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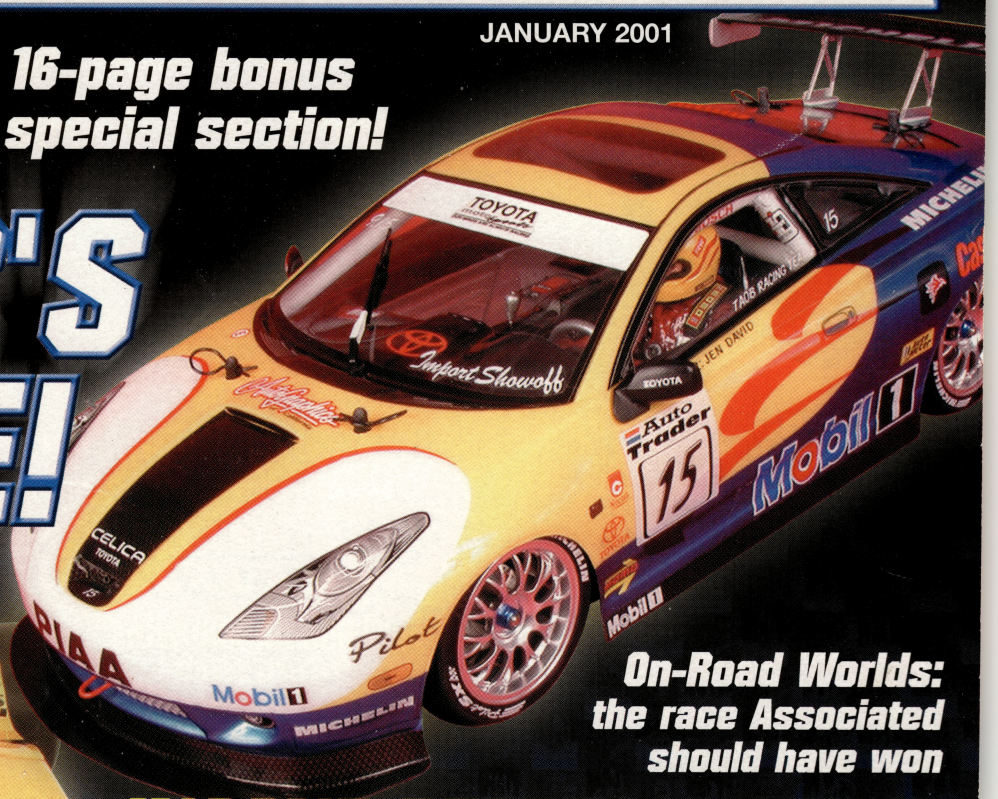

On-Road Worlds: the race Associated should have won



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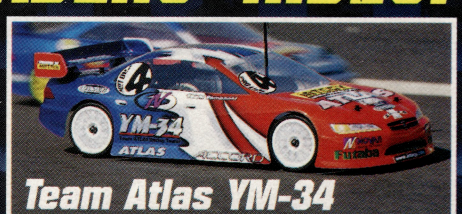

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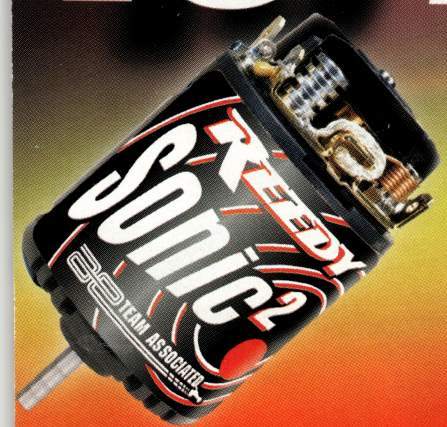

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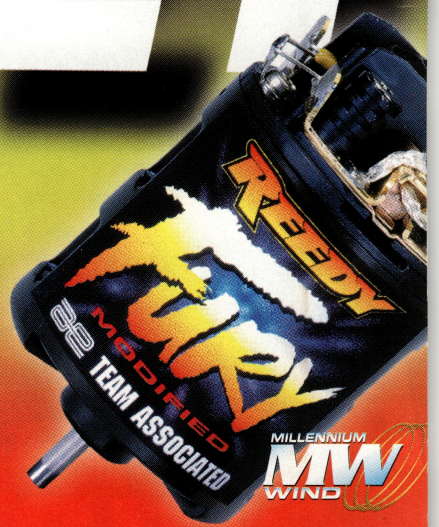

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22 IFMAR WORLDS WINS!



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R/C CAR
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On the cover: BattleBots Minion gets set to wreak havoc; Chad Geissler's Jordan F1 replica is one of the cleanest we've ever seen; Ian Aquino's Concours-winning Tamiya Toyota Celica is in a class of its own; the Kyosho TR15 rips up the dirt; and the new Atlas YM-34v3 pounds the pavement. Photos by John Howell (Minion video capture provided by owner Christian Carlberg).

On this page: Atlas' new YM-34v3 touring car gets set to take on the competition.

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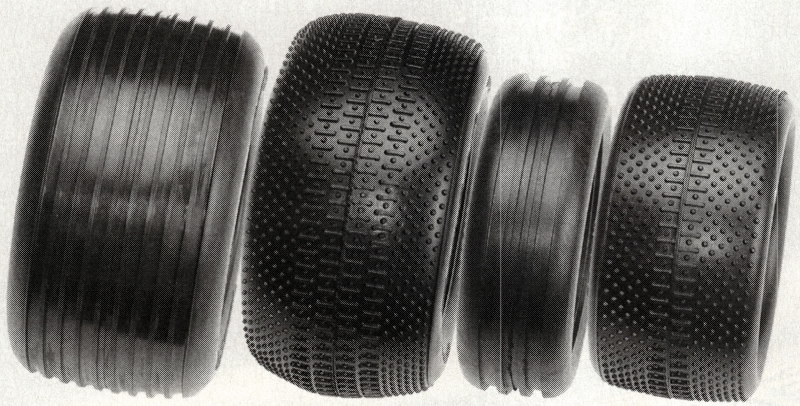



-Performance Speaks For Itself-

Privateers or pros, stock or modified, trucks or buggies, Team Losi Racing Tires were the choice of every Electric National Champion this year.

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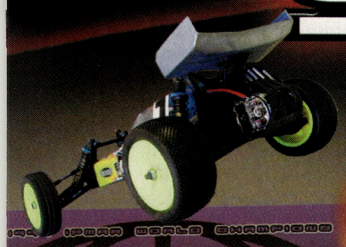



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drivers' stand

Future shock

by Frank Masi

As this is officially the first issue of the new year (despite the fact that I'm writing this in October of 2000), it's only fitting that I share with you some predictions for the future of our hobby.

Spec tires

They've used them at the on-road Worlds, they've used them at off-road races. Spec tires are a good idea and it's high time that we take a cue from full-scale auto racing and use handout tires at all major events. No more complaints from the have-nots. No more uneven playing field for the non-sponsored driver. No more "one run" tires for the factory pros.

Forget radio crystals

Hitec started things off with its Spectra module for its Lynx 3D transmitter, and Novak follows up with its Prism synthesized FM receiver. We are on the brink of a transmitter/receiver system that operates without standard crystals. Think of the benefits. You will no longer have to buy extra sets of expensive crystals, and you won't be stuck waiting your turn on the track while some gas truck that's on your channel runs out its eleventh tank of fuel. And soon, I'll wager that systems that can scan for open frequencies will be available. With this, you won't even have to check channels: just turn on your radio and it will do the checking for you! The probability of this happening is high. The technology is available, but who will be the first to offer a synthesized radio system?

NiMH with high voltage

Nickel Metal Hydride batteries are the future. They have superior capacity and they don't need to be discharged before being recharged. The only area where NiMH cells come up short in comparison to traditional NiCad cells is in the area of voltage, or "punch." It's not going to take long for Sanyo and Panasonic to work out the voltage issue. Once this happens, it's bye-bye NiCad cells forever!

Send in the clones

T-Maxx clones, that is. We know that Traxxas has a gold mine on its hands with the T-Maxx and E-Maxx trucks, but don't think for a second that Traxxas' competitors haven't figured this out! Soon, we expect to see a proliferation of T-Maxx and E-Maxx clones from all corners of the globe. Also expect to see trucks in the T-Maxx vein that are more suited for racing. The T-Maxx class is a viable category, and a hybrid of today's racing gas trucks and the T-Maxx is inevitable.

More micro

Everything's going to become smaller, and this includes the cars and trucks themselves. Kyosho's 1/24-scale Mini-Z and Kawada's Trip Mate have proven that proportional steering and throttle control and micro-sized chassis can co-exist. In many instances, space and weather conditions limit how often you can run your R/C. Micro cars can be run indoors on almost any surface and they are just as fun as the big models.

More RTRs

Horizon Hobbies has purchased Team Losi. As far as we know, it will be business as usual for Chino, California based Team Losi, but we have also heard that one of Horizon's goals is to increase the Losi product catalogue and further expand its market penetration. To this end, it's a near certainty that there will be an RTR (ready to run) from Losi. Whether this will come in the form of an existing model or an all-new car or truck remains in speculation.

Smaller and better ESCs

Speed controls will continue to get smaller yet will actually become more efficient and feature-laden. Some ESCs may be comprised of two separate modules: the "brain," which functions as the control unit, and the power unit which contains the transistors. By separating the more delicate electronics from the heat-generating transistors, the ESC's efficiency can be even greater. Rather than wires, the control and power units may be connected using fiber-optics.

National point series

ROAR will change the way it runs its national championships. Instead of having one single event to determine a national champion, ROAR will instead initiate a national points series similar to that used in other forms of motorsports. A series of six races will be held at various locations throughout the country, and the driver with the highest number of points declared the national champ at the end of the year. The manufacturers and sponsors could also use this "traveling show" to promote the hobby and their products, especially if the event were combined with sportsman-style classes to bolster attendance.

The way of the dodo

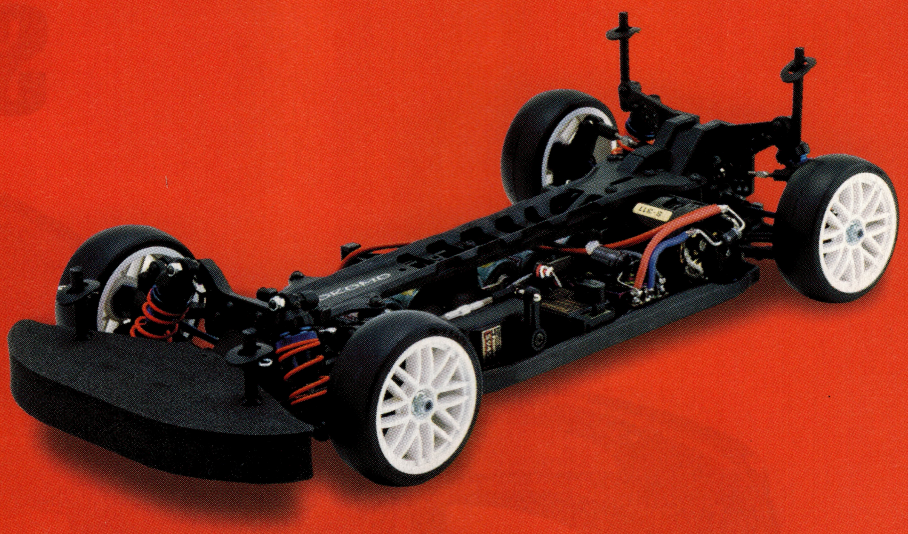
All it takes is one manufacturer to raise the bar and the others must follow. I don't remember exactly who started the trend of including ball bearings instead of metal or plastic bushings in their sport-level kits, but we are all the beneficiaries. And we will continue to see bearings in even the least expensive kits until bushings are a thing of the past.

R/C on TV

Have you ever looked at some of the programs that make it onto the air on most cable sports networks and thought to yourself "wow, if people will watch this, then why don't they broadcast R/C racing?" I have. Most people, myself included, firmly believe that R/C racing on TV would be a good idea—provided, of course, that the drivers, sponsors and manufacturers check their quibbles at the door. R/C on TV would be great, but we need to polish our product before it is beamed to the vastness of the general public. We have a great hobby, and we would indeed swell our ranks by showing the world just how much fun R/C racing can be. But the mainstream won't become a reality until we can represent ourselves as a cohesive industry. It would be nice to see R/C on TV, but are we ready? ◆

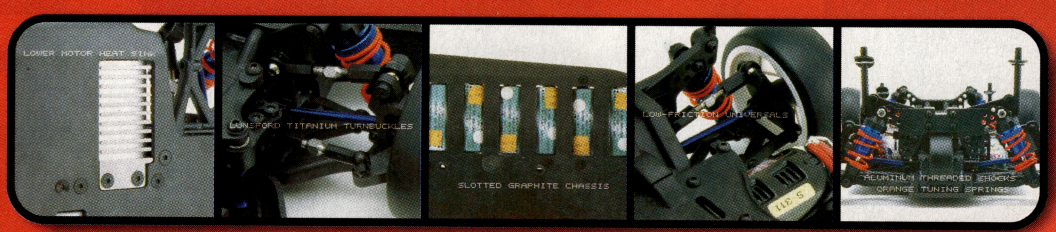


Ready To Win?



MR-4TC PRO

Experience Yokomo's latest RTW(*Ready-To-Win*) touring car kit, the MR-4TC PRO. Race-tuned for all out performance, the PRO comes with all the lightweight option parts, plus an all-new upper deck and graphite chassis for optimum chassis rigidity. Suspension components were specially selected by the Factory Team Drivers, and Yokomo Engineers have fine-tuned the drivetrain for even smoother and quieter performance. So if you're looking for that elusive race-winning package, look no further. Get the MR-4TC PRO from Yokomo.



Battery, motor and electronics not included in kit.

Congratulations to new Yokomo team driver Chris Tosolini for winning the PRO Modified Class at the 2000 Novak Midwest Touring Car Championship!

Also, congratulations to the 'Fabulous One' - Barry Baker for winning the 2000 Millenium RC Touring Car Race in Hong Kong.

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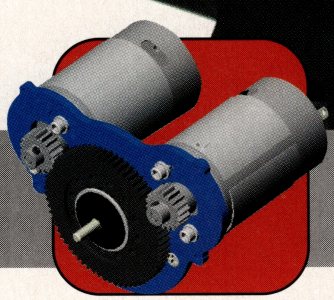

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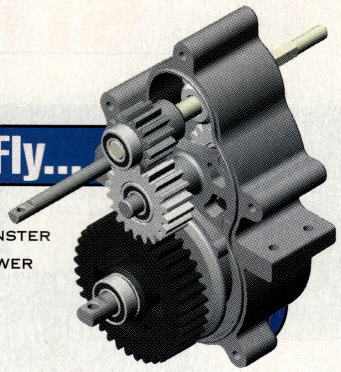

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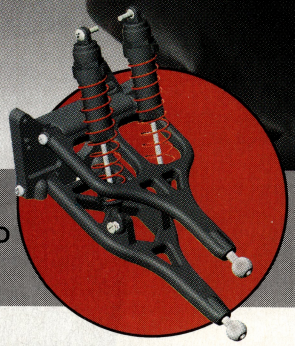

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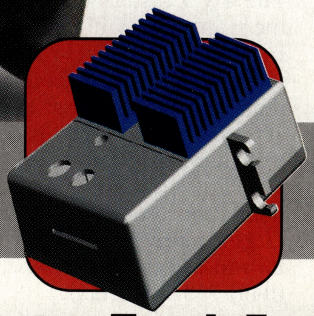

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HPI BRINGS THE "MINI" TO ANOTHER LEVEL!

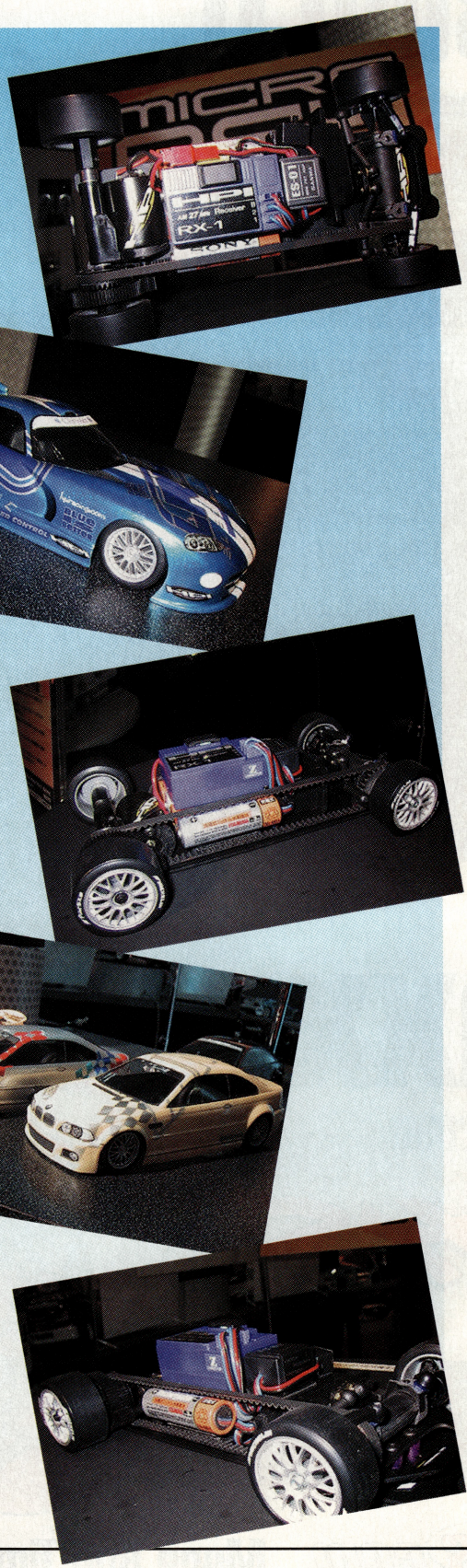
One of the biggest hits at the recent RCHTA show in Chicago was the introduction of HPI Racing's new Micro RS4 kits! These four-wheel drive 1/18 scale cars are the same size as the large die-cast metal models you can find in various toy stores and hobby shops. We have a feeling that they are going to be the next big thing...no pun intended! These cars can use standard electronics—except for the Viper, which is shown using a micro ESC due to body clearance issues. The cars are powered by 380-size motors and AA batteries (the Micro RS4 will also be able to use AAA batteries with an adapter). Nickel-metal hydride batteries can provide up to 30-40 minutes of runtime!



A single belt drives both the front and rear differentials (a rear ball diff and front one-way will be optional). The front end will use pan car style springs (very small springs) and the rear will use a modified T-bar setup for extra grip. The 4WD system will make the cars easy to handle, while the suspension will make it easy to tune in for any situation. In addition, the Micro RS4 can have three different widths to fit different car bodies and enhance handling. Early reports also tell us that Micro RS4 tires will be available in at least two different compounds for tuning purposes!

The Micro RS4 will be able to take advantage of its size and large tires to run on nearly any hard surface—wood floors, concrete, clean asphalt, low-pile carpet, tile and more!

For more information, contact HPI Racing at 15321 Barranca Parkway, Irvine, CA 92618 • (949) 753-1099; (949) 753-1098 (fax).



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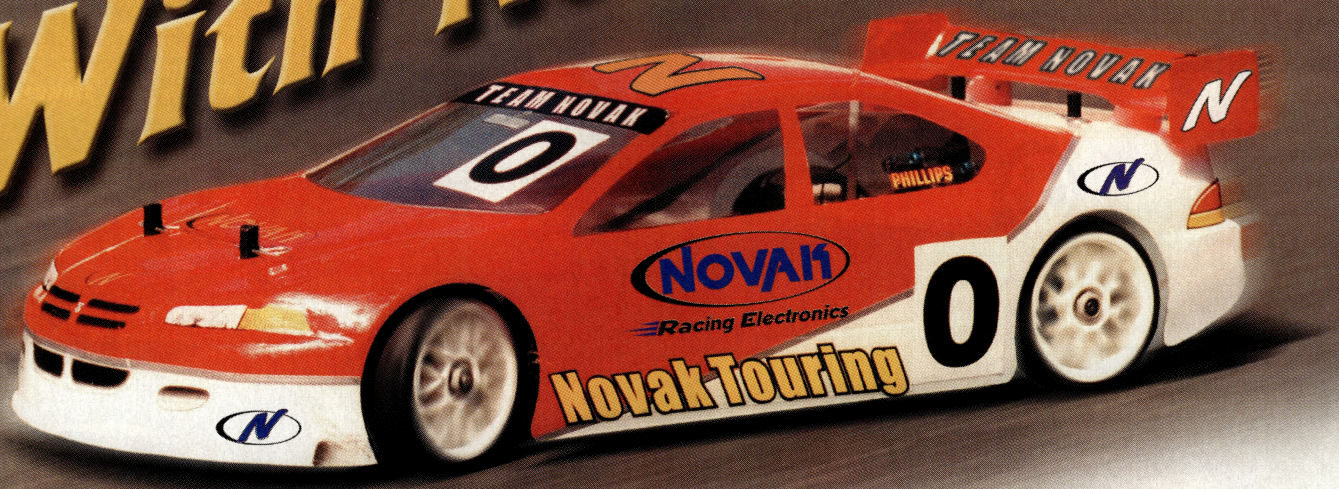

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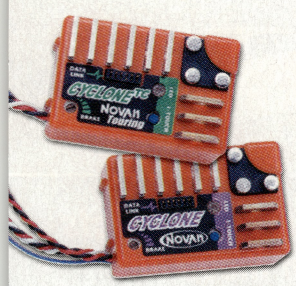

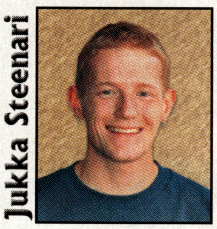
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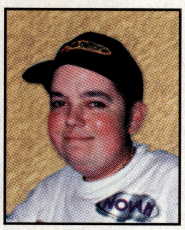
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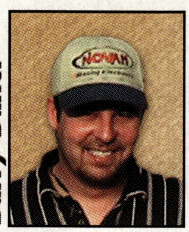
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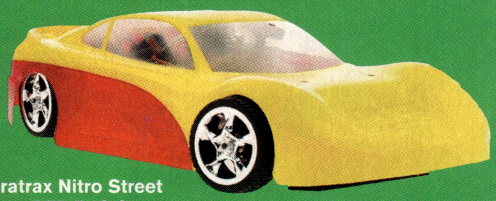

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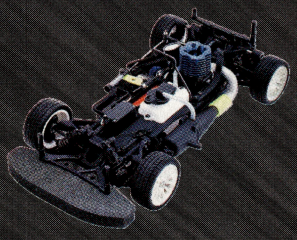

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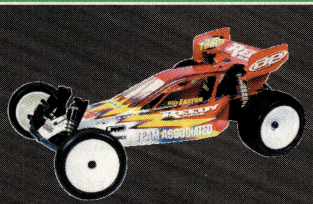

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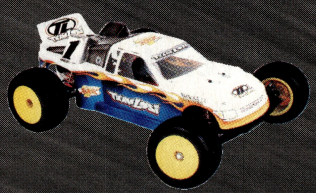



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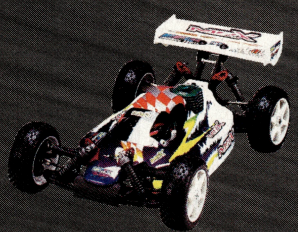

■ **MBX-4 RR 4WD 1/8 R/C Racing Buggy**
by MUGEN
eHobbies price: $479.99
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■ **Thunder Tiger EB-4 1/8 4WD Racing Buggy**
by THUNDER TIGER
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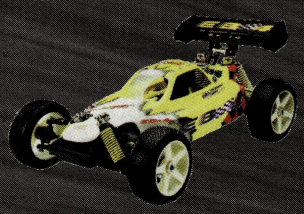



■ **Associated RC10GT RTR R/C Truck**
by ASSOCIATED
eHobbies price: $299.99
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PARTS & ACCESSORIES

Item #	Description	Manufacturer	Price
1004-5707	True Lathe 2 Pro	Trinity	179.99
1004-1613	Minitemp Temp Gun w/ Laser sight	Raytek	99.99
1002-9679	Monster Hauler Bag, Black	Trinity	39.99
1004-0587	1/8 Buggy Torque Pipe, for .21	Paris Racing Products	36.99
1004-0582	Racing Turbo Ring Pipe, 1/10 Scale	Paris Racing Products	27.99
1002-6877	Track Corner Markers, Set of 5	Tamiya	22.99
1002-7877	Maximizer Fuel Filter	Kyosho	17.99
1002-5719	Racing Fuel Bottle	HPI	15.99
1003-0836	Thorp 1/16" Hex Driver	Moore's Ideal Products	14.99
1003-0842	Thorp 1.5mm Hex Driver	Moore's Ideal Products	14.99
1003-0844	Thorp 2.5mm Hex Driver	Moore's Ideal Products	14.99
1003-0746	Six Pack Pinion Gears ODD 15-25	Robinson Racing	12.99
1003-0928	Blue Crystal Case	RPM	7.99
1000-1453	Nitro R/C Car Cleaner	HPI	4.99
1003-0402	Front, Rear 1/8 M2 Multi-Spike	Pro-Line USA	19.99
1003-0400	Front, Rear 1/8 XTR Multi-Spike	Pro-Line USA	17.99
1002-9140	Rear Truck Sprint, (Red)	Team Losi	17.99
1002-9146	T-2000 Truck Tire, (Red)	Team Losi	17.99
1002-9152	LST T-90 Street Truck Tire, (Red)	Team Losi	17.99
1003-0372	Rear 2.2" Gladiator 2 Truck Tire, M2	Pro-Line USA	17.99
1003-0356	Rear Hole Shot low-pro M3 cmpd	Pro-Line USA	13.99
1003-0307	Rear Bow Tie M2, 2.2"	Pro-Line USA	12.99
1004-6060	Low Pro Sedan Slick,24 mm H13	Pro-Line USA	10.99
1004-6062	LP Slick 2, 26 mm Sedan Tires	Pro-Line USA	10.99
1004-6067	LP Slick , 26 mm Sedan Tires	Pro-Line USA	10.99

BATTERIES, CHARGERS, ESC'S

Item #	Description	Manufacturer	Price
1002-6096	Millennium Digital D/C Charger	Novak Electronics	139.99
1000-0563	Cyclone Programmable Spd Control	Novak Electronics	129.99
1002-6095	N-Power, Power Supply 10 amp	Novak Electronics	129.99
1000-0565	Super Rooster Speed Control	Novak Electronics	115.99
1002-6088	2400 V-Max Plus Batteries TM	Team Orion	69.99
1000-0564	Rooster Reversible Speed Control	Novak Electronics	69.99
1002-6090	2400 VIS Extra Batteries Race 6C	Trinity	58.99
1002-6094	3000 MAH NiMh Batteries Stick Pk	Trinity	46.99
1002-6727	Black Box2 Discharge Cutoff Device	Deans W.S. Co.	25.99
1000-0632	Discharger	Deans W.S. Co.	24.99
1000-1353	900 AC/DC Auto-Charger	Hobbico	24.99
1004-5459	Dyna-Sport 1700 6 Cell Flat Batt.	Dynamite	22.99
1004-5695	1700 MAH 6 Cell 7.2V Battery	Racers Edge	17.99
1002-6343	Twisted Gold Connector Set	Team Orion	9.99

RADIOS & SERVOS

Item #	Description	Manufacturer	Price
1004-0474	3PJFS FM Surface Radio System	Futaba Corp.	299.99
1000-1401	M8 3CH FM Radio System	Airtronics	269.99
1002-9840	Lynx 3D 3 w/Spctra Mdle FM75MHz	Hitec	264.99
1000-1270	3PD FM Radio System	Futaba	199.99
1000-1400	Airtronics CX2P FM 2 CH Radio System	Airtronics	164.99
1003-9391	2PEKA	Futaba	114.99
1004-0522	High Torque Alum. Gear Servo	Airtronics	109.99

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■ **MRC SP3 Extreme 1/12 Scale R/C Car**
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■ **Tamiya Rover Mini Cooper(M03) R/C Car**
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eHobbies price: $89.89
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■ **Tamiya King Tiger Tank**
by TAMIYA
eHobbies price: $389.99
Item #1000-0609

ENGINES & MOTORS

Item #	Description	Manufacturer	Price
1004-0650	.21 RZ-V99B Buggy Engine	O.S. Engines	279.99
1000-0302	FS-26S-C R/C Car Engine	O.S. Engines	189.99
1004-0991	.21 RG-X (P) Engine, Pilot Crank	O.S. Engines	189.99
1002-6380	Picco .12 engine, Rotary w/pull	Trinity	144.99
1004-5524	CX 12 Non Pull Start Engine	Nova Rossi	139.99
1002-6379	Picco .12 Engine, Rotary Carb	Trinity	124.99
1000-0296	.12CV-X RC Car/Buggy Eng. w/ Rec	O.S. Engines	119.99
1002-6167	Chrome Modified Motor 12x2	Team Orion	49.99

BODIES

Item #	Description	Manufacturer	Price
1002-6844	Calsonic Skyline Body Set	Tamiya America	29.99
1004-1599	200mm Toyota Celica Sedan Body	HPI	22.99
1004-1604	200mm Alfa Romeo GTV Sedan Bdy	HPI	22.99
1004-1609	200mm Cougar Sedan Body	HPI	22.99
1002-5687	1/10 Mercedes CLK-GTR Bdy (200mm)	HPI	22.99

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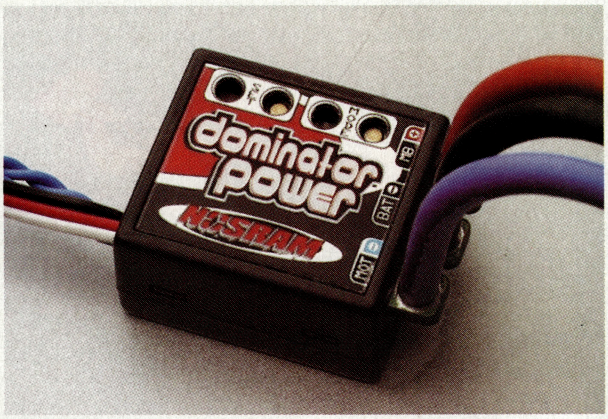
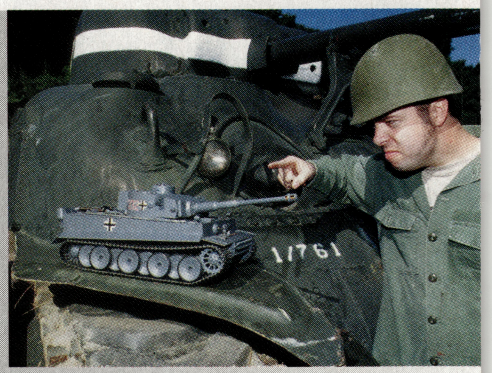


The Return of NOSRAM

NOSRAM was a UK-based manufacturer which dominated the European racing scene during the late '80s and early '90s using advanced electronic speed controls. Some of the best R/C-drivers in the world were using NOSRAM speed controls. In early 2000, NOSRAM was taken over by LRP Electronics, the German company that produces such products as the V7.1 ESC and the Phaser micro receiver. NOSRAM will now re-launch a complete line of R/C products, beginning with speed controls with more to follow soon. LRP's trained engineers, supported by LRP staff, will ensure the highest product quality and development standards for all future NOSRAM products. Currently, LRP is building up a new worldwide NOSRAM distribution.

As a testimony to the performance of NOSRAM, Japanese driver Takuya Ito used a NOSRAM Dominator ESC to set the fastest single lap (11.24 seconds) at the 2000 IFMAR On-Road Worlds in the Pro 10 class. Other renowned drivers joining the NOSRAM team include EFRA European Champion Andrew Griffiths and ROAR National Champion Chris Tosolini.

TAMIYA'S TIGER-1 TANK MAKES SOME NOISE ...LITERALLY!



New from Tamiya is this German Tiger-1 tank. What makes this tank stand out from the rest is the intricate sound system that sits in the beast's belly. The sound system accompanies all the tank's functions—when the turret moves, the gun raises and lowers, the tank moves forwards and backwards, and the machine gun and main gun fire, the sound system accurately matches each function! The coolest feature is when you fire the main gun; a strobe flashes, and the tank actually recoils backwards! Too cool... Look for a full feature in our next issue.



For more information, contact Tamiya America at 2 Orion, Aliso Viejo, CA 92656 • 1-800-TAMIYA-A.

MITSUBISHI MOTOR MANIA



HPI Racing is set to release an all-new 200mm body for wide touring cars—the 2000 Mitsubishi Eclipse! The stylish new Eclipse is becoming popular with the import tuning manufacturers and should prove to be a worthy successor to the extremely popular previous Eclipse. All HPI Racing bodies ship with a huge flexible vinyl decal sheet for detailing the clear polycarbonate shell. Window lines, headlights, grilles, tail lights, HPI logos and other details are on the decal sheet. A complete set of Mitsubishi and HPI decals is included! A convenient overspray film is also included, as well as vinyl window masks to make painting quick and easy. To make mounting the body simple, an instruction sheet is included and the body has dimple marks for drill locations. A "street style" wing is provided, as well as a large racing wing for superior handling. The 2000 Mitsubishi Eclipse Body (#7451) retails for $24.00.

For more information, contact HPI Racing at 15321 Barranca Parkway, Irvine, CA 92618 • (949) 753-1099; (949) 753-1098 (fax).

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The next breakthrough in RC realism is here – the Tiger I from Tamiya. You'll hear the engine crank up and accelerate when you move, the turret gears turn and when it fires, you'll swear you're standing next to the real deal. Researchers spent weeks in France recording the only working Tiger I in the world. No RC on the market can even come close to the incredible detail and driving excitement of this beast, much less claim sound. Demand the Tamiya Tiger I from your hobby source today or visit www.tamiya.com



1/16 RC GERMAN TIGER I

1/16 RC German Tiger I early production full-option complete kit 56010

A four-channel R.C. unit is necessary to operate this kit. Two 7.2V Tamiya Racing Packs (or equivalent) and charger are also required.

TAMIYA

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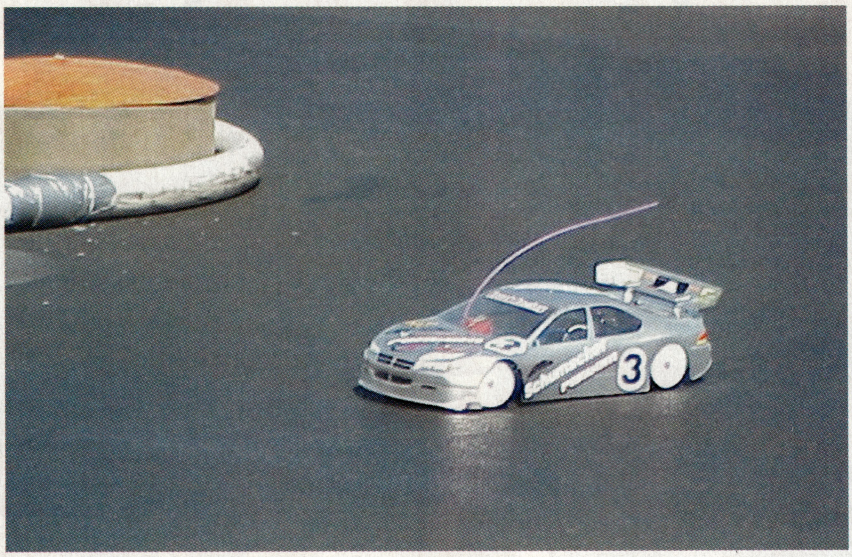


Axis 2 Wins NORRCA Nats

Team Schumacher drivers Paul Lemieux and Paul Wynn scored a fantastic one-two finish at the NORRCA Nationals at Delta R/C in Antioch, California. This race was the major USA race debut for Schumacher's new Axis 2 touring car and it dominated the Factory Modified Touring Class. Paul Lemieux captured TQ and went on to win the first A-main. Paul's teammate, Paul Wynn, also put in a great performance by winning the second of the three A-mains. Lemieux clinched the overall victory by winning the final A-main.

Both Schumacher drivers stated that they immediately felt confident with the new car, and the new bonded chassis construction with flexible top plate made the handling very consistent and easy to drive fast. According to Schumacher, the SST touring car series has now won eight U.S. National titles, more than any other manufacturer.



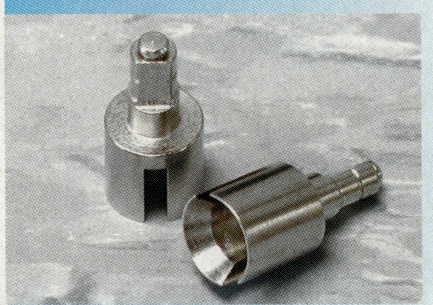
2000 NORRCA Nationals Factory Modified Touring results

1st Paul Lemieux	Schumacher Axis 2
2nd Paul Wynn	Schumacher Axis 2
3rd Mike Swauger	Xpress
4th Mike Bruce	Yokomo
5th Don Vinkemulder	Schumacher Axis2



BEEF UP YOUR HPI NITRO MT

Now available from HPI Racing is their new heavy duty adjustable slipper clutch set for the Nitro MT and RTR Nitro MT. The set includes a replaceable spur gear, a traction control pad, an adjustable nut for setting the amount of slip, and a new spur gear shaft. All the parts are available separately for easy replacement. This will be a popular accessory for all Nitro MT trucks—it allows racers to adjust the amount of drivetrain slip to save the drivetrain from the stresses of off-road jumps. The Slipper Clutch Set (#72230) retails for $33.00.



Also available from HPI Racing is a new option part for all HPI kits that use their sealed gear differential—heavy duty differential shafts! These differential shafts (#72213) are made from a hardened material that is more durable than the standard differential shafts. The new heavy duty differential shafts are perfect for anyone who races the Nitro MT off-road. The shafts (2pcs), retail for $8.00.

For more information, contact HPI Racing at 15321 Barranca Parkway, Irvine, CA 92618 • (949) 753-1099; (949) 753-1098 (fax).◆

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MILLENNIUM MW WIND

Billy Easton
'99 ISTC World Cup Champion
- Reedy Fury MW 12 Triple
- Reedy R3K World Cells



MILLENNIUM MW WIND

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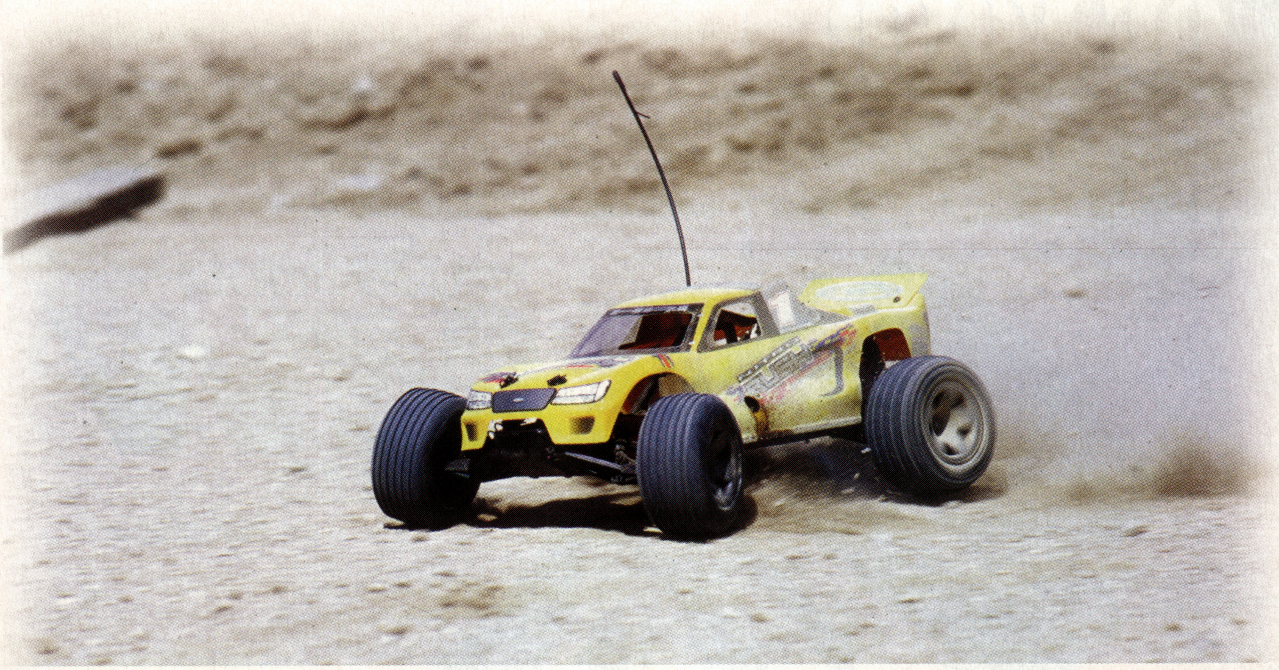


Nitro Truck Quandary

Which do you guys rate better overall, the Nitro Rush ST or Kyosho's Ultima GP RTR? What is the top speed for the Ultima?

Pooky
[via rc-car.com]

Both trucks are very similar, in that they are 2WD stadium-style trucks powered by .15 c.i. engines. Both trucks come ready-to-run and with pre-painted bodies. We've tested both, and they are equal in many categories. The HPI engine is stronger throughout the powerband than the Kyosho engine. Both trucks are under-damped, which is to say that they both could use thicker shock oil and stiffer springs. The Rush also comes with a full set of ball bearings, while the Ultima RTR has them only in the transmission. We've seen the Kyosho Ultima ST race truck perform, so we know that the Ultima RTR could be hopped-up into a serious race truck. We don't yet know the full performance potential of the Rush, but we are planning to add some hop-ups to our test truck to make it race-ready. Stay tuned. Oh, the Ultima RTR will do around 28 mph.

Looking for T-Maxx Mods

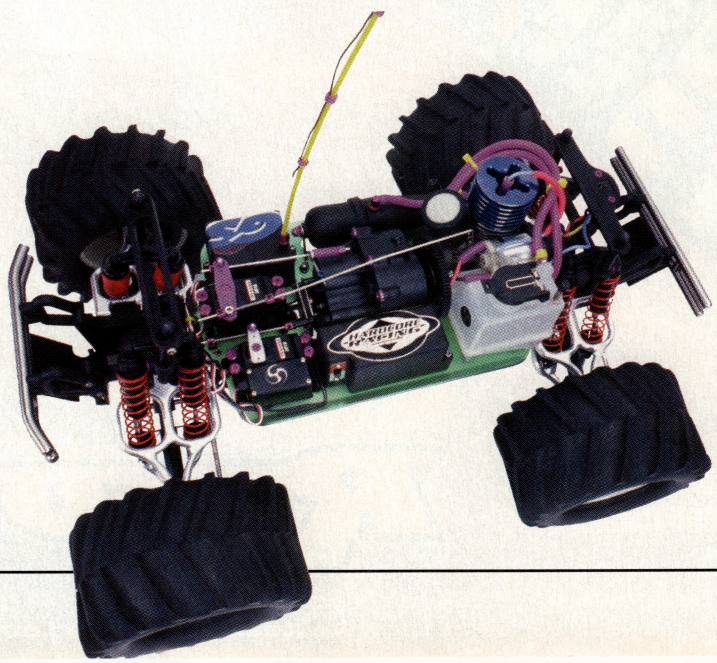
In your November '00 issue, in the article "Make your T-Maxx Race Ready," you gave all the part numbers but the ones for the air filter and the bent filter mount. Can you give me the numbers so I can get my filter away from the motor? By the way, great mag. Thank you very much

Joseph Brown
[via rc-car.com]

Joseph, sorry for the omission. The part you are looking for is from GS-Racing (General Silicones), and it is their Ultimate Molded Air Filter Adapter (part no. GA-A10 for 1/10-scale), which is available in 12 colors. Call GS Racing at (626) 445-6036 or visit your hobby dealer. We recommend a filter from Motor Saver over any other type. These filters are ideal for T-Maxx use as they provide excellent air flow to the engine and can go long periods without clogging up and needing cleaning. Contact Motor Saver at (949) 445-0201.

