INSTALLATION MANUAL

FOR

ROCK KRAWLER SUSPENSION, INC.

JK ROCK RACER SYSTEMS

2016 1st EDITION

2/2/16

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 action

Driving and Handling Tips

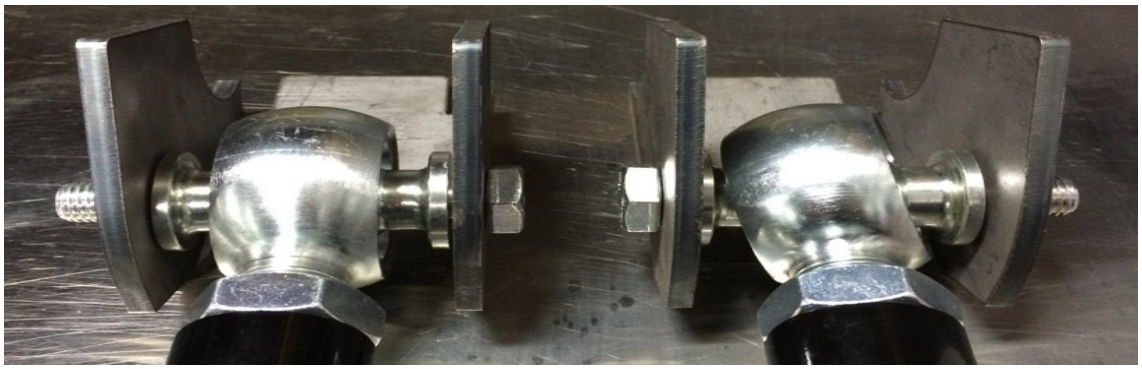
- For Highway driving it is best to have the front sway bar connected. This will give you the on highway ride and handling characteristics you expect. **If you choose otherwise, you do so at your own risk.**
- The ride quality and handling that Rock Krawler is known for is based on using OEM sway bars 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 proved traction and feed back 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

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.

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!

Component Starting Lengths For 4.5”/5.5” System

4.5”/5.5” Front Track Bar Assembled Length = 32 9/16”
4.5”/5.5” Rear Track Bar Assembled Length = 40.00”
4.5”/5.5” Front Lower Control Arm Assembled Length = 34.250”
4.5”/5.5” Front Upper Control Arm Assembled Length = 36.313”
5.5” Rear Lower Control Arm (*4 Door*) = 33.75”
4.5” Rear Lower Control Arm (2 Door) = 36.75”

Note: All Control Arms, Torque Arms, Track Bars and Triangulated 4 -Link Assemblies come pre-assembled, but they require final adjustment as specified in the directions above. These measurements are taken from the center of one bolt hole to center of the other bolt hole.

Please Note: The front upper arms can be tricky to set properly. Measure from the center of the mounting bolt to the center of the joint as shown.

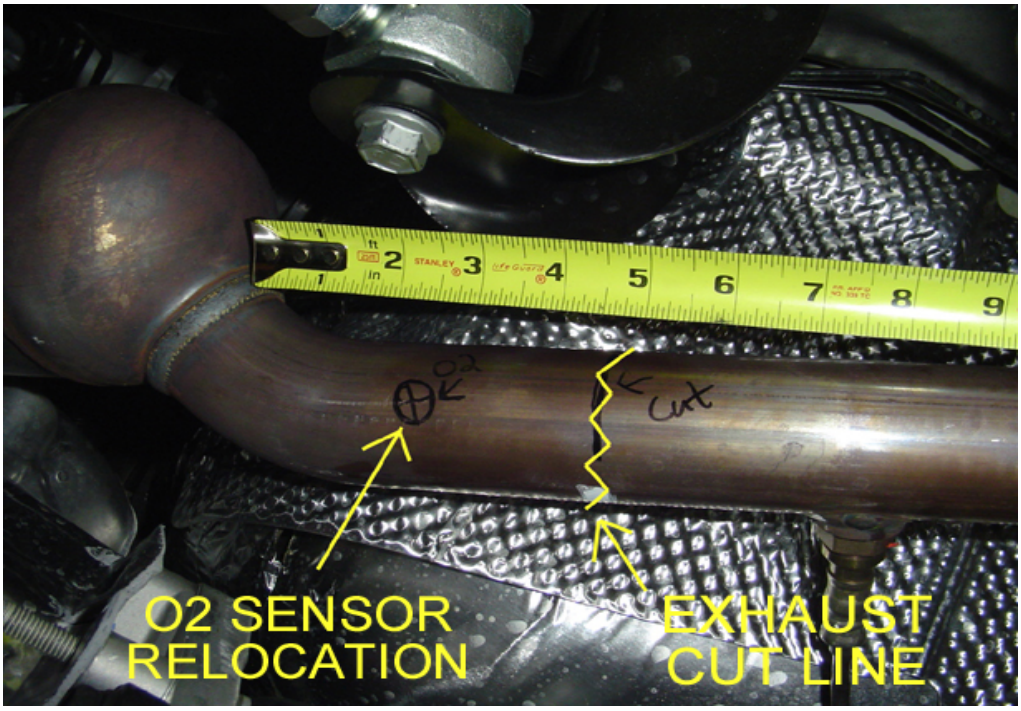
TORQUE VALUES FOR HARDWARE AND JAM NUTS

- 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.
- All 1 1/4" Jam Nuts are to be torqued to 275-325 ft-lbs. GET YOUR BIG BOY PANTS ON! Up to 7/8" of threads showing past the jam nut is safe for final adjustment. These specifications are critical for the overall longevity of the threaded section.

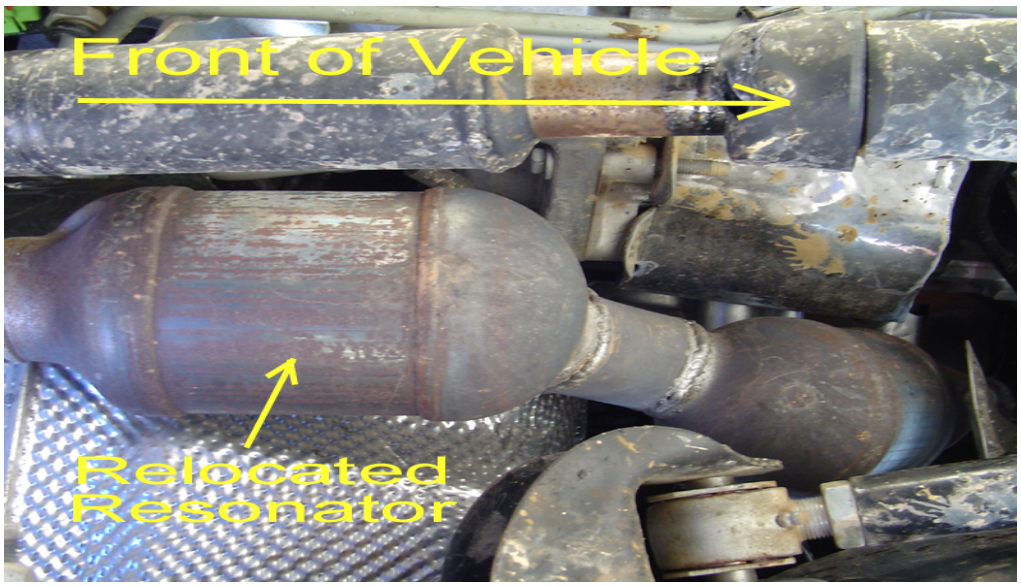
Please note: **Before you start this procedure it is recommended that you have your front exhaust modifications completed prior to installation of the system so when your installation is completed you can drive your JK away safely. The recommended exhaust modification is shown below. Please note the exact procedure will vary depending on years and engine models. The goal of the exhaust modification is to clear the new long arm mount and the new long front upper control arm. It may be helpful to bring the mount and upper control arm to the exhaust shop. Ensure the exhaust is not routed where is can interfere with hardware going into the long arm mounts.**

