Cognito Motorsports, Inc. 10”-12” Front Lift System for 2001-08 GM IFS 2 and 4WD 8 Lug

Requirements

- Maximum wheel backspacing is 5”
- Do not use a tire that is more than 4” wider than the rim width on a 4 1/2” or more backspaced wheel.
- 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, 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.

Parts List

- 8050 Front Crossmember
- 8051 Rear Crossmember
- 8003 Driver-side Crossmember Spreader Tube
- 8004 Passenger-side Crossmember Spreader Tube
- 8054 Driver side spindle
- 8055 Passenger side spindle
- (2) 8053 Compression Strut Tube
- 8056 Compression strut crossmember
- (2) 8057 Torsion Bar Bracket
- 8052 Passenger-side Differential Mount (needed on 4WD only)
- 8141 Driver Differential Mount Support (needed on 4WD only)
- (2) 5410 Front axle spacer (needed on 4WD only)
- PISKC2008, 8-lug Pitman and Idler Arm Support Kit
- Hardware Package #9031 (needed on 4WD only)
- Hardware Package #9032
- Hardware Package #9034 (needed on 4WD only)
- Hardware Package #9036
- Hardware Package #9049
- Brake Line Kit, ZZDN-12

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. Using a torsion bar unloading tool, unload torsion bar and remove adjuster nut. Remove tool. 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 adjuster to fall out. Repeat this to the other side.

3) Remove torsion bar crossmember by removing the bolt from each side of the crossmember. 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.

4) Remove the upper and lower shock bolts, and discard shocks.

5) Extended brake lines are included and must be used. 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 caliper and discard the brake line. Repeat on the other side.

6) On 4WD models, unbolt the CV axle from the differential. To do this, remove the six bolts holding it in on the differential end. Then remove the large nut on the spindle end of the axle. Axle may now be removed from the vehicle. Repeat this step on the other side.

7) Remove the tie rod end nuts on the spindle. Using a pickle fork, or hammer, dislodge tie rod from spindle. If you purchased the Cognito heavy-duty steering kit, refer to those instructions for installation.

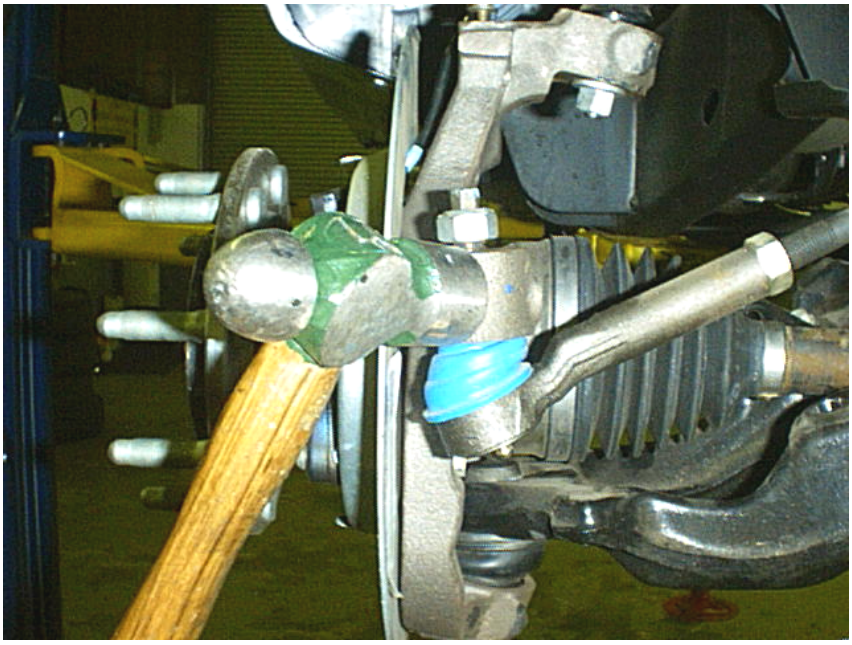

Figure 1. Remove tie rods from spindles.

8) Remove both anti-sway bar links, which connect the sway bar to the lower control arms.

9) If your vehicle is equipped with ABS brake system, disconnect the wire sensor and clamp from the frame.

