



INSTALLATION MANUAL

FOR

ROCK KRAWLER SUSPENSION, INC.

JK ADVENTURE SERIES MID ARM

SYSTEMS

2021 1st EDITION

06/23/2021



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 Loctite 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.
- 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.
- 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.

ROCK KRAWLER

S U S P E N S I O N

Driving and Handling Tips

- For Highway driving it is best to have the front sway bar connected. This will give you the on-highway ride and handling characteristics you expect. **If you choose otherwise, you do so at your own risk.**
- The ride quality and handling that Rock Krawler is known for is based on using OEM sway bars front and rear with approved shocks. Using any components other than directed can result in adverse handling characteristics and poor ride quality.
- For Off-Road use it is best to have the front sway bar disconnected and the rear sway bar connected. This will allow your suspension to do its intended function. Our suspension will give your vehicle unmatched articulation which will provide traction and feedback to keep your vehicle moving in almost all conditions. Let the suspension do the work!

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 heeded 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.

ORIENTATION OF JOINTS

Orient the Krawler Joint for maximum amount of movement with the head of joint perpendicular to bolt / head of the joint vertical in the mounting bracket. This same rule for orientation needs to be followed for all heim joints. The photo below shows the right way (LEFT SIDE) and the wrong way (RIGHT SIDE) to orient a joint.



^RIGHT WAY^

^WRONG WAY^



MAINTAINING JOINTS

Krawler Joints/Pro Flex Joints, Anti-Wobble Joints and Pro Disconnect Joints

Before Jan 1 2020 The Pro Series Krawler Joints, Pro Flex Joints, Anti-Wobble Joints and Pro Disconnect Joints are greaseable. They come pre-greased from the factory. The grease valley is machined into the housings. We require Triple Zero (000) grade grease for lubrication of all our joints. They will not take a lot of grease nor do they need a lot of grease. Approximately every 4 to 6 months under normal operating conditions they should be greased. This is condition and use dependent so please use common sense. Over lubrication or using the incorrect grade of grease can do damage to the joints and hydraulically displace the race way material causing a sloppy joint condition. Never ever use red and tacky.

After Jan 1 2020 The Pro Series Krawler Joints, Pro Flex Joints, Anti-Wobble Joints and Pro Disconnect Joints are greaseable. They come pre-lubed from the factory. The grease valley is machined into the housings. Grade 1 grease can be used in all joints. They will not take a lot of grease nor do they need a lot of grease. Approximately every 4 to 6 months under normal operating conditions they should be greased. This is condition and use dependent so please use common sense. Over lubrication or using the incorrect grade of grease can do damage to the joints and hydraulically displace the race way material causing a sloppy joint condition. Never ever use red and tacky.

If the joint is not loose, it is not bad. Only if the ball is sloppy in the joint housing is it a bad joint and should be rebuilt. Krawler Joint Raceways, Pro Flex Joint Raceway, or Anti-Wobble Joint Raceways are available through Rock Krawler Suspension or an authorized dealer.

Please note: If you are not using the full range of motion of the Krawler Joint, Pro Flex Joint or Anti-Wobble Joint very often, the lubrication will not be moving inside the joint. In such cases we recommend spraying down the outside of the Joint with WD-40 or Liquid Fluid Film to ensure the race ways do not dry up. In highly corrosive environments it is also recommended to spray down the suspension components with WD-40 or Liquid Fluid Film. This will minimize corrosion of the components do to exposure to the elements.

HEIM JOINTS (Non-rebuildable spherical joints)

All Rock Krawler Heim Joints use Teflon Liners and thus are self-lubricating. They too can also benefit from spraying down the outside of them liberally with WD-40 or Liquid Fluid Film. Grease should never be applied to them! Take caution when using cleaners and detergents on your vehicle as it can ruin the adhesives used on the Teflon liners yielding a bad heim joint!

