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March/April 2026

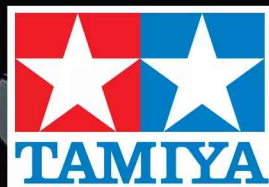
BACK-TO-BACK WORLD CHAMPION!

WE GO BEHIND THE WHEEL OF THE TEAM
ASSOCIATED RC10B84D



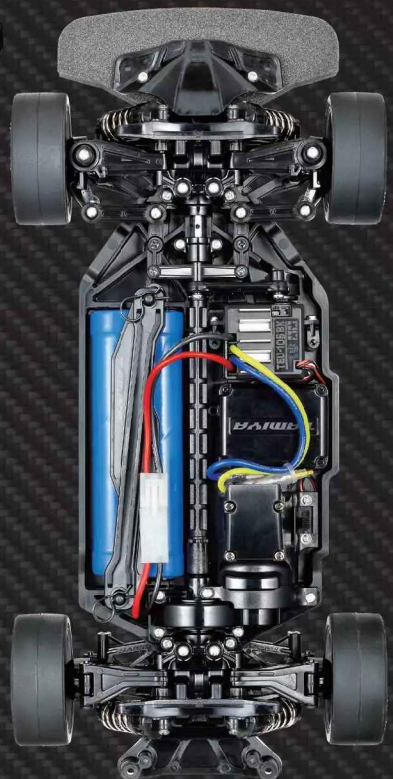
**TAMIYA
GRASSHOPPER**
FIRST DRIVE FOR A GENERATION

- > Upgrading the Traxxas Bigfoot 4x4 BL-2S
- > Scale Building the Excaliber Monster Truck
- > Ball Bearing Cleaning and Maintenance
- > On The Bench: Tamiya RC Car Stand



1/10
TT-02
CHASSIS

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- A** Gearbox covers can be removed simply with the loosening of a few screws.
- B** Steering linkage employs resin ball-end links for smooth operation.

TT-02 CHASSIS

BMW M4 GT3 EVO

ITEM 58751 L:443mm 4WD ASSEMBLY KIT

**NEW
MODEL**

Perfection Evolved

The BMW M4 GT3 EVO is the latest evolutionary stage of BMW M Motorsport's GT race car, appearing on racetracks from the 2025 season, and is packed with cutting-edge technology to maximise drivability, efficiency and reliability. Now, it joins the ever-expanding stable of Tamiya R/C cars in the form of this assembly kit model. The powerful silhouette of the car is recreated expertly by a polycarbonate body, with separate polycarbonate light cases and rear wing, plus molded plastic parts for the side mirrors and rear wing stays. It is based upon the efficient and accessible TT-02, a shaft-driven 4WD chassis that can be upgraded to suit your driving style and skill. Dedicated wheels round off this exciting product!

TT-02 Chassis Information

- Wheelbase: 257mm/251mm • Bathhtub-Type Chassis Frame
- Longitudinally-Mounted Motor, Shaft-Driven 4WD
- Front/Rear 4-Bevel Differential Gears • 4-Wheel Double Wishbone Suspension
- Front/Rear Friction Dampers • Gear Ratio=8.27:1
- Type 540 Motor

BMW M3 SPORT EVO JÄGERMEISTER 1992

ITEM 58760 L:449mm
4WD ASSEMBLY KIT

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Model is intended for adult hobbyists - not a
toy. Das Modell ist für erwachsene Bastler
gedacht und kein Spielzeug.



TT-02
CHASSIS

1/10

On the Hunt

This is a welcome comeback for the Jägermeister liveried M3 Sport EVO assembly kit, now newly paired with the TT-02 chassis. The body is molded in polycarbonate with separately molded plastic parts for the rear spoiler and side mirrors, and silver mesh type wheels paired with racing slick tires. The TT-02 is an adaptable and accessible shaft-driven 4WD chassis.

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ON THE LEFT:

Team Associated RC10B84D

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Thanks for joining us for another issue. This one brings together a mix of classic RC history, current competition machines, and practical garage knowledge.

On the vehicle side, we take a closer look at an upgraded Traxxas Bigfoot 4x4 BL-2s—built on a familiar platform but with updated performance and durability that make it just as fun for experienced drivers as it is for newcomers. We also feature the Associated B84D, a back-to-back world championship-winning buggy that shows what top-level race engineering looks like when everything comes together.

This issue also highlights where the hobby has been and where it's going. Our Legacy of the Tamiya Grasshopper feature looks back at one of the most important entry-level RC vehicles ever made. It was the starting point for many enthusiasts, and its continued presence today says a lot about its design and impact. On the build side, we check in

on an in-progress Excaliber monster truck scale build, giving you a look at the process and decisions that go into bringing a custom project to life.

We also focus on keeping your vehicles running at their best. Our bearing maintenance article breaks down the differences in bearing types, lubrication, and cleaning methods, so you can get the most out of your equipment. In Test Bench, we review the Tamiya RC Car Maintenance Stand, a simple but useful addition to any pit setup that makes working on your car more efficient.

As always, our goal is to bring you a balance of inspiration, technical insight, and hands-on content you can actually use. Thanks for reading and for being part of the RC community.

– The *RC Car Action* Editorial Team



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GEARBOX

New and noteworthy items



1. SL3D - Squid'nserts

These tire inserts bring a clever traction upgrade to 1.9 crawler tires by supporting the carcass while maintaining flex where it matters. Designed to improve sidewall stability and reduce tire collapse on technical terrain, they enhance grip, predictability, and overall crawling performance without sacrificing the soft, conforming feel enthusiasts want.

MSRP: \$40-65
 URL: sl3drc.com



2. Little Guy Racing Parts - Black Label M/T 1.0 crawler tires

These crawler tires deliver aggressive performance in a compact package. With a 57mm diameter and deep mud-terrain tread, they provide excellent bite on rocks, dirt, and mixed surfaces. The soft compound and scale-inspired design make them ideal for micro crawlers demanding both realism and capability.

P/N: LGT505
 MSRP: \$16.99
 URL: littleguyracingparts.com



3. Custom Color Carbon - RC10 Model 24 (4-piece kit)

This set of four carbon fiber pieces upgrades your 1/24-scale Team Associated RC10 platform with lightweight strength and style. Featuring carbon fiber shock towers, battery straps, and a transmission brace, this USA-made set enhances durability and chassis rigidity while adding a distinctive, high-end look to your build.

MSRP: \$29.99
 URL: ebay.com

READERS RIDES

A NEW WAY TO SUBMIT YOUR RIDE!

We now have an easy new way to submit your Readers Rides to RC Car Action online. Just go to Rccaraction.com/readers-ride-entry-form/ to fill in your vehicle's info and upload your pix directly to us! As a bonus, it will generate a shareable link that you can send to your friends or share on social media to show off your ride to everyone!

FROM BRISTOL TO BIHOKU

NICHOLAS RODRIGUEZ « CORPUS CHRISTI, TX

We're big fans of builds that blend styles, and when we saw this S14 we had to take a closer look. Yes, it's that well-executed. Nicholas Rodriguez from Corpus Christi, Texas, tells us more about his creation: "RC and full-scale drifting have always been a passion of mine, so when Team Associated announced the DC10 I had to jump on

it. The plan is to take this car to Japan since it's a bit harder to fit a full-size car in a carry-on." Built on a Team Associated DC10 chassis with a Yokomo S14 Silvia body, it mixes Japanese street style with an American twist. With D Magic styling and BN Sports over-fenders, it's designed to blend in at the track while still standing out in the pits.





BUILD HIGHLIGHTS

- Chassis: Team Associated DC10
- Body: Customized Yokomo S14 D1 1093 Speed Silvia
- Motor: Trinity Slot Machine 10.5T
- Speed Control: Elceram Nitride
- Battery: Team CRC Rocket Fuel 2s Shorty LiHV 6300
- Wheels & Tires: Wheels—Spice Work Meister S1, Tires—DS Racing
- Shocks: Team Associated
- Axles: Team Associated
- Paint: Tamiya Color PS-20 and PS-16
- Graphics: Sl maxx
- Lighting System: Yokomo light buckets with Team AD light kit
- Radio System: Futaba 10PX
- Other Options: D Magic street style front and rear bumpers and side skirts, as well as Addiction BN Sports over-fenders and quarters. The car also has Yokomo LED side mirrors and Pandora hood pins.



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The special "P-L" logo marks the Readers Ride of the Month. If you see it on your vehicle, you win a Pro-Line prize pack that includes a T-shirt, cap, and Pro-Line body.



To submit your vehicle, email your high-resolution JPEG images and a description to readersrides@airage.com. Readers Rides is also on Facebook! Visit [facebook.com/rccaraction](https://www.facebook.com/rccaraction)

LOW LOW-RIDER PUMPKIN

JON JAMES « UNITED KINGDOM

We always appreciate a build that takes a familiar platform in a completely different direction, and this Pumpkin does exactly that. Jon James from the United Kingdom tells us more about his build: “After regretting selling my Midnight Pumpkin for years, I decided to build another—but this time as a lowrider.” Starting with a Tamiya M06 chassis and Pumpkin body, he went

all-in—cutting the arches, reshaping the body, and fabricating custom plasticard extensions to achieve the stance. The body sits as low as possible, with reworked valances, smoothed details, and a clean black finish. It’s a wild mix of vintage style and custom fabrication. Great work, Jon—this one stands out.





