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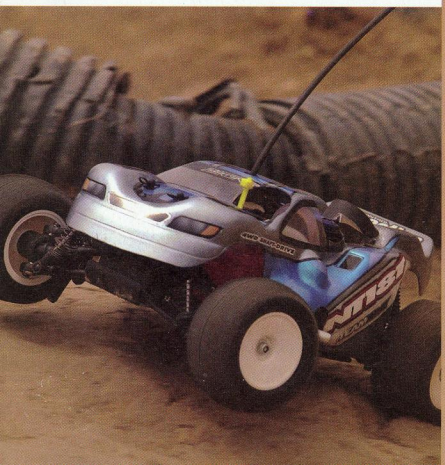
# XRAY NT18T

1/18-SCALE 4WD NITRO STADIUM TRUCK

## Big performance in a small package

**WORDS** GEORGE M. GONZALEZ
**PHOTOS** JASON SAMS & GEORGE M. GONZALEZ

Not too long ago, if you wanted to run nitro, your choices were 1/8- and 1/10-scale machines. Then XRAY's NT18 fuel-burning touring car brought nitro to aficionados of 1/18 scale. Now, XRAY has applied its nitro-micro formula to off-road with its new NT18T 4WD nitro stadium truck. The NT18T has the same suspension as its electric sibling, the M18T, and its nitro components are the same as the NT18's, but it's far from being a parts-bin creation. XRAY did its homework and engineered the NT18T to handle the extra horsepower and the abuse that the truck is sure to encounter in the hands of average racers. I couldn't wait to test it, so I tore open the box and started building it.



**TESTING: ROUND 1**

The NT18's engine didn't give me any major hassles during break-in. The only glitch was that there were air bubbles in the fuel tubing that leads to the carburetor pick-up. When the bubbles reached the carb, the engine suddenly revved up and stalled. Shortening the fuel tubing made the situation worse, so I installed a longer, 8-inch piece, and that worked very well. The longer fuel line still had a few bubbles in it, but they never reached the carb.

After running through a few break-in tanks and doing some tuning, I had the little engine running reliably. The NT18T handles the nitro power very well: it accelerates very quickly and gets up to full speed in a short distance. It's definitely faster than a stock electric M18T. It tracks straight under power, but my truck veered to the left slightly whenever I let off the throttle. Steering at lower speeds is very sharp; the NT18T has a very short wheelbase that gives it a very tight turning radius. On high-bite surfaces, it pushes quite a bit under power, but the understeer actually makes it easier to drive.

My NT18T handled my rough backyard fairly well. It was tossed around when I drove it over small rocks and other natural obstacles, but it rarely flipped onto its lid. The chassis hit rock bottom when I jumped it off the curb and landed squarely on all four tires, but the suspension rebounded smoothly, and the truck kept going without a hiccup. I built the shocks with the supplied shock oil and the recommended shock pistons, but the rear end felt too soft. No biggie; I filled the rear shocks with thicker 45WT oil, and that helped quite a bit. The truck rolled less in the corners, and the chassis didn't bottom out as much.

The disc-brake system is almost too effective; my NT18T locked its wheels with


the slightest touch of the brakes, and it spun out whenever I applied the brakes with the wheels turned. I set my radio's brake endpoint to a lower value, and that helped a lot. The NT18T runs great on dirt, gravel and asphalt, but tall grass bogs it down and overworks the engine. Keep off the grass unless it's like a close-cut golf course. I didn't want to run the truck too long in my front yard because asphalt wears tires out quickly, and it was hardly a challenge for the NT18T. I packed my gear and headed to the track.

**ROUND 2**

I had to fill some of the ruts and give the track a good watering because it was too rough and dusty for a micro vehicle. When the track had dried a bit, I started the engine and tossed the NT18T onto the front straightaway. The XRAY Low-Pin tires hooked up very well, so I could push the truck as hard as I wanted to. The NT18T seemed to have even more steering in the dirt. I was able to carry most of the speed down the straightaway and pitch the truck into the first corner. It rotated very neutrally going through the corner and held a tight line when exiting it. It spun out a few times in the corners when I was overzealous with the throttle trigger, but it didn't take very long for me to grow accustomed to its handling.

There were a few problems with the surface that I wouldn't have been able to fix without breaking a sweat, but of course, I inadvertently drove the NT18T straight through the blown-out sections. The truck was tossed around quite a bit and even rolled several times, but somehow, it always landed on all fours. This really pleased me because it was a 90-degree-plus day, and I didn't feel like climbing down from the drivers' stand to turn-marshal the truck. My luck ran out when I drove through the rhythm section. Larger vehicles can clear this section with little difficulty, but for the little XRAY truck, it was like 10 small jumps in a row. I had trouble getting my timing right through this section, and in the end, I found that rolling over the jumps was faster than taking a chance and trying to clear them with a few well-timed jumps.

