



## JEEP TJ WRANGLER & LJ UNLIMITED JOHNNY JOINT® SUSPENSION SYSTEMS INSTALLATION INSTRUCTIONS & TECHNICAL MANUAL



Please note that modifying the suspension of your Jeep Wrangler will affect the vehicle handling and stability characteristics!

Thank you for purchasing the RockJock Johnny Joint® Suspension System for your 1997-2006 Jeep Wrangler TJ or Unlimited. This suspension system will provide ample lift to accommodate up to 35" tall tires.\* A 4 1/2" back spacing wheel was used for the development of this kit. Other wheel & tire configurations can be used but interference may be an issue.

\* For clearance it may be necessary to use a 1" body lift and/or different type of fender flares. Some body trimming may also be necessary depending upon application.

### Fits

**Fits:** 1997-2006 Jeep Wrangler TJ & LJ Unlimited

### Kit Includes

- 1) CE-9132FP.....Front Coil Springs
- 1) CE-9102.....Front Upper Arms
- 1) CE-9106.....Front Lower Arms
- 1) CE-9122F.....Front Bump Stop Kit
- 1) CE-9900.....Front Antirock® Sway Bar - or -
- 1) CE-9141.....Front Sway Bar Disconnects
- 1) CE-9120TJS.....Front Adjustable Trac Bar
- 1) CE-9131RH2P.....Rear Coil Springs (TJ) - or -
- 1) CE-9131RH3P.....Rear Coil Springs (LJ)
- 1) CE-9121N.....Rear Trac Bar Relocator
- 1) CE-9122R.....Rear Bump Stop Kit
- 1) CE-9103.....Rear Upper Control Arms
- 1) CE-9106.....Rear Lower Control Arms
- 1) CE-9142.....Rear Sway Bar Links



### Tools Required

- |   |             |                            |                              |               |             |
|---|-------------|----------------------------|------------------------------|---------------|-------------|
| Complete Set of Hand Tools (Metric & SAE) | Jack Stands | Drill                      | Tap & Die Set (Metric & SAE) | Angle Finder  | Red Loctite |
| Torx Bit Set                              | Floor Jack  | Drill Bit Set (up to 5/8") | Pickle Fork                  | Torque Wrench | Grease Gun  |

### Optional Equipment Shown/Available

- |  |  |
|--|--|
| Front Antirock® Sway Bar Kit.....CE-9900             | Set of 4 Rancho 9000 Shocks.....CE-9150    |
| Rear Antirock® Sway Bar Kit.....CE-9900TJR           | Front Shocks - (Rancho 999255).....CE-9151 |
| Johnny Joint® Adjustable Rear Trac Bar.....CE-9120RS | Rear Shocks - (Rancho 999256).....CE-9152  |
| Correctlync® Heavy Duty Steering.....CE-9701         | 1" Body Lift.....CE-9300                   |
| HD Steering Stabilizer Shock.....CE-9170SD1          | HD Motor Mounts, 1" raised.....CE-9200     |
| Rear Shock Relocator Kit.....CE-9601                 |  |

### Notes

#### BE AWARE:

- You will most likely need a new driveshaft, a transfer case slip yoke eliminator kit (non-Rubicon models), a CV rear driveshaft and our CE-9601 rear shock relocator brackets to complete this installation - before your vehicle is drivable again.
- You will need to obtain a new set of shocks to be installed with this kit. We offer shocks on our website, or you can take the required specs. from our website and source the shocks of your choice.
- Use red Loctite on all suspension hardware when assembling.
- PLEASE read the complete instruction manual before starting installation.

### Installation Instructions

Begin on the next page!



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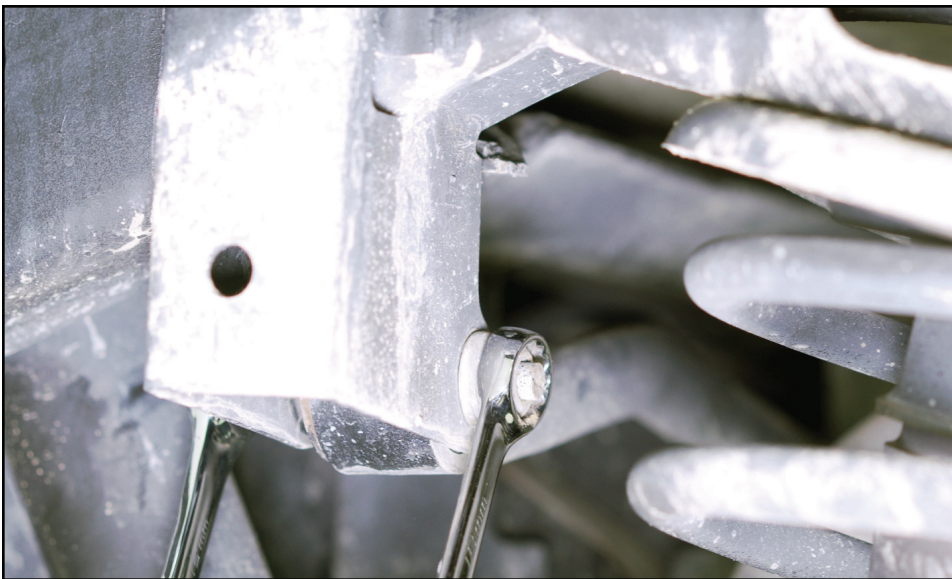
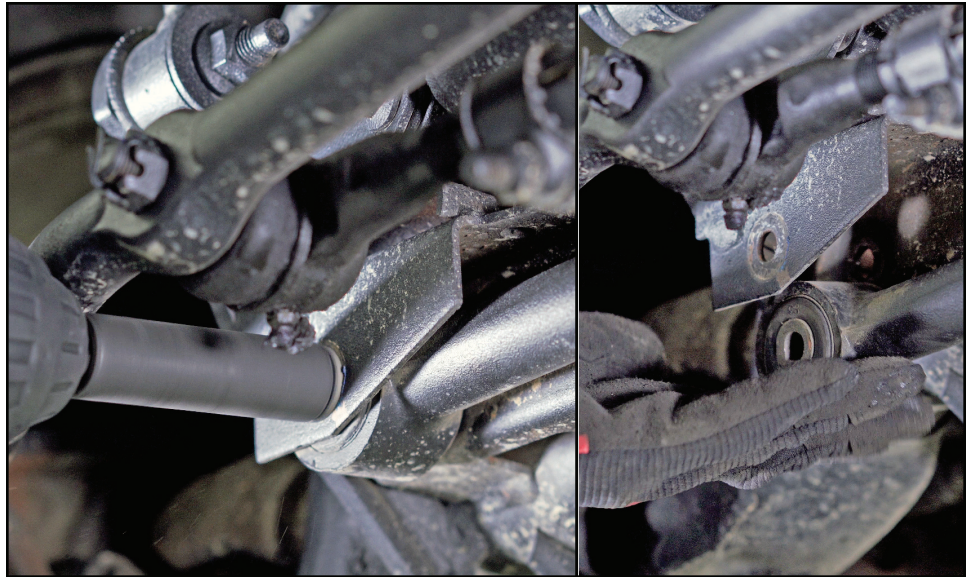
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### Step 1

Remove the front trac bar bolt from the differential housing and drop the trac bar down out of the way.

Be advised! When the trac bar bolt comes out, the differential will shift in the vehicle!

While you are right here, now is a good time to go ahead and drill this trac bar bolt hole in the differential housing out to 1/2" as per the instruction sheet for the CE-9120TJS Front Trac Bar that is included in this suspension kit.



### Step 2

Remove the rear trac bar from the rear trac bar frame bracket.

Be advised! When the trac bar bolt comes out, the differential will shift in the vehicle!

### Step 3

Jack your vehicle up and put it on jackstands by the frame. Make sure that the vehicle is stable and secure before proceeding.

Then, remove all 4 wheels and tires.



#### Step 4

At the frame end of the front trac bar, remove the cotter pin and the castle nut that attach the trac bar to the frame bracket.

Then, with a shorty sledge hammer, or a shorty sledge hammer and a pickle fork, remove the trac bar end from the frame bracket.



#### Step 5

These are very important steps!