BUILD HIGHLIGHTS

- Chassis: Tamiya M-06
- Body: Tamiya Midnight Pumpkin
- Motor: Tamiya RZ
- Wheels & Tires: Custom 3D-printed baskets fitted to Tamiya wide 2-piece rims, touring car tires
- Shocks: Tamiya
- Axles: Tamiya
- Other Options: Tamiya carbon damper mounts, full Yeah Racing chassis upgrade components, front valance and arches using plasticard, custom rear bed with wood-style finish and chromed strips, magnetic body mounts (modified M06 mounts), matte black grille backing, chromed door handles, painted wheel baskets and chromed pulley

KUSTOM K2500

KEITH NEWMAN « RENO, NV

We're always into builds that mix scale looks with serious trail capability, and this Silverado-based crawler checks both boxes. Keith Newman from Reno,

Nevada, tells us more about his creation: "I wanted something that looked clean but could still handle the terrain." Built on custom BPC rails with an unbranded transmission mount and 1/8-inch solid steel bumpers and sliders, this Pro-Line 2015 Chevy Silverado sits tough and ready. Power comes from a Castle Slate 2850kV 4-pole motor paired with a Mamba X ESC and Lectron Pro 2S battery. Finished with a Pro-Line bed rack, it's a clean, capable crawler built to get used.

Follow Keith @coffincrawlersrc for more!



BUILD HIGHLIGHTS

- Chassis: BPC Rails
- Body: Pro-Line Racing 2015 Chevy Silverado
- Motor: Castle Creations Slate 2850kV 4-pole
- Speed Control: Castle Creations Mamba X
- Battery: Lectron Pro 2S
- Wheels & Tires: Vanquish KMC Machete 2.2s, Pro-Line Mickey Thompson Baja Pro X 2.2s
- Shocks: Pro-Line Racing 5" Powerstroke XT
- Axles: Axial Wraith AR60s front and rear
- Radio System: Spectrum DX3 transmitter, Spectrum SR315 receiver
- Other Options: Pro-Line bed rack, unbranded trans mount, custom 1/8" solid steel bumpers and sliders

DISRUPTOR



FULL-THROTTLE, NON-STOP FUN

The Traxxas® 4s Disruptor® is the one boat that holds nothing back. The fun begins when you pin the throttle and Disruptor launches hard on its way to 40+MPH on a single 4s LiPo battery. At 26" long, Disruptor is perfectly sized to be quick and agile on small ponds and stable in open water. Disruptor is purpose-built by Traxxas for the wildest stunts and unstoppable fun—all with Rapid Right™ self-righting security.



Rapid Right™ Self Righting



4S Power System



Injection Molded ABS Hull



**Transport Disruptor to the lake in style
with the accessory tandem-axle trailer.
(PART 10650)**

TRAXXAS



SPECIAL PROJECT: BEST FOOT

UPGRADING THE TRAXXAS BIGFOOT 4X4 BL-2S



I've always been a fan of the Traxxas 1/10-scale 4x4 off-road platform and have had a few throughout the years, but it's been a while since I had one in my collection. When Traxxas introduced the Bigfoot 4x4, it caught my eye.

It has a great look and a lot of beefy components, and for me one of the best updates is the new stock BL-2S brushless system. I grabbed one of these trucks for fun around the house and for something to do while I'm waiting for my class to come up while racing solid-axle monster trucks.

The area that the truck will see the most is a freestyle-type location with large jumps and other obstacles that are a blast to run on, so I decided to install some upgrades to beef the truck up a little bit and to add to its already-great looks. I'm not here to throw every option at it—I'm just installing the parts I think are necessary for what I'm going to do with it.

FORWARD

Text & Images by Kevin Hetmanski

ALUMINUM CENTER DRIVESHAFT

The plastic driveshaft is great for starting out, but over time it can flex, which can cause vibration and can soften the truck's feel off the line. An easy upgrade for the stock driveshaft is the aluminum one offered by Traxxas.

They are available in blue, green, orange, and red. The shaft is hollow, making it lightweight, and the aluminum's zero flex helps improve the truck's acceleration. One thing to note is that you also have to pick up a front drive hub (6888X) to complete the assembly.



I went with a Traxxas aluminum center driveshaft for my build to increase durability and performance. Make sure you pick up that front drive hub when you get this upgrade.



SERVO UPGRADE

If I'm being honest, there's nothing wrong with the stock 2075 steering servo. For general use it does its job and points the truck where you want it to go. However, you can never go wrong with some extra power and speed in the steering department, especially when you have some possible immobile objects that you may want to avoid.

Stock, you get a 125 ounce-inch unit, but this servo offers 400 oz-in of torque, metal gears, and a partial aluminum case. So you get more power, a little more speed, increased durability, and it looks pretty good too. While I had the truck apart, I threw in a blue anodized aluminum steering drag link for a little more durability.

400 oz-in of torque is a bit overkill for this project, but you can never have too much power when you're behind the wheel of a big-tire monster.



I threw in Traxxas' aluminum steering drag link for increased steering durability.

ALUMINUM MOTOR BEEF

Traxxas includes an aluminum motor plate and that's great for some heat dissipation for the motor, but they also offer one that's a little bit better. The optional piece is also made out of aluminum, but it's a little thicker and the pockets machined out of it increases the surface area of the piece, which increases its cooling ability.

The thickness also eliminates any possibility of flex, which will ensure that your gear mesh stays the way it should be. I paired it with Traxxas' aluminum motor mount to further enhance the non-flex capabilities. It keeps the motor in place but also adds stability for the truck's spur gear. The combination of the blue anodized motor plate and motor mount looks awesome in the chassis.



When you have a truck that's going to be thrown around, it's not a bad idea to increase the consistency of the pinion/spur gear mesh. The aluminum also helps with heat dissipation.



Let's be honest, I really added the aluminum stub axle carriers, steering blocks, and caster blocks because they look awesome. They increase durability too... but they look awesome.

ALUMINUM SUSPENSION UPGRADES

The Bigfoot 4x4 comes with Traxxas' very durable HD suspension components, and I really had no need to change them. But I wanted my truck to stand out and look a little better, so I opted for some aluminum components. These include blue anodized aluminum stub axle carriers, steering blocks, and caster blocks.

Sure, they're a little more durable than the stock pieces, but just look at them. If you plan this upgrade for your truck, keep in mind that you won't be able to use the Traxxas steel CV driveshafts or the extreme heavy-duty suspension pin set. These components are designed for use on the HD plastic parts.

BEEFY SHOCKS

When it comes to function, the stock shocks are great; they support the chassis, control the suspension arms, and are pretty smooth. The problem with an all-plastic shock and a truck that's going to get beat on is that there can possibly be a failure point at the shock cap. The two can separate and you can lose all the oil inside; then you have no damping.

You can increase durability by using aluminum caps, but I wanted more, so I removed the stock shocks altogether and replaced them with Traxxas' GTR shocks. They're available in many different colors; they use a large-diameter shock body for improved damping performance thanks to having more oil onboard; the bodies are threaded for fine and easy adjustment of ride height; and the coated shafts offer less stiction, which makes them smoother. Keep in mind that they do not come with springs and the springs that come on the truck do not fit, so you'll need to grab some new ones. I went with .892-rate springs in the front and 1.004-rate springs in the rear to start.



The Traxxas GTR shocks are an upgrade that's worth it for many reasons. Increased durability, improved performance, and ease of use are always welcome.



WHEELIE BAR BLING

If I have a 1/10-scale Traxxas vehicle with a wheelie bar, I put this upgrade on it. First and foremost for this build, these wheelie bar wheels look really good. What makes them a great upgrade besides that is that they come with bearings, so they'll never wear out and will always be smooth, and they include soft-compound tires. The result is a wheelie bar that gives the truck more control when the front tires are off the ground.



These wheelie bar wheels end up on all my 1/10-scale Traxxas vehicles with a wheelie bar. They look great, but the included bearings and rubber tires are a plus.

CLEAR BODY

I can't build a project truck and keep the stock body that everyone else has. I decided to personalize my truck by getting a new clear body and giving it a paint job. I kept the paint simple because I plan on driving this truck hard—I expect rollovers and that body is going to get roughed-up.

A simple stripe with two colors above and below is perfect for this truck. When masking for the paint, I used the included masks to cover the window areas so the truck's roll cage could be seen through them. I stepped things up a bit by painting the top portion of the cage gray to make it easier to see.



Yes, the Traxxas Bigfoot 4x4 BL-2S has a roll cage hiding under the body. I painted the top portion gray to make it easier to see.



