RJ-440000-101, RJ-440000-103, RJ-440001-101 & RJ-440001-103 JL & JT HIGH STEER KITS INSTALLATION INSTRUCTIONS & TECHNICAL MANUAL

ROCK JOCK® BY JOHN CURRIE

RockJock's High Steer System for the JL Wrangler, JL Unlimited and JT Gladiator vehicles not only gives you high steer knuckles that exceed OEM quality - but also everything to make them work! Although swapping the knuckles on your vehicle probably seems like a daunting task, it's really not that big of a deal if you just take your time. Please read this entire manual before beginning on the job! If any questions arrise during the installation of this kit, PLEASE, feel free to give us a call so we can help!

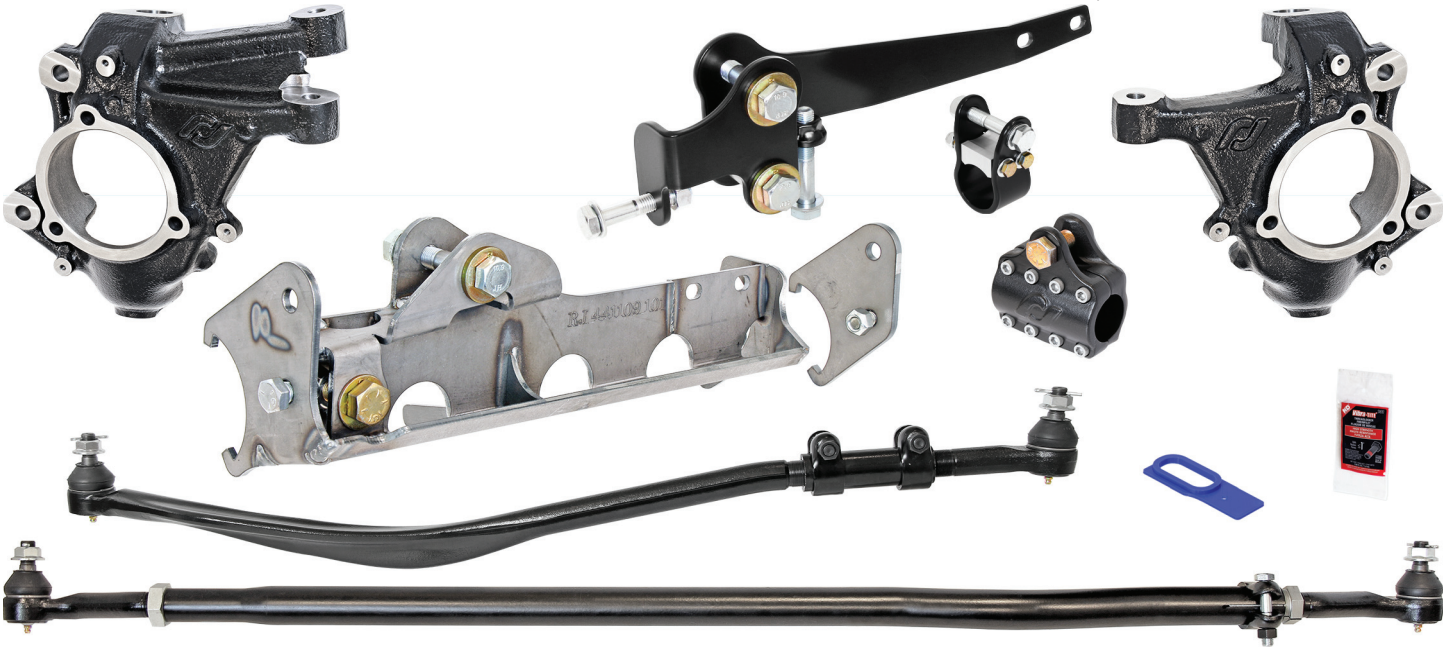
NOTE: Understand that we offer 4 kits, 2 for retaining the vehicle's stabilizer shock, 2 for upgrading to a hydraulic assist ram. Then, the 2 of each of those kits differentiate by what axle is in your vehicle. JL/JT Sport is a narrower width axle than JL Rubicon and JT Rubicon/Mojave/Tow Package. This only comes into play with the tie rod width, as outlined in the instructions.

Kit Includes

1) RJ-447100-101.....High Steer Knuckles (pair), incl. Steering Stop Bolts & Cotter Pins
1) RJ-441110-101.....Trac Bar & Stabilizer Shock Relocation Bracket Kit - or - RJ-44110-103.....Trac Bar Relocation & Ram Mount Bracket Kit
1) RJ-441002-101.....Steering Stabilizer Shock Tie Rod Clamp Kit - or - RJ-441001-101.....Ram Assist Tie Rod Clamp
1) RJ-442103-101.....Forged, Organically Shaped Drag Link Assembly
1) RJ-442101-101 - or - RJ-442101-103.....42mm OD Chromoly Tie Rod Assembly
1) RJ-HiSteer-DrillTemplate.....Blue Plastic Drill Template (in RJ-441002-101 kit)
1) RJ-442101-101.....2ml Tube of Red Threadlocker (in RJ-441002-101 kit)

Tools Required

1/2" Impact Wrench	Alignment Tool
SAE Sockets & Wrenches	Center Punch
Metric Sockets & Wrenches	Sledge Hammer
SAE Allen Wrench Set	Drill & Drill Bit Set
Metric Allen Wrench Set	Tape Measure
36mm Socket	Masking Tape
Torque Wrench	Red AND Blue Threadlocker



This is not an entry level installation! This kit requires the dismantling of major components of your vehicle. Please read this manual before proceeding to ensure that you are comfortable doing what needs to be done and that you possess the tools needed to accomplish it!

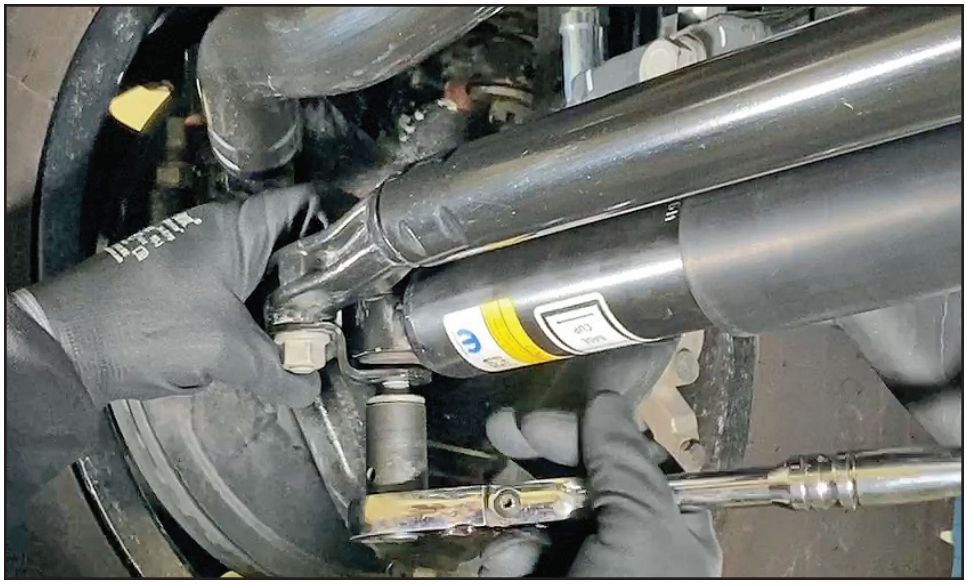
Instructions start on the next page....

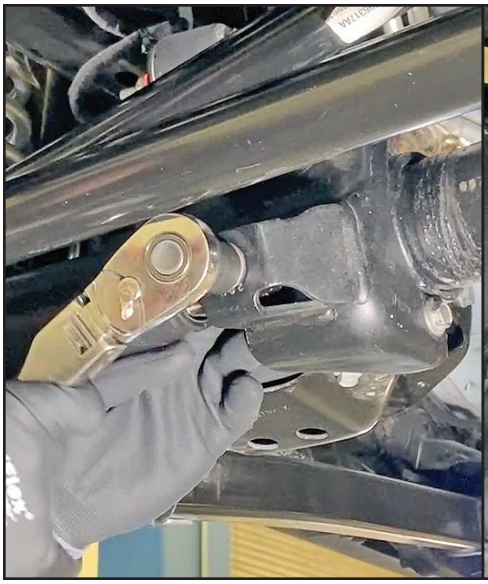
In preparation:

1) Ensure a safe working environment. Make sure you have your vehicle on a flat level surface, that you have the proper capacity floor jack and jack stands on hand and please wear safety glasses!
2) Jack your vehicle up by the frame and and put jackstands under the frame behind the lower control arm frame brackets.
3) Remove your front wheels and tires and set them asside.
4) Be aware: unless otherwise stated - every piece of hardware you remove in a step - retain it, because you will be reinstalling it!

Step 1

We'll start this kits installation by removing the stock steering stabilizer shock attaching bolt and nut from the passenger's side of the stock tie rod using an 18mm wrench or socket.





Step 2

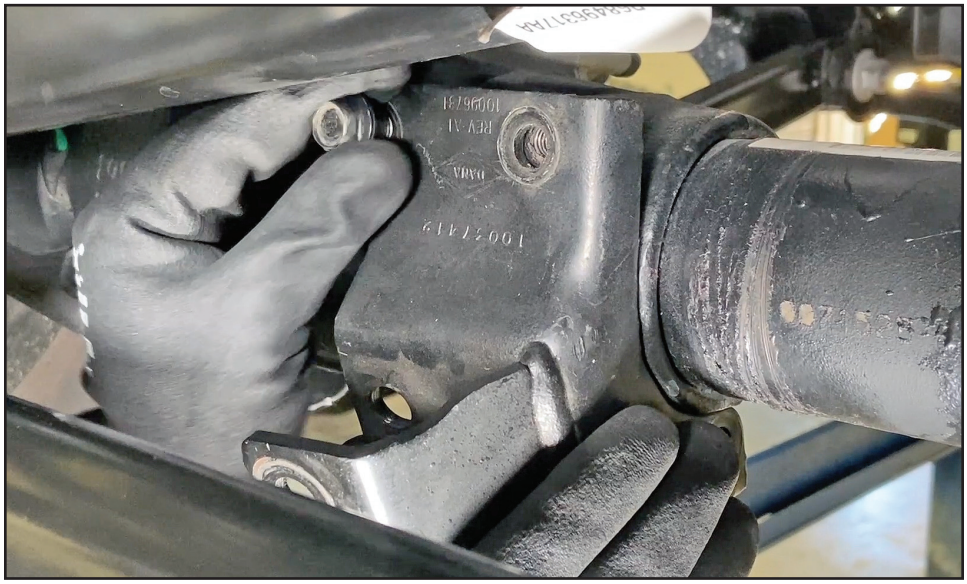
Next, with an 18mm wrench or socket, remove the bolt at the opposite end of the steering stabilizer shock, that attaches the shock to the axle housing bracket.

You may now remove the shock from both brackets and set it asside. Save the shock for reuse later.

Step 3

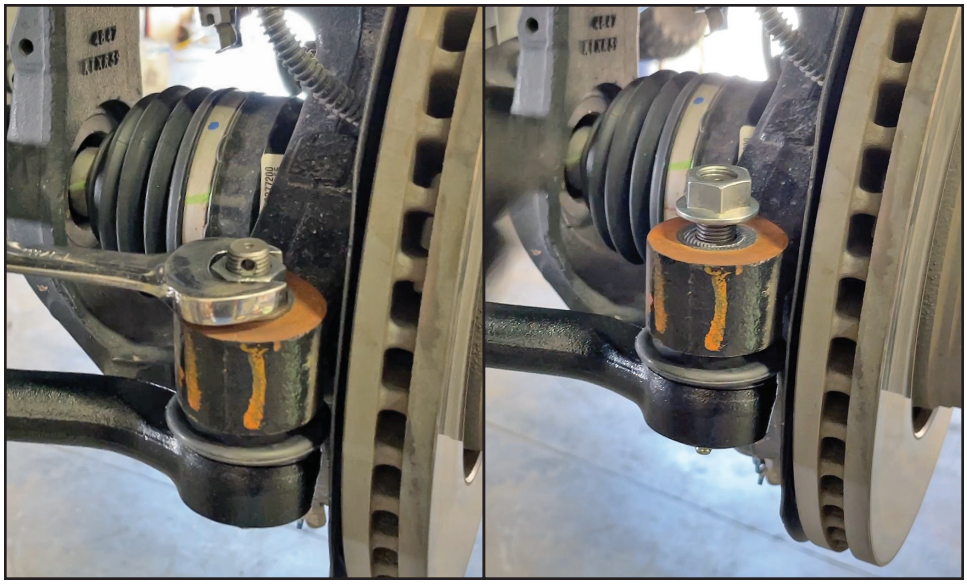
With a 15mm wrench or socket, remove all of the bolts that attach the factory steering stabilizer shock axle bracket to the axle housing

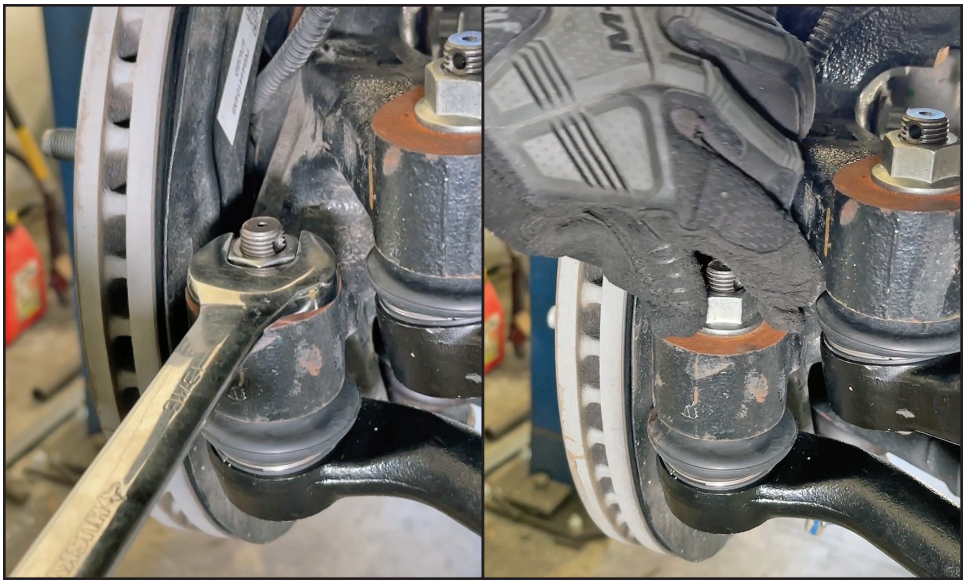
Remove and discard the bracket, but retain all 3 of it's bolts for reuse later!



Step 4

Next, in preparation for removal of the tie rod, remove the rod end cotter pin, break the nut loose and unscrew it upward to give yourself some gap - but do not remove it.



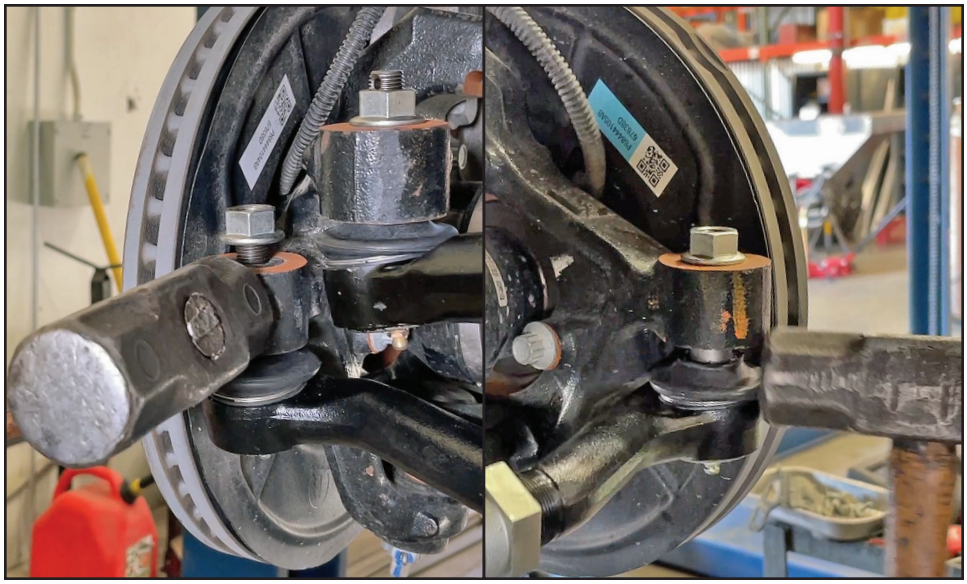


Step 5

Repeat the same process on the other side.

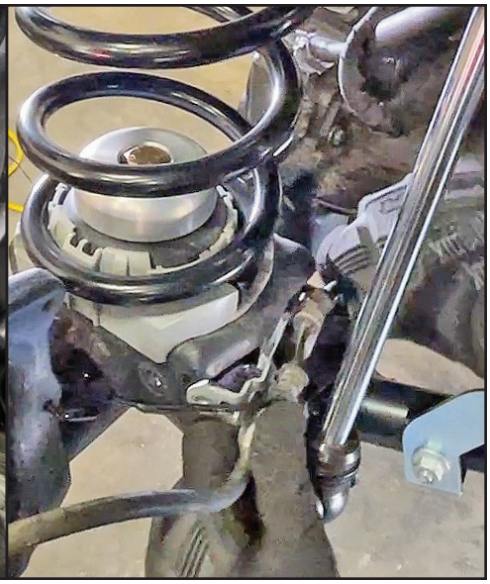
Step 6

Hit the face ends of the steering arms with a sledge hammer to break the tapers loose. When they pop loose, the tie rod will be retained from falling by the nuts you left threaded on.



Step 4

Now you may remove the nuts and remove the tie rod.

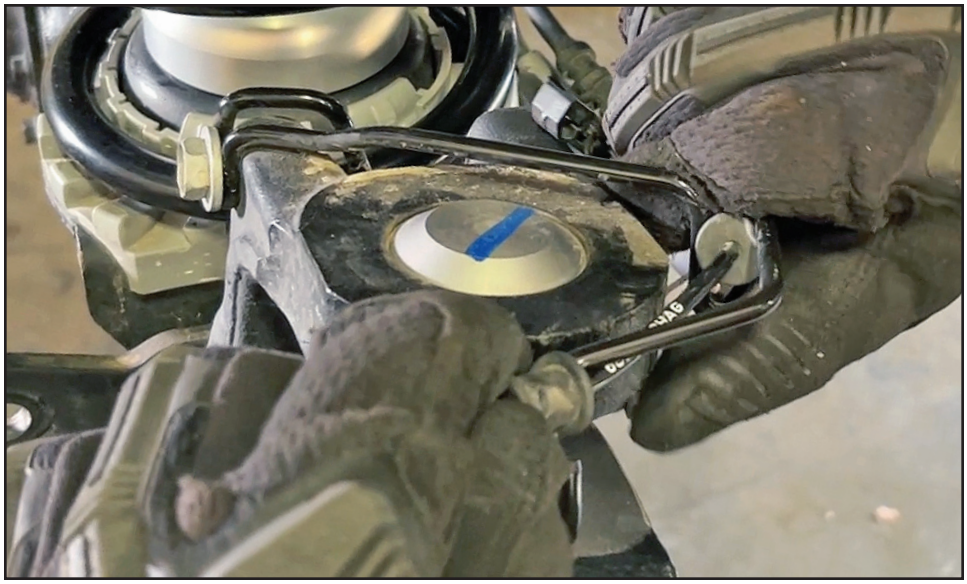


Step 5

With a 10mm wrench, remove the bolt that attaches the brake hose retaining bracket into the back of the coil spring bucket and free the bracket from the coil spring bucket.
Pull the bracket loose of the coil bucket to provide the brake hose some slack.

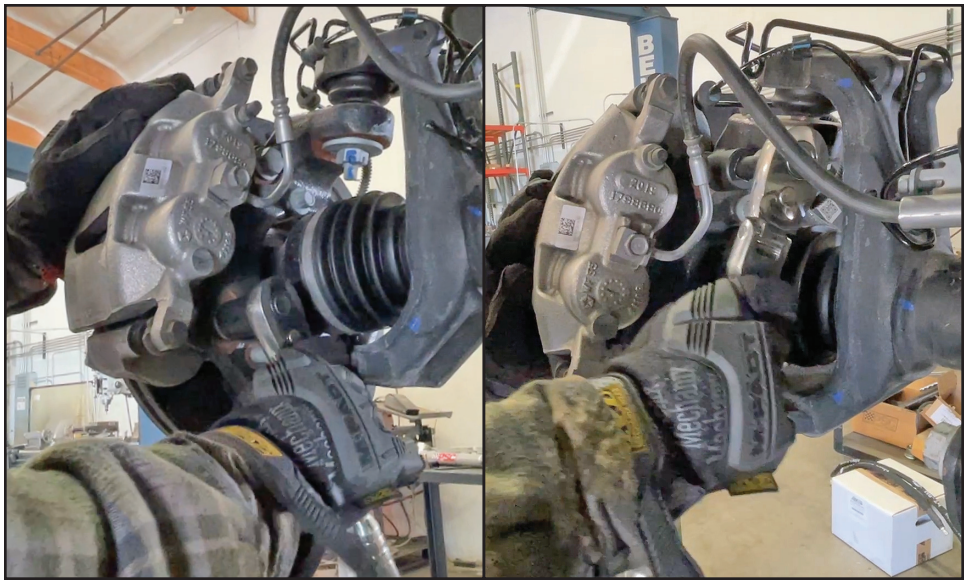
Step 6

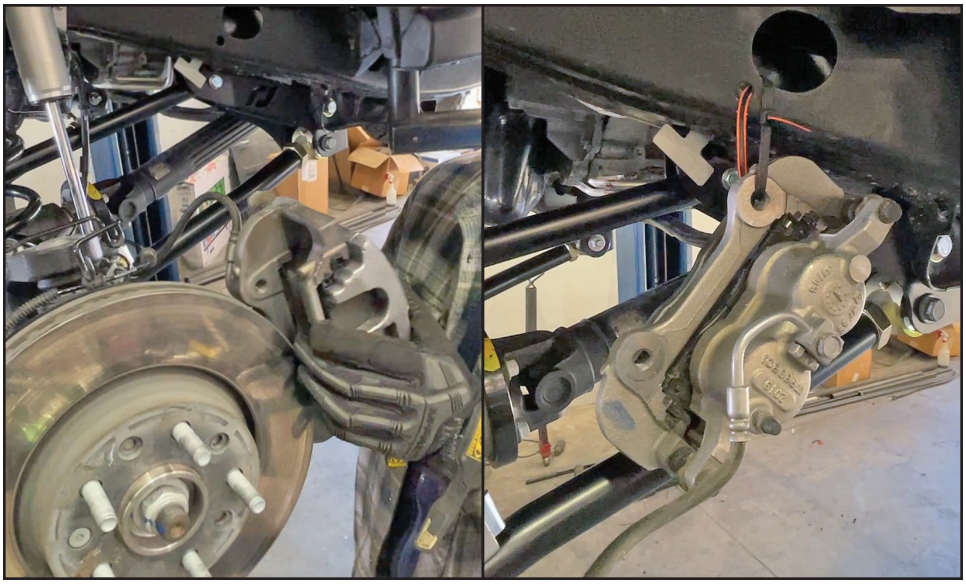
Next, follow the wheel speed sensor wire up the back of the inner C-knuckle. You'll notice it has plastic clips and rubber barrels attaching it to the wire bail on the back of the C-knuckle. Completely free all of the clips and rubber barrels so the wire is loose.



Step 7

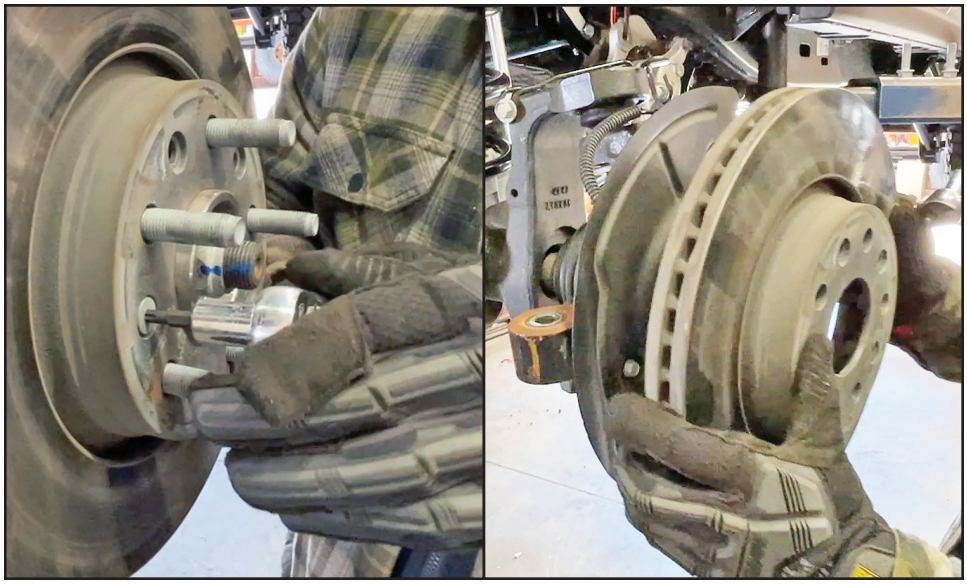
Break the bottom caliper bolt loose and then the top bolt.





Step 8

Remove the bolts, remove the caliper and hang the caliper up out of the way.
Make sure that the brake hose follows the caliper up and out of the way.

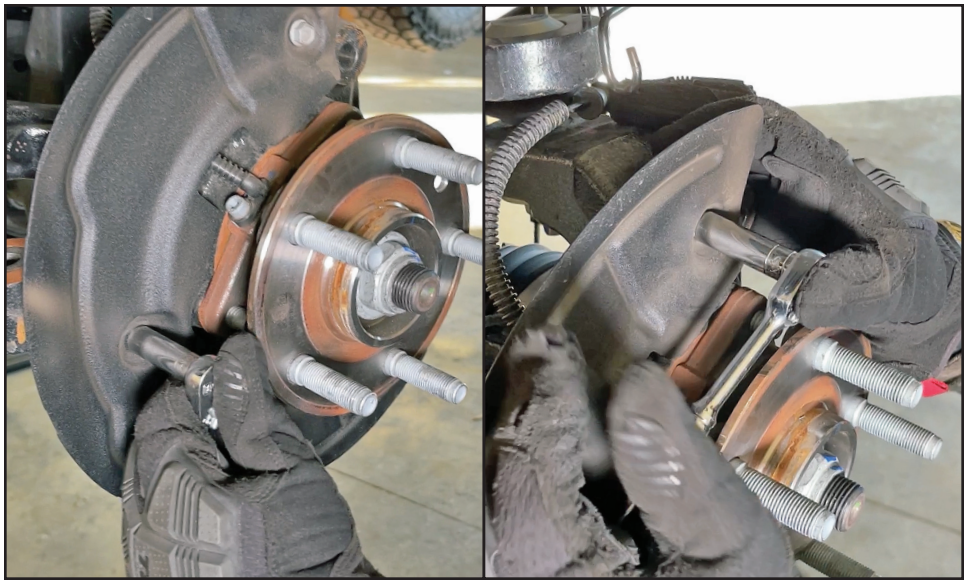


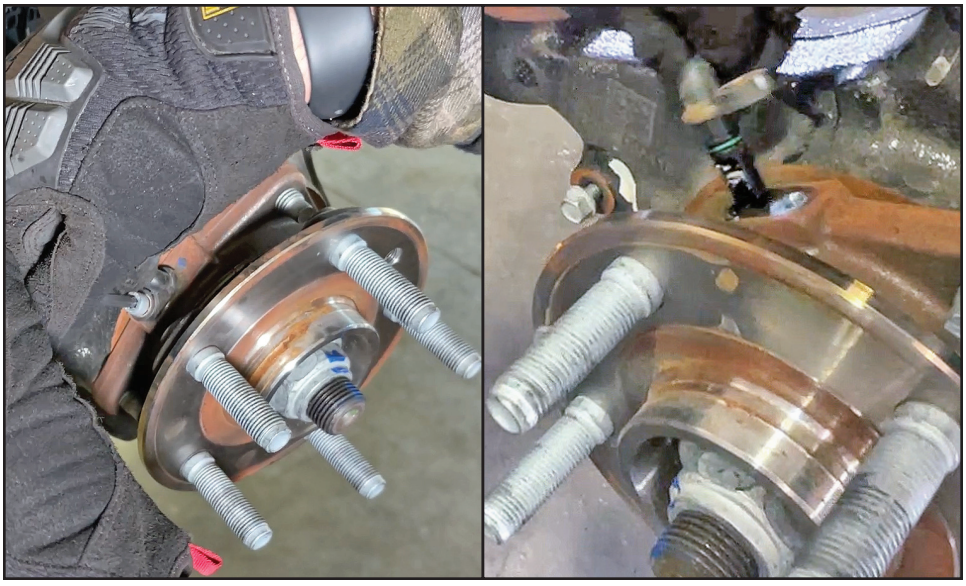
Step 9

With a Torx bit, remove the bolt that attaches the rotor to the face of the unit bearing and remove the rotor.

Step 10

Next, remove the 3 dust shield bolts and then remove the dust shield.





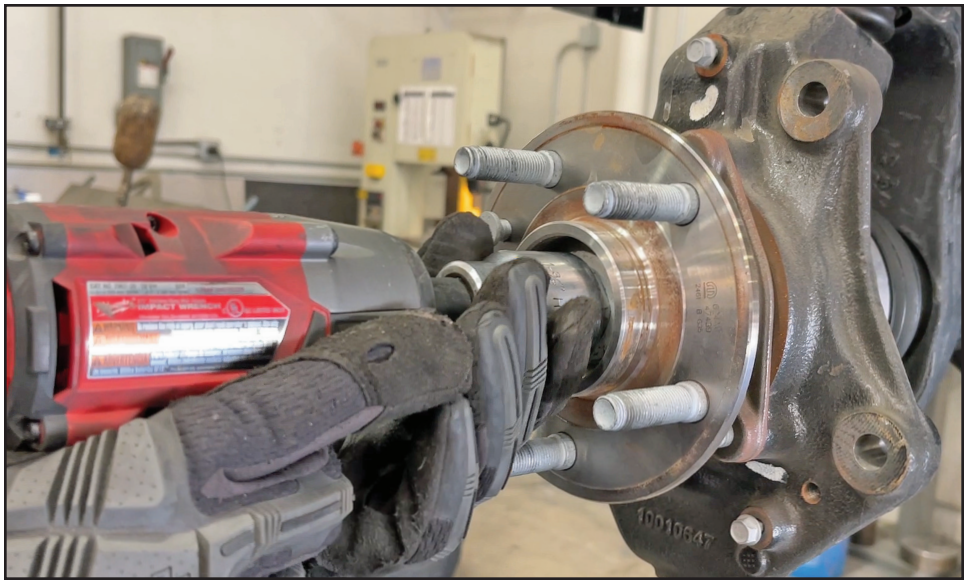
Step 11

Remove the wheel speed sensor screw with an allen wrench and then carefully remove the wheel speed sensor.

Tuck the sensor in some place safe until reinstallation.

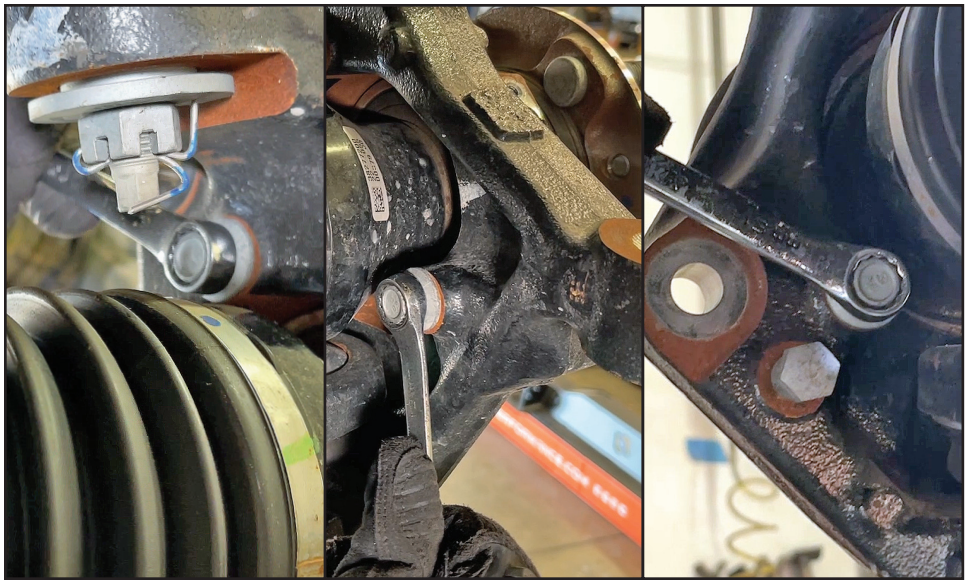
Step 12

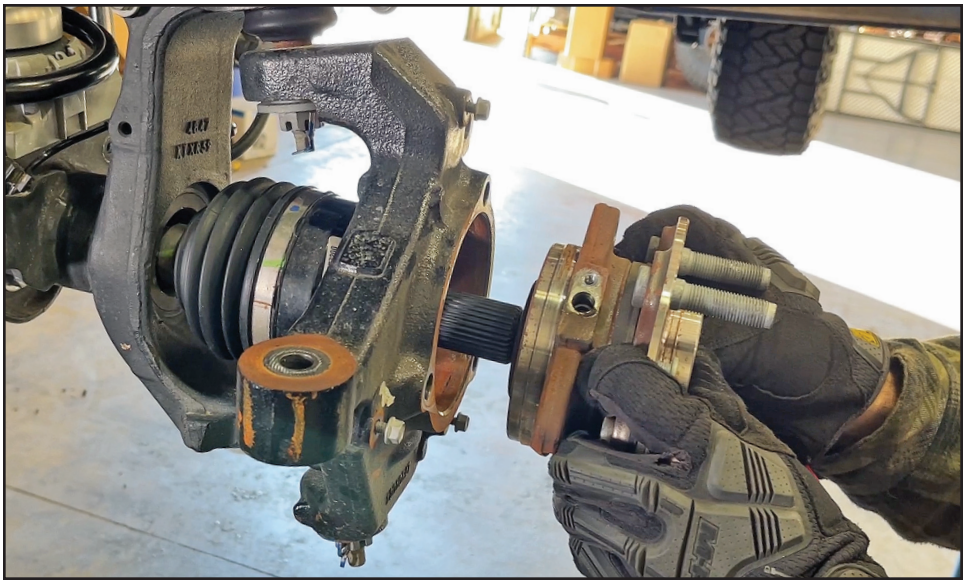
Remove the outer axle nut with an impact wrench. You'll have to lean into this guy pretty good with a 1/2" impact.



