Cognito SM Series Strut Spacers for 2015 – 2022 Ford F-150 4WD

INSTALL INSTRUCTIONS:

Cognito SM Series Strut Spacers for 2015 – 2022 Ford F-150 4WD

PARTS LIST:

QUANTITY	PART #	DESCRIPTION
2	6489	0.5" Strut Pre-Load Spacers
2	91037	2021+ Ford F-150 SM Series Strut Spacers
1	**HP9313**	Hardware Pack for Strut Spacer

PARTS LIST FOR SKU: HP9313

QUANTITY	PART #	DESCRIPTION
6	HARDWARE-M10X1.5-FNUT	M10 x 1.5 Class 10 Zinc Lock Nut

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.

INTRODUCTION

The Cognito SM Series Strut Spacers are designed to work with the Cognito SM Series Uniball Upper Control Arms for the Ford F-150 and will yield 2.5” of front lift. The strut spacer and preload spacer are constructed out of heavy-duty steel and finished with a durable semi-gloss black powder coating. Designed and made in the USA.

REQUIREMENTS

- Spring compression tools are required for this instillation.
- This leveling kit **REQUIRES** Cognito UCAs for Ford F-150. Failure to use the Cognito UCAs with this kit will result in damage to the vehicle.
- This leveling kit may only be installed on a truck that has not already been lifted or leveled. You cannot stack leveling kits or shock spacers.
- Front-end alignment will be required after completion.
- This kit requires advanced mechanical procedures that should only be performed by a qualified mechanic.
- Installation requires a qualified mechanic.
- Follow the OE specifications when replacing or re-installing OE fasteners, retainers, and hardware specified in the OEM manual.
- Always wear safety glasses when using power tools.
- When a lift is required to perform the installation of these products and always ensure the vehicle is properly supported before attempting installation or serious injury may occur.

TECH NOTES

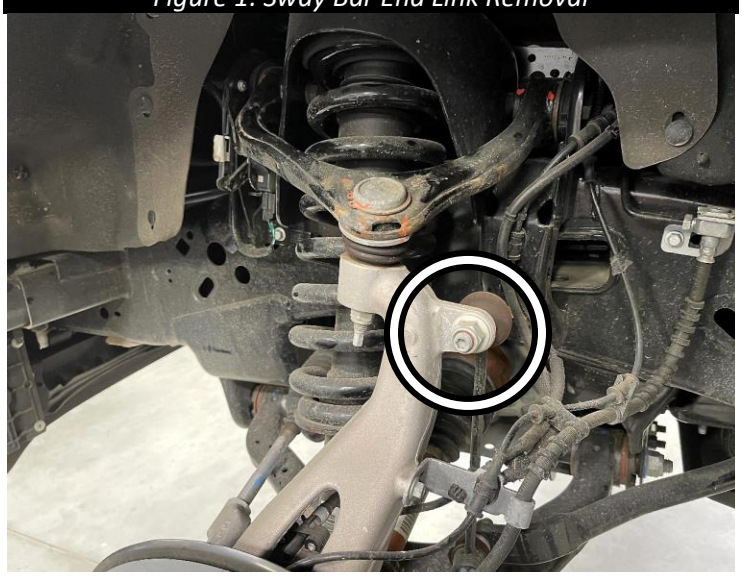
- The stock wheel and tire will rub and are not compatible with this kit.
- Trimming of inner fender well and bottom rear of steel fender may be required.
- CAM Brackets can be purchased separately that will allow for camber and caster adjustments
- Read instructions carefully and study the pictures (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.

INSTALLATION

1. Rack the vehicle and lift it off the ground, or if no hoist is available then jack 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.***