SUGGESTED STARTING LENGTHS

Front Track Bar

2.5" lift – 32 9/16"

3.5" lift – 32 5/8"

Front Upper Control Arms

2.5" lift heights – 19 1/8"

3.5" lift heights – 19 1/4"

ROCK KRAWLER

S U S P E N S I O N

Rear Upper Control Arms

2.5" lift heights – 17 ¾"

3.5" lift heights – 17 13/16"

****Please Note:*** All Control Arms, Track Bars, and Sway Bar Links come preassembled, but require adjustment to the above recommended starting dimensions. These measurements are taken from the center of one bolt hole to center of the other bolt hole.



TORQUE VALUES FOR HARDWARE AND JAM NUTS

- All 14mm and 9/16" bolts are torqued to 90-100 ft-lbs.
- All 12mm and ½" bolts are torqued to 75-80 ft-lbs.
- All 10mm and 3/8 bolts are torqued to 30-35 ft-lbs.
- All 7/8" Jam Nuts are to be torqued 200-220 ft-lbs. Up to 5/8" of threads showing past the jam nut is safe for final adjustment. These specifications are critical for the overall longevity of the threaded section.
- All 1" Jam Nuts are to be torqued to 250-300 ft-lbs. GET YOUR BIG BOY PANTS ON! Up to 3/4" of threads showing past the jam nut is safe for final adjustment. These specifications are critical for the overall longevity of the threaded section.

Please see the generalized list of components included in your Jeep JK lift kit. Customers who opted for shock packages will also receive shocks in addition to the components listed below.

FRONT OF VEHICLE (Perform all Steps for the System You Are Installing)

- 1) Make sure vehicle is on a level, hardworking surface if you are using a floor jack and jack stands.
- 2) Block the rear wheels so the vehicle cannot move, and make sure the emergency brake is applied.
- 3) Raise and support the front of vehicle with safety jack stands. Locate jack stands on the frame in front of the axle.
- 4) If you are using a vehicle lift, place the lift arms according to those specific vehicles lifting procedures. Ensure that the lift arms will not interfere with the components that are being replaced.
- 5) Remove the front rims and tires with axle supported by a floor jack.
- 6) Remove the front shocks. Save the OEM hardware to install the new shocks.
- 7) Remove the front sway bar links.
- 8) Remove the bolt holding the factory brake line to the frame to add slack in the line. **Be sure to add slack to the**