SUGGESTED EXHAUST MODIFICATIONS

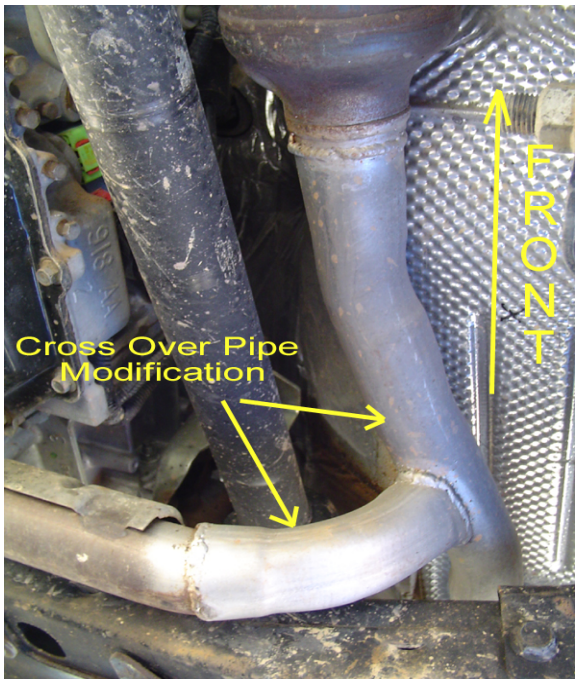
'07 – Early '10 JK's (3.8L V6)



- Remove the O2 Sensor and then cut the exhaust 4.5" back from the catalytic converter. Relocate the O2 Sensor 2.5" from the end of the first cat. **Please note: the O2 Sensor will actually function better the hotter it is so moving it closer to the manifold will certainly not hurt its operation.**

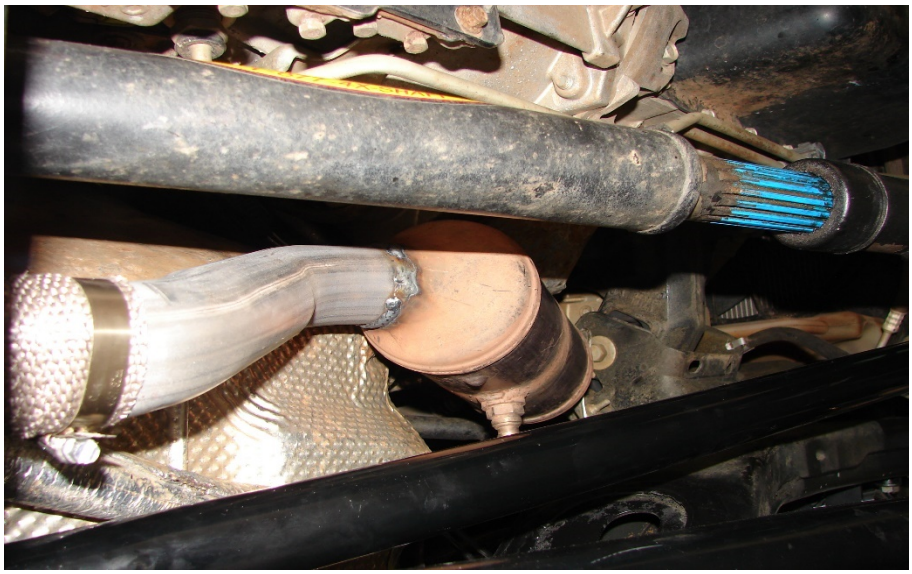


- Relocated resonator after the Cat on the driver's side after relocating the O2 sensor forward (it must be relocated between the cat and the resonator) flip the resonator over 180 degrees and weld it back in place as shown above.



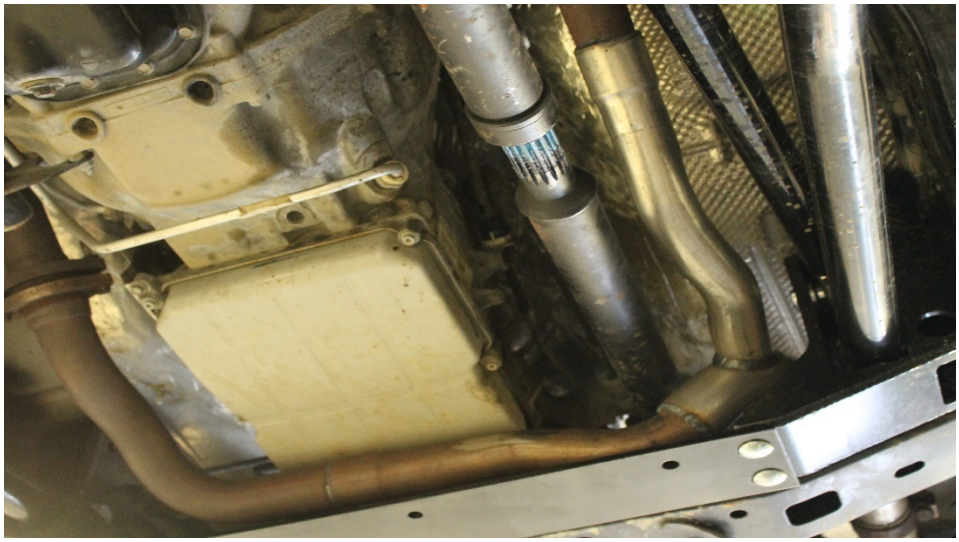
- Modify the cross over pipe and tie the driver's side resonator into the exhaust connection and then bring the entire exhaust system back together. Make sure your modifications allow for clearance for the new mounts and mounting hardware for the arms.

Late '10 – '11 JK's (3.8L V6)



- Cut out the catalytic converters and relocate them as close to the exhaust manifolds as possible.
- Reroute the exhaust around the long arm mounts and tie both left and right pipes back into each other.

'12+ JK's (3.6L V6)



- You will want to cut out the exhaust loop on the drivers side of the y-pipe. Then reroute the pipe around our control arm mount and tie the crossover pipe back into it. You will want to take into account the movement of the driveshaft during articulation as you are rerouting the pipes. Make sure that you do not have any contact at any point of your suspension movement. For 4 door applications a great starting point would be to use the Magnaflow Exhaust Loop Delete Kit – Ref. Part # 19211.

FRONT OF VEHICLE

1) Make sure vehicle is on a level, hard working 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 the front of vehicle and support 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 breather tube as well.

9) Lower the front axle assembly onto jack stands.

10) Remove the front track bar from the vehicle and save the OEM hardware for reuse.