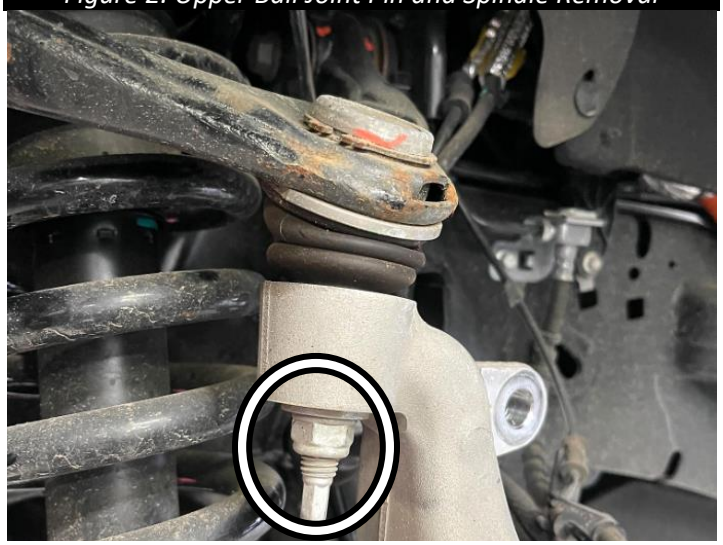
2. Remove the sway bar end link from the spindle. Place the hardware safely aside, it will be reused later.

Figure 1: Sway Bar End Link Removal



3. Remove the factory upper control arms. Loosen the ball joint nut of the upper control arm, 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.

Figure 2: Upper Ball Joint Pin and Spindle Removal



4. Remove the tie rod form the spindle. Loosen the tie rod nut, but leave the nut engaged on the tie rod by a few threads. Using a hammer, hit the end of the tie rod up to dislodge the tie rod from the spindle. Remove the tie rod from the spindle. Place the hardware safely aside, it will be reused later.

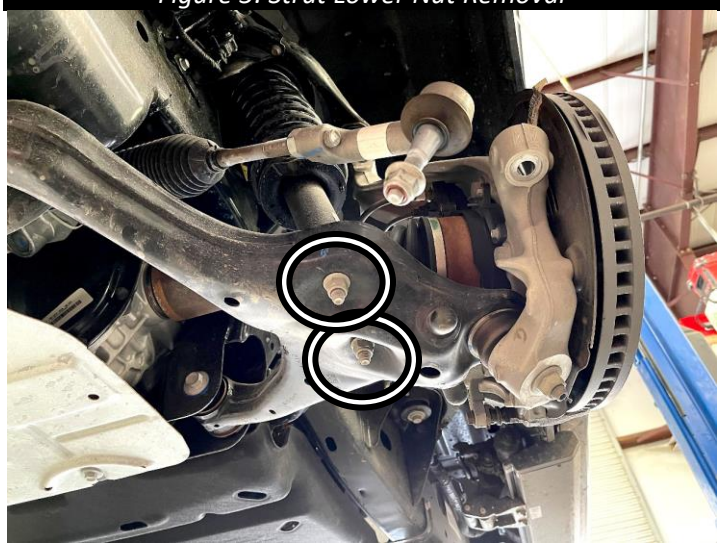
Figure 3: Tie Rod Removal

5. Using a marker, mark the alignment of the lower control arm (LCA) pivot bolts on both the bolt head and nut side of the frame.

Figure 4: Mark Alignment of LCA

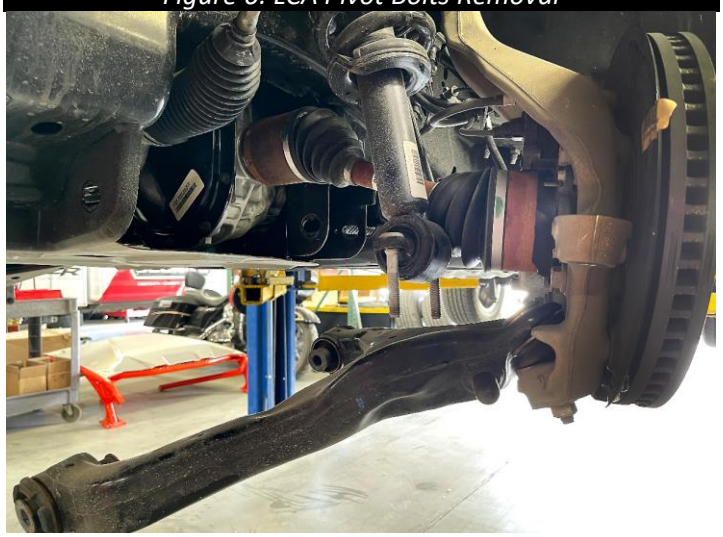
6. Remove the strut's two lower nuts underneath the LCA. Place the hardware safely aside, it will be reused later.