Off-Road Down Under

I am looking at off-road racing here in Australia and I need some advice on choosing the right batteries. What brand is good; Sanyo, Panasonic etc? What size is best, 2400 or 3000? Is it really worth going NiMH, since the chargers are so expensive? Should I make up the battery packs? If so what



bars are best, copper, silver or gold? Thanks,

Michael

[via rc-car.com]

The type of car and class you run will usually determine which type of battery is best. In off-road, we recommend the new Sanyo 2400s for almost all conditions, with the possible exception of 4WD buggy modified. In all the other classes, e.g., 2WD stock, truck mod, etc., the 2400 NiCads will provide more than adequate run time and excellent voltage. NiMH cells have phenomenal capacity (longer run time), but they don't quite have the voltage (punch) of a NiCad cell, which is most noticeable in stock-class racing. And because of their construction, NiMH cells do not need to be discharged or cycled prior to charging, which actually makes them more maintenance-free. If you are going to race, then we do suggest that you invest in matched battery packs, which come as separate cells that you must assemble. Most any type of battery bars will work well. In particular, we recommend those sold by Deans, Trinity or Team Orion. See our article on battery building in the December '00 issue for more information.

Rally Conversion Question

Hi guys! I own a Tamiya TA03, and I was wondering if there was a way I could convert it for rally use. It would be especially good if this conversion was cost effective. Thanks for your time!

Phil

[via rc-car.com]

Converting a road-going TA03 for rally use is simple. First, you'll need to lengthen the shocks a bit by installing longer plastic shock ends. This will allow you to raise the car's ride height and still allow some needed down-travel in the suspension (necessary for good handling). Next, you should get a set of rally-style tires, which have larger tread for improved traction on dirt and grass, as the on-road slick or tread tires won't work at all off-road. Several companies such as Tamiya, HPI, Kyosho and Yokomo produce rally tires that fit standard sedan wheels. Finally, and this is an option, a rally-style body kit would top it all off. Tamiya produces several very sharp rally bodies that will fit your TA03 perfectly. ◆



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

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MCT207 Heavy Duty Steering Rods $39.95
MCT302 Rear Sway Bar $39.95

MCT301 Front Bumper $39.95
MCT401R Shocks w / Reservoir (SALE)$65.00
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MCT403 Right Angle Body Mounts (pr.) $ 3.95

"CLOD" Options

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MCT421 Cantilever Kit w / Bearings $89.95
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MCT423 New Era Masher Tires (pr.) $26.95

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NTF151 1/8 Scale Top Fuel (for21) $559.95
NPS152 1/8 Scale Pro Stock (for21) $529.95
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NTF210 SS(steel)Brake w/Fibre Pads $ 9.95

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TRM323 Rear Bumper pr. $18.95
TRM324 Front Bumper Supports pr. $24.95
TRM325 Rear Bumper Supports pr. $24.95
TRM102 Rear Sway Bar $39.95 (Requires TRM325)
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TRM333 Lower Control Arms pr w/pivot lock $49.50
TRM334 Center Skid Plate$15.00
TRM336 Frt or Rear Shock Tower $39.00
TRM910 Roll Bar W/Brace $39.50
TRM103 4.7mm Chassis $64.50
TRM107 3.2mm Ex. Main Chassis $59.90
TRM321EX Rear Skid $26.50
TRM123Engine Mount for Rear Exhaust .15 or .21Pull Start$35.00
AGT301Hi-Torque Ripple Pipe Powder Coat Blue $29.95
AGT301W Pipe Wire Blue $ 5.00
TRM241 Header Blue $19.95

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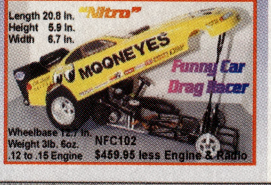
RC10GT RTR & Team Upgrades

HPI Nitro RUSH Upgrades

Nascar Tubular Chassis





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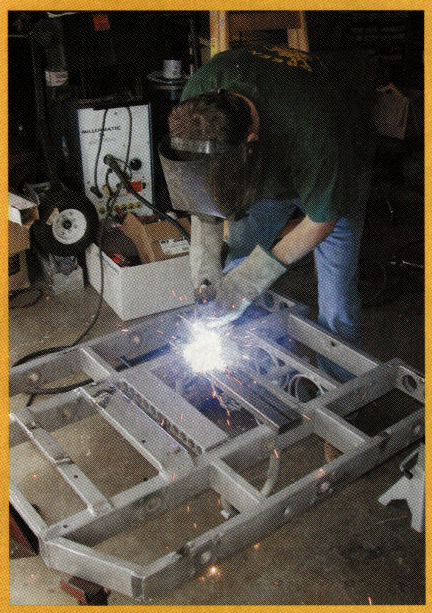
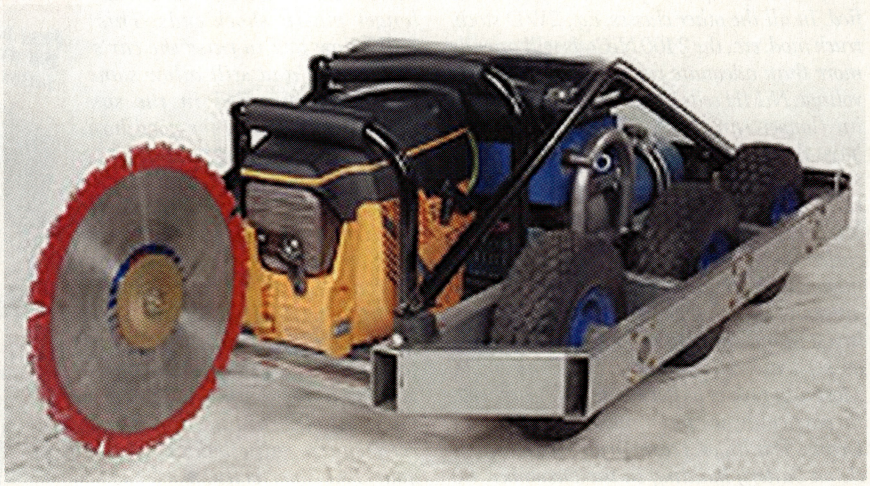






BattleBots: R/C ON THE



Inside Minion, the baddest super-heavyweight 'bot in the battle!

by Lito Reyes

Photos by John Howell

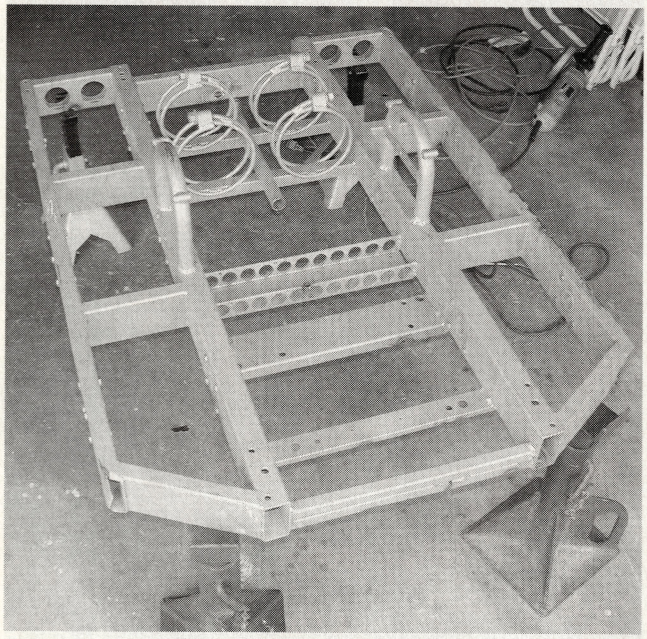


Christian Carlberg with two of his earlier "BattleBot" creations—a creeper (left), and a spinning hammer bot.

By now, you've probably heard of BattleBots, those R/C fighting robots on pay-per-view television. Well, Comedy Central has picked up BattleBots as a series, and is bringing all the charred electronics, dented metal, and WWF-like theatrics to a wider audience.

Okay, if you're not familiar with the concept, here it is in a nutshell: weapon-yielding robots fight against each other in a battle to the "death" whilst dodging traps and obstacles in the playing area. Does it sound simple? (Or does it sound like the novice class at your local track?) Well, what if I told you that some of the weapons include a 5-h.p. circular saw, a pneumatic spike, or a hammer that spins around at 120 r.p.m.? Or that some of the arena's "obstacles" include steel-cutting saws that come out of the floor, or shiny steel spikes. These may not be R/C cars, but frankly, they are very cool and we thought our readers would be interested in seeing this side of R/C.

CUTTING EDGE



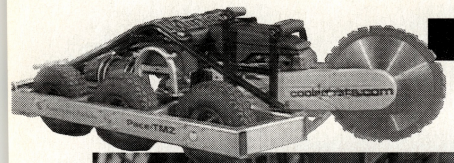
Minion's bare steel frame gets prepped for the next battle session.

Comedy Central taped a two-day event in San Francisco this past June and has broken it up into 13 weekly episodes. The overall winner of the Super Heavyweight division and the all-inclusive Rumble was Minion, a beast that wielded the previously mentioned circular saw. Designed and built by the Coolrobots team, headed by Christian Carlberg of Santa Monica, California, Minion took is share of cuttings, dents, and spike holes (imagine being charged by a 300-pound steel ramrod-bearing robot), but eventually came out on top. Doogie and I spent some time with Christian one day to find out more about the robot and its designer.

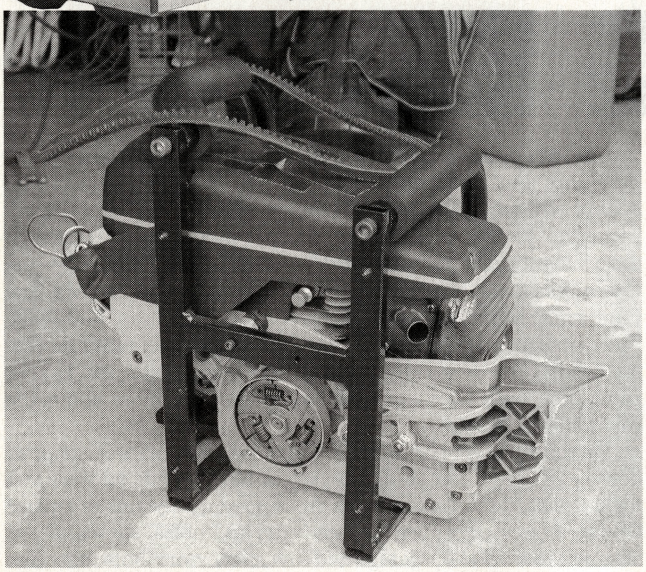
By the time we got to meet Christian, Minion was stripped down to a bare frame so that repairs could be made to prepare it for the next event. As Christian arc-welded new seams to replace damaged ones, and filled in some cuts and holes, we wandered around the workshop/garage and saw a few more 'bots that were "hibernating." One was a "wobbler" (like a spider, but with steel balls in place of legs) with cute headlights for eyes and a whole bunch of rotating sawblades for teeth. "Nice robot, good robot," I muttered as I walked past. In another corner was what looked to be a cross between a miniature car trailer and a sledgehammer. Its tactic was to spin in place until some other 'bot got in the way of the spinning hammer. Simple, but effective.



Some examples of Minion's battle scars.



THE CUTTING



This is Minion's main weapon, which was unfortunately broken early in the competition. You wouldn't know from seeing this, but in real life it started out as a two-stroke circular saw.

R/C CAR: *How did you get started in fighting robots?*

Christian: Well, I had just finished college in 1992 back east with a couple of Mechanical Engineering degrees, and I thought it would be fun to come out here to California to try my hand at special effects work.

I ended up working on a few movies like "Starship Troopers" and "Species 2." I saw my first robot wars competition in 1995, and from there I decided to build one to compete with. My goal was to have something for the 1996 competition, but I ran out of time. The idea was to build a "walker." In 1997 I actually competed with two of them, the first of their kind in this sort of competition.

R/C CAR: *How did they do?*

Christian: They both won their first fights. Eventually, I was profiled with my robots in a trade journal. This caught the attention of some people at Walt Disney Imagineering, and I've been working there ever since. I started out on ride development, but now I'm doing special effects work.

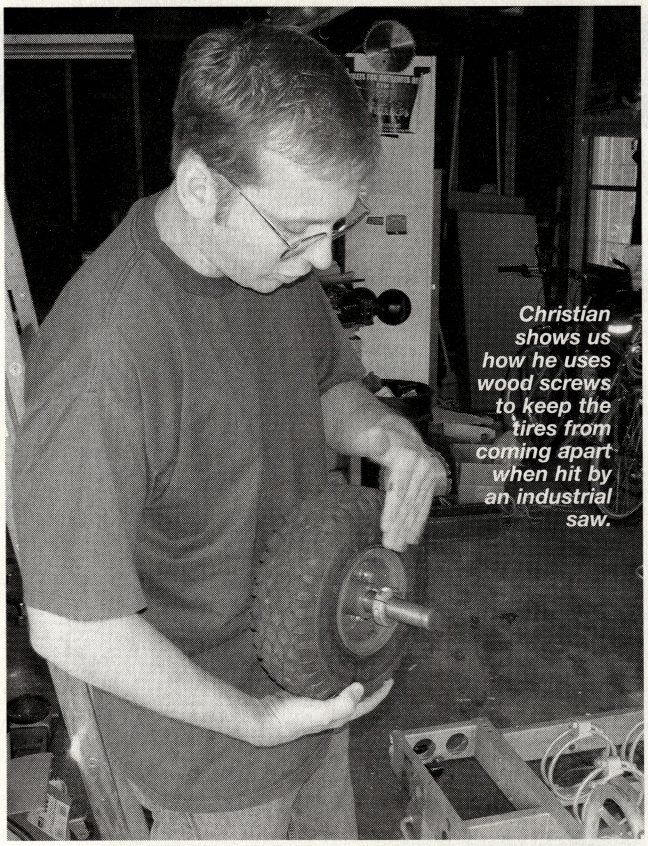
R/C CAR: *What kind of gear do you use in your robots?*

Christian: Well, most of it is either custom built or industrial equipment, but I do use some gear you might be familiar with. For radios, I use a Futaba 8-channel PCM unit. It holds five models and has more than enough channels to control my robots.

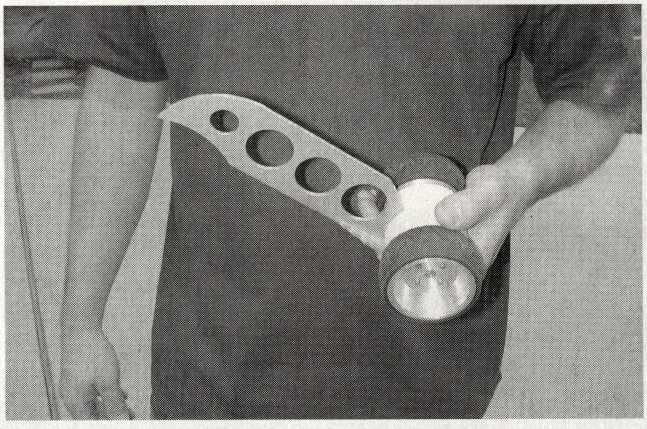
Since my robots are electric-powered, I use Vantec speed controls. They're not really used for race cars, but are popular among robot builders. It is a two channel unit, meaning it can control two motors independently, kind of like the tracks on a tank. That's how we can get robots to spin really fast in place. The motors I use are industrial units that can only be described as "big". They're powered by 12-volt batteries.

R/C CAR: *Do you do everything yourself?*

Christian: No. Over time people have helped me out, and now I have a couple of key people I call my "team," but I still do most of the work. Actually, from 1995 through 1999 I didn't even have a team. Basically, the Coolrobots team is me, Brian Poe and Luke Khanlian. Brian provides invaluable help with the building process, and Luke is an excellent "field" guy.



Christian shows us how he uses wood screws to keep the tires from coming apart when hit by an industrial saw.



This spring-loaded replica of one of Christian's original bots is available on his website, www.coolrobots.com.

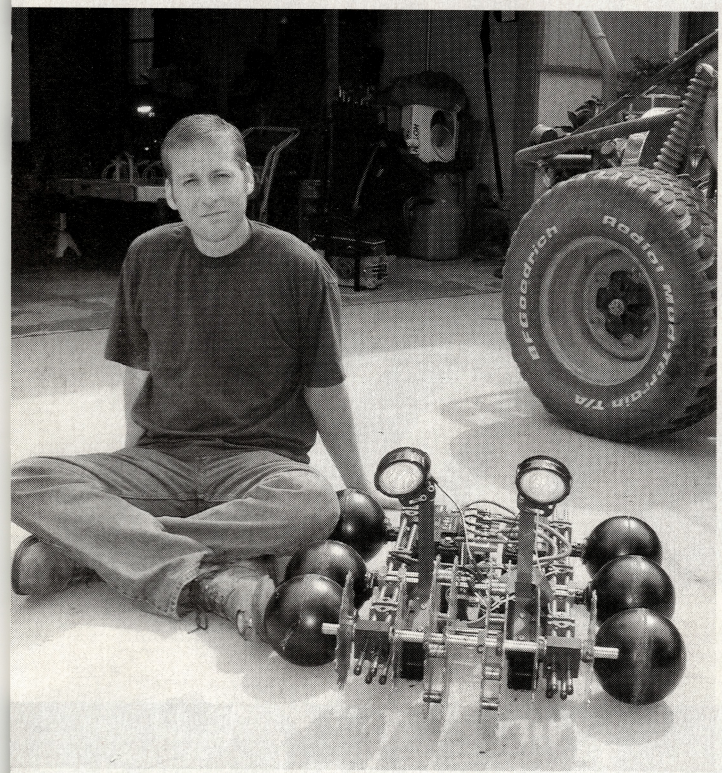
R/C CAR: *How much does Minion weigh, anyway?*

Christian: It's 325 pounds, right up to the limit in the class. You want to be as heavy as possible so you don't get knocked around so much in the competition.

R/C CAR: *Tell me about Minion's weapon.*

Christian: It actually broke early on in the competition, but we were able to continue anyway. It's just a two-stroke circular saw that is mounted in tubular steel we made to fit Minion's chassis and had powder-coated with a black finish. The saw is rated at five horsepower, and can inflict some serious damage. Its belt drive is protected by an aluminum housing.

R/C CAR: *It looks like you guys put some serious money into building your machines. Are sponsorships a part of the game, as well?*



This is one door you don't want to show up at unannounced!

Christian: I don't really have any major sponsors. I do get donations here and there, but they are very small compared to the costs needed to compete in an event. I pretty much pay for everything myself.

R/C CAR: *It looks like most of the other guys in the competition are pretty serious about their robots. What is the level of your competitors like?*

Christian: Basically, there are a good mix of hackers and really sharp competitors out there. The order in which you get to fight them is just luck. But there's always someone out there that you didn't expect.

R/C CAR: *So what's next on the horizon for your robots?*

Christian: As you can see, we're preparing Minion for the next event that will take place before the end of the year. We're also working on Overkill, which works sort of like a huge spring-loaded chopping knife. That one should be interesting in competition.

R/C CAR: *Good luck in your next competition and we hope to see you with another trophy for the bookshelf!*

Editor's Note: Obviously, these R/C robots can be very dangerous machines, and should be treated as such. They are all more than capable of inflicting serious bodily injury and are not for the inexperienced, so please don't just go out and try to attach an electric chainsaw to your Triple-XT. If you want more information about these robots, go to Christian's site, *www.coolrobots.com* or visit Comedy Central's website at *www.comedycentral.com* and click on the BattleBots link. ◆

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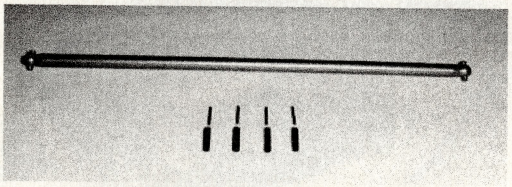

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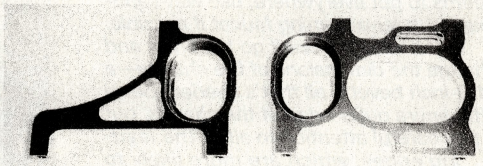

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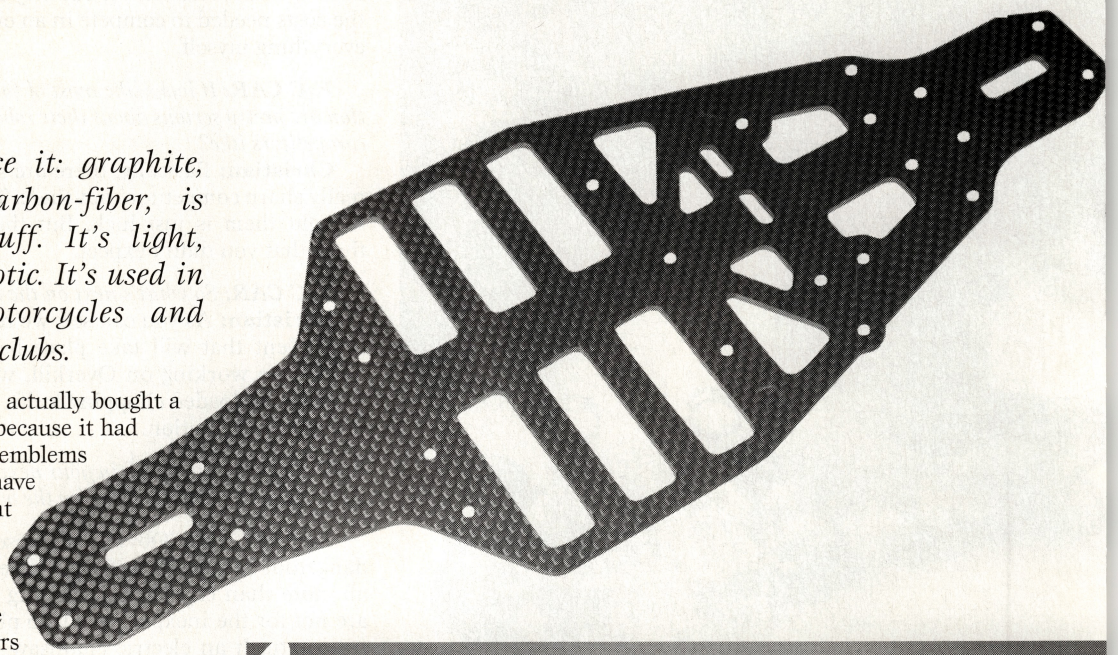
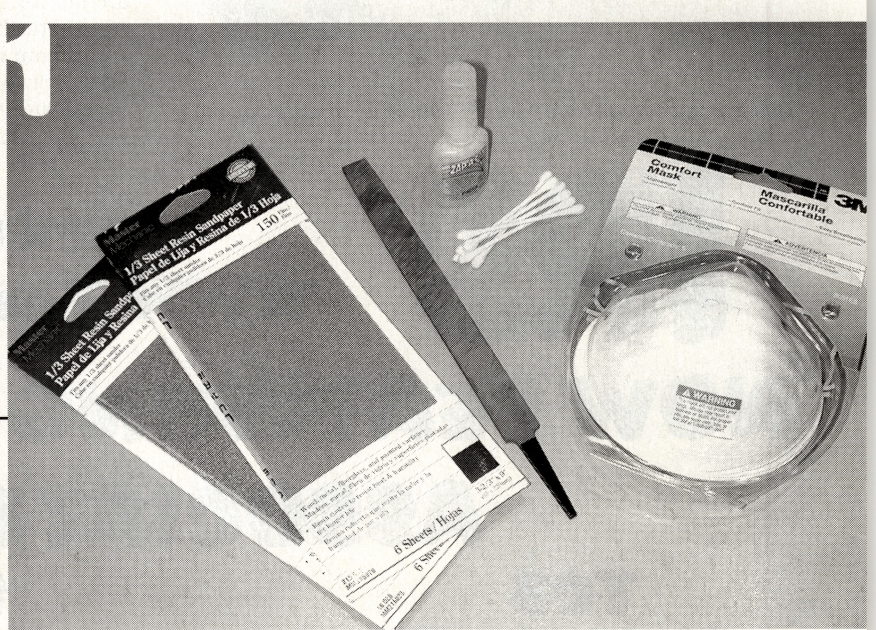
HOW TO

Graphite Chassis



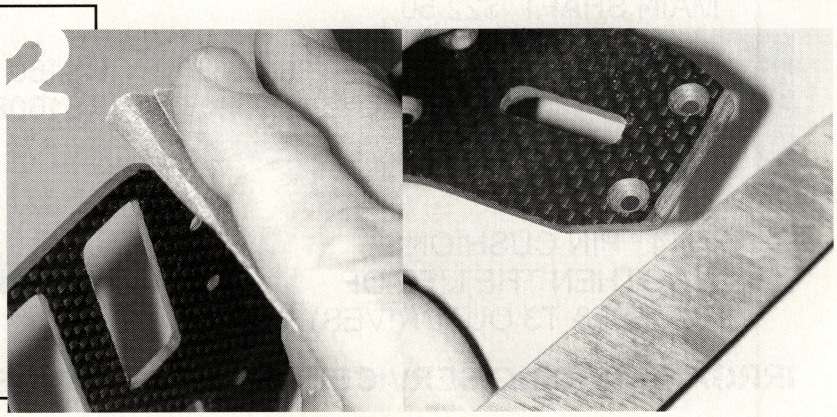
Let's face it: graphite, aka carbon-fiber, is cool stuff. It's light, strong and exotic. It's used in F1 cars, motorcycles and expensive golf clubs.

One of our editors actually bought a new truck simply because it had carbon-fiber-look emblems (true story!). But have you noticed that many of the graphite chassis plates and shock towers that are used for R/C cars and trucks aren't very well finished? Many times, the edges of the chassis are still rough from the tool used to cut them, and this can not only make the edges prone to splitting and cracking, but can give you a nasty splinter as well. Also, the sharp edges of a battery slot can cut through the cells' shrink wrap and may cause a short-circuit (graphite *will* conduct electricity). You can avoid all of these potential hazards with a few basic tools and a little elbow grease. Here's how to have a beautifully finished piece of graphite.



1

Before you begin, take a few measures for safety. Graphite is not only notorious for causing painful splinters, but its dust is not something you want on your skin or in your lungs. When working with graphite (or fiberglass, for that matter), always wear eye protection and a dust mask or respirator. Thick gardening gloves are also recommended to avoid splinters.

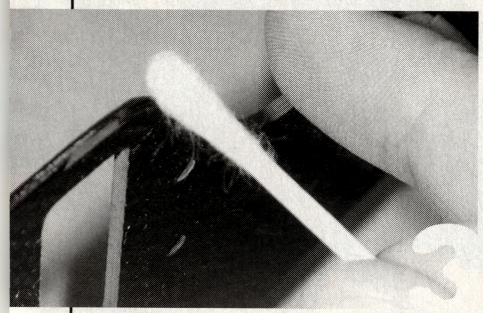


2

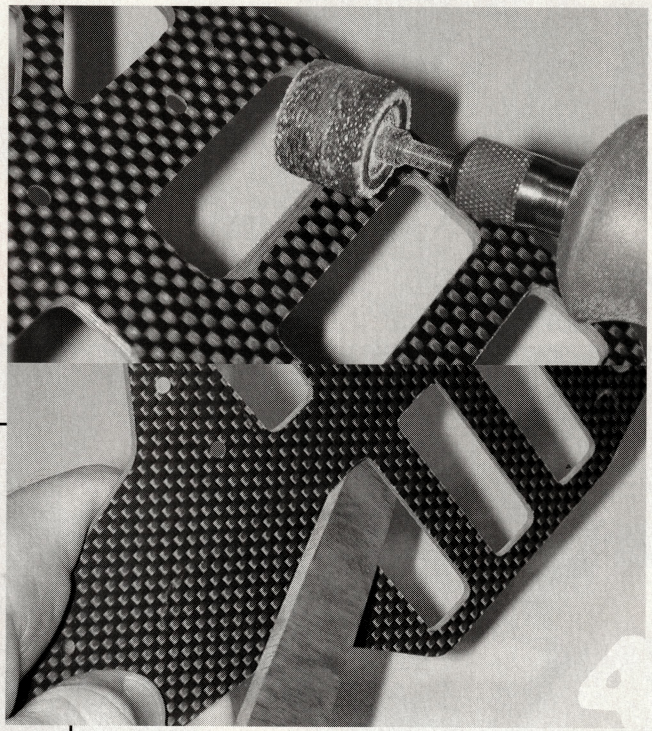
Removing rough edges or sharp corners from your graphite chassis will help prevent damage should the chassis scrape against the ground. Begin by rounding the edges of the chassis with medium-grit sandpaper. To avoid dust, which seems to get everywhere, use wet-sandpaper under a running faucet if possible. When sanding, don't go too crazy and change the dimensions of the chassis—a 1/8-inch bevel is all that's needed. Bevel the entire outer edge of the chassis, but pay careful attention to all of the leading edges, which are more likely to become damaged should the chassis scrape the ground.

Preparation

Add stiffness, lose weight and avoid splinters



Once the chassis has been sanded, it's time to seal the edges (make sure that you've wiped away any remaining dust and that the chassis is dry). Using a cotton swab, apply a thin coat of CA (cyano-acrylate, or "super glue") to the edges of the chassis. This seals the exposed graphite laminations and will prevent them from splitting. Doing this also creates a great-looking shiny finish. In most cases, one or two coats of CA will do the trick.



If your chassis has slots into which the batteries fit, removing the sharp edges prevents the cells' shrink wrap from becoming damaged. As an added benefit, beveling the slots also allows the cells to sit lower in the chassis for improved cornering. We prefer to use a Dremel rotary tool and a small-diameter grinding or sanding drum for this purpose. Hold the tool at about a 45-degree angle to the chassis and grind a 1/8-inch bevel from the tops of each slot. We like to have a battery pack on hand so that we can test-fit the slots as we sand them. This ensures that we remove the right amount of material. After all, you don't want the pack to sit so low in the chassis that it scrapes on the ground! Once you've finished sanding, you can seal the slots with CA as was done to the chassis' sides. ◆

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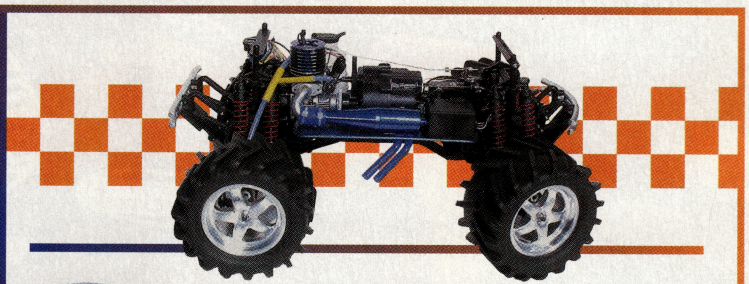



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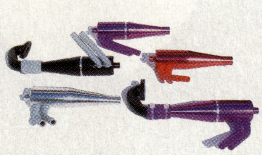

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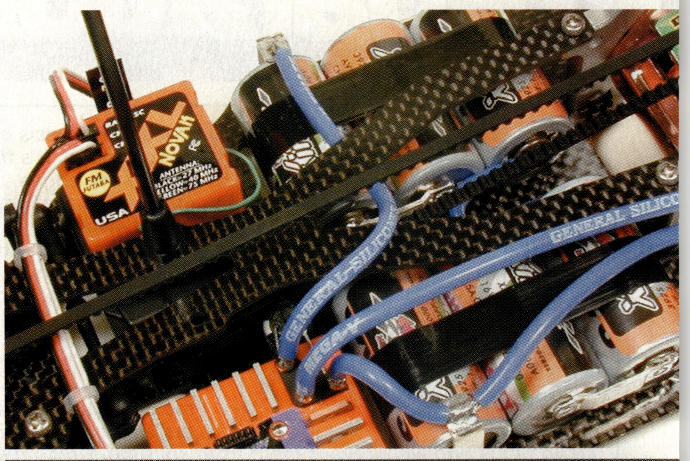




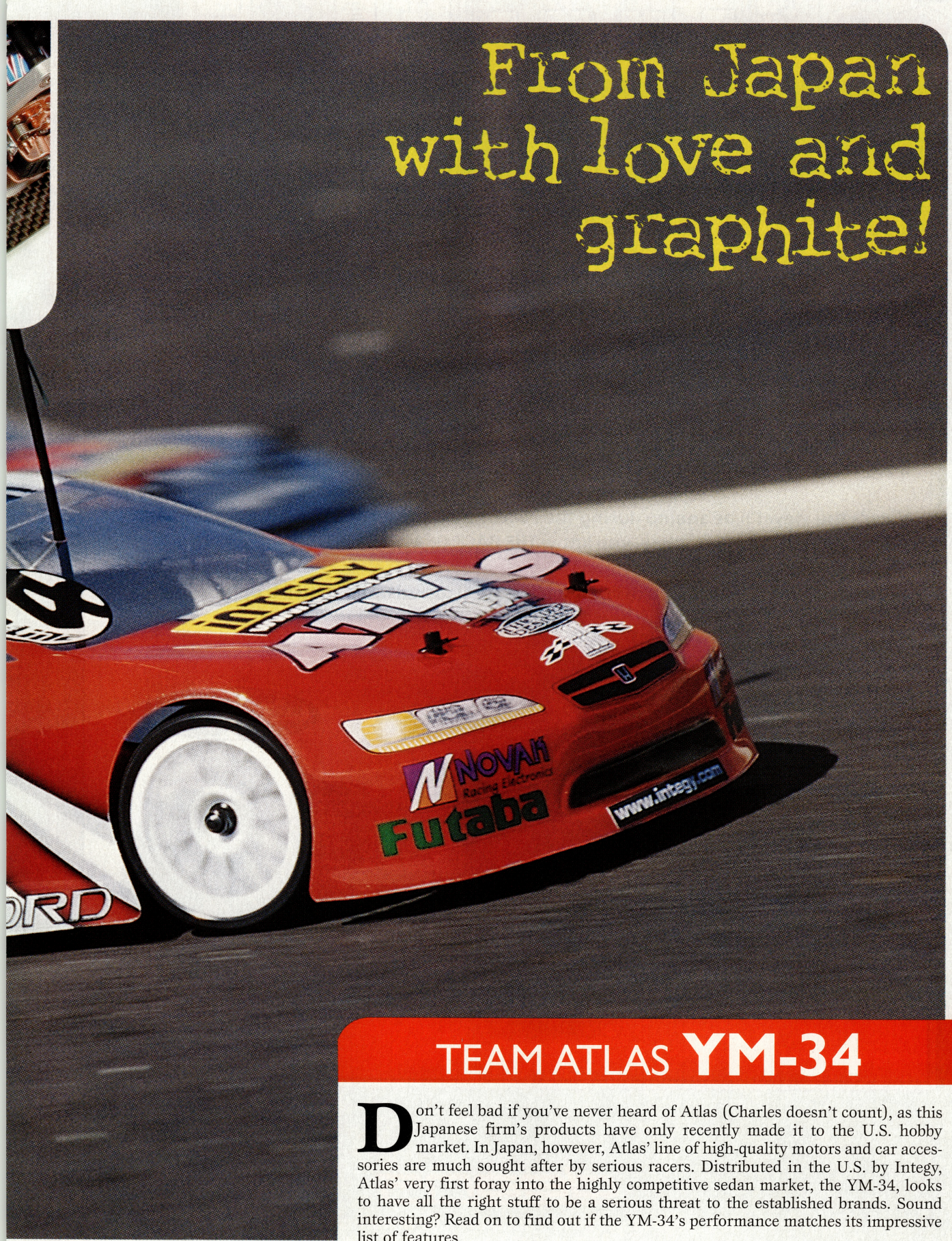
SPECIFICATIONS

Length	13.7 in./349mm
Width	7.3 in./186mm
Wheelbase	10.1 in./257mm
Track (F/R)	6.3 in./160mm
Skill level*	3

PRICE

Average street price: $249

* Indicates skill needed to satisfactorily complete kit. Level 1 kits are the easiest to complete, Level 4 are the most difficult and shouldn't be attempted by beginners without experienced assistance.



TEAM ATLAS YM-34

Don't feel bad if you've never heard of Atlas (Charles doesn't count), as this Japanese firm's products have only recently made it to the U.S. hobby market. In Japan, however, Atlas' line of high-quality motors and car accessories are much sought after by serious racers. Distributed in the U.S. by Integy, Atlas' very first foray into the highly competitive sedan market, the YM-34, looks to have all the right stuff to be a serious threat to the established brands. Sound interesting? Read on to find out if the YM-34's performance matches its impressive list of features.

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Hard Drive

Race Secret

COOL RACER, FRIDAY, GOT SPEED?

GOT SPEED?

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

YO JOEY,

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

Here's the view I'll be seeing during the race. You'll see it in the pits. Sorry dude, I didn't get a shot of your view, you know THE BACK OF MY TRUCK!

Gotta charge bro – Gotta make room on the shelf for this weekend's trophy.

Later,
Cool Racer



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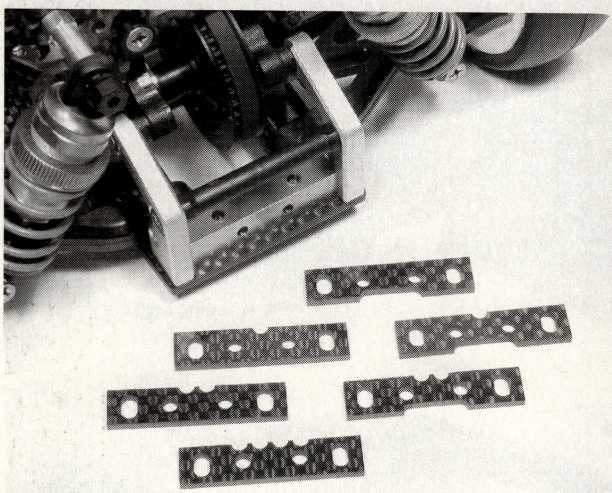
Trash

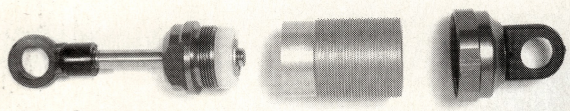
TEAM ATLAS **YM-34**

SUSPENSION

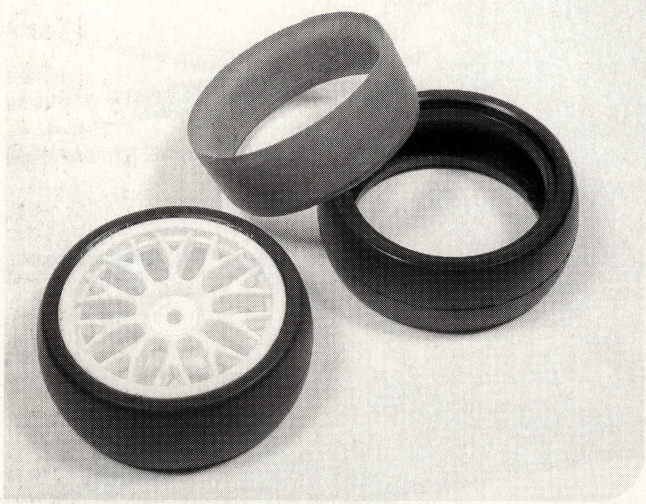
The YM-34 uses four equal-length suspension arms to provide even amounts of traction from front to rear. Up front, the suspension uses standard uprights and spindles with an adjustable turnbuckle upper link to control camber angle. Atlas offers two uprights, one with seven degrees of caster and one with nine. The kit comes with the seven-degree uprights for more mid-turn steering. Both the front and rear suspensions use carbon-fiber shock towers that provide five holes for shock mounting and six holes for the camber link. The towers are very strong, but because they are attached to the rather flexible diff-mount plates, their strength is mostly for naught—especially in back, where the long aluminum shock standoffs accentuate the flex.



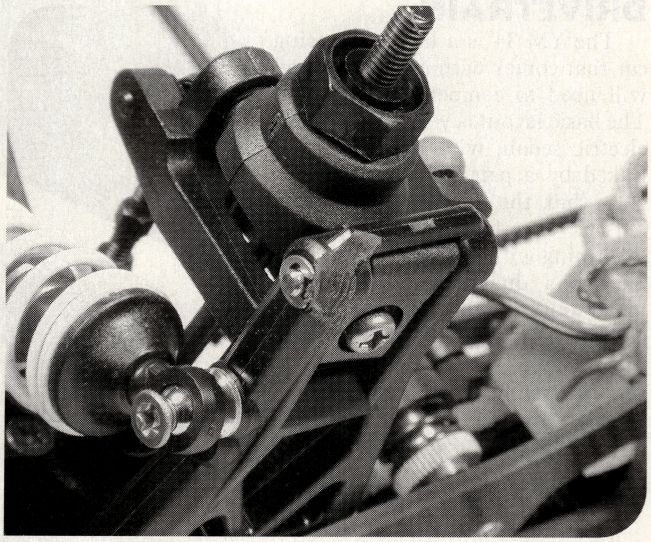
We installed Atlas' optional alloy rear suspension mounts, which allows for subtle toe-in adjustments via these graphite inserts.



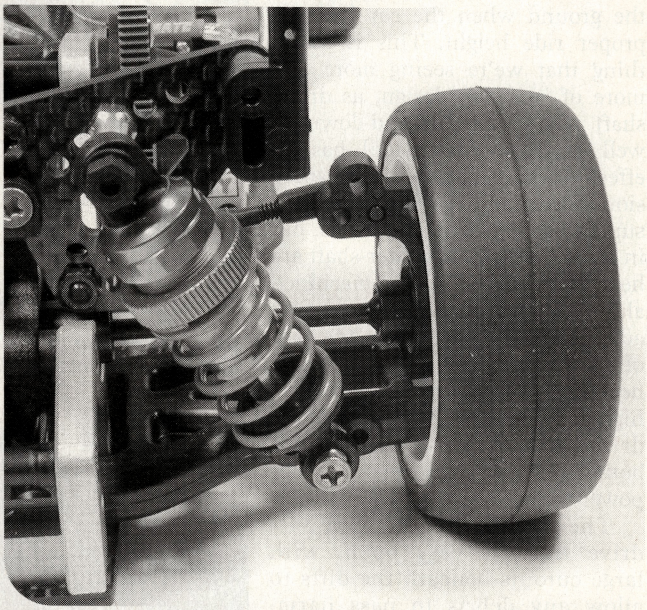
Similar to Kyosho's Twin Cap shocks, the YM-34's shocks can be built with or without an optional rubber pressure bladder. Threaded pre-load adjustment makes it easier to set ride height.



The kit supplied tires are okay, but we used a set of Eagle Racing's C34 belted slicks with firm inserts.



To prevent the wheels from rubbing, we had to shave a bit of material from the front suspension arms using a Dremel tool.



With five shock-mounting holes and six camber-rod holes, the YM-34's graphite shock towers provide plenty of tuning options.