10) Remove the brake calipers, brake rotors and detach the lower control arms from the spindles.

11) Remove the lower control arms from the vehicle. Next loosen the upper ball joint nut, and separate the ball joint from the spindle. Now set the spindle aside.

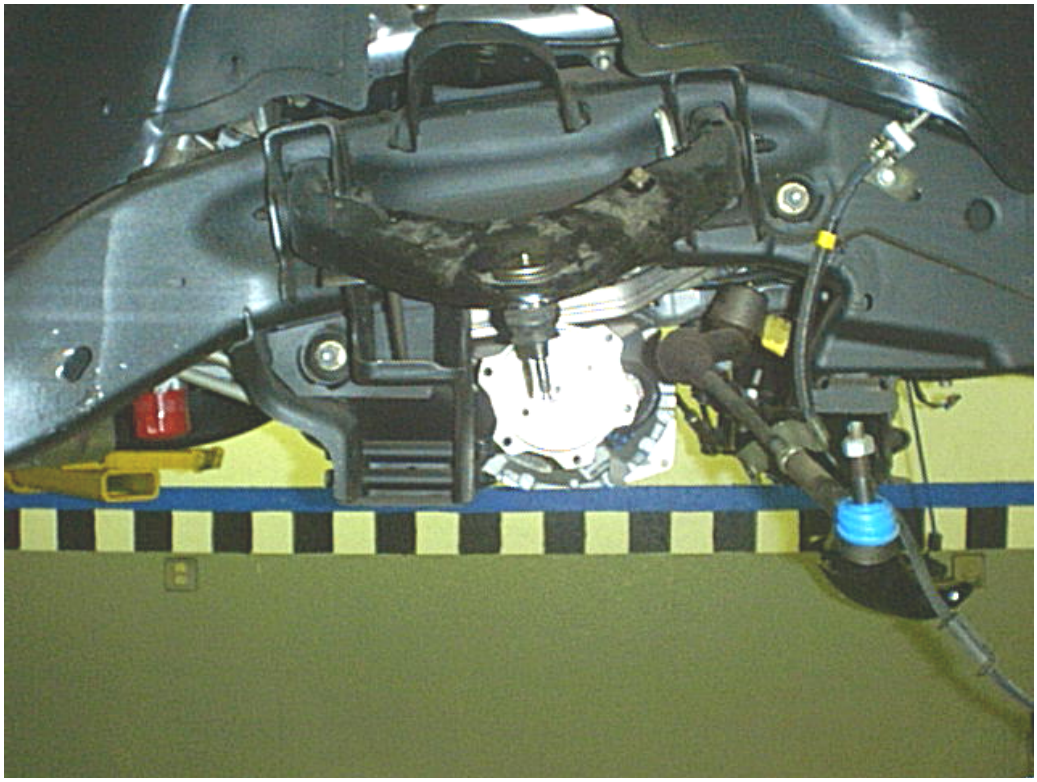

Figure 2. Lower control arms, CV axles, brake calipers, and spindle assemblies removed.

12) 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.

13) Remove front differential skid plates and discard, if so equipped.

14) On 4WD models, unplug the differential's electronic coupler(s) and breather hose. Unbolt and remove front drive shaft.

15) On 4 WD models, loosen, but do not remove the two differential bolts on the driver side. Loosen, but do not remove the two nuts from the studs on the passenger differential mount.

16) Remove the factory crossmember that is bolted in between the rear lower control arm pockets. The flange just under the front differential pinion yolk on 4WD models will have to be cut off. Use a reciprocating saw and stay close to the back of the control arm pocket. Retain this piece if desired for future re-installation. See Figure 3.