Step 13

Remove the three 12-point bolts that retain the unit bearing to the knuckle.



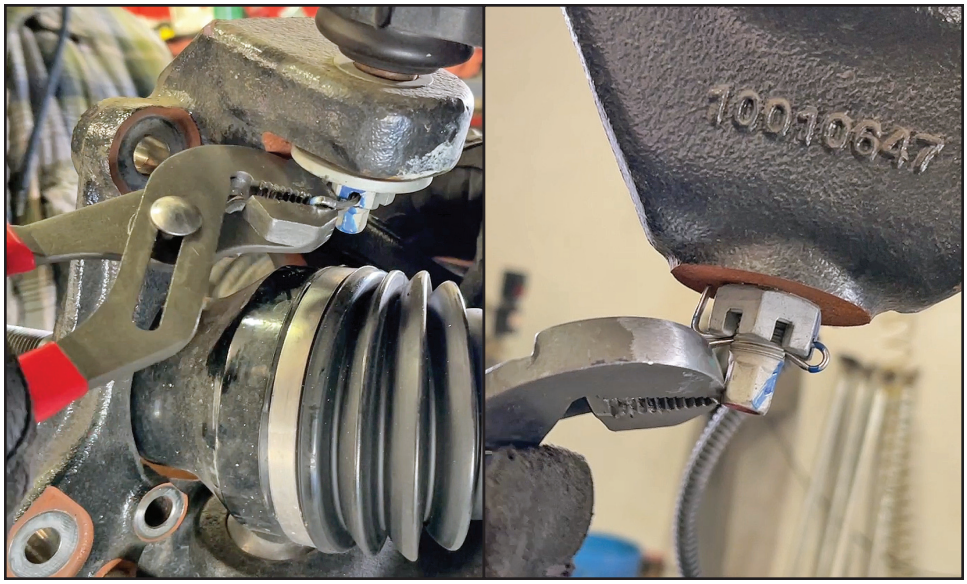


Step 14

Remove the unit bearing from the knuckle and off of the outer axle spline and set it aside.

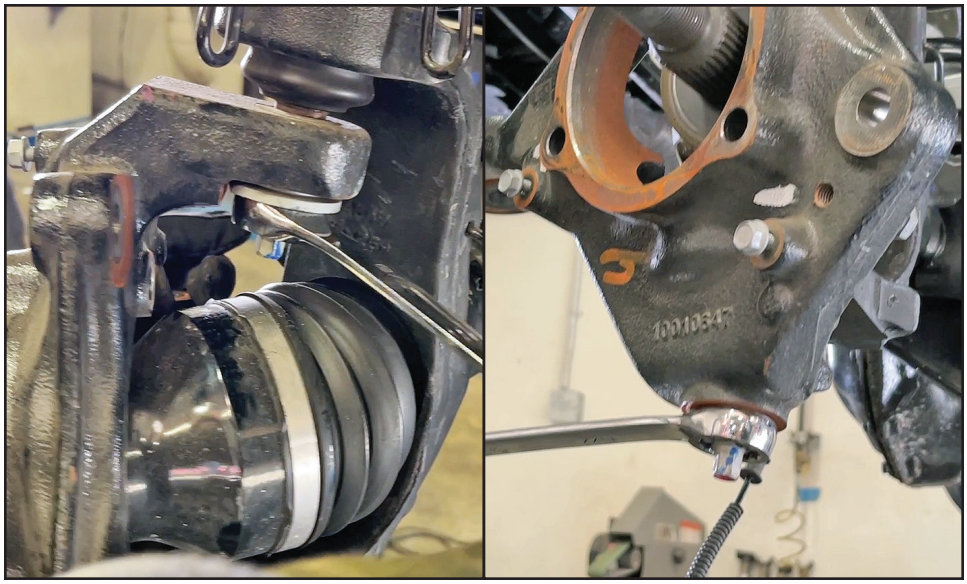
Step 15

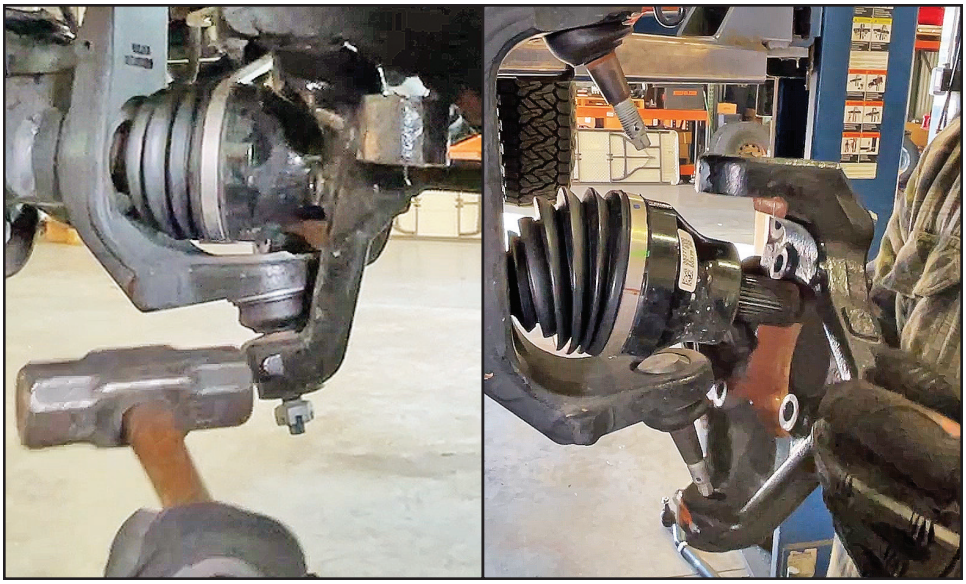
Next, remove the upper and lower cotter pins from the knuckle's ball joints and discard them.



Step 16

Break the top and bottom ball joint nuts loose and unscrew them, but do not remove them - just like you did on the tie rod.





Step 17

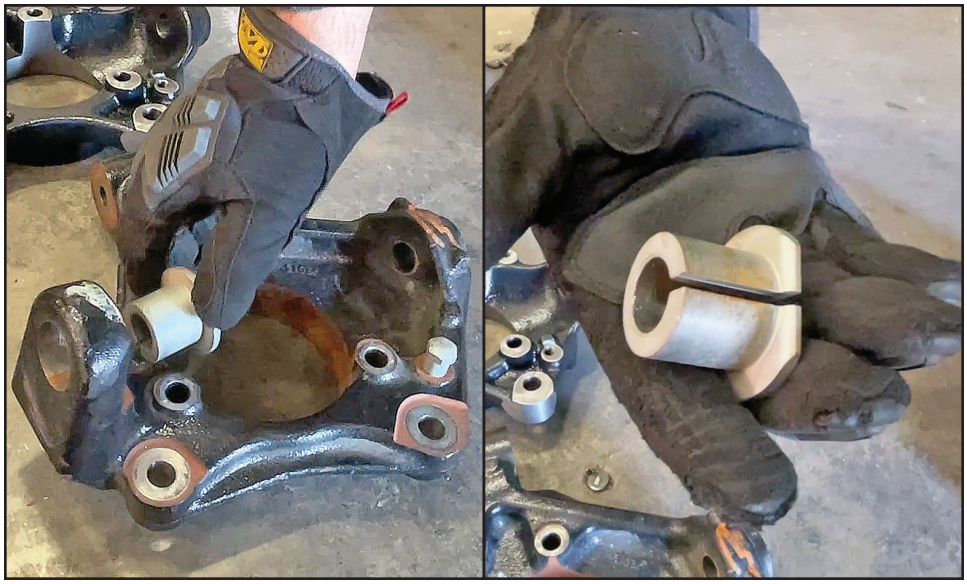
Again, similar to the tie rod, hit the casting outboard of the ball joint taper, top and bottom, to break the tapers loose. The nuts will catch the knuckle from falling.

Then go ahead and remove the nuts and the knuckle.

You will be discarding the knuckle after Step 67 (but hang on to the nuts!).

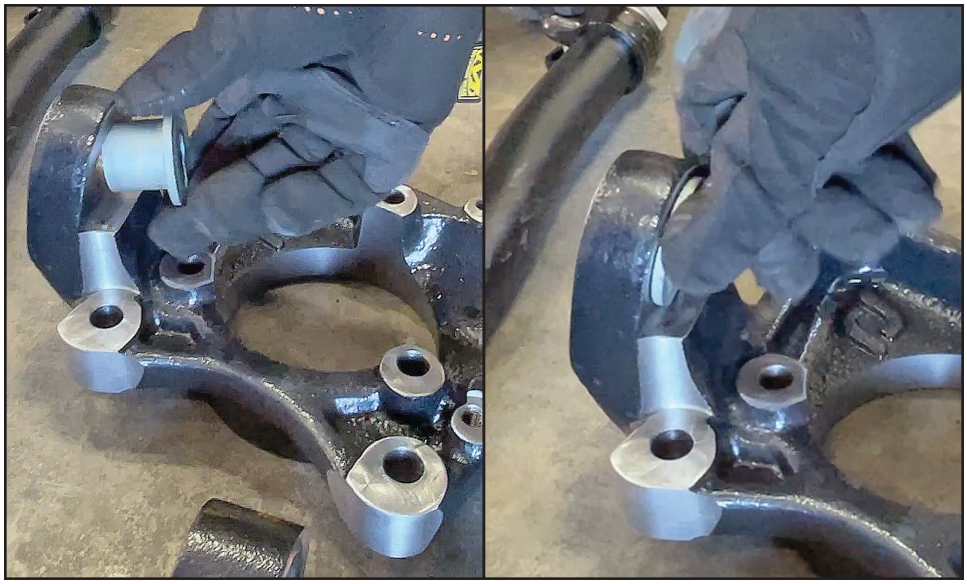
Step 18

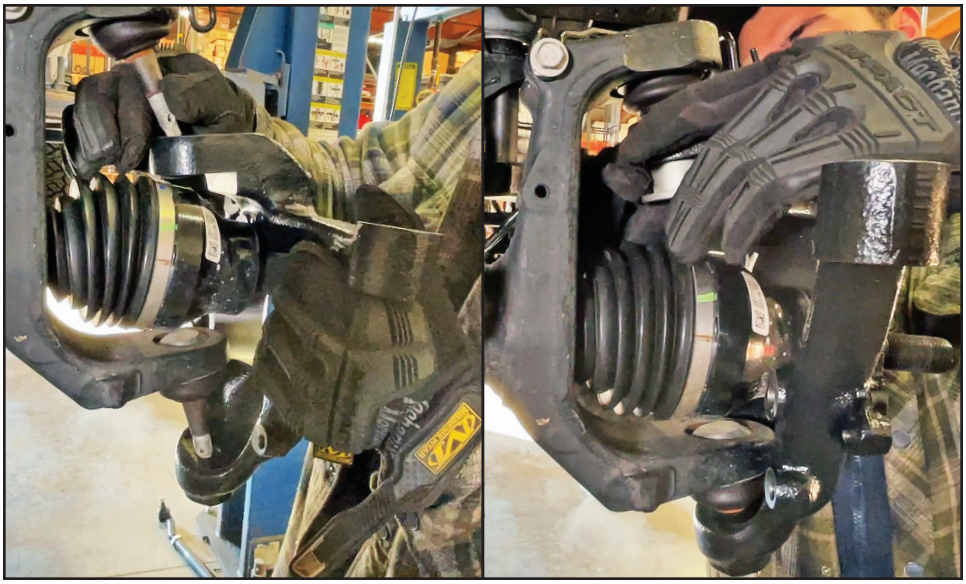
Remove the tapered ball joint camber sleeve from the top of the factory knuckle for reuse.



Step 19

Install the tapered ball joint camber sleeve into the new LH RockJock High Steer Knuckle.



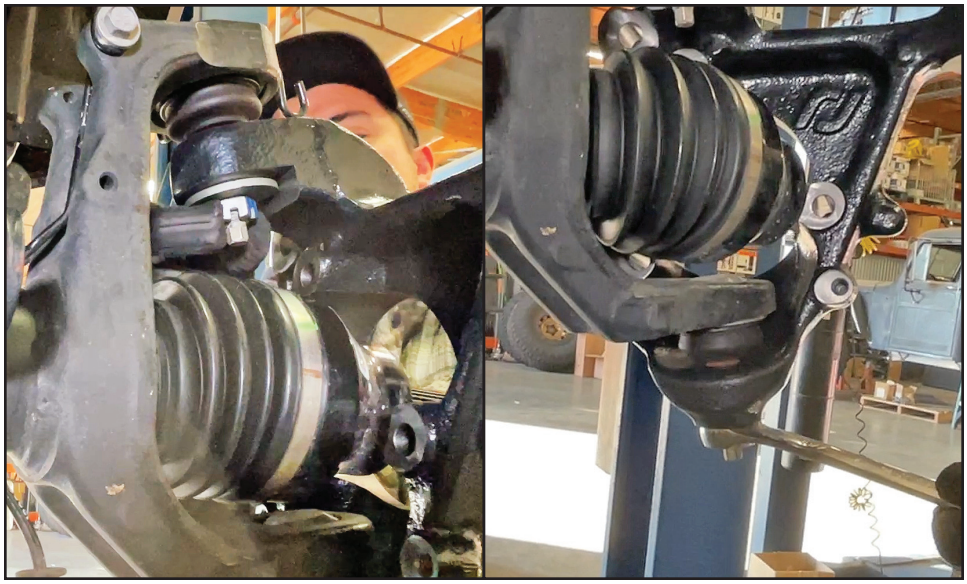


Step 20

Install the new RockJock knuckle onto the ball joints, just like you took the old one off.
As the new knuckle goes on, make sure and monitor the camber sleeve so that it stays in place and goes onto the upper ball joint taper properly.

Step 21

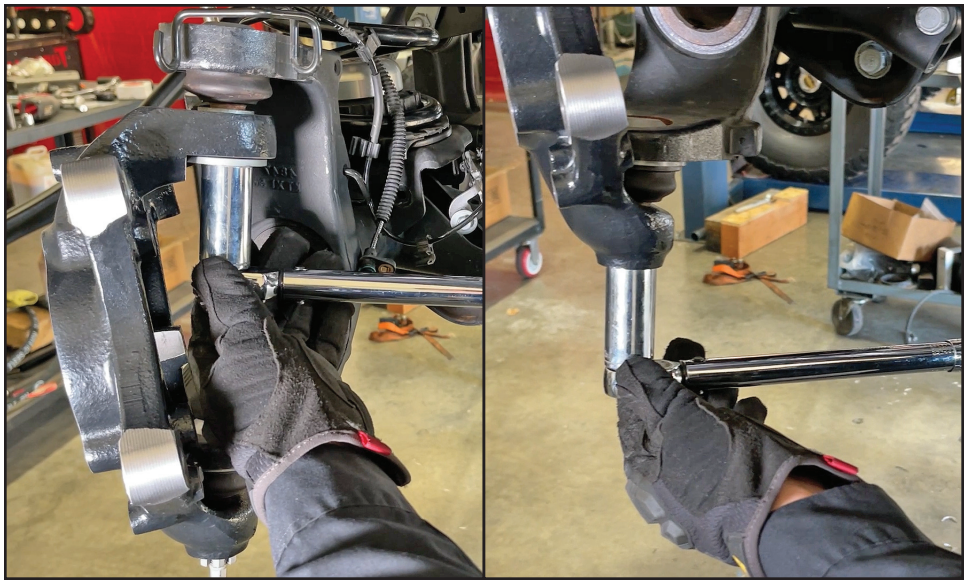
Reinstall the castle nuts onto the upper and lower ball joint threads and tighten.

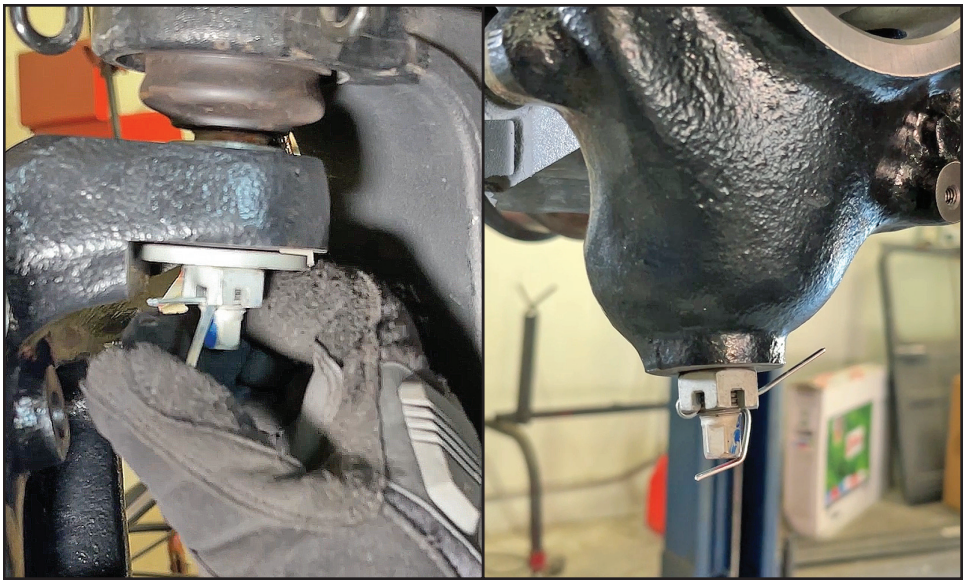


Step 22

Torque both nuts to spec. with a torque wrench.

TORQUE SPECS.
SEE PG. 59



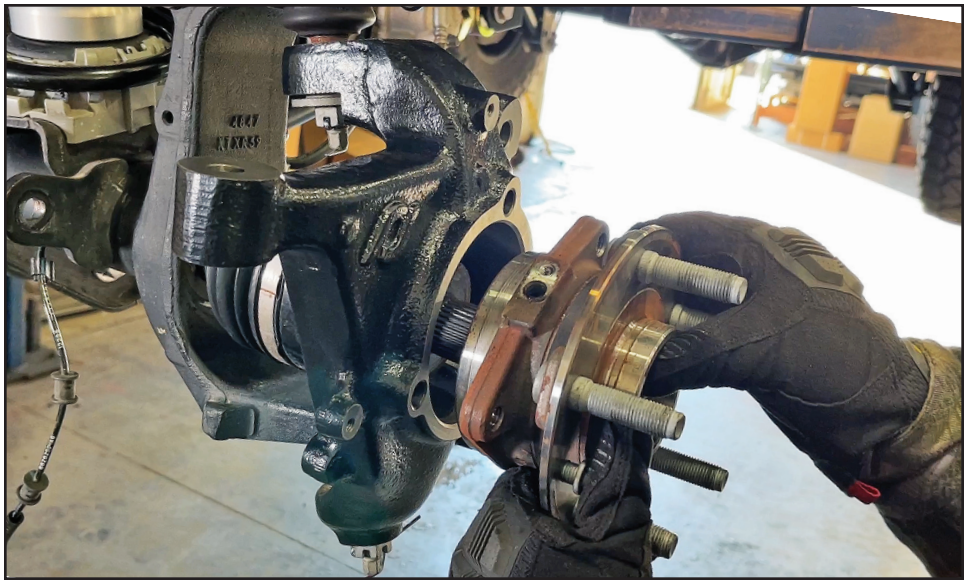


Step 23

Install the new upper and lower ball joint cotter pins supplied with the new knuckles in this kit.

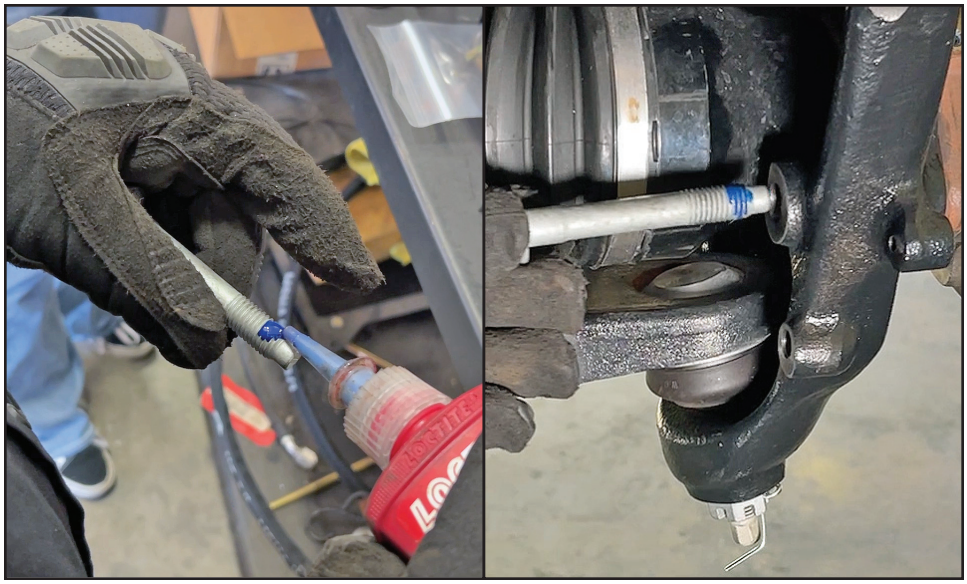
Step 24

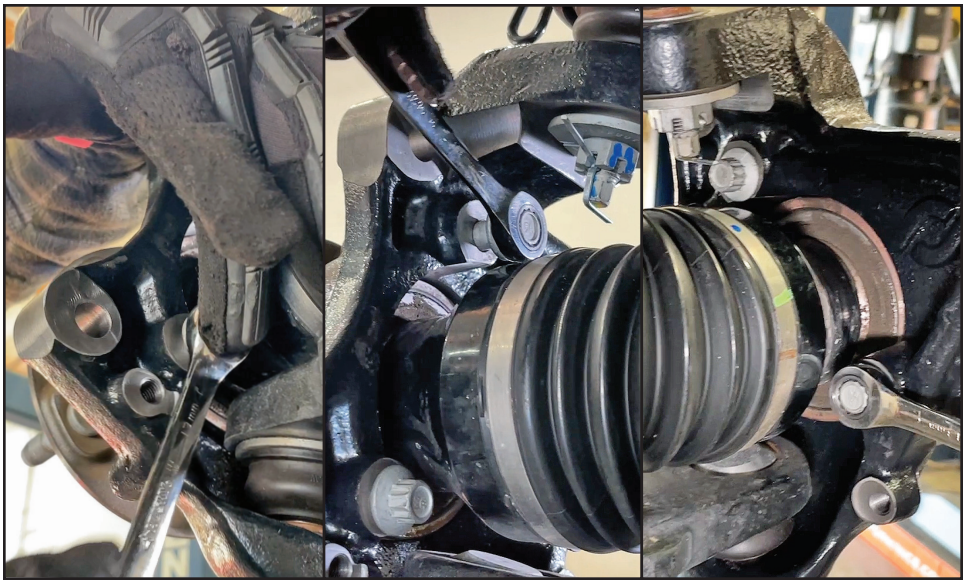
You may now reinstall the unit bearing, noting the clocking of the wheel speed sensor hole.



Step 25

In preparation for reinstallation of the 3 unit bearing bolts, have blue threadlocker handy and apply to all 3 bolts.





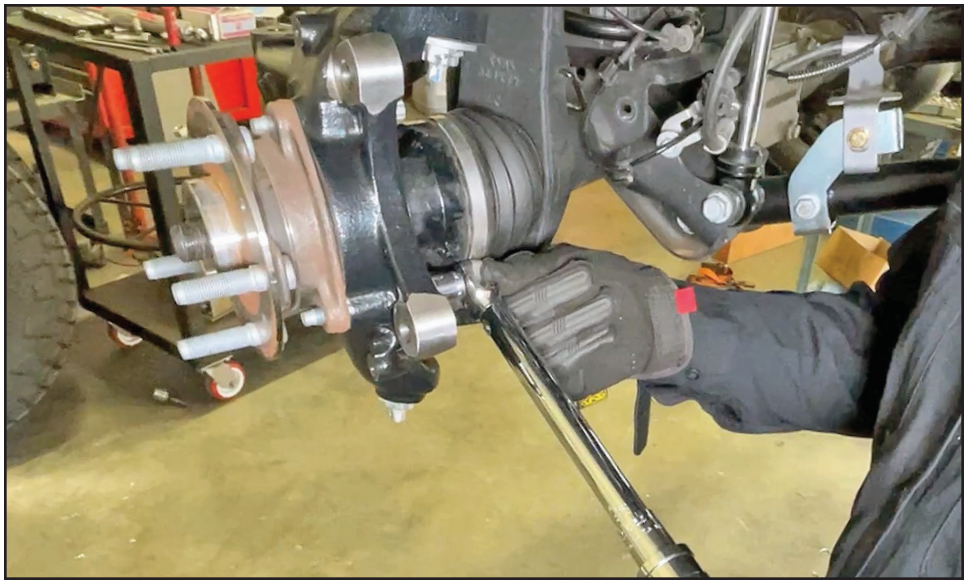
Step 26

Reinstall and tighten the three 12-point unit bearing bolts.

Step 27

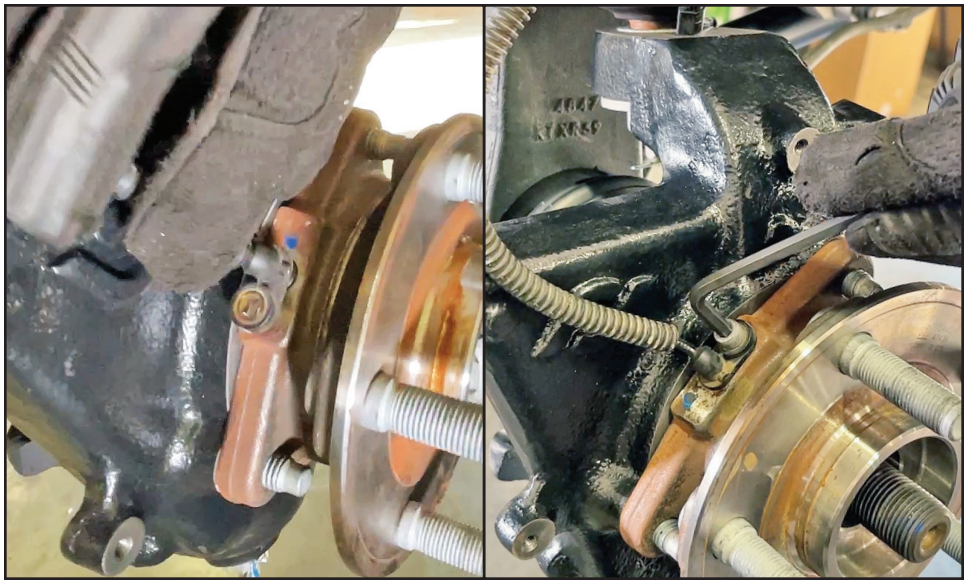
Torque all 3 bolts to spec. with a torque wrench.

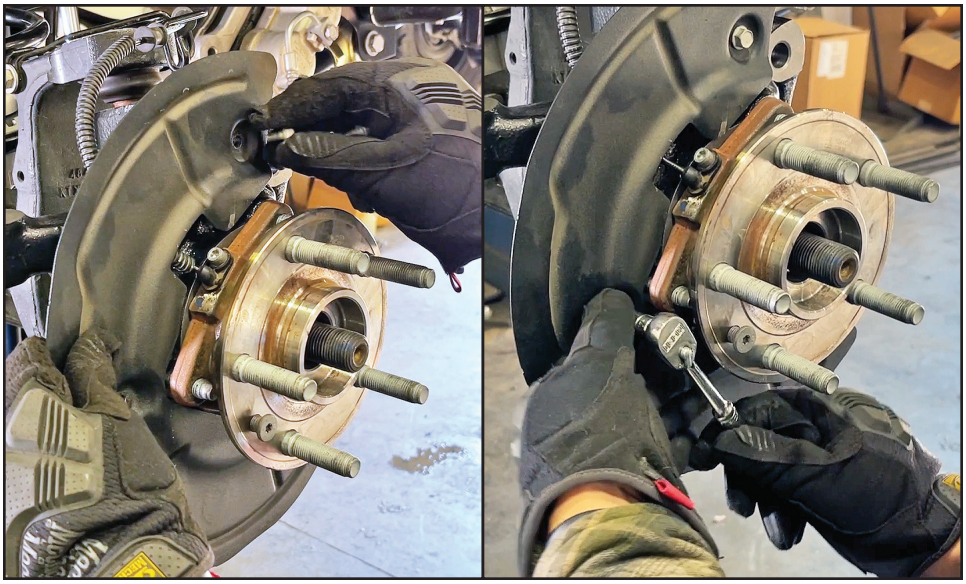
TORQUE SPECS.
SEE PG. 59



Step 28

Carefully reinsert the wheel speed sensor back into place and install and tighten it's allen screw.





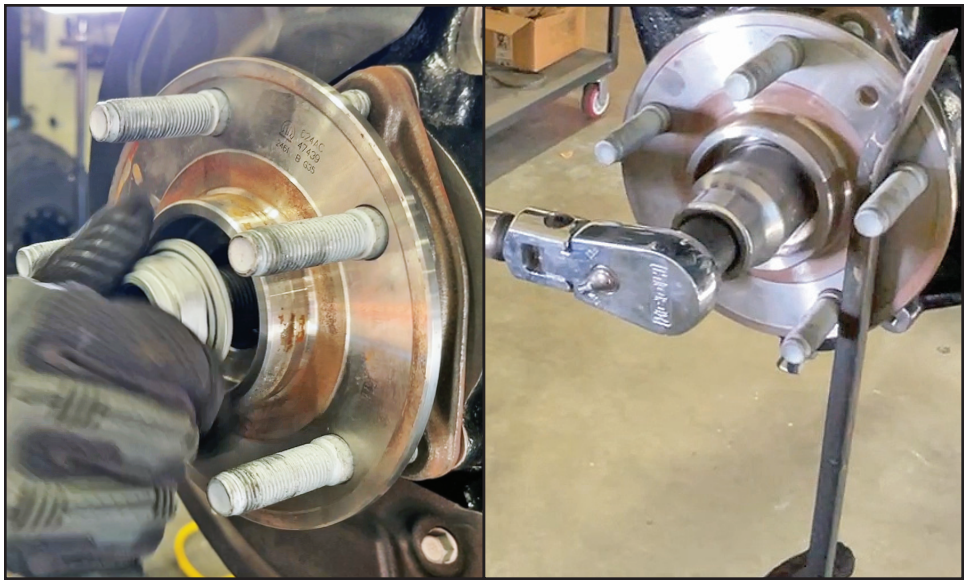
Step 29

Reinstall the brake dust shield using it's original bolts.

Step 30

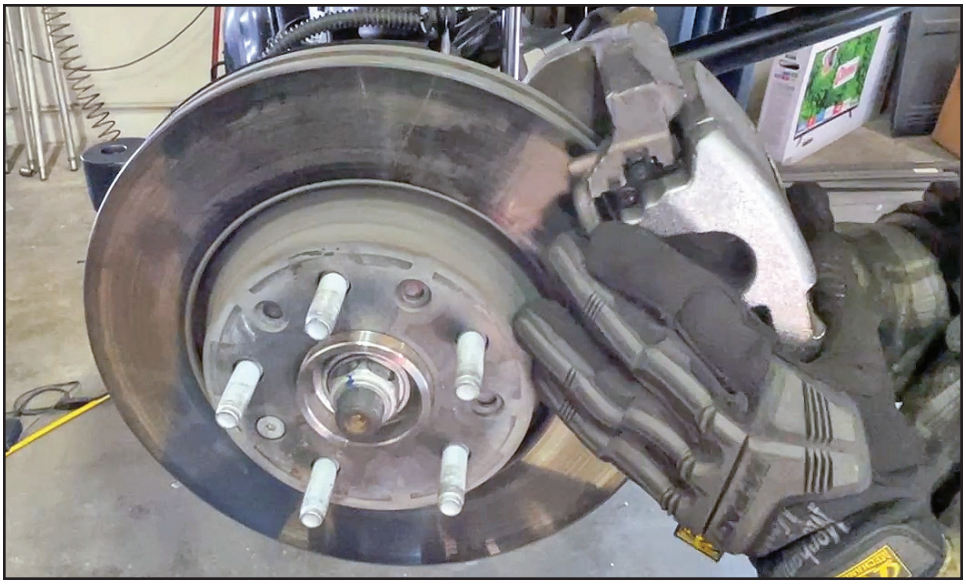
Install, tighten and torque the outer axle nut to spec.

TORQUE SPECS.
SEE PG. 59



Step 31

Slide the brake rotor back on and affix it using it's original Torx bolt.