We used Atlas' optional alloy lower suspension mount sets in place of the kit's stock plastic mounts. The mounts add strength, but in particular, the rear mount is an essential item because it allows you to adjust the rear toe-in angle from between 0.6 and 1.2-degrees per wheel by changing the mount's carbon-fiber plates. The YM-34 has, in our opinion, some of the best shocks in the business. The shocks use hard-anodized threaded bodies with aluminum shock cartridges and caps. The shocks can be built standard or with pressure bladders (these are optional). The spring pre-load is adjusted by turning threaded adjuster nuts. We used Integy's C22300 Spec Speed Tune spring set in place of the kit's medium black springs. We installed the stiffer purple springs up front to reduce dive and keep the rear wheels from unloading when the car enters a turn. We used the soft blue springs in back to provide more rear bite. The kit doesn't include shock oil, but we found Team Losi's 35wt. Certified shock oil to work well in most conditions.

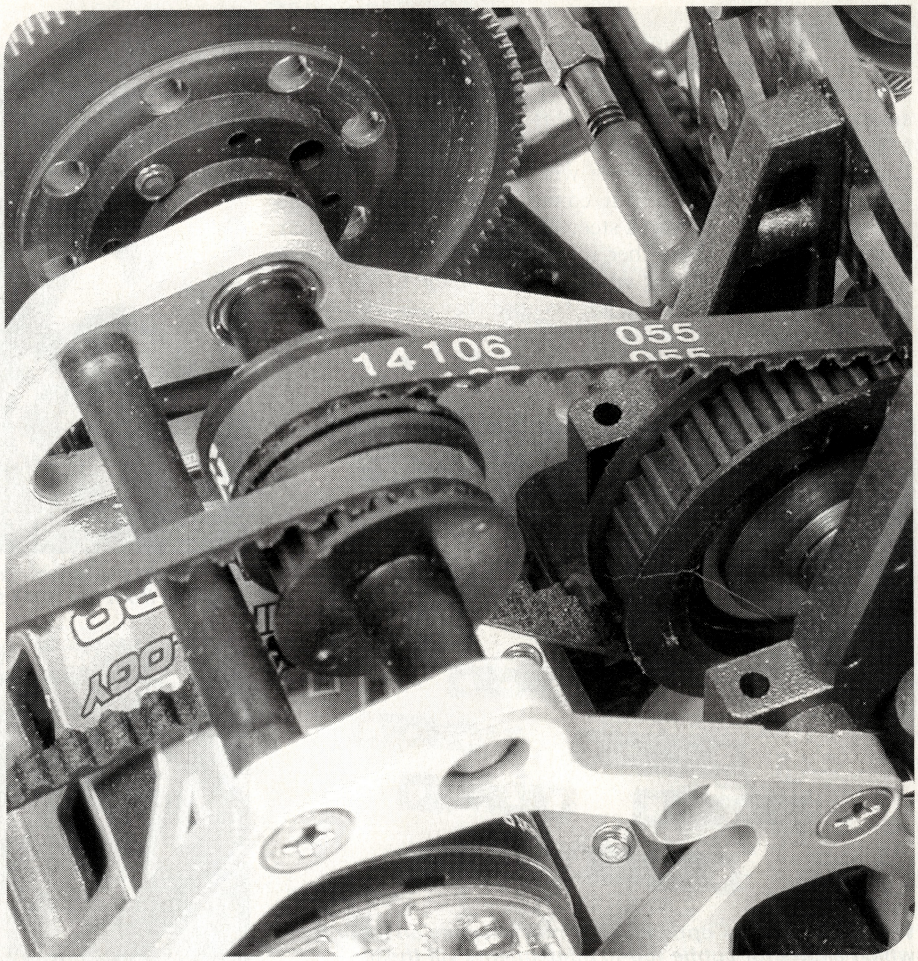
TEAM ATLAS **YM-34**

DRIVETRAIN

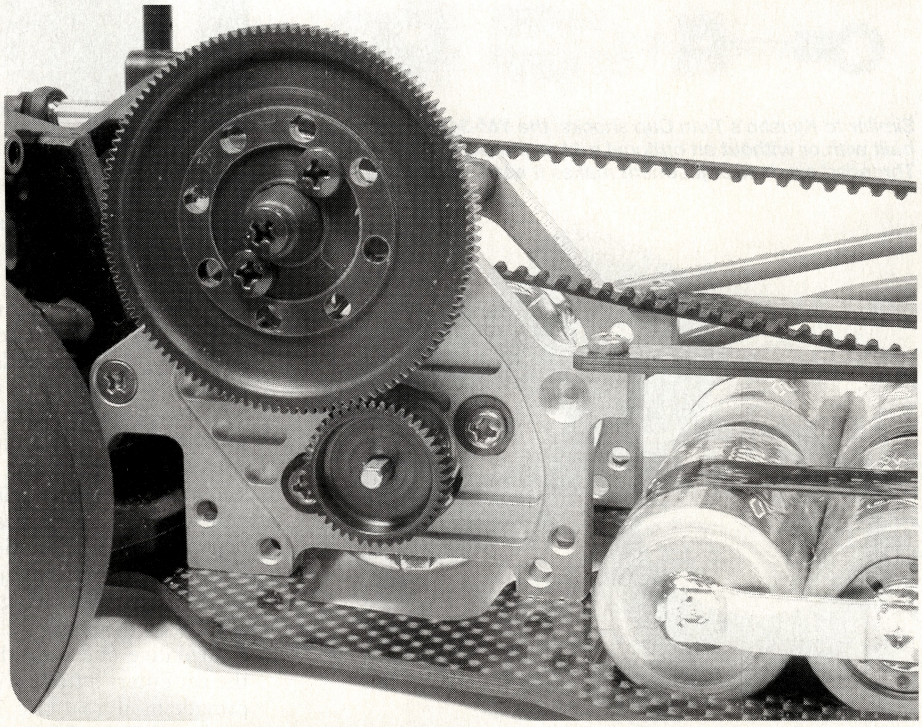
The YM-34 is a high-end racing car that comes with everything you will need to compete at any level. The basic layout is very typical of an electric sedan, with twin ball diffs linked by a pair of toothed-rubber belts, but the YM-34's equipment list is anything but ordinary. Beginning with the chassis, the YM-34 has a dual-deck design that's made out of stiff yet lightweight carbon-fiber. We were impressed by the chassis' superb finish. Aside from having to file the battery slots (to lower the cells and to prevent the sharp edges from slicing the cells' shrink), you won't need to sand or smooth anything else.

The belt-driven 4WD system uses large-diameter diff pulleys that actually raise the diffs' center-line so that the driveshafts are level with the ground when the car is at its proper ride height. This is something that we're seeing more and more of in sedan design, as driveshaft angle (both up-and-down as well as from side-to-side) has an effect on acceleration and suspension movement. Up front, the diff is supported by plastic bulkheads, but in back, the diff and center-shaft are held by a pair of nicely machined aluminum side plates that not only add significant strength to the rear of the chassis, but act as effective heat sinks for the motor. The kit's high-end theme is also carried to the driveshafts, which are CVD-type both front and rear for smoother power transfer.

The design of the YM-34's drive train is very open, with large cutouts beneath the diffs to allow any debris to pass harmlessly through the diff/belt area. During our testing, both indoor and outdoor, we noticed no damage from rocks or sand. The diffs themselves are supremely smooth and of very high quality, with each pair of diff halves connected by a pair of ball-bearings. The diffs are joined to a central layshaft by a pair of thin drive belts to further reduce drive train friction. For some unknown reason, the YM-34 kit doesn't include a spur gear. We used a Robinson Racing 64-pitch 119-tooth spur gear and mated it to a Robinson Absolute 64-pitch 45-tooth pinion. This combination worked well with the Matrix TQX Pro stock motor we used for our test.



The open design of the drive train permits debris to pass the pulleys and belts harmlessly. The flexible molded mounts betray the high-quality graphite shock tower.



A large alloy motor mount/bulkhead draws plenty of heat away from the motor. No spur gear is included, so we installed this 119-tooth gear from Robinson Racing.

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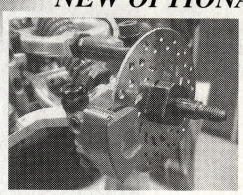

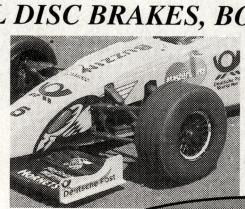



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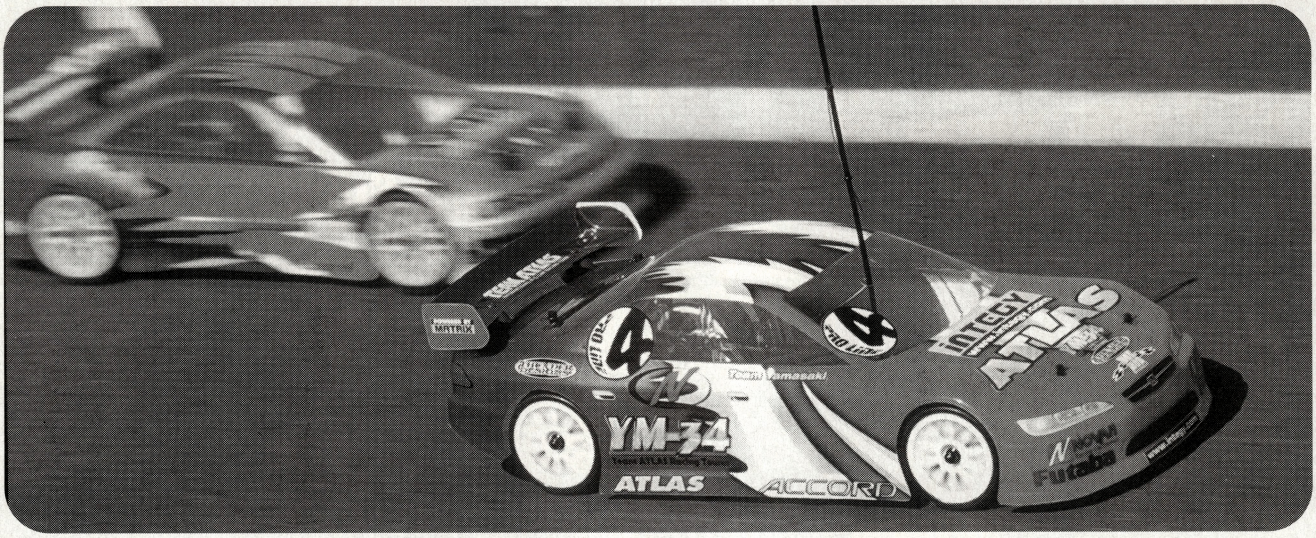
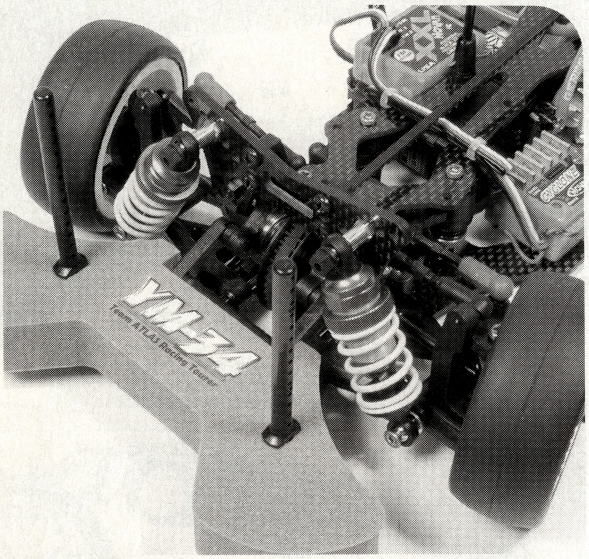
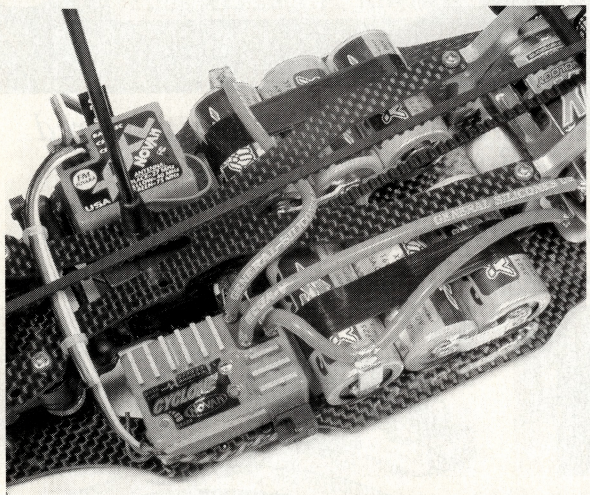
TEAM ATLAS **YM-34**





Team Atlas' optional foam front bumper is mandatory. We also installed Atlas' optional alloy suspension arm mounts.



Novak's updated Cyclone provides throttle control. We re-wired the ESC using GS Racing's Ultimate Mega V 14 gauge wire (all blue; we have seen this on Kinwald's cars). Yes, you have to tape the battery in place.

The Bad

■ The instructions are well illustrated, but the English translation of the Japanese text is the worst we've seen.

■ The YM-34 comes with a host of great features, but it lacks some very basic items such as a spur gear(!) and shock oil.

■ The front arms must be slightly shaved to prevent the wheels from rubbing. Also, you must reduce the amount of steering travel or else the front tires will rub against the lower shock-mount screws.

■ You have to tape the batteries in place. Once you get good at this, it's not much of a problem. We used Competition Products' CP5000 battery strapping tape.

■ There's no provision for any type of belt-tension adjustment.

The Good

■ Overall excellent quality and finish. Full ball bearings and nice alloy parts are included. The graphite parts are extremely well finished.

■ Exceptionally smooth and efficient drive train with excellent ball diffs.

■ Great shocks and very adjustable suspension makes the YM-34 easy to tune to any track surface.

■ Univeral CVD-style driveshafts at all four corners.

■ The YM-34 is very well balanced and easy to drive. Cornering traction is very equal from front to rear.

The Verdict

In a class that's flooded with competitors, it's very difficult for a new car to find its own identity. The YM-34 has what it takes to stand out from the crowd in that it combines high-quality parts and lots of adjustment with a well-balanced chassis and a silky smooth drive train. There are some small quirks to deal with, e.g., the strange instructions translation and the lack of a few essential items (spur gear, shock oil), but the YM-34's quality and performance offset its few shortcomings. ◆

SOURCES

Competition Products, 8740-24 Cherry Lane, Laurel, MD 20707 • phone (301) 498-0850; fax (301) 498-9329

Futaba, distributed by Great Planes Model Distributors, 2904 Research Rd., Champaign, IL 61826-9021 • phone (217) 398-6300; fax (217) 398-0008

General Silicones Co. USA Inc., 650 W. Duarte Rd., Suite 205, Arcadia, CA 91007 • (626) 445-5036; fax (626) 445-6084

Integy Technologies, Inc., 1140 Centre Dr. #E, City of Industry, CA 91789 • phone (909) 444-2766; fax (909) 627-4132

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SPECIFICATIONS

Length	390mm/15.4 in.
Width	242mm/9.5 in.
Wheelbase	275mm/10.8 in.
Track	(F) 201mm/7.9 in.
	(R) 203mm/8.0 in.
Weight (RTR)	1700g/3.7 lb.
Skill level*	1.5
Price	$274.99

* Indicates skill needed to satisfactorily complete kit. Level 1 kits are the easiest to complete, Level 4 are the most difficult and shouldn't be attempted by beginners without experienced assistance.

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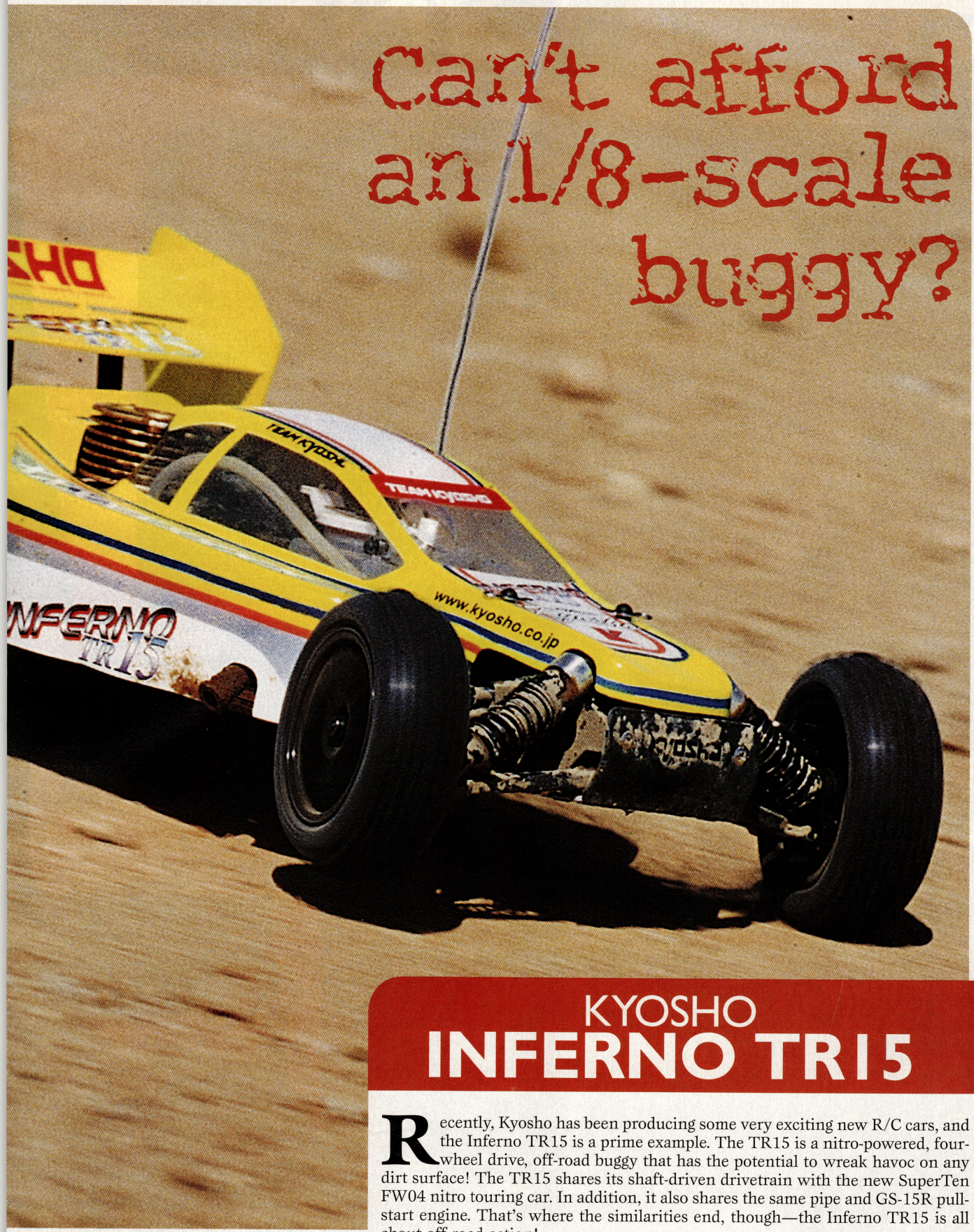
Running Gear

- Trinity Monster Blend 20 percent fuel
- JR Racing Z250 standard race servos
- JR Racing XR3 FM radio
- Paint by Dennis Rotine



KYOSHO INFERNO TR15

Recently, Kyosho has been producing some very exciting new R/C cars, and the Inferno TR15 is a prime example. The TR15 is a nitro-powered, four-wheel drive, off-road buggy that has the potential to wreak havoc on any dirt surface! The TR15 shares its shaft-driven drivetrain with the new SuperTen FW04 nitro touring car. In addition, it also shares the same pipe and GS-15R pull-start engine. That's where the similarities end, though—the Inferno TR15 is all about off-road action!

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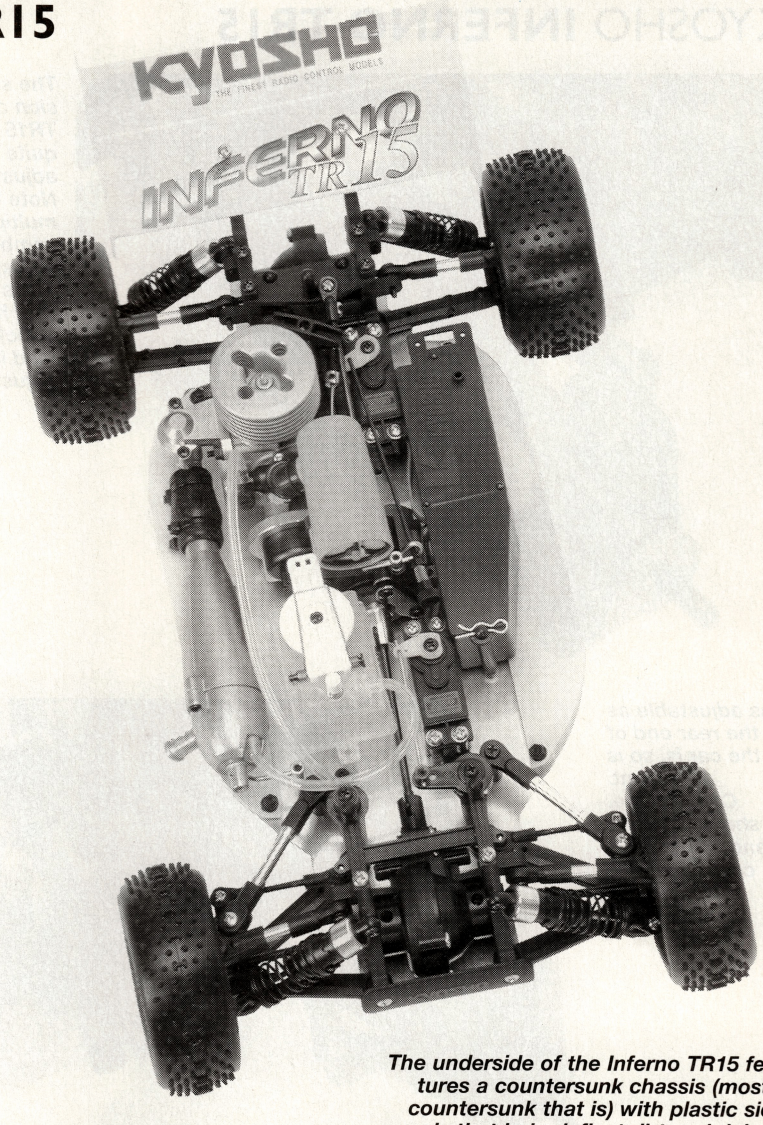
KYOSHO **INFERNO TR15**

CHASSIS

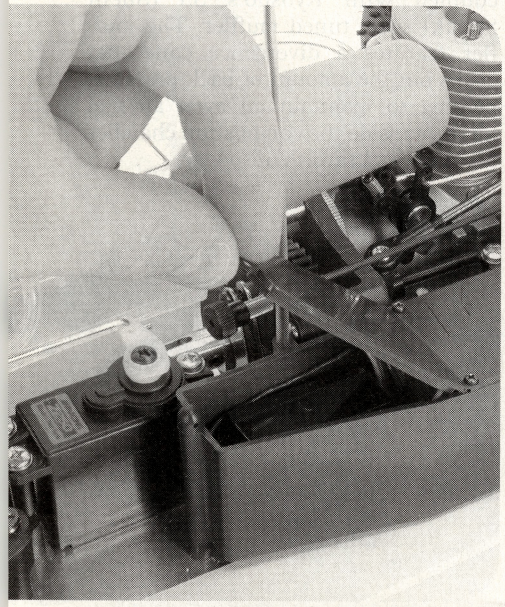
The Inferno TR15 features a mostly countersunk aluminum main chassis (the engine mounting screws and servo mounting screws are not countersunk). A countersunk underside helps the car glide more easily over rough terrain without getting snagged or hung up on obstacles. While we were surprised at how thin the stamped chassis is, once assembled, the car is relatively rigid. A rear chassis stiffener ties the rear bulkhead to the center gear section. This no doubt helps tighten up any fore/aft flex. A thicker chassis is available as a hop-up option, but until we put the car through its paces more thoroughly, we won't know if it's a crucial "must have" item.

On both sides of the chassis are plastic side guards that help deter any excess roost from entering the chassis (in addition, the pipe is also protected from rocks and crud thanks to the side guard).

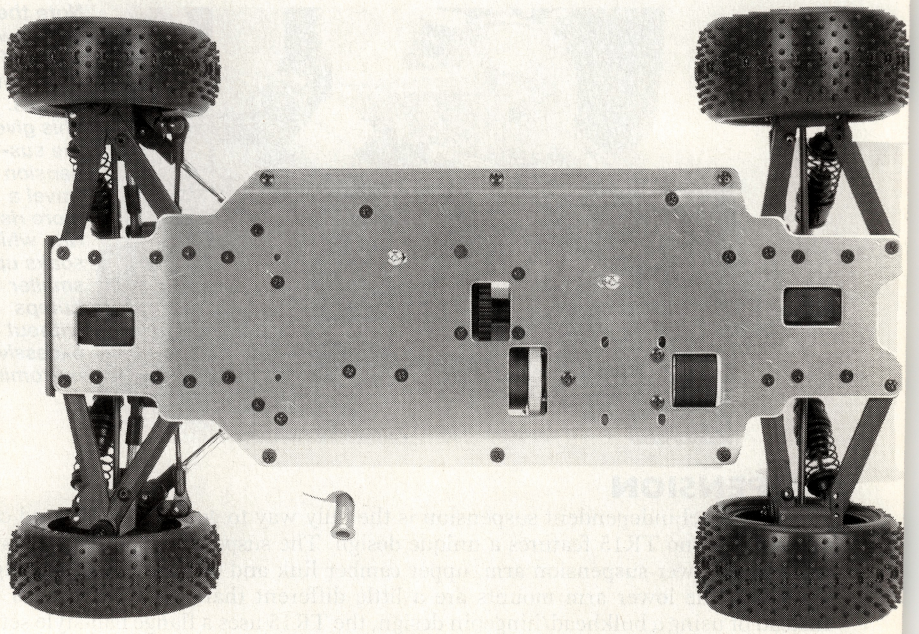
Mounted off to one side of the chassis is a plastic-enclosed, dust-proof radio box. The lid of the box is screwed into place, and it has a "hinged" section that flips up allowing you to gain access to the receiver quickly. While Kyosho makes no claims about the radio box being fuel-proof, it seems to us that it's sealed well enough that your radio gear would be relatively safe if some fuel did manage to spill while fueling the car. Speaking of fueling, a 75cc fuel tank (standard issue in most nitro cars) sits off on the other side of the chassis. The tank has a quick-flip lid for easy access, and the priming pump is built into the top of the tank.



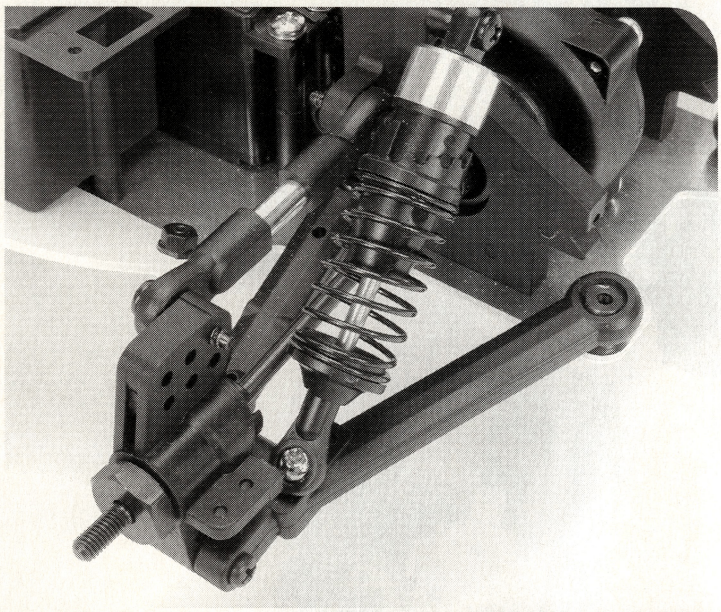
The underside of the Inferno TR15 features a countersunk chassis (mostly countersunk that is) with plastic side guards that help deflect dirt and debris.



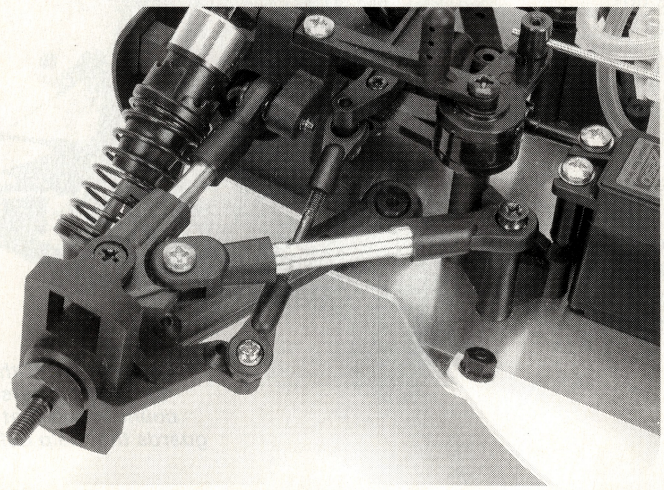
The molded plastic radio box houses your radio's receiver, as well as your receiver pack. While the radio box is sealed pretty tightly, Kyosho makes no claims about it being completely fuel-proof, so don't go splashin' fuel all over the place when filling up the tank.



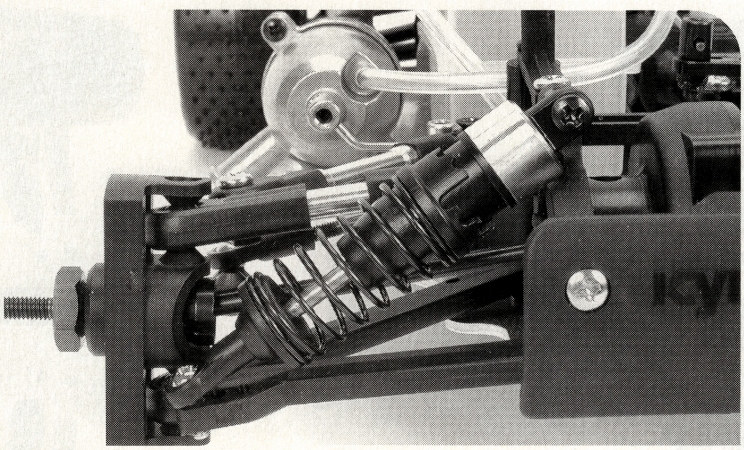
KYOSHO **INFERNO TR15**



The suspension on the TR15 is quite adjustable. Note the multiple camber link adjustment holes on the rear hub. Shock preload is also adjustable.



As adjustable as the rear end of the car is, so is the front. Camber, toe, shock pre-load and caster (to a certain extent) are all adjustable.



Note the laid-down angle of the front shocks. This gives the suspension travel a more rising rate which soaks up smaller bumps without excessive bottoming.

SUSPENSION

Four-wheel independent suspension is the only way to go with an off-road car, and the Inferno TR15 features a unique design. The suspension setup consists of the typical lower suspension arm, upper camber link and oil-filled shock arrangement, but the lower arm mounts are a little different than what we're used to. Instead of using a bulkhead/hingepin design, the TR15 uses a flange ball-style setup (two at each arm).

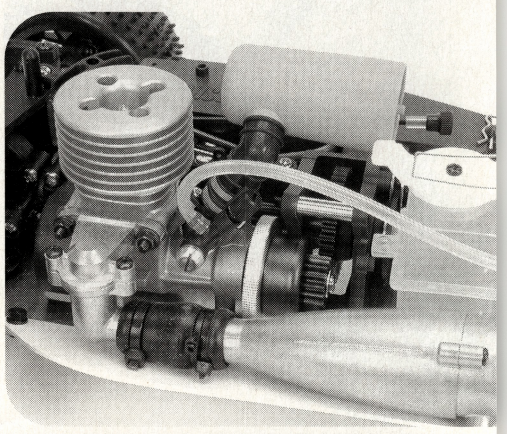
DRIVETRAIN

One of the nicest features of the Inferno TR15 is that the drivetrain comes pre-assembled from the factory—a nice touch! The Inferno TR15 picks up its reliable and proven drivetrain from Kyosho's new SuperTen FW04 nitro touring car. Two dog-bones sprout out from the center spur gear, and at each end you'll find an enclosed gearbox that houses an input shaft and a reliable, beefy, metal gear differential. Driving each diff is a pinion gear at the end of the input shaft which is mated to a metal ring gear. Unfortunately, the entire drivetrain is supported on bushings rather than bearings. A set of ball-bearings is available as a hop-up option.

Stopping power is provided by a brake disc which is located directly in front of the spur gear. The disc is stopped by a pair of steel brake calipers.

ENGINE

The Kyosho Inferno TR15 comes standard with a GS-15R engine with pull-starter. The .15 engine features a low-profile, gold-anodized head to help keep the engine running cool, as well as a molded-composite carburetor that has a single-needle adjustment which makes it easy for novices to tune the engine. A funky-looking air filter comes with the engine that looks more like an "air scoop" than a filter, but it functions quite well. And finally, the engine is coupled with Kyosho's SS (Silent Streak) sport tuned muffler. The muffler features a divergence cone that evens out the amount of back pressure, helping to maintain an even air/fuel mixture inside the combustion chamber for improved throttle response.



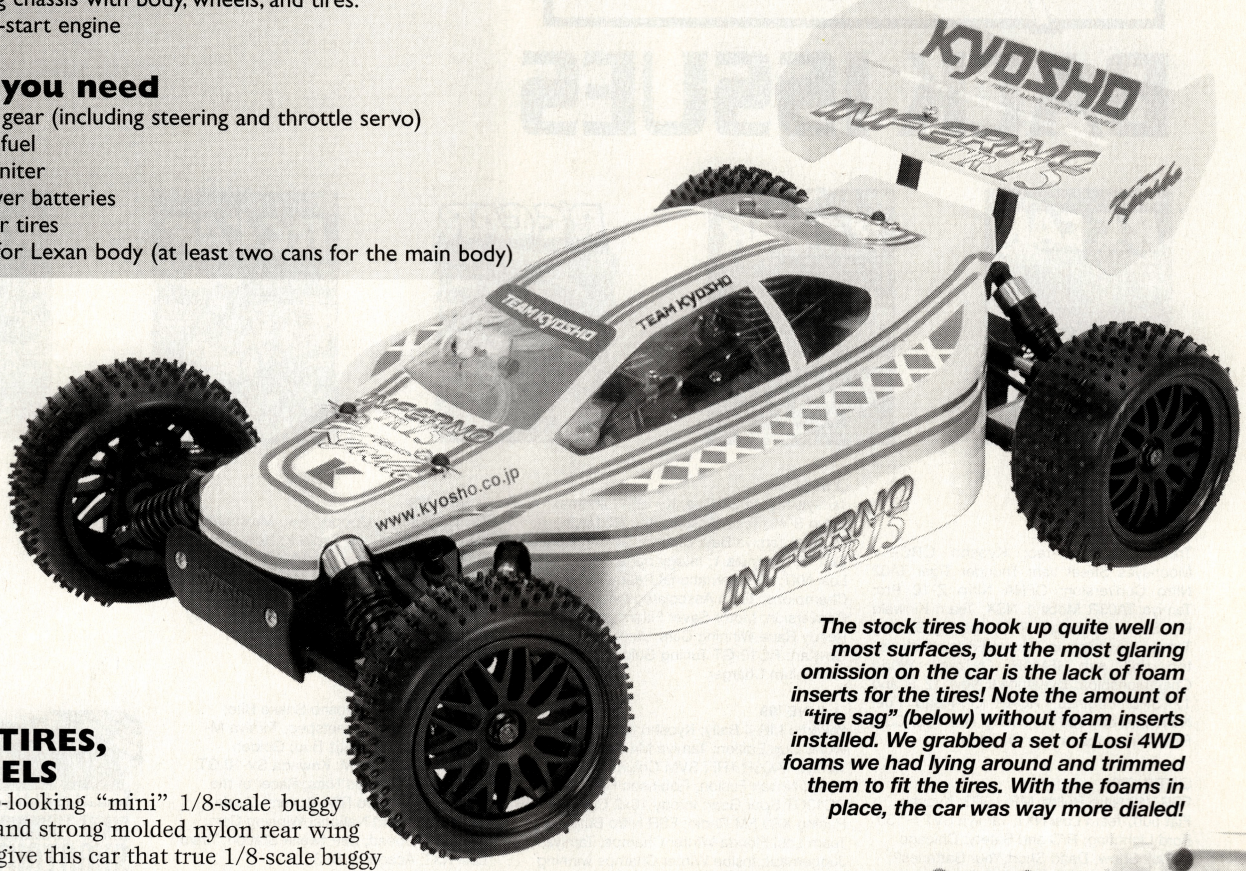
The Kyosho GS-15R engine rips! We were pleasantly surprised at how fast this little pull-start engine really is. The addition of the SS (Silent Streak) pipe helps coax more power from the engine than your average airplane-style muffler.

What you get

- Rolling chassis with body, wheels, and tires.
- A pull-start engine

What you need

- Radio gear (including steering and throttle servo)
- Nitro fuel
- Glo-igniter
- Receiver batteries
- CA for tires
- Paint for Lexan body (at least two cans for the main body)



The stock tires hook up quite well on most surfaces, but the most glaring omission on the car is the lack of foam inserts for the tires! Note the amount of "tire sag" (below) without foam inserts installed. We grabbed a set of Losi 4WD foams we had lying around and trimmed them to fit the tires. With the foams in place, the car was way more dialed!

BODY, TIRES, & WHEELS

A sharp-looking "mini" 1/8-scale buggy style body and strong molded nylon rear wing really help give this car that true 1/8-scale buggy look. The car comes with a set of slick-looking black mesh-spoke wheels. The front wheels and tires are a little narrower which helps the car carve through the corners with less effort. Speaking of tires, the TR15 comes with a set of medium compound pin-spike tires that should work well on most semi-loose terrain. Interestingly, though, no foam inserts are included with the kit. While the tire compound is relatively firm, the tires would still benefit from some foam inserts. We installed some 4WD foams out of an extra set of Losi tires we had sitting around.



The Bad

- Bushings—we don't need to say anything else, do we?
- No foam inserts for the tires—and they need them!
- The instructions are weak! The front-end is adjustable, right? How so...
- A little lacking in decals—you don't get what you see on the box. Or at least most of those decals weren't included with our kit.

The Good

- It's a fun car to drive, and it looks great blasting through the dirt.
- The pre-assembled car is easy to complete.
- The GS-15R engine provides a good amount of power for a "sport-level" engine. Top speed is quite respectable.

The Verdict

While the Inferno TR15 was never designed with racing applications in mind, this car is quite capable of throwing down some fast lap times at your local track. Still, it's best suited for off-road, backyard style escapades. Our best advice is that once the bushings wear out, we suggest replacing them with a set of ball bearings to make the drivetrain as efficient as possible. It's a fun car and our test sample held up to quite a bit of abuse without any problems. We plan on fixing ours up a bit to see what it can do out on the track—could this car spark interest in a new racing class? Time will tell... ◆

SOURCES

JR Racing, distributed by Horizon Hobby Distributors Inc., 4105 Fieldstone Rd., Champaign, IL 61821; (217) 355-9511
Trinity Products Inc., 36 Meridian Rd., Edison, NJ 08820; (732) 635-1600; (732) 635-1640 fax
Kyosho, distributed by Great Planes Model Distributors, P.O. Box 9021 Champaign, IL 61826; (217) 398-6300; (217)-398-1104 fax

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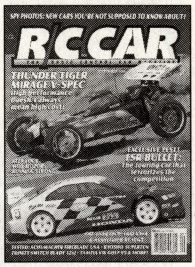
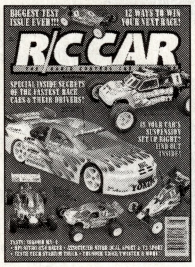
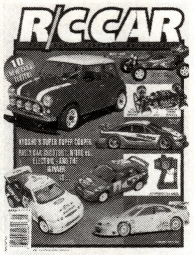
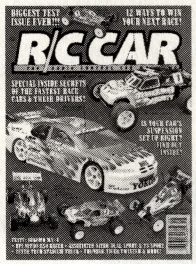










❑ JAN. '99

Traxxas Nitro 4-tec; Kyosho QRC-SV Mooneyes Street Van; Thunder Tiger TA02 Nitro Conversion; OFNA Nitro Z-10 Pro; Tamiya TA03R Mobil 1 NSX; Team Kinwald Pro Shock bushings; RPM Bearing Blaster; Tamiya tire gluing jig; Racers Edge shock piston drill set; IFMAR OnTrack World Championships; Dynamite's New 12 S and 12 SPD Engines; ROAR On-Road Fuel Nationals; off-road tire tuning; HPI Viper Cup; First Annual Labor Day Shootout

❑ FEB. '99

FSR V12 Nitro Bullet; MRC SP3; Kyosho Fiat 500; Team Losi NXT; Tamiya SVT F-150 Ford Lightning; R/C and Safety; Chicago Hobby Show; Dead Short Your Batteries?; Tamiya TCS national; Trinity's Paradox; Inside the TCS winning cars; Tamiya CVA Transparent Shocks; Hitec CG-335 Charger; Integy discharge tray; Roland Sticka STX-7; Team Losi Street Weapon; MRC nitro Thunder King.

❑ MAR. '99

MRC Q-Tee Coupe; Schumacher Nitro S.S.T.; HPI Super nitro RS4; Tamiya TG-10 Mk.1; Mercedes CLK-GTR; Savage Motorsports Headhunter HS-350; Team Associated RC12L3; How to break in your engine; Trinity D3.5 Modified motor; pro building tips; new Era models Clod Buster Kit; How to set screw your suspension; Trinity foam touring car stand; Team Kinwald blue drivers; GM Racing Commander Charger; Integy Indi Reactor 20 discharger; MPH Products Packrack; OFNA Racing Nitro Z-10.

❑ APR. '99

Duratrax maximum ST RTR; Team Losi I.W.C. Street Weapon; Kyosho Inferno MP-6; HPI RS4 pro 2; HPI Nitro RS4 RTR; Schumacher S.S.T. '99 Pro; Team Losi Double-X Tuning Guide; Super-Size Nitro Sedan Shootout; Deans Speed Jig; Dirt Bags Cargo Hauler; Multiplex programmable servos; HG Inc. Transparent Shocks; HPI RS4 Rally.

❑ MAY '99

Tamiya Toyota GT-One; Kyosho Landmax Volvo S-40; Team Assosicated RC10L3 Touring; Tamiya Baja Champ; Golden Horizon Colt 10- Formula 1; Integy parts cleaner; Team Losi NXT; '99 International Reedy Race of Champions; Team Associated Dual Sport Conversion; Motor Saver Filters; Inside the Reedy Race Winning Cars; Jamara 1/2-scale Go-Kart; RC10-GT Tuning Guide; Novak's new Millennium Charger.

❑ JUNE '99

Yokomo MR-4 Rally; Kyosho GP Spider Mk. II World Cup Edition; Tamiya M4 Sherman Tank; Tamiya TAO3R TRF; SVM Columbia Mk5 1/5th Scale; Novak Fusion; Robinson Racing RC10GT Spur Gear; Integy 16x2 Chargers; JR Racing XR3 FM Radio; FSR Nitro Bullet; '99 Team Losi Florida Winter Champs; Tamiya Juggernaut; Inside Winter Champs winning Cars.

