

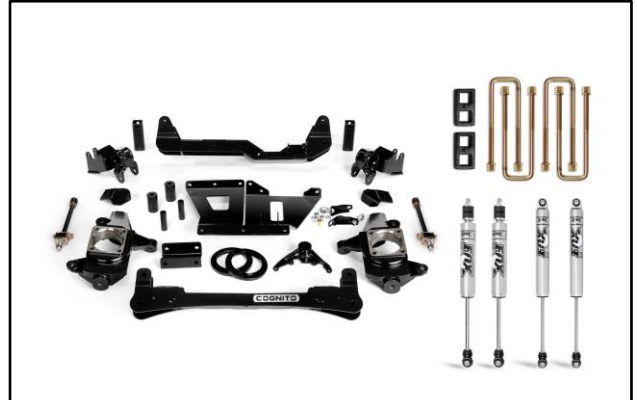
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Install Sheet #7270 | Cognito 4" Standard Lift Kit for 2001-2010 GM 2500HD/3500HD 2WD/4WD Trucks | SKU: 110-P0785



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INSTALL SUMMARY SHEET:
Cognito 4" Standard Lift Kit
for 2001-2010 GM 2500HD /
3500HD 2WD / 4WD Trucks
SKU: 110-P0785



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.

PARTS LIST FOR SKU: 110-P0785

QTY.	PART #	DESCRIPTION
1	110-70005	4"/6" 4WD Component Box
1	110-70006	4"/6" Non-Torsion Drop Component Box
1	110-70007	4"/6" Sub-Frame Component Box
1	110-70118	4"/6" Spindle and hardware Component Box
1	110-90796	2" Block and 13.6" U-bolt Kit
2	210-90206	Fox 2.0 (PSMT) Single Front Shock for Cognito 4"/6" lifts
2	210-90207	Fox 2.0 (PSMT) Single Rear Shock for 1.5-4" lift

INTRODUCTION

Thank you for purchasing the Cognito 4" Standard Lift Kit. This kit is designed to lift your vehicle 2" in the rear and 4" in the front, with a minimum of 3" of droop travel for superb ride quality. This kit also includes Fox Performance Series Mono Tube Shocks for all 4 corners designed for proper length, fitment, and ride quality.

TECHNICAL INFORMATION

- The cutting and drilling of some OEM frame and suspension components is required.
- Proper vehicle lifting equipment is required. Always make sure the vehicle is properly supported and **never work under an unsupported vehicle.**
- Torsion bar unloading tool is needed.
- Check the parts and hardware packages against the parts list in each instruction set to assure that your kit is complete.

You have just received several component boxes, and may be asking where you should start first. This Kit Install Summary is simply a check list of what you should have from a boxed items stand point, and also a 'where to start' the process to install each of the individual components that comprise this kit in the required sequence to safely complete full and proper installation.

The proper installation of this combination of products is dictated by the necessary sequence in which each component must be installed to avoid access, interference or clearance issues that will result in unnecessary disassembly and reassembly and potential safety hazards.

This document will guide you through the sequence of operations, which includes preparatory work and the prescribed order for installing components – by referring you to the individual instructions packaged with each Cognito component for detail on how each kit component is properly installed.

YOU MUST FOLLOW THESE STEPS IN SEQUENTIAL ORDER FOR PROPER INSTALLATION OF THIS KIT.

REVIEW TECHNICAL NOTES AND REQUIREMENTS OF THE INDIVIDUAL INSTALLATION INSTRUCTION SHEETS INCLUDED WITH THIS KIT BEFORE BEGINNING.

INSTALLATION

1. Begin by locating the 2 instruction sheets 7048 and 7024 included with this kit. You will need them both to do this install. If instructions are missing or damaged, contact Cognito Motorsports for where to find replacements.
2. **Component Instructions Sequence (A) Install Front Lift Components:** Start with instruction set 7048 and check to make sure you have all parts on the parts list.
3. Work through instruction set 7048 until the rear lift installation is mentioned near the end.
4. **Component Instructions Sequence (B) Install Rear Lift Components and Alignment:** Refer to instruction set 7024 next and check that all parts on the parts list are accounted for.
5. Work through all steps of instruction set 7024 from start to finish.
6. Refer back to instruction set 7048 where you left off, and work through the rest of them to completion.

This completes the installation steps, enjoy your new Cognito 4" Standard Lift Kit!

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 warranted 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.



Cognito Motorsports, Inc. Non-torsion bar drop 4"-6" Front Lift System for 2001-10 GM IFS 2 and 4WD 8 Lug Trucks/Suburban/Avalanche

Requirements

- Maximum wheel backspacing is 5.5"
- Do not use a tire that is more than 4 1/2" wider than the rim width on a 4 3/4" or more backspaced wheel.
- Set at 4 to 5", suggested tire size is 33" tall and up to 12.5" wide on an 8 to 9" wide rim with 4.25 to 5.0" back spacing. Set at 5 to 6", **ONLY ON 2500HD AND 3500** suggested tire size is 34.5" tall and up to 12.4" wide on an 8 to 8.5" wide rim with 5.0" to 5.5" back spacing (Hummer H2 take offs fall in this suggestion). Call Cognito Motorsports with wheel and tire suggestions if necessary.
- Follow alignment specs at the end of this instruction set.

Introduction

- Installation requires a qualified mechanic.
- Prior to installation on used vehicles, carefully inspect the vehicle's steering and driveline systems, paying close attention to the tie rod ends, pitman and idler arms, ball joints, and wheel bearings. Also check steering to frame attaching points for stress cracks. The overall vehicle must be in excellent working condition: repair or replace all worn parts.
- 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.
- Secure and properly rack the vehicle on a hoist prior to beginning installation.
- Always wear safety glasses when using power tools.
- Use extreme caution when cutting is required under the vehicle: the factory undercoating is flammable. Be careful of all fuel lines, fuel tanks, brake lines, and electrical harnesses.
- When tightening bolts, foot-pound readings are listed on the Torque Specification Chart at the end of the instructions.
- Front-end alignment will be necessary after completion.
- Exhaust modification may be necessary.
- Drive line(s) modification may be necessary.

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Parts List

- 110-70005, 4WD ONLY
 - o 1339, Passenger-side Differential Mount (needed on 4WD only)
 - o 8151, Driver-side Differential Mount (needed on 4WD only)
 - o (2) 5434, Front axle spacer (needed on 4WD only)
 - o Hardware Package #9076 (needed on 4WD only)
 - o Hardware Package #9078 (needed on 4WD only)
- 110-70006
 - o 8213, driver non torsion bracket
 - o 8214, passenger non torsion drop bracket
 - o 8220, driver bump stop bracket
 - o 8221, passenger bump stop bracket
 - o (2) 5388, NTD bracket mandrel
 - o (2) 5299, 3.34" long crush sleeve for 8144 rear crossmember
 - o HP9111, non torsion drop bracket hardware
- 110-70007
 - o 8143, Front Crossmember
 - o 8144, Rear Crossmember
 - o 8145, Skid Plate
 - o (2) 5345, rear bump stop spacer
- 110-70118
 - o 8148, Driver side spindle
 - o 8149, Passenger side spindle
 - o 110-90253, sway bar end link kit
 - o HP9073, sub frame hardware pack
 - o HP9075, skid plate hardware pack
 - o HP9081, rear bump stop spacer hardware

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Front End Disassembly

- 1) **Always work on a properly supported vehicle.** With the vehicle on a car hoist, lift the vehicle off of the ground and remove the front wheels.
- 2) Remove torsion bar adjusting screw, Figure 1. Using a torsion bar loading tool, load torsion bar, Figure 2. Remove adjuster nut, Figure 3. Remove tool.



Figure 1: remove torsion bar adjusting bolt



Figure 2: load torsion bar to remove adjuster nut

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Figure 3: adjuster nut removed

- 3) Slide torsion bar forward into lower control arm. If bar seems lodged, use a punch and hammer to loosen through the hole in the back of the crossmember. This will allow the torsion bar adjuster keyway to fall out. Repeat this to the other side.
- 4) Remove torsion bar crossmember by removing the bolt from each side of the crossmember, Figure 4, retain for future use. With the crossmember out of the vehicle, the torsion bars can be removed from the lower control arms. Be sure not to mix up the torsion bars from front to back or left to right, they must go back into the vehicle the way they came out.