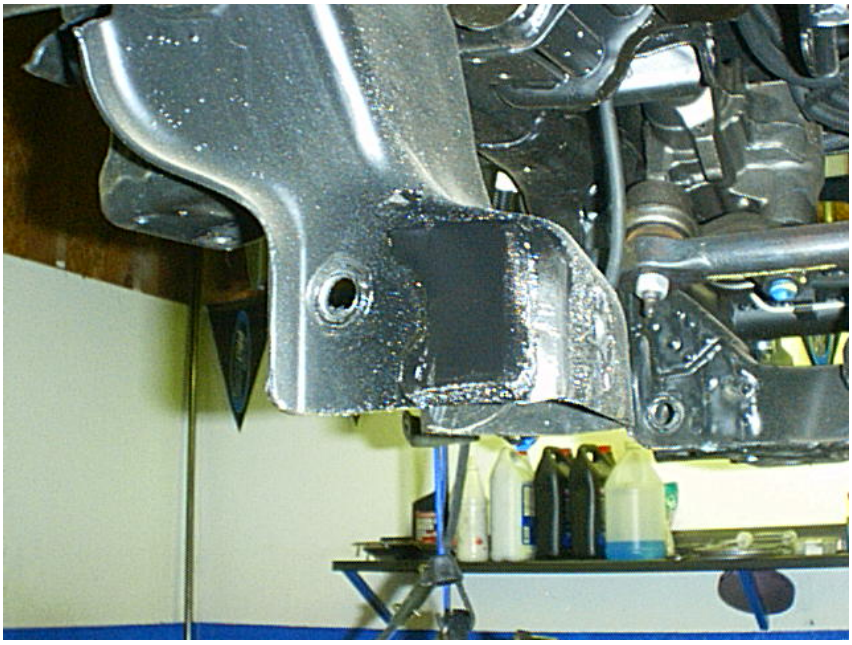

Figure 3. Trimming for front differential clearance, required on 4wd only.

17) Unbolt the transfer case skid plate and discard, if so equipped.

Lift Kit Installation and Front End Re-assembly

18) 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.

19) Install the Cognito Motorsports Pitman and Idler arm support kit at this time that is included with your lift system and has installation instructions attached to it.

20) Bolt Cognito rear crossmember into the rear lower control arm pockets using stock, rear lower control arm bolts. Unbolt the factory lower control arm bump stops from the frame and remount to the Cognito Rear crossmember.

21) On 4WD models, use a transmission or differential jack to support the front differential. Remove the bolts and nuts holding in the differential. Lower the differential with the jack until the Cognito passenger differential drop will fit into place.

22) On 4WD models, insert the polyurethane bushings and crush sleeve into the Cognito passenger differential drop from hardware package #9034. Using the factory nuts and washers, bolt the Cognito passenger differential mount to the factory differential mount. Use a 9/16” x 4 ½” bolt, 2 flat-washers, and a lock nut to fasten the lower end of the Cognito differential mount to the pocket on the Cognito rear crossmember.

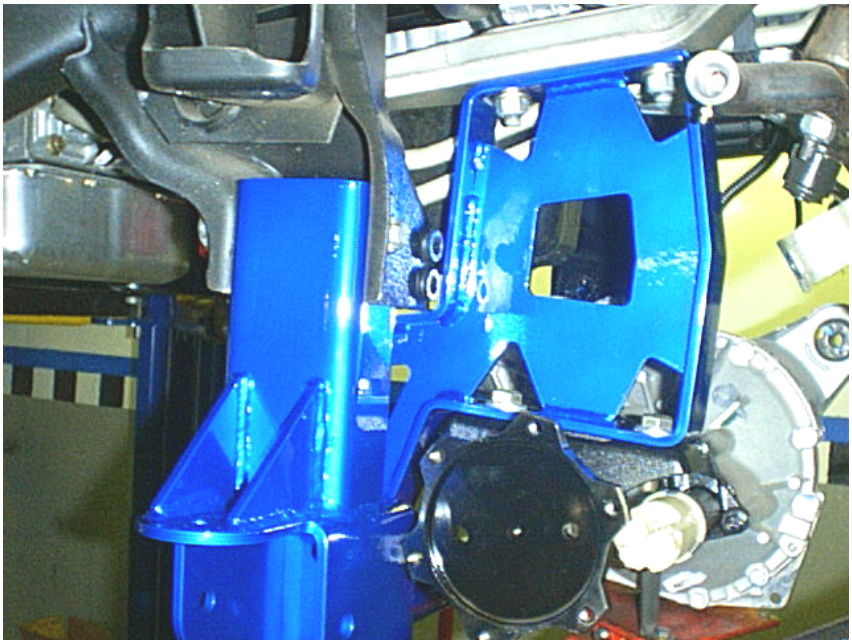

Figure 4. Passenger side differential mount installed.