❑ JULY '99

Hobby Tech HT1; BoLink/Racetech G-Force; Mugen Seiki MBX-4; Yokomo YR4-M2 pro; Tamiya Wild Dagger; Traxxas Nitro Wash; Pro-Line/Jaco pre-mounted sedan tires; FMA Direct Typhoon ESC; Golden Horizon Turbo Head; FMA Warlock FM Receiver; Hi-Tec Lynx FM 3D; Silver State Nitro Challenge; How to update your HPI Nitro RS4; '99 Florida Gas Winternats; Tamiya TG-10.

❑ AUG. '99

Tamiya Juggernaut; Kyosho Ford F-150 Desert Racer; Kyosho 4-Stroke SuperTen; Tamiya McLaren F1; PC Controller Shootout; '99 Reedy truck Race of Champions; .12 Engine Guide; Inside the Trinity/team Losi Merger; HPI Super Nitro RS4; Tamiya Porsche GT-One; Duratrax maximum ST; Take-Off Setup Board.

❑ SEPT. '99

CEN SP1; Kyosho QRC Ford Escort Rally; Yokomo MR-4TC; Kyosho TF-3 Type R '99; Rally Car Shootout; Inside Team Associated's TC3 touring car; FM racing receiver guide; How to make a pseudo sedan; International Reedy Race Touring Car Championship; FSR Bullet; Duratrax Piranha; Progressive Suspension piggy back reservoirs.

❑ NOV. '99

Tamiya 1/8 Mini Cooper; Neo Maximum Nitro pro; Team Losi Triple-X; How a two-speed tranny works; '99 IFMAR Off-Road World Championships; Hitec HS-925MG & HS-945MG Servos; Inside the IFMAR Winning Cars; Tamiya Monster Truck Alloy Shock Set; TamiyaMo3 Mini Cooper; Hobby Tech HT1.

❑ DEC. '99

HPI Nitro RS4 2; Kyosho Snake Bite; Serpent Impulse Streetspec; Tamiya M-O4L; HPI RS4MT Baja Bug; Golden Horizon Neo Type-M; Kawada SV-10 GT; '99 ROAR On-Road Nats; Racer of the Century; HPI Nitro RS4 Buyers' Guide; ROAR On-Road National Winning Cars; CEN Two-Speed; MIP tweak Station; Team Losi NXT; Academy SP3,

❑ JAN. '00

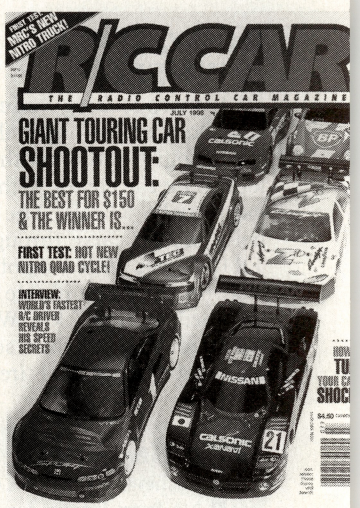
Schumacher Fireblade EVO; Tamiya Wild Willy 2; Academy STR-4; Kyosho MP-6 DX; Thunder Tiger Real Ten RTR; Horizon Pro-Trax Stampede; Picco/Omega .21 Engine; Team Orion Chrome Modified motor; Traxxas T-Maxx; NORRCA Off-Road nats; How to clean bearings; Tamiya nationals; Pro-line Endless Summer; Budget battery discharger guide; Penguin Yokomo MR4-TC Chassis Set.

❑ FEB. '00

Schumacher SST AXIS Pro; Tamiya Tao3R-S TRF; Team Associated TC3; Thunder Tiger EB-4; New for 2000; *R/C CAR* interviews Mike Reedy; Volvo Challenge II; Trinity Real Time 2 battery discharger tray; Sierra Radio Control Racers PC Game.

❑ MAR. '00

Kyosho TF-4 type R; Tamiya Toyota Celica; Team Losi XX-4 Worlds Edition; Duratrax Axis; HPI World Challenge; How to make a pass; Hot Rod hobbies & *R/C CAR* Shootout; What's the deal with 4WD?; Inside foam inserts; Team Losi Triple-XT; Hitec Spectra Module.



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Missing any back issues? Here's your opportunity to get those lost classics back and complete your collection! Use the order form below and get a brand-new magazine packaged and shipped directly to your door for only $5.70 plus $1.25 shipping and handling!

Yes! I want to get the above back issue(s) that I've checked. I've enclosed $5.70 for each copy plus postage and handling (U.S. $1.25 each copy; Canada $2.00 each copy; all other foreign $3.00 each copy). Canada and all foreign please send international money orders payable in U.S. funds only. Do not send cash. THANKS!
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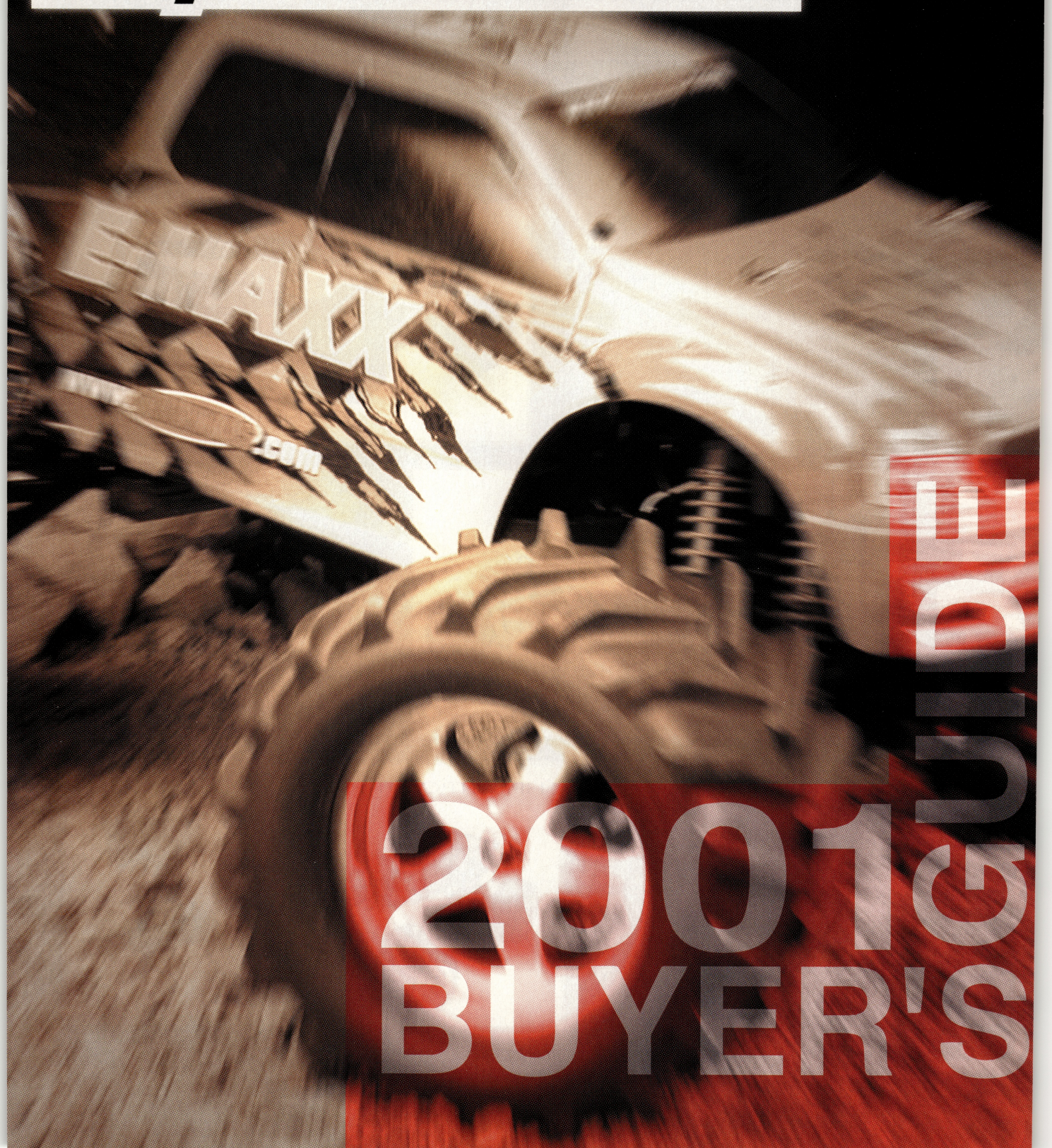
R/C CAR

THE RADIO CONTROL CAR MAGAZINE



2001 BUYER'S GUIDE

new product guide

WELCOME to R/C Car magazine's guide to "What's new for 2001." We produced this guide to help you prioritize your holiday hobby shopping. In other words, use this guide to learn what's new and hot for the coming year. We selected these items from among nearly one-hundred of the latest R/C goodies—no easy job—and we think that you'll agree that this is a great time to become involved in the R/C car hobby!

NEW CAR AND TRUCK KITS

HPI

In the tradition of the Nitro RS4 Racer kit, HPI has released a hopped-up version of its Nitro MT 4WD nitro truck. Options include a heavy-duty main chassis, Shiny MIP CVDs, a new slipper clutch, racing fuel tank, stainless-steel hingepins, high-performance clutch, tuned pipe and more. Engine not included.



HPI NITRO MT RACER



HPI NITRO RUSH

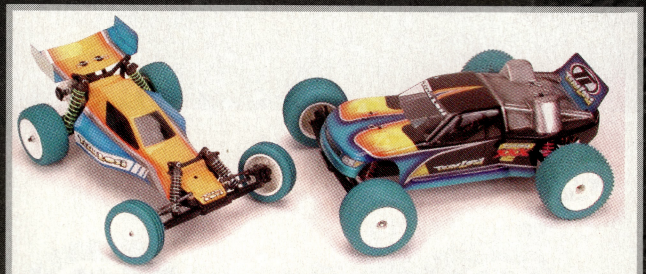
HPI's latest addtion to its line of kits is the Nitro Rush, a racing-style, 2WD RTR (ready-to-run) nitro truck with long-travel suspension and a powerful Nitro Star .15FE pull-start engine. The Nitro Rush comes fully assembed with a pre-installed radio system and pre-painted desert-style truck body.

The newest kit to join HPI's RTR line is the Nitro MT RTR. The Nitro MT has a powerful Nitro Star .15FE pull-start engine and an efficient and rugged full-time 4WD system for unparalleled traction on any surface. Even a two-channel radio system is included. Just add batteries, paint the body and go!

HPI NITRO MT RTR



For more information, contact HPI, 15321 Barranca Pkwy., Irvine, CA 92618 • phone (949) 753-1099; fax (949) 753-1098



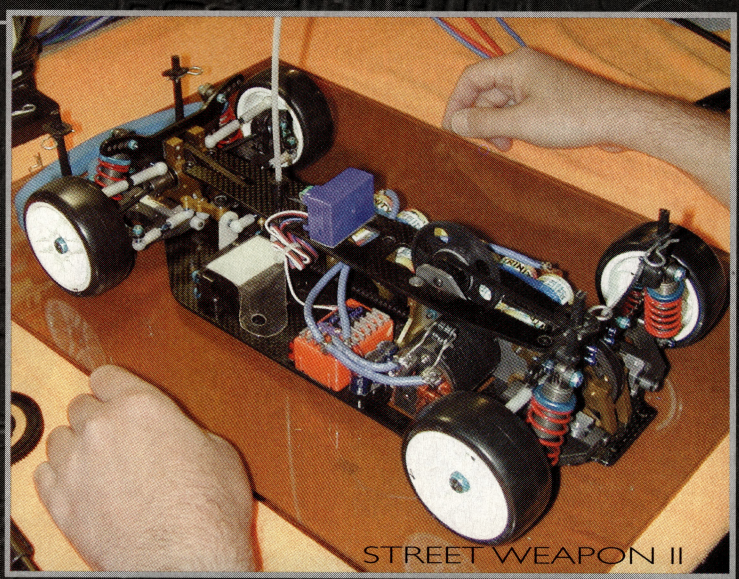
TRIPLE-X AND TRIPLE-XT DIRT SPEC

Team Losi

DIRT SPEC
COMPETITION • RACE • SERIES

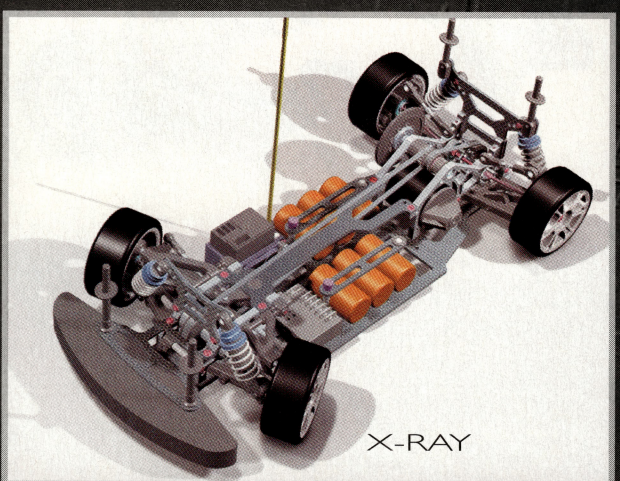
Team Losi's ambitious Dirt Spec racing program is designed to reduce the costs of racing while at the same time creating a more level playing field for the average club racer. Specifically designed for this program, the new Triple-X and Triple-XT Dirt Spec kits come with bushings at each wheel and standard aluminum shocks (in place of the more expensive hard-coated shocks). Also included is a full set of Losi's blue spec tires and all of the racing features that have made the Triple-X series a hit at all racing levels.

Team Losi has built a new touring car from scratch! Tentatively named the Street Weapon II, this new chassis features a radical single-belt 4WD drive system and ultra-narrow diff bulkheads. Instead of the original SW's molded chassis, the SWII will have a dual-deck graphite-plate chassis. Look for the production version soon! (A prototype version of the SWII is shown in the photo.)



STREET WEAPON II

For more information, contact Team Losi, Inc., 13848 Magnolia Ave., Chino, CA 91710 • (909) 465-9400; fax (909) 590-1496



X-RAY

Hudy

Best known for its high-quality motor lathes, tire truers and tools, Hudy enters the popular 1/10-scale sedan market with the X-Ray, which features pillow-ball suspension, twin-belt 4WD, dual-deck carbon-fiber chassis plates, light-weight ball diffs, a single steering bellcrank, aluminum shocks with threaded pre-load adjusters and much more.

For more information, contact Serpent USA, 2830 NW 79th Ave., Miami, FL 33122 • phone (305) 639-9665; fax (305) 639-9658

new product

GS Racing

To commemorate its third year in the R/C industry, GS Racing introduces the Storm high-performance 1/8-scale off-road nitro buggy. There will be two versions available: an RTR version complete with radio, painted body, engine and pipe, and a hopped-up full-race version that is designed for serlous competition.

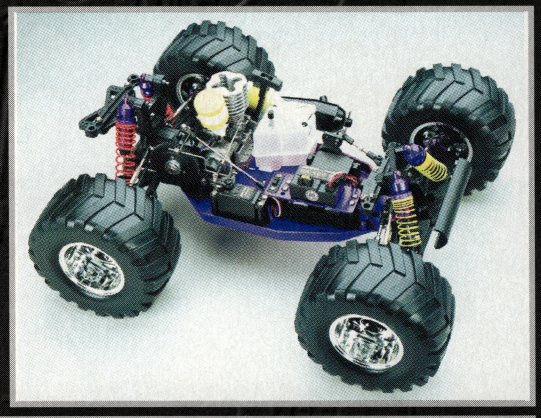


GS RACING STORM

For more information, contact GS-Racing, 650 W. Duarte Rd., Suite 205, Arcadia, CA 91007 • (626) 445-5036; (626) 445-6084

DuraTrax







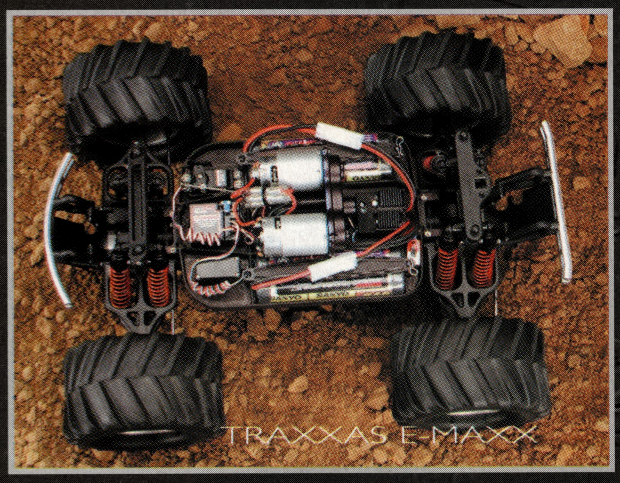
What do you get when you take a pair of popular RTR nitro trucks and add $300 worth of hop-ups for much less than it would cost to buy them separately? The Maximum ST and MT Pros from DuraTrax! Each truck now gets the more powerful Torq 16 engine (previously found only on the MT), a stronger chassis, a two-speed transmission, black-anodized tuned pipe and header, aluminum steering bellcranks and strengthened aluminum suspension parts for greater durability. And as if this weren't enough, both trucks come with full ball bearings, a throttle-return spring (for safety), machined universal-joint driveshafts, a metal counter-gear for the transmisison and custom chrome wheels. Of course, both models come ready-to-run with a new DuraTrax radio and pre-painted/trimmed bodies.

For more information, contact Great Planes, 2904 Research Rd., Champaign, IL 61826-9021 • phone (217) 398-6300; fax (217) 398-0008



Traxxas

How could Traxxas possibly follow last year's show-stopper, the T-Maxx? With an all-new electric version called the E-Maxx! This isn't any ordinary gas-to-electric conversion; the E-Maxx is as ground-breaking in the electric monster truck category as the T-Maxx was in the gas category. With a high-voltage power system that uses two battery packs and a pair of large 550 motors, the E-Maxx has enough power to pull wheelies. And with an ingenius two-speed transmission (which you shift via a toggle on the included radio), the E-Maxx has blistering top speed to boot! Of course, the E-Maxx comes fully assembled and with the T-Maxx's awe-some dual-shock modular suspension system.



TRAXXAS E-MAXX

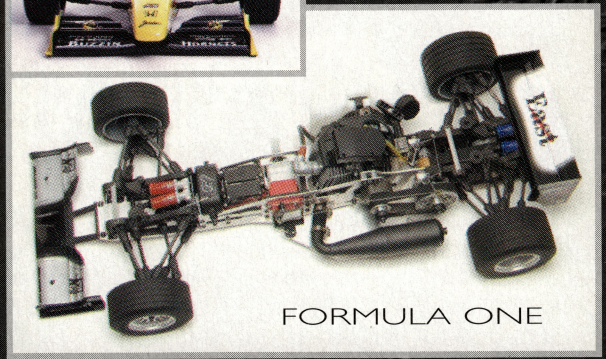
Traxxas hasn't forgotten its hugely popular Nitro Rustler and Nitro Stampede RTR trucks. Both receive substantial upgrades, including a new, blue-anodized aluminum chassis, stronger EZ-Start mount, beautiful pre-painted bodies and trick-looking chrome spoked wheels



Y2K NITRO RUSTLER & STAMPEDE

For more information, contact Traxxas, 12150 Shiloh Rd., Dallas, TX 75228 • phone (972) 613-3300; fax (972) 613-3599





FORMULA ONE

SEI/FG-Modellsport

Formula One is the ultimate automotive experience, and the ultimate R/C experience is this giant, 1/5 scale F1 from SEI Racing! This 39-inch long Solo- or Zenoah-powered F1 features a strong 5mm alloy chassis, four oil-filled, pushrod-operated shocks, four-block Teflon clutch, BBS wheels and full ball bearings. Many optional tires, springs, tire warmers, disc brakes, "F" style body and new Jordan F-1 style bodies are now available!

For more information, contact SEI Racing, 145 N. Sierra Madre Blvd. #10, Pasadena, CA 91107 • phone (626) 577-8004; fax (626) 577-8084

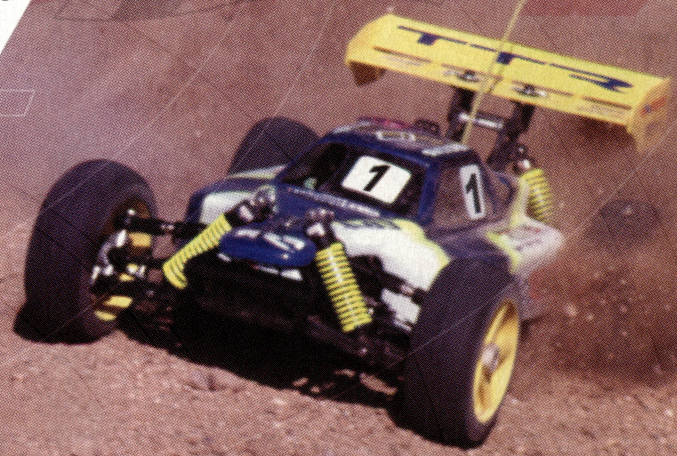
EB4 KICKS BUTT!

b4 **limited** eb4 **limited** eb4 **limited** eb4 **limited** eb4 **limited** eb4 **limited** eb4 **limited** eb4 **limited**

"Keep an eye out for these cars, they'll be ***taking over*** *a track near you."--Car Action*

EB4

Alex Laffranchi's EB4 dominates the IFMAR 2000 World's Warm Up! Winning by ***3*** *laps over the world's best. The field included the new MP7 and MBXRR,* ***EB4 takes no prisoners!***



". . . a ***world*** *championship is not out of reach for Thunder Tiger."--Xtreme*

EB4 Limited Upgrades:

PDO800 Body, EB4 Limited.
PDO798 Short bumper.
PDO764 ERGAL light chassis, type A.
PDO757 ERGAL front knuckle.
PDO758 ERGAL front upper arm mount.
PDO769 ERGAL rear toe-in block, 3 degree.
PDO785 ERGAL front shock tower.
PDO786 ERGAL rear shock tower.
PDO610 ERGAL steering slider with ball bearing.
PDO612 Servo saver posts w/BB.
PDO773 Center universal drive shafts.
PDO759 Rear universal drive shafts.
PDO746 Teflon shock piston, 3-hole.

Standard EB4 can easily be upgraded to full Limited specs.



EB4	TTR6201
EB4 Limited	TTR6202

"We were blown away by how fast it is . . . this car ***barks!****"--R/C Car*



1999 ROAR	2000 NORRCA	2000 Silver State	2000 World Warm
National Champion	National Champion	Champion	Up Champion
Richard Saxton	Richard Saxton	Billy Easton	Alex Laffranchi

Join the winning team. Run EB4.

Designed By Franco Sabatini

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Thunder Tiger TEAM
INTERNATIONAL

Thunder Tiger Super Combos

True Performance in RTR!

Ready-to-Run versions of the national champion EB4 and future champion TS4n are arriving at dealers soon.

Thirteen year-old championship driver Jared Tebo chooses Thunder Tiger for his weekend fun!

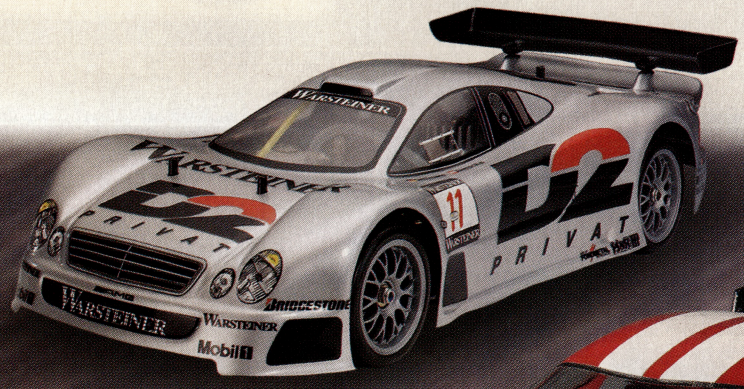
- 100% Assembled
- 2-Channel Radio Installed
- High Torque Steering Servo
- Painted Body with Decals
- Race-Proven Suspension Geometry
- Durable Gear Differential System
- Thunder Tiger PRO-21 with Pull-Start
- Performance Manifold and Tuned Pipe
- Strong Fiberglass Reinforced Composite Parts
- High Performance Champion Rubber Tires
- Super Low CG
- Full Array of Options
- Dual Disk Brake System



EB4

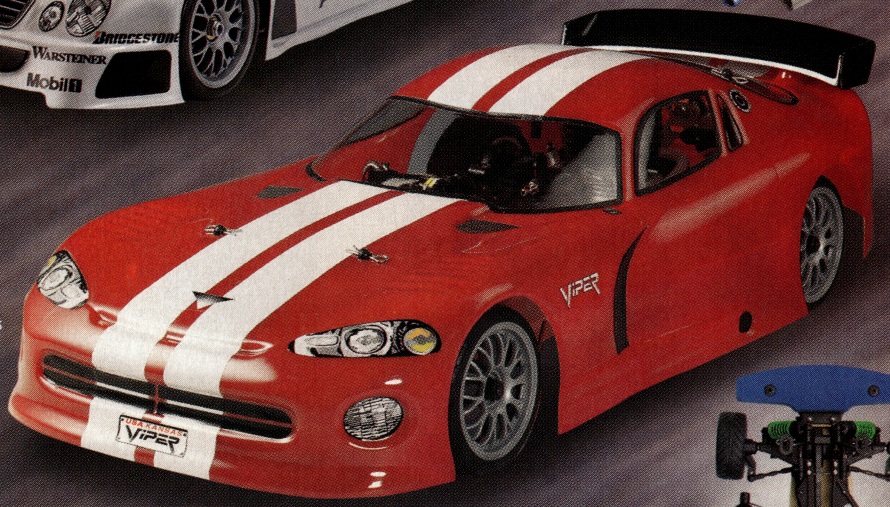
Radio Included and Installed

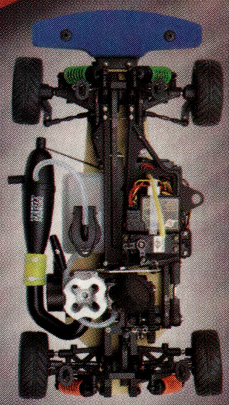
Starting Accessories Included

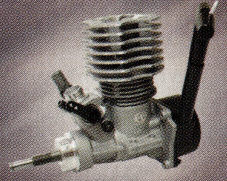




- 100% Assembled
- 2-Channel Radio Installed
- Painted Body with Decals
- Durable Gear Differential System
- Thunder Tiger PRO-15BXS Pull-Start Engine
- Performance Manifold and Tuned Pipe
- Strong Fiberglass Reinforced Composite Parts
- High Performance Champion Rubber Tires
- Super Low CG
- Double Wishbone Suspension
- Full Array of Options
- Disk Brake System







Thunder Tiger TEAM INTERNATIONAL

TS4n

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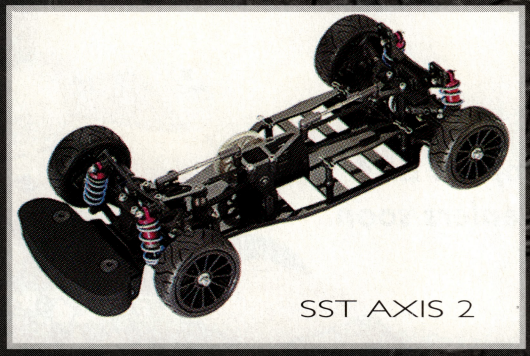
new product guide

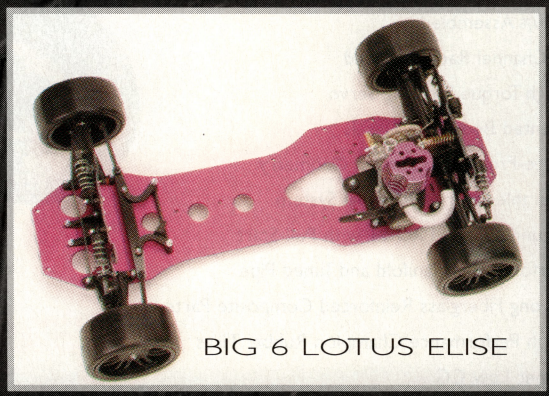
Schumacher



SST AXIS 2

Schumacher's new Axis 2 1/10-scale sedan features a "probonded" chassis (which is less prone to tweaking) and a multi-point upper chassis design (that uses tie-rods rather than a rigid plate. Raised ball diffs also improve handling by keeping the driveshafts horizontal at normal ride height. Steering improvements and new Dragon tires are just a few of the many updates to this awesome racer!

Want big? Schumacher's got it with the Big 6 Lotus Sport Elise. Available in both gas and electric versions (gas is shown), this 1/6-scale behemoth sets a new standard for low cost and high-performance in a larger scale. The electric model uses standard batteries and motors, while the gas version comes with a pull-start Thunder Tiger .21 cubic-inch engine. Both come with a fully licensed Lotus Sport Elise body and assorted graphics.



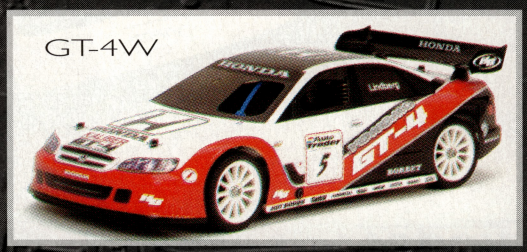
BIG 6 LOTUS ELISE

For more information, contact Schumacher USA, Inc., 6302 Benjamin Rd., Suite 404, Tampa, FL 33634 • phone (813) 889-9691; fax (813) 889-9593

Yokomo USA



Yokomo has built its reputation by producing cars that win races, and its first foray into the world of nitro touring cars is no exception. The GT-4W features competition-style pillow-ball suspension at all four corners, a thick aluminum lower chassis with molded upper radio plate (which also places much of the running gear towards the middle of the car for better handling) and a two-speed transmission for quick acceleration and high top-speed.



For more information, contact Yokomo USA, 17951 Skypark Circle, Ste. K, Irvine, CA 92614 • (949) 252-8663; fax (949) 252-8657

new product guide

Kyosho

The Ultima RB is Kyosho's finest 2WD off-road racing buggy since the original Ultima of the '80s. The RB is based on Kyosho's Ultima ST electric stadium truck, and features Kyosho's innovative Twin Cap shocks (which can be built in various configurations) and Triad Pro three-gear transmission with adjustable ball-differential and slipper clutch. And the RB's suspension is highly tunable to suit varying track conditions. With its performance pedigree, adjustable chassis and high quality Pro-Line wheels and tires, the Ultima RB is ready to take on the competition.



KYOSHO ULTIMA RB



KYOSHO MINI-Z BMW Z8



KYOSHO MINI-Z AUDI TT

At just five inches in length, Kyosho's tiny but sophisticated Mini-Z series proves that bigger isn't always better! With a fully proportional steering system and a high-performance reversing electronic speed control (ESC), driving the Mini-Z is as exciting as being being behind the wheel of any larger R/C model. The latest additions to the Mini-Z series are the BMW Z8 and the Audi TT coupe. Each body is molded in sturdy polystyrene plastic and comes pre-painted. Once you've added a few of the included decals, the Mini-Zs look great whether you're racing with friends or displaying them on a shelf. Comes with Kyosho's pistol-style Perfex radio system.

If you like 1/8-scale nitro buggies, but don't have the space to run one, Kyosho's new 1/10-scale Inferno TR15 is for you. Based on the four-time World Champion Inferno, the TR15 has a rugged shaft-driven 4WD system, duralumin chassis, four-wheel independent suspension with oil shocks, a powerful Kyosho GS15R pull-start engine, a dust-proof radio box and pin-spike tires. Chassis comes assembled.

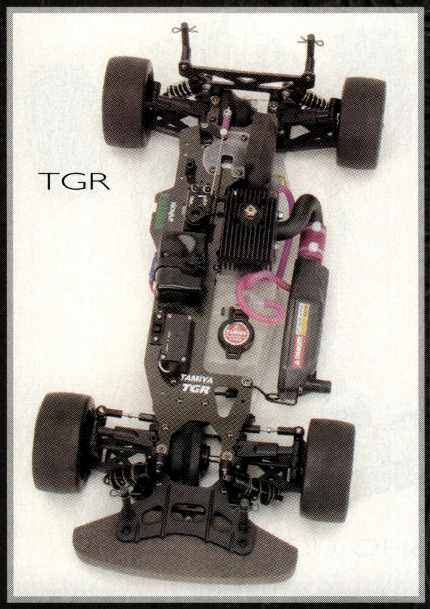


INFERNO TR15

For more information, contact Great Planes, 2904 Research Rd., Champaign, IL 61826-9021 • phone (217) 398-6300; fax (217) 398-0008

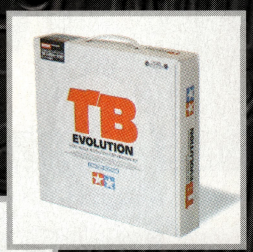
new product guide

Tamiya America

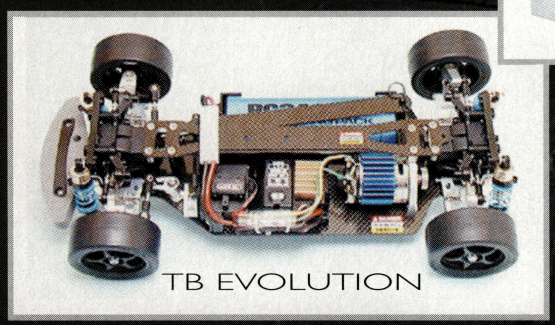


TGR

In redesigning its 1/8-scale TGX nitro sedan, Tamiya has redefined performance in the "super-size" category with its new TGR. With its 4WD drivetrain shifted to the right to centralize the engine's weight, a two-speed transmission, thick duralumin chassis, carbon-fiber upper deck, Type A belted tires, aluminum oil shocks and Tamiya FS-15R slide-carb engine, the TGR needs nothing to go head-to-head with the likes of the Kyosho SuperTen and HPI Super Nitro RS4. Every detail needed for competition is present on the TGR!

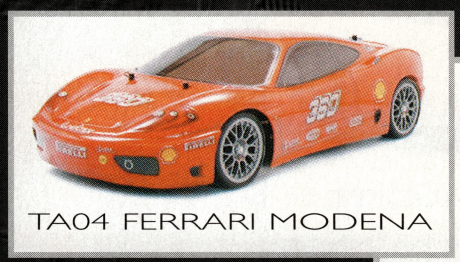


First introduced as a rally car, Tamiya's shaft-driven 4WD TB-01 chassis is now available as the hopped-up TB Evolution kit, which includes Tamiya's most popular options, such as a carbon-fiber chassis set, aluminum hub carriers and steering spindles, ball bearings, Type A belted slick tires, alloy shocks and sluminum steering bellcranks as standard equipment.



TB EVOLUTION

Tamiya released the limited production 414X 1/10-scale touring sedan last year in an effort to gauge racer response to a twin-belt chassis.



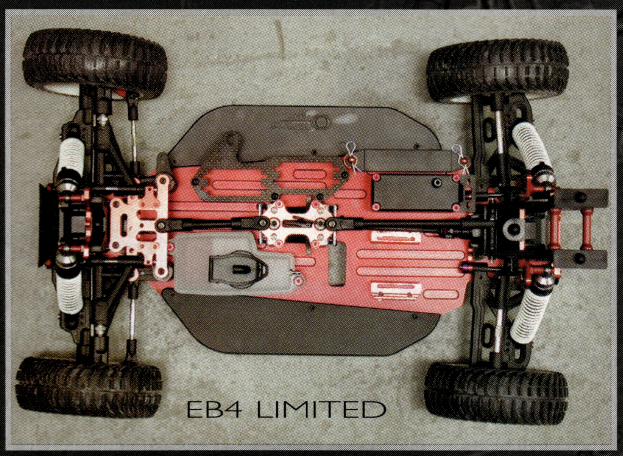
TA04 FERRARI MODENA

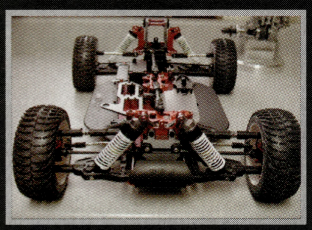


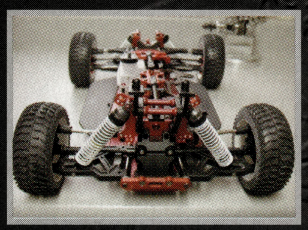
Using what it learned from the 414X, Tamiya introduces the TA04—the fourth-generation sedan from the company that invented the category. The TA04 is Tamiya's best racing kit to date, featuring full bearings, plenty of chassis adjustments and a smooth-as-silk dual-belt 4WD system with new lightweight ball diffs. Originally released as a chassis-only kit, the TA04 is now available with a stunning Ferarri 360 Modena body shell and replica wheels. Mama mia!

For more information, contact Tamiya America, Inc., 2 Orion, Aliso Viejo, CA 92656-4200 • phone (949) 362-2240; fax (949) 362-2250

Thunder Tiger



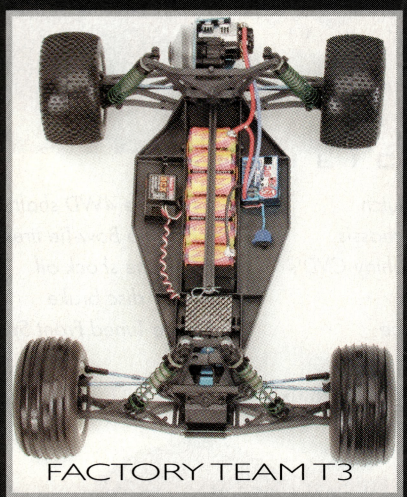




The EB4 is the only 1/8-scale buggy that seems capable of breaking Kyosho's stranglehold on the class. Already, the EB4 has won both the NORRCA and ROAR national championships, and recently dominated the 2000 IFMAR Worlds Warmup. Thunder Tiger now ups the ante with the release of the EB4 Limited, which includes such hop-ups as lightweight Ergal alloy chassis, suspension and steering pieces, universal-joint driveshafts for the rear wheels and for the center diff, and three-hole Teflon shock pistons. With this type of momentum behind it, the EB4 Limited just might be the next World Champion!

For more information, contact Ace Hobby Distributors, Inc., 116 W. 19th St., Higginsville, MO 64037 • phone (660) 584-7121; fax (660) 584-7766

Team Associated



Just when we thought Associated's electric racing truck couldn't get any better, along comes the Factory Team T3. Inside the kit you'll find an extensive assortment of goodies such as a graphite-composite chassis and suspension arms, blue-anodized aluminum nose plate, rear motor plate and hardware, plus a set of Associated's hard-coated Unobtainium shock shafts. And as if this weren't enough, the Factory Team T3 even includes a snazzy Pro-Line Chevy racing truck body!



And if you were wondering when Associated would wave the Factory Team wand in the direction of its 4WD sedan, your wait is over! Associated now has a Factory Team TC3 to satisfy the option-minded sedan racer. With everything from graphite chassis and suspension pieces, threaded aluminum shocks, to a blue-anodized motor-mount and hardware, the Factory Team TC3 is the ultimate Associated sedan. All you need to win is talent. Sorry, that's not in the Factory Team catalogue—yet!

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

NITRO MT RACER

NITRO RS4 MT RACER

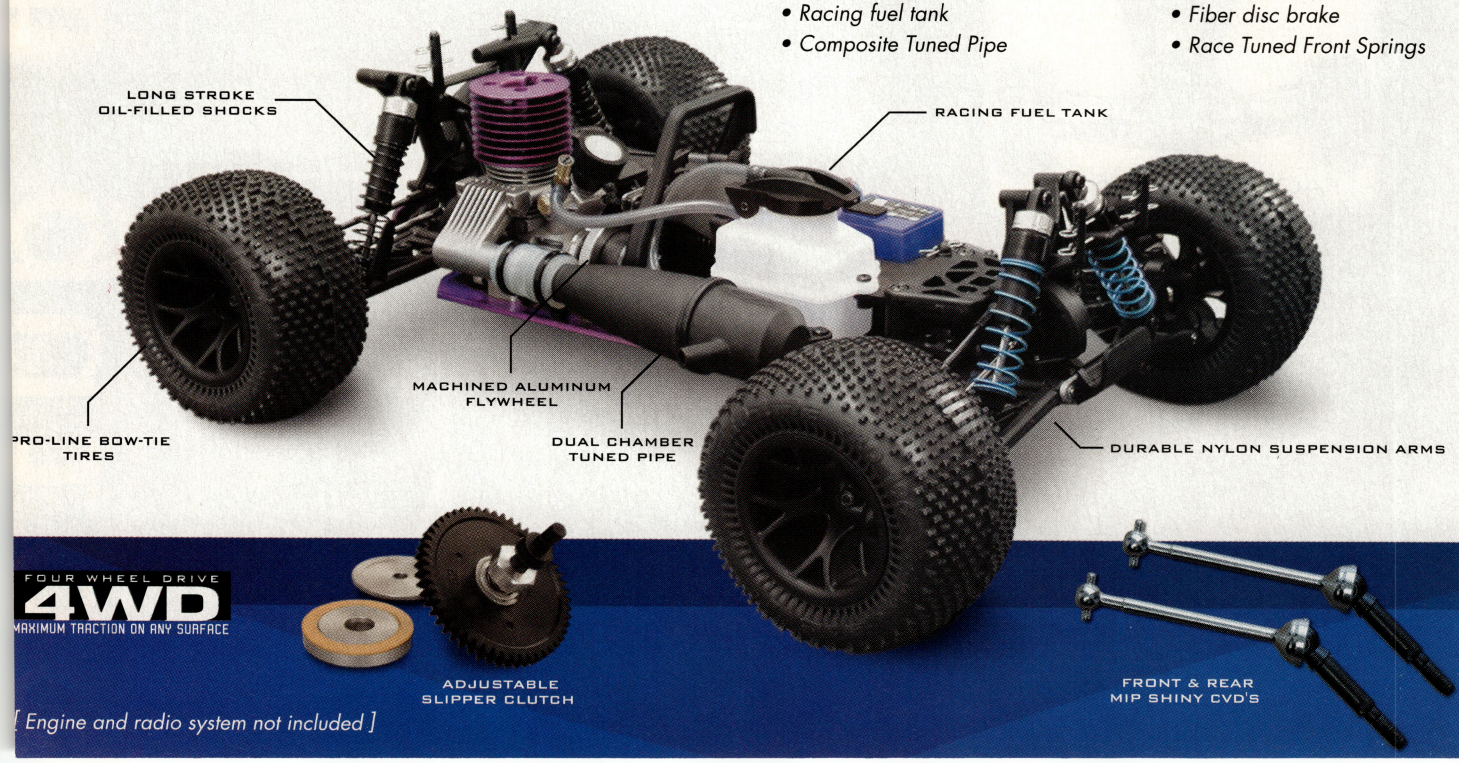


#545 Nitro RS4 MT Racer

SPECS

SPECIFICATIONS

- *Adjustable slipper clutch*
- *Heavy-duty 2.5mm chassis*
- *Front and rear MIP Shiny CVD's*
- *Racing fuel tank*
- *Composite Tuned Pipe*
- *Full-time 4WD shaft drive*
- *Pro-Line Bow-Tie tires*
- *Silicone shock oil*
- *Fiber disc brake*
- *Race Tuned Front Springs*

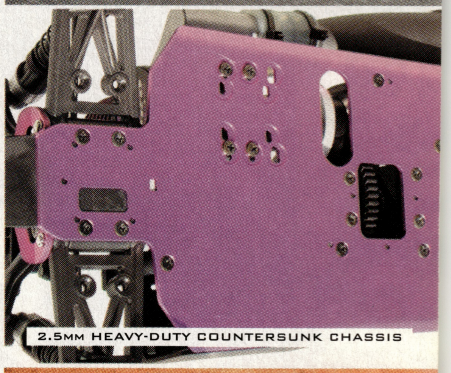


[Engine and radio system not included]

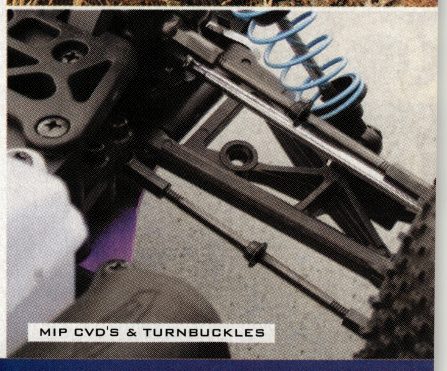












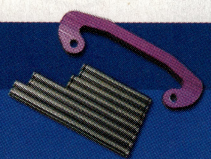
Nitro MT Racer

The Nitro RS4 MT Racer is built for racetrack performance. The foundation is our popular Nitro MT kit... tough shaft drive 4WD system to power through any type of terrain, full ball bearings, sealed differentials for trouble-free performance on any surface and a convenient removable radio tray for quick and easy cleaning. Then we add a huge list of our most popular hop-ups. It starts with a Heavy Duty 2.5mm Chassis, MIP Shiny CVD's, our new adjustable slipper clutch and a full set of stainless steel hinge pins with braces. Those options make the Nitro MT Racer tough enough to take the abuse of radical 1 horsepwer engines like our Nitro Star Pro 12R SC. Then we add items for optimum racetrack performance: silicone shock oil, race-tuned front springs, fiber disk brake and sticky Pro-Line Bow-Tie tires. A racing clutch, lightweight aluminum flywheel and racing fuel tank are included to help get the power to the ground. No engine is included so that racers can choose their own. We even make it look mean with a new set of Nitro MT Racer decals for the body.