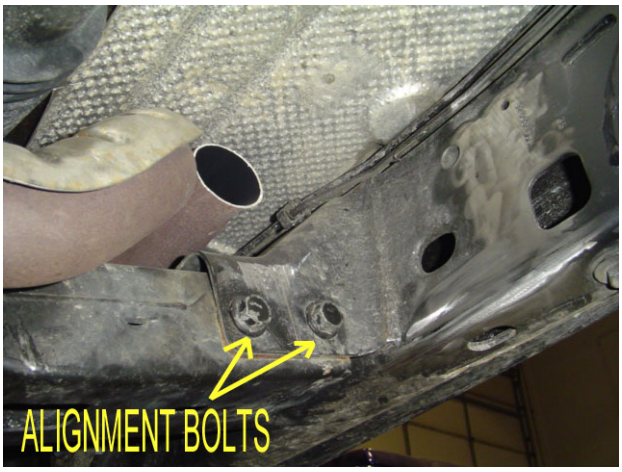
11) Remove the front springs.

12) Remove the front lower control arms. Discard the arms, but save the hardware for reuse.

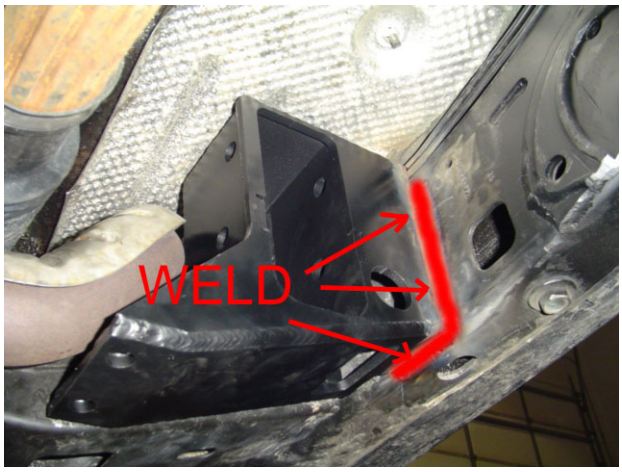
13) Remove the front upper control arms. Discard the arms and hardware.

14) Install the front long arm mounts as shown below.

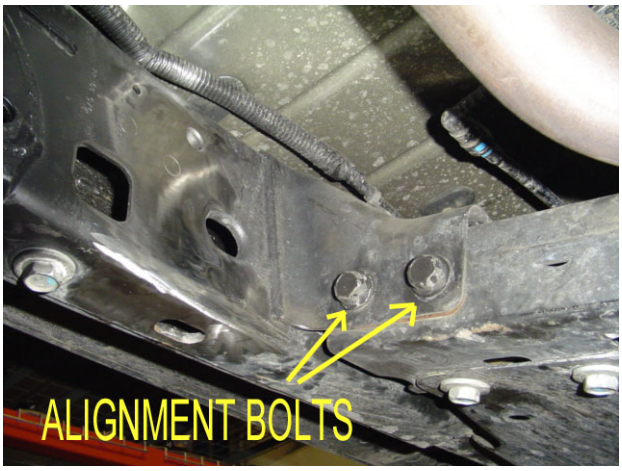
Please Note: The mounts bolt into position using the OEM cross member bolts and then weld in place. Use a full ¼" fillet weld. Be sure to prep the surfaces properly. Apply a finish of your choice.



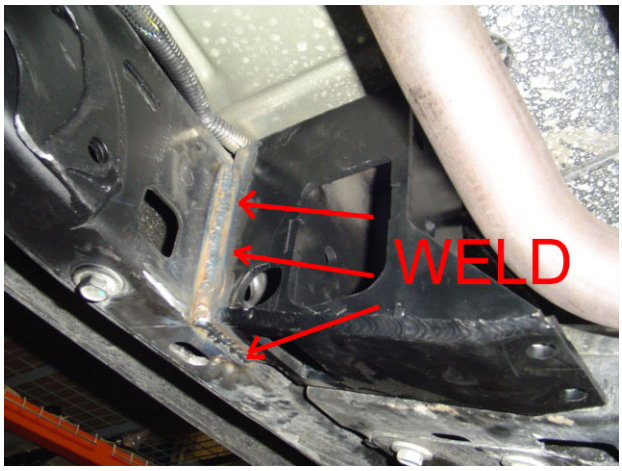
D.S. Bracket Location Bolts



D.S. Bracket Welded in Place



P.S. Bracket Location Bolts



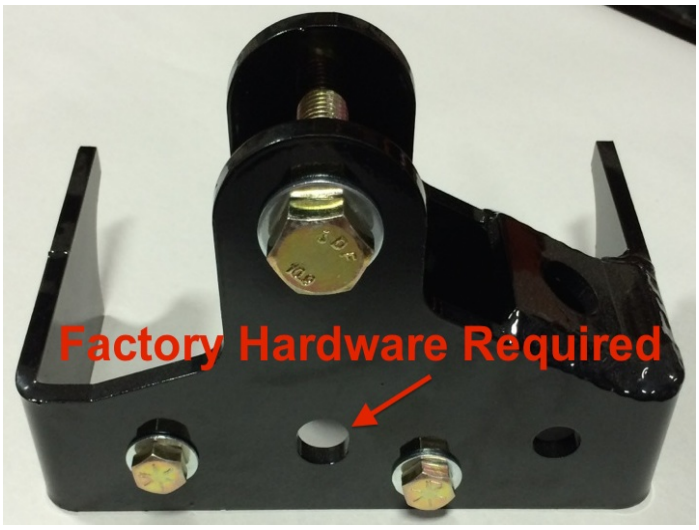
P.S. Bracket Welded in Place

15) Install the new cross member using the (4) supplied ½" x 1.25" carriage bolts, ½" lock washers, and ½" free running nuts.

16) Remove the OEM front upper and lower control arm mounts from the frame. Clean up the frame and apply a durable finish of your choice.

17) **OFF-ROAD PRO FRONT UPPER CONTROL ARM MOUNT:** Mark or note the position and orientation of the front upper control arm mount on the passenger side of the axle, then remove the OEM mount off the axle. Place the supplied off-road pro front upper mount in the same position and orientation as the OEM front upper mount was on the passenger side tube of the axle and weld in place as shown below. ***Helpful hint:*** When the caster is set on the axle, the front surface of the off-road pro front upper mount will be vertical.

18) Install the supplied front track bar bracket using the factory hardware in the hole marked below to secure the new bracket. Place the supplied crush sleeve between new relocation bracket and the factory bracket.



18a) Install the supplied 3/8" x 1" hardware with washers and nyloc nuts through the holes in the front of the new relocation bracket that line up with the OEM holes in the factory track bar bracket.

