# 1025 – 2013-PRESENT, RAM PROMASTER, FRONT 1.5” LIFT STRUT SPACER

Version 1.2

## General Notes

- For the most up to date and current instructions, please visit our website at www.vancompass.com
- Please read all instructions thoroughly before starting installing Van Compass products.
- This is a bolt on lift kit that can be installed with basic hand tools.
- This lift kit can be completely removed, allowing the vehicle to be returned back to stock configuration if desired.
- Installation of this lift kit requires complete removal of the strut assembly from the vehicle. Strut removal from the vehicle requires partial dash disassembly. The BCM (Body Control Module – fuse panel) will need to be removed from the vehicle as well. All these steps are outlined in the instructions.
- DISCLAIMER: This lift kit will put the front CV shafts at an increased operating angle from stock but well within their operational range. However, we cannot guarantee dealer warranty of front axle shaft CVs should they show premature wear at a later date. Additionally, the stock sway bar end link bushings will operate at an increased angle at the new lifted ride height and may also see premature wear over time when compared to a stock vehicle.
- An alignment is recommended after installing this lift kit to adjust the toe on the vehicle.

## Parts List

### 1025 – 2013-PRESENT, RAM PROMASTER, FRONT 1.5” LIFT STRUT SPACER

- (1) 102501-L FRONT STRUT SPACER, LEFT HAND SIDE
- (1) 102501-R FRONT STRUT SPACER, RIGHT HAND SIDE
- (6) DSM10-1.25-41-10.9 M10-1.25 X 41MM LONG, DOUBLE ENDED STUD
- (12) NSM10-1.25 M10-1.25 STOVER NUT, CLEAR ZINC PLATE
- (12) WFM10 M10 FLAT WASHER
- (2) NPM10-1.25 M10-1.25 PLAIN NUT

## Tools Needed

- Two vehicle jacks and 4 jack stands.
    - Optional – Automobile lift, one transmission jack or screw jack.
- Simple hand tools:
    - Torque Wrench
    - Hammer, dead blow
    - 6” C-Clamp

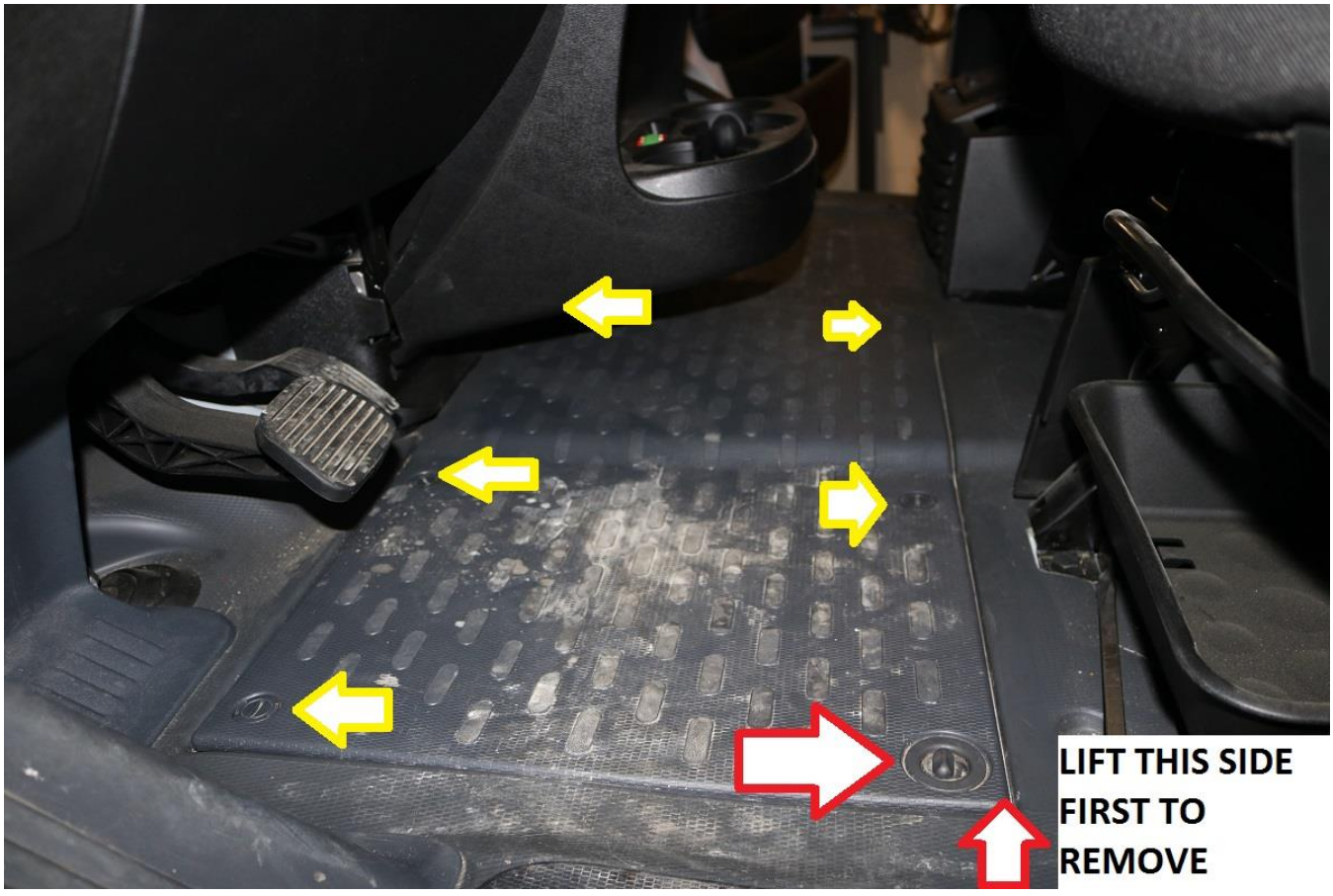
- Large Pry bar ~ 3ft long
- Basic wrench and socket set:
  - Metric sizes: 16mm, 17mm, 19mm, 21mm, 22mm, 24mm
  - T-25 torx
  - Allen Wrench sizes: 5mm, 14mm
  - Axle Nut Socket: 46mm or 1-13/16”
- Electric drill with 3/16” or 5mm drill bit

