

COMPETITION ENGINE GUIDE - 6 ENGINES TESTED & DYNO'D!

Xtreme RC Cars

Performance Tests • News • How-To's • Race Coverage • Nipples!

EYE of the TIGER!

THUNDER TIGER'S
EB4 S3
CHALLENGES
THE WORLD!

FOR YOUR
REDESIGNED!
PLEASURE

RACE COVERAGE:
NR/CTPA TRUCK WORLDS ♦
PRO SERIES FINAL ♦

LEARN HOW-TO:
GET FREE HORSEPOWER ♦
READ A BATTERY LABEL ♦
PAINT FLAMES ♦
NEVER GLITCH ♦

DRIVEN:

- ♦ Kyosho **V-ONE RRR**
- ♦ Team Associated **RC18**
- ♦ XTM Racing **XLB**

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03>



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visit us on the web:
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Check the race results...

The new Reedy QUAD-MAG Motors are Dominating both onroad and offroad races all over the world! Now Reedy introduces the "Pt" (Platinum) modified, the standard-comm, standup-brush alternative to the awesome Reedy "Kr" motor. Serious racers... now you have another winning choice!

• Capacitors installed

• Clear Anodized Heat-sinks

• Quasar #729 Brushes

• Hi-flow can cooling vents



**NEW! Quad-Magnet
FOURCE-FIELD**
Latest C4 Magnet Technology!

• Standard-size
7.5mm Comm

• Special winds
optimize the power of
the latest 3300 cells

• 1.4mm thick
Motor Can

ELEMENT SERIES
MODIFIEDS

Neil Cragg
European
Champion
2WD Offroad

• Reedy Pt Motor
• Reedy X-Cell
Batteries



REEDY

The Power Behind
24 IFMAR World Champions!

Reedy Modifieds • A Division of Associated Electrics, Inc.
3585 Cadillac Ave., Costa Mesa, CA 92626 •

www.teamassociated.com

Pt

PLATINUM
MODIFIED

MACHINE WOUND MODIFIEDS HAND WOUND PERFORMANCE

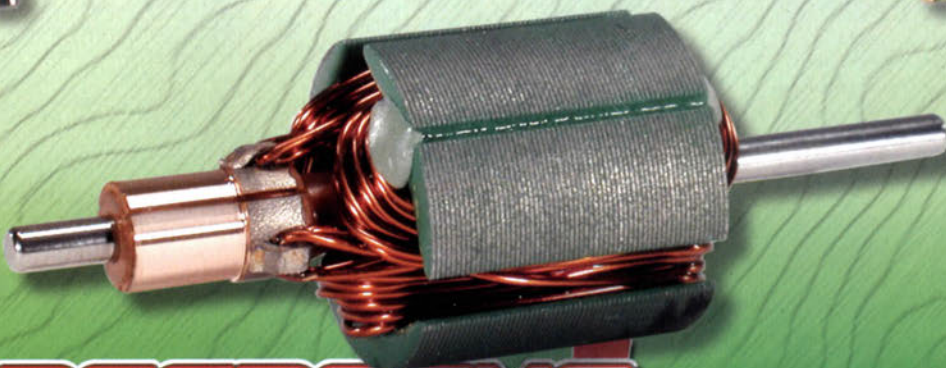
The Highest Quality, Fastest Machine Wound Motor In R/C



- D6 Style Motor Can & Endbell
- Trinit FB-9.Four, 4 Magnet System
- Dual Ball Bearings
- Adjustable Timing
- Pure Copper Brush Hoods For Lowest Resistance
- Brush Hood Damper System For Brush Stabilization
- 3 Installed Capacitors, Nothing To Solder
- No Solder Leads, Plugs Right Into Speedo
- New Hi-Performance Long Wear Motor Brush Compound
- High Performance Spring Setup
- Machine Wound On Hi-Torque, Hi-Power Armature Blank
- Biggest, Lowest Resistance Wire For Power
- Diamond Trued Commutator
- Epoxy Balanced
- Dyno Tested, Tweaked & Tuned
- Designed In The USA
- Made In Japan



Trinity FB-9.Four, 4 Magnet System
For Greater Power & RPM



SPEEDGEMS
EXTREME

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1:18 Scale ASSEMBLED Electric Offroad 4WD Truck

RC18T 4WD

•Captured
Suspension
Hinge Pins...
No E-Clips!

•Many
"Factory
Team"
Hop-up
Components
available!

•Suspension
arms inter-
changeable
Left to Right,
Front to
Back

•Fits most
Aftermarket
Micro Servos
with adapter
kit (available
separately)

•Inline
Mounted
High
performance
"Super 280"
Electric
Motor

•Aluminum
Motor Mount
Fits most
aftermarket
1:18 Size
hop-up
motors!



•1100 mAh
Ni-MH Battery Pack



•Battery
Charger

•Standard-
Mounting
Wheels Com-
patible with
other "Mini"
Trucks

(ACTUAL SIZE)

Send for your
FREE RC18T
Catalog!

BIG PERFORMANCE IN A SMALL PACKAGE!



•Associated XP2
Radio System

Individual, Replaceable Electronic Components



•AE XP2
27-Band Micro
Receiver



•AE Micro
Steering
Servo



•AE XPS Speed
Control with
Reverse

The 18T is not your typical "toy-class" small truck... it was designed from the ground up by Team Associated's award-winning team of engineers for four-wheel-drive performance and rugged durability far beyond the competition. If you're looking for the next big thing in small trucks, you've found it... Team Associated's RC18T!

Ready-To-Run



•Painted Body
in Red or Blue Color
Schemes

RC18T RTR
"20100



Full set of
15 Ball
Bearings
INCLUDED!

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www.rc10.com • www.teamassociated.com

PRO LINE

POWERSTROKE SHOCKS
WE'VE GOT YOU COVERED!



Kit Options:

Full Kit Part #6025-00 - includes 4 Pre-Built Coil-Over Shocks and 4 Pre-Built By-Pass Shocks, 2 oz. of 30wt oil and tuning guide.

Coil-Over Kit (Pair) Part #6025-01 - includes 2 Pre-Built Coil-Over Shocks and tuning guide.

By-Pass Kit (Pair) Part #6025-02 - includes 2 Pre-Built By-Pass Shocks and tuning guide.

Our specially designed **Hardware Kit** (Part #6029-00) is required for use on the **MGT** and we recommend using the optional **extra firm springs** (Part #6025-36)

www.prolineracing.com



OCKS - CHOOSE YOUR TERRAIN

If you could have the same technology and advantages that racers around the globe are experiencing, wouldn't you want it? Well, now you can. The PowerStroke shocks offer advantages on and off the track and in any terrain. Check out all the advantages:

- ★ Maintain greater control over bumps, jumps, stairs, you name it.
- ★ Finely threaded shock bodies allow for virtually an infinite amount of adjustability
- ★ Damping that adjust to the characteristic of the terrain
- ★ Dual stage spring set-up for added customization of shock absorption and rebound
- ★ 4 unique spring rates available for added user customization
- ★ 3 different piston configurations included with kit
- ★ Pre-built, just add oil

For T/E/2.5-MAXX, MGT and TNX Trucks



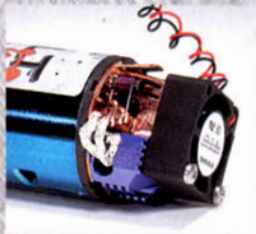
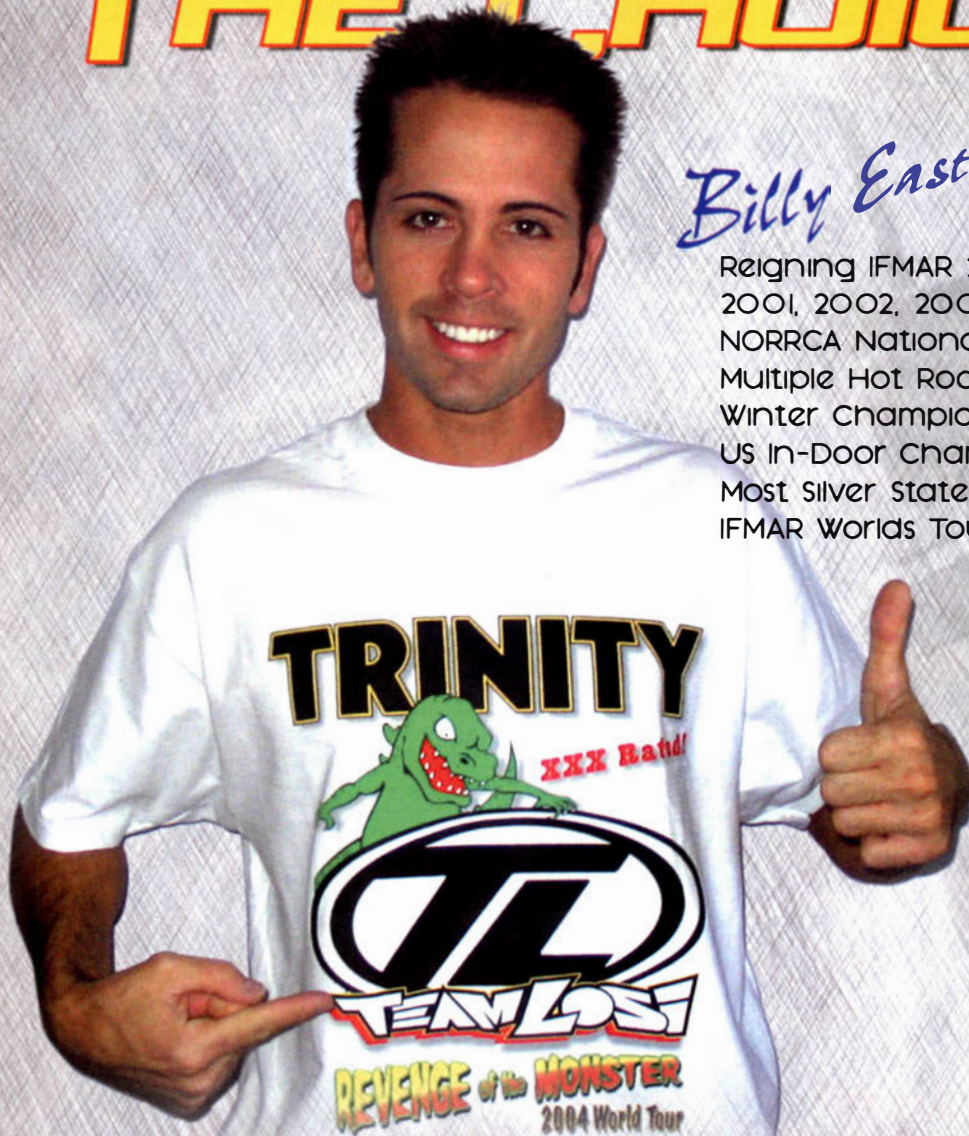
POWERSTROKE
PERFORMANCE SHOCK KIT

Pro-Line Racing
P.O. Box 456
Beaumont, CA
92223
951.849.9781
951.922.9311 fax

THE CHOICE OF

Billy Easton

Reigning IFMAR 2wd World Champion
2001, 2002, 2003 Gas National Champion
NORRCA National Champion
Multiple Hot Rod Shoot Out Champion
Winter Championships Champion
US In-Door Champion
Most Silver State Championships Ever
IFMAR Worlds Touring Finalist Qualifier



Heatsinks are made to easily attach the Cobalt external fan for greater cooling in enclosed bodies like touring and oval. Works great in boats too. TRI13019

FLATWIRE™

*Hi-Torque Fast Spool Up
For Tight Tracks*

TRI10060	Cobalt 6T Single
TRI10061	Cobalt 7T Single
TRI10062	Cobalt 7T Double
TRI10063	Cobalt 8T Single
TRI10064	Cobalt 8T Double
TRI10065	Cobalt 9T Single
TRI10066	Cobalt 9T Double
TRI10067	Cobalt 10T Single
TRI10068	Cobalt 10T Double
TRI10069	Cobalt 11T Single
TRI10070	Cobalt 11T Double
TRI10071	Cobalt 12T Single
TRI10072	Cobalt 12T Double
TRI10073	Cobalt 13T Single
TRI10074	Cobalt 14T Single

ROUND WIRE

*Hi-Rpm For Big Fast Tracks
With No Slow Corners
Broad Power Band*

TRI10075	Cobalt 6T Single
TRI10076	Cobalt 7T Single
TRI10077	Cobalt 7T Double
TRI10078	Cobalt 8T Single
TRI10079	Cobalt 8T Double
TRI10080	Cobalt 9T Single
TRI10081	Cobalt 9T Double
TRI10082	Cobalt 10T Single
TRI10083	Cobalt 10T Double
TRI10084	Cobalt 11T Single
TRI10085	Cobalt 11T Double
TRI10086	Cobalt 12T Single
TRI10087	Cobalt 12T Double
TRI10088	Cobalt 12T Triple
TRI10089	Cobalt 12T Quad



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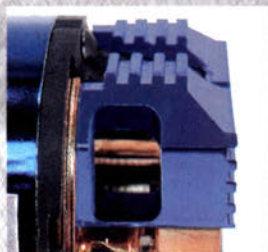
BILLY EASTON

Tour-bil-lion, From Latin turbo
A whirlwind. A vortex, as of a whirlwind or
whirlpool. A skyrocket that has a spiral flight.



LEMANS COMPOUND
Super Long Wear Brush

New very high silver compound
and special lubricants allow
5 to 10 runs between commuta-
tor cuts & a 20 to 30 run brush
life. No performance fade during
run or run to run. No horsepower
loss like other long wear brushes.
TRI13504, Screwdriver Install
TRI13504NT, Solder on



New tourbillon heatsink and end-
bell design maximizes cooling of
the brushes. Endbell design chan-
nels air flow from armature
through heatsinks for additional
cooling.

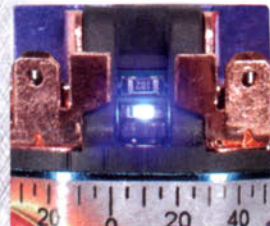
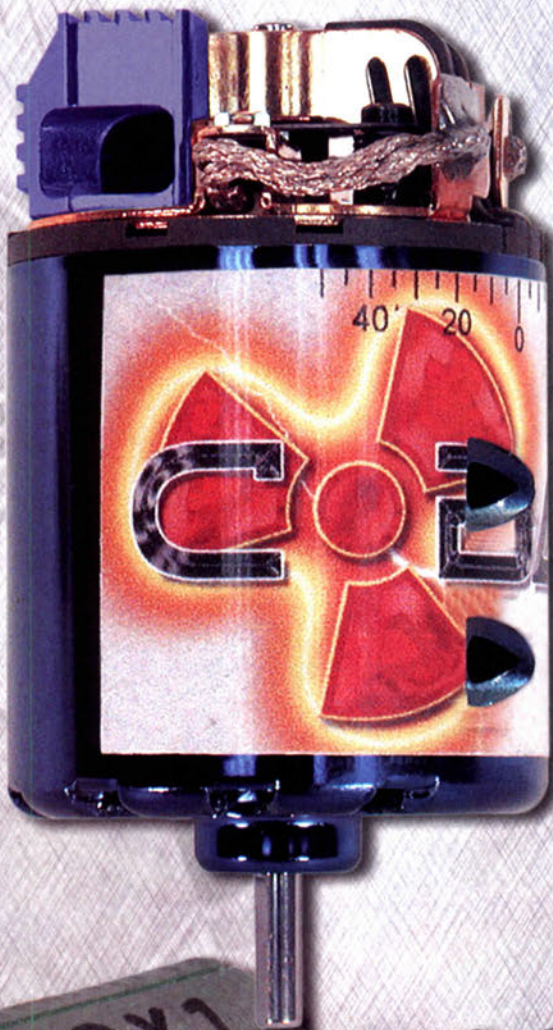


All new pure copper endbell
hardware sucks heat away from
the brushes and into the heat-
sinks most efficiently while deliv-
ering the least amount of
electrical resistance.

Endbell is designed with bosses
to align hardware for perfect
brush hood alignment.

Overhead brush springs means
you now only have to inventory
one type of springs. The Cobalt
uses the same springs as your
Trinity/Epic stock motors.

The Cobalt is available with both
high torque FlatWire™ armatures
or high rpm round wire arma-
tures. All armatures are wound
on our high torque armature
blank, the choice of our team
racers and our competitions
team racers.



All Capacitors are already
installed with circuit confirmation
LED. Be sure your capacitors are
working and your motor is
hooked up correctly.



Capacitor circuit board is moved
inside the endbell for crash pro-
tection. Brush hood assembly has
been moved closer to the com-
mutator for better brush support
and elimination of brush chatter.



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Truck pulling and no mullet jokes!

How-To's

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I can read numbers! Awesome.

- 147 • Act Like a Sponsored Driver**
And it doesn't involve spitting?

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A snowmobile to be proud of.

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Barry makes Associated's car go faster and tells all.

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Simple ways to stop the glitch.

Xtreme RC Cars
MAGAZINE

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Waaa, I'm Derek, waaa.

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Free horsepower!

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Dave shows you he's a flamer.

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Map quest to the mountains!

- 198 • Mail Sack**
Read my sack.

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Stuff that's just wrong.

- 208 • Racers' Rides**
Hey it's me.

Other Stuff In This Issue:

Lots of "waaaaa" is packed in these pages. There's dyno information that nobody else can do. That's right you prop dyno users, throw your chicken sticks against the wall. Waaaa! Our dyno uses a prop. WAAAAA! This is what you get when you work 18 hour days to get the magazine done... WAAAA!

On This Page:
It's what you're looking at.

On The Next Page:
Mmmmm....corn.

On The Cover:
Thunder Tiger's new buggy is not chicken anymore. Waaa.

Cover photos by: Jason Yu

This page: Jason Yu

Next page: Jason Yu

Pictures in your wallet: Jason Yu

Some day this page will make sense. Waaaa!





Wow.

And besides stunning styling, JR's fully-synthesized XS3 Pro features memory for 10 models and a new, micro-size RS310 receiver. What's more, it boasts a new adjustable trigger, an 85 oz/in metal-gear Z590M steering servo plus a standard servo for throttle. All for only \$249.99*.

Oh, we nearly forgot. The XS3 Pro also includes every one of the groundbreaking features found in JR's original crystal-free XS3 radio. Like we said, wow.

Performance Tests

68 • Associated RC18T
Little in size, big on performance.

**80 • Thunder Tiger
EB4 S3**
Eye of the Tiger and some Thunder.

92 • XTM XLB
That's one big bugger!

104 • Kyosho V-One RRR
R...R...R...vroom.

First Takes

**62 • RD Logics
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More durable and with wheels that pop off.

Under The Scope

**134 • Duratrax Ice
Charger**
Yo, VIP! Let's kick it...Ice Ice baby.

166 • Trinity Cobalt
Better and with a blue light.

Xtreme RC Cars
magazine

Editorial

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Phone: **1.800.406.4288**

Back Issues, Xtreme Gear, Sales Info

Phone: **1.888.200.8299**
Our Complete Web Site: **www.rc411.com**

Hobby Shop Sales

Retail Vision: **1.800.381.1288**

Advertising Rates

Available upon request. Contact:

Advertising Department: Xtreme RC Cars

2000 S. Grove Ave., Bldg. A, Suite 111, Ontario, CA 91761
ph: **909.947.5626** fax: **909.947.8165**

National/International

Newsstand Distribution
The Curtis Circulation Company

Xtreme RC Cars (ISSN 1535-9646) is a publication of Think Omnimedia LLC, 2000 S. Grove Avenue, Bldg. A, Suite 111, Ontario, CA 91761; Phone: 909.947.5626; Fax: 909.947.8165; E-mail: mikev@rc411.com. Subscription rates are \$24.99 for 12 issues (one year), \$79.99 per year for foreign airmail, \$39.99 for Canada and Mexico. All rights reserved. The entire contents are copyright 2005 Think Omnimedia LLC, and may not be reproduced in any manner in whole or in part without written permission from the publisher. The views and opinions of the writers and advertisers are their own and do not necessarily reflect those of Think Omnimedia LLC, the publisher, or the editorial staff. The publisher assumes no responsibilities for advertising claims, errors, and omissions. **Xtreme RC Cars** is put together in the RC car capitol of the world, Southern California.

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THINK
OMNIMEDIA LLC

Read Xtreme RC Cars.
Printed in the U.S.A.



Waaaaa I want to be a copy editor too! WAAAA.



QUANTUM 2

COMPETITION

#LRP8083



The Future is NOW...

The World's First "REACTIVE FREQUENCY" Speed Control!

- Over 5 Turn Motors
 - Variable Frequency REACTIVE Software
 - 100% WATERPROOF!
 - 150 amps continuous
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0.013 Voltage drop @20 A.
 - 100% Digital Technology with 3
adjustable modes: Punch Control, Initial
Brake, and Automatic Brake
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TEAM ASSOCIATED

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Approx.
1" by
1 1/8"
footprint!

LRP's Quantum Competition Speed Control established the standards for pro-level racing speed controls, becoming the championship-winning choice for the majority of the world's top R/C drivers, including Mark Pavidis, Billy Easton, Matt Francis, Craig Drescher, and many, many others.

Now, LRP is proud to introduce the successor to the legendary Quantum Competition, the next generation Quantum Competition 2 (QC2).

The QC2 takes digital speed control technology another step forward with its revolutionary "Reactive Frequency" feature. Whereas all previous-design ESC's run at a single assigned frequency, the QC2's intelligent circuitry actually calculates and adjusts the drive frequency during the run... adjusting to a lower frequency for more "punch" is coming out of a corner, and adjusting to a higher frequency at the end of the straight for more top speed and longer run time.

The QC2 also features three adjustable running modes, and is also 100% waterproof... you can actually run the speed control under water without damage!

LRP's Quantum Competition 2...simply the world's most advanced digital electronic speed control.

LRP

ELECTRONIC

ARE WE ALL BIG BABIES?

I'm beginning to think that we are all just a bunch of babies. Ever go over to a friend's house where there's a bratty kid just complaining and whining about anything and everything? I have, and sometimes I think this industry is that bratty, spoiled kid.¹

There are just too many examples of this all around us.² You go to a race and the racers complain about the organization, the organization complains about the racers, the manufacturers complain about other manufacturers, magazines complain about other magazines, and I basically complain about them all.³ It's a pretty vicious cycle that slows down the progress of our industry. When will we pull our heads out of our asses and work towards a unified industry? The phrase "united we stand, divided we fall" not only holds true for our country, but for our industry as well.

I've been a part of this industry for about five years⁴ at a level that most hobbyists will never see, and I've watched old grudges make industry leaders do some pretty stupid things that not only lost them a lot of money, but hurt the industry by perpetuating these conflicts. Even at the last IFMAR Worlds, there were rumors of exclusive media contracts and shady deals that created unnecessary drama and negativity at a race that's supposed to be a spectacle of all that is good in our industry. Instead, since we are all looking at the small picture of "what's good for me right now" and trying to make the short-term buck, people will do things that aren't really good for them (or for anybody else) in the long run.

So when are we all going to get a little bit smarter? When will we realize that the industry has the potential to grow to a size that we've only dreamt about? Sure, we'll have to forget past grudges, stop thinking that our favorite class is the only one that is important, and actually work to promote the industry as a whole and not just for ourselves. I'll be the first to admit that realistically I do everything for my own benefit—we all really do—but sometimes you have to make it look like we're all getting along so that people who aren't already aware of the industry and come to check it out don't see that bratty kid crying in the corner and run the other way.⁶

Godspeed,



Derek Buono
derekb@rc411.com
Executive Editor



1. That kid that got all the cool toys while you played with your Slinky and plastic army men.
2. I know what you are thinking at this point...keep reading, smartass.
3. See, I told you I knew what you were thinking. I complain about myself too!

4. Been racing since I was 12.
5. Right now, a beer and a nap would be good...no?
6. So go make up and lets get a move on!

TEAM RANTS

PUBLISHER

MIKE VELEZ



WHAT'S GOOD FOR ME RIGHT NOW:

More readers.

PERSON I'D LIKE TO HOLD HANDS WITH:

Jenna Jameson

COOLEST VINTAGE TOY I USED TO OWN:

The Bionic Man action figure.

EXECUTIVE EDITOR

DEREK BUONO



WHAT'S GOOD FOR ME RIGHT NOW:

Bikini Team, oil, and a Slip-N-Slide.

PERSON I'D LIKE TO HOLD HANDS WITH:

President Bush

COOLEST VINTAGE TOY I USED TO OWN:

G.I. Joe Sky Striker plane.

ART DIRECTOR

ANDY MOCK



WHAT'S GOOD FOR ME RIGHT NOW:

The blonde in Mail Sack.

PERSON I'D LIKE TO HOLD HANDS WITH:

The drummer of Del Leppard.

COOLEST VINTAGE TOY I USED TO OWN: My old school Stomper with the Wild Mountain play set.

ON-LINE EDITOR

DAVE PALACIOS



WHAT'S GOOD FOR ME RIGHT NOW:

A nice long vacation.

PERSON I'D LIKE TO HOLD HANDS WITH:

Nikki Cox

COOLEST VINTAGE TOY I USED TO OWN:

Generation one Transformers and Voltron.

SENIOR PHOTOGRAPHER

JASON YU



WHAT'S GOOD FOR ME RIGHT NOW:

Angelina Jolie.

PERSON I'D LIKE TO HOLD HANDS WITH:

My wonderful girlfriend Dayna... or Angelina.

COOLEST VINTAGE TOY I USED TO OWN:

The original Nintendo Entertainment System (NES).

TECHNICAL EDITOR

SHANE ARCHER



WHAT'S GOOD FOR ME RIGHT NOW: Watching the extended Lord of the Rings trilogy, the Star Wars box set, and Ghost in the Shell Standalone Complex...all in one eye-popping 24-hour marathon.

PERSON I'D LIKE TO HOLD HANDS WITH:

Keira Knightley. Over and over again!

COOLEST VINTAGE TOY I USED TO OWN: R.O.B.

EDITOR

STEPHEN BESS



WHAT'S GOOD FOR ME RIGHT NOW:

Auto insurance for stolen cars.

PERSON I'D LIKE TO HOLD HANDS WITH:

The guy who invented LoJack.

COOLEST VINTAGE TOY I USED TO OWN:

My 1977 Daishen radio control BMW with working engine noises.

EDITOR-AT-LARGE

JEFF ENVEIGH



WHAT'S GOOD FOR ME RIGHT NOW:

Vaseline, root beer, and my blanket.

PERSON I'D LIKE TO HOLD HANDS WITH:

Derek...because he's so strong.

COOLEST VINTAGE TOY I USED TO OWN:

They don't have toys in Canada, but I had a wicked snowball one time.

EDITORIAL ASSISTANT

COLLIN COCORES



WHAT'S GOOD FOR ME RIGHT NOW:

Chipotle and a \$50,000 check.

PERSON I'D LIKE TO HOLD HANDS WITH:

Jessica Alba or Kristen Kurik. I can't decide since I've never held a girl's hand before.

COOLEST VINTAGE TOY I USED TO OWN:

The original Teenage Mutant Ninja Turtles.

ANDY'S DOG

SAMMY



WHAT'S GOOD FOR ME RIGHT NOW:

To have this stupid lamp shade taken off.

PERSON I'D LIKE TO HOLD HANDS WITH:

Andy, he's my hero.

COOLEST VINTAGE TOY I USED TO OWN:

Andy's old school Stomper with the Wild Mountain play set...until I ate it.

Orange Power

GP3300VE



#6000: Orange Power
GP3300VE Ni-MH Matched
Platinum 6 Cells

#6100: Orange Power
GP3300VE Ni-MH Matched
Gold 6 Cells



What Makes Novak Batteries Better than the Rest?



Novak-designed
Accu-Match

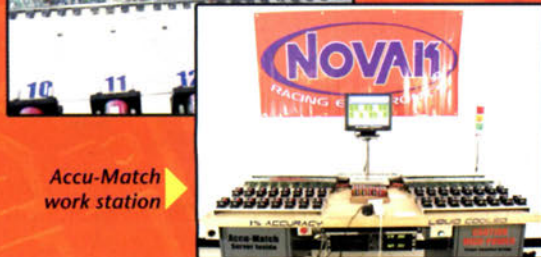
Channel Display 1

CELL	1	2	3	4	5	6
Value	1.4179J	1.4179J	1.4179J	1.4179J	1.4179J	1.4179J
Charge Time	1.4179J	1.4179J	1.4179J	1.4179J	1.4179J	1.4179J
Discharge Time	1.4179J	1.4179J	1.4179J	1.4179J	1.4179J	1.4179J
Max. Temp.	1.4179J	1.4179J	1.4179J	1.4179J	1.4179J	1.4179J
Min. Temp.	1.4179J	1.4179J	1.4179J	1.4179J	1.4179J	1.4179J
Max. Vol.	1.4179J	1.4179J	1.4179J	1.4179J	1.4179J	1.4179J
Min. Vol.	1.4179J	1.4179J	1.4179J	1.4179J	1.4179J	1.4179J

Individual cell
data is recorded



Individual Cell
Monitoring Circuitry



Accu-Match
work station

It's all in the way we treat our cells...more specifically, the battery matching system we designed from the ground up: the **Accu-Match**. Everyone has the same cells, but here's what makes ours better than the rest:

- ▶ Increased lifespan of battery pack due to quality of matching process.
- ▶ Liquid-cooled and climate-controlled system (only matcher than can consistently hold 30 amps).
- ▶ Individually bar coded cells eliminate human error by tracking each cell through entire process.
- ▶ Novak's Voltage Enhancement Method safely raises battery voltage and lowers internal resistance with no adverse effects on cell capacity.
- ▶ Individual Cell Monitoring Circuitry provides accurate cell data guaranteed to be within 1%.
- ▶ Accu-Match discards first second of discharge time to remove erroneous resting voltage data in order to provide accurate discharge times.
- ▶ Individual cells charged with exclusive Novak Ni-MH II charging system at 5.0 amps.
- ▶ Accu-Match stores each cell's information on a central server and chooses the best combination of cells for packaging.
- ▶ Final check: All 6 cells are scanned to ensure matched cells chosen by Accu-Match system are correctly packaged together.

RACE-PROVEN!

TQ/Winner — Roar Carpet Nationals, 1/12th Masters Sedan, Chuck Lonorgan
Winner — Roar Carpet Nationals, Touring Car Stock Sedan Class, Chuck Lonorgan
TQ/3rd Place — Roar Carpet Nationals, 1/12th Stock, Mark Smyka

For more details about our batteries and battery matching system, please visit our website

www.teamnovak.com

NOVAK

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#4477
Ionic & Platinum
Battery Combo

Combo &
Accessory
Items

Cross Bars
#5820-5822
oxygen-free plated
copper battery bars



#4505
Smart Tray &
Platinum Battery Combo



Jay Halsey - 1st IFMAR
Off-Road World Champion

The X1CR & X1 RTR are both designed, developed and tested in the USA by Jammin Jay Halsey and OFNA Team. The X1 comes with all the high performance / quality winning features included. Everything you've always wanted at a reasonable price. This is the most complete 1/8th scale off-road buggy kit that you can race out of the box and win.

JAMMIN' X1CR Features

- ◎ Lightened front & rear billet shock towers
- ◎ Front billet spindles with T-Bolt kingpin
- ◎ Lightened front & rear billet chassis stiffeners
- ◎ 3mm CNC billet chassis
- ◎ U-Joints front rear and center
- ◎ Carbon Fiber radio tray
- ◎ Carbon Fiber front top plate
- ◎ Carbon Fiber center brace
- ◎ All aluminum parts are hard anodized
- ◎ Radio Bag

PART # 34960

(electronics and engine not included)



**X1 Radio Bag
Included
w/ X1 CR**

JAMMIN' X1CR

A Complete Race Kit

JAMMIN' X1 RTR

READY TO
RIP

4WD
3 DIFFERENTIAL

EP BODIES
Includes OFNA Full Painted Bodies

JAMMIN' X1 RTR Features

- Front U-joints
- OFNA Shaft Start
- Force .26 engine
- OFNA Radio System
- 7075 Aluminum shock towers
- 2 Car Carrying Bag
- Molded plastic front & rear chassis stiffener

PART# 34961

PRE-ASSEMBLED
ASSEMBLED CHASSIS WITH RADIO AND ENGINE INSTALLED



Performance Features for the X1 CR & X1 RTR

- ◎ Lower radio box
- ◎ Lay down steering servo
- ◎ Increased suspension travel
- ◎ Steering geometry reduces bump steer
- ◎ Longer front and rear suspension arms
- ◎ Jammin high traction tires with dish wheels
- ◎ Fuel Tank - Lower and closer to center of chassis
- ◎ Lower body that helps promote better engine cooling
- ◎ Engine mounted lower and closer to the center of chassis
- ◎ New king pin design with a T-Bolt/Nut hardware - No more gluing
- ◎ Lower CG components make for a quicker responding and more stable car

**SHAFT
START**



**Adam Drake and the X-1 CR
win the first big race in 2004**

"On a roll" That can easily describe the results of Adam Drake and his prototype Jammin X-1 CR.

On Jan. 25th, 2004, at CRCRC In Ohio, Adam continued his winning by taking the A main 1st place trophy.

X1-CR wins the 2003 RC Pro Series West

Adam Drake was top qualifier and took 1st in every event of the RC Pro Series West that he entered. Taking the series championship over some of the best racers in the world.



Measure The Sag

After some tea and strumpets, Schumacher decided to offer this ride height and droop gauge. It's machine aluminum, anodized purple, and comes in a cool carrying case.

www.racing-cars.com

I Was First!!!

You'll notice a fuss over new long-life, high-silver content brushes and Schumacher's are the originals. They offer high power and over 20-run life with lower comm wear in most modified applications. They are available in standup standard size brushes only.

www.racing-cars.com



Team Orion End Bell For All

The Orion V2 modified motor has had some pretty good success across the globe. What really separates the motor from the rest is the aluminum endbell with angled, round brushes and it's now available to pop on any of your favorite motors even if it's not a V2. Or if you have older Orion or Peak motor with the old-school endbell, or a machine wound mod it will fit right on. You'll get all the benefits of the design and for less money.

www.teamorion.com



What's the Temperature Kenneth?

With Atomik's new Microtemp Kenneth will be able to find out the temperature for himself. The Microtemp is a hand held temp probe that should be perfect for measuring engine temperature, pipe temperature, and just about anything else you want to measure. It's an IR thermometer that has a temp range of -27F to +420F. Features include a lock mode, readings in Fahrenheit and Celsius, a minimum/maximum reading, and auto shut-off to keep that 40 hour battery life a useable 40 hours. Speaking of batteries, it comes with an extra along with a metal carrying case. Look for the Microtemp at a hobby shop soon thanks to the folks at Atomik RC.

www.atomikrc.com



Wheel Of Fish

The Sponsor wheel gets spun again and the chant of "no whammy" gets muttered by more than a few companies this month. In fact, this was one of the biggest name shake-ups in some time.

Billy Easton-packed his Yokomo bags and now lives over with the Losi's and Trinity motors.

Josh Cyrul-takes a break from making his own cars to help out Kyosho and Truespeed motors.

Mark Pavidis-leaves long time sponsor Associated in favor of Kyosho.

Paul Lemieux- takes the same path, leaving Losi to run Kyosho and Truespeed motors.

Mike Dumas-Jumps off Losi to take a train down to Texas to run



Losi King Pink

Adding to the tread pattern in the popular Pink Losi tire compound are the King Pin tires. They work well on lots of hard packed conditions. They are directional so be sure to note the rotation direction before gluing or you'll look like an idiot...just like Derek.
www.teamlosi.com



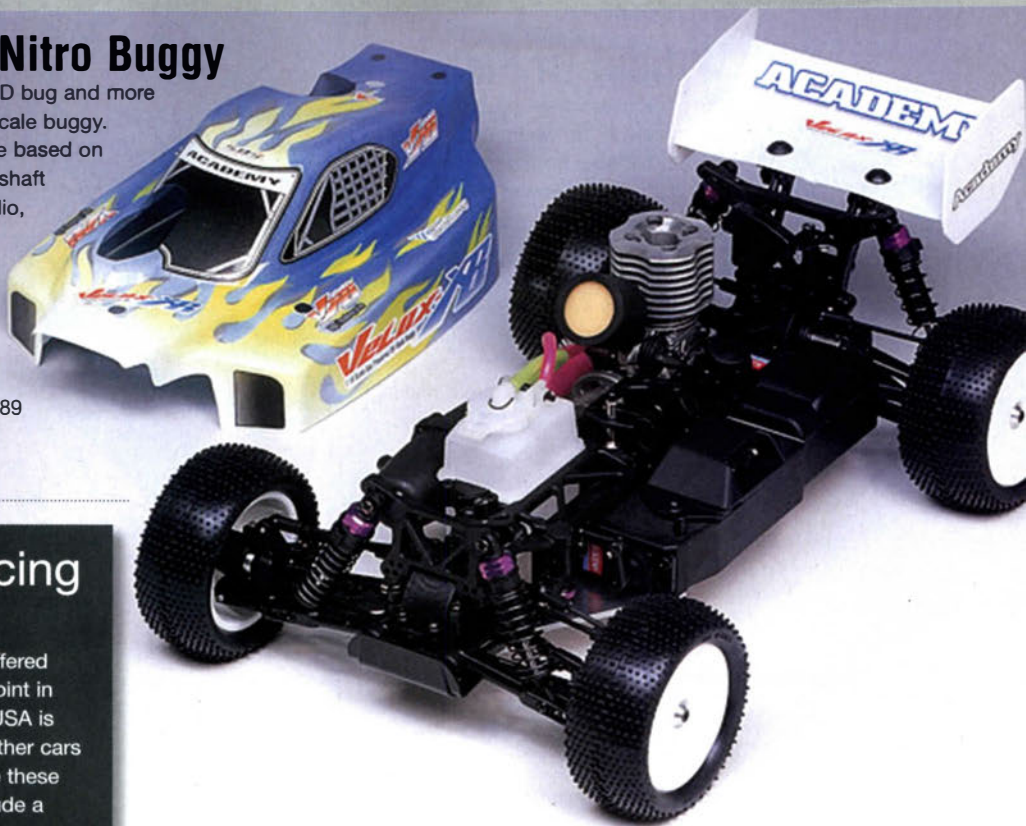
Hodapp X5

If you think back to our coverage of the 2004 ROAR Mod Nats you'll remember the story on the guys making a conversion for the XXX4. Well more like stitching a XX4 and XXX4 together combining the best of both. It seems Greg Hodapp has signed on to campaign the car in races. We'll see how he and the X5 fair in upcoming race coverage.

Don't you know the wheel of fish?

Academy 1/10 Nitro Buggy

Academy seems to have a 4WD bug and more proof is this Velox Nitro 1/10-scale buggy. From the pictures it looks to be based on their electric version including shaft drive. A .15 engine, Futaba radio, all metal gears and full ball bearings make it up to the task for some punishment. Academy informed us that most of the option parts of the electric version fit the Velox and with an MSRP of \$289 it doesn't look like a bad deal. www.modelrectifier.com



Titanium Racing Pro 4 Parts

Titanium Racing has only offered Schumacher parts to this point in the US. Now Schumacher USA is importing option parts for other cars and the first off the ferry are these for the HPI Pro4 which include a solid spool with replaceable cups, Ti screw set, alloy CV-axles, and alloy input shafts. While we got the parts for the Pro4, we were informed that the parts be offered for other popular sedans as well. www.racing-cars.com



Trinity GP3700

Like a silent auction, we knew they would come and Trinity is the first to send us mock-ups of the latest cells from GP. They climb the capacity scale to 3700mAh. We're guessing that they will have a higher IR than the previous cells, but there's no telling at this point. Soon our batteries will have the capacity to run forever...muhahahaha. www.teamtrinity.com



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NEWS GOSSIP RUMORS NEW GEAR SNEAK PEEKS UPDATES NEWS GOSSIP RUMORS NEWS

I've Got The Smallest

The guys at Pro Exotics must be pretty confident because they are hell bent on playing with snakes and making the smallest temp guns ever. Their newest temp gun is small enough to be swallowed and smuggled overseas. It's pen-shaped and a tick over 3 inches. It should fit inside most engine heads pretty well. While they might not be surgical-accurate for most people they can offer better information than spitting on the head...snake or engine.

The production version will be all black for that stealth look and should be sold for less than \$30.

www.tempgun.com



The Spring Taint Set

Schumacher has always had a full range of springs for their car and acknowledge that AE springs have become the standard. Well to fill the missing gaps the new springs are in between the AE rates for even more fine-tuning.

www.racing-cars.com



Collin came up with that caption.

Kyosho USA

If you didn't notice there's been a lot of Kyosho talk in this issue. It seems the planets are aligning for Kyosho to make a big push in the racing scene here in the States and while it's not official at this point you'd have to wear a helmet and have both eyes poked out not to see what is in the works. We're guessing by the time you read this the website for Kyosho will be Kyosho USA.

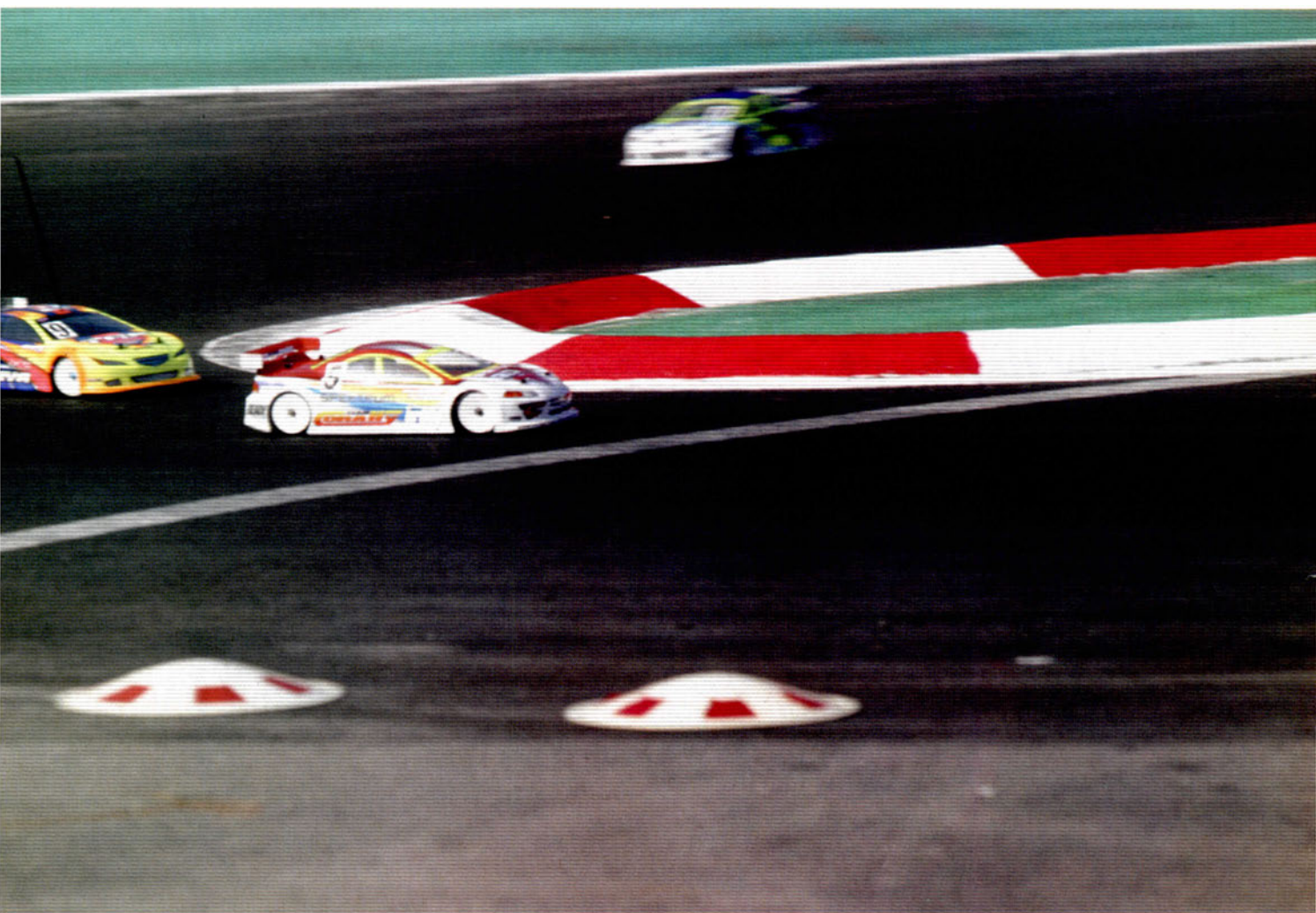
Ti One On Worlds

Reedy announced the Reedy Ti Worlds Edition motor that is based on the Ti modified motor. Spinning its heart out inside the motor is a hand-wound, precision-balanced armature featuring a 9mm mid-sized comm and two high-powered C4 magnets. Reedy claims the result is a motor that delivers more over-all power and RPM with a broader torque band.

www.rc10.com/reedy



Of 134 racers competing in the 2004 IFMAR Electric World Championships, only 21 used equipment that was immune to glitches and interference. They were using Spektrum 2.4GHz Spread Spectrum DSM.



Traxxas Ends The Argument

Traxxas is putting an end to all the argument; they've got the biggest big block. How's 540 blown cubic inches with 1500+ HP sound? Traxxas will be sponsoring a Monster Truck racing team this year. The Full-Sized T-Maxx will compete in the USHRA Monster Jam which is televised on Speed Channel™.

www.traxxas.com



Prospec for non Prospec

Not to be left off the "I have a cool motor mount" list Mugen now offers the one-piece Prospec engine mount for its MRX4 on-road racer. The off-road version was only available to the few who bought the MBX-5 Prospec kit, but if they are selling this one we'd hope that soon every MBX-5 owner can enjoy this one piece engine mount too.

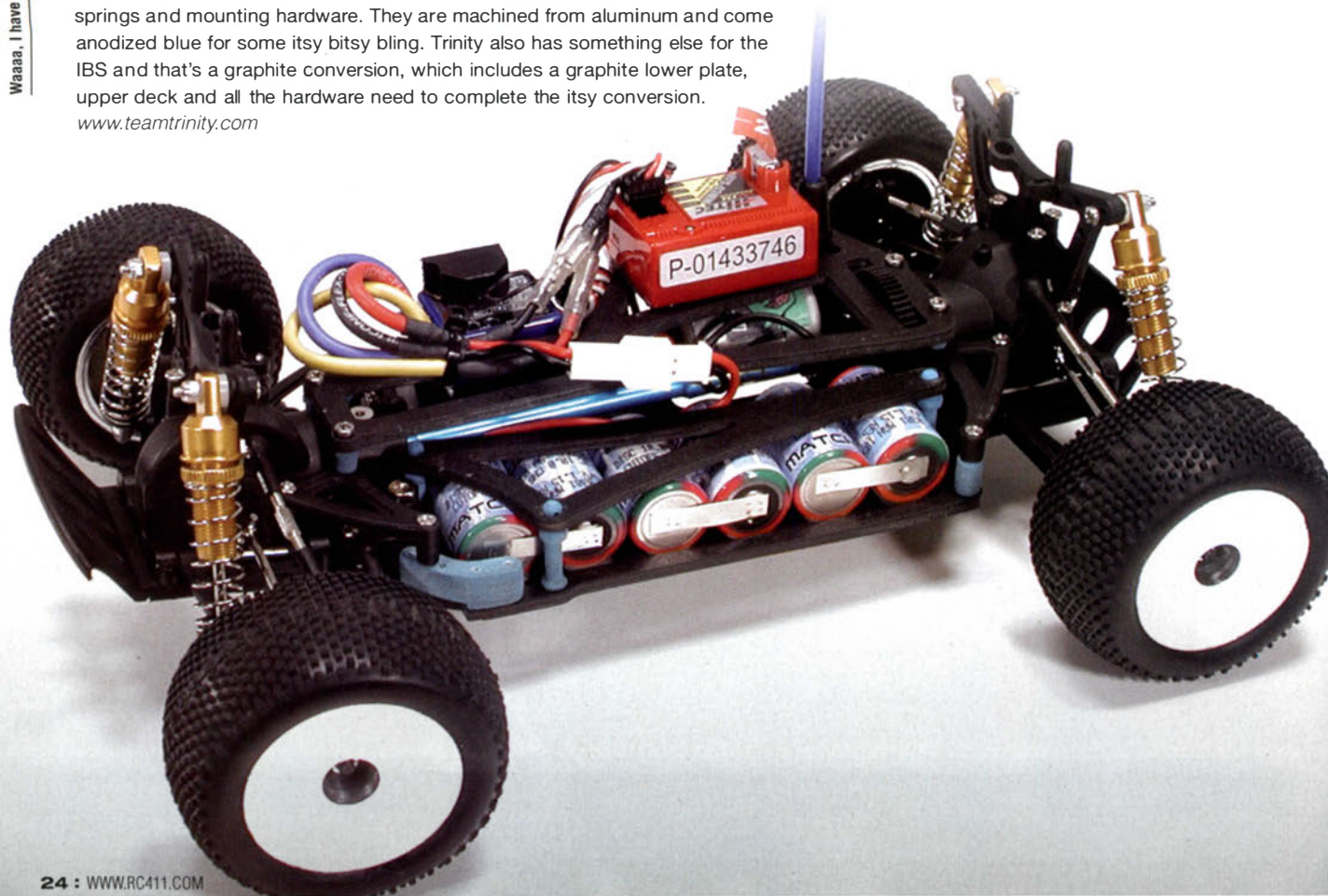
www.mugenracing.com

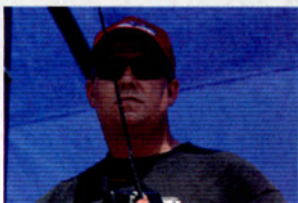


Trinity Itsy Stuff

The Itsy Bitsy Spyder may not have been out for too long, but the line of aftermarket goodies is streaming in and most of them are from Trinity. Trinity now offers an oil-shock conversion for the IBS that includes the shocks, springs and mounting hardware. They are machined from aluminum and come anodized blue for some itsy bitsy bling. Trinity also has something else for the IBS and that's a graphite conversion, which includes a graphite lower plate, upper deck and all the hardware need to complete the itsy conversion.

www.teamtrinity.com





"Using DSM, I never have to wait for an open frequency. That means more track time—especially important during practice. Plus the security and confidence I have in DSM means no worries about interference. It lets me totally focus on chassis setup and tuning—things that help me run faster."

Mark Pavidis



"At the World's, the drivers' stand was a steel shipping container with metal poles supporting its roof—a virtual RF noise chamber. Lots of racers, including me, were having radio problems. I installed Spektrum's DSM system just before qualifying and didn't have a single glitch for the rest of the week."

Tyree Phillips



"I've been running with DSM for months now and haven't had a single glitch. With DSM I feel totally connected with my car. And at the World's it was the same story."

Brian Kinwald

And here's what 3 of them had to say about 2.4GHz Spread Spectrum DSM.

Proven Technology.

Using Direct Sequence Spread Spectrum (DSSS) technology in the 2.4GHz band, Spektrum DSM (Digital Spectrum Modulation) is a proprietary application of technology that solves a wide variety of problems common in many of today's RC activities.

