Cognito Standard Upper Control Arm Kit for 2019-2024 GMC Sierra 1500, Chevrolet Silverado 1500, 2WD/4WD Trucks

INSTALL INSTRUCTIONS:

Cognito Standard Upper Control Arm Kit for 2019-2024 GMC Sierra 1500, Chevrolet Silverado 1500, 2WD/4WD Trucks
SKU: 110-91207

PARTS LIST FOR SKU: 110-91207

QUANTITY	PART #	DESCRIPTION
1	8693	2019 GM 1500 Tubular Bolt-In Arm, Driver
1	8694	2019 GM 1500 Tubular Bolt-In Arm, Passenger
4	6468	UCA Bushing Thrust Washer
4	6878	Pivot Bushing Assembly
1	**HP9274**	Ball Joint Installation Hardware - Includes hardware for 2 ball joints.
1	**HP9327**	Self-tapping screw hardware pack
2	90722	Ball joint, bolt in, application for Cognito upper arm, 2019 GM 1500

PARTS LIST FOR SKU: HP9274

QUANTITY	PART #	DESCRIPTION
16	HARDWARE-33080	5/16” SAE Zinc Flat Washer
8	HARDWARE-37262	5/16”-18 Grade C Zinc Top Lock Nut
8	HARDWARE-15057	5/16”-18 X 1-1/4" Grade 8 Yellow Zinc Hex Head Cap Screw

PARTS LIST FOR SKU: HP9327

QUANTITY	PART #	DESCRIPTION
2	HARDWARE-M6X1.0X10-HEX	M6-1.0 Self-Tap Screw

WARNING

The upper control arm is not designed to function as a droop limiter. Ball joint failure may occur if the control arm is installed with an incompatible shock. The maximum shock length depends on each lift specification, but in all installations, it is critical that the control arm ball joint does not bind or over articulate.

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

INTRODUCTION

The Cognito Motorsports Standard Upper Control Arm Kit is a direct replacement of the factory upper control arms and can also be used with a Cognito spindle/knuckle replacement lift kit. This kit is built with a modified ball joint angle to extend travel limitations of the ball joint. This design also eliminates the need to cut the service perch off the truck. Upgrade your stock upper control arms with Cognito for better performance, style, and function. Bolt in, maintenance free, high angle, heavy duty ball joints are included as well as new maintenance free pivot bushings. The allowable droop travel is also improved with the design of these arms. Ample droop travel is required for good ride quality and allows all suspension components to last and work properly.

This kit is fully compatible with the Adaptive Ride Control (ARC) system standard on GMC Denali and Chevrolet High Country trims. The ARC system uses sensors to read suspension height and dynamically adjust shock valving to improve ride quality. Some steps in this install instruction only pertain to trucks equipped with the ARC system. Installations on trucks without the ARC system may safely ignore those steps.

TECH NOTES

- **The upper control arm is not designed to be the droop limiter, ball joint failure will occur if the upper arm is used as the droop limiter. A shock or limit strap is required to be the limiter. It is required that the proper length shock from Cognito or a limit strap kit from Cognito be installed to prevent failure which could cause an accident and serious injury.**
- Trimming of front bumper trim may be necessary based off tire size.
- Front-end alignment will be required after completion.
- Read instructions carefully and study the pictures (if included) before attempting installation.
- If this product was purchased as part of a bundle/package. Familiarize yourself with each set of instructions included with the bundle/package before beginning.
- Check the parts and hardware packages against the parts list to assure that your kit is complete before starting.

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.

INSTALLATION

1. **It is critical that the correct length shock is used**, using a shock that is too long will cause the upper ball joint to bind and break. **For this kit, when used in a stock-height or leveling application, the maximum shock length that can be used is 23.7" from the center of the lower eyelet to the mounting face at the top of the strut hat. Any spacers added to the shock must be included in this measurement** (see figure 1). If this UCA kit is used with any other parts then specified, warranty will be void on this arm kit, and damage may occur to arms, ball joints, tie rods, cv axles and possibly more.