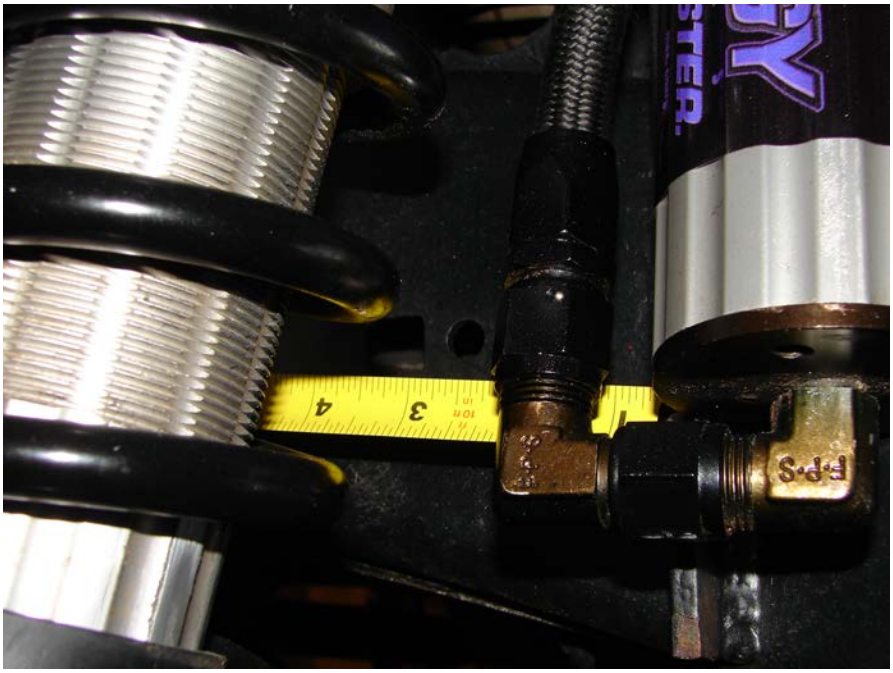
18b) Weld the new bracket to the axle tube using a 1/4" fillet weld around the radii of the bracket that contact the axle tube. Apply a durable finish of your choice.

19) Install the new upper coil over shock mounts.

19a) Remove the OEM coil spring and shock buckets from the frame completely as shown below.

19b) Place the new coil over mounts on top of the frame rail. The upper shock mounts are driver/side pass side specific. Set them on the frame rail and position them **2.75"** back from the edge of the square hole by the brake line mounting tab to the inside of the bracket as shown and fully weld in place using a full ¼" filet weld.

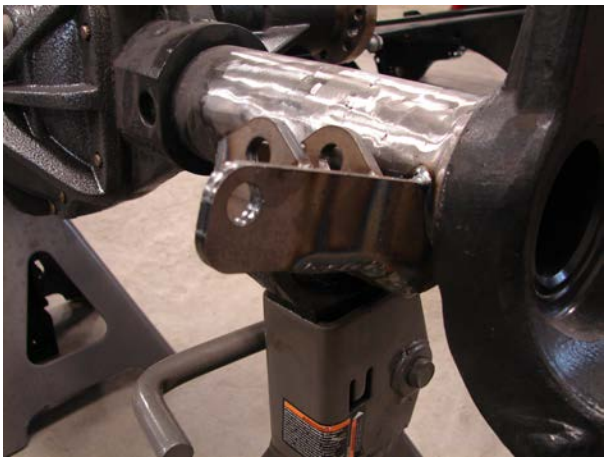
Driver Side Assembly Shown



Pass. Side w/ Measurement Shown

19c) Remove the OEM shock mounting brackets and sway bar link mounting brackets off the front axle completely. Install the supplied lower coil over/bypass/sway bar link mounting brackets as shown. Set the caster to 4 - 5 degrees and the bottom surface of the brackets to 0 degrees or horizontal. Space the mounts ½" inside the C's so you can get a nice ¼" fillet weld all the way around.

Pass. Side Front Lower Mount



Driver Side Front Lower Mount

Please note: Variations in axle width and Inner C's will need to be taken into account so the sway bar disconnects line up and function properly. These mounts also may require an offset tie rod for clearance depending on application.

20) Install the new front upper control arm to the specified length for application. Secure using the supplied 14mm x 100mm bolts, washers, and nyloc nuts at both ends.

21) Install the front lower control arms set to the specified length for your application.

Please Note: **T**he bend in the arm is for improved ground clearance and go up. The Krawler Joint (Zinc Plated Spherical Joint) goes to the axle and the Pro Flex Joint (Bushing Joint) goes to the frame.

22) Install the supplied coil overs and bypass shock assemblies with the supplied ½" x 2.75" bolt, washers and nylok nuts on both top and bottom.

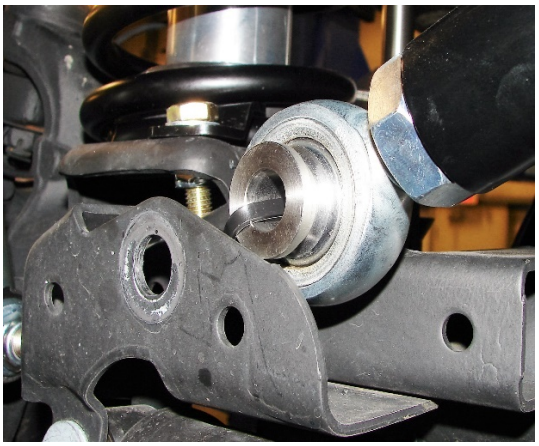
Please Note: There is a specific drive side and passenger side to each assembly as shown in step 21b (Pass. Side Shown in the image). The front coil overs and bypass shocks are the longer assemblies. The rear are the shorter assemblies.

23) Install the supplied front bypass shock ressy holders. The bracket mounts around the tube in the frame as shown below. Mark and Drill (4) ¼" holes, then attach the bracket with the supplied 5/16 thread forming bolts.

Ressy Holder w/ Ressy Installed

Please Note: You want to have a minimum of 4.5" of compression. Use the spanners on the coil overs to adjust the height of the vehicle until your desired stance and lift is achieved. For remote reservoir applications, the reservoir attaches directly to the back side of the upper shock mount using the supplied hose clamps.

24) As you are compressing the suspension, install the front track bar reusing the OEM hardware in the OEM location(s) or the supplied 14mm x 80mm bolt, washers and nylok nut in the raised axle mount location. 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 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: If for some reason you happen to remove the joints from the bar, the Anti-Wobble Joint goes in the short leg and the Heim Joint goes in the long leg. When installed, the bend of the bar goes up! Orientation of the bar is set by locking the jam nut at the frame connection. Do not allow more than 5/8" of thread to show past any jam nut for proper thread engagement. If you find it difficult to get at the jam nuts properly in the vehicle, remove the track bar and tighten the jam nuts in a vice making sure to hold the orientation of the joint while doing so.

25) Install the Off-Road Pro HD Drag Link

25a) Disconnect and remove the drag link from the vehicle using a ball joint separator or dead blow technique. Note the OEM drag link length. Save the Tie Rod End at the pitman arm for reuse if it is in good condition

25b) Drill out the passenger side knuckle mounting position for the drag link to 11/16" as shown below.

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

25c) Assemble your new HD Drag Link like shown below with the supplied jam nut installed on the factory Tie Rod End and the Tie Rod End threaded into the HD Drag Link.

25d) Set your new HD Drag Link to the length of the factory assembly you noted.

25e) Install the new HD Drag Link using the supplied hardware to the top of your passenger side knuckle and the factory Tie Rod End hardware at the pitman arm connection.

Please Note: You can go back to the OEM geometry if the need ever arises. Simply purchase our flip spacer and follow the directions included.

25f) Center your steering wheel by adjusting the new HD Drag Link.

25g) 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.

