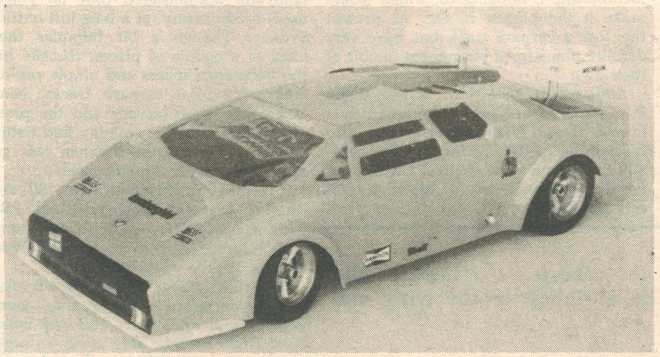
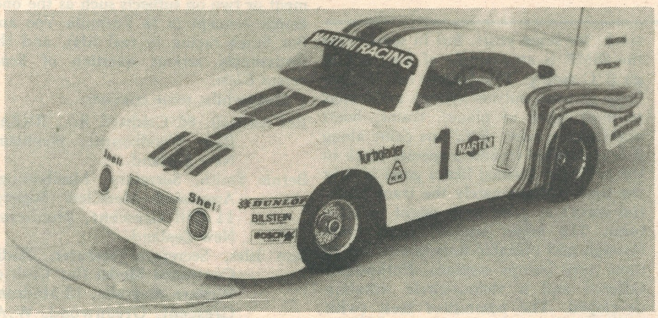
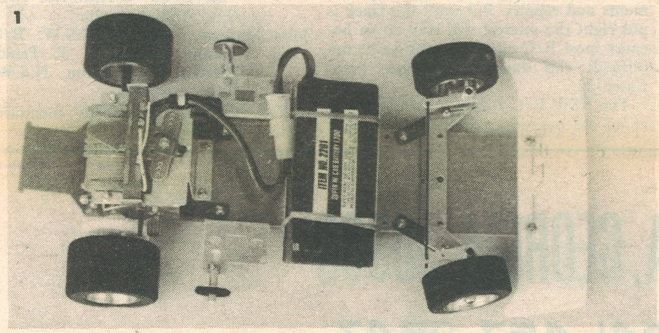
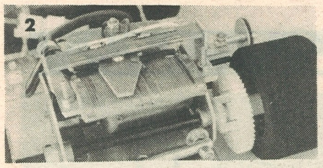
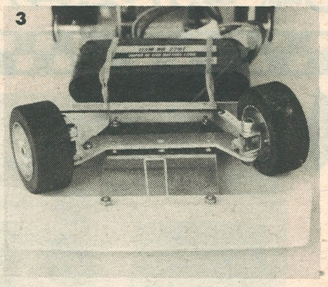


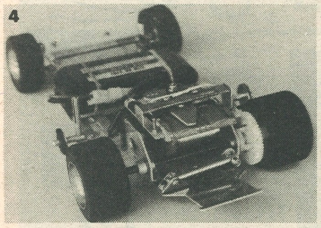


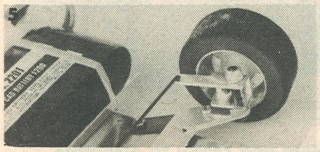

**TOP: The 1:12 scale Lamborghini Countach has a functional shape. BELOW: Transparent bumper provides protection. Car is ideal for indoor racing on small tracks.**

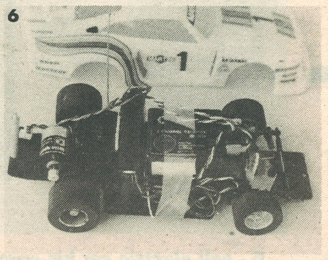



**1. This is the way the chassis looks when you pull it out of the box. Add a two-channel radio and you are ready to race! 2. Interesting features of the rear end. On top is the sliding-arm rheostat. Note the transverse DeDion arm which locates the "sprung" weight of the drive train. White nylon drive gears and a real working differential provide the motive power. Rheostat provides forward and reverse speeds. 3. The front suspension is very rugged. Stamped metal parts are "sprung" by two leaf springs. Note flat plate "bumper." 4. Overall view of the rear end. Car is well-made and can be put on the track in racing trim in one hour if you are in a hurry. 5. Another view of the front end. Steering arm is rugged. 6. 1:20 scale Porsche. Speed control is by electronic "servo." Regular servo is used for steering.**

# TWO FROM KYOSHO

by George G. Siposs

For some reason, electric R/C racing in 1:8 scale has never caught on. Nine years ago there was a Detroit-based company that tried it, but since then no serious efforts have been noticed on the U.S. market.