And with its performance proven by months of testing by Horizon and Team Losi® drivers prior to the 2004 Kissimmee races, DSM's impressive debut at a World Championship event came as no surprise.

Here are some of the facts behind its success.

An added benefit of 2.4GHz operation.

Besides DSM's immunity to interference from 27 and 75MHz radios, lap counting systems, telemetry units, cell phones, etc., it's important to know that all devices using the 2.4GHz band must conform to strict FCC regulations, requiring that they coexist without interfering with each other. Now that's security.

How DSM pays off for racers.

To begin with, no form of frequency control is required on the part of drivers. So waiting for a channel and a pin become a thing of the past.

Automatically locating and locking on to an available channel immediately on power-up, DSM equipment delivers extraordinary range (typically around 3,000 feet), lightning fast response, incredible resolution and an extremely robust, interference-proof RF link.

Also, as the graph below shows, DSM's operation in the 2.4GHz band places that link well above the frequencies of common 27 and 75MHz RC channels, as well as the frequencies at which all glitch-causing, car-generated RF noise occurs.



Easy to install, easy to own.

Simply remove the RF module of your transmitter and plug in its Spektrum counterpart. (They're available for KO, JR®, Futaba/Hitec and Airtronics transmitters using plug-in RF modules.)

Then install the small Spektrum™ receiver—with its short 8-inch antenna—in your vehicle in a normal fashion. That's it. (Plus you won't have to worry if your receiver is near a "noisy" speed control or ignition.) And if desired, you can trim the antenna to an incredibly short 3.6 inches.

What's more, you'll never have to return DSM equipment for a tune-up (there's nothing to tune), plus you'll enjoy the security of knowing it's backed by the service policies of Horizon Hobby, Inc.

And best of all, you'll discover that Spektrum DSM gear is eminently affordable, plus it'll be available at your local dealer's shortly.



JGTC and RC

FRESHNESS
Race Date:
12.18.04
GUARANTEED



POWER UP YOUR RTR!

Reedy "Spec 19 Quad-Mag Motor."

Step up the power of your RTR with Reedy's Quad-Magnet "Spec 19" Motor! A great choice for the B4 RTR, the TC3 RTR, or any Ready-to-Run electric with a speed control rated for a 19-turn or less motor.

#513 Reedy Spec 19 "Quad-Mag" Motor



Reedy's "Rated-X" Matched Sport Packs. Fully assembled in clear tubes so you can see the matching info right on the label of each cell. Don't settle for "mystery" cells in your sport packs, get Reedy's "X-Rated" packs and see the power you've been missing!

#700 Reedy "Rated-X" Sport Pack, GP 3300 cells

ONLY \$64.99
Suggested Retail Price



Suggested Retail Price

ONLY \$59.99

#699 Reedy "Rated-X" Sport Pack, Panasonic 3000 cells

Reedy Ni-MH Receiver Packs for Nitro Cars and Trucks.

Reedy receiver packs give you the long-lasting, reliable power needed for nitro racing, and have a great low price that makes them your **BEST** choice!



#615 Reedy Ni-MH Receiver Pack, (Hump style for RC10GT, Monster GT, Etc.)

#614 Reedy Ni-MH Receiver pack, (Flat style for Nitro TC3, etc.)

VS GOSSIP RUMORS NEW GEARS SNEAK PEEKS UPDATES NEWS GOSSIP RUMORS NEW GEARS SNEAK PEEKS UPDATES NEWS GOSSIP

The Japanese Grand Touring Championship made its first visit to anywhere other than Japan on December 18, 2004 at California Speedway in Fontana, CA. For those who aren't familiar with the event, it features some of Japan's best drivers racing cars that we see on a daily basis with more horsepower than we see on a daily basis. The entire event was a car junkie's dream times a hundred. There were car clubs, SCCA events, test drives, drifting, touring car racing and RC racing. Several of the companies, including *Xtreme RC Cars* magazine made it out to the event to show some car lovers smaller cars to love. The list of companies attending included HPI, Yokomo, GS Racing, and Pacific Coast Hobbies. We handed out over 1,000 copies of our magazine and people got to watch some exciting RC touring car racing. In conjunction with the event, only bodies used in the JGTC race were allowed to race. The event was awesome and we can't wait for next year.



Mini-MAX

Reedy Hop-Ups for Micros!

ONLY
\$42.99 Suggested
Retail Price



Reedy Mini-Max High-Voltage 1100 Ni-Mh Racing Battery Pack. Higher voltage means more power and that's just what you get with Reedy's new Mini-Max 1100s. Featuring much higher voltage output than stock battery packs the Mini-Max HV 1100 pack is the ticket to making your micro car rip up the road. Comes completely factory assembled with connector and fits directly into the RC18T! #616 Reedy Mini-Max 1100 Ni-Mh Battery Pack



ONLY
\$44.99 Suggested
Retail Price

Reedy Mini-Max Modified Motor. Seriously turn up the heat in your micro with the Reedy Mini-Max Mod Motor. Big time features like ball bearings and replaceable brushes are shrunk down to the popular 280-size to fit most 1:18 vehicles, especially the RC18T. #290 Reedy Mini-Max Modified Motor

www.rc10.com/reedy

REEDY

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headline:

ad copy:

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At Byron Originals, we know fuel like other makers only wish! Only Byron combines computerized blending accuracy, unequalled raw material purity, pressurized nitrogen blanketing, high velocity closed loop raw material integration, the absolute best recipe and the meanest punch of the pack — bar none.

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NEW R+T+R — unequalled performance and lubrication for off-the-shelf ready-to-run packages.

Official Fuel Sponsor for RCX 2004

Byron Fuels are available in nitro packages from 10% to 40% and can be purchased at most hobby shops. To find the dealers nearest you, visit byronfuels.com.



RACE

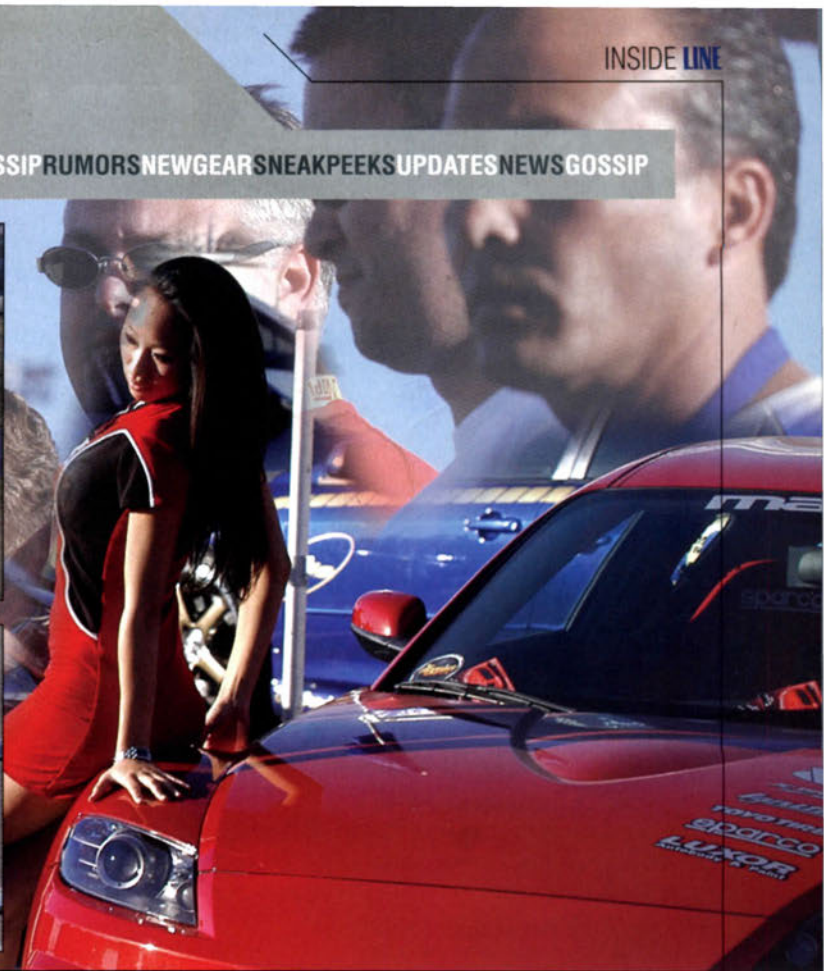
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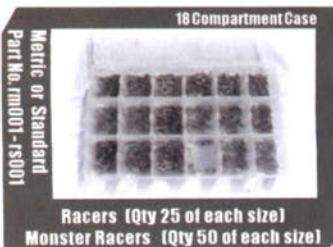


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9.5 VIOLATOR

KING PIN SUSPENSION

4WD
3 DIFFERENTIAL

READY TO
RIP

PART #34954



PRE-ASSEMBLED

- 135CC GAS TANK
- FORCE .28 ENGINE
- FRONT KP SUSPENSION
- OIL-FILLED COIL-OVER SHOCKS
- 330MM WIDTH
- THREE DIFFERENTIALS
- HARD COATED CHASSIS
- FRONT CVA'S
- 2 CAR CARRYING CASE
- FULL BALL BEARING SET
- 3.5MM SHOCKS SHAFTS

**SHAFT
START**

Both the Violator and the Blazer SST include OFNA's Shaft Start starting system to get your engine started fast and hassle free. Just place the dog bone shaft into the receptacle and push the button, that's all there is to it.

9.5 C-HUB

PART #34956

**C-HUB
SUSPENSION**

9.5 MBX

PART #34955

**MBX
SUSPENSION**

- 2 CAR CARRYING CASE
- OIL-FILLED COIL-OVER SHOCKS
- PRE-CUT BODY
- FAIL SAFE
- THREE DIFFERENTIALS
- FRONT AND REAR CHASSIS BRACES
- FRONT CVA'S
- FULL BALL BEARING SET
- PRE-PAINTED BODY



**FP
BODIES**
FULL PAINTED BODIES

Includes an OFNA Full Painted Body so you will look good right out of the box. No hassles with masking and painting.



PRE-ASSEMBLED

READY TO
RIP

READY TO
RIP

BLAZER

SST
KING PIN
SUSPENSION

PART #34953

PRE-ASSEMBLED

- HARDENED DIFFERENTIAL GEARS
- OFF-SET KING PIN SUSPENSION
- FRONT & REAR LONG DAMPERS
- FULL RUBBER SEALED BEARINGS
- 2 SETS OF RACING WHEELS & TIRES
- FRONT & REAR SWAYBARS
- 3.5 MM ALUMINUM SHOCK TOWERS
- COMPOSITE LONG SUSPENSION ARMS
- 2 CH. RADIO & HIGH TORQUE STEERING SERVO
- 9.5 VIOLATOR LONG WHEEL BASE - 330 mm
- USES 9.5 VIOLATOR HIGH TORQUE CHASSIS



The Blazer SST includes two sets of Tires and Wheels at no additional cost. Now you get the best of both worlds right out of the box.

Put on the Chrome Five Spoke wheels and Stadium tires for racing at the track or the Dish Monster Truck wheels and LZ Monster Tires for Bashing, Climbing Rocks and more.

FREE TIRES

9.5

PRO
PART #34950

C-HUB
SUSPENSION

&

MBX
SUSPENSION

- NOW INCLUDES C-HUB STYLE SUSPENSION AND MBX TYPE (FRONT & REAR)
- ADDITIONAL ANTI-SQUAT PLATES
- CNC FRONT AND REAR CHASSIS BRACES
- FUEL TANK SPLASH GUARD
- 3.5MM SHOCK SHAFTS
- FRONT, CENTER AND REAR CVA'S
- GRAPHITE & ALUMINUM SHOCK TOWERS
- ALUMINUM RADIO TRAY POSTS
- BALL BEARING STEERING
- ALUMINUM WING STAY POSTS
- DUAL DISC BRAKES
- THREADED SHOCK BODIES
- 2 CAR CARRYING CASE



2 CAR
CARRYING CASE

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2004 K.O. GRAND PRIX CHAMPION
PEAK RACING
FACTORY DRIVER
TOURING EDITION VANTAGE MOTOR





SCREW THE TAPE

HOLDING YOUR SERVO IN PLACE

Many chassis layouts use plastic servo standoffs to fasten the steering servo to the vehicle. Although the standoffs are usually sufficient for securing the servo, it's wise to use a piece of double-sided servo tape as well to ensure that the servo stays put. With the high output torque of today's servos and the mass of the cars, strengthening the mounting will ensure that all of the power and responsiveness of the servo goes straight to the wheels, rather than getting wasted as the servo twists. Plus there will be less of a chance that the servo will come loose during a race, so it is a win-win situation.



LONGER CLIPS

Losing body clips or having body clips get

pulled through Lexan in a crash are two common race-ending problems, so instead of using four small body clips to secure your vehicle's body to its chassis, use two long body clips. These longer clips will not only stay on the car more securely, they will also eliminate any chance of the body tearing and getting pulled over the posts and body clips in a crash. As an extra precautionary measure you can slightly bend the tip of a long body clip so you have to twist it to get it through the second body post hole. This will help keep it even more securely mounted to the car.



ADJUSTABLE SLOP

Over time, the plastic bushings used to anchor the top of a shock to the shock tower can wear out, leading to excessive play in the upper shock mount. Even fresh bushings can be slightly sloppy, so to remedy this, use aluminum locknuts on the shock mounting screw and over-tighten them slightly to cause the plastic bushing



to mushroom out just enough to eliminate the slop. You never want to tighten the nut so much that the shock begins to bind, but you should be able to find a good torque setting that will reduce most of the end-play while still offering smooth shock movement.

Screw longer slop nuts?



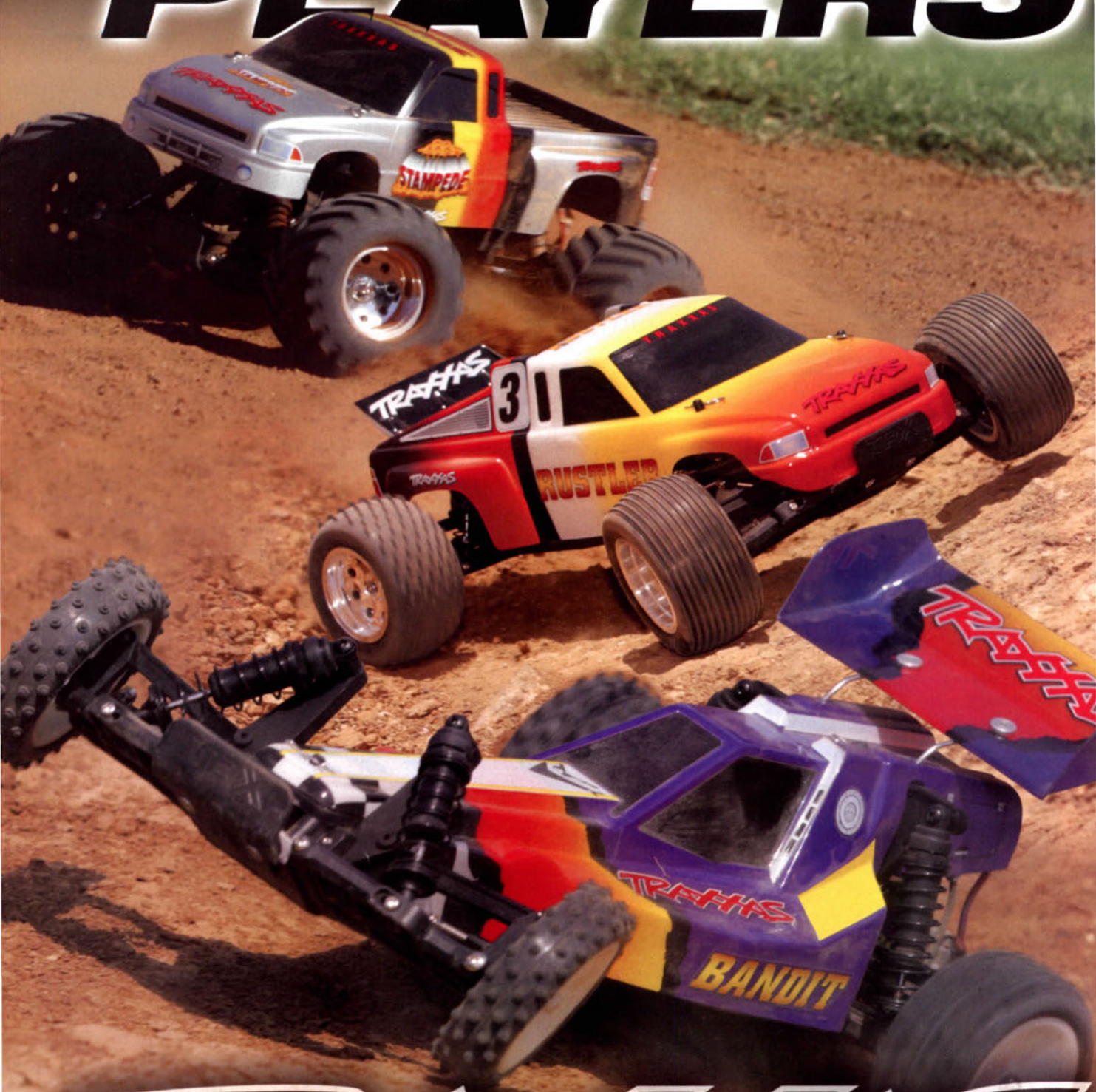
RANDOM NUTS

Look over your car for areas where screws or ball joints are used to secure parts but don't have a retaining nut on their backside. If you think the area could become a problem during longer races then add a small locknut to the back to help keep



the part from coming loose. This is especially important when the screw threads into a plastic part that might be (or become) slightly worn out. Good examples are on the back of shock tower mounting screws, behind ball links, and on throttle linkages for nitro cars. Be sure that the new nut doesn't cause any other moving parts to bind once it's installed.

POWER PLAYERS



TRAXXAS

WHERE POWER MEETS TECHNOLOGY™

ELECTRIC OFF-ROAD!

2WD The Number-One Selling RTR Stadium Racer!
READY-TO-RACE®

RUSTLER™



Electric Stadium Race Truck

The Traxxas Rustler has built a legendary reputation for easy set up, incredible performance, and unmatched durability. It's loaded with race inspired features such as the Magnum 272 ball bearing tranny with slipper clutch, 20-turn Stinger modified motor, fully tuneable oil-filled Ultra Shocks, and tough independent suspension and bellcrank steering with proven racing geometry. The tough planetary gear differential requires virtually no maintenance or adjustment. Rustler is the proven performance leader.

- Painted & trimmed Prographix™ body
- Stinger™ 20-turn modified motor
- Magnum 272™ transmission
- Planetary gear differential
- Adjustable slipper clutch
- Oil-filled Ultra Shocks™
- 6 or 7-cell capacity
- Chrome wheels

Available with XL-1
(Model 3706 only)



BANDIT™

READY-TO-RACE®

2WD

Hot-Performing Off-Road Buggy!

Bandit offers classic buggy style with the extra kick of the smooth ball bearing tranny, slipper clutch, and the powerful Stinger modified motor. Sharp handling response comes from the long suspension arms, oil-filled Ultra Shocks, bellcrank steering, and the aggressive knobby tires. Bandit is built tough for rough and tumble play. Its Ready-to-Race® with a rotary speed control, and a hot looking painted and trimmed ProGraphix body with separate adjustable wing.

- Painted & trimmed Prographix™ body
- Off-Road tires and dished wheels
- Stinger™ 20-turn modified motor
- Magnum 272™ transmission
- Planetary gear differential
- Adjustable slipper clutch
- Oil-filled Ultra Shocks™
- 6 or 7-cell capacity

New!



Now Available with the
XL-1 Electronic Speed Control!

Efficient fully-proportional,
forward/reverse electronic
speed control.

(Model 2406 only)



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STAMPEDE™



Available with XL-1 (Model 3606 only)

Monster Ground Clearance!

Stampede is the first high performance monster truck. The chassis is pure monster with it's reinforced channel design, fiber composite materials, and unsurpassed ground clearance. The suspension is pure race with the track-tuned suspension geometry and fully adjustable oil-filled shocks of a competition-level race truck. Stampede features a ball bearing transmission with slipper clutch, 20-turn Stinger modified motor, and a super strong planetary gear differential that uses metal gears to handle real-world abuse. Stampede is totally unique. There is no other product like it!

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- Magnum 272™ transmission
- Four-inch ground clearance
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- Planetary gear differential
- Adjustable slipper clutch
- 6 or 7-cell capacity
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2WD



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- ✓ Protected 3 Amp BEC
- ✓ Adjustable Brakes
- ✓ Receiver Priority
- ✓ User Solderable Posts
- ✓ New Heatsink Case

SPECIFICATION

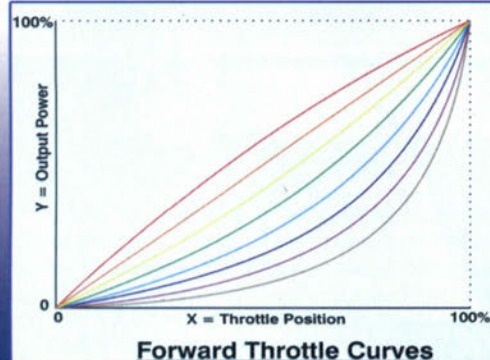
Set-Up	True-One-Touch
Direction	Forwards/Brake
Motor Limit	No Limit
Number of Cells	4 - 10
Operating Voltage	4.8 Volts - 12.0 Volts DC
B.E.C. Output	5.6 V / 3.0 A max.
Weight	43gm (incl. wires) 26gm (excl. wires)
Dimensions (mm)	L28.0 x W31.0 x H15.5

	Forward	Brake
Operating Frequency	1.5-5.0kHz (Programmable)	
Voltage Drop @ 10A	0.006V	
Resistance	0.625 mΩ	
FET Cont. Fwd Current	500A*	
Rated	50A*	
Peak Current	1000A*	300A*

* Rating of GEN-R FETs @ 25°C



More information can
be found on line at:
globalhobby.com



Cirrus - Item No. 159182
ECO 20 - Item No. 159121
Tempo 11 - Item No. 159131
Super E-Truck - Item No. 159153
RV Max - Item No. 159161
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STARTING BOX

S >> NOVICE >> INTRO

DUCTION >> BEGINNERS >> NOVICE >> INTRODUCTION >> BEGINNERS

New Kits Need TLC

CARING FOR YOUR NEW KIT

Words: Aaron Waldron

Ready-to-run RC cars have come a long way since the days of mechanical speed controls and 540 Mabuchi motors. RTR kits provide a simple, low-cost way to enter the hobby and have brought more new enthusiasts into the hobby than any other single breakthrough in the last ten years. Nearly every kit manufacturer in the industry offers a few of their models as complete, pre-assembled packages, and many of these cars share a great deal of their equipment with their competition-bred cousins, promising solid handling and competitive performance on the track.

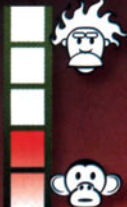
The demand for competition-inspired RTR kits is on the rise, and the industry is listening. Team Losi, Team Associated, Kyosho, and OFNA are only a few of the big names who have recently released their most popular kits in race-ready form. With such high-quality gear readily available, only simple adjustments are needed to transform your Ready-To-Run into a Ready-To-Race.

DIFFICULTY METER

SKILL LEVELS: 1=MONKEY • 5=EINSTEIN

Xtreme RC Cars

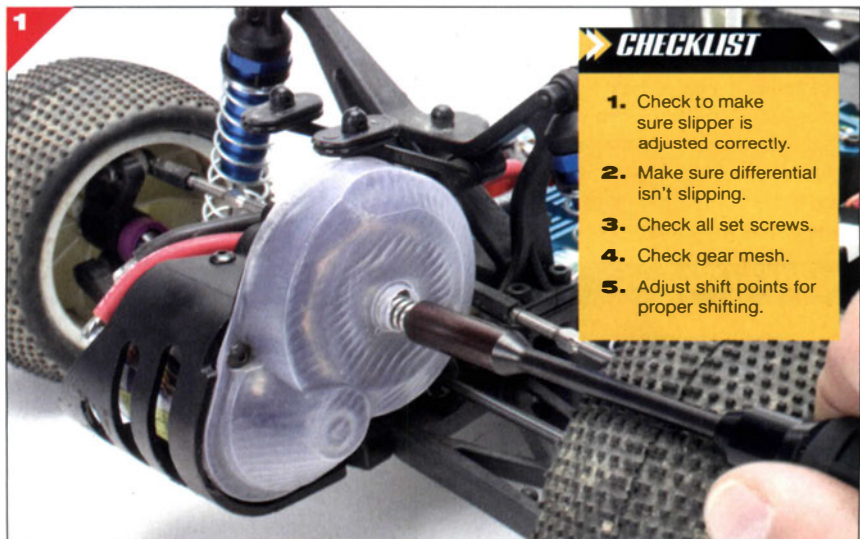
2.0



Transmission

The heart of every race car is its transmission. RC cars generally have very simple gearboxes in comparison to their full-size counterparts, but an efficient drive train is important nonetheless.

The differential is largely responsible for how well a car will or won't turn. While ball diffs are adjusted with a nut and screw, and gear differential action is changed via different viscosities of silicone oil, a few general rules do exist. A looser diff will allow the car to rotate in the corner, while a tighter diff will help the vehicle track in a straight line when exiting the corner. A differential should never be allowed to slip, as this will almost certainly destroy parts and can stop your car from moving an inch!



CHECKLIST

1. Check to make sure slipper is adjusted correctly.
2. Make sure differential isn't slipping.
3. Check all set screws.
4. Check gear mesh.
5. Adjust shift points for proper shifting.

Shane's finally off the nipple.



You may need to ask a friend to borrow his hand if you have hands like a carnie.

A slipper clutch utilizes spring tension and friction pads to absorb shocks to the drive train, saving gears and differentials from the stress of high load situations, such as landing off of large jumps. Slipper clutches are often used as traction control devices, but should never be locked down or permitted to slip excessively. Many nitro on-road cars and nitro monster trucks use two-speed transmissions to accelerate more quickly without sacrificing top speed. A centrifugal clutch is used to shift between first and second gear, and this engagement point is often adjustable with the turn of a screw; turning it counterclockwise will make second gear engage sooner, while clockwise will do the opposite. Use this adjustment to help your car accelerate quickly from corner to corner, and shift into high gear in time for a top speed charge down the straightaway.



Twenty-five years later than most.

Clutch

The most powerful nitro engine is nothing without a properly tuned clutch. Many RTR nitro kits use a simple centrifugal clutch setup, where shoes are used to engage the clutch bell. Changing the weight of these shoes, either by adding weight or removing material, can change the effective engine RPM at which the clutch engages.

The heavier the clutch shoe, the sooner the clutch will engage, helping in low-traction situations and when you want to smooth out the low-end power of a nitro engine. Conversely, a lighter shoe will engage later, giving you more of a "hit" in power and more bottom-end torque.

CHECKLIST

1. Check for proper spacing in clutch bell.
2. Remove glaze from inside the clutch bell with a Scotch Bright pad.
3. Check springs for signs of heat stress.



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Precision ground and polished 6AL 4V American Titanium. Exact fit in both metric and standard sizes.

3004	RC10B3/T3
3005	RC10 B4/T4
3006	RC10 B4/T4 Inner Front-2
3007	RC10 B4/T4 Inner Rear-2
3012	RC10T2/GT
3031	RC10 TC3
3032	RC10 TC3 2-Inner Front/Rear
3033	Nitro TC3
3034	Nitro TC3 2-Lower Inner Front/Rear
3035	Nitro TC3 2-Upper Inner Front
3036	Nitro TC3 2-Upper Inner Rear
3037	RC10 TC4
3054	XXX
3056	XXX-4
3057	XXX-BK2
3066	XXX-T MF2
3067	XXX-T
3068	XXX-NT
3072	XXX-S
3176	HPI RS4 PRO 2
3178	HPI RS4 PRO 3
3182	HPI RS4 Nitro MT



Turn Buckle/ Hinge Pin Kits

All the Titanium goodies plus a free aluminum billet wrench.

4004	RC10 B3
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4012	RC10 T2/GT
4013	RC10 T3
4014	RC10 T4
4031	RC10 TC3
4033	Nitro TC3
4037	RC10 TC4
4054	XXX
4056	XXX-4
4057	XXX-BK2
4066	XXX-T MF2
4067	XXX-T
4068	XXX-NT
4072	XXX-S
4176	HPI RS4 PRO 2
4178	HPI RS4 PRO 3
4182	HPI RS4 Nitro MT



Turn Buckles

CNC machined from 6AL 4V American Titanium. 3mm left and right hand threads. Guaranteed for replacement if broken or bent.

2004	RC10 B3
2005	RC10 B4
2012	RC10 T2 / T3 / GT
2014	RC10 T4
2031	RC10 TC3
2033	Nitro TC3
2037	RC10 TC4
2054	XXX
2056	XXX-4
2057	XXX-BK2
2067	MF2 / XXX-T
2068	XXX-NT
2072	XXX-S
2121	X-RAY
2174	HPI RS4 Nitro
2176	HPI RS4 Pro 2
2177	HPI RS4 Rally
2178	HPI RS4 Pro 3
2181	HPI RS4 MT
2182	HPI RS4 Nitro MT
2701	Traxxas Nitro Sport
2702	Traxxas Nitro Rustler
2703	Traxxas Nitro Stampede
2722	Traxxas Rustler
2723	Traxxas Stampede



Wrenches

9901	Punisher Wrench
9902	Punisher Pro Wrench (the purple one)
9903	Sport Sedan Wrench (the little one with the flat head)

LUNSFORD

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Brakes

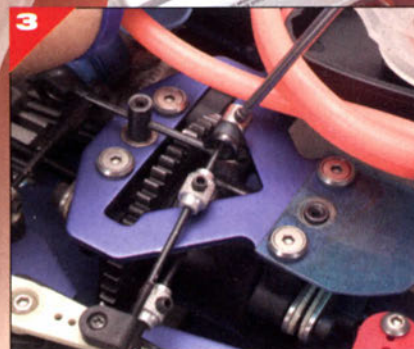
Your new RC car's braking system is very important, as it is quite often the last thing saving your car from a serious collision! You should always check the brakes before driving your new rig, and give them regular attention throughout the life of the car.

The brakes of an electric RC vehicle are very simple. The electronic speed control stops the rotation of the motor, and the car stops. In a nitro car, the throttle servo, linkage, and braking system all combine to slow the car. 2WD cars have two-wheel braking, while 4WD cars have all four tires helping to put the binders on.

The strength of the brakes can be adjusted with the end-point adjustments on your radio, and with the servo linkage on the car. Because locking up the tires can cause you to lose control, you may want to adjust your brakes to simply slow the car down quickly without sending it into a skid. If you plan on driving an off-road vehicle on the street, you should set the brakes to lock up immediately; the brakes can get very hot if allowed to slip, and can even start to melt!

CHECKLIST

1. Check radio for servo throw and adjust if necessary.
2. Adjust physical linkage to provide the desired amount of stopping force.
3. Check set screws on linkages.



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68T, 70T, 72T

Suspension

The shocks and suspension of your new racer are integral to your racing success, since an ill-handling car is harder to control and won't do anything good for your chances of winning! Spring sets and shock oils are very inexpensive and provide valuable tuning aids. The manufacturer of your kit will likely be able to provide setup information, and give you a good starting point. The best way to learn the effects of each change is to try making one adjustment at a time and taking notes as to the results of each modification.

A combination of shock oil, the shock piston, and the shock spring make up the action of each shock. Generally, a stiffer shock will make the car react more quickly than a softer one, but can upset the car over rough terrain. Always remember that shock dampening works in conjunction with the spring, so make your adjustments accordingly.

Spring preload changes the ride height of the car, and is one of the most significant adjustments you can make. Generally, whichever end of the car rides lower will have more traction. To adjust the spring preload, you'll either use spring clips or move the spring collar manually, be it with a screw or by twisting a threaded collar up or down on a threaded shock body.

CHECKLIST

1. Check for proper ride height and adjust preload as needed.
2. Check for excessive play in suspension and use shims.
3. Check oil in shocks to make sure it's clean, and replace if required.



As with anything, the best information comes from experience. Experienced racers will spend practice time making adjustments to their cars and taking notes based on the changes they had made. In addition to spending time refining your driving skills, paying attention to the adjustments available on your car to learn what each does can lead to lower lap times, which means more trophies! 🏆

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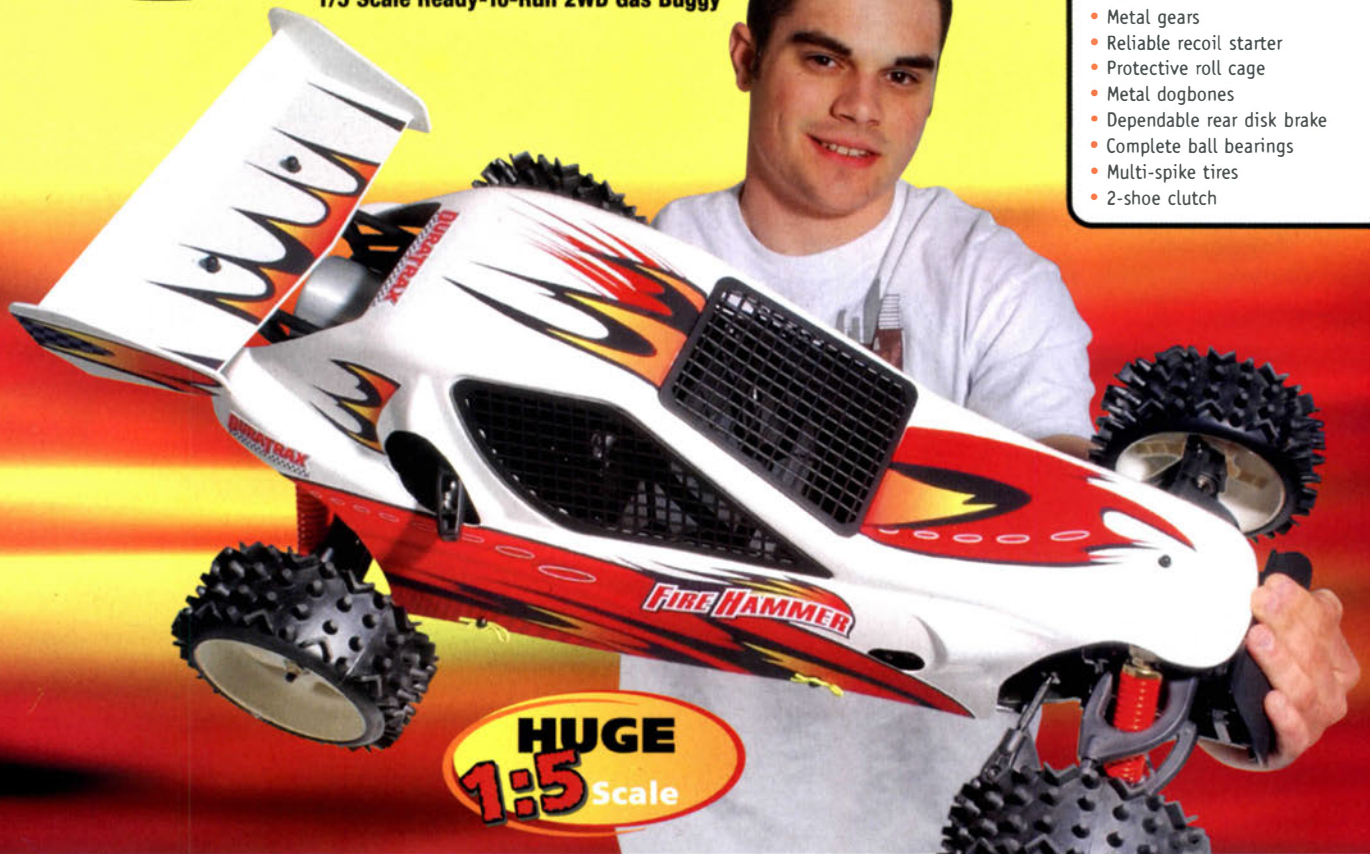
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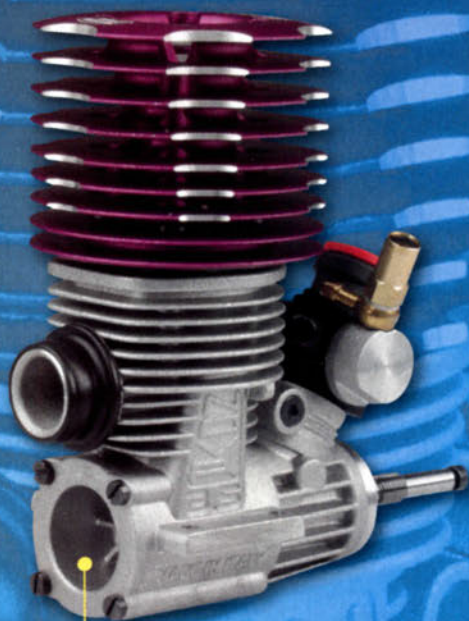
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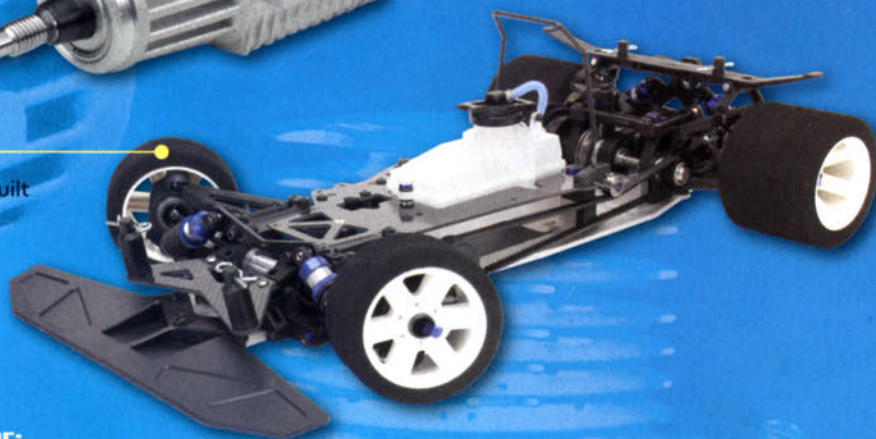
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Pavidis Testing KYOSHO 2wd BUGGY

A recent day at one of Southern California's local tracks confirmed what we had all heard as rumors: Mark Pavidis was seen testing a Kyosho 2wd off-road buggy in place of his former sponsor's vehicle. Although details are sketchy at this point, we do know that Mark recently signed an exclusive contract with Kyosho to drive all of their vehicles...which makes us wonder what Kyosho has up their collective sleeve in terms of competition 1/10 buggy, touring car, and stadium truck.

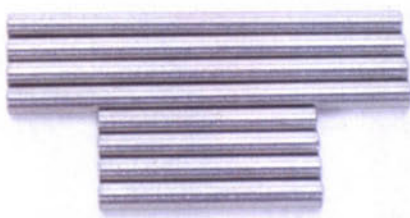
Lunsford 18T Titanium Parts

The Associated 18T is already making a big splash in the mini-truck world, partly due to its high speed. And everyone knows that high speeds can equal bent parts; with that in mind, Lunsford has hit the market with a brand new array of 6AL4V titanium accessories that will bulletproof your 18T while reducing its overall weight. Choose from its Titanium Hinge-Pin kit (#3101) that replaces all of the 18T's tiny hinge pins with machined ti-parts, or the Titanium Turnbuckle & Ball Stud kit (#2101) that includes everything you need (including rod ends) to



tweak your 18T into a fully adjustable race machine.

www.lunsfordracing.com

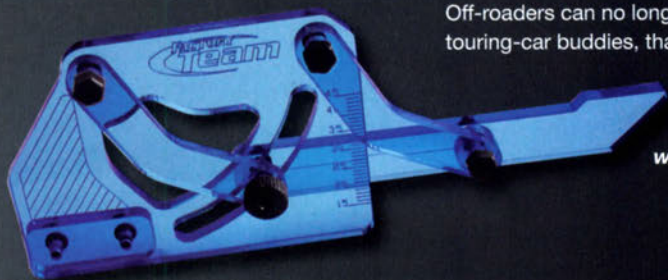


The balloons on the next page are Magnum size.

Associated Ride Height Gauge

Off-rodgers can no longer cry about not having the same cool set up equipment as their touring-car buddies, thanks to AE's new Ride Height gauge. Built from translucent blue acrylic plastics, AE's gauge is adjustable for ride heights from 15mm to 45mm, meaning you can use it on your 1/10-scale stadium trucks and 1/8-scale off-road buggies. Part no. 1449.

www.teamassociated.com



Associated GT Manifold

Team AE's RC10GT is arguably the most successful vehicle in history, dating back to the days before rear-exhaust .12 engines. Although it has been possible to fit a rear-exhaust engine into a GT for some time now, using an OEM Associated rear-exhaust header wasn't an option. Their new GT manifold fixes that problem, featuring smooth bends and a tight, low profile design that keeps the exhaust tubing close to the chassis and away from the body. Part no. 7737. www.teamassociated.com



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IN THE DIRT HOW-TO

MAKE CHEAP SHOCK BOOTS

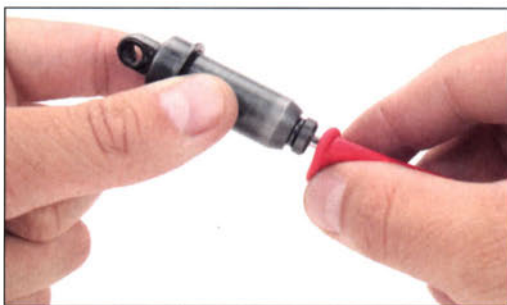
Shock boots protect oil-filled shock shafts and seals from dirt and grit that can scratch the shafts and tear the seals. Depending on the manufacturer, these rubber boots can be very expensive and difficult to find, but luckily there's an inexpensive replacement option: party balloons. Pick up a bag of 50 balloons at a party store for a couple of bucks, follow the steps below, and you're in business.

**1. Buy the balloons.**

Not just any party balloon will do; make sure you pick up a bag of long party balloons like the ones you can twist into animal shapes. Check the balloon's thickness and buy the thickest balloon you can find. Proceed to make a balloon sword and challenge your little brother to a duel.

**2. Measure new balloon.**

Remove the old shock boot, and use it to measure against the party balloon. Use a hobby knife or scissors to cut the balloon to fit the original boot. If the original boot is torn or missing, simply cut the balloon long enough to cover the bottom of the shock body to just cover the shock

**3. Install!**

Simply slide the balloons over the shock shaft, and make sure the lip of the balloon fits into the groove on the shock body. On certain shocks without boot-retaining lower lips (does that sound funny?), you may need to add a drop of CA to retain the boot.



Although most party balloons won't last as long as OEM shock boots made specifically for RC cars, the balloons' dirt-cheap cost more than justifies their increased replacement intervals. Keep an eye on the boots and replace them often as they wear. Plus, if you're in to colors, you can customize your ride with different colored balloons and be the envy of all your pastel loving friends. ⚙️

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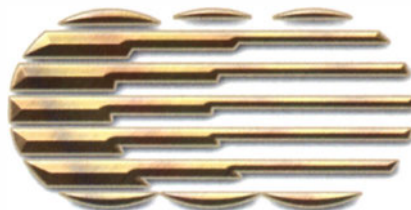
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TRI13504, Screwdriver install, \$14.99
TRI13504NT, Solder on, \$13.99

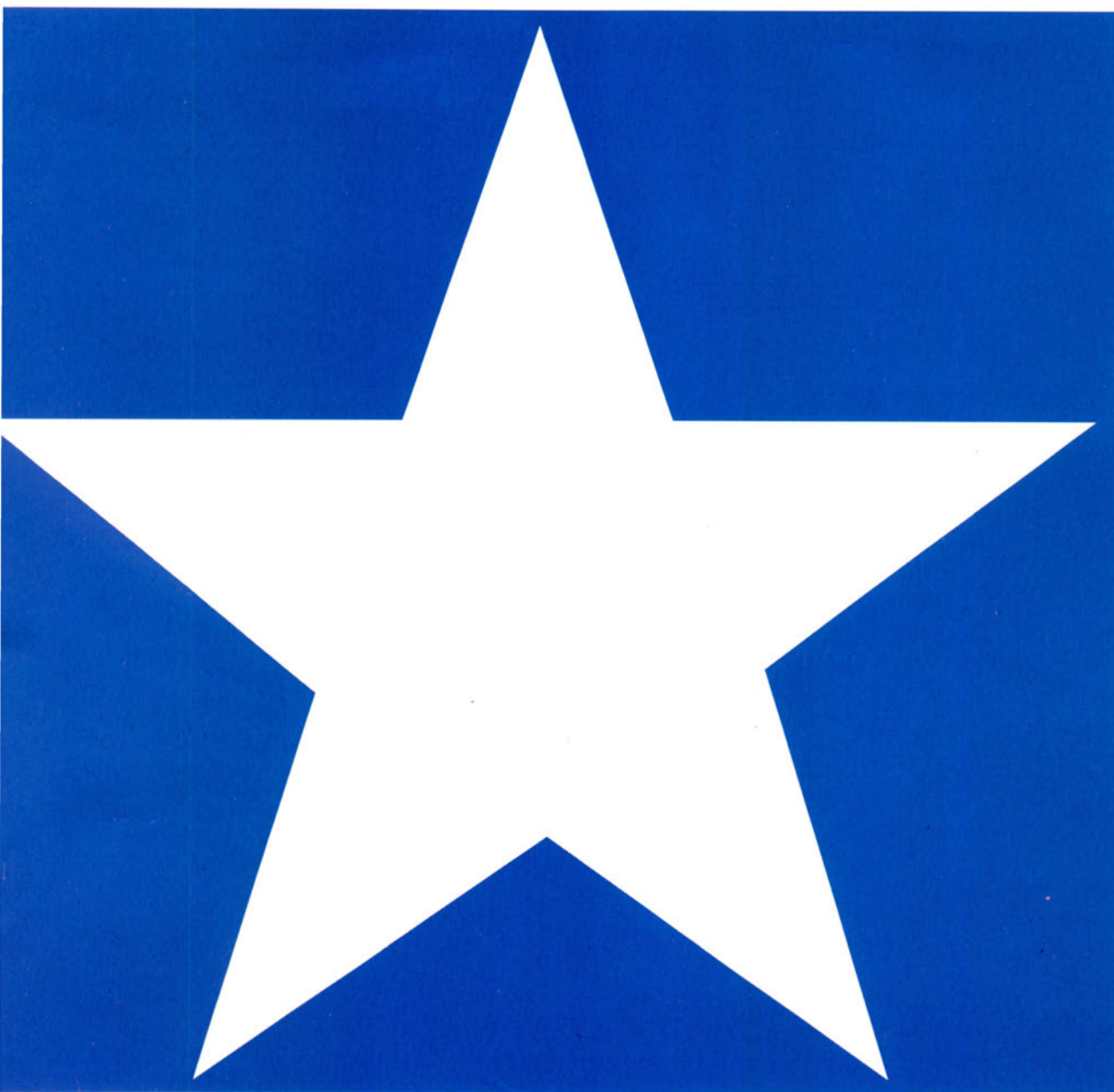
Standard sized, fits Reedy, Putnam, LRP, etc.
TRI13505, Screwdriver install, \$14.99
TRI13505NT, Solder on, \$13.99



www.teamtrinity.com

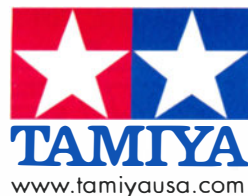


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RACING SOLDER



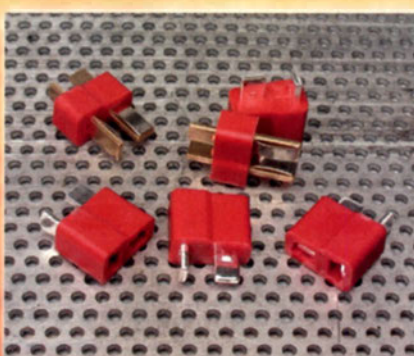
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Want to cut to the chase and see what's new on the on-road scene? Just flip to these pages and you'll get all the latest news, gossip, and products on the market. From the latest body to the newest speed secret brought to you each month. ***If you've got a tip, secret or new part you'd like to see here just email touringcorner@rc411.com.***

PROTOFORM Dodge Stratus 3.0

If you've been racing for more than a few months, you probably remember the days of the omnipresent Dodge Stratus bodies, and how solidly they dominated the lineup at nearly every touring car event. Now those days may return, as Protoform has released a new version of the body, and it's receiving rave reviews everywhere. Hand-designed by master mold maker and Protoform founder Dale Epp, the Stratus 3.0 is based on the 2005 Dodge Stratus and promises improved handling on nearly every surface. Like all

Protoform bodies, it includes a molded wing, window masks, decals, and a protective overspray film.

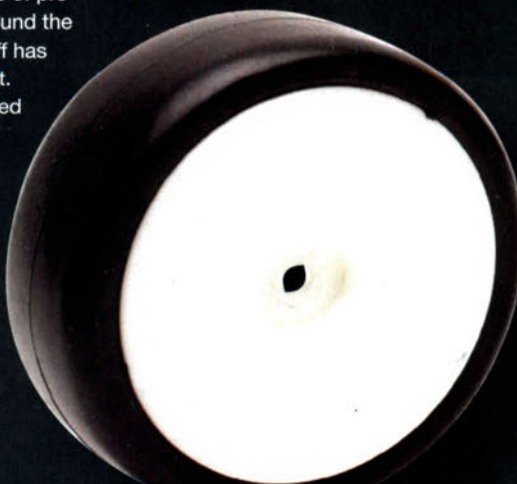
www.prolinerracing.com



TAKE OFF RP TOURING TIRES

For those who've gotten used to the ease of pre-mounted rubber tires but haven't quite found the right compound for their surface, Take Off has developed a tire that shouldn't disappoint. While the CS compound that we're all used to was designed to achieve a balance between grip and durability, the RP tires are made specifically for performance under racing conditions. The tires will come as sets of four without inserts, or as sets of four pre-mounted on wheels with a neutral insert. They'll be available in 24, 30, 36 and 40 compounds, with higher numbers indicating an increased operating temperature range.

www.racing-cars.com



RUMOR MILL

You're all familiar with the big names in the touring scene, right? Associated, Losi, Tamiya, Yokomo, Xray, HPI, Schumacher, and Corally all put a lot of effort into their sedans. Chances are that wherever you race, each of these companies is represented by at least one driver, and probably more. With that much competition, **who would be crazy enough** to try and launch a new car and an entirely new racing team? If what we hear is true, it sounds like Kyosho would, and it could be happening **by the time you read this**. We've already shown you pictures of the newest touring car they've developed in Japan, and now it sounds like they are assembling a team of A-list on-road drivers here in the USA. Cracking into the elite side of the TC market will be tough, but with these drivers and the excellent racer support that Kyosho is known for, they could be right in line to become **the next big thing**.

