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**INSTALL INSTRUCTIONS:**
**2019-2020 GM 1500 Limited Dynamic Geometry Traction Bar Kit for 0-9" Rear Lift Height**
**SKU: 110-90747**

## PARTS LIST FOR SKU: 110-90747

| QTY. | PART # | DESCRIPTION |
|---|---|---|
| 2 | 2689 | FRAME MOUNT BRACKET, 2019 GM 1500 TRACTION BAR |
| 2 | 6208 | GIIRO BUSHING HEAVY DUTY, REINFORCED, GREASELESS, MAINTENANCE FREE BUSHING WITH .562 BORE CRUSH SLEEVE |
| 2 | 6227 | FORGED ROD END 1-1/4-12 UNF THREAD |
| 2 | 6229 | TRACTION BAR ADJUSTER NUT 1-1/4-12 TO 1-1/2-12 |
| 4 | 8460 | TRACTION BAR SHACKLE |
| 2 | 8668 | 38.5" TUBULAR TRACTION BAR WITH 2 BOLT PINCH CLAMP |
| 1 | 8661 | TRACTION BAR MOUNTING BRACKET, DRIVER, 2019 GM 1500 |
| 1 | 8662 | TRACTION BAR MOUNTING BRACKET, PASSENGER, 2019 GM 1500 |
| 2 | 8663 | TRACTION BAR AXLE MOUNTING BRACKET, 2019 GM 1500 |
| 4 | HARDWARE-3/8-LW-SHCS | STEEL SPLIT LOCK WASHER FOR 3/8" SOCKET HEAD SCREWS 0.385" ID 0.55" OD |
| 4 | HARDWARE-93307 | 93307 SHCS 3/8-16X1.25" Z |
| 1 | 91196 | Misc. Parts Box |

## 91196 – Misc. Parts Box

| QTY. | PART # | DESCRIPTION |
|---|---|---|
| 1 | HP9214 | Traction Bar Bushing Kit |
| 1 | HP9266 | 2019 GM 1500 Traction Bar Kit Hardware |

## HP9214 - Traction Bar Bushing Kit

| QTY. | PART # | DESCRIPTION |
|---|---|---|
| 8 | 2581.01-MOD | Black Polyurethane Bushing |
| 4 | 2509.1 | Black Polyurethane Spring Bushing |
| 4 | 5036 | Crush Sleeve |
| 2 | 5045 | Crush Sleeve |

## HP9266 – Hardware Kit

| QTY. | PART # | DESCRIPTION |
|---|---|---|
| 4 | HARDWARE-15207 | 15207 HCS 1/2-13X1.25 YZ 8 |
| 2 | HARDWARE-15269 | 15269 9/16-12 X 4” YZ8 HCS |
| 2 | HARDWARE-15273 | 15273 9/16-12 X 5" YZ8 HCS |
| 16 | HARDWARE-33086 | 33086 1/2 Sae F/W |
| 8 | HARDWARE-33088 | 33088 9/16 Sae F/W |
| 2 | HARDWARE-37264 | 37264 3/8-16 Lock Nut Gr C |
| 8 | HARDWARE-37268 | 37268 1/2-13 Lock Nut Gr C |
| 4 | HARDWARE-37270 | 37270 9/16-12 Lock Nut Gr C |
| 2 | HARDWARE-93305 | 93307 Shcs 3/8-16 X 1.00" |
| 2 | POLY-BUMPSTOP-6079G | 6079G Black Polyurethane Bump Stop |
| 4 | HARDWARE-15212 | 15212 HCS 1/2”-13 X 2.25” YZ 8 |
| 2 | HARDWARE-33082 | 33082 3/8” Sae F/W |

## WARNING

**Please read this entire instruction sheet before beginning installation. Proper installation of these components requires a qualified mechanic. Always wear safety glasses when using power tools, and take appropriate precautions when working under a vehicle. If these instructions are not properly followed you may jeopardize your, and your passenger's safety, and severe frame, suspension or tire damage may also result from improper installation.**

