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MARCH 2006

XRAY M18T

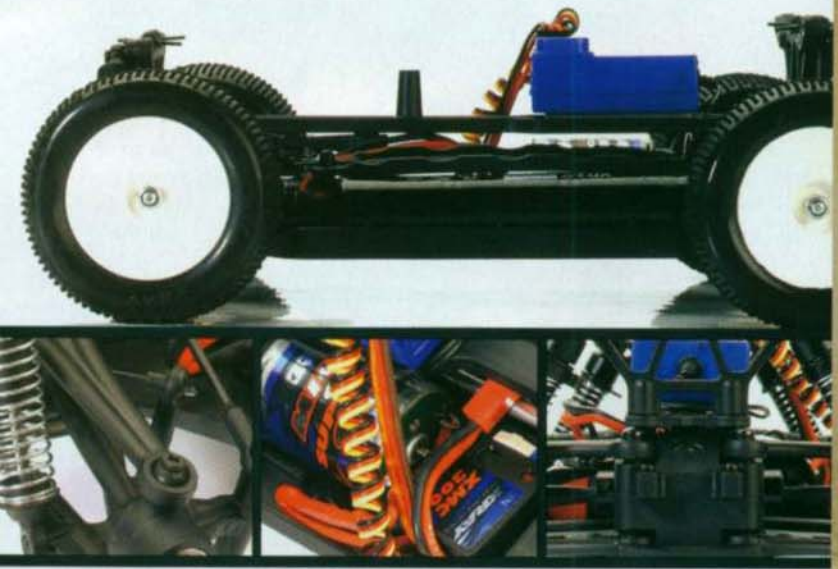
1/18-SCALE ELECTRIC 4WD MINI-TRUCK KIT

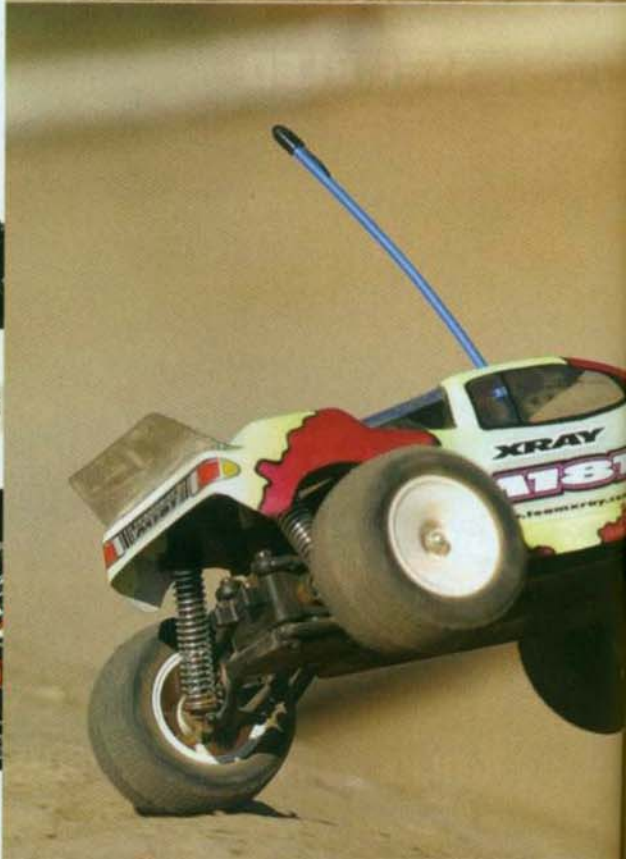
A race-ready mini with XRAY specs

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

XRAY is well known for their finely crafted and innovative RC models, and they proved they could retain the same high quality and innovation in a scaled-down machine when they introduced the M18 micro touring car. The M18 set the standard in the mini on-road arena, and now XRAY is ready to repeat that performance for the mini off-road scene with the new M18T shaft-driven, 4WD stadium racing truck.