Figure 1: Shock Length Measurement

2. Rack the vehicle and lift it off the ground, or if no hoist is available then jack the front of truck off the ground and support properly with jack stands. Remove the front tires and set them as side.
   - ***NEVER WORK ON AN UNSUPPORTED VEHICLE.***

3. **For ARC equipped models (if not equiped, skip this step):** remove the ARC sensor link and ball stud. See figure 2.

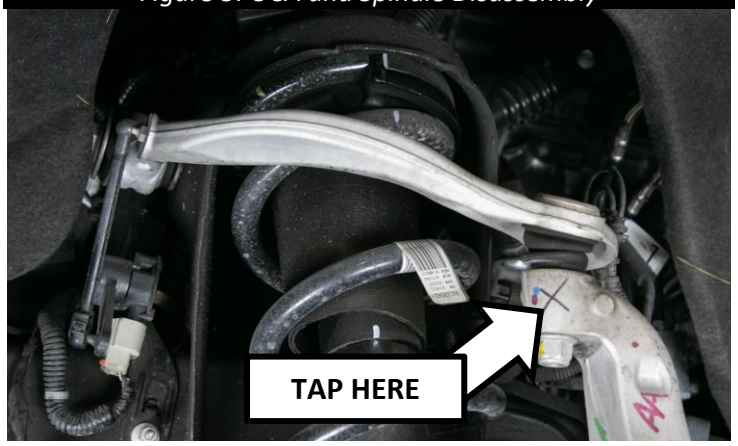
   - Use a pair of screwdrivers or similarly shaped tools to pry against both sides of the upper ball and socket joint to disengage the socket from the ball. Be careful in removing the link, it is plastic and susceptible to damage. Let the ARC link hang free and out of the way.

   - Remove the sensor link ball stud from the stock arms. Retain the ball studs for reuse on Cognito upper arms.

Figure 2: ARC Link

4. Remove the factory upper control arms by supporting the lower control arms with a floor jack or in a safe fashion. Loosen the ball joint nut of the upper control arm until you can spin the nut with your fingers, but do not fully remove it. Use a pickle fork to separate the ball joint from the spindle; or tap the side of the spindle next to the ball joint stud with a hammer (see figure 3). When the tapered seat of the ball joint breaks loose, you may then remove the ball joint nut, and separate the factory upper control arms from the spindles.

Figure 3: UCA and Spindle Disassembly



5. Use a 21mm wrench to remove the factory bolts that connect the control arm to the frame, retain them for future use. Place them aside in order so they can be re-installed in the same place they came off.

6. Bolt the ball joint to the bottom of the control arm as shown in figure 4 using the included 5/16” hardware. You can determine which side of the control arm is the bottom and which is top by the logo. Torque to **22 Ft.-lbs.**

Figure 4: Bolt-in Ball Joint Installation

7. **For ARC equipped models (if not equiped, skip this step):** Locate HP9327 and remove the M6 thread forming screws. Use a socket to drive the screw into the ARC tab located on each Cognito upper control arm, see figure 5. After the screw has been fully driven into each arm, remove and discard the thread forming screws. These threads are needed to attach the ball studs previously removed from the OE upper control arms.

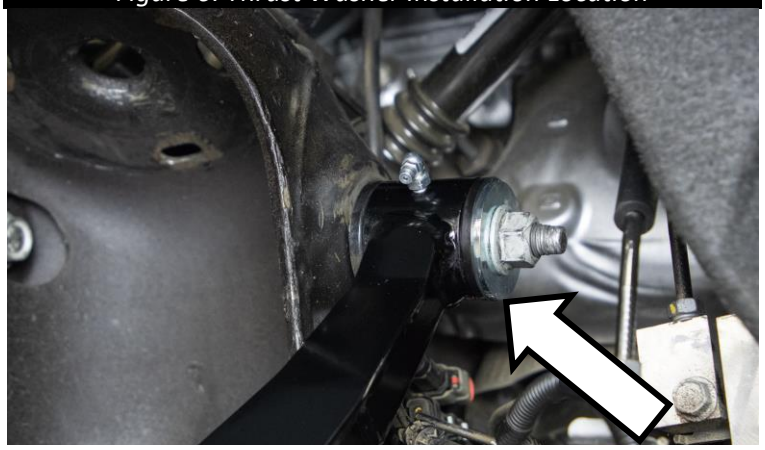
8. **For ARC equipped models (if not equiped, skip this step):** Install the previously removed ball studs into the Cognito UCAs. Torque the ARC link ball studs to **7.5 ft-lbs**.