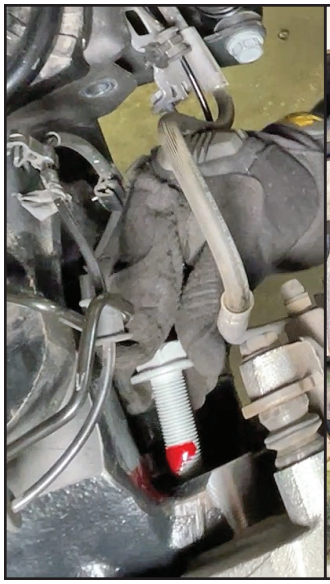
Step 32

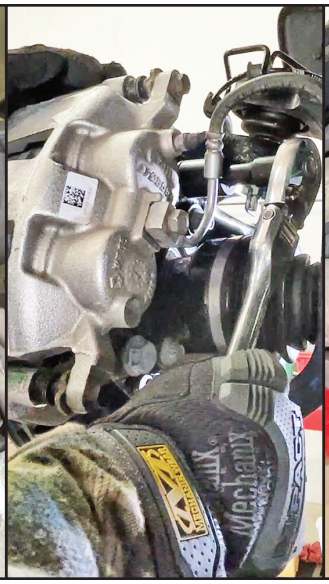
Free the caliper from where you tied it up out of the way and reinstall it.

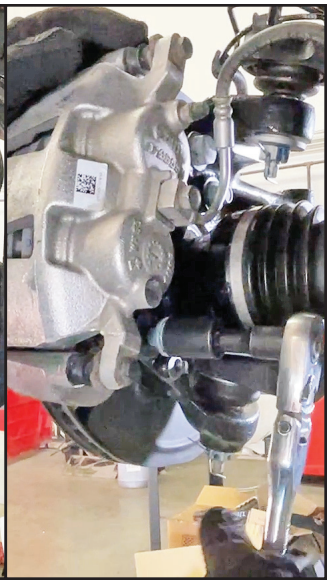
Step 33

Apply red threadlocker to the factory caliper bolts, bolt the caliper back onto the knuckle and torque the bolts to spec.

TORQUE SPECS.
SEE PG. 59

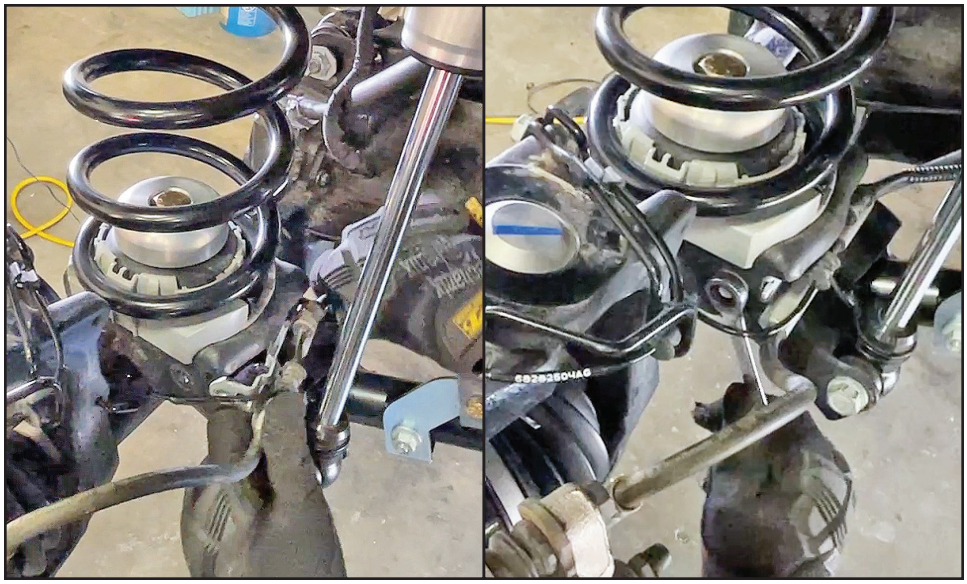


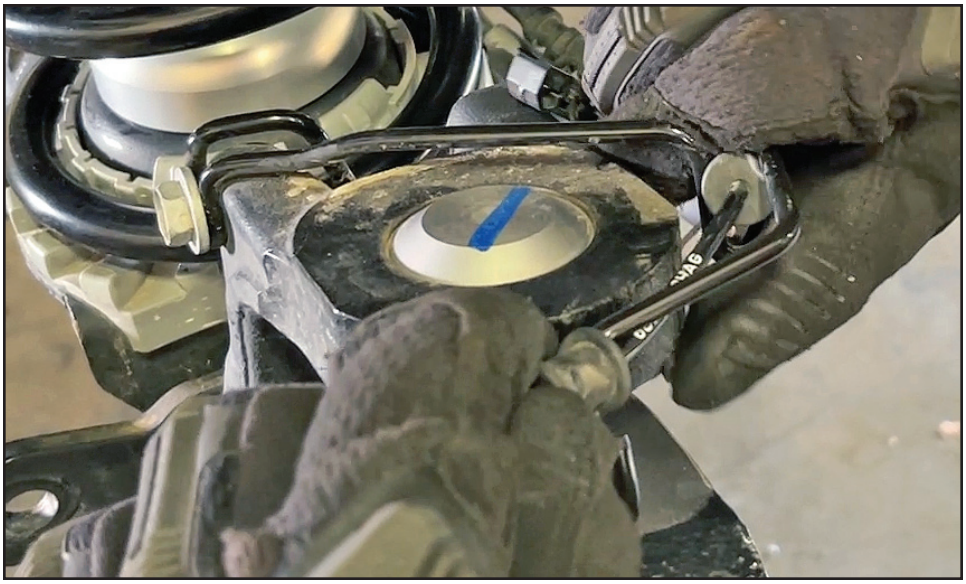




Step 34

Hook the brake hose bracket back into the back of the coil spring bucket and bolt it back up using it's original 10mm bolt.





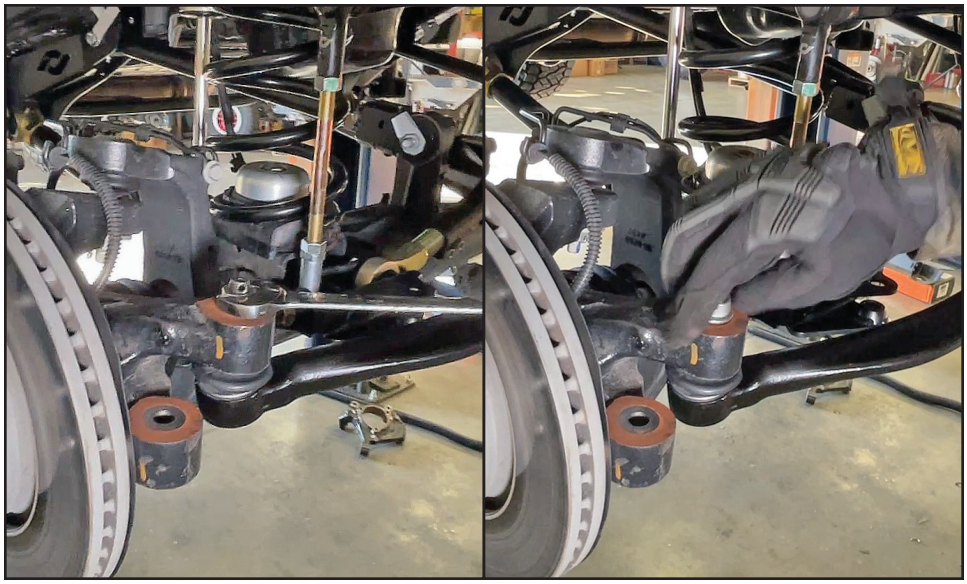
Step 35

Carefully reroute the wheel speed sensor wire back to it's original location, pop it's clips back into place and the rubber barrels back into their grooves.

With that, you have finished one side. Let's move on to the other side!

Step 36

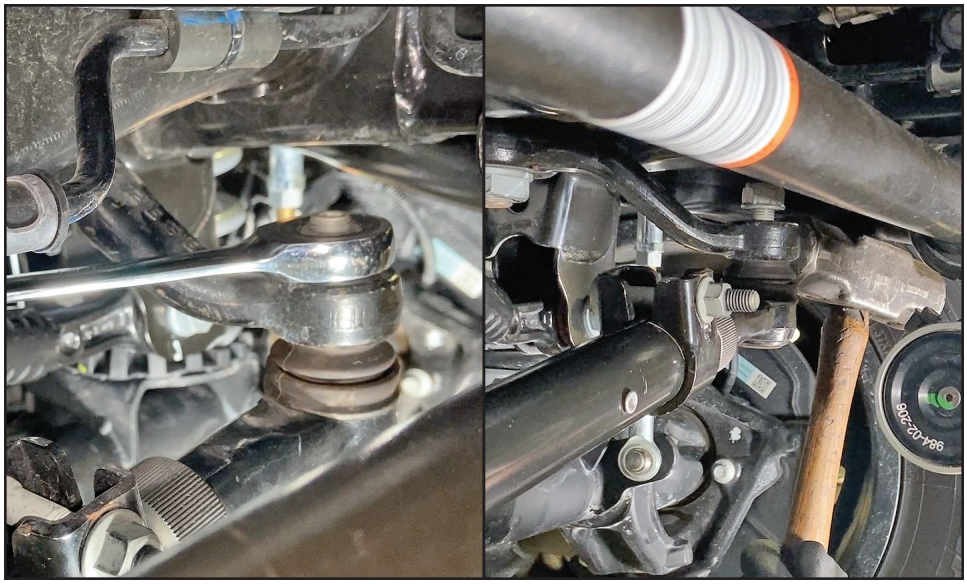
Moving to the other side, the tie rod is already removed, but go ahead and follow the same removal procedure on the drag link that you did on the tie rod and ball joints. Pop the nut loose and loosen but don't remove.

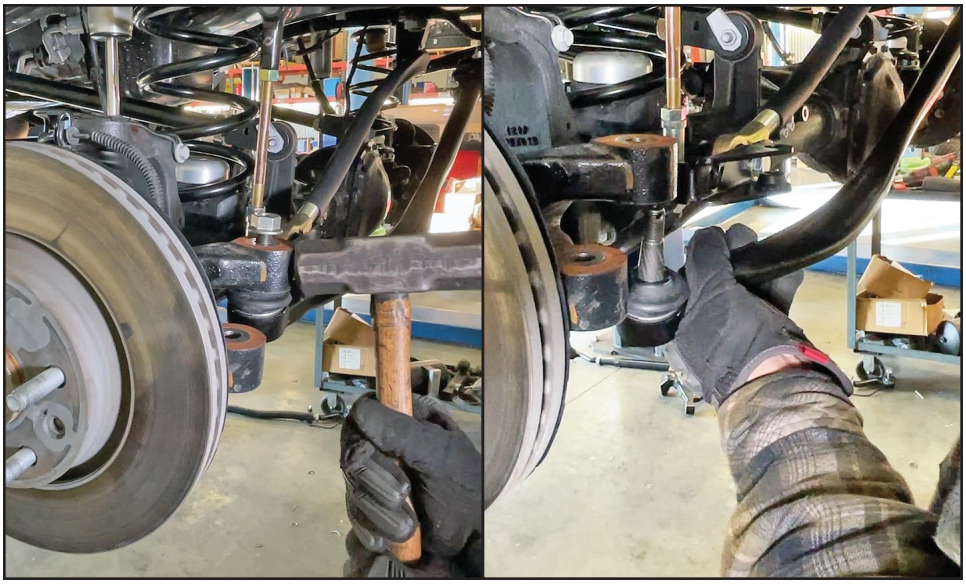


Step 37

At the other end of the drag link, at the pitman arm, do the same thing here: loosen the nut, but do not remove.

While you are there, go ahead and pop the end of the pitman arm with a sledge hammer to break the taper loose.





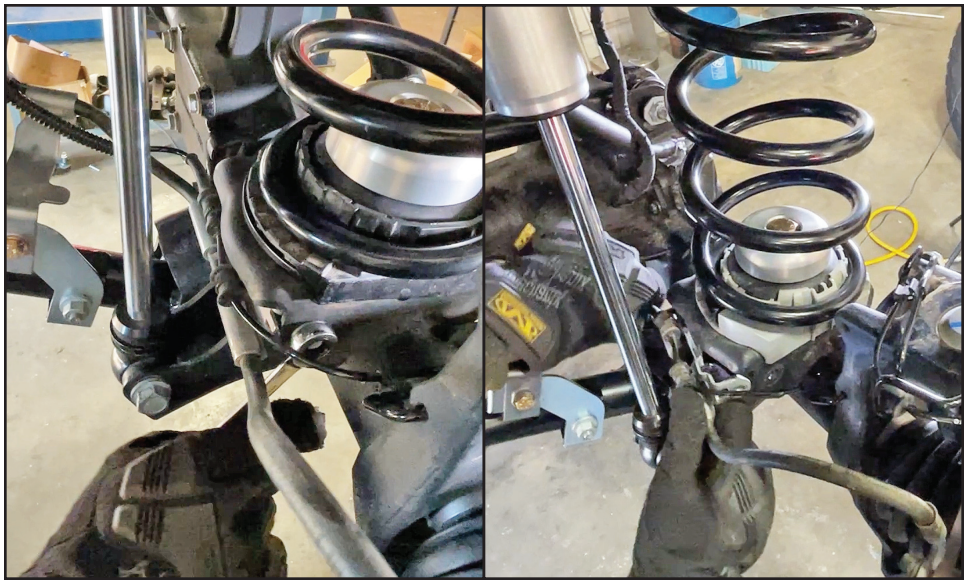
Step 38

Back at the other end, go ahead and pop the end of the steering arm on the knuckle with a sledge hammer to break the taper loose there, then remove the nuts at both ends and remove the drag link.

Step 39

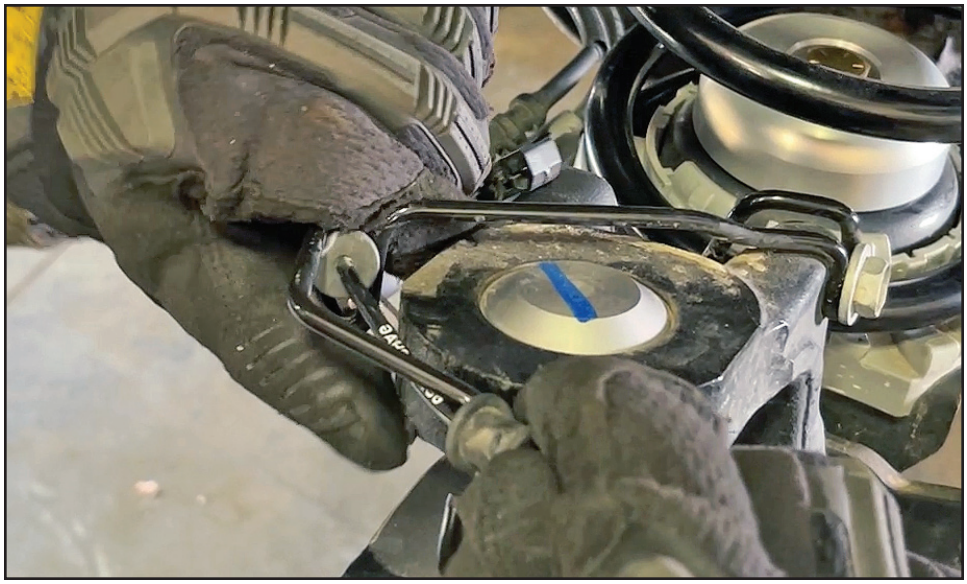
As you did on the other side, you'll remove the 10mm bolt from the back of the coil bucket to temporarily remove the brake hose retention bracket from the coil bucket.

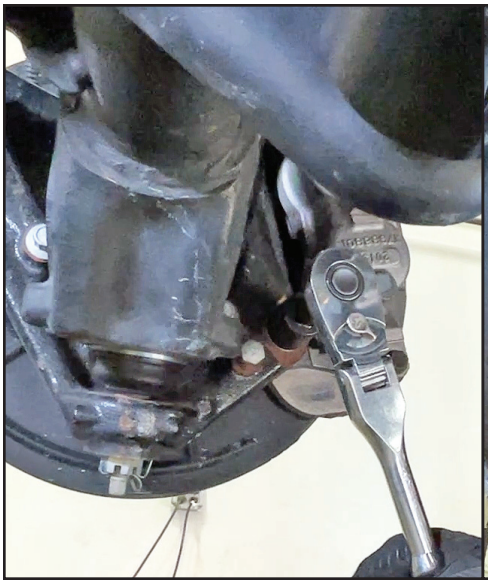
Pull the bracket loose of the coil bucket to provide the brake hose some slack.



Step 40

Now follow the wheel speed sensor wire up the back of the inner C-knuckle. You'll notice it has plastic clips and rubber barrels attaching it to the wire bail on the back of the C-knuckle. Completely free all of the clips and rubber barrels to free the wire.





Step 41

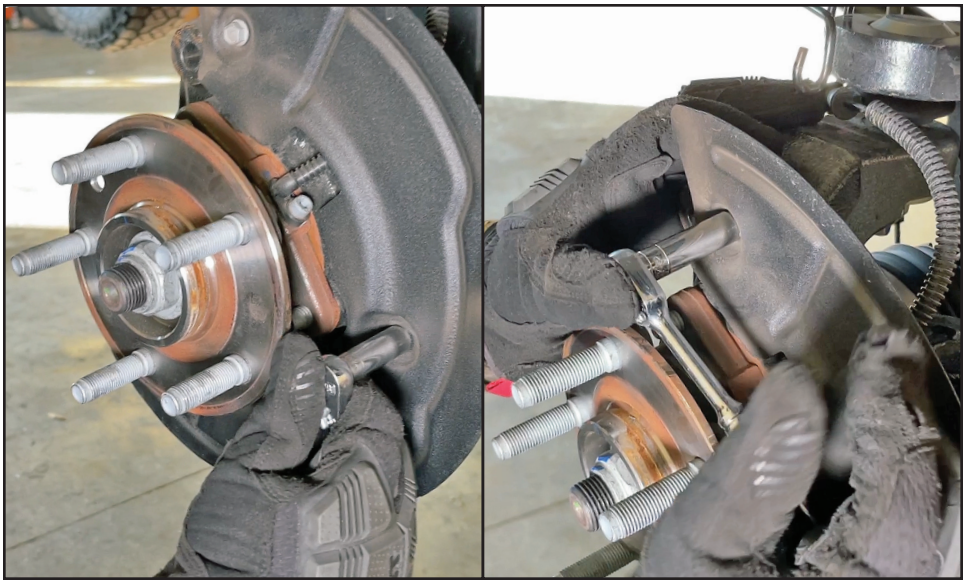
Break the bottom caliper bolt loose and then the top bolt.

Step 42

Remove the bolts, remove the caliper and hang the caliper up out of the way, just as you did on the other side. Make sure that the brake hose follows the caliper up and out of the way.

Step 43

With a Torx bit, remove the bolt that attaches the rotor to the face of the unit bearing and remove the rotor.



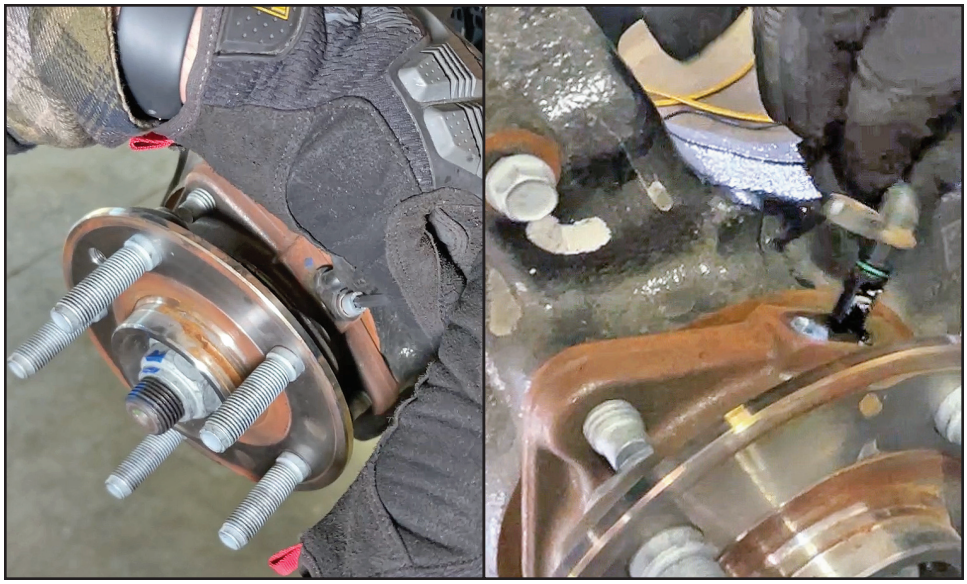
Step 44

Next, remove the 3 dust shield bolts and then remove the dust shield.

Step 45

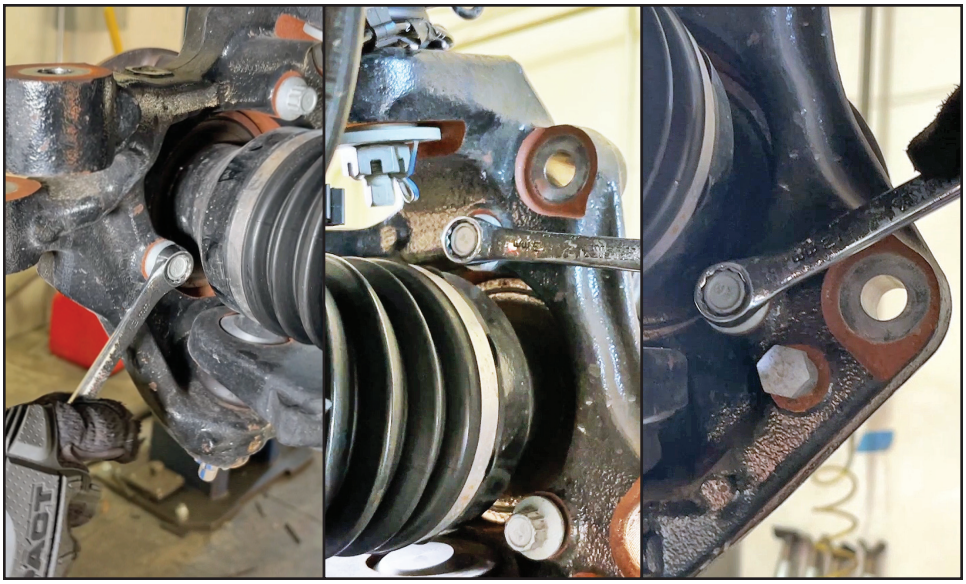
Remove the wheel speed sensor screw with an allen wrench and then carefully remove the wheel speed sensor.

Tuck the sensor in some place safe until reinstallation.



Step 46

Remove the outer axle nut with an impact wrench. You'll have to lean into this guy pretty good with a minimum of a 1/2" impact.



Step 47

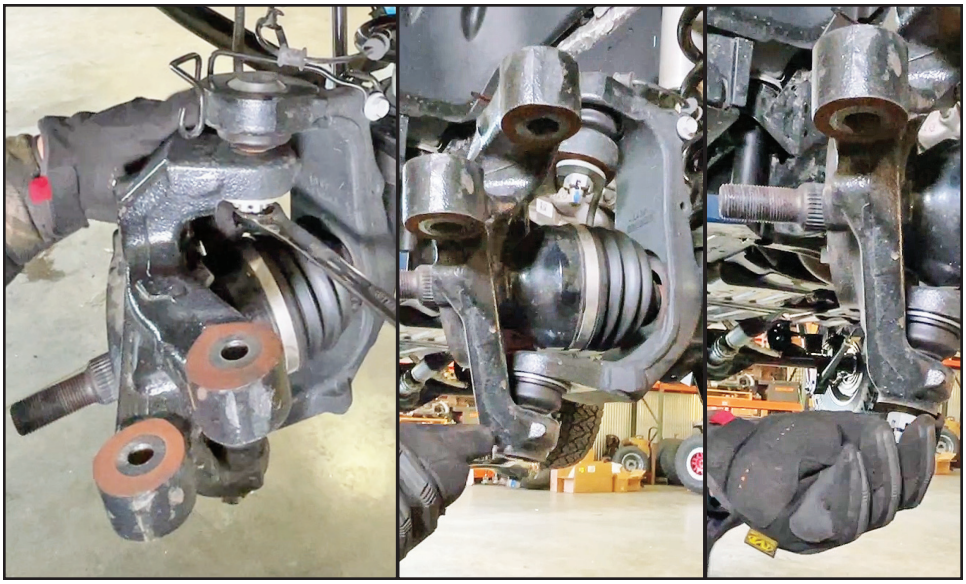
Remove the three 12-point bolts that retain the unit bearing to the knuckle.

Step 48

Remove the unit bearing from the knuckle and off of the outer axle spline and set it asside.

Step 49

Next, remove the upper and lower cotter pins from the knuckle's ball joints and discard them.



Step 50

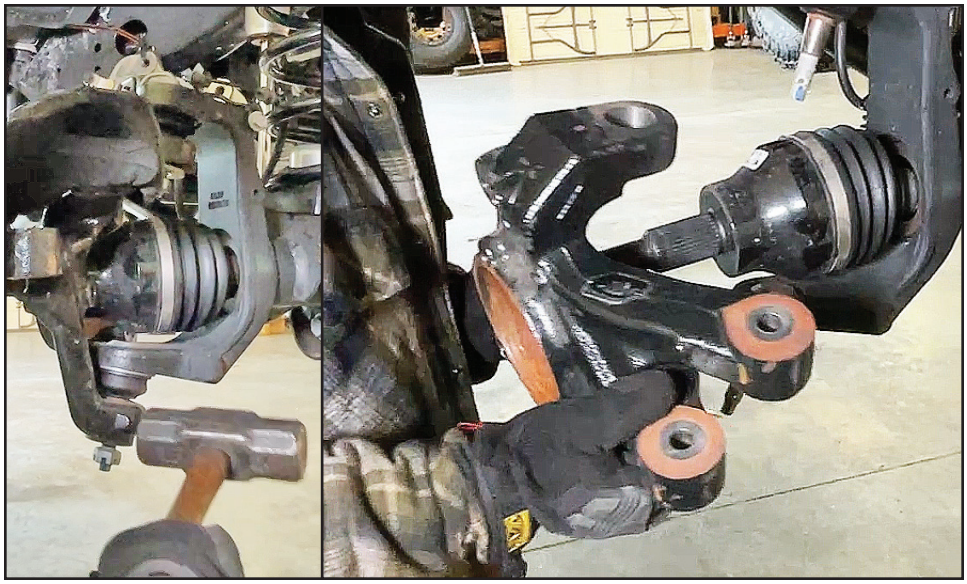
Break the top and bottom ball joint nuts loose and unscrew them, but do not remove them - just like you did on the tie rod & drag link.

Step 51

Again, similar to the tie rod, hit the casting outboard of the ball joint taper, top and bottom, to break the tapers loose. The nuts will catch the knuckle from falling.

Then go ahead and remove the nuts and the knuckle.

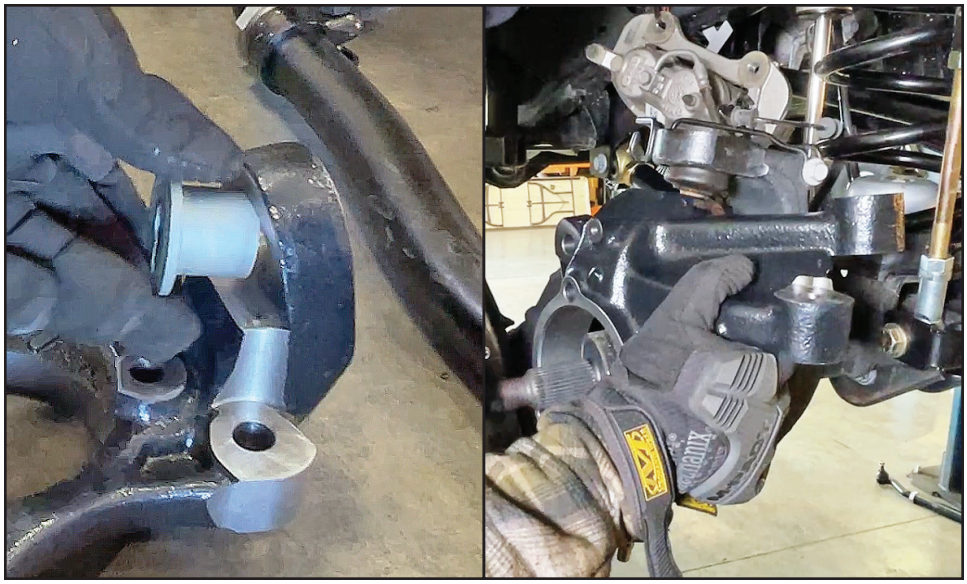
You will be discarding the knuckle after Step 67 (but hang on to the nuts!).

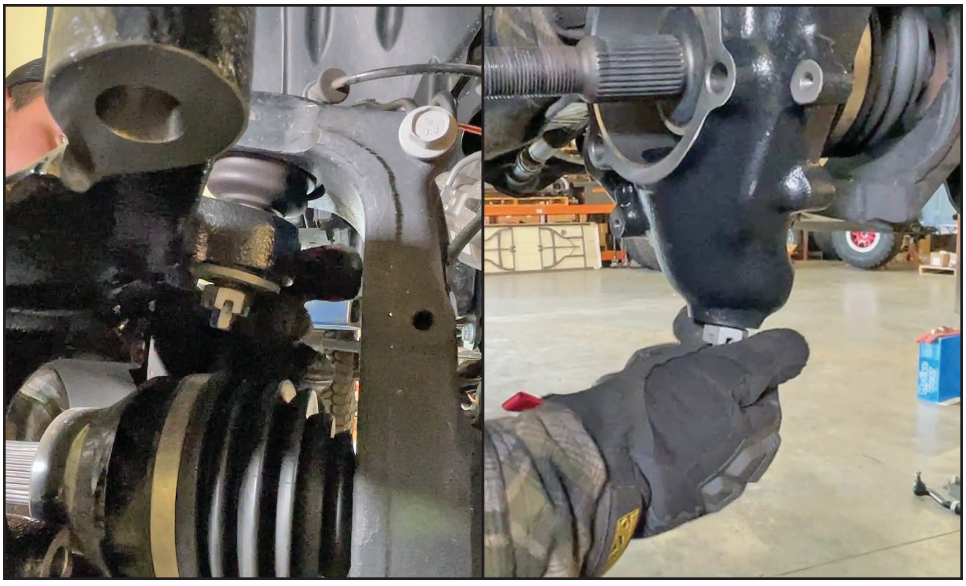


Step 52

Just like on the other side, remove the tapered ball joint camber sleeve from the top of the original, install into the new knuckle and lift the new knuckle into place.

As the new knuckle goes on, make sure and monitor the camber sleeve so that it stays in place and goes onto the upper ball joint taper properly.





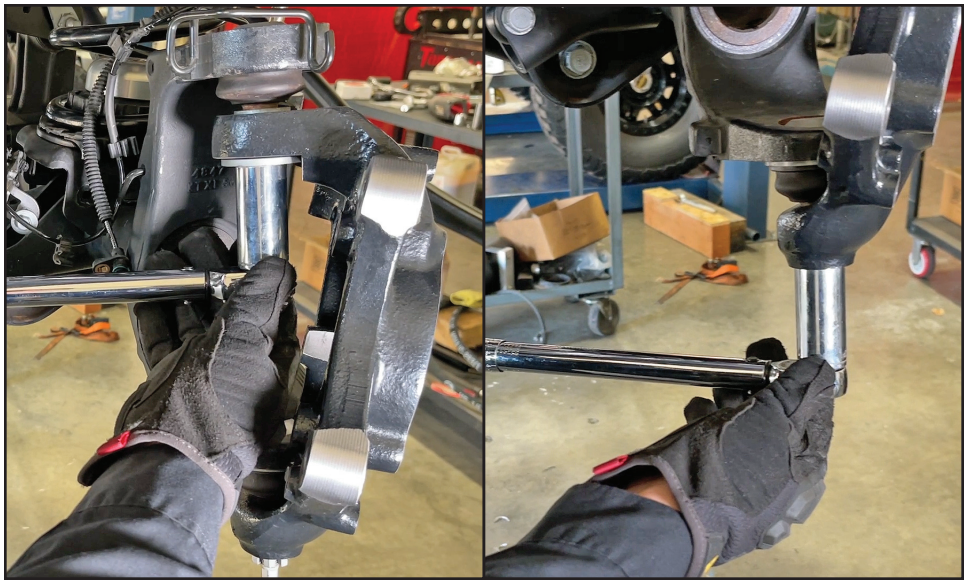
Step 53

Reinstall the castle nuts onto the upper and lower ball joint threads and tighten.

