Cognito 7”-9” Front Lift System for 2011-2019 GM 2500HD/3500HD 2WD/4WD Trucks

INSTALL INSTRUCTIONS:

Cognito 7”-9” Front Lift System for 2011-2019 GM 2500HD/3500HD 2WD/4WD Trucks



PARTS LIST FOR SKU: 110-70026

QUANTITY	PART #	DESCRIPTION
1	8278	GM HD 7” Front Crossmember
1	8279	GM HD 7” Rear Crossmember
1	8280	GM HD Sub-Frame Connector, Driver
1	8281	GM HD Sub-Frame Connector, Passenger

PARTS LIST FOR SKU: 110-70027

QUANTITY	PART #	DESCRIPTION
1	8273	GM HD 7” Spindle, Driver
1	8274	GM HD 7” Spindle, Passenger

PARTS LIST FOR SKU: 110-70029

QUANTITY	PART #	DESCRIPTION
1	1631	GM HD 7” Differential Mount, Driver
1	8282	GM HD 7” Differential Mount, Passenger
2	5499	GM HD Axle Spacer, 1.2”
1	8241	Spacer, 1.5” OD x 0.65” ID x 0.625”
1	HARDWARE-M12X1.75X50	M12-1.75x50mm Class 10.9 Yellow Zinc Cap Screw
1	**HP9121**	Front Differential Mount Hardware Pack
1	**HP9122**	7” CV Axle Spacer Hardware Pack

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: 110-70117		
QUANTITY	PART #	DESCRIPTION
1	1630	GM HD 7” Skid Plate
2	1633	GM HD Compression Strut Frame Bracket
2	5501	Non-Torsion Drop Bracket Mandrel
2	8283	GM HD 7”/10” Compression Strut
1	8284	GM HD 7” Non-Torsion Drop Bracket, Driver
1	8285	GM HD 7” Non-Torsion Drop Bracket, Passenger
1	8287	GM HD 7” NTDB Frame Bump, Driver
1	8288	GM HD 7” NTDB Frame Bump, Passenger
1	EBEK-1	Emergency Brake Cable Extension Kit
1	110-90255	GM HD 7” Front Sway Bar End Link Kit
1	**HP9040**	Compression Strut Hardware Pack
1	**HP9081**	Skid Plate Hardware Pack
1	**HP9118**	GM HD Non-Torsion Drop Bracket Hardware Pack
1	**HP9123**	Subframe Hardware Pack

PARTS LIST FOR SKU: HP9121		
QTY	PART #	DESCRIPTION
2	HARDWARE-M12X1.75X30	M12 - 1.75 X 30mm Yellow Zinc Cap Screw
1	HARDWARE-M12X1.75X50	M12 - 1.75 X 50mm Yellow Zinc Cap Screw
3	HARDWARE-M12-FLATWASHER	M12 Flat Washer
3	HARDWARE-M12-LOCKWASHER	M12 Split Washer
2	HARDWARE-15260	9/16” – 12 X 1.75” Yellow Zinc Cap Screw
4	HARDWARE-33088	9/16” Flat Washer
2	HARDWARE-37270	9/16” - 12 Lock Nut
4	HARDWARE-15217	1/2" – 13 X 3.5” Yellow Zinc Cap Screw
8	HARDWARE-33086	1/2" Flat Washer
4	HARDWARE-37268	1/2” - 13 Lock Nut
1	5018	Crush Sleeve
2	POLY-BUSHING-2130G	Polyurethane Bushing

PARTS LIST FOR SKU: HP9122		
QTY	PART #	DESCRIPTION
16	HARDWARE-0513991	M10-1.5x55 Class 10.9 Yellow Zinc Cap Screw
16	HARDWARE-33082	3/8” Flat Washer

PARTS LIST FOR SKU: HP9040		
QTY	PART #	DESCRIPTION
8	HARDWARE-33086	1/2" SAE Zinc Flat Washer
4	HARDWARE-37268	1/2"-13 Grade C Lock Nut
4	HARDWARE-15221	1/2"-13 X 4.5" Grade 8 Yellow Zinc Hex Head Cap Screw
4	5012	Crush Sleeve
8	POLY-BUSHING-2130G	Polyurethane Bushing

PARTS LIST FOR SKU: HP9081		
QTY	PART #	DESCRIPTION
8	HARDWARE-33082	3/8" SAE Zinc Flat Washer
4	HARDWARE-37264	3/8"-16 Grade C Lock Nut
4	HARDWARE-15107	3/8"-16 X 1-1/4" Grade 8 Yellow Zinc Hex Head Cap Screw