Figure 4: Remove factory torsion bar crossmember

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- 5) Remove the upper and lower shock fasteners, and discard shocks. Retain the hardware for possible future use depending on the shock setup you have chosen. Front shock upper fastener is difficult to get to, but bending the plastic inner fender well around will get it done. The other option is to remove the inner fender well, and replace later, but this will take more time than muscling the inner fender, Figure 5.



Figure 5: remove shocks, front upper shown here.

- 6) Extended brake lines are not needed; the rubber brake line can be pulled through the steel bracket for better fitment. If you are retaining the factory brake lines, skip now to the next step. You can purchase extended brake lines if desired. If installing new brake lines unbolt the steel clamp from the upper control arm and the other from the top of the spindle. Then remove the front rubber brake line by taking the clip off of the top of the line and unscrewing the fitting. Next, unscrew the bolt on the banjo fitting of the caliper and discard the brake line. Repeat on the other side. Re-assemble the new lines in the opposite manner, being sure that copper crush washers are used on both sides of the banjo fitting on the caliper.
- 7) Unbolt the brake line bracket from the top of the spindle, and the bracket from the upper control arm. Remove the brake calipers by removing the 2 bolts fastening the caliper to the spindle; it is easiest to hang the caliper from the front bumper bracket with a bungee cord or something of the like. Now remove the clips from the wheel studs and discard, and then remove the brake rotors. At this time, remove the clips from ALL 4 corners of the vehicle, as aftermarket wheels will not fit with these clips in place, see Figure 6.

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Figure 6: Remove clips from all 4 corners of vehicle. MUST DO for aftermarket wheels.

- 8) Remove the tie rod end nuts on the spindle. Using a pickle fork, or hammer, dislodge tie rod from spindle. Pull down on the tie rod and hit the spindle casting with a hammer to dislodge the taper seat as shown in Figure 7.



Figure 7. Remove tie rods from spindles.

- 9) Skip this step for 2WD vehicle. On 4WD models, unbolt the CV axle from the differential. To do this, remove the six bolts holding it in on the differential end. Use a thin chisel to pry the axle stud cover cap from the spindle hub, and then remove the large nut on the spindle end of the axle with a 36mm socket. Axle may now be removed from the vehicle. Repeat this step on the other side. See figure 8.

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Figure 8: Remove CV axles on 4wd vehicles

- 10) Remove both anti-sway bar links, which connect the sway bar to the lower control arms.
- 11) Your vehicle is equipped with an ABS brake system. Unplug the wire sensor from the wire harness terminal located near the top shock mount. Remove the clamp from the frame also, since the sensor wire will have to be re routed after installing the suspension lift system.
- 12) Detach the lower control arms from the spindles. Do this by loosening the nut on the lower control arm ball joint, but leave a few threads engaged. Loosen the 2 large bolts holding the lower control arm to the frame. With the control arm and spindle assembly hanging, hit the spindle with a large hammer on the boss that surrounds the lower ball joint stud. This will dislodge the taper seat and free the lower control arm from the spindle, see Figure 9. Remove the lower control arms from the vehicle.
- 13) Next loosen the upper ball joint nut, but leave engaged by a few threads. With the spindle assembly hanging from the upper control arm, hit the spindle with a large hammer on the boss that surrounds the upper ball joint stud. This will dislodge the taper seat and free the upper control arm from the spindle. Remove the spindle assembly from the vehicle and set aside.

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Figure 9: removing lower control arm.

- 14) If you purchased, or your kit includes the Cognito upper control arm kit, remove the factory upper control arms at this time and refer to those instructions.

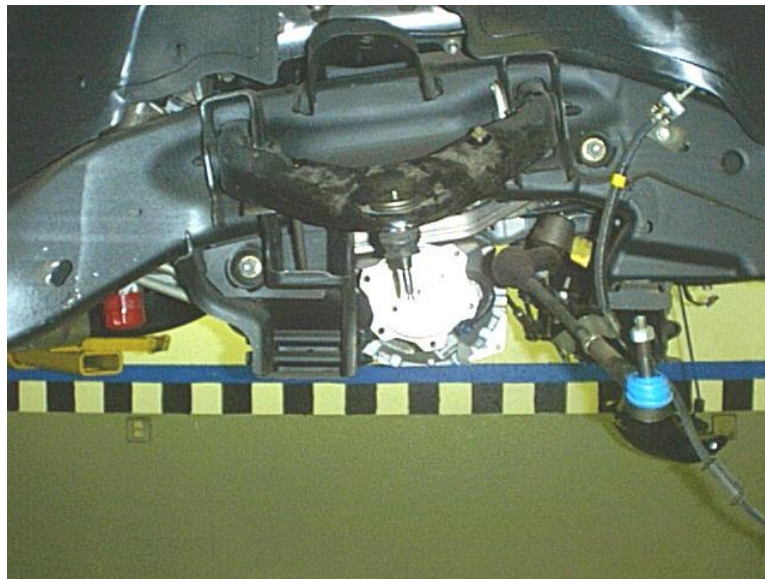


Figure 10. Lower control arms, CV axles, brake calipers, and spindle assemblies removed.

- 15) Remove front differential skid plate and discard, if so equipped. Also remove the black plastic air dam from underneath the radiator; this may be re-installed later if desired with some modification.
- 16) On 4WD models, unplug the differential's electronic coupler(s) and breather hose. Unbolt the front drive shaft from the differential yolk.

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- 17) Remove the lower driver side bolt holding the differential to the back of the rear driver side lower control arm frame pocket as shown in Figure 11.
- 18) Support the bottom of the front differential with a transmission jack to prepare to cut the frame to clear the differential housing after it is dropped down. It is best to use a bracket on a transmission jack that will bolt to the front differential as shown in Figure 12.
- 19) Now using a reciprocating saw, cut the back of the driver side lower control arm rear frame pocket off as shown in Figure 13. This allows room for the differential to drop down without hitting the frame.
- 20) After cutting the back of the pocket off, now remove the 2 long bolts holding the passenger side of the factory crossmember to the frame, and remove the factory crossmember from the vehicle as shown in Figures 14 and 15. You should retain this crossmember and removed frame section for later replacement if you should decide to return the vehicle to stock.
- 21) On 4 WD models, loosen, but do not remove the upper driver side differential bolt. Loosen, but do not remove the two nuts from the studs on the passenger differential mount. Once these fasteners are loose and the differential is supported, remove the fasteners and lower down the differential safely, this is a very heavy item.



Figure 11: Lower bolt removed from front differential prior to making frame cut.

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Figure 12: Supporting the front differential before cutting the frame.

