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**DRIVEN:**

XRAY XB8-TQ

IRC VULCAN SE

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AUG 2006 / ISSUE 129



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# XRAY XB8-TQ

Words: Michael Wortel • Photos: Jason Yu

**And you don't need a lead apron to protect your nuts.**

**A**lthough it's rather subjective, I have to admit that I generally get excited about building something from XRAY. There's just something special about cracking open the box and seeing well organized parts bags, high-quality instructions, and the official certificate of authenticity, reminding me just how cool I really am. XRAY's newest beast is a 'pro' version of their already successful buggy: the XB8-TQ. Even though the XB8 was XRAY's first attempt at 1/8-scale, it proved to be highly-competitive. Unlike many other pro versions of preexisting kits, the TQ offers a wide array of changes and upgrades, not just a few. As with every other competitive buggy, when you purchase the TQ, spare no expense for the engine and components, because the sky is the limit for this chassis. Now the tough part - to see if the TQ can make me into a better driver... I will get back to you on that one.

He will show you how they roll in Children.

# XRAY XB8-TQ

• 1/8-SCALE NITRO BUGGY • 1/8-SCALE NITRO BUGGY • 1/8-SCALE NITRO BUGGY • 1/8-SCALE NITRO BUGGY •

## VEHICLE FEATURES

It's very apparent that the TQ is essentially a highly-upgraded version of last year's XB8. And leave it to XRAY to leave no stone unturned. Much of the buggy remains the same, but with a few changes, XRAY managed to reconfigure the entire suspension geometry, allowing for a much wider range of adjustments. XRAY has quickly become legendary for their parts quality, and they stepped it up even more by inducing new, stronger Hudy Spring Steel throughout.

### SPREAD THEM

The TQ offers wider suspension arms than its predecessor. This should add to the general stability of the buggy and increase forward traction, especially on rough tracks. The buggy should also hit and land jumps with a little more confidence, benefits of a wider track. The wider TQ may, however, lose a little steering, so it will be interesting to see how the TQ's turning radius compares to the original. The included arms are of standard hardness, and are beefy and almost completely seamless from molding.

### IN THE CLUTCH

The TQ sports an updated clutch system. The flywheel is made out of the super strong T6 aluminum and is hard coated. This assures that the pins will not shift, move, or piss you off in any way. Clutches take a ton of abuse, so it makes sense to use these high-quality components. And take a look at the new shoes. They are manufactured from machined aircraft aluminum that is tolerant to extreme temperature changes and high-speed friction. And oh yeah, they weigh 1.71 grams, which provides for later clutch engagement – optimized for the track. The metal-shielded clutch bearings are thick and designed for the high-torque and blazing heat of the clutch.

### MORE XRAY

XRAY ditched all of the graphite that was found on last year's buggy in favor of T6 aluminum. And it's made by the Swiss; they know their metals. The aluminum offers more rigidity and durability than graphite. The 3.5mm shock towers look indestructible, and the steering brace and radio plate should add some stiffness to the chassis, making the TQ faster on high-speed, high-traction surfaces. XRAY tops it off by including a T6 steering link that looks like it can take a lot of abuse – important when you hit something at 40 mph.



### BUILDING AND SETUP

Building an XRAY kit is usually something to look forward to: the high quality parts require almost no modification for a perfect fit. The differentials went together very easily, and you don't need to spend hours shimming the bevel gear. The drive axels, suspension and center transmission were also a breeze. The shocks, however, were a bit difficult to assemble, due to a dangerously springy c-clip, that there isn't a tool on the face of the earth to assist you with. XRAY's instructions are typically top-notch due to the detailed, clear drawings and colored print. The TQ, however, uses that original XB8's instructions with a supplemental manual for differences in the new buggy. Here's a tip: go through and use a highlighter on the big manual to indicate when you need to refer to the supplement.





It's pretty rare when a car comes around the office and captures **EVERYONE'S ATTENTION.**

Special thanks to Moshon for NOT complaining about Photoshop.

#### ▶ VARIABLE CHASSIS BRACES

I was a little confused while assembling the TQ, because there were two sets of chassis braces: composite and aluminum. Then I realized that this was intentional. XRAY includes the two sets to provide racers with the option of stiffening their chassis for high traction tracks, with the use of aluminum braces, or making the chassis less rigid for bumpy, low traction surfaces. And if you're totally insane, you can experiment with a combination of both to achieve a specific feel for the track. Serious racers will definitely appreciate the variability.