23) On 4WD models, use hardware from package #9034 and bolt the lower mounting ear of the differential driver side to the Cognito rear crossmember with a 9/16" x 4 ½" bolt, 2 flat washers, and lock nut. Mount the passenger side of the differential to the Cognito differential mount with the 9/16" x 1 ¾" bolts, washers, and lock nuts.

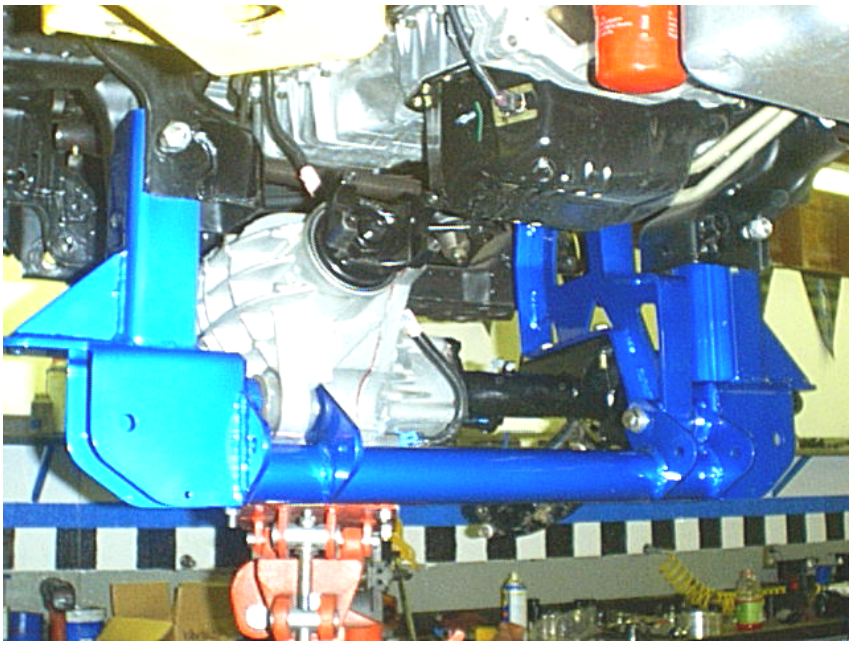

Figure 5. Differential installed.

24) From hardware package #9049, insert the two ½" 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 the Cognito front crossmember. Using the factory hardware from the front of the lower control arms, bolt the Cognito front crossmember to the frame. Be sure that the plate bolts fall through the holes on the Cognito front crossmember.

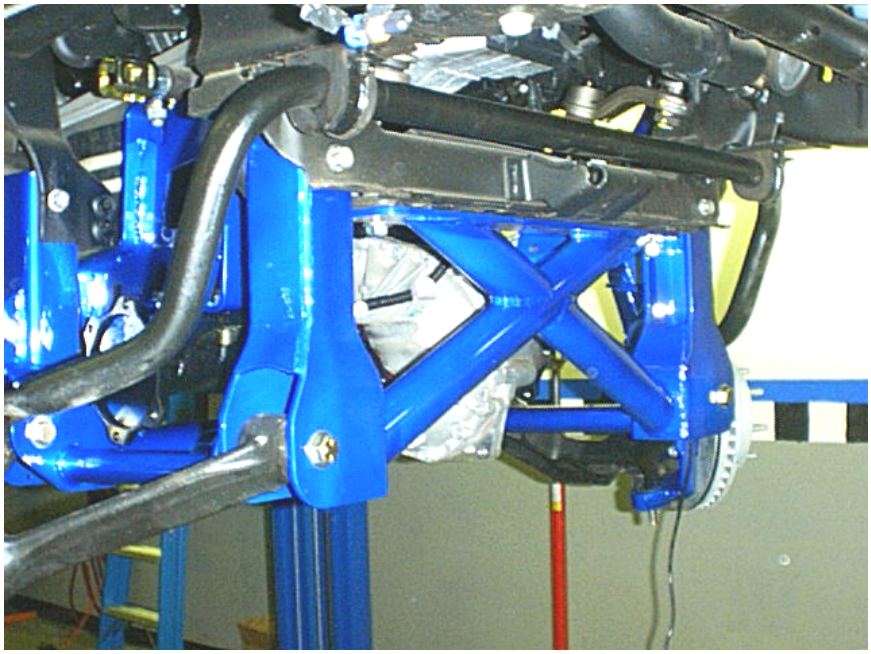

Figure 6. Front crossmember and sway bar installed. Also shown, sub-frame connector tubes