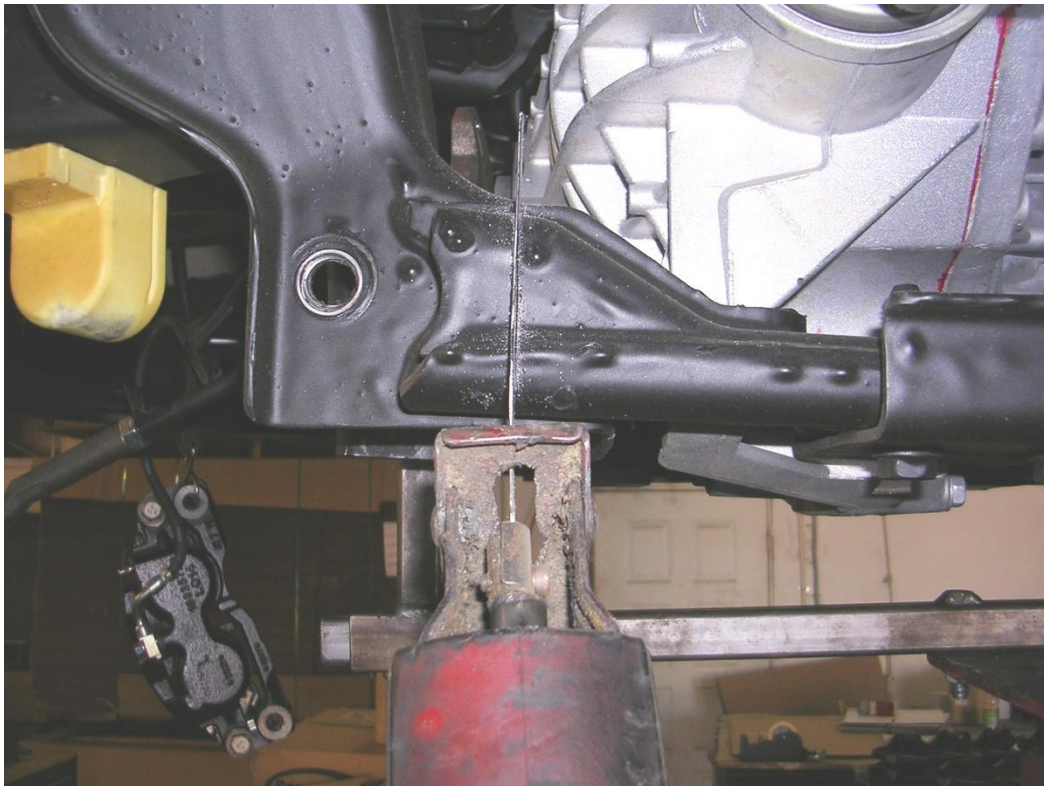


Figure 13: Cutting the frame pocket.

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Figure 14: Factory crossmember and frame section removed.



Figure 15: Factory crossmember and frame section removed.

22) In order to maintain clearance for the steering drag link, the top differential mount must be cut off. Use a reciprocating saw and cut the mounting ear off as shown in Figure 16, close to the differential housing. If this vehicle needs to be returned to stock later or a different Cognito Motorsports suspension system is desired later, you may purchase the Cognito conversion bracket to re-establish this mounting point without having to buy a new differential case.

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- 23) Remove the black plastic air dam from underneath the radiator. Set aside for later reinstallation. This will give ample room to install the pitman and idler arm support kit.

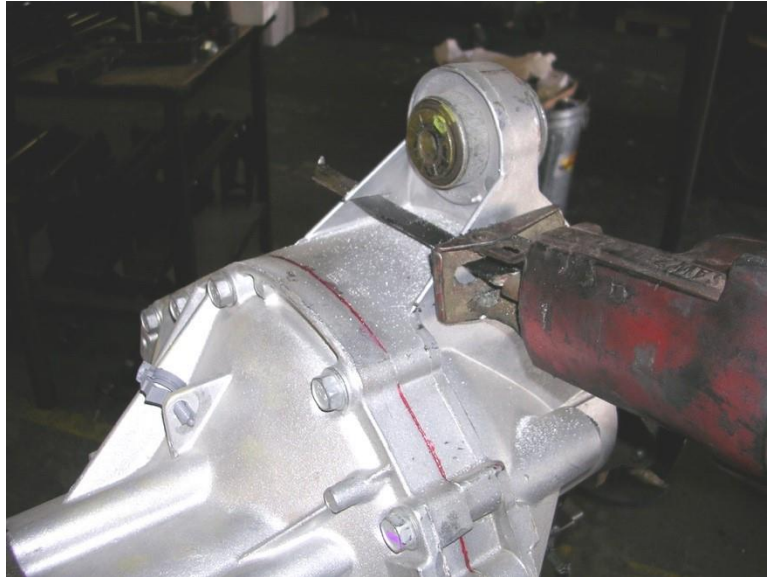


Figure 16: Cutting off mounting ear. Don't worry! We make a replacement if needed later.

Lift Kit Installation and Front End Re-assembly

- 24) This step will begin the installation process. **Do not tighten any fasteners until instructed to.** Unless otherwise specified, flat washers will always be used under the heads of bolts and under nuts. Therefore, one bolt with one nut will require 2 flat washers.
- 25) If you purchased the Pitman and Idler Arm support kit, install at this time with the installation instructions attached to it. If you purchased the lift kit package/bundle that does not include it, we highly recommend adding it.
- 26) Reinstall the factory black plastic air dam previously removed. It will be easiest to reinstall now, but can be installed at a later time with a little bit of patience. Make sure the plastic clip on the bottom of the radiator hose gets located in the small hole on the air dam.
- 27) From Hardware Package 9078, insert the 2 polyurethane spring bushings and the steel crush sleeve into part #8151 Cognito Driver Side Differential Mounting Bracket. Remove the 4 front differential case bolts as shown in Figure 17, and install part #8151 Cognito Driver Side Differential Mounting Bracket with the longer 10mm metric bolts and flat washers from Hardware Package 9078. Use a small amount of thread locker on the new bolts, and torque to 40 ft-lb at this time.

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Figure 17: part #8151 Cognito Driver Side Differential Mounting Bracket installed

28) Bolt part #1339 Cognito Passenger-side Differential Mount to the factory differential mount using the factory thick flat washers and lock nuts previously removed, as shown in Figure 18. The bracket is symmetrical, so the top side looks the same as the bottom side. Torque this factory hardware at this time to 85 ft-lb.

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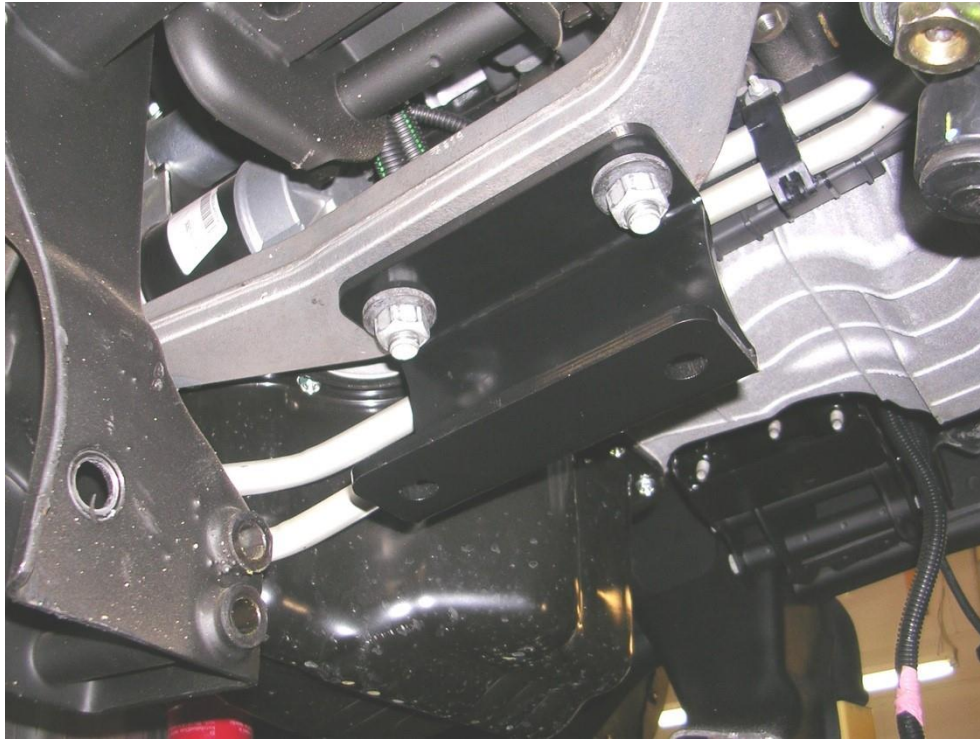


Figure 18: Cognito Passenger-side Differential Mount installed

- 29) Remove the lower control arm bump stop from the frame on each side. They are held on by one nut and then have a small key to keep them from rotating.
- 30) Locate hardware pack HP9111, use a 3/8x1.1/4" bolt to fasten 8220 bump stop bracket to the driver side where the factory bump stop was previously removed as shown in Figure 19. Then fasten the bracket with the 5/16x1.1/4" bolt as shown in Figure 20. At this time, tighten the 3/8" fastener to 19 ft-lb and the 5/16" fastener to 13 ft-lb of torque.
- 31) Now the third mounting hole must be drilled using the 8220 and 8221 bracket as a drill template. Use a 3/8" drill bit, then fasten using the remaining 3/8x1.1/4" hardware from HP9111 and torque to 19 ft-lb now. See Figure 21
- 32) Bolt part # 8144 Cognito Rear Crossmember along with the 5299 crush sleeves, into the rear lower control arm pockets using stock, rear lower control arm bolts. The bolts must run from the front toward the back of the truck for ample clearance with the differential.