Figure 5: ARC tabs circled in red

9. Mount the Cognito upper control arms to the frame using the factory nuts and bolts using the thrust washers on the outside, not frame-side, of each bushing. Torque to **90 ft-lbs**. See figure 6.

10. **For ARC equipped models (if not equiped, skip this step):** Reinstall the ARC sensor link onto the installed ball studs. Be careful not to damage the plastic ARC sensor link.

Figure 6: Thrust Washer Installation Location



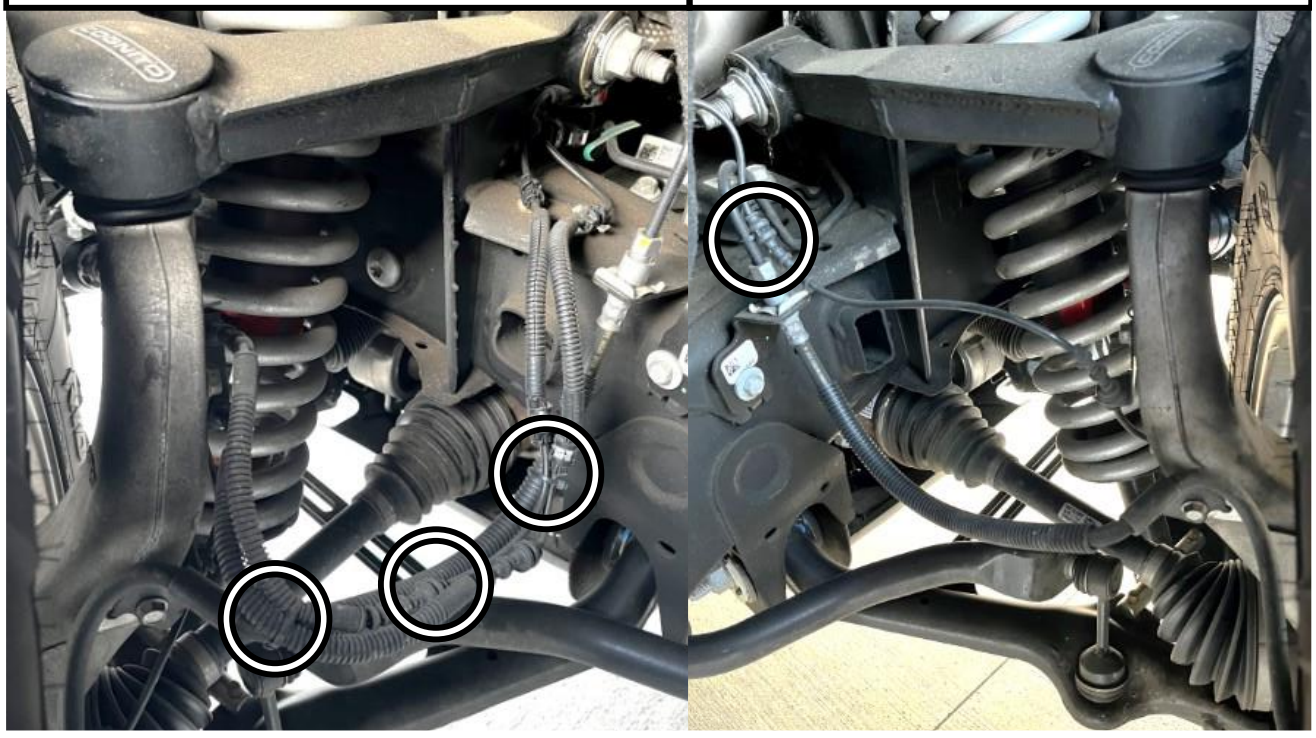
11. Mount the ball joint to the spindle with supplied hardware. Use the 1/2” flat washers supplied if the castle nut needs to be spaced down for the cotter pin to engage with its castellations, then torque the nut to 60 ft-lbs. Install cotter pin and bend to lock into place.
    - If the castellations in the castle nut and the hole in the ball joint pin do not align once torqued to 60 Ft.-lbs continue tightening the nut until the two are aligned and the cotter pin can be installed. ***NEVER LOOSEN THE NUT TO GET THE CORRECT ALIGNMENT!***