PARTS LIST FOR SKU: HP9118		
QTY	PART #	DESCRIPTION
1	5503	Rivet Nut Installation Tool
4	HARDWARE-RIVET-NUT-1/4-20	1/4-20 Rivet Nut
4	HARDWARE-15005	1/4"-20 X 1" Grade 8 Yellow Zinc Hex Head Cap Screw
4	HARDWARE-33618	1/4" Zinc Split Washer
4	HARDWARE-33078	1/4" SAE Zinc Flat Washer
2	HARDWARE-1/2-13X5-G8HB	1/2”-13 X 5” Grade 8 Yellow Zinc Hex Head Cap Screw
8	HARDWARE-33086	1/2" SAE Zinc Flat Washer
4	HARDWARE-37268	1/2"-13 Grade C Zinc Lock Nut
2	HARDWARE-15210	1/2”-13 X 1.75” Grade 8 Yellow Zinc Hex Head Cap Screw
2	POLY-BUMPSTOP-M22978-BK-01	70A Polyurethane Progressive Bump Stop Black
2	HARDWARE-33082	3/8" SAE Zinc Flat Washer
2	HARDWARE-33622	3/8" Split Washer
2	HARDWARE-36106	3/8"-16 Grade A Zinc Hex Nut

PARTS LIST FOR SKU: HP9123		
QTY	PART #	DESCRIPTION
8	HARDWARE-M18-FLATWASHER	M18 DIN 125 Zinc Steel Flat Washer
4	HARDWARE-M18X2.5-LOCKNUT	M18-2.5 Gr 10 Zinc Steel Hex Nut Top Lock
2	HARDWARE-M18X2.5X120	M18-2.5 X 120mm DIN 931 Class 10.9 Yellow Zinc Hex Head Cap Screw
2	HARDWARE-M18X2.5X140	M18-2.5 X 140mm DIN 931 Class 10.9 Yellow Zinc Hex Head Cap Screw
4	HARDWARE-15107	3/8"-16 X 1-1/4" Grade 8 Yellow Zinc Hex Head Cap Screw
8	HARDWARE-33082	3/8" SAE Zinc Flat Washer
4	HARDWARE-37264	3/8"-16 Grade C Lock Nut
2	HARDWARE-15005	1/4"-20 X 1" SAE Grade 8 Yellow Zinc Hex Head Cap Screw
4	HARDWARE-33078	1/4" SAE Zinc Flat Washer
2	HARDWARE-37260	1/4”-20 Grade C Zinc Top Lock Nut

REQUIREMENTS

- 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.
- Trimming of inner fender well and bottom rear of steel fender may be required.
- Cutting of the service perch and OEM crossmember is required.
- Only the shocks supplied in this kit can be used with this lift package.
- Front-end alignment will be required after completion.
- Drive line modification may be necessary.

TECH NOTES

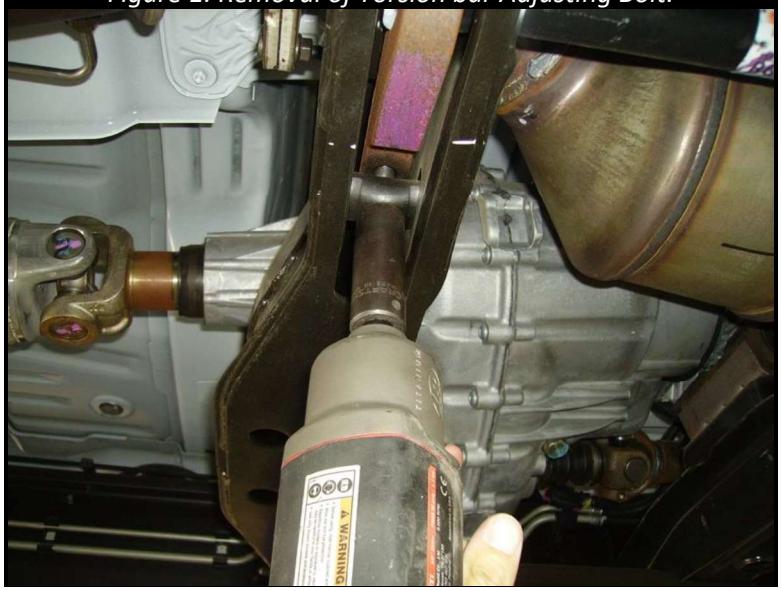
- Read instructions carefully and study the pictures (if included) before attempting installation.
- If this product was purchased as part of a kit each kit, and options to kits, are packaged separately. Therefore, installation procedures are covered in separate instructions. Familiarize yourself with 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.
- Torsion bar loading tool is required for this installation.
- 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.
- It is recommended that all cut areas be smoothed to get rid of any sharp edges and spray painted to prevent corrosion.

INSTALLATION

1. **Always work on a properly supported vehicle.** With the vehicle on a car hoist, lift the vehicle off the ground and remove the front wheels.

2. Remove torsion bar adjusting screw, Figure 1.

Figure 1: Removal of Torsion bar Adjusting Bolt.



3. Slide torsion bar forward into lower control arm, this will allow the torsion bar adjuster keyway to fall out. Repeat this to the other side.

4. Remove the factory sway bar end links, which connect the sway bar to the lower control arms, from the truck and discard.

5. Skip this step for 2WD vehicle. then remove the hub cover and the axle nut and washer using a 1.5/16" socket as seen in Figure 2. Unbolt inner cv axle flange from differential then remove cv axles from truck.

Figure 2: Hub Disassembly.