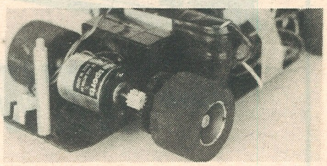
But 1:12 scale electric R/C racing is becoming extremely popular. In addition, it seems that the smaller scales, especially 1:20, are catching on. While cars with good steering and proportional control are sweeping the market, the toys with their "bang-bang" left-right steering and stop-or-go controls are a passing fad, good for a one-night stand but little more.

Now Kyosho, a Japanese manufacturer of quality hobby products, has two offerings for the serious R/C hobbyist. One is a 1:12 scale car while the other is in 1:20 scale.

In many respects the 1:12 scale car follows modern R/C car engineering practices while in other areas it presents some very worthwhile engineering features. Let's start with the chassis.

The chassis is stamped and has all holes and mounting points accurately located. When you pull it out of the box, the chassis is completely assembled and requires only the addition of a radio. The motor is connected to a sliding-arm rheostat speed control with 20-watt capacity so it is not likely to heat up unless you are in a long race. The rheostat provides fully proportional forward *and* reverse speeds. Two gear ratios are supplied; one for high speed, one for low speed racing.

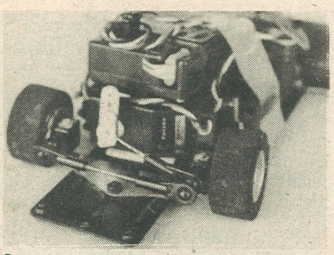
The recommended battery power is 6 volts. The 1200 MA rechargeable ni-cad battery is mid-mounted for low polar moment. Where the car really shines is in the suspension area. The motor and drive assembly are mounted on their own bracket which is attached to the chassis by means of two leaf springs. Lateral location is assured by a DeDion arm. This reflects some very serious thought on the part of the designer. The front suspension consists of kingpins mounted on a transverse beam which in turn is supported by two leaf springs. (I would have mounted them on trailing springs instead of "leading" springs but this can be altered easily.) Only time and racing experience will tell if some kind of shock absorbing system is required for even higher performance. A real, working differential provides maximum traction even in tight turns.



**TOP: The Porsche 935 Turbo box, body and chassis with radio. ABOVE: The sidewinder drive of the 1:20 scale model is reminiscent of slotcars.**

The wheels are highly detailed and molded from nylon, shod with lightweight sponge rubber tires. The entire unit is assembled and all you need to do is install a two-channel radio. The finicky types may want to align the chassis on an alignment plate and tighten the screws after LOCTITE has been added to the threads.

The body is highly detailed and painted on a vacuum-formed polycarbo-



**Steering tierod ends are balljoints. Sponge tires are used.**

nate shape. My own model is a Lamborghini Countach LP500 which has squarish sides but, oh well, the Italians know what they are doing. A Porsche RSR Turbo is also available. In every respect the car is of high quality and should be trouble free even after many hours of racing.

Now for the 1:20 scale model. When I first held it in my hands nostalgia swept over me because, honest to Goodness, it felt like I was holding a 1/24 scale slot car. But don't let it fool you, this is a precision-made model with balljoint steering and tie rods. Only one servo is needed (for the steering) because an "electronic servo" can be used to control motor speed. This is a lot more precise and faster than conventional servos. A ni-cad battery is used (4.8 to 6 volts) to provide motive power. The recharging plug is mounted on the chassis. Porsche or Pantera bodies are available.

Two battery chargers are available. One is a conventional trickle-charger type while the other has a built-in charger timer that goes tick-tick. An automobile cigarette lighter plug is available (as well as two alligator clips) so you can easily charge your car's batteries right at the trackside.

**This quick-charger can be plugged into an automobile cigarette lighter or attached to battery. Clock-timer ensures proper charging rate.**

These days most people seem to be in a hurry. If you don't like to tinker with the construction of a model the KYOSHO R/C cars are for you. Decals are supplied if you want "looks" but, if you want "go," it is quite possible to install a radio system, using servo tape and electricians tape or even Scotch tape, in about an hour.

In my opinion, the Kyosho cars will be very popular on small tracks where response and precision are needed.

Kyosho cars are marketed in the U.S.A. by the Peerless Corp., 3919 "M" Street, Philadelphia, PA 19124. **RCW**

# ANOTHER LOOK AT: "TWO FROM KYOSHO"

## by DAN RUTHERFORD

*RCW has made a commitment to give any products tested a very close look, reporting on both the good and the bad sides of the product. And evidently we didn't make our wants clear when George Siposs did a write-up on the two new Kyosho cars, George coming through with an article more of the press-release variety than an actual test of the products. It isn't that George is wrong in his evaluations, it's just that he quite possibly wasn't critical enough.*

*Rather than edit George's text, we have published it as written. However, to keep our commitment to you, the readers, we feel it necessary to publish the following test, which is more in keeping with RCW policies.*

The 1/12 Kyosho car is very complete, as it comes from the box. Major parts are all in place, the body is painted. All that is necessary to get it ready to run is to install most any two-channel radio and fit the body. That sounds easy enough, and in fact is, but the instructions are not very clear on a couple of points. For example, there is absolutely no mention made of what to do with the battery pack for the receiver. Careful study of one picture shows it mounted on an extension of the main frame, in back of the rear axle.