## Approximate Installation Time

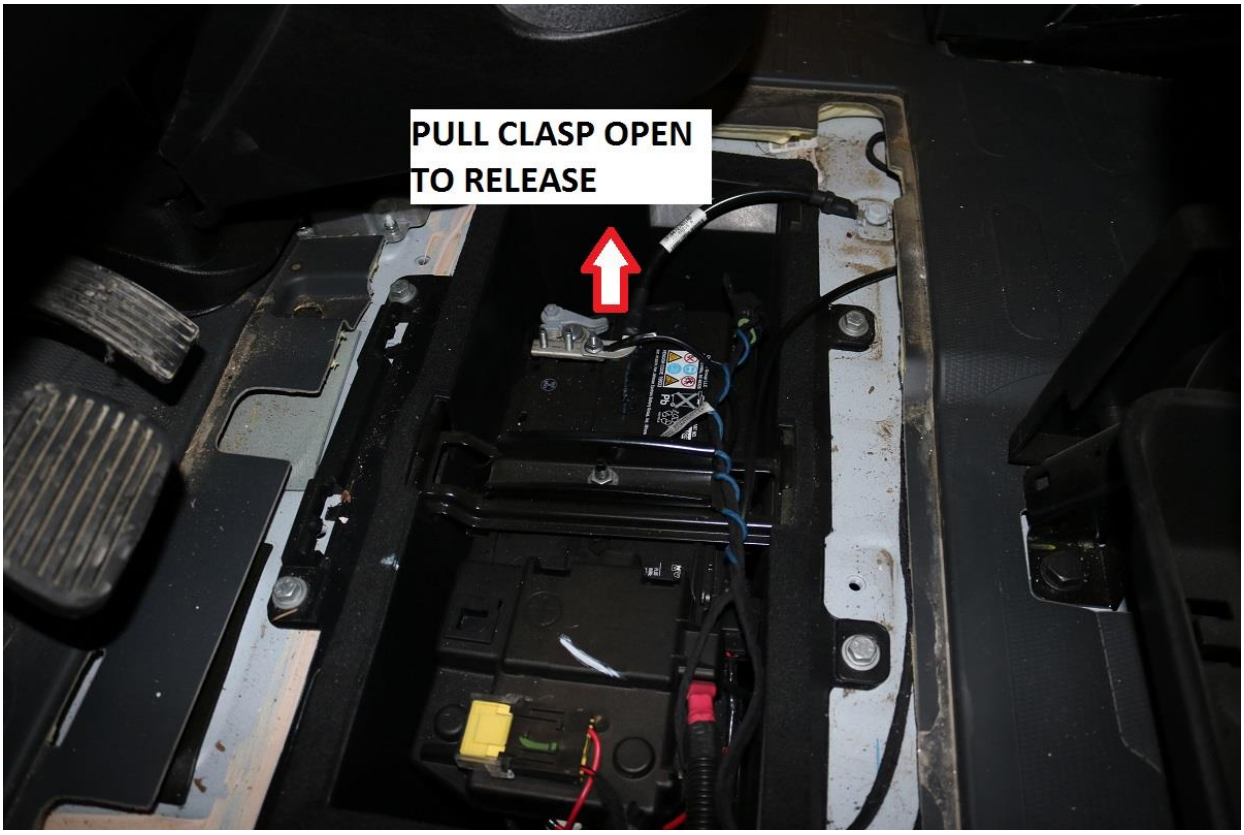
- Professional shop with automotive lift: 4-6 hours
- Driveway install with jack and jack stands: 7-8 hours

## Installation

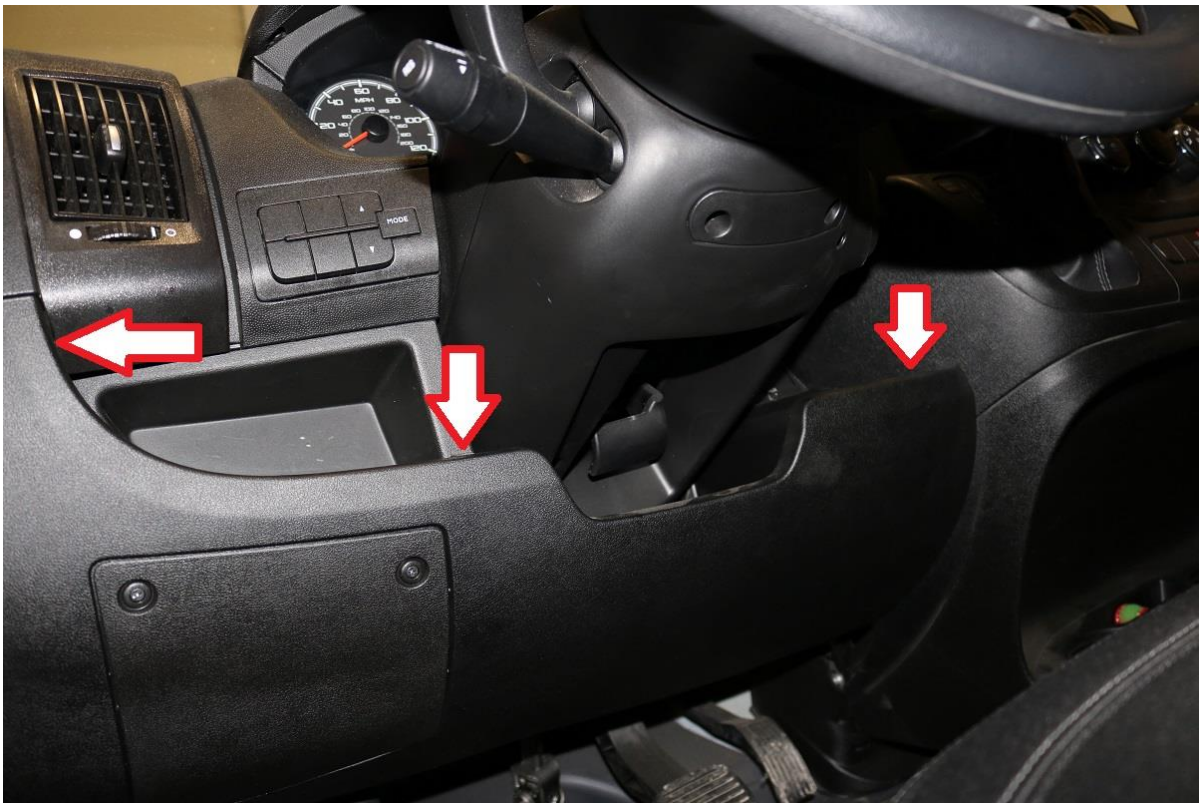
1) Place the vehicle on a lift or jack stands so the front suspension can hang free.
2) This lift kit can be installed simultaneously on both the driver and passenger side of the vehicle. These instructions document installation on the driver (left hand) side of the vehicle. Installation on the passenger side is the same; any specific differences for the passenger side will be addressed.
3) Remove the battery compartment cover plate on the driver (left hand) side of the floor board.
4) Rotate the slotted fasteners 90 deg to free the cover plate from the floor board. There are 6 total fasteners denoted by the arrows in the image below. Pull up the side nearest the seat base first and remove the cover plate from the vehicle.