ROCK★KRAWLER

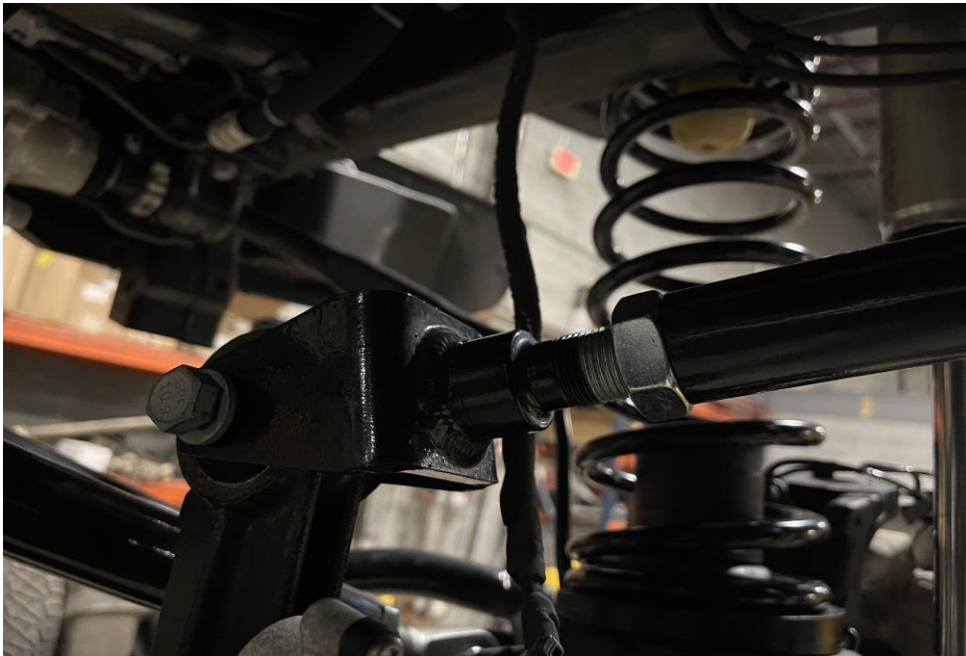
S U S P E N S I O N

breather tube as well.

- 9) Loosen all control arm mounting bolts before starting installation, but do not remove until required.
- 10) Lower the front axle assembly onto jack stands.
- 11) Remove the front track bar from the vehicle and save the OEM hardware for reuse.
- 12) Remove the front springs.

***Please Note:** For all OEM components being reused, loosen the mounting hardware at all connections so you do not overstress the OEM vulcanized rubber bushings. Failure to do so can result in a rougher than expected ride, adverse handling and premature wear of the OEM components.

- 1) **ULTIMATE ADVENTURE SYSTEM ONLY (ALL OTHERS OMIT):** Install the supplied front upper control arms set to the specified length for your kit according to our measurements. Secure using the supplied 12mm hardware. The adjustable Clevis Fork goes to the axle connection as shown below.



Pass. Side Front Upper Showing Clevis Adjuster at the Axle Connection.

- 2) Remove the front lower control arms and save the OEM hardware for reuse.
- 3) Cut out the portion shown in purple. We recommend using an angle grinder or hole saw. This cut is made to provide clearance to the grease fittings.

ROCK KRAWLER

S U S P E N S I O N



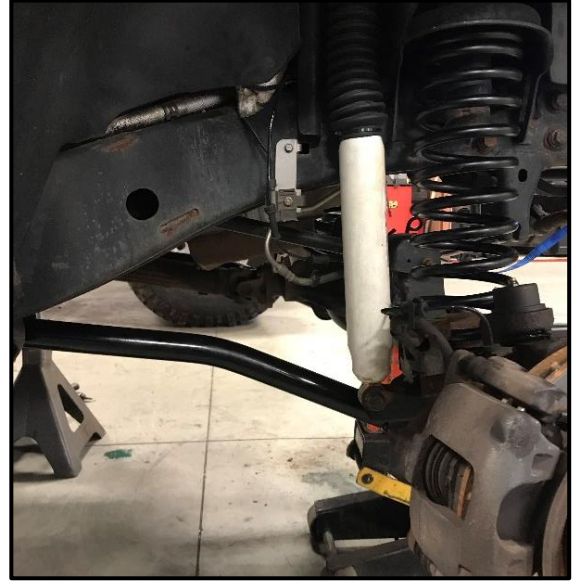
- 4) Install the supplied front lower control arms with bend oriented upwards from the ground. Please note: they are bent symmetrical so there is no wrong way of installing them other than putting the bend down!



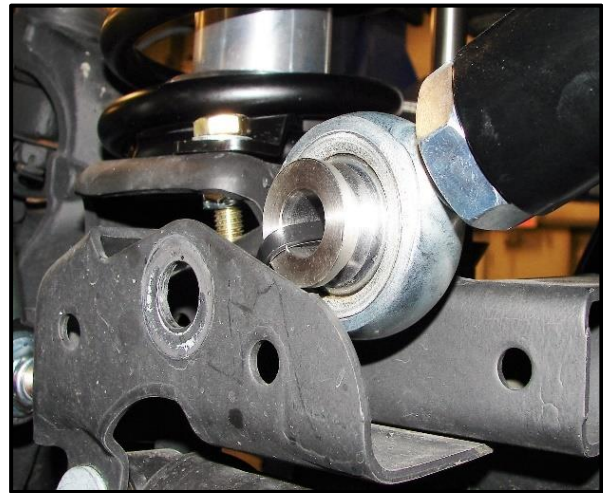
Stock and Rock Krawler Lower arm comparison – bend oriented upward

