Version 1.1

RC4WD Copperhead
Instruction Manual

Thank you for your purchase. Welcome to the RC4WD family. This kit is a combination of many specially engineered and manufactured parts. Enjoy your build.

This is a complete instruction manual for the Copperhead truck kit. We have tried to detail as many things in the build process as possible. Since the kit has so many options available it is hard to cover all of them. This manual covers the basic kit.

If for some reason you don't find enough detail here, or you are having issues with your build please visit RC4WD Copperhead forum here.

You will need to have a few things for this build.

Metric Hex Wrenches
Regular Wrenches, or Nut Drivers
Pliers
Monster Lube RC4WD #X-0317
Blue Thread locker
Shock Fluid

The first thing you will want to do is unpack your truck kit. Be careful with the parts when unpacking and make sure to inventory all your items.

When you build this kit you will want to use some Blue thread locker on the metal to metal parts. The included nuts have nylon inserts to prevent them from backing off, but all other metal to metal surfaces will stay in place better with the thread locker. Anytime you see an *, this notes the need for thread locker. (*please be sure to get blue thread locker, it is removable.***)**

Hardware Listing

(12) M3 Nylock nut
(2) Black Motor Screws
(12) M3 X 16mm SHCS
(6) M3 X 6mm SHCS
(20) M3 X 20mm SSS
(19) M3 conical washers
(9) M3 X 12mm SHCS
(7) M3 X 20mm SHCS
(4) 6mm spacers
(8) M3 X 10mm SHCS

Miscellaneous parts listing

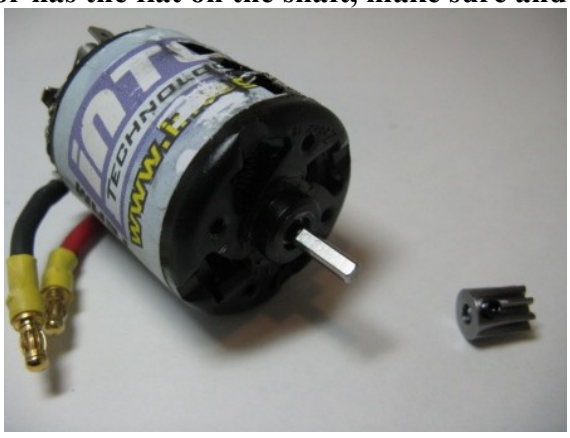
(1) 89mm long Silver links
(16) Black straight Rod
(2) 46mm long Silver links
(2) 52mm long Silver links
(2) 62mm long Silver links
(2) 40mm long Silver Links
(4) Velcro Straps
(1) 33mm long Silver link

Assembly Steps

Step 1. Motor Installation

Items needed
R2 Transmission **(2) Motor Screws** **(2) Washers** **8 tooth Pinion**
Clear Dusk cover **(1) Pinion set screw**

You may install the motor into the R2 tranny. Use an Allen wrench to install the set screw into the Pinion gear supplied. Then install the Pinion gear onto the motor and tighten the set screw. If the motor has the flat on the shaft, make sure and align the set screw up with the flat of the motor shaft.

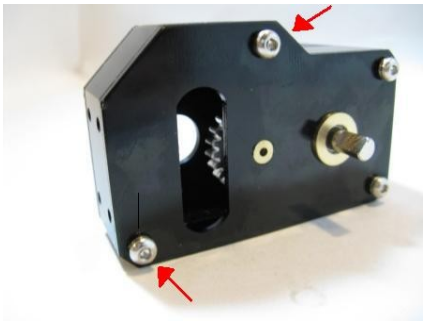


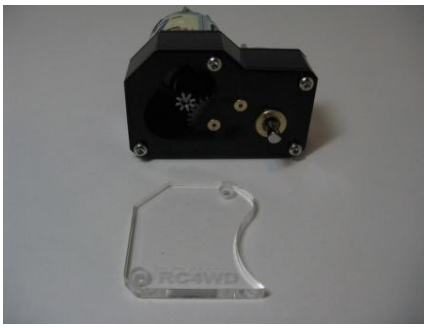
Next install the motor into the tranny on the side with the small hole. Using the black motor screws supplied insert the screws thru the holes in the tranny then into the motor. Make sure to tighten the screws only part way. You will want to align the pinion and R2 gear mesh, then tighten the screws all the way down.