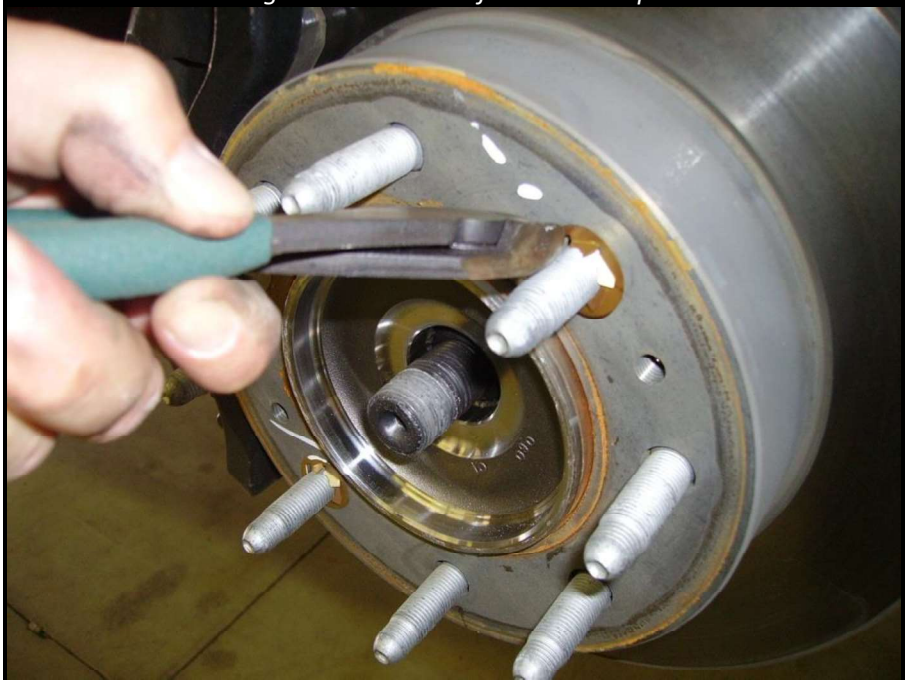


6. Unbolt factory front shocks from truck and retain the lower mounting hardware.

7. 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 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.

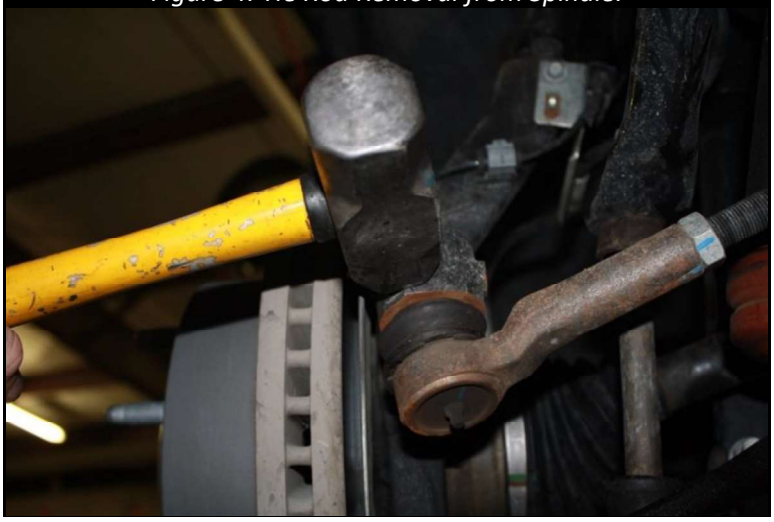
8. Unbolt the brake line bracket from the spindle and unfasten the ABS sensor line from the brake line bracket. Remove the brake calipers by removing the 2 bolts fastening the caliper to the spindle; it is easiest to hang the caliper from the front bumper bracket with a bungee cord or something of the like. Now remove the clips from the wheel studs and discard, and then remove the brake rotors by first removing the flat head torx screw. 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 3.

Figure 3: Removal of Hub Stud Clips



9. 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 4.

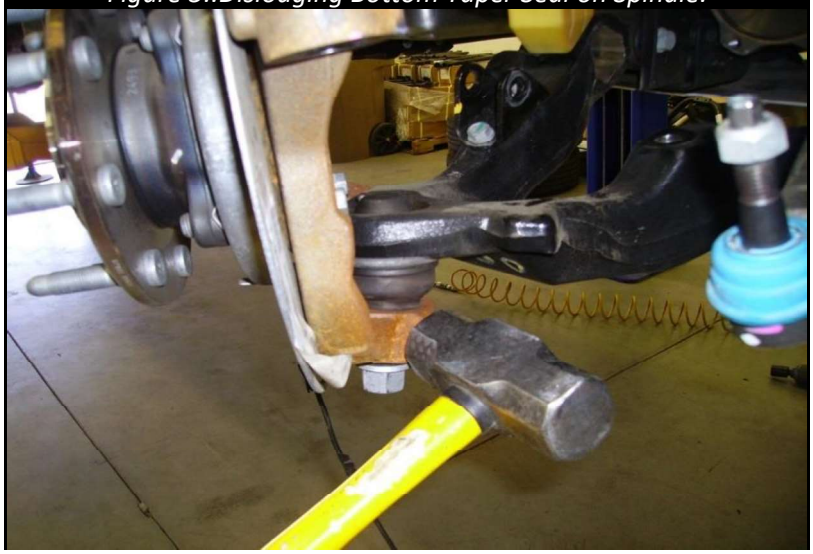
Figure 4: Tie Rod Removal from Spindle.