Step 54

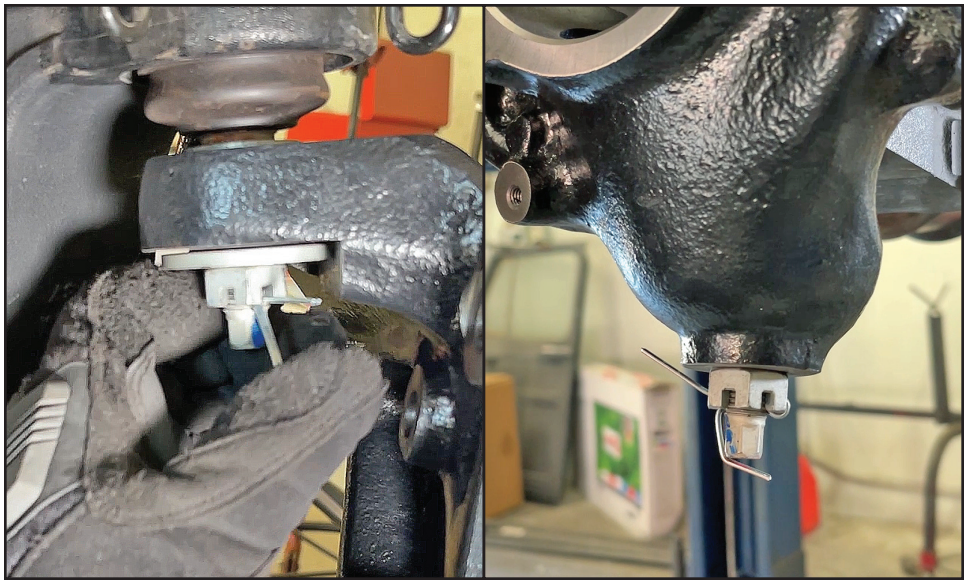
Torque both nuts to spec. with a torque wrench.

TORQUE SPECS.
SEE PG. 59



Step 55

Install the new upper and lower ball joint cotter pins supplied with the new knuckles in this kit.



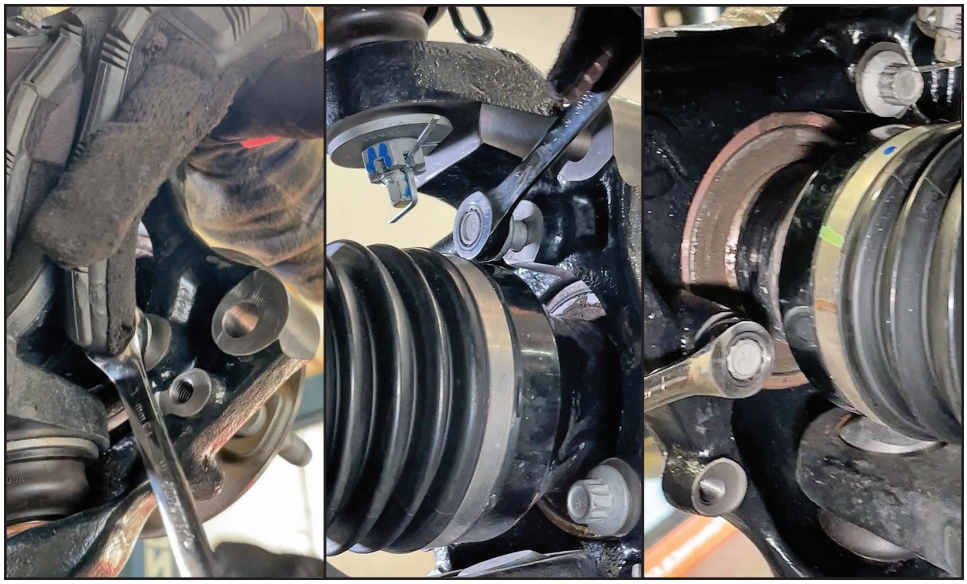
Step 56

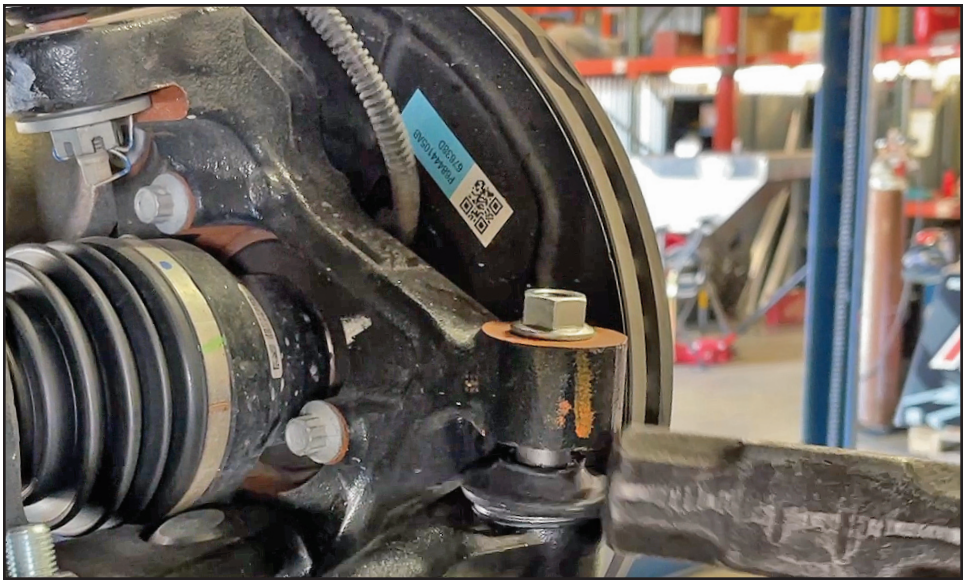
You may now reinstall the unit bearing, noting the clocking of the wheel speed sensor hole.

Step 57

In preparation for reinstallation of the 3 unit bearing bolts, have blue threadlocker handy and apply to all 3 bolts.

Step 58
Reinstall, tighten and torque the three 12-point unit bearing bolts.



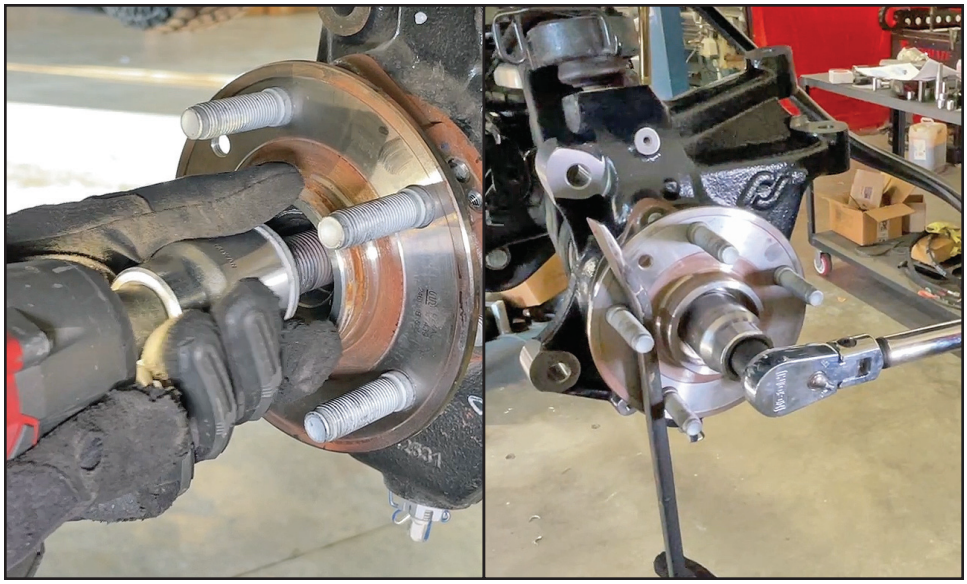


Step 59
Torque all 3 bolts to spec. with a torque wrench.

TORQUE SPECS.
SEE PG. 59

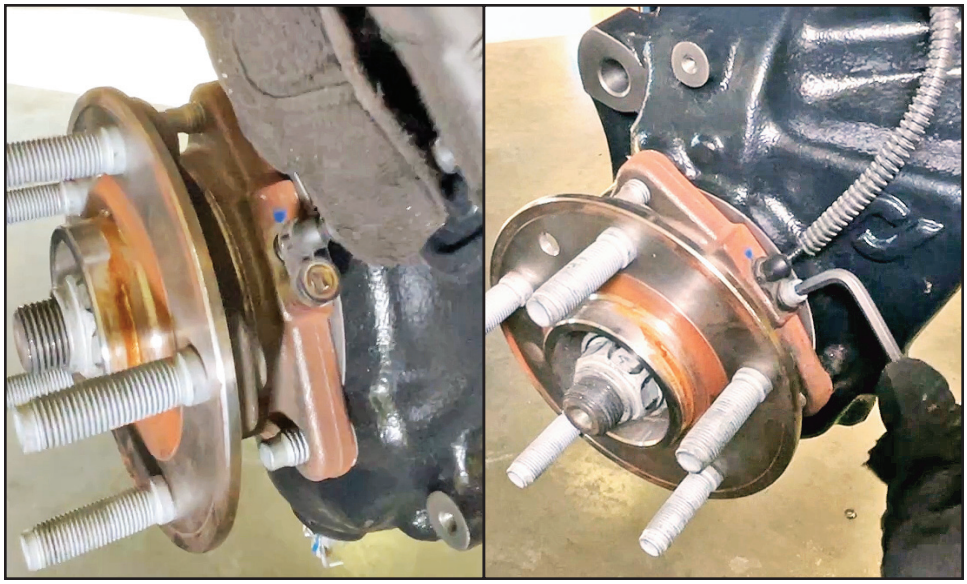
Step 60
Reinstall the outer axle nut with an impact wrench and torque to spec.

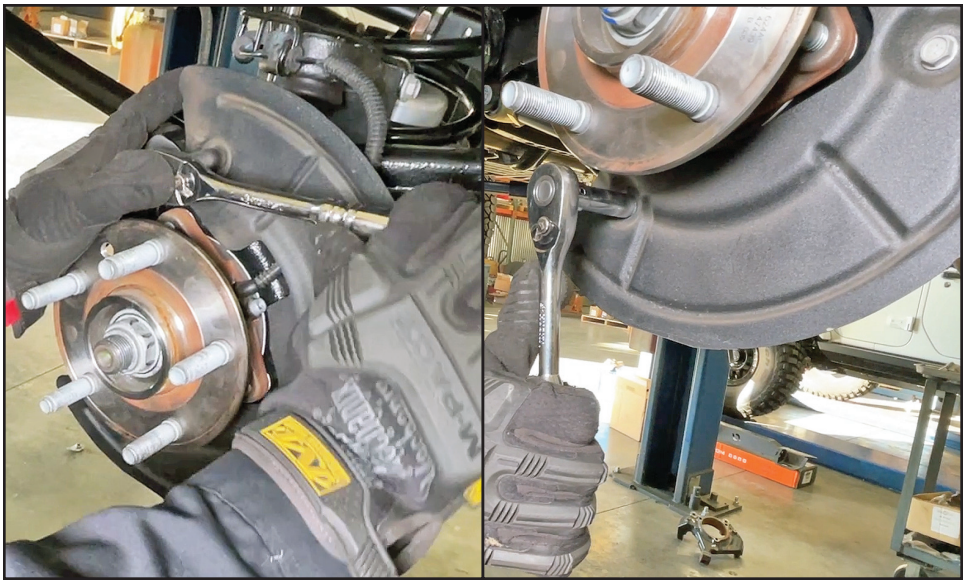
TORQUE SPECS.
SEE PG. 59



Step 61

Carefully reinsert the wheel speed sensor back into place and install and tighten it's allen screw.





Step 62

Reinstall the brake dust shield using it's original bolts.

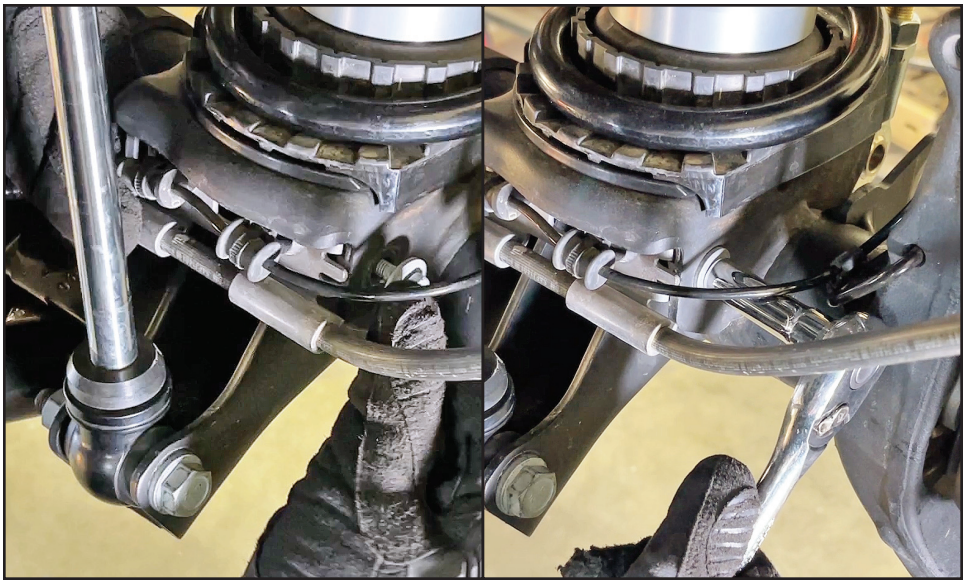
Step 63

Reinstall the outer axle nut with an impact wrench and torque to spec.

Step 64

Apply red threadlocker to the factory caliper bolts, bolt the caliper back onto the knuckle and torque the bolts to spec.

TORQUE SPECS.
SEE PG. 59

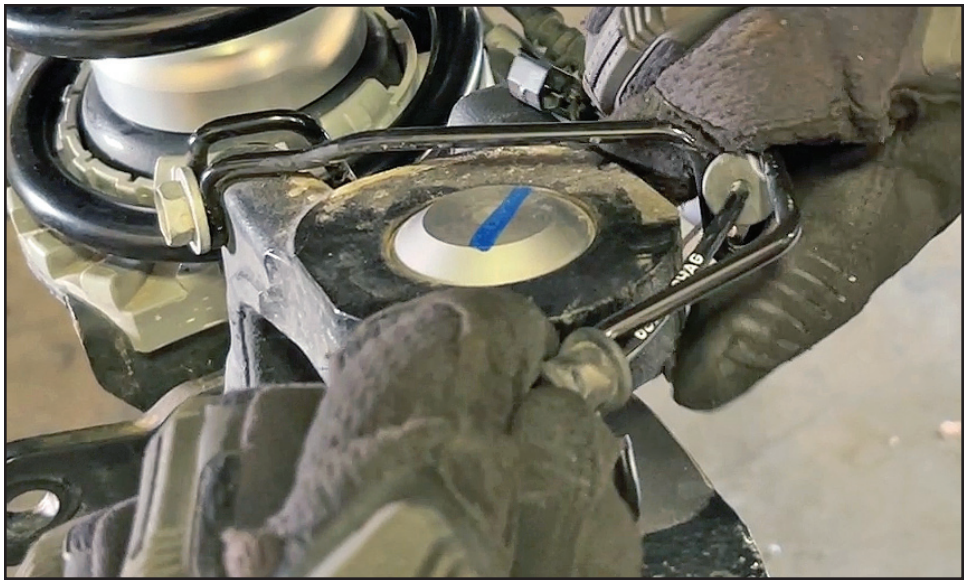


Step 65

Hook the brake hose bracket back into the back of the coil spring bucket and bolt it back up using it's original 10mm bolt.

Step 66

Carefully reroute the wheel speed sensor wire back to it's original location, pop it's clips back into place and the rubber barrels back into their grooves.



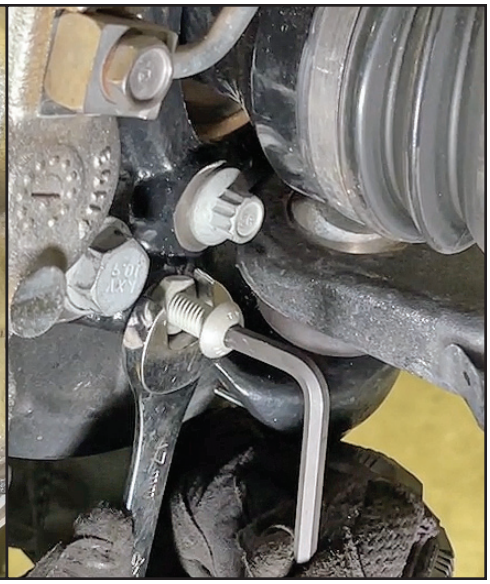
Step 67

Now we'll set up your steering stops. You'll notice the new RockJock knuckles have a fore and aft steering stop provisions.

With a micrometer, You'll want to measure your steering stop distance on your factory knuckles. This is measured from the face on the knuckle where the jam nut tightens against to the top of the stop bolt head. This measures the effective length of the stop.

Then, replicate this measurement onto the new stop.

Measure both right and left independently and set the new stops to match your factory right and left measurements.



Step 68

Install your new, right and left specifically adjusted stops onto their respective knuckles - in the rearmost stop holes.

Changing their dimension as minimally as possible, tighten them down.

If you think you accidentally changed their dimension you can easily double check your dimension with them installed.

Once you are satisfied with the accuracy of the measurements, hold the stop with an allen wrench and lock the jam nuts down.

Step 69

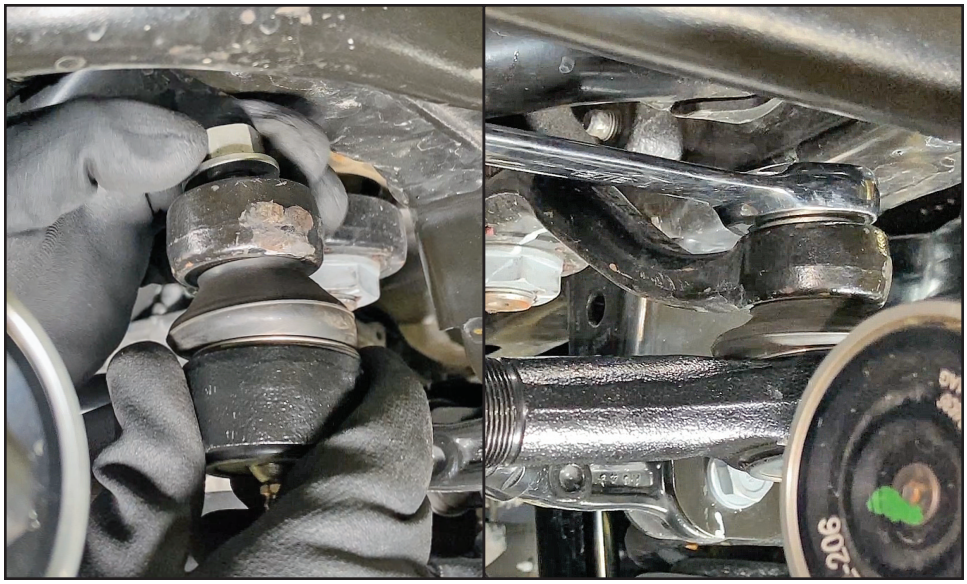
To set the length of the new, additional frontmost stops, you'll want to grab ahold of the entire outer steering knuckle assembly and turn it until it is stopped by the rearmost stop that you just installed.

Now simply just install the frontmost stop into the hole in the new RockJock knuckle, adjust it out out until it touches the steering stop landing pad that the new knuckles feature, and lock it down using the jam nut.

Reapeat this process on the other side.

Step 70

Next we'll install the new, organically shaped drag link. It installs very simply, just a reverse of how it was removed.
Insert the upper rod end into the pitman arm, install and tighten nut.



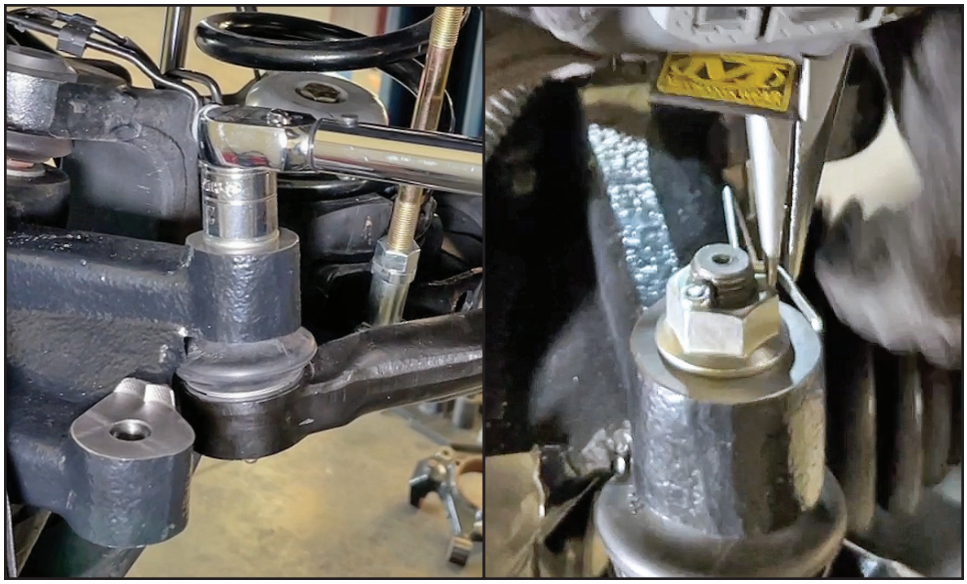
Step 71

Install the opposite end of the drag link into the upper, high steer steering arm on the new Rock-Jock knuckle and install and tighten the nut.

Step 72

Now go back and torque the 2 nuts to spec. with a torque wrench and install the new, supplied cotter pins at both ends of the new drag link.

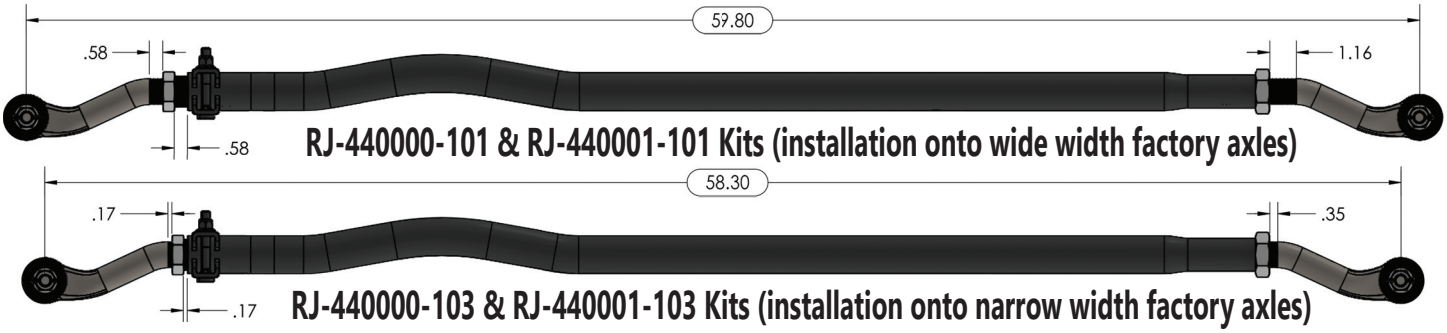
TORQUE SPECS.
SEE PG. 60



TECH TIP

See the guide below for tie rod adjustment measurements. Pre-adjust the passenger's side of the tie rod to the dimensions illustrated below (RH side shown below) before installing the unit into the vehicle. After installation, do the rest of your adjustments with the double adjuster on the driver's side.

Do not install the unit and then use a pipe wrench, etc. to adjust the tie rod's length - we <u>will not</u> warranty damage to the tie rod's finish!
If you have trouble adjusting the passenger's side end, wrap the tie rod in cardboard, etc. and put the unit in a vice!



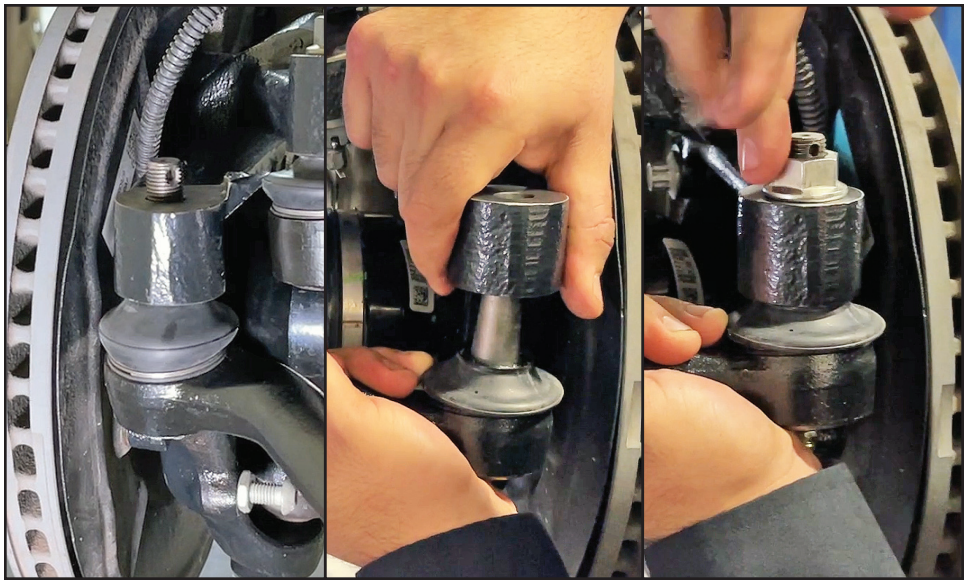
RJ-440000-101 & RJ-440001-101 Kits (installation onto wide width factory axles)

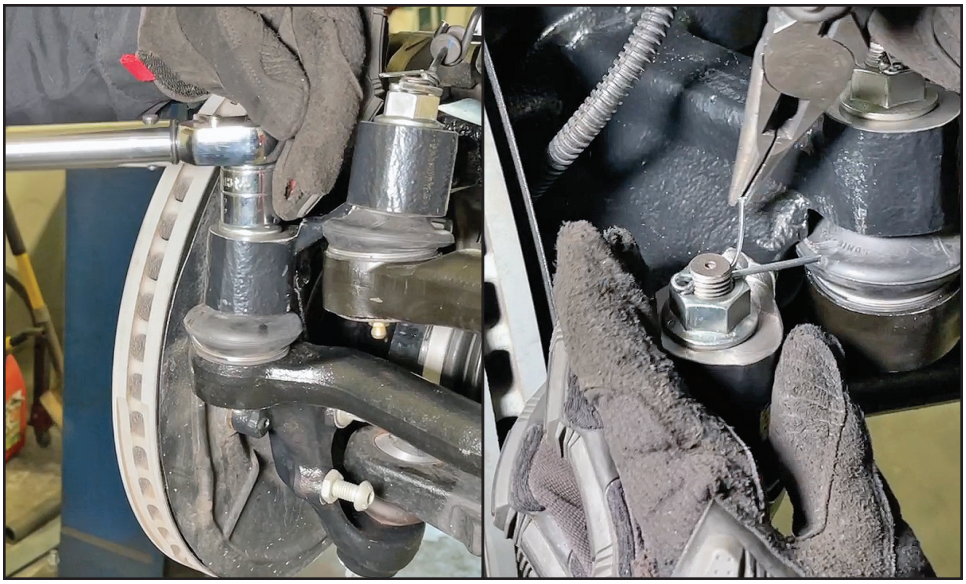
RJ-440000-103 & RJ-440001-103 Kits (installation onto narrow width factory axles)

Step 73

Moving on to the tie rod, installation is essentially the same. Insert the tie rod ends into the steering arm holes on the new RockJock knuckles. The dog-legs in the tie rod ends are intended to push forward toward the bumper.
With the rod ends inserted, install and tighten the nuts.

NOTE: when installing the tie rod - the dip in the tie rod tube is NOT for diff cover clearance! The dip should point to the ground as the dip is engineered for increased tie rod up travel clearance.

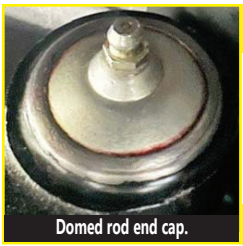




Step 74

Just like with the drag link, go back and torque both nuts to spec. with a torque wrench and install the new, supplied cotter pins at both ends of the new tie rod.

TORQUE SPECS.
SEE PG. 60


Domed rod end cap.

BE ADVISED:

Before greasing the steering rod ends in this kit, you'll need to understand their lubrication situation. Rod ends can be damaged by attempting to force grease into them. You **NEVER** want to use a power grease gun on these rod ends. Only use a hand pump (low pressure) grease gun, so that you can feel if the rod ends are taking grease. Attempting to force grease in will pop the back cap on the rod end out, doming the cap, and destroying the rod end. Damage caused to rod ends by forcing grease in or using a power grease gun is NOT covered under warranty! Use only non-synthetic, high moly lube grease, such as our **CE-9013G**.

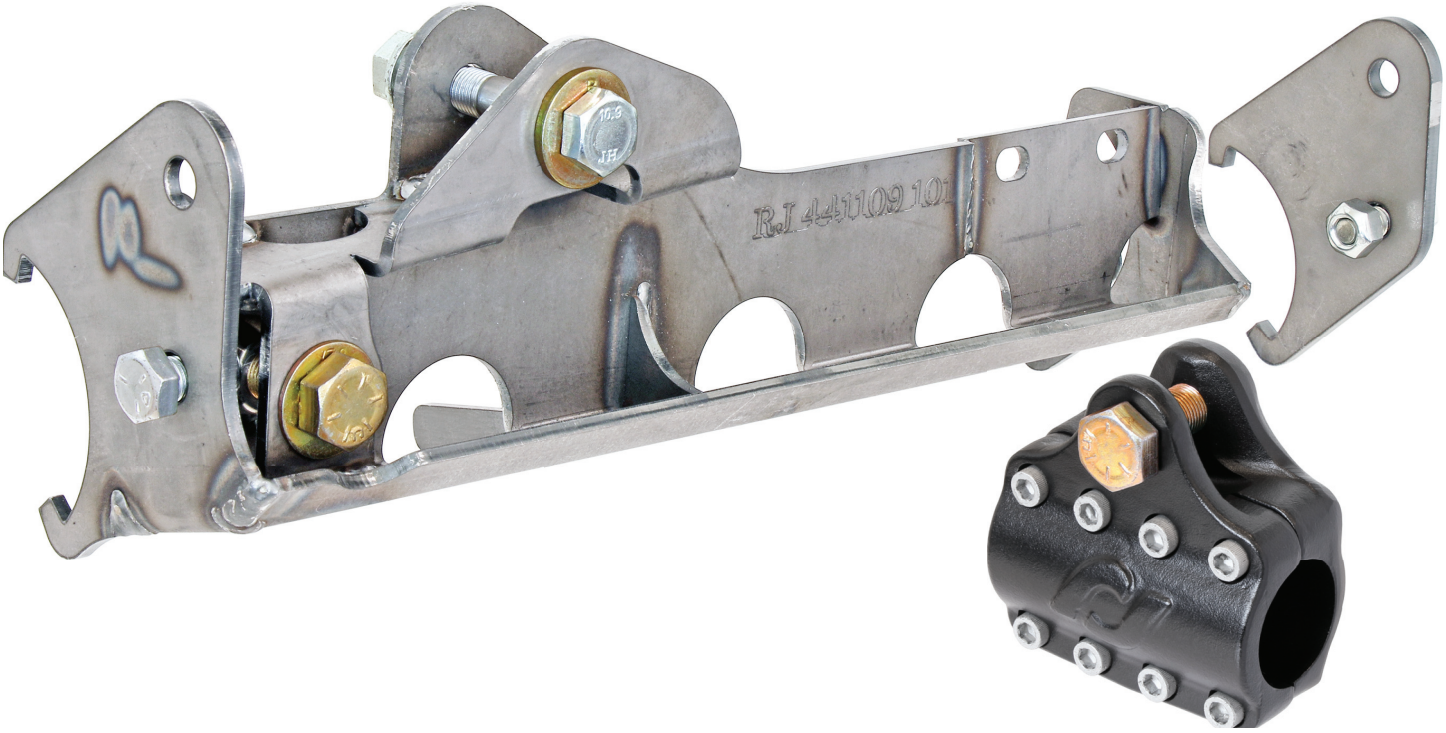
Stabilizer Shock - or - Steering Assist Ram Mount Installation

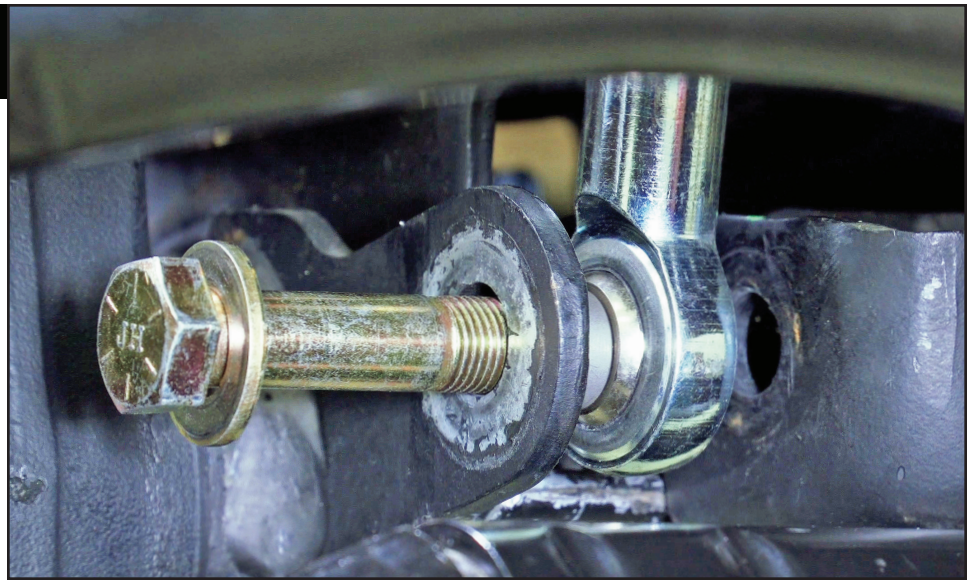
At this stage of the installation, we reach a V in the road. You have either purchased a High Steer Knuckle Kit with provisions to relocate and remount your steering stabilizer shock, or you've purchased a kit with provisions for mounting a steering assist hydraulic ram.

For Stabilizer Shock installation - carry on to the next page.

For Ram Assist installation - skip to page 43.