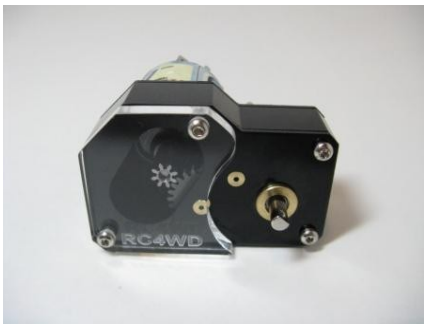
Proper gear mesh can make the R2D gears last a long time, and will reduce gear noise. If you set the lash to tight it will wear the gears and be very loud. The mesh in the photo is just about right. You will want to use some Monster Lube to lubricate the gears. More lube is better.

<u>At this point the shafts will be almost impossible to turn by hand.</u>

You can now install the clear cover like shown in the next photos. Remove the two screws highlighted in the first photo. You will use these same screws to install the clear cover.



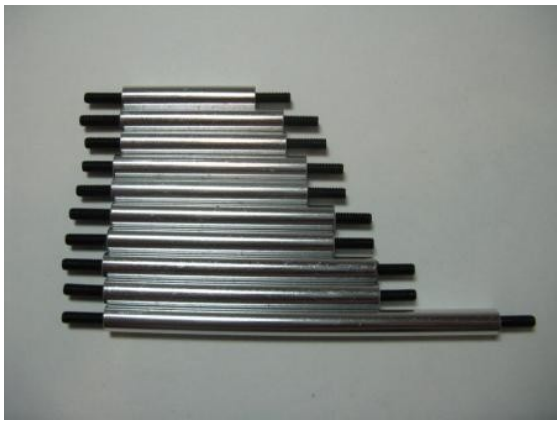




Step 2. <u>Link Assembly</u>

All Links **(20) Silver Long Rod Ends** **(20) M3 X 20 SSS**

A. You can now assemble the links. Insert the set screws into the link ends. * They should look like the rods in the second photo.
You can now install the rod ends onto each end of the links. *



Step 3. <u>Shock Fluid</u>

(2) Front Shocks X-0366 **(2) Rear Shocks X-0307**

You can now fill your shocks with fluid. This is a simple thing. You can remove the shock cap and put your favorite shock fluid into the shock. Make sure that all the air and air bubbles are out of the shocks before you reinstall the cap. Make sure the shocks are not locked and then set them aside for final assembly.

(you may need to do some research on how best to bleed your new piggyback shocks**.** The springs included on the kits stock shocks are very heavy. So a light duty fluid will work really well**.)**

Step 4. Axle Lubrication

RC4WD Monster Lube X-0317 Front and Rear Plastic T-Rex Axles

Lubrication of the axle gears is a very important step in the assembly of your kit. Remove the screws holding the cover onto the axles (like in the second photo). Use some Monster Lube on the main gear, and reinstall the cover. Be careful not to tighten the screws to much, you can strip the plastic.

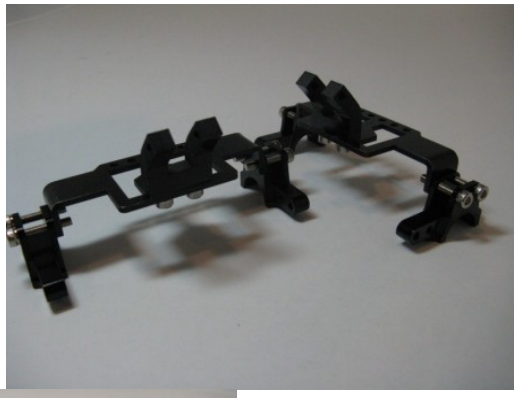


(There are washers included with the axles. Use these as shims if needed)

Step 5. Axle Servo 4 Link mount assembly

(8) M3 X 16mm SHCS (2) Upper 4 link mounts 4) Upper portion of the lower 4 link mount

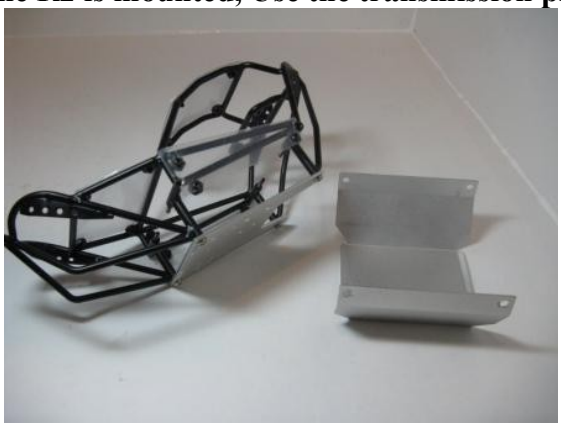
You can install each lower 4 link mount to the sides of the servo mounts. Use the M3 X 16mm SHCS to secure the two parts * Make sure that the link mounts are all facing the same way like in the second photo. Once these are installed on the axles they can't be changed unless removed from the axles.