Traxxas sells a clear body, so I grabbed one and gave it a custom paint job to make my truck stand out.



BASE KIT
TRAXXAS BIGFOOT 4X4 BL-25

P/N: #67134-4

MSRP: \$379.95

URL: traxxas.com

TRAXXAS UPGRADE PARTS LIST

- 1 x Digital High-Torque Brushless Servo - 2255
- 1 x Blue Aluminum Steering Blocks (L&R) - 9064-BLUE
- 1 x Blue Aluminum Caster Blocks (L&R) - 9063-BLUE
- 1 x Blue Aluminum Stub Axle Carriers (L&R) - 9065-BLUE
- 1 x Blue Machined Aluminum Motor Mount - 6860R
- 1 x Blue Aluminum Machined Motor Plate - 6890X
- 1 x Red 189mm Aluminum Center Driveshaft - 6765R
- 1 x Blue Aluminum Steering Drag Link - 6845A
- 1 x Red Aluminum Tie Bars (F&R) - 6823R
- 1 x Blue Aluminum Wheelie Bar Wheels & Hardware (2) - 5186A
- 1 x BIGFOOT No. 8 4X4 Clear Body - 9020
- 1 x 1/10 Blue Aluminum Long GTR Shocks (2) - 7461
- 1 x 1/10 Blue Aluminum XX-Long GTR Shocks (2) - 7462
- 2 x Black Heavy-Duty Suspension Arms (L&R) - 3655-BLK
- 1 x 1/10 Long GTR Springs (0.892-Rate Blue Stripe) (2) - 7448
- 1 x 1/10 XX-Long GTR Springs (1.004-Rate Blue Stripe) (2) - 7449



IT'S A WRAP

This turned out to be a fun project built around an already enjoyable truck. I liked the Traxxas Bigfoot 4x4 in stock form, but these upgrades feel like the perfect step forward. The truck looks fantastic, and the added improvements give me more confidence behind the wheel without taking away from its original character. I do think it would be nice if the Traxxas steel driveshaft would work with the aluminum steering knuckles and rear hubs.

The steel shafts offer a clear durability advantage over the stock plastic units, though in fairness, the plastic components have held up well so far. For now, I'll keep an eye on them and consider upgrading down the road if it becomes necessary. I decided to stick with the BL-2S power system paired with a 7-cell NiMH battery, which should keep stress on the drivetrain relatively low. All things considered, this setup strikes a great balance and I'm looking forward to putting plenty of runtime on it.

The GRASSHOPPER

1/10th SCALE RC HIGH PERFORMANCE OFF ROAD RACER
1/10 電動RCレーシングカー(380タイプモーター付)
グラスホッパー



FIRST FOR A



DRIVE GENERATION



FROM KITCHEN TABLE BUILDS TO DIRT LOT RUNS, THE TAMIYA GRASSHOPPER'S ENDURING IMPACT ON RC CULTURE

Text by Jerry Tsai
Images Courtesy of Tamiya

Few RC vehicles carry the kind of recognition and staying power as the Tamiya Grasshopper RC buggy. Introduced in 1984, the Grasshopper arrived at a time when radio control cars were beginning to shift from niche kits to a more accessible hobby. The formula was simple: affordable pricing, straightforward assembly, and a durable design that could handle backyard terrain as easily as a local dirt lot. For many, it was the kit that turned curiosity into commitment.

Tamiya's long-running Grasshopper platform has seen many variations, including this limited-edition Candy Green version.



SIMPLICITY PERFECTED

At its core, the Grasshopper was built around a lightweight ABS bathtub chassis, a sealed rear gearbox, and a simple independent front suspension paired with a solid rear axle. Power came from a 380-size motor, modest by today's standards but more than enough to deliver lively performance for new drivers. Paired with mechanical speed controls in its early form, throttle inputs felt direct and deliberate, adding to the learning curve in a way many still remember.

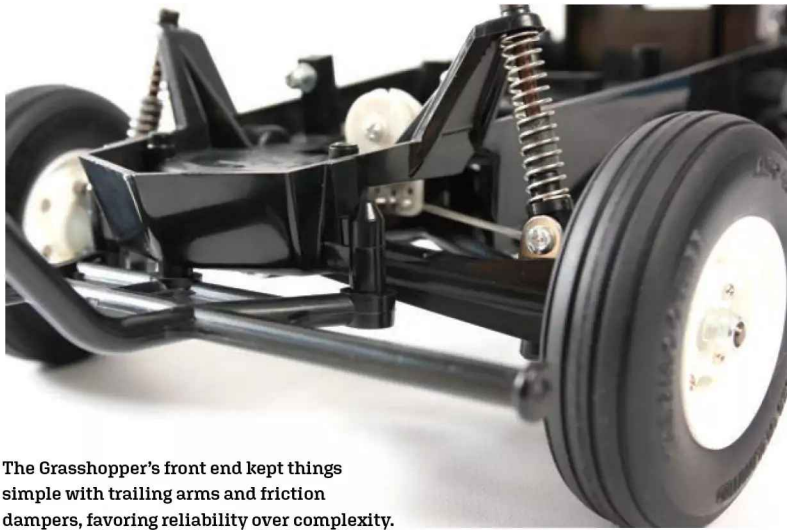
The design prioritized ease of use and reliability over outright speed, which made it approachable for first-time builders and younger hobbyists. For many, it wasn't just their first RC car—it was their introduction to wrenching, tuning, and understanding how mechanical systems worked. The act of installing bushings, routing wires, and adjusting ride height left a lasting impression.

Part of the Grasshopper's appeal came from its unmistakable look. The narrow front end, exposed front



The Grasshopper's ABS bathtub chassis and straightforward layout made it approachable to build while standing up to early off-road use.





The Grasshopper's front end kept things simple with trailing arms and friction dampers, favoring reliability over complexity.



Out back, a simple sealed gearbox and 380 motor provided dependable performance with minimal upkeep.



Another spin-off of the venerable buggy, the Comical Grasshopper reimagines the original with a playful, exaggerated design.

suspension arms, and large rear tires gave it a purposeful stance that echoed full-scale off-road buggies of the era.

Its simple white body, often customized with bright decals or personal paint schemes, became a blank canvas for creativity. From hand-cut paint masks to mismatched sticker placements, no two builds looked exactly the same. This visual identity helped it stand out on hobby shop shelves and in magazines, contributing to its lasting recognition.

OBTAINABLE HOBBY-LEVEL FUN

More importantly, the Grasshopper helped define what an entry-level RC kit could be. It lowered the barrier to entry at a time when more complex and expensive kits could intimidate newcomers.

Assembly required basic tools and patience, but the process itself became part of the experience. Builders learned by doing, and that hands-on approach created a deeper connection to the hobby. Early runs often meant learning throttle control on loose dirt, dealing with bouncing front ends, and figuring out how to keep the car tracking straight over uneven ground.

Today's ready-to-run models offer impressive speed and convenience, but they often remove the build process entirely. For many longtime enthusiasts, that shift represents a missed opportunity. Building kits like the Grasshopper introduced fundamental mechanical concepts—gear meshes, suspension movement, drivetrain layout—that translated beyond RC. For younger hobbyists in particular, that hands-on exposure often served as a gateway to understanding full-scale vehicles in a practical, approachable way.

It's a pattern that continues today, with many enthusiasts tracing their interest in RC cars back to a Grasshopper kit built on a kitchen table.



Clockwise from upper right: Grasshopper II, Grasshopper Jr., and Tamtech Grasshopper.



GRASSHOPPER VARIATIONS THROUGH THE YEARS

The longevity of the Tamiya Grasshopper RC buggy is reflected in the number of variations it has spawned. While the original 1/10-scale kit remains available in reissued form, Tamiya has continued to reinterpret the platform for different audiences and eras.

One of the most recognizable updates is the Candy Green Edition, which adds a metallic finish to the classic body while retaining the original mechanical layout. It's a cosmetic refresh that highlights the model's enduring visual appeal without altering its core identity.

At the opposite end of the spectrum is the Comical Grasshopper, which exaggerates the proportions with oversized tires, a

shorter wheelbase, and a wheelie-friendly setup. It trades scale realism for playful handling, and it appeals to drivers looking for something less traditional.

The Tamtech Grasshopper introduced a smaller-scale, battery-powered variant aimed at casual users, while the Grasshopper Jr. further simplified the concept for younger hobbyists with a more toy-like approach.

Across these iterations, the formula remains consistent: accessible, durable, and fun to drive. Each version reinforces the original Grasshopper's role as a gateway into the RC hobby, adapting its core concept to new generations without losing what made it popular in the first place.

CAN'T STOP, WON'T STOP

Decades later, the Grasshopper remains in production in reissued form, a rare feat in the RC world. Its continued availability speaks to both nostalgia and relevance. While modern RC vehicles offer brushless power, advanced suspensions, and ready-to-run convenience, the Grasshopper still holds value as a teaching tool and a reminder of where many enthusiasts began. It also remains a common sight at vintage RC meetups and casual backyard sessions, bridging generations of drivers.