ROCK KRAWLER

S U S P E N S I O N



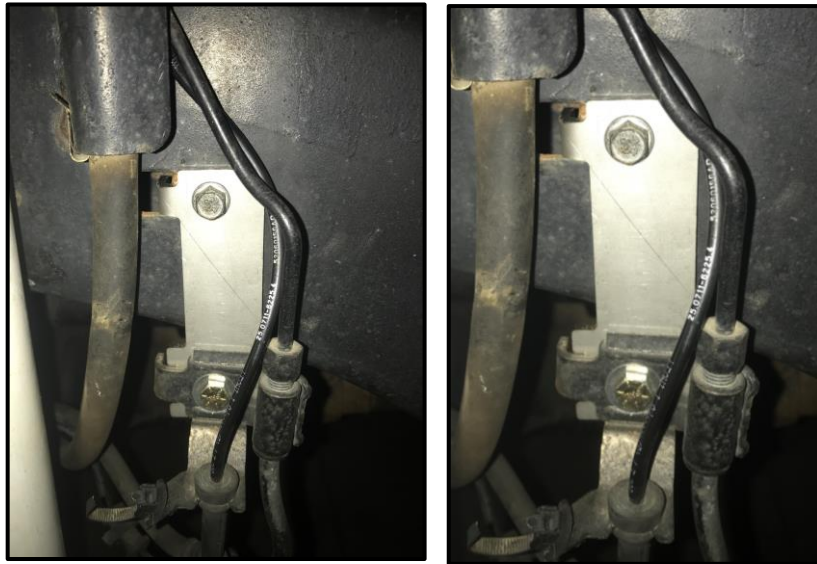
- 17) Install the supplied front coil springs. Make sure the end of the coil spring sits in the spring mount just as it did from the factory. If the coil is not seated properly it will bow more than it should and can damage your coil.
- 18) Install the front shocks using OEM hardware.
- 19) **IF YOU RECEIVED OUR BUMP STOPS:** Install the new bump stops supplied in your kit. The front bump stops will be installed by drilling a ½" hole into the center of the front spring mounting pad. 2.5" systems get 2", 3.5" systems get 3".
- 20) As you are compressing the suspension, install the front track bar reusing the OEM hardware. Be sure to set it to the starting dimensions for your system as specified above and balance the amount of thread showing past the jam nut on each end. The rebuildable Anti-Wobble welded joint goes to the frame connection and the heim joint with high misalignment spacers go to the axle connection as shown below. Helpful hint. Be sure to have the steering column unlocked so the axle will swing side to side freely.



***Please Note:** For right hand drive models, the welded anti-wobble joint attaches to the bracket at the frame. Ensure the two O-rings are on either side of the joint. The heim joint goes to the bracket at the axle.

- 21) Remove the rear Sway bar links from your Jeep. Remove the front sway bar links and discard them. Install the rear sway bar links in the front of the Jeep using the OEM hardware.
- 22) Install brake drop line bracket as shown in picture below. Note that line will need to be “extended”, by stretching line down. It is recommended to use your hands to straighten the bends in front brake lines from 90° to approximately 30°. Use your thumbs to press into the line gently.

***Please Note:** The factory front brake lines on a 07'-10' are routed different then the front brake lines on a 11'+. We use the same brake line for all of our JK products thus we require you to route the line on the 11'+ just as if you were routing a line on earlier JK's. See the photos below to reference your new front brake line and ABS line routing.



The Front Brake Line Drop Brackets are installed using the original hardware. Reorient the original bracket like that in the picture below. The new mounting hardware for each brake line includes one ¼"-20 bolt as well as two washers and a corresponding nylok nut. The washers should “sandwich” the two brake brackets between the bolt and nut.