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Figure 119: bolt bump bracket to existing hole on bottom



Figure 20: bolt bump bracket to existing hole on side.



Figure 12: drill mounting hole for bump stop brackets

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- 33) Raise the front differential into place. From hardware package 9078, fasten the passenger side of the front differential to the Cognito Passenger Side Differential Mount with the two 9/16 x 1.75" bolts, four flat washers and two 9/16" lock nuts. Align the lower driver side of the differential with the differential mounting hole on the Cognito rear crossmember and fasten with a 9/16" x 4.5" bolt, two flat washers and one lock nut. This bolt should be run from the middle of the truck toward the outside so that the nut is in the pocket where the rear lower control arm will mount. This will ease removal of the differential without removing the lower control arm at a later date if needed.
- 34) From hardware package #9073, insert the two 1/2" plate bolts inside the frame hole just above the front lower control arm pocket and through the holes in the frame. These should line up with the two mounting holes on top of the Cognito front crossmember. Attach the Cognito Front Crossmember to the 1/2" plate bolts with 1/2" washers and nuts from the Hardware Package. If there are no crush sleeves welded in between the tabs of the Cognito front crossmember, insert the 5310 crush sleeves in the Cognito front crossmember, then using the factory hardware from the front of the lower control arms and bolt the Cognito front crossmember to the frame. Run the bolts from the front of the truck toward the rear. See Figure 21

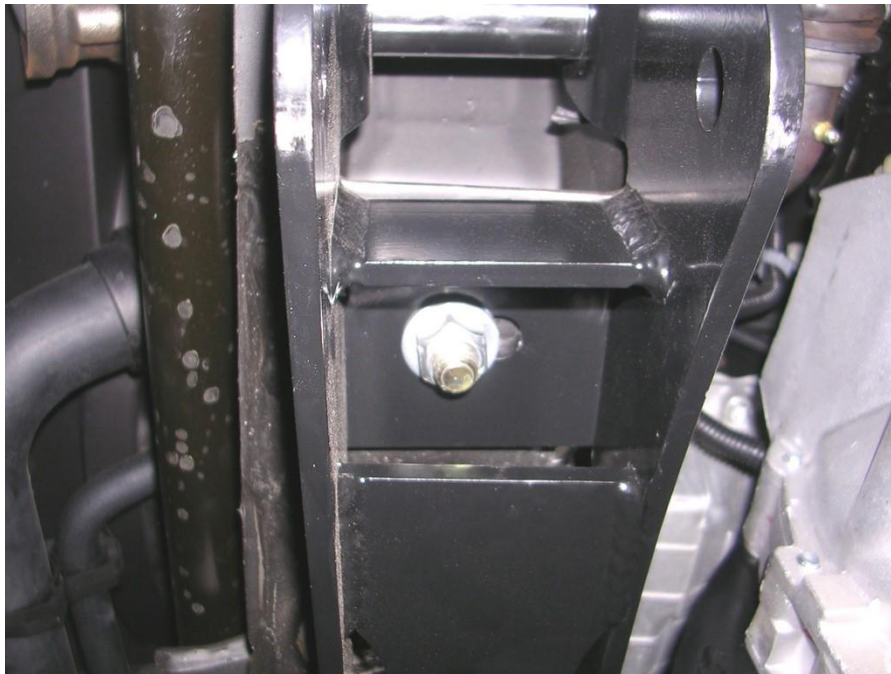


Figure 21: Front crossmember mounting.

- 35) Locate the Cognito Skid Plate part # 8145. Locate the skid plate hardware package # 9075. Start with the middle hole on the front of the Cognito skid plate and fasten it to the middle mounting hole on the Cognito Front Crossmember. Run all of the bolts from the bottom to the top so the head of the bolt is visible. Now with the rest of the fasteners, finish bolting the Cognito Skid Plate to the Cognito front and rear crossmembers. See Figure 22.
- 36) Use one of the factory differential bolts and nuts previously removed to fasten the Cognito Driver-Side differential bracket to the tabs on the Cognito Skid Plate. See Figure 23.

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- 37) Now fasten all hardware that has been installed but not yet tightened in all previous steps. Follow the torque specification chart at the end of this instruction sheet. For factory hardware (metric), compare the nominal size to the closest size in American fastener size to select the torque specification.
- 38) If your kit included the Cognito upper control arms, mount the ball joints on the top of the ball joint plate of the control arm if setting the kit at 4 to 5". Mount the ball joints on the bottom of the ball joint plate of the control arm when setting at 5 to 6". Refer to the Cognito Motorsports Upper Control Arm instruction sheet to finish installing them.
- 39) Disassemble the bearing hub assembly and brake rotor shield from each of the factory spindles. Also remove the o-ring from the bore of the spindle, careful not to damage it. Clean the mating surfaces of the bearing hub and brake rotor shield thoroughly and transfer all of these parts to the appropriate Cognito spindle making sure that the bore and o-ring groove of the Cognito spindles is clean and free from debris. Apply a small amount of thread locker to the spindle hub bolts before fastening them. Torque the bearing hubs to the spindles to 95 ft-lbs. at this time. See Figure 24.
- 40) Now hang the spindle assemblies on the appropriate sides of the vehicle from the ball joint of the upper control arm.



Figure 22: Cognito Skid Plate during installation

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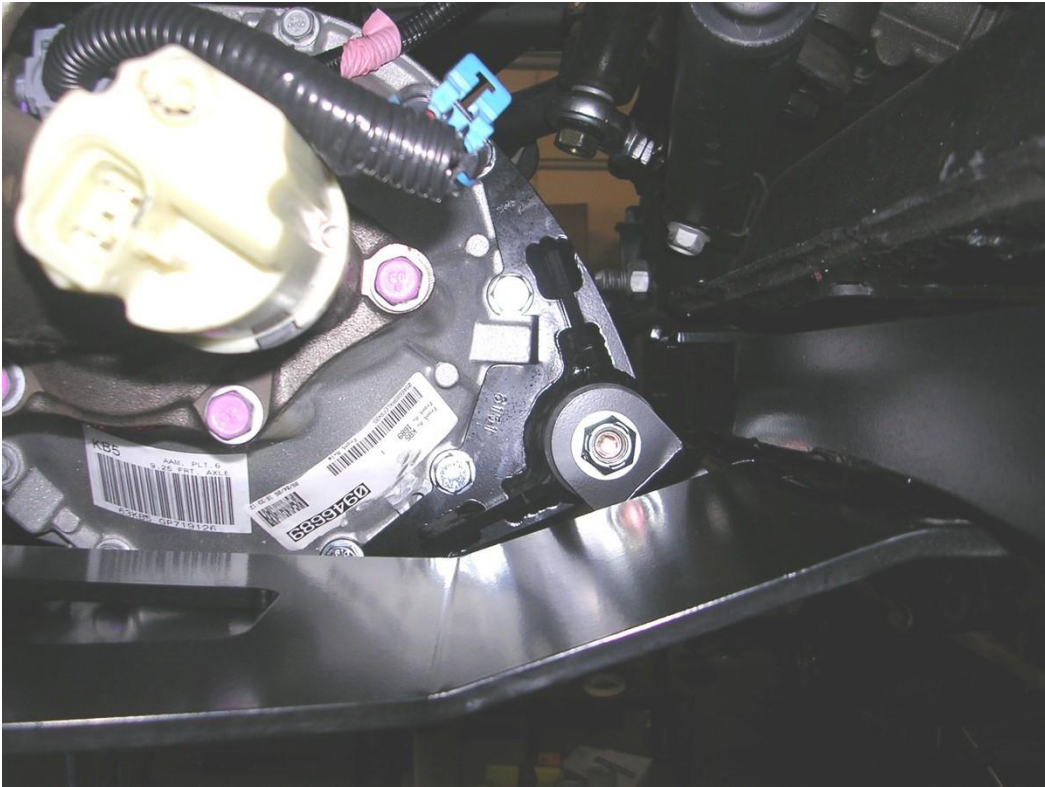


Figure 23: Cognito driver side differential mount bolted to Cognito skid plate.