- OR -





Step 75

On the passenger's side of the axle housing, locate the point where the bottom of the sway bar end link bolts to the trac bar bracket.
Remove this bolt and hardware and move the bottom of the sway bar end link out of the way.

Step 76

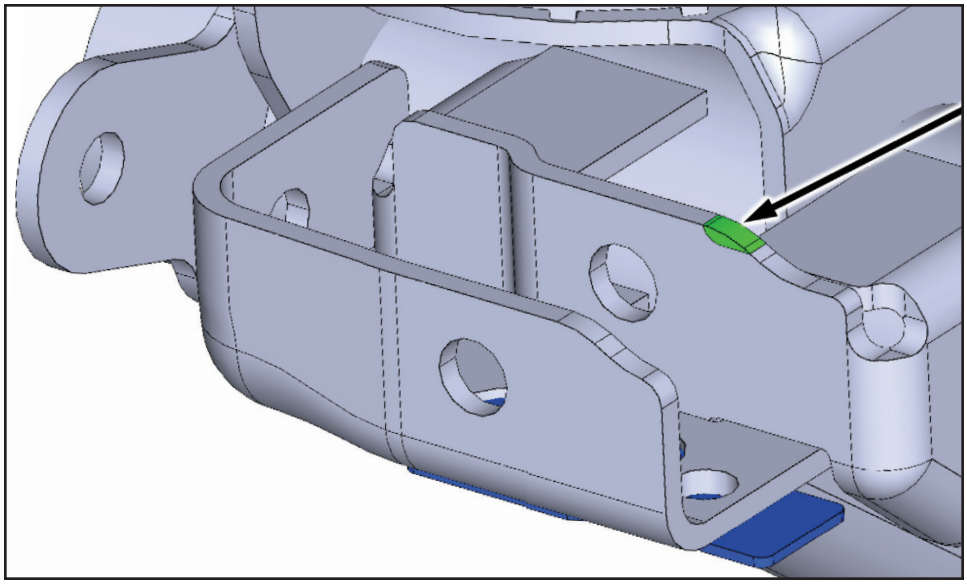
Remove the front trac bar axle bolt and free the front trac bar from the axle bracket.

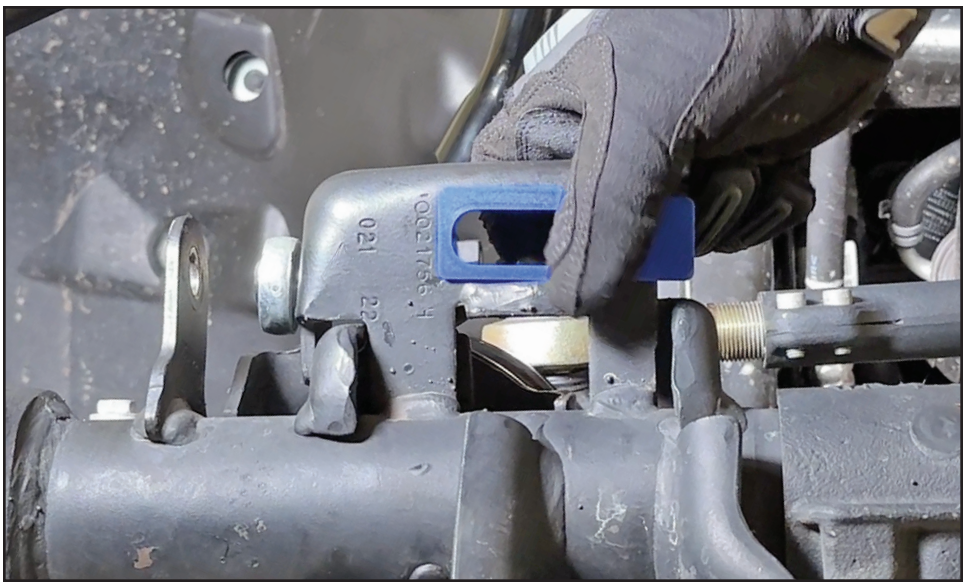
Step 77

Tie the trac bar up out of the way for the time being. We pushed ours up and zip tied it to the coil spring.

Step 78

On some, but not all, factory axle housings, you will need to grind the tip off of this curve on the factory trac bar axle bracket to allow for smooth fitment of the new rearward axle bracket component that you are about to install.
Grinding depth should only need to be 1/8".



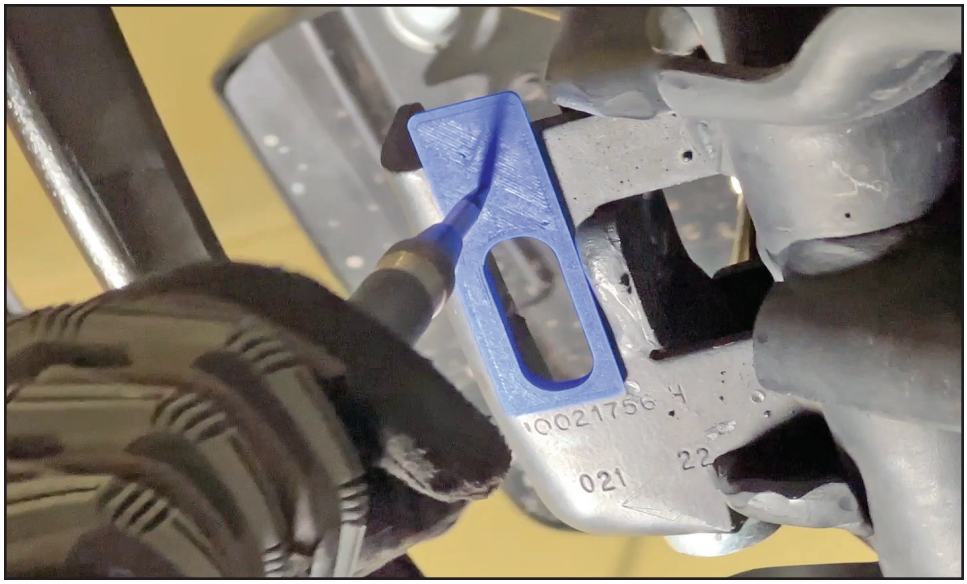


Step 79

In this kit you will find the blue plastic drill template. Insert the template into the oval hole in the bottom of the factory front trac bar axle bracket as shown.
NOTE: it will snap firmly into place.

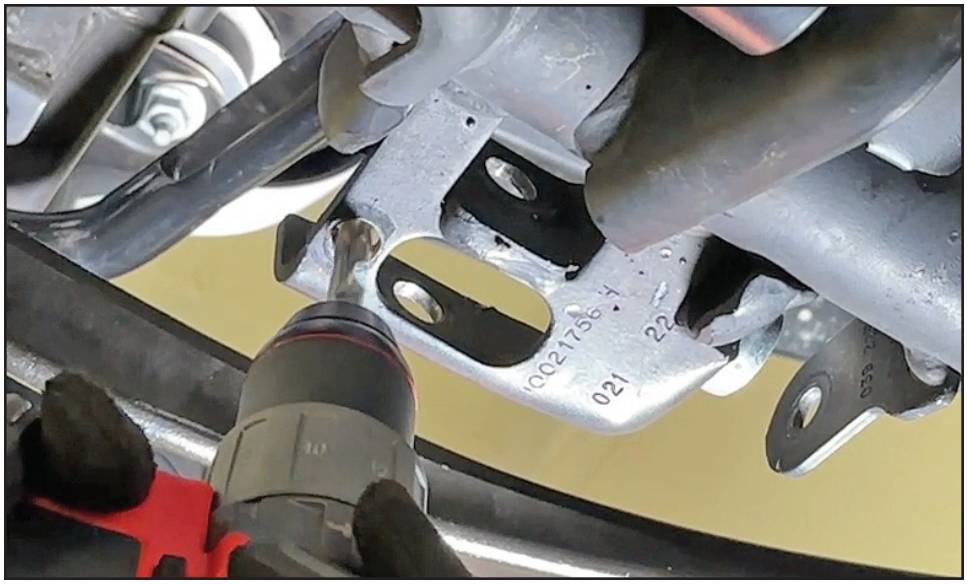
Step 80

Use the small hole in this template as a guide to centerpunch a hole in the bottom of the factory front trac bar axle bracket.
You may remove and discard the drill template after you have made your punch mark.



Step 81

Next, pilot drill and then drill a 1/2" hole where you centerpunched with the drill template.



Step 82

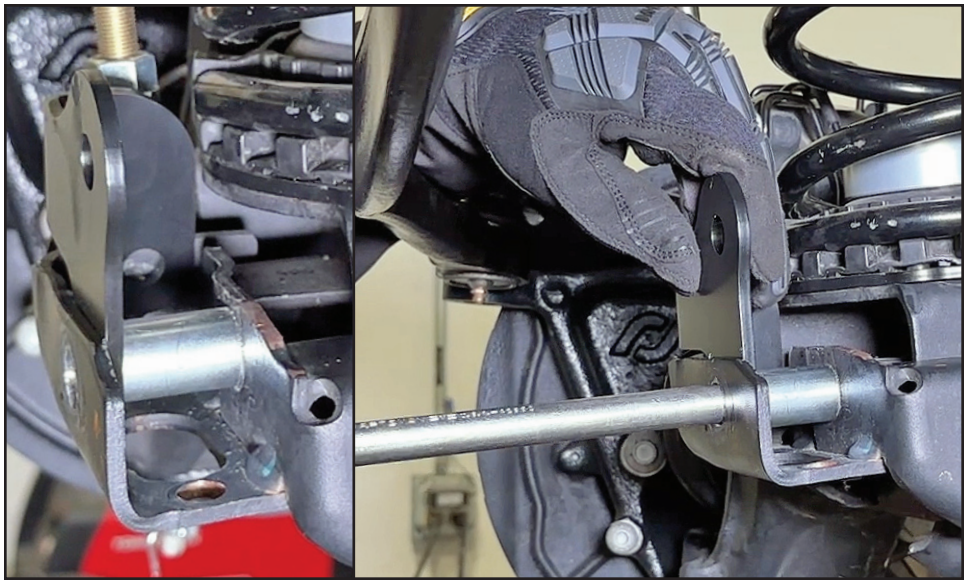
Drop the forward bracket plate included in this kit into the stock front trac bar axle bracket as shown.

The large hole in the bottom of the new bracket aligns with your old trac bar bolt hole in the factory bracket.

Step 83

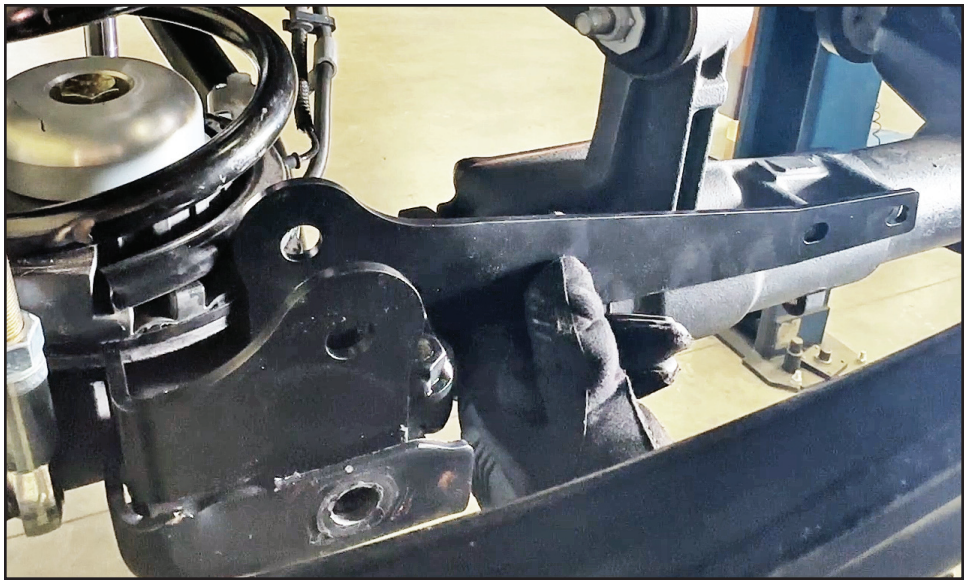
Locate the large, clear zinc plated steel spacer that is included in this kit. As shown, you'll not the new forward bracket fits flush against the inner surface of the factory bracket and the spacer fills the balance of the remaining space.

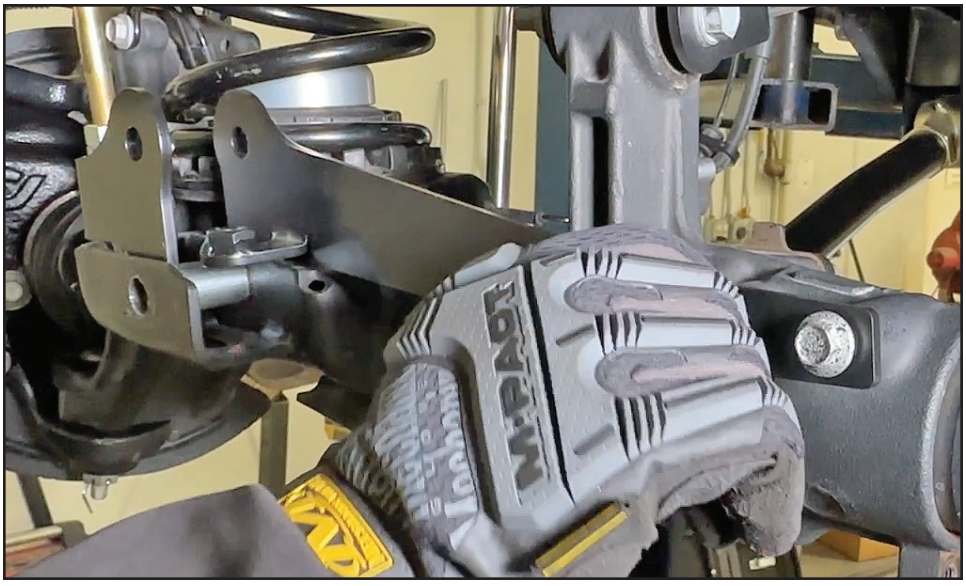
With an alignment tool align the holes in the front of the factory bracket, the new bracket, the spacer, and the back of the factory bracket.



Step 84

Position the new rearward bracket into place. This bracket fits flush against the back of the factory front trac bar axle bracke and you'll note the welded on nut. That nut aligns with all of the holes you just ran the alignment tool thru.
At the far end of this bracket, you'll see it matches up to the holes in the front axle casting.





Step 85

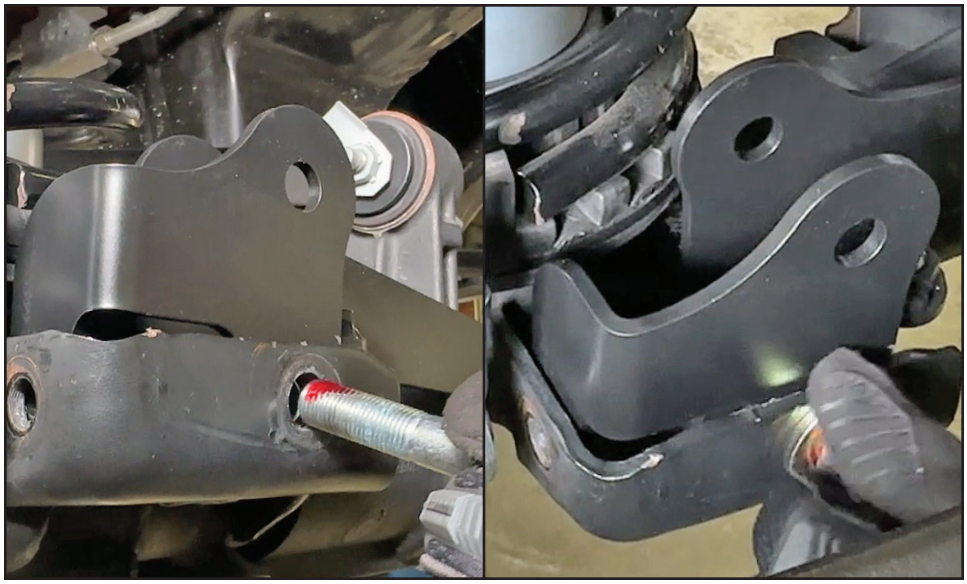
Go ahead and stick the factory bolts that you saved from Step 3 in these holes, loosely for now, just to index the bracket.
Hang tighten them, but do not tighten enough that the bracket can't still move around as other holes are aligned.

Step 85

Locate one of the 14mm x 80mm bolts that is included in this kit. Install a flat washer onto it and apply red threadlocker to it's threads.

Step 86

Insert the bolt thru all of the aligned holes and thread it into the welded on nut on the rearward bracket.



Step 87

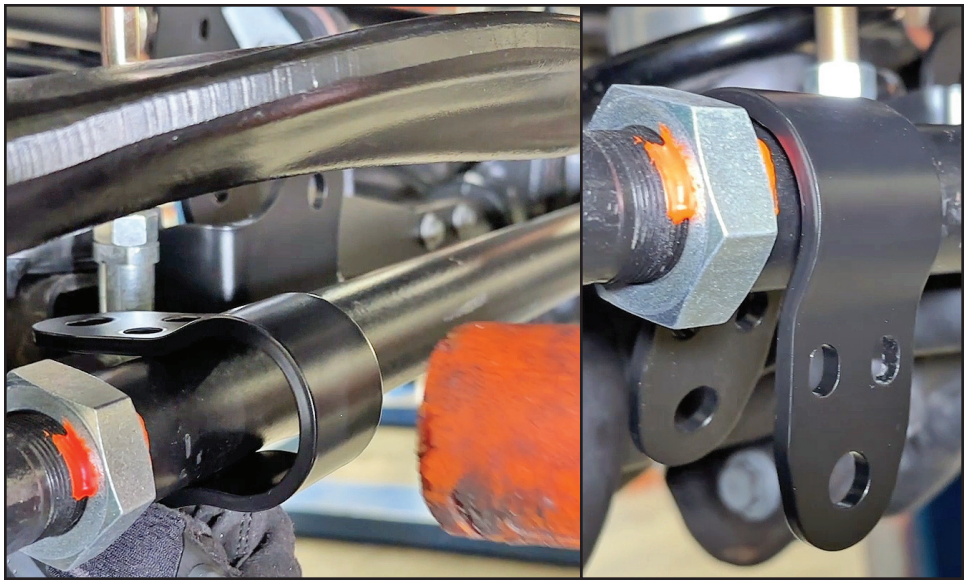
Locate the 12mm x 75mm bolt in the kit's hardware. Install a flat washer onto it and use it for the new bolt to attach your sway bar end link's lower heim joint and misalignment spacers.

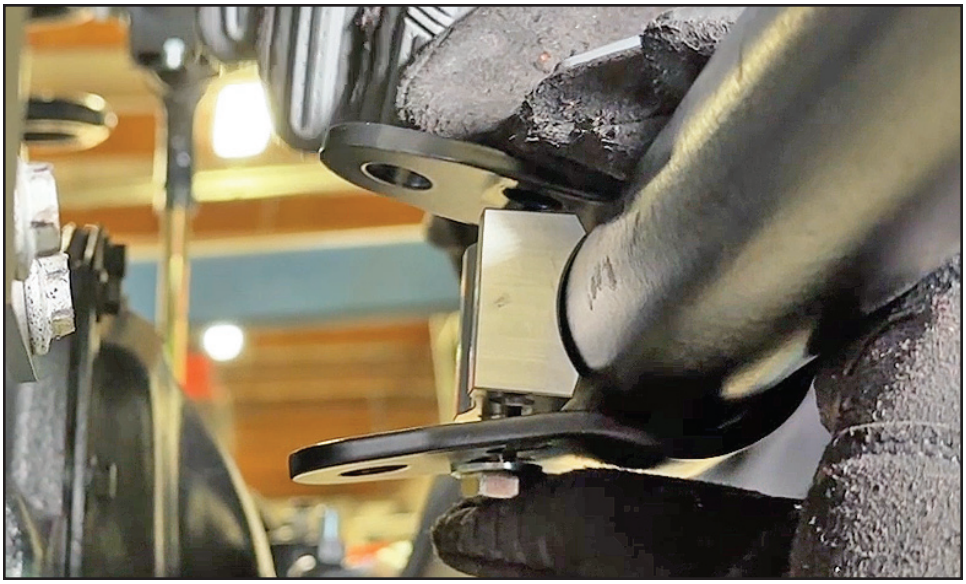
Step 88

The 12mm bolt will pass thru the hole in the factory front trac bar axle bracket as well as the hole in the new forward bracke from this kit.
Use another 12mm flat washer and a 12mm stover nut on the inside of the new bracket.
Snug this bolt up to align everything, but do not tighten tight enough that the bracket can't still move around as other holes are aligned.

Step 89

Next, locate the black steel portion of the steering stabilizer tie rod clamp.
You'll want to knock it onto the tie rod tube as shown.
At the passenger's side end of the tie rod tube, you'll notice a smaller diameter section - this is the easiest place to do this install.



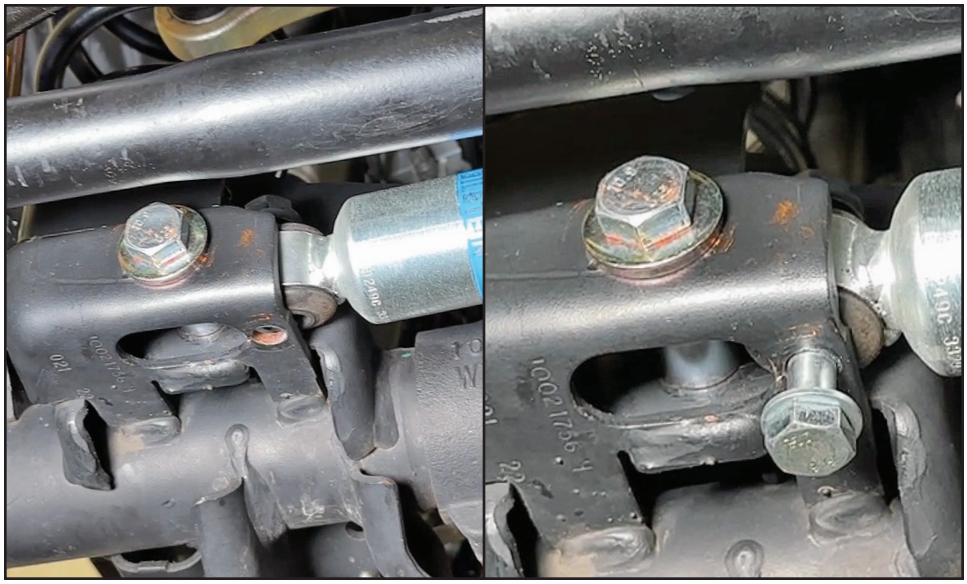


Step 90

In the tie rod clamp kit, locate the billet aluminum center block and install it into the clamp using the 5/16" x 2 1/2" bolts. Use a 5/16" flat washer on both sides of the clamp and install the 5/16" nyloc nuts.
Just snug these up at this point.
NOTE: we generally put the heads of the bolts facing the ground and the threads of the bolts pointing up - to keep them catching on rocks.

Step 91

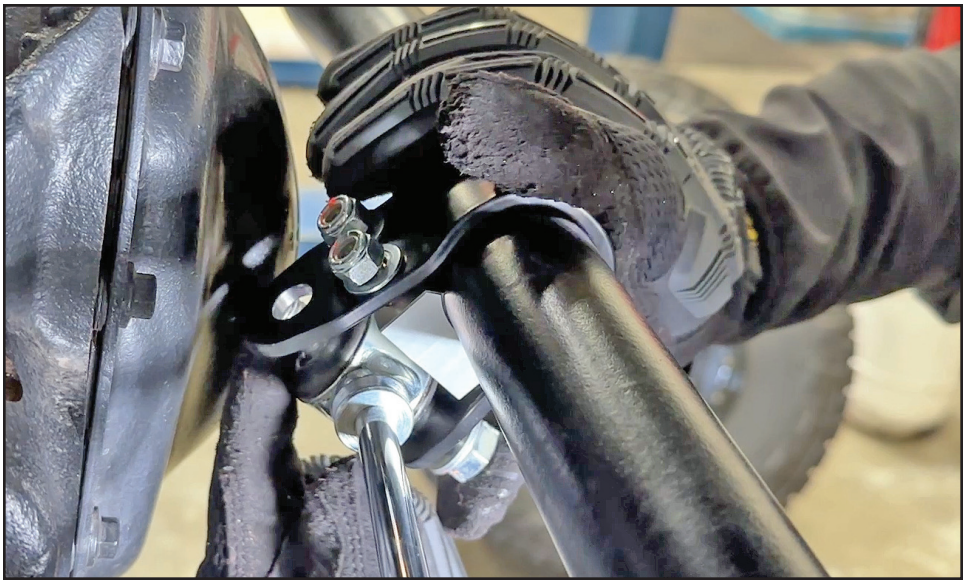
Back to the other side, install the end of your factory stabilizer shock (or you'll notice we've installed a stock travel spec. Bilstein shock in this illustration) into the end of the factory trac bar axle bracket, as shown. Note the orientation of the thru-hole on the end of the shock. You will be using the hole you drilled for the new, vertical orientation steering stabilizer shock attaching bolt.
Locate the 12mm x 70mm bolt and a 12mm washer in the hardware kit included with the trac bar and stabilizer shock relocation bracket kit. Insert thru the hole you drilled and thru the shock.



Step 92

This bolt then threads into the other nut that is welded onto the new rearward bracket that you installed in Step 84.

Like the other bolts, go ahead and snug this bolt up - but not so much so that things can't move around for alignment.



Step 93

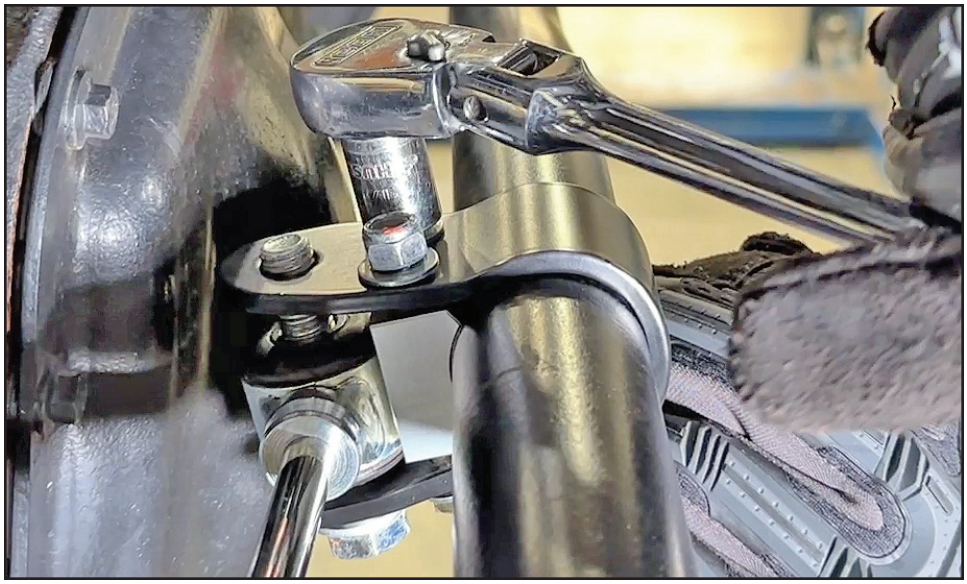
Back over to the tie rod clamp, fit the other end of the shock into the clamp and locate the 12mm x 70mm long bolt and a flat washer from the clamp kit's hardware pack.

Step 94

As you've probably noticed, the clamp is spread, making it difficult to install the shock bolt all the way thru.

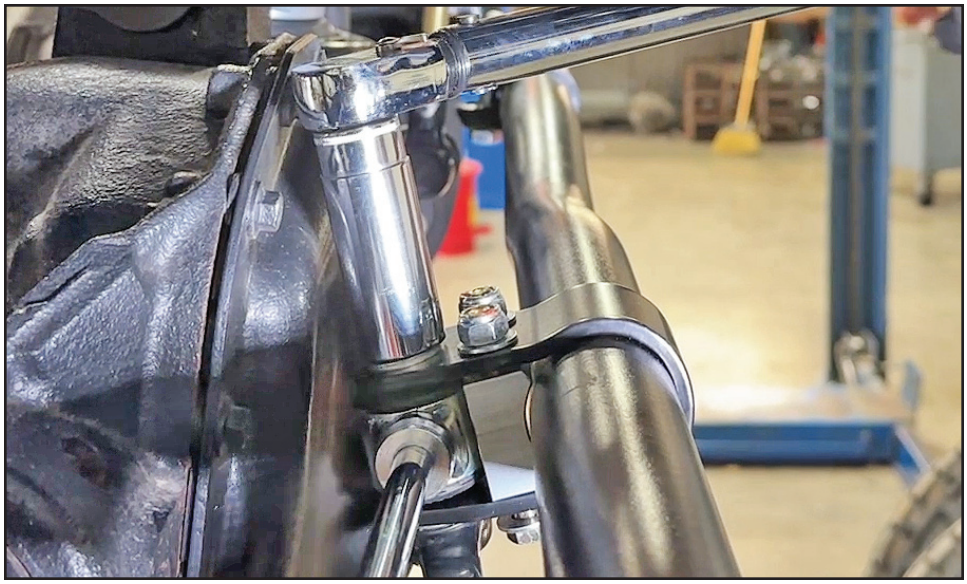
Go ahead and start tightening down the other 2 bolts, alternating to pull them in evenly, to pull the clamp closed and allow the shock bolt to come thru.

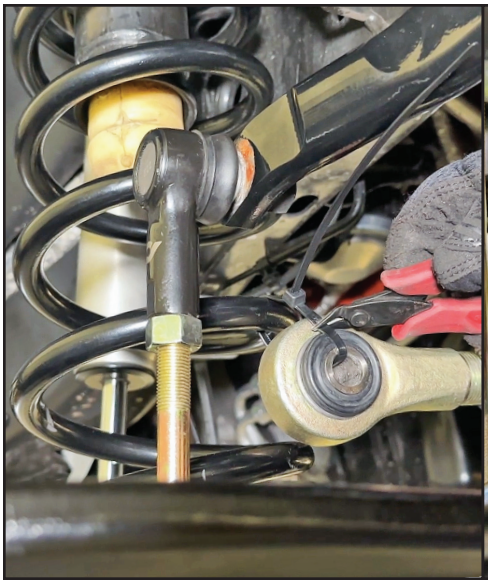
Do not fully tighten the 2 bolts because you'll still need to clock the clamp.

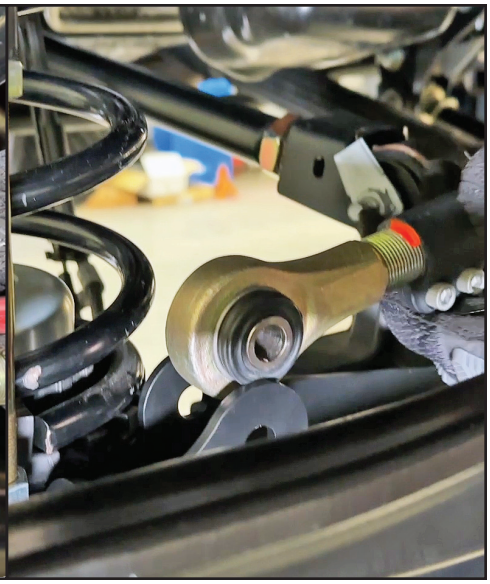


Step 95

Once you've got some shock bolt thread coming thru, go ahead an install another 12mm flat washer and the nyloc nut on the shock bolt. Again, do not fully tighten at this time.





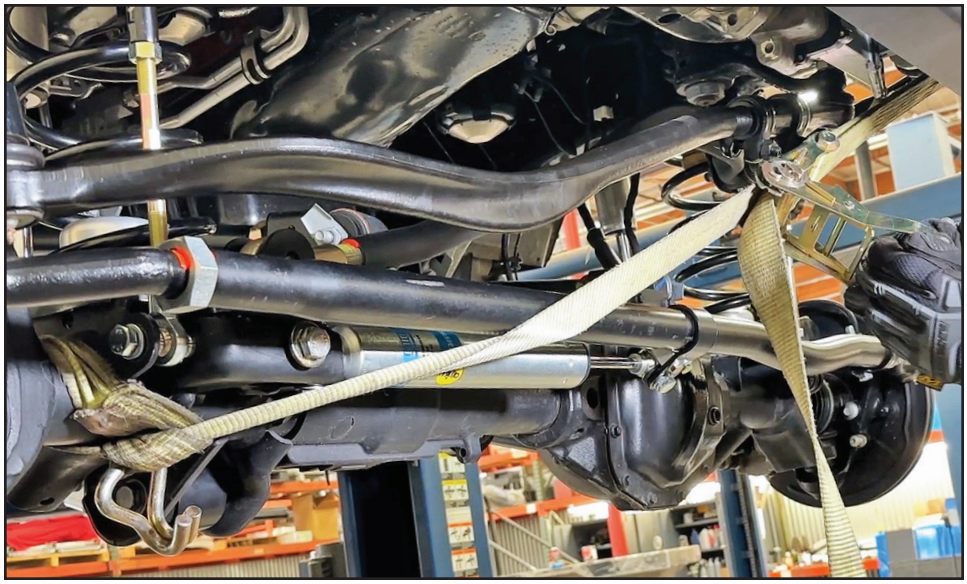


Step 96

Next, go ahead and release your trac bar from whereever you tied it up and bring it down to the new location that the new bracketry has provided.