25) On 4WD models, mount the 8141 Cognito Driver Differential Support Bracket into the upper driver side factory differential mounting pocket with the factory nut and bolt. Use the other factory differential nut and bolt to fasten the top differential-mounting ear to the pocket on the Cognito front crossmember, which will fit inside of the pocket of the Cognito Driver Differential Support Bracket.

26) Use the ¼" hardware from package #9049 and mount the driver and passenger side Cognito sub-frame connector tubes appropriately, in between the lower pockets of the Cognito front and rear crossmembers.

27) All hardware installed up to this point may now be tightened. Use the torque specification chart at the end of this instruction set for hardware supplied by Cognito Motorsports. Refer to factory specifications when tightening factory hardware.

28) 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 10". Mount the ball joints on the bottom of the ball joint plate of the control arm if setting the kit 12". Refer to the Cognito Motorsports Upper Control Arm instruction sheet to finish installing them.

29) 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. Torque the bearing hubs to the spindles according to factory specifications at this time.

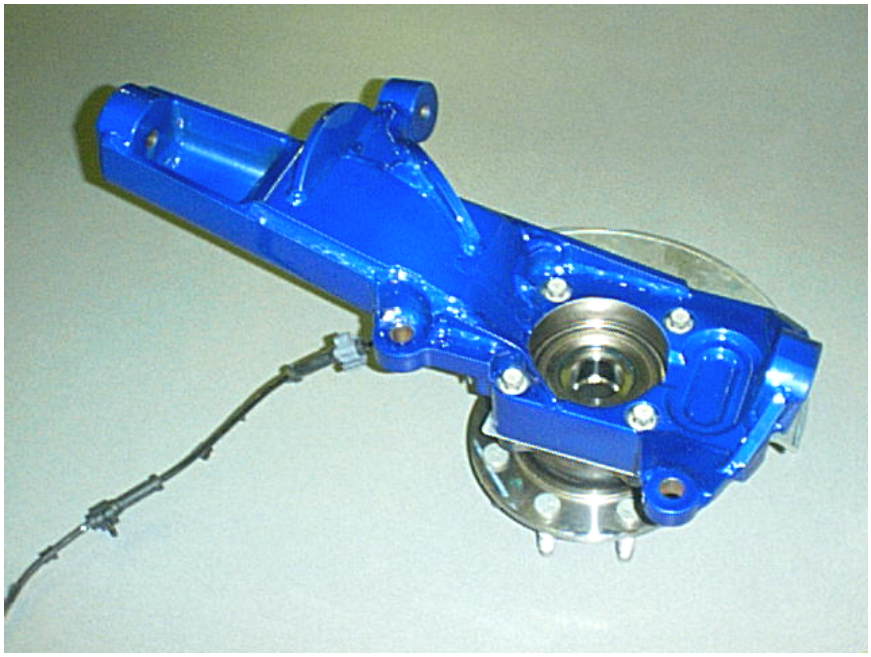

Figure 7. Spindle and bearing hub assembly.

30) Now hang the spindle assemblies on the appropriate sides of the vehicle from the ball joint of the upper control arm. Attach the appropriate lower control arms to the lower pockets of the Cognito front and rear crossmembers with hardware from package #9049, which also fastens the Cognito sub-frame connector tubes into place in-between the lower control arm mounting points. Then attach the lower control arm ball joint to the Cognito spindle. Tighten all ball joints to the Cognito spindles per factory specification at this time.

