

**PERFORMANCE TEST**

1/10-SCALE 4WD BUGGY | KIT



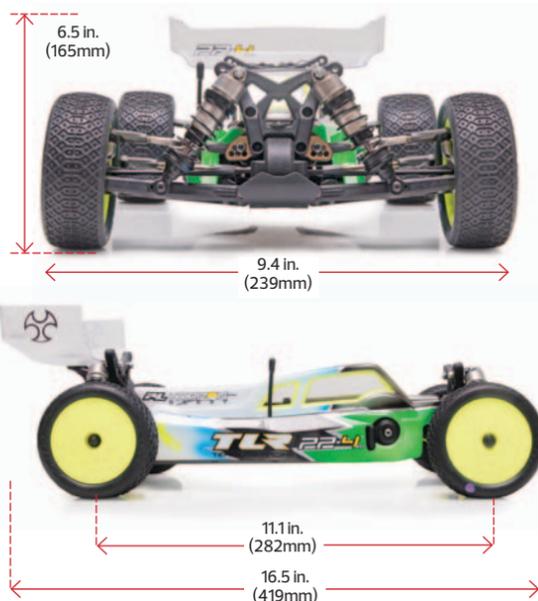
## TLR 22-4 2.0

*TLR Team refinements make the already competitive 22-4 buggy even faster*

TEXT & PHOTOS BY JOEL NAVARRO

**TLR recognizes the needs of racers** and the high demand of performance that they expect from their racecars. That is why so many race fans pick up TLR kits to attack their track. TLR stepped up the game in the 4WD class with the introduction of the 22-4, which was a buggy that came from a clean sheet of paper and modern-day thinking. The 22-4 has had a lot of track time, and with that comes knowledge and experimentation, resulting in a buggy that performs better than before. It was time for the team at TLR to take all that they have learned and put together a new buggy that will give you that same performance right out of the box. That's why we now have the 22-4 2.0. The biggest changes are the addition of gear differentials, with tweaks to the suspension geometry, and 22 2WD buggy rear hubs. TLR also threw in the most popular drivetrain, suspension, cab-forward body, and aluminum options. Even with the included option parts, the new 2.0 is \$70 less than the original 22-4. Lets get the 22-4 2.0 on the track and see what it can do.

# PERFORMANCE TEST



## VEHICLE SPECS

**Item no.:** TLR03007  
**Scale:** 1/10  
**Price:** \$400  
**Weight, as tested:** 3 lb. 14 oz. (1760g)

**CHASSIS**  
**Material:** 7075-T6 aluminum  
**Type:** 2.5mm plate, 7075-T6

**SUSPENSION**  
**Type:** H-arm with aluminum turnbuckle camber link  
**Inboard camber-link positions (F/R):** 5/3  
**Outboard camber-link positions (F/R):** 1/8  
**Shock positions, towers (F/R):** 3/4  
**Shock positions, arms (F/R):** 2/2

**SHOCKS**  
**Bodies:** Threaded aluminum body, 12mm bore  
**Shafts:** Coated steel, 3.5mm  
**Volume compensation:** Emulsion

**DRIVETRAIN**  
**Type:** 4WD 3-belt drive  
**Spur gear/pinion:** 84T/not included  
**Differential (F/R):** Lightweight narrow gear  
**Driveshafts:** Front and rear universal shafts  
**Bearings:** Metal shielded ball

**WHEELS & TIRES**  
**Wheels:** Dish wheel, 12mm hex  
**Tires:** Not included

## TEST GEAR (NOT INCLUDED)

**Radio:** Hitec Lynx 4S  
**Receiver:** Hitec Axion 2-channel 2.4Ghz  
**Speed control:** Orion R10.1 Pro  
**Motor:** Orion Vortex VST2 LW V2 5.5-turb  
**Servo:** Spektrum S6240 Low Profile  
**Battery:** Orion Carbon Pro 5000mAh 110C  
**Tires:** Pro-Line Electron, Clay Compound  
**Charger:** ProTek Prodigy 640

## REVISED SUSPENSION

The bottom of the shocks connect to a conventional H-arm suspension with adjustable upper link, and up top are thick composite shock towers. The suspension geometry has been updated to improve handling, and you now get rear hubs from the 22 buggy. You also get aluminum 12.5-degree caster blocks, a pink rear swaybar, and an aluminum vertical ball stud camber block. Spacers on the rear hub allow you to alter the wheelbase of the buggy, and aluminum inner hinge pin mounts increase durability.



Aluminum 12.5-degree aluminum caster blocks are now standard equipment and so are the rear aluminum camber block, rear pink swaybar, and 22 2WD buggy rear hubs.