FINAL WORD

In an era of increasing complexity, the Grasshopper stands as a straightforward, approachable platform that helped grow the RC hobby into what it is today. Its influence is less about performance metrics and more about participation—getting people involved, hands-on, and invested from the very first build.

TEST BENCH

**RC PRODUCTS
TESTED & EVALUATED**

Text by James York

Images Courtesy of Tamiya

TAMIYA RC CAR MAINTENANCE STAND



The Tamiya RC Car Maintenance Stand is a compact pit accessory designed to simplify basic service work without taking up much space on the bench. Measuring approximately 6.3 inches long, 3.9 inches wide, and 1.7 inches tall, it has a low-profile footprint that fits easily into most pit setups

FEATURES

Constructed from aluminum with Tamiya's signature blue anodized finish, the stand feels solid for its size while keeping weight to a minimum. The TRF and twin star logos on the side give it a clean, branded look that will be familiar to longtime Tamiya users.

ON THE BENCH

Functionally, the stand is straightforward. The flat top surface supports the chassis during maintenance, while two holes at either end provide a place to hold small components such as shock dampers or gear differentials during assembly or rebuilds. This added utility helps keep parts organized while you're working.

Tamiya notes compatibility across a range of models, including touring cars, longer-stroke rally cars, and select buggies with limited rebound travel, such as TT-02B and comical buggy variants. The stand's fixed height

and simple design keep operation intuitive, although it does not include additional features like rotation or integrated storage trays.

FINAL WORD

Overall, the RC Car Maintenance Stand focuses on basic functionality and compact size, making it a practical addition for hobbyists looking for a clean, dedicated workspace tool.

**Tamiya RC Car
Maintenance Stand**
P/N: 42371
MSRP: \$41
URL: tamiyausa.com

BACK-TO-BACK

WE GO BEHIND THE WHEEL OF THE ASSOCIATED B84D

Text & Images by Joel Navarro



AT A GLANCE

TYPE
Off-Road

SCALE
1/10

DRIVETRAIN
4WD

POWER
Electric

BUILD
Kit

PRICE
\$619

WORLD TITLES



Team Associated's 1/10 4WD buggy program was on fire when it claimed the world championship in 2023 with the B74D piloted by Italian driver Davide Ongaro. Fast-forward two years to the next IFMAR worlds and the next-iteration buggy, the B84D, took home the win in Australia once again after only being out a couple of months!

This time driven by Danish driver Marcus Kaerup, the B84D was a whole new car with a

long list of innovative features. Using an updated chassis that incorporates a long-arm suspension system, it can be adjusted for different flex characteristics at multiple points. The front and rear gearboxes are narrow and are height-adjustable, housing the lightweight differentials and center diff. Finished off with 13mm big-bore shocks and new suspension geometry, the B84D looks like a powerhouse on paper. So let's see for ourselves how it does on the track!

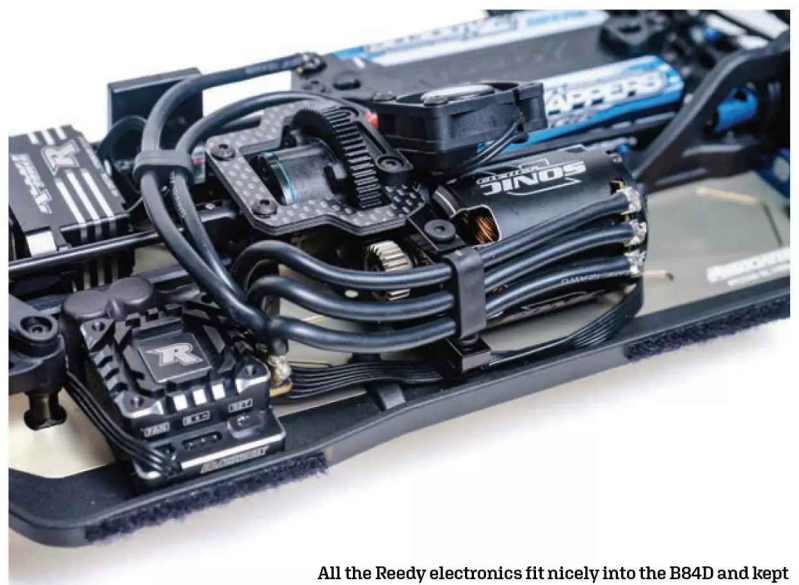


FLEX ADJUSTABLE CHASSIS

The all-new B84D chassis is multi-functional and not only provides a solid platform for the car's systems, but it is itself also adjustable, allowing you to dial it in to specific track surfaces. Constructed of 7075 aluminum, the 2.5mm-thick chassis plate is milled out to shed unnecessary weight while yielding a specific chassis flex.

The chassis braces now connect to the center differential bulkheads with either a pivot ball or a fixed pivot to change flex characteristics. The battery bay includes several different inserts that allow you to position the battery fore or aft to fine-tune your overall balance.

The steering system incorporates new geometry that promotes a direct feel at



All the Reedy electronics fit nicely into the B84D and kept everything down low to improve CG performance.



The front plastic upper chassis brace helps to keep the front end stiff. Note the durable 3.5mm turnbuckle and ballcaps.



Just like the rest of the car, the battery bay is fully adjustable, allowing you to move the battery fore/aft to change the weight distribution.



The rear chassis brace has multiple screw mounting points, giving you the option to add or remove screws to alter the rear chassis flex.

the wheel. Plastic bellcranks are paired with an aluminum steering rack that allows you to add or subtract washers at the pivot balls to change bump-steer characteristics. The servo itself sits on an aluminum floating servo mount that is integrated as part of the front brace so that it doesn't create a flat spot in the chassis flex.

HEIGHT ADJUSTABLE GEARBOXES

The B84D's drivetrain is grip-conscious, allowing it to adapt to the traction available for the surface you're racing on. You start with two sets of gearboxes—the standard set, and a set of +2mm cases that are also included to let you achieve lower ride heights in higher-grip environments. Housed inside these are high-volume, fluid-filled differentials fitted with plastic spider and ring gears to keep weight down. They are finished off with durable, milled-steel outdrives. Steel center universals connect the front and rear ends of the car to the center differential, which itself is housed in aluminum bulkheads that are included as standard.

The center bulkheads can position the motor mounting fore or aft to change weight bias. The center diff gets the same treatment as the front and rear diffs, using plastic spider gears inside to reduce rotating mass, and it mounts the spur gear separately from the diff case to allow for quick gearing changes. Smooth-moving CVA steel driveshafts are used on all four corners to effectively deliver power to the ground in the even the toughest conditions.

LONG ARM SUSPENSION

A long-arm suspension design is the new norm for the B84D. Taking a page from its 2WD buggy brother, the B7.1, the B84D narrows up the chassis where the aluminum arm mounts bolt on, allowing longer arms to be used front and rear. The rear plastic hubs and front aluminum hubs incorporate plastic inserts that allow you to lower or raise the hinge pin mounting point up to 2mm for ride-height or roll-center changes.

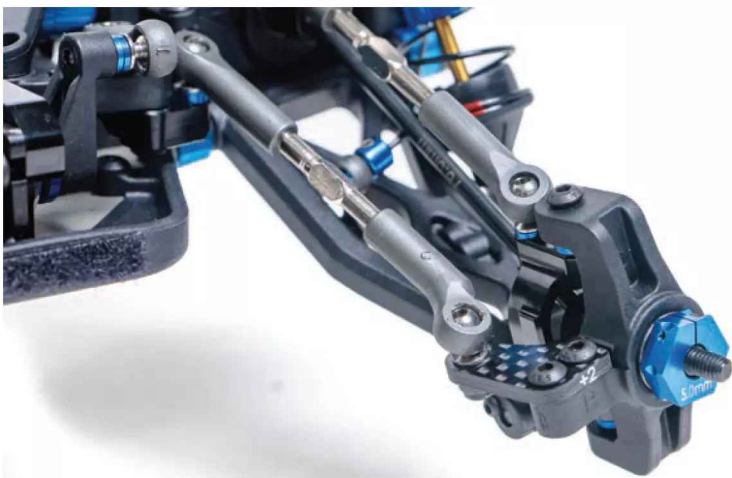
The camber and steering links use 3.5mm turnbuckles and ballcaps to add durability, and they are easily accessible to make quick changes to camber, toe-in,



The steering servo bolts onto an aluminum floating mount that incorporates into the front chassis brace.



The center differential is housed between two aluminum bulkheads with a carbon fiber top plate.



The front aluminum and plastic steering assembly is fully adjustable on the axle height, steering plate and hex width.

and roll center. The 4mm-thick carbon fiber shock towers use protective plastic covers front and rear not only to protect them, but to also prevent the towers or screws from snagging on carpet tracks. Taking care of damping duties are high-volume 13mm shocks. Using TiN-coated shock shafts, they glide smoothly on X-wing-style O-rings that install into machined-aluminum threaded bodies.