12. If there were factory lines mounted to the factory upper control arms such as ABS or brake lines, they must be restrained as to avoid binding and contact with any moving parts of the vehicle. Use cable ties to restrain the ABS line to the brake line on the passenger side. The driver side may have an additional line for the brake pad wear sensor and can be tied to the brake line as well. Make sure the Cognito arm and shock (if replaced) is fully installed and with a jack stand under the frame, lower the truck so that the suspension reaches full droop. **Check that all tied lines are free of stress durring the complete steering cycle. After the wheels are back on and the truck is sitting on the ground, check this again. Refer to the following steps for how to reroute OEM wiring.**

Note: *The Cognito UCA Kit is designed* ***NOT*** *to make use of the stock brackets used to route the wiring for the speed sensors and brake wear sensor. Locate the* ***HARDWARE-63124*** *6" black cable ties, use the cable ties to route the sensor wiring along the brake lines. For Silverado or Sierra, follow Step 13. For Tahoe, Suburban, or Yukon, skip to Step 14.*

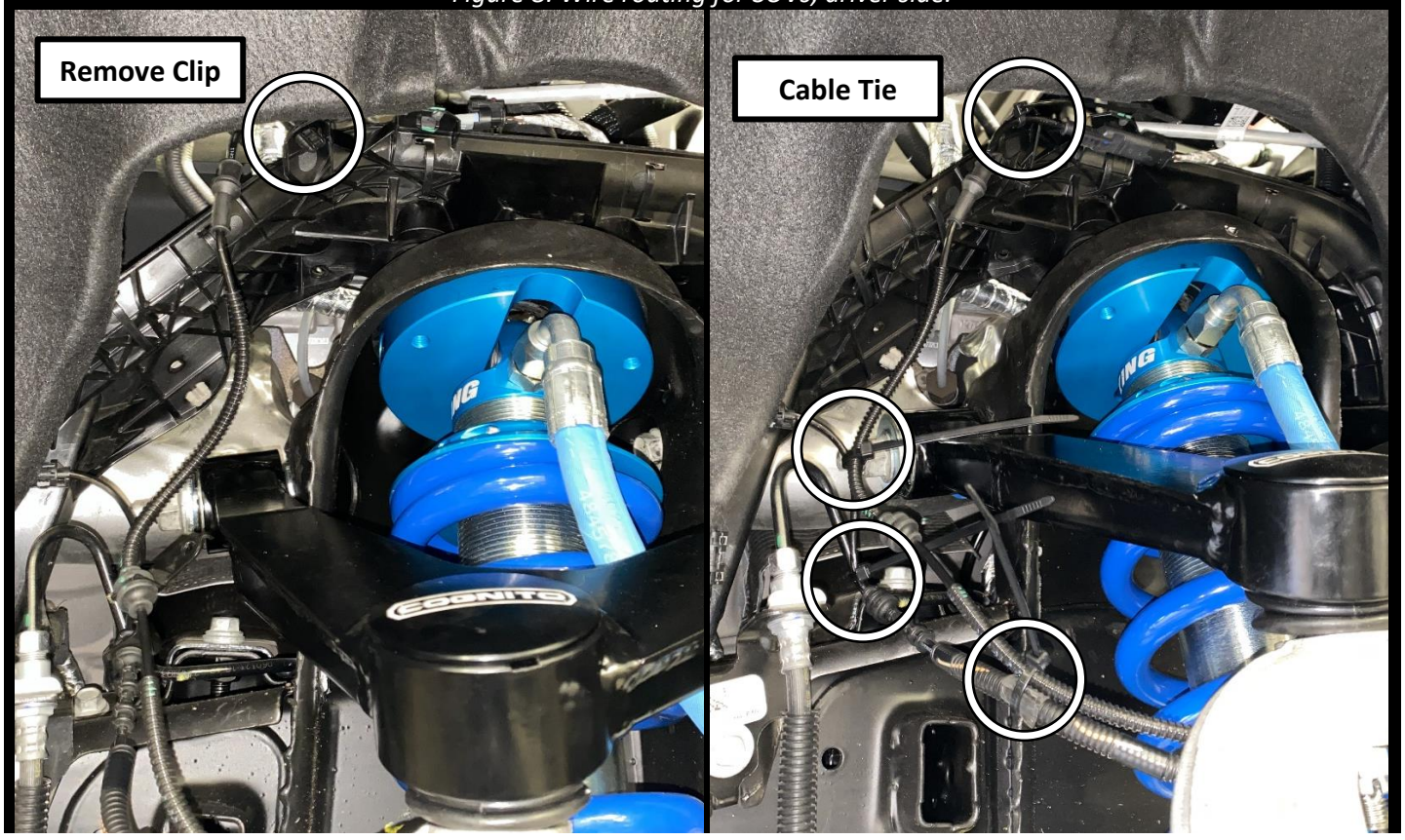
13. **For Trucks:** Use 4x **HARDWARE-63124** 6" black cable ties to route the sensor wires along the brake lines as shown below.