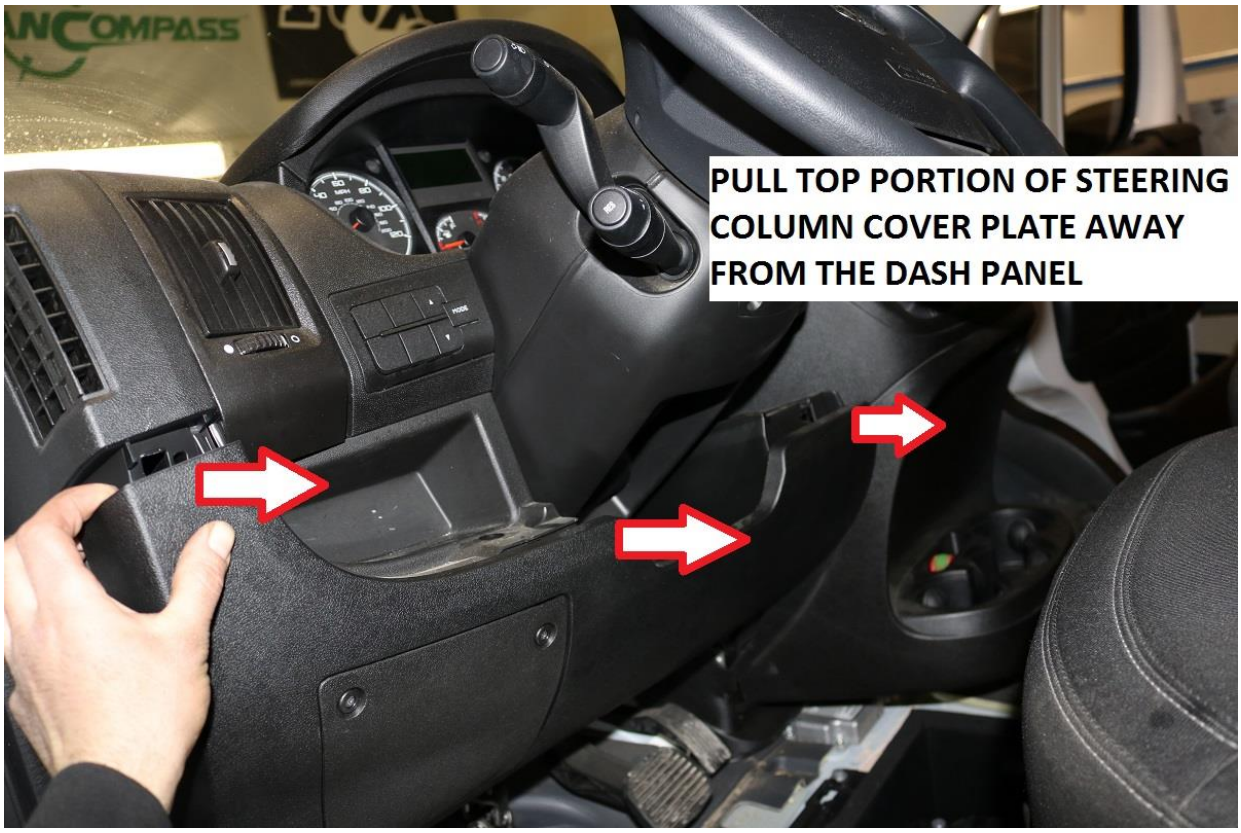
5) With the battery exposed, remove the ground cable from the negative side of the battery. The ground cable has a simple cam style clasp which secures it to the negative terminal. Open the clasp and remove the negative battery cable.



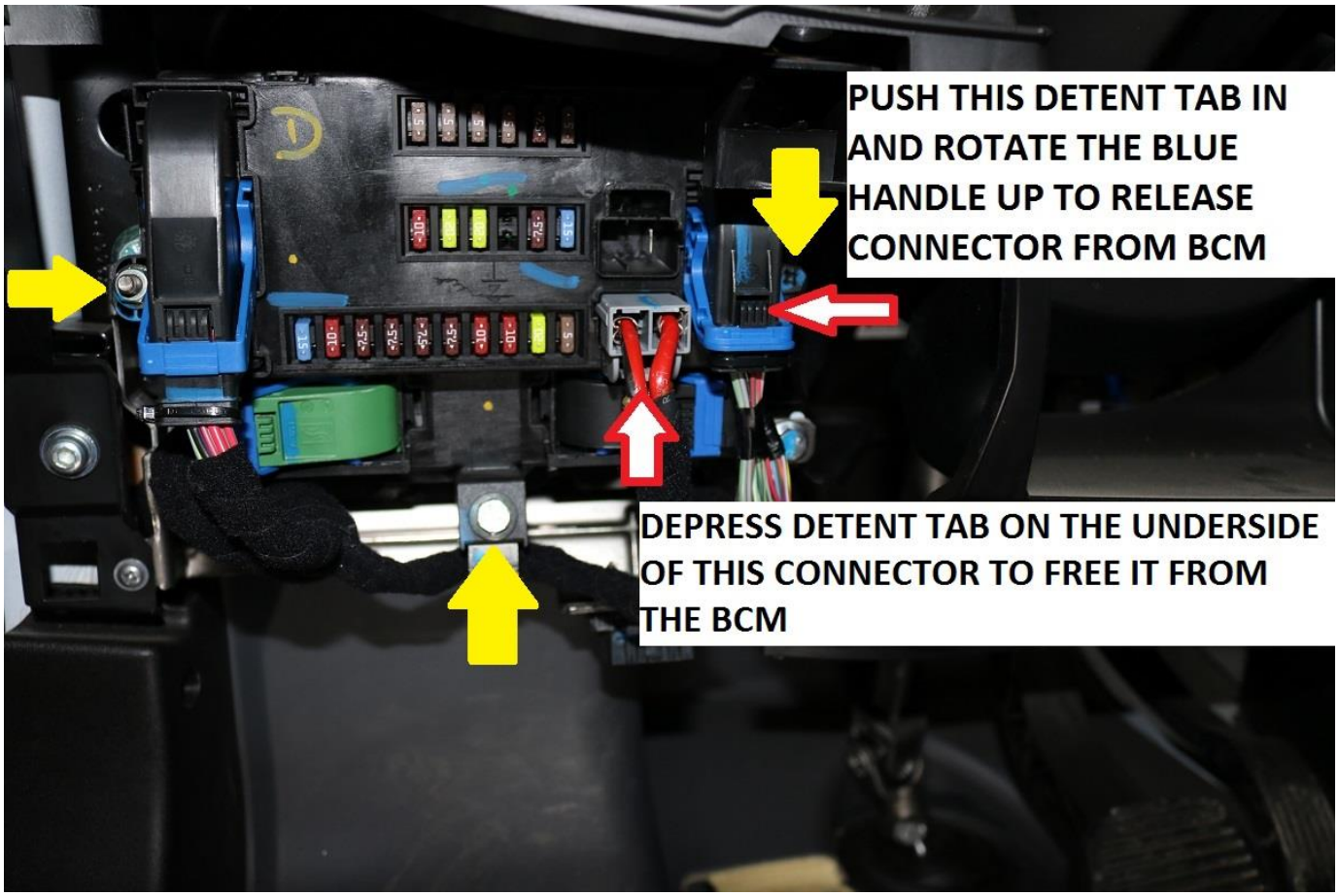

6) Working in the interior, on the driver side of the vehicle, locate the three Phillips head screws securing the steering column opening cover plate to the dash panel. The image below denotes the approximate location of the three screws. Remove these three screws.



