



Commander Tie Rods

Can Am Commander | 2011-2013 ; 2014+

Part #: 5602501, 5602502

Rev. 092722

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SAFETY WARNING

RT Pro UTV recommends this system be installed by a professional technician. In addition to these instructions, professional knowledge of disassembly/ reassembly procedures and post installation checks must be known.

WHY BUY RT PRO UTV

Great off-road driving and racing comes with having the most rugged and durable machine in the pack.

RT Pro UTV performance enhancing products will make your off-road machine stronger, tougher and safer so you can have more fun and less breakdowns.

For over a decade, RT Pro UTV staff have been taking brand new UTVs and driving them to their breaking point. When they bend, break or falter, we take them back to shop and create a fix that stops the problem from happening again.

There is no other company in the industry that puts more thought, engineering and design innovation into their products than we do. Our team is made up of off-road racers, mechanical engineers and talented fabricators who live and breathe all things motorsport. Above all, we share a passion for innovation, quality construction and getting things right.

All of our products are designed for assembly by weekend warriors with normal garage tools and the occasional spot-weld. Assembly directions are complete and thorough.

Remember, when you buy a RT Pro UTV product for your UTV, all of the parts have been designed and manufactured in the United States with U.S. steel and other high quality American components.



RTP5602501		
Part #	Description	QTY
04082	Commander HD Tie Rod	2
04145	Inner Hi-Misalignment Spacer	2
04146	Outer Hi-Misalignment Spacer	2
MXML-10	5/8"-18 Heim - Nylon Race - Male LH	2
A2000	Tie Rod Inner Joint Assembly	
36964	5/8"-18 Jam Nut LH	2
R126	Bolt Pack - Tie Rod Kits	1
	M12-1.75 x 85mm SHCS A2 Stainless	2
	M12 flat washer	2
	M12-1.75 nylock nut	4

RTP5602502		
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04082	Commander HD Tie Rod	2
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04146	Outer Hi-Misalignment Spacer	2
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	M12 flat washer	2
	M12-1.75 nylock nut	4

FITMENT NOTES

N/A

SPECIAL TOOLS

Snap ring pliers

INSTALLATION TIME

Approximately 2 hours
Medium difficulty

INSTALLATION INSTRUCTIONS

1. You must remove the complete OEM tie rod assembly from the steering rack. The inner ball joint WILL thread out. The threads are regular Right Hand threads. A large Crescent wrench should do the job.
2. When disassembling the outer parts MAKE SURE to note how the OEM tie rods mount to the spindle. You need to reassemble the new parts the SAME way.

Note: Your kit comes with pre-assembled inner joints from RT Pro with proper application of Loctite and tension. For the initial install you can skip steps 3-10. These instructions are for your reference if the time comes when you need to replace the monoball which is a wearable item. Please keep these instructions in your records. To order replacement monoballs, use the search bar in the top right corner of our website to look for "AIN8TF1".

3. The very first thing to do is assemble the monoball stud. You MUST use red Loctite or equivalent very liberally when assembling the stud and the screw. Put the stud in a vise and clamp down on wrench flats. Tighten the screw as tight as you dare tighten it.

Figure 1



4. Next, you'll need a snap ring pliers and possibly a brass hammer or rubber mallet.

Note: The monoball is an extremely tight precision fit to the cup. DO NOT force the mono ball in to the cup. MAKE SURE the monoball is going in to the cup perfectly straight before you force it.

5. You can use a light hammer to tap the mono ball straight before forcing it in.
6. The fit is so tight the mono ball usually tries to vapor-lock as it goes in to the cup. If you have the monoball lined up straight you should be able to slowly push it in by hand but if you get it started past about half way you can very lightly tap the stud to fully seat the monoball if needed.

Figure 2



Figure 3

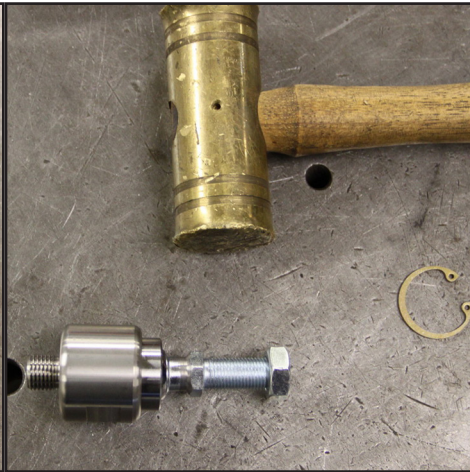


Figure 4



7. Make sure the monoball is fully seated and you can see the full ring groove.
8. Begin to set the snap ring by starting with the opposite side of the ring from the gap. Get the ring started in to the groove then begin to set in the rest of the groove until the pliers can be released.