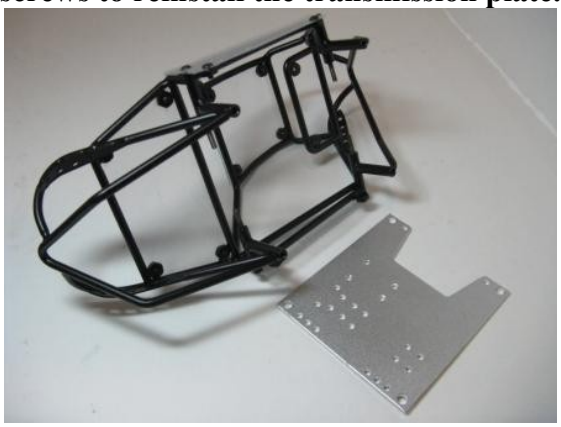


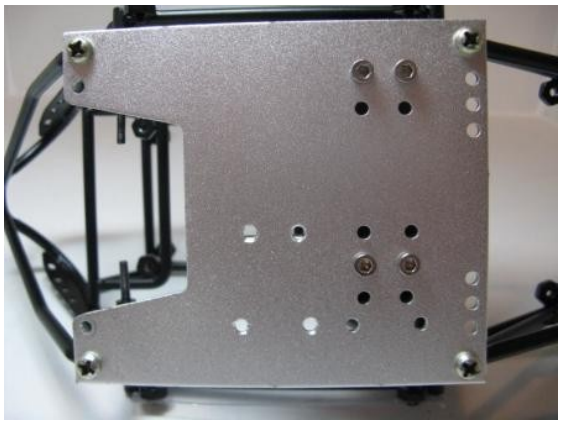
Step 6. <u>R2 Installation into Copperhead Chassis</u>

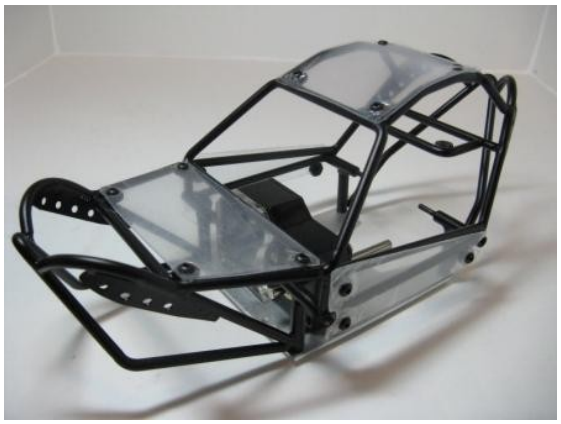
Copperhead Chassis (4) M3 X 6mm SHCS

Start by removing the 4 screws holding the lower chassis pan on. Then you should be able to slip the plate free from the main chassis. Then remove the 4 screws holding on the transmission plate. Use the screws to secure the R2 Transmission to the Transmission plate. * In the 4th photo you can see which hole to use for proper mounting.
After the R2 is mounted, Use the transmission plate screws to reinstall the transmission plate. *







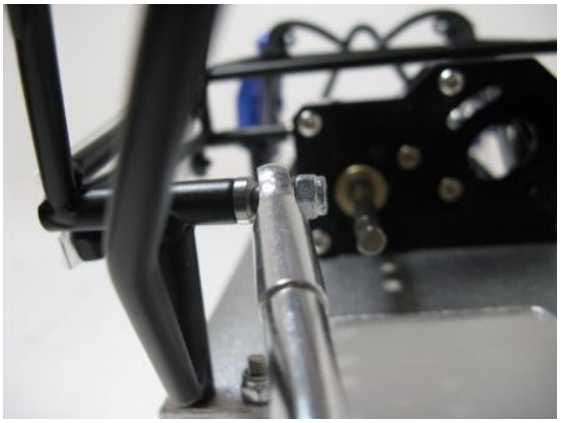


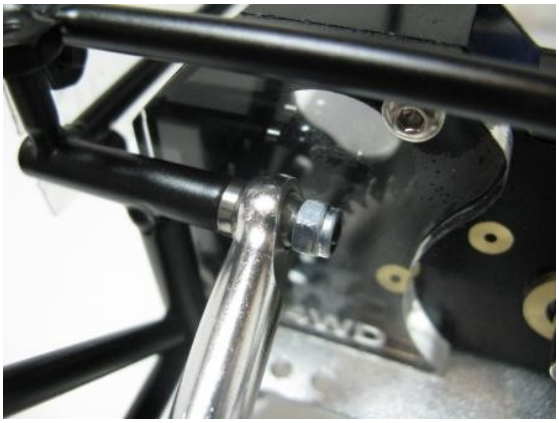
Step 7. 4 Link Placement onto the Copperhead chassis