7) With the three upper screws removed, pull the top of the cover plate away from the dash to separate the clips securing it to the dash panel.
    a. With the top of the cover plate free, pull the cover plate up and away from the dash to separate the lower part of the cover plate from the dash panel.
    b. Remove from vehicle.



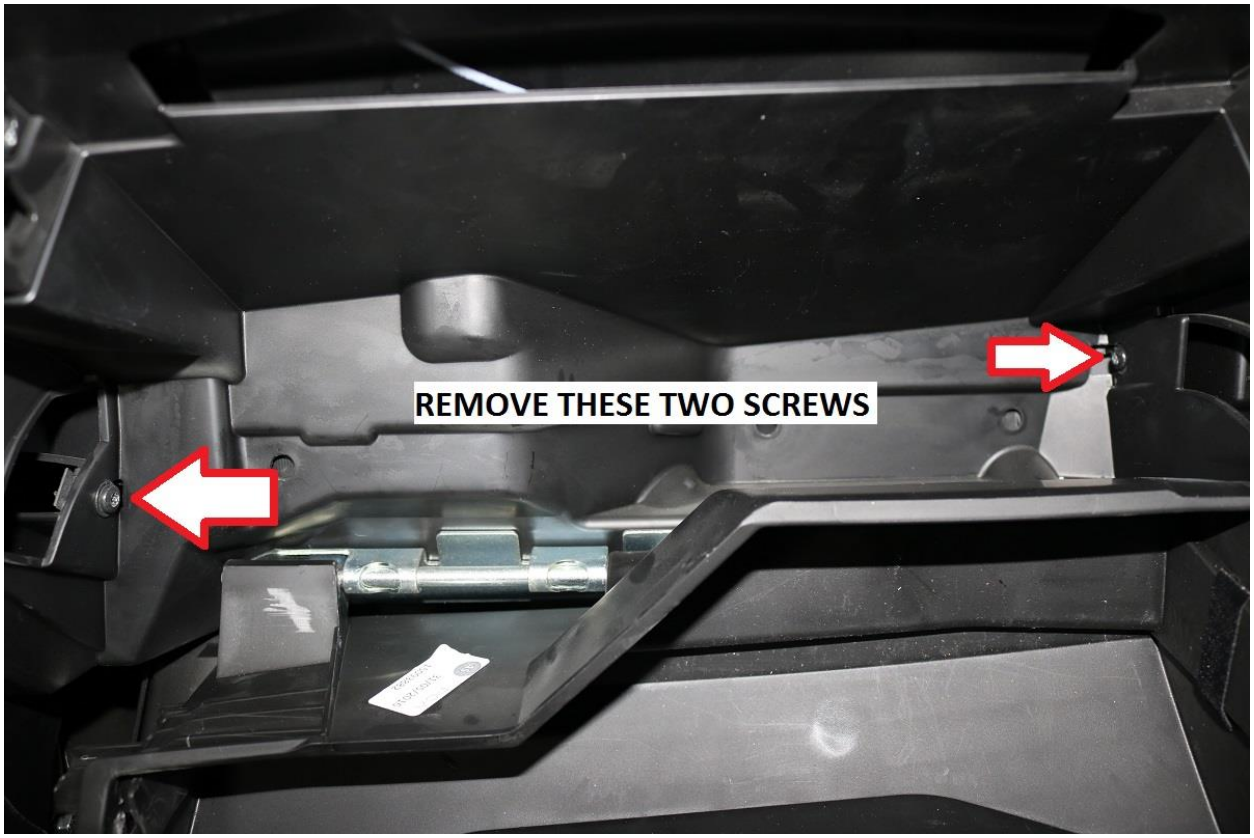

8) After the steering column cover plate has been removed, disconnect the electrical connectors on the front of the BCM (Body Control Module).
    a. There are 4 large connectors, and one small main power connector which needs to be removed.
    b. See image below and red / white arrows for reference on connector removal.
    c. Note; The electrical connectors on the BCM can only be re-installed in the port they are removed from, there is no need to label which location they came out of on the BCM.




9) With all connectors removed from the front face of the BCM, remove the 3 nuts / bolts securing the BCM to the dash using a 10mm socket / wrench. Their locations are denoted by the yellow arrows in the image above.
10) Pull the BCM away from the dash and unplug the remaining connectors on the back side of the BCM. Once separated, remove the BCM from the vehicle.
11) Remove the small piece of sound deadening / insulation on the top of the strut tower to access the upper strut mounting bolts.