#### ▶ VARIABLE SUSPENSION GEOMETRY

The combination of redesigned C-hubs and suspension holders allows for a greater range of adjustability in every major aspect of suspension. The TQ offers a greater adjustable range for the wheel base, caster, kick-up, anti-squat, and suspension travel. The larger variability of adjustments greatly adds to the tunability of the TQ for specific tracks. XRAY has been known for unique suspension designs, and it appears that this is starting to trickle down to 1/8-scale, not bad for XRAY's second buggy ever. They're fast learners over there.



## TESTING

Revelation Raceway, here we come. ([www.revrace.com](http://www.revrace.com)) The TQ is designed for one thing and one thing only: the racetrack. When we showed up at Revelation, it was a blistering hot SoCal afternoon. The track was literally drying as fast as they could water it down. Revelation is a medium sized track, and has a slightly shorter configuration than normal, but it is always fast. The Pro-Line Crime Fighters are extremely versatile and should be perfect for the surface of Revelation. Of course, while breaking-in the TQ and doing speed testing, I couldn't resist the temptation of blazing the asphalt and completely frying a set of tires on the runway.

### Acceleration and Speed

The TQ is extremely light, rigid, and efficient, so it seems to be the perfect platform for all-out speed. Picco's .21 engine combined with Nova Rossi's tuned pipe are a lethal combination. The two absolutely scream throughout the entire power band. The only down side, if I were pressed to find one, is that the engine is a little slower at reaching peak RPMs than I would like to see. Even though the TQ hits 40 mph+, it takes over 200 feet to do so – longer than most straights that you will encounter. Overall, the trio of the TQ, Picco engine, and Nova Rossi pipe provide for some white-knuckle, lip-biting speed across the spectrum.

**Rating: 10/9**

### Braking

When you're blazing around the track at 45 mph, it's always important to be in control, because when an RC crashes at 45, it doesn't break, it friggin' explodes. The brake system used in the TQ is on par with the excellent quality seen throughout the rest of the buggy. Of course, the front and rear biases are independently adjustable, so you can achieve your ideal setup rather easily. The linkages are accessible and easy to tune. At full force, the TQ has the ability to completely lock-up the

wheels, but it is sensitive enough to adjust to any desired braking force. The throttle servo has gobs of torque, which no doubt adds to the stopping power. Even through breaking-in on a day when the asphalt read 126 degrees, there was very little in the way of fade. This thing's ready for a 45-minute main.

**Rating: 9**

### Low-Speed Handling

The TQ has a ton of steering, which makes it good at maneuvering around at low speeds. With the stock setup, the TQ is pretty much ideal for shorter tracks, because it is easy to get the rear end to kick. There isn't much push at low speeds either, so it doesn't require brake action to move around in tight areas (though we all enjoy that). The Hitec servo has a good combination of torque and speed, which seems to suit the TQ well. Moving the bell cranks isn't a problem at all, so you definitely achieve full throw at any speed.

**Rating: 10**

### High-Speed Handling

Once again, the stock setup is more than adequate on the TQ. The buggy feels very stable, and this is no doubt facilitated by the widened arms. In fact, I compared the TQ's width with a few buggies laying around my office, and it is 3-7 mm wider than all of them. The stock springs are a little soft, taking away from high-speed cornering, but when I hit a rut at the end of a fast straight, I was more than glad to have the soft

## OUR TEST GEAR

	Futaba 3PK, FUTJ32*, \$320
	Receiver: Futaba R133F, \$52
	Engine: Picco P7 Evo .21, \$300
	Receiver Pack: Team Trinity 1400mah Ni-MH, TRI20507 Standard Off-Road, \$32
	Pipe: Nova Rossi Top EFRA-9886, ASC201, \$120
	Fuel: Werks 30%, WFX6030, \$29
	Fuel Gun: Pro-Line Straight Shooter, 6035-00, \$75
	Tires: Pro-Line Crime Fighters, 9014, \$16 (2)