## THE 22-4 2.0 ASSEMBLED AND FIT TOGETHER LIKE A FINE SWISS WATCH, AND THE BUILD WENT OFF WITHOUT A HITCH.

## GEAR DIFFERENTIALS NOW INCLUDED

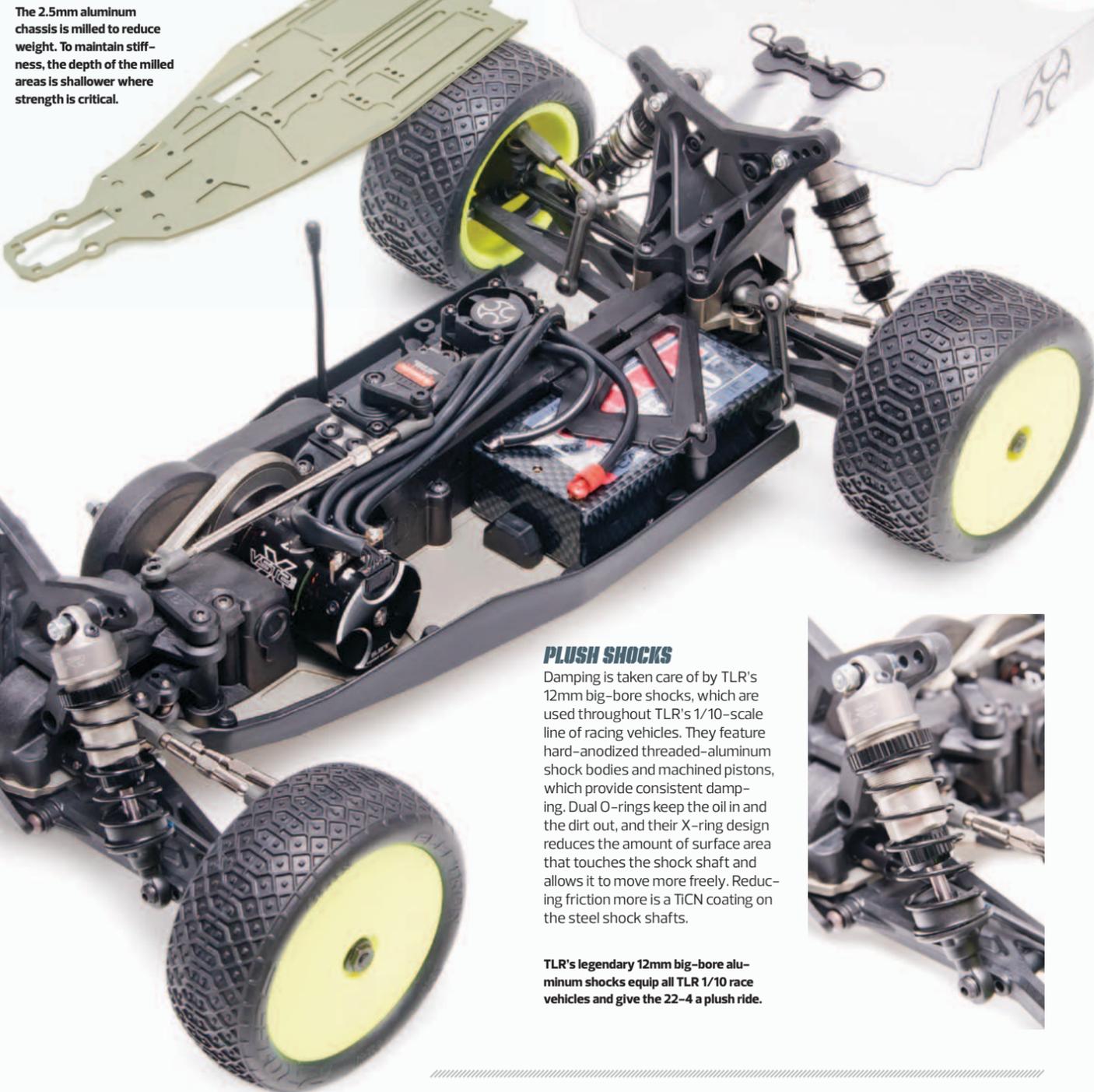
With traction levels going up and up all the time, the demand for bulletproof and consistent drivetrains are high. TLR answered back with tossing the ball differentials in favor of geared units. Engineers used a planetary design instead of a bevel gear to keep the dimensions of the diff narrow so that it would fit in the existing transmission cases, which were carried over from the first version of the car. The differentials are sealed units, so they are able to be tuned with various thickness of fluid. A spur gear and dual pad slipper clutch spins a trio of drive belts that connect through a series of pulleys, which efficiently transfer power to the front and rear ends of the car. The center access cover has been split to allow you to remove the back cover individually from the front. Front and rear steel CVA-type axles now get the power to the wheels because, according to TLR, they lock up under acceleration and keep the car flatter.



Lightweight CVA-type axles are made out of steel and are used on all four corners of the 22-4 2.0.



The planetary gear diff design keep the units narrow, which allows them to fit in the existing 22-4 drivetrain case suspension pickups. They are sealed so that you can fine-tune them with fluids.



The 2.5mm aluminum chassis is milled to reduce weight. To maintain stiffness, the depth of the milled areas is shallower where strength is critical.

## PUSH SHOCKS

Damping is taken care of by TLR's 12mm big-bore shocks, which are used throughout TLR's 1/10-scale line of racing vehicles. They feature hard-anodized threaded-aluminum shock bodies and machined pistons, which provide consistent damping. Dual O-rings keep the oil in and the dirt out, and their X-ring design reduces the amount of surface area that touches the shock shaft and allows it to move more freely. Reducing friction more is a TiCN coating on the steel shock shafts.