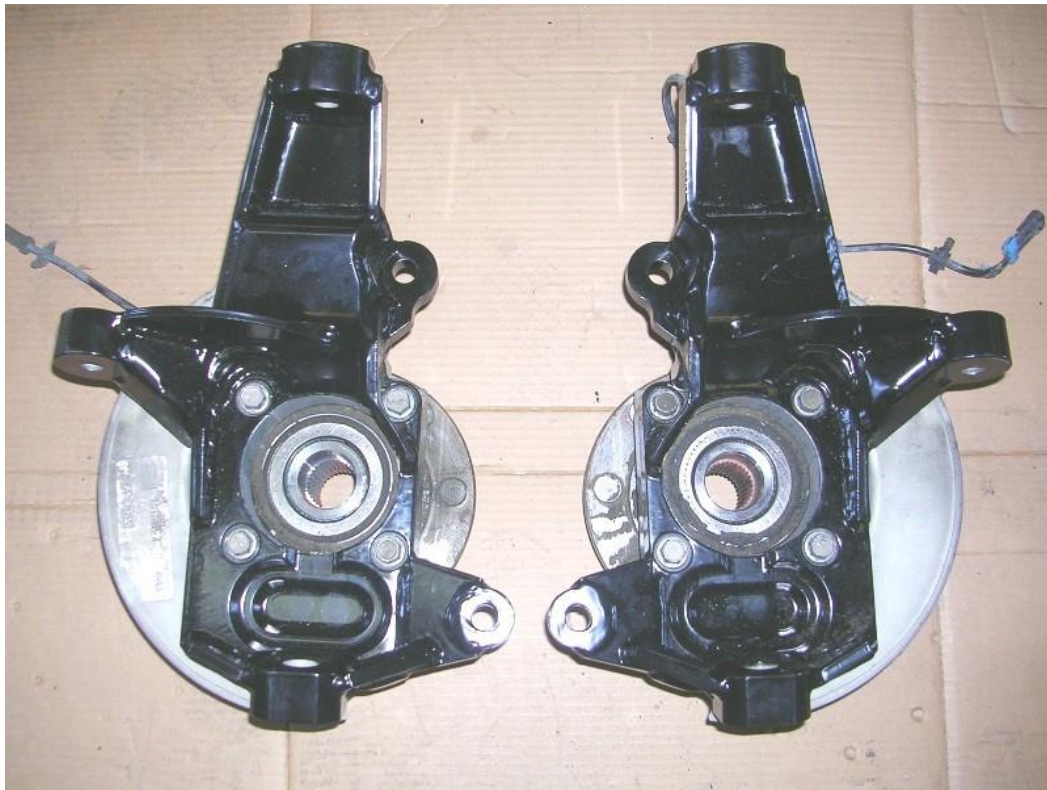


Figure 24: Spindle and bearing hub assembly.

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- 41) Attach the appropriate lower control arms to the lower pockets of the Cognito front and rear crossmembers with hardware from package #9073. Then attach the lower control arm ball joint to the Cognito spindle. Torque upper ball joints to the Cognito spindles to 60 ft-lbs. Torque lower ball joints to the Cognito spindles to 100 ft-lbs. You will have to use an end wrench and Allen wrench to tighten the nut on the ball joint without the stud spinning until the taper seat is established. Torque the lower control arm bolts to the Cognito crossmembers at 100 ft-lbs.
- 42) On 4WD models, install the stud/spindle end of the front drive axles into the Cognito spindles and fasten with factory hardware. Mount the differential end of the drive axles to the differential with hardware from package #9076, and the Cognito drive axle spacers in between. Fasten all hardware mentioned in this step to 40 ft-lbs of torque. Use a small amount of thread locker on the axle bolts. See Figure 25.
- 43) Fasten the stud end of the front drive axle to the spindle bearing with the thick factory washer and large nut. Torque this nut to 150 ft-lbs of torque at this time. Carefully tap the axle stud cover back onto the spindle hub.
- 44) Install the brake rotors and calipers on to the appropriate side Cognito spindle. Use a small amount of thread locker and torque the caliper bolts to 100 ft-lbs.



Figure 25: Spindle, end link, axle, tie rod.

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- 45) Install Cognito brake line kit if purchased separately, tightening fittings to factory specifications. Make sure that copper crush washers are used on both sides of the banjo fitting on the caliper. Stock brake lines are adequate in length. Extended brake lines are not needed; the rubber brake line can be pulled through the steel bracket for better fitment.
- 46) If you purchased the Cognito tie rod upgrade kit, follow those directions in this step, otherwise reattach the factory tie rod end to the Cognito spindles and tighten to 85 ft-lbs of torque at this time.
- 47) Be sure the brake lines and ABS sensor wires are routed and restrained as to avoid any rubbing and binding.
- 48) Remove the lower shock mount bracket from the lower control arms. Clean the bolts and the holes very good from the old thread locker. Use compressed air and brake clean and a scribe to chip away the old thread lock and a wire brush on the bolts. This is very important in order to avoid seizing the bolts into the hole and causing big problems. Discard the shock brackets but retain the bolts.
- 49) Insert the 5388 mandrel into the lower control arm torsion bar hole as shown in Figure 26.



Figure 26: 5388 mandrel inserted into lower control arm.

- 50) Bolt the 8213 and 8214 non torsion bar drop brackets to the appropriate lower control arms as shown in Figure 27. Insert the factory bolts first and get the threads started. Then use the 5/8x4.5" bolts and hardware to insert through the brackets and the 5388 mandrel. Tighten the factory bolts to 40 ft-lbs and the 5/8" hardware to 100 ft-lbs.

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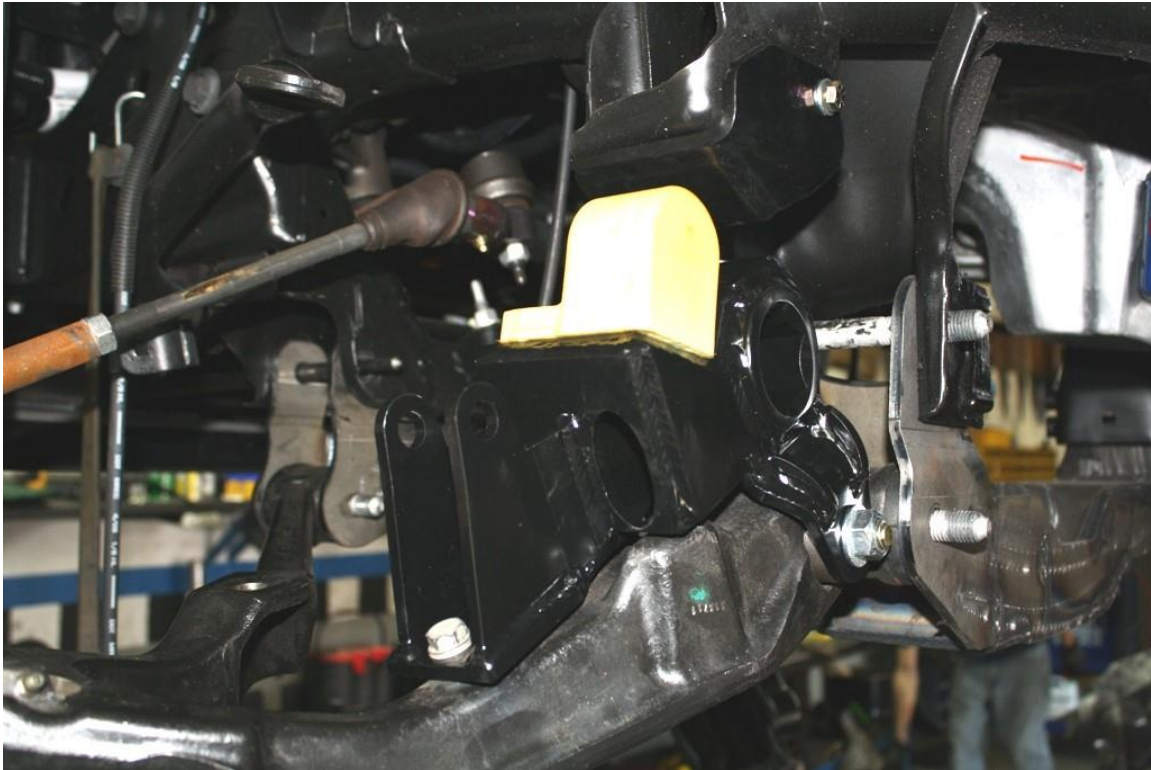


Figure 27: 8213 bracket bolted to driver lower control arm.

