Cognito Tubular LDG Traction Bar Kit for 2019-2024 GM 1500 2WD/4WD Trucks

INSTALL INSTRUCTIONS:

Cognito Tubular LDG Traction Bar Kit for 2019-2022 GM 1500 2WD/4WD Trucks
SKU: 110-90748

PARTS LIST FOR SKU: 110-90747

QUANTITY	PART #	DESCRIPTION
2	2689	Frame Mount Bracket
4	8460	Traction Bar Shackle
2	8668	38.5” Tubular Traction Bar
1	8661	Traction Bar Mounting Bracket, Driver
1	8662	Traction Bar Mounting Bracket, Passenger
2	8663	Traction Bar Axle Mounting Bracket
1	91196	Misc. Parts Box

PARTS LIST FOR SKU: 8668 (Pre-Installed)

QUANTITY	PART #	DESCRIPTION
1	6208	GIRO Bushing
1	6227	1.25”-12 Forged Rod End
1	6229	Traction Bar Adjuster Nut
2	HARDWARE-93307	3/8”-16 x 1.25” Socket Head Cap Screw
2	HARDWARE-3/8-LW-SHCS	3/8” Split Lock Washer

PARTS LIST FOR SKU: HP9214

QUANTITY	PART #	DESCRIPTION
4	5036	Crush Sleeve
2	5045	Crush Sleeve
8	6715	Black Polyurethane Shackle Bushing
4	POLY-BUSHING-2509.1	Black Polyurethane Spring Bushing

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.

CAUTION: This kit requires cutting and welding to the frame of the truck.

PARTS LIST FOR SKU: 91196

QUANTITY	PART #	DESCRIPTION
1	HP9214	Traction Bar Bushing Kit
1	HP9266	2019 GM 1500 Traction Bar Hardware Kit

PARTS LIST FOR SKU: HP9266

QUANTITY	PART #	DESCRIPTION
2	POLY-BUMPSTOP-6079G	Black Polyurethane Bump Stop
4	HARDWARE-15207	1/2”-13 x 1.25” Bolt
4	HARDWARE-15212	1/2"-13 x 2.25” Bolt
2	HARDWARE-15269	9/16”-12 x 4” Bolt
2	HARDWARE-15273	9/16”-12 x 5” Bolt
2	HARDWARE-33082	3/8” Flat Washer
16	HARDWARE-33086	1/2" Flat Washer
8	HARDWARE-33088	9/16” Flat Washer
2	HARDWARE-37264	3/8”-16 Lock Nut
8	HARDWARE-37268	1/2"-13 Lock Nut
4	HARDWARE-37270	9/16”-12 Lock Nut
2	HARDWARE-93305	3/8”-16 x 1.00 Socket Head Cap Screw

INTRODUCTION

Traditionally traction bars have a fixed length and fixed front pivot point. The nature of a leaf spring is to bend 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

- Read instructions carefully and study the pictures (if included) before attempting installation.
- If this product was purchased as part of a kit each kit, and options to kits, are packaged separately. Therefore installation procedures are covered in separate instructions. Familiarize yourself with each specific set of instructions before beginning.
- Check the parts and hardware packages against the parts list to assure that your kit is complete before starting.
- 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

- **Welding is required to complete the install.**
- Installation requires a qualified mechanic.
- Follow the OE specifications when replacing or re-installing OE fasteners, retainers, and hardware specified in the OEM manual.
- Always wear safety glasses when using power tools.
- When a lift is required to perform the installation of these products and always ensure the vehicle is properly supported before attempting installation or serious injury may occur.

