

# The 22 Guide!

Everything and anything you will want to know about your new 22, the most (R)evolutionary 1/10 buggy that's a result of eating, breathing, and sleeping RC for the past 30 years. Please feel free to send me comments and suggestions to add to it!

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## 1. Build Tips From the Experts.

I have been lucky enough to talk to Dustin Evans and Matt Chambers, and Dyno Dan (the designer of the buggy) has also been so kind as to answer questions on this forum, as well as Casey Peck, Casper, Frank Root, and other TLR drivers and experts. Their Opinions and Tips are sprinkled throughout the guide.

## Dyno Dan's Personal Tips on the build:

22 Build Tips:

- 1) Place 1 small drop of CA glue on Diff nut before inserting into plastic T-nut. Use a 1.5mm wrench or .050" as a "Skewer" to hold the nut while inserting into the plastic nut. Place locknut with nylon facing upward and insert 1.5mm wrench onto nylon portion. This allows you to easily place nut into plastic T-nut.
- 2) Do not over tighten Diff Screw!!!!!!!. Snug the screw down until spring is collapsed, and then back off 1/16th turn
- 3) Always put a small amount of Silicone diff grease between diff rings and outdrives.
- 4) Do not forget the RED spacer the goes on the input shaft before installing the slipper plates. Why Red? A Red spacer means that it is a transmission part not to be confused with the other spacers. I thought it would help identify spacers since there are so many that are close in size.
- 5) Be careful when tightening down all king pin screws. The kingpin screw has a small radius on the underside of the screw head. Do not over tighten and putting a small chamfer (using a hobby knife or other tool) is recommended.
- 6) Turn Buckles: Use a body reamer to knock off flashing to help thread engagement.
- 7) Shocks: The lower cap can be loosened up to 1.5 turns to adjust friction in the O-rings. A neat adjustment!
- 8) Placing a very small amount of loctite between rear inner hinge pin/hinge pin ball/aluminum pivots is a good way to keep the tolerances like new.
- 9) Do not forget the M3 screw hidden under the rear shock tower that goes into the rear camber block!!!!!!!!!!!!!!!

10) Apply blue locktite to the front wheel screw for the first couple of wheel changes. This will allow the locktite to accumulate and act like a locknut.

11) The small screw that fastens the rear toe plate pivot to the chassis is meant to keep the rear suspension in place while removing the transmission for diff service. There is no need to remove the motor guard (rear motor config.) when removing the transmission. Remove trans mount screws and simply pull the motor guard back and remove transmission, leaving motor guard in place.

12) Servo alignment / tie rod / End Point Adjustment is very critical. The 22 has the most steering throw of any buggy. It is not uncommon to end up with very high EPA settings!!!!

I hope you all enjoy the build! Please ask any questions and I hope this info helps!

[Casey Peck was so Kind as to Post a 22 build walk through with pictures! Enjoy.](#)

### **Bladders in the Shocks, or Not?**

When building my car, I asked Matt Chambers if he thought I could tell the difference between building the shocks with and without the bladders. He recommended building them with the bladders, as they are easier to build and I probably won't tell that much of a difference. I would imagine this would hold true for 90% of the people out there. I can always cut them later. I also recommend picking up a second set of bladders, they are cheap and that way you can switch back if you try the cut ones and don't like them.

### **Shorty Lipo?**

Almost all of the Losi Pros are now running the short 3800mah 60C 2s lipo in their cars. This brings it closer to minimum weight, and Matt Chambers reported his lap times dropped almost 1/2 of a second when switching from a standard pack to the 96mm pack. Some may find that it makes the car harder to drive consistently with the pack, but it is always better to be able to add extra weight where you want, where as you can't remove or control the weight with a standard lipo. You don't need the shorty pack, but if you are buying new lipos regardless, I highly suggest picking up the shorter packs. Either way, you can run them without weight, or add back the weight they lost in the places you want. Win-Win Situation!