- 51) Don't install the bump stops yet. Use a jack to lift the control arms in the up travel position so that the torsion bar hole will be aligned with the torsion bar adjuster key.
- 52) Insert the torsion bars back into the truck in the same orientation they were removed. Insert the front of the bar into and through the hex hole of the lower control arm 8213 and 8214 bracket. Now re-install the factory torsion bar crossmember into its original position and tighten bolts to 85 ft-lbs.
- 53) Insert the torsion bar adjuster keys into the slot on the torsion bar crossmember, now pull the torsion bar back all the way through the adjuster key.
- 54) Now relax the lower control arms down by removing the jacks that were holding them up. Bolt the factory bump stops into place on the 8213 and 8214 brackets as shown in Figure 27
- 55) Using a torsion bar loading tool, load the torsion bars and insert the torsion bar adjusting bolt nut. Now remove the torsion bar loading tool.

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- 56) Apply anti-seize lubricant to the torsion bar adjuster bolt threads and round head, and screw them into the adjuster nut. Screw the bolt in to the same depth it was at factory, and this will give about 4" of lift from factory settings. Change the depth of the adjuster bolt as a change in front and height is desired. When screwing the adjuster bolt in to load the torsion bar more, you should always have the truck lifted by the frame so the front wheels are drooped down. This will minimize stress on the adjuster bolt while loading it.
- 57) Install the heavy duty sway bar end link kit at this time per the instructions included in that kit.
- 58) Bolt in the new shocks using the factory hardware for the lower shock mounting to the lower control arm. Some shocks may come with hardware that uses a different fastener available from Cognito Motorsports.
- 59) Locate the Cognito Rear Bump Stop Spacers and Hardware Package # 9081. Unbolt the rear bump stops from the frame. Bolt the spacer to the frame with hardware provided. Mount the factory bump stop to the spacer. Tighten all hardware in this step to 25 ft-lb. See Figure 28



Figure 28: Rear bump stop spacer

- 60) At this point, inspect all hardware to ensure everything is torqued to factory specifications and to the torque specification chart at the end of this instruction set.
- 61) On 4WD models, reconnect front drive shaft. If the exhaust crossover is in the way of the drive shaft, the exhaust will have to be rerouted either over or under the drive shaft.

Installation # 7048

- 62) Install front wheels according to factory specifications. Please note the wheel requirement stated at the beginning of this instruction set. Do not re-install the small clips on to the wheel studs, they will interfere with most aftermarket wheels.
- 63) If you purchased new spring packs, replace the factory spring packs and use factory hardware and torque to factory specifications. The large bushing end of the spring goes toward the front of the vehicle. A 2.5 degree shim is recommended to reposition the differential pinion angle for driveline alignment. Then install rear wheels and shocks. Be sure to remove the 2 clips from each rear wheel hub as they will interfere with most aftermarket wheels.
- 64) If you purchased the block and u-bolt kit, refer to the instructions included with them for installation.
- 65) Have headlights readjusted to proper settings.
- 66) **Have the vehicle professionally aligned to the following specifications:**
Caster, +2.0 to +4.5 degrees with both sides within ½ degree of one another.
Camber, 0 to + .25 degrees.
Toe, 1/16” to 1/8” toe in.

Torque Specification Chart

1/4” Bolts	11Ft.-Lbs.
5/16” Bolts	13Ft.-Lbs
3/8” Bolts	19Ft.-Lbs
7/16” Bolts	30Ft.-Lbs
1/2” Bolts	60Ft.-Lbs
9/16” Bolts	85Ft.-Lbs
5/8” Bolts	100Ft.-Lbs

Torque all factory bolts to factory torque.

Installation # 7048

Cognito Motorsports

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 is for a one-time replacement of each Cognito Motorsports product and does not cover any part that Cognito Motorsports has previously replaced under this warranty. 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 reinstallation, freight charges, incidental or consequential damages are expressly excluded from this warranty.

This warranty excludes the following items: bushings, bumpstops, tie-rod ends, limiting straps, and hiem 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, and in the sole and absolute discretion of Cognito Motorsports.

Warranty Claims

All warranty claims must be submitted through the original company of purchase. All claims must be shipped back to the original company of purchase with an approved RMA number listed as a reference on the shipping label and clearly printed on two opposing sides of the package(s); product in question must be inspected by Cognito Motorsports before replacement parts are shipped out.

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 affect 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.

Cognito Rear Lift Block and U-Bolt Kit
INSTALL INSTRUCTIONS:

Cognito Rear Lift Block and U-Bolt Kit

PARTS LIST

QUANTITY	PART #	DESCRIPTION
2	Axle Block	Rear lift blocks
4	U-Bolt	Extended length U-bolts w/ washers and nuts


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.

*****WARNING: GM VEHICLES WITH SUPER CRUISE SYSTEM*****

If your vehicle came equipped with the Super Cruise, hands free driving system, the vehicle ***should not be modified***. The Super Cruise system relies on many sensors that must be calibrated by the manufacturer to ensure proper function and safety. If the vehicle is modified by changing the height or rake of the vehicle these sensors are no longer calibrated. At that point the system will no longer work properly and safety or function of the system cannot be guaranteed.

*****WARNING: FORD VEHICLES WITH BLUE CRUISE SYSTEM*****

If your vehicle came equipped with the Blue Cruise, hand free driving, system, the vehicle ***should not be modified***. The Blue Cruise system relies on many sensors that must be calibrated by the manufacturer to ensure proper function and safety. If the vehicle is modified by changing the height or rake of the vehicle these sensors are no longer calibrated. At that point the system will no longer work properly and safety or function of the system cannot be guaranteed.

REQUIREMENTS

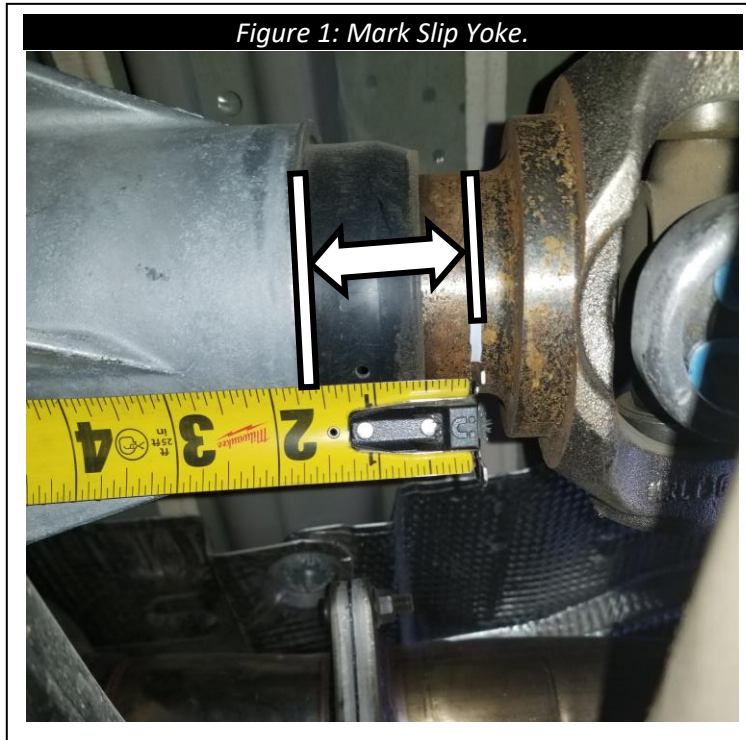
- Exhaust modification may be necessary.
- Drive line modification may be necessary.
- Installation requires a qualified mechanic.
- Follow the OE specifications when replacing or re-installing OE fasteners, retainers, and hardware specified in the OEM manual.
- Always wear safety glasses when using 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.