1. Disconnect the vent hoses from the front AND rear differential housings.
2. Unplug any electric locker or ABS plugs (where equipped) you may have going to the front AND rear differential.
3. Always, ALWAYS be mindful of your brake lines!

Failing to do any of the above could cause any of these items to be ripped from the vehicle as you lower the differentials down to install the new suspension components!

#### Step 6

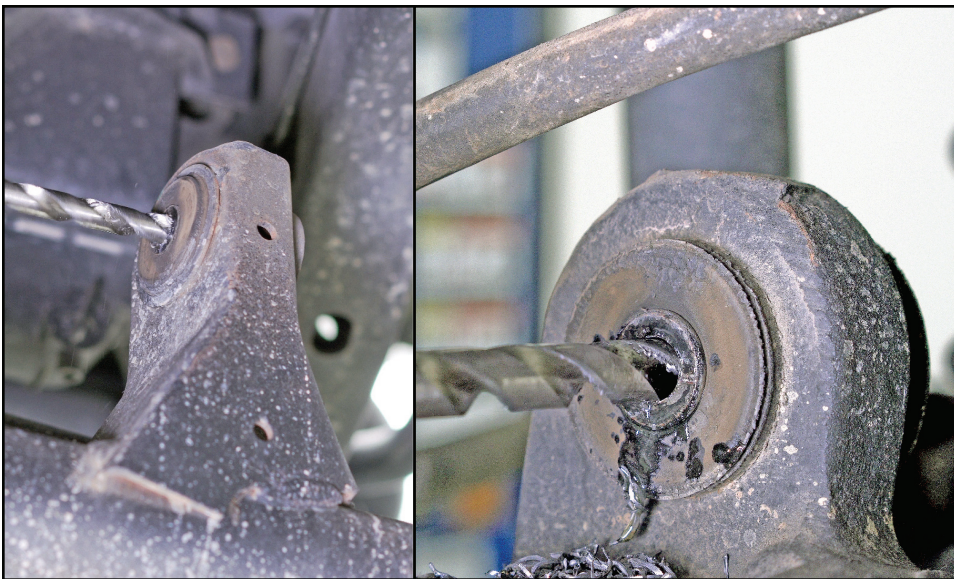
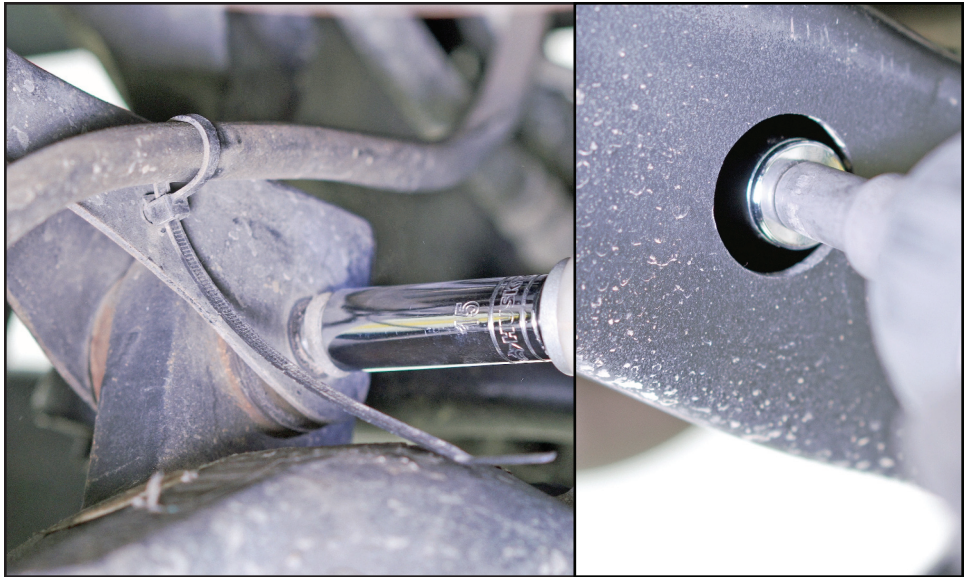
Remove the small bolts that attach the front driveshaft u-joint retaining straps to the differential yoke.

Remove the straps and then remove the drive-shaft from the differential yoke.



### Step 7

ONE AT A TIME, we'll begin with the removal and replacement of the front upper control arms. Remove the differential bolts and the frame bolts (accessed thru the hole in the side of the frame rail).



### Step 8

The upper control arm thru-bolt holes on at the differential housing are metric and must be reamed to 7/16" with a drill bit to accept the new greasable bolts that are included with the new control arms. On some years of vehicles, it may be necessary to ream the control arm thru-bolt holes in the frame as well, but this is uncommon.

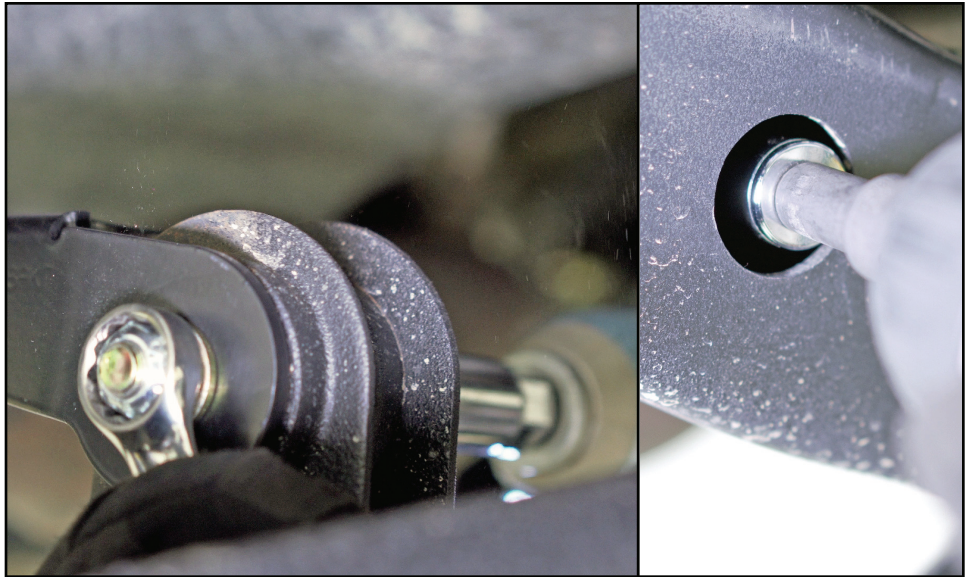
### Step 9

The new Johnny Joint control arms should be pre-set to the length needed for this kit, but double check that they measure 15" C-C.



### Step 10

Install the new control arms using the supplied greasable bolts.



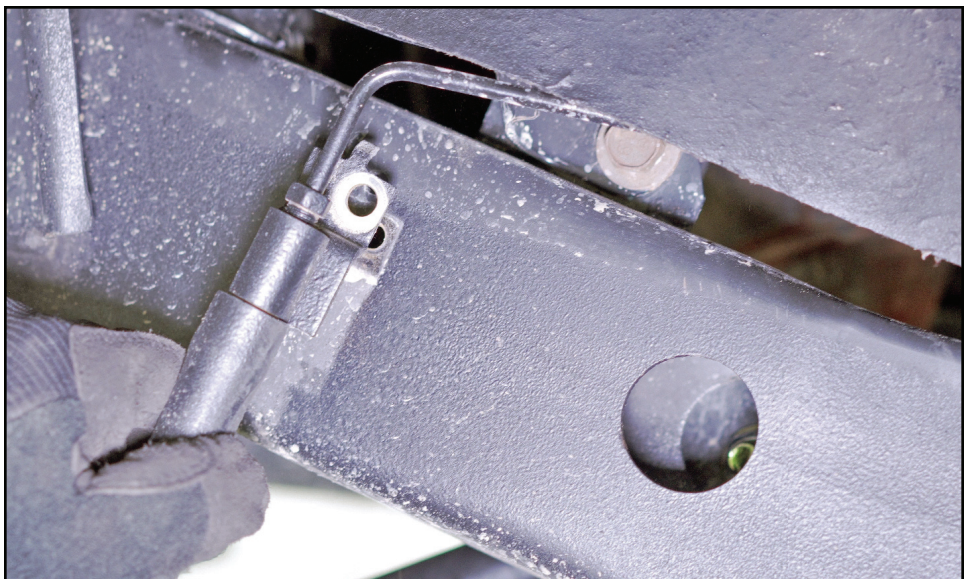
### Step 11

Remove the front shocks and discard them. Be advised! When the shocks are removed, the differential may suddenly drop! Make sure the differential is supported!