TEST GEAR

Sweep Racing produces tires for almost every onroad and offroad class racing today. For indoor testing, I chose set of their super-sticky Nonslip slick tires in clay compound. Taking minimal time to break in, the Nonslip tires yielded consistent grip throughout testing and allowed the B84D to perform at its full potential. It was the same story outdoors when I threw on a set of Square Armor in the super-soft compound.

I didn't have to go far when it came time to choosing electronics, with Reedy Power being part of Associated. Directing the precise way around the track, I installed the Reedy RT2007A steering servo onto the B84D's aluminum floating servo mount that easily mounted to the front center chassis brace. Its 0.085 transit speed, along with its ultra-high torque, will ensure you can drive the line you want without much effort.

I have an arsenal of Reedy motors, and I initially started testing with a hot Reedy Sonic 7.0 modified brushless motor. The B84D easily handled the power and efficiently put it to the ground through its low-resistance 4WD drivetrain. It also did a great job in making the most of the Reedy SP5 13.5's power when I strapped that in for racing. Reedy has an extensive line of racing LiPo batteries, and I decided on the Zappers 4800 mAh Shorty LiPo pack. Its 135C rating, coupled to its ultra-low internal resistance numbers, guaranteed the flow of power would be unrestricted. To manage the power, I opted to use the Reedy 610R Blackbox ESC along with a Blackbox PROgrammer 2 to unlock all the 610R's features.

BEHIND THE WHEEL

When I received the B84D, the Jimmy Babcock Racing League (or JBRL for



The aluminum motor mount makes it easy to change motors and adjust the gear mesh quickly and accurately.



Two mounts are included with the B84D that allow you to mount a 30mm fan above or behind the motor to help cool it effectively.



The all-new sway bar system helps to keep chassis roll to a minimum on the track while allowing quick changes in the pits.

short] season was in full swing. The six-race series is held at different tracks throughout Southern California. The next JBRL race on my calendar was at The Dirt Raceway in Perris, and although that's normally a 1/8 track, master track builder Joey Christensen had scaled down the layout to a 1/10-friendly size.

On the freshly groomed track, I went with the Sweep Racing Square Armor tires in the super-soft compound to start the first sessions of Friday practice. Right out of the box, the stock kit setup drove really well, with neutral handling characteristics, making the B84D easy to get around the track. The track crew did a good job of keeping it watered, and the increased grip levels started to show the B84D suspension's softness. If I wanted to increase corner speeds, I was going to have to stiffen things up.

Before I tried using stiffer springs I wanted to use what came with the car, so I started with standing up the shocks. I moved both the front and rear out one hole on the tower to keep the same overall balance. Back on the track, the suspension felt like it was using more of the available grip from the tires, pushing them more effectively into the dirt in the corners and letting the car roll better through them. The power delivery from the Reedy 7.0-turn motor through the B84D's drivetrain was excellent and made it easy to connect the power to the ground, especially on-power coming out of turns.

Setting the ride height to 20mm both front and rear was spot-on, and the suspension did a good job soaking up any imperfections and making short work of the large 1/8-sized jumps. On race day I swapped in a 13.5 motor to run in the 13.5 4WD Expert Class. The consistency of the B84D blew me away with my two qualifying runs and A-Main race times all being within six seconds of each other, allowing me to finish 7th at the end of the day.

The next test-and-tune session was a complete 180 on the race surface, going from lower-traction outdoor surfaces to the grippy indoor clay at SDRC Raceway in Miramar, California. The first change to make for my practice session would be tires. Going from the outdoor knobby-style



Sweep Racing's new Square Armor tires found plenty of traction on the low-grip outdoor track surface.

tires to full slicks for indoors is essential for making the most of the sticky grip a clay track offers. I opted to install Sweep Racing's new Nonslip 2.2 slick tires front and rear. This being the only change, I sauced up the tires and threw the B84D on the track.

Getting around the track on the first handful of laps was easy as the tires broke in. But as grip levels rose, the excess body roll the 20mm ride height I used for outdoor testing was too much—almost to the point of traction-rolling on the fast hairpin turn after the straightaway. Back in the pits, the threaded shock bodies made it easy to lower the B84D down to a 16mm height. While I was making changes, I went



VEHICLE SPECS TEAM ASSOCIATED B84D KIT

P/N: 90051

MSRP: \$619

URL: associatedelectronics.com

Height (as tested): 3.3 in. [86mm]

Length (as tested): 15.55 in. [395mm]

Width (as tested): 9.7 in. [247mm]

Wheelbase (as tested): 11.1 in. [282mm]

Weight : 3 lbs., 12 oz [1700g]

Scale: 1/10

Chassis: 2.5mm 7075 aluminum

Shocks: 13mm large-bore aluminum, adjustable, oil-filled

Suspension: Independent, front and rear

Front & Rear Differentials: Fluid-filled, plastic bevels

Center Differential: Fluid-filled, plastic bevels, plastic spur

Front & Rear Driveshafts: Steel universals

Center Driveshafts: Rear steel universal/ front aluminum driveshaft

Bearings: Rubber-shielded

Additional Parts & Upgrades

(Not included with kit)

Reedy Blackbox 610R Competition ESC
(P/N 27016)

Reedy Sonic 540-M4 7.0T Brushless Motor
(P/N ASC27491)

Reedy Zappers LiPo 4800mAh 90C 7.6V LP
Shorty (P/N 27396)

Reedy RT2007A Low-Profile Titanium Gear
Brushless Hi-Torque HV Servo (P/N 27155)

Reedy Blackbox PROgrammer 2 (P/N 27027)

Reedy HV 30mm Aluminum Motor Fan
(P/N 27457)

Sweep Racing Square Armor 2.2" Rear Buggy
Tires

Sweep Racing Square Armor 2.2" 4WD 1/10
Front Buggy Tires

Sweep Racing Nonslip 2.2" Rear Buggy Tires

Sweep Racing Nonslip 2.2" 4WD Front Tires

Futaba 10PX 2.4GHz T-FHSS Radio System
(P/N FUT01004409-1)

Test Gear

Reedy Blackbox 610R Competition ESC
(P/N 27016)

Reedy Sonic 540-M4 7.0T Brushless Motor
(P/N ASC27491)

Reedy Zappers LiPo 4800mAh 135C 7.6V LP
Shorty (P/N 27604)

Reedy RT2007A Low-Profile Titanium Gear
Brushless Hi-Torque HV Servo (P/N 27155)

Reedy Blackbox PROgrammer 2 (P/N 27027)

Reedy HV 30mm Motor Fan (P/N 27457)

Futaba 10PX 2.4GHz T-FHSS Radio System
(P/N FUT01004409-1)

ahead and added glue to the sidewalls of the front tires to combat against traction rolling, and went to 2 degrees of negative camber on all four corners. The lower ride height was definitely the ticket, as I was immediately able to roll into turns faster with a more planted feel on the ground.

After a few runs, the tires were well into the best window of their lives, pushing the B84D to go faster every run. The kit setting starts you with zero degrees of front toe, and with no toe-out dialed in, the steering felt like it wandered down the fast straightaway. With that

small added adjustment, the B84D started to feel more locked-in on every section of the track, and I began subtracting tenths of seconds off my lap times.

The installed Reedy electronics were as easy to adjust as the B84D, and throughout testing at SDRC I changed almost every stock setting on the motor and ESC. With the PROgrammer 2 connected to the Blackbox 610R ESC and the 13.5 motor timing at 50 degrees, I adjusted the drive frequency to 4K Hz, brake frequency to 6K Hz, 100% Punch Control, BEC voltage to 7.4 volts, and 15% drag brake.

FINAL WORD

When you see the same car manufacturers and drivers in the A-Main at a world championship, it's not just by luck. It's by design. Taking the winning formula from the championship-winning B74.2D, the all-new B84D was more than capable of capturing the IFMAR title again in the hands of Marcus Kaerup.