10. Your vehicle is equipped with an ABS brake system. Unplug the wire sensor from the wire harness terminal located on the side of the frame rail.

11. 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 5. Remove the lower control arms from the vehicle. along with the torsion bars. 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 5:.Dislodging Bottom Taper Seal on Spindle.



12. 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.

13. 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.

14. **Skip this step for 2WD vehicles.** Remove front differential skid plate and discard, if so equipped. It is steel and located directly under the front differential.

15. Remove the black plastic air dam from underneath the radiator; this will be re-installed.

16. **Skip this step for 2WD vehicles.** On 4WD models, unplug the black rubber vent tube from the driver side top of the differential, and unplug the wire harness from the front passenger side of the differential. Unbolt the front drive shaft from the differential yolk.

17. **Skip this step for 2WD vehicles.** unbolt the factory rear cross member from the frame and retain for future use if you must ever return the truck to stock suspension. this cross member is located just underneath the pinion of the front differential.

18. **Skip this step for 2WD vehicle**s. Support the front differential with a transmission jack to prepare to lower it from the frame It is best to use a bracket on a transmission jack that will bolt or clamp to the front differential so it will stay fastened to the jack.

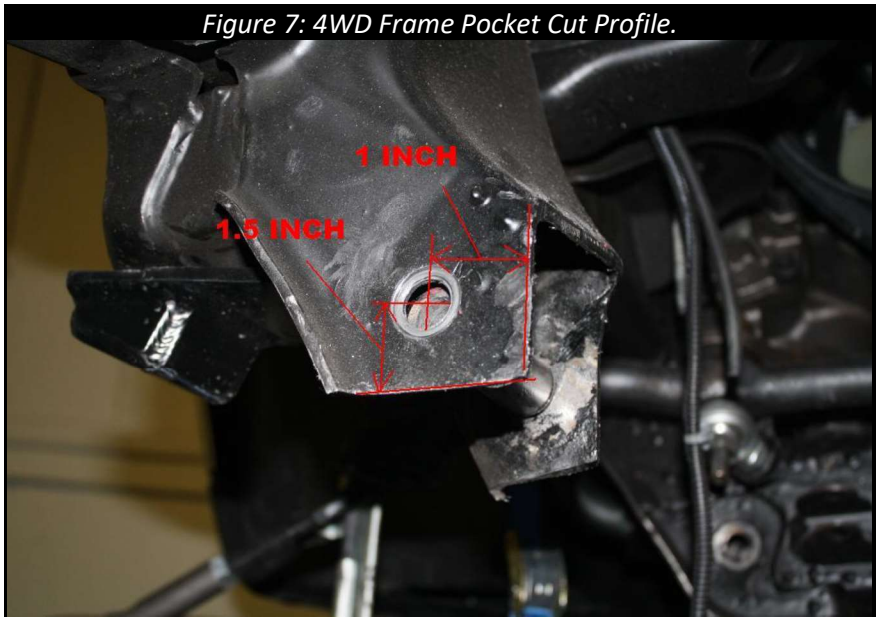
19. **Skip this step for 2WD vehicles**. Loosen, but do not remove the two nuts from the studs on the passenger differential mount. then unbolt the driver side differential mount from the frame, leaving the differential mount on the differential. the remove the 2 nuts from the passenger side and lower the differential out of the frame. See Figure 6.

Figure 6: Differential Removal.



20. **Skip this step for 2WD vehicles.** Now using a reciprocating saw, cut the back of the driver side lower control arm rear frame pocket off as shown in Figure 7. 1" from center of hole horizontally, and 1.5" from center of hole vertically. Then do the same thing on the passenger side lower control arm frame pocket. This allows room for the differential to drop down without hitting the frame.

Figure 7: 4WD Frame Pocket Cut Profile.



21. 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.

22. 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, although at the end do not re-install the steel skid plate under the differential if it is 4WD, since it is not used on the suspension lift. Re-install the previously removed plastic air dam/skid plate that belongs under the radiator area.

23. **Skip this step for 2WD vehicles.** Unbolt the factory driver side differential mount from the differential. Bolt the 1631 Cognito driver differential mount to the differential and then the stock mount to the Cognito mount, using Hardware package 9121, torque bolts to 50 ft.lbs. Use Spacer 8241 between 1631 and differential. Use HARDWARE-M12X1.75X50 with spacer. See Figure 8. ***Note:*** *If your kit includes spacer 8241, there will be 1 leftover bolt. Older versions of this kit do not include spacer 8241.*

Figure 8: Cognito Driver Differential Mount Assembled.