### Step 12

Next we'll move on to relocating the front brake lines.

Start by removing the screws that attach the lines to the side of the frame with the proper torx bit. Retain the screws for reuse.



### Step 13

You will now be replicating the 2 factory brake line bracket mounting holes 1 1/2" lower than the 2 factory holes.

Measure 1 1/2" down from both holes and make a mark.



### Step 14

Center punch your marks and drill the 2 new holes per side.

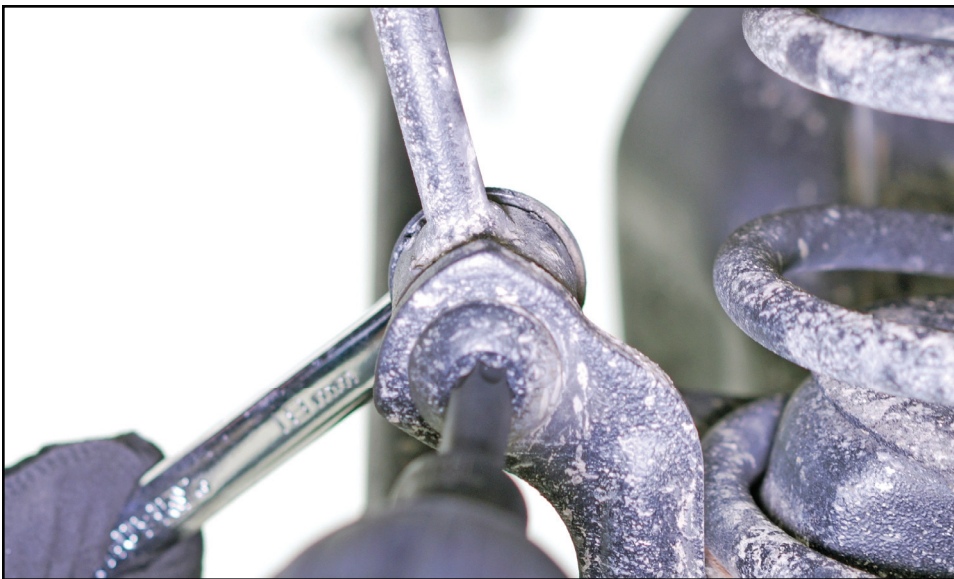


### Step 15

Tap the lower holes with a metric tap that will allow you to retain the factory brake line bracket attaching screws.

### Step 16

Reattach the brake lines into the new holes that you have installed. Be mindful that the top tab engages into it's hole properly and that the line bracket seats flush against the side of the frame. Tighten the factory screw down to retain the lines.



### Step 17

With the proper torx bit, disconnect the front sway bar links from the differential housing brackets.

### Step 18

In preparation for the next stage of the install, you'll want to put a floor jack under the differential pinion yoke, so that it is not able to drop down. Next, remove both front lower control arms and discard them.



### Step 19

Confirm that your brake lines have plenty of slack. During the following process you ALWAYS want to make sure you have "some" slack on the brake lines so they do not get ripped off.



### Step 20

At this point, you'll want to raise the frame, or lower the front differential out of the frame, far enough to allow the front coil springs to be removed.

Be mindful of your jack that is holding your pinion and adjust it necessary.

Note: as the front springs come out, make sure to capture and retain the upper rubber spring isolators that are above the spring, on the spring seat. These rubber isolators will be reused later.

### Step 21

Next, examine the coil spring pads on the differential housing. "Most" TJ/LJ front coil spring pads already have a center punch mark in the middle of them. If yours does - great!

If yours does not, locate the CE-9122F Front Bump Stop Kit. Familiarize yourself with it's instruction sheet.

Using one of the lower bump stop pucks, center the puck over the top of the coil spring pad on the differential housing and center punch a mark. Step drill the center punch in the coil spring pads up to 7/16", in preparation for tapping the holes 1/2"-13.





## Step 22

Tap the holes that you just drilled in the coil spring pads with a 1/2"-13 coarse thread tap.



## Step 23

Grab a hold of the rubber stock front upper bump stops and pull them out and discard them.

## Step 24

Remove the sheetmetal bump stop cups from the frame.



## Step 25

As per the CE-9122F Front Bump Stop Kit's instruction sheet, install the small aluminum spacers, the small urethane spacers and the 10mm bolts and lock washers into the stock threaded holes on both sides as shown.



## Step 26

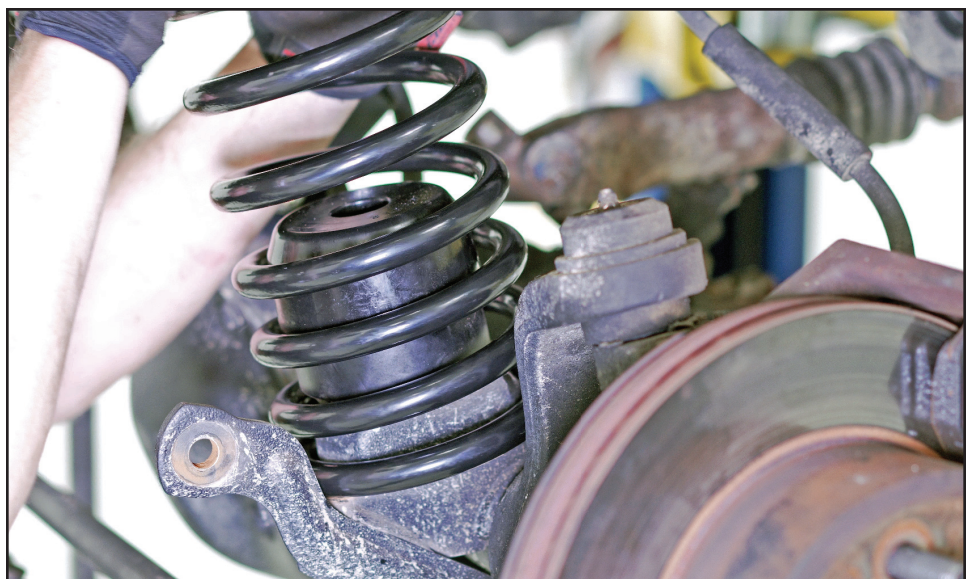
In preparation for installing the new coil springs, you'll need to start lowering the front differential housing to gain some room. Drop your differential as necessary to until you think you can get the new coil springs installed. Throughout this process, be mindful off your pinion and the jack you have under it. Don't let it flop and fall down. You may even raise it to roll the spring pads forward to aid in getting the new springs in. Also, watch your brake lines! Our vehicle required us to disconnect the drag link from the pitman arm with a shorty sledge hammer and a pickle fork to allow the differential to drop far enough to get the springs in.

## Step 27

Once you've got enough room to install your new coil springs, install the lower bump stop bolts into the urethane pucks, stack the urethane pucks on top of the aluminum pucks and put them into the bottoms of the coil springs.

Next, make sure you've got your upper rubber spring isolators from Step 20 in place on the upper bump stop tower.

Then, go ahead and install the tops of the springs first and then the bottoms of the springs, with the bump stops inside.



### Step 28

Rotate both front springs on the spring pads until the ends of the coils stop in the stop in the spring pad.



### Step 29

Slide a 3/8" drive 3/4" deep socket and a 3/4" ratchet in thru the side of the coil springs so that you can tighten down the lower bump stop bolts. Keep in mind that you are just tightening into sheet metal, so don't go too tight!

