



Cognito Comfort Ride Leaf Spring Kit for 2011-2019 & 2020-2022 GM 2500HD & 3500HD Trucks

INSTALL INSTRUCTIONS:

Cognito Comfort Ride Leaf Spring Kit for 2011-2019 & 2020-2022 GM
2500HD & 3500HD Trucks
SKU: 510-91152

PARTS LIST FOR SKU: 510-91152

QUANTITY	PART #	DESCRIPTION
2	6504	STOCK REPLACEMENT SOFT RIDE LEAF SPRING, GM 8-lug 2011-2021

**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

Thank you for purchasing the Cognito Comfort Ride Leaf Spring Kit. This kit is designed to keep your trucks stock appearance while providing a more compliant and supple ride. This kit is not for everyone, as there are tradeoffs to installing this kit like reduced carrying capacity in the bed and when towing.

To achieve the load carrying capacity of these trucks the OEM equipped the truck with high spring rate torsion bars and leaf springs to meet the load vs sag requirements set upon them. In return these trucks do not have a very comfortable ride when not loaded with additional weight. In an empty 2500HD it is noticeable, a ripple bump is very comfortable but something larger like a speed bump can be very harsh feeling. This is because the bottom overload spring is engaged causing the spring rate to increase quickly and harshly.

These comfort ride leaf springs will provide the same ride height as stock with an empty payload and have more compression travel before the bottom overload spring engages. The trade off for this is the carrying capacity of the vehicle will be reduced. This kit is meant for owner who only haul and tow occasional light loads.

Air bags can be added to the truck to restore some of the lost carrying capacity if occasional heavy towing is required.

REQUIREMENTS

- If installed on a 3500HD truck, the top overload springs will be deleted with this kit.
- The gross combination weight rating, payload and tow capacity of the truck will be **reduced**, by approximately 25% with this kit.
- 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 always ensure the vehicle is properly supported before attempting installation or serious injury may occur.

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.



INSTALLATION

1. Rack the vehicle and lift it off the ground, or if no hoist is available then jack rear of truck off the ground and support properly with jack stands. Remove the rear tires and set them as side.
 - **NEVER WORK ON AN UNSUPPORTED VEHICLE.**
2. If equipped, the tow hitch receiver will need to be removed.
3. If installing on a 3500HD equipped with an axillary fuel tank, the axillary fuel tank will need to be removed to provide access to remove a few bolts.
4. Remove the exhaust by unbolting it at the flange forward of the muffler, unhook the rubber hangers and slide the exhaust to the center of the vehicle.
 - **NOTE:**
The exhaust does not need to be fully removed to complete the install, only moved out of the way. If preferred, the unhooked portion of exhaust can be fully removed from the vehicle as well.
5. Support one side of the rear axle with a jack and lift it up slightly to take up the weight of the axle.
6. Remove the U-bolt nuts from that side of the vehicle. Remove the U-bolt lower plate and U-bolts, set them aside they will be reused with the new springs.
 - **NOTE:**
These springs are stock replacement, if direct swapping them, the U-bolts that came off the stock springs should be able to be used for the new springs.
7. Remove the forward leaf spring mounting bolt at the front of the spring. Remove the bolt and set it aside, it will be reused with the new springs.
8. Remove the rear bolt holding the shackle to the leaf spring, set it aside, it will be reused with the new springs. Swing the shackle down and away from the leaf spring.
9. Carefully lower the jack under the axle until there is enough room to remove the spring.
 - **NOTE:**
When lowering the axle check to make sure no wires or lines are being pulled on or stretched.
10. Remove the OEM spring and set it to the side.
11. Locate one (1) **6504**, comfort ride leaf spring, and slide it into place on top for the axle. The larger leaf spring eyelet is the front of the spring and should go to the forward mounting location.
12. Install the forward leaf spring mounting bolt, tighten the bolt by hand and leave it hand tight.
13. Lift the rear of the leaf spring up, swing the shackle into position and install the rear bolt holding the shackle to the leaf spring, tighten the bolt by hand and leave it hand tight.
14. Use the jack to raise the axle up to the leaf spring, ensure the centering pin of the leaf spring seats correctly in the spring perch of the axle.



15. Use the U-bolts removed in a prior step and re-assemble the U-bolt system with the U-bolt plate on top of the spring pack and the U-bolt lower plate under the rear axle just as they were before disassembly. Apply anti-seize to the threads of the U-bolts before installing the nuts and washers. Be sure to tighten the nuts evenly and in a star pattern so that the amount of thread protruding is about the same. Torque to **100 ft-lbs**.
16. Repeat the steps above for the opposite side of the vehicle.
17. Reinstall any components that were removed to provide access for the installation of this kit. Be sure to use new gaskets where necessary and use OE torque specs when reinstalling components.
18. Re-install rear wheels and set the vehicle back on the flat level ground. Roll the vehicle forward and back at least ten feet to settle the suspension to rest at ride height.
19. Torque the forward leaf spring mounting bolt. Torque to **160 ft-lbs**.
 - **NOTE:**
It is recommended that the bolt is torqued at ride height to keep the vulcanized rubber bushing from being preloaded at ride height.
20. Torque the bolt holding the shackle to the leaf spring. Torque to **129 ft-lbs**.
 - **NOTE:**
It is recommended that the bolt is torqued at ride height to keep the vulcanized rubber bushing from being preloaded at ride height.
21. Ensure that all bolts are properly torqued. Ensure there are no rubbing or loose cables anywhere after the 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 and full bump.



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 warranted 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.