If you're looking for a serious 4WD nitro powered truck, give the ***Nitro MT Racer*** *a try.*

COMPLETE SET OF BALL BEARINGS





REAR ARM BRACE WITH STAINLESS STEEL HINGE PINS

HPI RACING
15321 Barranca Pkwy. Irvine, CA 92618
Phone: 949.753.1099 Fax: 949.753.1098
Visit us on the web at www.hpiracing.com

new products

ELECTRONICS AND MOTORS

Novak Electronics



Novak once again leads R/C technology with its new Prism synthesizer receiver. Forget about changing receiver crystals; with the Prism, you'll be able to "dial-in" any frequency you desire (depending upon which band you use). Think about the money you'll save!



Novak has also updated the Cyclone programmable ESC to the C2. Among the changes are new performance profiles and an internal power switch.

For more information, contact Novak Electronics, Inc., 18910 Teller Ave., Irvine, CA 92612 • (949) 833-8873; fax (949) 833-1631

MIP



MIP has redesigned its popular On-Board temp gauge with an on/off switch, an easy ability to switch between Celsius and Fahrenheit, and a brand new sleek look. Consider the On-Board Temp Gauge a must-have if you own a nitro car!

MIP, 830 W. Golden Grove Way, Covina, CA 91722 • phone (626) 339-9007; fax (626) 966-2901

Team Orion

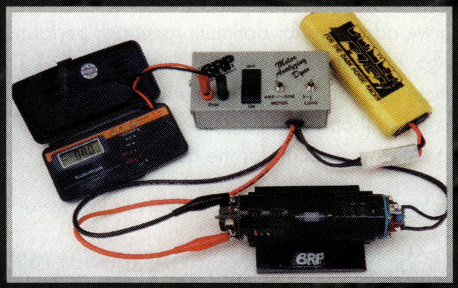


Team Orion's new Chrome Stock RS motor features a dual-rotor armature, solder-free flush-mount capacitors, brush dampers, high-airflow can and endbell, extra-large heatsinks and newly redesigned race-tuned brushes.

For more information, contact Team Orion, 22601 LaPalma Ave., Suite 103, Yorba Linda, CA 92887 • (714) 694-2812; fax (714) 694-2815

BRP

BRP's motor dyno/tester offers racers an economical way to gauge the performance and condition of their expensive motors. The tester can be useful for determining brush/comm wear, checking motor timing and selecting the right gearing for your track.



For more information, contact BRP, 1575 Lowell, Elyria, OH 44035 • phone (440) 284-0270; fax (440) 284-0271

Trinity



Trinity goes retro for 2001, releasing a line of new motors based on old favorites. Leading the pack is the Green Machine 3, a high-rpm stock motor for racers who run on high-speed tracks!

Trinity has also released a quartet of retro-winds. The 427 is a 11-turn wind, the 350 is a 10-turn, and the Monster Mash (remember this?) is a 13-turn bruiser that's great for big trucks. And finally, the Pure Gold is a 12-turn that's based on the original motor that was *the* hot ticket for the early RC10 buggy.





If you own a gas car or truck, you need one of Trinity's new Nitro Metal Hydride batteries. Available in all popular configurations.

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

DuraTrax





Bridging the gap between budget and high-end chargers are the IntelliPeak chargers from DuraTrax. Both feature micro-processor control, accurate peak-detection for Nicad and NiMH cells, a discharge function, two cycling functions, AC/DC operation. There are four models of IntelliPeak, the Pulse, the Mini Pulse, the Deluxe Pulse and the top-of-the-line Digital Pulse. All but the Pulse have built-in cooling fans.

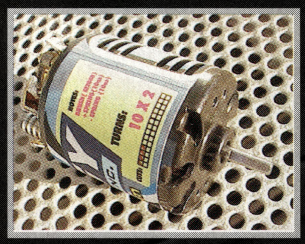


How's this for a compact 12V power supply? The Compact Switch Power Supply provides seven amps of current to power just about anything that runs on 12 volts! Just plug it into a 110V socket!

For more information, contact Great Planes, 2904 Research Rd., Champaign, IL 61826-9021 • phone (217) 398-6300; fax (217) 398-0008

new product update

Integy



Integy is now offering the Atlas Jett V8.0 hand-wound modified motors. These mod motors feature a special Hemi-Alpha Pattern winding that uses the shortest wire possible for a lower internal resistance. High silver-content welding plus Kevlar-reinforcement of the commutator adds durability. The Jett's lower operating temperature withstands higher rpm and makes this motor ideal for off-road and touring car. Available in a variety of winds to suit your needs.



For more information, contact Integy, 1140 Centre Dr. #E, City of Industry, CA 91789 • phone (909) 444-2766; fax (909) 627-4132

Hitec



With the release of five new digital servos, Hitec enters a new era of performance, quality and value. Massive power, increased reliability, programmable features and Hitec's unbreakable metal gear-train are just a few of the features found on these awesome new servos. The digital servos are available for most applications. The HS-5625MG has a transit time of 0.13 seconds with 93 ounces of torque. The HS-5645MG has a speed of 0.16 sec. with 133 oz. of torque. The HS-5925MG has a speed of 0.08 sec. with 128 oz. of torque. The HS-5945 has a speed of 0.13 sec. with 180 oz. of torque. And finally the HS-5735 has a speed of 0.15 sec. with an unreal 250 oz. of torque!

For more information, contact Hitec, 12115 Paine St., Poway, CA92064 • phone (858) 748-6948; fax (858) 748-1767

Multiplex



Multiplex's new Profi seven channel radio has 12 model memory and the ability to switch between FM and AM operation. Plus it looks really, really trick!

Multiplex, 560 Library St., San Fernando, CA 91340 • (818) 785-2401; fax (818) 785-3946

Airtronics



The new Blazer and Blazer Sport two-channel radio systems from Airtronics come with the new 96301Z micro ESC and MicroLite 99051Z servo, making them perfect for 1/24-scale cars such as the Kawada Trip Mate and small boats

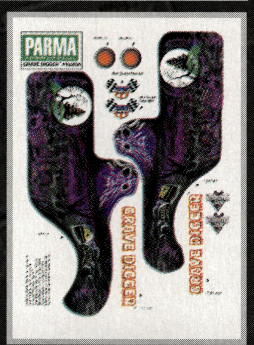
Airtronics, 1185 Stanford Ct., Anaheim, CA 92805 • phone (949) 978-1895; fax (949) 978-1540

PARTS AND ACCESSORIES









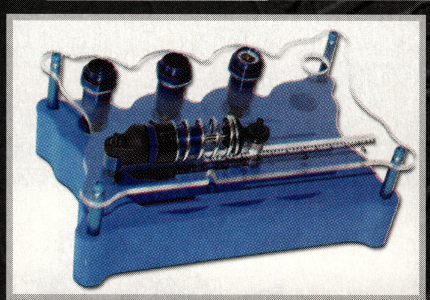
Parma

Parma has signed a new licensing agreement with Pace Motorsports to produce 1/10-scale replica bodies of the Monster Jam Monster Trucks! These include all the WCW Wrestling trucks. The first bodies available Sudden Impact, West Virginia Mountaineer and the Grave Digger. In the works are the Goldberg, Bigfoot Chromalusion and Predator/Prowler.

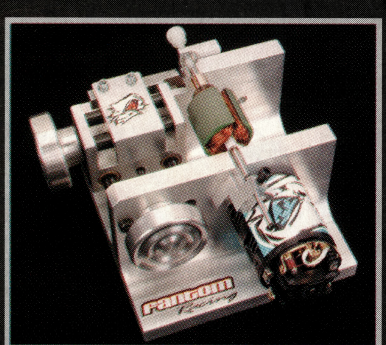
For more information, contact Parma/PSE, 13927 Progress Pkwy., North Royalton, OH 44133 • (440) 237-8650

Trinity

Check out this cool shock-building tool from Trinity. This multi-purpose tool serves as a shock stand to allow all of the air bubbles to escape the shock oil, and it has a handy metered scale to allow you to build perfectly matched shocks (by length) each and every time. The tool can also be used when building tie-rods to ensure equal lengths for the left and right sides of the car.



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

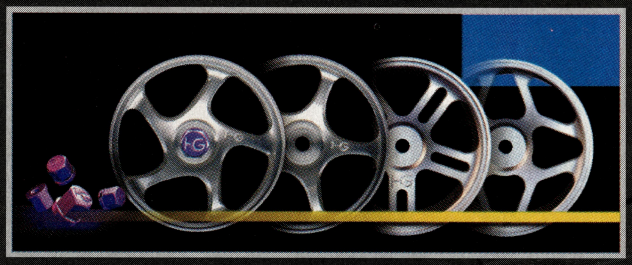


Fantom

Fantom's Factory Lathe features one-piece construction, precision-ground dual-guide bars for more precise tool action, self-lubricating bearing surfaces, precise bit adjustment (one turn equals 1/32-inch) and adjustable end-stops for all armature lengths (no need for shims). The Factory Lathe is made from high-quality steel and alloys.

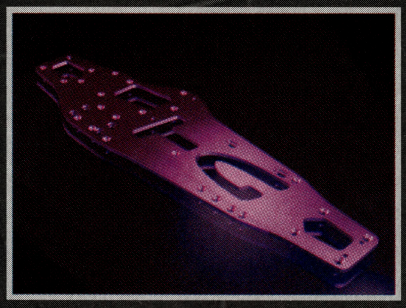
For more information, contact Fantom Racing Motors, 50201 Silver St., Vicksburg, MI 49097 • (616) 649-9583; (616) 649-9584

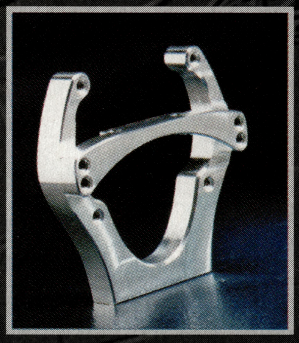
Hammad Ghuman



Hammad Ghuman's awesome alloy touring car wheels are now available in four styles to fit most popular 1/10-scale sedans. In addition to their beauty, these HG wheels are stronger than typical molded wheels.

HG introduces the thickest chassis (3.2mm) ever produced for the HPI Nitro RS4. HG's chassis aren't stamped like many other replacement chassis, rather, thay are completely machined by computerized equipment to ensure a higher quality. Why skimp on your car's "backbone"?

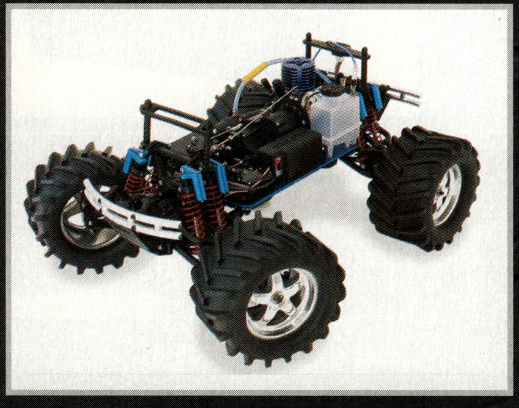




HG, the original creator of the first alloy bulkhead for the Associated RC10GT gas truck, has improved its bulkhead for the new millennium! The new GT bulkhead is lighter, stronger, more precise and machined to a higher-quality standard than before. The rear bulkhead on the GT is one of the truck's most important components—it's the backbone of the truck. The HG bulkhead strengthens the entire rear portion of the GT chassis.

For more information, contact Hammad Ghuman, 6 Tower Heights, Albany, NY 12211 • (518) 458-8441; fax (518) 782-9256

Progressive Suspension



Progressive now offers a set of eight of its EDC (External Damping Control) shocks as a set for the popular Traxxas T-Maxx (and new E-Maxx). The design of the shocks allows you to change the damping from the outside (no need to change oil), and each shock is capped with Progressive's external Piggy Back reservoir for improved damping.



Also available are Progressive's new Piggy Back shock reservoirs to fit all popular 1/8-scale off-road buggies such as the Kyosho, Mugen and Thunder Tiger. A set is also available to fit MIP shocks. Comes in one of six colors.

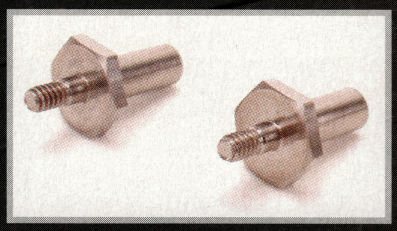
For more information, contact Progressive Suspension USA, Inc., 11129 Ave. G, Hesperia, CA 92345 • phone (760) 948-4012; fax (760) 948-4307



Lunsford Racing

Previously available only to sponsored racers, Lunsford Racing is now offering a full line of titanium replacement screws for most popular racing vehicles. These are much lighter and stronger than stock steel hardware!

The ultimate mod for your Losi Triple-X! Lunsford Racing's new titanium stub axles replace the stock kit's aluminum axles. These are much stronger than stock and absolutely will not bend!



FOR MORE INFORMATION ON LUNSFORD PRODUCTS, PLEASE PHONE 541. 928-0587

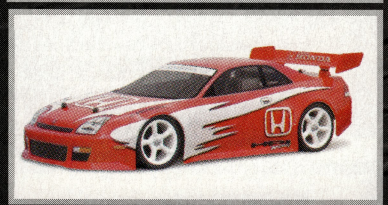


HPI's new Nitro Start-Up Set includes everything you need to get your new nitro car or truck up and running—all in one package! Two version are available: one with an HPI TX-2 radio and one without.

HPI

Also check out the latest bodies from HPI. The BMW M5 (top) and Honda Prelude. Both will fit any wide (200mm) sedan chassis, and come with full decals.





For more information, contact HPI, 15321 Barranca Pkwy., Irvine, CA 92618 • phone (949) 753-1099; fax (949) 753-1098

NEW ERA

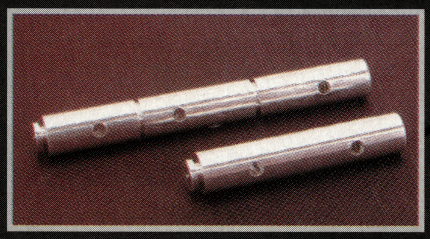
New Era Models offers a huge assortment of hop-ups for the Traxxas T-Maxx. Among the most interesting is a conversion kit that allows you to bolt-in a big-block .21 engine! Talk about overkill! In addition, New Era's catalogue includes a bevy of aluminum chassis and suspension replacement parts, so you could build your own "Ultra Maxx" and terrorize your neighborhood!





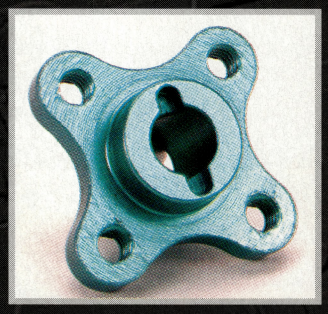
For more information, contact New Era Models, P.O. Box 7378, Nashua, NH 03060 • (603) 888-4453

IRS (Irrgang Racing Service)



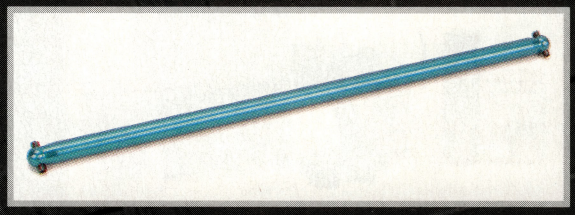
Irrgang Racing Service, or IRS, now offers a host of race-proven hop-ups for Associated's popular TC3 touring car. All IRS parts have been meticulously created using state-of-the-art machinery and have been carefully inspected by Dave Irrgang himself to ensure quality.

IRS's TC3 input shafts are made of machined aluminum and are much lighter than the stock steel shaft they replace. Less weight means faster acceleration. Part no. IRS145, $17 retail price.



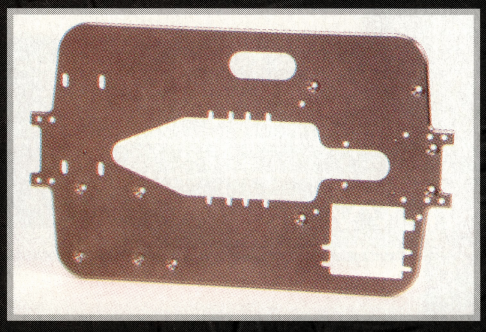
This blue-anodized aluminum spur-gear adapter (no. IRS144, $20) replaces the stock plastic piece and will keep your spur gear running more true.

If you want to make your TC3 stand out from the crowd, then this blue-anodized aluminum driveshaft (no. IRS146, $22.50) is for you. A direct replacement for the TC3s woven driveshaft.



For more information, contact Irrgang Racing Service, 18 Cannon Range Rd., Milmay, NJ 08340 • phone (609) 475-2371

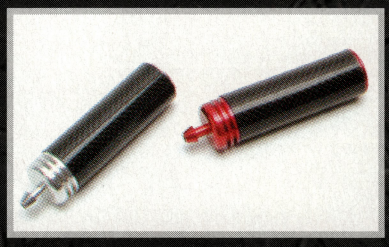
Killer Bee



Killer Bee offers a line of titanium and magnesium replacement parts for the Traxxas T-Maxx and other popular vehicles. This awesome chassis plate for the T-Maxx is stronger than stock.

For more information, contact Killer Bee, 130 Riverview Ave., Woodbridge, Ontario, Canada L4L02L6 • (877) 313-3136

GS Racing



GS Racing makes more than just silicone exhaust couplers and tubing, it has a large catalogue of hop-ups for gas and electric cars, including these new carbon-fiber boost-bottles for nitro engines. These bottles improve low-end throttle response to provide a smoother and larger powerband. Each bottle is available in your choice of colors, and comes with all of the hardware and detailed instructions for easy installation.

For more information, contact GS-Racing, 650 W. Duarte Rd., Suite 205, Arcadia, CA 91007 • (626) 445-5036; (626) 445-6084

FACTORY Team

T3

Since its introduction in 1997, Team Associated's RC10T3 truck has been the dominant force in electric truck racing, winning three consecutive NORRCA World Cups, the 1998 ROAR National Championship, the 1999 Florida Winterchamps, and many other national titles. Now the Team introduces the RC10T3 "Factory Team" edition, the fully-optioned ultimate factory race truck kit, and the new, updated RC10T3 "Team" kit.

Over $179 Worth of UPGRADES!



Send for your **FREE RC10T3 Catalog**



RC10T3 Factory Team Kit shown with items not included in kit: LRP Speed Control, Reedy modified motor, Reedy Zappers batteries, 2-channel radio gear and servos.

Factory Team T3 #7048

FEATURES:

- Sealed Ball Bearings
- Factory Blue Titanium Turnbuckles
- Factory Blue Chassis Plate, Motor Mount and Front Kickup
- Full Graphite Chassis, Shock Towers, Suspension Arms, transmission brace, and more.
- Pro-Line Chevy Silverado Body

Also, New Updated...

RC10T3 Team Kit #7038

FEATURES:

- Sealed Ball bearings
- Composite Shock Towers
- Hard-Anodized, Teflon-coated Shock Bodies
- Pro-Line Tires, One-piece Wheels
- Pro-Line Chevy Silverado Body

***3*-TIME WORLD CUP CHAMPION!**

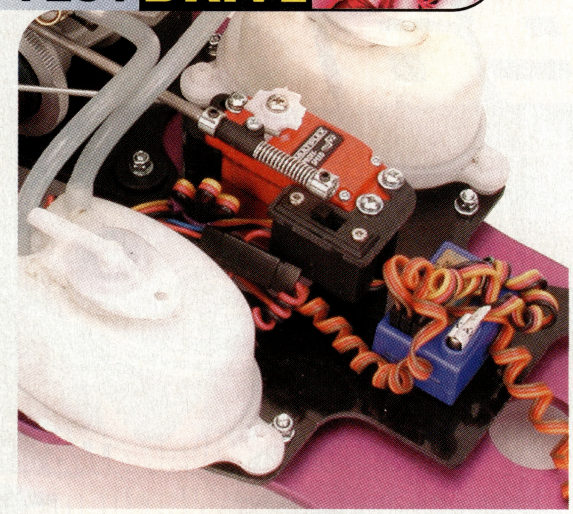




TEAM ASSOCIATED
3585 Cadillac Ave. Costa Mesa, CA 92626
www.rc10.com
www.teamassociated.com

ae

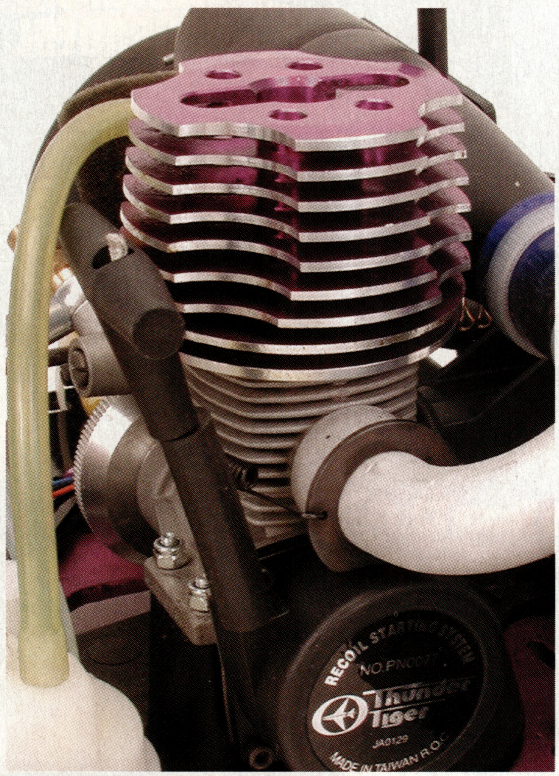
Ad#1072

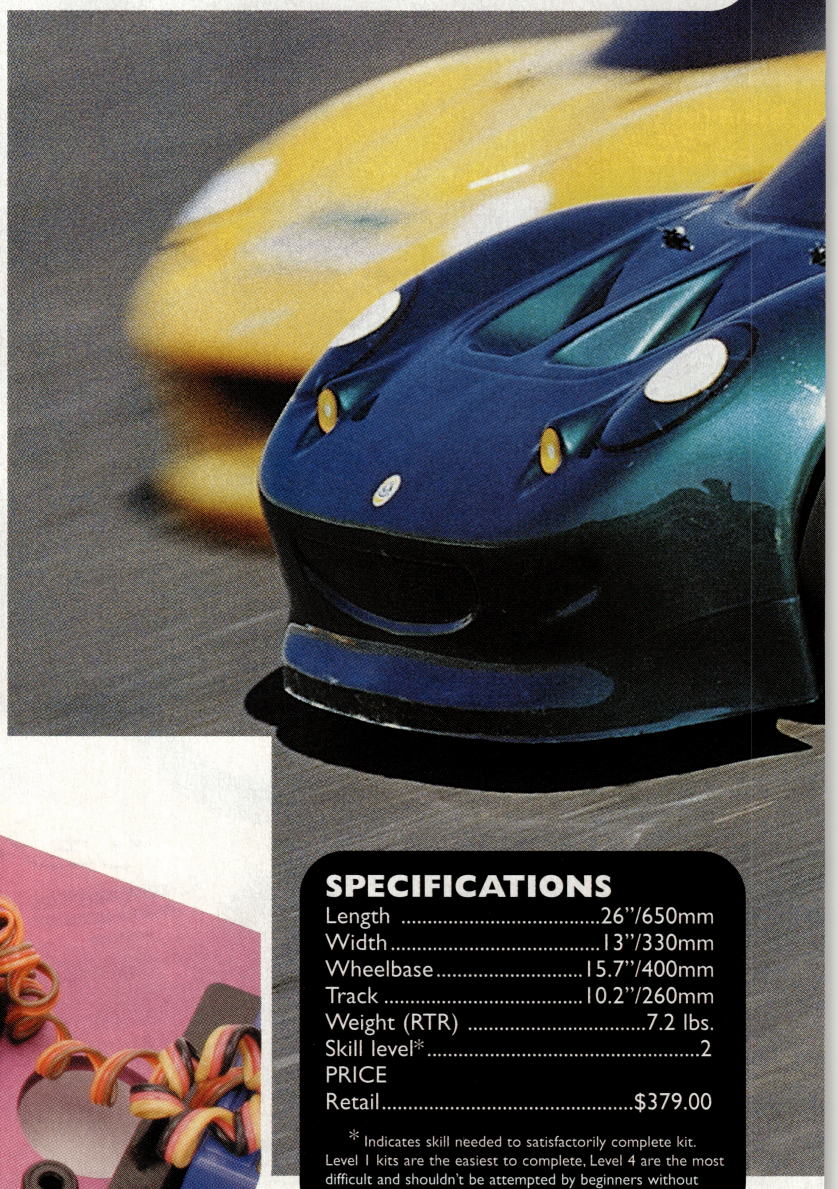


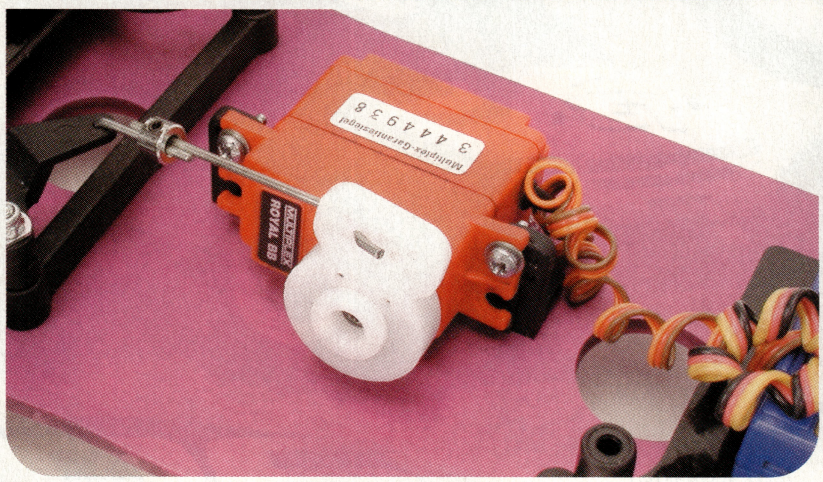
SCHUMACHER LOTUS SPORT ELISE BIG 6 NITRO

by Lito Reyes

Last month we showed you Schumacher's new Big 6 electric Lotus Sport Elise kit. Frank hinted that a nitro-powered version was expected to come this way, and it's here now, in a big way. Powered by a Thunder Tiger .21 c.i. engine, this Big 6 Lotus was designed strictly for speed. Sporting the same beautiful bodyshell design that has been licensed from Group Lotus, as well as a pair of twin fuel tanks to feed the potent .21, the rear-wheel drive Big 6 Nitro is all about power and grace.





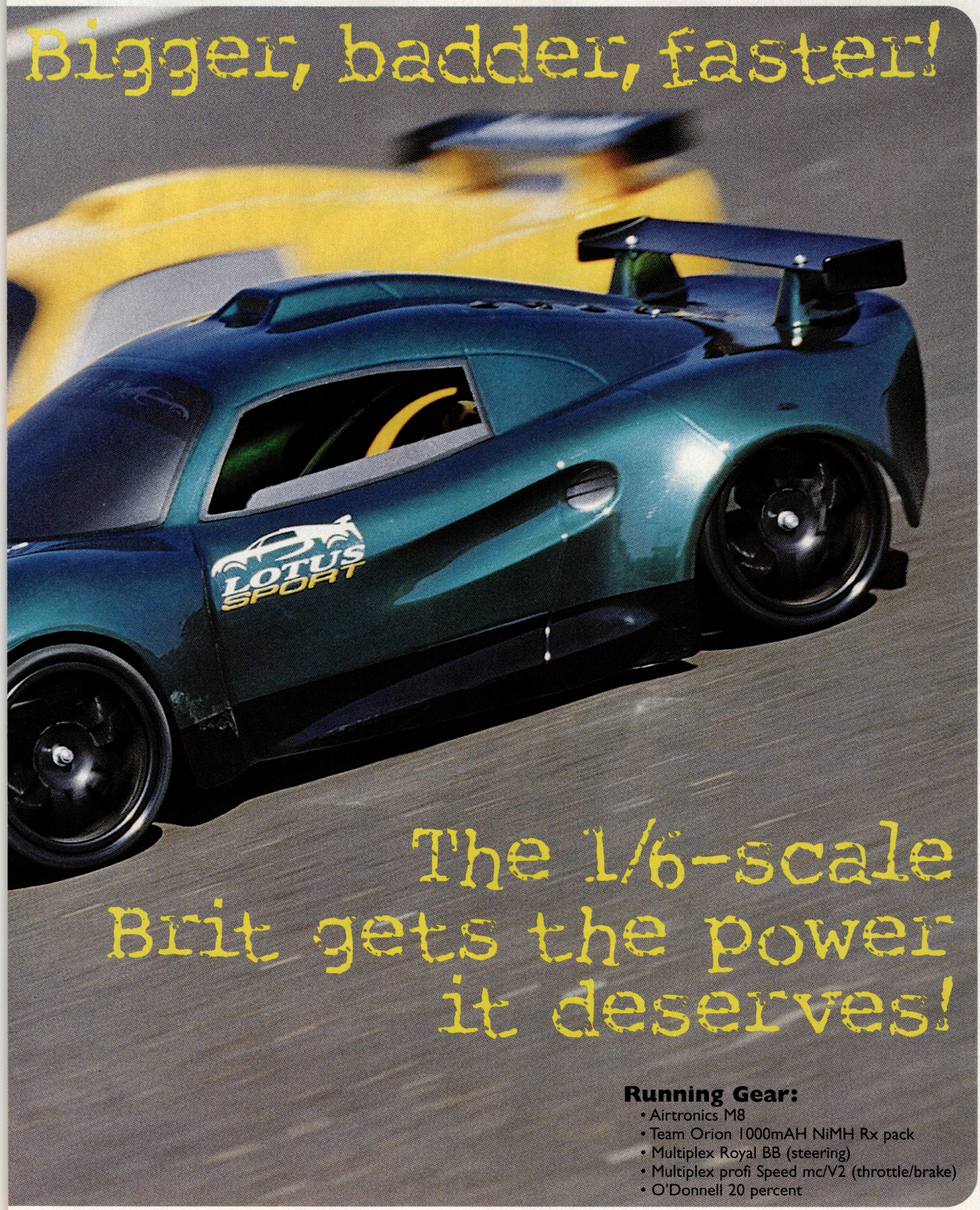


SPECIFICATIONS

Length	26"/650mm
Width	13"/330mm
Wheelbase	15.7"/400mm
Track	10.2"/260mm
Weight (RTR)	7.2 lbs.
Skill level*	2
PRICE	
Retail	$379.00

* Indicates skill needed to satisfactorily complete kit. Level 1 kits are the easiest to complete, Level 4 are the most difficult and shouldn't be attempted by beginners without experienced assistance.

Bigger, badder, faster!



The 1/6-scale Brit gets the power it deserves!

Running Gear:
- Airtronics M8
- Team Orion 1000mAH NiMH Rx pack
- Multiplex Royal BB (steering)
- Multiplex profi Speed mc/V2 (throttle/brake)
- O'Donnell 20 percent



When fuels can make or break your engine, it's no wonder world-class race engine manufacturers are picky about which brews they recommend for their nitro-breathers. For power-producers Picco and Nova Rossi, Blue Thunder's the choice blend. Make it yours, too.

DYNAMITE

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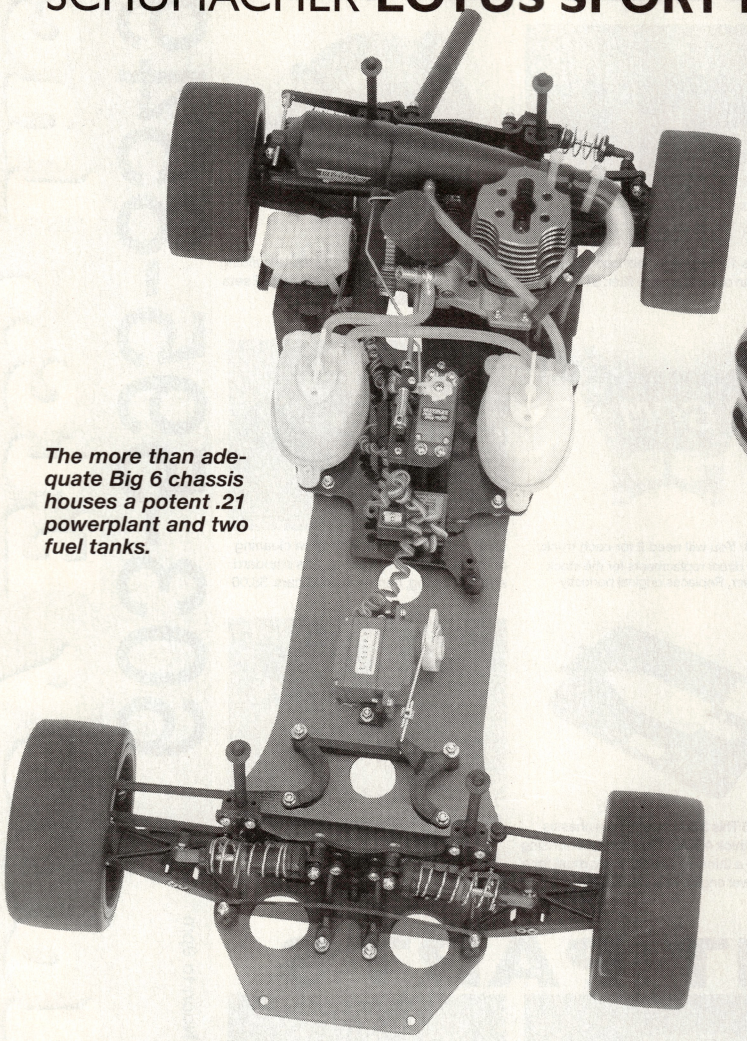
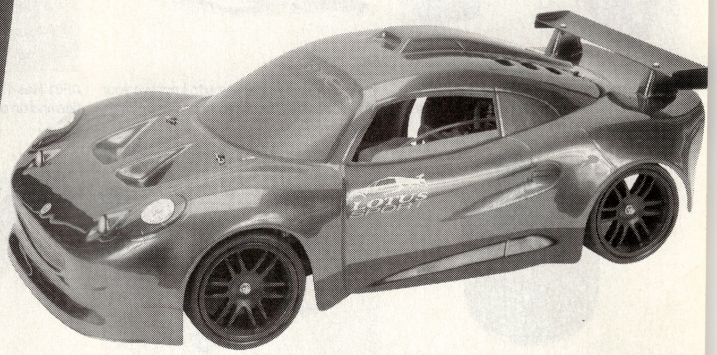
SCHUMACHER **LOTUS SPORT ELISE BIG 6 NITRO**

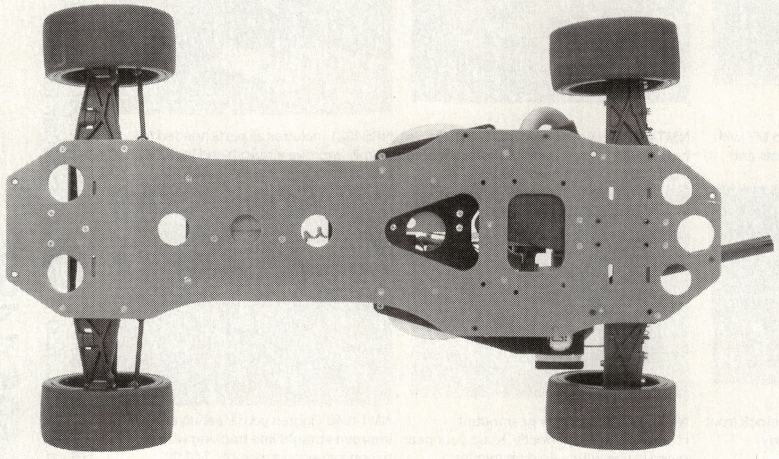


The more than adequate Big 6 chassis houses a potent .21 powerplant and two fuel tanks.



SUSPENSION

The front and rear shock towers are made of the same pressed composite material that the fuel tank riser is made of. The composite shocks are actually the same ones used in their much smaller 1/10-scale cars, but mounted at a laid-down angle. This sharp angle helps to make the dampening feel more progressive as it is compressed. These shocks also feature pistons that can be set to four different valvings without removing them from the shaft. The arms are all made of a stiff plastic composite and should prove durable in normal running.





To help control the front end, you need a pretty hefty servo to crank those big wheels back and forth. Make sure that your servo has a high torque rating.

CHASSIS

The chassis plate is made of 4mm purple-anodized aluminum. With so much space between the two ends of the car, the piece looks most impressive, mainly due to its sheer size. With stepped-up front and rear edges to accommodate the appropriate suspension components, its thickness and width make for a stiff platform for the 1/6-scale Sport Elise. Much of it is actually left exposed, since there really is not much to the car.

Mounted to the lower chassis plate, in between the front and rear bulkheads, is a pressed composite riser. The fuel tanks are symmetrically mounted to the riser, as is the throttle servo and receiver.

