

**INSTALLATION MANUAL**

**FOR**

**ROCK KRAWLER SUSPENSION, INC.**

**JK STEERING UPGRADES**

**SIXTH EDITION**

**05/01/16**

# ROCK KRAWLER

S U S P E N S I O N

**Dear customer:** Thank you for purchasing the best system on the market for your Jeep Vehicle. 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. 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

- Properly block and secure vehicle prior to installation.
- Always wear safety glasses when using power tools
- Rock Krawler Suspension recommends the use of locktite on all hardware, unless noted otherwise.
- The use of limiting straps is recommended to avoid possible damage from over extending the suspension of your vehicle.
- Do not tighten connections until assemblies are installed in entirety.
- Read and understand all instructions, warnings and safety precautions in these instructions and your owner's manual before attempting to install these components.
- Proper installation of Rock Krawler Suspension 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.

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- Rock Krawler Suspension 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.
- Rock Krawler Suspension does not condone or authorize the use of any other suspension components with its products. Should Rock Krawler Systems or components be installed in junction with other products or not per the provided instructions Rock Krawler Suspension warranty is void and is not to be held accountable for any resulting actions.

## **IMPORTANCE OF JAM NUTS**

**This is a note about jam nuts and the consumer's responsibility. The installer is the person or persons initially responsible for the proper setup of the suspension system and/or components and the initial tightening of the jam nuts. The jam nuts not only hold the orientation of the joint it is on but it is the single component that puts the necessary pre-load on the joints threads. The consumer or vehicle owner is the person or persons responsible for maintaining the jam nuts tightness. Failure to do so will result in the rapid deterioration of the threads in the control arm and will impose a "cause for concern" for the occupants of the vehicle. Failure to comply with the warnings headed in the directions regarding the amount of threads showing past the jam nut will also result in the same "cause for concern" for the occupants of the vehicle. All of the above items are the responsibility of the vehicle owner and or installer. If a threaded section of a component is bad it will show itself defective immediately. Threads that fail over time are due to improper maintenance of jam nuts and can be proven very easily. Thread sections and jam nuts not properly maintained or setup, are not covered under warranty. This is the end user and installer's responsibility.**

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## OFF-ROAD PRO TIE ROD INSTALLATION

- 1) Support the vehicle under the front axle with jack stands.
- 2) With the front tires removed, disconnect the steering stabilizer from the steering stabilizer bracket.
- 3) Remove the steering stabilizer bracket from the OEM tie rod.
- 4) Remove the cotter pins (if applicable) and nuts from the ends of the OEM Tie Rod Ends.
- 5) Using a ball joint separator or dead blow technique, remove the Tie Rod Ends from the knuckles.
- 6) Set your new HD PRO Tie Rod to a good starting length.

**Please Note:** Measure the OEM tie rod operating length from center of one Tie Rod End to the center of the other Tie Rod End. Set your new HD PRO Tie Rod assembly to that measurement to start, this means the CENTER OF ONE HEIM JOINT TO THE CENTER OF THE OTHER HEIM JOINT. When setting the new HD PRO Tie Rod assembly to length, be sure to have a equal amount of threads showing past the jam nut on each side. It is also a good idea to apply some Never-seize to the threads inside the HD PRO Tie Rod. **Make sure that there is no Never-seize on the threads where the jam nut will need loctite applied or it will not function properly.**



- 7) Attach your new HD PRO Tie Rod to your steering knuckles with the supplied tapered stud in the knuckles with the anti-wobble bushings as shown below. Tighten the top 14mm Nut to 80-90 ft-lbs securing the stud to the knuckle connection. Tighten the bottom 18mm nut to 200 - 220 ft-lbs securing the tie rod end to the stud.

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- 8) Adjust the toe to the factory specs by spinning the tie rod to lengthen or shorten it, follow the note below to torque the jam nuts.