### Step 30

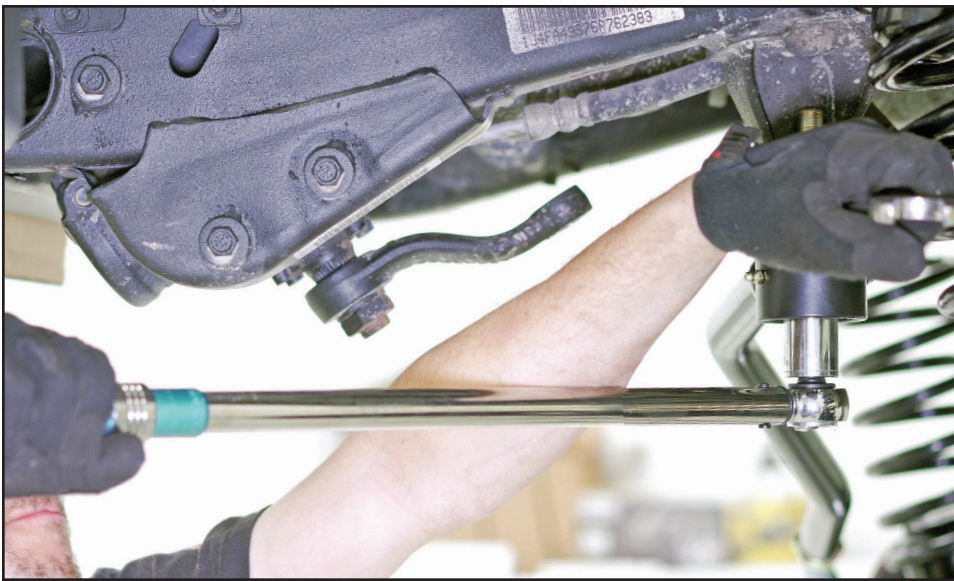
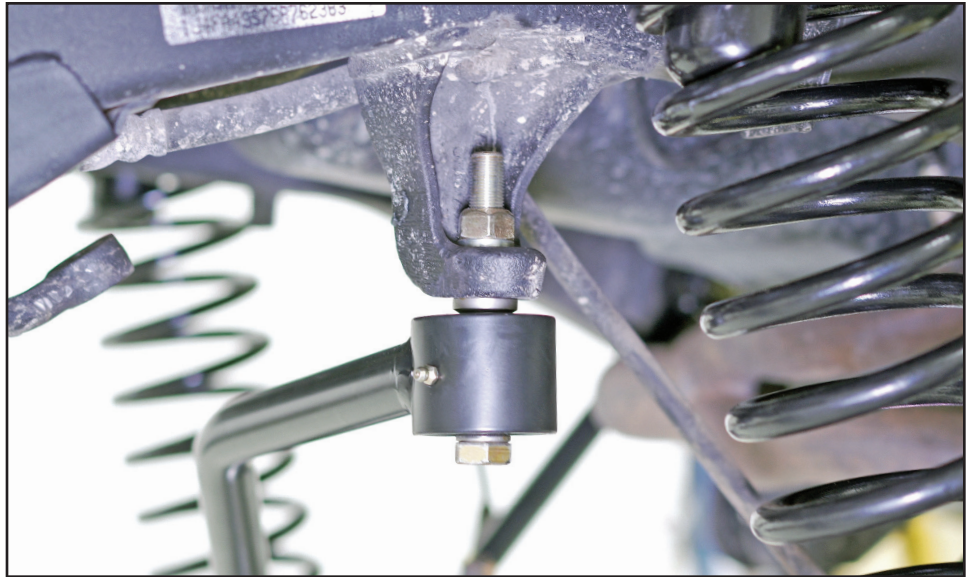
With a 5/8" drill bit, drill the tapered trac bar hole in the factory frame bracket out to accept the new trac bar's bolt.

Take your time with this drilling, this is a very critical hole! If it gets too loose, your new trac bar will be able to move.



### Step 31

Install the trac bar as shown. The thick machined washer goes on top of the factory frame bracket, under the nut.



### Step 32

It is very critical to torque this bolt with a torque wrench to 125 ft. lbs.

### Step 33

The new Johnny Joint control arms should be pre-set to the length needed for this kit, but double check that they measure 15 3/4" C-C.

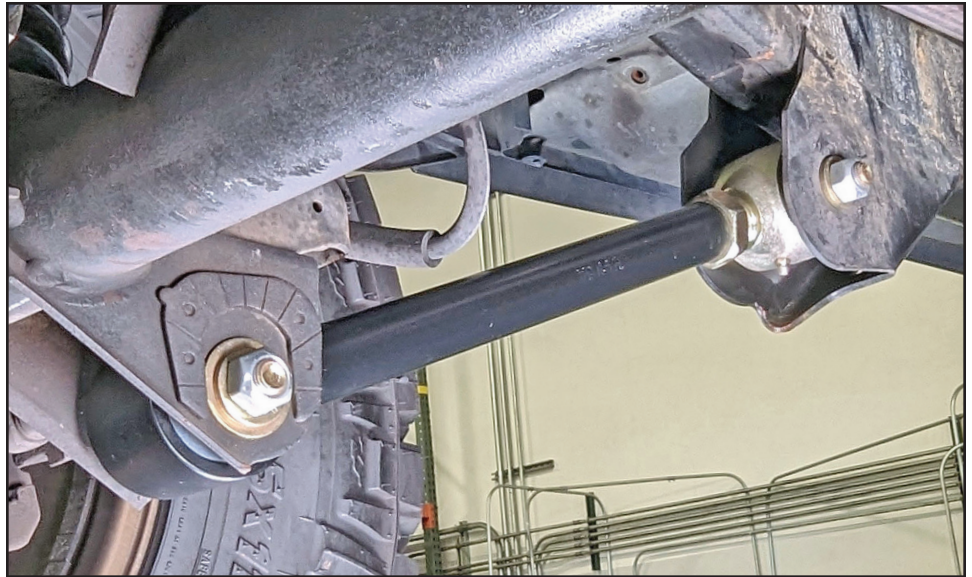
Note: in the kit, you will find 2 pairs of CE-9106 Control Arms. This is because the front and rear arms are identical.



### Step 34

Go ahead and install the front lower control arms. You may find that you need to lower the frame down, or raise the differential, up higher to get the arms in. Adjust as necessary, but always be mindful of the jack you have under your differential's yoke.

The jack under your differential's yoke can help a lot during the lower control arm installation process, as you attempt to align the bolt holes. Additionally, you'll notice on the left side of the picture to the right, if your differential had the cam bolts on the differential control arm brackets, the thick washers included with the new control arms are used in the cam bolt slot.



### Step 35

Install the front shocks of your choice. You can see options and specs. for the correct shocks on our website.

### Step 36

If you disconnected your drag link from the pitman arm - reattach it now.



### Step 37

Torque the castle nut to spec. and don't forget to replace your cotter pin!



### Step 38

Depending upon the kit that you have ordered, at this stage, you will either install the **Antirock Sway Bar Kit**, per it's instruction sheet, or, you will install the JKS Sway Bar Disconnects, per the instruction sheet included in their package. If you are going the route of disconnects, you will remove the stock sway bar links from the stock sway bar. This is a tapered fit arrangement, like a tie rod end, so you may need the shorty sledge hammer and the pickle fork again. If you are going the Antirock Sway Bar Kit route - you'll be entirely discarding the stock front sway bar assembly, so no need to remove the stock links.

### Step 39

Reattach your driveshaft to the front differential yoke using all of the original hardware.  
Note: your stock front driveshaft may or may not work after this suspension kit installation. Make sure to address whether or not your driveshaft length is ideal before ever driving the vehicle.





### Step 40

Lastly, go back and reconnect your front axle's vent hose and electric locker and ABS plugs (where equipped). These items should all still be disconnected in the rear.

### Step 41

Begin the rear suspension installation by removing the small bolts that attach the rear driveshaft u-joint retaining straps to the differential yoke. Remove the straps and then remove the driveshaft from the differential yoke.



### Step 42

Remove the rear lower shock bolts and pull the bottoms of the shocks out of the shock brackets. Be advised! When the shock bolts are removed, the differential may suddenly drop! Make sure the differential is supported! Retain the hardware for reuse.