All over the country, it seems like 4-cell 1/12-scale road racing is taking off again, and in a big way. **People are flocking** to the cars as a lower-cost and easily-accessible form of on-road racing. Better yet, there are tons and tons of different cars out there, assuming you count all of the various kits and conversions on the market. Going along the same lines, some people are talking about trying 4-cell sedan racing as well. The idea is to have a cheaper form of 1/10-scale that will be less harsh on motors, and perhaps more beginner friendly. This worked in reviving oval racing a few years ago, but **can it really help** bring people to the TC scene? When you work in the possibilities of some other emerging technologies like LiPo cells and more efficient motors, plus the lighter cars that would result from the reduction in cells, the speeds may be comparable to what we see now. Could be interesting!

For those who **like buying expensive cars**, it sounds like Masami Hirotsuka's father has begun producing an exclusive Hirotsuka Edition of HPI's Pro4. Each car is hand-built, and features an extensive list of upgraded parts. Details are still sketchy, but this could certainly become one of the more unique items of the year. The price tag? A cool \$1300, by special order only. **Operators are standing by!**

This just in: Look for Kyosho's new on-road race team to debut at the 2005 Snowbird Nationals.

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RACING ROUND-UP

As usual, there is plenty of racing action going on all over the place, and we're right here to bring you the news and results that matter. This month, we take you from Switzerland to Bangkok as we visit two large international events that recently took place.

Rheinard Takes GP Carpet World Cup in Geneva

Fresh off his IFMAR Worlds victory, Tamiya's Marc Rheinard proved he could do it all on carpet as well, taking both the top qualifying spot and the win at the recent GP Carpet World Cup in Geneva, Switzerland. American Xray driver Greg Hodapp made the trip as well, and finished a respectable fourth.

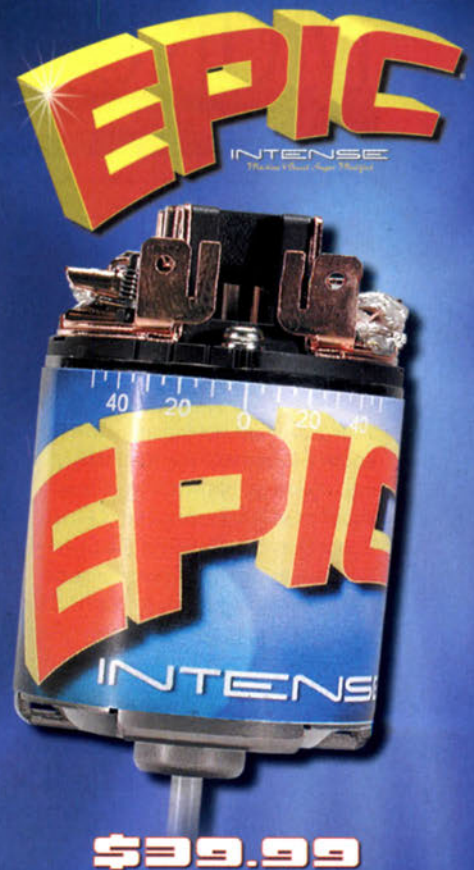
Finish	Qual	Driver	Laps / Time	Car	Motor
1	1	Marc Rheinard	281 / 307.90s	Tamiya	Orion
2	2	Steen Graversen	271 / 300.42s	Tamiya	Orion
3	3	Andy Moore	271 / 301.25s	HPI	Orion
4	4	Greg Hodapp	271 / 306.62s	Xray	Peak
5	8	Jonas Andersson	271 / 306.79s	Schumacher	Peak
6	10	Teemu Leino	271 / 307.58s	Schumacher	Orion
7	9	Olly Jefferies	271 / 310.88s	Associated	Reedy
8	7	David Spashett	261 / 302.14s	Losi	Peak
9	5	Benni Gröschel	261 / 303.63s	HPI	LRP
10	6	Hupo Hönigl	261 / 304.16s	Losi	LRP



Atsushi Hara Wins Reedy Race of Asia

We are all used to hearing about the famous Reedy Race of Champions that takes place every Spring here in the United States, but this event has spawned equally successful Reedy Races all over the world. The Asia version was held in early December in Bangkok, Thailand, and featured an all-star cast of drivers led by former World Champs Hara and Surikarn Chaidejsuriya, who was making his racing debut for HPI. It was Hara, however, who stole the spotlight in this one, winning two of the three A-Mains to take the overall win.

Finish	Qual	Driver	Car
1	1	Atsushi Hara	HPI Pro4
2	2	Surikarn Chaidejsuriya	HPI Pro4
3	4	Craig Drescher	TC4
4	3	Jilles Groskamp	X-Ray
5	5	Niels Koenekoop	Schumacher
6	6	Charlie Suangka	TRF415
7	10	Tanit Kachapanada	TC4
8	7	Tanaboon Visikitjarn	HPI Pro4
9	6	Paphon Chanyasak	TRF415
10	8	Meen Vejvharuck	HPI Pro4



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Long Wear P-94 Style Brushes
High Power FB-9 Magnets
Dual Ball Bearings
Adjustable Timing
Racer Performance
Play Price

EP115, 10 Turn Double
EP116, 11 Turn Double
EP117, 12 Turn Double
EP118, 13 Turn Double
EP119, 14 Turn Double
EP120, 15 Turn Double
EP121, 16 Turn Double
EP122, 19 Turn Single

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02-04

IFMAR
WORLD
CHAMPIONS

2004

IFMAR
WORLD
WARM-UP
CHAMPIONS

WORLD CHAMPIONS

Off Road 1/8

Off Road 1/8

Hydro

Dragster

Warm-Up

: Degani : Kanai : Brown : Campbell : Vick : Paulson :

**INSTANT
GRATIFICATION**

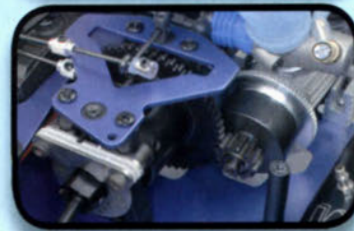
SUT RTR (Red body) #GS-2005
SUT RTR (Blue body) #GS-2005E
SUT RTR (Black body/chrome
wheels) #GS-2005Q

SUT RTR

The SUT RTR is built to bring on the fun at the track or anywhere the dirt needs to be kicked up. Standard equipment includes GS Racing's R25MT pullstart engine that delivers outrageous amounts of horsepower and torque enabling you to put the SUT RTR where ever you want to very quickly. The SUT RTR also comes with GS Racing's Beta-T1 digital proportional FM radio, featuring end-point adjustments to get totally dialed in. Just add batteries and glow fuel and get ready to hang on because the SUT RTR is going to totally blow you away.



The SUT RTR is the first factory 1/8th scale unlimited race truck and comes from GS Racing 100% assembled, ready to run. The SUT was designed to be fully compatible with Maxx wheels, tires and bodies to let you trick-out your SUT just about any way you want to. Factory finished SUT body and Road Ripper tires pre-glued on Monster Star wheels get you in to the action fast. The SUT RTR includes some hardcore race features like aluminum oil-filled shocks, full precision ball bearings and front universal driveshafts. Since the SUT RTR is based on the race proven GS Storm platform, there are over 75% parts and options compatibility allowing you to make your SUT the ultimate bullet-proof racing machine.



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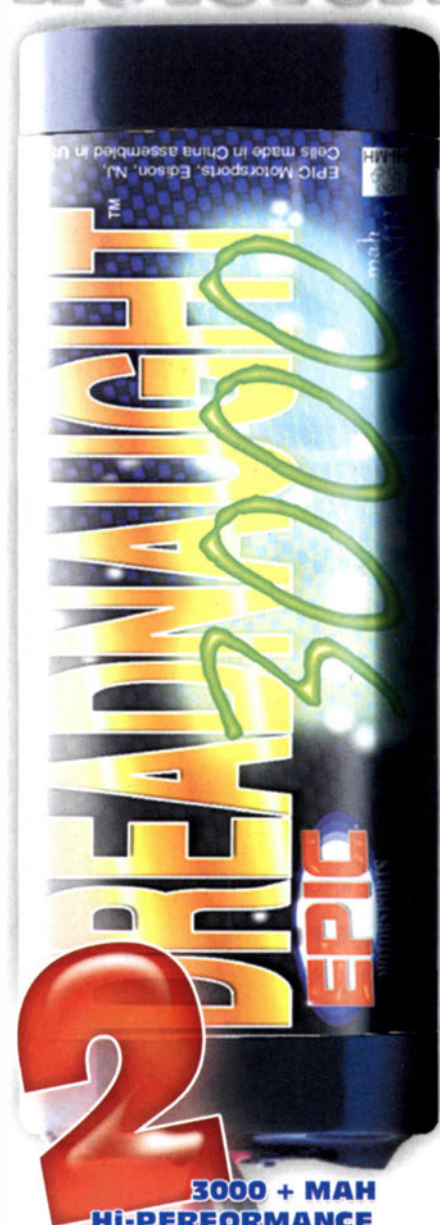
Integy LST Redux

Team Integy is pretty much redoing the Team Losi LST. They're set to unleash a complete, and I mean "complete," line-up of aluminum options for the Losi LST monster truck. The long list of options includes chassis decks, shock towers, skid plates, bumpers, upper and lower suspension arms, chassis braces, steering bellcranks and the biggest piggy back shocks you've ever seen. You'll need to buy your own oil well to change the oil on these massive dampers. All of the parts are machined of 6061-grade aluminum, then polished, and are ultimately available in clear anodize or blue. Considering the prices of some aluminum pieces out there, the Integy stuff is a real bargain.

www.integy.com



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Illuzion B4

Part #0001 | fits Associated B4 Buggy
Part #0001SL | fits Associated B4 Buggy (shown)



Illuzion MBX-5

Part #0002 | fits 1.8 Mugen MBX-5 buggy



Illuzion MP-7.5

Part #0003 | fits 1.8 Kyosho MP 7.5 line



Illuzion XXX

Part #0004 | fits Losi XXX line



Illuzion T4

Part #0005 | fits Associated T4 truck



Illuzion M6T

Part #0006 | fits Associated Monster GT



Illuzion Hyper-7

Part #0007 | fits Olina Hyper 7 line

Bodies have been custom painted for photos. Actual bodies come clear.

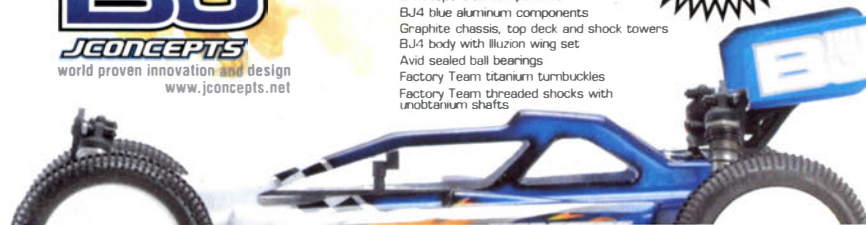
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- ✗ Display shows mah output to battery pack.

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FIRST TAKE

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RD LOGICS MONGOOSE G4

1/10-SCALE NITRO TOURING CAR

Words: Mike Velez

The G4 chassis has been imported into the US under a few different brands, but this latest offering from RD Logics is by far the most potent. In case you're not familiar with them, RD Logics has been making high performance touring car tires for years and has recently expanded their line-up to include aftermarket accessories for the most popular cars and trucks, nitro engines and pipes, and now complete car kits.

Features

Chassis • The Mongoose G4 gets the benefit of a K-Factory 7075 aluminum chassis that is fully countersunk and milled out for absolute weight reduction. The aluminum chassis is the foundation for a three belt drive system and woven carbon fiber upper deck. The upper deck connects to fiber-filled molded components and a couple of aluminum rear braces that make chassis flex practically non-existent.

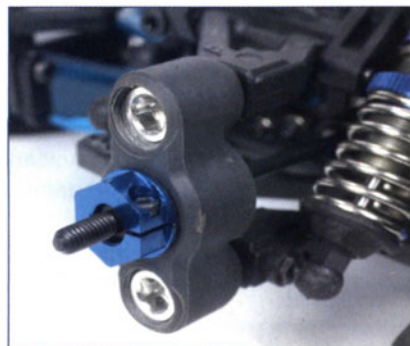
Drive Train • Most of the Mongoose G4's



The slick shifting 2-speed has a wide array of optional gearing choices available through RD Logics.

unique features lie in the drive train. Some of those include a K-Factory Centax-style clutch, a K-Factory one-way differential, K-Factory CV-style front axles, and a lightened 2-speed drive shaft. Along with the fancy hop-ups, the drive train comes with everything else you'd expect from a high-caliber nitro touring car; vented disc brakes, full ball bearings, a sealed rear gear differential, adjustable pulleys, and more.

Suspension • When it comes to the K-Factory treatment that the Mongoose



The Mongoose's pivot ball suspension is easy to adjust, and aluminum wheel hexes are included in the box.

has received, the suspension isn't neglected at all. Front and rear blade-style anti-roll bars come standard, along with a new ball bearing-supported steering system designed for minimal toe and bump changes. Threaded aluminum shock bodies support the pillow-ball suspension at all four corners. Like most of the molded pieces on the car, the suspension arms are also fiber-reinforced.

Other Features

Out of the box you get some serious Arrows racing foams, a large foam front bumper, a low-profile fuel tank, and some decent building instructions. The best part is that the entire kit can be found on the street for between \$280 and \$300. Considering the long features list, that price is a great feature in itself.

All these features leave us just dying to hit the track with the Mongoose to see if it's as good on asphalt as it is on paper. Look for a full review of the Mongoose G4 in a future issue. ☼

CONNECT:

MANUFACTURER/IMPORTER: RD Logics
WEB: www.rdlogics.com

VITAL INFO

SCALE: 1/10
PART #: 99100
ESTIMATED STREET PRICE: \$280-\$300

MAIN COMPETITION: Associated Nitro TC3, Serpent 710, Kyosho V-One RRR, Mugen MTX-3 Prospec, OFNA CD3, HPI R40, Tamiya TG10-Mk.2

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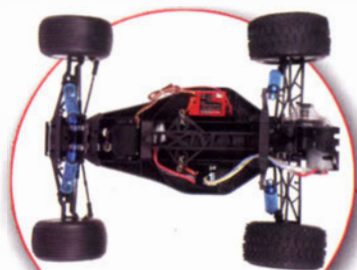
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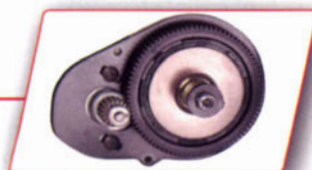
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**Fully Threaded
Aluminum Shocks**



**Adjustable Slipper
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FIRST TAKE

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TEAM LOSI XXX-NT DRAKE EDITION 2

1/10-SCALE NITRO STADIUM TRUCK

Words: Stephen Bess

When a product is at or near the top of its class for years, racers begin to wonder how the manufacturer could possibly make it any better. And year after year, creative RC companies like Team Losi continue to churn out improved vehicles with features that make all of us quietly wonder, "Why didn't I think of that?" Faced with the daunting task of improving the highly successful but aging XXX-NT stadium truck, Team Losi has answered the call with its XXX-NT Drake 2 truck—an updated truck with a handful of anticipated upgrades as well as several that none of us expected.

Features

Chassis • The Drake 2's chassis is one of the most visually obvious upgrades, with its hard-anodized coating and CNC-milled weight-reducing pockets everywhere. The chassis layout hasn't changed from the original Drake truck, which is a good thing when the original still works as well as it does. Losi's easily recognizable "Graphite" parts are found all over, including the upper chassis/servo brace and front bulkhead. Countersunk hex-head screws attach all of the components to the chassis.

Drive Train • Built to handle the abuse of today's .12's, the Drake 2's drive train receives several upgrades to increase its durability. Losi's patented Kevlar spur gear mounts to a hard-anodized dual-pad slipper clutch, and a beefed-up, heavy-duty thrust bearing assembly holds diff settings more securely. The 3-gear transmission's innards remain unchanged with the exception of a hard-anodized aluminum top shaft, and revised "cross bone" universal drive shafts power the wheels through larger, oversized rear axle bearings.

Suspension • The Drake 2's suspension receives a complete overhaul. Thicker, stronger VLA (variable-length arms) suspension arms are now found at both the front and rear, which means that the Drake 2's track width may be altered quickly without swapping out major components. Hard-anodized machined aluminum rear hubs with vertical ball studs increase the rear suspension's durability, and a full set of titanium-nitride hinge pins is included. One of the few carryovers from the original Drake truck are the smooth front and rear hard-anodized, threaded-body oil-filled shocks. Titanium turnbuckles with revised rod ends (now white) hold everything together.

Other Features • For all of its suspension and drive train upgrades, the Drake 2's rear axles have caused the most buzz by far. The Drake 2 includes 1/8-scale on-road-style rear quick-change hubs that allow you to swap out the rear tires in a matter of seconds. Additionally, the quick-change hubs allow you to use the same wheels for the front and rear of the truck, which means you'll no longer need to purchase separate front and rear wheels. A newly-styled Lexan truck body is included, as well as Losi's hard-anodized tuned pipe and header set.

The Drake 2 has already set off a tidal wave of discussion inside racing circles, and we're all excited to see how it will perform on the local and National level. Look for a full review in next month's issue to get our opinion. ⚙



Wanna swap rear tires out in 2 seconds? Now you can! The axles alone would be reason enough to buy the AD2.

Adam didn't receive an extreme makeover, but his truck did.

CONNECT:

MANUFACTURER: Team Losi
WEB: www.teamlosi.com

VITAL INFO

SCALE:	1/10
PART #:	LOSA0846
ESTIMATED STREET PRICE:	\$350
MAIN COMPETITION:	Team Associated RC10GT Factory Team



TTR S3



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- A7075-T6 front/rear shock tower and steering slider
- Front A-arm with adjustable Pillow-Ball suspension
- AB (Anti-Bumping) shocks with 3.5mm shafts provide various damping and rebounding
- Ultra long, light weight suspension arms
- Fuel tank with dual fuel pick up
- Small transmission bulkheads with gasket
- Front shocks are protected behind the shock tower and mounted through the upper A-arm
- Graphite front brace, radio tray and center diff top plate
- Unique Delta-Box machined hardened chassis provides more rigidity than a conventional stamped chassis
- Heavy duty CVD universal drive trains (Front/Center/Rear)
- Enclosed radio box protects receiver and batteries from any foreign elements
- Laid down steering servo for low center of gravity
- Complete set of rubber-sealed ball bearings
- Fully adjustable Toe, Caster and Ackerman
- Captured hinge pins no E CLIPS needed, also prevents bound up suspension components

THEY SAID I COULDN'T DO IT

**Richard Saxton
Pro Driver**





MST-1 Truck - L0001:

- Aluminum Rear Hub Carriers
- Ball Type Differential
- Rear Universal Drive Shafts
- Big Bore Shocks
- Long Span Double Wish Bone Suspension
- Adjustable Slipper

1/10 SCALE GAS POWERED 4WD TOURING CAR MTX-3 PROSPEC



MTX-3 Prospec - T0040:

- Titanium Pivot Balls, Middle Shaft, Tie Rods
- Front/Rear Universal Drive Shafts
- CNC Motor Mounts
- Aluminum Wheel Hex's
- 4mm Option Chassis

1/8th Scale 4WD Gas Powered Racing Car MRX4



MRX-4:

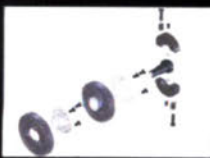
- Low Center of Gravity
- New Front Suspension
- New Rear Suspension
- New Drive System & Brake
- The car has more stability during the corner with new designed suspension

NEW

COMPLETELY RE-ENGINEERED



ALL-NEW MODEL



LIGHTWEIGHT 2-SPEED



LONGER SUSPENSION



NEW SUSPENSION GEOMETRY

PROSPEC = FULL OPTIONS



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Mugen Seiki Racing Fuel
Available in 20%, 30%, 40%



Competition .21 Pipe
P01004 • 1 pc • top end power

Competition .21 Pipe
P01003 • 1 pc • bottom end power



Comp .12 Pipe
P01002 • EFRA-26090 • On-Road • 1 pc

Comp .12 Pipe
P01003 • Off-Road • 1 pc



Comp .12 Pipe
Outlaw • S01002

Comp .12 Pipe
Standard • S01001

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MBX-5 Prospec - E0010:

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- 3 Diff Shaft Drive 4WD
- Pivot Ball Front End



TRACK GEAR



Mugen Seiki .21 Cooling Head
 Available in Blue P02004 and Grey P02003

FX Engines



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 21 Buggy - FX 21 B-ST & FX 21 B-SN
 21 On-Road - FX 21 R-01 & FX 21 R-02
 12 On-Road - FX 12 T-03 & FX 12 T-05

Mugen Seiki .12 X-12
 1.52 HP @ 41,000 RPM • X12S3



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Associated RC18T

Words: Mike Velez ■ Photos: Jason Yu

The next little thing.

A few months back, one of the big questions on everybody's mind was, "What is Associated going to do next?" What, you mean that wasn't on your mind? Well, it was on mine, and who would have thought that a 1/18-scale truck based on the TC3 design would be the next big thing coming from the boys in blue? Team Associated took the same basic design philosophy employed by their ultra-successful TC3, designed an off-road suspension around it, and sent it off to Rick Moranis for a "Honey, I Shrunk The RC Truck" routine. The result? Team Associated's smallest offering to date, the RC18T.

If only G.I. Joe had an RC18T.



Most of us when Mike has used the "Honey, I shrink" line enough

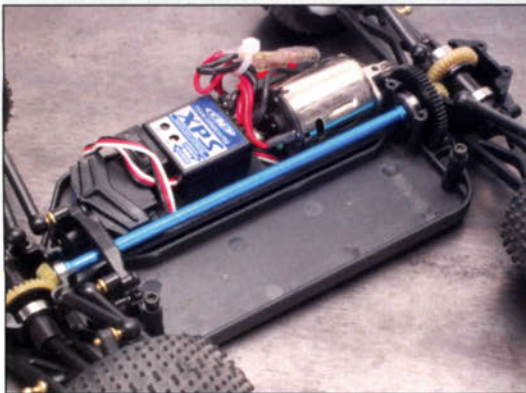
Associated RC18T

• 1/18-SCALE STADIUM TRUCK • 1/18-SCALE STADIUM TRUCK • 1/18-SCALE STADIUM TRUCK

VEHICLE FEATURES

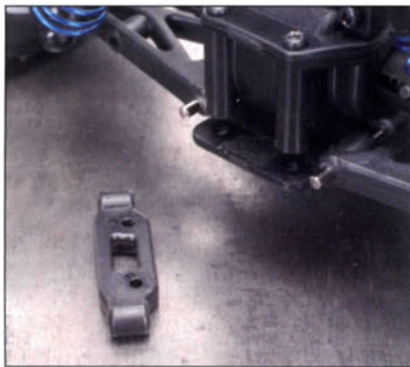
The RC18T comes equipped like most Team Associated vehicles—no matter what the size—with a long list of features. Along with many of the things that you've come to expect, I've picked out the five most important or unique features that I found worthy of special attention, and highlighted them here.

TC3-STYLE CHASSIS



The overall layout of the RC18T is pretty much a scaled down version of the original TC3 design. The motor, battery, and electronics placement is all right where it would be on the TC3, and a familiar blue aluminum shaft runs down the centerline to provide power to both the front and rear ends. The platform allows for easy access to all the major components, making the little truck easy to work on.

CAPTURED SUSPENSION PINS



Some of the mini-sized cars and trucks that I've come across have way too much suspension slop. On a 1/18-scale truck a few fractions of an inch of slop can make a real difference. The RC18T's suspension is nearly slop-free, and features captured hinge pins that eliminate the need for E-clips. This provides a very solid foundation for the rest of the suspension, helping it to work just as it was designed.

OIL-FILLED SHOCKS



In the world of small-scale cars and trucks, oil-filled shocks are usually reserved for a hop-up option. But in this case, Team Associated has made them a factory item out of the box. The shocks feature two O-rings and bladders to keep the oil where it belongs, and optional springs are available in different rates to aid in suspension tuning. The oil-filled shocks should have a hugely positive effect on the truck's handling and performance.

INSTRUCTIONS

Team Associated gets an A+ on the instructions. The truck includes a full-color quick start guide with step-by-step photos and instructions on getting started, along with troubleshooting information, detailed information on the XPS speed controller, and a 12-page instruction manual on re-building the truck from the servo saver on up. Inside the instruction manual is a complete schematic of the truck with part numbers, descriptions, and pricing, in case you need some replacement parts. The only thing I found lacking was some basic tuning information on ride height and the differentials, two things that novices might need some help with.

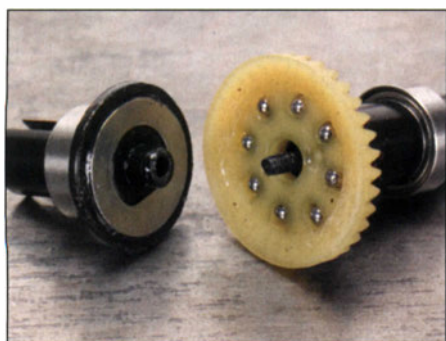


“...although adjustable ball differentials are usually reserved for an optional upgrade, Team Associated **WENT ALL OUT AND INCLUDED THEM...**”

Can you say “complete?”

▶ ADJUSTABLE BALL DIFFS

Once again, although adjustable ball differentials are usually reserved for an optional upgrade, Team Associated went all out



and included them on the RC18T. This is a real plus, since I'm sure most of these trucks will see a variety of terrain including carpet, tile, concrete, asphalt, loose

dirt, wet dirt, and grass. Being able to adjust the differentials will be a great benefit to those who take the time to learn the ins and outs of the truck's handling.

▶ COMPLETENESS

In all, the RC18T comes very complete in two major areas. First, as a kit; as I mentioned earlier, the RC18T comes with features like oil-filled shocks and ball differentials, two things that are usually sold as options on other vehicles, and also includes a complete set of ball bearings and a machined aluminum center shaft. Second, it's also a ready-to-run truck, coming completely pre-built with a mounted and painted body, and including an XPS Speed controller with reverse, an XP2 radio system with a receiver and micro servo, and an 1100 mAh Ni-MH 6-cell battery pack. The ESC should handle any 280-size motor, so the truck is easy to upgrade down the road.

A battery charger is included as well, although it takes up to 10 hours to charge the included pack. Faster chargers are available, but this one will get you started. From there, all you need to get running is a set of eight AA batteries for the radio.



TESTING

My testing sessions quite literally took me all over the map. Over a weekend I took the RC18T home with me and ran the truck on hardwood, carpet, concrete, and grass, all while seeking out obstacles to challenge the small truck's suspension. Back at the office I tested the truck in a dusty and dry dirt field with some dug up tire tracks for jumps and other impediments.

Acceleration • Acceleration is affected by two variables, gearing and voltage. Out of the box, the truck is geared more for top speed than for take off. The included 14-tooth pinion left me wanting more acceleration when I had charged the battery with the 10-hour charger. Going to a 12- or 13-tooth pinion would probably help this. Another way to get more punch is to charge the included battery with a competition-style charger if you have one. When I charged the included battery at 1 amp rather than the standard trickle charge, acceleration was much better and the run time seemed just as long.

Rating: 8

Top Speed • I was very impressed with the speed that the RC18T was able to reach, hitting 20 mph on the radar gun when the battery was charged at the full 1 amp. I was surprised that we saw such a high speed from such a small package.

Rating: 10

Braking • When you hold the truck in your hand, give it throttle, and then hit the brakes, there doesn't seem to be any response

until reverse kicks in. But on the ground the XPS Micro ESC brings the truck to a halt a bit more quickly than when you don't apply the brakes. It does take a little practice to keep reverse from kicking in. The braking power is not "stop on a dime," but it's enough to keep you safe.

Rating: 7.5

Low-Speed Handling • Low-speed handling really depends on the traction conditions. On high-traction surfaces, the truck handles perfectly. It has lots of steering without the rear end breaking loose, both on- and off-power. With less traction, such as on loose dirt, there's a noticeable push on-power but that usually disappears when you let off the throttle a little bit.

Rating: 9

High-Speed Handling • I'm very happy to report that the RC18T's impressive top speed was equally matched by its impressive high-speed handling. Just like at low speeds, the results were predictable depending on the traction conditions. Off-power, I just had to point the truck wherever I

RTR GEAR

	Radio: XP2 AM 2-channel
	Servo(s): AE 29128 Micro
	Receiver: XP2 TR203A AM Micro Receiver
	ESC: XPS 29136 Forward/Reverse
	Battery: 21149 6-cell 1100mAh Ni-MH
	Charger: 29151 AC 110V 120mAh Wall Charger
	Motor: Stock

OUR TEST GEAR

	Radio Battery: OFNA 2000 Ni-MH Rechargeables
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CONNECT

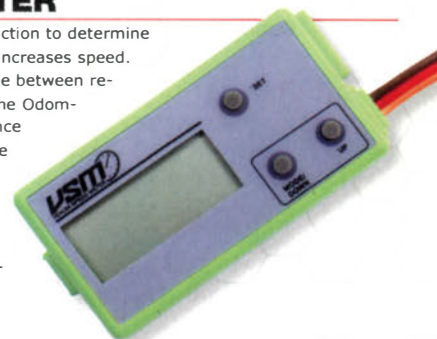
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Almost 40% smaller, the Venom Micro Temp is the industry's smallest on-board temp monitor. Featuring One Button High-Temp Technology (TM), the Venom Micro Temp records the highest temperature your engine reached, with easy recall at the touch of a button.



VEN-0601 GREEN

VEN-0602 PURPLE

Color may vary slightly from photo.



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wanted it to go, and it was there. On-power handling on a surface with traction was no problem, although on-power on a surface with less traction saw a little bit of a push present itself. No matter what the conditions, the RC18T's handling was very consistent and predictable.

Rating: 9

Rough-Track Handling • The RC18T did a great job of soaking up the rough stuff, and the oil-filled shocks came in very handy. In some really rough conditions the rear end had a tendency to kick up, but I think that's just a byproduct of speed and the truck's low overall weight.

Rating: 8.5

Jumping • Considering the size of this truck, it was pretty cool to hit large jumps with lots of speed and land most of them. The ones that weren't perfect 10's usually ended up with the nose down, resulting in a tumble. On some of the larger jumps I could hear the rear suspension smack the terra firma with a loud thud. Some thicker oil might help solve this. However, most of the time the RC18T handled jumps with relative ease.

Rating: 8

Tuning • Out of the box, the only real tuning options on the RC18T are the ride

height adjustments (via shock spacers), shock locations, and the differentials. For most people, I'd suggest not adjusting the differentials unless you really know what you're doing. As for ride height, the truck's initial setting shouldn't need much changing at all. Those with a lot of RC experience will long for the ability to adjust camber, toe, springs, and so on. All of those adjustments come as options through Associated's Factory Team division.

Rating: 8

Damage • Through many, many cycles, I'm happy to report that the truck suffered no breakages or severe war wounds. But that doesn't mean I made it through without a scratch. On the photo shoot, a small pebble managed to work its way between the pinion and spur gear. Nothing broke, but it did damage the profile of a few of the teeth on the spur gear. The result was a noticeable noise coming from the pinion and spur from that point forward.

Rating: 9

Conclusion

Team Associated has done a great job of setting the bar nice and high for any other company in the micro market, or for anybody thinking of jumping in. Overall, the RC18T is one of the nicest micro-sized packages I've seen. It's complete, high-

SCORECARD	
SCALE RATINGS: 1=POOR • 10=EXCELLENT	
10	INSTRUCTIONS
9	PARTS QUALITY/FIT
9	DURABILITY
8	TUNABILITY
8.5	OVERALL PERFORMANCE
10	VALUE
+ HITS	
• Completeness out of the box • Very solid handling • Great overall quality • Near-perfect instructions	
- MISSES	
• Limited tuning options • Pinion and spur somewhat exposed	

quality, fun, fast, and can be had for around \$165. My only complaints were a bit of a stretch, and because of that I can easily recommend this kit to anyone regardless of their level of expertise. Like so many other things in life, it's less fun when you're at it alone, so if you're in the market for a micro truck, pick up two of these. You'll be hosting RC18T parties in your living room before you know it. ☺



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So you have aluminum this and graphite that, but you still have a cheap stock radio?

Wake up your ride with the new performance packed SRX computer radio from HITEC. Starting at \$100, these 3 channel FM radio systems offer a rock solid signal and are easy to install. With 10-model memory, you only need one radio for your whole fleet. Get the most from those trick parts you've been bolting on, add a HITEC SRX radio.



Features

System:

- Clear and reliable FM signal
- Dual mode 3rd channel (shift or linear)
- Quick 14ms response rate
- Progressive spring steering
- Clear LCD display
- 10-model memory
- Brake ATL switch
- Brake lever travel limiter
- Steering wheel tension adjust
- Transmitter battery charging jack
- Two speed menu scrolling
- SPECTRA synthesizer module compatible
- Replaceable "Grip Pads" available in different thicknesses and colors, comfortable for big and little hands

Programming:

- Steering dual rate
- Steering and throttle exponential rates
- 4 character model naming
- End point adjustments
- Servo reversing
- Sub trims for quick and easy setup
- Countdown timer

Available Systems

Check out the Monster Truck edition, part # 129752 with a powerful HS-645MG steering servo.

- # 129271 - 27MHz transmitter with HFS-03MM 3 channel receiver, one HS-311 servo
- # 129751 - 75MHz transmitter with HFS-03MM 3 channel receiver, one HS-311 servo
- # 129752 - 75MHz transmitter with HFS-03MM 3 channel receiver, one HS-645MG Hi-Torque servo
- # 129753 - 75MHz transmitter with HFS-03MM 3 channel receiver, no servos
- # 129754 - 75MHz transmitter with SPECTRA PLL Module and HF8-03MM receiver, no servos

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Associated RC18T



• 1/18-SCALE STADIUM TRUCK • 1/18-SCALE STADIUM TRUCK • 1/18-SCALE STADIUM TRUCK • 1/18-SCALE STADIUM TRUCK •

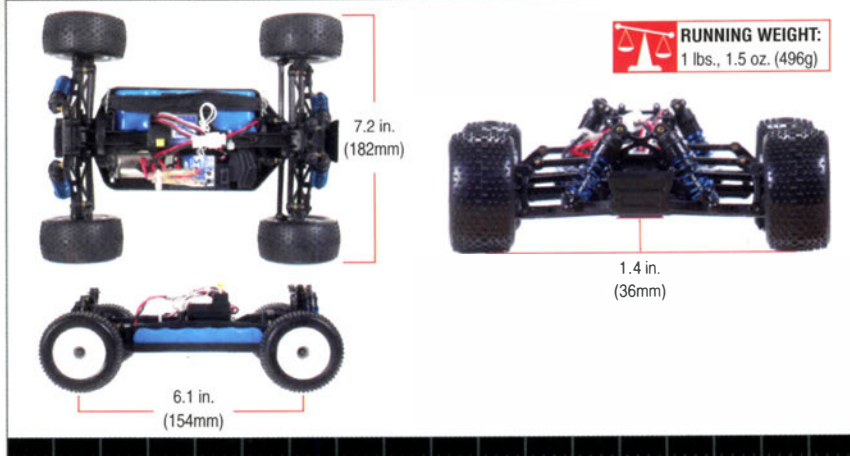
CONNECT:

MANUFACTURER: Team Associated
PHONE: 714.850.9342
WEB: www.rc10.com

VEHICLE INFO

VEHICLE:	RC18T
SCALE:	1/18
TYPE:	Electric Stadium Truck
PART #:	20100
STREET PRICE:	\$165
PRICE AS TESTED:	\$170 (stock); \$195 (modified motor)
SETUP TIME:	5 minutes (excluding charge time)
EXPERIENCE LEVEL:	Novice

DIMENSIONS



TECHNICAL INFO

CHASSIS

TYPE:	Integrated tub with complete countersinking
THICKNESS:	2mm
MATERIAL:	Molded composite

SUSPENSION

TYPE:	Four-wheel independent with lower A-arms, upper fixed camber links
TURNBUCKLES:	Fixed plastic
STEERING:	Bellcrank
SWAYBARS:	None

SHOCKS

BODIES:	Molded
DAMPING:	Silicone oil
PISTONS:	2-hole
SPRINGS:	Blue (3.0 lb.)

DRIVE TRAIN

TYPE:	4WD shaft
DIFFERENTIAL:	Ball
AXLE TYPE:	Dogbones
SPUR GEAR MATERIAL:	Molded
BEARINGS:	Metal-shielded

GEARING

PINION/SPUR:	14/55
GEAR RATIOS:	
PRIMARY:	3.92:1
INTERNAL:	2.50:1
FINAL:	9.82:1

BODY, TIRES, WHEELS

BODY:	Generic pre-painted stadium truck
TIRES (F/R):	Mini Pin
DIAMETER/WIDTH:	60mm x 30mm (2.36" x 1.18")
AXLE SIZE:	3mm
WHEELS:	White dish

ITEMS NEEDED

8 AA batteries

MAIN COMPETITION

Team Losi Mini-T, XRAY M18, Thunder Tiger Mini Truck, Trinity Itsy Bitsy Spyder

WHO IT'S FOR

Anyone

PERFORMANCE INFO

TEST CONDITIONS

WEATHER:	Sunny
TEMPERATURE/HUMIDITY:	70° F / 20%
BAROMETRIC PRESSURE:	29.99 in.
ALTITUDE:	652 ft.
TRACK TYPE:	Various

HANDLING

TURNING RADIUS:	3 ft., 9.5 in.
ON POWER:	Slight Push
OFF POWER:	Neutral

BRAKING

CONTROL:	Good
FADE:	None
OVERALL BRAKING:	Good

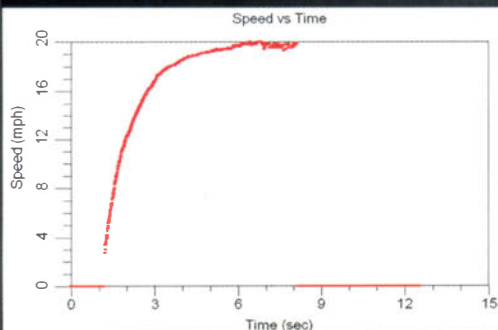
POWERPLANT INFO

The new "Caution: Hot" motor lineup is Team Associated's latest and greatest innovation. Just kidding! The stock RC18T motor is a standard 280-size, and it was surprisingly quick in the little truck. If the stock power isn't enough, Reedy Modifieds offers a replacement that should add about 10 mph to the truck's top speed, and it's a direct-fit hop-up. Unfortunately our dyno doesn't allow us to test these tiny micro-class motors, so we don't have any true facts to report. But even without hard data, the RC18T's stock motor should provide plenty of thrills and spills, and it's just about maintenance-free. Just keep dirt and debris from entering the can, and you'll enjoy hours upon hours of mini-trucking action.



ACCELERATION CURVE

ACCELERATION AND TOP SPEED



ACCELERATION

ACCELERATION	2.86 sec. @
(0-60FT):	14.3 mph
TOP SPEED:	20.0 mph @
	126 ft.
AVERAGE RUNTIME:	15 minutes

MOTOR DATA

MOTOR:	Stock 280
WIND:	N/A
MAX POWER*:	N/A
MAX TORQUE*:	N/A
PEAK RPM*:	N/A

*Results as tested.

MOTOR SETTINGS

TIMING:	Fixed
BRUSHES:	Internal
BEARINGS/ BUSHINGS:	Bushing



A caption that has nothing to do with this article. That's what.

BIGGEST!

1/7 RTR NITRO .28 POWERED

nitro

XLB

MONSTER BUGGY

This RTR monster buggy is pushing all other buggies out of its way, so make some room! Introducing the XLB (XTM's Large Buggy). We didn't follow any rules when building this beast! It's the biggest and baddest monster buggy out there! This massive 1/7 buggy uses the monstrous SH .28 engine, oversized fuel tank (220cc), and a 2-speed/ 4wd drivetrain that enables this monster buggy to drive over all other buggies out there!

FEATURES:

- > Adjustable camber, caster, and toe-in front & rear
- > Fully threaded, oil filled, aluminum shocks w/ 3.5mm shock shafts
- > XTM X-175 metal gear servo for steering
- > XTM X-77 metal gear servo for throttle
- > New XTM Micro Failsafe included
- > Newly designed bulkheads
- > Triple vented disk brakes
- > 2-Speed transmission
- > 4mm shock towers
- > Full ball bearings
- > Side dust guards



**Installed SH's Massive .28 Engine,
Hitec Aggressor Radio & XTM
Micro Failsafe!**

**Double Bracing Front & Rear For
Added Strength**

**Factory Installed 2-Speed
Transmission**

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4WD 2-SPEED MONSTER BUGGY



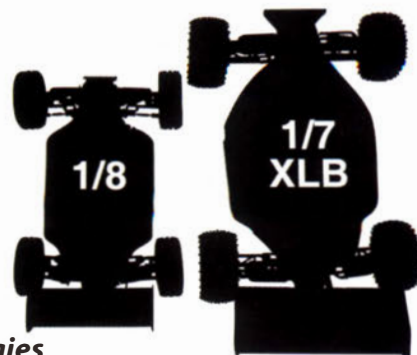
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20% Larger Than Traditional 1/8 Buggies**



It's a bird! It's a plane?



Thunder Tiger EB4 S3

Words: Derek Buono ■ Photos: Jason Yu

The 1/8-scale buggy market has snuck up becoming one of the hottest segments in RC. There are so many choices of quality buggies in both race and ready-to-run form that it's often hard to distinguish one buggy from the next. Thunder Tiger has finally released the newest version of their own EB4 buggy, and it's ready to make some waves, or more appropriately, roost the field. They've brought to the table one of the most adventurous designs we've seen so far on a buggy. The chassis breaks so far away from the standard plate that you'll step back and scratch your head as to how they did it. An extruded main chassis forms the foundation of what we think is one hell of a design, and even after skipping over the marvel that is the S3 chassis, the Thunder Tiger EB4 S3 is packed with features that will help you win.



Thunder Tiger EB4 S3

• 1/8-SCALE BUGGY • 1/8-SCALE BUGGY • 1/8-SCALE BUGGY • 1/8-SCALE BUGGY • 1/8-SCALE BUGGY •

VEHICLE FEATURES

The EB4 S3 is a radical departure from Thunder Tiger's previous design, and although we expected a redesign, we didn't really expect such a 90-degree turn from the original. Combine that extensive engineering work with some real world testing and input from Richard Saxton, and TTR has got a very capable race car that's ready and able to take on the kings of the class.

► HELICAL-CUT GEARS

Early on in the building process, you'll get to the differentials and see that TTR really spent some time here making sure the gears would be trouble-free. They are sealed to hold in the diff fluid (although it's not included in the kit) and go together really well.



The hardened steel gears in the front and rear are helical cut, making for a stronger combination by spreading the load on

the teeth over the entire tooth and, more importantly, over more than one tooth at a time. I also liked the fact that they included gaskets for the bottom of the gear cases to help keep dirt out.

► INSTRUCTIONS

I haven't built a Thunder Tiger kit in such a long time that I can't remember how the instructions used to be, but the new ones are visually top notch. The computer-generated drawings are in color and are laid out fairly well. I did notice that some of the scale screws weren't exactly 1:1, and that could cause some confusion in picking the right screw length. I'd recommend double-checking with a ruler before going cap-deep into the plastic with any screw. There were plenty of Pro Tips to help you build the kit, and even a reference to a "twister" which Saxton quickly told me was TTR code for needle-nose pliers.



► HIGH FIBER BRAKING

Stopping can be more important than accelerating at times, especially when you're faster than everybody else. The S3 has some pretty meaty brakes to slow things down quickly. The single fiber discs at the front and rear of the center differential allow you to adjust the brake bias to fit your driving style and desired braking feel. The fiber is lightweight to reduce rotating mass, and also resists fading due to fuel soakage. To help prevent spilled fuel from

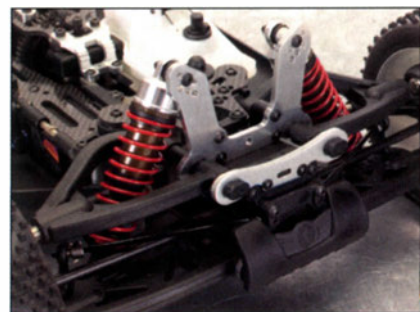
affecting the brakes, molded splashguards cover them.

Adjusting the caliper spacing is easy; with a ball driver, you can close the gap in the front without removing anything, and in the rear you only need to remove the engine. That's actually a nice touch that you don't really think about until you want to make an adjustment and have to take most of the car apart.



► SUSPENSION INNOVATIONS

The S3 offers a suspension design that we haven't previously seen in the class. Take a look at the front suspension and the first thing you'll notice is that the shocks are placed in between the upper arms. This keeps the shocks away from the front of the car where they can be damaged in a crash. Look beyond the surface and you'll see that TTR has captured the hinge pins with plastic pieces that can be adjusted to vary the angles of the pins. This will allow you to change the camber gain by allowing you to run a shorter or longer upper arm. You can also adjust the front anti-dive to 6-, 7-, or 8-degrees by moving the bottom of the front hinge pins, and plastic rear suspension mounts allow easy adjustment of anti-squat to help further tune the buggy.





*The S3 offers a suspension design
that we haven't*

PREVIOUSLY SEEN IN THE CLASS. ;

SUPER CHASSIS

It's not often that we get to talk about how innovative a chassis is, but the S3 jumps away from the pack with its ultra-cool extruded

chassis. It's not your typical flat chassis, resembling more of an I-beam. Looking down the front you'll see the "box" design that makes it one of the most rigid of the chassis ever. The drive train runs down the center channels, and the only break in the chassis is where the center diff mounts, and that area is braced with a carbon fiber plate and aluminum stand-offs. This is the point where the chassis will be subjected to the most stress, and it is advised that you keep an eye on the plate and screws to make sure they always remain tight.



FLOATERS

Shocks suffer some of the most brutal punishment on any buggy, and the S3 dampers look up to the task. The big oversized shock shafts match the current 3.5mm-thick shafts found on the best buggies out there. Unfortunately the kit doesn't include any shock oil (or fluids at all, for that matter) so you'll have to pick the starting oil weight yourself. Richard Saxton gave me a good starting point of 50wt. and 30wt. (f/r), which works well on most tracks. The most interesting thing about the shocks is its floating piston design. Look at the piston and you'll see that it's twice the thickness of a normal shock piston, and upon closer inspection you'll see the little ball that "floats." The idea behind this is to allow a different damping rate on the rebound than on the compression. The upstroke sees more holes that will allow the shock to rebound more quickly while still allowing pack during compression.



TESTING

I broke in the engine out in back of the office, cycling through about half a gallon of fuel and progressively leaning out the engine to get it up to operating temperature. After the break-in was complete I headed over to Revelation Raceway (www.revrace.com) for some hot laps. The track has seen the same layout for a few months now with only subtle changes to the array of jumps. Our usual sunny test conditions were replaced by lots of rain and thus the track was more rough than normal, but it also had increased levels of traction because of the damp soil. I knew it would be a good test for the S3 on such a tight and technical layout.

Acceleration • I pulled the trigger and the O.S. V-Spec unleashed a fit of fury on the earth with the tires clawing for forward traction. Richard Saxton had lightened the clutch shoes for a more snappy response and the result was very swift forward movement. The S3 was never bothered through ruts and such and just kept on moving in the direction I chose. Out of the corners the power hit hard and the combination of the S3 suspension and the Pro-Line Crime Fighters made even the longest straight feel short.

Rating: 10

Top Speed • Most competition buggies are geared to reach a top speed of about 45 mph, and the S3 is right in that area. The great thing about these buggies is that they are designed to reach their top speed in a short distance, so while it may seem that other vehicles are faster, the truth is that 1/8-scale buggies are among the quickest.

Rating: 9

Braking • The braking system on the S3 is pretty slick. Its caliper spacing can be adjusted much more easily than on most buggies, and the brake bias can be altered with just a few turns of the linkage. The lightweight fiber pads never seemed to fade, even when they were soaked with fuel in an overzealous pit stop. A nice set of stoppers, to say the least.

Rating: 9

Low-Speed Handling • The setup that Saxton suggested allowed for some easy low-speed maneuvers with very little push to be found. The traction was super high and the S3 knifed through the slow sections with ease. There were a few times where the rear end got a little loose when the power kicked up, but staying on the power made for a tight and fast corner.

Rating: 9

High-Speed Handling • The track at Revelation isn't really all that big and there are certainly tracks that will be faster, but the sections of the track where the buggy did reach higher speeds revealed a slight on-power push. This is a pretty safe

RTR GEAR

	Radio: Airtronics M8, 90280TX, \$200
	Servo(s): Hitec HSC-5996TG, HSC-5997TG, \$110/each
	Module: Spektrum DSM, SPM1002, \$160
	Receiver: Spektrum DSM (included w/module)
	Receiver Pack: Duratrax 6-Cell, DTXM2015, \$25
	Engine: O.S. VZ-B V-Spec, 13890, \$320
	Pipe: Jammin JP-1, 10055, \$70
	Fuel: Trinity Platinum 30%, MH0030T, \$15
	Starter Box: Duratrax Kwik-Pit, DTXP5760, \$95

CONNECT

AIRTRONICS	ph: 714.978.1895 web: www.airtronics.net
HITEC	ph: 858.748.6948 web: www.hitecrod.com
SPEKTRUM	ph: 800.338.4639 web: www.spektrumrc.com
DURATRAX	ph: 800.682.8948 web: www.duratrax.com
O.S. ENGINES	ph: 217.398.8970 web: www.osengines.com
JAMMIN'	ph: 949.586.2910 web: www.jamminproducts.com
TRINITY	ph: 732.635.1600 web: www.teamtrinity.com
BODZ	email: dsum@fullnet.net web: www.members.fullnet.net/dsum

I got dirt in my eye from that shot.

XRAY XB8

1/8 LUXURY NITRO OFF-ROAD BUGGY

LUXURY BUGGY



DESIGNED BY
Jimmy Hudby



UNIQUE
REVOLUTIONARY
C-HUB SUSPENSION

I.A.C. USES ONE C-BLOCK
FOR ENTIRE CASTER RANGE
ADJUSTMENT

ALL
HOP-UPS
INCLUDED

- FULLY-OPTIONED PREMIUM HIGH-COMPETITION OFF-ROAD BUGGY
- EXCLUSIVE HUDY SPRING STEEL™ DRIVE TRAIN PARTS
- INNOVATIVE I.A.C. (INTEGRATED ADJUSTABLE CASTER™)
- FULLY ADJUSTABLE SUSPENSION FEATURING I.S.S. (INTEGRATED SUSPENSION SETTINGS™)
- PINIONS, SPURS, CROWN GEARS AND CLUTCH BELL MANUFACTURED BY HUDY
- 7075 SWISS T6 CNC-MACHINED CHASSIS, FRONT/REAR SHOCK TOWERS, SUSPENSION BLOCKS & BRACE



FREE
BONUS

Fully adjustable suspension geometry featuring **I.S.S.™**: caster, camber, toe, anti-dive, anti-squat, ride height, down stop, Ackermann, roll center, in-board toe, wheelbase. All aluminum parts CNC machined from Swiss 7075 T6: chassis (3mm), brace (5mm), steering plate (3mm), suspension blocks (5 mm), front & rear shock towers (4mm). Special drive train parts manufactured from **Hudy Spring Steel™**: universal drives, diff outdrives, turnbuckles. XB8 includes clutch bell, aluminum 3-shoe clutch, rubber-sealed ball-bearings, 3 sets of pistons, 2 sets of clutch springs, front & rear anti-roll bars, 2 sets of shock springs, set of steel eccentric bushings and **FREE** 1200NiMH receiver pack and 4 **Hudy profitools™**.