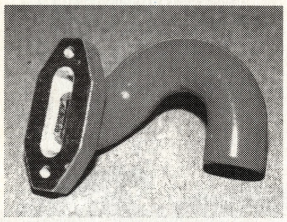
What you get

- Rolling chassis with body, wheels, and tires.
- A pull-start engine

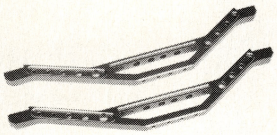
What you need

- Radio gear (including steering and throttle servo)
- Nitro fuel
- Glo-igniter
- Receiver batteries
- CA for tires

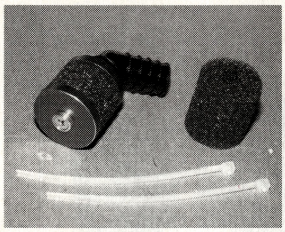
TRAXXAS T-MAXX ALUMINUM



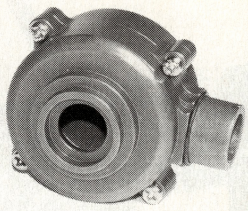
TMX13016 This manifold has a dark blue powder coat finish and is port matched to your exhaust. $30.00



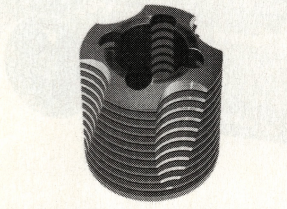
TMX1014 This will help you to improve your stock chassis. These replace your orginals perfectly$50.00



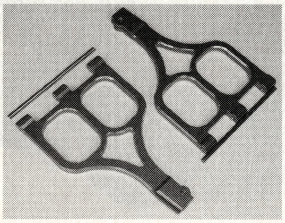
AF01 Has 45 Degree rubber boot, two zip ties and an outer foam pre filter. $15.00



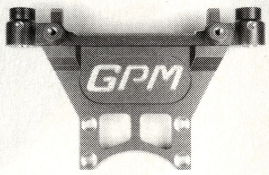
TMX1011 These are the first step to building a bullet proof drive train.You will need 2 sets for each truck. $65.00



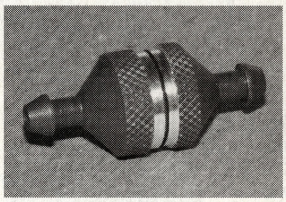
TMX1815 With 30% more cooling area and a large opening for easy maintenance. This is a must for longer engine life. Fits Pro 15 engine. $40.00



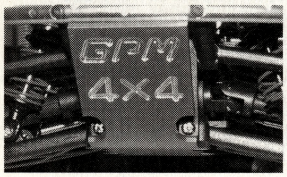
TMX1054 Set of 2 upper control arms. These are by far stronger than the original plastic arms. Includes pins and clips. $40.00



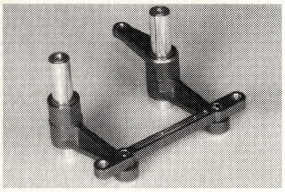
TMX1028 You will need 2 for each truck. These are direct replacments for the stock shock tower. Replaces original perfectly $40.00



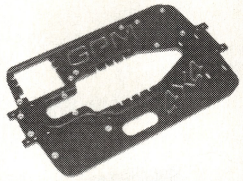
OF01 Filter comes apart to allow cleaning and is sealed with an o-ring. Fits standard size fuel tubing, common on all cars. $8.00



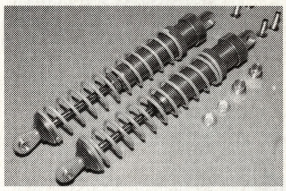
TMX1331F Don't be a poser, get one of these 3mm thick skid plates and be with the "in"crowd. $25.00



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

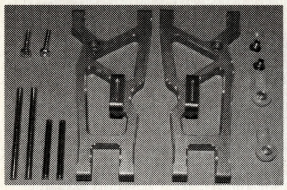


TMX1016 This 3.5mm thick main chassis features thick 4.5mm Ribs don't risk loosing power to a thinner chassis! It is a must for a more power engine hop-up. $75.00

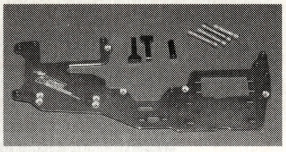


DP100 Threaded shock bodies are perfect for fine tuning your ride hieght. These are 4.125 inches long. $45.00

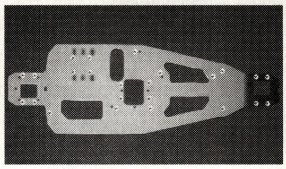
HPI NITRO MT PARTS



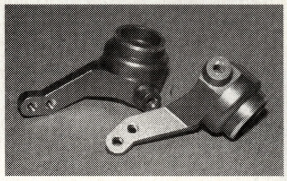
NMT4056 Replace your fragile stock rear control arms with a pair of sturdy aluminum ones. $35.00



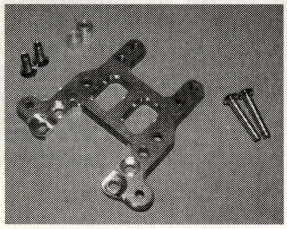
NMT4014 Customize your Nitro MT with an alloy radio plate. Includes posts and screws need to mount. $40.00



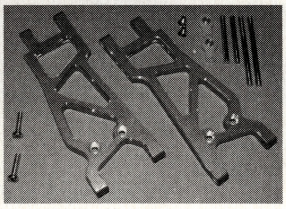
NMT4016 Set your truck apart from the crowd with a 3mm thick chassis machined from 6061 T6 Aluminum $55.00



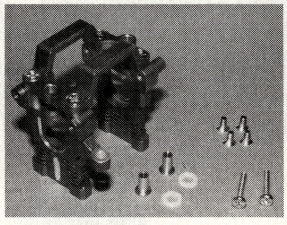
NRS4021 Includes all parts needed to install. Improve strength and looks with a pair of alloy front knuckles. $25.00



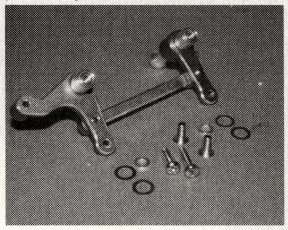
NMT4028 Improve both looks and durability with one of these front shock towers. $20.00



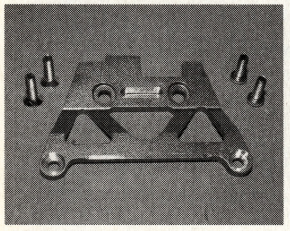
NMT4055 Replace your fragile stock front control arms with a pair of sturdy aluminum ones. $35.00



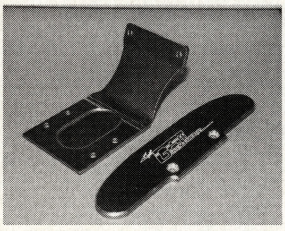
NMT4038 Alloy center gear mount replaces original perfectly. Keep your gear mesh in line with a rigid aluminum replacement. $45.00



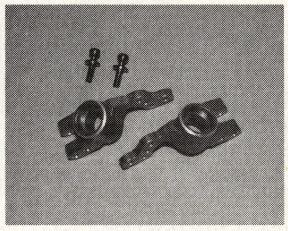
NMT4048 Tighten your steering and improve straight line tracking with a ball bearing steering assembly. $40.00



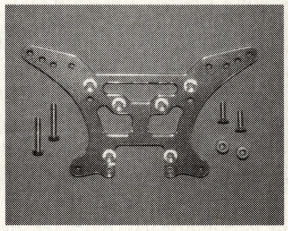
NMT4015 Keep your truck on the track and running strong with an alloy front top plate. $25.00



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



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



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

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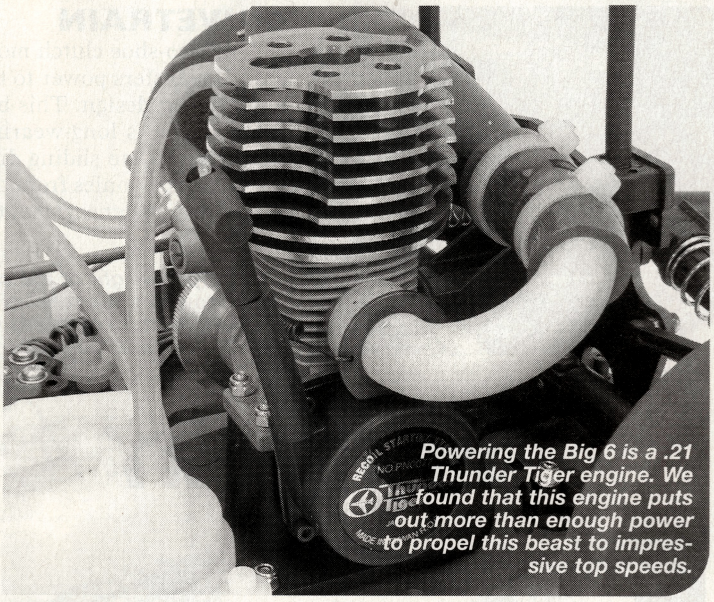
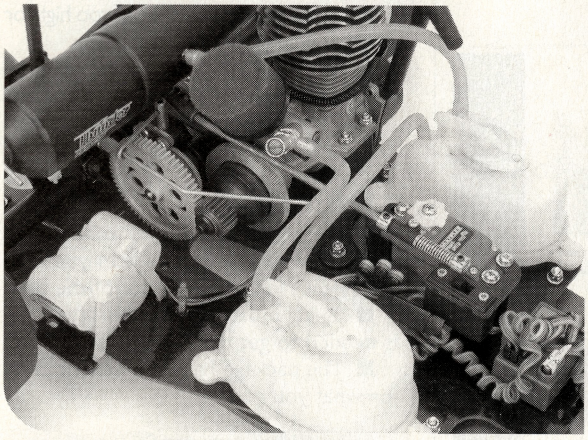
SCHUMACHER **LOTUS SPORT ELISE BIG 6 NITRO**

POWERPLANT

At the heart of this Big 6 Nitro is the Thunder Tiger Pro .21 engine. Equipped with a pullstart for convenience, this engine puts out more than enough power (2.1 h.p. at 40,000 r.p.m.) to propel this relatively lightweight car to ballistic velocities. It has a large finned heatsink head anodized purple with machined natural aluminum accents, has true ABC (Aluminum Brass Chrome) construction for consistent performance and long life, and a large-bore slide carburetor with a unique throttle return spring assembly fixed directly to the carb horn. The return spring is almost as big as a shock spring, and is strong enough to move even the highest-geared servo back to neutral. This bit of insurance can go a long way to preventing a dangerous runaway situation if the radio signal or even receiver battery power is lost.



Powering the Big 6 is a .21 Thunder Tiger engine. We found that this engine puts out more than enough power to propel this beast to impressive top speeds.



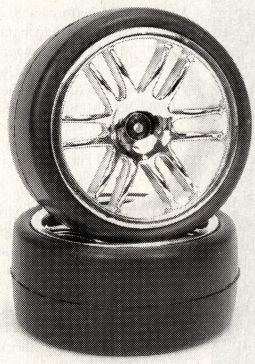
TWIN FUEL TANKS

Feeding fuel to the carb are the aforementioned twin fuel tanks. These are the same user-assembled units that come on a few of the other Schumacher nitro cars. They feature a large wide base for a low CG, an O-ring bottom seal and foam cap seal to prevent leaks, a strong cap spring to ensure proper closing and a built-in replaceable fuel filter. One tank is pressurized by the tuned pipe, and its output feeds (or drips) into what would be the second tank's pressure input. The output from the second tank then goes to the carb on the engine. This series tank system is much simpler than trying to use two tanks in a parallel configuration, but it also means that one side of the chassis will have more weight. Fortunately, the overall weight of the car makes this a non-issue.

WHEELS, TIRES, AND BODY

The wheels that come with this Big 6 are replicas of the black-finished ones on the full-sized Sport Elise, down to the wheel markings included on the decal sheet. Like everything else on this car, the best way to describe them is "big"—at 3.8 inches in diameter (with the tires mounted they are 4.2 inches). Slick tires marked with a green dot, though otherwise unrated, are the stock shoes. No inserts are included, as the stock tires are stiff enough to support the weight of the car without then.

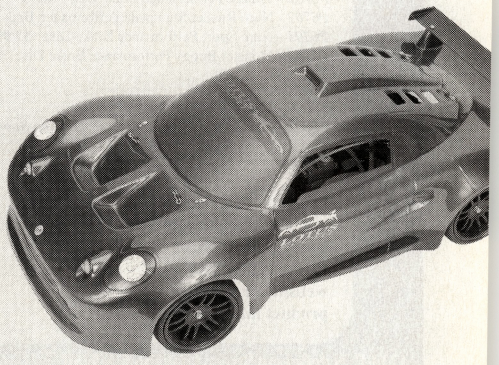
The Lotus Sport Elise body is what gives the Big 6 its "Big". This "in-between" car is much larger than 1/8-scale cars, but much smaller than the 1/5-scales. Measuring 650mm long and 330mm wide, this impressive piece of polycarbonate accurately portrays the sleek, evocative lines of the full-sized Lotus. It comes with a small, though scale, rear wing, and lots of 3-D molding. One of the decal sheets has large opaque windows and windshield stickers; since they are not transparent, no window masking is needed when painting the body if you use them.



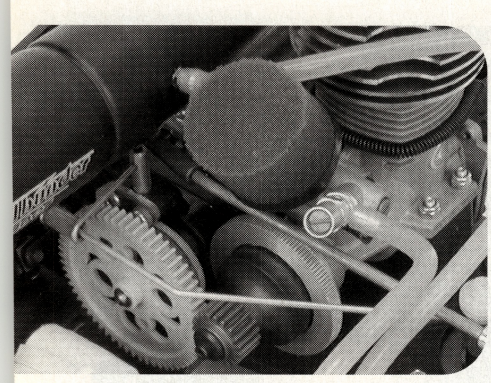
These optional chrome wheels with stickier tires give the car a little extra flash while at the same time giving the car better grip. The tires come highly recommended from us...

Performance:

For the first break-in session, we filled each of the tanks about 2/3 full, then gave the pull starter half a dozen tugs with the exhaust tube pinched to prime the fuel to the carb. One more tug is all it took to get the big .21 started after mounting the igniter. After a few patient tanks run moderately, we finally had a chance to let loose on the throttle. Actually, we couldn't let *that* loose, because we would run out of parking lot before reaching top speed. Those huge 4.2-inch diameter tires really move the Big 6 quickly. We did notice the car was pushing horribly under power. When letting off the throttle, we could actually see wheels snap into the position that our radio set it to go. The stock servo saver was severely limiting steering, so we switched to a large Kimbrough saver, which helped things out a whole lot. There was a large amount of body roll, and when we examined the shocks, we noticed there was lots of air in each one. Not knowing exactly what oil was used by the factory, we guessed at starting off with Associated 80-wt and using the variable valving from there. The setup we ended up with was the same 80-wt.oil with two holes open in the rear and one hole open in front.



SCHUMACHER **LOTUS SPORT ELISE BIG 6 NITRO**



DRIVETRAIN

The two-shoe clutch mounted to the engine rotates a large, white, 32-pitch spur gear. It transfers power to the ball differential via a strong 55-tooth belt rather than a multi-gear design. This belt transmission has been proven in many Schumacher vehicles and is long-wearing and requires very little maintenance. The outdrives from the diff are sliding drive shafts with a very large surface area—all the better to handle the ponies from the TTR engine. These plastic shafts slide freely, yet have a very positive engagement to get the power to the axles.

Most of the weight of the car is positioned towards the rear—a good thing, considering this car needs to get as much traction as possible!

THE BAD

■ The servo saver is much too soft. It causes the car to push so badly on power that it takes control away from the driver.

■ Pull-starts may be convenient, but not having a cutout for a starter box isn't. Due to the design, the flywheel is way too high for a starter wheel to even reach.

■ The fixed links are cheap to produce and foolproof, but threaded rods, at the very least, could have been included in the parts bags.

THE GOOD

■ That TTR .21 and tuned pipe combo are very, very potent. Maybe even too potent for the Big 6 out of the box.

■ Being mostly assembled, little time is needed to get the Big 6 running.

■ The package has an excellent price for what you get.

THE VERDICT

There really isn't anything we can directly compare the Lotus to. It is much faster than the much larger 1/5-scalers, but slower than the 1/8-scale rockets. But its rubber tires let it run in places that the other two can't, either due to space or surface conditions.

Overall, the Lotus Sport Elise Big 6 Nitro is an excellent value. For a retail price of around $380, you get all the fun of a big-scale car with a powerful engine, and some serious speed to boot. ◆

SOURCES

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

Team Orion, 22601 LaPalma Ave., Suite 103, Yorba Linda, CA 92877 • (714) 694-2812; (714) 694-2815 (fax).

O'Donnell, distributed by Great Planes Model Distributors, 2904 Research Rd., Champaign, IL 61826-9021 • (217) 398-3630; (217) 398-0008 (fax).

Multiplex USA, 560 Library St., San Fernando, CA 91340 • (818) 838-6467; (818) 838-3127 (fax).

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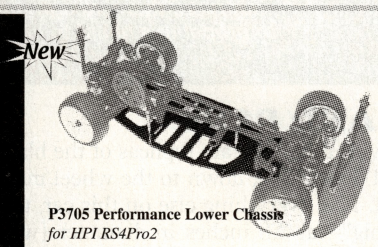
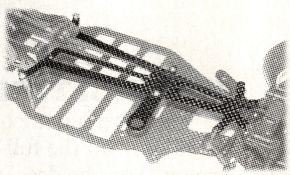


P3705 Performance Lower Chassis
for HPI RS4Pro2



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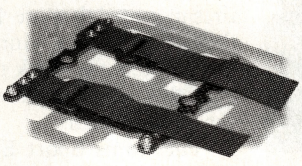

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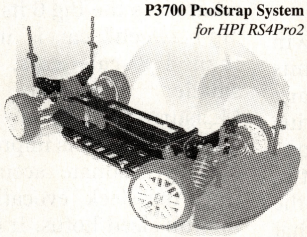

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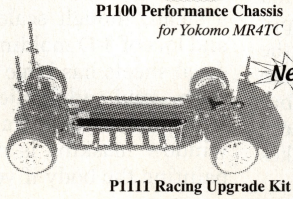

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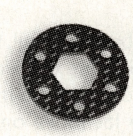

P5700 Performance Brake Disc
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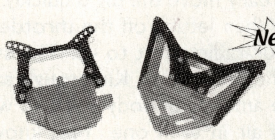

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Two F1 fanatics build their R/C dream machines!

By John Howell

Anytime you go to a big Tamiya event you can expect to see something special. Sometimes a person will work extra hard on detailing their car to help make it stand out from the rest of the crowd.



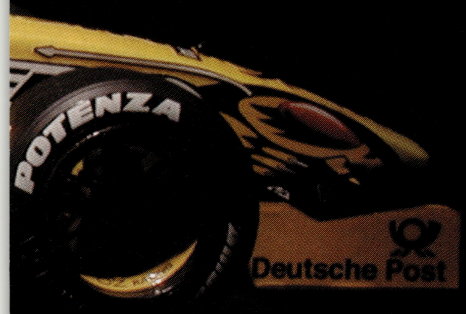








When I went down to the Tamiya Nationals this year, I expected, as I always do, to see some stunning scale replica cars. I was not disappointed. As I headed down there I thought to myself that there might even be some cool-looking F1 cars racing, since the United States Grand Prix was right around the corner. You see, I'm a huge fan of Formula One racing, so when I arrived and met the pair of local racers Chad Geissler and his friend Dan Carratturo, I was blown away with what I saw. Chad and Dan had worked very hard to recreate the two Jordan F1 cars that were competing in this years F1 circuit—no small task, since Tamiya doesn't offer a Jordan kit! But that wasn't all. "You should see the others," Chad exclaimed. After looking at the two Jordans in front of me, I knew that I had to get these guys in the photo studio. F1 fanatics—take a look at some of the most stunning F1 replicas this side of the real thing!



Chad's Jordan





Yes, this really is Eddie Irvine's helmet from the '99 season...hey, we told you these guys are hardcore F1 fanatics!



Dan's Sauber

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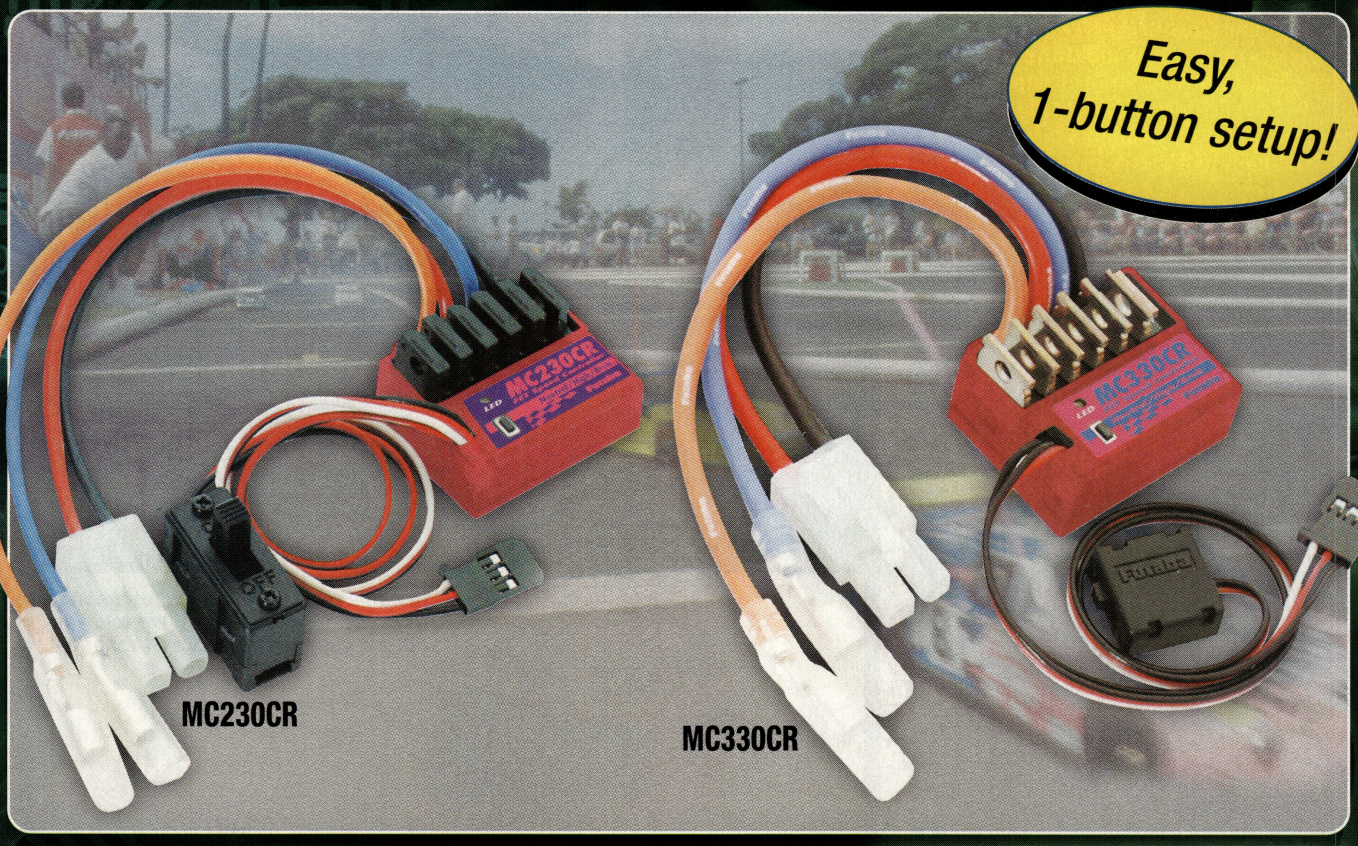

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Conquers F1 America!



Profile: Chad Geissler

Title: Chief Aerodynamicist
Job title: Art director for an automotive company
Hometown: Long Beach, California
Age: 27
Other hobbies: Golf, mountain biking, computer animation, video games

R/C Car: *When did you get interested in F1?*

Chad: I've always been a huge fan—I started getting into it in the '80s when guys like Nigel Mansel and Ayrton Senna were on top. Me and my friends have Formula-One parties at four in the morning to watch races live from around the world. Let's just say that I find it more intriguing than watching a bunch of rednecks turn left all day...

R/C Car: *What is it about F1 that you like so much?*

Chad: First off, the cars are absolutely beautiful—they're rolling works of art. I also like the speed, of course, and the fact that you have to be in the top two percent of race car drivers to be successful in this form of racing. Not to bag on other forms of racing, but when you're dealing with a car that has over 800 horsepower and it weighs only 1300 pounds including the driver, you're at a whole new level of driving.

R/C Car: *How did you get into R/C?*

Chad: When I was a kid I grew up in an area that had some dirt lots and open areas, and one Christmas I got a Tamiya Frog. It was a blast! But eventually I started playing sports, and I got out of R/C for awhile. About a year ago me and my friend Dan were looking to get into a new hobby, so we went to Gyro Hobbies. While we were there we saw some Tamiya TG-10s and said to ourselves, "they're only $140, lets go for it." Little did we know what we were getting into. But once I got out there I was hooked! We went to the Tamiya track and met a lot of cool people. It was there that I saw people running their F1 cars, and I knew I had to get one. It's nice—I'm 6'2", 260 pounds and will never have a chance to get into an F1 car, so this is a nice scale way to do it!

R/C Car: *How did you come up with building all these replicas?*

Chad: I've always liked to be different—I didn't want to have the same kit as everyone else. When you went to the track there were either nine McLarens or nine Ferraris since Tamiya didn't have any licensing for other contemporary teams. I started by working on touring car bodies first, then learned some tricks to apply over to our F1.

R/C Car: *Very cool—is there anyone you'd like to thank?*

Chad: Absolutely—I'd like to thank all the F1 guys at Tamiya for teaching me how to drive these things!



Profile: Dan Carratturo

Title: Chief Engineer
Job title: ICU/Trauma Nurse
Hometown: Laguna Hills, California
Age: 30
Other hobbies: Mountain biking, the "real F1"

R/C Car: *How long have you been involved in the R/C hobby?*

Dan: I started out when I was a little kid, when I was around 10 or 12, and I did it for a couple of years for fun, then somehow got out of it. I started back up again two years ago—Chad and I were at a restaurant one day and they had some Tamiya cars on display. We said we just had to get them and we were hooked! We've been best friends since high school, for the past 12 to 14 years—we've always done stuff together, so this was the next step.

R/C Car: *How long have you been into the real F1?*

Dan: Somewhere around eight to 10 years now.

R/C Car: *What is it about F1 that you like so much?*

Dan: The speed and technology are absolutely amazing!

R/C Car: *Chad mentioned you went to the Indy U.S. GP recently—how was it?*

Dan: The race was unbelievable! There is no comparison with any other form of racing—it's a whole new game. The sound, the acceleration, it's ridiculous! The first day of practice the stands were packed—at this point, no one had heard a modern F1 car here in the States. When the first car started its engine and hit the track, a Jordan, I think, the people in the stands went absolutely nuts!

R/C Car: *What are your primary "team" duties?*

Dan: I'm the machine shop guy—I fabricate the TV wings, the rear view mirrors...all the authentic stuff. I also build the chassis. If Chad builds his, I'll take it and tweak the suspension for him to make sure the car is set up just right.

R/C Car: *So who's the better driver?*

Dan: I'll leave it at who you ask...

R/C Car: *Favorite F1 Team?*

Dan: Ferrari or Jordan. Ferrari just because of their heritage, and Jordan just because I think Eddie Jordan (team owner) is cool. He has a really progressive team, yet still likes to have fun.

R/C Car: *Anyone out there you'd like to thank?*

Dan: Sure—all the local guys at the Tamiya track really helped both of us set up our cars and I'd also like to thank the guys at Gyro Hobbies for helping us along while we were getting started.

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Cincinnati, OH 54243
(513) 271-6858

Savon Hobbies
P.O. Box Box 421220
Miami, FL 33242
(305) 634-8959, fax (305) 634-3950

SEI Racing
145 N. Sierra Madre Blvd. #10
Pasadena, CA 91107
(626) 577-8004; fax (626) 577-8084

Serpent USA
2830 NW 79th Ave.
Miami, FL 33122
(305) 639-9665, fax (305) 639-9658

Schumacher USA
6302 Benjamin Rd., Ste. 404
Tampa, FL 33634
(813) 889-9691 (813) 889-9593

Tamiya America Inc.
2 Orion; Aliso Viejo, CA 92656
(800) TAMIYA-A, fax (949) 362-2250

Team Associated
3585 Cadillac Ave.
Coasta Mesa, CA 92626
(714) 850-9342, fax (714) 850-1744

Team Losi
13848 Magnolia Ave.
Chino, CA 91710
(909) 465-9400, fax (909) 590-1496

Team Orion
22601 La Palma
Yorba Linda, CA 92877
(714) 694-2812; fax (714) 694-2815

Tekin
940 Calle Negocio
San Clemente, CA 92673
(949) 498-9518, fax (949) 498-6339

Testor Corp.
620 Buckbee St.
Rockford, IL 61104
(815) 962-6654, fax (815) 962-7401

Thunder Tiger
distributed by ACE Hobbies (above)

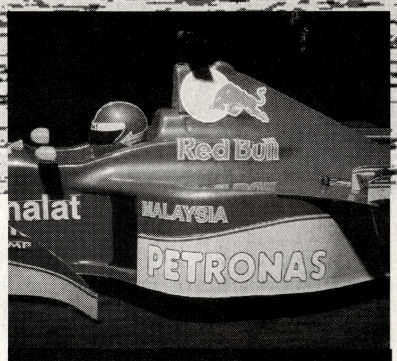
Traxxas Corp.
1210 Shiloh Rd.
#120 Dallas, TX 75228
(972) 613-3300 fax (972) 613-3599

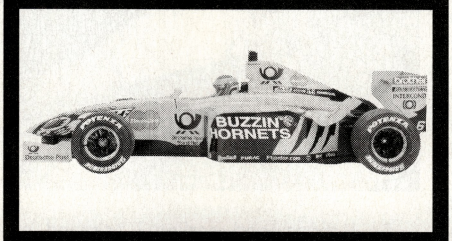
Trinity Products Inc.
36 Meridian Rd.
Edison, NJ 08820
(732) 635-1600, fax (732) 635-1640

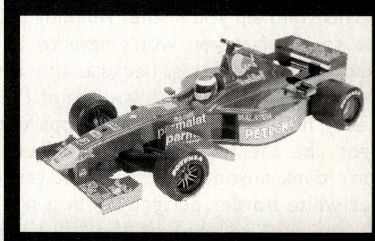
Yokomo
17951 Skypark Cir., Ste K
Irvine, CA 92614
(949) 252-8663, fax (949) 252-8657

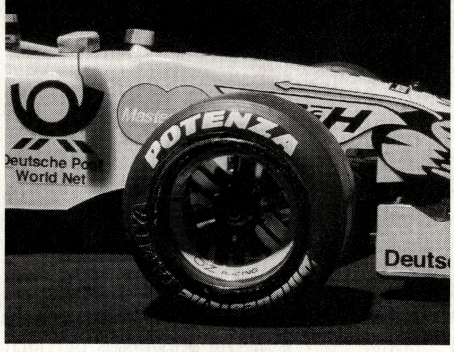
F1 Conquers America!













DOING UP DEAD-AIM DECALS! Just how Chad does it...

• The first thing I can't begin to express enough is the importance of thorough research when trying to recreate your favorite race car. An extra hour of research will save you four or five hours on the back end of your project. The more photos you have, the quicker you'll be able to get your car to the track. Six photos usually won't cut it if you plan to do it the way I did. If you are piecing the car together from left-over sticker kits and you just want something close, six 3/4-view shots will do fine for placement references. If you're going to get dirty and recreate the logos you better have a lot of straight-on shots of the sides, top, front and back of the car. Every race team changes sponsorship on a race-to-race basis. Knowing this before you begin can make your project go a lot smoother. With the research on the Jordan and Sauber projects, I accrued six hundred megs of digital photos and countless pages of print material, all in hopes of creating the most accurate recreations. In doing this I was able to create four different front wing livery sets, and several different side pod combinations for the Jordan, not including the Tobacco sponsorship versus Buzzing Hornets versions.

Unless you buy a pre-fabricated kit from a manufacturer like Tamiya (in my opinion, the hands-down best company at accurately recreating and detailing F1 bodies) you will never be able to achieve a 100-percent accurate reproduction, but you can get close. Most F1 gurus are going to point out that the Jordan is actually the Tamiya McLaren Mercedes MP4/13 body set and the Sauber is the Williams FW18. This is the biggest handicap you are going to face in any F1 R/C project you start. Unless you can sculpt like nobody's business and have your own vacuum forming machine, then you're stuck with the two, excuse me, one contemporary high-nosed F1 body (the MP4/13 has been discontinued). If you can sculpt and have a vacuum form machine, you can stop reading now, because you don't need any help from me. Since I can sculpt but can't afford the vacuum form, the cancellation of the MP3/14 is a bummer because I have found that it is a close body match to the Jaguar, Arrows, and Minardi cars. Do me a favor; if you readers are out and about in your neck of the woods and you happen to see one of these elusive bodies on your hobby shop shelf, pick it up for me; the check's in the mail. This is the only place I will sacrifice accuracy in my recreations, simply because it is out of my hands. Once you have gathered a bazillion photos of your car (give or take three photos) you're ready to start.

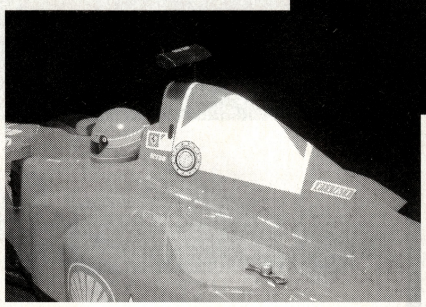
My background as an Art Director for an automotive company was an immense help but not a necessity. With a little diligence and a scanner at Kinkos (for print material only) you should have no problem with your project. When scanning photos, always remember the higher the DPI (dots per inch) the bigger the file, but the better the print. For good reproductions 300 dpi should be your minimum resolution. I scanned most of my photos at 600 dpi because I wanted to take my logos a bit farther, but we'll get into that later. Scan your photos into a program like Paint Shop Pro (PC) or the king of all digital programs, PhotoShop 5. Here you can adjust the scale, the hue and saturation and touch up any blemishes in the scan. You don't need to remove the rest of the photo around the scanned logo (that's why God made





Conquers F1 America!



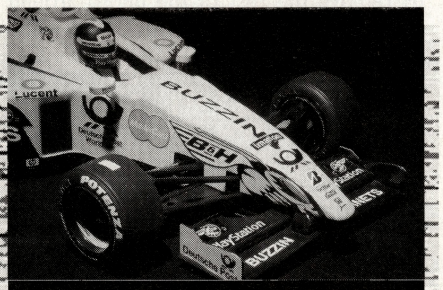


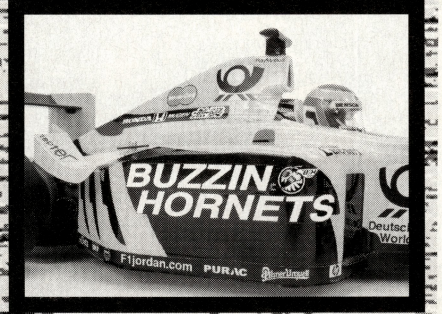


scissors) but it will make a world of difference if you digitally clean up the photos and back the image with a color as close as you can get to the paint you are using.

This will help you in the trimming phase due to the fact you won't have to be as exact in your cutting, because the background color blends with your paint. Pretty sneaky, huh? It really becomes apparent in logos like the Red Bull on the Sauber. I don't think anyone on the planet can cut that white border perfectly with a pair of scissors, so I just backed the logo with a shade of blue that was close to my paint choice. If you can trim that good, once again stop reading now, because you're wasting your time.

Your next hurdle is paper. There are hundreds of papers to choose from. I prefer adhesive backed glossy paper that works with my Epson Photo 1200 ink jet printer. Believe it or not, every logo on the car was printed on a desktop ink jet printer. The best paper I have found is a little hard to come by because I have only found it in 36" wide rolls used for digital plotters (we had one at my old job, that's how I found the paper) but any paper will do. I have friends who print their logos on regular non adhesive glossy paper and use clear packing tape to adhere it to the body and it looks fine. Here is where you ask yourself, "How realistic do I want this to be?" I haven't experimented with spray adhesives in this context but from past experiences it can be very messy if you don't know what you're doing and I can't vouch for its long term adhesive properties.





As I mentioned earlier, I scanned my images at 600 dpi because I imported them into Illustrator and re-drew every logo. Some of you may not know the difference between Photoshop and Illustrator, so let me give you a quick lesson. For those of you who already know, bear with me. Photoshop is a bit-map-based drawing program. An image created in a bit map program is composed of dots or pixels. These images tend to be softer and more "painterly." Images in Photoshop are resolution dependent meaning the higher the dpi or the dots/pixels per inch the better the image looks. Here is another reason I redrew all the logos. Remember the 600 megs of digital references? 99.9 percent of those images came from the web. Most web images are 72 dpi. See where I'm going here? 72 dpi is perfect for quick load times on a web page but horrible for printing. When you open a web image in Photoshop, consider yourself lucky if it comes out more than one inch square. If you scale it up all you get is an ugly bunch of dots. Illustrator, however, is an object-oriented or vector based program. This means that images are composed of separate, distinct objects that are mathematically defined. Because of this, an Illustrator image can be re-colored, resized and reshaped without affecting its smoothness or sharpness. Illustrator images are resolution independent so they look the same printed at 72 or 600 dpi and can be scaled to any size. So with that said, I imported all my images into Illustrator and drew the logos using a combination of lines and shapes. All this totaled about 20 hours of work for the Jordan and 15-plus hours for the Sauber. A lot of work and a lot of sleepless nights, but well worth it in the final product. As with any model, scale is very important as is color choice.

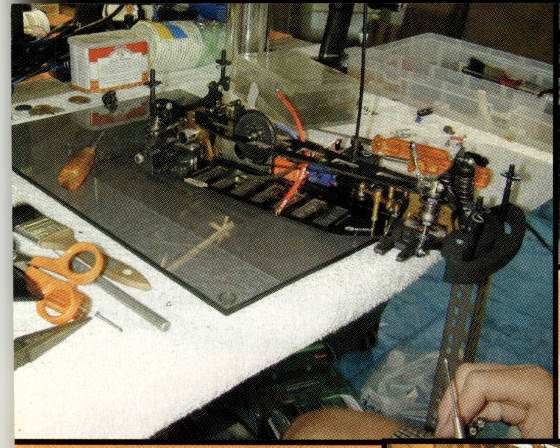
Nothing will destroy your hard work faster that colors that are wrong and logos that are way off in scale. If you're doing a Jaguar F1, take the time to make the Jaguar on the air box the right size and make sure you find a close Pearlesent emerald green; don't make it teal. If you've spent this much time researching and scanning, don't blow it with simple mistakes.

After I printed the logos I found a little trick to really make the decals pop. The first car I recreated was Rickard Rydell's Volvo S40 (long before the CEN body kit) for my Tamiya TG10 Nitro car. All the logos were created the same way except for one major hurdle. Any moisture on your decals will lift the ink and make it run. Nitro cars are some of the messiest things on the planet so I needed to find a way to seal them. After many different experiments I found that Krylon Crystal Clear Acrylic Coating (available at any hardware store) worked the best. This stuff is basically spray plastic. Your first coats should be very light mists to just hold the ink. Remember that "too much moisture" thing when spraying your first coats. Gradually build up the layers until you have a good even coat. I found that six or seven fine coats can protect your decals from nitro fuel and other un-decal friendly solvents. In fact, my S40 body wore out before the decals did.

With some practice and a lot of patience, you'll soon be showing up at your local track with some of the best bodies on the block. Oh, yeah; the first time you flip it, try not to cry. It's pretty embarrassing in front of your racing buddies, and besides, that's why you printed out two sets—right?

Chad Geissler ◆


ROAR NATIONAL CHAMPION IN IT'S FIRST OUTTING
XXX
IFMAR WORLD CHAMPION & ROAR NATIONAL CHAMPION
WORLDS EDITION XX4
IFMAR WORLD CHAMPION
TEAMLOSI XXX
WINS WINTER CHAMPS IN FIRST OUTTING
XXX NTC
2000 NORRCA NATIONAL CHAMPION WITH PRODUCTION PROTOTYPE
TEAMLOSI
Always Racing Towards The Future.





A former World Champ and the designer of Associated's TC3, Cliff Lett made a rare driving appearance at Yatabe. Three TC3s made the A-main (unfortunately, Cliff's wasn't among them). It was good to see Cliff with a radio in his hands!

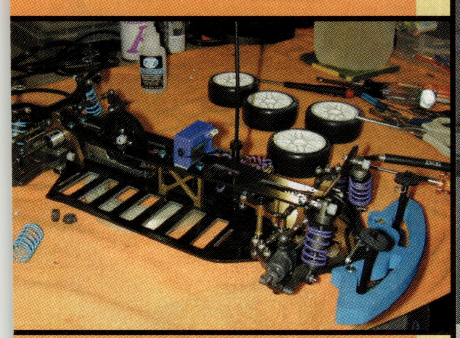


The huge Yatabe Arena facility offered plenty of indoor pit space. Team Tamiya (foreground) made a huge effort at the Worlds with their new TA04.

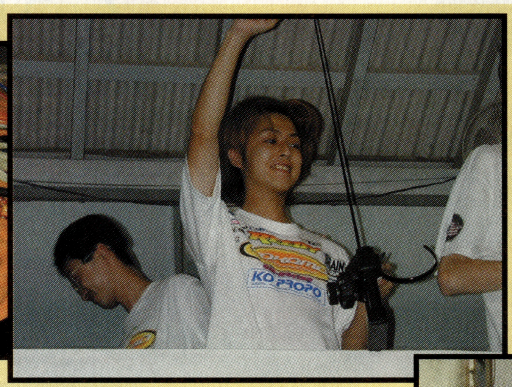
And it is perhaps the most difficult task in all of R/C racing to win the IFMAR On Road World Championships, as the speeds are high, the competition from the international field fierce, and the track challenging and more narrow than the tape measure would suggest. Held once every two years, the 2000 On-Road Worlds were held in Tsukuba City, Japan, at the famous Yatabe Arena. You may remember the Yatabe as the host of the '95 off-road worlds. The facility must surely rank among the best in the world, with an outdoor 1/12-scale track and a huge asphalt road course and dirt off-road track contained within a large metal structure with a roof that can open to let the sunshine in or close to keep inclement weather out. The indoor asphalt track was used for all three classes at the Worlds—1/12- and 1/10-scale pan-car (called Pro 10) and 1/10 touring—although the layout was changed for each class so no driver would have an advantage.

IFMAR ON-ROAD WORLD CHAMPIONSHIPS 2000

Perfection. Concentration. Preparation. These words describe what it takes to become a top driver. To win a world championship is an accomplishment only the best of the best may achieve.



Team Losi's radical new Street Weapon II uses a single drive belt. The Losi team used the Worlds as a shakedown run for this all-new design.



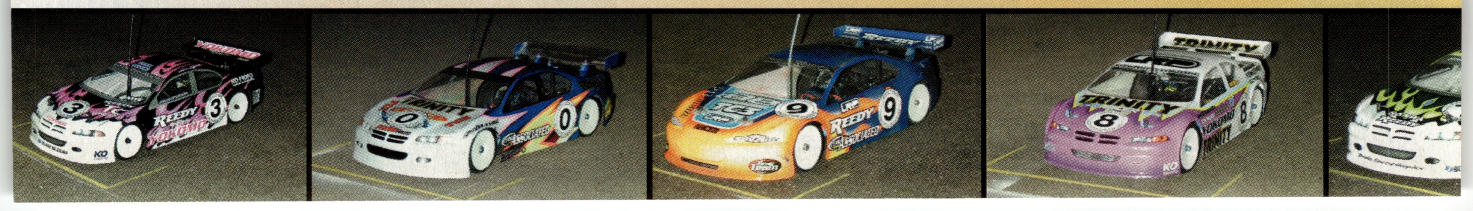
Atsushi Hara immediately following his victory in the ISTC class. Hara is Masami's teammate at Yokomo. This was his first-ever worlds title.



This is the look of a guy who could've won the Worlds for Associated. Questionable driving tactics by the Japanese Yokomo drivers Hara and Hirosaka kept Mark Pavidis relegated to second place.



Trinity CEO Ernie Provetti still attends the big races. Ernie has put together quite a stable of drivers, including former World Champ David Spashett and on-road legends Mike Blackstock and Josh Cyrul. Too bad the Magic Man retired.

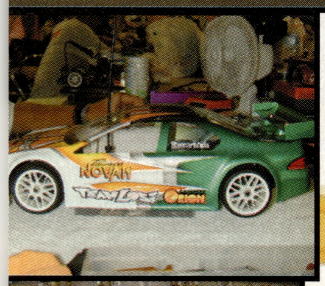


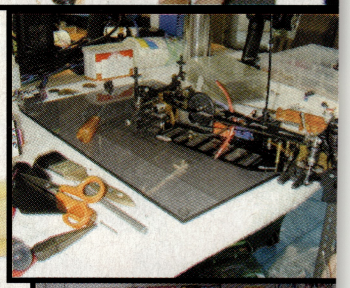


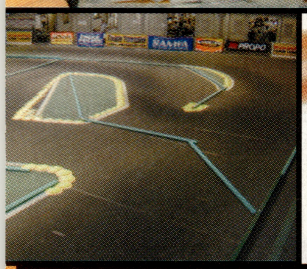
Masami Hirosaka picked up two more IFMAR titles, making him the winningest driver in history.

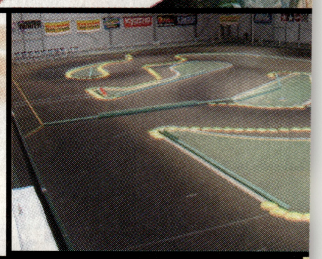


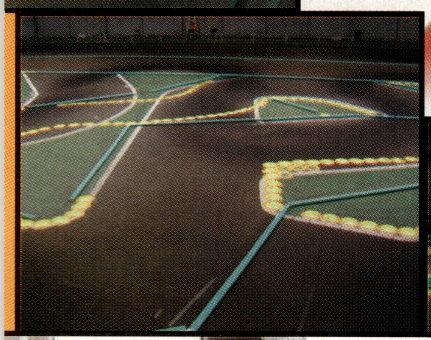
Two for Masami, three for Reedy, and an "almost" for Pavidis!



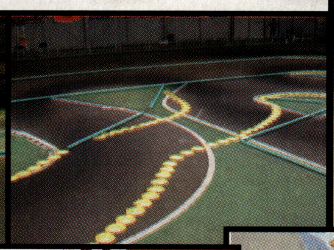


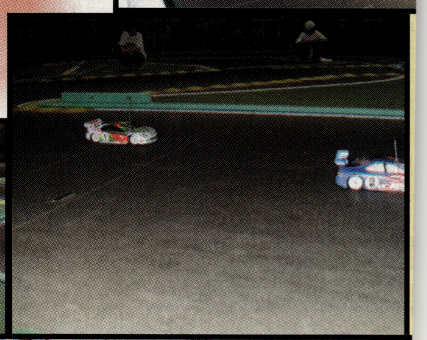
















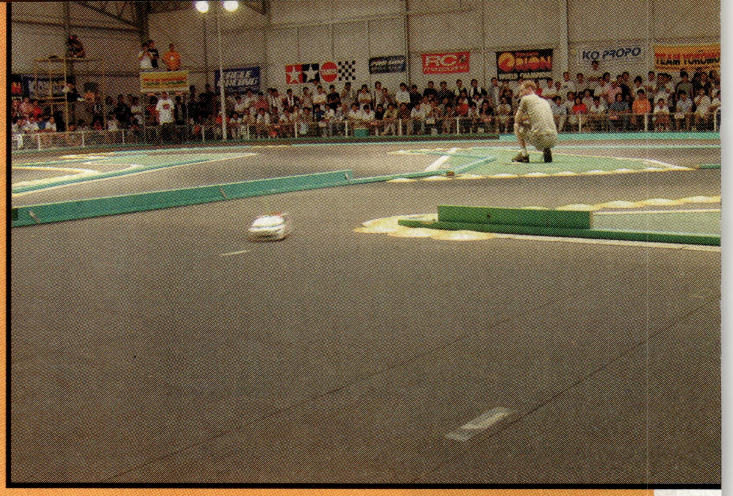
David Spashett's runner-up Trinity Switchblade 12.