Passenger side knuckle connection

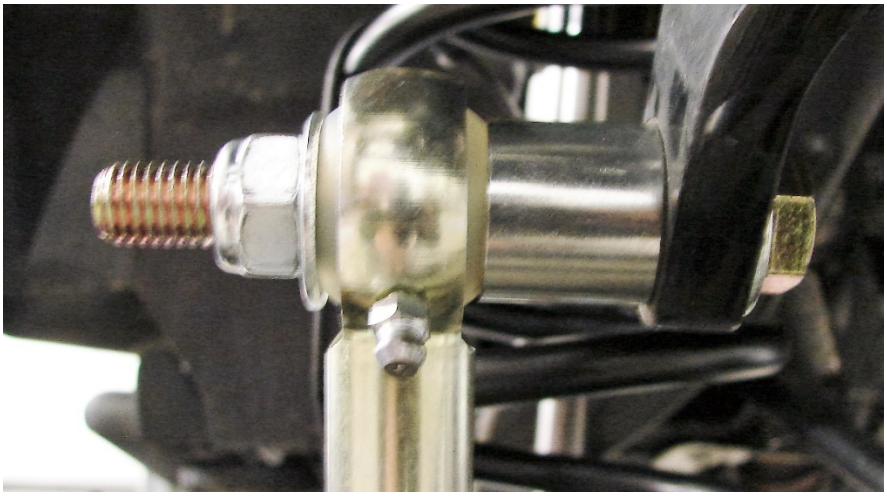
Pitman arm connection

26) Install the newly supplied Pro Disconnects/Extended Links. Set the length of the assemblies as noted below.

Recommended Lengths .5" Systems – 13" / 5.5" Systems – 14"

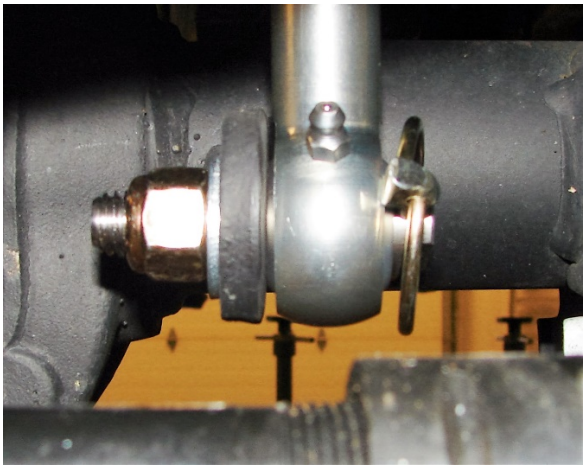
Please Note: These are recommended starting lengths. Fully cycle the suspension for clearance/interference checks once your installation is complete to ensure proper operation.

Top Connection

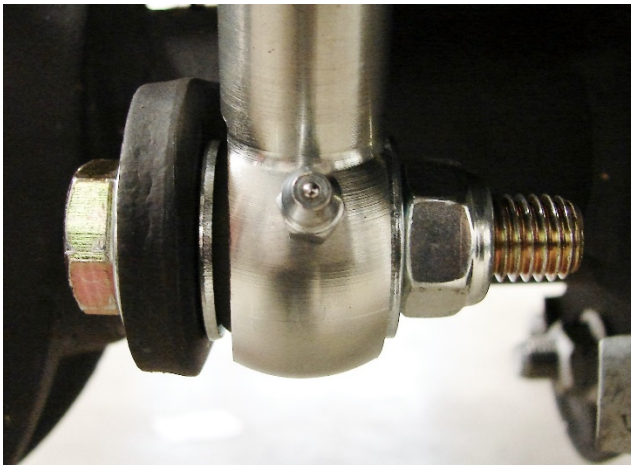


Top Connection: Working from the inside out, you have the head of the supplied 12mm x 80mm bolt, 12 mm washer, sway bar, shoulder of the billet spacer/sleeve, top joint of the sway bar link, 12mm washer then the supplied nylok nut as shown above.

Bottom Connections



Disconnect Connection



Fixed Bottom Connection (E-Disconnects)

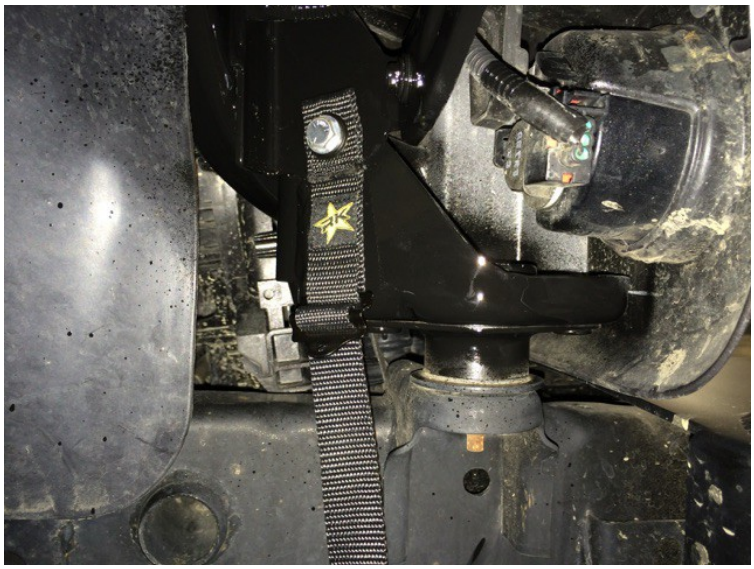
Disconnect Connection: Secure the supplied stainless steel disconnect bar pin to the OEM mounting tab with the supplied ½" washer under the supplied ½" nylok nut. Orient the lynch pin hole in an orientation most convenient for you to get at and make it as easy as possible to remove and disconnect the sway bar.

Fixed Bottom Connection: In the hardware package you will find a supplied 12mm x 50 mm bolt, straight sleeve (3/4" O.D. x ½" I.D.), washers and nylok nut. Remove the standard disconnect pin and insert the straight sleeve into the ball of the link. Secure as shown above with the head of the bolt, washer under the head of the bolt, washer on each side of the ball and the nylok nut.

Please Note: For those of you using the conventional disconnect feature we have supplied sway bar retainer straps for your convenience.

To install your sway bar link straps:

Drill a 5/16" hole in the sheet metal as shown in the picture below to the left and secure the fixed end of the sway bar link strap with the supplied 5/16" x 1" bolt, washers and nylok nut as shown below to the right.



When disconnecting, wrap the sway bar link strap around the sway bar and link. Then secure them up and out of the way. When not using the sway bar straps it is recommended the bottom end of the straps be removed and stored in a safe storage place.

27) Remove the OEM rubber brake lines. Install the supplied extended stainless steel brake lines (Part Number RK02038). Be sure to add slack to your ABS lines and route them with your new stainless steel lines. Use the supplied zip ties to secure them to each other. Do not worry about bleeding the brake system at this time unless your kit does not come with rear brake lines.

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 the prior year JK's. The 15 degree angle built in the fitting is designed so the line is pushed away from the tire and wheel assembly. See the photos below to reference your new front brake line and ABS line routing.

28) Secure the reservoirs with the supplied hose clamps as noted in the images prior. The bypass ressy goes to the newly installed front ressy mount and the coil over ressy goes to the back side of the coil over/bypass frame side mount as shown in prior images.

29) Put the tires and wheels back on the front end and carefully lower the vehicle to the ground. Get ready to work on the back end.

REAR OF VEHICLE

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 the rear of vehicle and support 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 floor jack.

6) Remove the rear shocks. Save the OEM hardware for reuse.

7) Remove the rear sway bar links.