Blue Screw's Tips:

Polish the A-arm kingpins so they almost "float" into the arm to avoid having to brake the arms in. Put a drop of glue on the slipper Pads to hold them on the plate.

For all of you Losi guys, if there are any tips I did not get here or in "The Build" section that you would like to add, PM me!

## **2. The Build**

Everything you need to know when building your new kit!

### **General:**

Do not use an electric wrench on the build. This is a sure way to strip out screw heads or the threads themselves. Use a quality wrench set, such as losi's with Tini hex tips.

Wrenches needed for the build:

- .050", 1.5mm, 2.0mm (Or 5/64), 2.5mm
- Hex Wrenches: 5.0mm, 5.5mm, 7.0mm

Lexan Scissors, a Needle Nose Pliers, a Hobby knife, and a body reamer are also needed.

Take your time! Do not rush, and follow the directions carefully. The manual has no words, so be especially vigilant if this is your first kit.

Many people do not use body pins to secure the body, myself included. Just some velcro along the side of the chassis plastic guards and the body are all you need. If you go this route, do not install the front body mount on the nose plate or the side body posts on the chassis guards.

Do not over tighten any of the screws. Carefully thread them in, and stop as soon as they bottom out.

The Kit comes with extremely tight tolerances, and for a reason. The kit may be tight at first, but after a few runs, the plastics will break in the tolerances will be perfect, with 0 slop and free movement. Do not ream anything out, unless you find a bur or something similar in the plastic. I have not heard of any occurrences of this, however.

Spare tuning parts such as antisquat blocks and pistons can be found in bag F.

The car is very durable, but a few parts that have been shown to break are the rear hubs, front steering rack, rear steering arms, and the rear camber block. Of course, other parts may break as well.

If you have any problems or defects with your kit, call Horizon. Their CS is second to none.

**Turnbuckles!!!!!!!** This can be a problem for inexperienced builders. The ball cup ends are extremely hard to thread on, but if you know these tricks it is very easy. First, take a body reamer and open up the opening of the ball cup ends where the turnbuckle threads into. Just ream it out a bit, but don't overdue it. Now, before starting to thread the turnbuckle on, do one of the following:

A: Use some Chapstick or Beeswax and coat the threads of the turnbuckle

B: Squirt some black grease, white lithium grease, or Vaseline into each ball end (**A small dab of grease! A little is all that is needed**). This will make threading and turnbuckle adjustment much easier. I personally have used black grease with great success. If you can find the white lithium grease, that stuff is fantastic.

Keep in mind that the notched side of the turnbuckles has right handed threads, and the other side has left handed threads. When installing all of the turnbuckles on the car, make sure the small notch side is on the left of the car when facing forward.

[Here is an online walk through with pictures of the build](#)

### **Steering:**

#### *Step A-1 to A-3*

As stated by Dan, this car has a lot of steering built in to it. In order to get all of that steering, you have to follow a few simple tips. When installing the servo arm on the servo, make sure the servo is centered with no trim or sub trim on your radio. Put the steering arm on as straight up as you can, but one click to the right if that's not possible. Only ONE CLICK to the RIGHT! Next, before you put the small ball cup turnbuckle together, take a sharp Xacto knife (I find a razor blade works a little better) and cut off 1-2mm on each ball cup where the small turnbuckle threads in. IF you cut too much off, do not worry. Any of the older ball cups used on XXX models, or even AE's SC10, B4.1, or T4.1 will work. I personally used RPM ball cups, which work perfectly (You still have to cut them). When putting the ball studs on the steering arm and rack, make sure the one on the servo arm and other one, which will connect to the small

turnbuckle are the smaller ones without a hex base. Tighten the ball cups on the small turnbuckle almost all the way down, and snap one side onto the steering arm ball cup. **Do not attach the other side until you are completed with the build!**

You may notice that there is a small high spot in the steering, this is ok, it will break in and smooth out after a few runs.

