



## Cognito Motorsports Inc. 2014 Polaris RZR XP1000 2/4 seat Tie Rod Kit

For long travel and stock width kit #s: *360-90021 and 360-90060*

### Introduction

- Installation requires a qualified mechanic.
- Read instructions carefully and study the pictures (if included) before attempting installation.
- Check the parts and hardware packages against the parts list to assure that your kit is complete.
- Always wear safety glasses when using power tools.
- ❖ There are 2 options to consider when you are going to install the inner boot.
- ❖ **Option 1** will be for the competitive racer because it will have you cut the tie rod boot as shown in figure #3; to provide quick and easy access to the inner tie rod, it is for a user who will be removing/installing/tinkering with the tie rods frequently.
- ❖ **Option 2** will be for the recreational user that does not need frequent access to the inner tie rod end because it will show you how to install the tie rod boot leaving it looking like the stock tie rod. This will protect the tie rod end from dirt/mud/rocks/etc. but it will be slightly more difficult to remove/install/tinker with

### Requirements

- Clevis clocking is very critical, pay close attention to instructions.



**Parts List: 360-90021 (long travel)**

- (2) 5631, clevis
- (4) 5634, misalignment spacer bushing
- (2) ½-20 flange bolt, 2.3/4" long
- (2) 8375, black tie rod adjuster tube
- (2) Rodend-JMX10T, right hand thread rod end
- (2) Rodend-RSML8T, left hand thread rod end
- (2) 5/8-18 right hand thread jam nut
- (2) 5/8-18 left hand thread jam nut
- (2) ½-20 nylock flange nut
- (2) ½-20 flanged shoulder bolt, 1.1/4" long
- (2) 3/8-16 nylock flange nut
- (4) ½" i.d spacer washer
- (2) M14-1.5x20mm long socket head cap screw
- (1) thread locker tube

**Parts List: 360-90060 (stock replacement)**

- (2) 5631, clevis
- (4) 5634, misalignment spacer bushing
- (2) ½-20 flange bolt, 2.3/4" long
- (2) 8369, black tie rod adjuster tube
- (2) Rodend-JMX10T, right hand thread rod end
- (2) Rodend-RSML8T, left hand thread rod end
- (2) 5/8-18 right hand thread jam nut
- (2) 5/8-18 left hand thread jam nut
- (2) ½-20 nylock flange nut
- (2) ½-20 flanged shoulder bolt, 1.1/4" long
- (2) 3/8-16 nylock flange nut
- (4) ½" i.d spacer washer
- (2) M14-1.5x20mm long socket head cap screw
- (1) thread locker tube

### **Installation Instructions**

1. Raise the front of your RZR up and support by the frame so that the suspension droops out and tires are off the ground by at least an inch. Remove front tires.
2. Remove the outer tie rod from the spindle by removing the nut and bolt holding the outer tie rod to the spindle.
3. Remove the inner tie rod dust boot by cutting the zip tie holding the dust boot to the steering box, and by prying off the outer dust boot clip using a flat head screwdriver. Pull the dust boot back and using a 2" crescent wrench unscrew the tie rod from the steering box as seen in figure 1. Once the inner tie rod is free from the steering rack bar, there is a plastic spacer on both sides of the steering rack bar, they need to stay there.



Figure 1: pull dust boot back, remove inner tie rod from rack bar.

4. Clean the internal threads with contact cleaner to remove any grease to prepare the threads for Loctite. Also clean the supplied M14-1.5x20mm long socket head cap screw threads with the cleaner. Add a drop of the provided locktite to the allen head bolt threads, insert the bolt into the Cognito clevis and screw the Cognito inner tie rod clevis into the steering box. The clocking is very important, Figure 2 shows the clocking, the bolt holes will need to be in line with the upper control arm bolts. So the driver side clevis, if you put a bolt through the holes then the bolt would be pointing at 4 o'clock and 10 o'clock. The passenger side the bolt would be pointing at 2 o'clock and 8 o'clock. Tighten using a crescent wrench and 12mm allen as seen in figure 2, torque would be 80 ft.lbs.
5. **(If using option 1 please proceed with this step.) (If using option 2 instructions please skip to step A on page #7.)** Using a razor, cut off the small end of the inner tie rod dust boot at the first raised edge. As seen in figure 3. Slide dust boot over the tie rod clevis and steering box. Use zip ties to secure the dust boot to the steering box groove in the clevis, and the other end to the steering box just like stock was.