(8) Conical washers	**(8) M3 Nylock Nuts**	**(4) M3 X 16mm SHCS**	**(2) 40mm Links**
(2) 46mm links	**(2) 52mm links**	**(2) 62mm links**	**Copperhead Chassis**

Here you can install the front and rear 4 links to the Copperhead Chassis. Here is a quick note to follow when installing the rod ends. Each end has two sides. One side has a smaller face and the other side a larger face. (see photo below) When installing the rod ends, make sure the small face is toward the conical washers. This will allow for better link movement.
Small face on the left. Large face on the right.

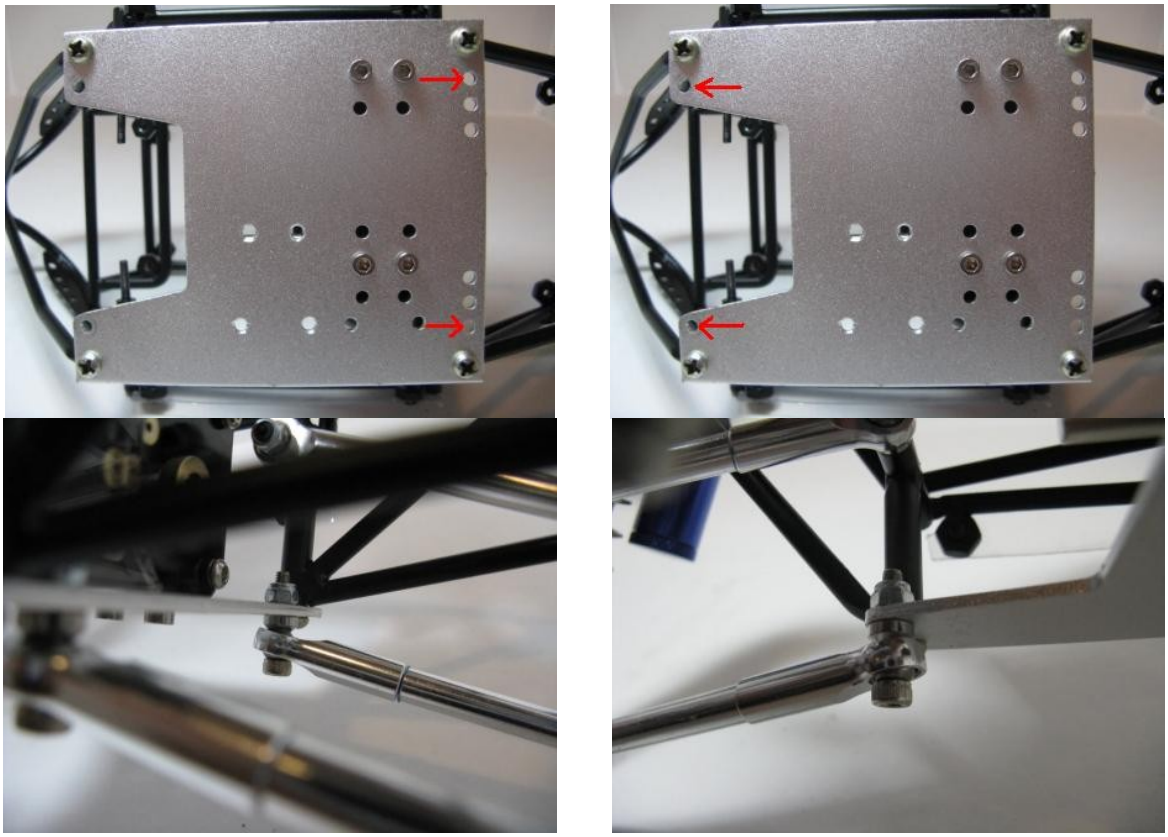
A. Install the upper links first. In this step it may be easiest to turn the chassis over on its top. The 40mm links are used for the front upper links. Install a conical washer onto the thread shaft inside the chassis. (see first photo below) Make sure the beveled edge of the conical washer is facing out. Then slide you rod end on and secure with a nylock nut. Repeat for the other front link. Then turn the chassis around and install the 52mm links to the upper mounts on the chassis the same way as the rear.