Using input from the factory team and their customers, Team

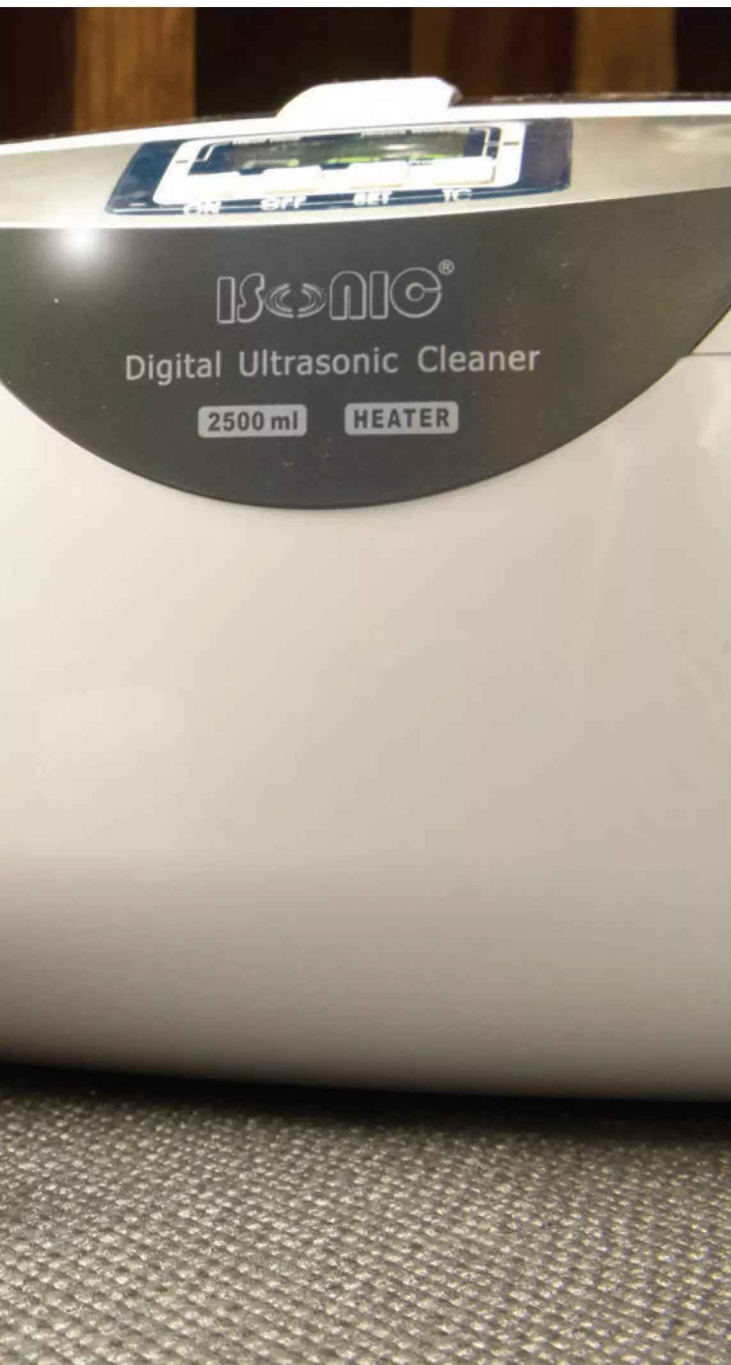
Associated works hard to bring you a solid box-stock setup that works right from the first pull of the trigger. Throughout testing and racing, the B84D's handling was confidence-inspiring. And every adjustment I made was in a positive direction and allowed me to go quicker every run. Team Associated sets the standard in the 4WD buggy class with the World Titles to back it up. That places the B84D solidly in your corner when it comes to performance.



ROLLING SMOOTH

Ball Bearing Cleaning & Maintenance

Text & Images by Lauren Short



Getting into the details of bearings is one of those areas that can make a noticeable difference in how an RC vehicle performs and holds up over time. In this article, we take a closer look at the different types of bearings commonly used in RC, along with the practical differences between bearing grease and bearing oil—and when each makes sense. We'll also cover several approaches to cleaning and maintenance, from removing factory-packed grease to using ultrasonic cleaners.

WHICH BEARING TYPE AND WHY?

One of the more common questions in RC is, “Which bearings should I use and why?” Considering all of the different types of bearings available, that can be a confusing decision. In the end, it all comes down to how the bearings are going to be used.

Metal shielded bearings provide less drag on the internal bearing components and therefore are the go-to choice for on-road RC cars such as touring, drift, drag, and even some off-road carpet track vehicles. For bashing, off-road, and all other dirt applications, it's best to get bearings that have a rubber shield on at least one side. The rubber shield might drag a little on the internal bearing components, but it will help keep out dust, dirt, and debris much more effectively than a standard metal shield will. There's nothing worse than a crunchy, locked-up bearing, so rubber shielding is the way to go when dirt is involved.

STEEL VS. CERAMIC BEARINGS

Most RC bearings are made from steel and contain steel balls and races, which are a great all-around choice due to their relatively low cost, good longevity, and wide availability. Steel bearings can also take a lot of abuse, and so long as they are thoroughly cleaned and maintained when necessary, they will last a long time. Ceramic RC bearings contain ceramic balls with steel races and are ideal for high-performance applications. Ceramic bearings tend to require more regular maintenance and are usually more expensive than their steel counterparts.

So why would we want more expensive ceramic bearings? It's all about the performance. The ceramic balls used in RC bearings are made from silicon nitride, which is lighter and harder than steel. This lightness and added hardness makes them ideal for high-speed performance applications like on-road touring and drag racing. Ceramic bearings are also used in high-performance nitro engines since the ceramic material copes well with the extreme RPMs and high heat.

The extra hardness of ceramic bearing balls has sparked debate on whether they should be used in off-road applications, since the extremely hard ceramic might not take impacts as well as steel in something like a hub or axle bearing. Considering ceramic bearings have been used in off-road RC applications for years with much success, I don't see a downside to them—so ultimately, it's personal preference. A widely



The first thing is to clean the exterior of the bearing and remove the rubber shielding. If the bearings are new, just a quick wipe-down with a towel will do.



Fill a small, clean jar with lighter fluid, the kind you might buy for a Zippo or similar refillable lighter. Always be sure to work in a well-ventilated area when handling flammable fluids, and of course keep them away from open flames and sources of heat.



Once filled, simply drop the bearings in the lighter fluid and cap the jar. Leave the bearings in the fluid for a few minutes, shaking occasionally to dislodge grease and dirt. The goal here is to loosen and clean as much of the grease from the inside of the bearings as possible.

agreed-upon mindset for off-road applications is to use ceramic bearings in the drivetrain and steel bearings around the axles, giving you the best of both worlds.

BEARING GREASE VS. OIL

All bearings come pre-lubed from the factory. The difference is that some are oiled, and some are pre-packed with grease. Bearing grease generally provides a good layer of protection along with decent lubricity with just a small bit of drag on the bearing components, giving a nice balance between protection and performance. I'd recommend greased bearings for bashers, and for more casual enthusiasts who seek to limit the amount of maintenance needed on their vehicles.

For RC enthusiasts looking to extract every bit of performance out of their cars, bearing oil is usually the superior choice. Bearing oil is specially formulated to provide maximum lubricity and minimal drag on the bearing components, which in practical terms means your bearings will perform to their full potential.

HOW TO REMOVE BEARING GREASE

Thoroughly removing bearing grease provides us with a fresh start on used bearings and allows us to fill new bearings with a different type of grease or oil than the factory provided.

The cleaning process is shown at left with the accompanying photos.

Once they're clean, carefully remove them from the jar and set them on a paper towel to dry. It's best to inspect each bearing to ensure all grease and dirt has been removed. Make sure the lighter fluid has completely dried, then give the bearings a quick spin test. You should be left with a smooth-rolling, perfectly clean bearing, ready to be lubed with the bearing oil or grease of your choice.





Pre-soak the bearings in a cleaning solution that's free of water, something like 100% alcohol, chain lubricant with a thin consistency, lighter fluid like mentioned previously, or even orange oil if you want a more gentle approach.



Once the bearings have soaked for a few minutes, put the jar in the basin of the ultrasonic cleaner and turn it on for about 3 to 5 minutes. Extended lengths of time in the ultrasonic cleaner can potentially damage bearing components, so it's best to keep the cleaning cycles fairly short. Empty the cleaning solution from the jar, making sure to clear out any gunk or debris.



Fill the jar once more, gently mix it up, and place it into the ultrasonic cleaner for a second cycle—again, between 3 to 5 minutes. Two cycles will generally do the trick, but if you want to be extra-thorough you can always do more. I recommend inspecting the bearings after each cycle; once they're clean and spin freely they're ready to be re-lubed.



ULTRASONIC CLEANING

Ultrasonic cleaners are by far one of the most thorough methods for cleaning out bearings, as they help to break up small bits of debris. When using this method to clean bearings, it's generally a good idea to put them in their own container rather than in the main cleaner tub.

The procedure is shown at left with the accompanying pictures.

This method keeps the bearings isolated from any possible contaminants inside the main cleaner basin, and it keeps the overall mess down. The jar method also allows you to remove all bearings from the cleaner easily, shake up the jar if needed, and quickly inspect the bearings from all angles while they are submerged in the cleaning solution. When using a jar inside an ultrasonic cleaner basin, it's best to fill the basin with an inch or two of water. This helps to keep the jar in place when cleaning so it doesn't dance around the basin.

CLEANING CERAMIC BEARINGS

Most ceramic bearings can be cleaned exactly like steel bearings, with the exception being the specialty ceramic bearings that have a plastic bearing cage. These types of ceramic bearings require the use of orange oil cleaners rather than solvents. This is to prevent any damage to the nylon-plastic bearing cage. Simply use orange oil cleaner with any of the methods provided above, and you'll be good to go.

FINAL WORD

RC bearings can seem to be a complicated topic at times, so hopefully we've helped to make it a bit easier when it comes to choosing and cleaning your bearings. As always thanks for reading and we'll see you in the next issue with more technical and DIY content.