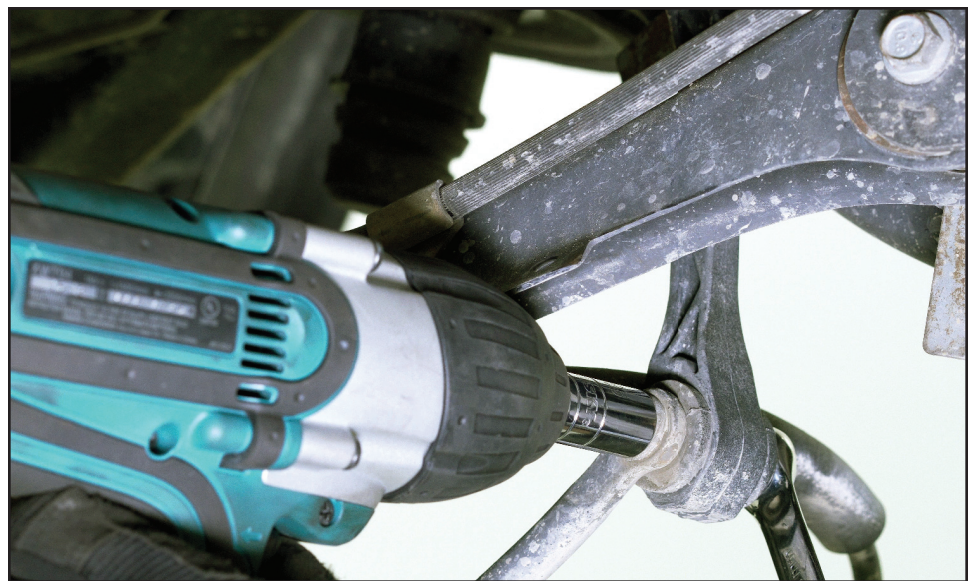
### Step 43

Next, you'll want to raise the frame, or lower the rear differential out of the frame, far enough to allow the rear coil springs to be removed. Be careful! The springs will be loose and could fall out and hit you!

Note: as the rear springs come out, make sure to capture and retain the upper rubber spring isolators that are above the spring, on the spring seat. These rubber isolators will be reused later.

### Step 44

Disconnect the bottoms of the rear sway bar links from the rear sway bar. Retain all of the hardware for reuse later.



### Step 45

Disconnect the brackets that attach the brake line and emergency brake cables to the rear upper control arms.



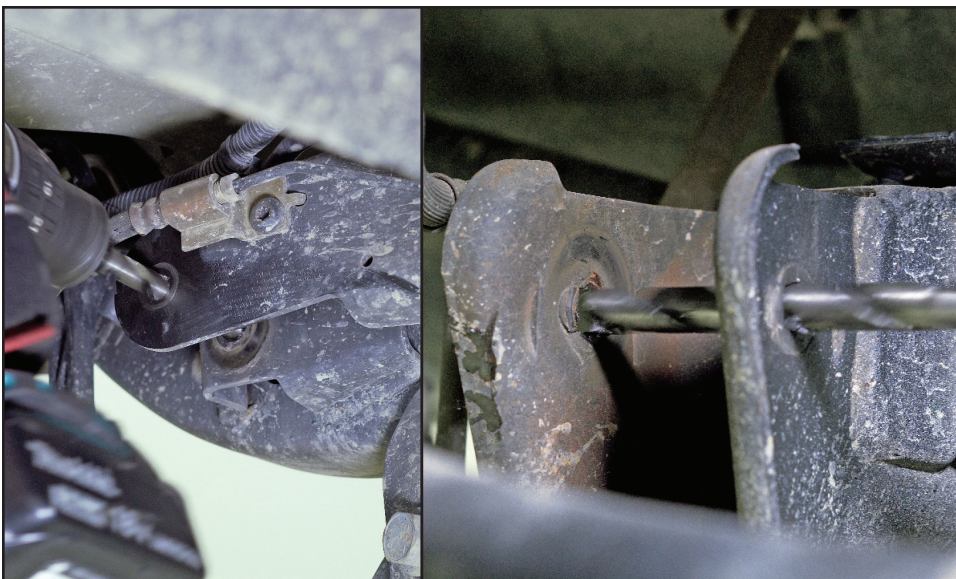


### Step 46

ONE AT A TIME, remove the rear upper control arms.

### Step 47

The new Johnny Joint control arms should be pre-set to the length needed for this kit, but double check that they measure 13 1/2" C-C.

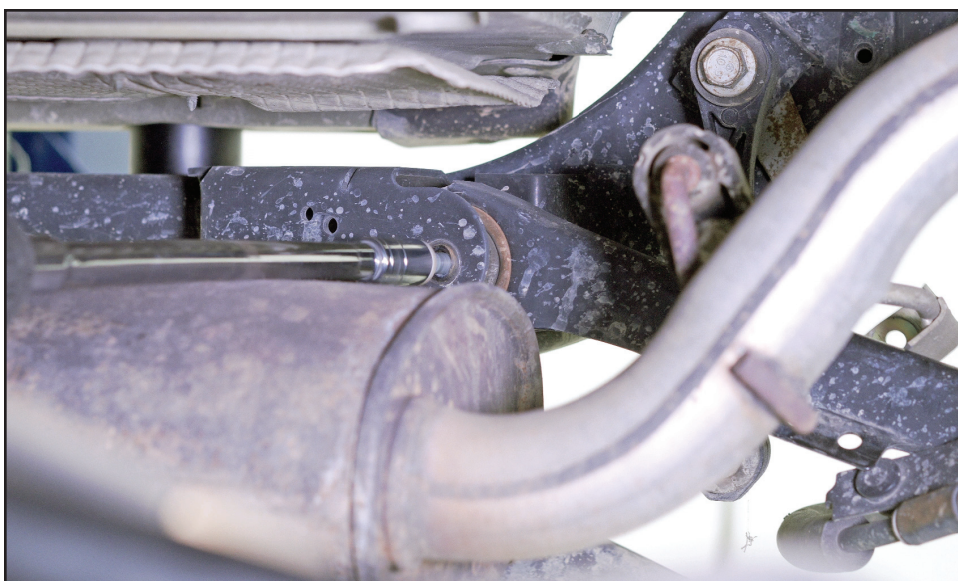


### Step 48

The upper control arm thru-bolt holes, at the frame and at the differential, are metric and must be reamed to 7/16" with a drill bit to accept the new greasable bolts that are included with the new control arms.

### Step 49

The replacement of the control arm and the the hole reaming process at the frame end of the passenger's side upper control arm, on most year model vehicles, will require you to remove the 2 exhaust hanger bolts from the outside of the frame rail to allow the exhaust to drop down, gaining you access to the bolt and the hole to ream.

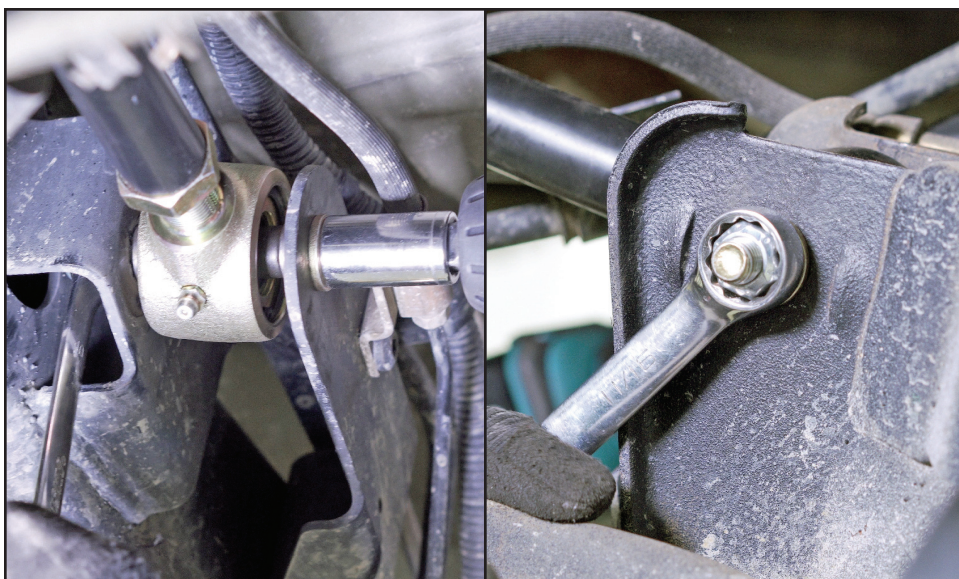


### Step 50

Once the exhaust is dropped, you are able to access the bolt, as shown.