TLR's legendary 12mm big-bore aluminum shocks equip all TLR 1/10 race vehicles and give the 22-4 a plush ride.

## MULTI-CONFIGURATION CHASSIS

TLR is always on top of its R&D, and took into consideration how its racers were modifying TLR's 22-4 1.0 platform. Because of that, the 2.0 chassis can now be configured to use saddle-style packs or a single shorty pack without modifications. When the chassis is configured for a shorty-type battery, it can be positioned fore or aft by positioning a spacer in front or behind the battery. The chassis itself is a 2.5mm-thick aluminum plate that has been milled out to reduce its overall weight. The pockets toward the rear of the chassis are now half the depth to stiffen its flex characteristics. Molded guards span the length of the chassis on the left- and right-hand sides to keep debris from entering the chassis.



The 22-4 2.0 can be configured to accept saddle or shorty packs. In the shorty configuration, the battery can be positioned fore or aft to change weight bias.



## BEHIND THE WHEEL

### TEST GEAR Orion Vortex VST2 LW V2 5.5-turn brushless motor

I wanted a powerplant that was of the same caliber as the 22-4 2.0, so I went with an Orion 5.5-turn VST2 LW (lightweight) sensored brushless motor for the job. The beautifully machined case features three sets of mounting holes at different heights, allowing you to mount the motor lower in the chassis (clearance permitting) for a lower center of gravity (CG). The Vortex design also has a smaller diameter than other 540 cans, which further reduces weight and the overall CG of your vehicle. During testing, the 22-4 was unbelievably fast and, with the manual's recommended gearing, had plenty of bottom-end power to easily clear any jump with a small blip of the throttle.

I have some recent TLR builds under my belt, and this one isn't any different. The 22-4 2.0 assembled and fit together like a fine Swiss watch, and thanks to the easy-to-follow manual, the build went off without a hitch. Electronics installation was straightforward, and after a studio photo session, I was ready for the track. I packed my race bag and headed off to my local track: SDRC Raceway in Miramar, California. For tires, I went with a set of Pro-Line Electrons in their clay compound. The shakedown run on the 22-4 2.0 instilled nothing but confidence, as the handling was already pretty solid even before the tires had scrubbed into the suspension's settings. This can be attributed to effectiveness of the 4WD drivetrain being able to connect the power of the Orion 5.5-turn motor to the ground. The ride height was looking a little low, so I gave the 22-4 a once-over in the pits, and I found that the ride height did lower as the springs broke in. Thanks to the threaded shock bodies, I was able to quickly set the rear ride height to 20mm and the front to 21mm. Back on the track, the adjusted ride height let the 22-4 attack with good control and consistency. Jumping abilities came naturally to the 22-4, and the horizontally opposed motor makes it easy to control the attitude of the car if you did get out of whack in the air. Not much correction was needed as most takeoffs were nice and level, and landings were plush thanks to the 12mm big bores that cushioned even the hardest landings. Coming onto the straightaway, the 22-4 tracked straight and true, setting up sure footedly into the high-speed sweeper. The chassis stayed relatively flat in the sweeper, thanks to the included pink rear swaybar that kept the rear end planted. Approaching the left 90-degree turn, stable braking from top speed set me up perfectly entering the turn. Entering the short chute to the triple, the gear differentials kept unwanted wheel spin to a minimum allowing me to easily clear the triple with a short blip of the throttle. By the time I had a handful of packs through the 22-4, I got comfortable enough to start to push it hard on the track. The following day at the track, I wanted to get a couple of hours of practice in before racing started. The 4WD buggy class has steadily been making a comeback, and lucky for me, there was a full heat of it this night. Before I set the 22-4 down for its first heat, I lowered the ride height to 19mm front and rear, set 1.5 degrees of negative camber, and reset the slipper clutch. Throughout qualifying and the main, the 22-4 was pretty close to perfect and fit my driving style like a glove. By the end of the race night, the 22-4 2.0 was on pace with the fast guys in the class, and with some more fine-tuning, finishing in a podium position should come regularly.



- Easy assembly
- Popular option parts included
- Extremely agile on the track
- Responsive 4WD drivetrain



- Front belt tension not adjustable

## FINAL WORD

The TLR 22-4 2.0 is definitely a car that makes me look like a better driver than I really am; everything on the track was easy to do with the 2.0. From the build to the first laps on the track, the 22-4 didn't take much to get up to speed and run competitive laps. The addition of the popular options adds to the already highly adjustable suspension and drivetrain. The competitiveness of the 22-4 2.0 carries on to its price tag. Being \$70 less than its predecessor while including more bang for your buck shows TLR's commitment to providing racers with the best racing platform and overall value, which makes the 22-4 2.0 unbeatable in every way. 🏆

## SOURCES

- Orion teamorion.com
- Pro-Line prolineracing.com
- Spektrum spektrumrc.com
- TLR tlrcing.com