## INTRODUCTION

Traditionally traction bars have a fixed length and fixed front pivot point. The nature of a leaf spring is to bend in order to do its job of carrying vertical load. When the spring is bending, the distance between the fixed front pivot bolt of the spring, and the axle housing, changes through the suspension cycle because the leaf spring is bending to do its job. A fixed length traction bar coupled with a leaf spring that is changing length causes binding as the axle travels in the suspension cycle. The Cognito Limited Dynamic Geometry traction bar kit allows the length of the traction bar and shackle assembly to vary with the leaf spring through the suspension cycle under normal operating conditions, without binding via the use of the shackle. The length of the traction bar assembly at its longest position, which is when the shackle is lined up with the traction bar, is used to control axle wrap and wheel hop that can happen when high torque loads are applied by heavy acceleration and/or heavy weight loads.

## TECH NOTES

- Installation of this product requires welding to the frame. All welds must be done by a capable welder.
- It is necessary to raise the vehicle to perform installation of these products. A hoist or installation bay is recommended. Always ensure the truck is properly supported before attempting installation as serious injury could occur.
- This application is for stock and lifted applications.
- Due to variations between stock and lifted vehicles, U-bolts are not included with this kit. This kit requires 1/2" additional U-bolt length for the axle bracket. Contact Cognito if your application requires longer U-bolts.

## REQUIREMENTS

- Installation requires a qualified mechanic.
- Read instructions carefully and study the pictures before attempting installation.
- Check the parts and any hardware packages against the parts list to assure that your kit is complete.

## INSTALLATION

1. Lift the truck off the ground using a hoist or jack stands so that it is securely supported. Using a floor jack, support the rear axle but do not lift the rear axle. Doing so will put pressure on the front spring bolts which need to be removed.

*Figure 1: Securely Support the Rear Axle*

2. Remove the front leaf spring bolt. This should be relatively easy to remove, if it is not, adjust the height of the axle on the jack or jack stands until the bolt comes out easily.

3. Bolt the frame bracket to the traction bar bracket using two of the 1/2”-13 x 1.25” bolts, washers, and nuts. Then bolt the traction bar bracket to the frame by the leaf spring bolt and rotate the bracket up until the alignment tab contacts the frame. You may need to trim the body or bed mounts which are welded to the frame. Once done, clean off the chassis wax from around the frame bracket using a putty knife and then clean the residue with acetone.

*Figure 3A: Frame Mount Bracket Location (Driver’s Side Shown)*

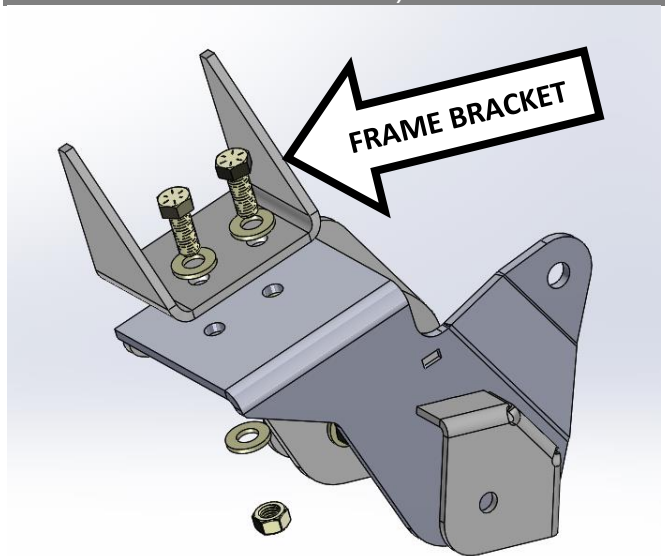
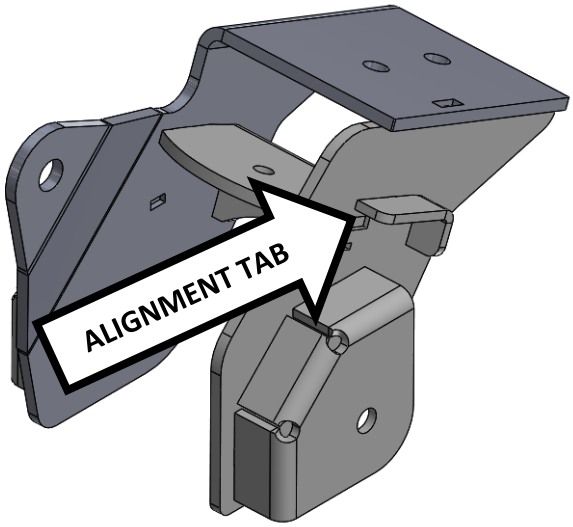