B. **Now install the lower links to the Copperhead chassis. Use the 46mm links on the lower front. In the first photo you can see where to install the links. Make sure and mount on the lower side of the transmission plate. Use the M3 X 16mm SHCS up thru the rod end, then a conical washer, (beveled edge facing the rod end) then into the transmission plate. Secure with a nylock nut. Repeat for the other side. (third photo)**

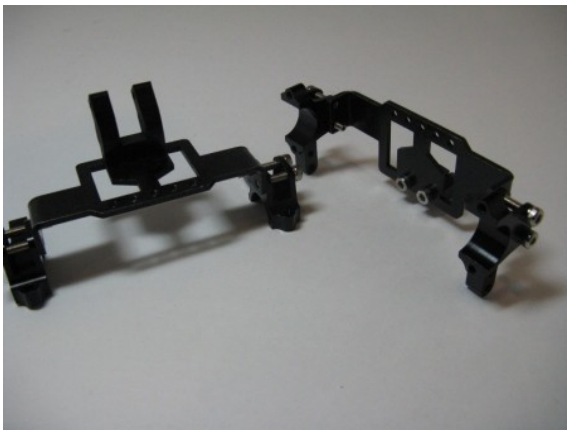
You can turn the chassis around to the back and install the 62mm links to the rear lower mounts. You can see the mounting holes marked in the second photo. Again use the M3 X 16mm SHCS up thru the rod end, then a conical washer, (beveled edge facing the rod end) then into the transmission plate. Secure with a nylock nut. Repeat for the other side. (fourth photo)



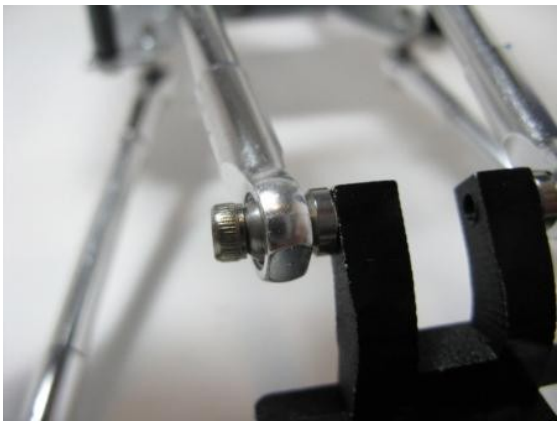
Step 8. 4 Link Placement/Shocks onto servo mounts

(6) M3 X 12mm SHCS **(8) M3 Conical Washers** **(2) M3 X 20mm SHCS**
(2) Link mount assemblies

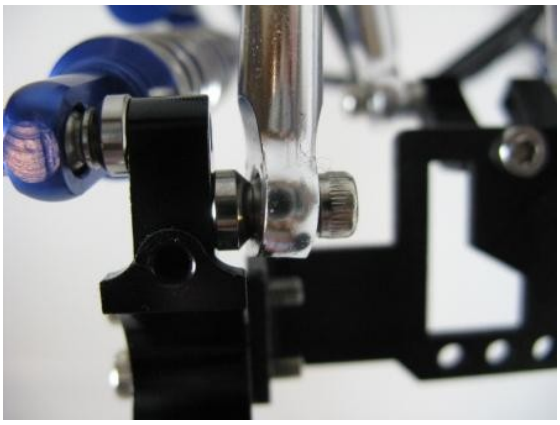
Now install the front and rear 4 links to the servo/link mounts.



A. Install the upper links first. Insert a M3 X 12mm SHCS into the end of the front upper link. Then install a conical washer (bevel facing the link) onto the screw. Now you can insert the screw into the upper 4 link mount. * Repeat this step 3 more times for the other upper links. *



B. The lower links can be mounted to the lower 4 link mounts. Installing the front link use a M3 X 12mm SHCS. Insert a M3 X 12mm SHCS into the end of the front lower link. Then install a conical washer (bevel facing the link) onto the screw. Now you can insert the screw into the lower 4 link mount. * Use the rear hole like shown in the photo below. Repeat this step again for the other front lower link. *