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.
- Foot-pound readings are listed on the Torque Specification Chart at the end of the instructions.

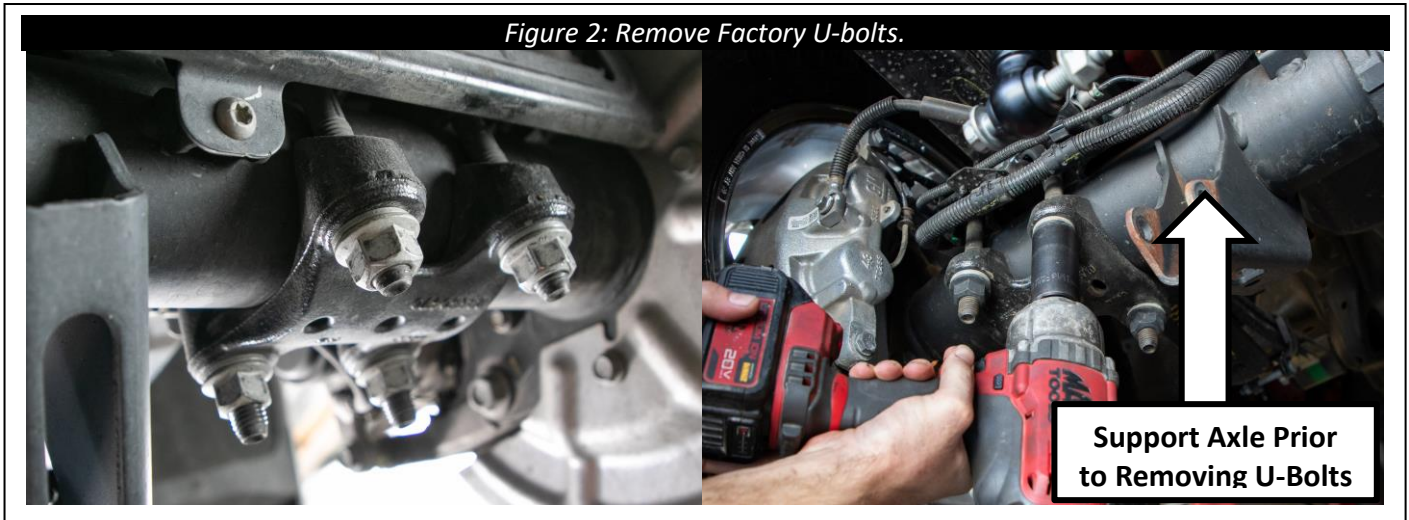
INSTALLATION

1. Park vehicle on level ground. Mark the slip yoke on the drive shaft where it comes out of the tail housing and measure how far it is from the tail housing (Figure 1). This mark will be needed later to determine how long to lengthen the drive shaft if needed. Record measurement here: _____.

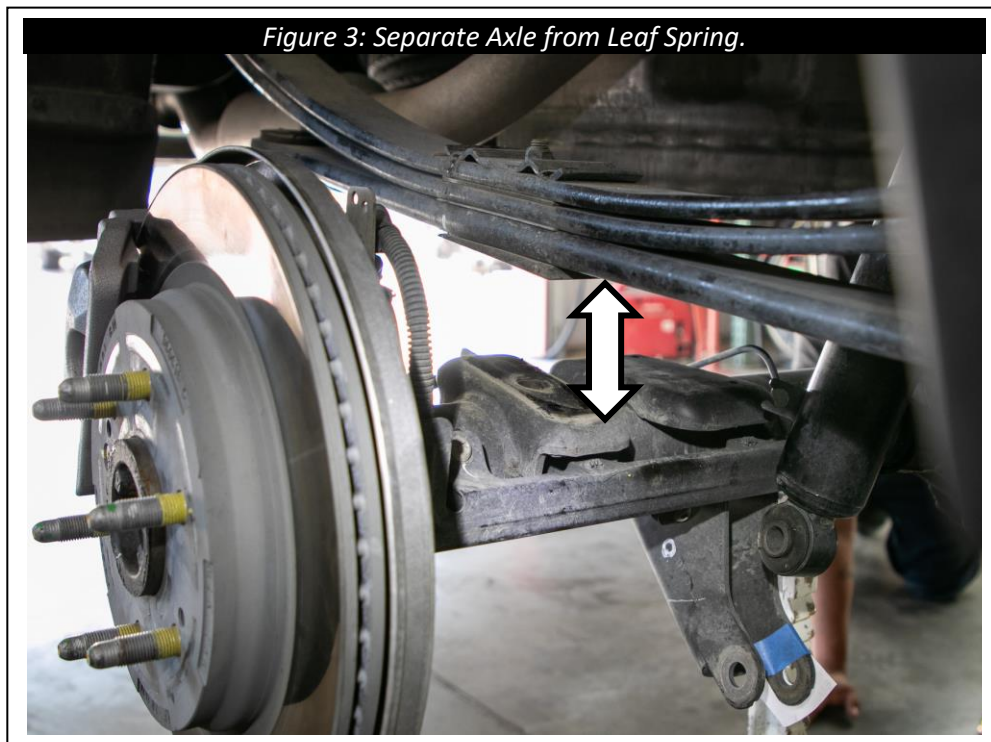


2. Rack the vehicle and lift it off the ground, or if no hoist is available then jack rear of truck off the ground and support properly with jack stands. Remove the rear tires and set them as side.
 - **NEVER WORK ON AN UNSUPPORTED VEHICLE.**
3. If using OEM brake lines, check to make sure they will not be overextended when the suspension reaches full droop. Modifications to the OEM brake line brackets might be necessary. If aftermarket extended brake lines were purchased, install them now. Make sure to bleed the brakes, purging any air from the system and checking for leaks.
 - **NOTE:**
If brake line length is needed, remove any clamps or brackets holding the OEM brake lines in place.
4. Remove the lower shock mount bolts holding the shocks to the axle on both sides of the vehicle.

5. Support one side of the rear axle and remove the U-bolt nuts from that side of the vehicle. Remove the factory U-bolts and discard them with the nuts (Figure 2).