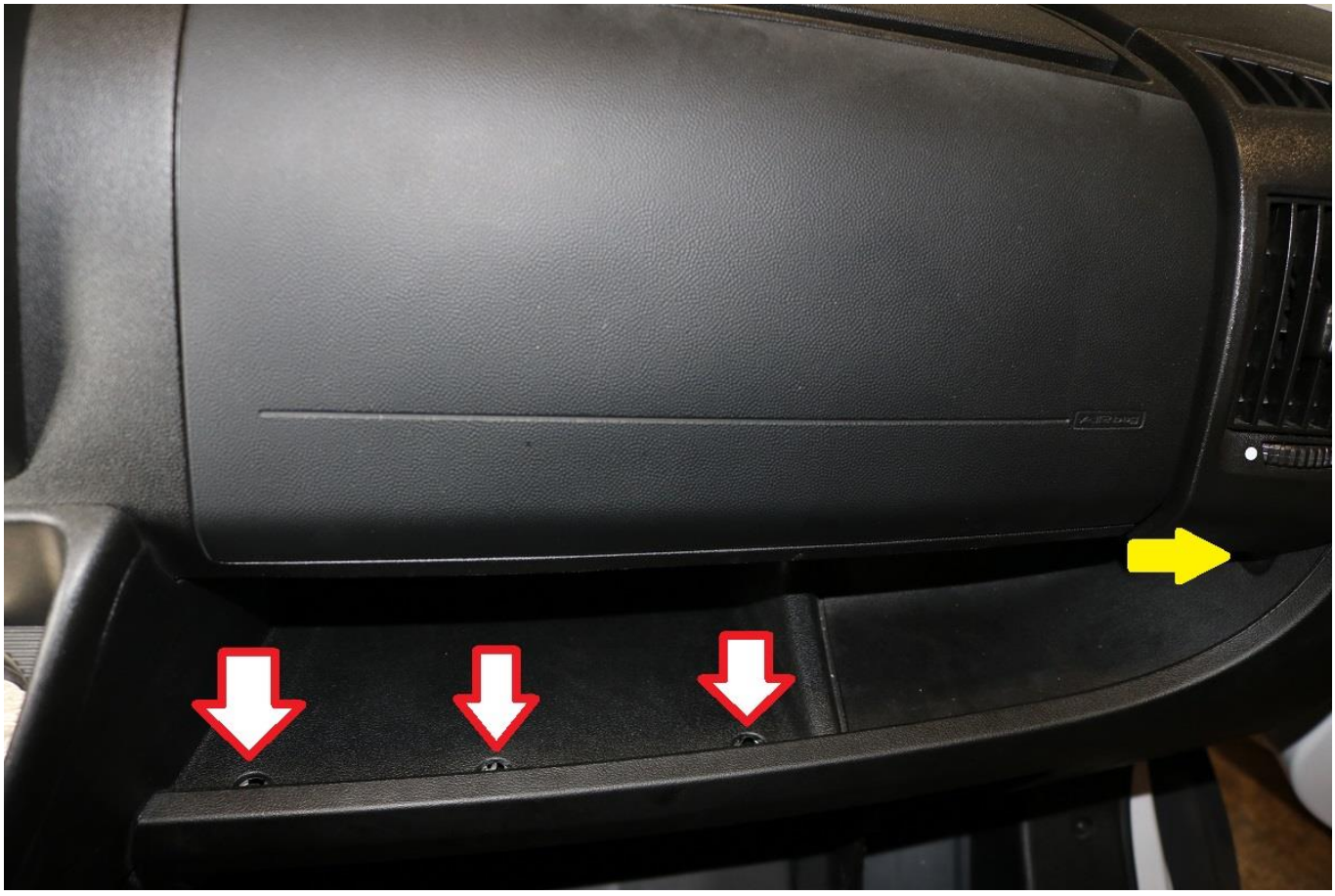
12) Move to the passenger side of the vehicle and open the glove box.
13) Locate the two tabs on each side of the glove box which limits the glove box's open position. Pry these tabs inward to allow the glove box to fully rotate down. See image below for reference.


14) With the glove box flipped down, locate the two T-25 torx screws shown in the image below which secure the glove box housing to the dash.



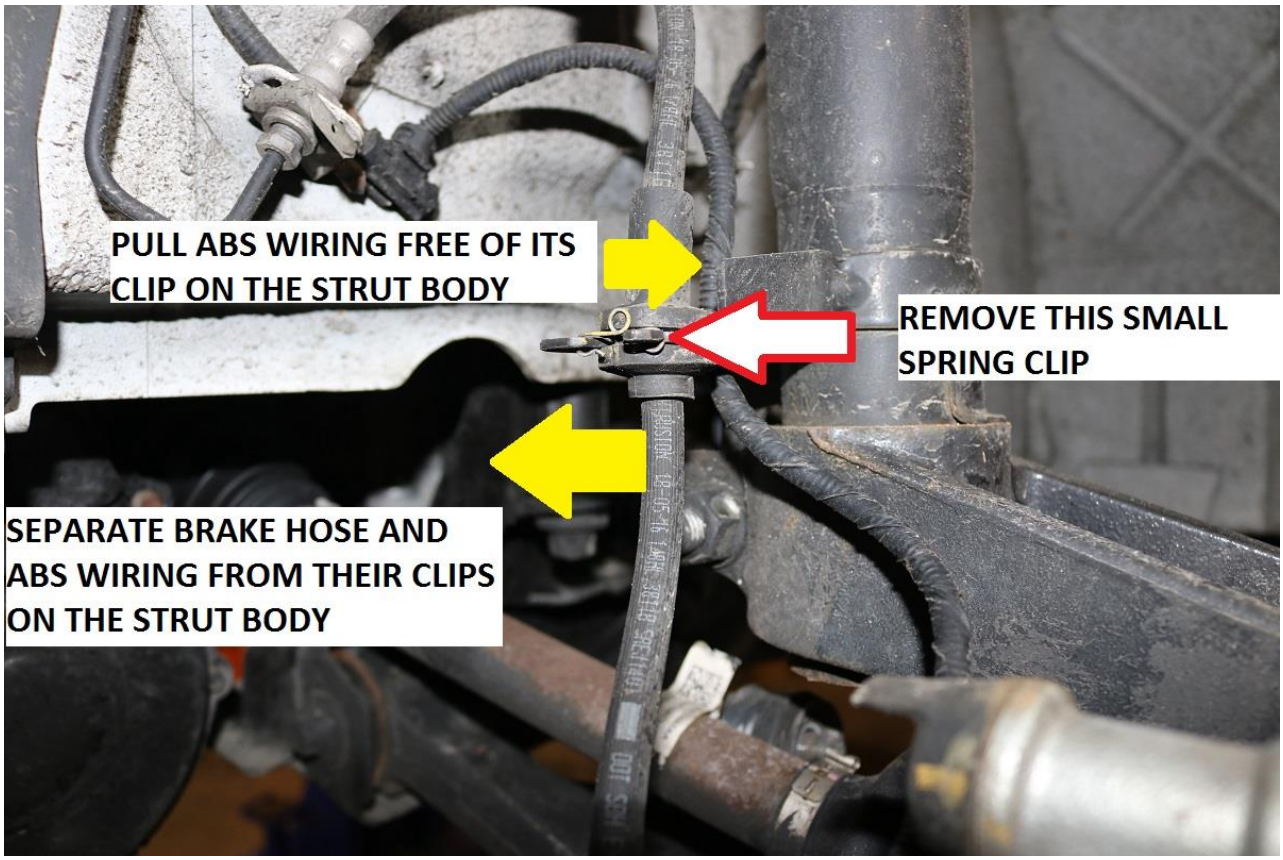
15) Above the glove box, remove the rubber shelf liner to expose three T-25 screws.


16) Locate and remove the three T-25 torx screws exposed by removing the shelf liner. Locate and remove the last T-25 torx screw shown by the yellow arrow in the image below.