Brake Drop Line Brackets

- 23) Ensure all bolts have been tightened per specification. Put your tires and wheels back on the front end and carefully lower the vehicle to the ground. Make sure all your bolts have been tightened, and jam nuts are torqued to the values found on page 5. Put your tires onto front axles and get ready to do the same process to the rear.



REAR OF VEHICLE (Perform all Steps for the System You Are Installing)

- 1) Make sure vehicle is on a level, hard, working surface if you are using a floor jack and jack stands
- 2) Block the front wheels so the vehicle cannot move.
- 3) Raise and support the rear of vehicle with safety jack stands. Locate jack stands on the frame behind the rear axle.
- 4) If you are using a vehicle lift, place the lift arms according to those specific vehicles lifting procedures. Ensure that the lift arms will not interfere with the components that are being replaced.
- 5) Remove the rear rims and tires with axle supported by a floorjack.
- 6) Remove the rear shocks. Save the OEM hardware for reuse.
- 7) Unbolt the bottom end of the rear sway bar links and save for reuse if your kit requires it.
- 8) Remove the bolt holding the factory brake line to the frame to add slack in the line. **Be sure to add slack to the breather tube as well.** (This can be done by popping out the clips holding the tube to the frame).
- 9) Loosen all control arm mounting bolts before starting installation, but do not remove until need be.
- 10) Unbolt the brake lines from the frame and let them hang now.
- 11) Remove the wire hanger for the rear emergency brake cable and route them to have as much slack as possible.
- 12) Lower the rear axle assembly onto jack stands.
- 13) Remove the rear coil springs.
- 14) Unbolt the axle end of the rear track bar, save it and the OEM hardware for reuse.

***Please Note:** For all OEM components being reused; loosen the mounting hardware at all connections so you do not overstress the OEM vulcanized rubber bushings. Failure to do so can result in a rougher than expected ride, adverse handling and premature wear of the OEM components.

- 15) **ULTIMATE ADVENTURE SYSTEM ONLY (ALL OTHERS OMIT):** Remove the rear upper control arms and save the OEM hardware for reuse.
- 16) **ULTIMATE ADVENTURE SYSTEM ONLY:** Remove the rear lower control arms and save the OEM hardware for reuse.

***Please Note:** Cutting the OEM lower control arm nut anti-rotation tab in half is recommended so the tab does not rub on the rear lower control arm. Reference the next image for where the tab should be cut.

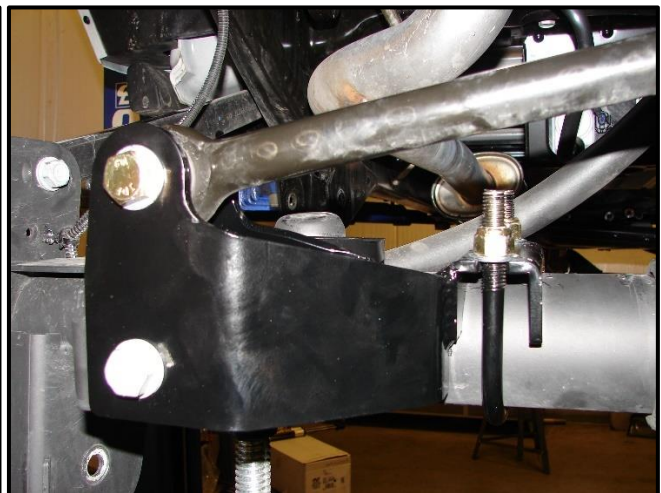
ROCK KRAWLER

S U S P E N S I O N



- 17) Install the rear track bar relocation bracket using the OEM bolt and the supplied 7/8" O.D. x 9/16 I.D. x 1.625" long crush sleeve on the inside of the OEM lower track bar mount, and supplied 1/2" U-bolt, washers, and nylok nuts as shown below.

