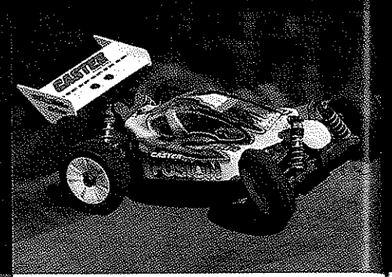
Nitro-to-Electric Conversions

Why and how!

by Chris Long



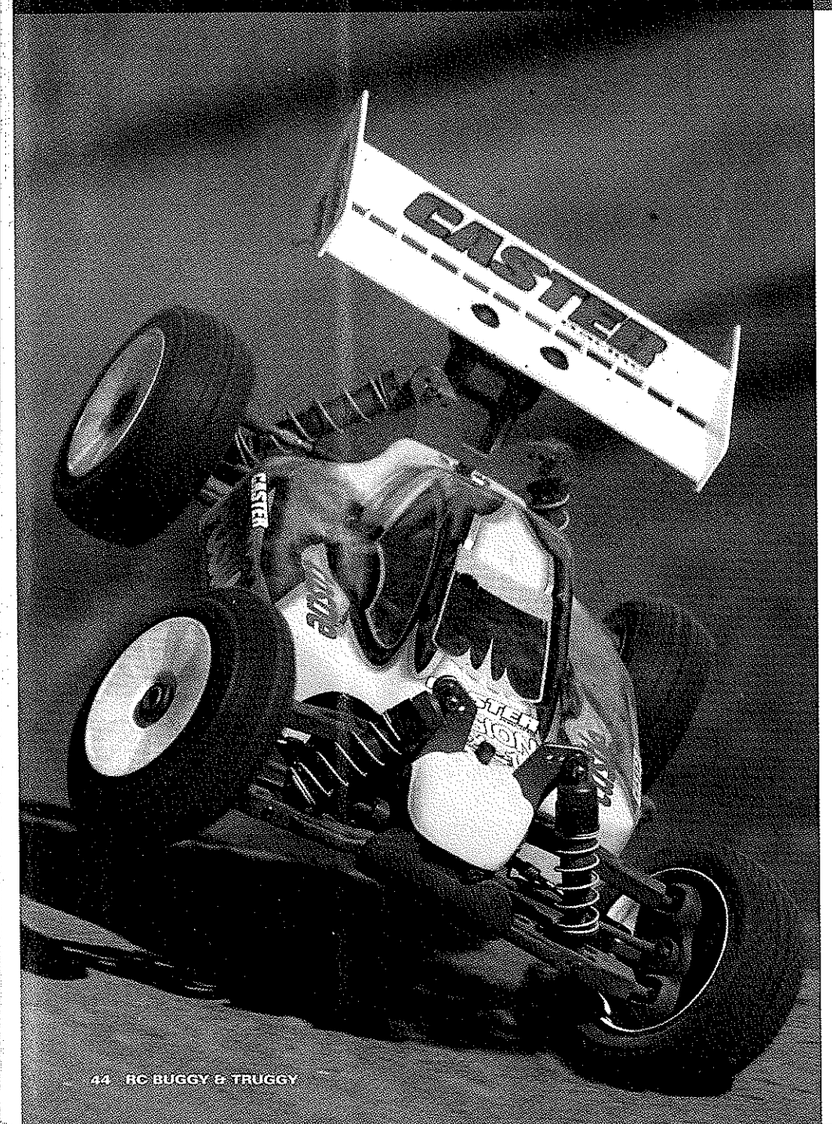
Advances in motors and batteries have made 1/8-scale electric racing really popular, and I'm sure that tracks near you hold such events. If you already run a 1/8 nitro but are ready for a power change, why not try an electric conversion? Battery power offers many advantages for average bashers and hardcore racers. No more tuning and tweaking carburetor needles to accommodate changes in temperature and humidity, and no more cleaning off spilt nitro fuel at the end of the day.

Now, with the simplicity that electrical conversion kits offer, you can load your settings into your ESC, plug in a battery and head out to the track. Warm-up laps? Not required—thanks to electrical conversions.

Converting from nitro fuel to electric was a DIY project, and many were put off by that and the unavailability and/or cost of the electronics. This has changed; most hobby shops stock conversion parts, so the technology is widely available—and at competitive prices. An electric conversion is now a viable option. This year, ROAR and RC Pro will allow the use of electric conversions, and most local tracks now allow 1/8 electric conversions to run with the nitro vehicles.

Slowly, but surely, my last nitro fuel truck disappeared a few months ago. Today, having completed over 10 nitro-to-electric conversions, I run only with electric power—brushless motors. This includes everything from my 1/8 Revo 3.3 monster truck, HoBoa Hyper ST Pro truggy and Jammin' X1-CR Pro Buggy to my on-road Ofna GTP2 and the ever versatile 1/12 Ofna CRT .5 truggy.