## CONNECT

FUTABA	ph: 217.398.0007 web: <a href="http://www.futaba-rc.com">www.futaba-rc.com</a>
HITEC (Dist. by Horizon Hobby)	ph: 856.748.6948 web: <a href="http://www.hitecrod.com">www.hitecrod.com</a>
PRO-LINE	ph: 951.849.9781 web: <a href="http://www.prolineracing.com">www.prolineracing.com</a>
PICCO (Dist. by Werks Racing)	ph: 408.365.1000 web: <a href="http://www.teampicco.com">www.teampicco.com</a>
WERKS RACING	ph: 408.365.1000 web: <a href="http://www.werksracing.com">www.werksracing.com</a>
TRINITY	ph: 732.635.1600 web: <a href="http://www.teamtrinity.com">www.teamtrinity.com</a>

suspension to keep the TQ on the track. The rear kick made the throttle a little volatile in fast sweepers, but the swaybars seemed to keep the TQ pretty well planted at all times. There was a slight amount of



push during on-power, but this can be lessened by stiffening the rear suspension.

**Rating: 9**

#### Rough-Track Handling

The surface of the track itself was very smooth and rut free at Revelation, even considering the heat and wind, but there was a pretty challenging rhythm section of the track with irregular sized bumps and increments. The chassis did not feel too stiff, even with the TQ's addition of aluminum braces, and the shocks were smooth enough to absorb sudden impact. Like a lot of 1/8-scale buggies, the TQ wants to ride on its front wheels, pulling you down through the rhythm section, which is usually good, but occasionally the buggy wants to summersault as a result. The TQ holds its composure very well on irregular sections of the track.

**Rating: 9**

#### Jumping

The widened suspension helps the TQ grab a good line on the jumps and then land them gracefully. The soft suspension makes jumps more forgiving on the way up, and the combination of the two-hole pistons and 35 wt. shock oil proves to be a good balance for a controlled landing. The amazing stopping power of the brakes, however, caught everyone by surprise when controlling the throttle in the air, sending the nose slamming violently to the dirt. But after a couple adjustments (mostly mental), this isn't an issue, and the good brakes add to the TQ's control in the air.

**Rating: 9**

#### Wrenching

##### Maintenance

Most non-American/Japanese cars simply seem to 'go together' differently. And XRAY in particular utilizes different bulkhead assemblies than the norm. They're not more difficult to install, just less intuitive if you're not used to them. That being said, however, it was a bit difficult to assemble the integrated bulkheads, hinge-pins, and arms. You could really benefit from

an extra set of hands. The diffs are of average difficulty to remove, and the center tranny is accessible. Because there is plenty of space, the steering linkages/bell cranks are not frustrating to work on. The TQ does not suffer from many awkward screwing angles (leave the Kama Sutra at home), so simple chores such as removing the shocks and adjusting linkages aren't tough.

**Rating: 9**

#### Wear and Tear

The TQ is solid like a hickory tree. The chassis and its various braces and components are made of super durable aluminum and should never break. The screws used throughout the construction are hard coated and heavy duty; just make sure to use thread lock pretty much everywhere. The manual does not indicate when you should use thread lock, but use it 100% of the time whenever there's metal to metal contact. Do this and you'll avoid stupid mistakes. The only problem I encountered on the TQ was with one of the rear shocks. After landing funny off a table top, the shaft hyper-extended and jammed at full extension. I couldn't really figure out the problem, and it pretty much disappeared on its own. It is possible that I over tightened the bolt that attaches the piston to the shaft, expanding the piston and causing it to catch on the bottom of the body.

**Rating: 9**

#### Tuning

Just about every possible adjustment can easily be done to the TQ, because if it's difficult to make a slight tuning change, most people are actually too lazy to do it. Adjusting wheelbase is very easy with the use of c-clip spacers, and things like roll center, front kick-up, rear toe, and caster are adjusted using eccentric bushings. Of course, the wing, clutch, and all three

differentials are totally adjustable as well.