Tightening sequence is as follows; with all the hardware in place, tighten the 1/2" nylok nuts on the U-bolt to 50-55 ft-lbs. Then tighten the OEM mounting bolt at the OEM location.



- 18) **ULTIMATE ADVENTURE SYSTEM ONLY:** Install the rear upper control arms set to the specified length for your kit according to our measurements and secure using the OEM hardware.

**Please Note:* The arms can be installed in either direction but it is much easier to get to the jam nut if you put the adjustable end at the frame connection as shown below.

ROCK KRAWLER

S U S P E N S I O N



Rear Uppers and Rear Lower Installed in the Vehicle

- 19) **ULTIMATE ADVENTURE SYSTEM ONLY:** Remove the rear lower control arms and save the OEM hardware for reuse. Please note: they are bent symmetrical so there is no wrong way of installing them other than putting the bend down!
- 20) **ULTIMATE ADVENTURE SYSTEM ONLY:** Install the spring correction wedges under the rear coils on the axle. The thick part of the shim goes towards the rear of the vehicle as shown below.



ROCK KRAWLER

S U S P E N S I O N

- 21) **IF YOU OPTED FOR THE RK BUMP STOP KIT;** Install the RK fabricated rear bump stops. Our rear fabricated bump stops mount to the factory bump stop pad using the supplied hardware. Make sure the bumps stop angles to the front of the vehicle as shown in the photo below. The rubber “hockey pucks” can then be screwed into the metal bump stops with the supplied button hex screw and nylok nut.



Note Add one rubber spacers for 2.5” and two for 3.5”

- 22) Install the Rock Krawler rear coil springs. Make sure to put the end of the coil winding all the way to the rear of the lower coil pad. Verify the spring is seated correctly in the axle.
- 23) Slowly start to compress the suspension. Ensure all axle links are connected and springs are sitting with proper orientation (as shown above).
- 24) As the suspension is compressing, attach the OEM track bar to either the OEM track bar position on the axle using the OEM hardware or attach the OEM track bar to the raised track bar bracket with the supplied 14mm x 80mm bolt, washers and nylok nut.
- 25) Install the rear shocks using the OEM hardware.
- 26) Connect the newly supplied rear fixed sway bar links with the supplied hardware. Install welded rear sway bar links in orientation as shown below (top & bottom connection). Picture is of driver’s side sway bar link connection (Oriented rear - facing forward of vehicle). Take note that 12 mm washer is placed on inside of bracket, while larger “fender” washer is placed on outside (between bolt head and link). In the picture shown below, the tire was on the left of the link mount.

Top connection: 12mm x 50mm bolt, fender washer, sway bar link, attachment bracket, smaller washer, nylok nut.

Bottom Connection: 12mm x 50mm bolt, fender washer, sway bar link, attachment bracket, smaller washer, nylok nut. Make sure larger washer is sandwiched between the bolt head and the sway bar link.

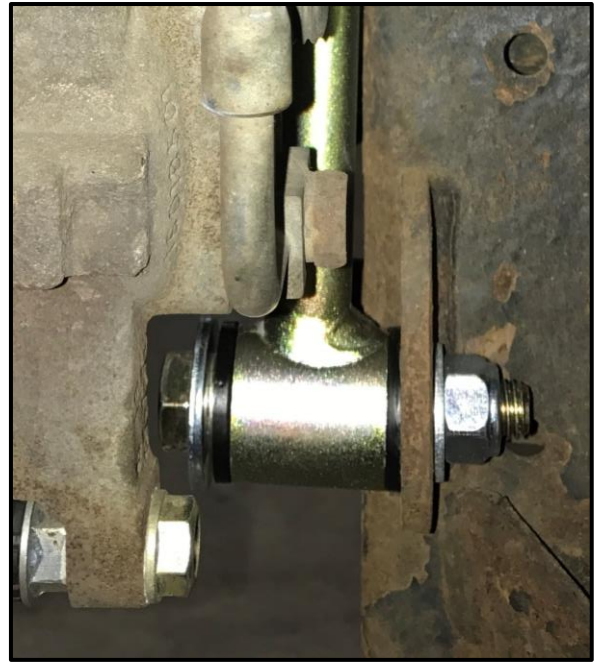
ROCK KRAWLER

S U S P E N S I O N

Top Connection (Fixed)