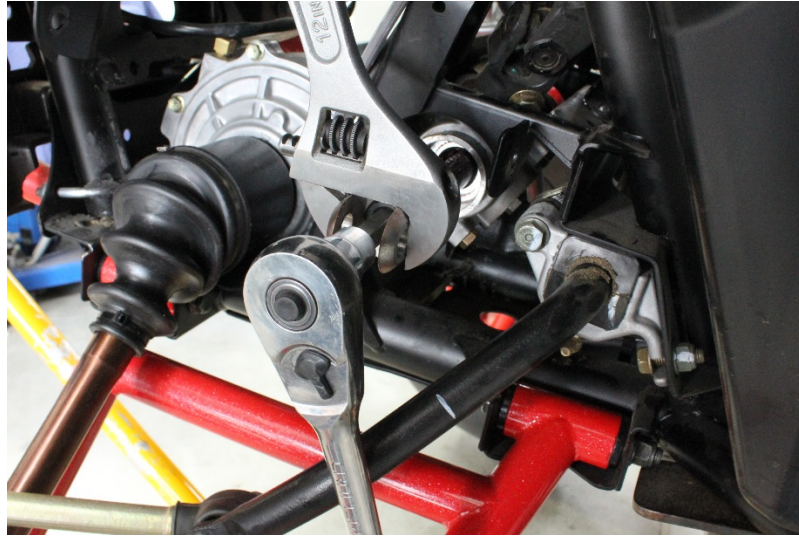


Figure 2: installing clevis to the steering rack bar



Figure 3: trim the small end off the dust boots, so it can be attached to the clevis groove.

6. Thread the appropriate jam nuts all the way onto the appropriate rod ends, then thread the rod ends all the way into the adjuster tubes. Remember one end is right hand thread and the other is left hand thread.
7. Bolt the rod end that has the  $\frac{1}{2}$ " hole to the clevis with a spacer on both sides of the rod end, using the shoulder bolts and flange nuts included. Tighten hardware using a  $\frac{1}{4}$ " allen wrench and  $\frac{9}{16}$  wrench, to 30 ft.lbs. see figure 4
8. Before installing the tie rod into the spindle you must drill out the spindle tie rod hole using a  $\frac{1}{2}$ " drill bit as seen in figure 5. Get some help if needed, as you need to make sure the hole is

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drilled out straight with the original hole. You don't want it wallowed out or crooked. Remove any burrs.

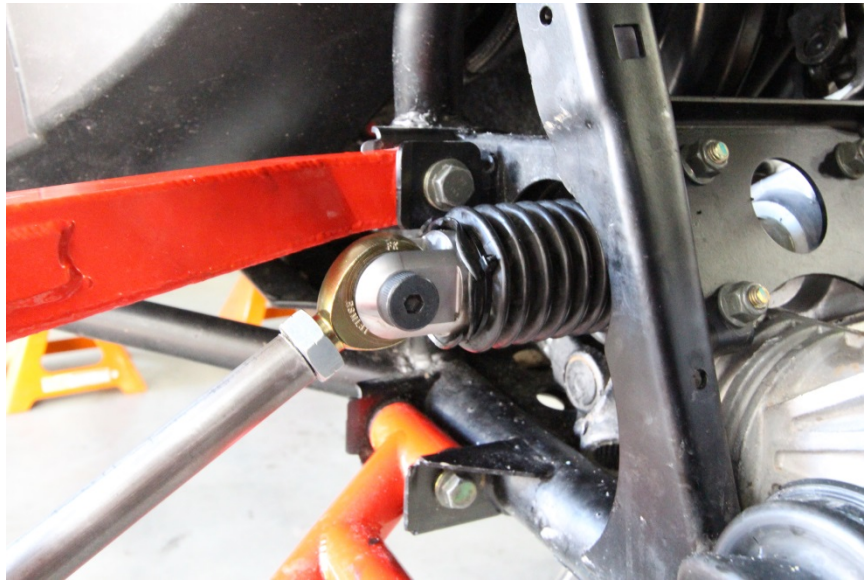


Figure 4: inner rod end attached to clevis, and dust boot tied to clevis groove.

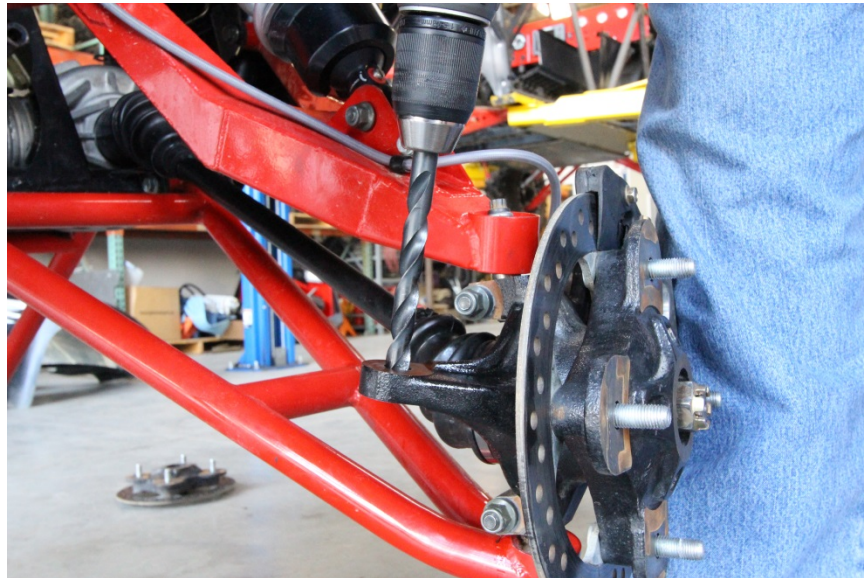


Figure 5: Drill the tie rod hole in the spindle, out to 1/2"

9. Now insert a misalignment spacer into both sides of the outer rod end, and fasten it to the top of the spindle with the 1/2" flange bolt and flange nut. Tighten to 70 ft.lbs.
10. Now you can turn the adjuster tube and the tie rod length will change. Once the toe is set, then tighten the jam nuts against the adjuster tube to lock it in place, make sure the inner and outer rod ends are clocked appropriately for articulation, this takes a little patience since while tightening the jam nuts, the rod ends want to turn, just get a small crescent wrench to hold the rod end while tightening the jam nut

but also need to keep the adjuster tube from turning while tightening the jam nut. Get some help if needed. This is important so that there is no binding.