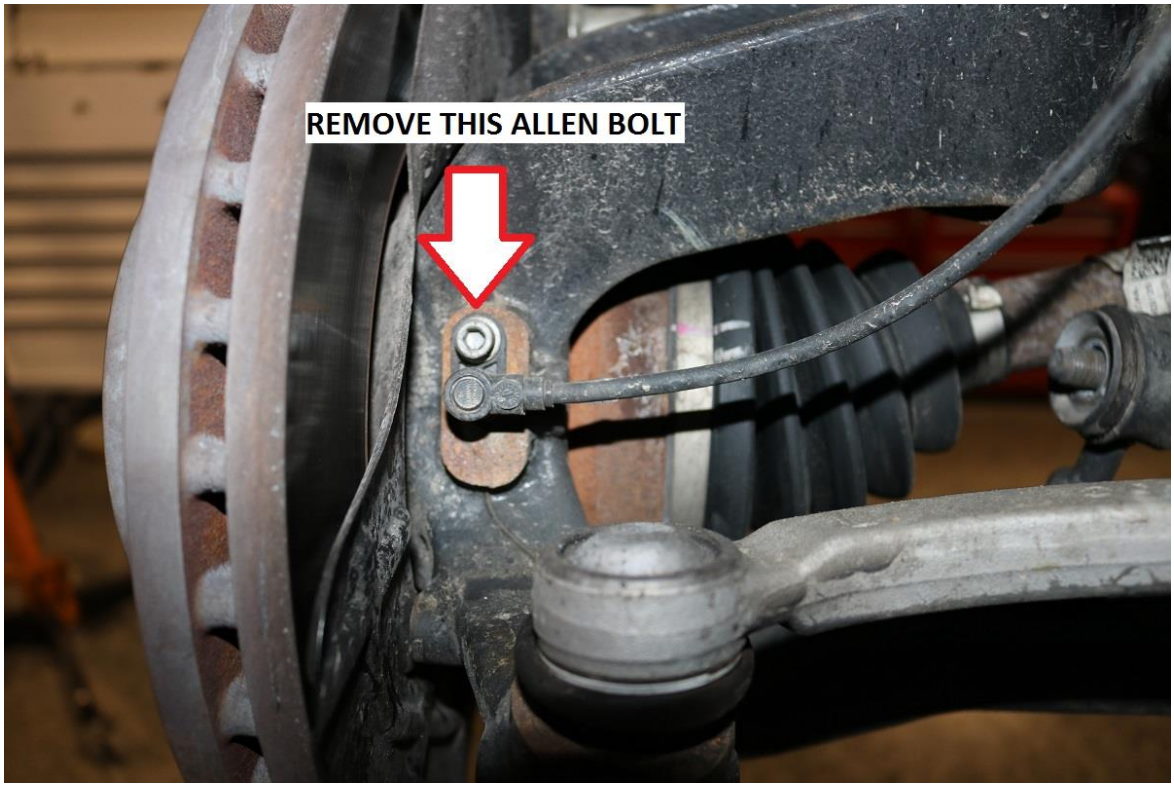


17) Pull the glove box mounting panel away from the dash to free it from the clips. Remove it from the vehicle.

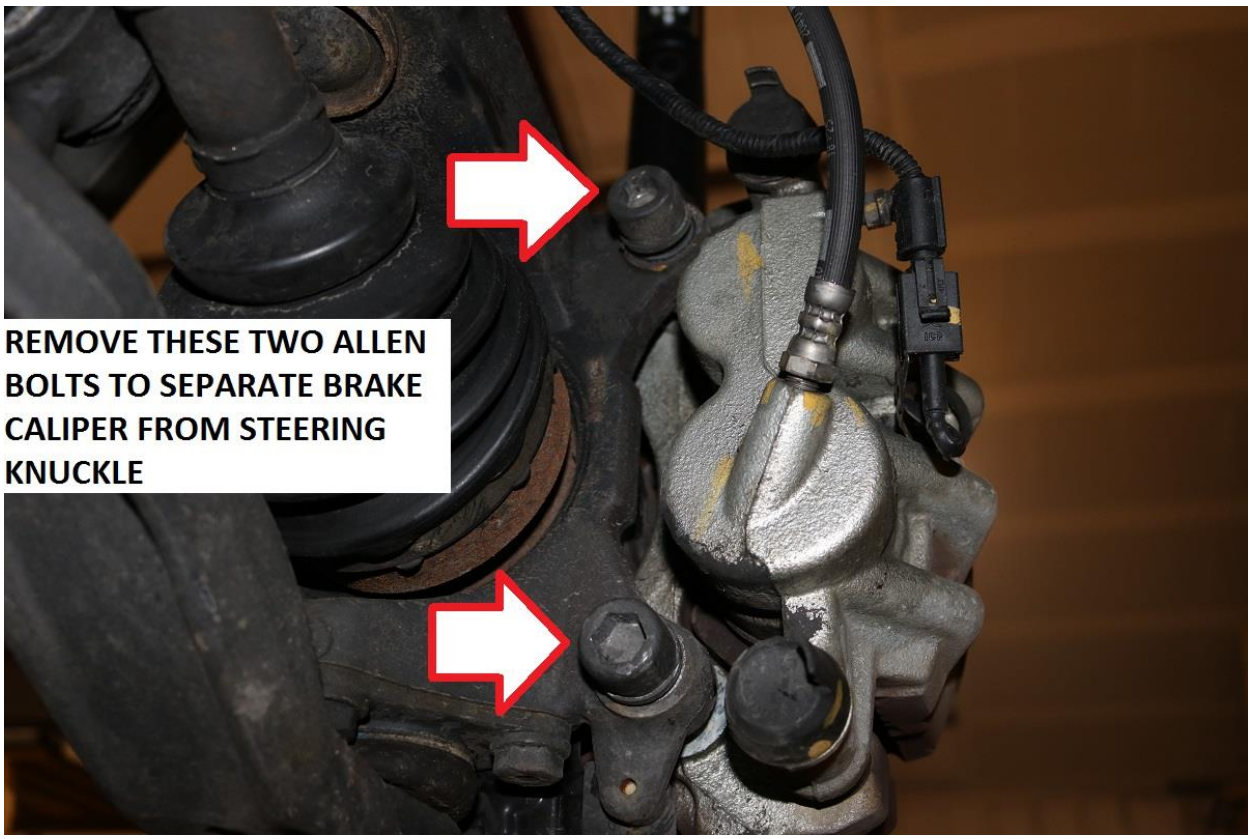
18) Again, remove the small piece of sound deadening / insulation on the top of the strut tower to access the upper strut mounting bolts. This is the extent of interior disassembly required for strut removal.
19) Remove the wheels and tires. Note the factory lug bolts remove with a 21mm socket.
20) Remove the small spring clip securing the brake hose to the strut. Use a small flat blade screw driver to remove the spring clip. Once removed, separate the brake hose from the strut by wiggling it free of its mount.
    a. Pull the ABS wiring free of its clip on the strut body as well at this time.
    b. See image below for reference.

