

# RC4WD Rock Crawling Guide (Version 4)

Before you even start buying your first crawler truck, make sure to do a lot of research. First figure out which chassis, axles, electronics, wheels, etc. that you would like to use. Pretty soon you will find out there are a lot of options to choose from.

## **Popular crawler websites:**

rccrawler.com (the largest forum for rock crawling)

clodtalk.com (another popular forum)

clodparts.com (list a lot of different aftermarket parts made for clod)

## **Axles:**

Most people run on Tamiya clod axle (Part # AX-001), mainly because of how good the weight distribution is. Each clod axle has the motor attached to the axle, so the center of gravity is as low as possible. This allows the truck to go over obstacles more easily and increases the side hilling capabilities. Another very important aspect with Clod axles is the stall. With the use of 2 motors the ESC delivers power to the axle with the least resistance, causing the axle with the greater resistance to stall. This is an incredible benefit when climbing.

Another popular axle is the Tamiya TXT-1 axle and transmission, Traxxas E-Maxx axle (converted to straight axle) and transmission, TLT-1 axles and transmission, Or any combination of the above, almost every combination has been built. Search around the above listed websites and you'll see what we mean. The Traxxas Stampede Transmissions (aka pede tranny) are another very popular transmission to use in a shaft driven rig, commonly known as a "shafty".

Fact: Did you know Tamiya Clod Buster is almost 20 year old already.

## **Chassis:**

There are well over 50+ different chassis out there on the market.

So which is the best chassis?

That's a question that is commonly discussed in the crawling forums with no real definitive answer. RC Guy Gecko II is for sure one of the best selling chassis in the last 2 years, since they had a head start in the crawling scene. The Stick chassis from thecrawlerstore.com is one of the most talked about chassis with very unique and innovative design. Our chassis rockbull 1 and 2 came out late 2005 and has been greatly improved over time and is one of the only chassis that is made out of full metal and has the most adjustment points. Make sure you visit clodparts.com or RCCrawler.Com and check out all the different chassis out there on the market, before you make a decision on which one to buy.

You can also make your own chassis, a basic crawler chassis is fairly easy to fabricate. All you need is just some 3mm thick 6061 aluminum plate and band saw. With a creative mind, a simple crawler chassis can be built in a few hours. Please keep in mind that it's not the building of the chassis that is the difficult part, but the link and shock placement. This is typically what takes the most time to sort out.

If you do decide to make the chassis on your own, you can find many different lengths of rods (links) and size of rod ends at:

<http://rc4wd.com/shop/index.php?cPath=80>

All for your custom building needs. We also offer link mounts for the axle (Part # X-025)

## **Motors:**

The Integy lathe motor is the best choice for crawling right now. The reason for this is due to there efficiency. They're cheap, run cool, require little to no maintenance and can give you a runtime of an hour or more. They are available in 4 different versions, the 35T, 45T, 55T and 65T. 55T is a good choice if you use stock 13T pinion gears. 65T is probably a little bit overkill for rock crawling, you want to gear up to 14T or 15T if you decide to use that motor. If you decide to use 35T or 45T, make sure use an adjustable motor mount (Part # X-042) or Gear Reduction Unit (part # X-111)

Note: Even with 55T, your truck goes probably around 3-5 MPH only.

Again, at the end the speed and torque really also depends on how good is your battery is.

## **Reversing the rear Motor:**

If you decide to use the Clod axles on a crawler, you will need to run the rear motor in reverse. This will require that you rotate the motor end bell 180 degrees. This then allows the rear axle to spin in the same direction as the front.

For detailed instruction with pictures, please visit [www.tracgear.com/catalog](http://www.tracgear.com/catalog)

## **Setting up Axle:**

To ensure maximum traction, you will want to lock the differentials (both front & rear). You can either lock the differential by JB weld or purchase the aluminum Tracgear gear (part # X-001). Another great method is using hot glue. It holds very well and can be removed at a later time.

Please keep in mind that locking the differentials in your crawler with greatly reduce your turning radius. To counter this ill effect you can setup your truck to do four wheel steering (part # X-138 or X-157). We will talk more about how to setup the servo for 4WS in later.

Once you start rock crawling, the clod axle will get hit constantly by rocks. Make sure you get a skid plate that is contoured to the axle housing, so you won't lose any clearance. We offer chrome plated steel skid plate (Part # X-151).

## **Wheels & Tires:**

If you decide to use a T-maxx wheel for your truck, you will need a 12mm-14mm adaptor (Part # X-057 offers no offset and X-160 offers 1 ¼ inch offset)

If you decide to use a Proline 40 series wheel with 23mm back hex, you will need a 12mm to 23mm adaptor (Part # X-157)

The most recommended tire would be Proline Moab Tires (Part # 1117-00 and 1119-00)

Keep in mind that tires are very site and user specific. Some tires work really well and some do not and it can all be summed up to location (aka rock type) and temperature.

On a crawler, you want to keep the weight as low as possible. Many people use metal BB's inside in the tire with plastic wheels. You can also purchase our narrow aluminum Beadlock wheel (part # BL03N) and don't worry about the weight issue.

Hint: With BL03N, you can also combine it with X-160 if you want more offset.

**Speed Controller:**

You can use Traxxas EVX, Tekin Rebel II (Part # TT1020) Novak Super Rooster or XR Super Duty (Part # 1865). EVX and Super Rooster are widely available on eBay. Super Duty is probably the best and the most advanced speed controller right now. Tekin Rebel is easier to setup and the most affordable one.

If you purchase a Novak Super Duty ESC and want to run on a single battery only, you will need to do some modification to the ESC. Novak does supply a set of instruction in their manual on how to perform this.

**Radio:**

Any 2 channel or 3 channel (AM or FM) radio will do. If you want to do four wheel steering with 2 channel radio, all you need to get is a Y reverse connector that connects both servos. Many people also modify the Traxxas TQ3 radios for rock crawling; you can find more info on rcrawler.com or thecrawlerstore.com

**Servo:**

Hitec HS-645MG (Part # 32645) is a very commonly used servo for rock crawling. It has a rated torque of 133.31 oz/in at 6.0V. If money isn't an issue, you can get the Hitec robot servo (part # HSR-5995) with titanium gears, rated at 333.29 oz/inch of torque at 6.0V.

**Batteries:**

There is a great deal of choices when it comes to batteries, and what it really comes down to the most is how long you would like to crawl for. (Now I know that there are a lot of variable with batteries, but hey where talking about crawlers, not racing.)

You can use a regular NiMH or NiCd batteries, ranging from 1500mAH to 3500+ mAH. Or there is the next level of battery, the LiPo battery. These require great care is charging, dis-charging and general use but have a great deal to offer, especially with there very low weight.

With the Integy 55T motor and a3300 mAH you will easily see 35-60 minutes of run time.

Mounting the battery really depends on the chassis you have chosen. Some of the more serious competition crawlers with require that you make your own packs, often times into a saddle or bullet style pack design. This provides a great variety of mounting choices and allows you to keep the center of gravity as low as possible. Some popular battery mounting locations are on the axle, or on the upper suspension rods (links).

**Articulation:**

Usually 60-80 degrees is the best choice for most situations. Our chassis comes with either bent links (for extra clearance) or straight links. With bent links, you will get about 80 degree of articulation.

**Complete Crawler Truck:**

We offer many different complete, from aluminum chassis to tube chassis based crawler. You can find more info at

<http://www.rcrockcrawling.com/index.php?cPath=32>