24. **Skip this step for 2WD vehicles.** From hardware pack 9121, press the 2 poly bushings and the steel crush sleeve into the 8282 Cognito passenger differential mount, then bolt it onto the front differential with the 9/16" hardware from hardware package 9121, as shown in Figure 9. The differential has slotted holes, center the Cognito bracket onto the slotted holes and torque fasteners to 60 ft.lbs.

Figure 9: Cognito Passenger Differential Mount Assembled.



25. **Skip this step for 2WD vehicles.** Raise the front differential back up into the frame and fasten the passenger Cognito differential mount to the factory passenger differential mount with the factory hardware and torque to 60 ft.lbs. Fasten the factory driver differential mount to the frame with the factory hardware and torque to 60 ft.lbs. Reconnect the rubber vent and the wiring harness. Bolt the driveline back to the front differential yolk, tighten bolts to 20 ft.lbs.

26. The rear foam bump stop and retainer must be cut from the frame. Do this by cutting the stitch welds and knocking it off the frame, and then grind the welds off flush with the frame as shown in Figure 10. There is a hole left that was concentric with the bump stop retainer, pointed at in Figure 10, drill that hole out with 25/64" drill bit, it will only cut a tiny bit of material if any.

27. Install a rivet nut into the hole shown in Figure 10. Do this by opening hardware package 9118, obtain a 1/4" bolt, rivet nut and the hex shaped installation tool. place the tool on the bolt and then thread the rivet nut onto the bolt, flange side first, all the way till it touches the installation tool as shown in Figure 11. Now push the rivet nut through the hole in the frame and use a 3/4" wrench to hold the installation tool from turning while you turn the bolt with a 7/16" wrench or socket, do not use air tools for this, only hand tools. Turn the bolt about 4 full turns until you feel it get tight, this means the rivet nut has crushed and is riveted to the hole in the frame. now back out the bolt and retain the installation tool for the next rivet nut installation.

Figure 10: Rivet Nut Installation Location



Figure 11: Rivet Nut Installation Tool



28. Loosely fasten the 8279 Cognito rear cross member in place using the factory bolts, no nuts needed at this time. If 4wd Note that the previously installed passenger differential mount ear will fit in between the tabs on top of the 8279 rear cross member, go ahead and install the 1/2x3.1/2” hardware at this time to fasten the passenger differential mount to the rear cross member.

29. Locate the 8287 driver frame bump stop bracket. The pivot tube on this bracket will be the crush sleeve that fits inside of the 8279 rear cross member, that the mounting bolt will pass thru. Use a jack or have a buddy hold the rear cross member up while you remove the driver side bolt holding the 8279 cross member in place, insert the pivot tube of the 8287 bracket in between the ears of the 8279 cross member and then re-insert the bolt through the frame capturing the 8279 and 8287.

30. Swing the 8287 bracket up against the frame and secure it with the 1/4" bolt temporarily into the rivet nut that was just installed. Using the hole in the front of the 8287 as a drill template, drill a 1/4" hole through the frame. Now remove the 1/4" bolt and let the 8287 swing down out of the way. The 1/4" hole that was just drilled must now be drilled out to 25/64". Now install a nut rivet into this hole.

31. Insert a 1/4" lock washer then a 1/4" flat washer over the 1/4"x1" bolt and fasten the 8287 bracket to the frame into the 2 rivet nuts just installed, torque to 11 ft.lbs.

32. Now follow the previous steps and install the 8288 Cognito passenger bump stop bracket.

33. Now tighten the rear lower control arm bolts to 90 ft.lbs using the factory hardware.

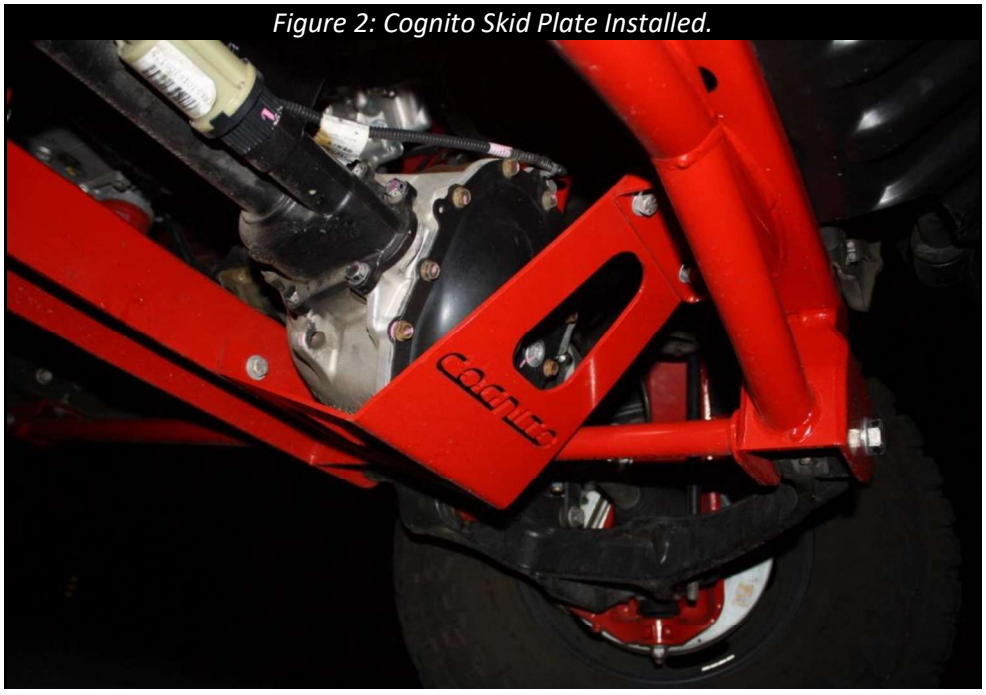
34. Bolt the 8278 Cognito front cross member to the frame with the factory hardware, do not tighten yet, future torque is 90 ft/lbs.