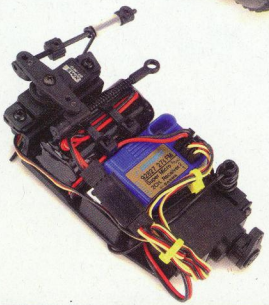
Jumps were a challenge; most were too steep and too widely spaced. Fortunately, the NT18T's engine had enough pep to get it airborne, but it tended to fly with its front end held up high. Tapping the brakes leveled the truck, but I constantly had to make in-flight adjustments, and that was a little nerve-wracking. I had to single most of the double and triple jumps but as long as I had a good approach and the jumps weren't too far apart, the truck cleared some of them in one swoop. It took practice, but I figured out the fastest line around the track and stuck to it.

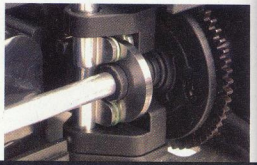
During one run, the engine got a little too hot and flamed out (it was 270 degrees Fahrenheit, according to my temp probe). It refused to start afterwards, even after I had let it cool down for a while. The glow plug was toast. I installed an O.S. A3 glow plug, richened the high-speed needle valve slightly and put the truck on the starter box. The engine fired right up and idled smoothly. I ran the truck for another hour and probably burned through 10 tanks of fuel without a problem.

## TUNING TIPS

### BALL-DIFF SETTING

The ball diffs are set tight at the factory, but you'll need to check them after the first couple of runs because they'll loosen up during break-in. The diffs can be adjusted externally with minor disassembly. Just remove the screw that secures the outside ends of the upper front wishbones to the right front and left rear steering knuckles/rear hub carriers. Move the driveshafts out of the way to access the diff screw, and then tighten the screw with a 1.5mm hex wrench. About ½ turn clockwise will tighten the front diff properly, and about ¼ turn will do it for the rear. You can fine-tune the diffs afterwards to suit track conditions.





**Left:** the one-piece radio tray can be removed quickly by loosening four screws and disconnecting the steering link and brake lever. Note that the radio tray is cramped, but there's enough room to mount micro-electronics.

**Right top:** the upper and lower wishbones pivot on steel pivot balls instead of hingepins. The oil-filled shocks operate very smoothly, and the kit includes several shock pistons in different sizes and preload spacers for track tuning.

**Right bottom:** the brake rotor is laser-cut and hand-ground to tight tolerances, and the steel calipers have Ferodo brake pads for smooth, consistent braking. The brake rotor floats on a separate sleeve that's keyed to the end of the aluminum propeller shaft.

## CHASSIS

**» Swiss T6 7075 machined-aluminum chassis » One-piece radio tray**

Flat-head screws are used throughout, and the engine-mounting screws are recessed to ensure a smooth chassis bottom. The engine-mounting holes are slotted to allow gear-mesh adjustment, and an opening under the fly-wheel allows starter-wheel access.

The electronics are neatly arranged on a compact, removable radio tray that has room for two microservos, a small receiver and a 4-cell AAA pack. Do yourself a favor and pick up the NT18T with the optional Electric Pack, as I did; it includes two metal-gear micro-servos, a NiMH receiver pack and a switch harness, so the only additional items you will need are a radio and receiver.

A molded upper deck runs along the chas-sis' centerline and spans the distance between the two gearboxes. The chassis is fairly rigid on its own, but the upper deck and the radio tray provide additional stiffness.

## DRIVETRAIN

**» Ball differentials » Shaft drive 4WD » Laser-cut, hand-ground steel brake rotor**

The NT18T's drivetrain is extremely smooth and highly efficient. A light aluminum propeller shaft links the front and rear ball diffs and pro-vides full-time 4WD. A rugged, 54-tooth, hard-steel spur gear is attached directly to the rear pinion shaft; 26 metal-shielded ball bearings contribute to the drivetrain's efficiency. The factory-built front and rear ball diffs have hard-ened steel balls, keyed diff rings and thrust-bearing assemblies, and they can be adjusted to suit the track. The brake rotor floats on a plastic hub that's keyed to the propeller shaft. Steel calipers with Ferodo brake pads clamp down on the rotor to slow the truck down. Plastic universal axles drive all four wheels.