Figure 7: Sensor wire routing for trucks.



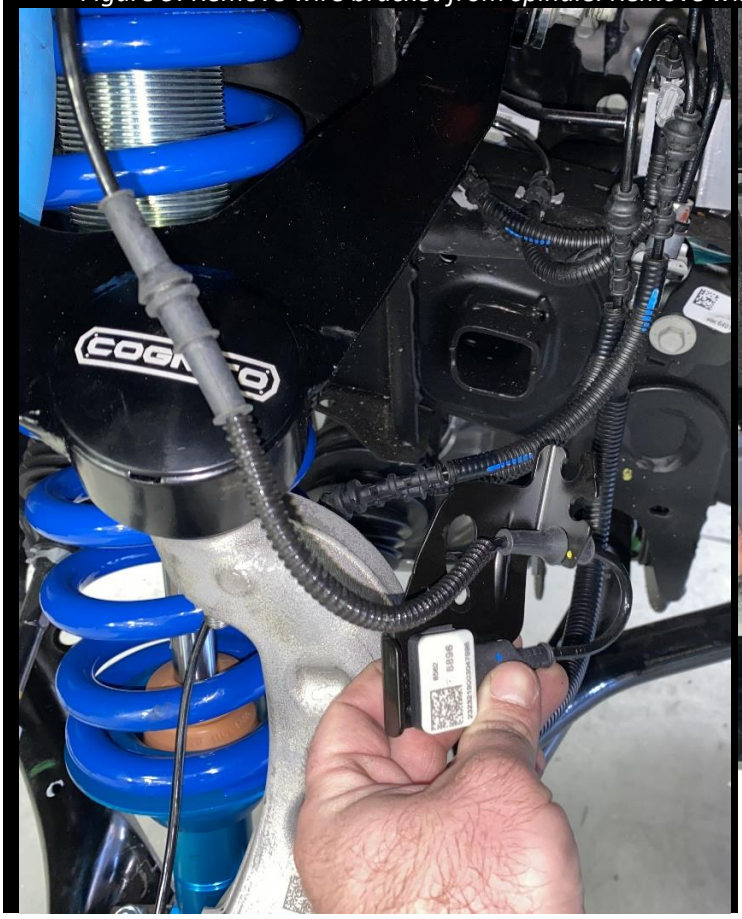
14. **For SUVs:** Beginning on the driver side, unclip the plastic clip constraining the wire above the shock tower. Remove the wires from the UCA wire bracket and discard the bracket. Cable tie the wire through the hole that the clip was removed from. Cable tie the wires out of the way as shown. Ensure that wires are not being stretched through the entire suspension and steering travel.

Figure 8: Wire routing for SUVs, driver side.