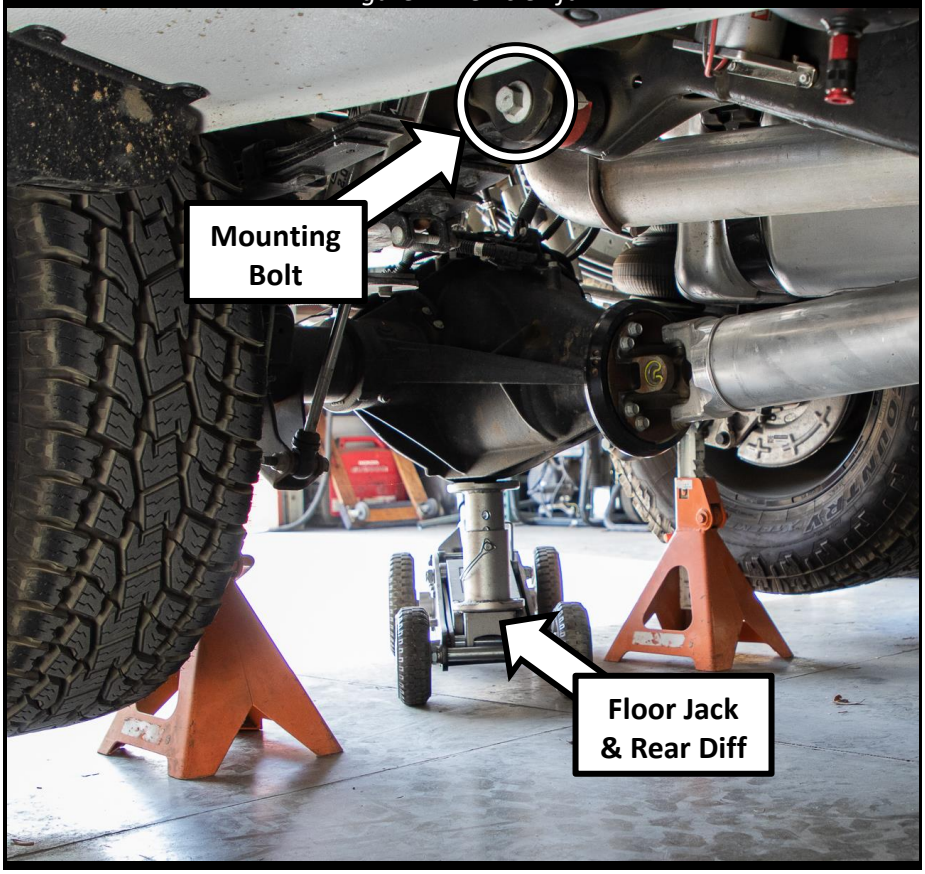
INSTALLATION

1. Rack the vehicle and lift it off the ground, or if no hoist is available then jack rear of truck off the ground and support properly with jack stands.
   - ***NEVER WORK ON AN UNSUPPORTED VEHICLE.***

2. Use a floor jack to lift the rear differential housing a few inches to relieve tension on the forward leaf spring mounting bolt.
   - **NOTE:**
     Ensure the vehicle's frame does not lose contact with the lift or jack-stands that are supporting the vehicle's weight and do not put tension on any cables or lines.

3. Remove the forward leaf spring mounting bolt. Place the hardware safely aside, it will be reused later.

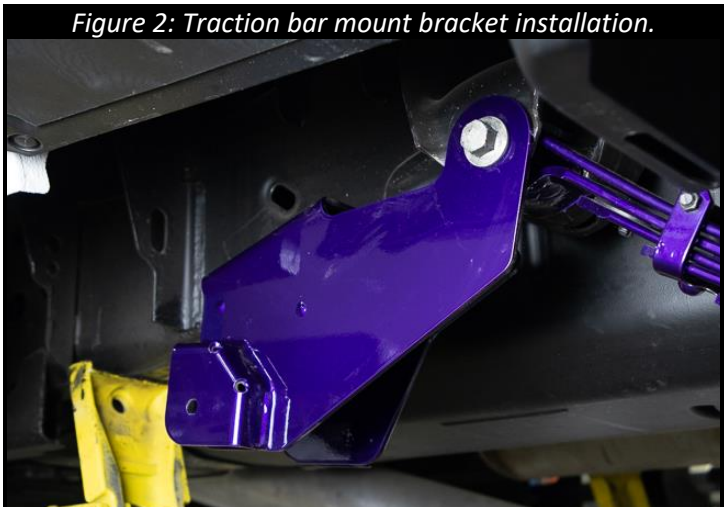
Figure 1: Vehicle lift.



4. Locate the driver side **8661,** Cognito traction bar mounting bracket, and align it against the frame. Reinstall the forward leaf spring mounting bolt, but do not fully tighten.

5. Press the traction bar mounting bracket against the frame and tighten the forward leaf spring mounting bolt enough that the mount will not easily move.

Figure 2: Traction bar mount bracket installation.



6. 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 3: Frame mount bracket installation.