UNDER CON

A LOOK AT AN IN-PROGRESS EXCALIBUR MONSTER TRUCK SCALE BUILD

Text & Images by Kevin Hetmanski



CONSTRUCTION



In 2014, the world of radio control solid-axle retro monster trucks grabbed my eye. I grew up watching trucks like Bigfoot, Lon-Ranger, Black Stallion, Excaliber, and more. Seeing these mini replicas took me back to New Haven Coliseum, where I attended many monster truck shows in the '80s. It was around then that I decided to build my own truck instead of just grabbing what was available at the time.

While trying to find a direction for the build, I worked on an article that featured a really cool replica of Excaliber, and that made me decide to build my own version of the truck. But I didn't want to build the familiar black iteration. Instead, I went with the earlier version.

The goal for this project was to build the most scale monster truck I could possibly build, and I decided to work on it only when I was in the mood to ensure the best work possible was happening. That's one of the many reasons I've been working on it since 2014. I'm here to show you where I am with the build so far... and to give you some information on a little twist to the project a bit later.



The project started off with an RC4WD Blazer body. Modifying it to look like a K20 truck is easier than you think. It just takes some planning, cutting, and time.

HIGHLY MODIFIED BLAZER BODY

In the beginning, the closest thing I could find to a 1978 Chevy K20 pickup body (which was used to build the first truck) was RC4WD's Chevy Blazer. I've modified many injection-molded bodies through the years, so I knew it wouldn't be a problem chopping the Blazer body up and making it look the part. I didn't just simply make the Blazer look like a truck.

I started by cutting the bed loose from the cab with a razor saw, using a piece of tape as a cutting guide to get a nice, straight cut. The Blazer body's nose is slightly tilted, and from what I can see in photos the 1978 K20's nose is more straight up-and-down. Either way, I didn't like the nose's tilt, so I cut it up and reconfigured it to be straight. The grille on the Excaliber monster truck is also different from the one on the Blazer, so I designed a 3D-printed piece that replaces the stock one and looks more realistic.

The back of the cab needed to be patched up, so I went back to the computer and designed a pickup-style cover, also 3D-printed, to fit the cab's shape perfectly. I even took the time to design it with a functional rear sliding window, because why not? I often see people make this modification, but they always go wrong at the back of the roof.

The Blazer has a very sharp transition from top to back, but a truck has a more rounded transition, so I included some extra material on my patch panel that I could sand down once



Here you can easily see the difference with the nose. The top is the stock piece, and the bottom shows my modification.



A razor saw with some tape used as a cutting guide made quick work of removing the bed.

I reworked the front end to straighten it up. A little more plastic and filler and the modification will be complete.



With the hood glued on, it was time to cut the front end off the cab using a razor saw and some more tape as a guide.

The edges of the doors and the openings are a little rough after the cut, but some sanding sticks and strips of polystyrene make quick work of cleaning them up like factory-issue.

the back was glued to the cab. This gave it a more realistic, rounded-edge look. Before cutting the fenders off the front for the tilt nose, I glued the hood to the fronts of the fenders because their alignment would be better thanks to everything being square and secure. As with the bed, I used a razor saw and some tape as a guide to cut the front end off the cab.

the window to improve the look.

After that it was time to cut out the doors, which is something I like to do with the back edge of a hobby knife. I scrape the plastic along the door and keep making passes until the door is free, then I go in and fine-tune the edges of the doors and openings with some sanding sticks and strips of polystyrene. While cleaning up the door edges and cab openings, I decided to modify the tops of the doors and added a little extra material above

The tops of the doors are very thin, so I added some material and spent some time reshaping them. I'm much happier with the end result. I made several attempts at designing a door hinge that worked properly before I was finally happy enough to have it 3D printed. I used CA glue to attach each side of the hinge, then checked the door movement before drilling holes and installing screws to lock them down.

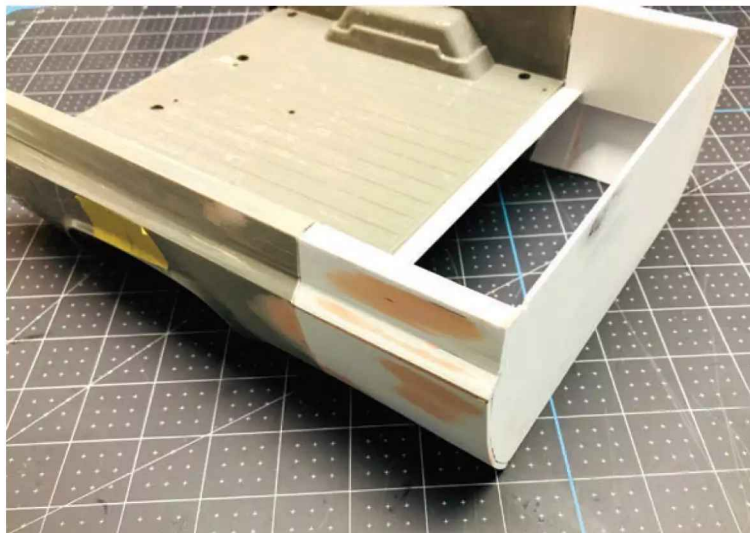
I designed the hinges to be held together with a screw as the pivot point, so the doors could be easily removed for modifications and painting. The Chevy Blazer is a short-wheelbase truck and the K20 is a long-wheelbase truck, so the bed needed to be extended to get to the correct dimension. I



While cleaning up the edges of the doors, I decided I wasn't happy with the look of the tops and modified them. The door on the left is how it came off the truck, and the one on the right is the modified unit.



I designed the back cover for the cab and had it 3D printed. A functional sliding rear window was incorporated to add more realism.



The bed was extended using sheet plastic, glue, and time.

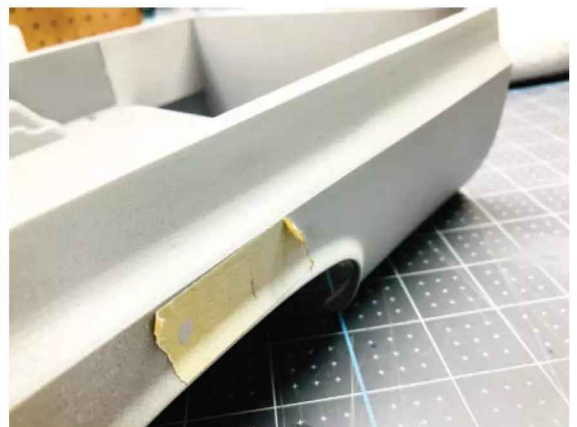
made that modification with some sheet plastic, a little knowledge, and time.

No 3D printing happening here. Evergreen plastic polystyrene sheet can easily be bent by warming it in boiling water and carefully forming it, so I did that to match the shape of the bed and combined those pieces with some straight-cut pieces. Before I knew it, the bed was extended. Trying to make the floor in the extension area match the existing one isn't easy to do, so I just made a cover that gives it a realistic and more consistent look. I also took some sheets of plastic, cut them up, and used them to form a firewall and floor for the cab.

All that's left to do before paint is completing the interior, which will include door skins, a race seat, a roll cage, and more.

HEAVY METAL CHASSIS

The body for this build is very important because that gives the truck its identity,



After a few rounds of body filler, the bed extension was done and matches up perfectly.



The entire floor/firewall was built by cutting up sheets of polystyrene and gluing it all together. Some adjustments will have to be made once the engine finds its final resting place.



I wanted to get the chassis design to match the full-size truck as closely as possible and... I think I nailed it. Machined pieces, flat-plate pieces, and some 3D-printed pieces make it come to life.

but in this case the chassis is just as important because it's something that's easy to see... and the Excaliber's chassis is very unique.

My plan for the chassis was to wing it and get the details as close as possible while looking at old images of the full-size truck. But Dan Wyatt—who is an RC monster truck builder, full-size monster truck builder, and Excaliber monster truck geek—had some drawings of various chassis components and he sent them over for me to use while designing the one for my build.

Normally when I design something like a chassis I like to include all the components that have to be attached to it so I can make sure it's 100% correct before having a single part made. But I had a bit of a time crunch for this one. I managed to find a local machinist who was able to make parts for me and I didn't know how long that marriage would last, so I rushed the chassis design and had the parts made right away.

I ended up with the main frame rails and all the flat plate components, and I made the rest of the parts myself. One thing I did with the design was to make some non-structural parts via 3D printing to reduce weight and my overall bill from the machine shop.

V8 ENGINE

Since the truck's hood is going to open like the one on the full-size truck, I

wanted something to see once that happened. Ideally this is where the truck's electric motor would live, but the last thing I want to see under the hood of a scale monster truck is an electric motor. My plan was to use RC4WD's scale V8 and transmission for the job.

The V8 is a great scale piece that hides the RC motor and the transmission is a functional piece that's very scale. You can't go wrong with this combo. I designed a bunch of 3D-printed

accessories that made it look more like it belonged in a monster truck chassis, and I was pretty happy with where it was going.