Integrated Adjustable Caster™ (I.A.C.)



Composite steering block with molded-in steel bushing.



www.teamxray.com

XRAY

characteristic and can even help you in a heated battle. To help correct this I put the brake bias toward the rear and added a touch of drag brake to help the rear un-stick from the track. Quick lateral transitions were no problem as the buggy reacted well to directional changes.

Rating: 9

Rough-Track Handling • Having less-than-perfect conditions on the track was a good test of the S3's ability to handle the ever-changing conditions that most racers experience over the course of a 20+ minute race. The setup I used had 50 wt. the shock oil in the front and 30 wt. to the rear, and it seemed pretty good in most places. I did think that on the bumpy straight that the car seemed to be a little bouncy. This could be because it was over sprung, or that the "floating" piston design took some of the up-travel damping away. It wasn't bad, but I think it could have been slightly better and a slightly different setup would have cured that bounce.

Rating: 9

Jumping • I had no complaints about the S3's ability to take flight. Approach a jump and give a quick blip of the throttle, and the S3 was airborne. It launched nearly perfectly every time and I could really control the attitude in the air with quick throttle and brake inputs. Landing was exceptional with even flat-bottom mistakes being soaked up and not upsetting the car's direction.

Rating: 10

Tuning • I guess that one of the reasons I like racing buggies so much is that you really don't need to keep fussing with adjustments, since the track conditions are so extreme. Once you get a good setup you tend to stick with it unless you're well off the pace. That's not to say you don't want adjustments, though, because the S3 has lots of them. What I like about its adjustments is that they tend to be very simple, and yet very effective. Replace a suspension block, rotate a caster location mount, and it's track time.

Rating: 10

Damage • I'm sure that the more I race the buggy, sooner or later something will break, but at the end of my initial testing nothing was broken or loose. There were some early reports of problems with the center carbon fiber brace breaking under some extreme conditions, and I tend to think that this a spot to keep a close eye on. Any movement in that area could be very bad. I'd recommend making sure those screws are always tight, and if and when an all-aluminum brace is available, switching it out. The stress at that point is huge since no other place in the chassis will flex. But other than my imaginary problem that could never surface, everything felt great and the feel of the parts during building led me to believe there shouldn't be many issues other than your standard crashed-at-40mph-and-rolled-into-the fence breakage.

Rating: 9

Conclusion

The field of quality racing 1/8-scale buggies gets bigger every time I look, and it just

SCORECARD	
SCALE RATINGS: 1=POOR • 10=EXCELLENT	
9	INSTRUCTIONS
10	PARTS QUALITY/FIT
9	DURABILITY
10	TUNABILITY
9	OVERALL PERFORMANCE
9	VALUE
+ HITS	
• You have to love the chassis design • Loaded with features despite not being a "factor " kit • Suspension works well and is easily adjusted • Front suspension protects shocks	
- MISSES	
• Doesn't include shock or diff oil? • Body required lots of cutting to get right • Center brace feels the entire stress load of the chassis flex	

went up one more on the clicker. It took Thunder Tiger a long time to revise their old S2 buggy, but the result is a completely new buggy that steps to the left in design, and after driving it I can say that's a very good thing. A lot of thought went into this buggy from the shocks behind the front shock tower on up to the chassis that adds a new level of stiffness. Sure, parts availability may be an issue at first, but if the buggy can make a name for itself on the track like I think it's capable of, then the support will soon follow. ☺

Powers join hands with world eminent "Hirosaka"

Powers have signed a partnership agreement with Hirosaka.

Powers have become the exclusive distributor of "Hirosaka" products for Japanese market and for overseas market. Powers will help you to deliver Hirosaka product to your hands. Mr. Hirosaka will also work as a supervisor of Powers products. We will continue to introduce more quality products in the world with the help of Mr. Hirosaka.



HIROSAKA Powers
Collaborative project No.1

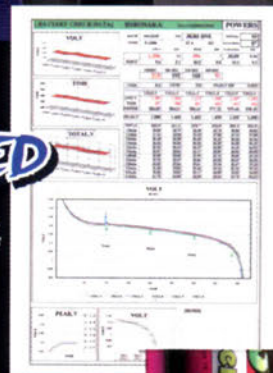
Newest lot GP3300/SP330 battery
matched by Masaaki Hirosaka

HIROSAKA MATCHED

6-cell Ni-MH battery precisely matched by Masaaki Hirosaka, who has achieved thousands of success at world championships and other international races as the best R/C car mechanic.

Sold as 6-cell hand soldered pack—Results are different with the data which was measured in every cell and the data measured when it is united. HIROSAKA MATCHED battery were measured when it is united.

Every pack includes detail data sheet—Measured with 25A discharge Amps which is similar to the race run condition based on experience of Mr. Hirosaka. Matched status and overall quality of batteries are marked as "Matched" and "Total" out of 100.



▲ You can easily find the accuracy of the data from detail data sheet which is attached every pack as curves of each cells are almost same.

▲ Administration number, marks of "Total", "Matched" are labeled on each cells.



STAGE III
STAGE II
STAGE I

**HIROSAKA ultimate items
are produced
by the master Masaaki Hirosaka**



48pitch
64pitch: Coming soon!

Lightweight machine cut spur gear is extremely precise. Use it with lightweight aluminum pinion, and you get very high efficiency and silence!

Lightweight machine cut spur gear

Thickness: 3mm / Precision milled

HR-002-4865 65 T	HR-002-4873 73 T
HR-002-4866 66 T	HR-002-4874 74 T
HR-002-4867 67 T	HR-002-4875 75 T
HR-002-4868 68 T	HR-002-4876 76 T
HR-002-4869 69 T	HR-002-4877 77 T
HR-002-4870 70 T	HR-002-4878 78 T
HR-002-4871 71 T	HR-002-4879 79 T
HR-002-4872 72 T	HR-002-4880 80 T

*Spur gear should be fixed by screws.
Do not use it for ball differential gear.

Lightweight aluminum pinion

HR-001-4815 15 T	HR-001-4828 28 T
HR-001-4816 16 T	HR-001-4829 29 T
HR-001-4817 17 T	HR-001-4830 30 T
HR-001-4818 18 T	HR-001-4831 31 T
HR-001-4819 19 T	HR-001-4832 32 T
HR-001-4820 20 T	HR-001-4833 33 T
HR-001-4821 21 T	HR-001-4834 34 T
HR-001-4822 22 T	HR-001-4835 35 T
HR-001-4823 23 T	HR-001-4836 36 T
HR-001-4824 24 T	HR-001-4837 37 T
HR-001-4825 25 T	HR-001-4838 38 T
HR-001-4826 26 T	HR-001-4839 39 T
HR-001-4827 27 T	HR-001-4840 40 T

The POWERS Tire

*The reference tires for
a new global standard!*

Powers Tire System is well balanced system which makes a good combination of tires, molded inserts and dish wheels. We have developed the system on the basis of our R&D as to be a reference of the world standard. When the selection of the tires, molded inserts and wheels is carefully made for each race track, it provides high level strong grip, durability, straight drivability, good cornering, appropriate braking and stability.

- POWERS QG (CA superglue for R/C models)
Low-viscosity formula and high-strength adhesiveness. It ensures perfect gluing for fitting wheels and tires.
Powers QG (nozzle, pin cap included) 20ml
- Extension nozzle for POWERS QG
10pcs pack



- Powers Slick Tire
Highly pure blended compound and well balanced inner mesh provide great running performance!

Surface temp. (0~25°C 57~102°F) (10~45°C 75~113°F) (20~60°C 93~140°F) (40~70°C 104~158°F)

Compound	PJ-224	PJ-274	PJ-304	PJ-354	4pcs
	: 22	: 27	: 30	: 35	

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Thunder Tiger EB4 S3

• 1/8-SCALE BUGGY • 1/8-SCALE BUGGY • 1/8-SCALE BUGGY • 1/8-SCALE BUGGY • 1/8-SCALE BUGGY •

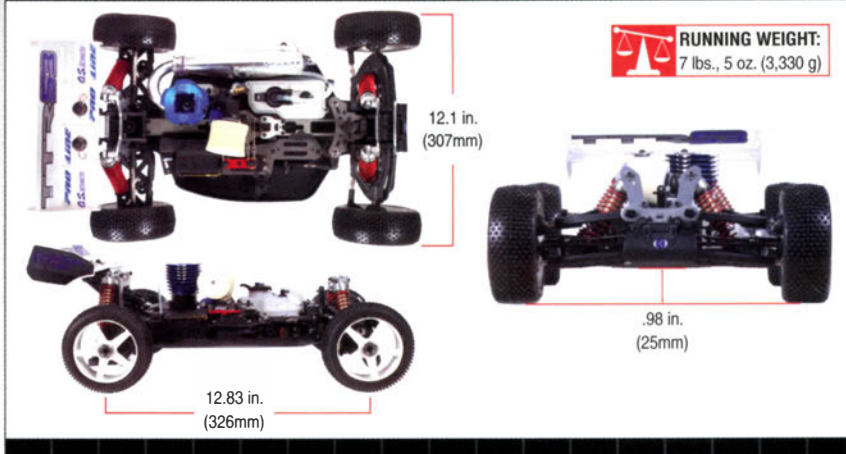
CONNECT:

MANUFACTURER: Thunder Tiger
PHONE: 800.322.7121
WEB: www.acehobby.com

VEHICLE INFO

VEHICLE: EB4 S3
SCALE: 1/8
TYPE: Nitro Buggy
PART #: TTR 6320-K10
STREET PRICE: \$550
PRICE AS TESTED: \$1,665 (including all items used for testing)
BUILD TIME: 8 hours
EXPERIENCE LEVEL: Intermediate

DIMENSIONS



TECHNICAL INFO

CHASSIS

TYPE: Extruded tunnel
THICKNESS: 3mm
MATERIAL: 6061 aluminum
FUEL TANK CAPACITY: 125cc with dual pick-up

SUSPENSION

TYPE: Front pivot ball with adjustable upper link / Rear H-arm with upper control link
TURNBUCKLES: Steel
STEERING: Ball-bearing dual bellcrank
SWAYBARS: Front and rear (2.7mm)

SHOCKS

BODIES: Hard anodized aluminum
DAMPING: Not included
PISTONS: 4-hole floating piston
SPRINGS: Red (4.3 lb.)

DRIVE TRAIN

TYPE: 4WD with center diff
DIFFERENTIAL: Sealed planetary gear
DIFF FLUID: Fluid not included
AXLE TYPE: CV-axle
SPUR GEAR MATERIAL: Steel
CLUTCH: 3-shoe composite
BEARINGS: Rubber-sealed

GEARING

CLUTCH/SPUR: 18/46
GEAR RATIOS:
PRIMARY: 3.54:1
INTERNAL: 3.31:1
FINAL: 11.72:1

BODY, TIRES, WHEELS

BODY: Thunder Tiger
TIRES (F/R): Not included
DIAMETER/WIDTH: 6.89" x 3.9" (111mm x 45mm)
HEX SIZE: 17mm
WHEELS: White 5-spoke

ITEMS NEEDED

Engine, tuned pipe, radio system, servos, receiver battery, tires, paint, tire glue, fuel, starting box.

MAIN COMPETITION

Mugen MBX-5 Prospec, Kyosho MP 777, Jammin X1CR, OFNA Hyper 7 PCR, OFNA 9.5, GS Avenger Pro

WHO IT'S FOR

1/8-scale buggy racers

If you haven't done it already, go buy a 1/8-scale and race.

POWERPLANT INFO

The O.S. 21 VZ-B V-Spec is one powerful little engine. O.S. addressed some of the issues with their other engines to increase the longevity of the VZ-B. The whacky cooling head design keeps temperatures at the low end of the spectrum. The engine started with a little coaxing at first since the pinch was so tight, but after that it started every time and found its tune without fail, something O.S. engines are well known for. Combining the easy tuning and brute power was no easy task, but the VZ-B does just that and will make any buggy roost dirt and be user friendly at the same time.

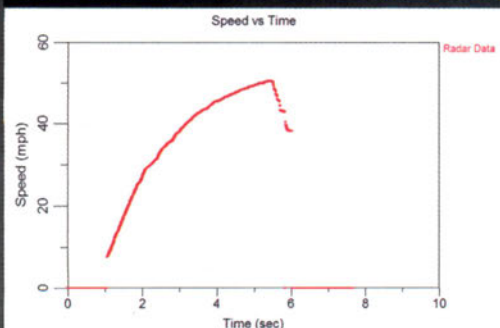
X-DYNO DATA

POWER PLANT DYNO PERFORMANCE



ACCELERATION CURVE

ACCELERATION AND TOP SPEED



ACCELERATION

ACCELERATION (0-60FT):	1.69 sec. @ 35.6 mph.
TOP SPEED:	50.5 mph @ 231 ft.
AVERAGE RUNTIME:	7 minutes



ENGINE DATA

ENGINE:	O.S. Engines VZ-B V-Spec
BORE x STROKE:	0.654 in. x 0.630 in. (16.6mm x 16mm)
DISPLACEMENT:	0.211 in. ³ (3.46cc)
FUEL:	Trinity Platinum 30%
PIPE:	Jammin' JP-1
PLUG:	P3
PEAK HP*:	1.47 @ 24,250 rpm
PEAK TQ*:	61.2 in.-oz. @ 22,500 rpm
PEAK RPM*:	41,500

*Results as tested.

NEEDLE SETTINGS

HIGH:	2.5 turns from bottom
LOW:	1 3/4 turns from bottom
MID:	1 turn in from flush w/carb body
OPERATING TEMP.:	220-230° F

PERFORMANCE INFO

TEST CONDITIONS

WEATHER:	Partly Cloudy
TEMPERATURE/HUMIDITY:	50° F / 71%
BAROMETRIC PRESSURE:	30.26 in.
ALTITUDE:	900 ft.
TRACK TYPE:	Medium Packed

HANDLING

TURNING RADIUS:	3 ft., 1 in.
ON POWER:	Slight Oversteer
OFF POWER:	Neutral

BRAKING

CONTROL:	Excellent
FADE:	None
OVERALL BRAKING:	Excellent

We wonder how this engine would perform with a prop.

REEDY NEO-ONE BRUSHLESS MOTOR

- High-Performance Sensor-Brushless Motor
- Neodymium Magnets
- Extra-Thick Copper Windings
- Nine-Turn Power With Longer Runtimes
- Maintenance-Free Performance
- Standard "540-Size"
- Solder Tabs & Sensor Plug Socket

**Reedy NEO-One
Brushless Motor**
#111 \$149.99
Suggested Retail

WHEN TWO WO

Reedy is pleased to announce their first brushless motor, the NEO One Brushless. Developed in conjunction with the LRP Electronics "Sphere" brushless and brushed electronic speed control, the NEO One delivers what racers all over the world have been waiting for the true driving feel of a high-performance 9-turn brushed motor with virtually no maintenance!

The NEO-One is a sensor-brushless motor which

works interactively and intelligently with the speed control. When used in conjunction with the LRP Sphere ESC, the combo offers the same linear performance and braking feel that you've become used to with conventional brushed motors.

The Reedy NEO-One is a true triumph of electrical engineering for the RC racer or basher and is the first brushless motor good enough to wear the name "Reedy". Reedy motors have powered 25 IFMAR World Champions, and the new NEO promises to keep Reedy at the leading edge of new motor technology for years to come. Check out the Reedy NEO One at you local hobby shop or at www.rc10.com/reedy.

www.rc10.com/reedy

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LRP SPHERE SPEED CONTROLLER

- Runs Brushed & Brushless Motors
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- Small Footprint Of Only 1.31" x 1.48"



**LRP Sphere Digital
ESC RUNS BRUSHED &
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Suggested Retail

WORLDS COLLIDE.

The new LRP Sphere digital speed control is revolutionary as it's the first competition-level ESC that can be used with both brushed motors and brushless-sensor motors such as the Reedy NEO One. The LRP Sphere is actually 4 speed controls in one by offering the choice of Forward/Brake/Reverse or Forward/Brake operation when used with any brushed or brushless motors.

The Sphere offers all the benefits of brushless motor systems like minimum maintenance, tremendous power and high efficiency with practically no motor wind limits. The Sphere features a 3-way multi-protection system against overload, thermal and short protection, as well as external solder tabs for all the power wires.

The Sphere's sensor design gives the Sphere brushless system the feel of a brushed motor with all the inherent driving characteristics and smooth, linear operation with no stuttering. The Sphere expands on the LRP QC2's easy-to-use setup platform with four adjustable modes.

The LRP Sphere is LRP's first ESC for the new era of brushless and brushed motors and is simply the most advanced competition level digital speed control in the world today.

LRP
ELECTRONIC

The XLB's size impressed all the chicks at the track.





Drive this buggy and rule any track you want.

XTM XLB

Words: Stephen Bess ■ Photos: Jason Yu

We like them big and and we like them fast.

It's not often that we come across a vehicle that doesn't fit into one of the common 1/10- or 1/8-scale classes without being tiny. Mini vehicles have been all the rage lately, but XTM went the other direction with its 1/7-scale XLB Nitro Buggy. Sure to wow you with its sheer mass and dimensions, the XLB is all about being big. Whether you're gawking at its 290cc fuel tank, its .28 pull-start engine, or its 26-inch nose-to-tail length (most 1/8-scale buggies are a half foot shorter), the XLB's size is impressive. And for those wondering if its performance meets its mass, the answer is yes, in many ways.

XTM Racing XLB

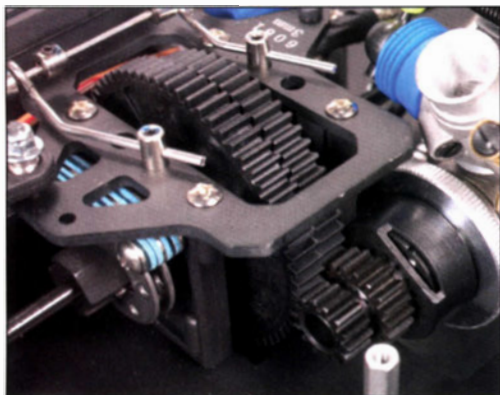
• 1/7-SCALE NITRO BUGGY • 1/7-SCALE NITRO BUGGY • 1/7-SCALE NITRO BUGGY • 1/7-SCALE NITRO BUGGY •

VEHICLE FEATURES

If you're hoping to take a close look at the 1/7-scale XLB, first take a step back. Although the difference between 1/8- and 1/7-scale may not seem very large on paper to us math nerds, the visible difference is shocking (just look at the comparison photo). This buggy is just plain BIG! A well-supported rear wing provides downforce and doubles as a carrying handle when transporting the car. The large spiked rubber tires with 5-spoke wheels are roughly the same size as typical monster truck tires, but they look buggy-like on the massive XLB.



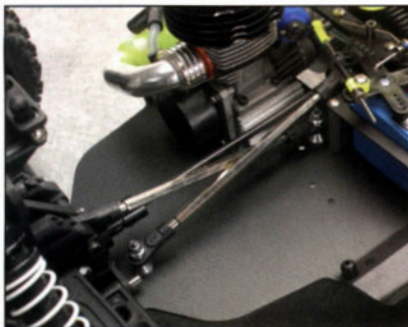
► TWO-SPEED TRANSMISSION



The XLB's colossal size and weight are managed by an adjustable 2-speed transmission. Although the gearing is tall enough to drive a small automobile, it works well and gives the XLB tire-spinning low end while retaining an impressive 45-mph top speed. Due to the spur gears' large diameter and the way the gears protrude through the chassis, the lower chassis features a plastic gear cover to protect the gear teeth from hang-ups and debris.

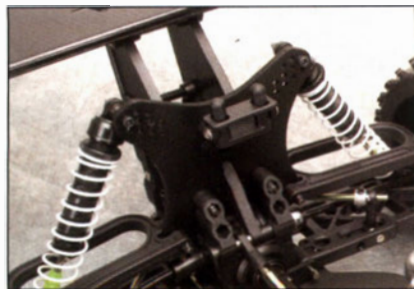
► REAR DUAL BRACES

Talk about real estate! The XLB's expansive chassis leaves plenty of extra room from the center 2-speed back to the rear bulkhead. Although the machined 4mm-thick chassis plate is plenty strong, the chassis area behind the engine would likely twist without substantial bracing. As a result, XTM outfits the XLB with not one, but two large rear chassis braces to eliminate flexing—one from the bulkhead to the chassis, and one from the bulkhead to the center differential housing.



► 4MM SHOCK TOWERS

Continuing the XLB's over-size, over-strong theme are solid 4mm-thick front and rear shock towers. They're lightly machined at the upper shock mounting positions but 4mm thick everywhere else, which means that nothing short of a freight train should bend them. The towers feature several rows of mounting positions, which allow several ride height and shock angle adjustments.





See that fuel tank? Skip the quart and buy a gallon of fuel!

“ A buggy of this size requires stronger servos than the typical plastic gear variety, so XTM outfits the XLB with metal gear STEERING AND THROTTLE SERVOS. ”

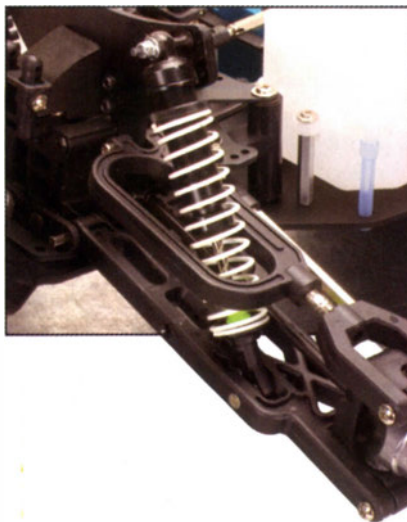
RADIO GEAR

A Hitec Aggressor AM radio is included to control the XLB, and comes on the 75MHz band, giving you a choice of thirty different channels if you spring for optional crystal sets. Many RTR-included radios are on the 27MHz band with only six channels, so your chances of standing in line at the frequency board are greatly reduced. A buggy of this size requires stronger servos than the typical plastic gear variety, so XTM outfits the XLB with metal-gear steering and throttle servos. XTM rates the X-175 steering servo at 175 oz./in. of torque, with the X-77 throttle servo at 77 oz./in. with a 0.15 sec. transit time. To protect against runaways (which would certainly be a bad thing for such a huge vehicle), XTM includes a micro-failsafe.



OIL-FILLED SHOCKS

The XLB's damping system is just as beefy as the rest of the car, with oversized oil-filled shocks soaking up the bumps. The black anodized aluminum shocks feature threaded bodies for easy ride height adjustments, firm white springs, and large 3.5mm-thick shock shafts to withstand the XLB's extra mass. Yellow rubber bump-stops come installed on the shafts to add durability and eliminate over-compression.



TESTING

I broke in the engine using a heat-cycle method, and dialed it in on our back parking lot. I also installed a 5-cell rechargeable receiver pack before heading out, partially because in our office, finding AA batteries is like striking gold. We then headed out to Revelation Raceway in Ontario, California for some sunny, warm-weather testing in December.

Acceleration • I must admit, considering the XLB's size I wasn't expecting much in the acceleration department, but I'll be the first person to say that I couldn't have been more wrong. Once the SH .28 engine was properly tuned and warmed up, the XLB spun its tires with ease and shot off the line. Low-speed acceleration is impressive as well, as the buggy makes the transition from low speed corners to timing sections and jumps easily with the pull of the throttle. Anyone expecting a sluggish response will be in for a nice surprise.

Rating: 9

Top Speed • The XLB's strong acceleration continues all the way up to top speed, which I must say is also surprising. The .28 engine never runs out of steam until the buggy snaps into second gear and maxes out at 45 mph. When compared to most oversize vehicles, the XLB's top speed is top notch. Give it enough space and the XLB will overtake most RTR vehicles, and was fast enough at Revelation to earn several "Wows" from fully sponsored drivers who were there testing. Give yourself plenty of room if you plan to hit top speed though, since bringing everything back to a stop takes a little extra room.

Rating: 10

Braking • Out of the box, my XLB didn't brake well at all. It continued its forward motion at full brake, and I became concerned. But one quick tweak of the brake linkages solved the problem, as the brake stoppers were set too loose at the factory. After the tweak, the XLB locked its wheels easily, even on asphalt. On the dirt, the brakes work well and allow the buggy to swing its tail around corners.

Rating: 9

Low-Speed Handling • Revelation's relatively tight layout isn't the ideal venue to test an oversize buggy, but the XLB performed well nonetheless. Once I grew accustomed to the steering servo's response, the buggy felt solid. Handling around tight or sweeping corners is less than perfect on a track, however, because the all-terrain tires suffer in the traction department. Smaller racing lugs would work best on a track. The steering servo's 0.22 sec. transit time is also fairly sluggish compared to most racing servos, but for a RTR kit, the 175 oz./in. of torque and metal gear drivetrain more than make up for the servo's lack of speed.

Rating: 8

RTR GEAR

	Radio: Hitec Aggressor AM
	Servo(s): XTM X-175 (St); XTM X-77 (Th)
	Receiver: Hitec
	Pipe: XTM Muffler
	Engine: SH .28

OUR TEST GEAR

	Fuel: Trinity Monster HP 30%, MH0030, \$12
---	---

CONNECT

XTM/ GLOBAL HOBBY	ph: 800.854.8471 web: www.hobbypeople.net
HITEC RCD	ph: 858.748.6948 web: www.hitecrnd.com
TRINITY	ph: 732.635.1600 web: www.teamtrinity.com

Jason is a professional; don't try that photo at home.

GET SOME AIR

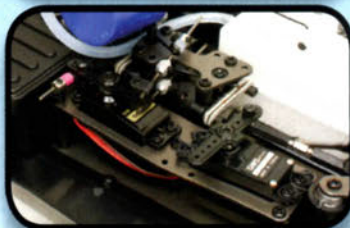


STORM RTR PLUS

The Storm is back and better than ever. GS Racing's Storm RTR Plus has all the same high quality features as the original Storm RTR including a newly updated hard-coated chassis, 4mm 6061 aluminum front shock tower, cast aluminum lower hinge pin mounts, and sway bars in the front and rear. GS Racing's new high torque B-02P pullstart engine and 2-chamber tuned pipe comes standard in the Storm RTR Plus and has loads of brut power on tap, perfect for bashing up the backyard or for the next race at your local track. The GS Racing factory installed Beta-T1 digital proportional FM radio, featuring end-point adjustments and a new high torque steering servo keeps the Storm RTR Plus under total control.



The Storm RTR Plus is based on GS Racing's race proven Storm Pro and includes some hardcore race features like aluminum oil-filled shocks, full precision ball bearings and front universal driveshafts. The Storm RTR Plus also has 100% parts and options compatibility allowing you to build your Storm RTR Plus in to the ultimate bullet-proof racing machine. The Storm RTR Plus is available with five new factory finished bodies and includes GS Racing's glow igniter and fuel bottle right in the box. The Storm RTR Plus comes from GS Racing 100% factory assembled, just add batteries and glow fuel and get ready to be totally blown away because the Storm RTR Plus is going to rock your world.



CALL 626.338.3815
www.gsracing.com



High-Speed Handling • The XLB didn't have enough room to fully max out at Revelation, but it did feel stable at high speeds—not a shocker when you consider that a buggy of this size and weight simply absorbs bumps and ruts that would send a smaller vehicle tripping. To make it through sweepers and corners, however, you must slow the buggy down as it has a tendency to push with its firm-compound tires and large, general use lugs. Better tires would help high-speed handling, but in its stock form the buggy delivers too much fun to worry about the lack of traction.

Rating: 8

Rough-Track Handling • As mentioned, the XLB soaks up large bumps and ruts easily, and those it doesn't soak up it rolls over and through. Several times during the photo shoot, I overshot a corner and ended up in dead area of the track. Hopping the coping pipe or driving through drainage ditches became less of an accident and more of a fun event once I realized I could drive anywhere on the track and make it out safely. Although the center 2-speed cover scrapes over lots of obstacles, it's not enough to stop the buggy.

Rating: 9

Jumping • Revelation's smaller jumps were a breeze, as the XLB flies easily over small hills and jumps. But I was eyeballing Revelation's monster jump—a huge moto-x finish-line-style triple, with a 6-foot tall launch jump that sends vehicles into double-digit altitudes. Once our low-speed photos were finished, I launched the XLB off of the big triple about a dozen times. The chassis attitude can be corrected easily while airborne with a tap of the brakes or jab of the throttle.

Rating: 9

Tuning • The included instruction manual features an excellent tuning guide to help novices decide what to tune and when. There are plenty of optional and standard tuning adjustments, with all of the normal adjustments such as camber, toe-in, steering Ackerman, and so on.

Rating: 8

Damage • After many tanks of blasting around the track, the XLB came to a halt but the engine continued to rev. My first suspicion was confirmed—the plastic spur gears were stripped, with the gear teeth sheared off after too much abuse. After setting the car on the bench, I also noticed that the front lower-left hinge pin had popped itself out of the lower suspension plate, causing the suspension arm to tweak at a severe angle. After speaking with reps at XTM, I was told that their spur gears have been durable and that the hinge pin problem had been seen before but wasn't a catastrophic failure. These two breaks were the only damage sustained by the buggy, as the rest of the vehicle was durable and fun to drive. As far as wear and tear is concerned, the lower 2-speed gear cover was ground away significantly but still intact.

Rating: 8

Conclusion

The XTM XLB isn't your typical RC car, and in my opinion, that's why it's so much fun to drive. Blasting around a field or race track is entertaining, not only because the buggy will go nearly anywhere but also because it's freakishly fast. The SH .28 engine pushes the big buggy with ease and takes it up to an impressive 45 mph. Ideally, this buggy would be a blast to race with a pack of 8-10 other XLB's on a large off-road track. The action is intense, its size makes everything else look small, and you can drive it almost anywhere. For its \$500 street price,

SCORECARD	
SCALE RATINGS: 1=POOR • 10=EXCELLENT	
9	INSTRUCTIONS
9	PARTS QUALITY/FIT
8	DURABILITY
8	TUNABILITY
9	OVERALL PERFORMANCE
9	VALUE
+ HITS	
- Gargantuan size makes it look cool and fun to drive - Neck-snapping acceleration and 45 mph top speed 290cc fuel tank means long run time	
- MISSES	
- Ground clearance issues - Big size means increased wear - Only one tire tread pattern available	

you'll get a lot and will enjoy using all that the XLB has to offer whether it's speeding through a backyard or blasting over moto-x jumps. ⚙️





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GLOW IGNITERS

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RE 10561P	GLOW IGNITER W/METER, BATTERY & CHARGE PURPLE	\$26.99
RE 10561R	GLOW IGNITER W/METER, BATTERY & CHARGE RED	\$26.99
RE 10561S	GLOW IGNITER W/METER, BATTERY & CHARGE SILVER	\$26.99
RE 10562B	XL GLOW IGNITER W/METER, BATTERY & CHARGE BLUE	\$29.99



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RE 10125B	.21 NOVA MEGA/HPI .25 NOCER HEAD BLUE	\$79.00
RE 10125P	.21 NOVA MEGA/HPI .25 NOCER HEAD PURPLE	\$79.00
RE 10125S	.21 NOVA MEGA/HPI .25 NOCER HEAD SILVER	\$79.00
RE 10126B	.26 PICCO NOCER HEAD BLUE	\$79.00
RE 10126P	.26 PICCO NOCER HEAD PURPLE	\$79.00



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XTM Racing XLB

• 1/7-SCALE NITRO BUGGY • 1/7-SCALE NITRO BUGGY • 1/7-SCALE NITRO BUGGY • 1/7-SCALE NITRO BUGGY •

CONNECT:

MANUFACTURER: XTM
PHONE: 714.964.0827
WEB: www.hobbypeople.net

VEHICLE INFO

VEHICLE: XTM XLB Monster Buggy

SCALE: 1/7

TYPE: 4WD Nitro Buggy

PART #: 145617

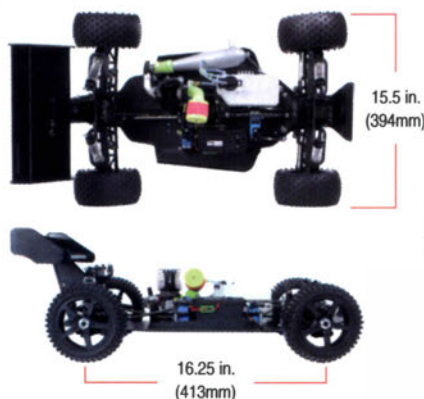
STREET PRICE: \$499

PRICE AS TESTED: \$526 (including all items used for testing)

SETUP TIME: 20 minutes

EXPERIENCE LEVEL: Intermediate

DIMENSIONS



RUNNING WEIGHT:
10 lbs., 8 oz. (4,762g)



TECHNICAL INFO

CHASSIS

TYPE: Lower plate with upper deck
THICKNESS: 3mm
MATERIAL: 6061 machined aluminum

SUSPENSION

TYPE: H-arm with upper control arm
TURNBUCKLES: Steel
STEERING: Dual bellcrank
SWAYBARS: 3.5mm rear, no front

SHOCKS

BODIES: Threaded aluminum
DAMPING: 100 wt. oil
PISTONS: XTM 2 hole
SPRINGS: XTM white

DRIVE TRAIN

TYPE: 4WD shaft with front and rear differentials
DIFFERENTIAL: Sealed gear
DIFF FLUID: Grease
AXLE TYPE: Dogbones
TRANSMISSION: 2-speed
SPUR GEAR MATERIAL: Nylon
CLUTCH: 3-shoe fiber
BEARINGS: Metal shielded

GEARING

PINION/SPUR: 1st 14/65 2nd 19/60

GEAR RATIOS:

PRIMARY: 4.64:1 3.16:1
INTERNAL: 3.31:1
FINAL: 15.36:1 10.46:1

BODY, TIRES, WHEELS

BODY: XTM pre-painted
TIRES (F/R): XTM spiked
DIAMETER/WIDTH: 95mm / 65mm
HEX SIZE: 17mm
WHEELS: 5-spoke nylon

ITEMS NEEDED

Fuel, fuel bottle, 12 AA batteries, air filter oil, basic tools.

MAIN COMPETITION

Traxxas 1/6 Monster Buggy

WHO IT'S FOR

Off-road bashers who want something big and different.

I'll take one XTM XLB, ASAP.

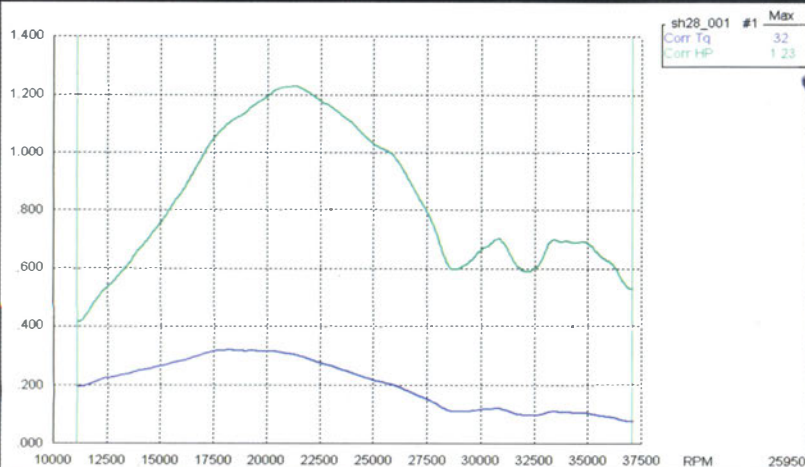


POWERPLANT INFO

The included SH Engines .28 pull-start power plant provided the stump-pulling grunt to get the XLB up and running, but the engine's power doesn't stop there. We managed to squeeze 45 mph out of our XLB, which means that the .28 provided plenty of revs. At the track, the .28 held its tune well and ran consistently in the 220-240° F range using 30% Trinity fuel. I never did replace the stock plug, which lasted through break in, testing, and six dyno pulls. An engine of this size will most likely perform its best with a cold element plug such as an O'Donnell 99, McCoy MC9, or Novarossi 7.

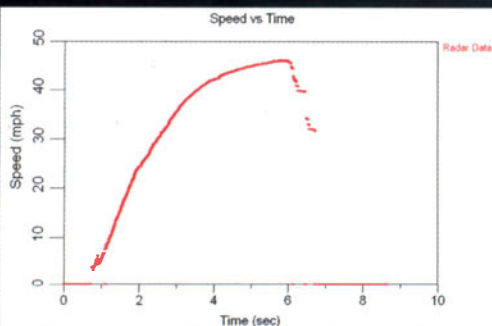
X-DYNO DATA

POWER PLANT DYNO PERFORMANCE



ACCELERATION CURVE

ACCELERATION AND TOP SPEED



ACCELERATION

ACCELERATION	1.90 sec. @
(0-60FT):	34 mph
TOP SPEED:	46 mph @
	240.50 ft.
AVERAGE RUNTIME:	10 minutes



ENGINE DATA

ENGINE:	SH .28 Pull Start
BORE x STROKE:	.73 in. x .67 in. (18.5mm x 17mm)
DISPLACEMENT:	.28 in. ³ (7.1cc)
FUEL:	Trinity Monster Horsepower 30%
PIPE:	XTM
PLUG:	XTM
PEAK HP*:	1.22 hp @ 20,500 rpm
PEAK TORQUE*:	61.4 in.-oz. @ 14,750 rpm
PEAK RPM*:	38,450 rpm

*Results as tested.

NEEDLE SETTINGS

HIGH:	3.5
LOW:	Flush w/body
MID:	N/A
OPERATING TEMP.:	240° F

PERFORMANCE INFO

TEST CONDITIONS

WEATHER:	Sunny
TEMPERATURE/HUMIDITY:	65° F / 30%
BAROMETRIC PRESSURE:	30.10 in.
ALTITUDE:	652 ft.
TRACK TYPE:	Dirt

HANDLING

TURNING RADIUS:	4 ft., 1 in.
ON POWER:	Moderate Push
OFF POWER:	Neutral

BRAKING

CONTROL:	Very Good
FADE:	Slight
OVERALL BRAKING:	Very Good

XTM XLB SH .28...this sure is an acronym-friendly article.

By: **TEAM INTEGY**

The Best Monster Hopups for '05

Serious Modified Parts for the LST

Precision Parts made from 6061 aircraft grade aluminum alloy

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 Front Shock Tower \$29.99
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 Front Bumper Set \$17.99
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 Castor Block L+R \$22.99
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***also available in blue color**



The new MSR6 shocks for the LST have fine threaded shock bodies, real working piggyback oil reservoirs and super heavy-duty shock shafts. The internal shock pistons are keyed with an innovative seal o-ring to improve dampening performance.

HD BILLET PARTS FOR REVO



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 Alloy Servo Box Cover for Revo \$16.99
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 Alloy Receiver Box Skid Plate for Revo \$15.99
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 Alloy Front Upper Arm (L+R) for Revo \$25.99
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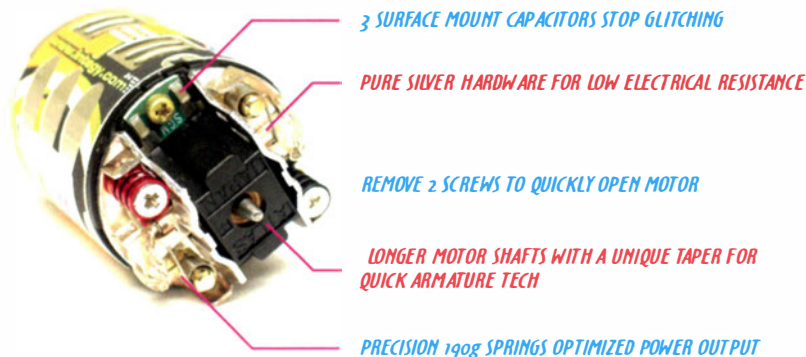
USA

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By: **TEAM INTEGY**

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The MATRIX V10TT has more rpm compares to other 27 turn 2 magnet stock motors. New stage 6 wet magnets provide the low-end torque needed to accelerate your vehicle. Our special 3mm super light weight armature gets you the extra power throughout the entire rpm range. Best of all, the V10TT armature is coated with a layer of polymer protective coating to prevent electric short. Result? THE ULTIMATE 27T STOCK MOTOR CAPABLE OF DELIVERING THE FASTEST LAP TIME ROUND AFTER ROUND.



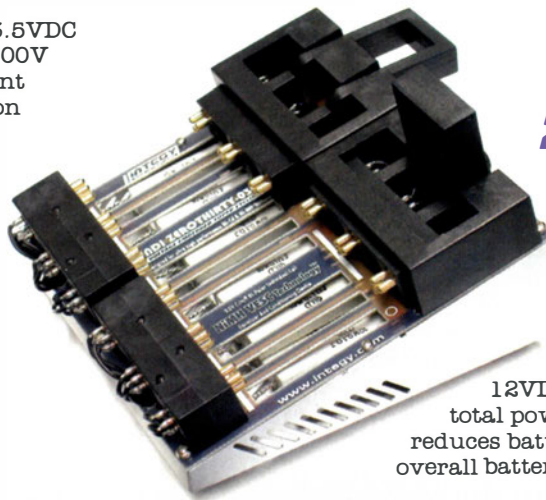
MODEL #M2483 List: \$39.99

MODEL #E2028
List: \$109.99

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the ultimate portable motor tool

Green backlit monitor LCD
 Input voltage: 11VDC to 13.5VDC
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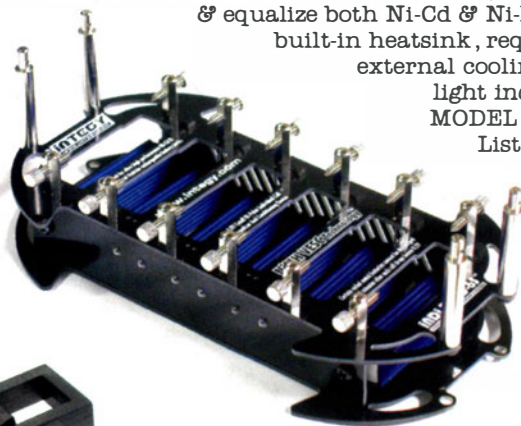


ZERO-THIRTY

The INDI 030 discharge board is designed for stock and 19T racing, 30A discharge rate, 0.0V cutoff & will not cause cell reversal, works on both Ni-Cd & Ni-MH batteries, easy to use clamp type switch with 3 pins connector on each terminal, built-in twin cooling fan, requires 12VDC input, drastically increases battery total power, increases average output voltage, reduces battery internal resistance and improves overall battery life. MODEL# E2030 List: \$69.99

INDI ZERO 6S

The 6S is designed for serious racers, it can increase battery runtime, increase average voltage, increase overall power output and reduce battery internal resistance. Units are stackable to save pit space, 6A discharge current is perfect for modify racing, 0.0V cutoff, will not cause cell reversal, safely discharge & equalize both Ni-Cd & Ni-MH cells built-in heatsink, requires no external cooling fan, 6 light indicators.
 MODEL #E2029
 List: \$32.50



Kyosho is the King of longest-strung-together letter names.



Kyosho V-ONE RRR

Words: Derek Buono ■ Photos: Jason Yu

Domination is a word we throw out all the time. It's not often that a team, person, or car dominates an event, but it's safe to say that the Kyosho V-One RRR dominated the IFMAR Worlds by getting a total of eight cars in the main event. We've driven the previous RR and even the R versions of this car and were always impressed with its capability, but never would we have thought that the final R would be so good. With Kyosho forming a pretty formidable force in the racing community, we won't be surprised to see the RRR winning at your local track. If you laugh at how the car's name makes you feel like you stutter, you won't be laughing when an RRR makes you look like you stutter on the track without one.

Please, no RRRs! Have mercy!



Kyosho V-ONE RRR

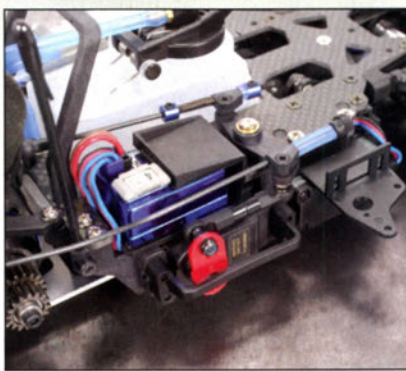
• 1/10-SCALE 4WD NITRO TOURING CAR • 1/10-SCALE 4WD NITRO TOURING CAR • 1/10-SCALE 4WD NITRO TOURING CAR •

VEHICLE FEATURES

Sometimes you look at a car and are impressed with the way it looks, feels, or performs. When you look at the RRR, you'll get two of those three attributes, and when it hits the track the final one is taken care of. The RRR has so many little details that it was tough to just point out a few. While you'll love the little things, the overall picture of the car's design won't be clear until you hit the track.

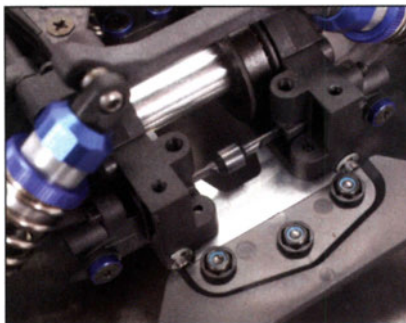
LAY DOWN

The overall theme, if cars have themes, is an ultra low center-of-gravity. This is first visually apparent by the orientation of the steering servo and throttle servo, which have traditionally stood upright, but now have been turned on their sides. To further keep the mass of the car as low as possible, the battery is found underneath the fuel tank and straight down the center. Everything about this car was designed to keep the weight and polar moments as close to the center of the chassis as possible.



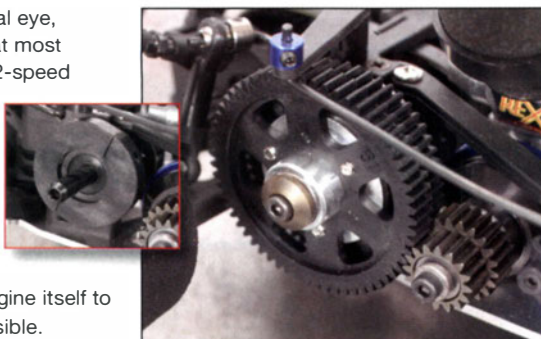
FRONT END APPEAL

The front of the car is just as functional as the rear suspension with a fully adjustable pivot ball design. The caster clips let you adjust the caster quickly. Along with the droop screws, threaded shocks, and standard front one-way diff, there's an adjustable blade-style sway bar to adjust. Simply rotate the bar to increase the stiffness and of the front. Making the flat spot vertical will increase rear grip and running it flat will increase steering. The only point of the car we second-guessed is the RRR's front dogbones. Yes, dogbones allow the front end to be "freer" and steer better, but we've had our problems with dogbone ejections with similar designs.



LITTLE SPINNING THINGS OF FURY!

While not apparent to the normal eye, Kyosho is quick to point out that most of the things that spin, like the 2-speed and flywheel, have been optimized to be as small as possible. This reduced inertia will equate into increased performance. Since the spur gears and flywheels are small in diameter, this allows most of the rotating mass and the engine itself to sit as low in the chassis as possible.



INSTRUCTIONS & SETUP

The instructions are typical Kyosho with detailed drawings, but with little helpful text for those who prefer to read something. They are very intuitive and easy to follow, so even less experienced racers shouldn't have any issues. I didn't like that there is no setup information or tuning suggestions in the instructions. They do include several tables, which include front overdrive, gear ratio, roll out, and distance travel per one engine rotation. There is a "pro" setting sheet that is supposed to be your starting setup, and the instructions always reference you to look back for the length or angle of a building step. It's a slight annoyance, but the end result is a well handling car.



**To further keep the mass of the car as low as possible,
the battery is found underneath
THE FUEL TANK AND STRAIGHT
DOWN THE CENTER.**

What happened to the shaft-drive version?

▶ REAR END

The rear suspension of the RRR has been reworked, and just looking at the design you'll know it means business. You'll notice that the rear camber link is set really high in the car to allow the proper fitment of wheels and also to match the higher CG of nitro cars for improved handling. To adjust

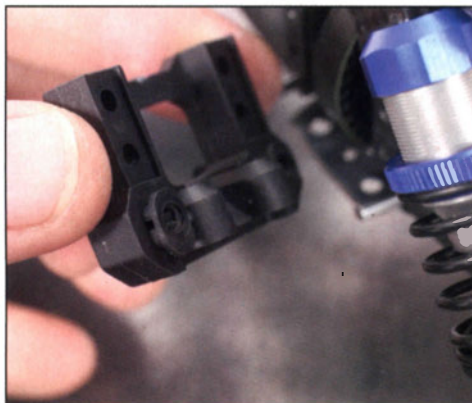
the car's handling characteristics you simply add or remove shims under the ball stud. It's a quick, easy way to improve the handling of the car and one of the most used tuning options.



▶ TUNING MADE EASY

Well maybe not easy, but the V-One RRR has one of the most adjustable suspensions on the market. This makes it simple to dial the car into any track and just as easy dial yourself out of any track. There are a few adjustments

on the suspension that are pretty trick. The rear pin angle can be adjusted very easily by removing a plastic guide and replacing it, or flipping it over. This allows you to make quick, accurate changes to the geometry of the suspension. It's little details like these that make the car not only fast on the track but also friendly in the pits.



TESTING

Wet weather pretty much ruined our month and it didn't have a positive effect on the track either. Revelation Raceway (www.revrace.com) is usually pretty high grip, but the rain washed away most of the stick and left a fine coat of dust to further reduce the traction. The engine was broken in on the car and dyno'd for our guide in this issue and was ready to throw down the power. The large flowing track made testing a little easier but it was a little more white-knuckled than most of the conditions this car would see.

Acceleration • And gone. Once the clutch was set right and the engine was singing the tune of the right settings, the RRR was Gone Gone Gone. Even with less than perfect traction you can feel the result of multiple R generations and weight reduction pay off. The power of the REX engine and the lightweight drive train produced an impressive forward movement.

Rating: 10

Top Speed • I never get tired of hearing a tiny .12 engine screaming down the back straight shifting and lighting up the radar gun at speeds real cars cruise at. The RRR is geared for big tracks and once shifted in to second the ride to top speed is a good one.

Rating: 9

Braking • Of course there is a downside to including a front one-way in the kit. Sure, it makes the car faster in most corners and pull hard out of them but if there's any chance of you hitting the brakes and slowing down to out brake somebody, it better be going dead straight and you better not get to frisky with the trigger. While setup and tweak reduction will make braking with a one-way easier, it still isn't what most people would want to do aggressively.

Rating: 7

Low-Speed Handling • The first indication of the car being a winner was felt while getting used to the track and feeling the car react to my steering inputs. I could feel the car dart left to right without feeling twitchy. Getting up to race speed and racking the slower corners was simple and actually faster than I was used to. The car lived to eat up the corners and it did that very well. A few times I was going into the corner a little hot and I pushed wide into the rumble strip, and a few other times I hit the brakes and spun out, but once I got a feel for the track and the car and I figured out my lift points, the car was a dream.

