COGNITO Tubular Series Bolt-In Ball Joint Upper Control Arm Kit for 1999-2006 GM Silverado / Sierra 1500 2WD/4WD

INSTALL INSTRUCTIONS:

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SKU: 110-90289



COMPONENTS INCLUDED:

QUANTITY	PART #	DESCRIPTION
2	8105	COGNITO 1999-2006 GM 6-Lug Tubular Bolt-In Ball Joint UCA DRVR/PASS
2	91320	Bolt-In Ball Joint, Small GM
4	6878	Pivot Bushing, Control Arm, 14mm
1	HP9321	Hardware Pack

COMPONENTS INCLUDED:

QUANTITY	PART #	DESCRIPTION
2	HARDWARE-13003	1/4"-20 X 3/4 Grade 5 Zinc Hex Head Cap Screw
8	HARDWARE-15057	5/16”-18 X 1-1/4" Grade 8 Yellow Zinc Hex Head Cap Screw
4	HARDWARE-33078	1/4" SAE Zinc Flat Washer
16	HARDWARE-33080	5/16” SAE Zinc Flat Washer
2	HARDWARE-33086	1/2" SAE Zinc Flat Washer
2	HARDWARE-33088	9/16” SAE Zinc Flat Washer
2	HARDWARE-37260	1/4”-20 Grade C Zinc Top Lock Nut
8	HARDWARE-37262	5/16”-18 Grade C Zinc Top Lock Nut
6	HARDWARE-63124	6" Black Cable Tie

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.
Modification of vehicle suspension can interfere with ride-height sensors, active suspension, lane departure features, semi-autonomous, and autonomous driving features. It is the responsibility of the installer to determine feature compatibility prior to installation. Recalibration of sensors may be required in the event of any modification.

BALL JOINT WARNING:

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. If you have questions, please contact the Cognito Sales Team to have you questions or concerns addressed.

INTRODUCTION

Cognito Tubular Upper Control Arm Kit is for leveled and lifted applications where an upgrade is desired to provide better performance, style, and function. Cognito alloy series ball joints are included as well as new bushings. Ample droop travel is required for good ride quality and all suspension components to last and work properly. This control arm kit will add performance to the Chevy and GMC truck by correcting the ball joint angle for lifted and leveled applications. The allowable droop travel is also improved with the design of these arms.

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.**
- Cutting of the OEM frame and suspension components is required.
- 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

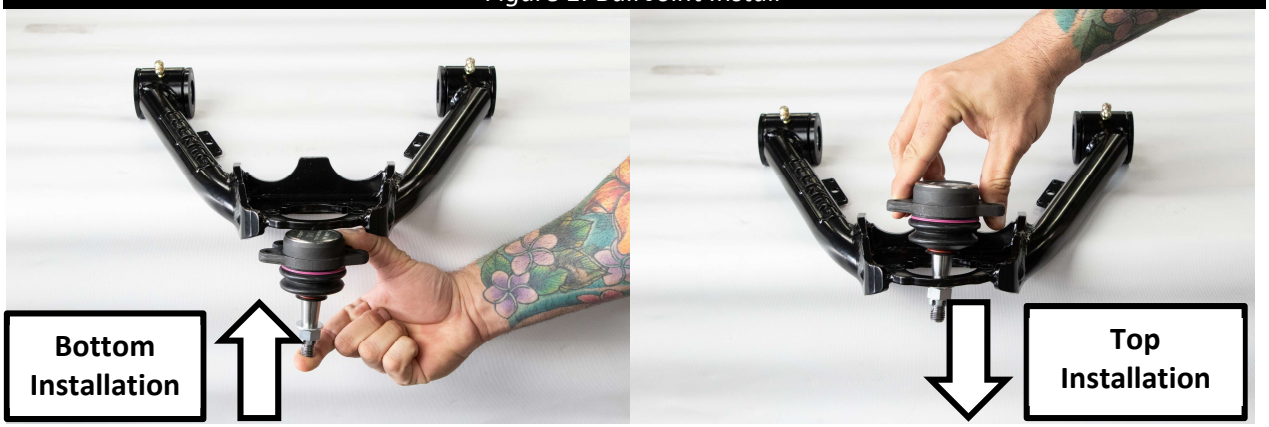
- Installation requires a qualified mechanic.
- Follow the OE specifications when replacing or re-installing OE fasteners, retainers, and hardware specified in the OEM service manual.
- Always wear safety glasses when using power tools.
- When a lift is required to perform the installation of these products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

INSTALLATION

1. Place the truck on a flat surface with the parking brake engaged, chock the rear tires.
2. Use a suitable floor jack in the manufacturer designated spot on the frame to lift the front of the truck, then place a suitable jack stand under the frame and set the truck down securely on the jack stand. Remove the front wheels and tires.
    - ***NEVER WORK UNDER AN UNSUPPORTED VEHICLE***.
3. Support the lower control arms with a floor jack or stand prior to removing the upper control arms (UCAs).
4. Remove the factory upper control arms. Loosen the ball joint nut of the upper control arm enough until the nut can be spun by hand, but do not remove totally. Use a pickle fork to separate the ball joint from the spindle or tap on the side of the spindle next to the ball joint stud. When the tapered seat of the ball joint breaks loose remove the ball joint nut, and separate the factory upper control arm from the spindle.
5. Remove the factory bolts and eccentric washers that connect the control arm to the frame but retain them for future use. Place them aside in order so they can be re-installed in the same place they came off. The plastic inserts will need to be removed and discarded from the eccentric washers.