*Figure 3B: Alignment Tab*



4. Use a clamp to hold the brackets to the frame securely, then tighten the front leaf spring bolt. You can now weld the frame bracket onto the frame around the sides and bottom.

*Figure 4: Frame Bracket Welded to Frame*


5. Remove the traction bar bracket and paint the frame mount bracket.

6. Locate the following parts.
   - (2) - Traction Bar Shackle (Part # 8460)
   - (4) - Traction Bar Shackle Bushing (Part # 2581.01-MOD)
   - (2) – Traction Bar Shackle Crush Sleeve (Part # 5036)

*Figure 6: Traction Bar Shackle Parts*

7. Install (2) shackle bushings per shackle from each side (Figure 7A). A light lubricant, WD-40, may be used to install but do not grease the outside of the bushing. Once the bushings are installed in the shackles, grease the inside bore of each bushing (Figure 7B) and insert the crush sleeves (Figure 7C).

*Figure 7A: Install Shackle Bushings*

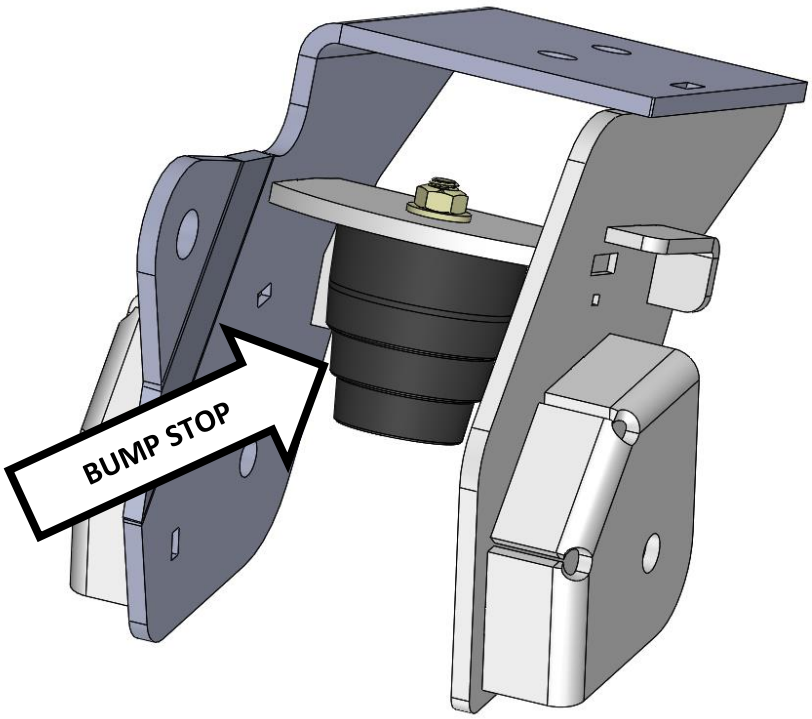
*Figure 7B: Grease Shackle Bushings*

*Figure 7C: Install Shackle Crush Sleeves*