Figure 5: Strut Lower Nut Removal



7. Remove the LCA pivot bolts. Swing the LCA downward and free of the strut. Place the hardware safely aside, it will be reused later.

Figure 6: LCA Pivot Bolts Removal

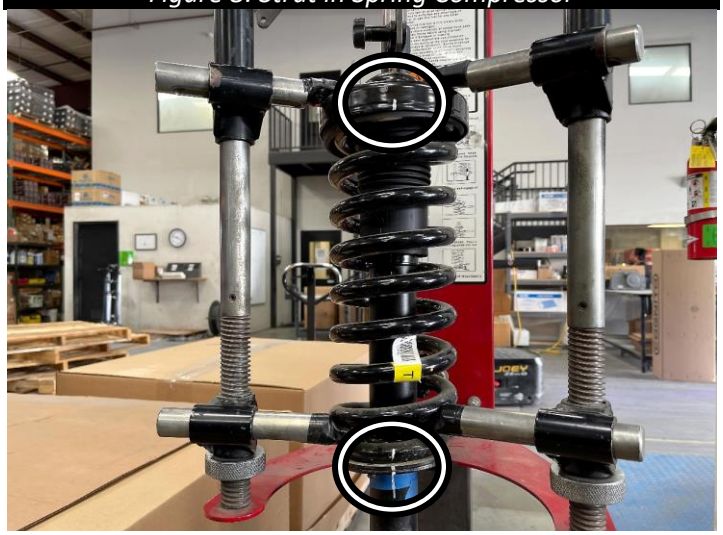


8. Remove the strut from the vehicle. Remove the 3x nuts on top of the strut to free the strut from the frame.

Figure 7: Top Strut Nut Removal

9. Using a marker, draw a line down the strut for alignment purposes.

Figure 8: Strut in Spring Compressor



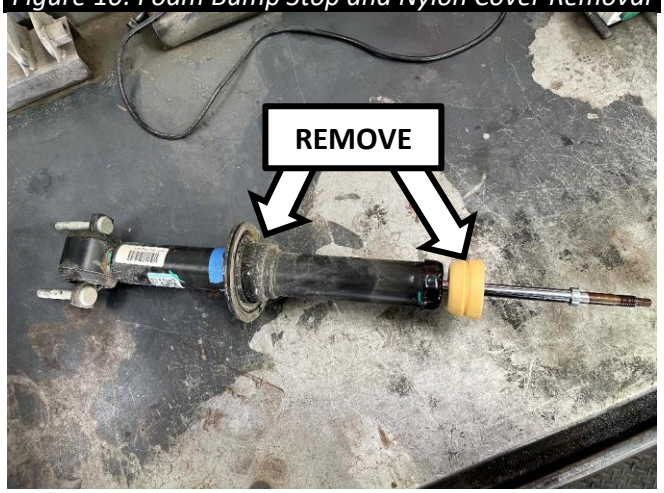
10. Using any form of spring compression tools, compress the strut assembly until the shock body assembly can spin freely. Remove the center nut at the top of the strut assembly using an impact gun and free the shock body assembly from the strut assembly.

- **NOTE:**
  If the shock body assembly is spinning, leave some tension from the spring on the top hat while using the impact.
  NEVER remove the nut at the top of the strut assembly without having the spring properly restrained/ compressed. Strut assemblies have the spring preloaded and if the nut at the top of the strut assembly is removed without the spring being compressed it will rapidly unload and forcefully come apart. This can lead to ***serious injury*** if hit by the spring or other components as the spring unloads.

Figure 9: Strut Center Nut Removal

11. Remove the foam bump stop cushion and nylon cover from the spring seat.

Figure 10: Foam Bump Stop and Nylon Cover Removal



12. Remove the shock rod seal cap by placing the shock body assembly between a vice with jaws open enough to go around the c-clip installed on the shock body assembly.

- **NOTE:**
  The vice should not directly grip the shock body.

13. Move the shock body assembly like a slide hammer and hit the spring seat into the vice until it touches the rod seal cap. Repeat this motion until the rod seal cap is knocked free.