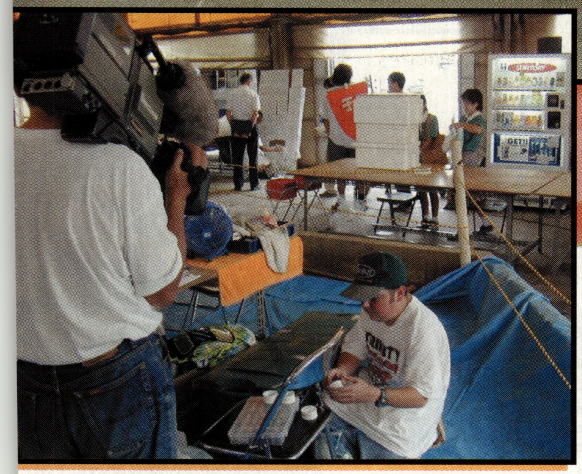
Masami Hirosaka's winning Team Associated 12L3. Masami used Reedy motors and batteries and a special Yokomo chassis that was more flexible and positioned the batteries laterally.







Yatabe provided plenty of space for spectators.



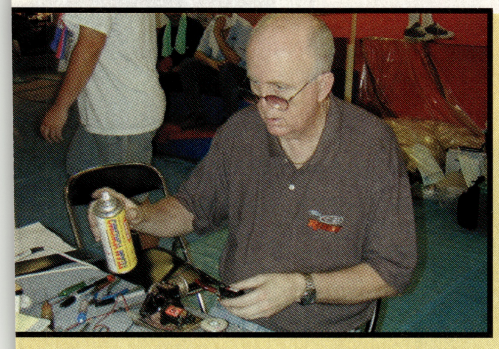
BK on Japanese TV.

Speaking of advantages...

To make the race fair for foreign drivers, the Yatabe track was closed for the week leading up to the Worlds, and the organizers made new layouts for all three classes. However, it was already determined before the race that the "home team" Japanese drivers would enjoy a significant advantage. After all, the Yatabe Arena track is open for practice and racing seven days a week! The layouts would be different, but learning the track surface is a vital step in chassis tuning and tire selection.

A truly international affair

Despite this apparent disadvantage, drivers from 15 different countries signed up. Represented at the Worlds were Japan, USA, England, Finland, Germany, South Africa, Australia, Switzerland, Austria, Holland, France, Hong Kong, Korea, Sweden and Spain. If the number of entries per class can be taken as an indication of the popularity of each segment worldwide, then it's obvious that the touring class is by far the most popular on-road category, as there were 113 entries. Each of the pan-car classes received scarcely half as many.



Score three more for Reedy. Reedy Modifieds have won an unprecedented 23 World Championships. Mike brought along his own portable air conditioner to deal with the oppressive heat and humidity.

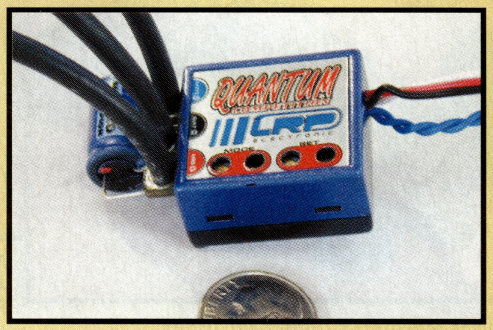
Pro10 Class

The flowing track design seemed to be perfect for the super-fast Pro10 cars. Most of the cars were equipped with 3000MAh cells and ultra-low-turn motors (in the seven- to eight-turn range). Needless to say, these cars were scary-fast with speeds in excess of 60mph on the straightaway. Some drivers had trouble making the four-minute run time, and if you do the math, this equates to an average current draw of 45 amps! Talk about motor and battery wear!

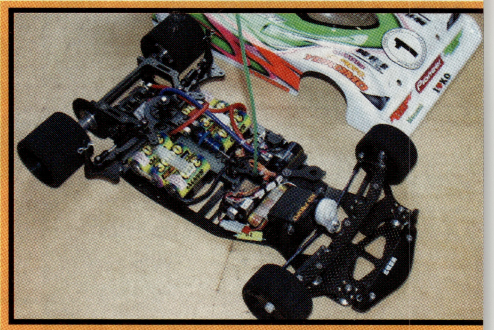
• **Practice:** The track didn't provide very much traction in the beginning. It seemed that the track hadn't been cleaned well enough as it had taken nearly four rounds of T-Time practice until traction was acceptable. This changing condition certainly didn't help the foreign drivers as they struggled to set their cars properly.



Frenzy in the pits as drivers search for that elusive A-main setup.

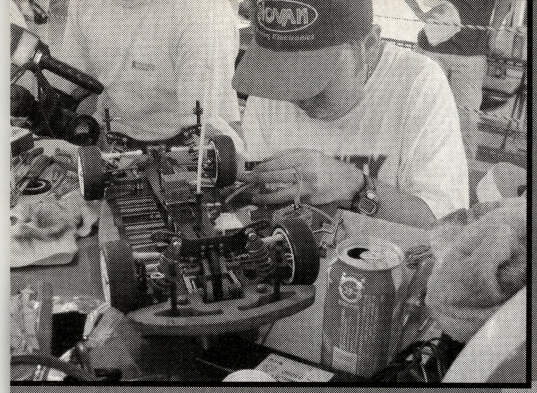


LRP's new Quantum micro-ESC was used in several top drivers' cars, including Mark Pavidis' and Billy Easton's TC3s



Masami's winning Yokomo YRX-2000

IFMAR ON-ROAD WORLD CHAMPIONSHIPS 2000



Rick Howhart, Jason Ruona, Greg Hodapp and Gil Losi Jr. make their way to the large Yatabe Arena structure. The Arena's roof can be opened during good weather.

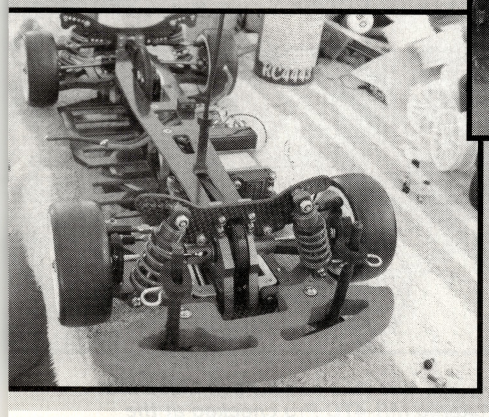




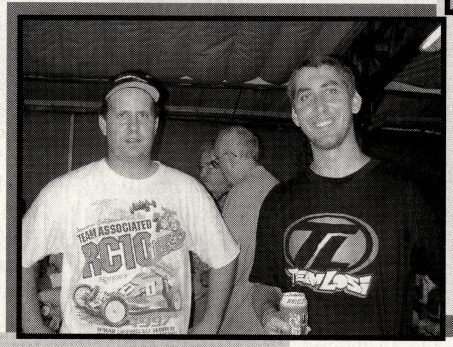
A neat feature at the Worlds was this vendors' area in which manufacturers could display their newest products.



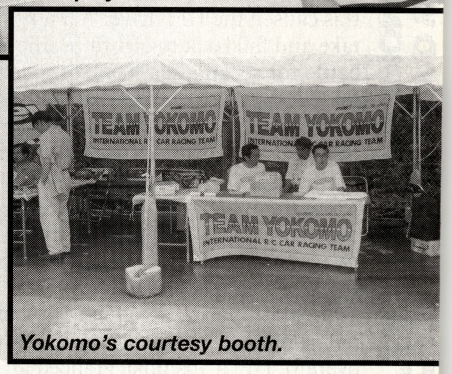
HPI's display booth.



Another look at Losi's new sedan.



Friends off the track. Mark Pavidis (left) and Gil Losi Jr.



Yokomo's courtesy booth.



osho's Mini-Z display

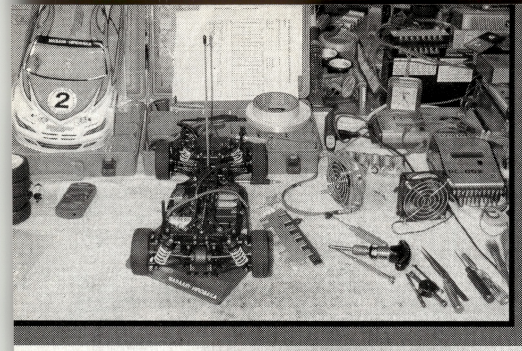


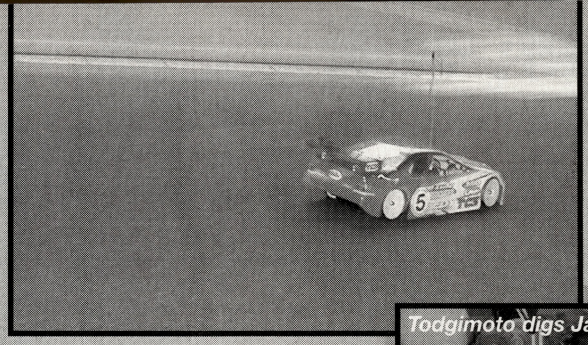
Current 4WD off-road World Champion Jukka Steenari from Finland talks sedan setup with Gil Losi Jr.

Many drivers complained about this matter. As expected, the Yokomo drivers looked very strong from the beginning, and it was easy to see that they knew what they were doing, and that they had tested a lot before the World's. So, it was Masami Hirosaka, Hideo Kitazawa, Atsushi Hara and Barry Baker who were fast during controlled practice. Two Japanese HPI drivers, Daisuke Yoshioka and Masayuki Murai, also did well and showed that they too had done their homework.

• **Qualifying**: Masami Hirosaka had an outstanding qualifying performance by TQ'ing each of the six rounds; he would certainly be the strongest contender for the title. Daisuke Yoshioka was doing great and showed that he could be one of the next drivers who could follow in Masami's footsteps. Daisuke was second, followed by Hideo Kitazawa. Barry Baker, as the fastest foreign driver, was in fourth position.

But where did all the European drivers end up? Where was current World Champion David Spashett or his teammate and current European Champion Andrew Moore? They all struggled with their setups in the beginning, found their car setups too late and found themselves in unusual positions: Moore was an unlucky 11th-on pole-position in the B-final, and Spashett was down in 16th position! The IFMAR qualifying rule where four out of six





Masami's Yokomo MR-4TC Pro, caught in the pits.

rounds count certainly didn't help the foreign drivers' performance.

• **Finals**: At the start of the first A-final, Masami essentially pulled a holeshot and checked out with his Reedy-powered Yokomo YRX-2000. Yoshioka followed in second, with Kitazawa and Hara in tow; an order that remained until the four-minute mark.

In the second A-final, Masami again grabbed the early lead, but this time Yoshioka attacked early. Unfortunately, this caused the HPI driver to make a mistake and fall back to eighth position. The battle for second had heated up between USA's Barry Baker and Japan's Kitazawa. Baker made the pass at the two-minute thirty-second mark. Kitazawa then had to fend off a hard-charging Chris Tosolini, which he did successfully to maintain his third-place position. With two wins, Masami had already become the Pro 10 world champion.

In the final race (which Masami did not contest, as he had already won the overall), HPI's Yoshioka grabbed an early lead and never looked back. He would cross the line first ahead of Kitazawa, Baker and Tosolini.

Masami Hirosaka won another IFMAR World title and showed that he has the same appetite for the title as he had 10 years ago! Daisuke Yoshioka drove impressively, especially when you consider that this was his second world championship race. He clinched the runner up spot for HPI, Team Orion and LRP. Hirosaka's Yokomo teammate Hideo Kitazawa would claim the final podium position.

1/12-scale

Before the start of practice, there were heated discussions as to whether or not the track should be changed to the originally planned layout to give the foreign drivers a fair chance, since there would be good traction from the beginning. To enact a change, however, all of the countries would have to agree, but since Japan was against the change, the track was built as originally planned. The track seemed to be very large for the four-cell powered 1/12-scale cars, but it had a challenging infield with fast, but difficult sections. The foreign team managers asked the organizers to clean the track better than it was done in Pro10 to give all drivers a fair chance. As a result, traction was a lot better than it had been in Pro10.

• **Practice**: As expected, Hirosaka looked strong, but this time the current World Champion, David Spashett from England, also found a good setup for his Trinity Switchblade car and ran good lap times. Other fast guys were mainly from Japan, such as young Takuya Ito, Hideo Kitazawa and Daisuke Yoshioka.

• **Qualifying**: Another pole-position for Masami Hirosaka, but this time it looked a lot closer than in Pro10. David Spashett was in much better form this time and qualified right behind Masami.

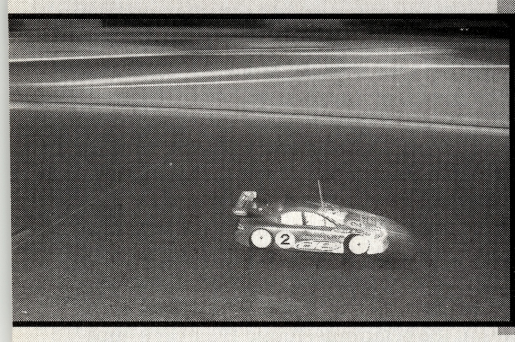


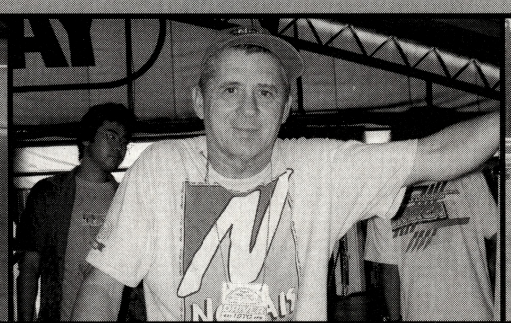


Masaki Hirosaka has his son Masami's Yokomo MR-4TC Pro checked at the tech table.



Scott "Squirrel" Hughes.





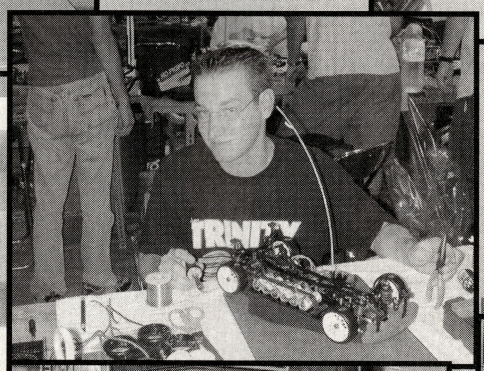


Bob Novak from Novak Electronics sweats in the humid Japanese weather.



Gil Losi Jr. is Cliff Lett's counterpart at Losi. Like Cliff, Junior also came out of "retirement" to race at Yatabe.





What's the Dirtinator doing at an on-road race? He may have won all his titles off-road, but Kinwald is also a competitive sedan driver.

Team Losi/Trinity now employs the services of Jason Ruona. Jason is helping in the development of the new Losi sedan.





Sightseeing: the Losi crew take in the local scenery.

Kitazawa kept his good performance from Pro10 and was in third, followed by British driver Andrew Moore.

• **Finals**: Masami had taken the lead at the start of the first A-final, but made a rare mistake in turn two to allow Spashett to go by. Masami's bad fortune allowed Trinity driver Takuya Ito up into the second position; however, a fierce battle between Ito and Yoshioka allowed the hard-charging Masami to pass both drivers! With one minute to go (the 1/12 class runs for eight minutes), Spashett became tangled with a lapped car and lost much of his lead. Masami made a great charge, but Spashett held on to win by 0.15 seconds! In the second A-final, Masami holeshotted to the lead to leave Kitazawa and Spashett to battle for second. The two cars tangled frequently; however, Spashett managed to get by the Japanese driver and give chase to Masami. Spashett did manage to close the distance to the leader, but the clock ran out before he could get within striking distance. The 1/12-scale title would go down to the third and final race. Masami would win this one from pole-to-pole to gain his second World Championship title of the event. Spashett tried a little too hard to catch Masami and found himself back in eighth; however, brilliant driving allowed Spashett to carve through the field and make it to the runner-up spot.

ISTC class

Now it was time for the big event that everybody was waiting for. The entry list was a real "who's who" of R/C! There were seven former (and current) world champions competing in this class: Gil Losi jr., Cliff Lett, Mark Pavidis, Brian Kinwald, Jukka Steenari, David Spashett and, last but not least, Masami Hirosaka.

• **Practice:** All of the drivers had five rounds of T-Time practice on Thursday and two rounds of controlled practice on Friday morning to get used to the Yokomo 138GW controlled tires—and the unique track. The Japanese drivers looked good from the beginning, and it was easy to see that they practiced a lot before the World's and that they had a rather big "home track" advantage. The Associated team looked very strong and showed that they had also done their homework. Masami demonstrated early in practice that he was able to pull off a 19-lap run. Only five other drivers could go his pace for the extra-lap in the timed controlled practice, one of whom was European driver Reto Konig with his HPI RS4 Pro 2.





Former national champ David Jun drove Tamiya's new TA04 touring car. This was Tamiya's most serious effort at an IFMAR event to date.

• **Qualifying:** Masami Hirosaka set his Yokomo car on pole position followed by Mark Pavidis' Associated TC3. The next Yokomo was that of Masami's teammate Atsushi Hara in third, with the fastest HPI RS4 Pro 2 of Daisuke Yoshioka in fourth. The gaps between the positions were very close, and many famous drivers qualified in unusual positions. Drivers who would normally be in the A-final, such as Baker, Cyrul, Orr, Kinwald and Spashett, found themselves in lower finals! The drivers in positions tenth through 12th were tied on points. Mike Blackstock was the lucky tenth and Jukka Steenari, as the fastest of the new Losi cars, was on pole in the B-final. He missed the A-final by only 0.02 seconds!

• **Finals:** Masami got the lead from the start. Hara touched the rear of the Pavidis' car in a not-so-gentle fashion to send Mark off the track and into dead

last. Masami maintained his lead to cross the finish line first, with Hara and Britain's Craig Drescher (driving another TC3) in third. Pavidis salvaged some of his race by charging all way up to fourth.

In the second A-final, Masami once again got the holeshot but this time Pavidis was cleanly in second. Halfway into the race, Pavidis was all over the back of Masami's car trying to find a way around. Even with the speed of these eight-turn-powered cars, the two were merely inches apart! At the two-minute point, Pavidis finally found his way past Masami to take the lead. Masami almost immediately put a harsh move on Pavidis going onto the straight and put Mark into the barriers. Hara was able to go through from third to first, with Masami in second. The referees obviously agreed with the crowd, and issued a stop-and-go penalty to Masami for rough driving. With this, Pavidis was able to cut through the field to gain second position. In the very last corner, Hara got a little loose and Pavidis would make the pass to take the win. The crowd was on its feet for this one!

Going into the third and final race, there were four drivers who could mathematically win: Masami, Pavidis, Hara and Drescher. Again, Masami got the lead from the start, with Pavidis again all over his rear bumper. Pavidis looked to be the faster of the two, but Masami's precise driving afforded no clean way to pass. At the 3:30 mark, Pavidis tried to get by Masami but the two cars touched, with Pavidis spinning and dropping back to fourth and Masami retaining the lead. With just one minute to go, Masami made a rare mistake to allow teammate Hara to gain the lead and possibly his first world title. On the last lap, both Hara and Hirosaka begin to dump. Pavidis charged by Masami but couldn't quite catch Hara, whose car just crawled past the finish line!

Atsushi Hara won the ISTC Class and certainly deserved his first title. Unlucky Mark Pavidis finished second. He was certainly the fastest driver in the ISTC Class. Masami Hirosaka took the last place on the podium by finishing third. ◆

NOSRAM's new Dominator ESC.

The world's best sedan drivers pose with the Yokomo girls.

Team HPI/LRP/Orion.

The top ten 1/12-scale drivers on the podium.

The top ten Pro 10 drivers on the podium.

TECH-CHART Pro10:

	Name	Car	Motor	Ratio	Batteries	ESC	Receiver	Body	Sponsors
1	Masami Hirosaka	Yokomo YRX-2000	Reedy Fury 8x3	27.8	Yokomo RC-3000H	GMV12 WE	KO 297	Protoform Peugeot	Yokomo, Reedy, GM, KO, Pioneer, Jaco, Team Suzuki
2	Daisuke Yoshioka	HPI RS10-G	Orion Chrome 9x3	26.4	Orion RC-3000H	LRP Quantum Competition	LRP Phaser	Protoform Peugeot	HPI, Orion, LRP, Sanwa, Takashima Design
3	Hideo Kitazawa	Yokomo YRX-2000	Reedy Fury 8x3	27.5	Yokomo RC-3000H	GMV12 WE	Futaba 123	Protoform Peugeot	Yokomo, Reedy, GM, Futaba, Keyence, Team Suzuki
4	Barry Baker	Yokomo YRX-2000	Trinity P-3000	29.9	Trinity P-3000	Novak Cyclone TC	Novak	Protoform Peugeot	Yokomo, Trinity, Novak, TRC, Hudy, Airtronics
5	Atsushi Hara	Yokomo YRX-2000	Reedy Fury 8x3	27.8	Yokomo RC-3000H	GMV12 WE	KO 297	Protoform Peugeot	Yokomo, Reedy, GM, KO, BSG, Jaco, Protoform
6	Chris Tosolini	Yokomo YRX-2000	Reedy Fury 8x2	27.8	SMC RC-3000H	Nosram Dominator Power	LRP Phaser	Protoform Peugeot	Yokomo, SMC, Airtronics, Jaco, Nosram, Reedy
7	Mike Blackstock	Trinity Switchblade 10	TrinityD4 8x4	33.6	TrinityRC-3000H	Novak Cyclone	JR	Protoform Peugeot	Trinity, TRC, Novak, Lunsford, Protoform, JR
8	Masayuki Murai	HPI RS10-G	Orion Chrome 8x3	26.0	Orion RC-3000H	LRP Quantum Competition	LRP Phaser	Fukushima Bardon	HPI, Orion, LRP, KO, Hyakutake Design
9	Jon Orr	Trinity Switchblade 10	TrinityD5 8x4	31.7	TrinityP-3000	GMV12 WE	KO 297	Andy's Mercedes	Yokomo, TRC, Trinity, KO, GM, Andy's
10	Takuya Ito	Trinity Switchblade 10	TrinityD4 8x5	34.9	TrinityRC-3000H	Nosram Dominator Power	Sanwa	Protoform Peugeot	Kyosho, Trinity, Nosram

TECH-CHART 1/12th:

	Name	Car	Motor	Ratio	Batteries	ESC	Receiver	Body	Sponsors
1	Masami Hirosaka	Associated Yokomo 12-L3	Reedy Fury 10x2	35.4	Yokomo RC-3000H	GMV12 WE	KO 297	Andy's Mercedes	Yokomo, Reedy, GM, KO, Pioneer, Hudy, Associated
2	David Spashett	Trinity Switchblade 12	TrinityD4 10x4	38.4	Trinity RC-3000H	LRP Quantum Competition	KO 297	Andy's Mercedes	Trinity, TRC, LRP, KO
3	Daisuke Yoshioka	HPI RS12-G	Orion Chrome 11x2	39.3	OrionRC-3000H	LRP Quantum Competition	Sanwa	Andy's Mercedes	HPI, Orion, LRP, Sanwa, Takashima Design
4	Hideo Kitazawa	Associated Yokomo 12-L3	Reedy Fury 9x3	34.7	Yokomo RC-3000H	GMV12 WE	Futaba 123F	Andy's Mercedes	Yokomo, Reedy, GM, Futaba, Keyence, Team Suzuki
5	Masayuki Murai	HPI RS12-G	Orion Chrome 11x2	39.2	Orion RC-3000H	LRP Quantum Competition	LRP Phaser	Andy's Mercedes	HPI, Orion, LRP, KO, Hyakutake Design
6	Josh Cyrul	Trinity Switchblade 12	Trinity D5 10x5	38.6	Trinity RC-3000H	Novak Cyclone TC2	KO 297	Protoform Nissan	Trinity, TRC, Yokomo, Novak, KO
7	Andy Moore	Trinity Switchblade 12	TrinityD4 10x4	39.4	Trinity RC-3000H	LRP Quantum Competition	KO 297	Andy's Mercedes	Trinity, LRP, TRC, KO
8	Markus Mobers	Corally SP12-G3	Corally9x2	34.0	Corally RC-3000H	LRP Quantum Competition	LRP Phaser	Bud's Nissan	Corally, LRP, Momo, Carson
9	Takuya Ito	Trinity Switchblade 12	Trinity D4 10x2	37.1	Trinity RC-3000H	Nosram Dominator Power	Sanwa	Andy's Mercedes	Kyosho, Trinity, Nosram
10	Yutaka Takizawa	KawadaM300 RSR	Kawada MX5 10x5	38.1	EchoRC-3000H	M-troniks Prototype	Sanwa	Andy's Mercedes	Kawada, Sanwa, KCM, Echo

TECH-CHART ISTC:

	Name	Car	Motor	Ratio	Batteries	ESC	Receiver	Body	Sponsors
1	Atsushi Hara	YokomoMR4 TC-Pro	Reedy Fury 8x2 MW	21/78	Yokomo RC-3000H	GMV12 WE	KO 297	Yokomo Stratus	Yokomo, Reedy, KO, GM, BSG, Team, Suzuki, Andy's, Yatabe Arena
2	Mark Pavidis	Associated TC-3	Reedy Fury 8x2 MW	30/100	Reedy RC-3000H	LRP Quantum Competition	LRP Phaser	Protoform Stratus	Associated, Reedy, LRP, Proline, MIP, Airtronics
3	Masami Hirosaka	YokomoMR4 TC-Pro	Reedy Fury 8x2 MW	20/78	Yokomo RC-3000H	GMV12 WE	KO 297	Yokomo Stratus	Yokomo, Reedy, KO, GM, Pioneer, Hudy, Associated, Team Suzuki
4	Craig Drescher	Associated TC-3	Reedy Fury 8x3 MW	30/100	Reedy RC-3000H	LRP Quantum Competition	KO 297	Protoform Stratus	Associated, Reedy, LRP, KO, Proline, MIP, O'Sher
5	Daisuke Yoshioka	HPI RS4 Pro-2	Orion Chrome 8x2	29/122	Orion RC-3000H	LRP Quantum Competition	LRP Phaser	HPIStratus	HPI, Orion, LRP, Sanwa, Takashima Design
6	Billy Easton	Associated TC-3	Reedy Fury 8x3 MW	31/104	Reedy RC-3000H	LRP Quantum Competition	LRP Phaser	Protoform Stratus	Associated, Reedy, LRP, Proline, MIP, Airtronics
7	Hideo Kitazawa	YokomoMR4 TC-Pro	Reedy Fury 8x2 MW	21/78	Yokomo RC-3000H	GMV12 WE	Sanwa	Yokomo Stratus	Yokomo, Reedy, GM, Futaba, Team Suzuki
8	Shinnosuke Adachi	YokomoMR4 TC-Pro	Reedy Fury 8x2 MW	21/78	Yokomo RC-3000H	GMV12 WE	Sanwa	Yokomo Stratus	Yokomo, Reedy, Sanwa, Proline, Brain Speed Graphics, Yatabe Arena
9	Andrew Moore	YokomoMR4 TC-Pro	Trinity D4 8x4	22/78	Trinity RC-3000H	LRP Quantum Competition	KO 297	Yokomo Stratus	Trinity, KO, LRP, Yokomo, TRC
10	Mike Blackstock	Associated TC-3	Trinity D4 8x2	30/100	Trinity RC-3000H	Novak Cyclone TC	Novak	Protoform Stratus	Trinity, JR, Associated, TRC, Protoform, JS Bodies, Novak, Lunsford

TEAM LOSI TECH-TALK

Tech Tips #5

Shock tuning is one of the most asked about subjects in R/C racing. It would take a small book to relay all of the factors that come into play when working with your shocks but nothing beats experience. Your Team Losi owner's manual helps you assemble your buggy or truck with a good baseline set-up. The World Champion development team have spent a lot of time to find an optimized spring rate, dampening, and geometry. This means that you should find that, outside of some dampening adjustments to compensate for temperature, the model will work well on a wide variety of tracks and conditions. The first thing to consider in shock tuning is that it is easy to get lost! The experts will tell you that when in doubt go back to the kit set-up. Shock tuning is a combination of springs and dampening. Typically, spring changes are made less then 25% of the time.

Dampening is the most common shock tuning you will try. Simply put this is the dynamics of a given viscosity (weight) fluid traveling thru a given size hole or holes in the shock piston. Sounds almost too simple doesn't it? It really isn't all that difficult to understand and make good tuning decisions if you understand the following basics. To test the high speed dampening ("pack") of your model, hold it level about 12 inches above the bench and let it drop. As it contacts the bench the suspension should move between ? and ? of the total travel and smoothly return to its normal ride height. If it bottoms or rebounds beyond ride height it is probably under-dampened. This means that you need to change to a heavier (larger number) fluid or perhaps in a severe circumstance change to pistons with a smaller hole size (larger number). So if you were running 30 wt. fluid you should try 35 wt. Do your test again and notice the difference. If the model hits the bench like a ton of bricks with little deflection in the shocks you would be wise to try a lighter fluid like 25 wt. So what causes the need for a change in the shock fluid?

Temperature is the most common reason. Even though Team Losi's "Certified" shock fluid is made from the highest quality silicone base that is the least temperature sensitive, there are other factors that come into play. As the shock piston is moving up and down in the shock bore it is creating heat. The use of hard coatings and teflon pistons minimizes the friction of the piston but the "shear" effect of the fluid being forced through the holes in the piston will create heat. This heat is absorbed by the fluid and transferred to the shock body that in turn is cooled by the air passing around it. So as the air temperature rises the fluid and shock body can't dissipate the heat as well and the fluid becomes thinner as it gets hotter. The opposite is true as the air temperature gets cooler. Typically you want to try changing in 5wt. increments, from 30 to 35 to 40 etc. Team Losi does make "half weights" which allow for finer adjustments and at times eliminate the need to change pistons, as we will see later. These are 17.5, 22.5, 27.5, 32.5, and 37.5 weights. As we pointed out before, there is no substitute for experience.

The pros all carry notebooks with information from testing or races where particular conditions existed. You would be wise to do the same. The following suggestions are meant to give you a direction for your testing. Generally speaking, the fluid is to light (under dampened) when the chassis rolls over easily and /or bottoms out when landing jumps. The fluid is too heavy (over dampened) when the wheels tend to kick up over the bumps and there is a lack of rear squat under acceleration. This will also cause a loss of rear traction and prevent the chassis from leaning and transferring weight when entering a turn. Obviously every track is different and everyone's opinion of conditions will vary. High traction surfaces may require going one step stiffer with the springs. Heavier dampening will probably also be required. If the surface is also extremely bumpy try changing to a larger piston (example; #56 to #55) and heavier fluid to maintain the same static dampening. Slick track conditions usually require a slightly softer spring and less dampening. You may also want to try going to the next smaller (#55 to #56) piston as well. Changing the shock piston can have multiple effects.

Beside the rate at which the shock moves, "pack" or the resistance to sudden hard impact is changed. A larger piston in the rear tends to make the car "freer" on power and jump better but may bottom out easier on landings. A smaller piston/lighter fluid makes the car square up quicker with better grip exiting turns and helps it land jumps better. The down side is that this combination may not be as good on a choppy surface. As you can see, every thing is a compromise. What may be ideal at one track may not be suited for another. Remember the stock set-up? There's no place like home. Blue Spec Tires The response to the new Team Losi "Blue" Dirt-Spec tires has been overwhelming. With this sudden popularity has come a few questions and comments that you will no doubt find of value. In general, the racers around the country report that the "Blue" compound works well on both hard and soft tracks.

The general consensus is that due to the extended wear characteristics of this compound, the blue-specs take a few runs to break in and get maximum traction when running on a hard or high bite surface. Some racers have taken to running them on the street for a few minutes to do this as well. The foam used inside the Blue-Spec tires offer a slight tuning point. In general, if the track is relatively smooth, firm foam offers a little more grip. When the track is rutted or choppy, softer foam will help keep the tire in contact with the racing surface. It doesn't appear chemicals enhance the performance of these "spec" tires although many racers report trying. A few clubs have offered a "blue spec" class with excellent results. It seems clubs have welcomed the concept of a single design and compound tire that is easy to tech for their stock class with great results. We'll let you know more about this exciting concept as we learn more.

Best Wishes, Gary Kyes

ADVERTISEMENT







What it Takes To Make

Inside Ian Aquino's home-built Super Celica! By John Howell

I first met the affable pair of Ian Aquino and his girlfriend Jennifer David at the HPI World Challenge last year at Honda's headquarters in Torrance, California.

Ian had just won the concourse competition with a stunning NSX entry. Recently I ran into Ian and Jennifer again, this time at the Tamiya Nationals at Tamiya's Aliso Viejo facility. Ian was entered in the concourse competition, and to no one's surprise (especially mine), he took home top honors for his work with an out-of-this-world front-wheel drive Tamiya Toyota Celica. Ian puts a lot of time and effort into the fine details on his concourse-winning entries, and it shows! We joked at the Tamiya Nats about how he was becoming a sort of "concourse celebrity" thanks to the coverage in our magazine. Well, get ready for round two everyone, 'cause this car is gonna knock your socks off! I felt it would be best if Ian described in his own words the steps it took to build up his latest winner. Take it away, Ian!

From Idea to Reality

The idea was born when I saw a review in *R/C Car's* March 2000 issue about a new kit being produced by Tamiya, the FWD Toyota Celica 2000. Coincidentally, this was also the issue where the previous year's HPI Challenge was covered, which featured my winning NSX entry. After I saw the Celica, I said to myself, "I want to have that car." A month after, my girlfriend Jennifer decided on buying the real deal, which she actually did, and it was then that I concluded, "Now, I really need to have that car."

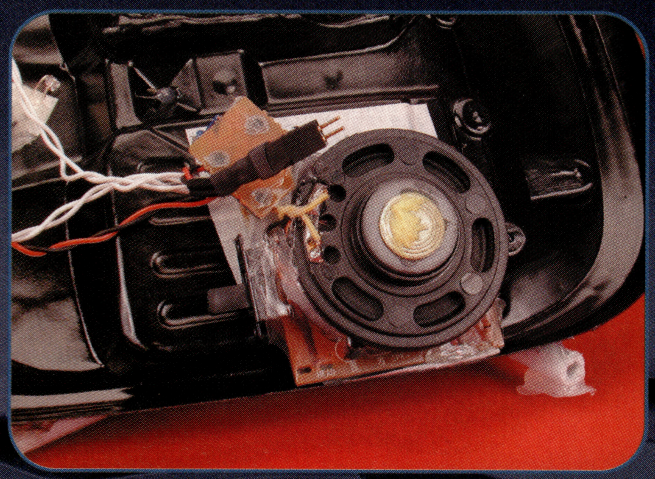
Initially, the idea of a concourse entry body was out of the question. I merely wanted to replicate Jen's car in stock form, a white piece of art in all angles. And then I heard of the TCS (Tamiya Championship Series) for the first time, and how popular and competitive their concourse events were getting. Then I thought, "why not make something more out of this plain Tamiya body." So I took on the challenge.

The first thing I did was to do a small amount of research on import cars. With the help of full-size car magazines, the internet, and a Playstation game called Gran Turismo, I finally had a clue on what I needed to put in the car to distinguish it from the rest of the crowd. I guess the only part left was the "execution" of it all. Which was all the more challenging than what I originally anticipated.

The painting process went smoothly. Regular masking tape and Parma's Liquid Mask were sparingly used throughout the process to produce crisp lines. As always, dark colors first before lighter ones. I didn't have access to an airbrush, so I had to settle for spray cans. In this case, I laid out Pactra's metallic blue first, then Daytona yellow, and lastly Pearl white/white. Silver was my choice for



a Concourse Winner



The speaker for the alarm system is located directly underneath the "passenger seat." It's pretty loud too!



Even a tow-hook is included on the front-end. Check out that detailed grille that the hook connects to!

undercoat as it gives a little extra brilliance. The next process was to apply the decals. I utilized various ones from different Tamiya and HPI kit "leftovers" for this project. Probably the most important part of this step is to cut to the edges of the design as close as possible for a clean look. Autographic's letter art added some personal touches. BoLink's tint sheet added realistic looks to the moon roof, and HPI's Graphite decal sheets were used all over to complete the custom appearance.

Now for the fun part. From my experience, what makes a concourse car stand out among the rest is the ingenuity that goes into it. The Tamiya Celica 2000 body didn't come with any wing, as it was molded as a street car from the start. One of the highlights of my custom racecar was the wing, which I had to fabricate from



Attention to detail is critical—check out the decals.



A set of disc brake rotors add that extra touch to these stock Tamiya wheels.



Looks like "Jen" has a pretty sweet ride...

scratch. To start off, I used a beaten-up wing from an old Tamiya body, re-cut it and painted it with Model Master's Aluminum paint. Next, I laid graphite decals on the aileron itself to imitate real Japanese touring cars. And lastly, the wing posts were made of brass pieces, cut and glued together. To further highlight the back of the car, twin exhaust tips made from real aluminum were also placed. All the items used for the wing and the exhausts are easily available in most hobby shops.

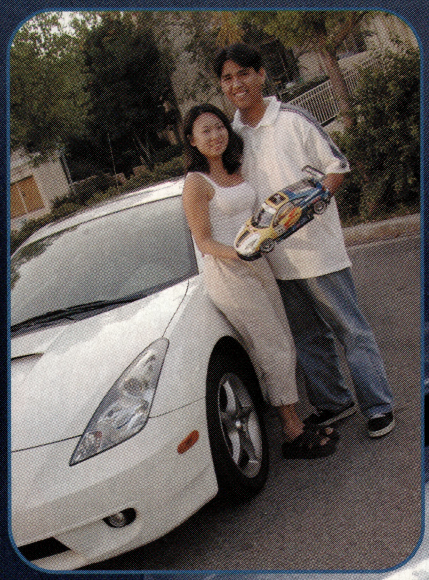
For the all-important "fascia," a plastic mesh was pre-cut to simulate a 3D grill. A piece of red paperclip was also attached to the grille to replicate tow hooks used on real touring cars. What's good about Tamiya bodies is that they include details such as windshield wipers and side mirrors out of

What it Takes To Make a Concourse Winner

the box. These actually help any concourse competitors out there, including myself.

The TCS concourse competition only allowed Tamiya wheels. So this hindered me from using just any kind of wheels on my tourer. After searching most shops in my area, I was able to pick up a rare set of aluminum treated Tamiya mesh wheels, after which I installed Pro-Line's disc rotors on all four corners as well as Michelin decals for that perfect look. The blue lock nuts also added a bonus attraction for the four rolling rubbers.

As for the interior of the car, I tried to put as much detail on it as I did outside. I used an HPI interior set for the base platform; painted the figure with matching body colors, and put



Ian with his girlfriend Jennifer David and the inspiration for his Concours winning car.





Twin exhaust tips made from real aluminum were used to highlight the back end of the car.



Can you believe that Ian actually had to race with this body after competing in the Concours competition!



Ian custom made the rear wing from an old Tamiya body; re-cut it and painted it with Model Master's Aluminum paint. The wing posts were made of brass pieces that were cut and glued together.



decals on it to highlight most areas. A cushion pin acted as a shift knob and a custom six-point roll bar was constructed out of large pieces of plastic tubing attached together with synthetic glue. I painted the cage white to contrast with the colors of the outer shell. The end result is a realistic rendition of a full-bred racer.

Now, for that something "different." My concourse entry isn't just a static model. There's actually something in there that made the judges come back for more: an alarm system! Taking some lessons from previous competition, I installed a complete alarm package taken out of an electronic toy. With a little re-wiring, I had it working. Yes, the alarm actually works with a touch of a remote. Not only that, it also had a built in engine start and horn sounds. This did attract a lot of attention.