Finally, droop is set using a

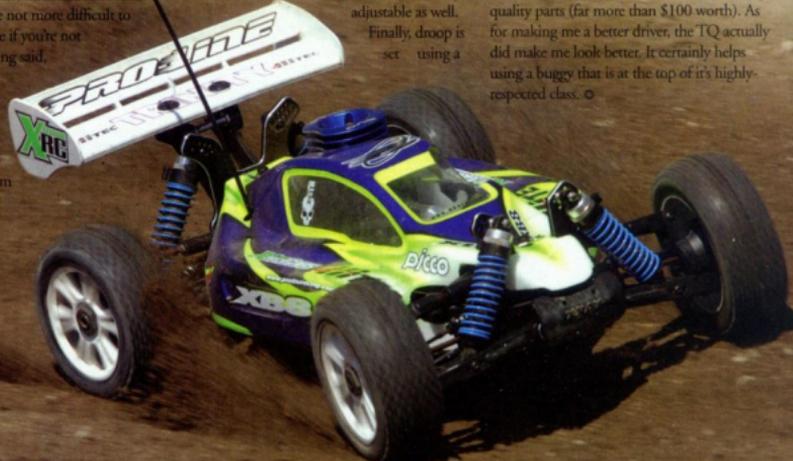
SCORECARD	
SCALE RATINGS: 1-POOR • 10-EXCELLENT	
9	INSTRUCTIONS
10	PARTS QUALITY/FIT
9	DURABILITY
9.5	TUNABILITY
9.5	OVERALL PERFORMANCE
9	VALUE
<b>+ HITS</b>	
<ul style="list-style-type: none"> <li>Some of the smoothest diffs I have ever tested</li> <li>Tons of CNC aluminum</li> <li>Easy to adjust</li> <li>You get a lot for the extra \$100</li> </ul>	
<b>- MISSES</b>	
<ul style="list-style-type: none"> <li>Composite wheel hubs</li> <li>Tricky shock assembly "Flinging"</li> <li>Bulkheads can be a hassle</li> </ul>	

hex set screw on the arms. XRAY even includes eight-pages of setup tips, detailing not only how the adjustments affect the buggy, but how to do them as well.

**Rating: 9.5**

#### Conclusion

Let me put it like this: after I finally had the TQ together and running and we made it to the track, everyone wanted to drive it. It's pretty rare when a car comes around the office and captures everyone's attention. And after driving the TQ once, the general consensus was extremely positive. It is hard to believe that this is essentially XRAY's third buggy, but I guess there's no surprise that it is fast, durable, and innovative, because that's what XRAY has become known for. Coming in at \$100 more than last year's XB8R, XRAY adds a lot of high quality parts (far more than \$100 worth). As for making me a better driver, the TQ actually did make me look better. It certainly helps using a buggy that is at the top of its highly-respected class. ☺



# XRAY XB8-TQ



• 1/8-SCALE NITRO BUGGY • 1/8-SCALE NITRO BUGGY • 1/8-SCALE NITRO BUGGY • 1/8-SCALE NITRO BUGGY •

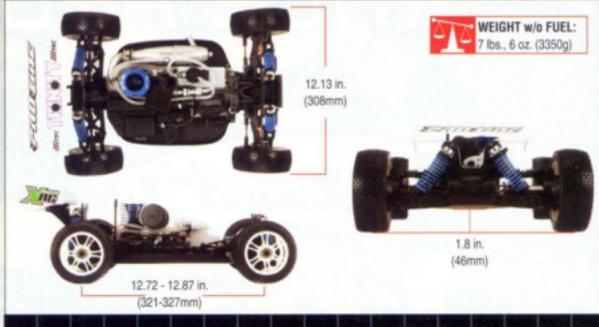
## CONNECT:

MANUFACTURER: Team XRAY  
PHONE: 800.519.7221  
WEB: [www.teamxray.com](http://www.teamxray.com)

## VEHICLE INFO

VEHICLE:	XRAY XB8-TQ
SCALE:	1/8
TYPE:	4WD Nitro Buggy
PART #:	350001
STREET PRICE:	\$599
PRICE AS TESTED:	\$1818 (including all items used for testing)
SETUP TIME:	13 hours
EXPERIENCE LEVEL:	Advanced

## DIMENSIONS



## TECHNICAL INFO

### CHASSIS

LAYOUT:	Single deck w/upper braces
THICKNESS:	3mm
MATERIAL:	7075-T6 CNC aluminum
FUEL TANK CAPACITY:	120cc

### SUSPENSION

TYPE:	Four-wheel independent, integrated C-hub
TURNBUCKLES:	Hudy Spring Steel
STEERING:	Dual bell crank
SWAYBARS:	Front and rear, adjustable

### SHOCKS

BODIES:	Aluminum
DAMPING:	35 wt. oil
PISTONS:	(f) 2-hole, 1.4mm (r) 2-hole, 1.5mm
SPRINGS:	Blue (Soft)