6. Mount the supplied ball joints with the 5/16” bolts, flat washers, and locknuts provided in **HP9047-1** to either the top or bottom of the ball joint pocket of the Cognito upper control arms. Depending on your application use Figure 1 and the chart below to determine the correct mounting orientation for your kit. *If installing with a Cognito lift kit (i.e. 7”-9” lift kit) the low point of the lift kit is 7”-7.75” of lift, and the high point of the lift kit is 8”-9” of lift. Use anti-seize lubricant on the threads. [Torque all hardware to **22 ft-lbs**.]

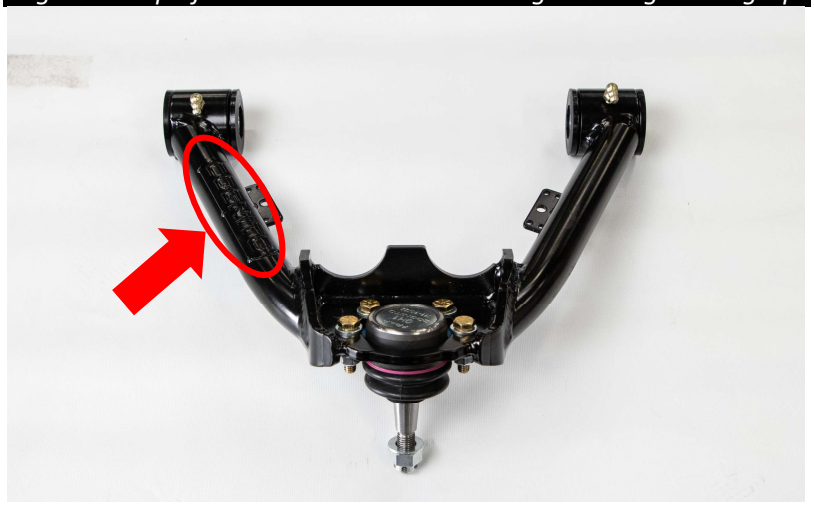
Figure 1: Ball Joint Install



Vehicle	Stock	Leveling Kit	*Low Point of Lift Kit	*High Point of Lift Kit
1999-2006 1500	Top	Bottom	Top	Bottom

7. **Critical Step**: It is extremely important to verify the control arms are installed in the correct orentation. The Cognito logo should be facing up. **[FIGURE 2]**

Figure 2: Top of Control Arm – Grease Fittings and Logo Facing Up



8. Mount the Cognito upper control arms to the frame with the factory nuts, bolts, and eccentric washers as previously removed. Torque alignment nuts to **90 ft-lbs.**

9. 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 [Torque the castle nut to **50 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 **50 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!***
10. These upper control arms are not designed to contact the factory frame perch. If the proper length shocks are not being used to limit travel and ensure the arms do not contact the frame perch, it is then REQUIRED to install a limit strap kit (available from Cognito) to limit down travel and prevent damage to the upper control arm as a result of contacting the factory frame perch. Failure to properly 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.***
11. (If equipped with Zerk fitting(s)) Grease the ball joint until the dust boot starts to swell. If these items are not greased, premature wear will result on these items! It is highly recommended to grease the ball joints every 3-5K miles.

    (If equipped with Zerk fitting(s)) Grease the a-arm pivot bushing. If you do not grease these items, premature wear will result on these items! Its highly recommend to grease the pivot bushings every 3-5K miles.
    - **NOTE:**
      Warranty on Cognito products will be void if damage occurs due to negligence in servicing the ball joints and pivot bushings every 3-5K miles with fresh grease.
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 the ¼" hardware provided to fasten the factory brake line bracket to the Cognito upper control arm. If necessary, slide the brake line through the bracket to obtain a suitable mounting situation.
13. Remove the abs line clip from the top of the frame shock pocket and use the cable ties to restrain the abs line to the brake line. Double check the clearance of both the brake lines and the abs lines after the install while the truck is on the ground through the complete steering cycle.
14. Ensure that all bolts are properly torqued. Ensure there are no rubbing or loose cables anywhere after the Cognito UCA installation. Use cable ties to restrain any cables from interfering with any other part. Check that all lines are free of stress or interference while the vehicle is in full droop, full bump, and throughout the complete steering cycle.
15. Repeat the steps above for the passenger side.
16. Reinstall the wheels and tires [Torque lugs to factory specs].
17. Check wheel and tire clearance one last time through the steering cycle. Make adjustments as needed.
18. Adjust the headlights per your owner's manual.
19. Get vehicle professionally aligned after the install.
    - **NOTE:**
      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 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.

VERIFY ALL FASTENERS ARE PROPERLY TORQUED BEFORE DRIVING VEHICLE.
RETORQUE ALL NUTS, BOLTS AND LUGS AFTER 100 MILES AND PERIODICALLY THEREAFTER.

This completes the installation steps, enjoy your new Cognito SM Series Ball Joint Upper Control Arm 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 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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