35. Locate the 1/4" hardware from HP9123. Loosely fasten the 8280 driver sub frame connector to the Cognito rear cross member with the 1/4" hardware through the clocking hole of the rear cross member to the clocking hole of the rear of the sub frame connector. This will be sure the sub frame connector is aligned properly once the lower control arms are fastened to the Cognito sub frame. Mount the 8281 passenger side sub frame connector in the same fashion.

36. Now torque the 8278 front cross member mounting bolts to the frame, 90 ft/lbs.

37. From hardware pack 9081, fasten the 1630 skid plate to the 8278 front cross member, on the top side of the skid plate bracket that is part of the cross member. Then fasten the rear of the skid plate to the rear cross member, tighten all 3/8" hardware at this time to 19 ft.lbs. See Figure 12.

Figure 2: Cognito Skid Plate Installed.



38. With the driver lower control arm on a bench or the floor, insert the 5501 mandrel through the hex hole in the control arm. then attach the 8284 Cognito driver non torsion bracket to the mandrel with the 1/2" x 4.1/2" hardware from package 9118, tighten to 60 ft.lbs. See Figure 13.

Figure 13: Non-Torsion drop braclet installed on lower control arm. Passenger side shown.



39. Using the hole in the 8284 as a drill template, drill a 1/2" hole thru the pad on the lower control arm. Fasten with 1/2" x 1.3/4" hardware from package 9118, tighten to 60 ft.lbs. bolt the polyurethane bump stop to the bracket with a 3/8" flat washer, then 3/8" lock washer, then a 3/8" nut, tighten to 20 ft.lbs.

40. Install the 8285, Cognito passenger non torsion drop bracket to the passenger lower control arm using the previous steps.

41. Bolt the lower control arms to the Cognito front and rear cross member using the 18mm hardware from hardware package 9123, run the bolts from front to back. Do not tighten yet, future torque on these will be 100 ft.lbs. Make sure the bolts pass through the previously installed 8280 and 8281 sub frame connectors.

42. If your kit included the Cognito upper control arms, install them now referring to the Cognito Motorsports Upper Control Arm instruction sheet included in that kit.

43. Disassemble the bearing hub assembly and brake rotor shield from each of the factory spindles. 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 with the factory bolts to 90 ft/lbs.

44. Be sure there is no dirt, powder coat, or other debris in the 3 tapered holes on each spindle. If there is, clean it or scrape it out now. Hang the spindle assemblies on the appropriate sides of the vehicle from the ball joint of the upper control arm. Attach the lower control arm ball joint to the Cognito spindle. Tighten all ball joints to the Cognito spindles, 100 ft/lbs for the lower, and very tight with a boxed end wrench on the upper approx. 50 ft/lb.

45. All hardware installed up to this point may now be tightened.

46. 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.

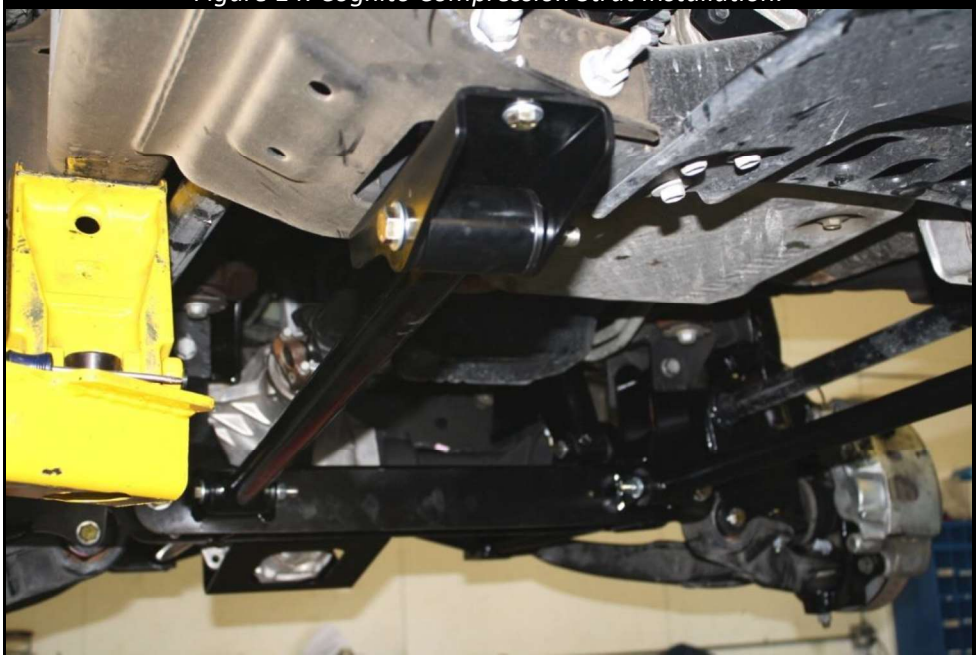
47. Locate the 1633 compression strut brackets, the 8283 compression struts, and the HP9040 hardware package. Use WD40 or similar lubricant to install the polyurethane bushings into the ends of the 8283 compression struts, and then the steel crush sleeves into the poly bushings.