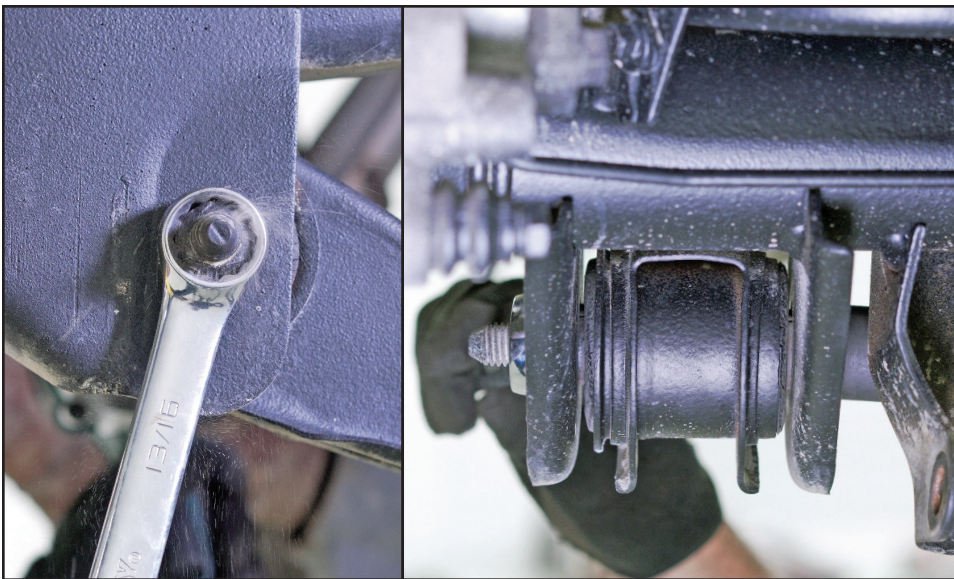
### Step 51

Install both upper control arms and torque the bolts to spec.



## Step 52

With the new control arms installed, you can push your exhaust back up into place and bolt the hanger back down.



## Step 53

ONE AT A TIME, remove the rear lower control arms.

## Step 54

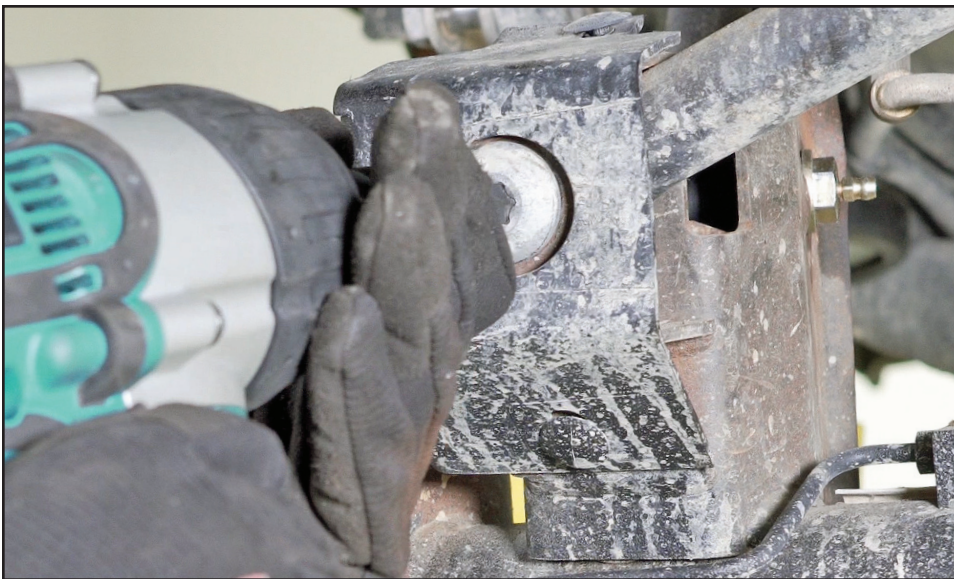
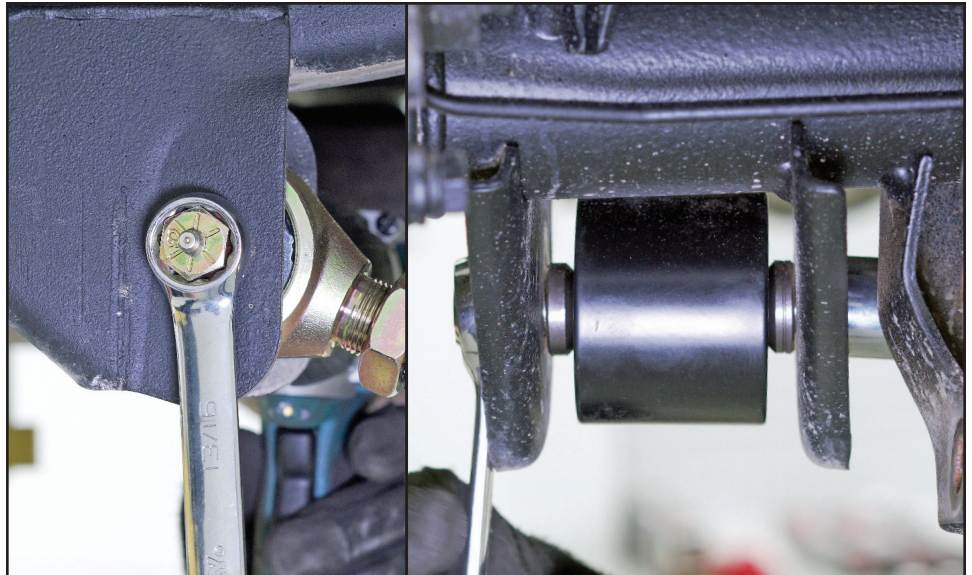
The new Johnny Joint control arms should be pre-set to the length needed for this kit, but double check that they measure 15 3/4" C-C.

The large flat washers, that you may have used in Step 34, are discarded in the rear.



### Step 55

Install the lower control arms and torque to spec.



### Step 56

With the appropriate torx bit, remove the rear trac bar bolt at the differential and set the trac bar asside.

### Step 57

Install the CE-9121N Rear Trac Bar Relocation Bracket per it's instruction sheet.



## Step 58

If you are installing an **Antirock Sway Bar Kit** at the time of this suspension kit install, you will remove the entire stock rear sway bar assembly and discard it, and then follow the Antirock Sway Bar Kit's instruction sheet for install.

If you are not installing an Antirock Sway Bar Kit, continue by removing the bolts that attach the stock rear sway bar links to the frame. Discard the stock rear sway bar links and then install the new sway bar links with the bolts and nut plates from the stock links.

Next, bolt the bottoms of the new sway bar links to the factory sway bar, again, using the stock hardware that you retained from Step 44.



## Step 59

Just like you did in the front, you'll want to center punch and drill the very center of the protruding hubs on the rear coil spring pads on the differential housing. Step drill up to 7/16", in preparation for tapping the holes 1/2"-13.

## Step 60

Tap the holes 1/2"-13 coarse thread.



### Step 61

Grab ahold of the stock rear upper bump stops and pull them out and discard them.



### Step 62

Remove the sheetmetal bump stop cups from the frame.

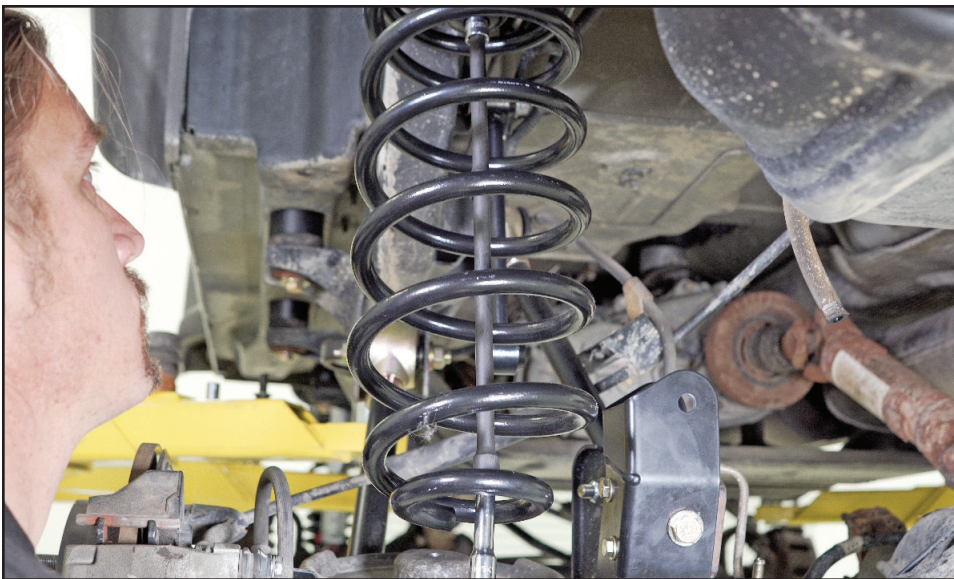
### Step 63

If you haven't done so already, now that the path is clear, go ahead and remove the bolts that retain the tops of the rear shocks and discard the shocks. Retain the hardware for reuse.