### DRIVE TRAIN

TYPE:	4WD Shaft
DIFFERENTIAL:	Gear (3)
DIFF FLUID:	(f) 700K Si oil, (c) 700K Si oil, (r) 100 K Si oil
AXLE TYPE:	Hudy Spring Steel Universals
TRANSMISSION:	Single-speed
SPUR GEAR MATERIAL:	Metal
CLUTCH:	Three-shoe aluminum
BEARINGS:	Rubber shielded

### GEARING

PINION/SPUR:	13/46
GEAR RATIOS:	
PRIMARY:	3.54
INTERNAL:	3.33
FINAL:	11.79

### BODY, TIRES, WHEELS

BODY:	XRAY XB8 Racing Body
TIRES (F/R):	Not included
DIAMETER/WIDTH:	N/A
HEX SIZE:	17mm
WHEELS:	XRAY Starburst

### ITEMS NEEDED

CA, Charger, Engine, Fuel, Glow Igniter, Glow Plug, Radio, Receiver, Receiver Pack, Servos (two), Tires, Thread Lock, Paint

### MAIN COMPETITION

GS Racing CL-1, Jammin' X1CR, Kyosho Inferno 777 Sp2, Mugen MBX-5, OFNA Hyper 8 Pro

### WHO IT'S FOR

Competitive 1/8-scale buggy racers

My first car cost less than this thing.

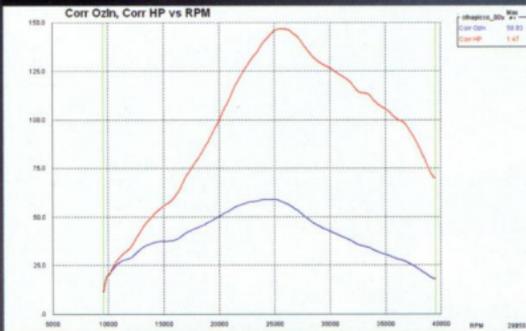


## POWERPLANT INFO

Picco's P7-R is an excellent motor, and it produces strong power throughout the rpm range. The engine fires-up very consistently and isn't a needle-where; it holds its adjustments well and is pretty easy to tune. The engine ran very cool, never exceeding 230°, although the weather itself resembled a typical SoCal summer: HOT. If you do decide to purchase this engine, don't cheap-out on the pipe. We dynoed the P7 using the Nova Rossi pipe, and it put out 1.47 hp, almost an entire .5 hp more than with the "tuned" pipe included in a different high-end buggy kit. Picco has been in the game for a while, and the P7 is a very good match for the XRAY.

### X-DYNO DATA

POWER PLANT DYNO PERFORMANCE



### ACCELERATION CURVE

ACCELERATION AND TOP SPEED



### ACCELERATION

ACCELERATION (0-60FT):	2.83 sec. @ 32.5 mph
TOP SPEED:	43.3 mph @ 250 ft.
AVERAGE RUNTIME:	8 minutes



### ENGINE DATA

ENGINE:	Picco P7-R Evo 21
BORE x STROKE:	0.64 in. x 0.661 in. (16.26mm x 16.8mm)
DISPLACEMENT:	21 in. <sup>3</sup> (3.5cc)
FUEL:	Werks Racing 30%
PIPE:	Nova Rossi Top EFRA-9886
PLUG:	O'Donnell #99
PEAK HP*:	1.47 hp @ 25,200 rpm
PEAK TQ*:	59.01 oz.-in. @ 24,800 rpm
PEAK RPM*:	39,400

\*Results as tested.

### NEEDLE SETTINGS

HIGH:	1 1/2 turns in from flush
LOW:	2 turns from closed
MID:	1 turn out from flush
OPERATING TEMP.:	210° - 225° F

## PERFORMANCE INFO

### TEST CONDITIONS

WEATHER:	Sunny
TEMPERATURE/HUMIDITY:	91° F / 12%
BAROMETRIC PRESSURE:	29.97 in.
ALTITUDE:	900 ft.
TRACK TYPE:	Various

### HANDLING

TURNING RADIUS:	5 ft., 8 in.
ON POWER:	Slight Understeer
OFF POWER:	Neutral

### BRAKING

CONTROL:	Excellent
FADE:	Minimal
OVERALL BRAKING:	Excellent