Rating: 10

High-Speed Handling • The car was amazing even with the stock set-up. The last car I felt this confident with was the Mugen. The RRR felt better in some sections of the track. The RRR would steer where I wanted and when I wanted. I didn't feel like the car was fighting itself at any point. It was really stable and inspired a high level of confidence. I learned where to let off for the best possible line and if something wasn't right I could correct that line easier than I thought I would be able to.

Rating: 10

OUR TEST GEAR

	Radio: Airtronics M8, 90280TX, \$200
	Servo(s): Airtronics 94737 (th) / 94359 (st), \$75 / \$145
	Receiver: LRP Phaser Comp, LRP8727, \$110
	Battery: Orion Marathon 1200, \$30
	Engine: REX ReRSS3, \$320
	Pipe: RD Logistics Turbo 2, 61217L, \$75
	Fuel: O'Donnell 30%, 432, \$15
	Body: Protoform Mazda 6, 1466, \$22

RTT GEAR

	Tires (F/R): GHP 35-shore Foam 26mm/28mm
---	---

CONNECT

RD LOGICS	ph: 310.217.0908 web: www.rdlogics.com
AIRTRONICS	ph: 714.978.1895 web: www.airtronics.net
O'DONNELL RACING	ph: 562.944.9871 web: www.odonnellracing.com
LRP ELECTRONIC	ph: 714.850.8342 web: www.lrpsscoshed.com/lrp
REX ENGINES	ph: 602.347.1600 web: www.internet-rc.com
BODZ	email: dsun@ultra1.net web: members.ulfnet.net/dsun

The body is scary with those skulls!



MARC RHEINARD

2004 GERMAN NATIONAL CHAMPION

2004 EURO TOURING MASTERS CHAMPION

2004 IFMAR ISTC WORLD CHAMPION

2004 GP CARPET WORLD CUP CHAMPION



TEAM ORION FACTORY DRIVER

RHEINARD WORLDS EDITION MOTOR COMING SOON



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All Team Orion racing components are designed and manufactured
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Tel. 714 694 2812

spots. The most you can say is if you hop one of the few cracks in the surface or you drove on the rumble strips. The car was solid in all cases and I'm sure would be able to handle the less than perfect parking lot based circuits across the country.

Rating: 9

Tuning • I really wish the instructions gave some tuning tips so I could have fined tuned the car without just guessing what it needed. The surface was a little trickier than I'm used to at the track and I'm sure there were a few simple changes that could have been suggested in the instructions. Team drivers and parts support are a little rare in this area and both would have helped. But the tuning changes I played with were very simple to make and were felt on the track. I raised the roll center slightly to get rid of some of the on edge feel it started with and made some other minor ride height and damping adjustments. The options are there, but the knowledge may be a few steps away or a click on a few forums.

Rating: 9

Damage • Revelation can eat cars or it can baby them. It all depends on your speed and where you make the mistake. I've seen several cars pancake into the end of the straight at over 50mph and perhaps that makes me be a little less aggressive there, but I make up in other areas. Flipping on its lid never seems to do much except ruin that body. Ironically I did more damage to the car at my office. The car was on the floor after testing, and while walking by my foot somehow just caught the top of the rear body mount and I heard a funny noise. It was the sound of crunching carbon fiber. When I inspected the tower I found a crack that I fixed with some CA glue. The crack was near a shock-mounting hole where it gets pretty thin. I put a screw in there with some washers to make a sandwich brace and along with the CA fix it felt like new. I felt like an ass for breaking the car in the office, but as long as you don't step on it the durability should be normal.

Rating: 8.5

Conclusion

I'm impressed. And if me being impressed isn't enough, how about the car's domination at the recent IFMAR Worlds filling 8 of the 10 A-Main spots. That's pretty good for any car with that much legitimate competition. It's one of the

SCORECARD	
SCALE RATINGS: 1=POOR • 10=EXCELLENT	
8	INSTRUCTIONS
10	PARTS QUALITY/FIT
8.5	DURABILITY
10	TUNABILITY
9.5	OVERALL PERFORMANCE
9	VALUE
+ HITS	
• Super low CG and incredible handling • Fit and finish among the best • Suspension is super easy to tune	
- MISSES	
• Front dog bones can be ejected • Parts support may be scarce	

best handling cars I've driven since our 2-time X-Best winner the Mugen MTX-3. The parts support can be a little thin and also the team support with setup. But the recent expansion of the K-team in the USA may change that drastically. If you're looking for one of the best in the World...or correction, the best in the IFMAR Worlds, the Kyosho RRR is the car to have. 🍀

Derek's pro-tip: don't step on your car.



THE FUEL THAT RULES!

W O R L D W I D E

There's a good reason Mugen drivers continue to win the big ones. The best drivers, the best equipment — and now the best fuel to go along with it.

Mugen Racing Fuel gives you:

- Computerized blending accuracy
- Pressurized nitrogen blanketing
- ANGUS Nitromethane, the same nitro used on full-scale tracks
- Unequaled raw material purity
- High velocity closed loop raw material integration
- The BEST lube package period!

Jason Ashton ROAR 1/8 Buggy 2004 National Champion

Mike Swauger 1/10 Winter Nationals 2004

Mike Swauger 1/8 Winter Nationals 2004

Robbie Collins 1/10 Region 12 Championship 2003

Mike Swauger 1/8 Speedline Grand Prix 2003

Robbie Collins

1/10 Speedline Grand Prix 2003 & 2001

Kenji Osaka

1/8 Winter Nationals 2002

Tim Long

1/8 Regional 12 championship 2002

**Kenji Osaka/Masao Tanaka
/Keisuke Fukada**

(1,2,3) 1/8 IMAR WORLDS 2001

*Incredible 1st, 2nd & 3rd Place
finishes in 2001 Worlds...just the
START of our undeniable reign in
the winners circle!*



Kyosho V-ONE RRR



• 1/10-SCALE 4WD NITRO TOURING CAR • 1/10-SCALE 4WD NITRO TOURING CAR • 1/10-SCALE 4WD NITRO TOURING CAR •

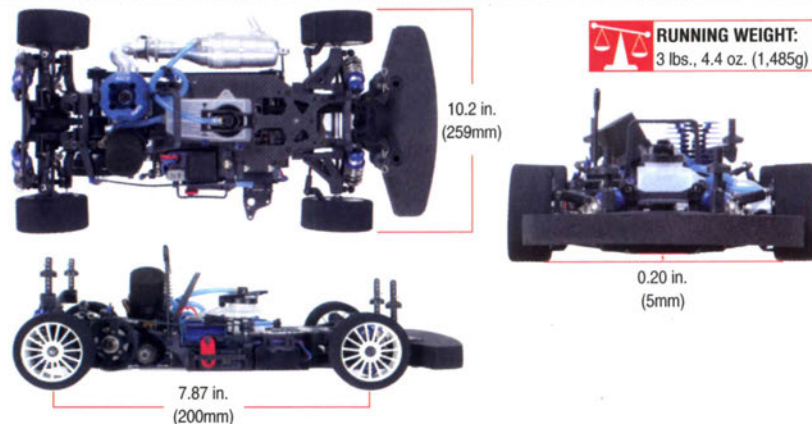
CONNECT:

MANUFACTURER: Kyosho, distributed by Great Planes
PHONE: 800.682.8948
WEB: www.kyosho.com

VEHICLE INFO

VEHICLE: V-One RRR
SCALE: 1/10
TYPE: Nitro Touring Car
PART #: 31256B
STREET PRICE: \$450
PRICE AS TESTED: \$1,600 (including all items used for testing)
BUILD TIME: 6-8 hours
EXPERIENCE LEVEL: Advanced

DIMENSIONS



TECHNICAL INFO

CHASSIS

TYPE: Double-deck
MATERIAL: Aluminum lower / carbon fiber upper
THICKNESS: 3mm / 2mm
FUEL CAPACITY: 75cc

SUSPENSION

TYPE: 4-wheel independent pivot-ball
TURNBUCKLES: Steel
STEERING: Single bell crank
SWAYBARS: (F) Blade / (R) 2mm

SHOCKS

BODIES: Threaded aluminum
DAMPING: 500 wt. Kyosho Oil (50 wt.)
PISTONS: (F) 1-hole / (R) 2-hole
SPRINGS: (F) Kyosho Silver / (R) Kyosho Black

DRIVE TRAIN

TYPE: 4WD triple belt
DIFFERENTIAL: One-way/Gear
DIFF FLUID: Silicone oil (Kyosho Hard)
AXLE TYPE: Dogbones
TRANSMISSION: 2-speed
SPUR GEAR MATERIAL: Molded plastic
CLUTCH: Kyosho 3D
BEARINGS: Metal-shielded

GEARING

	1 st	2 nd
PINION/SPUR:	16/61	21/56
GEAR RATIOS:		
PRIMARY:	3.81:1	2.67:1
INTERNAL:	2.00:1	
FINAL:	7.63:1	5.33:1

BODY, TIRES, WHEELS

BODY: Not included
TIRES (F/R): GRP 35-shore / GRP 35-shore
DIAMETER/WIDTH: (F) 2.51 in. x 1.10 in. (64mm x 26mm)
 (R) 2.51 in. x 1.18 in. (64mm x 30mm)
HEX SIZE: 7mm
WHEELS: 15-spoke white plastic

ITEMS NEEDED

Radio transmitter, receiver, steering servo, throttle servo, receiver battery, battery charger, engine, pipe, manifold, fuel, starting box, glow plug, glow igniter, body, paint.

MAIN COMPETITION

Associated FT NTC3, HPI R40, Mugen MTX-3, Serpent 710, Yokomo GT-4W, OFNA CD-3, Schumacher R12

WHO IT'S FOR

Advanced nitro touring car racers



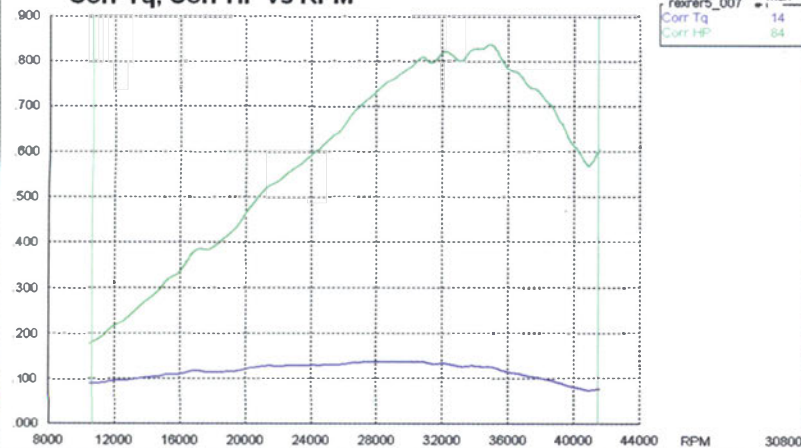
POWERPLANT INFO

The REX ReR5 turbo 5-port engine puts out some serious power. It's not ROAR legal, but unless your track enforces ROAR rules at club races, you'll be fine. It's a Novarossi based engine and that Italian heritage means big power. It peaks pretty high in the RPM range where you'd like it to, but don't let the revs drop too far or it will take off a bit slower. Temps held steady in the 240-260-degree range, and post-run inspection of the piston showed the signs of a good tune.

X-DYNO DATA

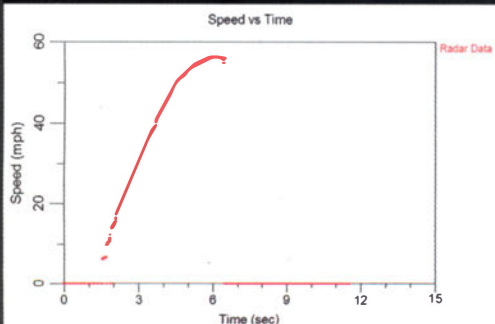
POWER PLANT DYNO PERFORMANCE

Corr Tq, Corr HP vs RPM



ACCELERATION CURVE

ACCELERATION AND TOP SPEED



ACCELERATION

ACCELERATION (0-60FT):	1.83 sec. @ 22.4 mph
TOP SPEED:	56.2 mph @ 237 ft.
AVERAGE RUNTIME:	6 minutes

ENGINE DATA

ENGINE:	REX ReR5 5-port turbo
BORE x STROKE:	.54 in. x .55 in. (13.7mm x 14mm)
DISPLACEMENT:	.12 in. ³ (2.1cc)
FUEL:	O'Donnell 30%
PIPE:	RD Logics Turbo II
PLUG:	O'Donnell #77 Turbo
PEAK HP*:	.84 @ 34,750 rpm
PEAK TQ*:	27 in.-oz. @ 26,750 rpm
PEAK RPM*:	41,250

*Results as tested.

NEEDLE SETTINGS

HIGH:	5-1/2
LOW:	1-1/2
MID:	Flush w/case
OPERATING TEMP.:	250-265° F



A legal pipe but an illegal engine? Nice combo.

PERFORMANCE INFO

TEST CONDITIONS

WEATHER:	Partly Cloudy
TEMPERATURE/HUMIDITY:	55° F / 70%
BAROMETRIC PRESSURE:	30.36 in.
ALTITUDE:	900 ft.
TRACK TYPE:	Prepared Asphalt

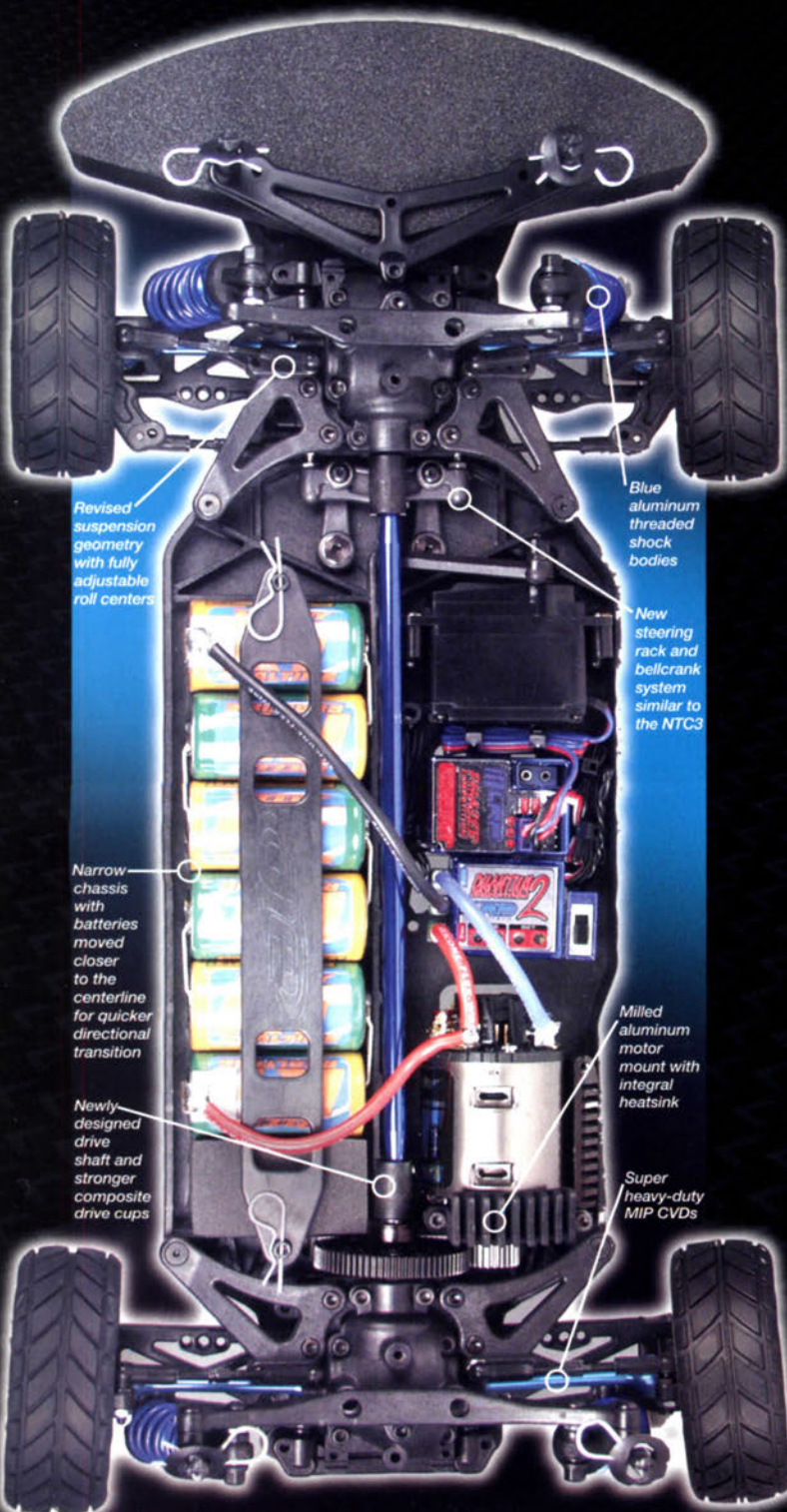
HANDLING

TURNING RADIUS:	2 ft., 9 in.
ON POWER:	Neutral
OFF POWER:	Neutral

BRAKING

CONTROL:	Satisfactory
FADE:	None
OVERALL BRAKING:	Satisfactory

RC10 TK!



Revised suspension geometry with fully adjustable roll centers

Blue aluminum threaded shock bodies

New steering rack and bellcrank system similar to the NTC3

Narrow chassis with batteries moved closer to the centerline for quicker directional transition

Newly designed drive shaft and stronger composite drive cups

Milled aluminum motor mount with integral heatsink

Super heavy-duty MIP CVDs



A

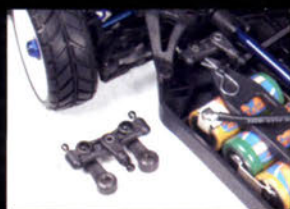


RC10TC4 Team Kit shown with items that are not included in the kit. LRP Speed Control, LRP Receiver, Reedy Modified Motor and Reedy Batteries may be purchased separately.

Setting the bench mark in touring car performance with the original TC3, Team Associated proudly brings to you the next generation RC10TC4 Touring Car. The TC4 comes as the direct result of racing, research and development of the TC3. Refinements designed and built in to the new TC4 takes the TC3 concept to the next level. Integrating the TC3's race-proven shaft-drive system with the newly designed suspension geometry and the narrow



CHAMPION REFINED.



mass-centralized chassis makes the TC4 quicker and more stable in the corners. Area 51 spent endless hours optimizing the TC4's all-new suspension components resulting in a car that features maximum adjustability, precision and strength. Featured are captured inner-lower hinge pins that are 40% stronger and mount in floating pivot balls that ensure bind free movement with maximum adjustability. Steering has also been optimized with a ball bearing dual bellcrank system

similar to the NTC3's. Beefed-up MIP CVDs round out the package making the TC4 the most potent touring car to date. Check out the TC4 at your local hobby shop today or at www.rc10.com and become evolved.



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www.rc10.com or www.teamassociated.com

COMPETITION
.12

ENGINE

We rustled up and dyno'd six of the strongest .12's on the market!

In the world of full-scale autos, professional engine tuners use dyno data to evaluate an engine's performance by recording baseline power numbers and tracking power increases as modifications are made. Although horsepower figures may vary widely from dyno to dyno, smart consumers and tuners know that reliable, repeatable power data occurs when the same dyno is used for every pull. Whether dyno X produces higher or lower figures than dyno Y is irrelevant; what is relevant is consistency—when comparing HP numbers between mod stages, the consumer should have all of his dyno pulls recorded on the same dyno. It's all about creating a standard for comparison.

That's what we've done here at XRC. We've created a standard for comparison in regard to the 2-stroke nitro engines we test in our magazine, and we're now placing all of the data on display for your consumption. Every engine undergoes identical break-in procedures, runs on standardized nitro-percentage fuels, and performs on the same X-Dyno for accurate, comparable results. What all this means for you, the reader, is reliable data that you can use and reference when making buying decisions for your particular vehicle and needs.

This .12 engine guide isn't about dyno-graphing modification stages, although we do plan to do that in future issues. Our .12 engine guide is here to start a baseline for comparison between the best small-block engines on the market. We rustled up six of the finest touring car engines available and dyno'd them with a standardized pipe, plug, and fuel combo. We hope you'll kick back and take some time to enjoy reading our results.

By: Stephen Boss



During this article, please remember to wear a pit apron and look cool for days on end.

ROUNDUP



He was also looking for a square dancing partner.

ENGINE ROUNDUP

COMPETITION .12

The sound of 6 different engines revving to 40,000 RPM gave us all the chills for 5 days straight.

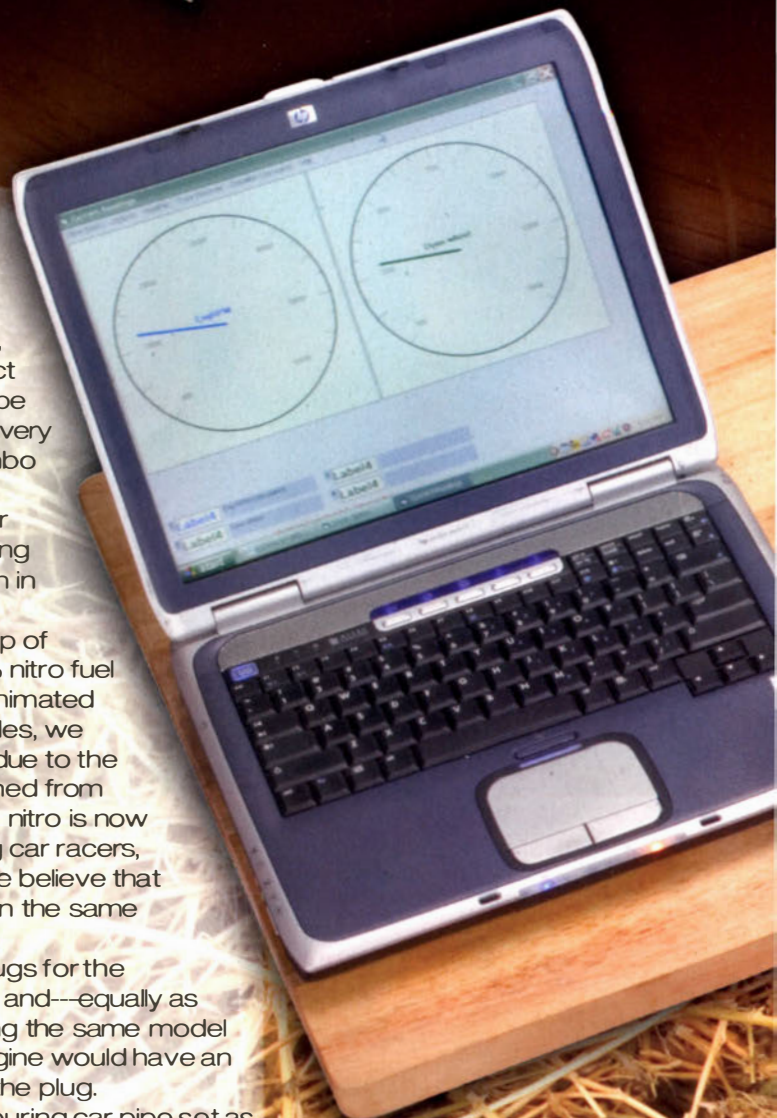
How we tested:

Ideally, each engine would be tested with its manufacturer-recommended glow plug, tuned pipe, and fuel, but unfortunately direct comparison between engines would then be impossible. Although we understand that every engine has its own ideal plug and pipe combo (which, curiously enough, may or may not be the manufacturer recommended ones), our standard for comparison relies in part upon using a standardized fuel, pipe, and plug combination in each of the engines we've tested.

Because this group of .12 engines is made up of high-end touring car racing mills, we used 30% nitro fuel with a 10% lubricant package. After plenty of animated discussion and a few rock-paper-scissors battles, we all agreed that 30% nitro was the best choice due to the fact that (a) all of the engines tested are shimmed from the factory for use with 30% nitro, and (b) 30% nitro is now used almost exclusively by competition touring car racers, with some even going as high as 40% nitro. We believe that whenever possible, engines should be tested in the same manner that they will be used by consumers.

Additionally, we chose O'Donnell 77 turbo plugs for the test. O'Donnell's plugs are durable, consistent, and—equally as important—the easiest for us to obtain! By using the same model of plug in every engine we ensured that no engine would have an advantage over another due to differences in the plug.

Finally, we chose Mugen Seiki's one-piece touring car pipe set as our standard for this test. After testing several different pipe sets on the same engine, the Mugen pipe consistently produced the highest and broadest horsepower numbers.



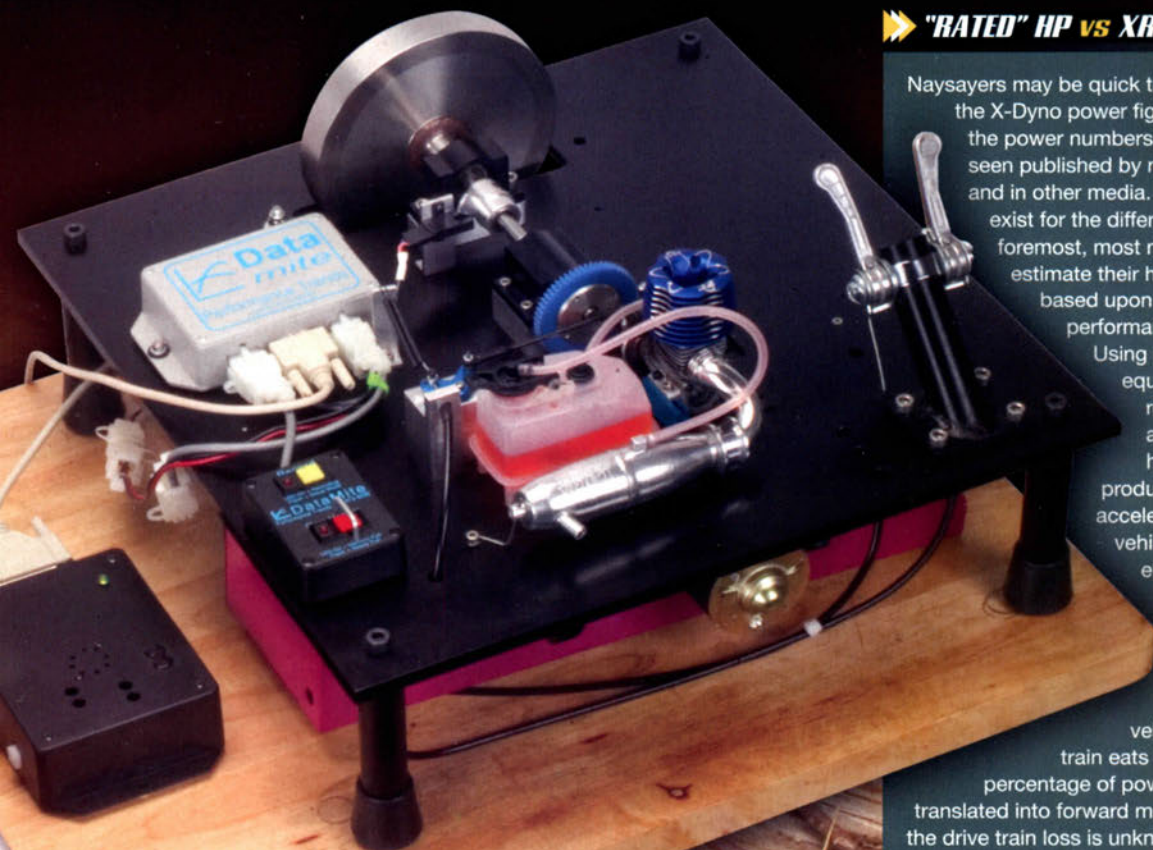
OUR TEST EQUIPMENT:



PLUGS: O'Donnell
77 turbo

PIPE: Mugen Seiki
1-piece set

FUEL: 30% fuel,
10% lubricant



► "RATED" HP VS XRC DYNO

Naysayers may be quick to point out that the X-Dyno power figures do not reflect the power numbers they may have seen published by manufacturers and in other media. Several reasons exist for the difference: First and foremost, most manufacturers estimate their horsepower figures based upon an engine's performance on the track. Using mathematical equations, one can roughly calculate an engine's horsepower production using acceleration data, the vehicle's mass, and elapsed time over a known distance. However, these calculations are rough estimates because the vehicle's drive

train eats up an unknown percentage of power before it gets translated into forward motion. Because the drive train loss is unknown, it must also be estimated, and the estimation will greatly affect the final horsepower figure. When in doubt, most manufacturers err on the high side, and rightly so!

The X-Dyno measures an engine's power directly from the engine's crankshaft by connecting it to a single gear set that spins a known inertia mass (in this case, the silver flywheel in the photo above). Additionally, the Dyna-Mite data collection software is written in such a manner that given any gear ratio, the power data is calculated directly into exact numbers given the known equation for horsepower: $HP = (\text{Torque} \times \text{RPM}) / 5252$. A single dyno pull, meaning from low RPM to full throttle, gives us an entire dyno graph from bottom RPM to top RPM, meaning that re-tuning for specific RPM levels isn't an option. The power curves you see on our graphs directly reflect an engine's actual power curve when accelerated from low RPM in your vehicle.

Although X-Dyno horsepower numbers may seem lower than the numbers you've seen elsewhere, we feel that our numbers more accurately reflect an engine's true power production. Our calculations using acceleration and timing data have shown that we're not only accurate, but more importantly, that the accuracy of the dyno guarantees that an engine tested today with the same fuel, pipe, and plug combo will be directly comparable to engines tested next year.

DYNO TESTING:

Each engine performed a minimum of eight pulls, with fresh fuel on tap and plenty of circulating air from an oversize fan to keep head temperatures controlled. Incredibly enough, we didn't blow a plug in or otherwise damage any of the engines we tested, and with most engines revving well beyond the 40,000 rpm mark, that says something about the reliability of today's 2-strokes.



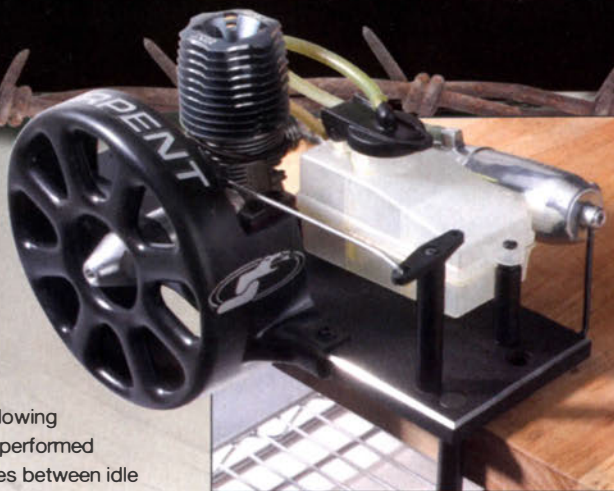
ENGINE BREAK-IN:

If you're following along, you should know by now that standards are necessary to ensure repeatable, accurate results between engines. Because break-in methods vary widely between manufacturers and internet "experts," I chose to break in our engines using an accurate, repeatable method that would make sure that no single engine received an advantage.

I chose to use Serpent's "Engine Break-In Test Bench" made by Hudy as our break-in tool. The bench is constructed of heavy-grade CNC aluminum and nylon plastics, and includes a high-pitch, high-drag propeller to add resistance. The Serpent bench allowed me to start each engine easily using a rotary airplane starter, adjust the fuel mixture while the engine was running, and re-fuel the tank easily between runs.

Using Serpent's included break-in instructions as a guide, I started each engine and allowed it to warm up for one minute, and then proceeded to perform a

10-minute long initial first run at a slightly rich setting between idle and 30% throttle. Engine temperatures ranged from 160-190° F, which was ideal for parts expansion and proper fit inside the engine. After allowing the engine to cool, I then performed additional 10 minute cycles between idle and 50-60% throttle until five full 125cc tanks were consumed (for a total of 625cc). Before strapping the engines into the dyno, I installed each engine into our test-mule Associated Nitro TC3 and ran it for three full 75cc tanks. During the runs, I dialed in the needle settings for maximum power and was able to feel each engine's power while driving. Then it was dyno time, with a minimum of eight dyno pulls. Each engine was tested until it had produced three nearly identical peak horsepower graphs and



demonstrated that further tuning produced power losses.

Each engine consumed a minimum of 825cc of fuel during the entire break-in process, which equates to approximately one and a half hours of run time. By the time each engine was ready for the dyno, the power-robbing "stick" at top-dead-center was gone and a powerful compression "thump" was in place – exactly what's desired for maximum power output.

O.S. 12 TR-T OUTLAW

By far the easiest engine to break in, the O.S. 12TR-T is also one of the "oldest" engines in this test, meaning that this particular model has been on sale for well over a year. Previous national and international race results with this engine have proven the 12TR-T to be an impressive blend of smooth power and the reliability that O.S. is known for, and our dyno and test results confirmed both attributes. The 12TR-T averaged 7 minutes of run time, and when installed in the Nitro TC3, its power felt smooth with seamless delivery flowing from top to bottom RPM ranges. The 12TR's broad power curve comes on strong at 20,000 RPM (0.42 HP), peaking at 0.73 HP at a relatively low 31,500 RPM (contributing to its linear feel). Not surprisingly, tuning the 12TR-T is as close to idiot-proof as possible with its premium-quality carburetor and predictable,

consistent needle settings. Our 12TR liked the O'Donnell 77 plugs and 30% fuel right out of the box, as it produced an exceedingly broad power curve and maintained head temps in the 250-260° F range.

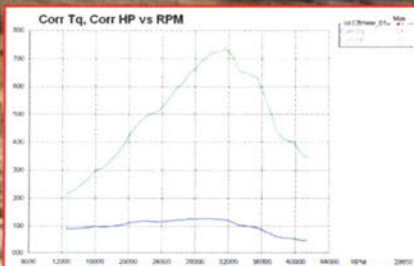
The incredibly affordable O.S. 12TR-T will perform well on all tracks, and especially well on ones with less-than-perfect traction, and is ideal for drivers who desire smooth, predictable power and reliable tuning.

PART #: 11365

Connect: www.osengines.com

SPECS

BORE:	14.0mm
STROKE:	13.7mm
PORTS:	5
PLUG:	Turbo
STREET PRICE:	\$160
PEAK HP:	0.73 @ 31,500 rpm
PEAK TORQUE:	24.96 oz.-in. @ 27,250 rpm



ENGINE ROUNDUP
COMPETITION
12

Serpent's break-in bench is the bomb... You had to try to suck my shirt into the propeller 37 times.

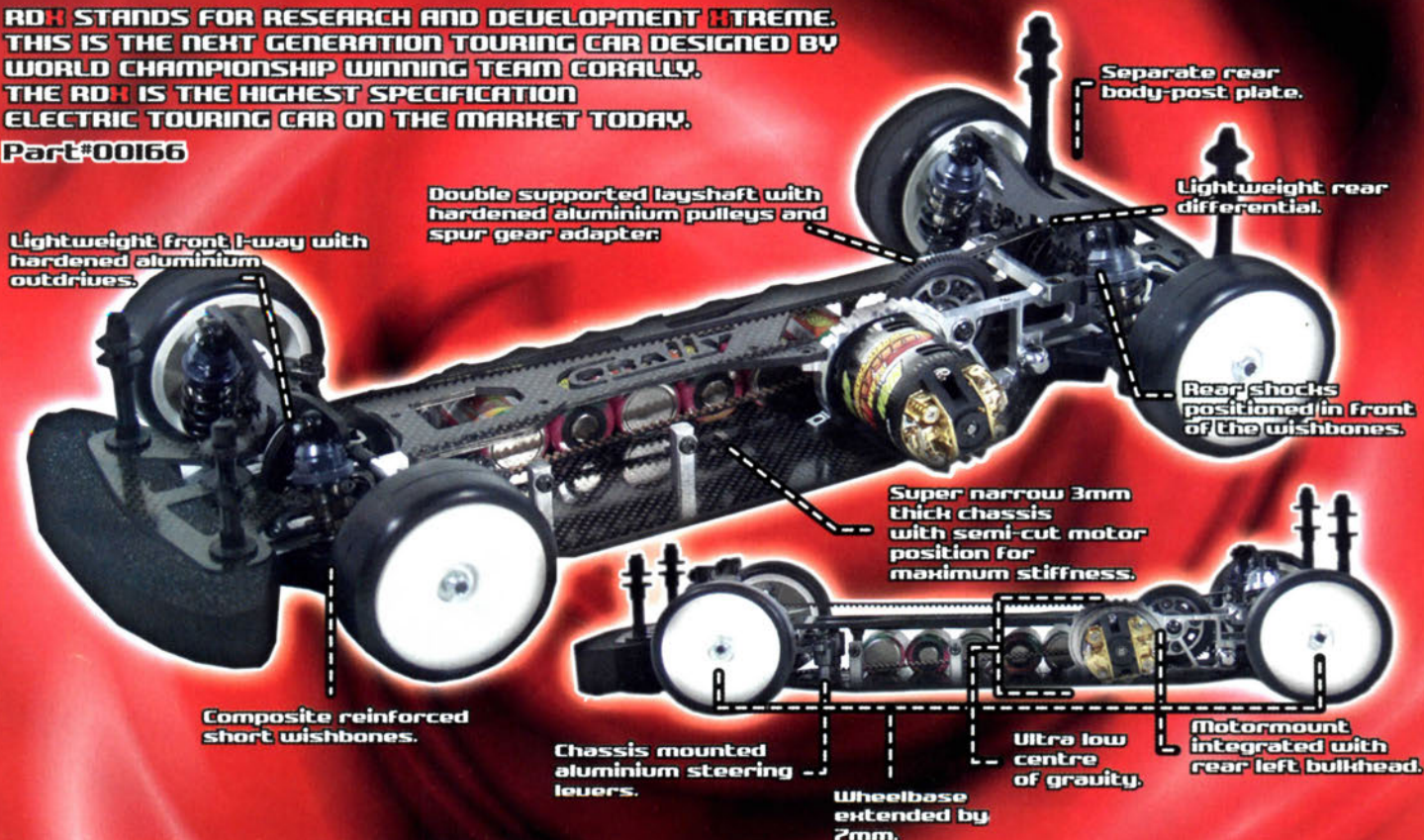
RDXX

HIGH PERFORMANCE ELECTRIC TC

TEAM
CORALLY

RDXX STANDS FOR RESEARCH AND DEVELOPMENT XTREME. THIS IS THE NEXT GENERATION TOURING CAR DESIGNED BY WORLD CHAMPIONSHIP WINNING TEAM CORALLY. THE RDXX IS THE HIGHEST SPECIFICATION ELECTRIC TOURING CAR ON THE MARKET TODAY.

Part#00166



Standard features include:

- Full graphite chassis parts ● Precision Ball Bearings throughout ● Coral-aluminium bulkheads, motor mount, rear uprights, caster blocks, differential, servoposts, batteryposts and turnbuckles
- Lightweight MIP CUDTM driveshafts with replaceable blades ● Biggest possible pulleys for ultra low friction ● Aluminium shocks ● Play-free clamp-on aluminium hexagons ● 4 identical wishbones
- Cut-outs in chassis for ultra low centre of gravity balancing weights ● Complete with sway-bars
- Fully adjustable by using unique couplers on the wishbones: Front and rear toe / Kick-up and anti-dive / Up travel (droop settings) / Roll-centre ● Wheelbase: 262 - 265mm ● Width: 188-190mm
- Rolling chassis weight: 620 Gram

Corally RC BU
Ploegstraat 49
3319 LG Dordrecht
Holland
Fax: 0031 (0)78 6212689
team@corally.com

Please visit
www.corally.com / www.corallyusa.com
for more info

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Fax: 407.681.5906
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If you are a Hobby Shop owner and desire to give your customers the highest quality packs with true and honest numbers, please contact us to become a dealer.

Ph 928.855.2226 Fx 928.855.1229

SPECS

BORE:	13.8mm
STROKE:	14.0mm
PORTS:	3
PLUG:	Turbo
STREET PRICE:	\$375
PEAK HP:	0.95 @ 34,250 rpm
PEAK TORQUE:	28.8 oz.-in. @ 28,750 rpm



RB CONCEPTS V12 RODY 3T

RB Concepts has long been a regular presence at the trophy podium, but until now no one knew exactly what kind of power these mills were capable of laying down.

Rody Roem of RB Concepts eagerly supplied us with a V12 "Rody" Modified IFMAR- and ROAR-legal small block for testing, and now we know why. The V12 Rody set new benchmarks for power across an incredibly broad RPM range, and even set a high mark for maximum RPM. The engine broke in without a hitch, and once it was installed in our Nitro TC3 for its final break-in, I knew instantly that it packed a powerful punch. From top to bottom, the V12 Rody feels like an animal ready to pounce at any moment, and our dyno results confirmed its prodigious power: 0.43 HP at 20K RPM, a peak of 0.95 HP at 34,250 RPM, and a mind-boggling 0.72 HP at 40K RPM. Even at 45,000 RPM (an RPM level some engines could never reach without exploding), the Rody V12 continued to produce a usable 0.52 HP, meaning that the engine's power seems to go on forever, even on

the longest of straights. The Rody's aggressive porting and high power creates a narrow tuning window, so novice drivers should consider gaining experience before plunking down the dough. Say what you will about its steep price, but for the racers who are willing to "pay to play," the Rody V12 does not disappoint.

PART #: 1700-000445

Connect: www.sigmatrading.com

ENGINE ROUNDUP

COMPETITION 12

Got balls? The engine to the left certainly has!

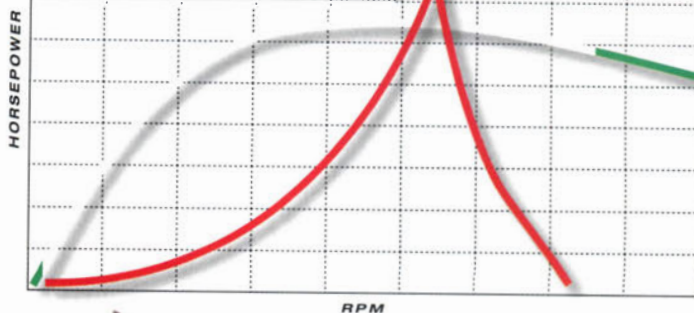
PEAK HP AIN'T WHAT IT'S ALL ABOUT!

Dyno graphs and peak horsepower numbers can be misleading. Not because the numbers are inaccurate, but because the shape of the dyno graph almost always encompasses an engine's on-track performance more accurately than its peak horsepower.

For example, an engine that produces 0.90 peak HP at 30,000 RPM may seem more desirable to the horsepower junkies of the world than an engine that produces "only" 0.80 peak HP at 30,000, but unless one can see and interpret the dyno graph as a whole, the 0.90 HP engine may be a "dyno queen," an engine that produces prodigious HP numbers on the dyno but has little to offer on the track due to its peaky, on-and-off throttle response. Let's assume that the engine peaking at 0.80 HP produces 0.40 to 0.60 HP between a broad 20,000 to 40,000 RPM range (while peaking at 0.80 HP at 30,000 RPM), and the engine peaking at 0.90 HP produces 0.20 to 0.40 HP in the same RPM range. Although the 0.90 HP engine does produce more power, the 0.80 HP engine produces an extremely broad, flat horsepower curve that's much more usable than the peaky 0.90 HP engine.

Simply put, the most desirable engine would produce a horsepower and torque curve that's not flat at all, but more gradual-looking like a plateau, whereas a less desirable engine with an excessively narrow power window may produce a dyno curve that looks more like a witch's hat. For racers who want predictable, useable power, the decision is clear: choose an engine that produces a wider power curve!

The power curves below are exaggerated to make a point; the engine that produced the wider, smoother powerband (in green) will be easier to drive and better suited to racing.



SPECS

BORE:	14.0mm
STROKE:	13.7mm
PORTS:	5
PLUG:	Turbo
STREET PRICE:	\$200
PEAK HP:	0.79 @ 35,050 rpm
PEAK TORQUE:	23.04 oz.-in. @ 22,000 rpm

SIRIO S12T3 EVOII

The Sirio engine's performance on the track and on the dyno was spot-on with its reputation as a top-level, high-powered-but-drivable engine. Although its peak horsepower didn't top the charts, the Sirio S12T3 demonstrates that peak dyno numbers rarely tell the entire story. In the Nitro TC3, the Sirio produces sling-shot acceleration from any speed while maintaining a smooth throttle transition from bottom to top due to its peak torque of 23.04 oz.-in. at a low 22,000 RPM. Top-quality components and an accurate carburetor add up to make the S12T3 a tough engine to beat for overall power and drivability. Weighing in with 0.79 HP at 35,050 RPM, the Sirio S12 will perform its best when geared to keep revs up between the mid-20,000 RPM level on up to 40,000 RPM. The Sirio's oversize cooling head kept head temperatures in the 230-250° F range even after full-throttle dyno pulls, which means that it should perform well even in high temperature conditions.

PART #: S12-TRP1

Connect:

www.teamtrinity.com

Corr Tq, Corr HP vs RPM

ENGINE ROUNDUP
COMPETITION
12

TOP TS12S3

The second of three Novarossi-based engines in our guide, the TOP TS12S3 is a 3-port engine that's fully ROAR-legal but performs like an "outlaw" engine. Its 3-needle carb features a 5.4mm insert, a standard-size cooling head, and some special attention to its crankshaft and sleeve. Imported by Jim Hottinger of Fusion Motorsports, the TOP TS12's drilled crankshaft is filled with a silicone mixture to smooth the incoming fuel/air charge through the induction window and into the crankcase. The 3-port sleeve also receives extra attention at the CNC machine around the boost and transfer ports to help direct the fuel/air mixture to precisely where it's needed the most. On the dyno and in the Nitro TC3, the TS12's power comes on smoothly but strongly, with its maximum 26.88 oz.-in. of torque showing up at only 20,250 RPM, meaning that you'll effortlessly out-accelerate competitors through tight corners. Although our test engine had over twice the run time compared to the others in this test, the S3's performance showed no signs of fade. For short and mid-size tracks, the S3 is tough to beat.

PART #: TSR12S3

Connect: www.fusionmotorsports.com

SPECS

BORE:	13.8mm
STROKE:	14.04mm
PORTS:	3
PLUG:	Turbo
STREET PRICE:	\$299.99
PEAK HP:	0.77 @ 31,000 rpm
PEAK TORQUE:	26.88 oz.-in. @ 20,250 rpm

Corr Tq, Corr HP vs RPM



Any of the engines featured in this guide will serve you well. But now you'll know exactly what to expect!

MX

COMPETITION RACING SERIES



MX-3

MX-3S

MX-A

SYSTEMS



MX-3

3 Channel FM System with 5 Model Memory
Crystal Transmitter and Receiver

MX-3S

3 Channel FM System with 18 Model Memory
Synthesized Transmitter and Receiver

MX-A

2 Channel AM System with 12 Model Memory
Crystal Transmitter and Receiver

WORLD CHAMPION SYSTEMS AND ACCESSORIES



ESC Speed Controllers



90050FM27 Tamiya TLT 1 27MHz
90050FM75 Tamiya TLT 1 75MHz
90051FM27 Team Losi Mini T 27MHz
90051FM75 Team Losi Mini T 75MHz

MICRO Servo Saver

Fits Servos:

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94091Z
94501Z
94555Z
94556Z
94557Z



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Anaheim, CA 92805

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FAX: 714-978-1540



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Get The Advantage



MUGEN SEIKI X12

Mugen's Novarossi-based 3-port X12 touring car engine displays quality that follows suit with the other Nova-based engines in our guide. Its three-needle carb includes a 5.4mm removable insert, a turbo-plug head, and an oversized 11-fin cooling head. The large cooling head dissipated heat so well that I had to wrap it with aluminum tape to retain heat during break-in and throughout several dyno runs. During break-in and dyno pulls, the X12 ran flawlessly and tuned easily, requiring little tweaking to reach its maximum power. On the dyno and in the Nitro TC3, the

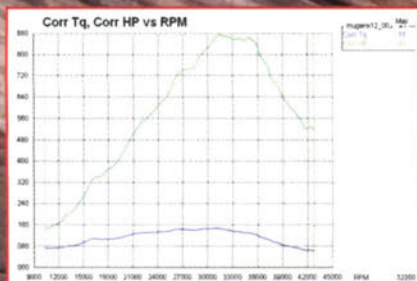
X12 pulls hard and accelerates strongly from low RPM all the way up to a 44,000 RPM redline. Its

0.88 peak horsepower ranks near the top of all the small blocks we've tested, and its horsepower curve is gradual, linear, and smooth all the way to peak power. The X12's sleeve and crankshaft doesn't look as exotic as several of its competitors, but its solid design and aggressive timing prove that high horsepower doesn't always necessitate crazy crankshaft cuts and grinds. Priced just below \$300,

the X12's mid-pack cost is arguably a bargain for such impressive performance.

PART #: X12S3

Connect: www.mugen-racing.com



SPECS	
BORE:	13.8mm
STROKE:	14.0mm
PORTS:	3
PLUG:	Turbo
STREET PRICE:	\$290
PEAK HP:	0.88 HP @ 31,500 rpm
PEAK TORQUE:	28.80 oz-in @ 30,000 rpm

REX R12S5 OUTLAW



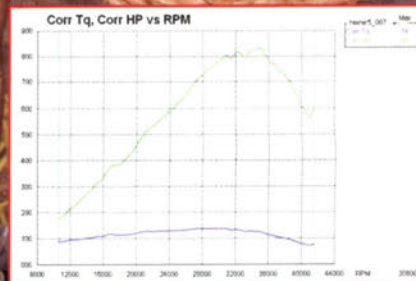
The REX R12S5 is considered an "outlaw" engine because of its 5-port sleeve design. Manufactured by Novarossi, the R12S5 shares many features with other Novarossi-based engines in the guide, including a 9-fin cooling head, a 3-needle carburetor, a large finned crankcase, and a 5.4mm carb insert. The R12S5 broke in easily, held its carb settings well, and spooled up smoothly. Although the S5's low-end pull isn't going to twist the axles off your vehicle, it will continue to pull strongly well into the high 30,000 RPM range, with its peak 0.84 HP arriving just before 35,000 RPM. In the Nitro TC3, the S5 felt linear, averaged just over 6 minutes of run time and never went beyond 230° F. If you plan to compete in ROAR-sanctioned events this engine isn't for you, but for club racing the S5 will power any touring car with ease and warp a long track into a short course in the blink of an eye.

PART #: RER12S5

Connect: www.internet-rc.com



SPECS	
BORE:	13.8mm
STROKE:	14.04mm
PORTS:	5
PLUG:	Turbo
STREET PRICE:	\$384.99
PEAK HP:	0.84 @ 34,750 rpm
PEAK TORQUE:	26.88 oz-in @ 26,750 rpm



Let's move 'em out!