*Figure 7D: Shackle Assembly*

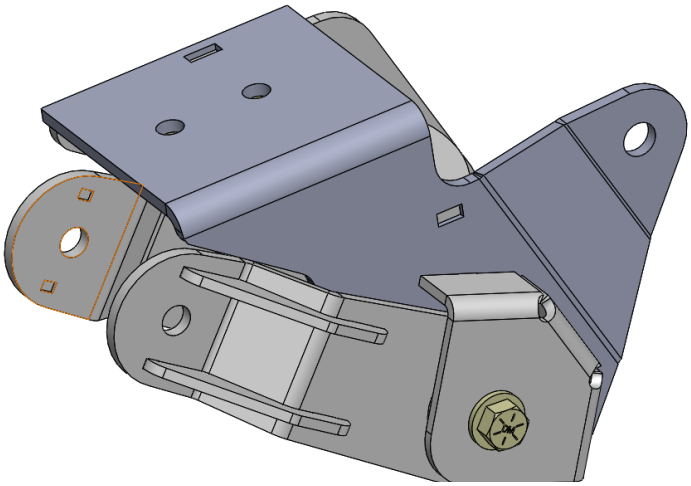
8. Bolt the bump stop to the inside of the traction bar bracket using the 3/8”-16 x 1” Socket head cap screws, washers, and nut. (Figure 8)

*Figure 8: Bump Stop Installed*




9. Using the 1/2”-13 x 2.25” bolts, washers, and nuts, assemble the shackles to the frame bracket, but do not tighten bolts at this time. (Figure 9)

*Figure 9: Shackles Installed to Traction Bar Bracket*



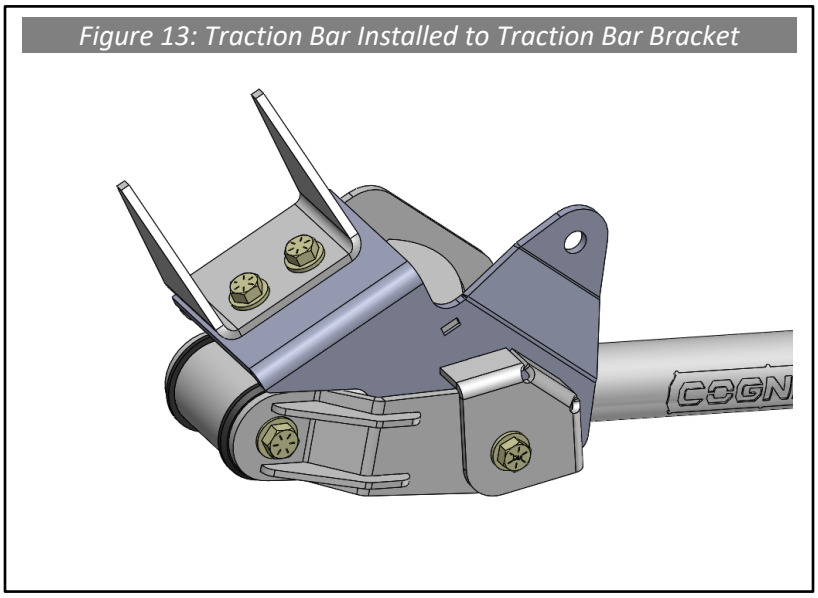
10. Install bushings and crush sleeves into the traction bars following the same procedure as step 7.

11. Bolt the traction bar bracket to the frame mount bracket with the hardware previously used. Tighten to 45 Ft.-lbs. (61 Nm)

12. Reinstall the front spring mount bolt and tighten to 125 Ft.-lbs. (170 Nm) then tighten an additional 48 degrees.

13. Install the traction bar between the shackles using the 9/16”-12 x 5” bolts, washers, and nuts. Tighten to 70 Ft.-lbs. (95 Nm) (Figure 13)