## Step 64

Lay out all of your upper bump stop pieces from the CE-9122R Rear Upper Bump Stop Kit. See the diagram in it's instruction sheet for correct component orientation.



## Step 65

The RockJock bump stop kit retains both ends of the rear springs to the vehicle to prevent them from falling out in high articulation situations. Install the upper bump stop components into the coil springs, with the hubs of the aluminum components protruding out the top of the springs.

Bolt the assemblies to the stock holes in the upper bump stop pads. Note: make sure the stock rubber upper spring isolator pads, that you saved from Step 43 are in place before installing the new springs!

## Step 66

Gather all of your lower bump stop hardware from the CE-9122R Rear Bump Stop Kit. Pre-assemble by dropping the bolts into the urethane pucks and make sure they protrude thru the bottoms of the pucks as well as thru the large gold washers.



### Step 67

Pop the bottoms of the springs onto the hubs on the coil spring pads on the differential housing. Slide the new lower bump stop assemblies in thru the sides of the coils and tighten them with the same 3/8" drive 3/4" socket and 3/8" ratchet that you used in the front.

Keep in mind that you are just tightening into sheet metal, so don't go too tight!



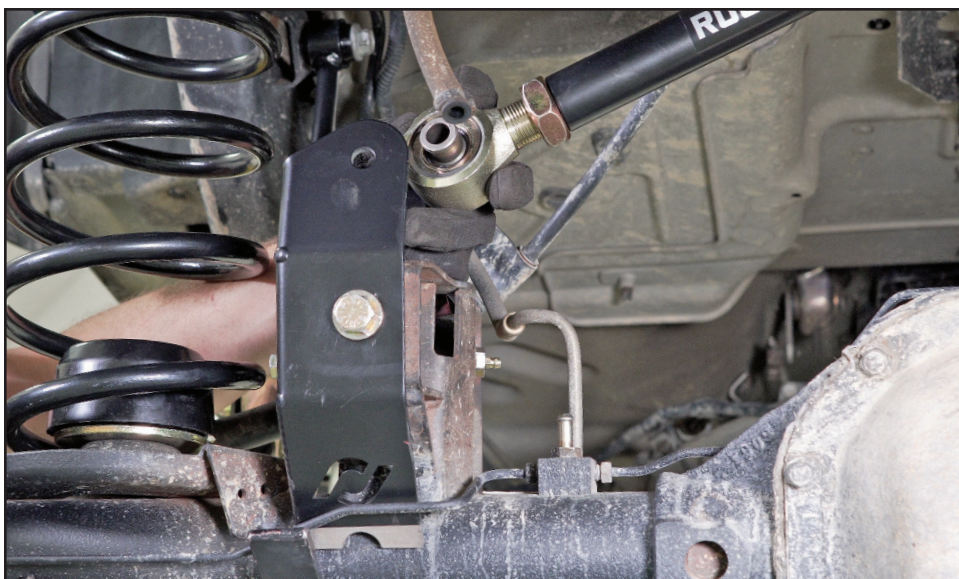
### Step 68

Reinstall the rear trac bar at the frame, using the factory hardware.

You will notice, in our build, we installed the CE-9120RS adjustable Johnny Joint rear trac bar. Installation is the same whether you are reinstalling your stock trac bar or installing the new, adjustable trac bar.

### Step 69

Position the end of the rear trac bar over the top of the new trac bar frame bracket. This end of the trac bar is easier to install once the vehicle is back on the ground.

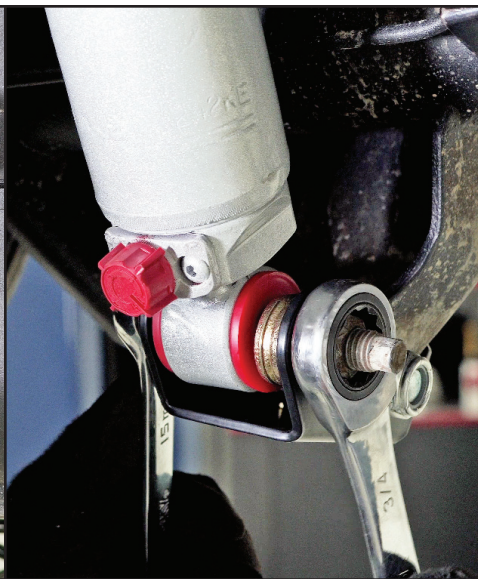
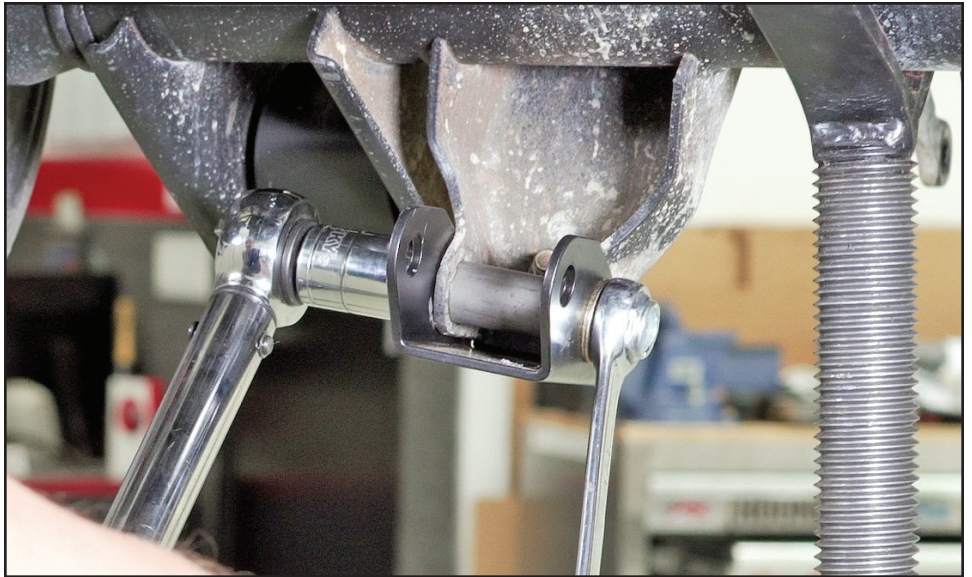




## Step 70

Next we'll install another optional - but HIGHLY recommended component, our CE-9601 rear shock relocater brackets. See this kit's instruction sheet for installation instructions.

If your vehicle has a factory rear differential - this kit is all but mandatory. The only reason they are not included in the suspension kit is because aftermarket differentials adjust for this issue in their installed bracket angles.



## Step 71

Install the rear shocks of your choice, using the hardware you retained from removing the stock shocks.

You'll notice the washers next to the bottom of the shocks inside the shock relocation brackets. These washers are included in the CE-9601 Shock Relocation Bracket Kit to allow you to adapt various widths of shocks from different manufacturers into the brackets.

Note: you can see options and specs. for the correct shocks on our website.

## Step 72

Reattach your driveshaft to the rear differential yoke using all of the original hardware.

Note: the stock rear driveshaft "may" be reuseable in a Rubicon model that features the shorter tail-shaft transfer case. In a standard TJ that features a traditional slip yoke on the transfer case, you will notice the driveshaft angle is now radical and should not be driven. In standard TJs, it is generally mandatory to install a Slip Yoke Eliminator Kit and a CV driveshaft. We recommend Tom Wood's Custom Driveshafts for these components.



### Step 73

Now go back and reconnect your rear axle's vent hose and electric locker and ABS plugs (where equipped).