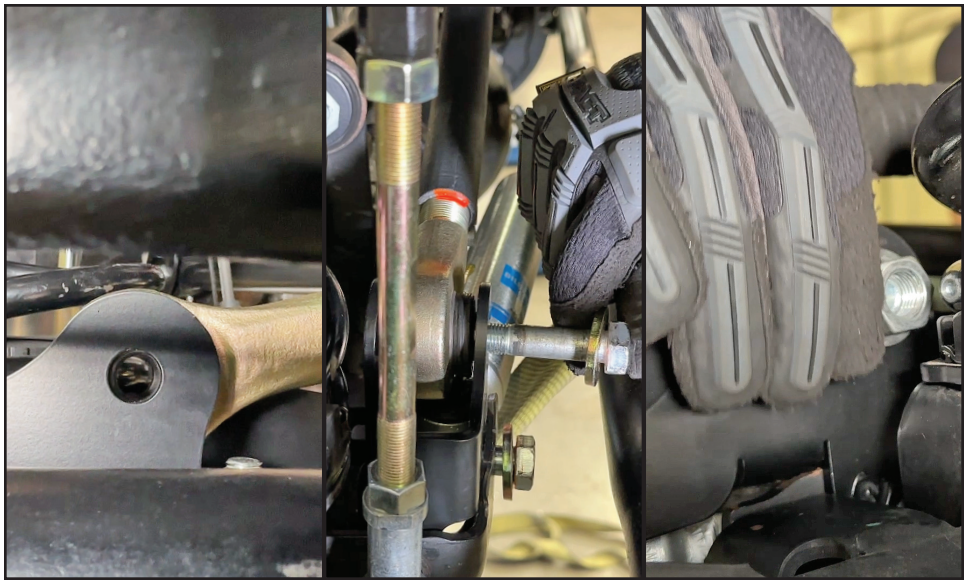
Step 97

In preparation for installation of the trac bar bolt, you'll notice we've employed a ratchet strap to allow us to pull the axle over to where it needs to be to allow for easy install of the trac bar bolt.



Step 97

Adjust the ratchet strap to line up the holes in the new brackets with the hole in the trac bar and then install the 14mm x 80mm long hex bolt and 14mm flat washer from the front side and the 14mm flanged nut on the back side.

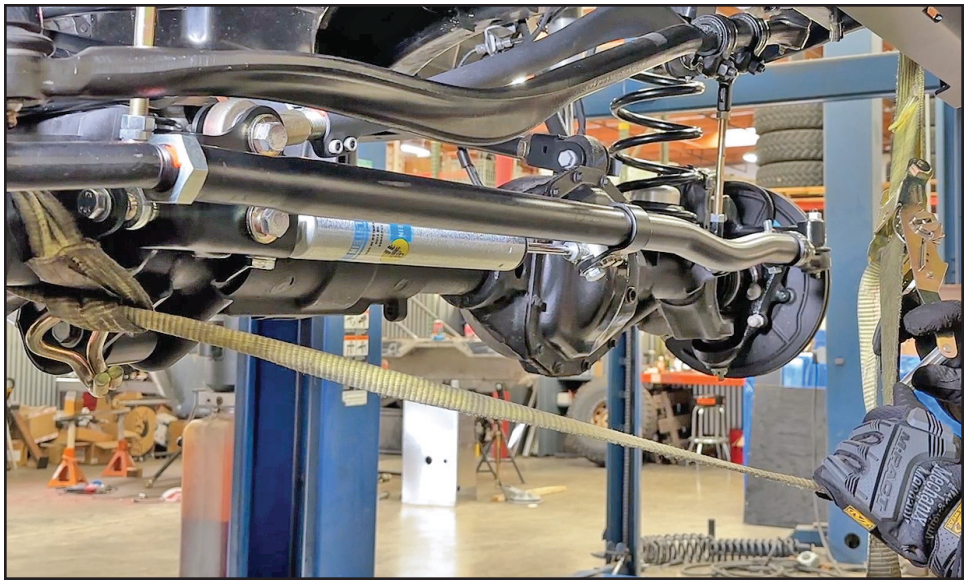


Step 98

Go ahead and tighten this bolt.

Step 98

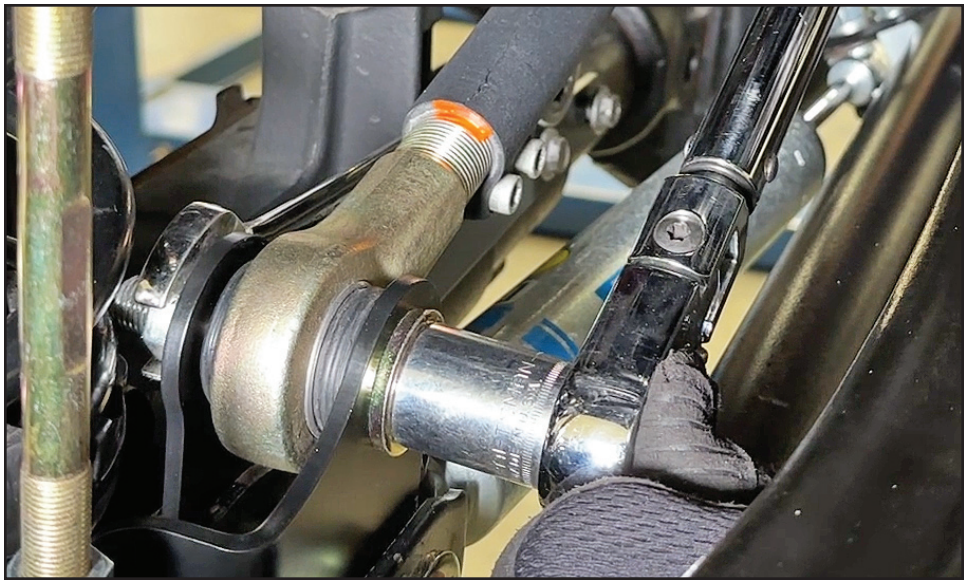
You can now release your ratchet strap.

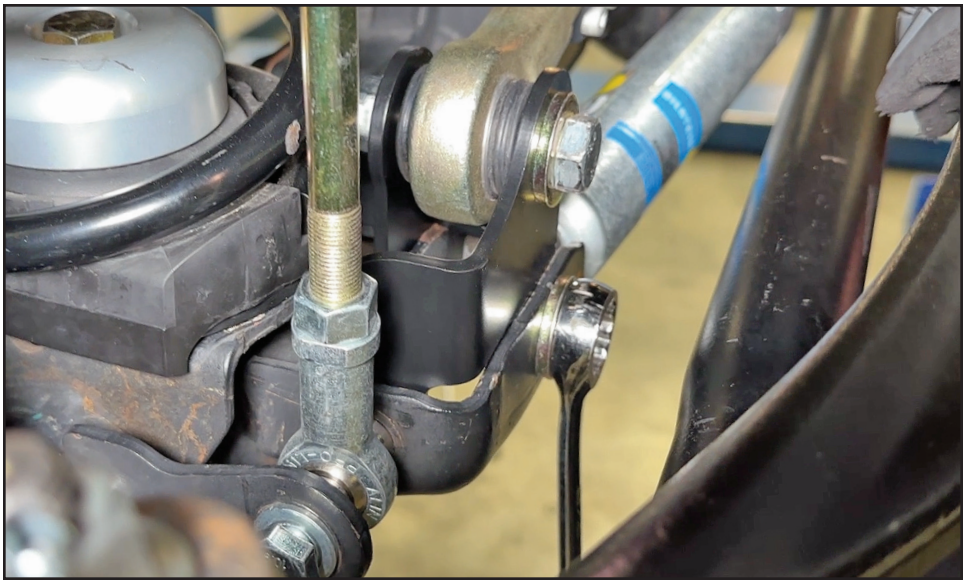


Step 99

Now we'll start tightening and torquing everything. Please adhere to the following sequence. Start by torquing the new trac bar bolt to spec. with a torque wrench.

TORQUE SPECS.
SEE PG. 60





Step 99

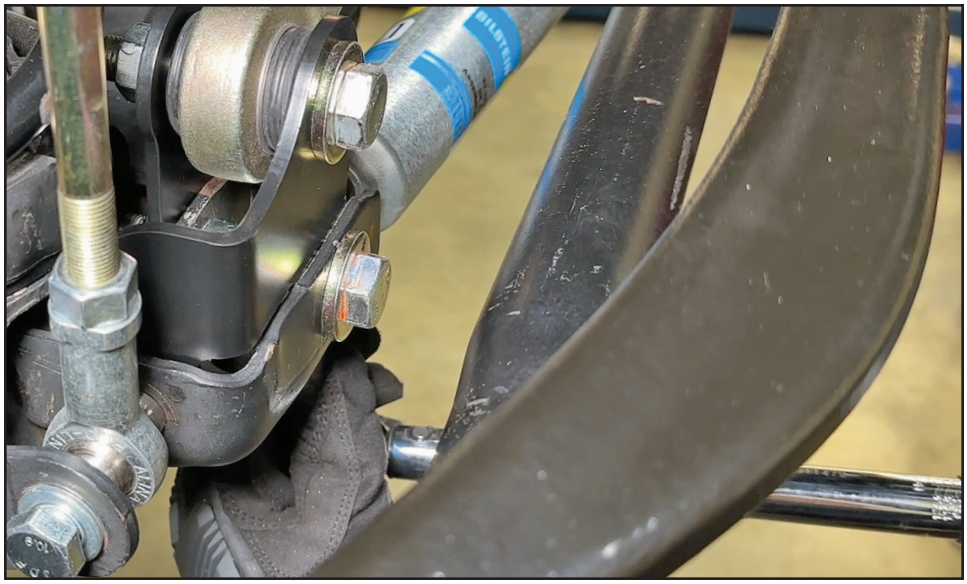
Next, tighten then torque the lower 14mm bolt to spec.

TORQUE SPECS.
SEE PG. 60

Step 100

Moving on, tighten then torque the 12mm, vertical, steering stabilizer shock bolt to spec.

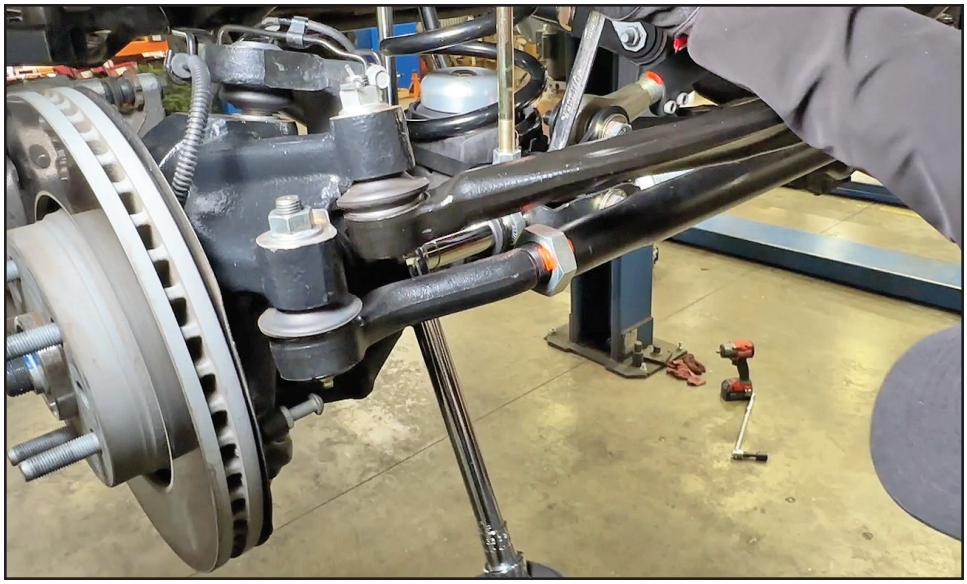
TORQUE SPECS.
SEE PG. 60

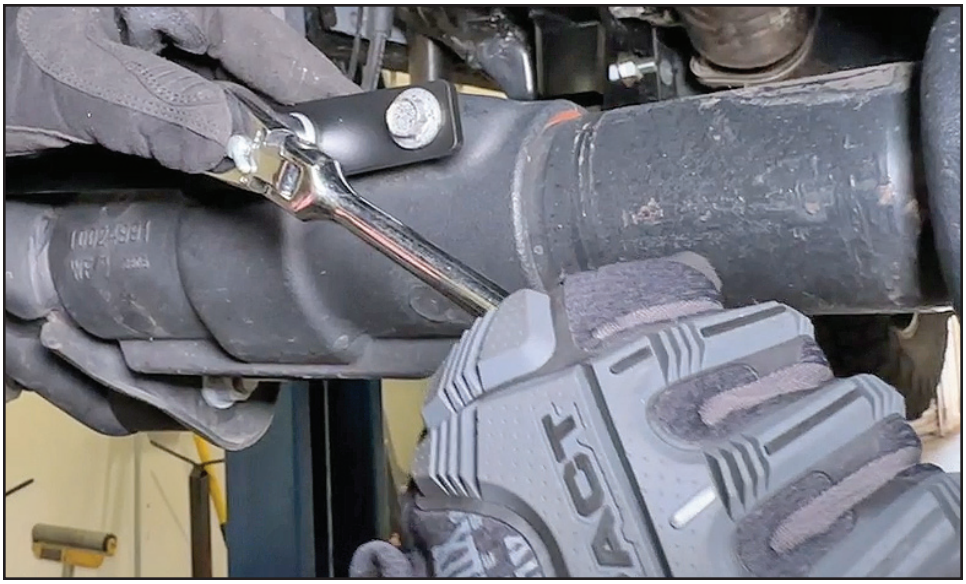


Step 101

Finish tightening and torque the sway bar end link bolt to spec.

TORQUE SPECS.
SEE PG. 60





Step 102

Over to the other end, tighten and torque the 2 factory bolts that attach the bracket to the axle casting to spec.

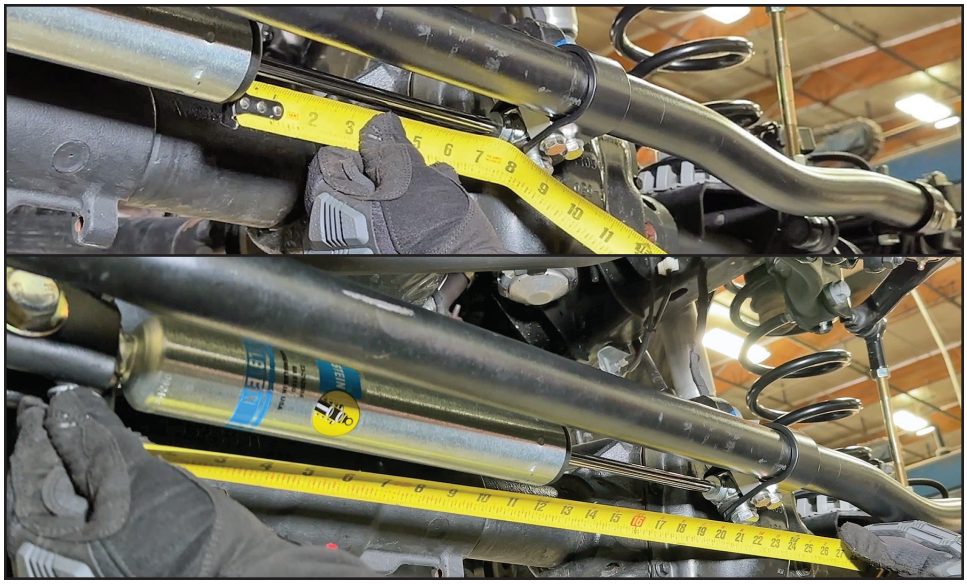
TORQUE SPECS.
SEE PG. 60

Step 103

Setting your shock travel is the next step. This kit was based on a factory shock - because - they work! We have also found the Bilstein's B8 5100 series stock replacement shock (very specifically part number: 33-292984) to work as well.

The shock set up is very simply moving the clamp side to side so that, with the wheels completely straight, the clamp is holding the end of the shock at the midway point of it's travel, so it has equal travel in both directions.

So, as you can imagine, a shock that is too long, will bottom out the shock when it closes. A shock that is too short with limit steering and try to pull the shock apart. Choose the right shock!

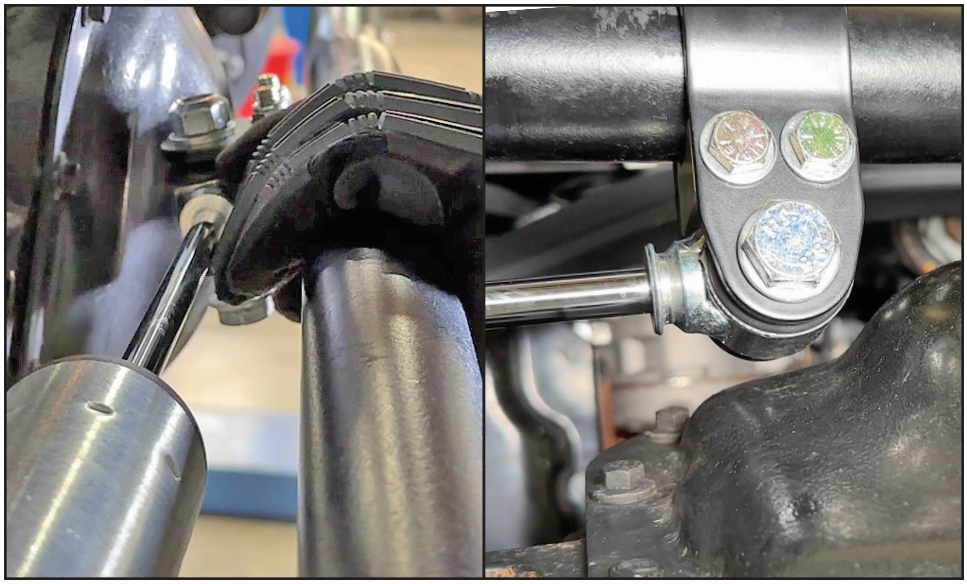


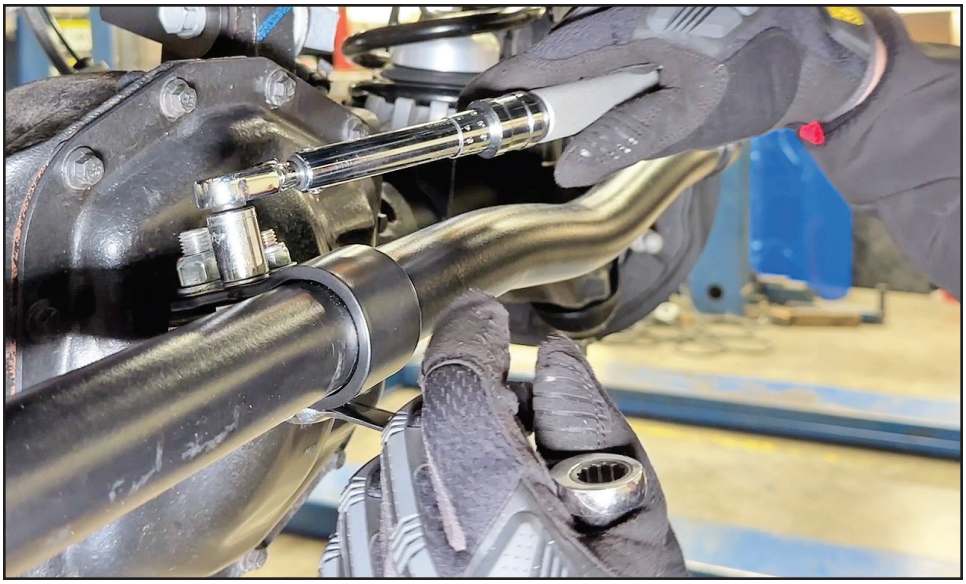
Step 104

Once you're satisfied with your shock travel adjustment, finalize the clamp by rotating it so that it is straight behind the tie rod and then checking all of your clearance gaps from lock to lock of the steering.

Again, this kit is engineered around a factory front axle housing with a factory diff cover and the stock stabilizer shock. You should end up with the end of the shock and the clamp nesting into the notch in the diff cover, as shown.

Aftermarket diff covers may change this clearance and you will have to address any fitment issues upon install onto your vehicle.





Step 105

Lastly, go back and torque the 2 clamp bolts to spec.....

TORQUE SPECS.
SEE PG. 60

Step 105

....and then torque the shock bolt to spec.

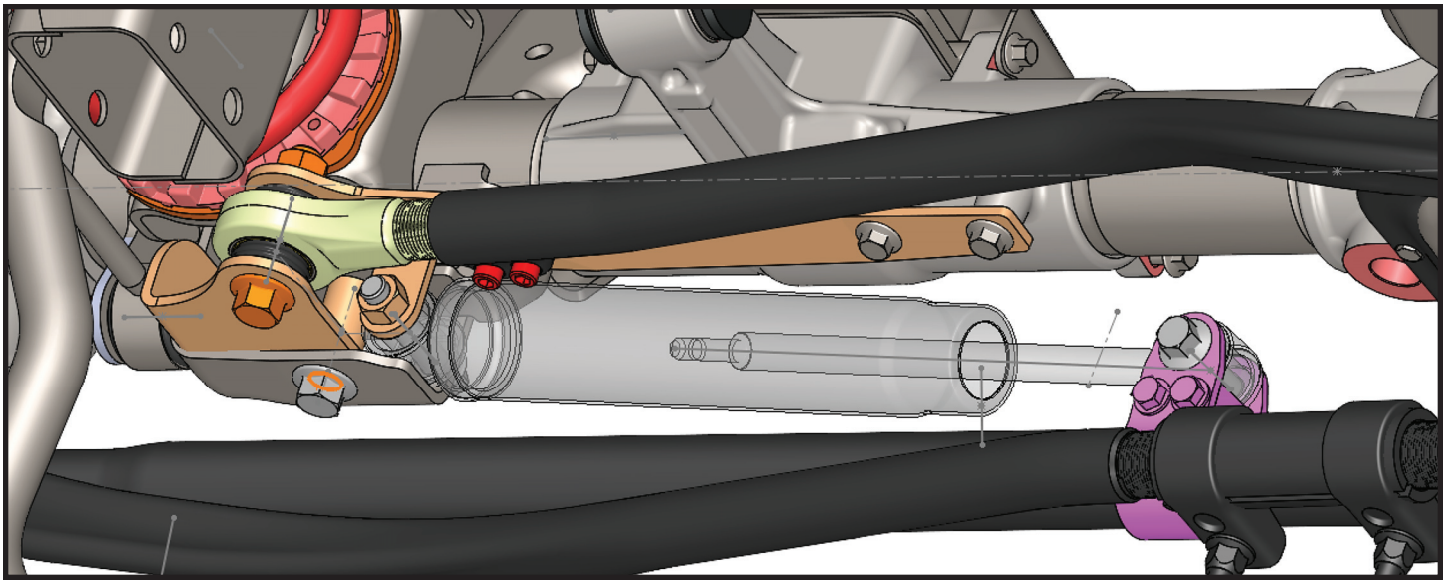
At this point, the job is done.

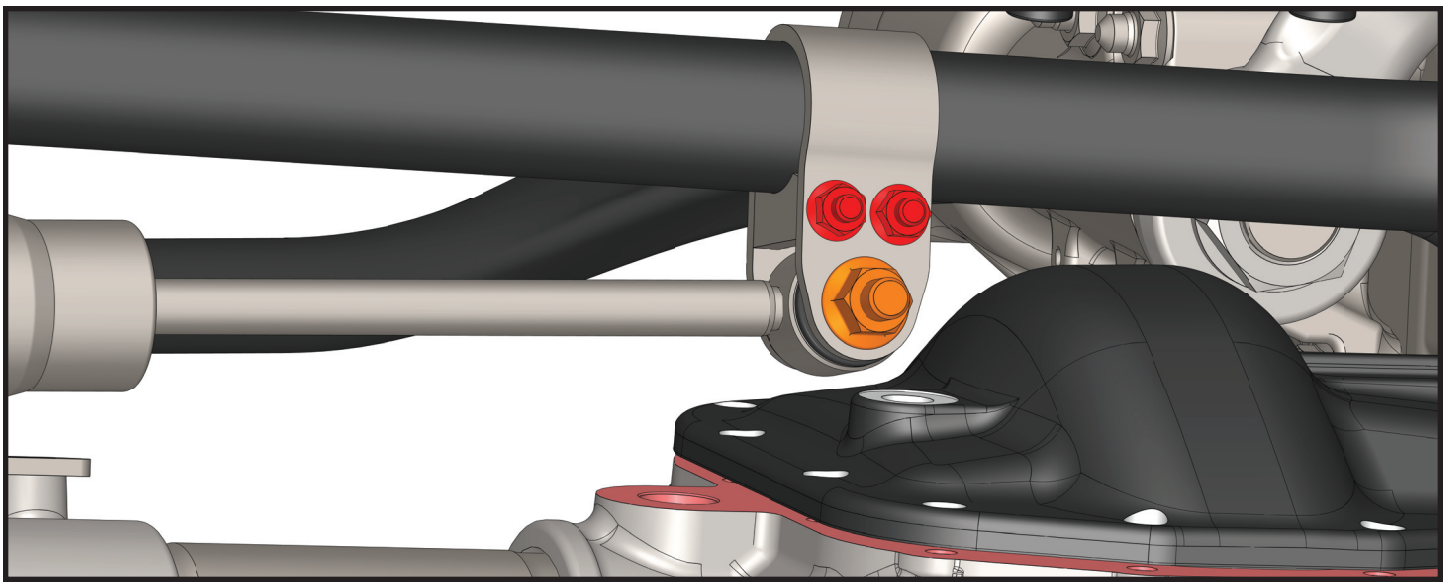
Reinstall your wheels & tires to the wheel manufacturer's torque specs. and CAREFULLY test drive your vehicle. ANY concerns should be address - you have just done a major modification to the dynamics of your vehicle.

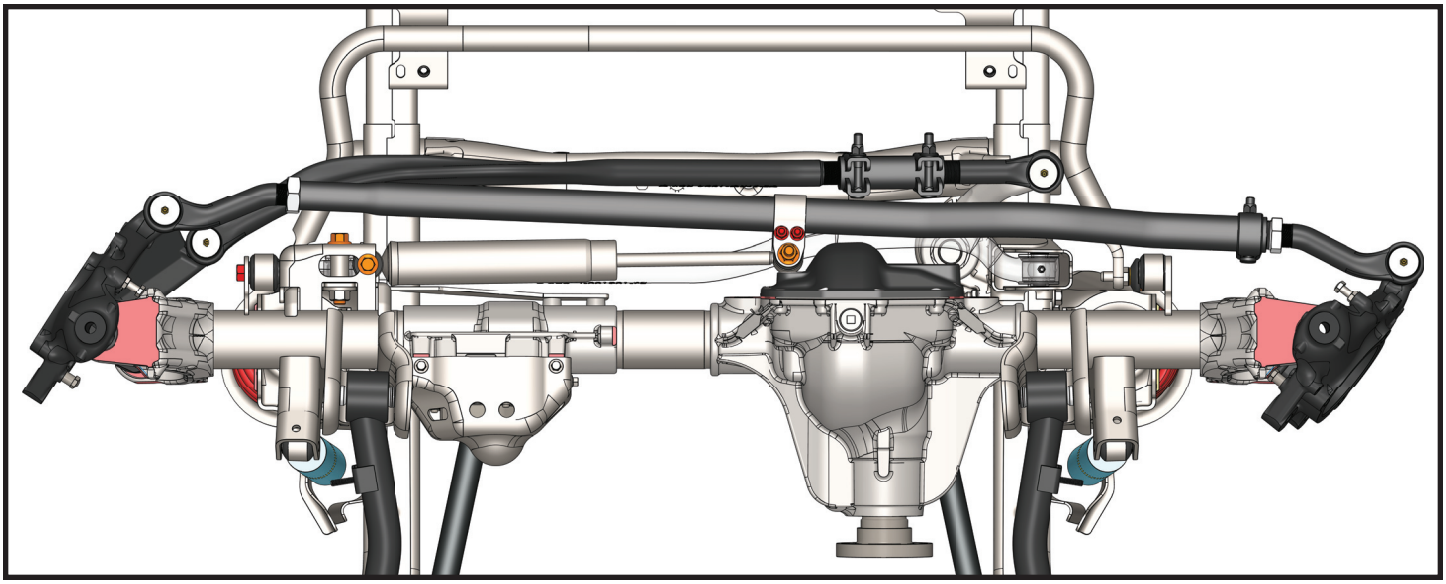
Once you are satisfied with your install. Drive the vehicle immediately to an alignment shop to have a proper alignment done.

Enjoy! Send us pictures!

TORQUE SPECS.
SEE PG. 60





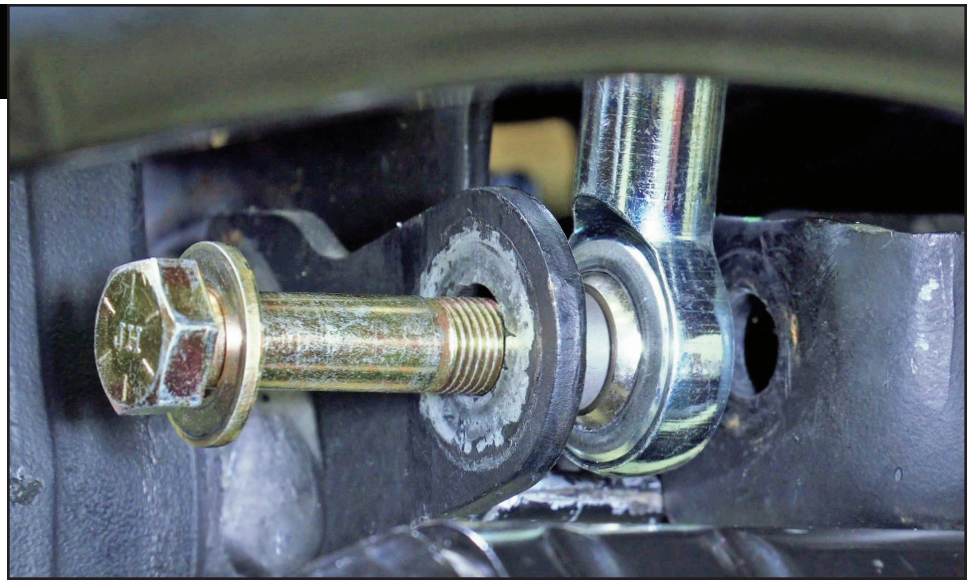


TRAC BAR RELOCATION & STEERING RAM MOUNT KIT INSTALLATION INSTRUCTIONS

Instructions for this kit will be handled a little differently, as this kit requires a little more aggressive work be done. In the interest of illustration, we will be showing a lot of the work with an axle out of a vehicle and also SolidWorks drawings. This can all be done in the car though!

Step 106

On the passenger's side of the axle housing, locate the point where the bottom of the sway bar end link bolts to the trac bar bracket.
Remove this bolt and hardware and move the bottom of the sway bar end link out of the way.



Step 107

Remove the front trac bar axle bolt and free the front trac bar from the axle bracket.

Step 108

Tie the trac bar up out of the way for the time being. We pushed ours up and zip tied it to the coil spring.

Step 109

Next, you'll be installing the large trac bar relocation and ram assist mount bracket included in the kit.

You'll start by cutting thru your factory front axle's trac bar bracket as illustrated over the next few pages of this instruction manual. PLEASE review the next few pages of this instruction manual before proceeding so that you can wrap your head around the job in front of you.

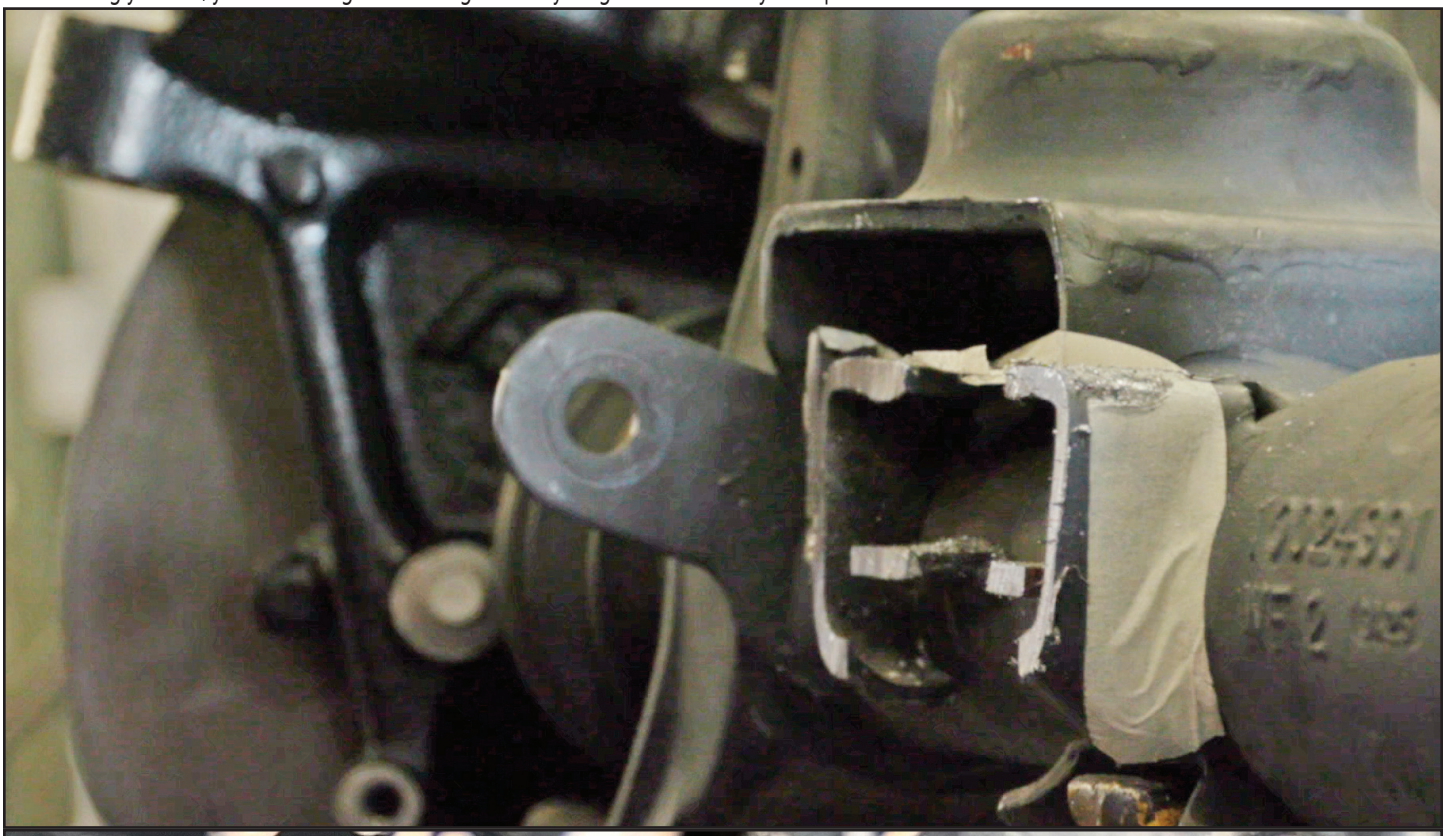
Note the green inner surface of the trac bar bracket in the the illustration below. That will be your zero point to measure backward 5/8".