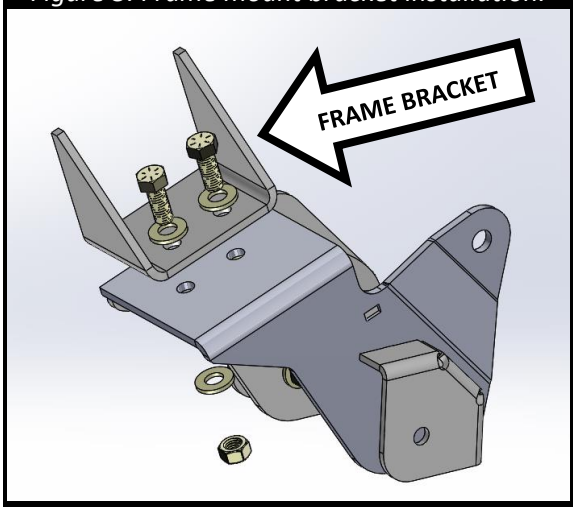


Figure 4: Alignment tab.

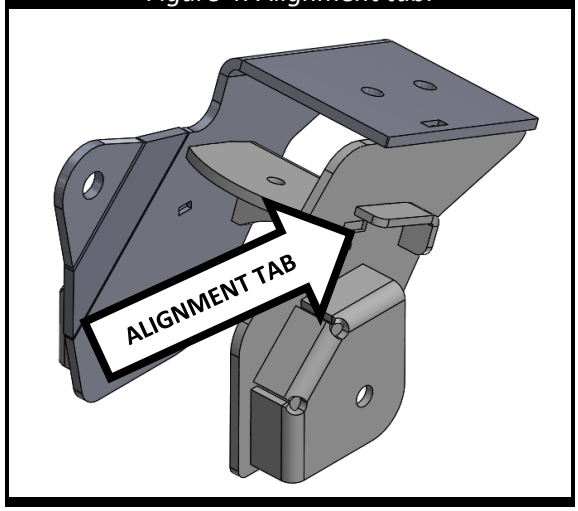


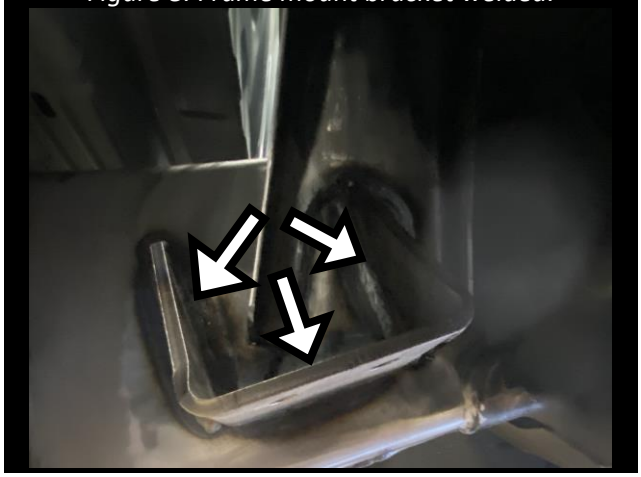
Figure 5: Bed mount cut.

Figure 6: Alignment tab against frame.

7. 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. Use a towel or other cover to protect the surface finish of the traction bar bracket during welding. Do not weld under the bottom edge of the frame mount bracket.

Figure 7: Frame mount bracket tacked.

Figure 8: Frame mount bracket welded.



8. Once the welds are cool, paint over the welded area and bracket to help prevent corrosion.

9. Install the 1/2" bolts into the holes of the frame mount and traction bar mount, torque to **90 ft-lbs**.

10. Torque the forward leaf spring mounting bolt to **125 ft-lbs**.

Figure 9: Assembled, welded, and painted mounting bracket.

11. Locate two (2) **8460** Cognito Traction Bar Shackles and **HP9214**. Find four (4) **6715** shackle bushings and two (2) **5036** crush sleeves from within the hardware pack. Install two (2) bushings and one (1) crush sleeve per shackle.

- **NOTE:**
  DO NOT add grease or lubricant to the outside of the bushings prior to pressing them into the shackles. Apply grease or a light lubricant to the inside bore of each bushing to ease the installation of the crush sleeves.

Figure 10: Shackles and hardware.

Figure 11: Shackles and hardware installation.