## SUSPENSION & STEERING

**» Double-wishbone suspension » Fluid-filled shocks » Swaybars**

The NT18T features the same double-arm wishbone suspension as the electric M18T. The upper and lower wishbones pivot on steel pivot balls instead of hingepins. This not only reduces weight, but also the pivot balls won't bend and bind the suspension. The only downside is that the upper wishbones are fixed in length, so you can't adjust camber.

The fluid-filled, plastic-body shocks have factory-installed O-ring seals and rubber blad-ders, and the shock caps have bleed holes. The completed shocks work as smoothly as any 1/10-scale bouncers that I've built, and they're extra-long to give the NT18T class-leading sus-pension travel. The front and rear shock towers have three upper shock-mounting options, and there are two more on the lower wishbones.

Front and rear swaybars reduce chassis roll in the corners when racing on high-traction areas. The one-bellcrank steering system pivots smoothly on ball bearings, and threaded-steel rods allow front toe adjust-ment. The bellcrank is installed on the upper deck, so accessing the diffs and the other dri-vetrain components is more time-consuming because to remove the upper deck, you have to disconnect the two steering rods and the link that goes to the servo-saver.

## ENGINE & ACCESSORIES

**» XRAY 3-port 0.8cc engine » Aluminum clutch shoes » T6 aluminum flywheel » 16-tooth hard-steel clutch bell**

The XRAY 0.8cc (0.05ci) engine might be tiny, but it's loaded with features found on larger racing mills. It has a 3-port, chrome-plated brass sleeve with an aluminum piston (ABC construction) and a light aluminum connecting rod. A dual-needle slide carburetor allows pre-cise engine tuning, and an 8-fin, machined-aluminum cooling head keeps the engine temp in check. A high-density air filter cleans the air that enters the engine, and the exhaust is routed out through a nice-looking polished-aluminum manifold and tuned pipe. A 30cc fuel tank keeps the engine running for 5 min-utes or more, and it features a cap-mounted pressure fitting, internal slosh baffles and a built-in stone fuel filter.

**The XRAY 0.8cc engine is powerful and reli-able. It has a dual-needle slide carb and a big, machined-aluminum cooling head just like larger engines. The engine does not have a pull-start mechanism, so you'll need a starter box.**

## BODY, WHEELS & TIRES

**» Clear Lexan body » Dish wheels » Mini-stud racing tires**

The NT18T includes a clear Lexan body shell. The body is molded to fit the chassis tightly, and 3D side panels provide clearance for the nitro-specific items. You have to paint it yourself, but decals with cool graphics are included, so a one-color paint job is enough to make the body look good. Window masks and overspray film make painting easy. The white dish wheels are light, but they aren't compatible with Losi or Associated rims, which have become the industry standard. This limits your wheel choices, but the included XRAY Low Pin tires are molded out of a soft racing compound, and they hook up very well on a variety of dirt surfaces. Foam inserts support the tires.

## XRAY NT18T

**Contact** RC America, rcamerica.com
**Price** $269 (varies with dealer)

### SPECIFICATIONS

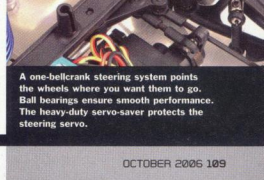
**Length w/body** 9.2 in. (233.6mm)
**Chassis length** 8.18 in. (208mm)
**Wheelbase** 5.9 in. (150mm)
**Width** (F/R) 7/70.8 in. (178/180mm)
**Weight, as tested** 24.34 oz. (690g)
**Chassis** 7075 aluminum plate w/molded upper deck
**Drivetrain type** Shaft-driven 4WD
**Clutch** 2-shoe aluminum
**Transmission ratio** 2.5:1
**Final drive ratio** 8.44:1
**Differentials** Adjustable ball
**Driveshafts** Plastic universal joint w/steel drive pins
**Bearings/bushings** Metal-shielded ball bearings
**Brake** Steel disc with padded calipers
**Suspension type** Pivot ball w/upper and lower wishbones
**Inboard camber-link positions** (F/R) 1/1
**Outboard camber-link positions** (F/R) 1/1
**Shocks** Oil-filled with plastic bodies and clip-on preload spacers
**Upper shock positions** (F/R) 3/3
**Lower shock positions** (F/R) 2/2
**Wheels** XRAY 37x30mm white dish wheels
**Tires** XRAY Low Pin tires w/foam inserts
**Body** Clear Lexan w/window masks, overspray film, decals
**Engine** XRAY NT18 0.8cc
**Construction** ABC
**Ports** 3
**Carburetor** 2-needle slide
**Pipe** Aluminum manifold w/tuned pipe
**Fuel tank** 30cc

### BONUS

» Powerful, reliable engine
» Hardened-steel spur gear & clutch bell
» Super-smooth drivetrain
» Excellent disc-brake system
» Easy to build and work on
» Fast and easy to drive

### BOGUS

» Pricey



**A one-bellcrank steering system points the wheels where you want them to go. Ball bearings ensure smooth performance. The heavy-duty servo-saver protects the steering servo.**

The NT18T is easy to build, thanks to the individual parts bags that contain all the parts and fasteners needed to complete each series of steps and the excellent instructions with CAD illustrations. Take your time when you build the kit, and follow the instructions to the letter. Here are a few tips that will make assembly go even more smoothly.