#### *Step A4*

The manual suggests how many shims are needed for different brands of servos. However, some are incorrect. Here is a current list of confirmed servo shims. The JR and Hitec (Both use 0 shims) in the manual are correct.

Futaba Servos: 0 shims  
Savox 1251 low profile servo: 2-2.5mm of shims. Some bulkhead shaving may be required  
Savox 1258: 0-.5mm shims  
Savox 1257: 0 shims  
Orion Servos: 0 shims  
KO Propo 2415 Low profile: 2mm shim

Basically, you want the servo linkage to be parallel, without hitting the servo or bulkhead. If you have to, it's ok to shave the bulkhead to provide clearance.

#### **Front End:**

The kit setup is designed to be good for a variety of tracks and is very easy to drive, but it can leave something to be expected. I highly recommend building the kit as close to Dustin Evan's Reedy race setup. Every change just makes the car better. If you don't have the 5 degree front castor blocks, run the kit ones first. However, use Dustin's amount of shims under ball studs on both the front and rear end. For the front, this will remove the bump steer present in the kit's setup. Follow his turnbuckle positions as well, and use the 2.5 degree antisquat block in the back. Then add the 5 degree front castor blocks with 25 degree pivot shim, and the 3.5 rear degree LRC block later.

#### *Step A-8:*

Install the two m3 locknuts upside down, with the nylon facing downwards. This will allow the bottom screws to reach the nylon.

#### *Step A-13:*

Be careful when installing the small setscrews, as they will not bottom out and keep going through the bottom of the plastic pivot block. Thread them so the top of the setscrew is not protruding from the pivot block and you cannot pull the hinge pin out.

#### **Rear End**

##### *Step B-3:*

Start out with the 2.5 antisquat block, found in the tuning bags. The 2.5 part that goes on top of the toe block does not fit correctly, so use the stock blank one.

#### **THE DIFF!**

(It's so important it gets its own sub-section)

The Diff used in this car is roughly the same as the one AE has used for years, but the big difference is it used 14 main diff balls. IF you build, set, and break in the diff correctly, it will be the best and smoothest diff you will ever own.

- Diff Rings: These are fantastic right out of the kit, and already sanded.
- Main Gear, bearings, and Outdrives: All are excellent
- Thrust Balls: They work fine, but can be replaced for ceramic balls.

Diff Nut and Screw: To avoid problems, I highly suggest simply getting the associated diff nut and screw (you must use them together) Part number: [ASC6575](#)

Main Diff balls: I believe that there were some quality control problems with these, as a few have been able to build their diffs with them without any problems. However, even experienced racers have built super smooth diffs, only to have them gritty after one run. The balls seem to be made of swiss cheese. To solve this problem, get some new carbide main diff balls. BFAST makes excellent ones, and they already come in a kit of 14. AE also has good ones, but they come in kits of 12 so you will have to buy two sets for 14 balls. It has been discussed, and many agree that getting carbide main diff balls and ceramic thrust balls is the way to go. BFAST offers an excellent kit for the 22 with ceramic thrust balls and carbide main diff balls, which IMHO, is the best option out there right now. All BFAST does is specialize in diffs, and they are good at it!

[BFAST Diff Parts](#): You need BD14 and CTB65, but not the BFAST rings as the kit ones are excellent

#### [TLR Main Tungsten Carbide Diff Balls](#)

Grease: AE's Clear and Black Diff grease has been the way to go forever, and still is. Dustin Evans was kind enough to help me build my diff, and he went right for my AE grease to build it. When building, line the small channel under the diff rings with the clear grease to prevent them from slipping. Push the rings down, and wipe away the excess grease. Put a little clear grease on a plastic bag, and drop the main balls into it, coating each one. Then, using an Xacto knife with a drop of clear grease on the tip, pick up each ball and place it into the little slots in the main gear. After putting all of the balls in, put a "small" dab of clear grease on each ball. Don't over do it! For the thrust, use a hearty amount of black grease, and wipe off the excess. Put the washer on the screw, then some black grease on the washer, and then plop each of the 6 diff balls onto the grease. Then put the 2<sup>nd</sup> washer on top, with some more black grease, and using your finger, wipe away the excess grease around it.