Note: To fully seat the ring, you MUST tilt the monoball stud all the way over in the direction of the ring gap shown below in the bottom right picture. This allows the ring to have enough clearance to set in to the groove fully. Once the ring is set the stud will clear.

9. Once the ring looks fully seated, use a hammer and punch or screw driver to tap around the snap ring to make sure it's fully seated. It helps to hold the punch on a slight angle outwards when you hit it so the force helps the ring go in to the groove the most it can.

Figure 5



Figure 6

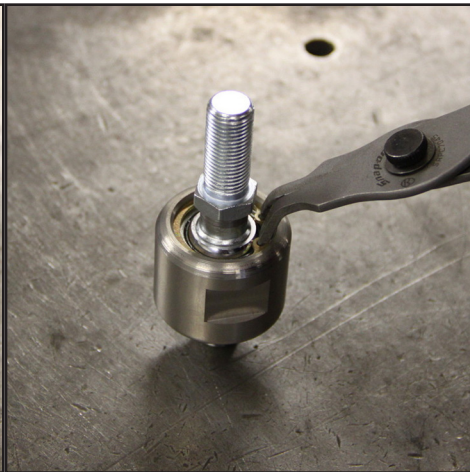


Figure 7

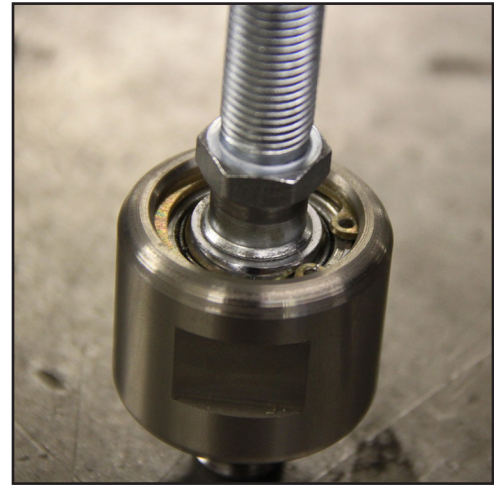


10. Once the inner joint is assembled and the snap ring is fully seated it should look like this:

Figure 8



Figure 9



Note: If there is any free play in monoball after complete assembly, disassemble and use supplied shims to take up the space. You can use more than one shim if needed.

11. Next install the inner cup assembly to the steering rack
12. When installing the RT Pro monoball cup it is **CRITICAL** to use RED Loc-Tite liberally on the threads.
13. Tighten the cup to the steering rack using the wrench flats and an adjustable wrench.

Note: These should be tight, but you do not need to overtighten them. It's possible to overtighten and break off the threaded stud in an extreme case.

Note: Using your snap ring pliers, adjust the orientation of the snap rings so the gap is facing the rear of the machine. It is critical for full articulation and monoball lifespan to make sure this is set properly. If the gap is improperly located it may cause issues with the articulation of the joint. (For reference, the gap on passenger side should be at 9 o'clock and the driver side at 3 o'clock.)

Figure 10



14. Re-using the OEM steering rack boots
15. Utilize your OEM tie rod boots. They will require some careful trimming around the small end of the boot. The boots must be used to prevent damage to the steering rack! Simply cut off the small ring around the end of the boot so as to more easily slide the boot over the new tie rod assembly.
16. We've found it is easiest to install the boot to the new tie rod by sliding it on to the new tie rod shaft from the outer end towards the inner in the direction which it will be installed on the machine. (Use some WD-40 to help it slide.)