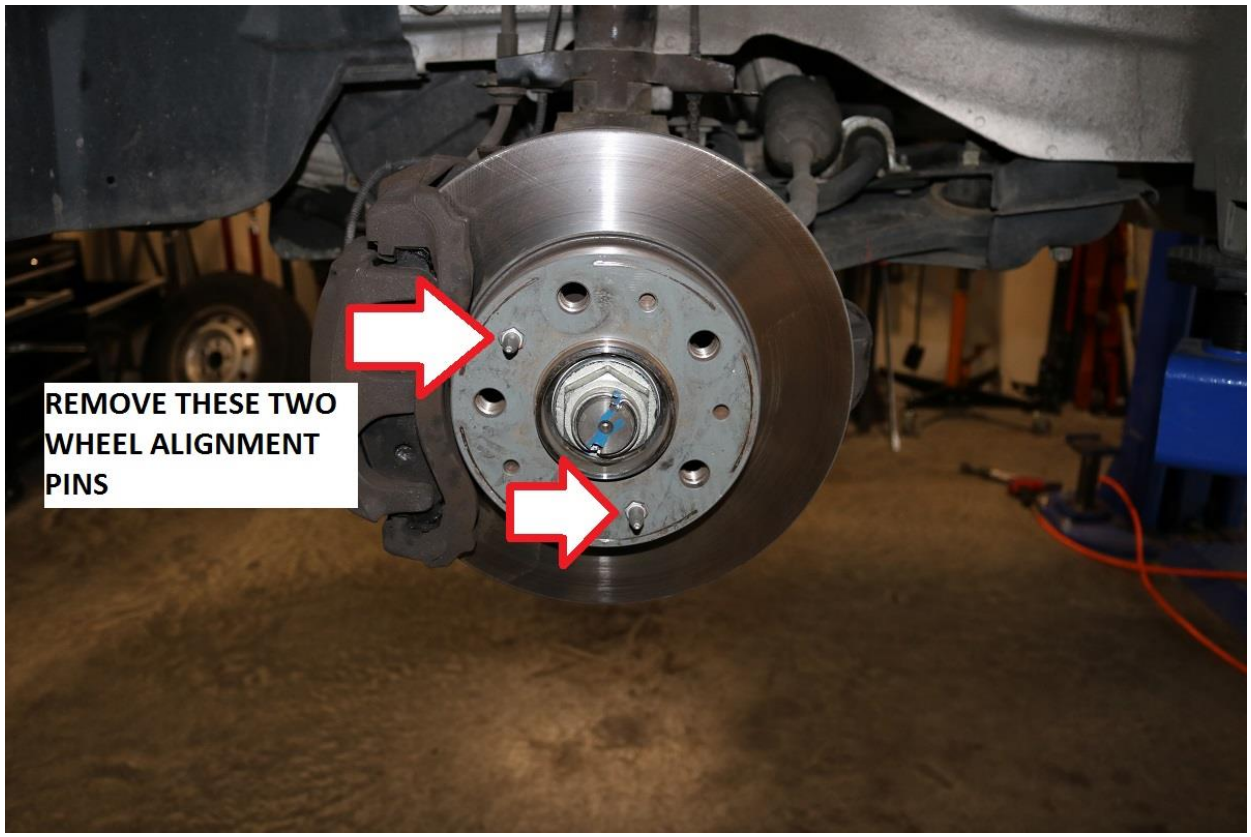



21) On the backside of the steering knuckle, locate where the wheel speed sensor bolts into the knuckle. Remove the retaining bolt using a 5mm allen and pull the wheel speed sensor out of the steering knuckle.

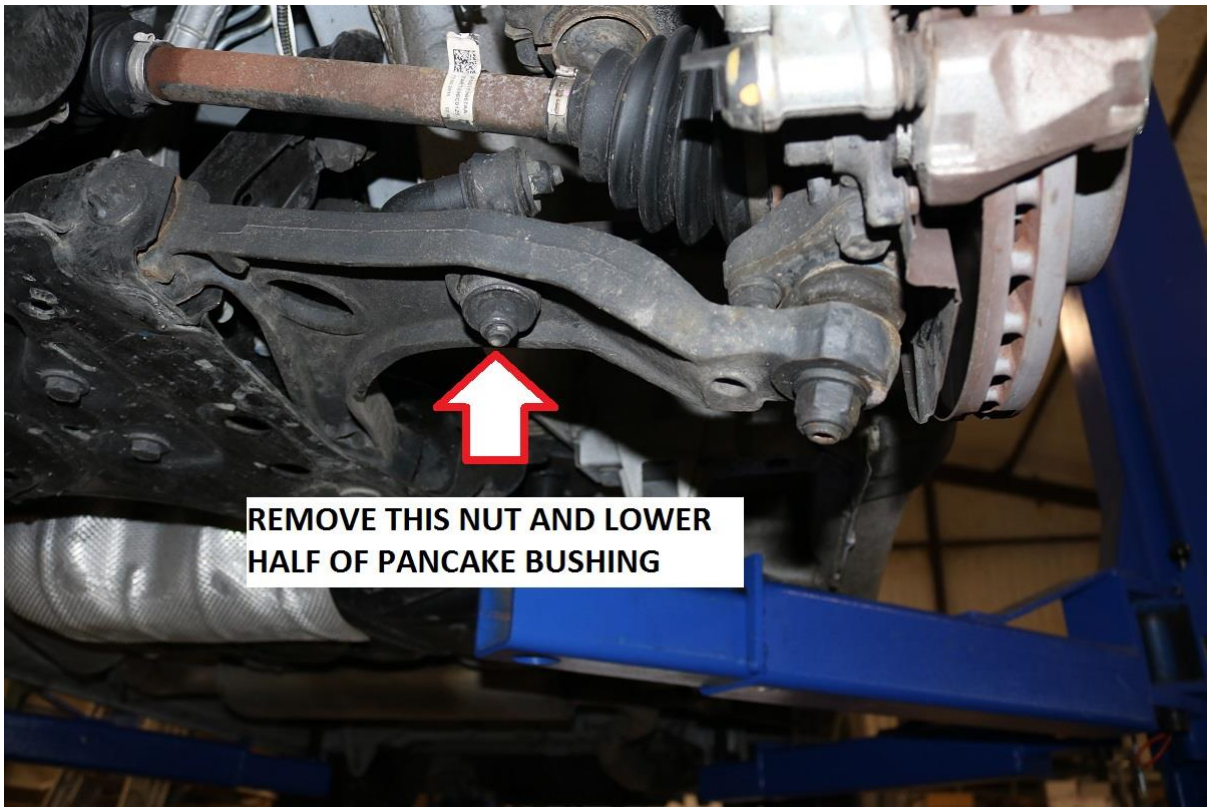


22) Once the wheel speed sensor is removed from the steering knuckle, separate the corresponding wiring from where it attaches to the strut.
23) Locate the brake caliper adapter allen bolts. Remove these two bolts using a 14mm allen wrench and remove the brake caliper from the steering knuckle.
    a. Safely hang the brake caliper out of the way. Be sure not to allow the brake caliper to hang via the brake hose as this can easily damage the brake lines / hoses.
    b. Remove the wheel alignment pins securing the brake rotor to the hub. Use a 12mm socket / wrench for removal
    c. Remove the brake rotor from the vehicle.