Now, insert the screw into the female outdrive, and follow the kit directions. When tightening the screw, don't tighten it all the way, and leave it loose. Install it into the car, and set it later once you have finished the build.

When you are done with the build, pop a ballcup off and tighten the diff little by little, until it is tight, but not gritty. If you haven't done it before, go to your local track and find someone who knows what they are doing, and have them help you do this and break it in. To break it in, put on wheel on the table, holding it, with the other in the air. Keep it like this, spin the wheel at 1/4 throttle for 3-4 minutes, and repeat on the other side. After this, retighten the diff until it is smooth, but not gritty. **Again, I highly suggest that you get the help of an expert or someone who knows what they are doing at the track if you do not or have not built a ball diff before!**

#### **Rear End Continued:**

Tranny: If you run on a low dust indoor clay track, put a dab of black grease on the tranny gears to lightly coat them. If you run on a super dusty outdoor track, leave it dry. For rear motor, the diff should be inserted with the screw facing the drivers (left) side. For Mid motor, it

should be facing the right passenger side. When putting the case together, put a drop of threadlock on the motor plate screw holes. Then, tighten the screws so they are just snug. Overtightening can cause binding.

Slipper: Add a small spacer between the spring and slipper plate. This allows the screw to get full compression and you can adjust it properly. The replacement springs are longer, and will fix the problem as well. Part # TLR2964

Setting the slipper: Start pretty loose to start. Do this after setting your diff. You always want the slipper to slip before the diff. Holding one rear wheel on the table with your hand, and the other rear wheel with the base of your radio, give a quick stab of full throttle. It should slip as you are starting with it loose. Keep tightening the nut until the front does a small wheelie (Not all the way). Your slipper is now perfect.

Gearing: the Gearing Chart is a good place to start

### **Shocks:**

From Matt C and some tips I learned from building mine:

Bottom Cap:

I always use a little AE green slime on the bottom o-ring chamber and on the o-rings and spacers themselves. This helps prevent leaking. When inserting the middle spacer between the o-rings, make sure that you can see the little lip on the inside of the plastic spacer with the top of the shock on the table. When inserting the shock shaft, make sure the bottom cap is loose, and put a little shock oil on the shock threads to prevent ripping the o-rings. Once the shaft is inserted, tighten the bottom cap all the way down (Matt recommended this).

Pistons: Use a fine sand paper (200-300) and carefully sand away the little mold tabs on the side of the pistons. Go slowly and don't overdo it. The piston should not make a squeaky noise when in the dry shock body.

Now, fill the shock almost up to the top with oil, and work the piston up and down to remove air bubbles. Then, let the shock sit for 10 or so minutes to let all the bubbles float to the top.

**With Bladders:** Now, starting on one side, slowly push the bladder down to properly seat it. There should be enough oil in the shock that a little comes out when doing this. Hold the bladder down lightly, slowly push the shock shaft up until it almost touches the bladder, but doesn't. More oil should come out. Here's the secret: Making sure the bladder is still fully seated, pull the shaft out to about 1/3 its length. This should suction the bladder in a little bit, and will prevent the bladder from coming unseated while screwing the top cap on. Screw the cap on until you meet resistance, and then unscrew it a turn or so. Push the shaft up to about 1/4 its length, and screw the cap all the way down. Do this a few times until you get as little rebound as possible. A little rebound is ok though.

**Without Bladders:** Building the shocks with the bladders cut allows the shocks to become emulsion shocks. You want as little rebound as possible with these. The TLR team reports that doing this allows the buggy to land better. [Here is a video of Mike Truhe building them emulsion style.](#)

### **3. Problems**

Wheel Nuts Keep Falling Off! The Solution:

A: Loctite them each time you take them off, once it dries, it will provide resistance on the threads. Tighten them as much as you can (Don't go overboard)

B: Get a very long M3 Screw, and thread it all the way through the axle to the other side of the wheel. Use a nylon locknut to secure the wheel, with a washer underneath it.