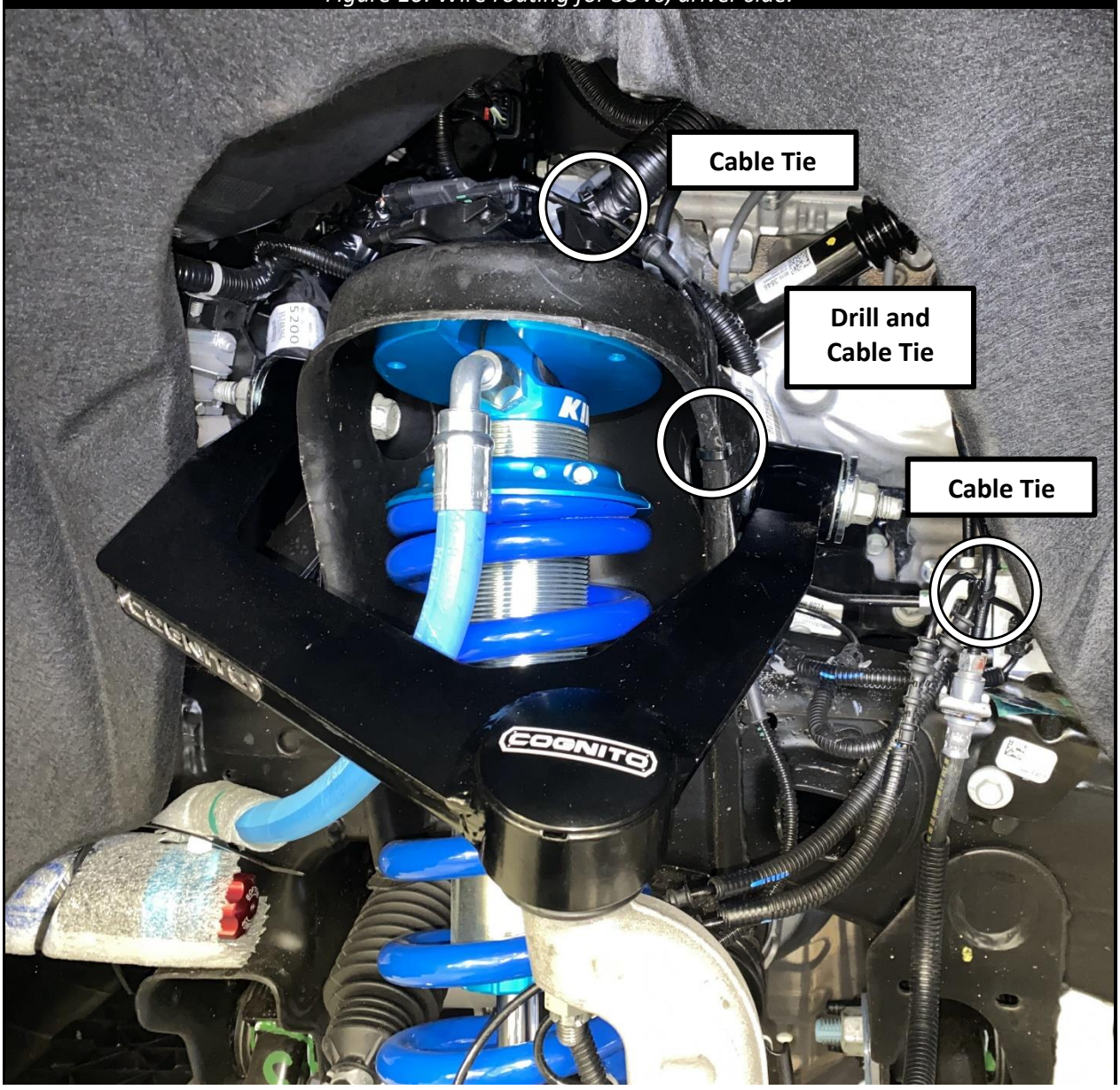
On the passenger side, remove the wires from the UCA wire bracket. Discard the bracket. Remove the 3-wire bracket from the back side of the spindle. Remove two wires shown from the bracket. Pass the bracket between the upper control arm and the spring perch.

Figure 9: Remove wire bracket from spindle. Remove wires and pass bracket between arm and shock tower.



Reattach the wires to the bracket and the bracket to the back side of the spindle. Use a ¼" drill but to drill a hole through the side of the spring perch where shown. Use this hole to cable tie the wire to the spring perch. Cable tie the rest of the wires out of the way. Ensure that wires are not being stretched through the entire suspension and steering travel.

