

NEW & HOT



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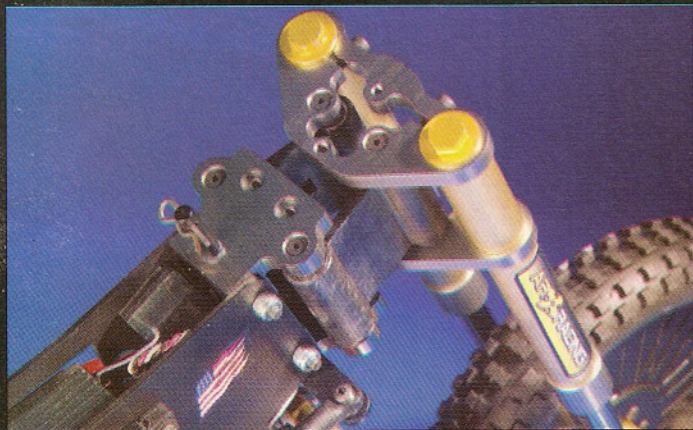
WILD RIDE 2

AR RACING ARX-540 ELECTRIC OFF-ROAD MOTORCYCLE

If your RC tastes lean towards things that throw rooster-tails of dirt around, you're in for a treat with this next wild ride. It has been said many times that the closest racing that RC off-road emulates is good ol' motocross; now there's a full race-quality motocross bike with AR Racing's ARX-540. This big 1/4-scale dirt bike comes either in kit or ARR form and is made of high-quality materials; we wouldn't expect anything less from Italy, the land where they're dead serious about racing anything with two wheels. It may bear a passing resemblance to the famed RadioShack Ricky Carmichael bike from a couple of years ago, but other than size and the basic physics, the similarities stop there. This is a performance vehicle aimed at getting racers all around the world stimulated to the idea of racing RC bikes on dirt and grass.

FRONT TRIPLE-CLAMP FORKS

The plush 9.5-inch sprung forks don't have any damping, but their long travel soaks up bumps and ruts as if they weren't there. 6mm machined triple clamps mount the forks on a pair of sliding bellcrank-style pivots whose geometry helps the bike to go straight until steering input is received from the steering servo.



GYROSCOPIC REAR WHEEL

Getting an RC bike to stay upright on low-traction surfaces is made possible by a mechanical gyroscope built into the rear wheel. It works by taking the rotation of the wheel power from the motor and multiplying it by about a factor of five to keep a ball-bearing-supported flywheel spinning inside the wheel. And a trick adjustable clutch system allows tuning the flywheel's engagement point. The wheel assembly is mounted on a beautiful gold-finish aluminum swingarm that is designed to take some serious force. The tires are custom-made knobbies manufactured by GRP in Italy for AR Racing.



SPECIFICATIONS

AR RACING ARX-540

AR Racing ARX-540

Contact armodelling.com, info@armodelling.com

Price \$790 (kit), \$850 (ARR) (varies with dealer)

DIMENSIONS & WEIGHT

Overall length 20.5 in. (521mm)

Wheelbase 14.3 in. (364mm)

Width 3.2 in. (82mm)

Weight, as tested 108 oz. (3,062g)

CHASSIS

2mm aluminum plate with aluminum standoffs

Drivetrain type Chain-driven RWD

Flywheel clutch Aluminum 2-shoe

Transmission ratio 3.56:1

Final drive ratio 24.5:1

Gyro Mechanical planetary gear with flywheel

Suspension type F/R Inner-coil aluminum body forks/ oil-filled coil-over mono shock with aluminum swingarm

Shock Threaded aluminum with 3mm shaft

Wheels F/R 124x26mm/ 100x35mm
black "spoked"

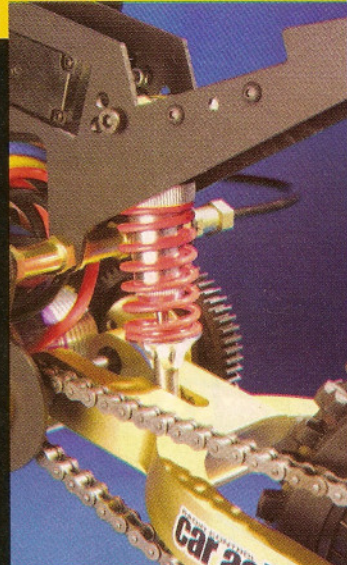
Tires F/R 162mm/ 150mm
with foam inserts

Body Clear polycarbonate

Rider Molded vinyl

MONOSHOCK REAR SUSPENSION

The 6mm ball-bearing-supported center layshaft powers the front sprocket from the spur gear and acts as the pivot point for the swingarm. Both sprockets are made out of high-wear aluminum alloy and can definitely take a beating. Damping control comes from an oversized aluminum-body shock with threaded preload adjustment and a machined spring perch. The swingarm squeezes the shock directly for a simple, effective setup.



