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Never being satisfied with the status quo and constantly pushing the envelope of design and performance are key components to the Dirt Sports Nation. Without this philosophy, our vehicles would never evolve and we'd still be racing stock VW sedans, trucks and Jeeps. Some of this evolution is gained via incremental amounts found within the confines of strict rules that govern vehicle construction. Without such restrictions, however, evolution can be made in huge leaps and strides.

In 2003, the world of rock crawling witnessed such rapid evolution with the introduction of Jon Nelson's "Tiny". While most crawlers of that era were large, heavy, front-engine vehicles similar in form to Jeeps, Tiny was miniscule, ultra-lightweight, low slung and powered by an air-cooled VW engine. At that time, it broke every mindset about what a rock crawler should be. Its subsequent

dominance of the Unlimited Class created a slew of clones. The era of the moon buggy had begun.

Today, the sport's elite have made the shift from these moon buggies to the more rule-intensive Pro Modified class. Amongst the converted was multiple Unlimited class champion Tracy Jordan. Despite the restrictions of this class, Jordan wanted to build a vehicle that would transcend a majority of Pro Mods. "We wanted to bring what Nelson did to the Unlimited class to the Pro Mod class," noted Jordan. On top of that, Jordan also needed something that could also take on the high-speed desert sections of the King of the Hammers race.

To achieve this complicated feat, Jordan turned to Eddie Casanueva and Tom Kingston of Spidertrax Off-Road. On the surface, Jordan's choice seemed unconventional, as Spidertrax is not a regular builder of competition chassis.

However, both Casanueva and Kingston possess extensive design and build experience that creates Spidertrax unique line of products. With early roots in Suzuki Samurais, the duo shared a lightweight build philosophy that was a perfect match for Jordan's moon buggy background. Knowing that the vehicle become a rolling centerpiece to Spidertrax's capabilities, both Casanueva and Kingston went all out in its construction adopting an almost maniacal pursuit of weight reduction. Thanks to its ultimate blending of strength and low weight, Jordan's new ride was an easy choice for this month's Masterpiece in Metal.



THE ROCK BUG

SPIDERTRAX'S LATEST STUNNER
MERGES SVELTE WITH STRENGTH

STORY BY CRAIG PERRONNE | PHOTOS BY BOYD JAYNES





ABOVE:

While the Rock Bug may only look slightly different than its Pro Mod competitors, it is light years ahead of the majority of them in terms of weight. In full competition trim filled with fluids and fuel, the Bug weighs in at an extremely light 2,510 lbs. Without the rear steer axle, its weight is estimated to be 2,350 lbs. For comparison, Jordan's miniscule Scrapper moon buggy weighed 2,360 lbs and most Pro Mods weigh around 3,500 to 4,000 lbs.

RIGHT:

The front suspension is a four-link design that yields 16 inches of wheel travel. To save weight the lower links are built from 2-inch, 0.120 wall tubing (relatively thin by rock crawling standards) but heat-treated chromoly is utilized to add strength. Weighing even less are the upper links constructed from 1.25-inch, 0.095-wall heat treated chromoly tubing. Spidertrax even went as far as making its own hollow suspension bolts from 4130 to shave weight in creating hardware with more tensile strength than a conventional Grade 8 bolt of the same size. For higher-speed events, such as King of the Hammers, the Rock Bug uses a single 16-inch stroke, 2.5-inch King quadruple bypass shock at every corner. In rock crawling mode, King air shocks are used to save weight. Also visible in the photo are the heavily cross-drilled Spidertrax 14-inch rotors and Wilwood four-piston calipers.



BELOW RIGHT:

Even smaller items, such as the Spidertrax Ultimate 60 Knuckle pictured here, were carefully constructed with lots of attention to detail. The Rock Bug is also used as a product development platform by Spidertrax and led to the creation of this Lightweight Performance Spindle and Hub setup. Still in prototype form, it utilizes a 3-inch diameter 4140 chromoly heat-treated spindle, a 6061 T6 aluminum hub, one-piece 4140 chromoly heat treated divider plate, 6 custom 4130 chromoly 0.625 hollow wheel studs, two large-diameter Timken roller bearings and a 6061 T6 aluminum flange cover. It is much smaller than Spidertrax's previous assemblies and saves 8.19 lbs of weight over its 1-ton unit bearing hub/spindle setup.