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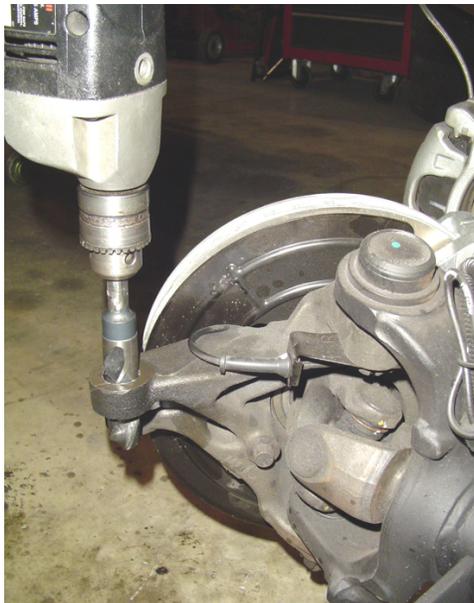
### The note below describes how to properly setup this Tie Rod.

**Note:** *The Ackerman angle in your steering requires slight up and down movements of the tie rod ends. It is completely normal that the tie rod has some up and down movement in it. Once the toe is set, set the orientation of the tie rod (preferably horizontal) and lock down the jam nuts. This will be done with the wheels pointed straight ahead. Cycle the steering back and forth to ensure no jam nuts loosen up and nothing binds at any point in the steering's movement. Torque the jam nuts on your HD PRO Tie Rod to 225-250 FT-LBS, this will ensure the proper amount of preload is on the threaded sections so you will not have issues with them down the road.*

### OFF-ROAD PRO DRAG LINK ASSEMBLY

**\*Please note:** *The Rock Krawler Off-Road Pro Drag Link is designed for high steer (drag link flip kits) only and requires a 3" raised track bar bracket for the axle connection to function properly. Please be sure to have a raised track bar bracket installed or you will induce bump steer/torque steer into your vehicle.*

- 1) Disconnect and remove the drag link from the vehicle using a ball joint separator or dead blow technique. Save the Tie Rod End at the pitman arm for reuse if it is still in good condition.



- 2) Drill out the passenger side knuckle mounting position for the drag link to 11/16".

**Please Note:** *It may take a slight ream to get the hardware to pass through. The tighter the hardware to the hole the better.*

- 3) Assemble your new Off-Road Pro Drag Link like shown below with the supplied jam nut installed on the

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OEM Tie Rod End from the pitman arm connection and the new end supplied threaded into the HD Drag Link.



- 4) Measure the OEM drag link operating length from center of one Tie Rod End to center of the other Tie Rod End. Make note of this length.
- 5) Set your new Off-Road Pro Drag Link to the length of the factory assembly you noted.
- 6) Install the new Off-Road Pro Drag Link using the supplied hardware to the top of your passenger side knuckle and the OEM nut at the pitman arm connection.

**Please Note:** *You can go back to the OEM geometry if the need ever arises. Simply purchase a taper flip spacer.*

- 7) Center your steering wheel by adjusting the new Off-Road Pro Drag Link.
- 8) Ensure that both joints are in phase with each other (misaligned in the same direction) as shown in the images below before you tighten the jam nuts on the joints.

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Passenger side knuckle connection



Pitman arm connection

It is a requirement that your vehicle be taken to a Jeep Dealership for an alignment. You should also get the printout of the alignment specs so you can reference back to them. If your steering wheel is off at all the ESP will be activated. This will be corrected once the vehicle is aligned by a certified Jeep dealership. Centering the steering wheel “by eye” is usually not good enough for ESP!

Before hitting the pavement or the trails be sure to make sure the control arms are oriented properly, all spherical joints (heim joints and Krawler Joints) are oriented correctly to allow for maximum movement without bind, and all jam nuts have locktite on them and are tight. Make sure the axles are properly centered, pinion angles are correct, there is proper slack in ABS lines, and all lines are properly routed. Go back over all your hardware and make sure each connection is tightened to its proper torque spec. Check your vehicles articulation and ensure that no moving parts contact or interfere with any other components throughout the travel. Also check to see if at full flex your coil spring losses tension, if so you may want to look into a limit straps.

**Congratulations, you have just finished installing your Rock Krawler Suspension System! Now your Jeep is ready for anything you can throw at it.**