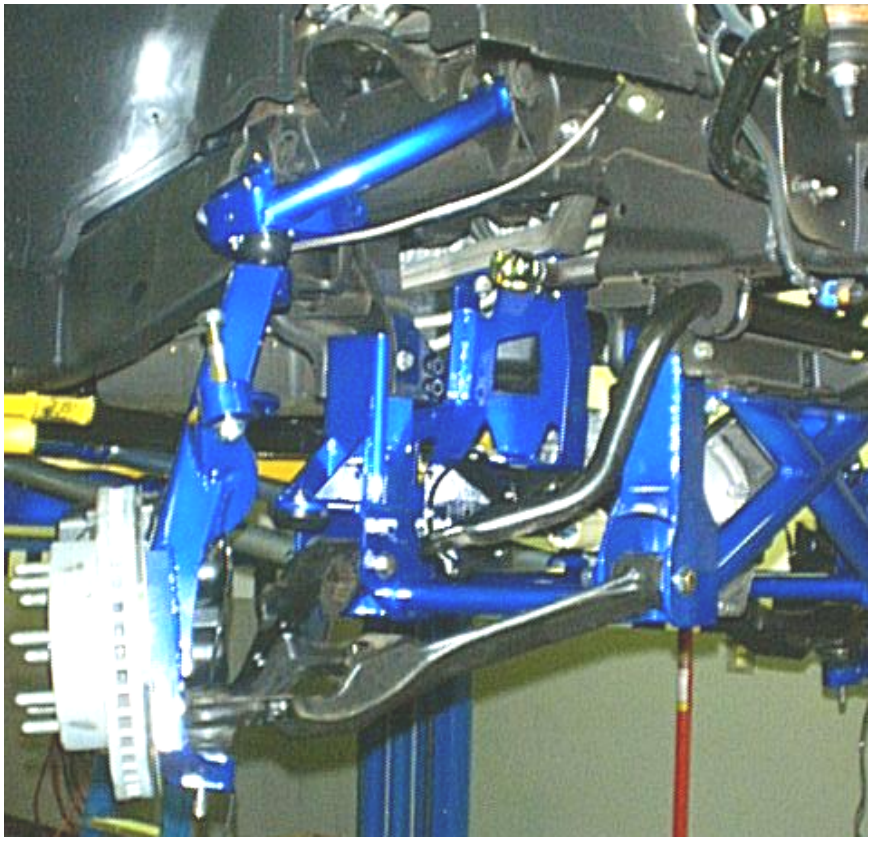

Figure 8. Spindle assembly and lower control arms installed.

31) 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 #9031, and the Cognito drive axle spacers in between. Fasten all hardware mentioned in this step to factory torque specifications.

32) Install the brake rotors and calipers on to the appropriate side Cognito spindle. Install Cognito brake line kit if purchased with suspension kit, tightening fittings to factory specifications.

33) Attach the Cognito anti-sway bar end links using hardware package #9036 and the 15" long sway bar end links. It may be necessary to compress the suspension with a floor jack. Use thread locker on the bolts and tighten the link bolt just until the bushings start to swell. DO NOT OVERTIGHTEN!

34) 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. Tighten all fasteners at this time.

35) Be sure the brake lines and ABS sensor wires are routed and restrained as to avoid any rubbing and binding.

36) From hardware package #9032, press the wide polyurethane bushings and sleeves into the ends of the Cognito compression strut tubes. Attach one end of the tubes to the Cognito rear crossmember with the 1/2" x 4 ½" bolts, washers and lock nuts. Run these bolts from the inside of the truck toward the outside.