We were quite reluctant to stick the radio pieces in place with just servo tape, but that is the quick and easy way to do it. Not the best way, it worked out, but quick and easy.

With the car assembled, we were very surprised to find that no battery charger, for the five-cell nicad pack driving the electric motor, was furnished. This is regarded as a serious omission, every electric car should be furnished with a charger, even if it is the simple wire resistor type seen in domestic kits.

We charged the pack with just such a charger after making up a Mickey Mouse adapter plug. With the pack charged, we ran the car for the first time and it ran fine in a straight line, but at the first turn the tires slid off the wheels. Back in the shop, we simply glued the tires to the wheels with good ol' Hot Stuff to finish what the manufacturer started.

To be very frank, it was expected that this car would be non-competitive, when up against electrics made by Associated, Jerobee, Bolink, etc. So we weren't expecting much when running it. As it turns out, the car would only be competitive on a very slick, very tight track but that was more than we were prepared to discover. Even with the disadvantage of a small motor and only a five-cell pack, the car works fairly well on tight, twisty stuff. Maybe the suspension helps here, but what seems to be the real trick is the operating differential. Possibly the next area of chassis development in electrics will be the use of a differential. After running this car we would tend to think so.

In regard to the "diff," the instructions make clear that servo throw should be set so that only 80% power is available in reverse and that when going from forward to reverse the car first be stopped, then backed up. Gleefully ignoring these cautions, our car was built so as to have full power in both directions and then we repeatedly slammed it into full reverse while going full speed forward. None of the gears in the differential broke, even with this kind of treatment, so it can be judged to be adequately durable, at least with the limited amount of power available. A full-size 05 electric motor would surely tear things up, however.

As initially suspected, this car is not nearly as durable as the usual competition-oriented electrics we are used to running. The light aluminum chassis is easily bent, the leading leaf springs on the front end get bent, the antenna tube is brittle, getting broken in most rollovers, and virtually every nut and bolt on our test car either fell off or came loose before we finally disassembled the car and put it back together with Loc-Tite.

On the good side, the car doesn't handle badly at all, in fact is very easy to drive. The motor used runs well and seems durable enough. The five-cell pack, in conjunction with the small motor, gives a very long running time per charge. The resistor used is quite large and runs cool, so it is not likely to give any problems.

We would like to suggest that this car does have interesting possibilities for some casual racing against friends using similar cars. A tight track would best suit the cars, but even more intriguing would be a gymkhana-type of event involving negotiating a course made of obstacles to maneuver around, using both the forward and reverse speeds to back between barriers, into and out of simulated box corners and so on. This kind of course is much easier on equipment, mostly due to the fact that one car is on the course at a time and winners are determined by elapsed time.

For racing on open, high traction tracks and against any of the domestic electrics, the Kyosho simply won't cut it. It might be competitive against four-cell cars, but the five-cell pack would make it illegal for this class. And in six-cell racing it would simply be out-powered, even if allowed to enter due to the fact that the motor used in not ROAR approved.

Still, it could be that if the track surface is very slick, as a number of Indoor tracks in use are, the Kyosho might have the right kind of power and controllability to get around in good shape. Unfortunately, none of our Indoor racing is done on slick surfaces, so we can't confirm our suspicions.

### THE "LITTLE SPORTS" 1/20 SCALE ELECTRIC

This car is really cute, what else is there to say? It isn't of the proper scale for bucking heads with established electrics, so there is no need to evaluate it as compared to other cars. It's just cute. . .

Whether or not it works very well, we can't honestly say. Although we have had the car for awhile there has been no time to assemble it, the outdoor gas and electric racing have first priority concerning our spare time and any extra radios laying around.

The car does seem durable enough for the use it will most likely be subjected to, that of running indoors at home in recreation rooms, garages and the like. Proper cut foam tires are used. They need to be glued to the wheels, but will probably give good traction. Running gear ought to hold up fine with the help of the clear front bumper. And the body, pre-painted, is thick enough to withstand any abuse the car is likely to see.

The only question we have concerns the electronic speed control. We did hook it up to a Futaba receiver, as suggested, and a battery pack, but found that it functioned simply as an on-off switch (although it does give both forward and reverse) not proportionally as stated. Possibly our unit is defective, we'll let you know if we discover this to be the case.

If you want to try electric racing, but don't have room for the 1/12 cars, or simply can't justify their expense, the 1/20 car may be just what you're looking for. It is a step above the "toy" type of R/C car, indeed representing a much better value than many of them, assuming the car fills your needs. **RCW**