6. Lower the support under the axle until there is enough room to install the lift block (Figure 3).



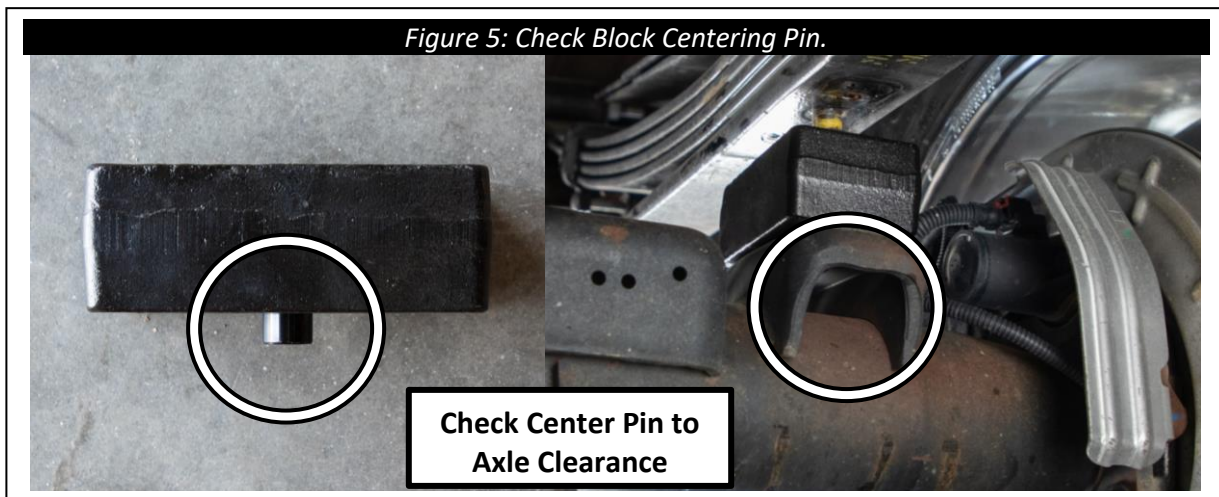
7. New U-bolts may be larger in diameter than the factory ones depending on the vehicle. Make sure the new U-bolts fit through the U-bolt plate. Drill the 4 holes in the U-bolt plate out to the proper size if needed (Figure 4)

- **NOTE:**

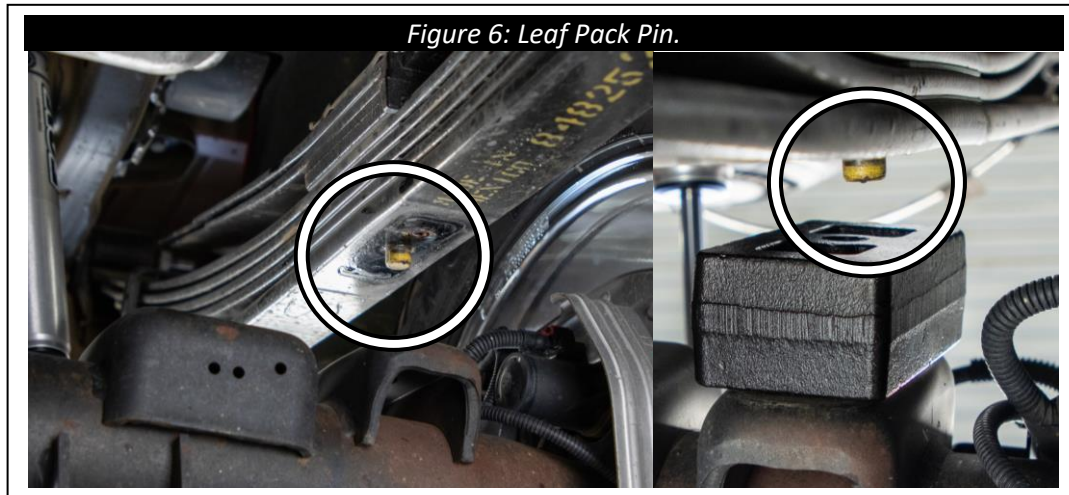
Always use safety glasses when using power tools.



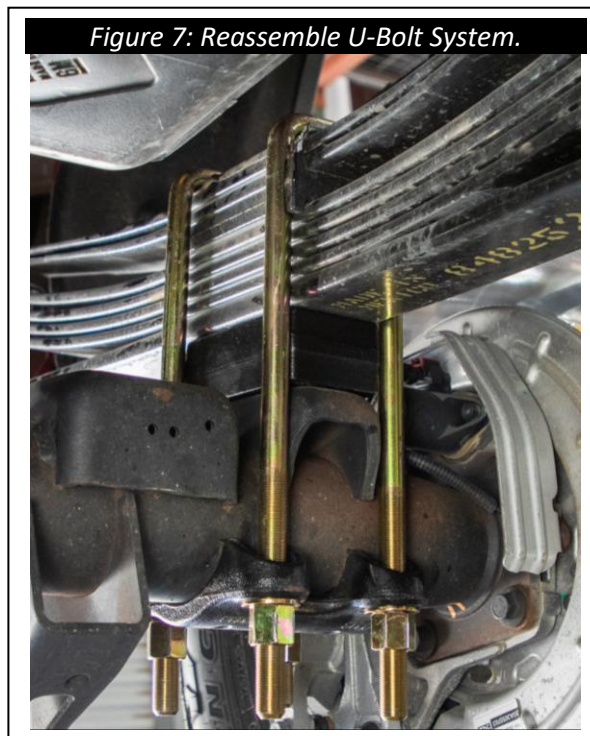
8. The centering pin on the block should fit snugly into the hole on the spring perch which is welded to the rear axle housing. Be sure that the pin is not too long and touching the axle housing tube. If necessary, trim the length of the pin to prevent this (Figure 5).



9. If the block is tapered, the tall end needs to be towards the rear of the vehicle. This will pitch the pinion angle up toward the transmission. If the block is straight, the hole on the top of the block may be offset from the centering pin on the bottom. If this is the case, orient the block so that the pin is offset forward of the pin in the leaf pack. The centering pin on the leaf pack should fit snugly into the hole in the top of the block (Figure 6).



10. Use the extended length U-bolts and re-assemble the U-bolt system with the U-bolt plate on top of the spring pack and the U-bolt lower plate under the rear axle just as they were before disassembly. Apply anti-seize to the threads of the U-bolts before installing the nuts (Figure 7).

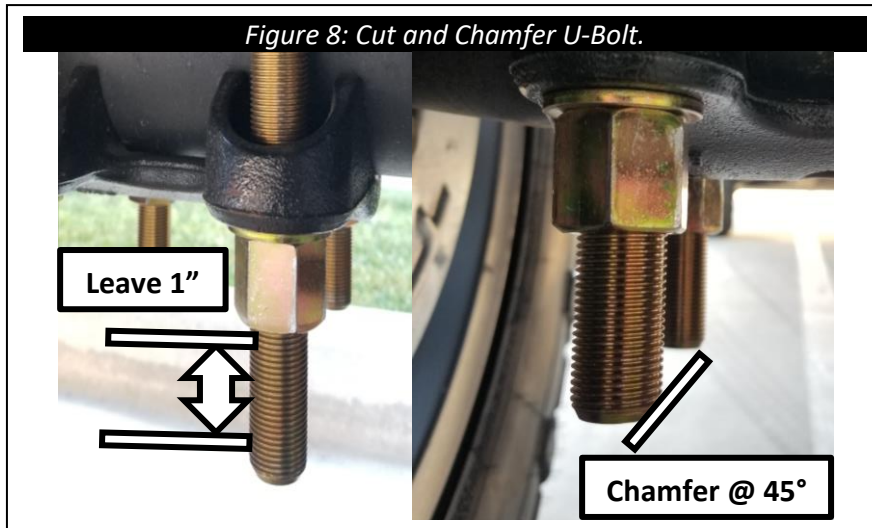


11. Repeat the steps above for the opposite side of the vehicle.

12. Some kits may have U-bolts that are long and will extend too far past the nut after installation and will need to be trimmed to get a socket on them to torque or to maintain max ground clearance. If this is the case, cut the bottom of the U-bolt leaving approximately 1" of threads extending past the nut (Figure 8). Make sure the nut is threaded on past the cut line if the bolt is removed from the install position to cut it. This will help straighten out the threads on the cut edge and make reinstalling the nut easier. Use a grinder/sander to add a 45° chamfer to the cut edge before removing the nut (Figure 8).

• **NOTE:**

Always use safety glasses when cutting or grinding.



13. Torque the U-bolt nuts to the specified torque spec in the chart at the end of these instructions (Table 1). 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.

14. Install rear shocks, torque OEM hardware to OEM specs.

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

16. If the lift block is tapered, add 1 extra quart of gear oil to properly oil the pinion gear.

17. Re-install rear wheels and set the vehicle back on the ground.

18. Retake the measurement from step 1 and record it here: _____. Subtract the first measurement from this one. If the difference is more than 1.5", it will be required to have the driveline lengthened by that amount.

TORQUE SPECIFICATION

Table 1

Bolt Size	Torque (ft-lb)
9/16"	90
5/8"	120
3/4"	150



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 warranted 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.



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