Rear Outdrive driveshaft pin keeps sliding out. The solution: Call Horizon up, this is a defect, and should be replaced. Until then, put some CA glue or green threadlock in the slot, and recenter the pin.

Stripped screw: This is probably due to using crappy wrenches or an electric wrench. The solution: Get a Dremel tool with a cutoff wheel. Dremel a small slot into the head of the screw, and then use a flathead screwdriver to unscrew it.

Missing a Part? Call Horizon!

Diff is Gritty after one run: Rebuild it, with new diff balls and flip the rings.

Diff doesn't seem to tighten all the way (with stock diff nut): Replace it with the AE diff nut and screw.

Slipper keeps slipping, even though it's tightened all the way down: Add a small spacer between the spring and slipper plate. This allows the screw to get full compression and you can adjust it properly. In order to tell if your slipper spring is the correct length, you can measure it. Some of the kits came with springs that were too short, at about 10.6mm. The correct length is 12.7mm.

#### 4. Mods and Upgrades:

Honestly, the car doesn't need much. But there are always those who will tinker.

**Battery Hold Down:** Don't like Velcro? Well there are easy ways around it.

A: [Diggity Designs makes a nice premade kit](#), but it is a little expensive and uses screws.

B: [My own Design and idea for it](#)

C: You can use the B4 battery hold down, along with the Losi front steering inserts, and some screws like [this](#)

**Rear Wider Hexes:** In order to run Dustin Evan's setup, you need to add 2mm to the hexes in the rear, to add width to the car. Now, after some testing, the widest hexes you can use with the stock wheel nuts are 5.6mm, which is 1.8mm wider. Do not go any wider with the stock wheel nuts, as the axle won't reach the nylon part of the nut.

Losi offers aluminum hubs, in plus .75mm, 1mm, and 1.5mm. Personally, I would not spend \$13 on them. Instead, pick up these Traxxas hubs. They are a perfect fit, they do have a small lip on the back by the pin (just raised around the slot) When you shave that lip off, they are an exact 5.6mm, which is the widest you can go. Cost \$2 as well, so you can order 3 sets and sand them to various desired widths.

[http://www.amainhobbies.com/product\\_info.php/cPath/1\\_25\\_1466\\_364/products\\_id/27164/n/T\\_raxxas-Stub-Axle-Pin-Collar](http://www.amainhobbies.com/product_info.php/cPath/1_25_1466_364/products_id/27164/n/T_raxxas-Stub-Axle-Pin-Collar)

**Chassis Protector:** Want to protect your nice new aluminum chassis?

Member [Wrightcs77](#) has very nice and thick clear sheets, which you simply cut out in the shape of the chassis and put on. It is very hard to punch holes in the correct places, so if you have to remove a screw the whole thing has to come off. Same with the [Upgrade RC](#) wrap.



[Fastlane Graphix](#) offers a nice one with precut holes. Wright's is the thickest, followed by Upgrade, and then Fastlane. For both Upgrade and Fastlane, you can choose and design a wrap from many colors and schemes. Wright's sheets are the most durable, and thicker than other brand chassis tape.

**TLR Upgrades:** TLR has a host of upgrades for the cars, such as aluminum front and rear hubs, titanium turnbuckles, and an aluminum steering rack. TLR also offers an aluminum diff nut, which will also solve problems with the stock one. However, you will be paying \$15 for one that is still harder to put together and will work the same as the \$2 AE one. Your choice. You can see them on [this page](#).