Bottom Connection (Fixed)



- 27) Remove the OEM bolt holding your brake line to the frame, and orient the brake lines as such. If your vehicle has an ABS line, there will be no change compared to a single brake line. There is NO need to bleed the brakes with these drop brackets.

The *Rear Brake Line Drop Brackets* are installed at the frame with reusable hardware. Reorient the original bracket as shown below. The new mounting hardware for each brake line includes one 1/4"-20 bolt as well as two washers and a corresponding nylok nut. The bracket faces should be touch, and A washer is required on each side of the brackets.



- 28) Install the rear wheels and tires and lower the vehicle to the ground.
- 29) Tighten all mounting bolts at this time!

ROCK KRAWLER

S U S P E N S I O N

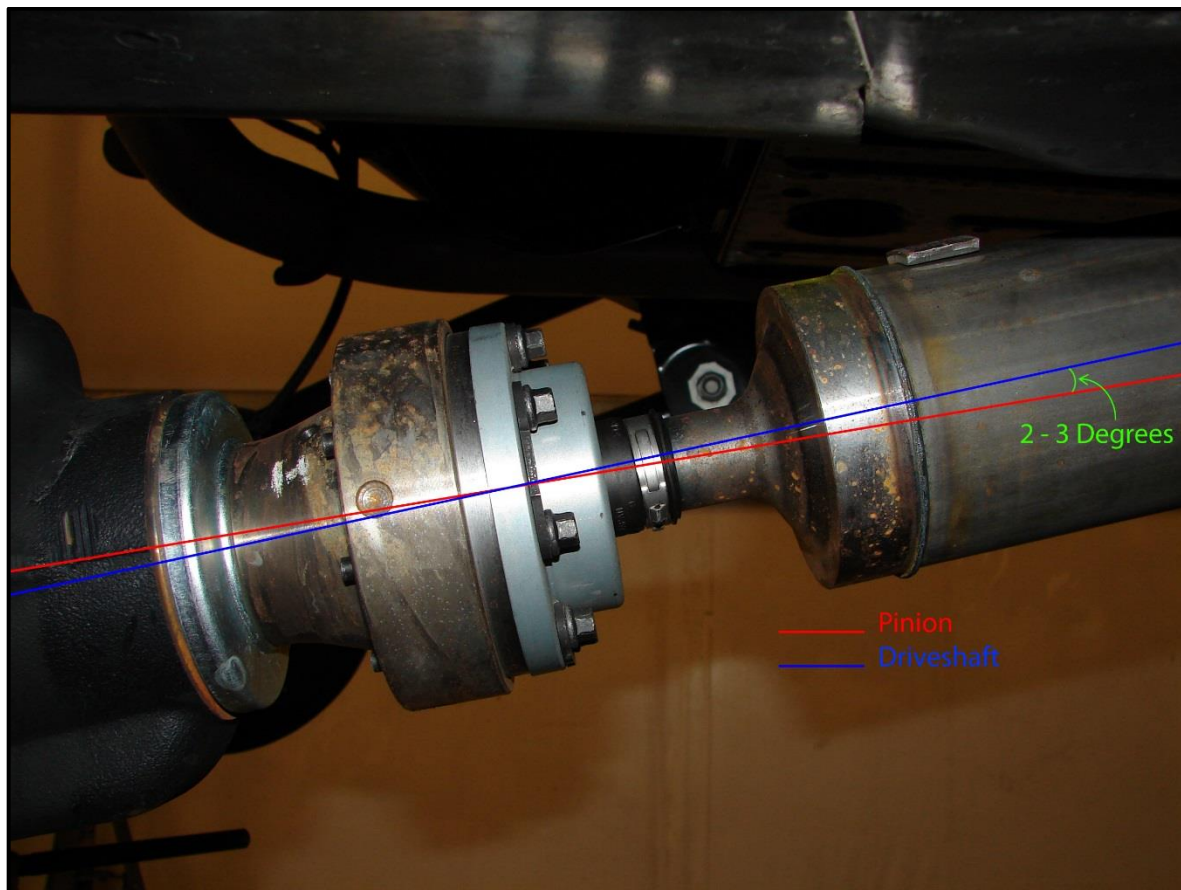
Recommended Alignment Specs are as follows: These caster values are imperative for your vehicle to drive correctly on a slightly contoured road.