It can be incredibly difficult to decide how to spend your hard-earned cash at the hobby shop counter, and choosing an engine has always been filled with more guesswork than anything else. Thankfully, that has all changed now thanks to our X-Dyno and our ability to test many different engines at the same time using a standardized format. Although it can be tough convincing a gear-head that peak-horsepower doesn't tell an engine's entire story, over time you'll learn to read a dyno graph's curve and imagine its on-track performance before ever starting it up. There's nothing more satisfying than spending your money confidently on a product you know will fit your needs, your specific driving style, local track layouts, and your budget. Starting with this engine guide, you'll be able to do exactly that when buying an engine. We hope you'll look forward to more dyno guides and articles in the future as we begin to set the industry standard for power evaluation, and continue to use our data to assist your purchasing decisions at the shop counters. ♦



New For 2005 From



NEW!

Monster Spider Wheels

RPM Monster Spider wheels are a split-eight spoke, extremely well detailed design based on a new full-sized wheel. Built for trucks like the Associated MGT, HPI Savage and the Traxxas T/E-Maxx line, the super-tough Monster Spiders are molded from our trademark blends of ultra tough nylons and protected by our internationally renowned breakage warranty. Both the standard offset and the StableMaxx offset are available in Chrome and Blue Chrome versions while our StableMaxx offset is available in a dyeable white as well.

NEW!

BK2 & MF2 Gear Cover

Molded from high strength nylon materials RPM Gear Covers won't crack or break. Since our Gear Covers are molded to the strictest tolerances, there is absolutely no cutting or fitting required. Installation is a snap using a 3/32" Allen or ball driver and included screws. Gear Covers come with our large soft plug that protects the slipper access hole from dirt and debris while allowing easy access to the slipper adjustment nut. These new Gear Covers should last longer than any other part on the vehicle, except of course for other RPM parts!



NEW!

Traxxas 2.5 Head Guard

The RPM Head Guard is almost 1/8" thicker than the stock version to add extra skid and impact resistance to the fragile cooling fins of the stock TRX 2.5 head. Our Head Guard also has a positive locking system that absolutely will not allow it to be pulled free during a crash. It is designed specifically for the Traxxas 2.5 stock engine head used in many Traxxas models including the Revo, T-Maxx, S-Maxx, SportMaxx, Nitro 4-Tec 2.5 and Nitro Rustler 2.5. Built from our blend of bulletproof nylons for strength and durability unmatched by any other material on the market!

Great stocking stuffers!

Camber Gauge & Toe-In Gauge

■ Proper set-up is the key to a vehicle that handles well. You don't need to spend hundreds of dollars on a set-up board when less than \$10 each will net you the same results with RPM Camber and Toe Gauges.



Bearing Blaster

■ The RPM Bearing Blaster is the only tool on the market that will actually pay for itself by extending the life of those expensive bearings found throughout your vehicle.

Motor Work Station

■ If electric motors drive your ride, the RPM Motor Work Station will help simplify motor maintenance, motor break-in's and will provide that helpful third hand when soldering capacitors and wires.



For more information please visit us at:
WWW.RPMRCPRODUCTS.COM

Or send \$4 for our complete catalog and decals to:
RPM R/C Products
14978 Sierra Bonita Lane, Chino, CA 91710

UNDERSTAND MATCHED CELLS

So many numbers, so little time!

Words: Shane Archer

When you first started racing competitively, what were the two most confusing things you saw? Chances are, they were the labels found on matched batteries and dyno-tuned motors. We just recently taught you more about dyno charts a few issues ago, so now it's time to explore the wondrous world of matched batteries. Depending on where you live or where you shop, you may have a huge selection of battery companies to choose from, or you may have just a few. In either case, it's quite likely that the methods they use to match their packs are different, and the more you know about the processes involved, the better you'll be at purchasing just what you need.



They now give Sub-C cells at church.

WHY MATCH?

One of the most commonly asked questions among new racers is, "Why do I need to buy matched batteries?" Simply put, the closer a battery pack's performance numbers are to each other, the better the pack will perform. Like many things in life, a pack is often only as good as its weakest cell, so using matched packs is a good way to eliminate those weak links. Plus, most unmatched battery packs are "leftovers" from matching companies, meaning that the best cells are put directly into those expensive matched packs. Not surprisingly then, matched packs really do outperform their inexpensive cousins by quite a bit.

THE NUMBERS

SEC (SECONDS) • The number of seconds on each cell's label refers to its run time, or how long it was able to deliver current until it reached a particular cutoff. Like most battery numbers, the run time can vary greatly depending on the matching method used. Lower discharge rates will result in a higher run time, and an earlier voltage cutoff threshold can reduce run time. If you are planning to race a modified class or a brushless class with longer heats, this number will be very important; if you are just going to run stock, the voltage will be more important.

AV/V (AVERAGE VOLTAGE) • The average voltage of a cell will determine how much power it produces throughout its run. For most matching systems, this average is taken from the beginning of the discharge until the cutoff point is reached. For most people, this is the number they look for, and the higher the better! Like run time, average voltage is highly dependant on the matching method used, and the numbers can vary greatly between matchers. An earlier cutoff will probably raise the average voltage, while a higher discharge rate will reduce it. Voltage is important for every class of racing, but especially with stock motors, where scraping together small amounts of power can be the difference between a win and a loss.

CHG (CHARGE RATE) • The charge rate determines how quickly the batteries are charged during the matching process. Most matchers will use either a 5A or 6A rate, although some will go lower. Higher charge rates typically result in a slight increase in average voltage, but a reduction in run time.

PUTTING THE NUMBERS TOGETHER

Picking a good pack is not as simple as finding the highest voltage or longest runtime. All of the characteristics of a cell work together to determine exactly how well it will perform. For example, a 1.17V cell with 420 seconds of run time may deliver a higher voltage over the first five minutes of its run than a 1.18V cell with 370 seconds of run time. The second cell has a higher average, but it's over a shorter time; the first cell may actually deliver more voltage during the initial part of its run. Internal resistance is also very important, since a cell with a lower IR is able to deliver a higher current (or in other words, more power in a shorter span of time). When comparing two different batteries, these are the three numbers you should really take into account—and remember, only compare cells that were matched with the same method!

OTHER NUMBERS

With so many different matchers out there, you are bound to run across other numbers on a cell label at some point. You may see the total charge time or charge capacity (in mAh), or average voltages during different parts of the run. It's always nice to have additional data, but the numbers we've gone over are the ones that are going to give you the most information about a cell.

PV (PEAK VOLTAGE) • Some matchers include a peak voltage as well as an average voltage, which is the highest point the cell reaches during a discharge (which will always occur at the very beginning). The peak doesn't tell us much, but can help to differentiate between otherwise similar packs.

MAH (CAPACITY) • Some matchers will report the total capacity that the cell charged to in milliamp-hours, or mAh. In theory, a 3300mAh cell should charge to 3300mAh, but with production variances and technology advancements, the actual capacity varies. More recently, many of the GP 3300 cells have shown 3400mAh or more, although this capacity typically decreases over time with use. This number should be the same from matcher to matcher.

AR (AVERAGE INTERNAL RESISTANCE) •

Although it is often overlooked, the internal resistance of a cell is a very important number. The lower the IR, the more current a battery can provide. If you have two otherwise identical cells, the one with the lower IR will provide more current in every situation. Different matchers use different units and conditions to define internal resistance, so the numbers usually can't be compared between brands.



DISC (DISCHARGE RATE) • Just about every matcher out there uses a 30 amp (A) discharge rate, although a few use 20A and a few have ramped it up to 35A. The higher the discharge rate, the shorter the time the battery will run. Matchers use a relatively high discharge rate to simulate the demands that will be placed on a battery pack during a race.

CUTOFF • This is the voltage level at which the discharge cuts off and stops reading data. For many years the industry standard has been a 0.90V cutoff, but some matchers have begun to use other methods to attempt to more accurately simulate race conditions.

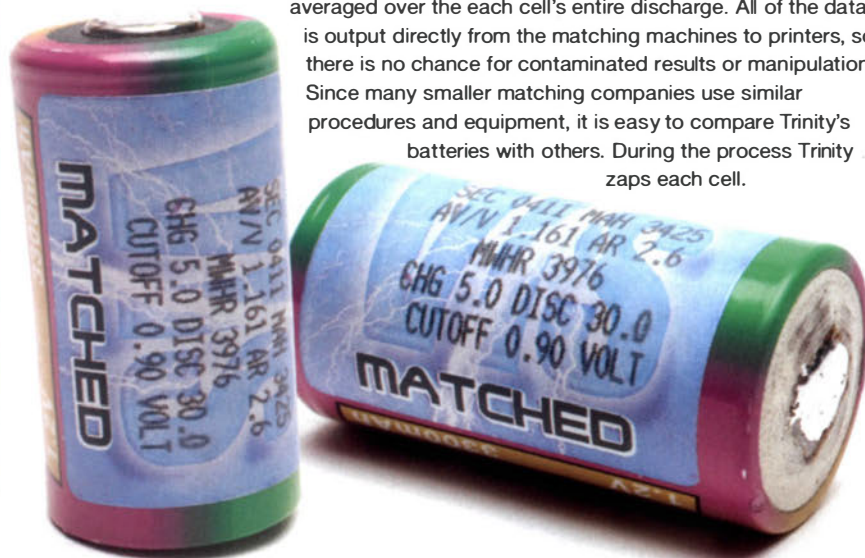
DIFFERENT STROKES FOR DIFFERENT FOLKS

Although there are tons of different battery matchers out there, a few of them are companies you are certainly already familiar with. We took a closer look at the matching processes used by four major companies, and what the differences may mean to you.

TRINITY

Matching System: TurboMatcher

The Process: Trinity's matching system is easy to follow since it has been a real standard throughout the industry. Using Competition Electronics' TurboMatcher 4/35, Trinity is able to process hundreds of cells at once, all in a temperature-controlled laboratory environment. Trinity uses the same industry standard parameters that many of us are familiar with, meaning a 5A charge, 30A discharge and 0.90V cutoff, with the voltage averaged over the each cell's entire discharge. All of the data is output directly from the matching machines to printers, so there is no chance for contaminated results or manipulation. Since many smaller matching companies use similar procedures and equipment, it is easy to compare Trinity's batteries with others. During the process Trinity zaps each cell.



REEDY

Matching System: TurboMatcher

The Process: Recently, Reedy began using their new "Real Time" matching process designed to more accurately simulate the conditions that a battery will endure during a race. Reedy uses a 30A discharge over a 5 minute period to calculate the cells' average voltage, and a 0.90V cutoff to determine their run time. Nearly every race is run for 5 minutes, so this process should more accurately describe real-world performance. Like most matchers, Reedy zaps each cell with high voltage to increase its capabilities, and then cycles it three times to stabilize it for a more accurate reading.



THE SAME, BUT DIFFERENT

In the old days (and by old, I mean about two years ago), there were so many different types of batteries, it could make your head spin. We had 2000s, 2400s, S3000s, 3000HVs, and even a few different 3300s. Luckily for most of us, the industry finally settled on somewhat of a standard in the GP3300 cell...for now. What does that mean to you? Well, for starters, things are a lot more simple than they used to be. You can go out and buy a matched GP3300 pack from just about any matcher, and feel secure in the knowledge that you'll be up to speed. Plus, since everybody is using Gold Peak cells, that means that every matcher on the planet is getting the same cells from the same place. Sure, many of them use different methods of matching, but at the end of the day, they are all the same product.

"But wait," you say. "If they are all the same, why are there so many different numbers?" One reason, of course, are the different matching methods that we've mentioned. But there are other possibilities as well, especially if you happen to deal with an unscrupulous matching company. There are many ways to "juice" the numbers on a cell, and it really isn't all that hard to do. A company could cut off the average voltage early, for example, or discharge at a lower rate than they advertise. Others may charge at a high rate to create a "super cycle," or use other voltage enhancing processes that create higher voltage in the short term, but decrease the life of the cell in the long run. And of course, anybody could simply print their own cell labels with bogus data.

If you are buying cells from somebody for the first time, ask them about their matching process, and see if their labels are printed directly off of their matching equipment. Chances are that there is nothing wrong, but it's always a good idea to err on the side of caution. If you are seeing a lot of batteries from the same place that all have abnormally high numbers, it might be a good indication that something is amiss. Like we said, all of these cells originate from the same place, so if your local ACME Matching Co. suddenly has more 1.18V packs than a company like Trinity or Orion that processes thousands of cells a day, you might want to think twice about the accuracy of their numbers.

BIG FUN

In a Little Package

ZK2 and ZT2 are two bad cats packaged as Ready-to-Run mini Trucks. Go ahead and try and tame these beasts inside or outside. You can try Dining room doubles, bedroom tabletops or rock crawl in mom's flowers. With these beasts nothing is too big or small. Included are a six cell rechargeable battery and charger. The stock 280 motor will have you popping wheelies and smoking the competition. Want even more power try our 370 motor (TTR PD2231).

ZT2

ZK2

The 2-channel Ace R/C system will let you have extended range compared to your friends, while they are glitching out of control you will be headed for the monster double. When you come up to the whoops or off road terror these cats just PURRR with there oil filled shocks. So if you are looking for BIG FUN in a small package our answer is ZK2 and ZT2 by Thunder Tiger.



Specifications:

Length: 210.5-240mm
Width: 79mm (7")
Height: 76mm (3")
Wheelbase: 146mm (5.75")
Ground Clearance: 18mm (.7")

Features

- Stock 280 motor can be upgraded to 370 or larger motors
- Integrated IC chip receiver and electronic speed control
- 4-cell rechargeable battery, with AC charger included
- 2-channel Ace R/C system with pistol grip controller
- Optional 5 or 6-cell NiMH power packs available
- Includes everything you need, No extras to buy!
- Three-gear transmission with differential
- Fully independent suspension
- Race tough composite parts
- Replaceable servo



Fun is only a few minutes away with the EDC-01 optional quick charger (ACE2529). Recharge your batteries to their peak with the EDC-01. Available at all Ace Dealers.



Thunder Tiger

Distributed exclusively by Ace Hobby Distributors, Inc.
for a dealer near you, call (800) 322-7121 or visit us at www.acehobby.com

ORION

Matching System: TurboMatcher

The Process: They used to use something called the Lavco system in the past, but like most of the other major matchers, Orion now uses Competition Electronics' TurboMatchers to cycle their cells in a controlled environment. In addition to receiving Orion's high-voltage V-Max treatment, each cell is cycled three times under what Orion calls RDS, or Race Simulated Discharge. Cells are discharged at 30A throughout the run, and are then taken down to an individual cutoff of 0.85V to determine run time. Orion's matching equipment is all computer-controlled, and cells are individually tracked using serial numbers to improve the matching accuracy. The entire operation takes place in a climate-controlled laboratory environment to keep the numbers consistent from cell to cell.



PRO MATCH

Matching System: TurboMatcher

The Process: Pro Match receives a shipment of cells each month, and starts by putting a "soft cycle" on each cell. This means they charge and discharge them at a lower rate than they will eventually be matched at. The cells rest for a day, then receive another cycle, and then rest for a few days. From there, the cells are zapped, which is by far the most important step in the entire process and will make the biggest difference in performance and pack life. Pro Match has really done their homework here, having tested many different methods before arriving at an optimum zapping technique. The owner, Jeff Roe, reports that they ruined over a thousand cells as they tried every different zapping method they could think of until they arrived at the best combination of life versus performance. After zapping, the cells are allowed to rest for a couple more days before going through the final cycling, matching and labeling process. Once they are labeled, the cells are sorted into trays by voltage, and from there they are sorted into bins by runtime. Finally, the cells are sorted into packs by average voltage and resistance.



NOVAK

Matching System: Proprietary

The Process: Of the four companies we looked at, Novak entered the matching business most recently and already has one of the most advanced and complex matching systems we've seen. For starters, everything is computer-controlled, from the charge cycles to the actual cell selection, eliminating any possibility of human error or inconsistency. As cells arrive at Novak's lab, they are assigned a unique barcode and entered into a computer before being tested. The cells are individually charged and discharged, with the results going straight into a database. Each cell is cycled three times, with the average voltage calculated between the full charge and a 0.90V cutoff, a process that most are familiar with. Unlike other systems, though, Novak's design takes special care to maintain a constant 30A discharge rate until the cutoff point is reached, resulting in more accurate data and more consistent results. To keep environmental factors from interfering, the entire system is liquid-cooled to maintain a constant temperature at all points throughout the cycle.



GAME, SET, MATCH!

Battery labels might seem tricky at first, but there's really nothing to them once you've seen a few. Whether you're buying a single pack here and there or grabbing an entire set to last you a full racing season, getting comfortable with the ins and outs of the matching process will help you make the right choice. You can't go wrong with any of the companies mentioned here, and there are plenty of other choices on the market to suit whatever needs you may have. Shop smart, get some new cells, and go faster. It's that simple! ♦

"...THIS THING IS A MONSTER!"

—R/C Nitro's Steve Pond, on the new O.S. .18 TZ



At O.S.®, we don't just claim that the new .18 TZ is the most powerful small-block engine on the planet — we can prove it.

The proof comes from no less than Radio Control Nitro's Senior Technical Editor, Steve Pond. He dyno-tested the .18 TZ himself — and here's just a part of what he posted on the R/C Car Action website.

"OS .18 TZ shatters the two horsepower barrier!"

In a recent dyno test for *RC Nitro Magazine*, the new OS .18 TZ rear-exhaust engine cranked out a record setting 2.28 hp at 30,500 rpm. It shatters the 2 hp barrier for small-

block engines well before anyone else had a chance to get close, making more horsepower than four very prominent big-block engines we've previously tested. The TZ also set a new high mark for torque, measuring an amazing 83.1 oz.-in. at 25,850 rpm."

The O.S.® .18 TZ

We claimed it. Steve Pond proved it. And you can own it. Available in four amazing versions, for absolute power in extreme on- and off-road adventures.

For more information on the O.S. .18 TZ, visit www.os-engines.com or phone 1-800-682-8948 and mention code number 2363Y.

UNDER THE SCOPE

PRODUCT >> SPOTLIGHT >> PRODUCT >> SPOTLIGHT >> PRODUCT >> SPOTLIGHT >> PRODUCT >> SPOTLIGHT

DURATRAX ICE

COMPETITION PEAK CHARGER

Words: Stephen Bess

The recent surge by Duratrax into the competition racing scene is headlined by the new IntelliPeak Ice charger. Designed to meet the demands of electric on-road and off-road racers, the Ice's hit list is chock full of the kind of features that you may not expect to find from a Duratrax charger that costs just a bit more than a single C-note. The Ice's charging capabilities and long feature list place it directly into the high-end competition charging market, but hardcore racers can be difficult to

Features

The design of the IntelliPeak Ice is simple and intuitive. A large 8x21 character LCD places all of the Ice's data in view, and a push-button scroll wheel with two directional arrow buttons is used to navigate the menus. Unfortunately, the Ice's display is not backlit, but it is clear and easy to see given normal lighting. The Ice's charging capabilities are impressive and almost too extensive to list here, starting with its ability to charge nearly any type of cell used in RC. You can charge 1-10 NiCad or NiMH cells, and 1-4 lithium polymer or lithium ion cells at anywhere from 0.1 to 8 amps (Li-Po and Li-Ion batteries are limited to a charge rate equal to their capacity ratings).



The charging leads have banana-plug inputs, and an optional temperature probe can be added.

The Ice can cycle batteries (charge and discharge in succession) up to 10 times, display both charging and discharging capacity data for all ten cycles in chart form, and discharge at rates ranging from 0.1 to 10 amps. Charging modes include a normal linear charge, a reflex mode to recondition old NiCad cells, a re-peak mode to peak the battery up to three times in a row, and a 4-step charging mode that allows you to charge a pack at four different rates throughout the charging session. All charge modes are displayed to show the battery's voltage data in graph form. One of the Ice's most convenient features is its 10-battery memory setting, which allows you to pre-program and name ten battery



A large master dial and two directional buttons make operating the charger very straightforward.

profiles on its menu for up to ten different battery types, each with its own parameters. As expected on any "racing" charger, the Ice also includes an electric motor break-in feature, which is adjustable for voltage and elapsed time.

Testing

After reading through the instruction manual, I hooked the Ice up to a 10 amp Novak N-Power power supply to begin its work cycle. I began by charging and cycling an array of batteries, ranging from several new 3300 matched packs to a few 1200 receiver packs to an old-school, beat-up 2000 NiCad saddle pack. After naming each battery profile, I adjusted the factory-set values to match my specific batteries and began charging. Scrolling through the menus requires a twist of the Ice's scroll knob, and a push of the knob locks in the setting once the desired value is attained. Charging begins with a quick beep and the Ice immediately displays its charging chart, which lists elapsed charge time (in seconds), capacity, voltage, current, temperature and many more parameters. The Ice's peak



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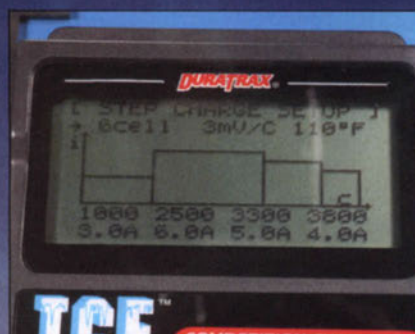
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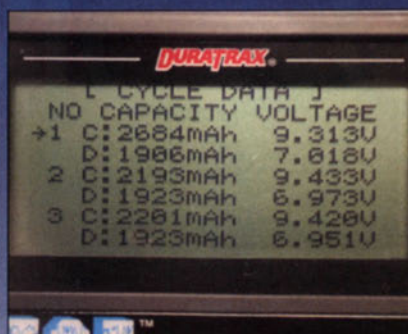
The multi-step charge feature allows a pack to be charged at up to four different rates throughout the charge cycle.

temperature feature monitors the battery's temperature and can cut off the charge current once a predetermined temperature is attained, although the temperature probe must be purchased separately.

The Ice's cycle mode begins by charging or discharging (user adjustable), and will delay the ensuing charge or discharge by anywhere from 1-30 minutes. During the 3300 pack's 10 amp discharge, the Ice's built-in cooling fan kicked in while I monitored the Ice's external temperature. The Ice's casing heated to a non-icy 135° F—certainly warm to the touch, but not hot enough to burn. Although the 10 amp discharge rate is enough for smaller capacity packs, several chargers offer higher discharge rates closer to 20-30 amps. At the conclusion of each cycle, a chart of charge and discharge capacities with voltages is listed—a useful tool that indicates a battery's ability to hold a consistent amount of charge.

All of the NiMH packs I charged got just slightly warm as they peaked, and never overheated, even at higher charge rates. Although it's impossible to know exactly what's happening inside a battery cell during a charge, it's safe to assume that the Ice pumps its packs with accurate charging and cutoff rates due to the reasonable temperature of the packs.

Finally, I connected a motor lathe and a freshly-cut modified motor to the Ice to test



The Ice displays the voltage, charge capacity, and discharge capacity after each cycle.

its motor break-in feature. It powered the lathe steadily and ran the fresh motor just as expected. The motor break-in feature allows you to program a run time from 1 minute to 180 minutes, as well as adjust the input voltage from 1 on up to 8 volts.

Conclusion

The Duratrax Ice charger is a strong performer and one that deserves serious consideration when it comes time to pick a charger to go racing with. Like the vast majority of race-caliber chargers, the Ice requires DC power, which means you'll need a power supply capable of supporting it. Considering its features, the Ice is highly competitive at its price, and I could find only two gripes with it: I expected a backlit display (as most competition chargers have nowadays), and most racers will

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Keira Knightley

9.0

HITS

- Displays lots of charging info
- Ten battery memory profiles
- Charges NiMH, NiCad, Li-Po, Li-Ion
- Easy to navigate menus

MISSSES

- Low 10 amp discharge rate
- Where's the ice-blue backlit display?
- Temp probe must be purchased separately

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WEB: www.duratrax.com
PHONE: 217.398.0007
PART NUMBER: DTXP4170
STREET PRICE: \$130

need a higher amperage discharge rate. Those are small gripes, however, since a charger with this many features and such diversity could easily cost twice its suggested price. For \$130, the Ice is tough to beat. ⚙️



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16th Annual NR/CTPA WO GOIN' FULL PI

Words by: Joe Kilian Photos by: John Etzler

The 16th Annual NR/CTPA World Championships took place on October 9-10, 2004 at its traditional location, the Ramada Holiday Inn in Montpelier, Ohio.

At the request of the rednecks, all redneck jokes were left out.

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This, no jokes about Camaros on blocks.

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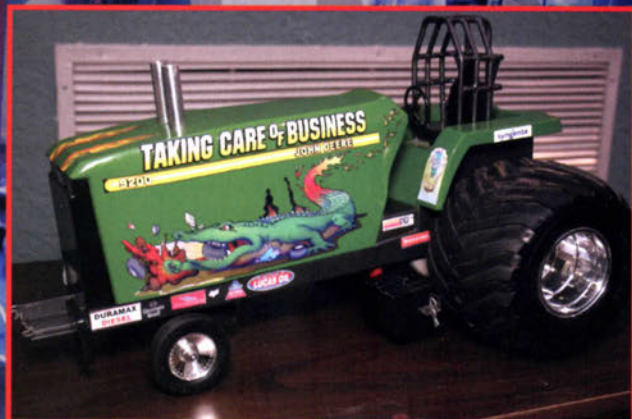
This year saw a record entry total of 479, making it larger than many other National and World events. It is actually a three day event, with monster truck drag racing kicking things off on Friday night. After the brackets were whittled down to just two, it was Mike Eckenrode versus Dan Wyatt, with Wyatt taking the win by about two tenths of a second. The next morning saw the concourse event take place for both the pulling and racing classes. The concourse entries for painting, best mechanical design, and overall concourse are voted on by the membership at the event. The President's awards in racing and pulling are voted on by the executive board to crown the most realistic racer or puller. The overall concourse winner for the pulling class was the 2-cycle gas entry of Robin Collier, an outstanding tractor with a homemade Lexan body. Robin took home the President's Award as well. In the racing class, the new retro class garnered both President's and overall concourse trophies with Dan Wyatt's excellent reproduction of the old Skoal Bandit monster truck.



Jiffy Pop is fun!



Carpet Pulling RESULTS



Pulling Events

Pulling at the NR/CTPA is divided into two groups: dirt and carpet. There were two carpet tracks with 68 trucks and tractors, and 164 entries on the two dirt tracks. The basic difference is that the carpet trucks pull about four times more weight than their dirt-bound counterparts, but the dirt entries are about six or seven times faster. It's only a straight line, but driving is a lot harder than it looks. This is especially true on dirt, where a little hole or a dry spot in the track shoots the puller one way or the other, all while the sled is increasing the weight as the truck streaks down the track. Pulling is a lot like drag racing, where you set up your vehicle and take your best shot with it. The more on the

edge you are, the less control you have over your vehicle, but the further it may go. This year's event featured laser measuring equipment to speed things up. Although most of the vehicles were electric, the NR/CTPA also pulls gas and nitro classes in the hotel with a smoke eradication system that vents harmful fumes outdoors. There was also a record turnout in pulling this year—notice a trend?

OUTLAW GARDEN TRACTOR	SW 58 lbs.	PO 72 lbs.
1. Jack Koogler Dayton, OH	FP	23' 2 1/2"
2. Bobbie McGuire Ezel, KY	FP	22' 6 1/4"
3. Jack Koogler Dayton, OH	FP	20' 11 3/4"

2WD MODIFIED TRUCK	SW 62 lbs.	PO 96 lbs.
1. Bobbie McGuire Ezel, KY	FP	28' 4 1/2"
2. Jack Koogler Dayton, OH	FP	26' 7"
3. Jack Koogler Dayton, OH	FP 2	5' 8 1/2"

MINI ROD	SW 112 lbs.	
1. Tim Dixon Champlain, IL		6' 8"

PRO STOCK TRACTOR	SW 92.5 lbs.	PO 126 lbs.
1. Tyler Powell Cochran, PA	FP	FP
2. Gene Nine Harmony, PA	FP	29' 10 3/4"
3. Vince Nelson Punxsutawney, PA	FP	29' 2 1/4"

BIG RIG	SW 92.5 lbs.	
1. Jack Koogler Dayton, OH	FP	
2. Ernie McReynolds Tipp City		29' 10 1/4"

2WD SUPERSPORT	SW 112 lbs.	PO 137 lbs.
1. Ed McDaniel Owingsville, KY	FP	26' 7 1/2"
2. Jack Koogler Dayton, OH	FP 2	3' 1 1/2"
3. Terry McGuire Ezel, KY	FP	22' 10 1/2"

BAR TIRE SPORTSMAN	SW 150 lbs.	PO 175 lbs.
1. Gene Nine Harmony, PA	FP	FP
2. Tina Kilian Wanakah, NY	FP	23' 4 1/2"
3. Gene Nine Harmony, PA	FP	21' 11"

2WD SPORTSMAN	SW 208 lbs.	PO 275 lbs.
1. Tim Dixon Champaign, IL	FP	20' 5 1/4"
2. Helen Singleton Utica, PA	FP	20' 2 1/4"

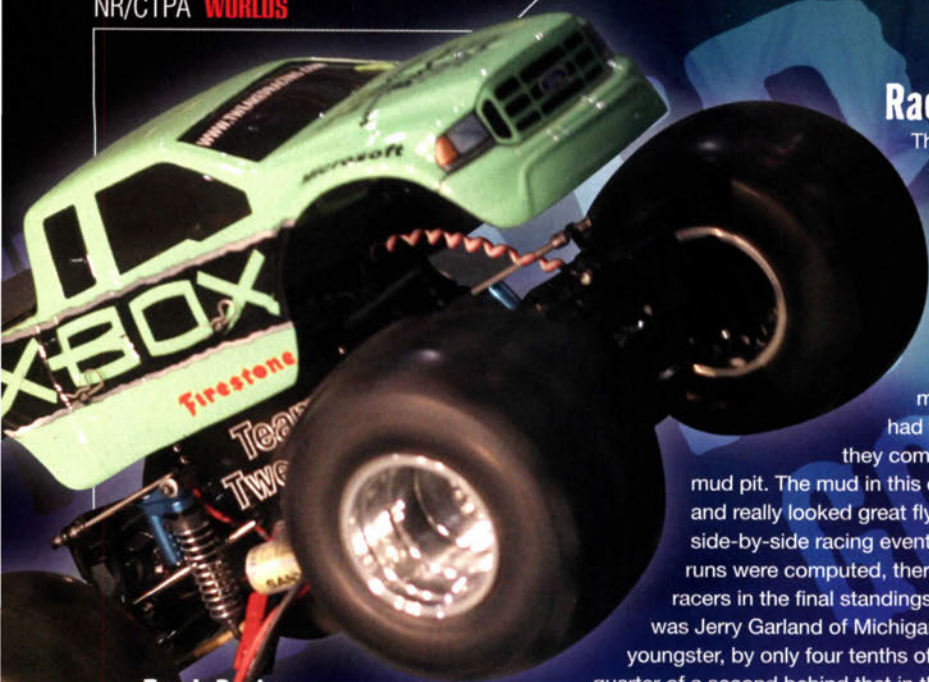
2WD OPEN 1	SW 275 lbs.	PO 325 lbs.
1. Jack Koogler Dayton, OH	FP	26' 4 1/2"
2. Joe Killian Wanakah, NY	FP	24' 11 1/2"
3. Jack Koogler Dayton, OH	FP	23' 3 1/4"

4WD OPEN 1	SW 275 lbs.	
1. Brad Pitt Lockport, IL	FP	

DUAL MOTOR MODIFIED	SW 414 lbs.	
1. Brad Pitt Lockport, IL	FP	
2. Scott Planting Cedar Lake		24' 6 1/4"

OPEN 2	SW 608 lbs.	
1. Jack Koogler Dayton, OH		23' 9 1/4"
2. Dave Wright Muscatine, IA		23' 3"
3. Spencer McKenzie Belleville, MI		22' 1"

And we won't even make the obvious mallet references.



Truck Racing **RESULTS**

Do they race monster trucks on an oval track?

Novice

1. Corey Powers
2. Andrew Etzler
3. Andrew Etzler

2WD Stk Tuff Trk

1. Mike Eckenrode
2. Mathew Hielvek
3. Mickey Klemm

2WD Mod Tuff Trk

1. Jay Bruns
2. Brad Dale
3. Bart Maimone

4WD Mod Tuff Trk

1. Leon Booth
2. Mathew Hielvek
3. Mickey Klemm

Stock Emaxx

1. Paul Ovares
2. Paul Ovares
3. Dan DuFore

Mod Emaxx

1. Dan DuFore
2. Mickey Klemm
3. Dan DuFore

4wd Box Stock

1. Erik Mitchell
2. Doug Harvey
3. Bart Maimone

4WD Super Stock

1. Bari Musawwir
2. Paul Ovares
3. Tim Powers

4WD Tube Chassis

1. Jay Jordan
2. Bari Musawwir
3. Jay Jordan

Open Monster

1. Mike Eckenrode
2. Tim Powers
3. John Bruns

Drive Shaft

1. Mike Eckenrode
2. Jay Jordan
3. Bart Maimone

Spec

1. Bobby Santoro
2. Mike Eckenrode
3. Fred Privett

Modified

1. Jerry Garland
2. Mathew Hielvek
3. Freddie Privett

Racing Events

The racing events consist of side-by-side racing on a timed dual track course. The times are recorded and the best times are added together to determine a winner. In addition to the drag race on Friday night, a long jump event took place on Saturday night and a freestyle event completed the weekend on Sunday afternoon, with one of the wildest tracks ever constructed. The new retro class was created to replicate the old school monster trucks of the late 80's and early 90's. These had to be an actual truck that came from that era, and they competed in a pulling event, a monster course and a mud pit. The mud in this case was popcorn seed, which ended up everywhere and really looked great flying through the air during the runs. As for the actual side-by-side racing events, the racing was so close that after two days of runs were computed, there were only a couple tenths of a second in between racers in the final standings. In the largest class at the event, Modified 4X4, it was Jerry Garland of Michigan followed by Mathew Hielvik of Minnesota, a rookie youngster, by only four tenths of a second. Freddie Previtt of Indiana was another quarter of a second behind that in third. All in all, the racing this year was some of the best ever, and the record turnout shows that this is definitely on the rise.



We're trucking out of here!

One thing that makes the NR/CTPA a little different from all of the other RC events out there is that there are a lot of handmade vehicles and bodies at this event. The entrants this year ranged from 4 to 75 years old, and all family members from sons and daughters to grandparents could find a class to run in and compete. It is a gender- and age-friendly event that grows every year. In fact, a couple grandmothers won world championships in the pulling events!

The NR/CTPA would like to thank the many sponsors at this year's event, including Mr. & Mrs. Kilian, McGuire Chassis, Island City Detailing, Hometown Hobby, Engle Manufacturing, the STPA, Hooter Chassis and hobby shop, County Line Pullers, Jack Koogler, Wyatt Engineering, Powers Racing Suspension, FCA Graffix, Excessive R/C, Tweaked Racing Team, Great Lakes Trophies, Clear Channel Motorsports, Tamiya, Kimbrough Products, JR Radios, Team Associated, Pro-Line, Boca Bearings, Ram Electronics, and especially Xtreme RC Cars! Contact information is available from Joe Kilian, who can be reached at (716) 627-4321 or via www.nrctpa.com. The NR/CTPA also has a Spring Nationals event the first weekend of May at that same hotel. If you're ready to win a world championship with your monster truck, this is the place to be! ♦

Dirt Pulling RESULTS

DIGGER	SW 13 lbs.
1. Diana Humes Springfield, IL	FP
2. JT Miller Oil City, PA	29' 8"
3. Cody Woodruff Richmond, IN	27' 3/4"

NITRO DIGGER	SW 20 lbs.
1. Delbert Humes Paxton, IL	FP

GARDEN TRACTOR	SW 23 lbs.
1. Dave Haas Bowling Green, OH	27' 11 1/2"
2. Bobbie McGuire Ezel KY	27' 3 1/4"
3. Jake Haulman Urbana, OH	27' 1 1/2"

2WD TRUCK	SW 23 lbs.
1. Terry McGuire Ezel, KY	FP
2. Terry McGuire Ezel, KY	FP
3. Mike Cloutier White Bear Lake, MN	29' 4"

2WD SUPERSTOCK	SW 23 lbs.
1. Joe Kilian Wanakah, NY	FP
2. Rose Guinta Baldwinville, NY	28' 6"

BIG RIG	SW 40 lbs.	PO 45 lbs.
1. Mark Woodruff Richmond, IN	FP	25' 10 1/4"
2. Tina Kilian Wanakah, NY	FP	25' 7 1/4"

MINI ROD	SW 40 lbs.
1. Ed McDaniel Owingsville, KY	26' 11 1/4"
2. Joe Kilian Wanakah, NY	25' 6"
3. Bill Niccum New Haven, IN	25' 2"

PROSTOCK TRACTOR	SW 40 lbs.
1. Jake Haulman Urbana, OH	FP
2. JT Miller, Oil City, PA	29' 10"
3. David Corbett Woodstock, OH	29'

BRUISER	SW 40 lbs.	PO 45 lbs.
1. Robin Collier Livingston, TN	FP	27' 1 1/2"
2. Audrey Pisiak Central Square, NY	FP	23' 8 1/2"
3. Mark DeBruyne Plainwell, MI	FP	11'

SCRATCHBUILT	SW 40 lbs.	PO 45 lbs.
1. Terry McGuire Ezel KY	FP	26' 7 1/2"
2. Robin Collier Livingston, TN	FP	26' 4"
3. Mark DeBruyne Plainwell, MI	FP	26' 1 1/2"

4WD BOX STOCK	SW 45 lbs.	PO 55 lbs.
1. Cory Briggs South Lyon MI	FP	26' 8 3/4"
2. Matt Wilkins Allegan, MI	FP	11' 7"
3. Ed Sanner Cooperstown, PA	27' 11 1/2"	

DUAL MOTOR STOCK	SW 45 lbs.
1. James Guinta Baldwinville, NY	FP
2. Scott Planting Cedar Lake, IN	27' 10 3/4"
3. John Brunns Palatine, IL	25' 3"

2WD PRO MODIFIED	SW 60 lbs.
1. Dorthy Haas Bowling Green, OH	27' 10"
2. Terry McGuire Ezel, KY	27' 7 3/4"
3. Terry McGuire Ezel, KY	26' 4 1/4"

BAR TIRE SPORTSMAN	SW 65 lbs.
1. Delbert Humes Paxton, IL	27' 8 1/2"
2. Tina Kilian Wanakah, NY	27' 4 1/2"
3. JT Miller Oil City, PA	26' 8 1/4"

2WD OPEN 1	SW 90 lbs.
1. Tina Kilian Wanakah, NY	28' 3/4"
2. JT Miller Oil City, PA	27' 11 1/2"
3. Minne Wiersma Bowmanville, ONT	25' 2 1/2"

DUAL MOTOR MODIFIED	SW 100 lbs.	PO 115 lbs.	PO2 115 lbs.
1. John Jacobus Westland, MI	FP	24' 10 1/4"	24' 11 1/2"
2. Nate Briggs South Lyon, MI	FP	24' 10 1/4"	21' 6 1/4"
3. Al Fowler Ypsalinti, MI	FP	23' 4 1/2"	

6X6 EXHIBITION	SW 100 lbs.	PO 115 lbs.
1. James Guinta Baldwinville, NY	FP	26' 9 3/4"
2. Adam Cesario Canastota, NY	FP	25' 4"
3. Cory Briggs South Lyon, MI	29' 7 1/4"	

2WD OPEN 2	SW 115 lbs.	PO 130 lbs.
1. Tina Kilian Wanakah, NY	FP	23' 9 1/2"
2. Gene Nine Harmony, PA	FP	broke'
3. Michael Ashby Champaign, IL		28' 1"

2WD MODIFIED NITRO	SW 85 lbs.	PO 100 lbs.
1. Audrey Pisiak Central Square, NY	29' 5 3/4"	23' 1"
2. Greg Arnone Niagara Falls, NY	29' 5 3/4"	17' 8"
3. Mitchell Leavitt Bright, ONT	27' 10 1/2"	

INSANE	SW 90 lbs.
1. Tim Ludyka Onemee, ONT	28' 4 3/4"
2. David Leavitt Bright, ONT	28' 1 1/4"
3. Joe Kilian Wanakah, NY	27' 6"

GAS CLASS	SW 135 lbs.	PO 150 lbs.
1. Dave Haas Bowling Green, OH	FP	26' 1 1/2"
2. Brad Houtkin Monsey, NY	FP	24' 9 1/4"
3. Jerry McReynolds Troy, OH	FP	23' 11 3/4"

4WD Nitro/Electric	
1. Delbert Humes Paxton, IL	29' 9"
2. Terry McGuire Ezel, KY	29' 1 3/4'
3. Ed Mc Daniels Owingsville, KY	28' 6"

Derek would have entered the modified bar class!

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This is a revolutionary ignitor and glo-plug tester. The E/Z Glo™ will not only effectively ignite your models glo-plug, but will also test it and report its condition with an audible beep. Simply connect the E/Z Glo to your glo-plug, press the test button and listen for the beep. If you hear a beep, the plug is good. If there is no beep, the plug is bad. The E/Z Glo™ comes with a 1700 mAh battery & charger. 1/pkg. **No. 927**

BEEP



NEW

SCISSORS & REAMER SET

Two essential tools for the shop are the Body Reamer & Scissors. Whether you are reaming holes for your body posts, antenna, or cutting a custom shape, you need quality equipment.

No. 2330 Body Reamer & Scissors Set 1 ea./pkg.



NEW

ANTENNA TUBES

No matter what level of R/C driver you are, chances are, at sometime, you will break your antenna tube on a roll-over. Our replacement tubes are what you need. They are available in 6 different colors so you can match your body color. We also have the caps and tubing to hold everything in place. Available colors: White, Purple, Yellow, Red, Blue, & Black.

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BALL LINKS**

BALL LINKS

DU-BRO Ball Links offer smooth friction-free operation with unsurpassed quality and durability.

A	2321	3MM	3MM X 18	2
A	2322	3MM	3MM X 18	12
B	2317	4-40	4-40 X 5/8"	2
B	2318	4-40	4-40 X 5/8"	12
B	2319	3MM	3MM X 18	2
B	2320	3MM	3MM X 18	12

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LEARN HOW-TO



11 WAYS TO ACT LIKE A SPONSORED DRIVER

RACE HARD AND
ACT PROPER!

Words: Jeff Eveleigh

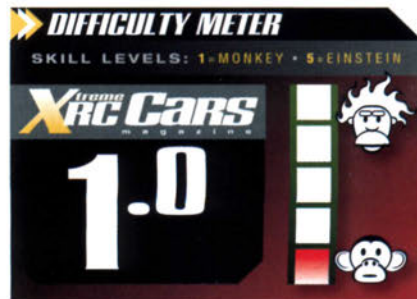
A couple of months ago we taught you how to get sponsored, and now it's time to learn how to stay sponsored once you're there. The radio control industry is full of people with factory rides, and some of them know how to act a little better than others. Drivers such as Matt Francis and Richard Saxton have become complete geniuses to the public eye, and have built a huge name for themselves in doing so. However, some others, who will not be mentioned here, leave much to be desired when it comes to supporting the companies that support them. So whether you're a full-time big-name driver or a fifty-percent-sponsored small-time racer, read on to discover how to act when it comes to fellow racers, organizers, fans, and of course, the good old media.

1. LOVE THE CAMERA

Cameras are great, since they market both you and the companies you represent. Whether it's some random dude taking your picture to show to his friends, the proprietor of a popular website who will post it online, or a magazine guy who is going to print it, the fact of the matter remains that the more often your picture is taken, the more valuable you are. Sure, the flash can be annoying, especially during races, but if you are professional enough to be sponsored then you are good enough to drive with a flash going off. If you complain about the flash, the people with the cameras will simply stop taking pictures of you, and if pictures aren't being taken, you aren't getting exposure. Become a camera chaser and both you and your sponsors will benefit from it.

2. LOOK GOOD

This is important for two reasons: First, as mentioned above, the better you and your car look, the more likely you'll get your picture taken, and second, it helps the general presentation of your team. Start with yourself; be sure that you are wearing clean clothes and sporting your sponsors' colors at all times. You should never be seen in public without a clean T-shirt or hat that features one or more of your sponsors' logos.



3. PAINT YOUR RIDE

Your car needs to look good too. A smart place to start is by painting up a nice-looking body. Stop running the one-color rush jobs with a few stickers, because those won't get noticed. When people are watching the track, a white body with a few decals will not grab their attention. Get something fancy sprayed up, and make sure your sponsors' names and logos are all over it. The better the paint scheme and layout, the more attention it will get, both from the spectators and from the guys with the cameras.



4. BE APPROACHABLE

Make it clear to other drivers and to anybody else who might be around that you are easily approachable. Answer questions with enthusiasm and excitement so people feel comfortable talking to you. As a sponsored driver, you will usually have many fans who look up to you, and if they feel they can talk to you they will, and both you and your sponsors will benefit. It's understandable that sometimes you simply can't put time aside to chat, so when someone comes up to you just as you're about to grid the A-main, explain to them that you have to concentrate on racing right now and set up a time to talk with them afterwards. There have been numerous times that I've approached a team manager and told them that a specific driver of theirs was easy to talk to and very informative, and in the end, this makes them far more valuable to the sponsoring company.

5. SURROUND YOURSELF

You should be a walking billboard for the products you support, and your pit area should look like a display counter for your race team. Keep your pit area tidy and presentable with products placed everywhere showing that you are not only using the products that you support, but winning with them. If you take a look at the pit area of any big-name driver with numerous sponsors, you'll see nothing but their sponsors' names and products sitting on their pit towel. It's one thing to rock a sticker on your car's body, but you bring your position to the next level when an onlooker actually watches you attach your sponsor's wheel onto your sponsor's car while using your sponsor's wrench to do it. Surround yourself with team products and use them with a smile, and you'll be doing your job perfectly.



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6. STROKE THE MEDIA

The media is your best friend, especially when you are a sponsored driver. The media is your opportunity to gain exposure for the companies that support you, and to gain exposure for yourself. Members of the media aren't hard to find. If you see someone walking around with a camera, wearing a magazine shirt, and taking notes all the time, it is a safe bet that they are doing some form of race coverage. Walk up to them, introduce yourself, talk to them, bug them, do whatever you can to get in their face. There are always a bunch of racers that approach me regularly at a big race and their faces and equipment almost always end up in my race report in the magazine.

7. REMEMBER WHO SIGNS YOUR CHECK

Or at the very least, remember who is giving you free stuff. Just like anything else, sponsorship is a business, and the teams that support you are doing it to get a return for themselves. If you attend a race that offers you the opportunity to fill out equipment and sponsorship sheets, do it! Don't wait to be forced into filling them out. Find the guy with the sheets and complete them, in full, and with a smile on your face. If you are talking to somebody about one of your sponsors' products, speak highly and enthusiastically about it at all times. Your job is to sell the product to the regular Joe, so do it both on the track and off. Always remember that if you aren't benefiting your team by increasing sales, they probably don't need you and you may be a privateer again before you know it.

Looking like Nena? Good!

8. SHOW UP FOR PICTURES

This one is by far my favorite, and it boggles my mind every time I cover an event and someone doesn't show up for the photo session at the end. If you attend a big race that is receiving magazine coverage and you are an A-main finalist, you have to know that there will be pictures after the race. You aren't new to racing, which is why you're so fast. If you work all weekend to do well, take the time to show up and get your picture in the magazine. If I were a team manager and saw one of my drivers finish in the top three at a huge event and their picture was missing from the podium shot, I'd drop that guy from the sponsored list instantly, no questions asked. If you are supposed to be in a picture, be there—it's as simple as that.



Continued on page 194.

READY TO RIP



The Ultra MBX Comp comes with pivot ball suspension and a 330mm wide arm set.



The Ultra MBX Comp includes a powerful .26 engine with OFNA's electric start system.



Both buggies include lay-down servos and blue anodized aluminum hop-ups installed.

EXTRA TIRES & WHEELS!



Part#: 34312



**MBX
SUSPENSION**

**4WD
3 DIFFERENTIAL**

FP BODIES
Includes an OFNA Full painted body. No painting with masking and racing.

**MBX ULTRA
COMP**

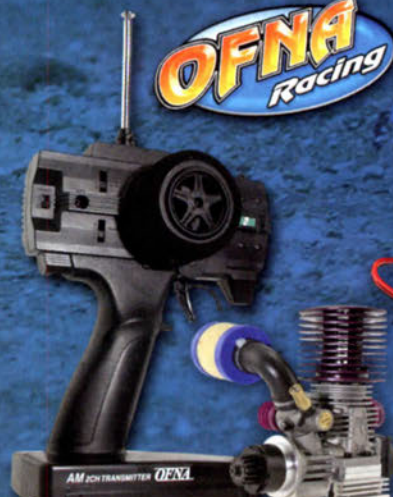
**.26
ENGINE
INSTALLED**

**50+
MPH**

**OFNA
Racing**

Electric Starting System

The Ultra Comp MBX is the first 1/8th scale buggy to include an Electric Starting System installed and ready to go. No more hassles with glow plug ignitors or pull starting.



PRE-ASSEMBLED
ASSEMBLED CHASSIS WITH RADIO AND ENGINE INSTALLED





The Ultra-LX Comp comes with King Pin suspension and a 320mm wide arm set.



Both Buggies include aluminum threaded coil-over shocks.



Both Buggies include 145cc gas tank for longer runs & fewer pit stops.

READY TO RIP

MBX & LX FEATURES

- OFNA racing pipe.
- Heavy duty air filter.
- Laydown steering servo.
- Water resistant radio box.
- High impact nylon wheels.
- 320mm adjustable width arm set.
- Powerful .26 big block engine installed.
- Threaded hard coated coil-over shocks.
- 145 cc fuel tank.
- 3 shoe racing clutch.
- Steel main spur gear.
- Strong nylon rear wing.
- Front CVA universal joints.
- Heavy duty nylon stone guards.
- Impact absorbing front bumper.
- Disc brakes w/thumb wheel adjuster.

Part#: 34308



KING PIN SUSPENSION

ULTRA LX COMP

4WD
3 DIFFERENTIAL

FP BODIES
Includes an OFNA Full Service Body. Be Ready with welding and assembly.

New Differential Design

All three diifs have four spider gears and plastic cases with molded-in steel inserts to support the output shafts and bearings.



OFNA Racing



PRE-ASSEMBLED
ASSEMBLED CHASSIS WITH RADIO AND ENGINE INSTALLED

JORDAN KRUPP'S

1/4-Scale Ski-Doo MXZx 440 Rev.

Words: Jordan Krupp

The radio controlled snowmobile is a model that very few manufacturers have attempted to produce. Offhand, there was the Nitro Elements ArtAttack, and there was also one from Sweden known as the "Atomic" from around 1980, an all-plastic model that I actually own. In the mid-70's COX made a "free flight" .049-powered Ski-Doo called the TNT Silver Bullet; I had one of these as well, it was the best Christmas present I ever had and it even had a tiny "pull-start" mechanism. I'm sure there have also been many "one-off" hand-made RC snowmobiles created by people that were determined to have this type of model, some whom I have met.