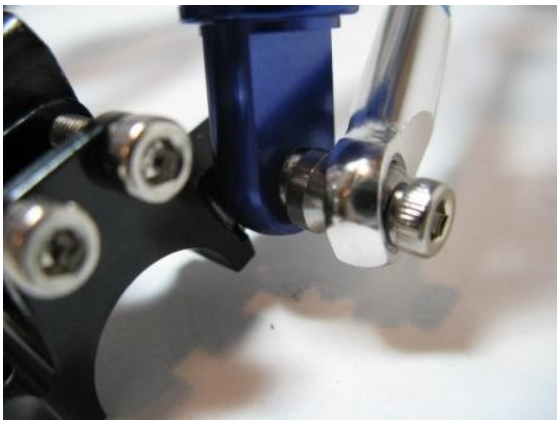
C. Now install the front rear lower links. Use the remaining M3 X 20mm SHCS here. Install the screw into the rod end, and then install the conical washer (bevel facing the link). Install temporarily into the rear hole in the lower link mount.

Step 9. <u>Shock mounting</u>

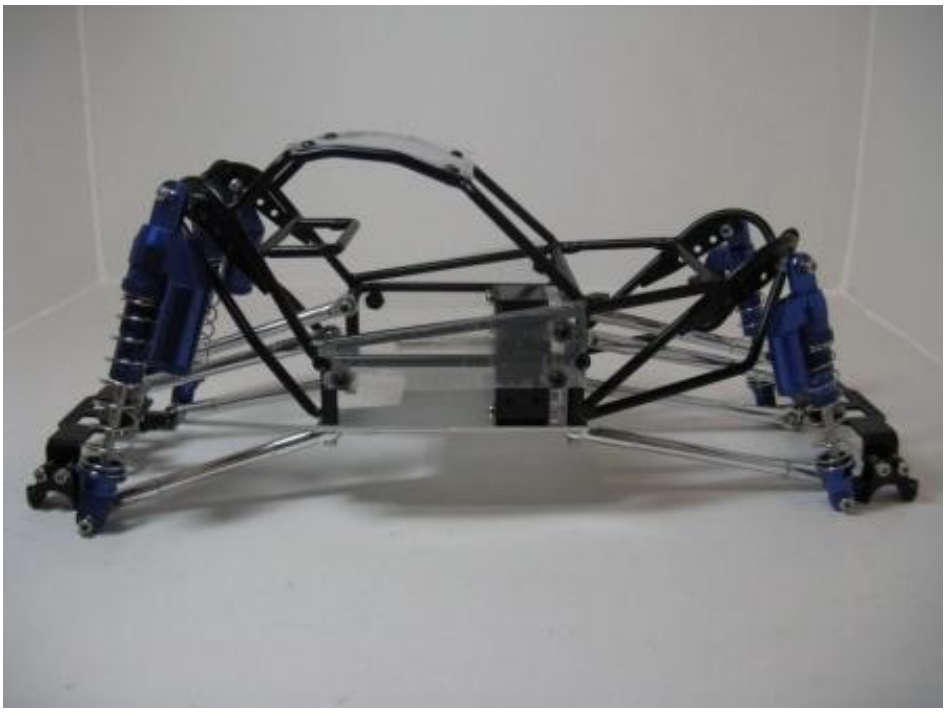
(2) M3 X 12mm SHCS
(4) M3 X 20mm SHCS
(2) M3 Conical Washers
(4) 6mm Spacer
(4) M3 Nylock Nut
(2) Front Shocks
(2) Rear Shocks

A. Install the front shocks first. Insert a M3 X 20mm SHCS into the top of the front shock body. Then install a 6mm spacer onto the screw. Insert into the top hole in the front of the Copperhead chassis. Secure with a nylock nut. (scene in the first photo) Insert a M3 X 12mm SHCS into the bottom of the front shock, then insert a conical washer onto the screw (bevel facing the shock). Now you can install the screw into the front hole of the lower 4 link mount. * (scene in the second photo) Repeat these steps for the other front shock as well.

B. You will install the top of the rear shock the same way you did the front. Use a M3 X 20mm SHCS. Install the screw into the top of the shock and then add a 6mm spacer. Insert the screw into the upper most mounting hole on the back of the Copperhead chassis. Secure with a Nylock nut. (not pictured)
You need to remove the lower link bolt in order to install the rear shock. Make sure the conical washer stays next to the link, then insert the lower shock body and reinstall the screw. *
Repeat these steps for the other rear shock as well.