48. Loosely bolt the 1633 bracket to one end of the 8283 compression strut and the other end of the compression strut to the tabs on the rear of the 8279 Cognito rear cross member. Note the orientation of the bracket as shown in Figure 14, the notch end of the bracket points toward the front of the truck. Swing the compression strut bracket up to the frame and be sure the mounting holes of the bracket line up appropriately to the factory frame cross member as shown in Figure 14. If it does not line up, try rotating the compression strut tube 180 degrees and re-check alignment till the proper orientation is obtained.

49. Use the 1633 bracket rear hole as a drill template and drill a 3/8" hole into the flange of the factory cross member. Bolt the bracket to the flange with the 3/8" hardware provided, as shown in Figure 14. Remove the bolt holding the compression strut tube to the compression strut bracket, let the tube swing down and drill the front 3/8" hole into the factory cross member. Fasten with the remaining 3/8" hardware, tightening to 40 ft-lbs of torque.

50. Now fasten the compression strut tube to the bracket and the Cognito rear cross member. Tighten all 1/2" diameter hardware to 60 ft-lbs.

Figure 14: Cognito Compression Strut Installation.



51. Use a reciprocating saw to cut both the front and back walls of the torsion bar holes in the transmission crossmember. The cut should start at the bottom of the frame rail an extend 3.00" downward. See figure 15. ***Note:*** *Due to the nature of the non-torsion bar drop kit, the torsion bar will swing in a larger arc than stock, causing the torsion bar to rub on the transmission crossmember. Failure to cut both the front and back wall of the transmission crossmember will result in suspension issues such as noise, torsion bar damage, frame damage, etc.*

Figure 15: Cognito Compression Strut Installation.



52. From the front of the truck, slide the torsion bars into the hex holes of the Cognito brackets as seen in Figure 16.

Figure 16: Torsion bar installation.



53. Install either the Cognito torsion bar keys if purchased or the OEM torsion bar keys into the torsion bar crossmember, but do not load the torsion bar.

54. If using the stock torsion bar adjuster keys, they must have a modification so that the adjuster bolt does not slip off of the adjuster key. If you have purchased Cognito aftermarket torsion bar adjuster keys you will see that this feature is already on these parts. See Figures 17-19 to add the pocket to the stock keyways on the vehicle.

Figure 17: Stock Torsion Key Hole-Punch Locations.

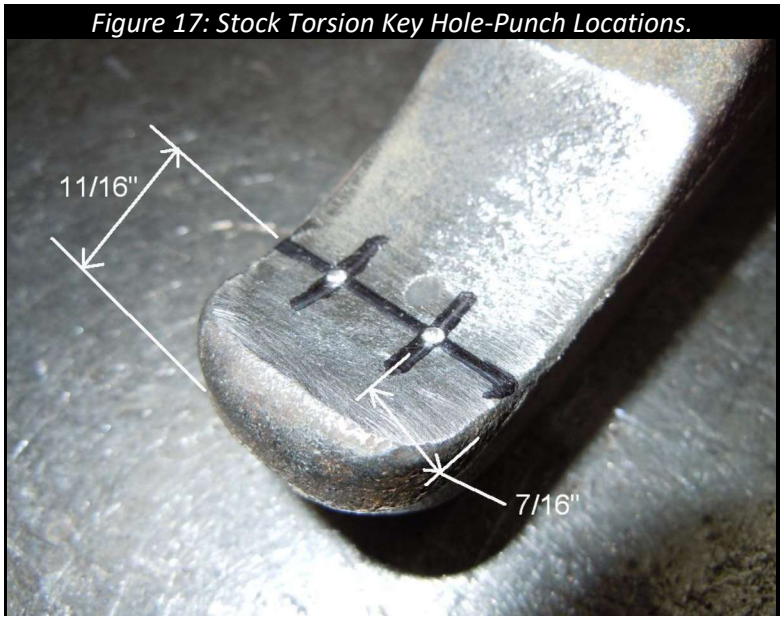


Figure 18: Stock Torsion Key Counter-Sinks 1/8" Depth.



Figure 19: Stock Torsion Key Slotted Pocket Formed.