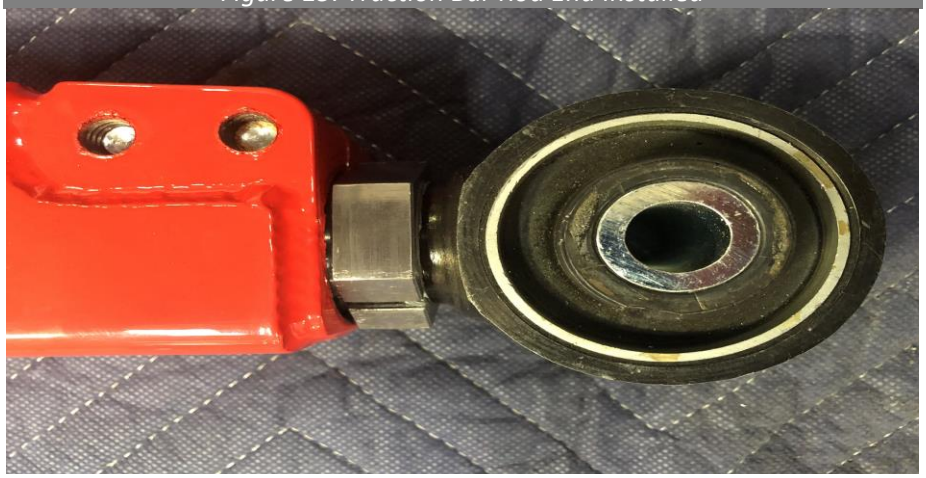
*Figure 13: Traction Bar Installed to Traction Bar Bracket*



14. Remove the nuts from the u-bolt plates and install the axle brackets. Reinstall the u-bolt nuts and torque to 90 Ft.-lbs. (122 Nm) ***Note:*** *Due to variations between stock and lifted vehicles, U-bolts are not included with this kit. This kit requires 1/2” additional U-bolt length for the axle bracket. Contact Cognito if your application requires longer U-bolts.*

15. Ensure the threads of the rod end and adjuster sleeve are thoroughly coated with anti-sieze, then thread them all the way into the end of the traction bar. (Figure 15)

*Figure 15: Traction Bar Rod End Installed*



16. Lower the truck back onto its wheels and remove the jack from under the rear axle so the truck is at its normal ride height.

17. Using a jack, lift the front end of the traction bar until the shackle makes a small angle with the bar. (Figure 17)

*Figure 17: Correctly Adjusted Traction Bars*

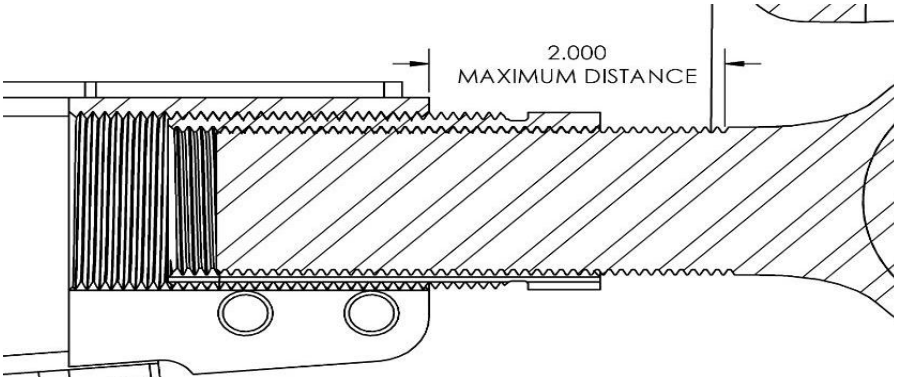
18. Insert the traction bar rod end between the eyelets on the rear axle mount. Turning the adjuster sleeve only, lengthen the traction bar tube until the rod end lines up with holes in the traction bar mounting eyelets. Install the 9/16”-12 x 4” bolts, washers, and nuts, then torque to 70 Ft.-lbs. (95 Nm). (Figure 18)

*Figure 18: Traction Bar Length Adjustment*

19. Remove the jack from underneath the traction bar. Adjusting the length of the traction bar by turning the adjustment sleeve, lengthen the bar until the adjuster gets tight or hard to turn freely, which happens when the traction bar is at its maximum length. Then shorten, (turn in opposite direction), by a 1/4 of revolution of the adjuster. With the traction bar length set, tighten the 3/8” socket head cap screws to 40 ft. /lbs. to lock the adjuster in place. **After completing these steps, the traction bar should form a very small angle with the shackle.** (Figure 17). There should be no more than 2” of threads exposed as shown in Figure 19.