Like its touring cousin, the M18T is packed with racing features that are sure to appeal to serious micro racers. The truck is available only as a kit, which means you must build it yourself and supply the necessary radio gear and electronics; or you can go for the kit with the Power Pack Pro, which includes a 300-size motor, a forward and reverse speed control, a metal-gear microservo and an 1100mAh battery pack. I tested the latter.



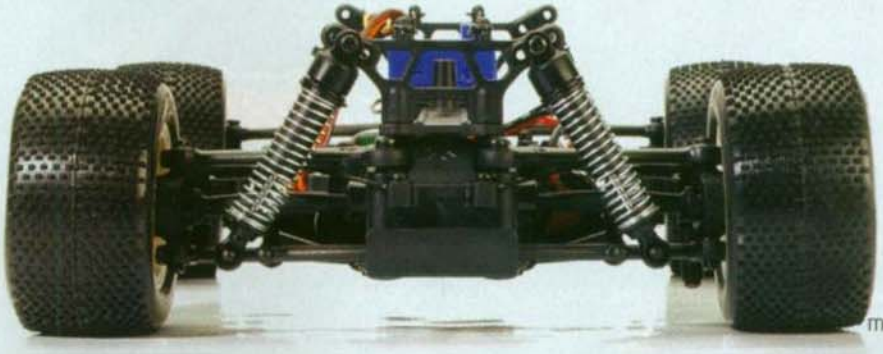


TESTING: ROUND 1

I tested the M18T at Hobby Haven in Bakersfield, CA. The small outdoor off-road track is basically an oval with an optional infield for off-road racing, and it's the perfect size for micro off-road trucks. I had raced my RC18T and Mini-T on this track before, so I was curious to see how the M18T would do on it. From the first pull of the trigger, I was pleased with the truck's get-up-and-go. The 300 motor that comes with the Power Pack Pro provides great acceleration, and the 12-tooth pinion gear I installed was the perfect match because the truck had plenty of scoot on the straightaway as well. Before hitting the jumps, I decided to break out the radar gun to get some speed data. The M18T topped out at 14mph—very respectable for a micro truck.

The M18T has plenty of steering at lower speeds, and that allowed it to get through the twisties with little difficulty. It did, however, have a tendency to drift to the outside on the high-speed sweeper, but letting off the throttle momentarily reeled the truck back to the inside to prepare it for the next set of switchbacks. After a few laps, I had the M18T on the fast track, and I was surprised by how incredibly easy it is to drive. It did not seem as nervous as some of my other micro trucks on the bumpy terrain. It rolled over the bumps and surface imperfections, and it never once felt as if it wanted to buck or swap ends.

The truck jumped nice and level, and the landings were fairly smooth, except when I tried to clear the



triple section and cased the crest of the last jump. The tires provided excellent grip on the hard-packed dirt surface, but the truck just didn't have the power to clear some of the widely spaced jumps. Driving conservatively and breaking the jumps into sets instead of trying to clear them in one swoop proved to be the fastest way around the track. Overall, I was impressed with the truck's box-stock performance, but I soon craved more speed. The truck craved more speed, too; the 300 motor hardly tested its capabilities.

ROUND 2

I decided that more speed was in order, so I installed a Castle Creations Mamba brushless motor system. The Mamba 25 performance speed control and 6800kv motor turned the M18T into a rocket and gave the term "overkill" new meaning. Pegging the throttle broke the tires free and made the truck do donuts, so careful throttle control was necessary to keep the little truck going straight. The brushless-equipped M18T was actually faster than some of the nitro trucks that roamed around the track, and it turned a lot of heads. I grabbed too much throttle the first time I went for the triple, and I cleared the last jump by 5 feet. The landing was rough, but the truck took the impact and kept on going like the Energizer Bunny. It had so much power on tap that it lost traction and spun out halfway down the straightaway whenever I grabbed too much throttle.

I got a little overzealous while chasing a nitro truck on the straightaway and brushed a pipe when I entered the sweeper. Suddenly, the truck stopped going straight, and it felt as if it lost drive to the rear wheels. Unfortunately, I broke one of the rear universal-joint axles, so I was finished for the day. The plastic U-joints are well suited to stock and mild mod motors, but they are a little delicate for brushless power. Fortunately, XRAY has optional aluminum units for those of us who like crazy power. I plan to order the aluminum universal axles and possibly a few more hop-ups while I have my credit card out, so stay tuned because you'll see a lot more of this truck in the future.