I'll tell you how to complete an electrical conversion, explain your options and clue you in on the new terminology associated with electrical conversions.



VEHICLE OPTIONS

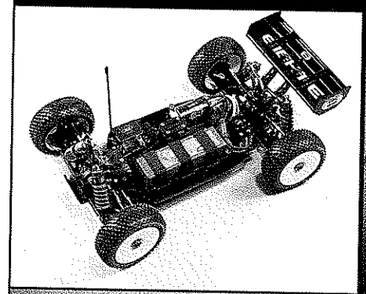
There are plenty of available options to convert your nitro car or truck into a brushless basher or a race car. RC-Monster.com, Novak, Tekno RC and Castle Creations are just a few of the companies that offer conversion kits for all of the most popular models and scales.

The kits vary with respect to motor mounting. Tekno RC and Novak make use of the existing motor-mount holes, and RC-Monster.Com and Castle Creations replace the rear center diff with a CNC-machined motor mount. It's your choice: Putting the motor in the rear of the car behind the steering servo leaves more room for the battery on the left. This helps to maintain a car's overall balance. As long as you're familiar with your car, installing either type of kit is can generally be completed in a couple of hours.

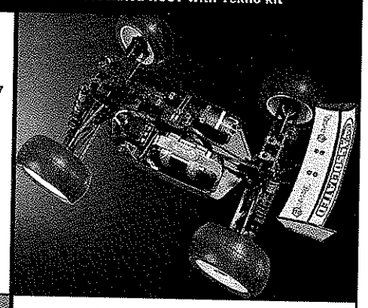
For a 100-percent factory look, RC-Monster.com and Tekno RC recently introduced complete custom electric chassis for nitro cars such as the CRT.5 and the RC8. This allows you to optimize the chassis layout for electric, and it eliminates unnecessary holes (and dirt).

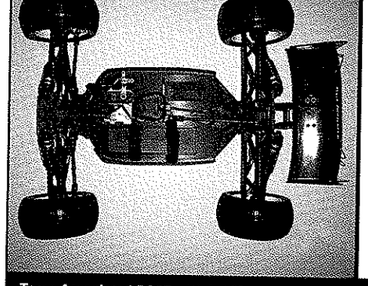
Losi, Traxxas and HPI have all announced ready-to-run (RTR) brushless motor versions of their nitro vehicles. The HPI e-Savage and Traxxas E-Revo both include re-branded versions of the Castle Creations Mamba Monster Max with the 2200Kv brushless motor. Both trucks will take lots of abuse and can easily go straight from the box to the starting line. For racers, Losi and Caster offer the 8-sight and Caster EX1. Both are more than capable of going head-to-head with their nitro counterparts.

Team Losi 8ight with Losi electric conversion

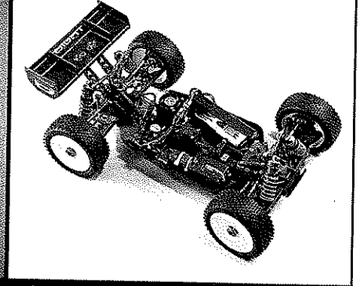


Team Associated RC8T with Tekno kit





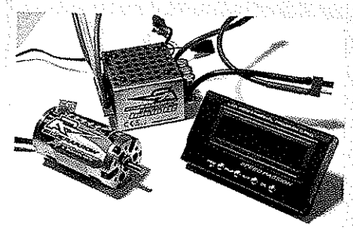
Team Associated RC8T with RC Monster Kit



Team Losi 8ight with Novak conversion

LATE BREAKING RELEASE

Speed Passion Silver Arrow 1/8 Brushless system



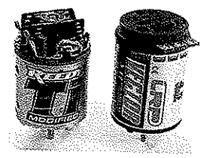
As we went to press the first Speed Passion 1/8 System was unveiled and it's packed with features.

- Perfect bolt-in size for any conversion kit.
- Ultra smooth throttle response in sensorless and sensored mode
- LED trackside programming box included
- 2200kv motor for serious racing and a 2500kv motors for big tracks

BRUSHLESS & BRUSHED—AN EXPLANATION

Brushless motors produce more power and are more durable and more efficient than brushed motors of equal size.

- **Brushed** Has static "brushes" that make mechanical contact with electrical contacts on the rotor (commutator) to complete an electrical cir cuit between the DC power source and the rotating armature coil windings.



- **Brushless** Has electromagnets around the can's perimeter; has static coils and a rotating magnet that is connected directly to the motor shaft. The coils are grouped in three phases, and the ESC switches the electricity between each coil in sequence to change the polarity of each phase. This causes the magnets and, hence, the shaft to rotate. Since there are no physical connections inside the motor, there's no friction and nothing to wear out.

SENSORED & SENSORLESS

- **Sensored** With a brushless motor, the ESC must "know" the magnet's orientation in order to power up the coils in the correct order and frequency. With a sensored design, small motor sensors are directly connected to the ESC and tell it the motor's position at any given time.