Step 110

As you can see in the pictures on this and the next page, we use masking tape to mark the line illustrated in Step 109 to give us a guide when cutting with our reciprocating saw (Sawzall).

Step 111

After making your cut, you'll have to go back and grind everything back even with your tape line.

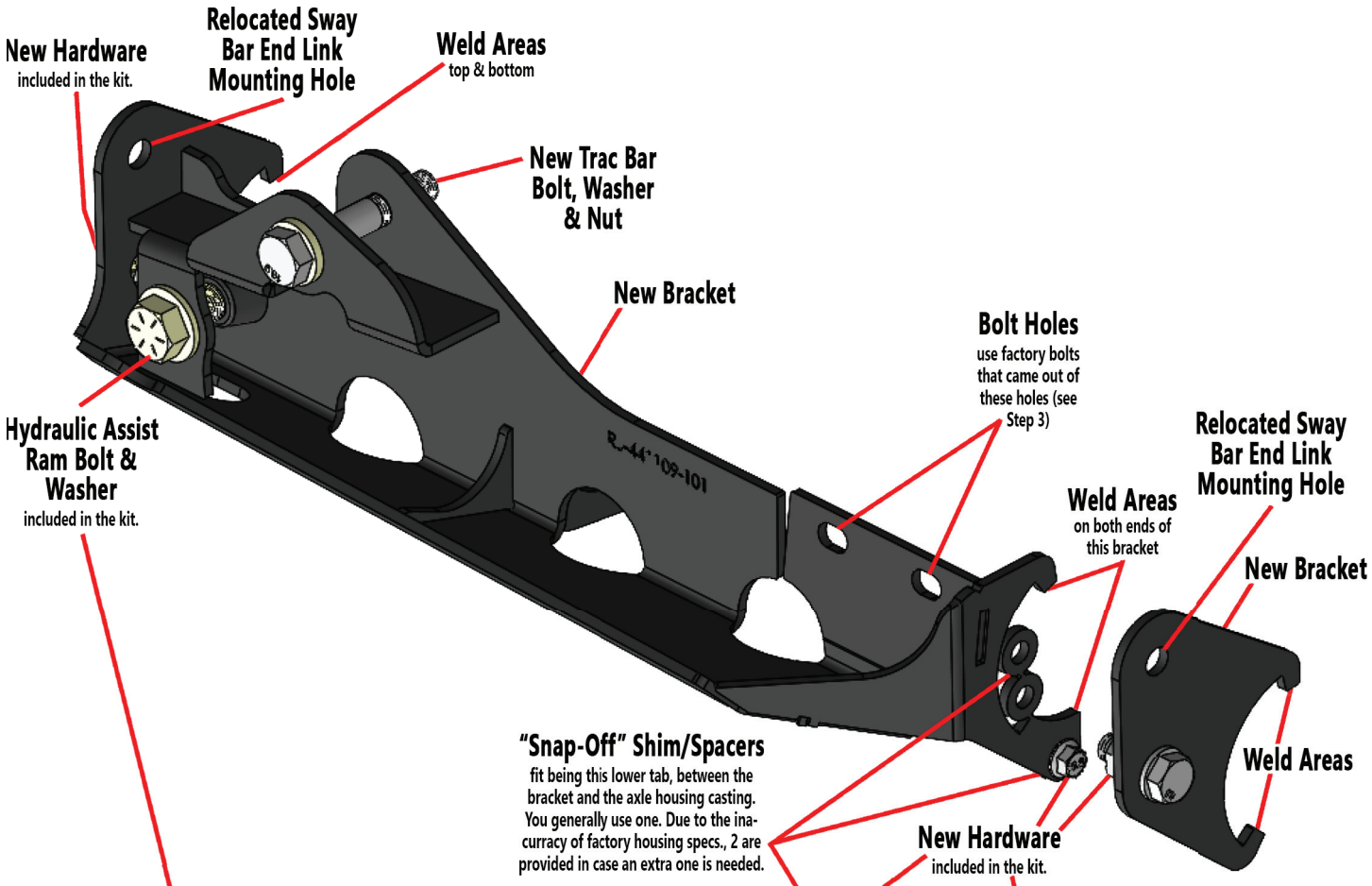


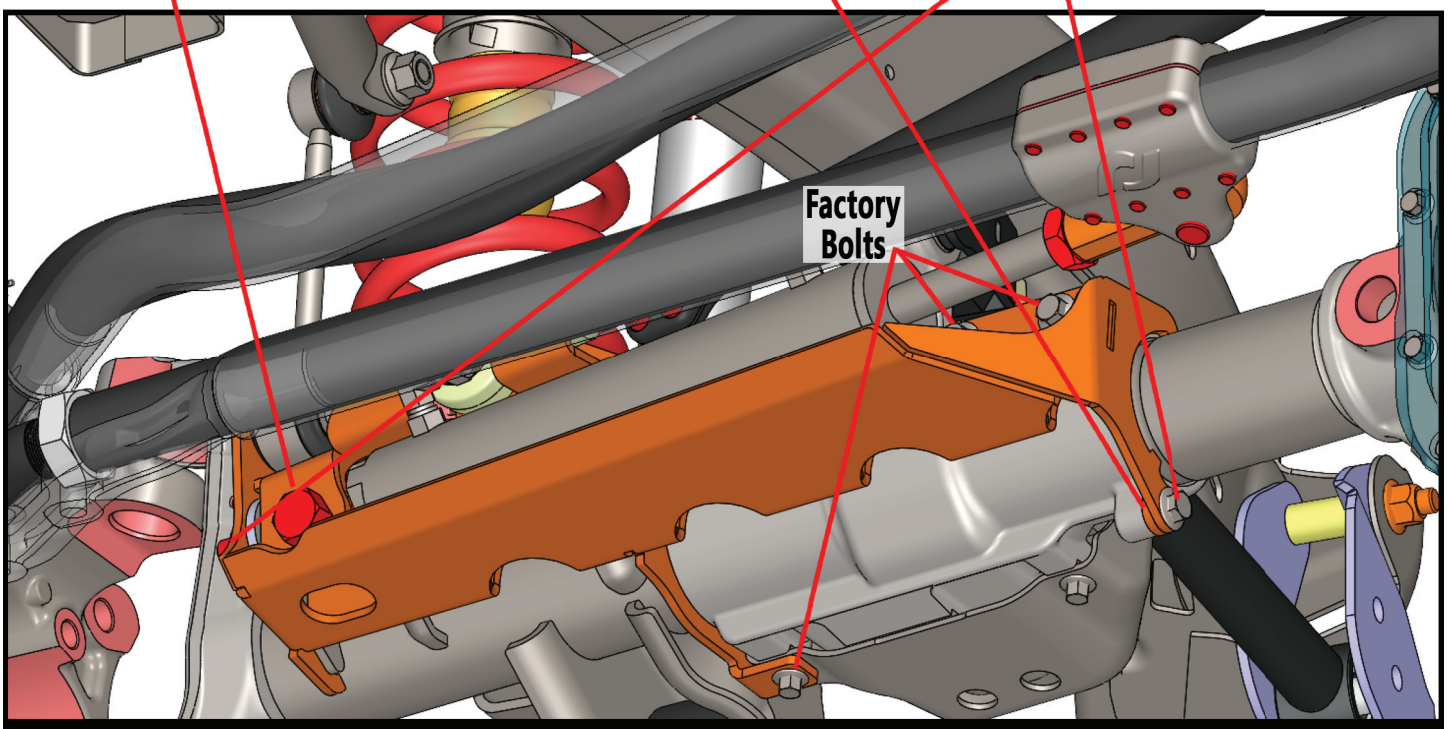
Step 112

The below illustrations are what you should be left with after making your cut and cleaning up the cut area.

Step 113

Examine and digest all of the illustrations on the next several pages. They outline the whats and wheres of mounting the new bracket to your axle housing and point out weld points. You'll bolt the bracket on first to properly index it, assembly the ram and all other hardware onto the bracket and then go back and weld last.



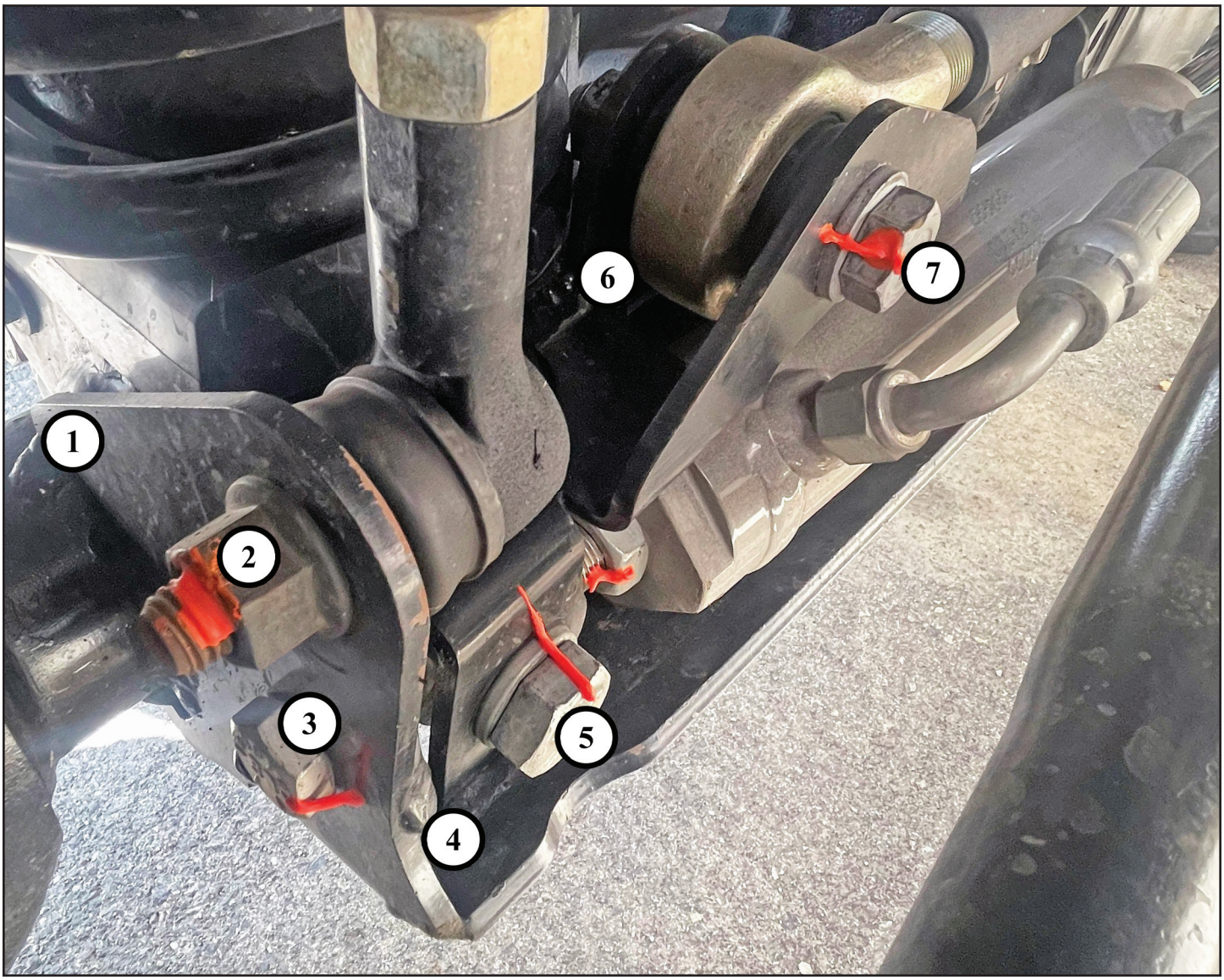


Step 114a

It is critical to fit the bracket to the axle housing and bolt it up solidly **BEFORE ANY** welding is done.
Review the diagrams on this, and the 5 subsequent pages, for bolt locations and weld area locations.

1) - Upper weld area.
2) - Relocated sway bar end link hole (sway bar end links must be shortened 2 1/8" center to center, on both sides, to accommodate this new hole location).
3) - New bolt and nyloc nut included in the kit is the main alignment bolt for the new bracket. The new bracket slides over the factory sway bar end link mounting tab on the factory axle housing and this bolt (and it's nut on the inside) attach the new bracket to the factory sway bar end link hole.
4) - Weld point attaching the bracket to the factory sway bar end link tab.
5) - Hydraulic ram assist bolt included in the kit.
6) - Addtional weld point.
7) - New trac bar bolt, washer and flanged nut included in the kit.

TORQUE SPECS.
SEE PG. 61



Step 114b

1) - Relocated sway bar end link hole (sway bar end links must be shortened 2 1/8" center to center, on both sides, to accommodate this new hole location).

2) - New bolt and nyloc nut included in the kit is the main alignment bolt for the new bracket. The new bracket slides over the factory sway bar end link mounting tab on the factory axle housing and this bolt (and it's nut on the inside) attach the new bracket to the factory sway bar end link hole.

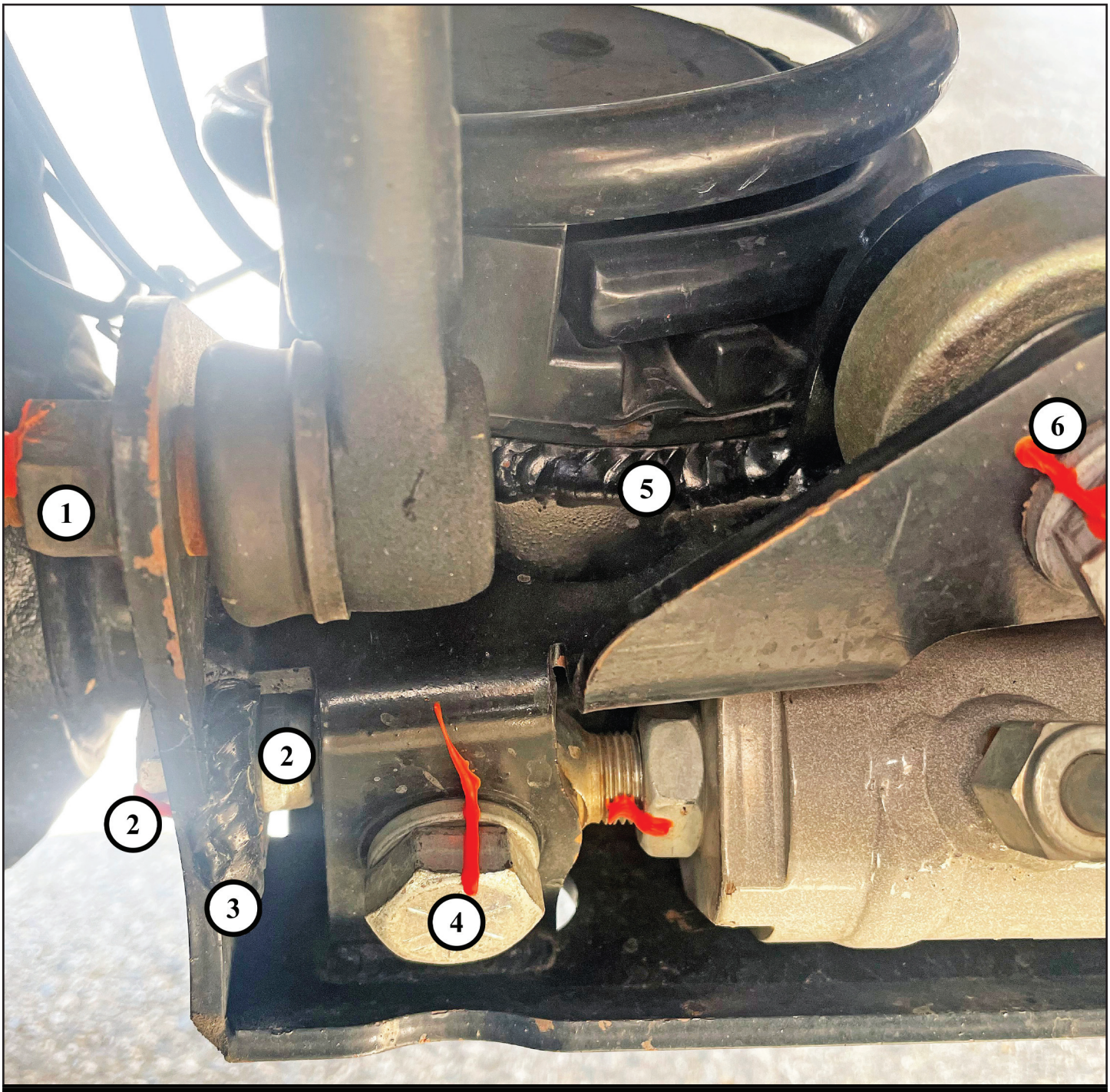
3) - Weld point attaching the bracket to the factory sway bar end link tab.

4) - Hydraulic ram assist bolt included in the kit.

5) - Addtional weld point.

6) - New trac bar bolt, washer and flanged nut included in the kit.

TORQUE SPECS.
SEE PG. 61



Step 114c

TORQUE SPECS.
SEE PG. 61

1) - Front face of passenger's side innner C-knuckle.

2) - Front of passenger's side axle tube.

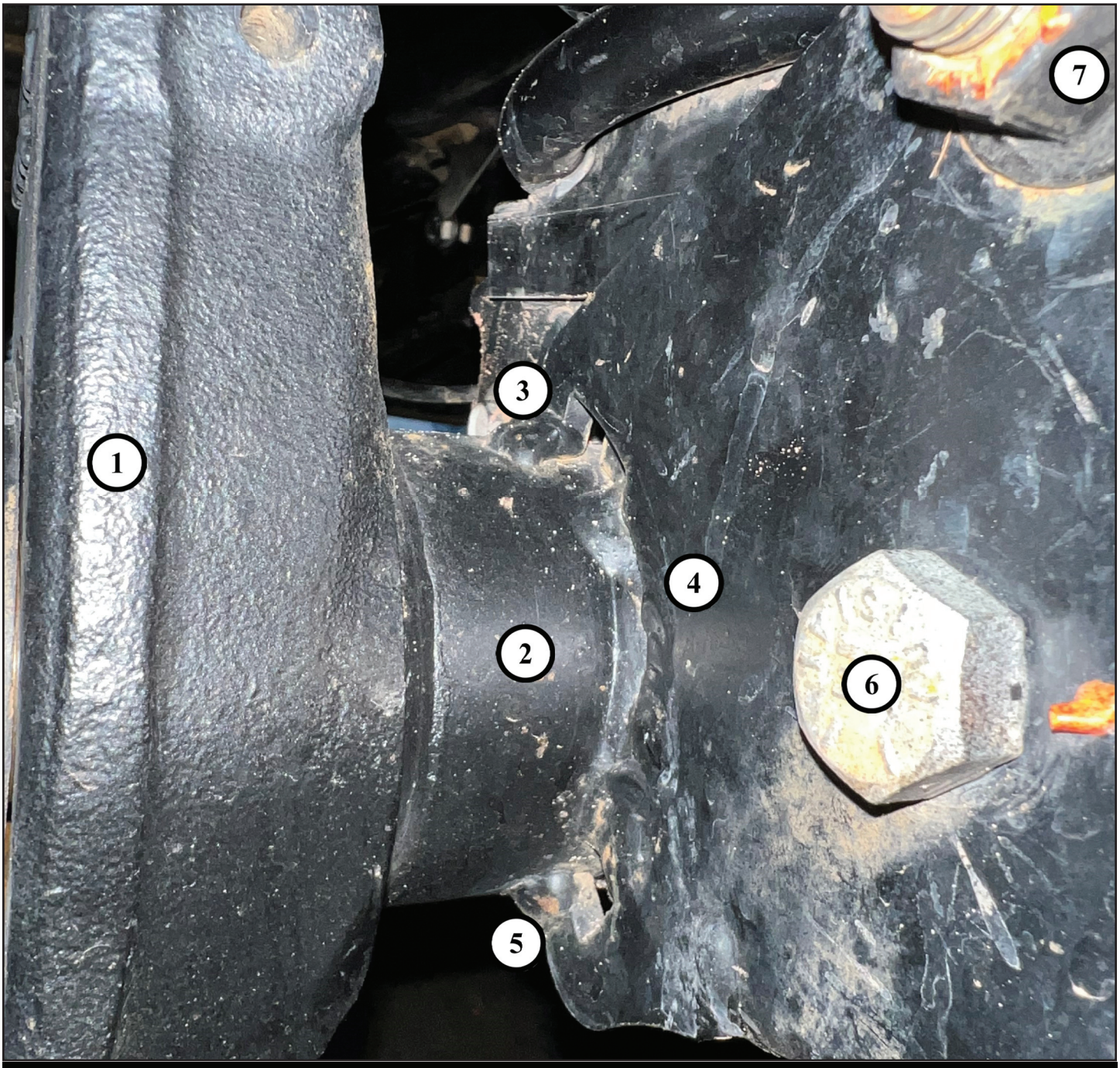
3) - Upper weld area (leg on bracket that touches the top of the axle tube).

4) - Large weld area (arc top to bottom of the bracket, between the legs on the bracket that touch the axle tube).

5) - Lower weld area (leg on bracket that touches the bottom of the axle tube).

6) - New bolt and nyloc nut included in the kit is the main alignment bolt for the new bracket. The new bracket slides over the factory sway bar end link mounting tab on the factory axle housing and this bolt (and it's nut on the inside) attach the new bracket to the factory sway bar end link hole.

7) - Relocated sway bar end link hole (sway bar end links must be shortened 2 1/8" center to center, on both sides, to accommodate this new hole location).



Step 114d

TORQUE SPECS.
SEE PG. 61

1) - Back side of passenger's side innner C-knuckle.

2) - Lower weld area (leg on bracket that touches the bottom of the axle tube).

3) - Bottom (skid plate area) of new bracket.

4) - Mid bracket leg on the back lower side of the new bracket.

5) - Factory bolt that attaches midway bracket to factory threaded hole on the factory axle housing.

Step 114e

1) - 2 upper factory bolts that attach the innermost end of the the new bracket to the factory threaded holes in the factory axle casting.

2) - Innermost end of the new bracket.

3) - Upper weld area (leg on bracket that touches the top of the axle tube).

4) - Factory cast area.

5) - Front face of factory axle tube.

6) - Additional weld area.

7) - Lower weld area (leg on bracket that touches the bottom of the axle tube).

8) - New bolt and washer included in the kit threaded into the factory threaded hole in the factory axle casting.

Step 114f

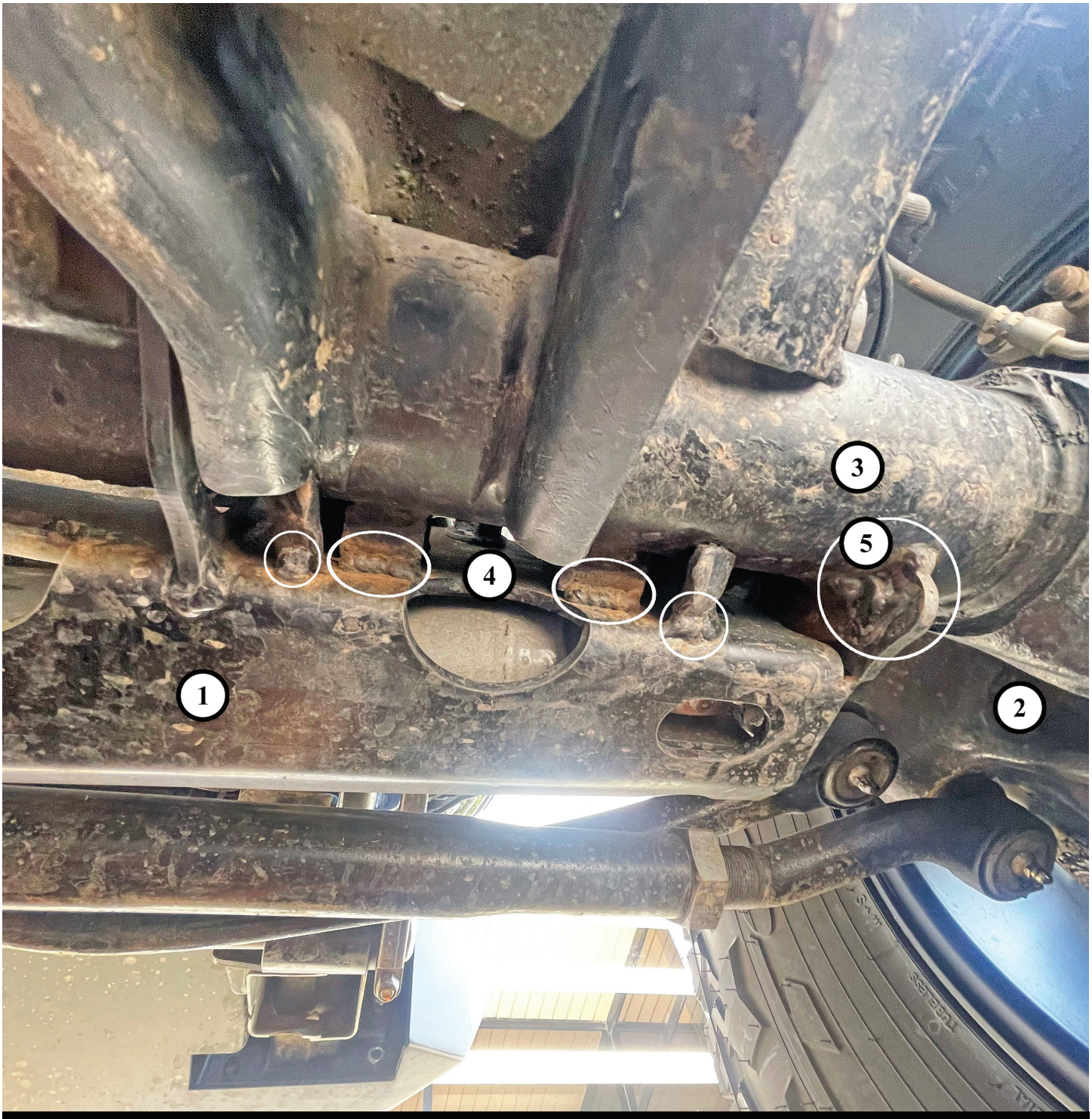
1) - Bottom (skid plate area) of new bracket.

2) - Back side of passenger's side innner C-knuckle.

3) - Back face of factory axle tube.

4) - Weld areas generated by the factory trac bar bracket being cut off. The new bracket butts up against the remaining pieces of the factory trac bar axle bracket, providing you with weld point that don't have you welding directly to the axle tube.

5) - Lower weld area (leg on bracket that touches the bottom of the axle tube).

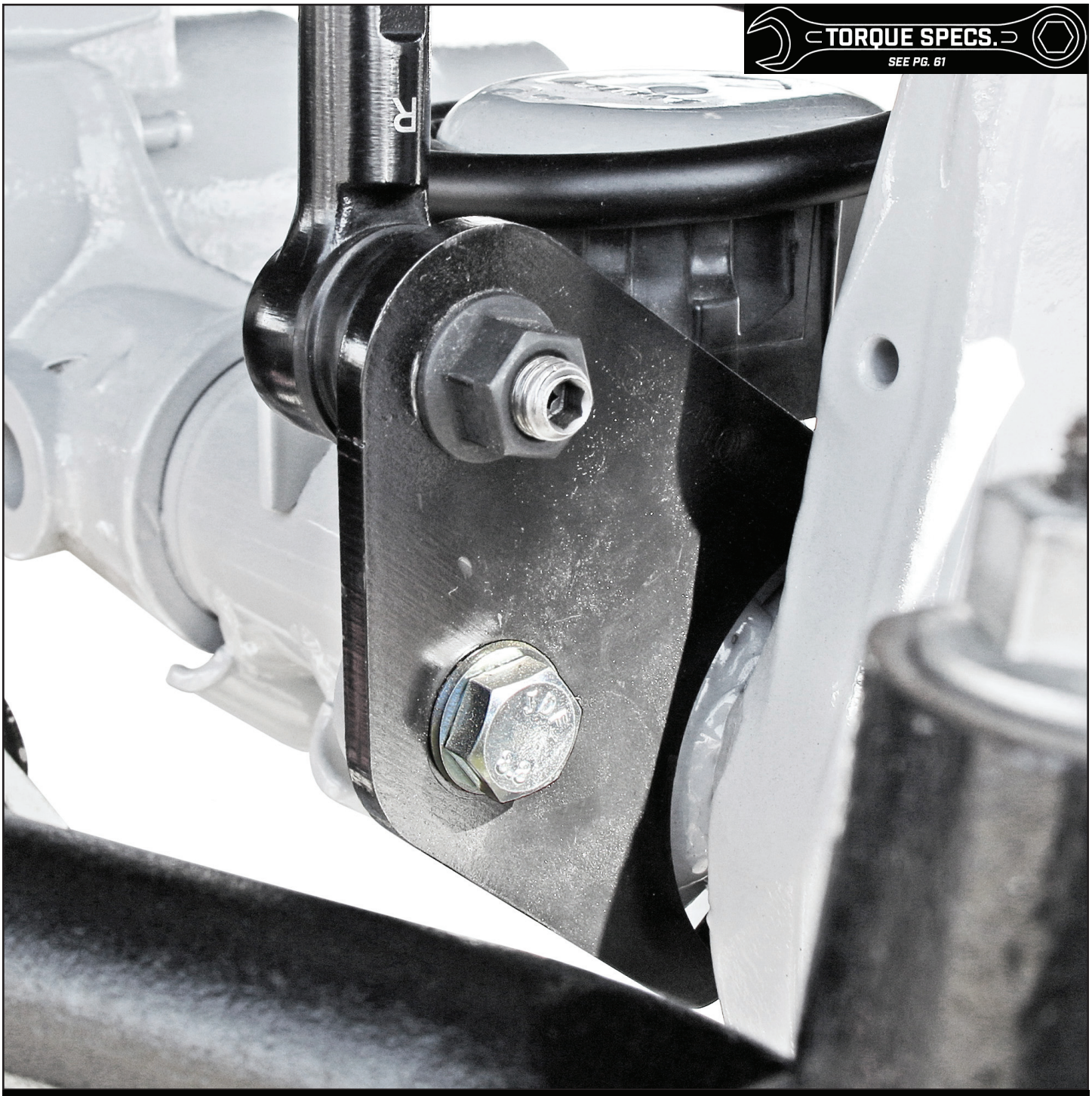


Step 106

On the driver's side, fit the supplied bracket to the outboard side of the factory sway bar end link tab on the axle housing. Note the location of the weld tabs on the new bracket and grind the paint of of the axle housing in these locations in preparation for welding.

Once you have cleared the way for welding, use the new supplied hardware and bolt the new bracket onto the factory end link mounting tab hole as shown below. Be mindful of the weld tips of the bracket that they stay in close contact with the axle housing.

Go ahead and weld the bracket tips to the axle housing. Allow to cool and shoot some paint over the bracket and the weld spots.
Again, same as the other side, you will need to shorten your sway bar end links by 2 1/8" to accommodate the new end link hole location supplied by this bracket.