**Thread-lock.** Put liquid thread-lock on the clutch nut that threads onto the engine crankshaft, the screws that secure the engine mounts to the chassis and the screws that secure the engine to the mounts. It might be a small engine, but it vibrates as much as any powerplant, so be sure to use thread-lock.

**Page 13, step 3 and page 18, step 3.** Pay close attention to the instructions when you press the steel pivot balls into the openings on the suspension arms. The pivot balls all look the same, but there are three sizes.

**Page 14, step 7 and page 19, step 7.** The ball bearings fit very tightly over the universal axles. I had to lightly sand the axles until I could slide the bearings on and off easily. Cup a piece of fine-grit sandpaper in your hand and slowly rotate the axle against it.

**Page 23, step 2.** Slide one 5.3x8.7x0.3mm shim and one 5.3x8.7x0.5mm shim in front of the split washer so that the clutch bell will line up properly with the spur gear.

**Page 27, step 1.** Use slow-drying CA to glue the brake pads to the calipers, and you'll have more time to align the pads properly.

**Page 33, step 7.** Make sure that the 3x10mm machine screw that secures the steering bellcrank to the upper deck is tightened all the way, or the screw that secures the servo link to the bellcrank will bind with the propeller shaft.

| YOU'LL NEED | WE USED |
|---|---|
| Radio | Airtronics M8 |
| Receiver | Airtronics 92827 27MHz FM |
| 2 microservos | XRAY XMS01-MG |
| 4-cell AAA receiver pack | XRAY 700mAh NiMH |
| Starter box | Hudy Micro |
| Fuel | Blue Thunder 30% Race Formula |

## FACTORY OPTIONS

- Aluminum shock towers (F/R)—382095/383095
- Universal steel driveshafts—385301
- Aluminum shocks (F/R)—388400/388401
- Adjustable turnbuckle set—383302

| | |
|---|---|
| **INSTRUCTIONS** | 10 |
| Beautifully illustrated manual with concise building instructions, tuning tips and getting-started info. | |
| **PARTS FIT & FINISH** | 9 |
| Excellent parts finish; high-quality materials. | |
| **ADJUSTABILITY & MAINTENANCE** | 7.5 |
| Shock angle and front toe are the only adjustments. | |

## PERFORMANCE RATINGS

| | |
|---|---|
| **ACCELERATION** | 9 |
| The NT18T is quick off the line, thanks to the peppy engine and smooth drivetrain. | |
| **TURN-IN** | 8.5 |
| Transitions very well at lower speeds and holds a tight line. | |
| **CORNER SPEED** | 8.5 |
| Feels a little loose when exiting corners, but carries good speed. | |
| **ON-POWER STEERING** | 8.5 |
| The NT18T will push if you carry too much speed entering corners. | |
| **BRAKING** | 9.5 |
| The brakes can be set to lock the wheels up or provide smooth, consistent braking. | |
| **BUMP HANDLING** | 7.5 |
| It handles small bumps and surface imperfections well. | |
| **JUMPING** | 7.5 |
| Jumps nose-up; landings are rough if not perfectly executed. | |

## THE VERDICT

All the parts fit perfectly, and the instructions are clear and easy to understand, so building the NT18T is a joy. Things only get better when you start the engine. The NT18T is fast and exciting to drive, and it handles superbly for a vehicle that's less than 9 inches long. The sound of the tiny engine and the smell of nitro really get your blood flowing, and the engine runs reliably from one tank to the next. Some may consider the $269 street price a bit steep, especially considering the additional costs of the starter box and accessories required to run it. If you think of the XRAY NT18T as a novelty fun car, it's certainly too expensive. But if you're a serious mini fan who expects his minis to be built as well as larger competition cars, then it's worth it because it's loaded with high-quality materials, and the workmanship is second to none.

**SOURCES**

**Airtronics** airtronics.net
**Blue Thunder** distributed by Horizon Hobby Inc.; horizonhobby.com
**Hudy** distributed by rcamerica.com; hudy.net
**XRAY** distributed by rcamerica.com; teamxray.com