This is how I got my start in the great hobby of RC: In 1980, when I was 18 years old, I made my first RC snowmobile with an all-aluminum chassis. I used a .40-sized airplane engine for power. It took a couple more years before I had a proper snowmobile engine, an O.S. .21SE and a Kraft 3PKW wheel radio. Many years of trial and error followed before I made a "true" 1/3-scale Ski-Doo Twin Track Oval Racer in 1988. This was my pride and joy, my dream come true and then some, having a model in the Ski-Doo museum and meeting all the best racers and many snowmobile World Champions. I had the thrill of staging RC snowmobile demonstrations at some of these series races in the 1990's for both the racers and the fans. Even Jacques Villeneuve, Sr., a three-time World Snowmobile Champion, helped start one and even drove a couple of my creations. He was my hero and a hell of a nice guy! In the early 1990's, myself and a couple other people hand-made over 120 1/3-scale Ski-Doo snowmobiles, 34 Twin Track Racers and 100 single track MXZ's. However, this collaboration eventually dissolved.





24 Ski-Doo? Isn't that a football play?



JORDAN KRUPP'S

1/4-Scale Ski-Doo MXZx 440 Rev.

The potential of such a new and truly exciting RC concept would greatly contribute to the overall exposure of the hobby, and give this new element some of the limelight. The snowmobile's 1/4-scale size enhances the realism of components like the chassis, front and rear suspensions, ski designs and steering systems. Also, the overall appearance and style of the body design and the scale rider screams "realistic!" The proper and "true" scale RC snowmobile model has the potential of easily capturing the thrill of full-size snowmobile racing in a smaller package. The scale design has an inherent simplicity and carefully thought out component placement. The direction and design objectives closely replicate the current #1 racing sno-cross snowmobile, the Ski-Doo MXZx 440 Rev. It would also be nice to see an Arctic Cat and a Polaris, since they also have very cool new race sleds for the 2004-05 race season. This brings me to the subject of the actual full-size market, a billion dollar industry. Brand loyalty is very strong here and many snowmobile fans want a high-performance RC model they can call their own. They may only run it a few times a season, but just owning such a model would stoke their ego, and since brand loyalty is so dear to a snowmobiler's heart, the money is not an issue.

Even though the RC snowmobile concept is seasonal and requires snow, I feel that building a high-quality scale version of a current design is necessary. Many people like myself race RC cars in the summer and then have a slow winter, so it's the perfect time to make some tracks in the snow. The snowmobile has the ability to run anywhere and will easily out-perform an RC truck or buggy when the surface is blanketed with snow. The thrill of running an RC snowmobile at the perfect location is very pleasing, seeing the tracks they make and the hills and jumps they can handle. The snow conditions range from fresh and soft to hard-packed and icy, and give the RC snowmobile a variety of different and challenging types of terrain to run on. I have even water-skipped a 1/3-scale .21-powered MXZ, and have even run them on grass. Making a scale sno-cross track would be very easy using only natural terrain. My friend and I have also done many demo runs with the 1/3-scale Ice Racers in between periods at hockey games, and the sound of a screaming .21 in an arena is music to my ears!

FEATURES

CHASSIS • The chassis for my 1/4-scale Rev is formed from pieces of sheet aluminum riveted together, with the scale pyramidal upper structure distributing shock loads throughout the chassis. This triangulated design greatly strengthens torsional rigidity while keeping weight very low. The engine bay is only big enough for a .21, but I hope to test a "big" .28 pull-start next year.



Woody's is a competitor to Hooter's?



BEHIND THE PROJECT

In the late 70's I was inspired to build my own RC snowmobile, and decided to create the drawings in a 1/4-scale size. After doing this, I changed to 1/3-scale because this would give more room for radio components and other necessary items, and also offer more stability in the rough world of snow. To date, nearly all my sleds have been 1/3-scale.

In 2001, Nitro Elements introduced the ArtAttack, which was close to 1/4-scale and was only the second RC nitro snowmobile I have ever seen on the market. I was now very fired up to make my own version of a 1/4-scale snowmobile! As I neared completion of my latest model, Ski-Doo rocked the racing world with the "All Conquering" MXZ Rev. As soon as I was able to find one of these amazing new sleds, I measured every part I could to get them scaled down to one-fourth of the size. After I had my simple drawings complete, I could see how Ski-Doo arranged the layout and pick-up points for this new A-arm-equipped, long-travel race sled that won 75% of all races last season, including the Winter X Games.

SUSPENSION • The front suspension uses TTR rear 1/8-scale buggy shocks, with scale unequal length brazed A-arms attached to perfectly scale aluminum spindles. The skis have an aluminum bridge, a thin UHMW base and a runner with a "V" to improve cornering performance on hard packed snow and ice.

The rear skid frame (track suspension) is constructed from 1/8"-thick aluminum plates with a coil-over shock on the front arm, and two torsional springs on the rear arm along with a shock. The track is formed with special belting I have made to the proper length, with three belts joined with a UHMW cross-bar with sheet metal screws for awesome traction. The complete drive has only six bearings, along with two for the clutch. The clutch is a Thorpe Variable Belt, made famous by 1/8-scale on-road cars in the 70's.

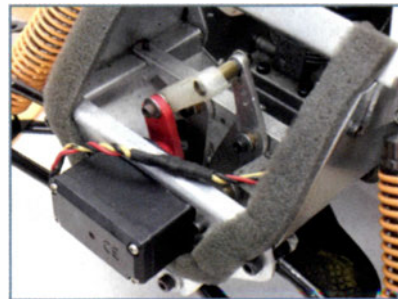


BODY & RIDER • I hand-carved all the plugs for the body parts and rider's helmet from pine, and then ABS plastic was used to vacuum form the parts.

The rider is created using sponge foam with a wire armature for strength and shape; I sew all the suits myself. The rider gives great crash protection to the snowmobile for inverted landings!



ELECTRONICS • I use a Hitec HS645 metal gear servo for the steering, and cheaper Hitec 322 servos for the throttle and brakes. The brakes use a single floating fiberglass "wave" rotor and block caliper from the Go n' Play Lil' Zipper 1/3-scale go-kart I helped design in 1992. My prototype RC Rev's are 29" long and weigh 7 lb., ready to run with a full 125cc fuel tank from our beloved 1/8-scale buggies!



I had the pleasure of meeting Brian Baskin from Nitro Elements, the creator of the ArtAttack. He was very gracious, and informed me that my 1/3-scale MXZ from 1993 had inspired him to build an RC snowmobile of his own.

I sure love this great hobby! ⚙️



Did Jordan just admit he sewed the suits himself?

PROVEN TOUGH



High Performance S-25 Engine

S-25 FEATURES

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Complete Set of Ball
Bearings Included



Pre-painted, trimmed body with decals applied!



SAVAGE 25

The Savage 25 offers the total package! It's tough, fast, loaded with features... all at a price that makes it the best value in the monster truck class. The Savage delivers all of the "Big Block" power you need to take on the most extreme off-road driving conditions. To handle the massive power we made the drivetrain & suspension oversized so you spend more time driving and less time making repairs. Long-stroke suspension and our Twin Vertical Plate (TVP) chassis system allow the Savage 25 to soak up rough terrain and giant jumps. The convenient Roto Start electric starting system is standard equipment, just push the start button and the engine roars to life. Other features include an automatic two speed transmission, a three-shoe clutch for wheelie popping launches, stiff shock springs for improved jumping, long life rubber tires, chrome wheels, and a pre-painted body just like what you see in the photo! With incredible speed, wheelies on command, long-stroke suspension and the reputation for being the toughest truck on the market, the RTR Savage 25 is the MONSTER truck that needs to be in your garage!



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GLITCH BE GONE!

GET RID OF THE GREMLINS FOR GOOD!

Words: Derek Buono

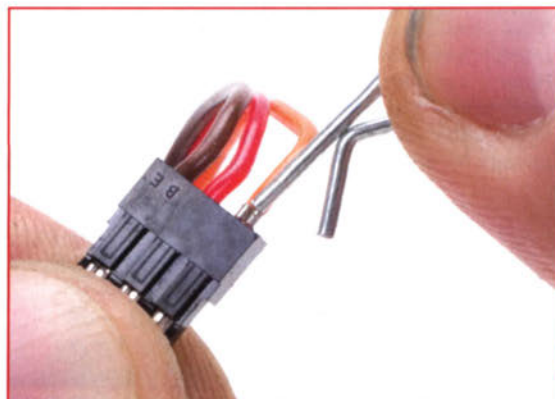
Most of us have had to deal with glitching at some point during our foray into RC. It's pretty common with our current radio systems, and sometimes there's really no avoiding it thanks to outside influences. While there are lots of things that can cause glitches, there are just as many ways to help avoid them. By inspecting and maintaining your gear you'll decrease the chance that radio problems will sideline you at a race or smash your car into a curb.

Gremlins is a movie classic!



CHECK YOUR CONNECTIONS

The connections in the plugs of servos and speed controls can occasionally work their way out over time, creating a bad connection that will cause radio problems. To check for this, plug all the servos into the receiver and use a small Allen wrench or a body clip to push the pins in to make sure they are all tight.





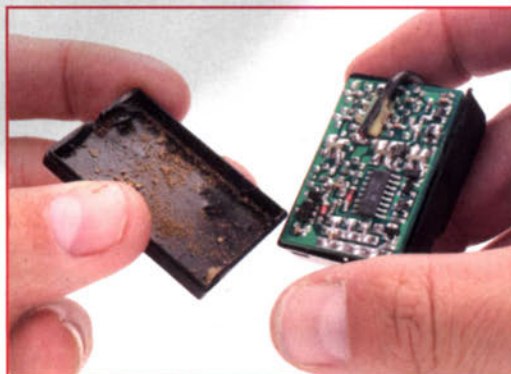
BATTERIES

This is less of an issue with computer radios since most have a warning alarm that will let you know when the batteries are low, but in radios with single or multiple LED indicators, you could have low voltage and not be aware of it. Low transmitter voltage will decrease the range of the radio and increase the chances of a glitch resulting from a poor signal. AM radios are more susceptible to this since they rely on the amplitude of the wave, and less voltage means less amplitude. On the car side, remember that receiver batteries should always be kept at their best. If you're still using alkaline cells, ditch them right away for a good receiver pack. It will give you more runtime, quicker responses and less of a chance that a low battery will create problems.



CLEANLINESS

Your mom told you to always to wear clean underwear in case you were in an accident, right? Well, she should have also told you to make sure there's not any dirt in the receiver or ESC in your car since there are minerals in sand that can conduct electricity and cause all sorts of problems. You should take the receiver and ESC out of the car on a regular basis and disassemble them to get all the dust out. To help keep more dirt from entering the receiver you can plug the extra lead wire spots with tape and use a rubber O-ring around the crystal.



BROKEN ANTENNA

Walk over to your AM/FM radio and rip the antenna off—I bet the reception is gone, and the same is true for your RC radio system. If the antenna in the transmitter is loose or broken it won't supply a good signal, and if the antenna wire on the receiver is broken or cut it could be causing very poor reception. Either way, make sure both antennas are in perfect condition.

**SHORT CIRCUITS**

Graphite is very stiff but it also conducts electricity, and if a battery was to short out it would certainly cause radio problems. With any kit that uses graphite in its molded plastic, or sheet carbon fiber for the chassis, it is very important to insulate the batteries from the chassis. Most kits that use sheets of CF recommend sealing all the edges with CA glue (1). Not only does this prevent it from splitting in a crash, it also insulates the chassis from the battery. If you are using side-by-side battery packs you want to make sure that there is enough CA glue to completely insulate the cells, or add some silicone to the edges (2). A molded chassis can be insulated using electrical tape, or by using the included insulation if it comes with some (3).

**CRYSTALS**

We rarely think they can go bad, but crystals can indeed break and cause glitching. To protect your crystals, always tape them into the receiver to

make sure they won't fall out during a run. If

you've taken the crystals out of your receiver

and radio, make sure that the TX crystal is in the transmitter and the RX crystal is in the receiver (4). Mixing them up will cause lots of problems! Also, if you're having issues on a particular channel and there is somebody else just a single channel away, sometimes it's best to space yourselves

out further. I've seen lots of problems with ten drivers on the stand and somebody running on an

odd channel like 71, while someone else is on channel 72. When in doubt, change your frequency.

**ELECTRIC MOTOR ISSUES**

An electric motor can cause all sorts of problems, and is often the source of radio interference in electric vehicles. There are a few special things you can do to make sure it's not the motor controlling, or rather out-of-controlling your car.

WORN COPPER • Commutator wear is just the nature of the beast, and as the comm wears down it will produce more arcing, which can cause radio glitches if it's not taken care of. While we often preach about how cutting the comm will extend motor life, it also reduces the chances of glitching caused by motor noise.



BRUSHES • Like the commutator, the worse shape the brushes are in, the greater the chance they can cause radio issues. Keep the brushes in good condition by routinely cleaning them and checking to make sure they aren't burnt or too short. They should slide in and out of the brush hoods freely, and if they don't, you may want to find a brush hood alignment tool to get the hoods lined up so the brushes don't hang up.



CAPACITORS/DIODES • Although they are designed to reduce interference, capacitors or diodes that aren't working properly will cause more problems than we can imagine. Many of the new motors on the market include an LED to let you know that the

capacitors are operating correctly, but most of the time we just assume that they are working. If nothing else is solving your glitch issues, it doesn't hurt to swap them out. Making sure that the capacitors are properly soldered to the can and brush hood is another way to reduce the chance that they are causing problems.



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GOT

CHEAPER!

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and Coated
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X35

TUNE UP THE RADIO

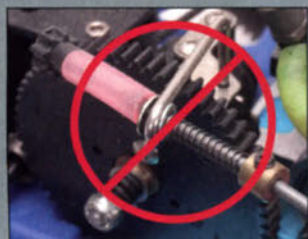
There's always a chance that your radio will get slightly out of tune over time. Most manufacturers offer a "tune up" service to verify that your transmitter is operating correctly within its specs. If they do, pack that baby up and take advantage of the service. If your radio is slightly out of tune, you could end up with glitching issues and even create interference problems for other drivers. Don't be that guy!

**THE FUTURE?**

Most of the issues I've addressed here arise from interference created by the vehicle itself and are not problems with the actual signal. Last month we reviewed the new Spektrum DSM and we are super excited about everything that the technology has to offer. If you missed it, one of the big advantages of the system is that it operates on such a high frequency that all the noise generated from the model cannot interfere with the operation of the radio. This will effectively eliminate glitching forever!

**BAD LAYOUT**

There are times when everything seems right but you just can't ditch a glitch. The motor is clean and noise free, the chassis is insulated, and yet the problems persist. In those cases, sometimes moving the electronics around in the chassis might be all you need to do. Try standing the receiver on its side instead of laying it flat, or swap the position of the ESC (1 & 2). Routing wires over electronics can also cause problems, so you may want to take a look at your wiring as well. For the most part, try to avoid crossing the high-current battery wires with the plug wires.

**BUCKET OF BOLTS**

In nitro vehicles, the vibration from the engine can loosen nuts and generate additional radio noise that can send you off the track. Make sure that you use thread lock to keep metal-to-metal connections from loosening and vibrating.

Any time that a metal object is vibrating against another metal object, they can get excited and lead to radio problems. Insulate those areas and make sure things are tight; for example, try using plastic washers on throttle linkages instead of metal.

LATER GLI-OTCH!

They are certainly annoying, and since there is no magical can of Glitch Be Gone you have to make sure that you take every possible precaution to never catch the glitch. We've seen racers throw their radios across the track after dealing with glitches, but if you sit down and follow these suggestions you should never have to deal with them again. ♦



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SV2



FORMULA
PRO-BUSHING

The Pro Bushing version is equipped with low profile bushings and fixed timing endbell for ease of operation

Part #	Wind	Max Power	Max RPM
ORI21035	10x2	191 Watts	42,000
ORI21036	11x2	186 Watts	39,500
ORI21037	12x2	181 Watts	38,000
ORI21038	13x2	175 Watts	35,750
ORI21039	14x2	169 Watts	33,250
ORI21040	15x2	164 Watts	31,000
ORI21041	17x2	154 Watts	28,500
ORI21042	19x2	147 Watts	27,000
ORI21043	21x2	138 Watts	25,250
ORI21044	23x2	133 Watts	24,000

@ 7.2 volts



FORMULA
PRO-BEARING

The Pro Ball Bearing version is equipped with dual ball bearings and a removable endbell with adjustable timing.

Part #	Wind	Max Power	Max RPM
ORI22031	10x1	209 Watts	44,250
ORI22032	10x2	204 Watts	44,750
ORI22033	11x2	201 Watts	39,750
ORI22034	12x1	197 Watts	38,500
ORI22035	12x2	192 Watts	39,000
ORI22036	13x3	186 Watts	37,000
ORI22037	14x2	182 Watts	34,500
ORI22038	15x2	178 Watts	31,750
ORI22039	17x2	169 Watts	29,500
ORI22040	19x2	160 Watts	28,000

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TRINITY COBALT

ELECTRIC MODIFIED MOTOR

Words: Derek Buono



Trinity is usually at the forefront of motor technology. While most companies are searching for a round brush, Trinity set out to prove that it's not the shape or angle of the brushes that matter, but the overall package. The last Trinity motor was the final entry in the long-standing D-series nomenclature. Instead, Trinity has named its new motor the Cobalt, and with the new name, Trinity hopes to prove that it can compete with the best brushed motors out there. And if our initial impressions are correct, it will.

New Features

The Cobalt does owe a lot of its technology to the D6 motor. It still has Trinity's Flatwire technology, and basically the same can design, though in a brilliant blue finish. Those similarities aside, the Cobalt has a list of innovations that should make it the best Trinity motor ever.

Brushes in the Hood

The brush hoods received some serious attention. The Cobalt hoods are now keyed into the end bell so that there is less of a chance that they will become out of alignment. Keen eyes will also note that the brush hoods actually sit lower in the end bell than before. Trinity explained that sometimes when the armature was centered in the magnetic field, the P-94 brush would actually hang off of the top of the commutator, so with the brush sitting lower this problem is eliminated.

No Brush Wiggle

The Cobalt has brush hoods that extend almost to the commutator. This is to keep the brushes from wiggling inside of the hoods. The previous design held the brush too far out and could cause some brush wander that could result in harmful arcing and actually change the timing of the motor. With the combination of the new keyed and lowered design, and the hoods extending almost to the comm, the result is

brushes that stay nearly perfectly aligned all the time.

Cooler is Faster

One of the issues addressed with the new end bell design is airflow. The Cobalt has two huge heat sinks to draw heat away from the motor. To make sure plenty of fresh air is entering the motor, two huge slots have been milled into the heat sinks and end bell to allow the rapid exchange of cool air and hot power-robbing air. If that's not enough, the heat sinks are also designed to accept an optional motor fan that will force-feed the motor fresh air under high-current conditions.

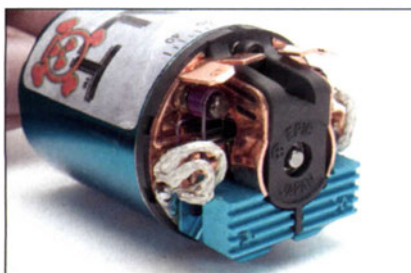
Brushes that Last?

What is probably one of the best new features has nothing to do with the actual motor itself, and a lot more to do with the brushes. The Cobalt comes with a set of Trinity's new XXX brushes that are designed to last up to 20 runs without suffering any performance losses. They claim you can get 5-10 runs without truing the motor's commutator with little-to-no performance

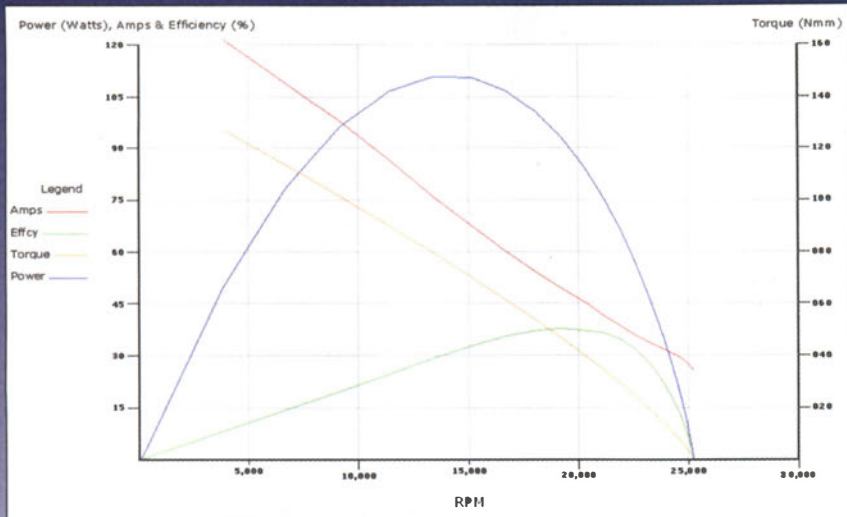
difference. That's pretty impressive, and is just what modified brush motor technology needed.

Trimming Up

The instructions include lots of tuning tips and information about the brushes. Trinity is the first to include information about cutting the commutator and the effects it will have on the motor's timing. They explain in the *instructions* that for every 0.001 in. removed from the comm via truing, that you must remove 0.0006 in. of the brush width. For those who aren't familiar with making that small of a cut in anything, you may want to wait a few cuts, since if you could freehand that small of a cut it would be amazing. Also, it's important not to start whittling Pinocchio out of the brushes. You should only narrow the beginning of the brush and not the entire brush to prevent the brush from **becoming** too narrow and wiggling in the hood. Our suggestion is take the edges off the brush at about a 45-degree angle to remove the same amount.



Is this what those Chevy commercials are for?



Motor:	Trinity Cobalt
Wind:	12-single
Armature design:	4mm blank (9-turn and below: 5.5mm)
Comm diameter:	0.302 in. (7.7mm)
Motor Timing:	15°
Brushes:	TRI13504
Springs:	Trinity Purple

Max RPM:	25,123 @ 2.9sec
Max Power:	110.76 W @ 13,295 rpm
Max Torque:	126.99 Nmm
Max Efficiency:	32.7% @ 19,138 rpm
Power Factors	
Low, Mid, High:	52.6, 98.6, 106.7

Dyno Testing

We threw the Cobalt on the dyno after a short 30 seconds of break-in as recommended by Trinity. I always make several pulls to get a consistent graph, so after each run the motor was allowed to stand and cool off until it reach the ambient temperature before the process was repeated. While we love to look at graphs, they are only a representation of the motor's performance and the true testing of the Cobalt will be on the track.

Track Testing

The more I stare and try to compare motors on the dyno, the more I itch to just get on the track with it. I strapped the Cobalt into my Losi XXXT MF2 that I've been running over the past few months at Titus Raceway. I've run several other motors in the car and have a good idea about what kind of power they produce and how many runs I get before I need to pay some attention to the motor. My plan was to run the motor as I normally would and cut the comm every 5 runs as Trinity recommended.

I drove two practice runs before qualifying and got a feel for the motor and what it could do. I haven't

actually run a 12-turn in a long time so I took some time to get used to the power band, which was a little tamer than the 10-turns I've been running lately. After the first qualifier I took the motor out to inspect the brushes and found them to be in perfect condition. Since the motor was out of the car, I inspected the commutator and found that it needed to be cut, so I skimmed the surface and put the motor back together. Power was excellent, with the power coming on very strong in the mid-to-high RPM range. I liked the blue LED being visible on the endbell, it looks cool and can distract the other drivers! I kept an eye on the motor temperatures and they didn't seem abnormal at all. After the night was over, I took out the brushes and they were still the same shade of silver with no signs of being overheated whatsoever.



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Jessica Simpson

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- Huge heat sinks and free-flowing end bell design
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- Cool wooden storage box

MISSES

- Blue color scratches off easily

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 PHONE: 732.635.1600
 PART NUMBER: TRI10071
 STREET PRICE: \$75

Conclusion

The Cobalt represents Trinity's best electric motor to date. While the motor is really similar to the D6 in many ways, its list of improvements separates it from the pack. The brushes are probably the biggest news in the motor, since they actually last more than a run or two and provide good power throughout the life of the brush, and not just for the first couple of runs. Trinity seems to be back on top of the motor game and the Cobalt should be finding its way to the winner's circle on a regular basis. ⚙️



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CAN I GET SOME POWER?

SQUEEZING THE JUICE OUT OF YOUR NITRO ENGINE

Words: Derek Buono

Our nitro engines put out a fixed amount of horsepower, all of which can be lost in seconds. There are tons of tuning combinations, and plenty of them can make the most powerful engine a dog and a dog of an engine into a hero. Extracting that power can certainly be confusing, but there are some very simple things you can do to “free up” the horsepower that is robbed in the process of putting it where it counts—the ground. We sat around for about 15 seconds and thought up some common ways to squeeze the most power out of your engine.

There is no knowledge that is not power.



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Xtreme RC Cars
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• Motor Spray

TIP

1

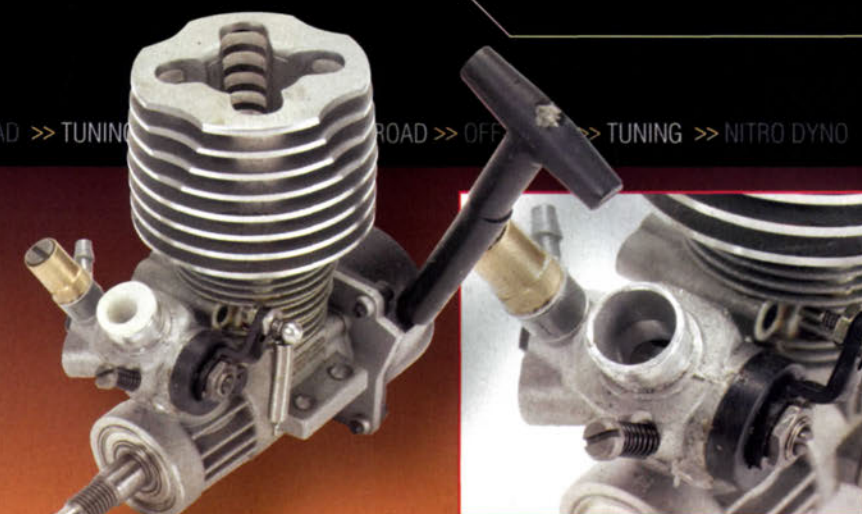
Clean air filter

You only need a few simple things to make an engine run. Air and fuel are two of the most important, and the ratio of one to the other is critical. Too much air and your engine is too lean; not enough, and it's too rich. If your engine is running in either condition, it won't be producing the most power no matter what else you do. When looking at the engine, airflow is controlled not only by the position of the carb, but also by how air flows through the filter, and this is just as important as the engine's needle settings. As time goes on, an air filter collects dirt and grime that restrict the airflow into the carburetor and affect the engine's tune. Thankfully, this reduces the amount of air and technically richens the mixture, but this richening can reduce the power of the engine. By routinely cleaning the air filter you can be sure that you are squeezing as much power out of the engine as the available air can provide.

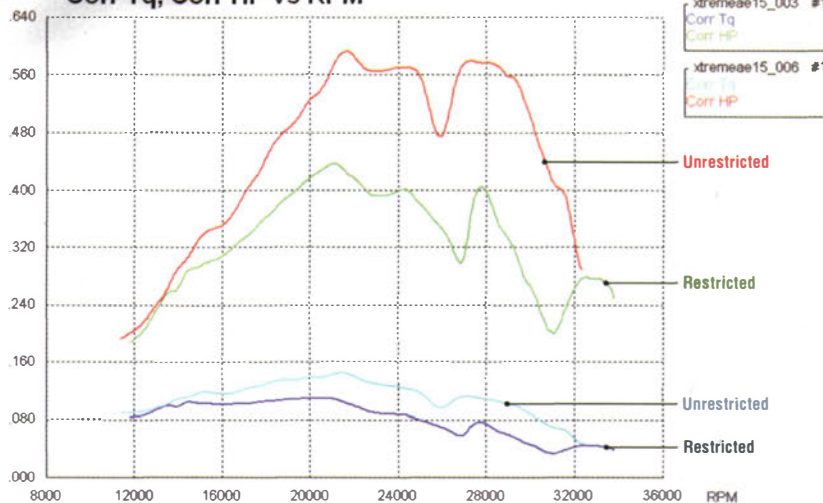


TIP Remove Restrictors

2 In some ready-to-run kit engines, and even in some race engines, changing or removing the carburetor restrictor can result in dramatic power gains. Removing the restrictor allows more air and fuel to enter the carb and in turn the engine can produce more power per stroke. Restrictors are used to reduce power and to make an engine produce more useable power in low traction conditions, usually making it easier to drive for newbies. If your engine is using a plastic restrictor and it isn't designed to be interchangeable, removing it will almost certainly make a huge difference. A good example would be an Associated .15 engine. The stock restrictor really limits the barrel diameter, so removing it opens up the flow significantly. Our dyno showed a very modest increase in the engine's power from just taking it out. If you do remove or change a restrictor, remember to re-tune the engine afterwards. Having the wrong mixture setting can ruin your engine quickly.

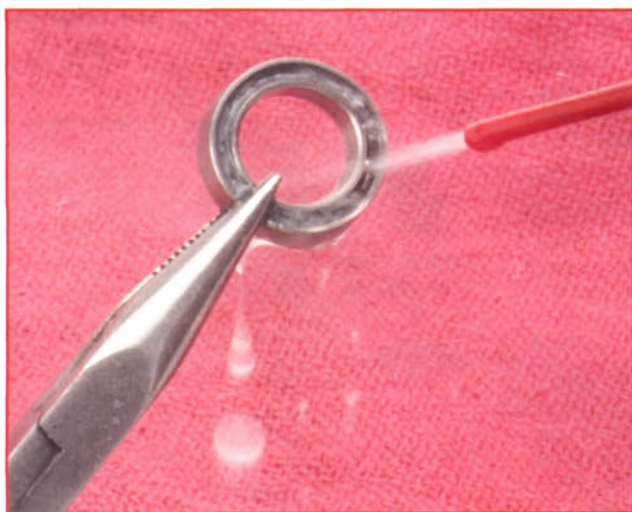


Corr Tq, Corr HP vs RPM



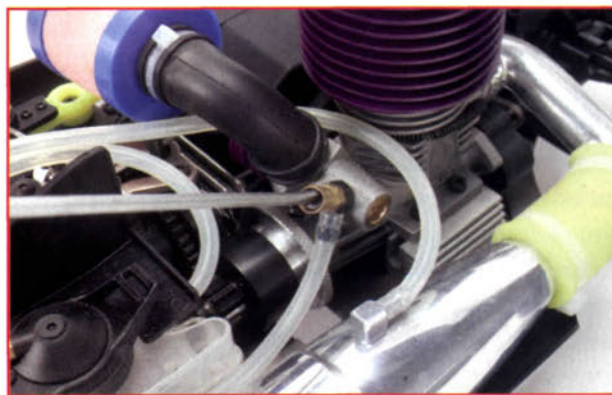
TIP Blow Out Bearings

3 Any resistance will reduce power and bearings will actually steal power from the car. Blowing out the bearings original grease will free up power and make you faster out of the hole. It is important that when you do this that you oil the bearing and maintain them on a more frequent schedule.



TIP Tuning

4 Tuning is probably the biggest factor in engine performance. Running an engine too rich will impede its performance across the board. It won't harm the engine too much, but it will certainly reduce power. Having the engine too lean will also result in a reduction in power. While it may be masked by slightly better low-end performance, once the engine is screaming while running too lean it will have its power reduced by as much as 25%. Get a feel for tuning and you'll unlock your engine's maximum power.



TIP**5****Increase Nitro**

A quick "pick me up" is to increase the nitro content in your fuel. If you're running 10%, slap yourself and then go buy some 20%. You'll notice performance gains across the board, and it really won't have any ill effects on the engine. If you're already running 20%, stepping up to a higher percentage will also generate more power. Just remember that you'll have to re-tune the engine when you change fuels, and the general

rule is that if you go up in nitro it's more than likely that you'll have to richen the mixture slightly. We don't recommend running higher than 33% nitro in small blocks or 40% nitro in big blocks, even though some of the factory guys may run higher percentages.

**TIP****6****Reduce Oil Content to No Less Than 8%**

Reducing the oil content in your fuel is another easy way to make power. While the oil in fuel provides the soothing and friction-reducing

lubrication that an engine needs, it does replace other substances that produce power. So if there's more oil, there's less alcohol to burn. Fuel with a lower oil content will burn cleaner and produce more power. This one is tough, though, because a lower oil content makes engines a little more difficult to tune thanks to their increased sensitivity and will increase wear and tear.



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TIP

7

Remove and Reduce Rotating Mass

Rotating parts take energy that is roughly equivalent to four times their mass to move, so any time that you reduce a mass that has to spin (unsprung weight) it will free up horsepower. Most flywheels are made of steel, so changing to an aluminum or any lighter flywheel will make the car accelerate harder. The one downside to a lighter flywheel is that it makes the idle more inconsistent. With a lighter flywheel, you may want to increase the idle speed a bit to help keep the engine from shutting off at idle.



TIP

8

Run the Right Plug

There are so many different engine tuning options that it can all become very confusing, and choosing a plug can increase that confusion exponentially. Not only are there about 123 different plug choices, there is no real standard, so one company's cold plug could be another company's hot plug. Stick with one brand and you'll be fine. When you increase the nitro content in your fuel, you may want to go down one temperature of plug to gain some extra power.



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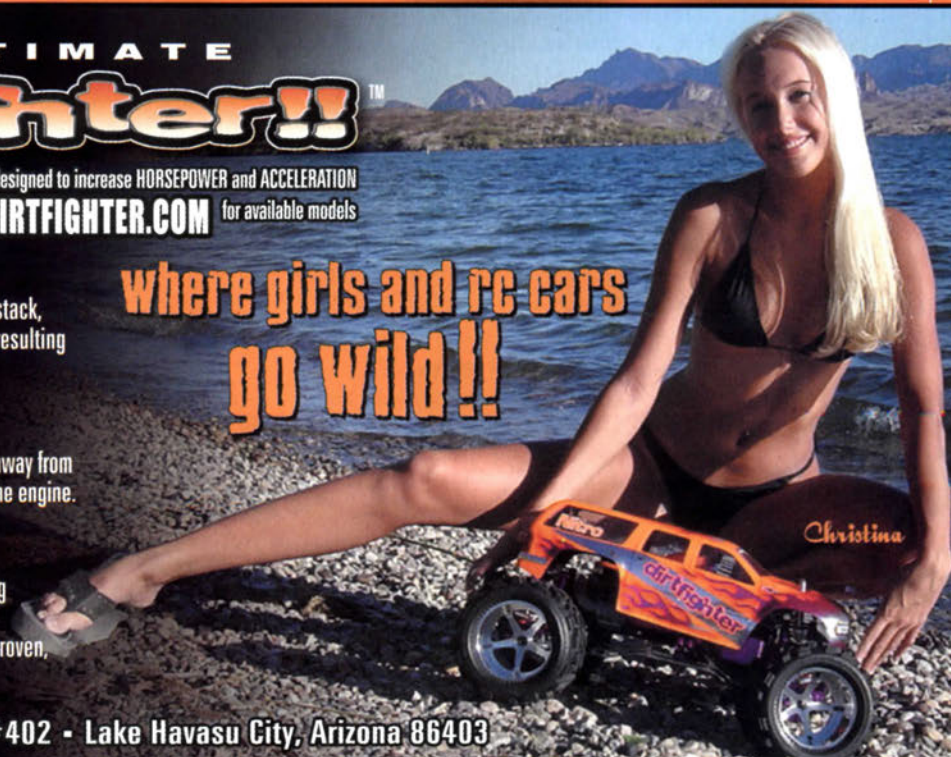
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TIP

9

Port Exhaust Header

Without going into detail on porting an engine, making sure that the engine's exhaust port gives gasses a smooth shot out of the engine and down the manifold can free up more power. This isn't as much of an issue on most rear exhaust engines, but on side-exhaust engines and with cheaper manifolds, taking a rotary tool to the manifold and matching up the ports will help.

**TIP**

10

Tuned Pipe

A tuned pipe is like a turbo charger for your car, as they are responsible for most of the power production of an engine. If your

kit came with a non-tuned plastic pipe or a baffle-type pipe, replacing it with a tuned pipe will make a pretty dramatic difference. Depending on the pipe design, it could also increase the torque or RPM of the engine.

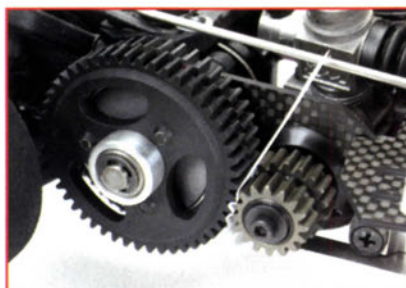
**TIP**

11

Gear Mesh

We all know that a crappy gear mesh can lead to problems. If it's too loose you can strip a gear, and if it's too tight it will bind

everything up. As it turns out, we were doing some dyno testing on an engine and the gear mesh shifted and became pretty tight. It wasn't binding, but there wasn't any play either. Once the gear mesh was fixed and the engine was retested, it gained a huge amount of horsepower. It was a pretty dramatic example of why gear mesh is very important on any part of a car. Check your gear mesh, and see what kind of power gain you can get just from freeing it up.

**TIP**

13

Remove Baffle

Lots of ready-to-run kits include plastic tuned pipes that have a baffle installed in the

pipe to lower the noise emitted by the engine. This restricts the air flow and charge in the pipe, reducing power in the process. Remember that removing the baffle will alter the air-to-fuel ratio and you'll have to re-tune the engine to get it running correctly.

**TIP**

12

Remove Head Shim

Most of today's engines come with head shims pre-installed to decrease engine compression. There is a safety factor built in that allows you to safely remove a shim to increase the compression and create more power as long as it's not the only shim. You must always have at least one to act as a gasket between the block and head. However, there is a catch: If you increase the compression too much, you can initiate engine-destroying detonation. For the most part, if you're running lower nitro percentages like 10-20%, you can remove a shim without worries.

**Power Up!**

You don't always have to buy an expensive new hand-modified engine to go faster. Most of us are very lazy and don't always do the simple things that it takes to maximize our engines' available power. By doing some of the things listed here, you'll be utilizing your engine at its fullest potential. ⚙️



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Rear Rocker Arms (90T)
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(Pair)
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Rear Upper Arms
(Pair—Blue or Silver)
6061-T6 Alum



Rear Lower Arms
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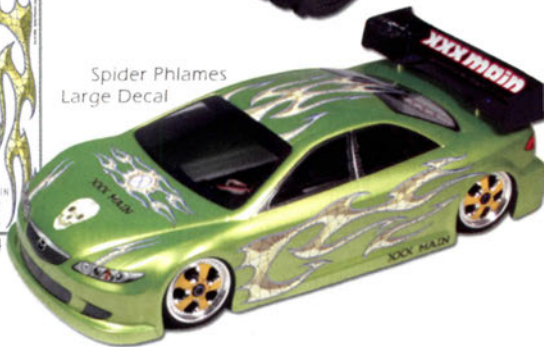
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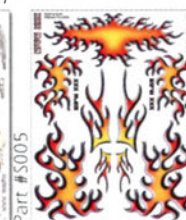
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Part #S005



Part #S006



Part #S007



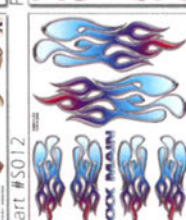
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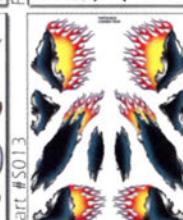
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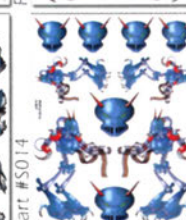
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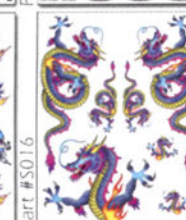
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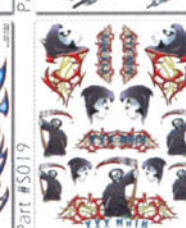
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BE A FLAMER!

PAINT CUSTOM FLAMES THE EASY WAY

Words: Dave Palacios

Flames have undoubtedly been one of the most popular custom paint schemes over the past few decades. They can make almost any vehicle look cool and seem faster than it probably is. In this month's Custom Works we're going to go through all the different styles of flames and the basics of painting them on your RC body. As usual, the information here is just to get you started. For more complex designs, it might be necessary to experiment and practice for awhile with the basics. Through experimentation and practice, the possibilities will be endless.

Dave doesn't brush his teeth very often.

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THE TOOLS

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- Masking Tape or Liquid Mask
- Hobby Knife
- Sharpie
- Paint for Polycarbonate (Lexan) Bodies

FLAME STYLES

Look through any radio control, chopper, hot rod, street truck or 4X4 magazine and you'll see a wide variety of flames. Each flame can be put into one of four categories: Tribal, Hot Rod, Classic and Classic-Hot Rod. Before you begin painting a flame job, you need to decide what type of flames you want to paint. Each type of flame starts with the same basic look, but features its own special characteristics.

Tribal

A very popular flame style, Tribal flames have an aggressive look with many variations. The basic Tribal flame is sleek with long, curvy licks. The main characteristic of Tribal flames is that the barbs give the flames a blade-like look. A variation on the Tribal flame is what I call a Wicked Tribal flame. These flames have smaller barbs that protrude from the pin-striping that borders the flames. Tribal flames can also follow the flow pattern of Hot Rod, Classic and Classic-Hot Rod flames. This allows Tribal flames to have a wide variety of sub-styles such as Tribal Hot Rod or Tribal Classic.



Here's an example of some wicked tribal flames.

>> BLING, BLING >> CHOP SHOP >> PERSONALITY

Classic

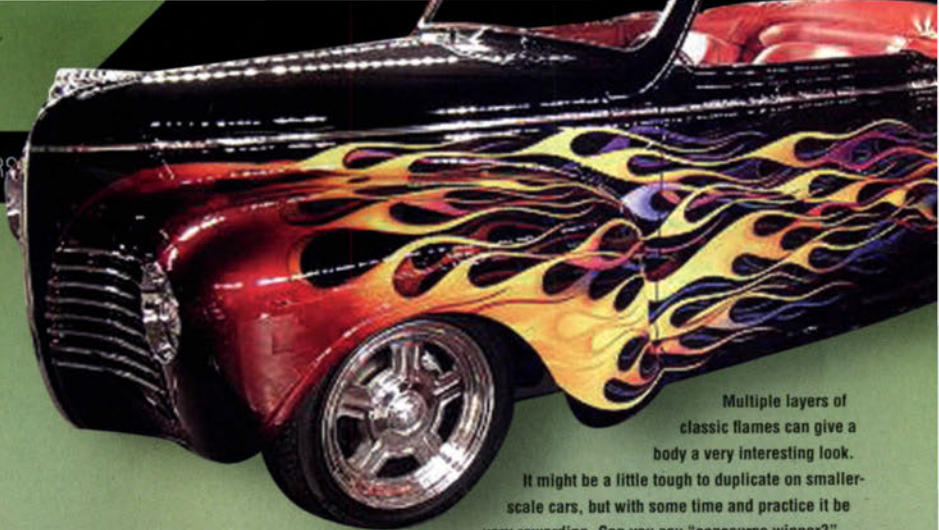
Lately, Classic flames seem to be the most popular. Classic flames are more uniform with long, thin licks that often fork off of each other. A variation of the Classic flame has overlapping licks that intertwine with drop shadows to give them a bit more depth. These characteristics are what make Classic flames so appealing.

Hot Rod

This is your typical flame style. It's simple, but still looks good on any type of body. The licks of the flames are thicker, fairly short and random with very little forking.

Classic-Hot Rod

Classic-Hot Rod flames have some characteristics of both the Hot Rod and Classic styles. This combination gives the flames a whole new look, putting them in a category of their own. Classic-Hot Rod flames tend to have longer, narrower licks that don't fork off of each other, but they do have many dual licks.



Multiple layers of classic flames can give a body a very interesting look.

It might be a little tough to duplicate on smaller-scale cars, but with some time and practice it be very rewarding. Can you say "concourse winner?"



The loud paint scheme on this Corvette is a good example of Hot Rod-style flames. The colors and style aren't exactly the best choices, but you get the idea...right?



These silver-on-black Classic-Hot Rod flames are an excellent example of what the style looks like. Racing helmets can be a good source of flame styles and colors.

MASKING

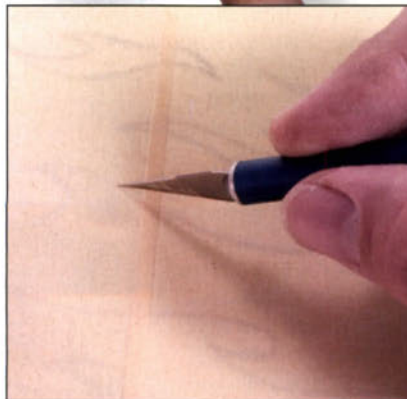
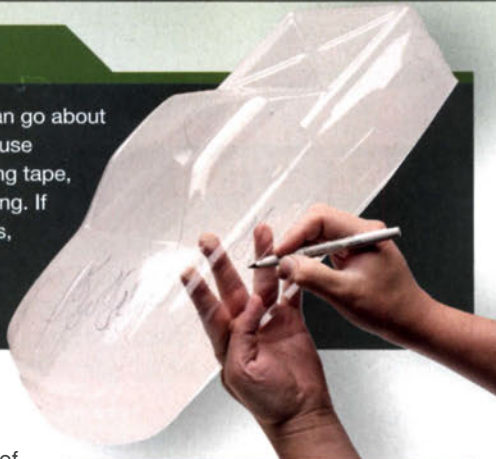
There are a few different ways you can go about masking your flames. You can either use masking tape, liquid mask, pin-stripping tape, or even purchase pre-cut vinyl masking. If you decide to create your own flames, you'll need to start by drawing your flame pattern on the outside of the body with a Sharpie marker.

Masking Tape

When using masking tape, you'll need to do it in one of two ways. First, you can lay the tape on a pane of glass, draw your flames, then cut them out and transfer them to the inside of your body. Alternately, you can cover the inside of the body where the flames are going to be and then follow your drawing on the outside to cut the tape on the inside.

Liquid Mask

Using liquid mask will take more time, but will usually yield better results. It is less likely that the paint will bleed, and you can probably achieve greater detail. Follow the instructions on the liquid mask to apply it, then begin cutting your flames on the inside of the body using your drawing on the outside of body.



When you cut out your own flame mask, it might be easier to trace your lines if you backlight the body a little bit. You'll be able to see the lines and be a lot more accurate.

TWIN BLADES

If you plan on outlining your flames with a color and don't want to use the pin stripe method, you can actually create a tool to help make things easier.

STEP 1: Get yourself a Popsicle and eat it. Then make sure it's clean since this will be your blade handle.

STEP 2: Take two new hobby knife blades and place one on each side of the Popsicle stick. Make sure the ends are even and secure them in place with some masking tape.



With one blade on each side of the Popsicle stick, you'll be able to cut a 1/8-inch stripe at the same time

you cut out your flames. The trick is to keep both blades in contact with the tape to ensure that both sides are cut. For thinner stripes, place two blades directly side-by-side and secure a Popsicle stick on each side of the blades to create your handle.

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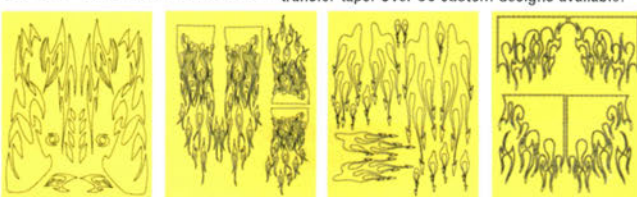
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Dave's Painting Tip!

When you trim the fill mask, you only want to apply enough pressure to cut through one layer of tape and not the pin striping.

**Pin Stripe Tape**

This is the way full-scale automotive painters do their flames. On smaller-scale RC vehicles, this method might not be the best choice, but on larger-scale bodies such as 1/8-scale, and on up to 1/4-scale, this method has the potential to give you the best results, especially if a pin stripe around the flames is desired.

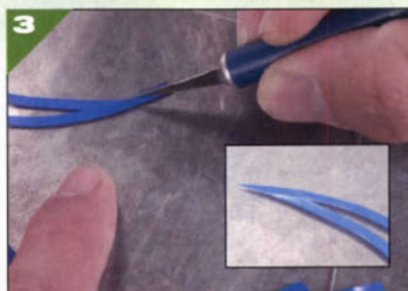
With your desired flame pattern drawn on the outside of the body, hold a roll of pin stripe tape in your hand, and use your index finger to press down and guide the tape along your lines. Start from one point of a flame lick, making sure to leave enough room to overlap the strips. Move along your line in one strip until you get to a point on the next flame lick. Continue doing this while overlapping the pin stripes at each point of the flame licks. Once your flames are all outlined with tape, go back with a hobby knife and cut the overlaps into points. Now you can fill in the flames with masking tape and trim it down the center of the pin stripes.



Use your index finger to guide the pin stripe tape around the curves of your flames.



When you come to the tips of the flames, make sure you overlap them enough for trimming.



Trim the overlapping tips to create a point. If you want, you can use this pin stripe as a mask to create outlines for the flames.



Trim the fill mask using a hobby knife down the center of the pin stripe and peel away the excess tape.

Go from plain to flame!



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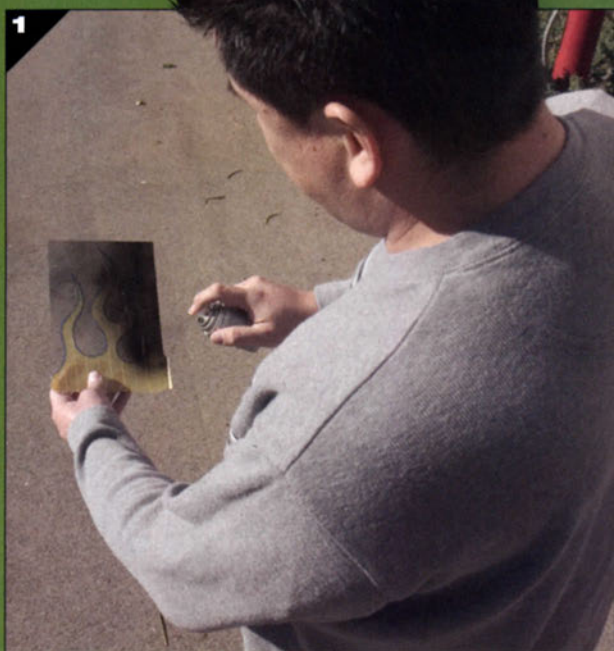
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PAINTING

STEP 1: Now that you're ready to paint, begin by painting a drop shadow around the flames if your design requires it. If not, then you can go ahead and paint the main color or colors that your design will use. We're going for the traditional look, so our main color is going to be black.