Figure 11

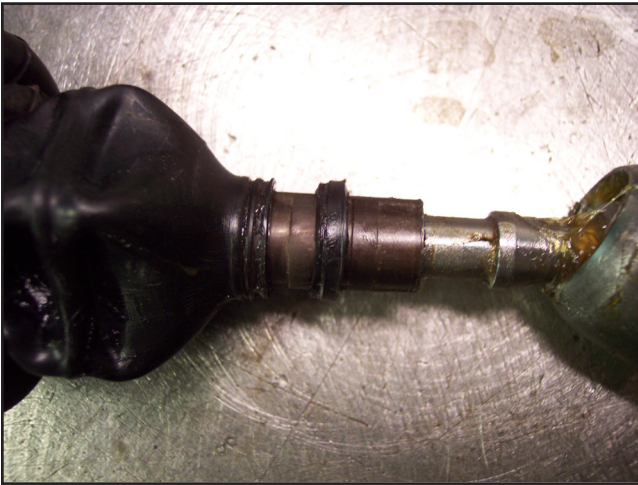


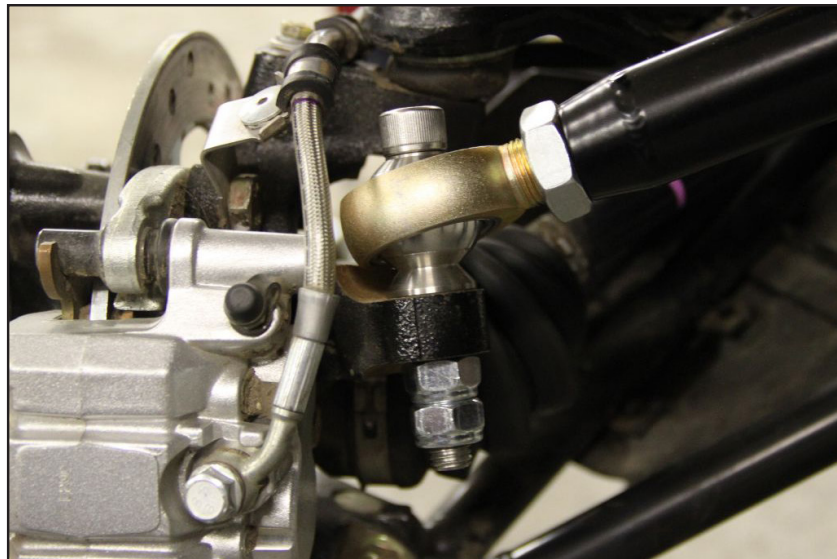
Figure 12



OUTER ASSEMBLY

17. The tie rod heim joint must attach the same way as the OEM setup. The supplied washer goes between the nyloc nut and the spindle casting. The bolt should go in from the outside. The tapered spacer of the heim tightens against the spindle casting. Be SURE to use BOTH supplied nyloc nuts and lots of red Loctite to ensure this part of the assembly does not come loose.

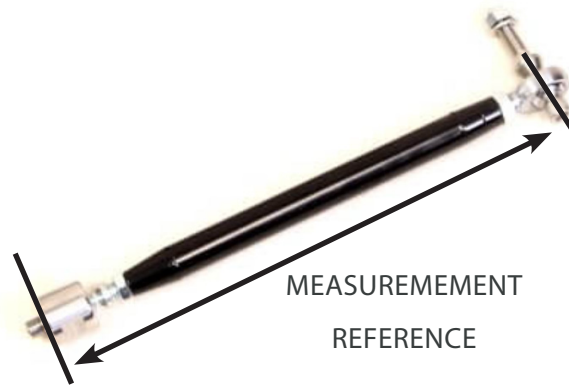
Figure 13



ALIGNMENT

18. Before driving, the alignment of the steering MUST be centered and we recommend the toe-in should be set at 1/8" inwards overall. You may also set it at 1/8" toe out but we've found toe-in to be the most effective for steering and handling.
19. We recommend using toe plates for the best results but the alignment can be done by measuring from the inner lip of the wheel to the lower tube of the chassis on which the lower A-arms mount. Center the steering first then adjust and measure until the desired toe setting is reached.
20. Tie rod length reference, measured from the seating surface of the monoball housing and steering rack to the center of the heim rod end eyelet (Figure 14):
 - Minimum length: 14 3/4"
 - Maximum length: 15 1/2"

Figure 14



21. Once the alignment is set be sure to tighten the jam nuts on the tie rods.
22. To tighten the inner joint jam nut simply use two wrenches. One holds the monoball stud and one tightens the jam nut (Figure 15).

Figure 15



THANK YOU FOR YOUR BUSINESS!

For questions or additional information feel free to call and ask for tech support or email us through our website at: rtproutv.com/contact



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