2.5" Lift Height: 4.5 to 6.0 degrees of Caster with a .2 to .4 Cross Caster Split (.2 to .4 degrees more caster on the pass. side than the driver's side.)

3.5" Lift Height: 4.2 to 5.5 degrees of Caster with a .2 to .4 Cross Caster Split (.2 to .4 degrees more caster on the pass. side than the driver's side.)

Tow: 0 to slightly towed in but within factory specifications

The rear pinion angle should be down 2 – 3 degrees from the driveshaft as shown below.



***Please Note:** If you do not have adjustable components you will not be able to dial in the alignment or pinion angle settings so what you get is what you get...

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 Red Loctite 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 (brake lines, shocks, coils, sway bar links). Also check to see if at full flex your coil



spring losses tension, if so you may want to look into a limit straps. You may need to look at bump stops depending on what shocks you choose to run.

Congratulations, you have just finished installing your Rock Krawler Suspension System! Your Jeep is now free to roam about the country.



Common Service Parts Listings:

Rock Krawler 000 Grade Grease – 3 oz tube – RK05494 For Systems Before Jan 1 2020

Grade 1 Grease such as Mobil Grease – Mobilux EP1 [NLGI 1] or equivalent can be used for Systems After Jan 1 2020.

Front and Rear Lower Control Arms Prior to 3/1/2021

Pro Flex Bushings – RK04838K – Requires Large Joint Tool – RK04484

Front and Rear Lower Control Arms After 3/1/2021 Part Number RK06063B

Rear Lower Control Arm Adventure Series Joint – RK07403K

Front and Rear Track Bars Prior to 1/1/2021

Please contact the office for proper service parts. There were two product updates over the 14 year run.

Front and Rear Track Bars After to 1/1/2021

Anti-Wobble Joint Bushings (Frame End) – RK07836K – Requires Small Joint Tool – RK04487

Front Track Bar Replacement Heim Joint (Axle End) – RK07535 (1” Shank) – Optional New Misalignment Spacers – RK03428

Rear Track Bar Replacement Heim Joint (Axle End) – RK03426 (7/8” Shank) – Optional New Misalignment Spacers – RK03428

Front Upper Control Arms Prior to 3/1/2021

Replacement Krawler Joint – RK03524

Replacement Krawler Joint Bushings – RK00221K – Requires Small Joint Tool – RK04487

Front Upper Control Arms After 3/1/2021

Front Upper Control Arm Adventure Series Joint – RK07415K

Rear Upper Control Arms Prior to 3/1/2021

Replacement Krawler Joints – RK03499 (Right Hand Thread) RK03499L (Left Hand Thread)

Replacement Krawler Joint Bushings – RK00221 – Requires Small Joint Tool – RK04487

Rear Upper Control Arms After 3/1/2021

Rear Upper Adventure Series Joint – RK07417K

Optional Fully Adjustable Joint with Housing and Joint Center – RK07427