RIDER & BODYWORK

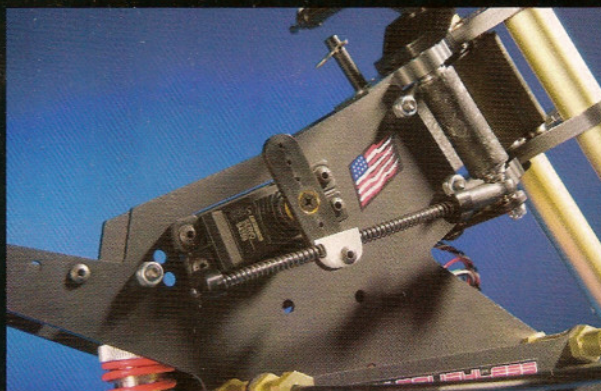
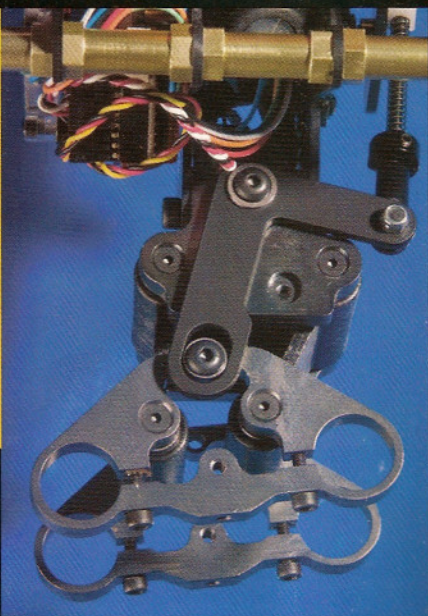


The vinyl rider figure is a little small in scale for the ARx-540 but works perfectly. The tank, fender and number plate are made out of thick polycarbonate painted in Kawasaki green. Just for fun, we had the rider done with baby-blue accents to match West Coast Editor Jason Sams' signature colors.

2MM ALUMINUM FRAME CHASSIS

Like an on-road RC motorcycle, the chassis is made of multiple plates mounted together with standoffs. The ARx-540 uses high-quality aluminum plates with gold-anodized aluminum hardware. This makes a very strong and light platform to house the running gear. The motor and battery are mounted on between the lower plates, which provide just enough room for an A123 Systems 3-cell 2300mAh battery pack.

SPRING-SUPPORTED STEERING LINKAGE



To let the front wheel center itself properly, a dual-spring steering linkage is used. Attached to the end of the servo horn is a sliding mount that runs on the steering rod between two springs. When the wheel on the radio is turned left, the servo horn swings forward and pivots the front wheel to the right, which makes the bike fall to the left to initiate a turn. So, effectively, the steering servo is there to nudge the bike into leaning in the direction you want it to go. It might sound like a bit of voodoo, but it works.

WILD RIDE 2

HITTING THE DIRT

TEST TRACK » SUN VALLEY SPEEDWAY
SUN VALLEY, CA



Having lots of experience with many road bikes and even the Ricky Carmichael bike mentioned earlier, I had the ARx-540 running in no time. It was really nice to see that just about every single turning part, save the gyro's planetary gears and clutch shoes, runs on ball bearings—high quality throughout. The suspension, however, needed a little work; the rear felt too lightly damped, and the forks sagged too much. So to solve this, I replaced the oil that came in the prebuilt rear shock with 10,000 CPS diff oil and stretched the fork springs up front to 1.5 times their original length. Now they felt perfect; time to hit the dirt.

With my buddy and fellow RC biker Jimmy Louis assisting me, we first did some runs on the hard-packed dirt oval to get the bike trimmed out. Before launching, we held the rear wheel in the air and gave it full throttle to get the gyro up to speed. Our goal was to trim it on the oval, but we had such a blast drifting the rear tire through the turns while countersteering that we ended up running two packs in circles. Fortunately, the A123 batteries charge in only about 15 minutes, so we were able to get out on the track again quickly.

Next, we took it over to the big 1/8-scale off-road track to test our skills with the bike. Even with a loose surface, we were able to drive it at a crawl as long as the gyro was up to speed. Once the bike showed signs of instability, a yank on the throttle to bring more life to the gyro (on a straight, of course) was all that was needed. Hairpins were definitely, uh, hairy; if the bike leaned over too much, the rear tire washed out, at which point it took a few moments of doing donuts to get it upright again and hopefully pointed in the right direction. The key with turns is either to take them wide or to take them really slow to minimize the lean. And we soon found out that the included stock plastic nerf bars are



way too flexible to use on a hard off-road track (they do work great on grass, however). We ended up replacing them with a 4mm steel rod that support the leaned-down bike much better. Jumping (you didn't think we'd forgot about that, did you?) was loads of fun, especially on the big doubles at SV. The front wheel tended to drop down quickly, but that was a compromise we had to deal with after setting enough rear droop to soak up the ruts and washboards of the track.

The ideal conditions for running the ARx-540 are a hard-packed dirt oval or a mixture of low-cut grass and hard-packed dirt such as a rally course. It's not quite ready to carve up precise turns on a loose off-road track, but on the right surfaces, this bike is a boatload of fun.

Pull it out of the box, or build it yourself

AR Racing offers the ARx-540 ARR and in kit form (yeah!). Although the instructions were originally in Italian, they were translated into English very well, and lots of clear photos detail the numerous steps of the assembly process. Since no running gear comes with the bike, we outfitted it with an Airtronics 94359 servo for steering, a Novak GTB/Velociti 6.5R brushless motor package, an A123 Systems 9.9V 2300mAh racing pack and a trusty Airtronics M11 radio to control it. This power package propels the bike to about 30mph.

SOURCES

A123 Systems distributed by Horizon Hobby; horizonhobby.com
Airtronics airtronics.net
AR Racing armodelling.com
Novak Electronics Inc. teamnovak.com
Serpent distributed by Molzer-Mowery Racing and Serpent USA; molzermoweryracing.com, serpentusa.com
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