Monsterizing the M18T

A cool thing about the M18T is that you can convert it into a monster truck by using XRAY's Micro Monster Truck Conversion Set (item no. 380595). The kit includes extra shocks and larger-diameter tires to turn the M18T into an 8-shock monster. See "Gearbox" for a look at the M18MT.

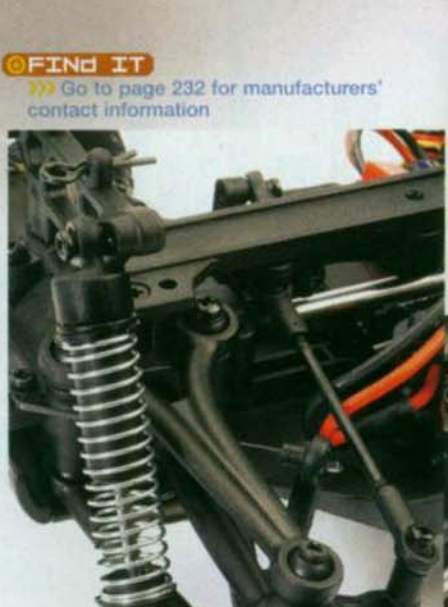
TUNING TIPS

DIFF ADJUSTMENT

The ball differentials are set tight at the factory, but you'll need to check them after the first couple of runs because the settings will loosen after they've had some break-in time. The diffs can be adjusted externally with minor disassembly. Just remove the screw that secures the outside end 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 gain access to 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 afterward to suit the track conditions.

FIND IT
>>> Go to page 232 for manufacturers' contact information

The molded semi-tub chassis is completely countersunk to provide a smooth undercarriage. Recesses under the suspension arms provide a little more suspension travel, and the motor mount is completely adjustable to allow gearing changes. Four pinion gears are included for track tuning.



The upper and lower wishbones pivot on plastic pivot balls instead of steel hingepins. The pivot balls are much lighter than hingepins, and the wishbones pivot smoothly without a hint of binding.

CHASSIS

» Semi-tub chassis » Adjustable motor mount » Quick-change battery strap

The chassis looks similar to the M18 micro touring car s, but it s a completely new design made specifically for the M18T. Recesses molded in the chassis allow the lower wishbones to pivot at greater angles to provide increased suspension travel, and the two-piece motor mount has been replaced with a much simpler one-piece unit. The motor-mount screw holes are slotted to allow gearing changes. There s also a recess to provide extra clearance for the large spur gear, and a cool-looking mini bumper protects the front end from impact damage. The bumper also provides ample nose clearance, and it is positioned slightly behind the front tires for improved handling when landing off jumps nose-down.

DRIVETRAIN

» Ball diffs » Shaft-driven 4WD » Full ball bearings

The M18T has one of the smoothest drivetrains I ve built. A long aluminum propeller shaft links the front and rear ball differentials and provides full-time 4WD. The 54-tooth spur gear is attached directly to the propeller shaft, and molded universal axles with metal drive pins spin the front and rear wheels. The factory-built front and rear ball diffs have hard steel balls, keyed diff rings and thrust-bearing assemblies, and they can be adjusted for track tuning. Four precision-molded pinion gears are included to broaden the gearing choices (8-, 10-, 11-, 12-tooth), and they have setscrews to keep them secured to the motor shaft.

SUSPENSION AND STEERING

» Double wishbone suspension » Oil-filled shocks » Front and rear swaybars » Single-bellcrank steering

The double-arm wishbone suspension is slick-looking and butter-smooth. The upper and lower wishbones pivot on lightweight molded pivot balls instead of the usual steel 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, which makes camber adjustment impossible. Fortunately, front and rear camber is set perfectly at approximately 1.5 degrees negative.