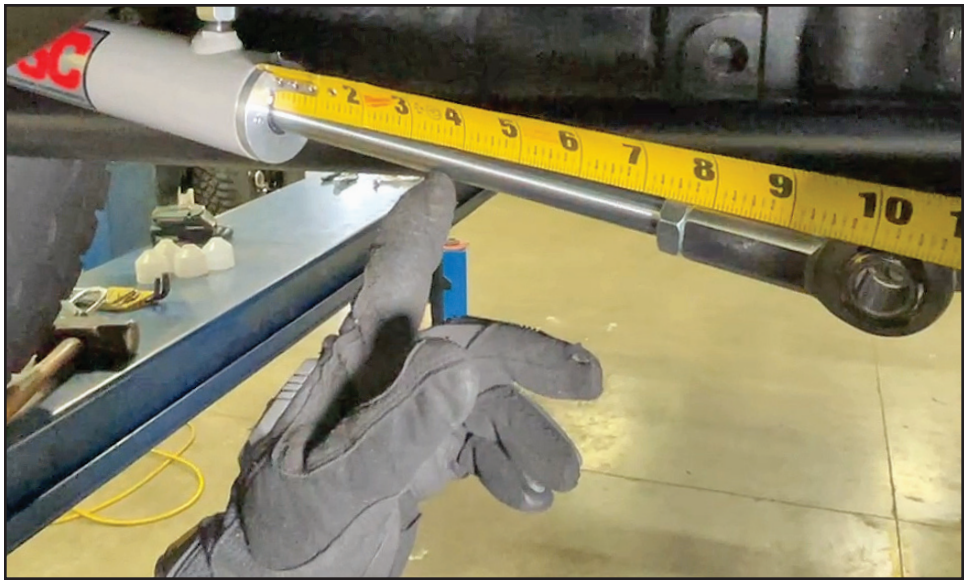


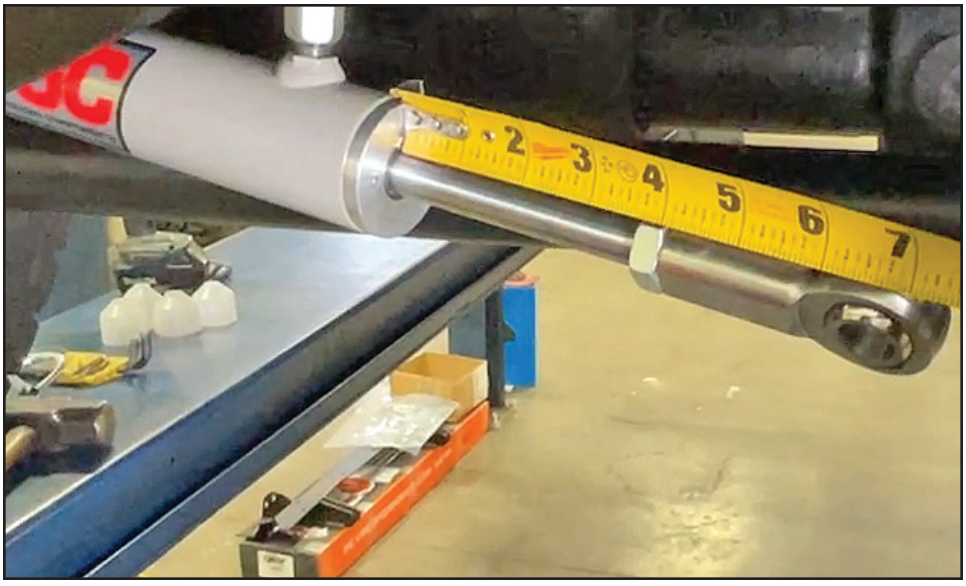
Step 106

This kit was designed around a common PSC hydraulic steering ram with a 7.375" stroke (stock steering radius).

With the ram already attached to the bracket on the passenger's side, we'll now install the Ram Assist Tie Rod Clamp.

Start by confirming your ram's full stroke potential by measuring as shown - from the end of the ram body, to the bottom of the jam nut.



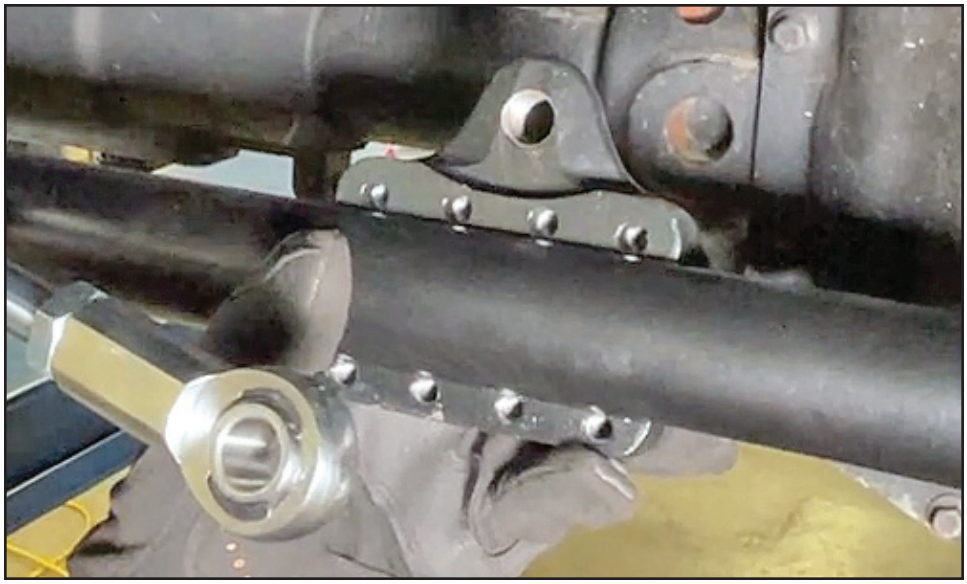


Step 107

Next, take the stroke number from above - and divide it in half. Set your ram to this, shorter dimension.

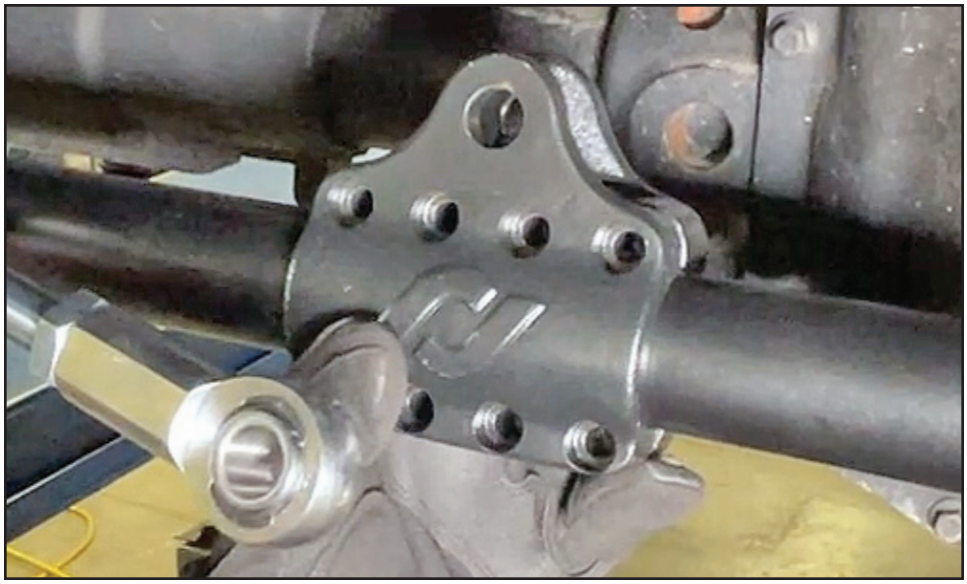
Step 108

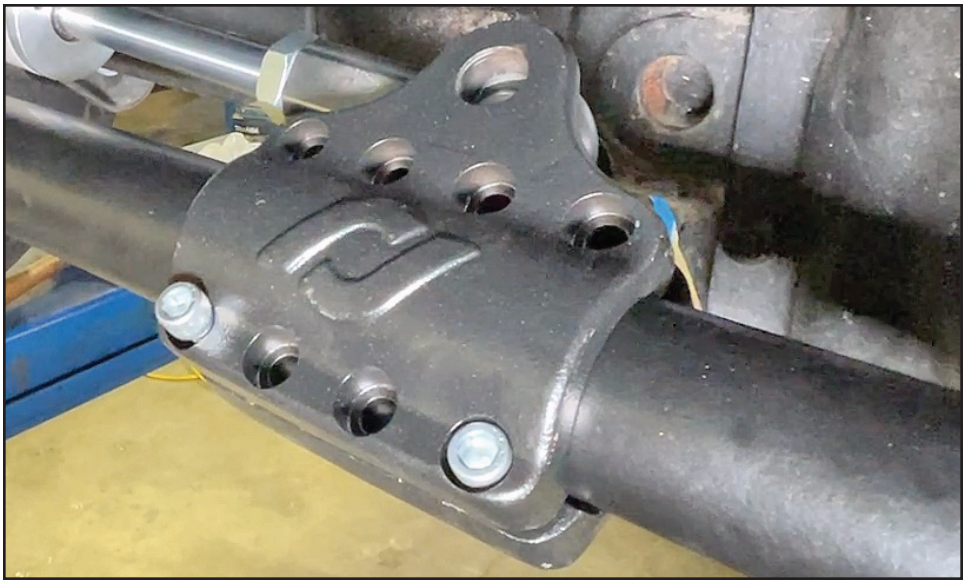
Fit the back half of the ram assist tie rod clamp to the tie rod.



Step 106

Fit the front half of the clamp onto the tie rod and align it's holes with the back half.





Step 107

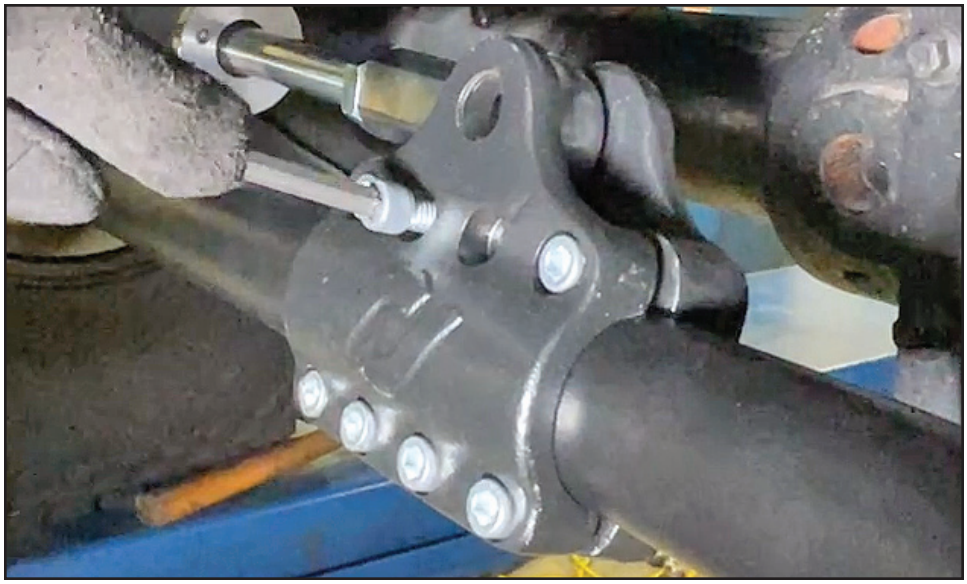
Insert a couple of the allen bolts into the 2 clamp halves to hold it together.

Ensure that your front wheels are steered straight and then slide the clamp over to meet your ram. You'll want to fit the clamp to the ram - not the ram to the clamp.

Align the ram hole with the upper holes in the ram clamp and then snug up the allen bolts to hold the clamp's location.

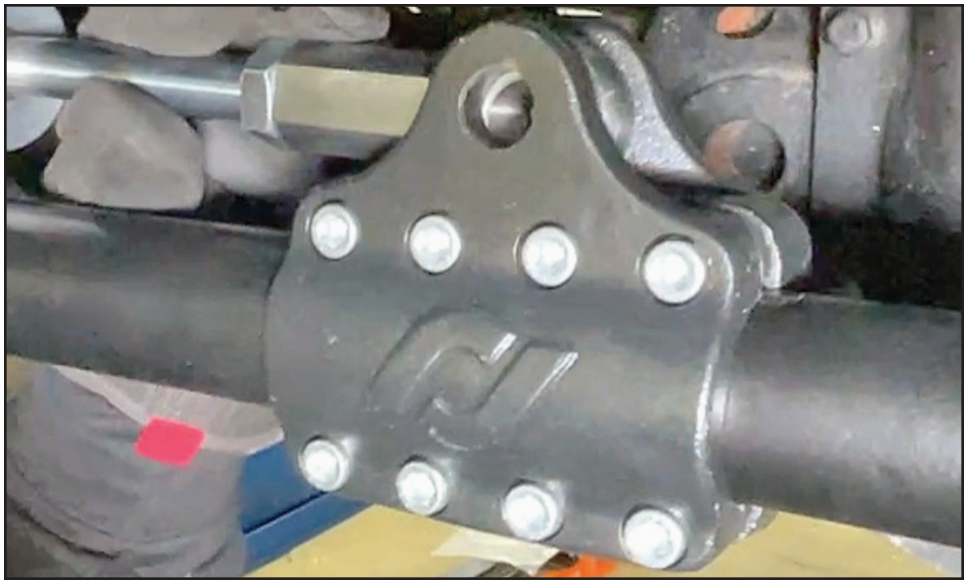
Step 108

Install the rest of the clamp bolts, but not so tight that you cannot still rotate the clamp.



Step 106

Rotate the clamp to allow the ram to be in the most neutral postion possible.
We usually end up with the clamp about flat (ram behind the tie rod, 8 clamp bolts pointing at the ground) as shown in the picture on page 60.



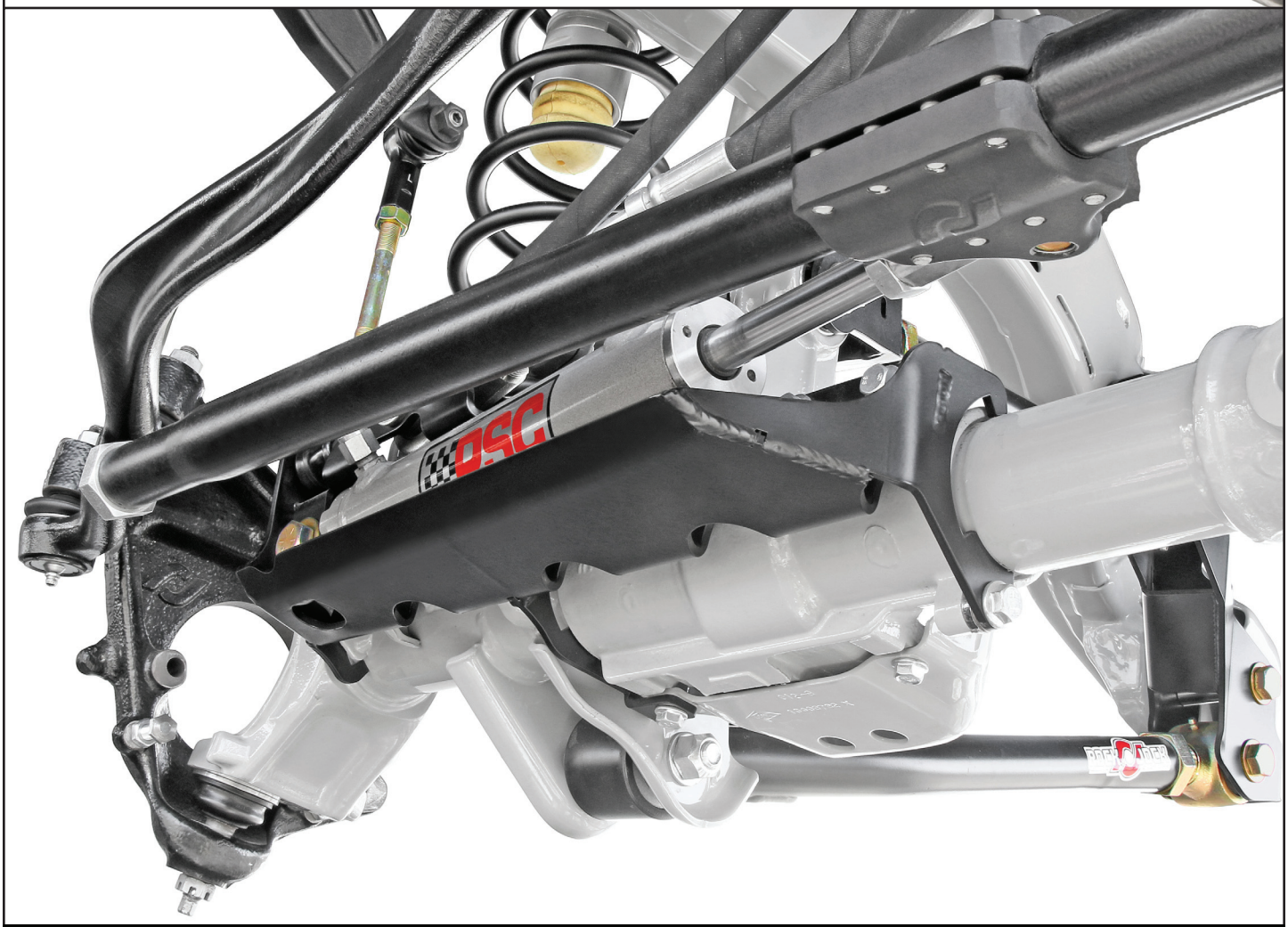
Step 107

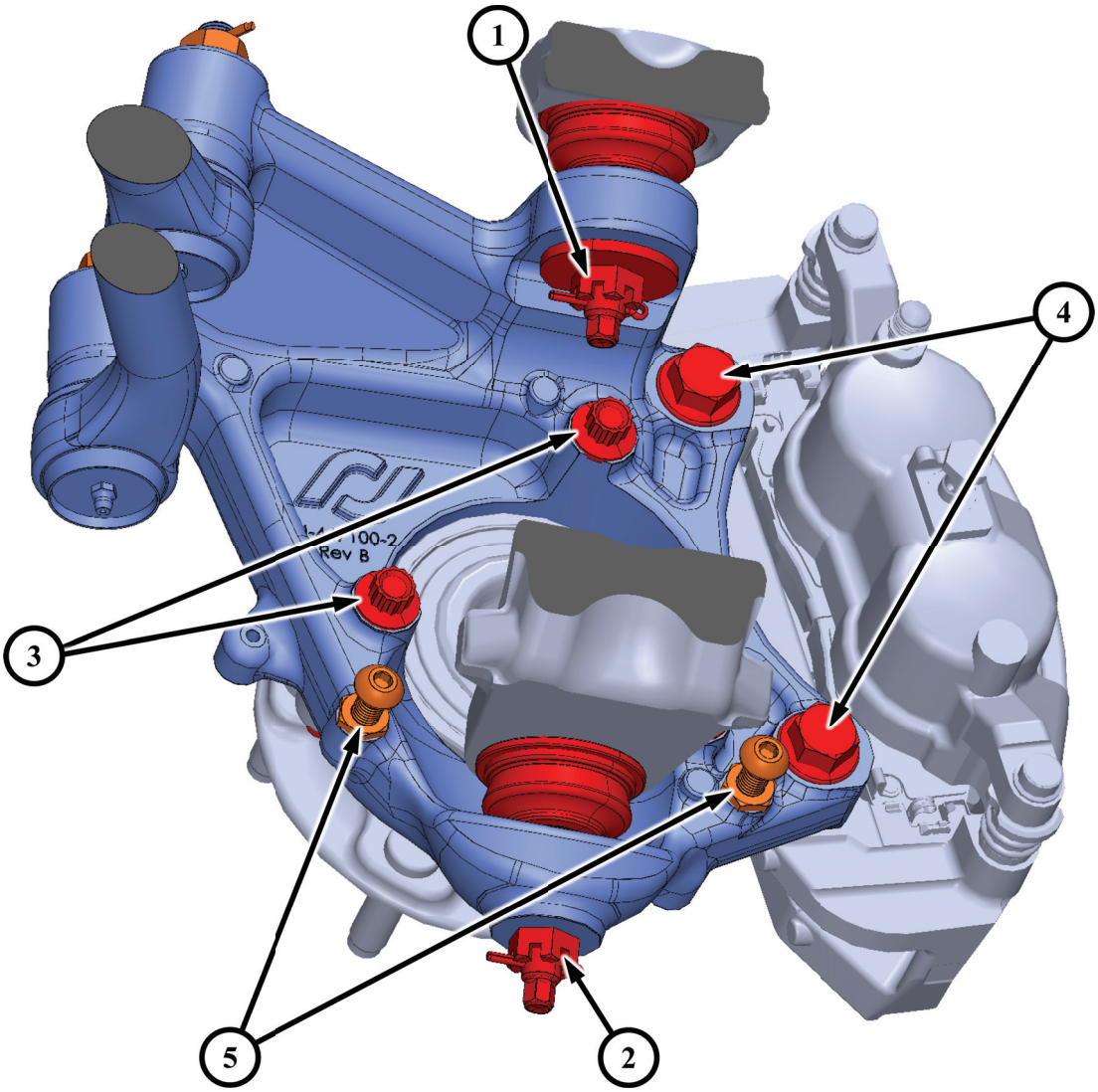
Apply red threadlocker to the supplied 5/8" bolt.

Step 108

Install the bolt thru the clamp, thru the ram, thread it into the back half of the clamp, tighten and torque to spec.
Lastly, torque the 8 allen bolts to spec.

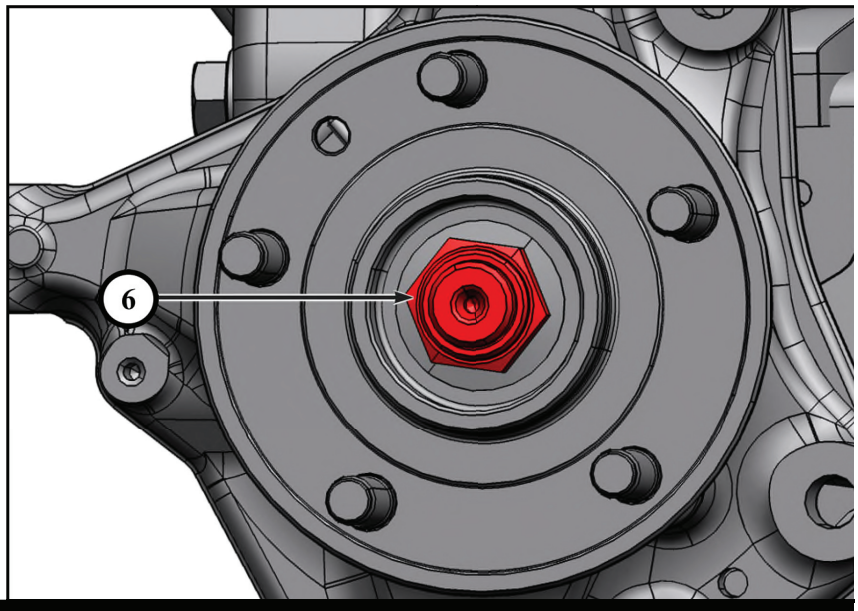
TORQUE SPECS.
SEE PG. 61

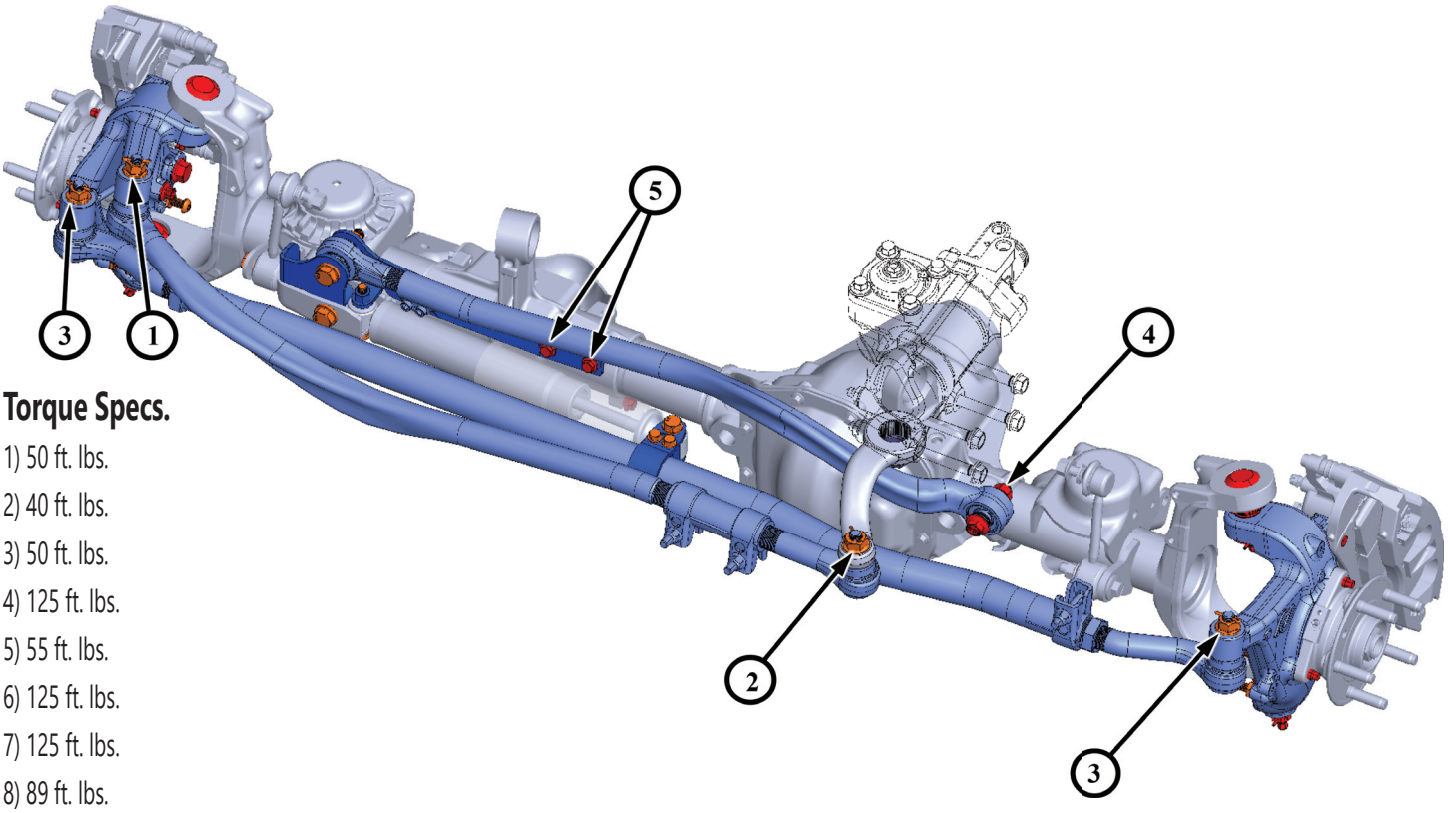

OSC



Torque Specs.

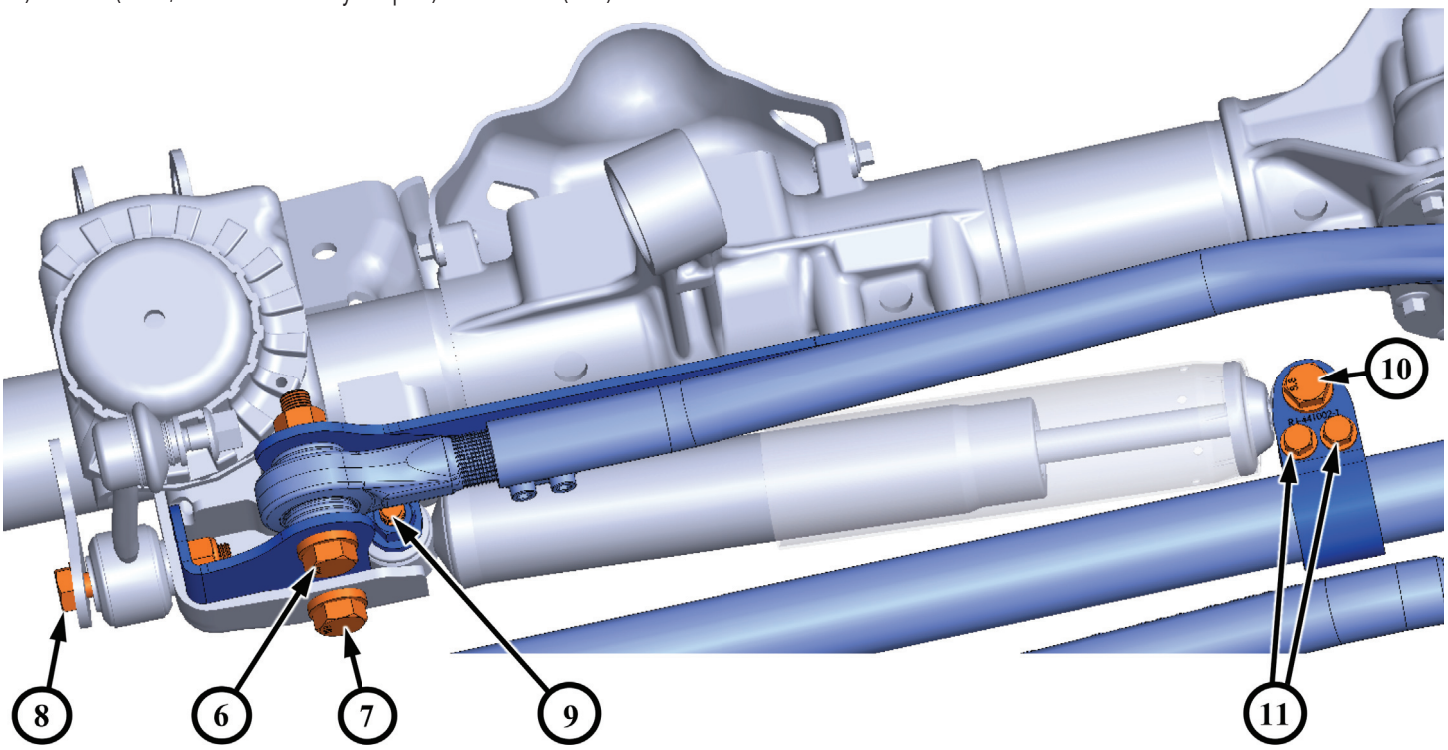
1) 55 ft. lbs.
2) 22 ft. lbs. (intitial)
   48 ft. lbs. (final)
3) 75 ft. lbs.
4) 148 ft. lbs.
5) 35 ft. lbs.
6) 100 ft. lbs.

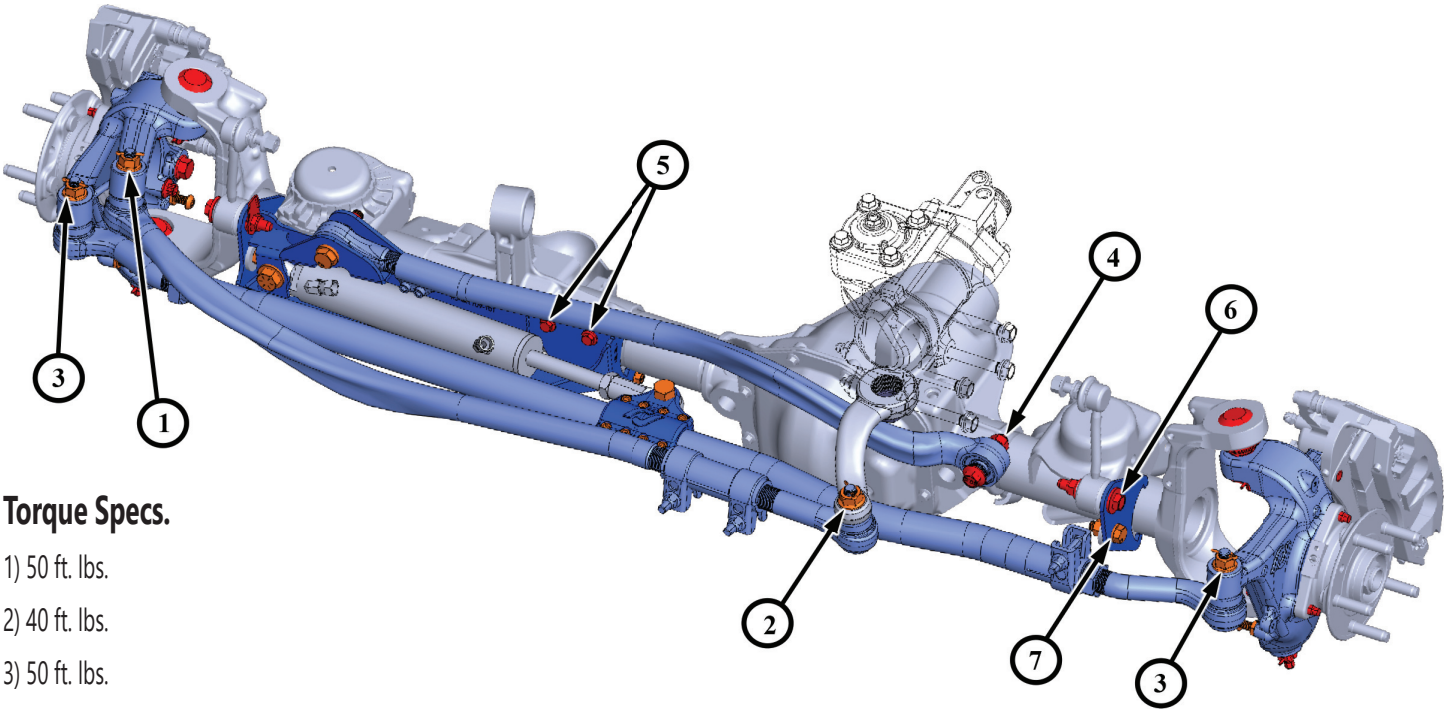




Torque Specs.

1) 50 ft. lbs.
2) 40 ft. lbs.
3) 50 ft. lbs.
4) 125 ft. lbs.
5) 55 ft. lbs.
6) 125 ft. lbs.
7) 125 ft. lbs.
8) 89 ft. lbs.
9) 69 ft. lbs.
10) 30 ft. lbs. (initial) -- 69 ft. lbs (final, after #11 is torqued)
11) 6 ft. lbs. (initial, after #10 is initially torqued) -- 16 ft. lbs (final)





Torque Specs.

1) 50 ft. lbs.
2) 40 ft. lbs.
3) 50 ft. lbs.
4) 125 ft. lbs.
5) 55 ft. lbs.
6) 66 ft. lbs.
7) 89 ft. lbs.
8) 125 ft. lbs.
9) 180 ft. lbs.
10) 180 ft. lbs. (**see note)
11) 26 ft. lbs. (**see note)
12) 66 ft. lbs.
13) 52 ft. lbs.
14) 26 ft. lbs.
15) 55 ft. lbs.

**Note: loosely assemble clamp halves will all hardware at callout #10 and #11. After clamp is pre-assembled, tighten all hardware to torque spec.