**Nice Tools:** TLR offers some nice tools for this kit, and one shines in particular. It is a diff adjustment tool, that allows you to tighten or loosen the diff without popping off any turnbuckles. IMHO, it is a must have for any 1/10 vehicle. [TLR2950](#)

They also have a nice aluminum shock tool set, but it isn't really needed. [TLR5099](#)

Their Metric Tool set is well worth the money, and the tips are excellent, and wear very well. [LOSA99109](#)

Dynamite offers a nice set of Cheap Nut Drivers. They work very well, I use them myself: [Dynamite-5-Piece-Metric-Nut-Driver-Set](#)

Losi's ride height ([LOSA99173](#)) gage works fine if you don't already have one. I particularly like the ride height gage, because it works on all of my vehicles, both 1/10 and 1/8. I use the [RPM monster camber gauge](#) for the same reason, and it works just as well with both 1/10 and 1/8 vehicles. Most camber and ride height gages will work just fine as well.

**Bodies:** Currently, your only options for bodies are the stock Losi ones and FTW's cab forward bodies sold at Avidrc.com. I'm sure many other companies will soon add their interpretations to the list, and it is confirmed JCONCEPTS will be coming out with a punisher body for it soon.

- [Stock](#)
- [FTW Vane](#)
- [FTW Blade](#)
- [JC Punisher](#)
- [Proline Bulldog](#)
- [Proline Bulldog Mid Motor](#)

**Wings:** Any 1/10<sup>th</sup> buggy wing will work, so you can experiment with different types. The stock wing comes with small nipples to show you where to ream the holes. However, most pros have been running their wings forward towards the shock tower, like most other 1/10 wings. The stock holes place the wing too far back. Here is a picture of Dustin Evan's wing to show you what I mean:





**Wheels:** If you were one of the many to switch from the XXX-CR to the 22, chances are you have an arsenal of wheels and tires for the XXX-CR. You're in luck, sort of. TLR was kind enough to include two sets of front and rear wheels in the box, which I give two big thumbs up to. It should keep you busy for a few weeks minimum until more wheels become available. If you find you need more wheels, you can use your old XXX-CR rear wheels on the buggy if you take the hex off to leave the spacer and pin. However, you cannot use the XXX-CR fronts. Losi 4wd fronts will work as temporary replacements. Keep in mind the 4wd fronts are slightly wider.

- [XXX-CR Rear wheels](#)
- [Losi 4wd Fronts](#)

## 5. Pro Setups & Sheets

For the majority of US tracks, rear motor seems to be the faster choice. However, in certain conditions the Midmotor can be. However, the Midmotor really needs the weight kit, which currently isn't available.

For the majority of indoor clay tracks, Dustin Evan's setup is the way to start. It is leaps and bounds better than the kit setup. It will work on a variety of other surfaces as well:

[Setup\\_DustinEvans-2011ReedyRace.pdf](#)

Frank Root also tried out the midmotor setup here in the US at OCRC, and here it is:

[SetUpSheet\\_MidMotor\\_FrankRoot-OCRC.pdf](#)

[Here is the setup page from TLR drivers](#), and is updated with new sheets from different drivers.

[Here is Casey Pecks Setup](#), which is better suited for outdoor rough hardpacked tracks.

For others tracks such as European ones, you can refer to [this page](#).

This came up, so I will mention it here. I will also continue to add info on how different tuning adjustments affect the car.

How do the 25/5 (DE) front kickup compare to the 20/10 (Stock) front kick up?

Originally Posted by Casper:

The 25/5 setup has a little more steering and seems to be a little better all around.

It doesn't just give you more steering.... Kickup only affects how easily weight transfers through to the front suspension arms, which will only affect off-power steering. Remember, some settings/changes affect static steering (steering on, off, and neutral power), some settings/changes affect only on-power steering, and some settings/changes affect only OFF-power steering.

So in short, 25/5 will give you more off-power steering than 20/10 will. It won't affect neutral power steering, or on-power steering. Total caster will, however. If you want your backend to kick around a little more, then run 25/5. If you need more rear-end stability when braking, run 20/10.