The oil-filled, plastic-body shocks have factory-installed O-ring seals and rubber bladders, and the shock caps have bleed holes. The completed dampers are as smooth as any 1/10-scale bouncers that I ve built, and the extra-long shocks give the M18T class-leading suspension travel. The front shocks are slightly longer than Losi s Mini-T rear shocks, and the rear shocks are even longer. The front and rear shock towers have three upper shock-mounting options and two more on the lower wishbones.

BODY, WHEELS AND TIRES

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

Decals and graphics are included with the M18T, so even a single-color paint job will make the body look great. Window masks and overspray film make the task even easier. The white dish wheels look great and they re lightweight; my only gripe is that they aren t compatible with Losi and Associated rims. This severely limits your wheel choices. On the bright side, the included mini-stud tires are molded out of a soft racing compound and hook up very well on a variety of dirt surfaces. Foam inserts support the tires.

XRAY M18T

Contact rcamerica.com
Price $235 (with Power Pack Pro)
Varies with dealer

SPECIFICATIONS

Length 9.2 in. (233.6mm)
Length w/out body 8.3 in. (211mm)
Wheelbase 5.9 in. (150mm)
Width (F/R) 7/7.08 in. (178/180mm)
Weight, as tested 20.7 oz. (587g)

Chassis Molded semi-tub
Drivetrain type Shaft-driven 4WD
Transmission ratio 2.5:1
Final drive ratio 16.8:1/11.25:1*
Differentials Ball
Drive axles Plastic universal-joint with steel drive pins
Bearings/bushings Metal-shielded ball bearings

Suspension type Double wishbone
Inboard camber positions (F/R) 1/1
Outboard camber positions (F/R) 1/1
Shocks Fluid-filled, plastic-body with O-ring seals
Upper shock positions (F/R) 3/3
Lower shock positions (F/R) 2/2

Wheels XRAY white plastic dish wheels
Tires XRAY mini-stud
Body Clear Lexan

Transmitter Not included
Speed control XRAY XMC300R*
Motor XRAY 300**
Battery XRAY 1100mAh**
Steering servo XRAY 01-MG**

**Final ratio varies with pinion gear used*
***Available with model 380591*

One-stop shopping

The M18T is available as a no-electronics kit (item no. 380500) and as a kit with XRAY's Power Pack Pro (380591) tested here. The Power Pack Pro comes with an XRAY 300 motor, an XMC300R forward and reverse speed control and an 01-MG metal-gear steering servo. An 1100mAh battery pack is included, too. That's everything you need to get started except a radio and receiver.

BONUS

» High-quality materials
» Smooth oil-filled shocks
» Excellent racing rubber
» Ball diffs
» Swaybars included

BOGUS

» Losi- and Associated-style wheels don't fit
» Plastic motor mount

Above: the battery pack is held in place with a plastic strap. Removing one of the body clips allows quick pack access. You must use a 6-cell stick pack because side-by-side cells won't fit. Left: a single steering bellcrank provides even throw to the left and right front wheels. The bellcrank pivots on ball bearings for smooth, bind-free operation. Threaded rods allow front toe adjustment. Check out the front swaybar; another bar is included for the rear suspension as well.

ON THE BENCH

The XRAY includes a beautifully illustrated instruction manual with 1:1 hardware identification legends and color illustrations. Despite its small size, the M18T is a sophisticated RC kit, so follow the instructions to the letter, and take your time while building. Here are a few tips that will make the build go more smoothly.

Steps 5 & 7, pages 5 & 9. Lightly grease the ring and diff gears with black moly to provide even smoother operation.

Steps 3 & 4, pages 11 & 12. Pay close attention to the instructions when pressing the pivot balls into the upper and lower wishbones. The pivot balls look similar, but some have taller flanges. Mount the pivot balls with the flanges facing upward on the lower wishbones and facing downward on the upper wishbones.

Step 6, pages 12 & 17. The ball bearings fit very tightly over the universal axles. I had to use sandpaper to lightly sand away material 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 into and out of the sandpaper.

Step 5, page 21. Be sure to tighten the 3x10mm machine screw that secures the steering bellcrank to the upper deck all the way, or the screw that secures the servo link to the bellcrank will bind with the propeller shaft.