TOP:

While the engine may look like it is pushed way back, there is actually minimal intrusion into the cockpit since it is a Scat V-4. A unique configuration, the Scat takes the center cylinders of a Chevy 350 V-8 and discards the outer cylinders to create a V-4. While used with success by Chuck Hovey and Doug Fortin Jr. in the desert, it is the first application of a Scat in a rock crawler. Chosen for its light weight (the engine only weighs 221 lbs.), Jordan admits it was a headache getting the V-4 to produce the low-end torque needed for rock work. Lots of dyno time, custom camshafts and tuning of the Fast fuel-injection system was required. Further separating it from other Scat V-4's is its coil-on-plug ignition system, sequential firing and Fast throttle body making it more akin to a baby LS. Spidertrax also helped with the engine by machining a five lb. billet oil pan that started life as a 50 lb. chunk of aluminum. Built by Powerhouse Motorsports, the little guy produces a healthy 300 horsepower and 300 lb-ft of torque.



LEFT:

The rear suspension is identical to the front with 16-inches of wheel travel provided by a four-link and controlled with King 16-inch quadrupe bypass shocks. Also identical to the front is the brake package with 14-inch Spidertrax rotors and four-piston Wilwood calipers. Visible above the center of the axle is the unique cable actuated lockout for the rear steering. Used for the King of the Hammers race, it allows for the rear steer to be locked preventing float during the high-speed sections. For rock crawling competitions, the axle is swapped for a non-rear steer version further shedding 160 lbs.

BELOW:

If the front has a pleasantly familiar look it is because the front clip is actually a Baja Bug fiberglass nose (hence the name Rock Bug). Also easy to spot is the Spider 9 front housing that was specially constructed for the project. It uses 0.188-inch thick heat-treated chromoly tube and plate (compared to the 0.25 and 0.0375 thickness of Spidertrax's other Spider 9's) to weigh in at a svelte 80 lbs. Gun-drilled 300M, 35-spline shafts are then used throughout giving it no weak links and providing strength beyond a Dana 60 while weighing less than a Dana 44. The complete, ready-to-run axle assembly weighs about 80 lbs less than a conventional Spider 9.





ABOVE:

To keep weight down, the interior is bare bones and all business. The Mastercraft seats are specially constructed units that weigh a scant 9 lbs. Other than that, the only occupants

(besides Jordan) of the interior are only the necessary gauges and the shifters for the Ford C-4 three-speed automatic transmission and Stak Dana 300 transfer case which was selected

because it is lighter than an Atlas. With this much attention to weight, we wouldn't be surprised if Jordan was replaced with a jockey for the next competition. **ds**

SPECIFICATIONS: 2009 SPIDERTRAX ROCK BUG

POWERTRAIN

ENGINE:
Scat V-4

BUILDER:
Powerhouse Motorsports

MAX HORSEPOWER:
300 bhp.

MAX TORQUE:
300 ft.-lbs.

INDUCTION:
Fast fuel injection system

TRANSMISSION:
Ford C-4 three-speed automatic

TRANSFER CASE:
Stak Dana 300

SUSPENSION

FRONT:
Four-link with 16 inches of wheel travel, King 2.5-inch, 16-inch stroke quadruple bypass shocks

REAR:
Four-link with 16 inches of wheel travel, King 2.5-inch, 16-inch stroke bypass shocks

BRAKES

FRONT:
Wilwood four-piston calipers, Spidertrax 14-inch rotors

REAR:
Wilwood four-piston calipers, Spidertrax 14-inch rotors

WHEELS/TIRES

WHEELS:
17x9 Trailready beadlocks

TIRES:
37x12.50 BF Goodrich Baja T/A's

INTERIOR

MasterCraft seats and harnesses, Autometer gauges

GENERAL

CHASSIS:
2009 Spidertrax Rock Bug

DIMENSIONS:
Wheelbase: 104 inches
Overall Length: 144 inches
Overall Height: 68 inches
Track Width: 76.5 inches (front)
74 inches (rear)
Weight: 2,510 pounds