- ***NOTE:***
  Be sure to not damage or scratch the polished shock shaft or shaft seal.
  Do not remove the slight film of oil on the shock shaft or seal.
  Be sure to not damage or dislodge the c-clip around the shock body.

Figure 11: Shock Rod Seal Cap Removal

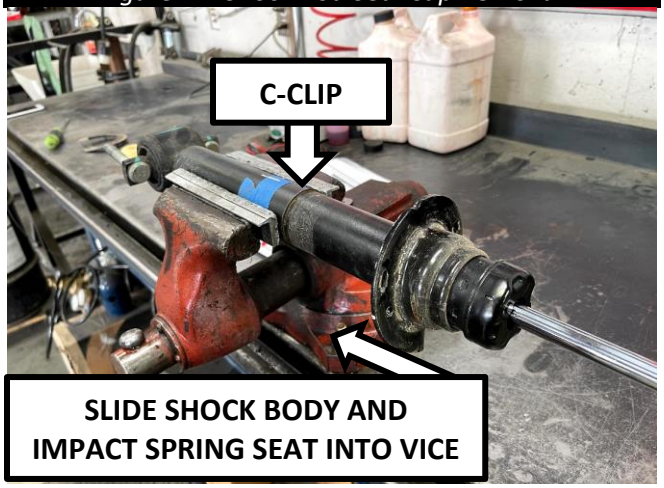
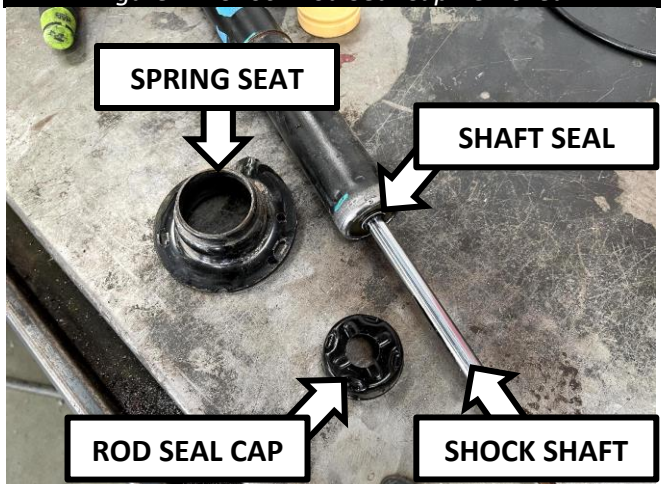
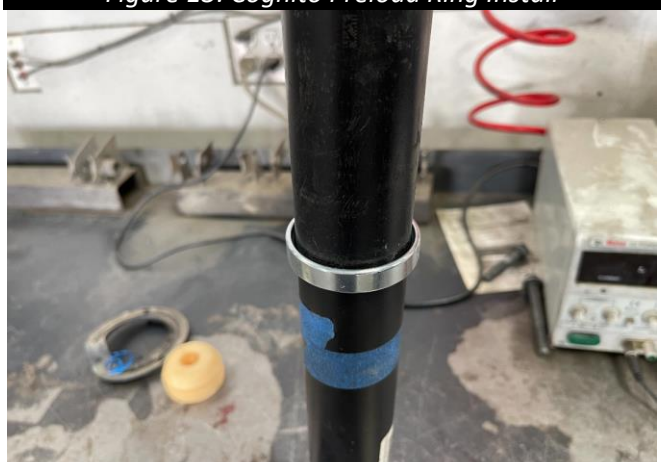