Spring Rates: Thanks for this chart Jeremy!

| Rear  |        |             |
|-------|--------|-------------|
| rate  | color  | part number |
| 1.6   | gray   | TLR5165     |
| 1.8   | white  | TLR5166     |
| 2.0   | yellow | TLR5167     |
| 2.3   | pink   | TLR5168     |
| 2.6   | red    | TLR5169     |
| 2.9   | orange | TLR5170     |
| 3.4   | silver | TLR5171     |
| Front |        |             |
| rate  | color  | part number |
| 2.5   | red    | TLR5172     |
| 2.9   | orange | TLR5173     |
| 3.2   | silver | TLR5174     |
| 3.5   | green  | TLR5175     |
| 3.8   | blue   | TLR5176     |
| 4.1   | black  | TLR5177     |

## 6. Completing Your Ride

**Lipos:** In rear motor, almost any 1/10 pack will fit. Standard stick packs, saddle packs, and the new shorty 96mm lipos. In mid motor, only saddle packs and the short 96mm pack will fit. The short 96mm packs are ideal in both configurations because of their low weight, small size, and small amount of wires. Losi and Venom are currently the only two companies to offer the short 96mm 2s 60C 3800mah packs. The Losi pack has been proven to be excellent, and venom lipos have always been very high quality and a good value.

- [Venom Shorty Pack](#)
- [Losi Shorty Pack](#)
- Trinity ReVtech Shorty Pack

**Motors:** Pretty Much any brushless 540 motor will work!

**ESC:** The 22 can provide some challenges to fit all of your electronics in under the body, but in the end it actually makes for a very clean install. I have yet to come across an ESC that doesn't fit, even my old Novak GTB esc with its huge purple heatsink fits on the ESC tray in rear motor config. I highly suggest using the ESC mounting positions designed by TLR, they are there for a reason. The Tekin RS ESCs are perfect for this car, as they are small, run very cool, and allow you to solder the wires on as you please. Most of the LRP ESC's also work very well.

**Servos:** Any 1/10 servos will fit, however some of the larger ones can leave a small amount of space for the receiver. Some excellent low profile servos are the Spektrum S6070 servo, and the Savox SC-1251MG servo.

[Spektrum S6070](#)  
[Savox SC-1251](#)

**Receivers:** Pretty much, the smaller the better. The older Spektrum SR300, SR300, and SR3001 receivers will only fit on their side or diagonally with large servos like the JR 9100s. (Here is a picture of my SR3001 receiver with the very large JR 9100s servo)



**Transponder:** As you can see in the previous picture, an AMB transponder fits perfectly on top of the servo.

**Body Velcro:** Instead of using the body mounts, use velcro instead to secure the body. It leaves no holes in your body that can crack, and allows easy body installation and removal. Here is a picture (the velcro is white):



**Setting Your Steering:** Now that you have installed everything, it is time to set your steering. With the steering arm one click to the right, and both the steering turnbuckles the same length (pointing straight ahead) Adjust the small steering turnbuckle (which we cut the ball cups

earlier) until the wheels point as close to straight ahead as possible when the steering servo is on and centered. (To see if the steering is pointing straight ahead, lightly hold the ball cup onto the balls stud) When you complete this, snap the ball cup on. Now, with your EPA set to max on both sides, turn the wheel all the way to the right. The servo will probably start making noise, this is normal. Wiggle both wheels when the steering is at full throw. Now, slowly start backing the EPA off. Keep going, until there starts to be a little slop in one or both wheels. Then, add more epa, so there is no slop again. Then do maybe 2 more clicks than 0 slop from that point to be on the safe side. Repeat with the left side, and your steering is set! Use the trim option on your menu to make the wheels point exactly straight if they are a little off center.

**Conclusion:**

I would like to thank everyone who helped contribute the information for this guide, and I hope it will answer all of your questions. I will continue to update and change the information, and it should save you from reading through 400+ pages of info. And most importantly, thank you Dan and TLR for making a *rockin* buggy!