



ROCK CRAWLING TIRE TECH

Just about anyone can take a truck and crawl over some rocks, but the ones who dial in their rigs can go further and make the impossible possible. Getting the setup on your tires and rims is one of the most important parts of your truck to tweak. Selecting the best tire tread and correct compound is important, but there are a few additional things you can do to optimize performance. These tips may or may not be helpful on the specific terrain you're driving on, so don't be afraid to experiment.

FOAMS

Today's soft compound tires require foam inserts to help them keep their shape. In most cases, the foam inserts make the tires too stiff for crawling and don't allow the tire to conform to the rock's surface. You want the tire to be flexible yet stiff enough support for the tire to prevent it from folding over. A lot of guys cut their inserts in a star type pattern to make that happen. Making this modification is easy. Mark the foams with the desired pattern, and carefully cut the sections out using a sharp hobby knife. How much or how little foam you remove will be largely based on the flexibility of your tires. Softer tires require more foam to be left for support.

A key to good traction is to have the tread of tire to be generally as flat as possible. A larger contact surface means more traction. An insert that is wider than the tire will distort the tread of the tire and potentially reduce the contact patch. You can eliminate this problem by cutting the foam insert so that it's the same width as the tire.

I used some of the techniques shown in this article when building my own rock crawler.



Above: cut your inserts in a star pattern to soften up the foams. This will allow the tire to conform to the rocks and still give it enough support. **Left:** memory foam is the latest trend in tire inserts.

The latest trend in foam inserts is memory foam. It's available from Kreepy Krawler Designs and RCP Crawlers. Since the memory foam is denser than standard foams, it adds weight to the tires to increase traction. Memory foams are also often run without any modifications such as cutting into a star pattern.





The rim on the right is a standard 2.2 inches wide. A narrow rim (left) will give your tire more "side bite."



A flat tread works better on the rocks than a rounded tread. The more tire contact you have on the rocks, the better your truck will crawl.

RIMS

A common practice in rock crawling is to narrow the rims. Doing this provides more clearance between the links and the tires when steering, and since the tire is pulled in, it will increase the tire's "side bite" by bringing the tread down the side slightly. You can see how to do this in the May 2007 issue of *Radio Control Car Action*. If cutting rims and gluing them back together isn't your thing, you can pick up some rims that are already narrowed. Narrow 2.2 rims are available from Axial, RC4WD and RPM. Axial also offers Maxx-size rims in a narrow form.





WEIGHT DISTRIBUTION

The only thing you need to know is that generally you want more weight up front than in the rear of the truck. This helps the truck handle vertical climbs. Some guys like to add equal weight to both ends of the truck. Either way, you'll want a little weight in all four tires. When considering the weight distribution, also remember one of the best things you can do to improve your crawler is to lower the center of gravity. So, moving the battery from the top of the chassis over to the front axle or links accomplishes two things: it moves weight forward for a better balance and lowers the CG.

When adding weight to your rims, you can add the same weight all around, or more weight up front than in the rear; 60/40 is the typical split.



PELLETS

A great way to add weight to your tires is to fill them with 6mm plastic pellets used in air-powered pellet rifles. The pellets roll around and stay at the bottom of the tires at all times, and that keeps the truck's center of gravity low and reduces roll-overs. You can pick them up wherever Airsoft guns are sold. The pellets also replace the foam inserts. Filling the tires can be a bit tricky. The easiest way we've found is to attach your tire to one side of the wheel and stick a small funnel into the open side of the tire and use it to direct the pellets into the tire. Fill the tire about halfway, and make sure that you have an equal amount in each tire. There is a downside to this setup; it doesn't work well when side-hilling—when you drive your truck perpendicular to its incline.

Airsoft pellets are all you need here. Use a small funnel to fill the tires with the pesky pellets. If you use pellets, weigh your tires to ensure they are filled equally.

STICK-ON WEIGHTS

You can also add weight to your tires by using stick-on lead weights on the rims. You can get these weights at your local auto parts store or at the hobby shop. Start with 3 to 7 ounces of weight on each rim, and make sure you prep the surface of the rims by cleaning them with motor spray before you stick the weights to the rims.



These stick-on weights are available at auto parts stores and hobby shops. You only need to use 3 to 7 ounces of the sticky stuff.

GET OUT THERE!

These tips go a long way and will make a noticeable difference in the performance of your truck on the rocks. If you have bead-lock rims, you'll have even more of an advantage over your buddies because you can fine-tune the weight and weight distribution in your tires for different rock-crawling courses. If you're really serious about rock crawling, pick up a scale so that you'll know the weight you added to each tire is perfect. **E**

An inexpensive digital scale is an invaluable tuning aid to accurately measure the percentage of weight in your trucks' front and rear tires.



SOURCES
Axial axialracing.com
RC4WD rc4wd.com
RPM rpmrcproducts.com