### Step 74

At this point you can go ahead and reinstall all 4 wheels and tires, torque the lug nuts to the wheel manufacturer's specs. and set the vehicle back on the ground.

### Step 75

With the vehicle on the ground we will finish up the trac bars.

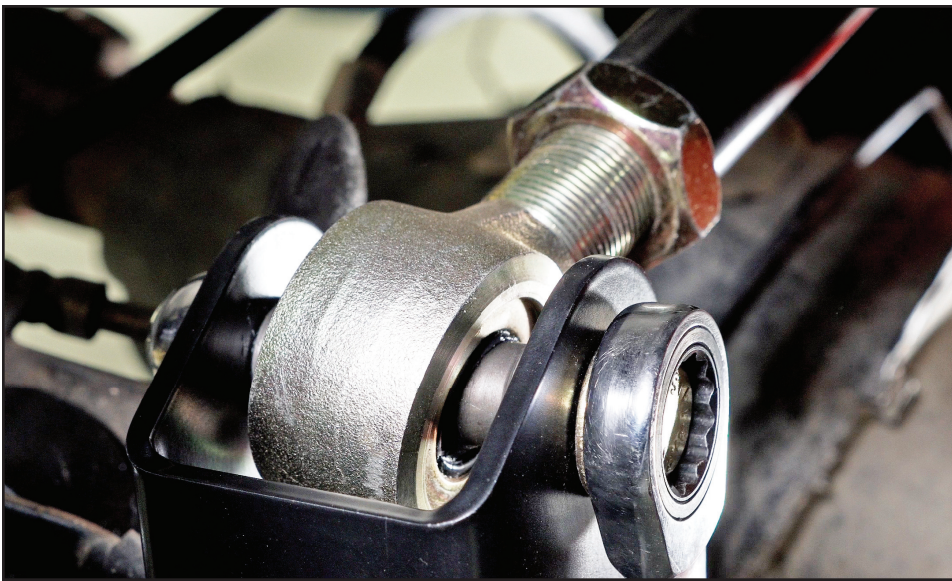
This information applies to front AND rear - the following illustration will show the rear - but repeat this process for both front and rear!

With the trac bars disconnected from the differentials (which they should still be anyway), measure from the side of the frame to a replicatable point on the tire, or you can get underneath and go from the frame to a wheel lip, etc. Take this measurement on both sides. You will more than likely find that the measurements are not equal.



## Step 76

With the help of a friend pushing on the side of the body, or with the use of a ratchet strap, pull the frame in the direction that would center the frame over the differentials, per the measurements you took.



## Step 77

Once you have pulled the frame into position and you have remeasured to ensure that the frame is centered over the differentials, then go back and adjust the trac bars. Simply adjust the trac bars until you can drop them into their brackets and slide their bolts right thru easily.

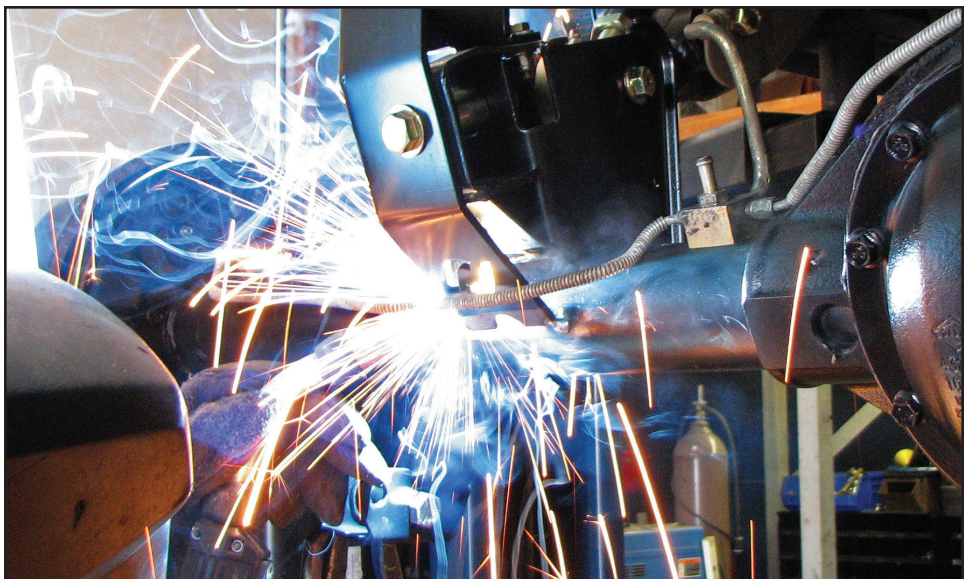
Finish by torquing the trac bar attaching bolts to spec. and tightening the trac bar jam nuts.

Note: Step 1 had instructed you to drill the trac bar bolt hole in the front differential housing out to 1/2". As per the CE-9120TJS Front Trac Bar's instruction sheet, you will now be installing it's new 1/2" bolt, washer and nut plate when installing the differential end of the front trac bar.

## Step 78

Lastly, as per the instruction sheet for the CE-9121N Rear Trac Bar Relocation Bracket Kit, you'll need to weld the tabs on the bottom of the trac bar bracket to the differential tube - or - safely drive the vehicle to someone who can weld it for you.

The bracket is bolted solidly enough that it is safe to drive the vehicle to get this welding done. Just be careful.



## IMPORTANT - Final Adjustments

The following is a check list of items to address before calling this installation done.

- 1** For best results we recommend following this adjustment process - front and rear - to neutralize any load being placed on the suspension by possible abnormalities of your vehicle. With the vehicle on the ground, disconnect the trac bar from the differential and disconnect one of the upper control arms (on differential end only). Center the differential under the vehicle by adjusting the length of the bar. Tighten and torque the trac bar bolt. Re-install the previously removed upper control arm. If the bolt no longer lines up with the bolt hole - do not force it - adjust the length of the arm until the bolt will slide thru easily. Tighten and torque the bolt.
- 2** Set your angles. Front differential caster must be 5 degrees positive. Rear differential pinion angle must be 2-3 degrees down in relationship to the driveshaft angle when using a conventional driveshaft and 1 degree down when using a double cardan (CV) style driveshaft. If your specs. do not match these parameters - you must adjust the upper and lower control arms until they do.
- 3** Your front and rear driveshafts may or may not be the correct length! Check them before operating the vehicle!  
The rear driveshaft in a Rubicon model vehicle, that features the shorter tailshaft transfer case may work fine. In a standard TJ, that features a traditional slip yoke on the transfer case, you will notice the driveshaft angle is now radical and should not be driven. In standard TJs, it is generally mandatory to install a Slip Yoke Eliminator Kit and a CV driveshaft. We recommend Tom Wood's Custom Driveshafts for these components.
- 4** Make sure all hardware is tight and torqued to spec. Make sure all of the jam nuts on the control arms and trac bars are locked down tight!
- 5** Adjust the drag link length to center your steering wheel and set your toe to 1/8" toe in as a recommended starting point.
- 6** Grease all of the Johnny Joints with a hi-moly lube, non-synthetic grease. If you cannot find this grease - we sell it on our website under CE-9013G. Repeat the greasing process after 500 miles, and then every 3,000 miles.
- 7** Test drive the vehicle at moderate speed for 1-2 miles to ensure everything is seated and safe and your brakes are good.
- 8** Congratulations! You have just installed the finest suspension system available on the market! Enjoy & we'll see you on the trail!

## IMPORTANT - Final Adjustments

Front Trac Bar Bolt @ Differential	85 ft. lbs.
Front Trac Bar Bolt @ Frame	125 ft. lbs.
Rear Trac Bar Bolt @ Differential & Frame	85 ft. lbs.
Upper Arms (all)	50 ft. lbs.
Lower Arms (all)	90 ft. lbs.
Lug Nuts	To Wheel Manufacturer's Specs.



### CALIFORNIA PROP 65 WARNING

**WARNING:** These products can expose you to chemicals including Chromium, Lead, Lead Compounds, Nickel (Metallic), Nickel Compounds, Diisonyl and Di(2-ethylhexyl) Phthalates (DEHP)(DINP) which are known to the State of California to cause cancer or birth defects or other reproductive harm. **For more information, visit [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov)**