8) Remove the wire hanger for the rear emergency brake cable and route them to have as much slack as possible.

9) 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.

10) Lower the rear axle assembly onto jack stands.

11) Remove the rear coil springs.

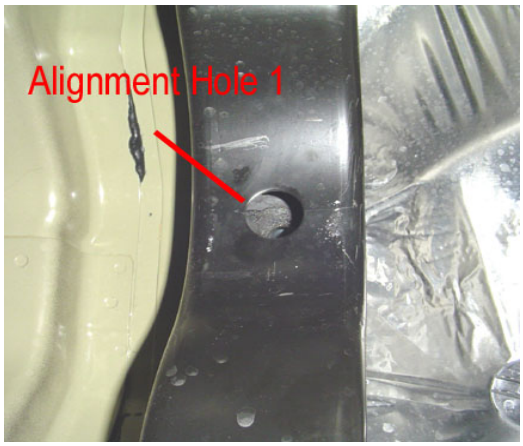
12) Remove the rear track bar, save the OEM hardware for reuse.

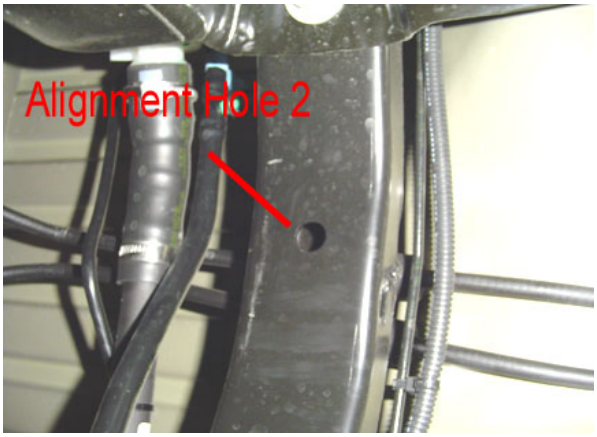
13) Remove the rear lower control arms, save the OEM hardware for reuse.

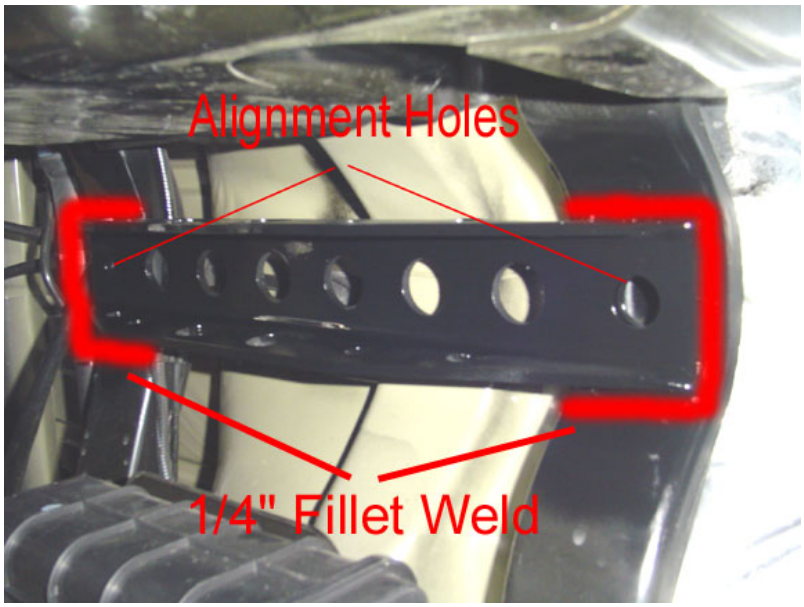
14) Remove the factory rear upper control arms. Discard the arms and hardware for they will not be used.

15) Remove the OEM rear lower/upper control arm mounts off the frame.

16) Install the rear upper control arm mount onto the frame. The bracket spans the two rear frame cross members and aligns off the holes in each cross member as shown below. Clamp the bracket with the holes aligned to the cross members and weld it in place using a ¼" fillet weld. Apply a durable finish of your choice after welding.

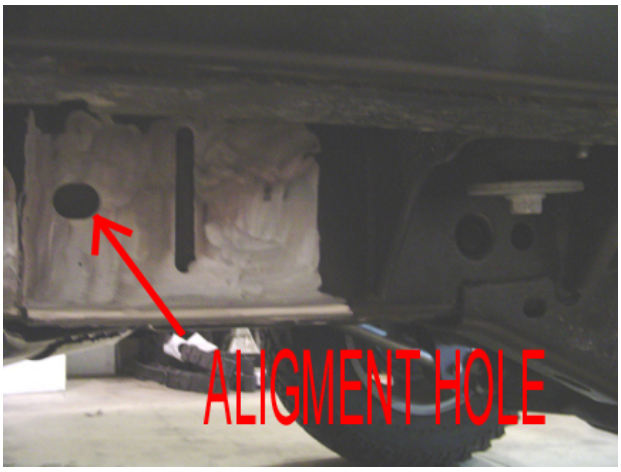




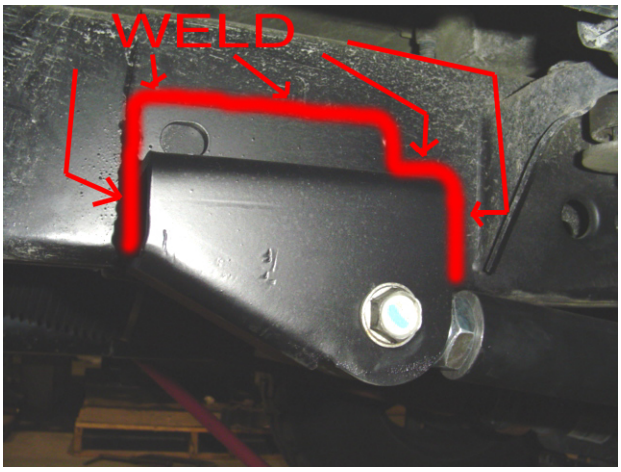


17) Install the supplied rear long arm mounts on the frame. The mounts locate off the slotted hole in the side of the frame as shown below. Weld them in place using a ¼" fillet weld.

Please Note: Keep the top edge of the mount horizontal when welding in place. There is a specific driver side and passenger side, the open end of the mount faces reward as shown below. Shown below is the driver's side only.