Figure 10: Wire routing for SUVs, driver side.



15. Ensure that all bolts are properly torqued.

16. Install front wheels and tires and torque lug nuts to factory manufacturer's specifications.

17. Setting ride height and checking for proper shock/spacer lengths (reference figure 11 and Table 1).

Lift the truck so that the front wheels are off the ground ensuring the suspension is at full droop. Put a piece of painter's tape at the top of the wheel well directly above the center line of the wheel. Take a measurement from the taped mark to the top of tire and record it as (A) in table 1. Subtract 3 inches from A and record this number as (B). Set the truck back on the ground and roll a minimum of 20 feet in any direction and then back to the starting point so the suspension settles out. Record this measurement from the same point on the tape to the top of tire again and record it as (C).

Figure 11: Setting Ride Height

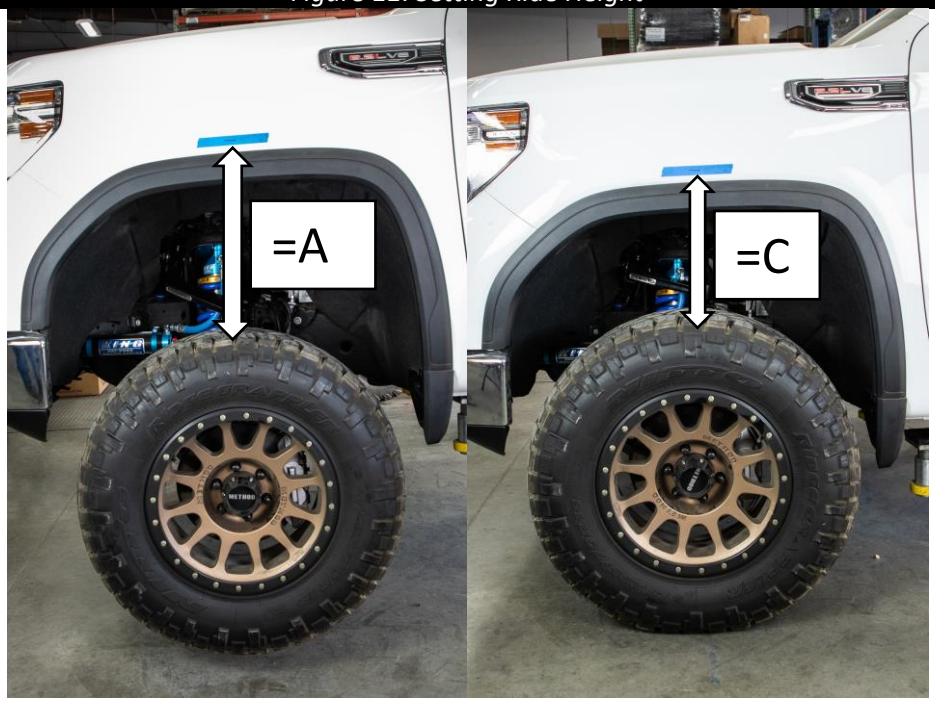


Table 1

Full Droop	**A**	
Max Ride Height	**B** = A - 3	
Current Ride Height	**C**	

If (C) is larger than (B), the ride height is too tall. This can be caused by shocks that are too long, too tall of a shock spacer, stacked shock spacers, spring preload devices, or any combination of the above.

Failure to use compatible shocks to limit the vehicles front suspension may cause over-extension, which as a result can cause damage to ball joints, uniballs, tie rods, and/or CV axles, along with other related safety issues. ***Warranty on Cognito products will be void if the vehicles front suspension is not properly limited to the above max ride height calculation.***

18. Adjust headlights per owner's manual.

19. 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. 8694 is the passenger side and 8693 is the driver side (the badge will be towards the front of the vehicle). It's also important to make your alignment shop aware that if caster is higher than normal for OEM, 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. For example, the driver side would have 2° while the passenger side would have 2.8° of 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. Camber should always be from -.1° to +.1° and toe should always be .125" to .250" toe in for best tire wear.

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.

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