

INSTALLATION MANUAL

FOR

ROCK KRAWLER SUSPENSION, INC.

LIBERTY, GRAND CHEROKEE, AND COMMANDER

3.5" X FACTOR SUSPENSION SYSTEMS

THIRD EDITION

02/04/08

Dear customer: Thank you for purchasing the best engineered systems on the market for your Liberty, Grand Cherokee, or Commander. We are sure you will be happy with this system after your installation is complete. Please take your time during the installation and be sure to do it correctly. These are fairly easy systems to install; your satisfaction with the product greatly depends on the quality of installation. Completely read the directions before starting your installation so you know what to expect. Remember, your personal safety depends on it. Should you have any questions during this installation feel free to give our tech line a call (518-270-9822) and we will be happy to help you.

Note: BE SURE TO CHECK ALL FASTENERS FOR PROPER TORQUE BEFORE TEST DRIVE. RECHECK AFTER 500 MILES AND BE SURE TO CHECK PERIODICALLY.

Warning

Read and understand all instructions, warnings and safety precautions in these instructions and your owner's manual before attempting to install these components.

Caution

Proper installation of Rock Krawler Suspension, Inc. Products requires knowledge of recommended procedures for disassembly/assembly of OE vehicles and components. Access to OE shop manuals and special tools are required. Attempting to install this kit without knowledge of these procedures may affect the safety of your vehicle and or the performance of these components. Rock Krawler Suspension, Inc. strongly recommends that this system be installed by a certified mechanic with off road experience.

Warning

Rock Krawler Suspension, Inc. does not recommend combined use of suspension lifts, body lifts or other lift devices. Combined use of lifts may result in unsafe and unexpected handling characteristics. Also, many states now have laws restricting vehicle lift, bumper heights and other alterations. Consult local laws to determine if your proposed alterations (including installation of this system) comply with your state laws.

Caution

Rock Krawler Suspension Inc. recommends the use of loctite on all hardware, unless noted otherwise.

Warning

Properly block and secure vehicle prior to installation.

Warning

Always wear safety glasses when using power tools

Warning

The use of limiting straps is recommended to avoid possible damage from over extending the suspension of your vehicle.

Helpful hint:

Do not tighten connections until assemblies are installed in entirety.

Let's Start with the Front End

- 1) Position the vehicle in a safe position so it stable and easy to work on the front end.
- 2) Jack up the front end and remove the front wheels and tires. Be sure to allow the knuckle and a arm assemblies to lower all the way down.
- 3) Remove the factory sway bar links from the vehicle and save them for reuse.
- 4) Separate the steering ball joint and upper a arm ball joint from the knuckle. If you are unfamiliar with where to hit the knuckle to perform this procedure please consult the service manual for your vehicle. Please note, this will allow your lower a arm assembly, knuckle, and half shaft to fall freely. Provide proper support so you do not damage your brake lines or ABS lines.



Upper A Arm Ball Joint Seperated



Steering Ball Joint Seperated

- 5) Remove the factory lower cast strut fork from the vehicle and discard it. None of the strut fork mounting hardware will be reused so that can be discarded as well.
- 6) For Grand Cherokees and Commanders (Liberty skip this step); trim the tab on the factory strut as shown in the illustration below. It is recommended that you remove the ABS line from the bracket before trimming it and then replace after the trimming is complete in order to avoid damaging the ABS line.



Grand Cherokee and Commander Front Strut Trimming

7) Grab the new lower front strut fork provided with the system. (Please note, they are a tight fit so they may need to be spread a bit to easily slide on the bottom of the OEM strut.) Loosely put them around the strut pushing the upper lip up to the OEM fork stops that are built into the struts. They are secured with the supplied $\frac{1}{2}$ x 5 bolt, washer and nylok nut. Then attach the new strut fork to the lower arm using the supplied $\frac{5}{8}$ x 4.5" bolt, (2) $\frac{5}{8}$ washers and $\frac{5}{8}$ nylok nut per side for the Grand Cherokee and Commander or the supplied 14mm x 120mm bolt, (2) 14mm washers and 14mm nylok nut for the Liberty. See below for a visual illustration on the Liberty (The Grand Cherokee and Commander are similar, but the hardware faces in). Tighten the $\frac{1}{2}$ bolts to 70 foot pounds of torque. Tighten the 14mm bolts if applicable to 80 foot pounds of torque. Tighten the $\frac{5}{8}$ bolts if applicable to 120 foot pounds of torque.



Liberty Strut Fork Installed

8) Raise the outer knuckle and lower a arm up to a point where you can reconnect the factory upper a arm. Tighten the factory upper a arm to the specs in the factory service manual. Reattach the outer steering ball joint to the knuckle and tighten it to the specs in the factory service manual.

For Liberty JK's Only – Please note, when trying to raise up the lower A arm, it may be required to pry the strut body away from the “frame” in order to get it up in the proper position.

9) Reinstall the OEM sway bar links using the OEM hardware.

10) Reconnect the steering ball joint back to the knuckle.

11) Now your front end suspension is all set. Put the wheels and tires back on the front end. Be sure to torque the lug nuts to the Factory Specifications as advised in the vehicle service manual.

Please be sure to get your vehicle aligned after the installation is complete. This will provide you with proper handling. Some Grands and Commanders may be required to run 2 less degrees of castor depending on bottom A arm configuration. The important thing is to maintain the castor mismatch from side to side as specified by the OEM specifications.

Let's Move to the Back End of the Vehicle

- 1) Position the vehicle in a safe position so it stable and easy to work on the back end.
- 2) Jack up the back end and remove the rear wheels and tires. Be sure to allow the wheels and rear axle to lower all the way down. Remove the wheels and tires.
- 3) Disconnect the OEM rear shock from the rear axle.
- 4) Allow the rear axle to drop down enough to remove the rear coil springs. You may have to disconnect the rear sway bar end links and on Grand Cherokee's and Commanders the rear upper control arm above the gas tank so it comes down enough.
- 5) Remove the rear coil springs and insert the poly spring spacer. On Grand Cherokee's, Commander's, and Liberty KK's (2008 and Newer Liberty) the Spacer goes on top of the factory spring isolator on the bottom of the axle as shown below. On Liberty KJ's (2003 to 2007 Liberty) the poly spring spacer goes on top as shown below. Then reinsert the factory coil spring.



Grand/Commander Spacer



Liberty Spacer

- 6) Reconnect all components that have been disconnected in the opposite order of removal. Torque them to the factory specifications as outlined in the factory service manual.
- 7) On Grands and Commanders only it may be required to trim the factory gas tank skid to allow enough movement for the driver's side upper control arm enough room to move downward through out the normal suspension cycle.
- 8) Install the rear wheel and tire assemblies and lower the vehicle to the ground. Be sure to torque the lug nuts to the factory specs as outlined in the vehicle service manual.

Typical Reference Torques

The required torque for all 10mm or 3/8" bolts not explicitly defined is 30 to 40 ft-lbs.

The required torque for all 12mm or ½” bolts not explicitly defined is 55 to 65 ft-lbs.

The required torque for all 14mm or 9/16” bolts not explicitly defined is 90 to 100 ft-lbs.

The required torque for all 16mm or 5/8” bolts not explicitly defined is 110 to 120 ft-lbs.

Good Job. Your installation is complete. Now go out and enjoy your vehicle.