Alignment Hole in Side of Frame



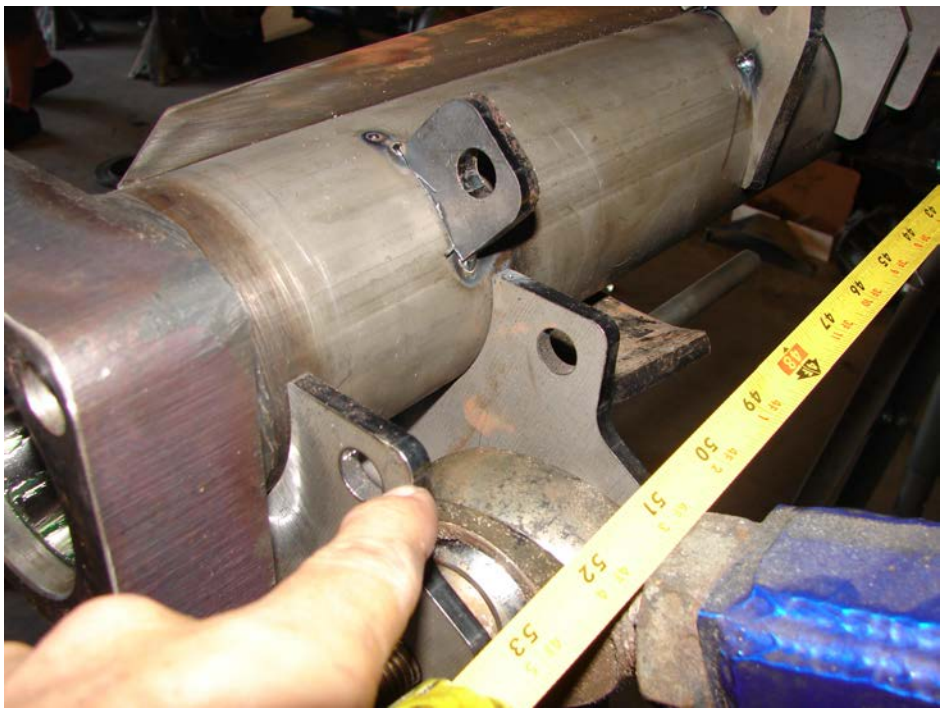
Weld on Lower Control Arm Mount

18) Install the rear coil over/bypass mounts in the wheel well and fully weld them to the frame.

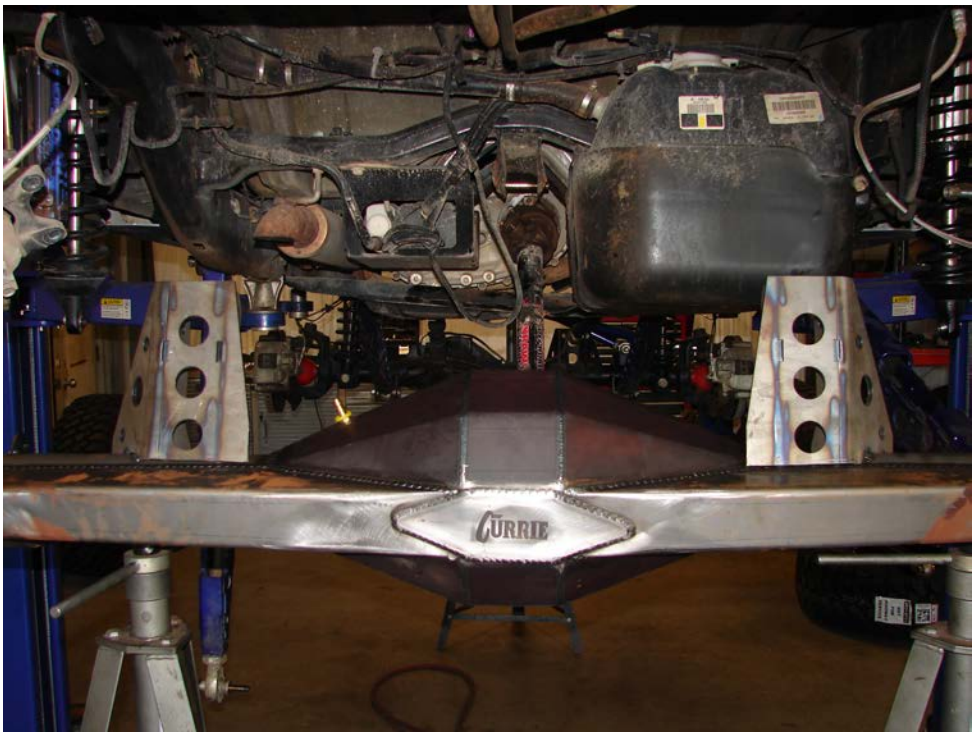
Please Note: There is a specific driver side and passenger side mount. The driver side mount is shown in the image. The mounts slide all the way forward on the frame just to the point of where the rear upper mounts almost touch the inner wheel well towards the front of the vehicle just allowing a finger tip of clearance.

19) After all frame side mounts are installed; it is time to set up your new rear axle. This is going to take some time and knowledge.

19a) Place your new low pinion rear axle under the vehicle. Set the vehicle and the axle to their approximate positions for ride height. Set the rear pinion angle for the driveline. Tack weld the lower control arm mounts in place. The bolt hole for the lower control arm should be tangent to the bottom of the axle tube. The mounts should be equal distant apart and should be no closer than 50" together as shown and no further apart than 52". See the image below for reference. The extra tab shown in the image is for The Currie Anti Rock Sway Bar that is being moched in place at the same time.



19b) Loosely bolt in your lower control arms and rear upper wishbone into place with the vehicle and axle at rough ride height and the pinion angle set. Bolt the rear wish bone into the rear upper mounts in the top hole and tack weld the rear upper mounts as shown below in place. Ensure the mounts are square and the axle is square to the vehicle.



19c) As mentioned prior, now is a great time to moch up and tack weld the sway bar link tabs of your choice in place. These should be the only items you are welding to your rear axle housing unless you opted for a pinion guard.

19d) Once you are confident your mounts are positioned properly on the axle confirming your drive line is proper and the axle is centered, go ahead and finish weld the mounts in place then apply a durable finish of your choice.

20) Remove the OEM cross member behind the cross member the rear wishbone mount attaches to (spring and shock cross member) as it will be in the way of your new suspension components.

21) Install the lower control arms set to the dimensions specified in the table on page 4. Be sure to set the orientation of the joint and tighten the jam nut accordingly. The welded joint end goes to the frame, the heim joint end goes to the axle. Use the supplied 14mm x 100mm bolt, washer, and nylok nut at the frame connection, then attach using the supplied 5/8 x 4.5 bolt, washers and nylok nut at the axle connection. ***Please Note:*** There is a specific driver side and passenger side arm. The welded seams go toward the inside of the vehicle to ensure a nice clean appearance.

22) Install the rear upper wishbone. The bend in the wishbone goes down. The adjustable joint goes to the frame connection. Be sure to have the joint orientation set and jam nut tightened properly prior to installation. Secure the wishbone with the supplied 14mm x 90mm bolts, washers, nylok nuts. Below are a few images of the completed assemblies for reference.

23) Install the rear coil overs and bypass shocks. They secure at the frame using ½ x 2.75 bolts, washers and nylok nuts and in the trailing arms with the supplied ½ x 3.5 bolts, washers, and nylok nuts. *Be sure to have 1" of preload on the rear coil over coils at this time or the coil over spanner nuts could possibly interfere with the bracket.*

24) Install the ressy holders in the wheel wells as shown below with the supplied ¼" x ¾" long bolts, washers, and nylok nuts. You will need to drill holes for the mounts. Be sure to use silicon to seal up the holes so you do not get leakage into the cab of the vehicle. Attach the ressy's to the holders with the supplied hose clamps.

25) As mentioned prior;

25a) Install a rear sway bar of your choice. We recommend and have great success with the Currie Anti Rock Sway Bars.

25b) Install air bumps or solid bump stops of your choice. Failure to do so can result in two holes punched in the floor pan of the vehicle from the rear upper arm mounts on the axle and the rear upper wishbone breaking as it makes contact with the OEM cross member.

26) The rear emergency brake cables can be routed in such a way that they use the holes in the newly supplied rear lower control arm mounts as shown in step 22.

27) You may need to extend the ABS lines for some applications.