## Inner Tie Rod Boot Option 2 Installation

### \*Instructions\*

#### Installation Steps

- A. Now that that the stock tie rod has been removed, grab the Cognito tie rod and remove the tie rod end that is circled in red in figure #1A. Once rod end is removed apply lubricant similar to WD-40 on Cognito Adjuster Tube and slide dust boot on as shown in figures #2B and #3C.



Figure 1A: Remove this tie rod end and install dust boot from here.



**Figure 2B: Install boot**



**Figure 3C: Pull boot down**

- B.** Now that the dust boot is on, it should look similar to how it did when you first removed it. Please continue to step #6 on page #4.

## **Limited Lifetime Warranty**

Cognito Motorsports warrants, to the original retail purchaser, that its suspension products are free from defects in workmanship and material for as long as the purchaser owns the vehicle on which the product was originally installed. Cognito Motorsports does not warrant the product for finish, alterations, modifications, and/or original installation contrary to specifications of Cognito Motorsports. Cognito Motorsports suspension products are not designed nor intended to be installed on vehicles used in race applications or for racing purposes or for similar activities involving abnormal abuse other than the vehicle was originally designed to handle or endure. (A "RACE" is defined as any contest between two or more vehicles, and/or contest of one or more vehicle against the clock, whether or not such contest is for a prize.)

This warranty does not include coverage for police or taxi vehicles, race vehicles, or vehicles used for government or commercial purposes. Also excluded from this warrant are sales outside of the United States of America. Alterations to the finish of the parts including but not limited to painting, powder coating, plating, and/or welding will void all warranties. Cognito Motorsports obligation under this warranty is limited to the repair or replacement, at Cognito Motorsports option of the defective product. Any and all costs of removal, installation or re-installation, freight charges, incidental or consequential damages are expressly excluded from this warranty.

This warranty excludes the following items: bushings, bump stops, tie-rod ends, limiting straps, and heim joints. These parts are subject to wear and are not considered defective when worn. They are warranted for 60 days of purchase for defects in workmanship. Cognito Motorsports suspension components must be installed as a complete system. Any substitutions or exemptions of required components will immediately void the warranty. Some finish damage may happen to parts during shipping and is not covered under warranty. This warranty shall not apply to any product that had been subject to accident, negligence, alteration, abuse, or misuse. Cognito Motorsports does not warrant products not manufactured by Cognito Motorsports. Cognito Motorsports reserves the right to supersede, discontinue, or change the design, finish, part number and/or application of parts when deemed necessary by Cognito Motorsports without written notice.

## **Return Policy**

Cognito Motorsports has a no refund return policy. Under special circumstances, returns might be accepted with prior written approval. All returned product will be shipped freight prepaid. Product returned is subject to a 25% restocking fee. No returns will be accepted after 30 days upon receipt of product.

## **Product Consumer Safety and Warning**

The installation of this kit will modify the suspension of your vehicle and may cause it to handle significantly different than a factory equipped vehicle. Installing larger tires with modified suspension and increased ground clearance will significantly alter the handling characteristics of the vehicle, and may result in increased braking distances as well as changes in vehicle maneuverability and handling compared to the factory equipped vehicle. As with any vehicle, extreme caution and care must be used to prevent loss of control or roll-over during sharp turns or abrupt maneuvers. Always wear seat belts and drive safely, recognizing the reduced speeds and specialized driving techniques is required.

This suspension system will not strengthen nor reinforce the stock frame of the vehicle, nor will it increase rollover protection. It is necessary to periodically inspect all suspension and drive train components for tightness of fit or any damage. Installation of these parts will modify the height of the vehicle and will raise the center of gravity. Altered height modifications and off-road operation may increase your vehicle's susceptibility to roll over conditions and may cause serious injury or death. Many states regulate the height modification to each vehicle. Check the laws in your state for exact specifications. Height modifications may effect the reaction, ride, handling, and wear factor of your vehicle's components.

**Failure to drive this vehicle safely may result in injury or death!** Do not drive this vehicle unless you are familiar with its unique handling characteristics and are confident of your ability to maintain control under all driving conditions. Some modifications and combinations of modifications are not recommended, unsafe, and may not be permitted in your state. Consult your vehicle owner's manual, the instructions accompanying this product, and your state laws before undertaking these modifications. The owner of the modified vehicle and the qualified mechanic required to install this product are responsible for the legality and safety of the vehicle being modified.