55. Use a jack to lift the suspension all the way up until the polyurethane bump stop almost contacts the Cognito frame bump. **Do not lift any higher than this. Further lifting may cause the truck to shift or lift on the vehicle hoist, causing the vehicle to fall.** Push the torsion bar all the way back into place with the torsion keyway in place inside the torsion bar cross member. The torsion bar should pass all the way through the torsion key. Once the torsion bar and torsion key are in place you can let the jack down and the suspension droop.

56. On 4WD models, install the stud/spindle end of the front drive axles into the Cognito spindles and fasten with factory hardware. First making sure all mating surfaces are clean, mount the differential end of the drive axles to the differential with the 5499 spacers in between via hardware from package #9122 using a drop of thread locker on the first threads of each bolt. Fasten all hardware mentioned in this step, axle nut to 120 ft/lbs. and spacer bolts to 40 ft/lbs.

57. 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 to 50 ft.lbs. Make sure all fasteners are tight at this time.

58. Install the SBELKHD-1007 sway bar end link kit now per the instructions included in that kit.

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

60. Load the torsion bars and replace the adjuster nut. Unload bars and insert the adjuster screw into the nut and adjust to factory specifications.

61. Install the front shocks, if you are using the Cognito Upper Control Arm Kit then you should be using the shock extender kit SEK-2011-8-1 to take advantage of the extra 2” wheel travel available. If you are using the stock upper control arms, then just using the Cognito spec Fox shocks will net you an extra inch of down travel over stock. Do not use any shock spacer if not using the Cognito upper arm kit.

62. At this point, inspect all hardware to ensure everything is properly tightened.

63. Some models may require front drive-line modification or replacement. Consult Cognito Motorsports about drive-line requirements. If you plan to drive faster than 30 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.

64. The front pinion angle is changed on 4WD models, check service manual and add 1/2 extra qt of fluid to the front differential to ensure proper fluid level. The rear differential pinion angle may also be changed if an axle shim or tapered lift block is used. If so, add 1 extra qt of fluid to the rear differential, see service manual.

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

66. Rear lift: 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. Use appropriate length u-bolts and torque them to 110 ft-lbs if they are 3/4”. If block and u-bolt was purchased refer to those instructions to install now. If the emergency brake cable is too tight due to the lift, the included EBEK-1 emergency brake cable extension kit must be installed now, please refer to those instructions. If the e-brake is long enough, no need to install the extension kit. Install rear shocks, and then install rear wheels and shocks.

67. If included, install rear brake lines. If the rear axle has wheel speed sensors and your package included WSE-R-1, this is to extend the sensor wires. Extend the sensor wires and route them along with the brake lines for the cleanest installation.

68. Adjust the torsion bars so that the front ride height is appropriate, and so that the truck is even left to right side. Do not over crank the torsion bars to try and gain too much height. Always lift the front of the truck so the wheels droop down before turning the torsion adjuster bolt tighter. Then drive the truck briefly to settle the height before measuring.

69. Setting the ride height: Record measurement (A) in chart below. Subtract 3" from (A) to determine maximum ride height (B). This will insure the proper amount of available down travel. **NOTE:** Maximum ride height is not required if you reach desired ride height below measurement (B). It is a good idea to record your final ride height after adjustments (C).

Figure 20: Measure Distance Between Top of Tire to Bottom of Fender.



	Record Measurement
Full Drop Out (A)	
Subtract 3"	**-3"**
Max Ride Height (B)	
Finished Ride Height (C)	

70. Have the headlights readjusted to proper settings.

71. Have the vehicle's front end professionally aligned using these front-end alignment guidelines:

Some Cognito upper control arms have added caster built into them to increase drivability performance, therefore it's important to be sure the correct control arm is installed on the correct side of the vehicle. It's also important to make your alignment shop aware that if caster is high, that is the intention by design.

Cross caster is important in making your vehicle track straight down the road. Most roads have crown to them, high in the middle for water runoff. This crown will make your vehicle want to pull to the right. Vehicles with stock tires on them have a narrow contact patch on the ground and are not as affected as a vehicle having larger wider tires. With larger wider tires it's important to have cross caster proper in order for the vehicle to track straight on these roads. Trucks with dual rear wheels have more tire on the ground and require more cross caster. The length of the wheelbase will also affect cross caster needed.

Generally, crew cab short and long bed trucks like .8 degrees of cross caster. Dual rear wheel trucks like .9-1.0 degrees of cross caster. Your area might have roads that are crowned more or less than average therefore these numbers may need to change, and your alignment shop should understand this. If your alignment tech is stating they can't align the truck, that typically means they can't get the alignment to OEM spec, and that's fine because your vehicle is no longer OEM. A good tech will understand this and the numbers and let caster run slightly out of OEM spec (Caster should always be above 2 degrees positive) while maintaining cross caster needed for the vehicle and roads so you enjoy your vehicle with aftermarket Cognito parts and your driving experience.

72. Have the vehicle professionally aligned to the following specifications:
Caster, +2.0 to +4.5 degrees with a caster split .9 degrees higher on the passenger side.
Camber, 0 to + .2 degrees.
Toe settings, .1 degree toe in on each side.

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.