*Completed Installation*

*Figure 19: Do not exceed maximum distance.*



*Completed Installation*

*Completed Installation*

## WARRANTY / RETURN POLICY / SAFETY

**Cognito Limited Lifetime Warranty**

Cognito Motorsports, Inc. hereinafter "Cognito," warrants to the original retail purchaser, that its suspension products are free from workmanship and material defects for as long as the purchaser owns the vehicle on which the product(s) were originally installed. This warranty will be void if any modifications are made to the components, including alterations to the surface finish, i.e.; painting, powder coating, plating, and/or welding, or if they are improperly installed. Cognito truck suspension products are not designed nor intended to be installed on "competition" vehicles used in race applications, stunt or for exhibition purposes that are outside of the intended operating conditions specified by the manufacturer. Racing and competition are defined as any contests between two or more vehicles; or vehicles competing individually on off road circuits in timed events (whether or not such contests are for an award or prize).

This warranty does not include coverage for police, taxi, government or commercial vehicles, and the warranty does not cover Cognito products sold outside of the USA. Cognito's obligations under this warranty are specified and applied at its sole discretion, and warranty coverage is limited to repair or replacement of the defective product(s). Any and all costs of removal, installation or reinstallation; freight charges, incidental or consequential damages associated with the covered products are expressly excluded from this warranty.

The following items are exempt from Cognito limited warranty coverage: bushings, bump stops, tie-rod ends (Heim joints) and limiting straps. These parts are "consumables" and designed to wear as a normal part of their duty cycle, therefore they are not considered defective when worn. The aforementioned products are warrantied separately against defects in workmanship, for 60 days from the date of purchase. As a condition of warranty validation, respective Cognito suspension components must be installed as a complete system (not combined with non-Cognito hardware or ancillary parts). Any substitutions or omission of required components will void the warranty. Some minor cosmetic wear and imperfections may occur to parts during shipping, which is not covered under this warranty. This limited warranty does not apply to any components that have been subjected to collision damage, negligence, alteration, abuse, or misuse, and coverage does not extend to products manufactured by third-party companies. Cognito reserves the right to supersede, discontinue, or change the design, finish, part number and/or application of its parts when deemed necessary, without notice.

**Return Policy**

Product returns will not be accepted without prior written approval from an authorized Cognito representative. All products being returned must be shipped via trackable, prepaid freight. Returned products are subject to a 25% percent restocking fee. The eligible return period for products purchased directly from Cognito is 30 days from the verified date when the product(s) were originally received by the purchaser.

**Product Safety Advisory**

The installation of Cognito steering and suspension components will modify your vehicle's original factory equipment and geometry, which may cause it to handle differently than a stock (unaltered) vehicle. Installation of these components is not intended to strengthen nor reinforce the vehicle's frame, nor are they designed to increase rollover protection. It is necessary to periodically inspect all suspension and drive train components for proper attachment, torque specifications, operation, and for any potential unusual wear or damage. Installation of these parts will modify the height of the vehicle and may raise the center of gravity. Modifying vehicle height combined with off road operation may increase your vehicle's susceptibility to rollover conditions, which may cause serious injury or death. Many states regulate allowable vehicle height modifications, and it is your responsibility to know and comply with the legal requirements specified by the laws where you reside. Modifications to your vehicle's ride height may also affect the ride quality, driver input response, trackability and handling, and wear to your vehicle's suspension components and tires.