28) You may need to extend the factory hard brake lines down the frame for some 2 door applications. Otherwise; remove the factory rear rubber brake lines and install the supplied extended stainless steel brake lines. Be sure to add slack to the ABS line, then secure the ABS and stainless steel brake lines together with zip ties and route them carefully. Now you can go ahead and bleed the brake system per the JK service manual.

29) Install the rear wheels and tires and lower the vehicle to the ground.

30) Tighten all mounting bolts at this time!

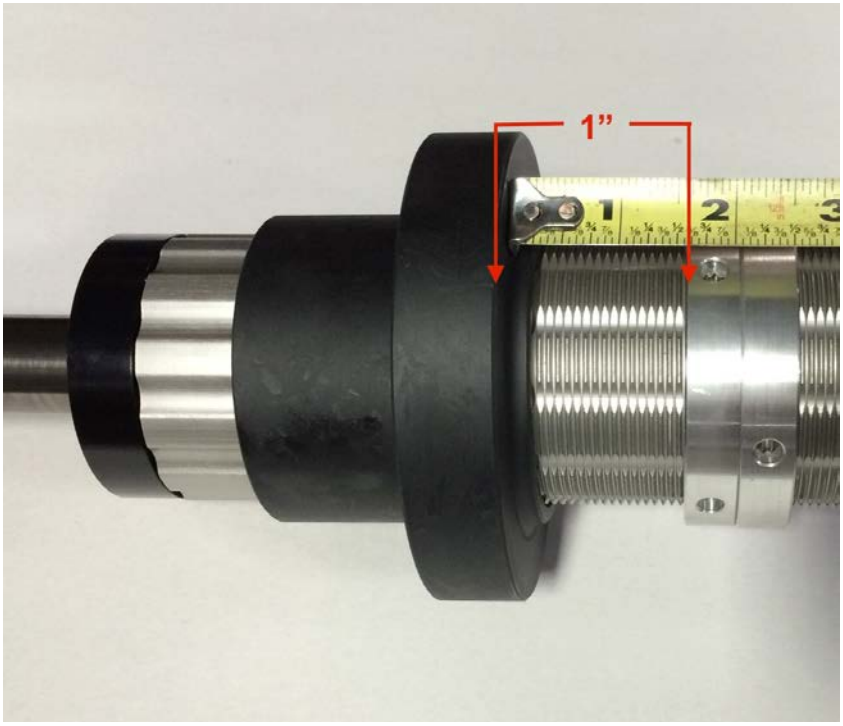
Setting up and Tuning the Suspension!

You have chosen an amazing suspension system for your Wrangler. The Trail Gunner Systems are completely tune-able by the end user. Please follow the guidelines below for tuning them to meet your specific driving style.

1) The very first thing you do is adjust the spanner nuts on the coil overs to achieve the desired stance of your vehicle on the front coil overs. The rear spanner nuts must be pre-loaded a minimum of 1", then the front spanner nuts can be adjusted to level the vehicle.

Helpful Hint: Spray the bodies with WD-40 and make sure there is as little spring load on the coil overs as possible to make adjusting the spanners as easy as possible.

2) The transition or cross over rings are a key point of adjustment for ride quality and performance. Once you establish your ride height, start with the transition rings 1" off the plastic spring slider. If you find yourself hard bottoming the coil overs in the rear, then spin down the transition rings closer to the plastic slider. If not, spin up the transition rings until you find yourself hard bottoming the rear coil overs, then come back down just a little bit to prevent or minimize hard bottoming. It is never good to hard bottom coil overs and this should be minimized and or eliminated. If not failures can occur.



Now that all your mechanical setups are complete, we can finally start adjusting the Bypass Shocks for your driving style!

3) Set all the bypass circuits to the fully closed (lead screws threaded in as far as possible), mark their measurements using calipers or a tape measure to the best of your ability. This will be your Zero Position or Fully Closed Position. Be sure to fully close and measure all 3 circuits; Compression, Rebound and Free Bleed.

For Example:

.136 is the Fully Closed Circuit Dimension

Please note: Not all circuits will have the same fully closed dimensions so be sure to mark them accordingly.

We recommend you start with all the circuits set at **¼"** or **.250** out from the fully closed positions. Based on the above **.136** dimension shown, that would mean you would start at **.386** or approximately **3/8"** out for all points of adjustment.

The absolute maximum you can thread out the adjusters (lead screws) is **5/8"** or **.625"** out from the fully closed position. In this case that would be **.136 + .625 = .761** or approximately **¾"**. If you thread out the adjusters too far, you will run into leaking issues.

We recommend you have a tuning log kept in your glove box, noting your shocks, closed dimensions, initial positions and adjustments.

Free Bleed – Adjusting out the lead screw on the Free Bleed Circuit will soften both compression and rebound dampening over the middle third of shock travel.

Compression – Adjusting out the lead screw on the Compression Circuit will soften compression dampening only.

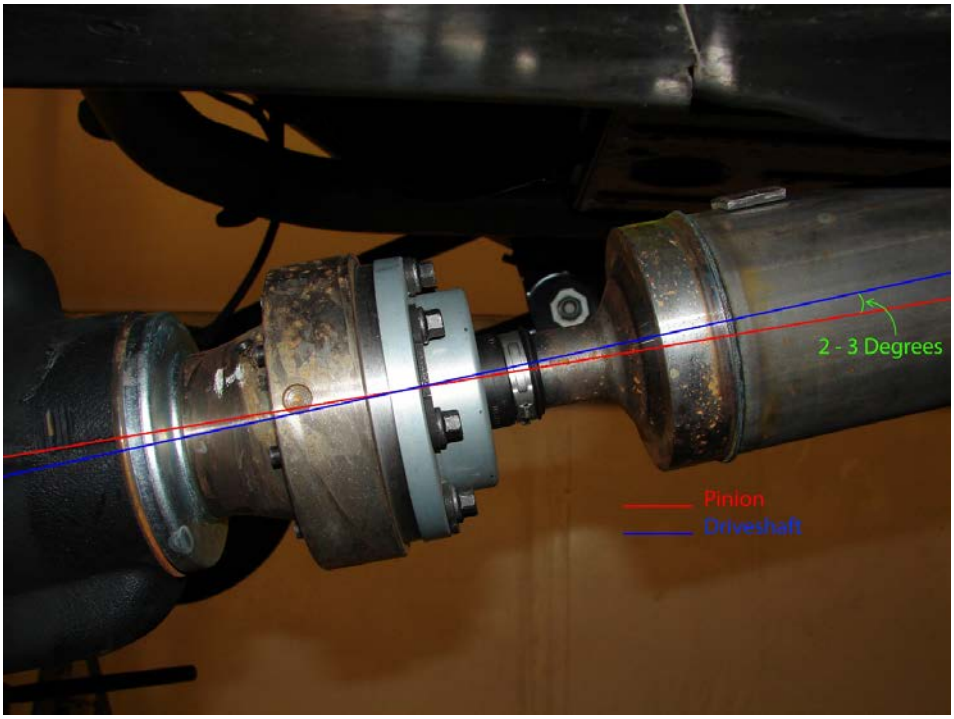
Rebound – Adjusting out the lead screw on the Rebound Circuit will lesson the rebound dampening only.

Recommended Alignment Specs are as follows;

4.5"/5.5" Lift Height: Minimum of 4.0 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.)

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.



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 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.