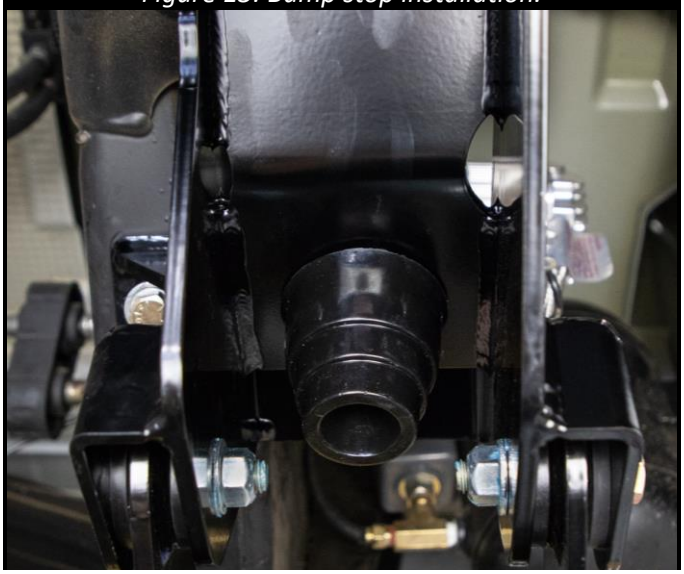
12. Locate **HP9266** and install the assembled shackles to the frame mount bracket using two (2) 1/2"-13 x 2.25” bolts, four (4) 1/2" flat washers, and two (2) 1/2"-13 lock nuts. Torque bolts to **90 ft-lbs**.

Figure 12: Shackles installation.

13. Locate **HP9266** and find one (1) bump stop, one (1) 3/8”-16 x1.00 socket head cap screw, one (1) 3/8” flat washer, and one (1) 3/8”-16 lock nut. Install the bump stop using the hardware on to the bottom of the traction bar mount bracket.

- **NOTE:**
  Use the washer under the head of the bolt. The bump stop only needs to be tightened so that it is firmly held in place, do not over-tighten.

Figure 13: Bump stop installation.



14. Repeat the steps above on the opposite side of the vehicle, using **8662** in place of **8661**.

15. Lower the vehicle, placing the vehicle on flat and level ground. Ensure the vehicle is sitting at a normal operating position.

- **NOTE:**
  It is ***critical*** for the next set of steps to be performed at nominal ride height with the suspension alone supporting the full weight of the vehicle. Failure to perform these steps at ride height can cause damage to components and lead to a failure which could cause an accident and serious injury.
  Warranty on Cognito products will be void if damage occurs due to improper instillation.

16. Remove the four (4) U-bolt nuts from one side of the vehicle.

17. Locate the one (1) **8663** Cognito traction bar axle mounting bracket and slide it over the U-bolts below the OEM U-bolt bracket. Re-assemble the U-bolt system with the U-bolt plate on top of the spring pack and the U-bolt lower plate and **8663** under the rear axle just as they were before disassembly. Apply anti-seize to the threads of the U-bolts before installing the nuts. ***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.*

Figure 14: U-bolt removal.

Figure 15: Leaf spring axle bracket installation.

18. Torque the U-bolt nuts to **100 ft-lbs.**

- **NOTE:**
  Be sure to tighten the nuts evenly and in a star pattern on all the U-bolts so that the amount of thread protruding is about the same

19. Repeat the steps above on the opposite side of the vehicle.

20. Locate the two (2) **8668** Cognito Traction Bars and **HP9214**. Find the four (4) poly bushings, and the two (2) **5045** crush sleeves.

21. Install two (2) bushings and one (1) crush sleeve per traction bar.

- **NOTE:**
  DO NOT add grease or lubricant to the outside of the bushings prior to pressing them into the shackles. Apply grease or a light lubricant to the inside bore of each bushing to ease the installation of the crush sleeves

Figure 16: Traction bar and hardware.

Figure 17: Traction bar bushing grease application.

22. The **8668** traction bars will be pre-equipped with a rod end, adjuster sleeve, and hardware. Ensure that the rod end and the adjuster sleeve are threaded all the way into the traction bar.

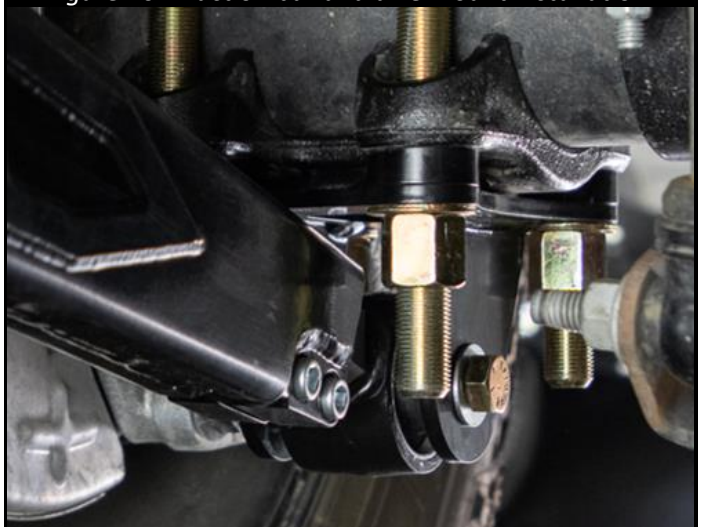
Figure 18: Traction bar rod end.