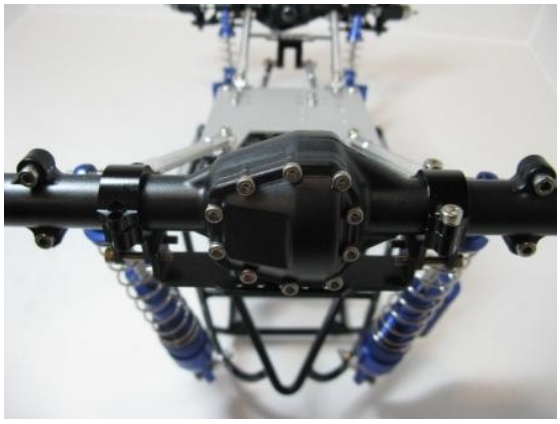
You should have something that looks like this.



Step 10. <u>Installation of the axles</u>

(8) M3 X 10 SHCS **Front and rear axles** **(4) Lower 4 link clamps**

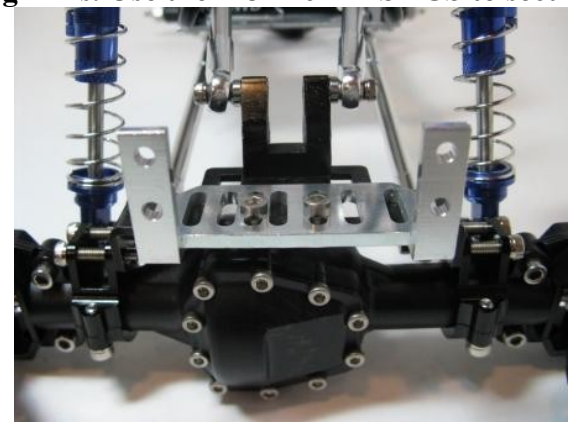
The lower 4 link clamps have a small lip inside them shown in the first photo. The lip lines up with a groove on the bottom of the axles. Put the axle up to the servo mount making sure the grooves are facing away from the chassis. Install the lower clamp using the M3 X 10mm SHCS. * Repeat this step until you have all the screws secured for the lower link mounts and your axles are installed. * (Make sure that you axle output shaft is facing you transmission**)**



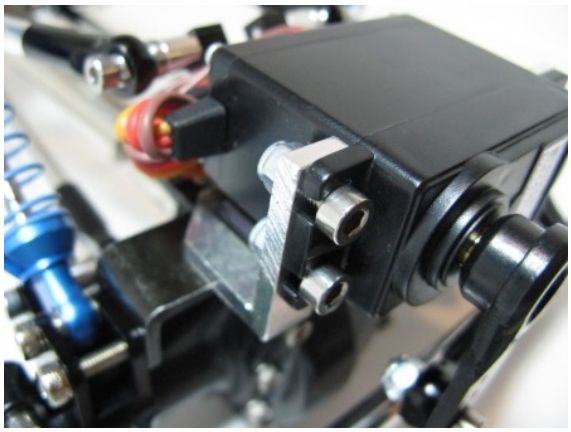
Step 11. <u>Servo and Servo Mount Install</u>

(2) M3 X 6mm SHCS (1) L shaped Servo mount

Line the servo mounts up similar to the photo below. This may require some repositioning once you install the servo and steering links. Use the M3 X 6mm SHCS to secure the servo mount. *



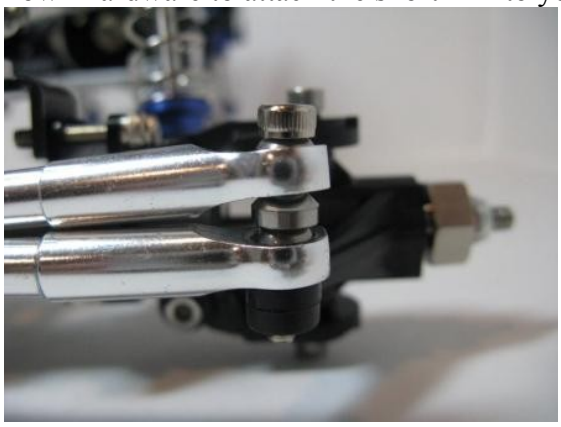
To install your servo you can use (4) M3 X 10mm SHCS, and (4) nylock nuts like shown below.
(you may choose to use some flat washers here, not provided in the kit**)**