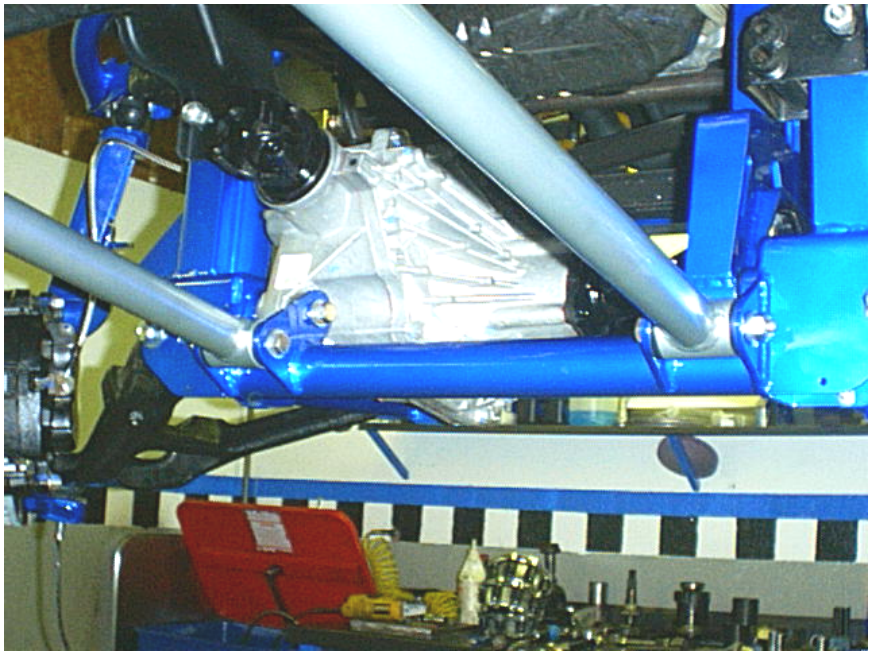

Figure 9. Compression struts mounted to the rear crossmember.

37) Attach the Cognito compression strut crossmember to the other end of the Cognito compression strut tubes with like hardware. Swing the Cognito compression strut crossmember up to the bottom of the frame rails and clamp to the frame. Make sure the crossmember is centered in the frame rails side to side, and drill four ½" holes using the compression strut crossmember mounting plates as a drill template.

Figure 10. Torsion bar drop mounted to compression struts, and to the bottom of the frame rails.

38) Press the narrow polyurethane bushings and sleeves into the Cognito torsion bar Brackets. Unclamp the Cognito Compression Strut cross member from the frame and drop it down slightly to Mount the Cognito Torsion Bar Brackets in place against the bottom of the frame rail, and then the Compression strut bracket against the Torsion bar bracket. Mount them to the frame with the ½" x 1 ½" bolts, washers, and nuts provided in Hardware Package 9032 and tighten the hardware at this time. See Figure 10.

39) Insert the factory torsion bar crossmember on to the Cognito torsion bar drops with the factory hardware. Tighten at this time. On 8-lug suburban, avalanche, 1500HD, and 2500 models, the factory torsion bar crossmember may need to be notched to fit in the Cognito torsion bar drops. Tighten at this time.

40) Insert the torsion bars into the lower control arms (be sure that you put them in the same way you took them out). Now place the torsion bar adjusters inside the torsion bar crossmember and slide the torsion bars into the crossmember and into the adjusters. Load the torsion bars and replace the adjuster nut. Unload bars and insert the adjuster screw into the nut and adjust to factory specifications.

41) If you are using single front shocks, install them into the factory location. Use factory hardware when necessary.

42) 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.

43) 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.

Some models may require front drive-line modification or replacement. Consult Cognito Motorsports about drive-line requirements. If you plan to drive faster than 20 MPH in 4WD, you MUST use the CV front driveshaft offered by Cognito Motorsports. Otherwise the stock front driveline will vibrate and damage the front differential and transfer case.

44) The pinion angle on the front differential is increased therefore ½ quart of approved gear oil needs to be added to the front differential to ensure the pinion bearings are oiled appropriately. You will not be able to use the oil level bolt on the front differential case because it is no longer at the same angle. The oil will have to be added through the plastic case vent by unscrewing the vent from the case, adding the oil, and then re-installing the vent. If having the front differential serviced ever, the oil level check hole will not be able to be used, be sure the service person knows this.

45) Install front wheels according to factory specifications. Please note the wheel requirement stated at the beginning of this instruction set.

46) 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 shim is recommended to reposition the differential pinion angle for driveline alignment. If the pinion is tilted, you must add 1 extra quart of gear oil to properly oil the pinion bearings. Use appropriate length u-bolts and torque them to 100 ft-lbs if they are 5/8". Then install rear wheels and shocks.

47) Have headlights readjusted to proper settings.

48) **Have the vehicle professionally aligned to the following specifications:**

10"-12" kit
Caster, +2 to +4 degrees with both sides within ½ degree of one another.
Camber, + .25 degrees.
Toe, 0" to 1/16" 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	70Ft.-Lbs
9/16" Bolts	95Ft.-Lbs
5/8" Bolts	100Ft.-Lbs

Torque all factory bolts to factory torque.

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 re-installation, 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.