Figure 12: Shock Rod Seal Cap Removed



14. Locate **6489**, install the Cognito preload ring from the top of the shock over the c-clip.

Figure 13: Cognito Preload Ring Install



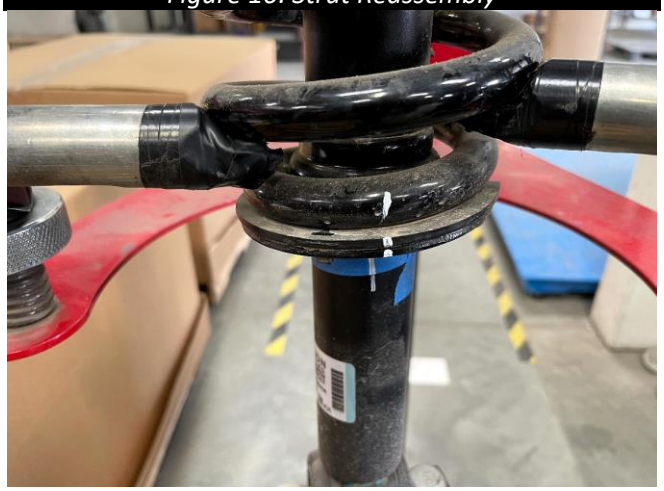
15. Install the factory spring seat over the Cognito preload ring, the shock rod seal cap by tapping it into place with a soft faced hammer, the nylon cover for the spring seat, and the foam bump stop cushion.

Figure 14: Spring Seat Over Cognito Preload Ring

Figure 15: Shock Body Reassembled

16. Reassemble the shock body and the strut assembly. Make sure to align the markings created in the prior step before tightening the center nut on the top of the strut assembly. Torque to **33 ft-lbs**.

Figure 16: Strut Reassembly



17. Locate **91037,** Cognito strut spacer, and **HP9270**. Install the spacer onto the strut and run the M10 nuts all the way down the studs but do not fully tighten. With a marker and straight edge, mark each stud level to the top plane of the spacer. Remove the nuts and spacer and double check the height of the mark made. The mark should be about 11/16" – 3/4" above the plate where the studs come through the top hat.

Figure 17: Marking the Strut Top Studs

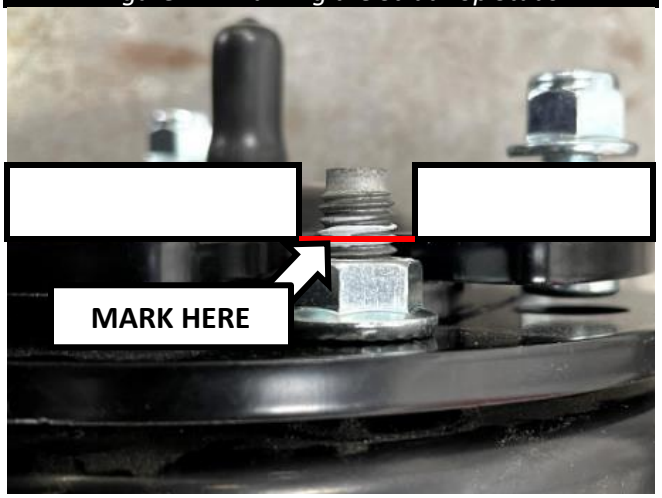


Figure 18: Measuring the Strut Top Studs

18. Using a cutting wheel, cut each of the studs off at the mark that was made in the step above.

19. Install **91037**, Cognito strut spacer, on top of the strut and torque the M10 nuts to **45 ft-lbs**.

- **NOTE:**
  With a straight edge, check to make sure the studs do not protrude above the top of the strut spacer. If needed sand the top of the studs down until they are below the top of the strut spacer.

Figure 19: Strut Spacer Installation

20. Install the strut assembly back into the frame using the M10 nylon lock nuts provided. Torque to **45 ft-lbs**.

21. Install the strut to the LCA using the factory hardware and torque to factory specifications.

- **NOTE:**
  Use a jack to slowly lift the LCA upward to the strut.

22. Install the LCA into the frame and be sure to place the pivot bolts in the same alignment from where they were removed and torque to factory specifications.

23. Attach the tie rod back into the spindle, fasten the nut, and torque to factory specifications.

24. Fasten the UCA ball joint nut and torque to factory specifications.

25. Attach the sway bar end link back into the spindle, fasten the nut, and torque to factory specifications.

26. Repeat the steps above to install the Cognito strut spacer onto the opposite side of the vehicle.

27. Ensure that all bolts are properly torqued. Ensure there are no rubbing or loose cables anywhere after the Cognito strut spacer 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.

28. Install aftermarket front wheels and tires and torque lug nuts to the factory manufacturer's specifications.

29. Adjust headlights per owner's manual.

30. Have the vehicle professionally aligned.

This completes the installation steps, enjoy your new Cognito SM Series Strut Spacer 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.