Step 2, page 27. Apply a drop of CA over the ends of the sway-bars before you press in the pivot balls.

YOU'LL NEED / WE USED

YOU'LL NEED	WE USED
Transmitter/receiver	Airtronics M8/92836 75MHz FM
Speed control*	XRAY XMC300R
Motor*	XRAY 300
Battery*	XRAY 1100mAh
Servo*	XRAY 01-MG
Charger	Novak Millennium
Batteries	Venom
Tire glue	Pro-Line
Polycarbonate paint	Pactra

*Included with "Power Pack Pro" kit

FACTORY OPTIONS

» Graphite chassis—item no. 381172 (silver), 381173 (blue)
» Adjustable turnbuckle set—383302

ALUMINUM
» Motor mount—382052
» Shock towers—382095 (front), 383095 (rear)
» Shocks—388400 (front), 388401 (rear)
» Driveshafts—385301
» Suspension block—382252 (left), 382262 (right)

THE COMP

VEHICLE	PRICE*	REVIEWED
Team Associated RC18T	$159	3/05
DuraTrax Mini Quake	$180	2/05
Team Losi Mini-T	$149	2/04
Schumacher XMT4	$160	1/06

Varies with dealer

KIT RATINGS

INSTRUCTIONS	**8.5**
The manual is beautifully illustrated but needs more supporting text	
PARTS FIT & FINISH	**8**
High-quality materials, but the bearings fit too tightly on the axles	
ADJUSTABILITY & MAINTENANCE	**7.5**
Plenty of shock-mounting options, but the fixed upper wishbones limit camber and roll-center adjustment	

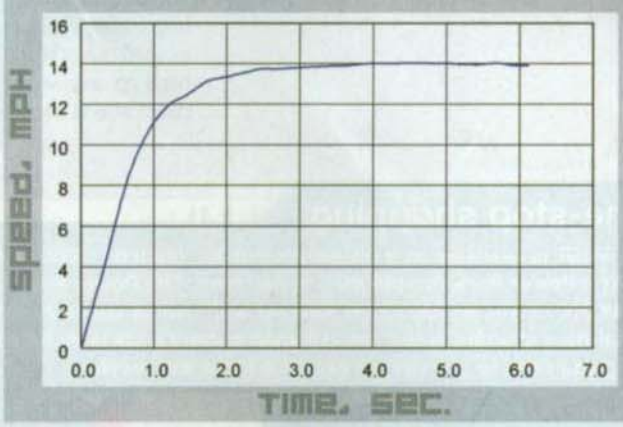
PERFORMANCE RATINGS

	ROUND 1	ROUND 2
ACCELERATION	8.5	9.5
Ultrasmooth drivetrain gets the power to the ground efficiently		
TURN-IN	9	9
The M18T turns very sharply at both low and high speeds		
CORNER SPEED	8.5	8
Carries good speed in the corners, and the rear end stays planted		
ON-POWER STEERING	8.5	8
Slight push under power, which is normal for a 4WD vehicle		
BUMP HANDLING	8.5	8.5
The M18 handles the rough stuff very well for a micro truck		
JUMPING	9	9
Flies level, and the landings are smooth and controlled		

RADAR TESTING

TOP SPEED 14MPH

Distance (in feet) traveled in:
1 sec. » 9.4
2 sec. » 27.8
3 sec. » 47.6
4 sec. » 68.2
5 sec. » 88.8
0-132 ft. time » 7.1 sec.
Time to top speed » 4.1 sec.
Speed at 132 ft. » 14mph



THE VERDICT

XRAY has done a fine job of designing the M18T. It is one of the best-handling mini racing trucks I've driven, and it has proven to be reliable. The swaybars, oil-filled shocks and adjustable ball diffs are very nice standard features, and the class-leading suspension travel makes the M18 a champion on rough terrain. I also like that you can convert it into an 8-shock monster truck with the optional Micro Monster Truck Conversion Set. I really like this truck and plan to race it until the wheels come off; keep an eye on my new column, "Micro Zone," for M18T updates.