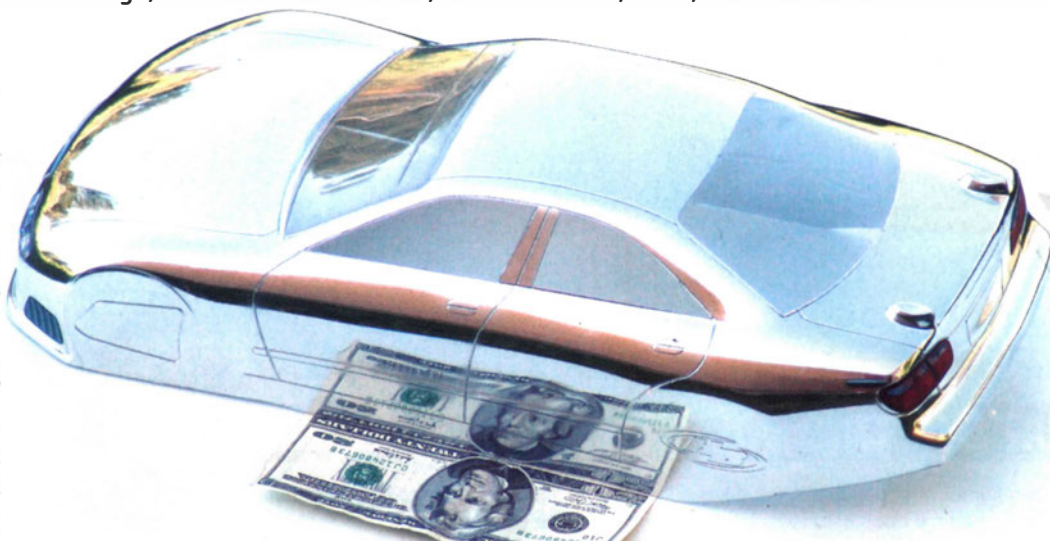
STEP 2: Allow the main color to dry completely and then carefully peel away the masking tape for your flames. If you have pin stripe masking and are going to outline your flames, be careful not to peel it up. If it does come up press it back down with your finger and make sure the seam is tight.



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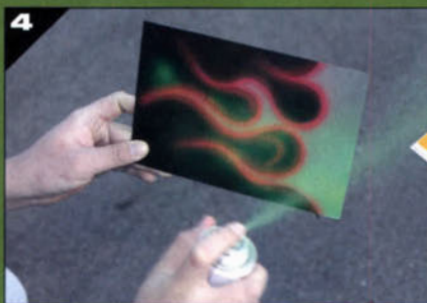
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STEP 3: To create the flames themselves, begin by painting the color that is going to go on the edges or tips first. Personally, I like to use bright colors when painting flames, so on our car I'm going to use Pactra Fluorescent Red. Start your spray outside the flame area and carefully follow the flame edge, aiming just outside to allow only the overspray to hit the flame area. Try to keep the airbrush moving at a moderate pace, but keep it smooth and consistent. Don't stop the paint flow anywhere along the edge without moving the spray outside of the flame area first. Remember that you want a faded edge and not a hard line, so keep the airbrush about three inches away from the painting surface.



STEP 4: After you've painted the edges, it's time to paint the filler color (or colors). On our body that means laying down the yellow, or in my case, fluorescent yellow. Once your filler color is dry, back it with white to brighten things up.



STEP 5: If you have a pin stripe that's going to go along the edge of your flames, now's the time to peel off the mask. Using either a hobby knife or pair of tweezers, carefully peel the masking off.



STEP 6: Lastly, all you need to do is spray your pin stripe color. Again, with our traditional flame colors, we'll be painting the striping Tamiya Light Blue, then back the whole thing with white.



THAT'S HOT!

Painting flames isn't difficult, it just takes a little practice and patience to get it looking right. Of course, it does help to have a few good tips from your friends here at Xtreme! If you don't plan on using pre-cut paint masks for your flames, it helps to do a little research on the web to see what styles and color combinations others are using. It also helps to practice drawing your flames on a flat piece of paper before attempting to draw them on the complex surface of a Lexan body. The main thing is to practice and be patient, since that's what painting a body is all about. Good luck, and as always, send us a photo if it turns out well and maybe we'll put it in Racers' Rides. Flame on! 🔥

PAINT MASKS

If you decide against cutting your own flames, there are plenty of alternatives on the market. Many companies offer a variety of styles that will make your RC body look killer.



xxxmain

With 18 different masks ranging from standard flames to flaming skulls, xxxmain may offer the largest selection of flame paint masks on the market.

www.xxxmain.com

Parma

Although they offer fewer choices, Parma also has a selection of flame paint masks. They feature styles such as Flame Stripes, Big Flames and Phat Nasty Flames.

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MDI Racing

MDI Racing is another brand to look for when it comes to flame masks, as they offer a few more styles as well.

www.mdiracing.com

There may be a few other smaller companies that make flame paint masks, so you'll have to ask around. But between the three that we've listed here, you shouldn't have a problem finding something that will suit your needs.

FASTER

by 22 laps

>>over the second
place truck. Yeah,
it's that good!



MAMMOTH

First Place Winner!

*Congratulations Jeff Guest
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Hot Bodies

HOT55005 Lightning 1/8 Stadium PRO
We have tested and raced this monster truck, and they are absolutely unbelievable! They are fast, handle awesome, and built to win. If you've been waiting for a winning racing truck, the wait is over. **Factory assembled Ready to Run with radio and high torque steering servo.**

- .26 Power Factory Engine, with jump start
- Long Wheelbase Main Chassis
- Aluminum, Long Suspension Arms
- Front CVA Joints
- Full Rubber Sealed Bearings
- F/R Sway Bars
- Fits T-maxx wheels

\$589⁹⁵



HP10832 Savage .25
Factory assembled Ready to Run with radio Nitro Star S-25 engine (ABC) with slide carburetor Full-time shaft driven four wheel drive Roto Start System installed!
New rear pick-up 160cc fuel tank with no primer Complete set of rubber sealed ball bearings Hardened metal differential gears Adjustable 2 speed trans w/H.D. metal internal gears Adjustable slipper clutch and Adjustable disc brake

\$424⁹⁵



HP10845 Savage SS
Kit only, unassembled requires radio gear Nitro Star S-25 engine (ABC) with slide carburetor Purple anodized, billet aluminum engine head Full-time shaft driven four wheel drive Complete set of rubber sealed ball bearings High performance aluminum ribbed tuned pipe Heavy-duty drivetrain and suspension Hardened metal differential gears Heavy-duty chromed steel dogbones Adjustable 2 speed trans w/H.D. metal internal gears Adjustable slipper clutch and Adjustable disc brake

\$339⁹⁵

SAVAGE SS

Associated RC18T Trinity Spyder 1/18



Length: 214mm
Width: 182mm
Wheelbase: 154mm
Team Associated introduces their RC18T 1/18th 4-wheel drive racer. RTR with radio system, battery and charger. This thing is sweet! Good news, Mini-T Rms fit it.
ASC20100 RC18T Ready to Run Truck \$179.95

Team Losi Mini-T



The Team Losi Mini-T comes assembled and painted, complete with radio system, Ready to Run.

\$149⁹⁵

LOS0200 Losi 1/18th scale.....



Width: 7.1", 180mm
Height: 3.5", 89mm
Length: 9", 220mm
Wheelbase: 5.75", 146mm

4wd 1/18th scale w/shaft drive, RTR racing truck, factory assembled for the beginner racer. The only additional thing you need to buy is 12 "AA" alkaline batteries. Price on these and what you get makes for a pretty impressive truck. Don't wait, they're gonna sell fast!
TRI90006 Spyder 1/18 scale truck.....

\$129⁹⁵



PEK4052 5-cell "Boost" Mini-T battery pack \$24.95



ORN13012 5cell pack, 1200mAh, 6.0 volt \$24.95
ORN13022 6cell pack, 1200mAh, 7.2 volt 29.95

The 5 cell, 6.0volt Peak Racing "Boost" battery pack is what you need for those tighter in-door tracks. Good power, direct fit in the Mini-T.

What you need for Mini-T speed, Team Orion has both a 5-cell and a 6 cell version of their popular "Supercharge" packs. Both are a direct fit in the Mini-T.

LOSI LST



MONSTER TRUCK with .26 ENGINE and 3-channel JR radio installed and ready to RUN!

The shocks on this thing are absolutely HUGE!!!!!!

\$599⁹⁵

TEAM ASSOCIATED MGT



MONSTER GT RTR INCLUDES
Full ball bearings, Heavy-duty high-torque steering servo with metal gears. Four wheel drive with four wheel independent suspension. Over 4 inches of ground clearance. Huge 6.6" diameter all-terrain tires. Pro-21 engine with pulstart or drill start option. High performance tuned racing pipe. Three channel radio fully installed. 22" long bumper to bumper, 17.5" wide with a 14.5" wheelbase weighing in at 12 pounds RTR. **Requires:** Glow-igniter, fuel bottle, fuel, (12) AA batteries.

ASC20500 Associated MGT, Ready to Run **\$469⁹⁵**

T-MAXX 2.5

Ready to run



T-MAXX RTR TRUCK-with painted body and 2.5 Engine. 40+ MPH RIGHT OUT OF THE BOX, 4 WHEEL DRIVE

\$369⁹⁵

TRAXXAS REVO



The Traxxas Revo is an engineering marvel and it's RTR. High performance features include: Variable progressive suspension with inboard shock design (almost 5 inches of individual wheel travel) 4 wheel shaft drive. Electronically controlled reversing transmission with auto shifting 2-speed. TRX 25R Racing engine. Dual high torque steering servos. Integrated 5-cell NiMH receiver battery pack with AC/DC fast peak charger, painted and ready to go with a engine tuning and setup DVD.

TRX5310 Traxxas REVO **\$479⁹⁵**

Mini-T Cool Hop-up's



LOS01110 Mini-T shock set, 2 front, 2 rear \$26.95



LOS01100 Bearing set, Mini-T 8 pieces \$12.95

We recommend these to any Mini-T owner. These are miniature versions of Losi's professional racing shocks. Anodized shock bodies, racing shafts, and rebuildable cartridges. Made by Losi, a complete set of 4 shocks, 2 for the front and 2 for the back, with springs. just add shock oil, oil not included. Any standard RC shock oil will work just fine.

Take out the sloppy plastic bushings and get some ball bearings in those wheels and hubs. Increase speed & runtime



TRI11990 Micro Monster Motor \$27.95



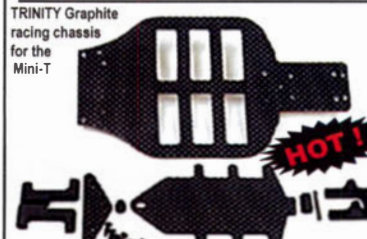
ORN20911 BAJA MINI-T race motor \$34.95



PEK1406 Raider MINI-T race motor \$37.95



FAN34100 Mini-Mod, modified racing motor .. \$37.95



TRI34077 Mini-T graphite chassis conversion \$79.95

Where The World Shops for Radio Control™

3300mAh GP's



NEWEST VERSION" 3300's

For the record, last years 3300's were good, but they don't have the outrageous voltage and runtime of the newer version 3300's from this fall. The numbers are better. The racing season is here. It's time to pick up some fresh packs and hit the track. These newer cells are the hot ticket for stock racing and most of those with the big motors in modified. How many hours a month do you work on your cars and race? Is it really worth it to run on last seasons cells? Give yourself the edge you need.

ORION

ORN11411	GP3300SP2 V-MAX PLUS RDS RACER, 6-cell loose	\$64.95
ORN11412	GP3300SP2 V-MAX PLUS RDS TEAM, 6-cell loose	79.95
ORN11415	GP3300SP2 V-MAX PLUS RDS RACER, 4-cell loose	46.95
ORN11416	GP3300SP2 V-MAX PLUS RDS TEAM, 4-cell loose	59.95

PEAK PERFORMANCE

PEK43111	GP3300SP2 POWERFLO WORLD SPEC, 6-cell loose	\$79.95
PEK43112	GP3300SP2 POWERFLO NATIONAL SPEC, 4-cell loose	47.95
PEK43113	GP3300SP2 POWERFLO WORLD SPEC, 4-cell loose	59.95
PEK43114	GP3300SP2 7.2v 6-cell BATTERY STICK PACK	59.95

TRINITY

TRI20014	GP3300 EVO 3 RACE PACK, 4-cell matched loose	\$49.95
TRI20017	GP3300 EVO 3 RACE PACK, 6-cell matched loose	69.95
TRI20018	GP3300 EVO 3 RACE MATCHED SADDLE PACK, 6-cell	84.95
TRI20019	GP3300 EVO 3 RACE MATCHED SIDE BY SIDE PACK, 6-C	84.95
TRI20020	GP3300 EVO 3 RACE MATCHED STICK PACK, 6-cell	84.95
TRI20021	GP3300 EVO 3 TEAM PACK, 6-cell matched loose	54.95
TRI20024	GP3300 EVO 3 TEAM PACK, 6-cell matched loose	84.95
TRI20025	GP3300 EVO 3 TEAM MATCHED SADDLE PACK, 6-cell	89.95
TRI20026	GP3300 EVO 3 TEAM MATCHED SIDE BY SIDE PACK, 6-C	89.95
TRI20027	GP3300 EVO 3 TEAM MATCHED STICK PACK, 6-cell	89.95
TRI20028	GP3300 EVO 3 SPORT STICK PACK, 6-cell	59.95

3600mAh Sanyos



Were you getting tired of trying to make run time last season? Wouldn't it be great if you had a cell that had a bit more run time? Well you found it Bubby! The new 3600mAh cells from Sanyo offer excellent voltage and killer run time. You don't want to be the last guy to try these at your track. Pick up one or two packs and put back in that motor that used to leave you stranded on the track before the 5 minutes was up.

ORION

ORN11400	SANYO RC3600HV NiMH 6-cell loose, CLUB V-MAX RDS	54.95
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ORN11402	SANYO RC3600HV NiMH 6-cell loose, TEAM V-MAX RDS	74.95
ORN11404	SANYO RC3600HV NiMH 4-cell loose, CLUB V-MAX RDS	39.95
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PEAK PERFORMANCE

PEK43100	SANYO RC3600HV NiMH CLUB SPEC, 6-cell loose	54.95
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TRI20004	SANYO RC3600HV, NiMH TEAM PACK, 6-cell loose	79.95
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Convert your primitive old stock motor into an aluminum endbell high-tech machine! Uses the new Orion round brushes. Complete conversion as shown.



ORN41510	V2 ENDBELL CONVERSION KIT for Epic (Trinity) stocks	39.95
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GS STORM RTR 1/8 racing buggy

This is truly one of the few RTR buggies that's track ready when you get it. Super fast, easy to drive and with a great radio, the JR-XR3. You'll have a lot of fun with this car.



GSC2003	GS Storm RTR, with JR-XR3 radio system	\$479.95
GSC2004	GS Storm, pro graphite (car only), requires assembly	399.95

XRAY XB8 1/8 racing buggy

Right now, this is one of the 1/8 buggies everybody is trying to get. It's loaded, super fast, easy to drive, and well, it's just cool to top it all off. Rolling chassis w/body, requires engine, exhaust, and radio system.



XRA350000	XB8 1/8 OFF-ROAD BUGGY KIT	\$ 649.95
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Fantom .27 '04 Engine



.27 '04 Pullstart ENGINE, Rear Exhaust, slide carb, SG crankshaft and turbo head button, includes glow plug. This is the newest engine from Fantom. Big power for your big truck or buggy. MSRP \$319.99

FAN01041	.27 Nitro engine, pullstart, slide carb	\$199.95
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Orion WASP engines

These high tech Orion WASP engines in a .12 size are turning up to 1.5 HP! Check the list below for more details and drop by our website, type in the part number in our on-line search engine to read even more about your favorite WASP, and don't forget to buy one! They're fast!

ORN80052	.12 Non-pull, turbo style, slide carb (msrp \$299)	169.95
ORN80053	.12 Non-pull OFF-ROAD ENGINE, rotary carb	159.95
ORN80054	.12 Non-pull turbo works, slide carb	199.95
ORN80060	.12 Non-pull, side exhaust, rotary carb	155.95
ORN80061	.12 Pullstart, side exhaust, rotary carb (msrp \$299)	169.95
ORN80200	.18 PRO Non-pull, slide carb (msrp \$154)	79.95
ORN80201	.18 PRO Non-pull, rotary carb	79.95
ORN80211	.18 PRO Pullstart, side exhaust, rotary carb	99.95
ORN80220	.18 T-MAXX Pullstart, slide carb	89.95

HPI Engine sale

Nitro Star engines from HPI. We bought a huge quantity of these great engines and were able to slash the price on these BIG TIME

Now is the time to get a great engine at a great price. There is no back ordering on these, when they're out, that's it, so don't wait, order up a few today!

1605 features a pre-cut crank for the rc10GT. The 1623, 1626 and 1627 all put out over 1hp @ 35,000 rpm.

If you require additional information on an engine, type the part number into the on-line search of our website. www.stormerhobbies.com

HPI1601	.15SS, rotary carb, pullstart for GT MSRP \$169.99	\$79.95
HPI1605	.15, rotary carb, pullstart MSRP \$135.00	59.95
HPI1615	.15FE, rotary carb, pullstart MSRP \$120.00	79.95
HPI1623	.12R SC, slide carb, non-pull MSRP \$209	94.95
HPI1626	.12R SS, rotary carb, non-pull MSRP \$209	99.95
HPI1627	.12R SS, rotary carb, pullstart MSRP \$225.00	144.95

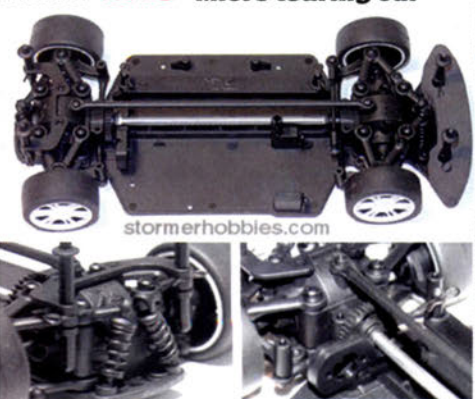
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Atsushi Hara

The AH-12 conversion kit transforms the standard Associated and Yokomo 1/12 cars into the Atsushi Hara car.

HOT90200 AH-12 conversion kit for Associated and Yokomo \$119.95

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This is the Micro you've been waiting for. The M18 has fully independent suspension and 4-wheel drive. Comes with a body. Requires 2ch radio with esc, micro servo, battery, charger. Power package is the motor, battery, esc, servo. XRA380000 M18 micro touring car \$ 96.95 XRA389100 Power package \$109.95

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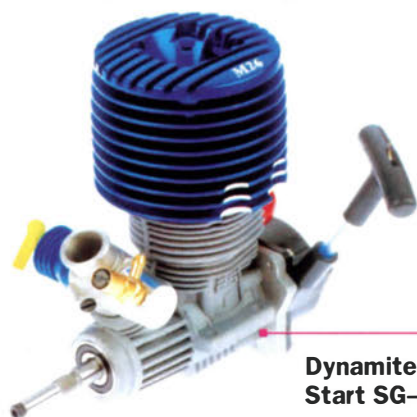
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Barry Baker's

A S S O C I A T E D

TC4

We let Barry read our "how to act like a sponsored driver" before doing this hook-up.

Not too long ago Team Associated released their latest touring car much to the joy of the AE faithful.

The worldwide success of the TC3 had most of us ready for the cars next level of domination and when the TC4 first hit the track several of us were confused. It seems that our old TC3 setups didn't seem to work and that upset a few. Well it turns out that that TC4 isn't a TC3 (incase you missed that extra number) and there are some subtle differences that make it a little different than you may have been used to. We got a hold of Mr. Barry Baker and his busy racing schedule to tell us some of the things he's learned about the new car and tuning the TC4.



“The TC4 is the most adjustable touring car Associated has ever made which could be good or bad for some. You now have the ability to adjust the car WITHOUT ACTUALLY MANIPULATING AND FABRICATING PARTS FOR CONDITIONS.”

- BARRY BAKER

Shock Angle

There are four holes on each shock tower and two holes on each suspension arm on the TC4. The two inner holes on the tower are to be used with the inner hole on the arm, and likewise the outer holes on the tower work with the outer hole on the arm. This allows you to manipulate the shocks' leverage point without affecting the angle of the shocks. The inner pair of holes are more suited to carpet racing to allow clearance of the 28mm foam tires used most often in that class. You can run the outer hole on the arm but you'll have to remove material from the ball cup and risk it breaking. If you're running elsewhere and need some more steering, you can also use the inner hole on the arm.

Ackerman

On the hubs the inside hole is like the stock TC3 position, and like the TC3, you don't need to run any washers under the ball stud. Using the inside hole makes the car smoother and easier to drive, whereas switching to the outside hole results in more aggressive steering. Barry had four washers under the ball stud to take away some of the initial turn-in and create more on-power steering. This results in less bump-out under compression, but makes the car harder to drive off of the corner—just how Barry likes it.



Shock Oil And Springs

Using the outside hole on the arms, Barry likes to run his car quadra-symmetrical. That means he'll run the same oil and springs all the way around the car with the occasional half-spring heavier in the front. Most of the time Barry runs #2 pistons with 40 wt. oil. Sometimes he'll drop to 30 wt. oil if it gets colder than 60°, to help keep the same damping feel that he is used to.

Battery Position

For the most part Barry suggests always running the batteries forward. It better balances the weight of the car and makes it easier to drive.

Does that bumper have a nipple?

Sway Bars

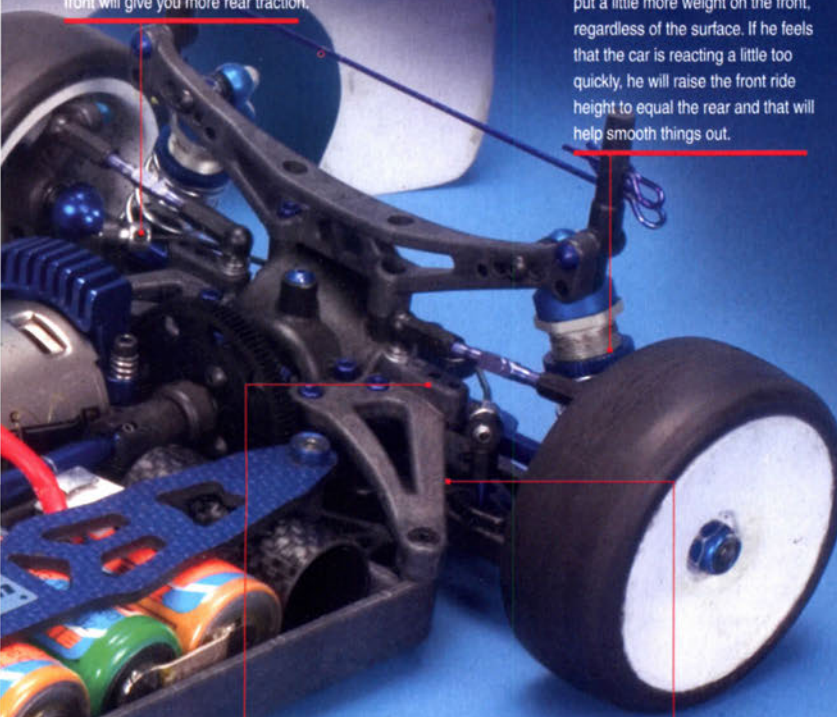
Barry says that this is the best sway bar setup on any RC car, ever. The thickness of the sway bars is the same as the old ones. In the past, you had half-turn adjustments to get the sway bars equal, but the new design allows you to adjust them from underneath in infinite increments to get them right. Barry highly suggests that you always set your tweak without the sway bars hooked up, since they can cause the car to end up tweaked in the turns. Stiffening one end of the swaybar will shift traction to the opposite end. A stiffer rear will give you more steering and a stiffer front will give you more rear traction.



Ride Height

Barry runs whatever the lowest legal ride height is for any track. On asphalt there's not typically a ride height rule, so he runs 5mm in the rear and 4.5mm up front.

Most of the time he runs that same stagger to put a little more weight on the front, regardless of the surface. If he feels that the car is reacting a little too quickly, he will raise the front ride height to equal the rear and that will help smooth things out.



Droop

Barry starts with the factory-recommended setting of #6 in the front and #5 in the rear (using the Associated droop gauge that is supplied with the car). He doesn't usually alter his car's droop settings too much. He'd try getting more turn-in with camber links or shocks before altering the droop. On carpet he'll run almost no droop, or #8 on the Associated gauge. The more droop in the front, the more turn-in the car will have off power. However, with more droop in the front the car may want to try and push on-power due to the increased weight transfer to the rear to the car.

Camber Link Positions

There are four camber link positions on the car. Barry uses the two inner holes and suggests that most follow suit. Moving the camber link out on the chassis will make the car turn in better, but will reduce steering coming out of the corner. If the links are already out on the chassis, moving them in will make the car smoother and reduce turn-in while increasing exit steering. The longer the link is compared to the suspension arms, the more the car will want to continue turning throughout the turn, while making it shorter will help the car "square up" quicker. At the rear of the car, Barry likes to run the inner hole on the hub and the furthest inside camber position for a smoother turn.



STICKY SITUATIONS

When Barry encounters the following track and vehicle conditions, here's what he tunes first, in order:

IF THE TRACK CONDITIONS ARE...

...high traction:

ADJUST THE...	HOW?
Less Toe-In	2.0 rear block
Change caster	2-degree

IF THE TRACK CONDITIONS ARE...

...smooth high traction:

ADJUST THE...	HOW?
Lower ride height	To minimum or just above scraping

IF THE TRACK CONDITIONS ARE...

...loose traction:

ADJUST THE...	HOW?
Rear toe	3-degree block
Droop	Add droop

IF THE CAR IS REACTING BY...

...feeling twitchy:

ADJUST THE...	HOW?
Rear toe	Add rear toe
Remove caster	Drop one block
More ackerman	Add washer

IF THE CAR IS REACTING BY...

...pushing entering turns:

ADJUST THE...	HOW?
Too soft front spring	Stiffen spring rate
Add damping	Go up 10wt

IF THE CAR IS REACTING BY...

...pushing on exiting turns:

ADJUST THE...	HOW?
Reduce toe	Drop one block

Roll Center

Once you achieve the steering you're looking for from making changes to the position of the camber link, Barry says the next step is to fine tune the car's roll center by raising or lowering the height of the inner ball stud. Barry says that lowering the ball stud will take away some turn-in, while raising it will make the car smoother and help it turn in well without dumping the front end over. It tends to keep the front end flat in the turn and makes the car easier to drive. Also remember that going too far in one direction can cause funny things to happen. In general, Barry likes to run the upper camber link parallel with the angle of the arm with the droop. This makes them move in the same geometrical plane.

Roll Center Blocks

The roll center blocks that come with the TC4 are actually lower than the ones from the TC3, and they can now be shimmed up for asphalt racing and lowered for carpet racing to increase performance. In the past, team drivers would grind the mounts to get the pins as low as possible for carpet, but this is no longer necessary. The new design of the blocks is far superior to the old ones, which made you force the pin angles into the block. The pin holes could actually end up getting oblong, so if you went from 3-degrees to 2-degrees you'd end up with oblong holes and extra slop. Now with the new pivot ball design you can swap blocks and use the same parts without worrying about wearing them out. Barry says that raising the blocks in the chassis will result in more traction at that end of the car because you've lowered the roll center and prevented the chassis from rolling as much.

Wheelbase

The wheelbase is adjustable on the inner hinge pins rather than on the hubs where the TC3 had it. Barry feels that the absolute best wheelbase is the stock



It couldn't get any better to adjust the sway bar to be equal on both sides of the car.



Barry uses the Factory Team aluminum hexes for a little extra durability.



Once again the signs of some Factory Team parts. The extra cooling of the machined aluminum is useful.



Shims under the suspension blocks are used on asphalt and removed when on carpet.

setting, with two shims toward the center of the car and one towards the rear. You can alter the wheelbase, but Barry likes the stock settings. Barry does suggest that if you go from a 3-degree to a 2-degree rear block that you may want to move the arms forward in the rear to keep the wheelbase the same as with the 3-degree. This wheelbase adjustment will put more weight on the rear wheels and thus will affect the handling.

Rear Suspension Mounts

There are three choices of suspension mounts: the stock 3.0-degree, 2.5-degree and 2.0-degree blocks. The blocks refer to total toe-in, so a 3.0 block would result in 1.5-degrees of toe-in on each side. Barry says he uses the 3.0 blocks when he wants his car to feel super stable. The

TC4 has a lot of rear traction already, and running the 3.0 blocks would increase that rear grip at the expense of steering. It may feel twitchy until you get on the throttle. If you feel that the rear of the car is pushing the front wide in the turns, going to a lower degree block will help. And if it feels too twitchy, going up one block will help smooth the car out.

Caster Blocks

More caster will create more turn-in, but some of it comes from a "jacking effect," or artificial turn-in. This can be demonstrated when you have enough caster and turn the wheels to see the car rock back and forth or lean forward. Barry starts with 4-degrees of caster all the time and almost never runs 0-degrees. He suggests keeping all the blocks in your pit box at all times as tuning options.

Differentials

Barry runs Associated's lightweight steel diffs in the rear of the car and either a one-way or spool up front. The stock plastic diffs will last for a bit in mod, but are better suited for stock racing. If you're running mod you'll need the steel diffs, plain and simple. The stock CVDs are plenty strong and ready for the action of both spools and one-ways without worrying about breaking or bending them. ⚙





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Continued from page 131

Despite what he thinks, Collin is not number 1.



9.

SET EXAMPLES

The old saying that "actions speak louder than words" holds true when you are in the spotlight, and you will be in it all the time when you are sponsored. Make sure that you set a good example to spectators and fellow racers alike. Always marshal right after your race, follow the rules, and never act as though you are better than anyone else. Treat people the way you want to be treated, and again, not only will you be a fast driver, but a well-respected part of the professional racing community.

10.

BE A SPORTSMAN

Face it: you can't win every race that you enter, and everybody has a bad day now and then. When it happens—and it will—chalk it up to just that, a bad day. Always smile and never throw a temper tantrum, otherwise you'll hammer the last nail into your sponsorship coffin. I remember covering the ROAR Sedan Fuel Nationals last year, when Mike Swauger was way out front in the lead at the 50-minute point, only to have his receiver battery die and force him from the race. He immediately came off the stand to watch the remainder of the race. He stood at the side of the track with a smile on his face the entire time. I asked him what happened and he said "my battery died, but it was really fun up there!" He just lost the biggest race of the year to a technicality, and he was still smiling, being a sportsman, and protecting his name as well as his sponsors'.

11. WIN RACES

Let's not forget about this part! Although sponsors are not always looking for drivers that only win races, it is a wise idea to do it once in a while. Sportsmanship, approachability, product support, and media exposure are all great things, but let's be reasonable, an outgoing driver in the K-Main isn't going to sell motors, so make sure you are always working hard, getting lots of sleep, and driving your best so you can back up your name with some serious race results.



CLOSING

Sponsorship is something that every up-and-coming driver seems to be itching to attain, but sponsorships are jobs, just like any regular 9-to-5, only they can be a lot more fun. Keep in mind that you are always working for someone, and that someone is always watching you. Whether it is your team manager, a fan, or just some dude thinking of getting into the hobby, once you are fast enough to be a sponsored driver, you'd better be ready to act like one. If you do, you'll have no trouble maintaining the position you worked so hard to achieve in the first place. ⚙

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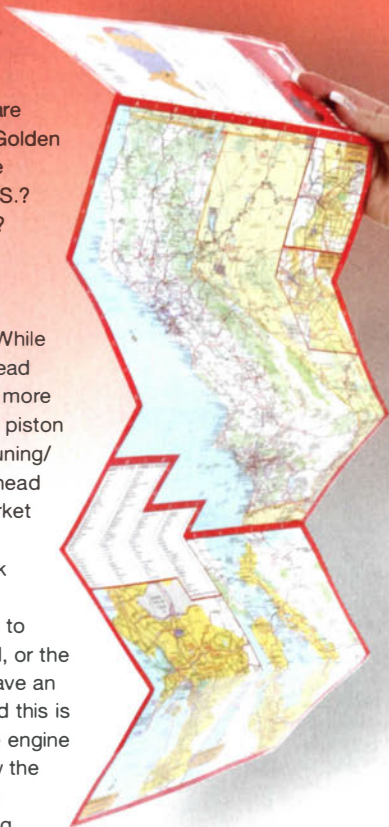
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Heading In The Right Direction

I am looking for an aftermarket heat sink head for my O.S. .15 CV-RX. I looked at O.S. and they are about \$60. Hardcore Racing and Golden Horizons both make some that are cheaper, but should I stick with O.S.? Does anyone run Hardcore or GH?

A. A word of caution on larger aftermarket cooling heads: While a larger cooling head allows the head and head button to dissipate heat more quickly, it doesn't do much for the piston and sleeve. I would recommend tuning/tempering your engine with the old head and then switching to the aftermarket version, and the temperature will surely be lower than with the stock head. But don't start leaning out the carb to get the temps back up to where they were with the old head, or the engine will be short lived. If you have an IR temp gun, the best way to avoid this is to measure the temperature of the engine on the side of the block just below the cooling head. I think this gives the most accurate temperature reading, and yes, I fried a Rossi .21 Black Magic and an RB C5 using huge Crazy Nut/O'Donnell heads thinking I could run the head temps up to where they were with the stock heads. Hope this helps.

Derek Buono



Freezer Burn Batteries

Hey Professor: I'm pretty new to electric, and I'd like info on how to store batteries—particularly NiMH—for prolonged life. I've read this article that says it's okay store batteries in the freezer or fridge to prolong their life, but I want to get some expert opinions on doing this.

Revzalot

A. You are referring to Sub-C-sized batteries, right? If so, then it's a bad idea and no good for your batteries, and can cause them to rust. According to the article, it says that you would do this if you wanted to store a fully-charged battery for several months, not to prolong its life span. It will hold the charge at 90% for months in a freezer and you don't want that, or at least not for racing. There is an article on RC Tech (www.rctech.net) somewhere that tells you how to prolong the life a racing battery pack.

My procedure: To prolong a battery's life, I usually discharge it fully and then equalize it on a tray after a run, and let it cool down to room temperature before charging it up again. It's a good practice to have more

than one battery pack because you can have one discharging while you are using the other one, and vice versa.

GTTurbo



Nope, no shrinkage there...or here.

Thick or Thin Lube?

Hey Professor: I am rebuilding the bearings on my nitro cars, and I wonder whether there is any difference in how to re-lubricate bearings for electric versus nitro vehicles. I was told to get rid of the thick (lithium) grease in the bearings in electric cars, and re-lube them with thin bearing oil to minimize friction. For nitro vehicles, do you just re-lube the bearings with bearing oil?

Raceblast

A. A lot of nitro guys do the same things as the electric guys with bearings. Just remember, the thinner the lube, the more often you'll have to re-lube them. I actually use 5-50 wt. synthetic motor oil. It's a little bit thicker, but you can pretty much set it and forget about it.

Rapid Roy



Mile Per Gallon

Hey Professor: How long should I drive my new engine for before it's completely broken in to finish tuning it?

astromonkey88

A. Depending on the engine, it can take up to a gallon of fuel before it's fully broken in. For now, run anywhere from a quart to half a gallon of fuel through it, and then tune it to where it performs well (but not too lean). You'll be fine-tuning it more as it breaks in.

Jason Yu



MAIL SACK

MAIL SACK MAIL SACK MAIL SACK MAIL SACK MAIL SACK MAIL SACK MAIL SACK MAIL SACK MAIL SACK

SACKMAILS

Afraid to Ask? Or Read?

Stephen, that was a great to hear what Adam is doing with his truck, but anyone racing know this stuff about the LST. (Feb 05 issue 111) You missed the opportunity to get us the real information, or maybe you were afraid to ask, thinking since Adam is a big man he might beat you up. This is what we really want to know!

What did you do to get rid of the reverse and the hi/low knob? Open that puppy up and let us take a peek? Is there a kit coming out extremely soon? I would jab him with a side note that Traxxas has a forward only kit for the REVO. I know I own an LST and Revo.

Now Stephen, don't play coy with us I saw the photos of his transmission. Did you get the secret handshake and not pass it on to us?

Sincerely, Dan

Hey Dan, I'll forward this email to Bess. Thanks for reading. I have to point out that if you read the Monster Pit column you'll see in the text for the new brake pads that they are working on that forward-only tranny. It wasn't included in the hook-up at the request of Losi, but us spreading the rumor of them working on it was okay.

*Thanks again
-Derek*

Hi Dan, glad you enjoyed the article. As Derek already said, at the time I interviewed Adam, Team Losi had requested that we keep details of their forward-only tranny kit rather vague because it was in the early EARLY testing and planning phases. R&D can take months, and to release details or part numbers about a product that may or may not make it to production could cause more problems than it solves.
-Stephen

Cross Moj-ination

I read all about the Jammin buggy and when I looked at what you were running for test gear it said an M8 and a JR synthesized receiver. Is this right? Can you use a synthesized M8 and another brand of receiver other than Airtronics?

Anonymous Emitter

Broken Links

Derek, I am a new reader of your magazine and I am expecting delivery of my first ever RC car tomorrow, the HPI Savage 25. I have found your Jan 05 issue very helpful with tips and do's and don'ts. I will be using the outside track at my local club in Marietta GA, TFB Raceway (www.tfbtrackway.com) and as such was very interested in the article on page 65 of the Jan 05 issue. You write about the Dirt Fighter air filter which looks like just the filter I will need for the off road track. I have tried the website link you have at the bottom of the article with no luck, is this the correct web address? Please let me know if there is another site I can get these from!!

Good luck for 05, your magazine is now on my must have monthly intake.

Regards
Richard Wade
Canton GA

Richard I double-checked the link and it seems to be working fine. It's www.dirtfighter.com, but sometimes if you leave out "www" it won't work. Give the link a try again and let us know how the filter works out. Maybe you turned the page and saw their ad with their lovely spokes model and khit a few wrnog kyees?
-Derek

Just so everybody is aware, yes you can mix brands of receivers and transmitters. There are a few that it may not work with, but in general Hitec and Futaba are compatible and then JR, Airtronics, KO and Multiplex are all compatible. It gets a little complicated with High Rate receivers and such but as a rule of thumb most will work with each other and more so with 27MHz.
-Derek

GOT A QUESTION OR COMMENT?

The Mail Sack is the place where you voice your opinions, thoughts, and complaints. We'll be publishing your letters each month, and we aren't going to edit them, so use spell check or we'll publish them how you send them and show off how smart you are.

Got an opinion? E-mail it to derekb@rc411.com



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West Alabama Road Warriors
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719 597-5911

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Aurora CO 80012, 303 343-0151

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303 804-0470; www.RMRCHobbies.com

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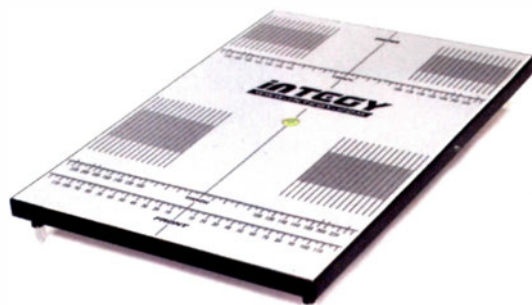
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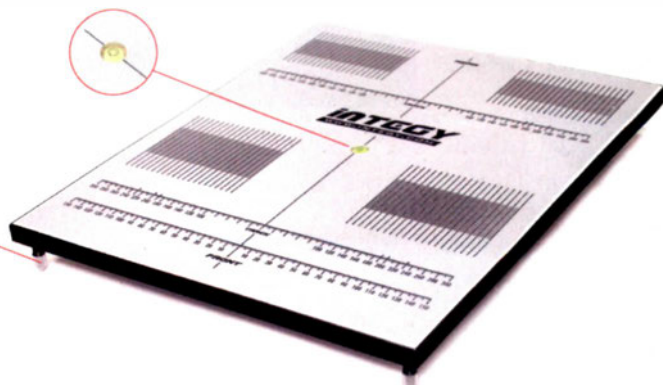
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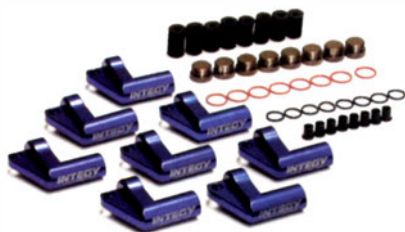


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A blue and purple radio-controlled (RC) car with large, treaded tires, parked on a wooden stump in a grassy area. The car has a blue body with purple accents and a purple rear wing. It is positioned on a weathered wooden log, with a grassy hillside in the background.

The Ms. Ride

Love the magazine, keep up the good work! Enclosed are photos and a brief description of the latest addition to my RC "garage." I tried to squeeze as many hop-ups as possible into this kit-built Team Associated electric TC3. Included are shaft-driven 4WD, a Team Trinity "Monsters of Touring" 19T motor, a Dynamite reversible "Tazer" ESC, Jaguar 2 CH radio system with a Hitec high torque metal gear HS645 servo, ball bearings throughout, titanium turnbuckles, CVD-style drive shafts, and Pro-Line tires and rims. Power is provided by a 3000mAH NiMH matched cell battery pack. I was really pleased with how my "Lightning Storm" paint job turned out. I custom mixed most of the colors and added some Pactra Fasglitter to give it an awesome metal flake appearance. The spoiler has been painted to simulate carbon fiber. Thanks for taking the time to check out my latest ride!

Ms. Jaymie Larkey
Toledo, Ohio



Very Purplie

First off, I've gotta say you have a great magazine, it's very informative (I'm a first time reader). I especially liked the piece on tuning your low speed needle and the one on adjusting tweak (Sept 04 #106). I also liked the first look at the Nomadio Sensor, and I just might buy one if the price is right. I'm pretty new to the sport, I've only been in it for a few months. This is my RS4 3SS. I currently have a 12R SS engine but plan on putting in a Novarossi RS12 rear exhaust in the next month. The body (Toyota Supra) I painted myself...silver and purple. Hope you like.

Purple anodized hop-ups include: Aluminum hex hubs, a front upright and rear hub set, high performance air and fuel filter, Powerline header and tuned pipe (double exhaust), purple heat sink, purple threaded adjustable shock set (rear), purple foam bumper, carbon brake disc, and an HPI racing clutch.

Anyway, thanks for putting out a great magazine and keep up the good work.

Avalon Pierre
Brooklyn, NY



Drifting

Hi, my name is Richard, and here's my Yokomo drift set with a Speedway Pal AE86 running a Trinity P2K2 Pro motor, an Explorer 2 ESC and an Airtronics radio and receiver, with PVC pipe for the wheels.

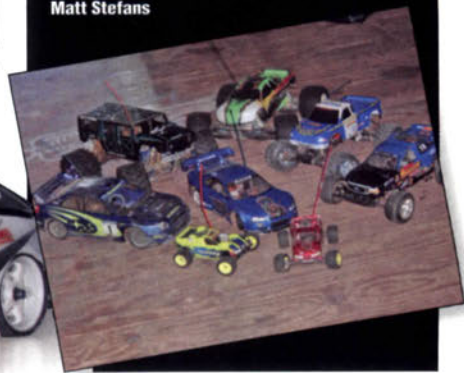
Richard



The 30+ Club

Hey Xtreme, just wanted to let you know that I love your mag and I've read about 30 or so issues from cover to cover at least twice. I decided that I should get my cars in this magazine. I own a Stampede, which is completely stock besides the blue rims. I also have a 4-Tec, which is completely anodized in red/chrome, and runs an Epic 10 turn motor. I have a Skyline body that is my favorite car in the world, a Viper, the stock one, and an Escudo Pikes Peak. The red and silver Mini T is mine and has an Orion big block and a gear set that I'm gonna keep secret, but it pushes 40 or 50. I have a Pro-Match matched 8-cell pack, which is the hottest thing you can get for it. In the mail is also a full carbon fiber chassis by Trinity. My HPI Super Nitro RS4 Rally has an OS .18, carbon fiber front and rear shock towers, a 2-speed tranny, custom rear exhaust, Traxxas bandit buggy tires, ad chrome rims. It pushes 80! The last of my cars, and probably the greatest, is my T-Maxx. I have a Hummer H1 body and an El Camino. It also has a TRX tuned exhaust, OS .18 CV-RX, a steel spur, aluminum shocks, bumpers, carbon fiber brakes, bulkheads, skid plate, and under braces. The rest, including all the a-arms, is painted chrome, and anodized by Dupli-Color paint. You can find it in Wal-Mart. Its not that cheap but its the easy way out to not spending a grand on all aluminum parts. I've fooled about 25 other racers with my paint. Nitro fuel takes off the chrome paint so just cover it with a layer of clear coat to prevent that. My dad owns the Rustler, which is completely stock besides tires, rims and bodies. The Green T-Maxx is also his, which he bought secondhand last week and dropped in a .18 CV-R by OS. The yellow Mini T is also his. It has another Orion Big Block, and Matched pack. This is my family of Radio Control cars that I race, and all together from Traxxas to Tyco, it comes to a grand total of 28 cars and trucks.

Matt Stefans



More Ms. need to send us their rides.



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002

REVISED REAR SHOCK TOWER
AND BATTERY BOX



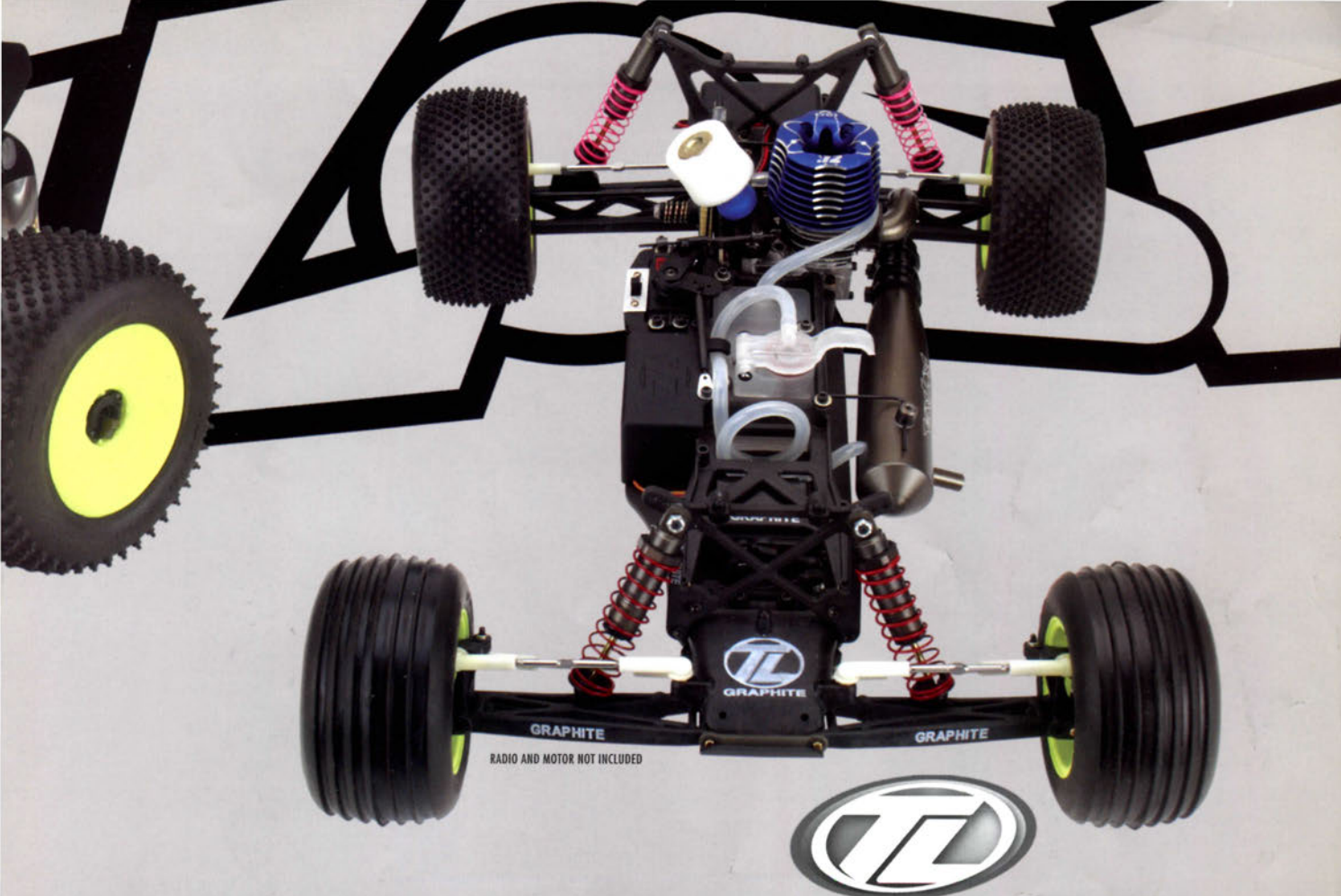
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The XXX-NT AD2's quick release rear axles let you swap old tread for new in seconds—a first for any 1/10 2WD nitro truck. New aluminum multi-adjustable rear hubs give you one of the most adaptable suspensions in nitro truck racing. The hubs include oversized rear axle bearings for maximum durability.

Another first in truck racing—the same quick-change rear wheels can be used on the front with a standard wheel nut configuration. This not only simplifies tire changes and tread testing, but it allows a greater selection of front tires as well.

Like the rest of the suspension components, the rear shock tower and battery box have been reinforced with a new design and new materials that can handle the toughest impacts.



TEAM LOSI RACING

MACHINED AND LIGHTENED
HARD-ANODIZED ALUMINUM CHASSIS



004

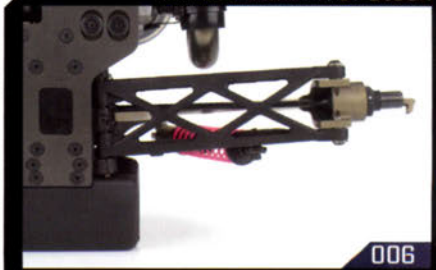
[XXX-NT ADAM DRAKE 2]

Revised Variable Length Arms



005

REVISED REAR PIVOT BLOCK



006

2-WHEEL DRIVE NITRO COMPETITION TRUCK

The thick aircraft aluminum alloy chassis is machined instead of stamped, eliminating stress that causes tweaking and bending. Secondary CNC machining is done to reduce weight while preserving strength. Finally, the chassis is hard-anodized for added surface hardness and wear resistance making it the trickiest and toughest in truck racing.

Front and rear Variable Length Arms allow you to adapt to a much broader range of driving styles and track conditions. The arms have been redesigned and reinforced with newly developed materials that make them even tougher.

The revised rear pivot block has been beefed up and features three areas of support making it stronger than any other nitro truck. This new design uses a longer well-supported hinge pin to maintain proper geometry no matter how tough the track. The anti-squat can be easily adjusted with the included shims.

SPYDER

Arachnophobia: Fear of Spydery



MONSTER
1/7th
SCALE
Ready to Run

Shopatron



2 speed transmission with reverse features high strength metal gears to handle tons of power!



Dual plate chassis design results in a super stiff structure which maximizes the integrity of the drive train. Precise and rigid alignment of running gear makes for a free drive train. More power and less failures.



NS volume adjusting bladder shock system insures superior road hold no matter what surface you encounter.



Factory assembled, just add 12 "AA" batteries, fuel and a 6 cell pack for your EZ-Start and you are racing.

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