Going back to the TCS Nationals, be prepared to race your concourse entry in at least one heat as this was exactly the case after I won the concourse competition. I did race it and luckily I was able to avoid bad crashes, but sadly had to deal with minor cuts and bruises. Just imagine, all this hard work and they force you to race with it! I can't complain, though, as rules are rules. But come to think of it, if all this work puts me in magazines like *R/C Car*, it's definitely worth every effort! Simply put—no complaints! Thanks, *R/C Car*! ◆

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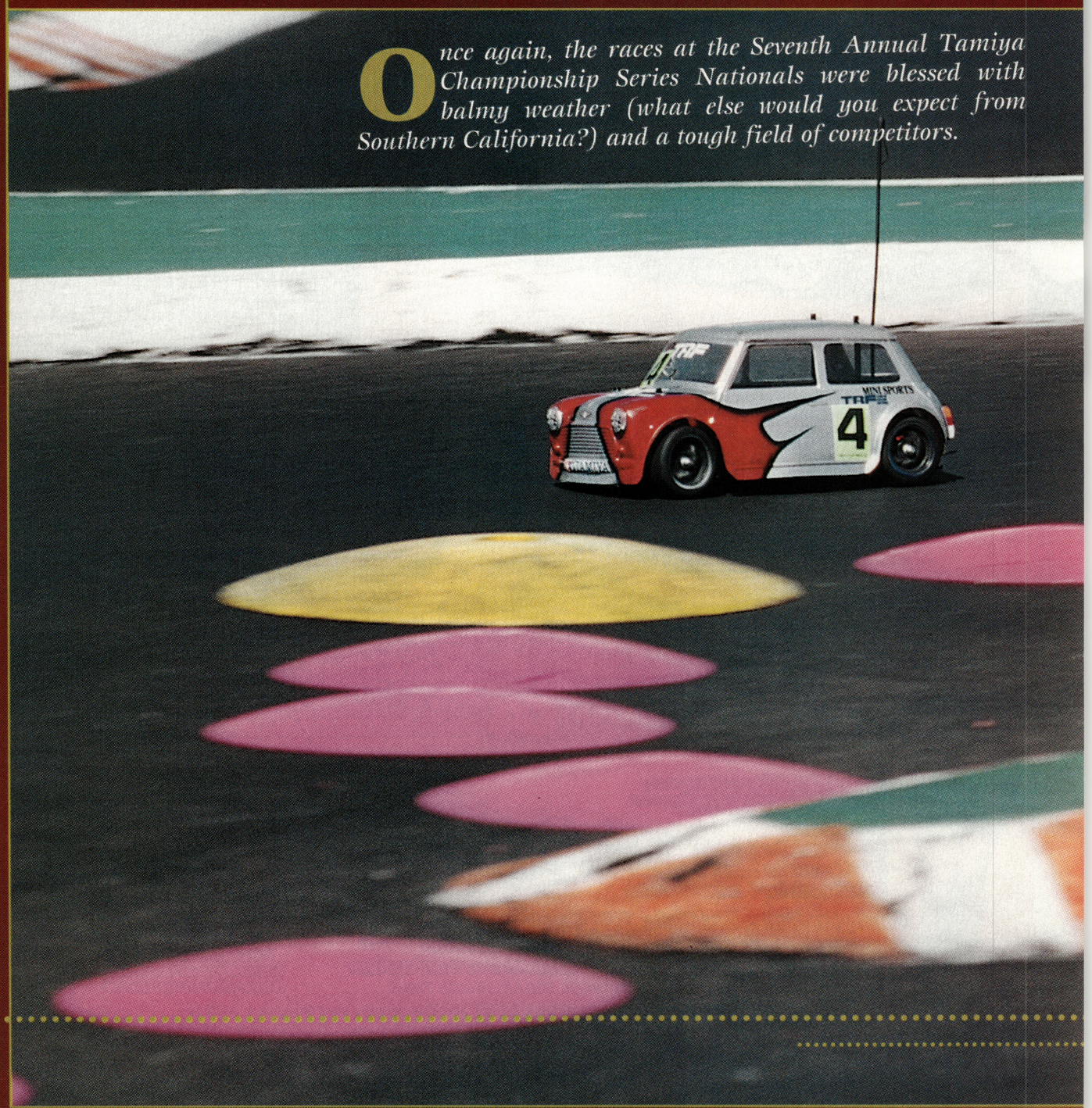
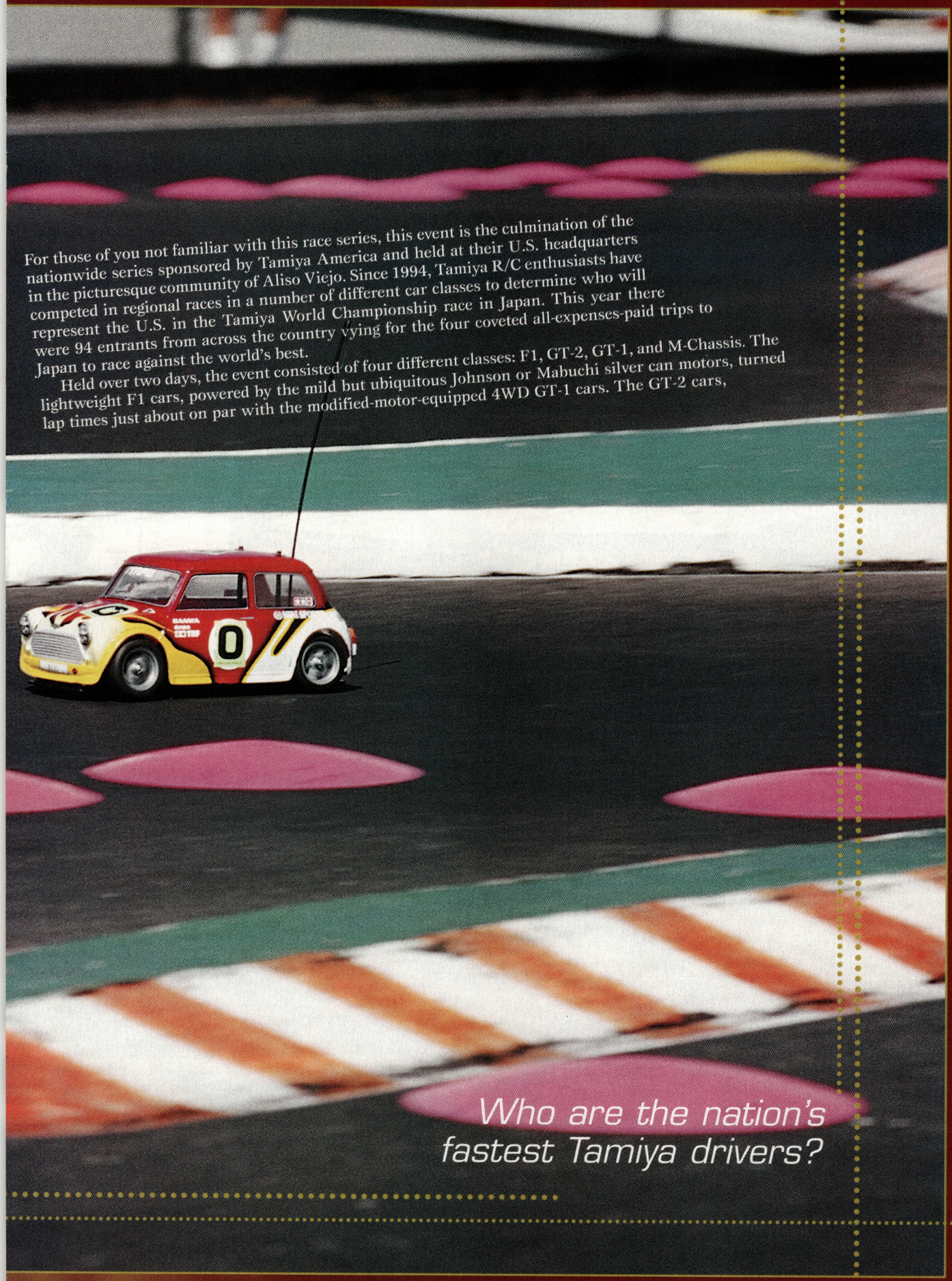
TAMIYA CHAMPIONSHIP SERIES U.S. NATIONALS 2000

Once again, the races at the Seventh Annual Tamiya Championship Series Nationals were blessed with balmy weather (what else would you expect from Southern California?) and a tough field of competitors.

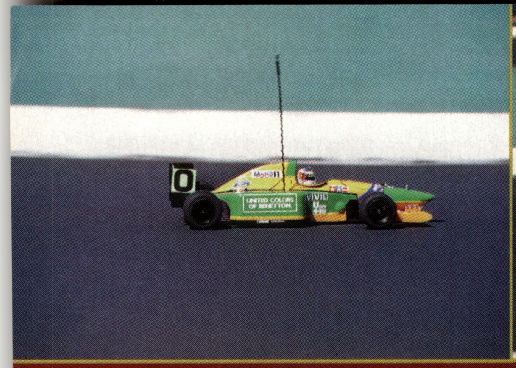


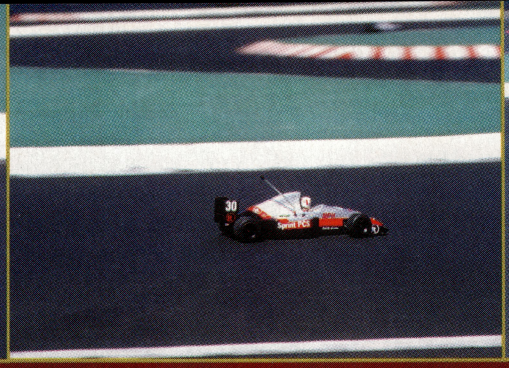


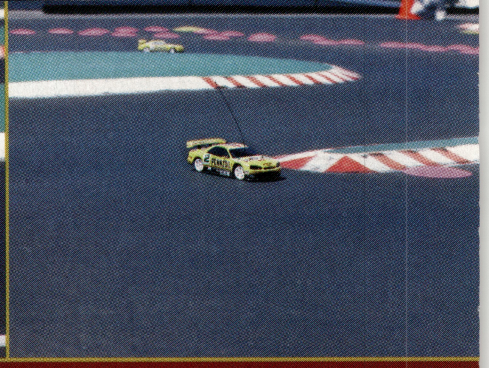
For those of you not familiar with this race series, this event is the culmination of the nationwide series sponsored by Tamiya America and held at their U.S. headquarters in the picturesque community of Aliso Viejo. Since 1994, Tamiya R/C enthusiasts have competed in regional races in a number of different car classes to determine who will represent the U.S. in the Tamiya World Championship race in Japan. This year there were 94 entrants from across the country vying for the four coveted all-expenses-paid trips to Japan to race against the world's best.

Held over two days, the event consisted of four different classes: F1, GT-2, GT-1, and M-Chassis. The lightweight F1 cars, powered by the mild but ubiquitous Johnson or Mabuchi silver can motors, turned lap times just about on par with the modified-motor-equipped 4WD GT-1 cars. The GT-2 cars,

Who are the nation's fastest Tamiya drivers?







with almost the same chassis requirements as the GT-1 class, were powered by 24-degree stock motors, as were the M-Chassis entrants. The race format was three rounds of qualifying on Saturday for each class, followed by triple-A-mains and single races for the lower mains.

SATURDAY

F1:

The first round established Chen-Hwa Chen and David Beale as the top two racers to watch out for with 18-lap runs. The second round saw people breaking into the 19-lap range, with Chen and Beale surpassed by Steve Williams, and joined by Marty Hageman and Tom Kahl as the fastest on the track. After the third round was complete, Chen posted a lightning-fast run of 19 5:00.20 to take the TQ position on the A-Main grid.

GT-2:

Like in the first F1 rounds the, top lap times were in the 18-lap range, with Matt Pozel and Lee Passehl posting the fastest runs. In the next round, Passehl and Benny Chow upped the ante with 19-lap runs. Then Jose Morales joined the 19-lap club, but Chow ended up with the fastest GT-2 qualifying run with a 19 5:08.57 to take the TQ spot.

M-Chassis:

Just because these little cars are slower than the other classes doesn't mean that the racing isn't any less competitive. Jesse Shapiro came out on top of the first round with a 16-lap run, with Miguel Macias and Doug "Doc" Mertes close behind. In the second round, Shapiro lowered his time for a few seconds, but Macias and Chou-Hang Iun ran quick 17-lap runs. Iun ended up in the TQ spot with his time from that second run.

GT-1:

Rodney Clemente and Pat Manalo set the bar with 19-lap runs right off the bat in the first round of qualifying. In the second round, Peter Robinson, Kevin Michellick and Gary Liu joined them with 19 laps, but Derek Hung posted a blazing 20-lap run with a 5:13.89 time. Though Michellick would also post a 20-lapper in the last qualifying round, Hung held on to the TQ spot for the A-main.

MAINS

The Sunday Mains were plagued early on by computer problems, forcing



Media madness racers do battle out on the track.



From left to right: Tamiya's Fred Medel, along with sponsored racers Jimmy Jacobson, Raymond Flores and David Jun, put on a driving display with the new TA-04.



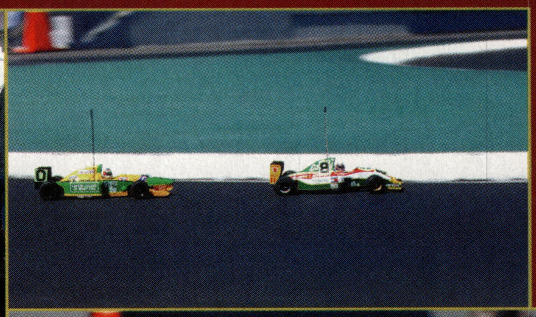
Tamiya brought out samples of their newest kits for display so that racers could see what they needed to add to their pit table for the next race!



Tic-tac-toe...round by round scoring helps keep track of who is nearest to the top of the field.



The F1s get "teched" after running out on the track.







Tamiya's Mr. Ken Hirai was on hand to make sure that everyone was having a good time at the race—mission accomplished, Mr. Hirai!

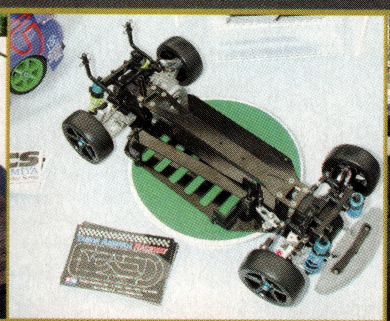
TAMIYA CHAMPIONSHIP SERIES U.S. NATIONALS 2000



Tamiya's permanent road course facility is one of the nicest tracks in the country! You'd be hard pressed to find a nicer setup than this...



Media madness carnage—the members from the media got to partake in a race to see who could bang-up a TA-04 the quickest...we fared so-so...ours is the purty red one.

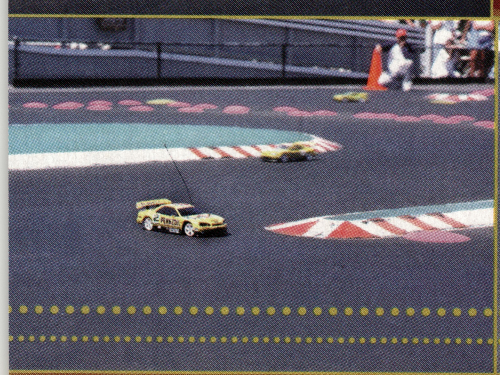


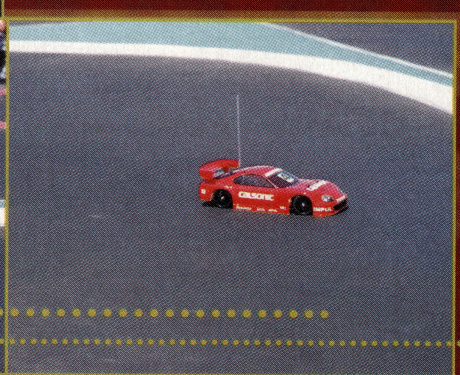
Tamiya's TB-01 Evolution is going to be a great performer on tight, twisty tracks. TCS racers, if this sounds like your track, check out this car!



Tamiya racers David Jun and Jimmy Jacobson work on dialing in their TA-04s.







a couple of race restarts. While the problems were being fixed, that gave race director Fred Medel a chance to remind all the racers of some of the rules, like the ban on tire saucing, which has been a problem in recent years.

The A-main drivers competed in three mains. The racers were awarded points based on finishing position. Whoever came out with the most points at the end of the three races would be declared champion and go on to compete in Japan.

F1

In the final main, the title could easily go to Chen, Beale, or Hageman, who all had first or second-place finishes in A1 and A2. From the TQ spot, Chen got the early lead, only to be passed by Hageman three laps into the race. Hageman didn't appear to have as much power as Chen, but the slightly cleaner lines he was carving put him ahead. Meanwhile, Beale moved up to third. After a couple of minutes Chen attempted to make a move for first on the inside of the long sweeper, but went too wide in turn one, and ended up losing more time to Hageman. Towards the last seconds of the race, the three leaders were in a freight train all the was around the track, and with four seconds to go, Beale passed the others to hit the finish first and secure the title.

Overall

1. David Beale
2. Marty Hageman
3. Chen-Hwa Chen

TAMIYA CHAMPIONSHIP SERIES U.S. NATIONALS 2000

GT-2

The first A-mains saw Chou, Pozzel, Passehl, with Morales just in there for the fight. In the opening of the third main Chou held onto the first couple of laps only to be challenged by Morales. They diced it back and forth a few times, with Chou holding onto the top spot. With 3:20 to go in the five-minute race, John Chen worked his way up to second. For the next couple of minutes, Chen slowly reeled in Chou, but even with more apparent horsepower, Chen's sloppier lines kept him from passing. Chou ended up the winner, and took the title.

Overall
1. Benny Chou
2. Matt Pozzel
3. Lee Passehl

GT-1

Going into the final main, Clemente, Michellick, Robinson, and Stevens all looked poised to win overall. Liu got the jump on the first turn, to be passed by Clemente. Hung was right up there in third, and closing the gap.

By the three-minute mark, Hung got in some tangles and lost his spot to Michellick, while Robinson worked his way up to second place. By the end of the race, Clemente was the clear winner with a three-turn lead. With his first-place showing in A2, Clemente had the title in his pocket.

Overall
1. Rodney Clemente
2. Peter Robinson
3. Kevin Michellick

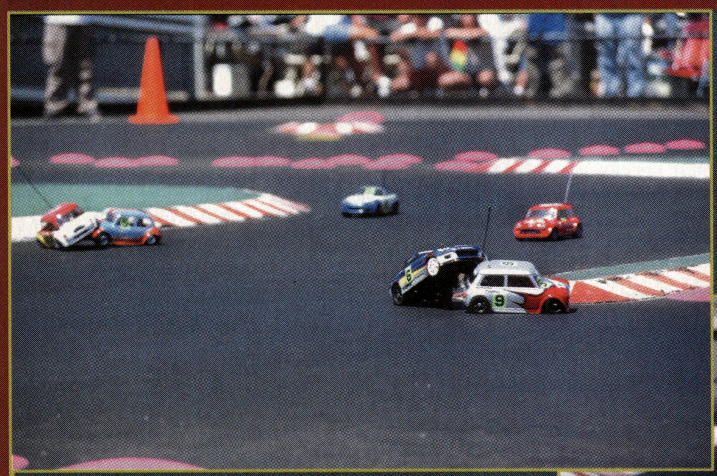
M-Chassis

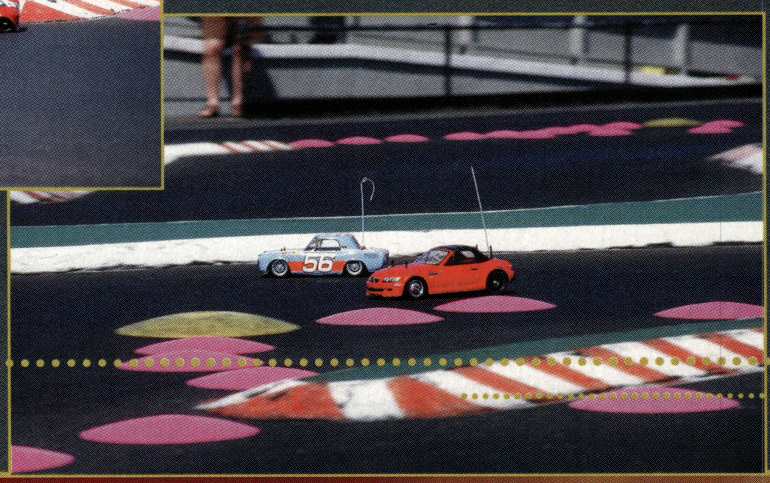
With Macias winning the first main and Jeff Olmstead winning the second main, the title was still up for grabs in A3. After the first-lap melee, Aquino, Olmstead and Macias found themselves in the lead pack, and exchanged the lead a number of times. Halfway through the race, Olmstead was in first with a 2.5-second lead over Macias, with a serious battle for the second spot with Aquino. With 1:25 to go Olmstead was still in the lead, but Macias was closing in with every turn. Thirty seconds later, Macias challenged Olmstead on the inside of the turn and came out on top. With only :30 left in the race, Olmstead rolled his car, and effectively lost the championship right there. With two A-main wins, Macias was the clear winner of the title.

Overall
1. Miguel Macias
2. Jeff Olmstead
3. Chou-Hang Iun

Best of Show Winners:
F1: Dan Pozel
GT-2: Ian Aquino
GT-1: Brad Palmer
M-Chassis: Dan Munoz



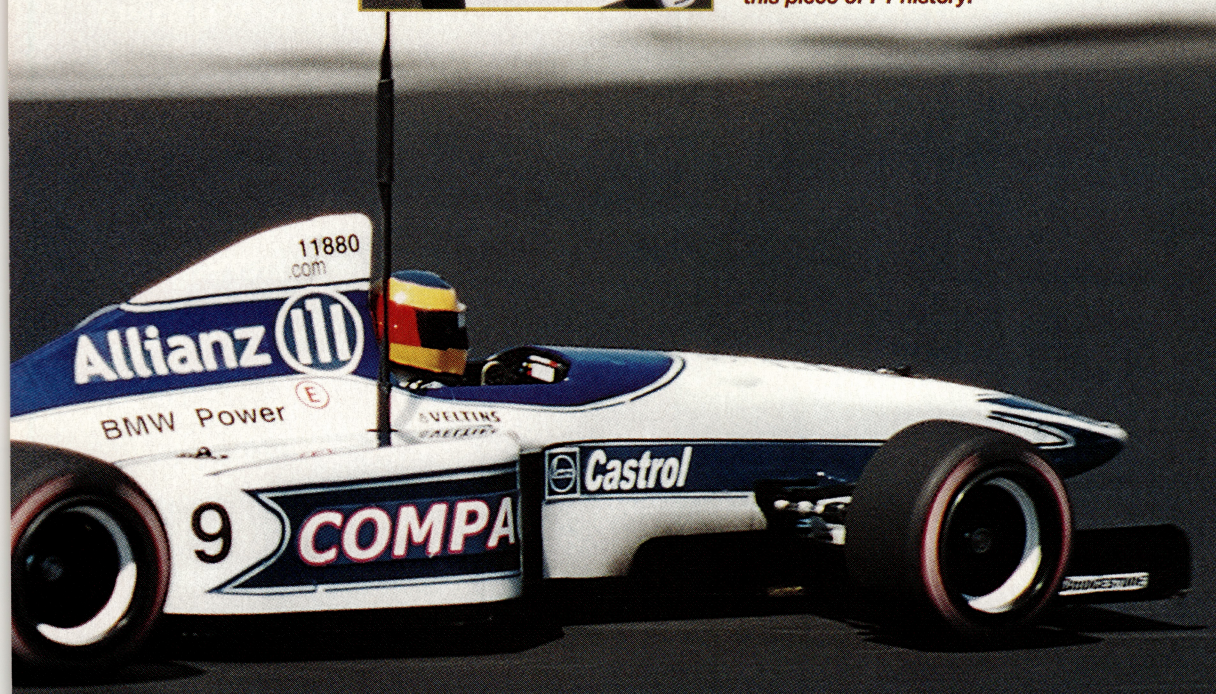








Since we're huge F1 fans here at R/C Car, we were blown away when we walked into the event and saw this authentic championship-winning McLaren F1 car that had been raced by the late Ayrton Senna. For those of you not familiar with his name, Senna was the Michael Jordan of Formula One racing. Very, very cool, Tamiya—thanks for letting us get so close to this piece of F1 history!



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From left to right: Tamiya's Mr. Ken Hirai, GT-2 winner Benny Chow, GT-1 winner Rodney Clemente, M-Chassis winner Miguel Macias, and F1 winner David Beale, and Tamiya's Moto Suzuki. These four lucky winners earned the trip to Japan to compete in the upcoming Tamiya World finals.



In Japan, kids start out with Mini 4x4 cars, then they work their way up to the R/C level. Here, Tamiya gets started on the next generation of R/Cers.

WHAT KEEPS THEM COMING BACK FOR MORE?

Tom Watana is one of the many racers who have kept coming back to compete in the TCS races since the first one in 1994. We spoke with him for a few minutes to get his feelings on how the program has progressed and changed over the years.



Tamiya National participant Tom Watana.

R/C CAR: What keeps you coming back to TCS races every year?

Tom Watana: I'm a huge F1 fan, and this is pretty much the only way I can fulfill my F1 fantasy, by racing R/C F1 cars.

R/C CAR: How's the competition this year?

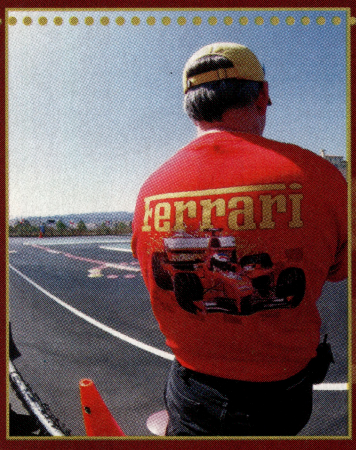
TW: Like every year, there are lots of fast guys. There doesn't really seem to be any "hometown" advantage. David Beale and Chen-Hwa Chen are the toughest competition here, but the out-of-towners seem very adaptable to the track conditions. It's good to see the people who came from across the country do well.

R/C CAR: How do you feel about the rules changes we saw this past year?

TW: There's some good and bad to the F1 tire rule. In the past, the track wasn't sprayed, but with the foam tires we used, it was slippery for everyone, and navigating the course required more finesse. But now with the rubber tire specification, the cars are more driveable, which has actually opened the door to let more people be competitive who weren't when we were using foams. The combination of track spraying and rubber tires has definitely made the F1 cars easier to drive. My car is running better than ever.

R/C CAR: Do you think the Tamiya Championship Series is still a good venue for beginners to try their hand at racing?

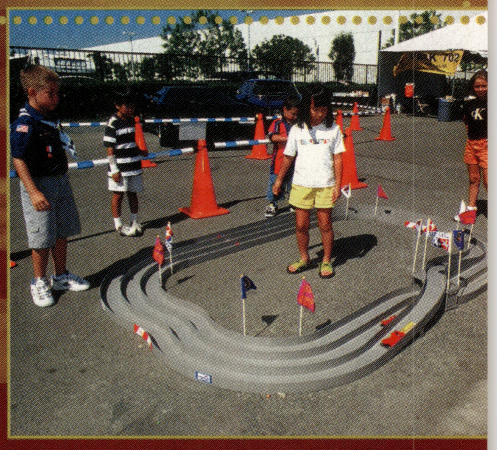
TW: No, I think beginners would be more intimidated here than in years past. The competition is much stiffer; people have to spend more money on batteries and tires to compete. When the TCS races first started out, everyone had handout 1400 mAh battery packs that we were all limited to. That certainly limited how much power we could use, even in the open motor classes, and because of the lower speeds, tire wear wasn't as much of an issue. Back then the atmosphere was looser and driving skills played a stronger role in the race outcome, not the amount of horsepower that was under the body shell. That's not to say that the overall tone of the race is as bad as a Nationals race. It's still very friendly between most of the racers. And it's still a good program; otherwise, I wouldn't keep coming back. ♦



Can we guess what F1 team Mr. Doug Mertes here is a fan of...that's correct, the right team.



A quick drivers meeting lets everyone know what is to be expected during the day as it progresses.



Children are invited to participate in the Mini 4x4 races set up alongside the track area.

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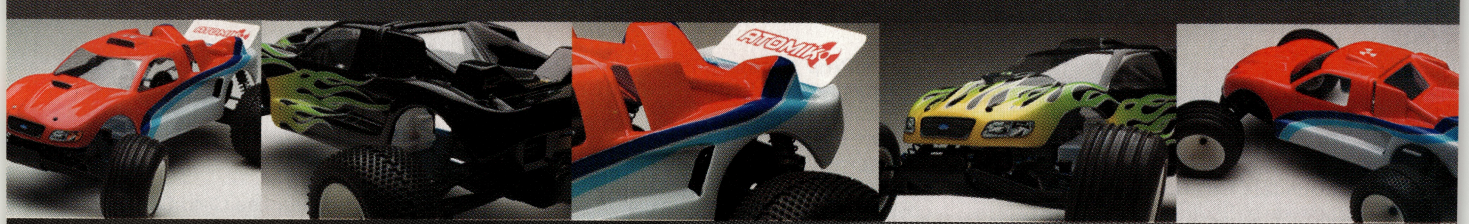

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R/C Thunder, 1530 Schillinger Rd., Mobile, AL 36675, (334) 645-2787

ALASKA

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

ARIZONA

Hobbytown Mountain Raceway, 1500 E. Cedar Ave., Cedar Hills Shopping Center, Flagstaff, AZ 86004, (520) 214-9887

Hobbytown Raceway, 13802 N. Scottsdale Rd., Scottsdale, AZ 85250 (602) 948-3946

Hobbytown Raceway, 1915 East Baseline Rd., Gilbert, AZ 95234, (602) 892-0405

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

Hobbytown USA, 5030 E Ray Rd., Phoenix, AZ 85044, Linda McFarland, (602) 598-5282

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

Scottsdale R/C Raceway, 3023 N. Scottsdale, Scottsdale, AZ 85251 (602) 945-2186

Speedway Hobbies, 2710 N. Steve's Blvd., Ste. 8 Flagstaff, AZ 86004 (520) 714-1566

ARKANSAS

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

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

Airport Speedway, 1521 Airport Loop, Rogers, AR 72756, (501) 636-7123

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

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

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

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

CALIFORNIA

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

Hobby Central Raceway, 34255 PCH, Unit #107, Dana Point, CA 92629, (619) 513-0373

Hobby Central II, 13461 Community Rd., Poway, CA 92064 (619) 513-0373

Hobbytown, Parktwon Plaza Shopping Center, 1350 S. Park Victoria Dr. #21, Milpitas, CA 95035 (408) 945-6524

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

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

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

MnM Hobbies, 4225 Prado Rd., Ste. 103 Corona, CA 91720, (909) 272-3545

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

ProCar West, Sante Fe Springs, CA m2rcracing

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

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

Racer's Haven, 7401 White Ln. #12 Bakersfield, CA 93309, (805) 835-0441

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

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

Showtime Speedway, 3709 Abbot DR., Bakersfield, CA 93312, (805) 5890493

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

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

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

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

COLORADO

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

CONNECTICUT

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

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

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

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

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

DELAWARE

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

FLORIDA

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

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

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

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

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

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

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

Frontier Race Track, 15260 N.E. 244th Ave., Salt Springs, FL 32134, (352) 685-2881

Hobbyworld Raceway, 7273 103rd St., Jacksonville, FL 32210, (904) 722-9022

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

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

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

NORRA, 3300 Santa Barbara Blvd., Naples, FL 34104, (941) 324-9021

Ocala R/C Car Club, 2610 SE 8th St., Ocala, FL 34470, (800) 324-8882

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

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

Port St. Lucia Racing, 3626 SW Rlvera St., Port St., Lucie, FL 34953 (561) 336-8711

Randy's RC Raceway, 7744 Glenwood St., Clermont, FL 34711, (352) 242-0557

River City R/C Club, 9711 Sharing Cros Dr., Jacksonville, FL 32257, (904) 268-1948

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

Speedworld-RC, 600 S. Yonge St., Ste. 107, Ormond Beach, FL 32174, (904) 271-6240

Tampa Bay RC Club, PO Box 10224, St. Petersburg, FL 33733, (813) 526-0744

Tropical Racers, Tropical Park, Palmeto Expressway & SW 40 St., (Bird Road), Miami, FL

GEORGIA

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

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

Emerald City R/C Speed, Hwy. 80 East, Dublin, GA 31027, (912) 272-3856

Hobbytown Raceway, 2301 Airport Thruway, Columbus, GA 31904, (706) 660-1793

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

Racer's Edge, 1530 Hwy. 19 N., Thomaston, GA 30286

Sandy Cross Speedway, Rt. 1 Box 1071, Hwy. 51, Royston, GA 30662, (706) 245-9573

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

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

HAWAII

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

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

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

ILLINOIS

Adams R/C Raceway, 7201 S. Adams, Bartonville, IL 61607, (309) 633-9300

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

CIRCR/Precisoin RC Hobbies, 1917 2nd St. Pekin, IL 61554 1-309-347-0975

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

H&H Raceway, 9346 Virginia Rd., Lake in the Hills, IL 60102, (847) 458-1777

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

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

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

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

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

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

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

Shiloh Eagles Speedway, 308 N. Virginia AVe., Belleville, IL 62220, (618) 277-6030

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

Sport 'N' Hobby, 905 Bibbs, Jacksonville, IL 62650, (217) 254-1375

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

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

INDIANA

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

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

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

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

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

P&T Hobbies & Raceway, RR2 (Hwy. 60), Mitchell, IN 47446, (812) 849 6666

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

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

IOWA

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

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

Manly R/C Club, Box 23, Manly, IA 50456 (515) 454-2025

Outback Speedway, 403 State St., Gutherie Center, IA 50115, (515) 747-3064

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

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

KANSAS

Hobbytown USA, 2016 W. 23rd, Lawrence, KS 66046; Kevin Decembes, (785) 865-0883

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

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

RCRC Raceway, 507 N. 4th Atwood, KS 67730, (795) 626-3261

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

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

LOUISIANA

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

Indy Speedway & Hobby, 3753 General DeGaulle Dr., New Orleans, LA 70131 (504) 367-1891

Pontchartrain Hobby Shop, 3755 Pontchartrain Dr., Slidell, LA 70458, (504) 649-1199

MAINE

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

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

MARYLAND

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

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

Hobby Town USA, 8223-11 Elliot Rd., Easton, MD 21601, (410) 820-9308

JR's Race Place, 2935 Crain Hwy., Waldorf, MD 20601, (410) 947-2766

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

MASSACHUSETTS

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

Hi-Tech Hobbies, 1681 Broadway (Rt. 138) Raynham, MA 02767, (508) 880-5373

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

MICHIGAN

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

House of Hobbies, 2863 West Shore Dr., Holland, MI 49424, (616) 786-3686

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

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

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

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

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

Ovaitt's R/C Speedshop, Cherryland Mall, 1732 S. Garfield Ave., Traverse City, MI 49686, (616) 947-6670

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

Rodgers R/C Raceway, 7463 Ridge Rd., Britton, MI 49223, (517) 451-8301

Village R/C Raceway, Praire Ronde St., Decateur, MI 49045, (616) 423-7878

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

MINNESOTA

Car Town USA, 2822 Peidmont Ave., Duluth, MN 55811, (218) 727-6248

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

Fun City, 9100 Park Ave., Elk River, MN 55330, (612) 441-8365

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

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

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

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

MISSISSIPPI

Joe McFaden Hobbies, 5531 Fox Meadow Dr., Meridian, MS 39307 (601) 483-7000

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

MISSOURI

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

Greentree R/C Racepark, Marshal Road, Kirkwood, MO (314) 831-2194

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

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

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

NEBRASKA

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

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

RC Motorsport Off-Road Raceway, 5600 Mass Rd., Omaha, NE 68164, (402) 593-6133

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

NEW MEXICO

Big Boys toys 1735 Juantabo N.E. Albq., NM 87112 505-298-1023 505-294-1543

Charlie's Hobby Shop, 225 E. Idaho, Ste. # 11Las Cruces, NM 88005, (505) 541-1097

NEW YORK

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

NEW JERSEY

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

RHODE ISLAND

Tri-State R/C Raceway, 205 Hallene Rd., Warwick, RI 02886, Lenny Sosa (401) 738-4908

SOUTH CAROLINA

Carolina R/C Speedway, 4148 Calhoun Memorial Hwy., Easley, SX 29640; Craig Prahl, (864) 295-1209; *ww.carolinarc.com*

Myrtle Beach R/C Park, 5976 Grace Lane, Myrtle Beach, SC 29577 Brad Smith, (843) 234-0096

The Grove Racing Center, 939 S. Anderson Rd., Rockhill, SC 29730, Mike Durham or Don Faris, (803) 327-4121

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Hobbies and More, 1570 S. Main str., Darlington, SC 29532; Jerry Pollard (803) 393-0355

J&M R/C Hobbies, 5341 Dorchester Rd., Evanston Plaza, N. Charleston, SC 29418; Mike Smith (843) 552-9449

Midway Hobby and Raceway, 707 Sulphur Springs Rd., Greenville, SC 29611; Allen A. Dodson, (864) 246-6335

ORA Atomic Racing, 373 Boyd Pond Rd., Aiken, SC 29803; Bill Felak, (706) 855-0846 or (803) 642-0314

R/C Racing Connection Speedway 4375 Juniper Bay Rd. Conway, SC 29527 843-397-0124

SOUTH DAKOTA

Boomerans Raceway, 105 N. Main, Hartford, SD 57033; Ed Smithback (605) 528-7345

TENNESSEE

Hobby Town USA, 2000 Mallory Ln., Franklin, TN 37067; Bobby Mills, (615) 771-7441

MSA R/C Racing, Rt. 12 Box 489 F, Crossville, TN 38555; D.R. Findley (931) 456-0027

W.O.W. Raceway, 59 Luray Rd., Beech Bluff, TN 38313; Kelly Bean, (901) 427-7874; *windix60@pipeline.com*

XS Speed, 5237 Hwy. 126, Blountville, TN 37617, (423) 323-1513

Hobby Town USA, Commons II 8859 Town & Country Circle Knoxville, TN 37923 865-690-6423

TEXAS

215 Speedway, 1814 County Rd. 215, Abilene, TX 79602; Clyde Gardner (915) 673-2351

Big Mike's R/C Raceway, 1405 W. Cotton St. Longview, TX 75604; (903) 297-7814

Comanche Trail RC Park, City Park, Big Spring, TX 79720; Allen Nichols (915) 263-4241

Discount Hobbies, 1722A West Anderson Loop, Austin, TX 78757; Tony Bermudex, (512) 458-2324

Drycreek Raceway, 5903 Co. Rd. 2297, Quinlan, TX 75474; Micky Alphin (903) 883-4060

Hal's Hobby Raceway, 1440 Bessember, El Paso, TX 79936; Carlos (915) 591-2213

Hobbycraft Speedway, 819 N. Main St., Corsicana, TX 75110; Keith Hoffman (903) 872-6761

HobbyTown USA, 999 E. Basse Rd., Suite 177, San Antonio, TX 78209; Joe Sena, or Clark Baisdon, (210) 829-8697

Indy R/C World, 2020 Saturn Rd., Garland, TX 75041, (972) 271-4844

Issac's Race Track, 18177 Gulf Frwy., Webster, TX 77598; Issac Ben-Ezra, (281) 488-8697

MBRC Off-Road Raceway, 204 D & E Valley Ln., Kennedale, TX 76133 (817) 292-5055

Performance Raceway, 1106C Witte Rd., Houston, TX 77055; Jorge Tabush or Terry Schmid, (713) 464-4458

VIRGINIA

Debbie's R/C World, 2200 Commerce Parkway, Virginia Beach, VA 23454, (757) 340-6681

Hobby Hangers Speedway, 14014D Sullyfield Cir., Chantilly, VA 20151; Kwang or Billy, (703) 631-8820

Olde Towne Hobby Shoppe, 9105 Center St., Manassas, VA 22110; Arnie Levine, (703) 369-1197

Shamroc Raceway, 106 Cheviot Pl., Stephens City, VA 22655; Scott Janow, (540) 869-3551

Star/Car Raceway, Debbie's R/C World, 200 Commerce Parkway, Virginia Beach, VA 23454, (757) 340-6681

The Toteyard, 6494 Toteyard Dr., Dayton, VA 22821 (540) 828-3476 *toteyard.com.home*

WASHINGTON

Alfie's, 108 South K St., Aberdeen, WA 98520; (360) 533-6638

A-Main Raceway, 14011 NE 3rd Ct., Vancouver, WA 98685; Monty Coleman, (360) 571-8404

Burien Toyota R/C, 15025 1st Ave. South, Seattle, WA 98148 Ray Meek, (800) 654-6456

Cedardale Raceway, 16733 Cedardale Rd., Mount Vernon, WA 98273; Joe Madonia, (360) 659-0072; *getchell@halcyon.com*

Four Season R/C Racing, 2941 Sleater Kinney Rd. NE Olympia, WA 98506; Gary Brown (360) 491-2430

Rain City Raceway, 3616 South Rd., Suite A3, Mukelteo, WA 98275, Debbie Cartwright (425) 438-2454 raincityraceway.com

Spokane Indoor Raceway, 6422 E. 2nd Ave., Spokane, WA 99212; Dave Mapston (509) 534-RACE

Tacoma R/C Raceway, 6305 6th Ave., Tacoma, WA 98406; Scott Brown (253) 565-1935

Ultimate R/C Raceway, 907 Cole St. #3, Enumclaw, WA 98022; Dan Dougherty, (509) 375-4995

West Coast Hobby & Raceway, 2239 Stevens Dr., Richland, WA 99352; Rick, (509) 375-4995

WEST VIRGINIA

Burr-Fab Raceway, 90 Davis St., West Union, WV 26456; Mark Travis, (304) 873-2487

Fulton's R/C Raceway, 2646 Chapline St., Wheeling, WV 26003; James Fulton (304) 233-5355

Left Turn Hobbies, 100 Saco Ln. Glen White, WV 25849; Stretch (304) 255-3930 **Race Zone,** Hopewell Rd., Rt. 8 Box 343A, Fairmont, WV 26554; Joe Clutter , (304) 368-1000

WVRCA R/C Club, 142 West Main, Bridgeport, WV 26330; D.W. Weed

WISCONSIN

ABC R/C Inc & Raceway, 244 W. Main St., Waukesha, WI 53186; Dick Mathiesen, (414) 542-1245

Gary's Hobby Center, 3701 Durand Ave., Racine, WI 53403; Bill Phalen, (414) 542-1245

Heart of the Valley R/C Club, 1330 Midway Rd., Menasha, WI 54952; Bill Morgan, (920) 954-1695

Hobbytown USA, 2061 South Koeller, Oshkosh, WI 54901 (920) 426-1840

Hobbytown USA-Revolution, Memorial Mall, 3347 Kohler Memorial Dr., #D2, Sheboygan, WI 53081; Kenny, (920) 452-0801

JJ's Dirt Heaven Hobby and Raceway, 6028 County Rd K, New Frankview, WI 54229; *dirtheaven@msn.com* Aaron Dufey (920) 866-9096

Mid-West Tri-Clone, 3745 Shuster, West Bend, WI 53095; Tom Holz, (414) 334-0429

Pro-Star Racing, 726 Pine St., Green Bay, WI 54301; Chuck, (920) 469-5566

RJ's/R.C., 4920 Hwy. 70W, Eagle River, WI 54521; Randy Stys, (715) 479-2541

S&N's Trackside Hobbies and Raceway, 6405 N. Green Bay Ave., Milwaukee, WI 53209; Scott Ernst, (414) 351-1910

WYOMING

Wind River R/C Racing Association, 309 N. 4th West, Riverton, WY 8250; Shannon Watts, (307) 857-0418

Xtreme Hobbies Raceway, 2724 Powder Basin, Gillette, WY 82718; Frieg Balls, (307) 682-6077

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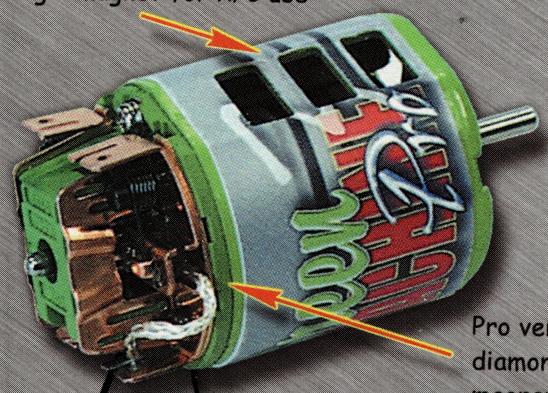
HORSEPOWER

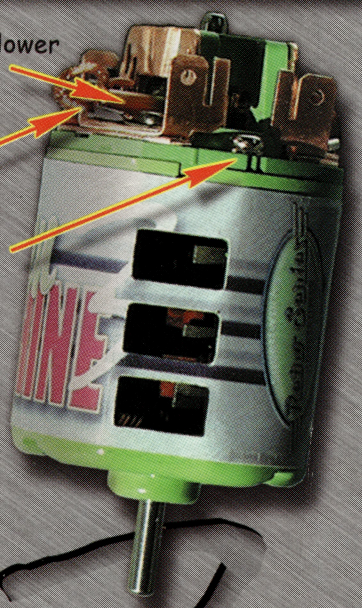
P2k™ wet pressed magnets, the strongest legal magnet for R/C use



Pure copper brush hoods for lower resistance and better cooling

Brush stabilizing system controls brush chatter

3 surface mounted capacitors no capacitors to solder

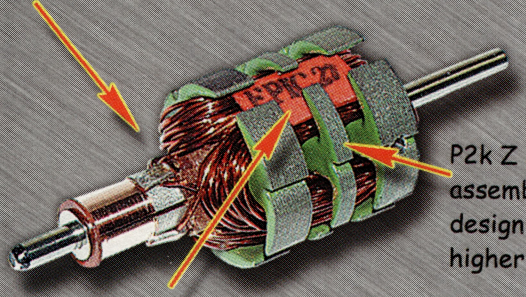


Pro version includes 4499 brushes, diamond trued commutator, zapped magnets and dyno tuning

Green MACHINE-3™

Completely rebuildable

27 turn, 22 awg wire, 24° locked timing



The perfect addition to your stock motor arsenal

Use the P2k on tight tracks where high punch is needed

Use the Green Machine 3 when maximum top end is called for

P2k Z Speed™ laminations assembled in a Tri-Rotor design for tracks where higher rpm is required

Tagged armature and tapered shaft for easy teching

Standard Version, 9426
Pro Version, 9427

Tale Of The Tape....

TRINITY 27x1
RPM: 30.742
Power:126.5W
Eff.: 68.1%
Torq.:162Nmm
Nr.: Green 3

Meets all ROAR & NORRCA specs for rebuildable stock motors

The powerband of the Green 3 differs from the P2k in that it is a Higher revving motor.

It has more top end with a slight loss of torque. We designed it for racers who like this type of powerband and who run on higher speed tracks.

TRINITY®

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