23. Locate **HP9266** and find one (1) 9/16”-12 x 5” bolt, two (2) 9/16” flat washers, and one (1) 9/16”-12 lock nuts. Install the traction bar end with the bushings between the frame mount bracket shackles. Torque to **120 ft-lbs.**

Figure 19: Traction bar and shackle installation.

24. Locate **HP9266** and find one (1) 9/16”-12 x 4” bolt, two (2) 9/16” flat washers, and one (1) 9/16”-12 lock nuts. Install the traction bar rod end between the eyelets on the rear axle mount.
Torque to **120 ft-lbs.**

Figure 20: Traction bar and axle mount installation.



25. Repeat the steps above on the opposite side of the vehicle.

26. Once the traction bars have been installed, roll the vehicle forward and back at least ten feet to settle the suspension to rest at ride height.

27. At this point torque the forward leaf spring mounting bolt. Torque to **160 ft-lbs.**

- **NOTE:**
  It is recommended that the forward leaf spring mounting bolt is torqued at ride height to keep the vulcanized rubber bushing from being preloaded at ride height.

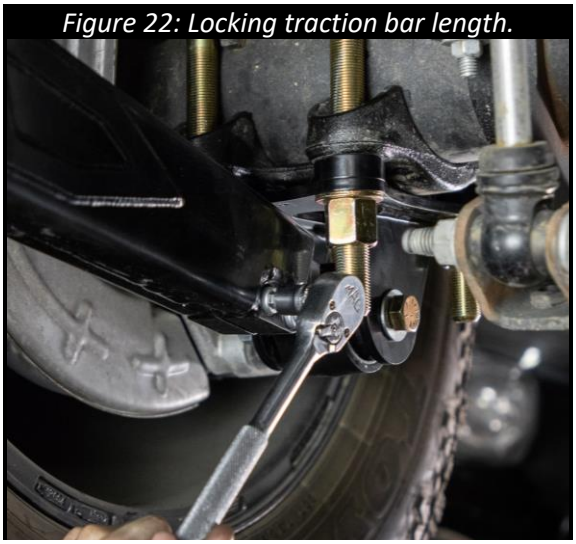
28. At this point all bolts should be torqued except the two locking screws in the traction bar.

29. Adjust the length of the traction bar by turning the adjustment sleeve. Lengthen the bar until the adjuster feels tight and hard to freely turn (this happens when the traction bar is at its maximum length).

Figure 21: Traction bar adjustment sleeve.

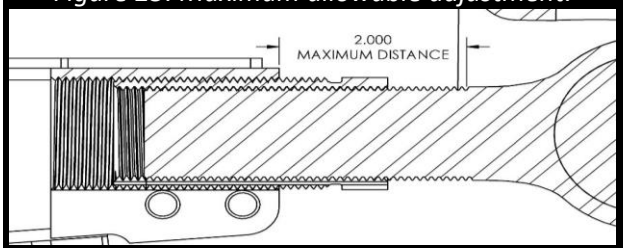
30. With the adjuster tight and hard to freely turn, shorten (turn in the opposite direction) the adjuster by 1/4 of a revolution. Tighten the 3/8” socket head cap screws to lock the adjuster in place.
Torque to **40 ft-lbs**.

Figure 22: Locking traction bar length.



31. Do not exceed **2.00”** of thread showing from the face of the traction bar to the start of the threads on the eyelet.

Figure 23: Maximum allowable adjustment.



32. The traction bar should now form a very small angle with the shackles and be close to or slightly touching the bump stop on the frame mount bracket.

Figure 24: Correctly adjusted traction bars.

33. Repeat these steps for the opposite side of the vehicle

34. Ensure that all bolts are properly torqued. Ensure there are no rubbing or loose cables anywhere after the installation. Use cable ties to restrain any cables from interfering with any other part. Check that all lines are free of stress or interference while the vehicle is in full droop and full bump.

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.