I ended up hanging with some of my Monster Jam buddies at the Atlanta Motor Speedway one weekend. I showed some of the photos you're seeing here to Charlie Pauken, who is one of the original Excaliber monster truck's drivers. I proudly busted out my phone, put it in his hands, and stood back, waiting



I modified the RC4WD engine to make it look more like a blown monster truck engine by designing some 3D-printed parts and painting the block orange, which looks more realistic than orange anodizing.

for his reaction. What I got was, “Aw man, a small block.” Right then and there I knew that the RC4WD engine had to go. I had to design and make a big-block engine for this truck no matter how long it took me to figure it out.

After a lot of thought, I managed to design a scale big-block that will be 3D printed, and it looks awesome. It will still cover the truck’s motor and attach to the RC4WD transmission, and I’ll design and make a transfer case to connect that transmission to. I have some RC4WD scale driveshafts to spin the axles later, and hopefully they’ll reach.

SCALE SUSPENSION

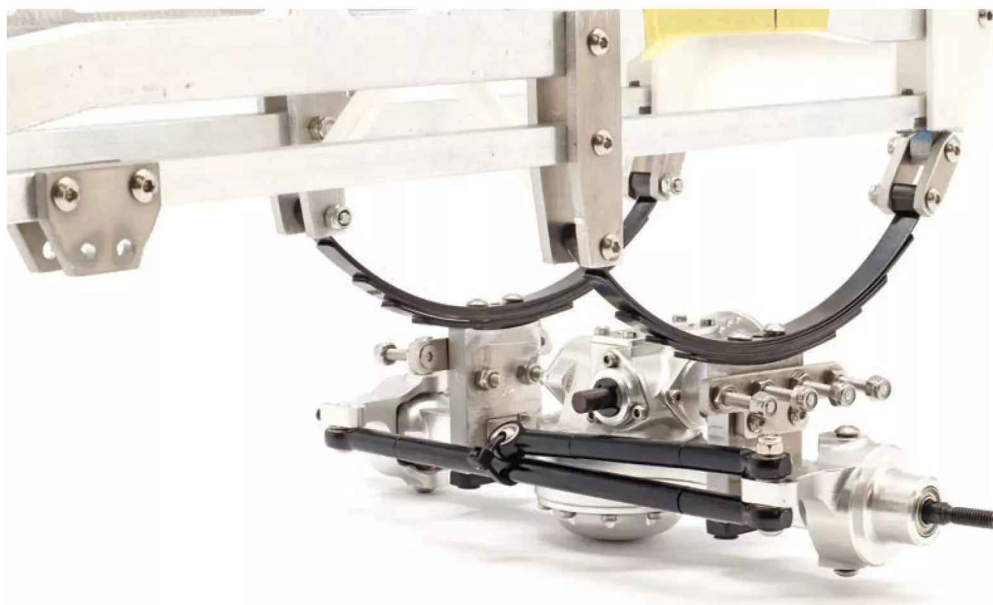
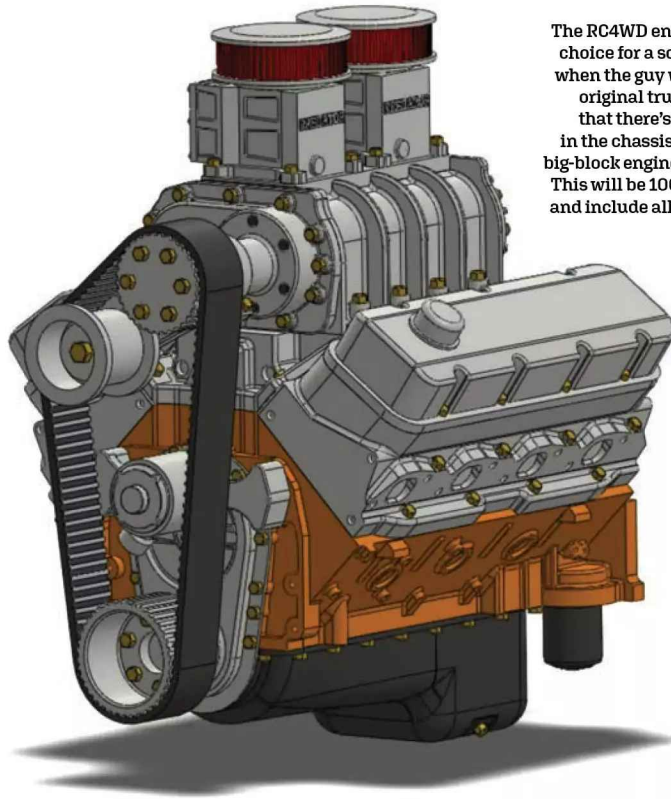
Full-size monster trucks in the '80s relied on heavily stacked leaf springs to support the chassis, so I decided to follow the same philosophy with my build. Fortunately, my parts bin was overflowing with leaf springs left over from old review vehicles and previous projects. After digging through the pile, I found several matching steel leaves and stacked them into proper packs to get the look I was after.

The leaf packs mount to the chassis using custom 3D-printed lift blocks that clamp directly to the axle housings. Originally, the plan

was to bolt on a set of scale shocks from RC4WD to complete the suspension. While they’re nicely made pieces, the proportions just didn’t look right for this truck. Just like the full-size truck that inspired the build, the stacked leaf springs were extremely stiff and barely moved at all. That realization opened the door to a different approach.

Since the suspension didn’t move, it didn’t require functional shocks. I designed some 3D-printed pieces that are purely scale units that matched the look I wanted. The visible chrome shafts are taken from real shocks, but that’s where the functionality ends—they’re strictly there for appearance. I made some front and rear axle supports to match the ones on the full-size truck; the front uses

The RC4WD engine is a great choice for a scale build, but when the guy who drove the original truck complains that there’s a small block in the chassis, you design a big-block engine to replace it. This will be 100% 3D-printed and include all the details of a real engine.



A bunch of leftover leaves were used to make up the spring stack for the build. Some adjustments were made later to get the brackets to sit properly.



If the suspension doesn't move, there's no need for a functioning shock. I designed some 3D-printed units that look the part.



I designed and made the front and rear axle supports to look like the ones on the full-size truck.

a simple aluminum support rod, while the rear relies on a ladder-style 3D-printed support bar.

MILITARY AXLES

The closest thing that I could find for Rockwell axles (a common axle for trucks of the 1980s) were Blackwell axles from RC4WD. They're made for 1/10-scale crawlers so they're a little small for this truck, and they have a spool instead of a differential. I added some width to them by using JConcepts wheel spacers that I had left over from the millions of monster truck wheels that I bought

through the years. I attached them to a 3D-printed drum brake.

Yes, the first version of Excaliber had large drum brakes on each corner. Then I added some 3mm set screws to the brake housings to look and function like the lugs you find on full-size brake assemblies. They're used to secure the wheels through small 3mm standard nuts.

MONSTER TIRES & WHEELS

For wheels, I went with a set from the Tamiya Clod Buster. In my eyes their design is pretty close to the full-size ones. I modified the center

of the wheels by cutting a large hole to match the 3D-printed brake hub that it was going mate with. I didn't have an accurate way to drill the holes for the lugs, so I designed a 3D-printed drill guide that I bolted to the wheel. I used that to make the holes with the correctly sized drill bit.

Then the time came to choose tires. I went to the JConcepts website and, after looking around a bit, I chose JConcepts' Firestorm tires for my project. Again, they're the closest thing to the tires used on the full-size truck.



RC4WD's Blackwell axles sit under the chassis. They're a little small for this build, but I was able to make them work.



3D-printed brake drums add to the look of the axle assembly, and the scale lugs are used to attach the wheel to it.



4-WHEEL STEERING

All monster trucks have four-wheel steering, so that feature was a must for this build. I spec'd some servos and used them to design some custom brackets that attach to the truck's leaf spring mounts. When the truck is done and the parts are painted, this location will help bury the servos in all the mayhem and make them less noticeable. Aluminum servo arms and some aluminum rods connect the servos to the Blackwell axle hubs.

NOW, FOR THAT TWIST...

I think the Excaliber monster truck is pretty awesome, and I like that the version I'm replicating is different from others out there. I'm also very happy with the work that was done to get the truck to where it is. But as I design and make parts, I realize that I don't want to exactly replicate the Excaliber monster truck.

There are some sections of the truck that I don't have detailed images of, and so I don't know how to replicate them, and there are a lot of features that I would want to be different if I were to build my own full-size truck. For example, I want the blower to stick through the hood, I want stacked roll bar lights, I want the bed to tilt, and the list goes on.

So, I'm going to bail on a lot of what has already been done to rework or redo it to build my dream '80s-style monster truck instead. None of the work will be lost... it's just going to look a little different.



Tamiya Clod Buster wheels were modified to work with the scale drum brakes that I have on the axles, and the bolt pattern was drilled using a 3D-printed guide. JConcepts Firestorm tires complete the look.



The steering servos are tucked into the axle assembly and mounted using custom mounts. This will hopefully make them less visually distracting once the truck is complete.

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