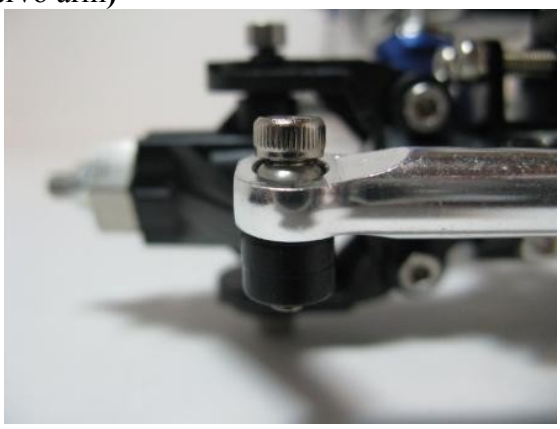


Step 12. Installing the Front Steering links

(1) M3 X 20mm SHCS **(1) M3 X 12mm SHCS** **(1) M3 Conical Washer**
(1) 89mm Link **(1) 33mm Link**

Install the M3 X 20mm SHCS into one end of the short link and then slide on a conical washer. Now install into the end of the long link, and screw into the steering knuckle like shown in the first photo below. Use the M3 X 12mm SHCS to secure the other end of the long link to the opposite steering knuckle.
(Use your own hardware to attach the short link to your servo arm**)**



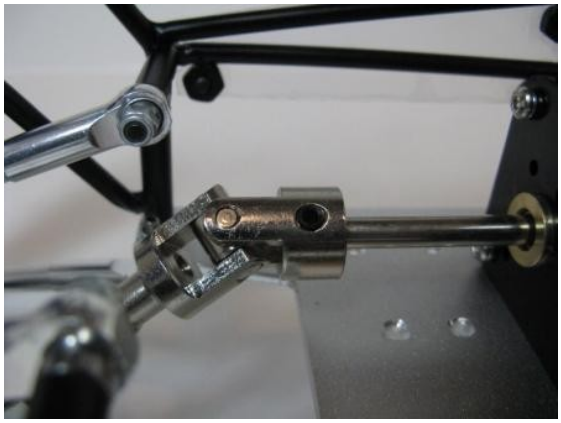


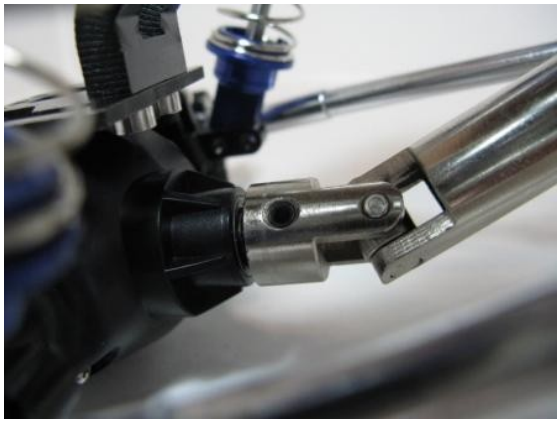
Step 13. Installation of the Punisher shaft

(1) X-0324 Rear Shaft **(1) X-0252 Front Shaft**

You can install the Punisher shafts that were included with your kit. These already have the set screws installed into them. You may want to use a small amount of thread locker on the set screws when installing the shafts.

The female shaft needs to be installed to the axle. While the male side attaches to the transmission. Please be sure that the set screw is secured to the flat spot on the pinion shaft sticking out from both the axles and the transmission.





Step 14. Reinstall Skid Plate

Use the screw you removed earlier to reinstall the lower skid plate to the Copperhead chassis. *

Step 15. Wheel and Tire Installation

Make sure when mounting the tires on any wheel that you look at the tread pattern and make sure that when the wheels are installed that each are facing the right direction.

It will take a little work to install your tires to the beadlock wheels. Remove all the screws on the front and back ring. Wrap the tire over the wheel and then insert the bead into the outer ring of the wheel. Carefully place the ring back on and reinstall the screws. I use a cross pattern and carefully tighten the screws slowly. Make sure not to tighten anyone screw all the way down until you have all screws installed, then slowly tighten them all in a star shape until they are completely secured. Tightening one screw farther than others can cause the bead to come out of its seat. Repeat for both the front and rear rings and the other 3 wheels and tires.

After you have your tires mounted, you can remove the nuts from the axles and install the wheels to your Copperhead. It should look something like this.

You will need to install the rest of your electronics, and paint your body panels. Please understand that the steering servo will require some adjustment to work properly. When you install your Radio and ESC you will need to refer to there operating manuals for proper setup.

Enjoy your new kit and please post up photos of your finished build on our forum here. Please also use the forum if you have questions about your build.

Thanks

Team RC4WD

Below are some additional photos of this Copperhead built.

Front

Rear