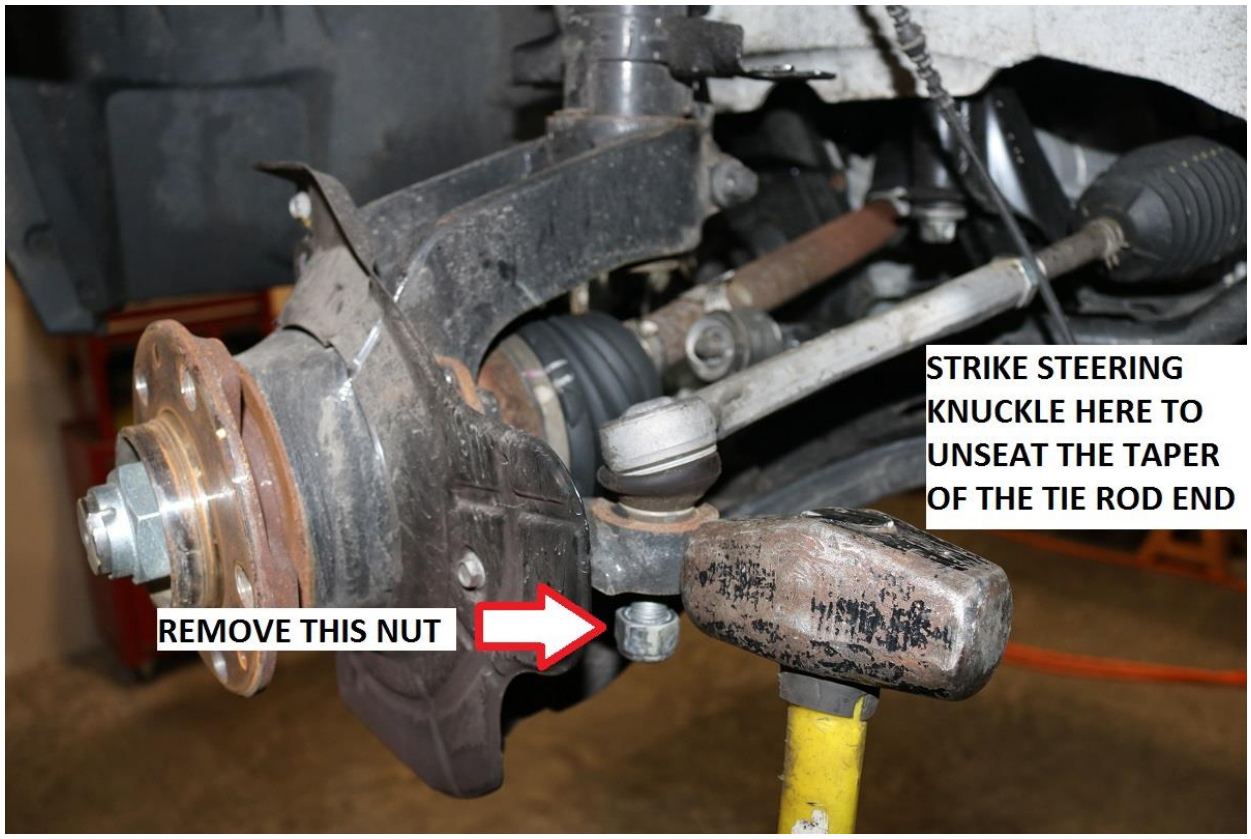




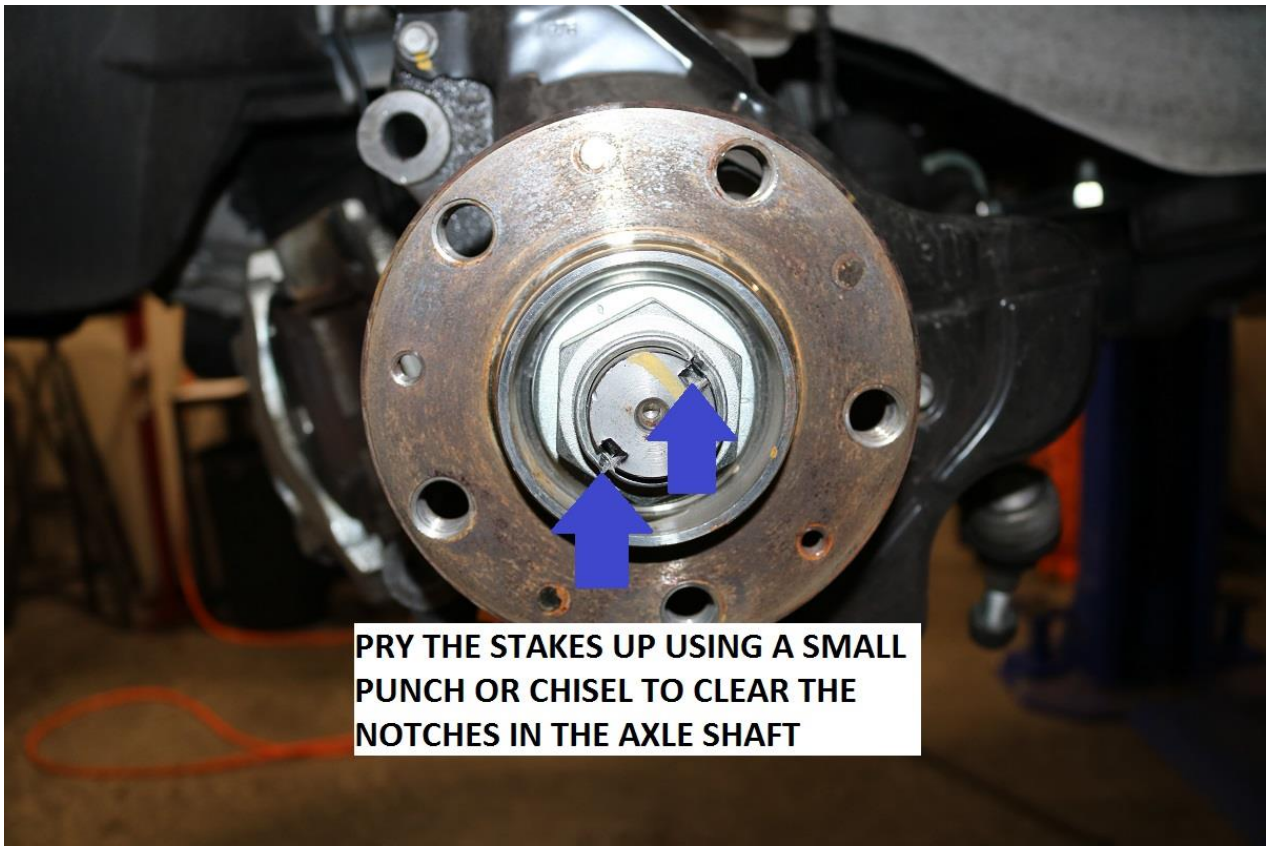

24) Remove the sway bar link from the lower control arm. Locate the 19mm nut on the underside of the control arm shown in the image below. Use a 19mm socket / wrench to remove the nut and lower half of the pancake bushing.



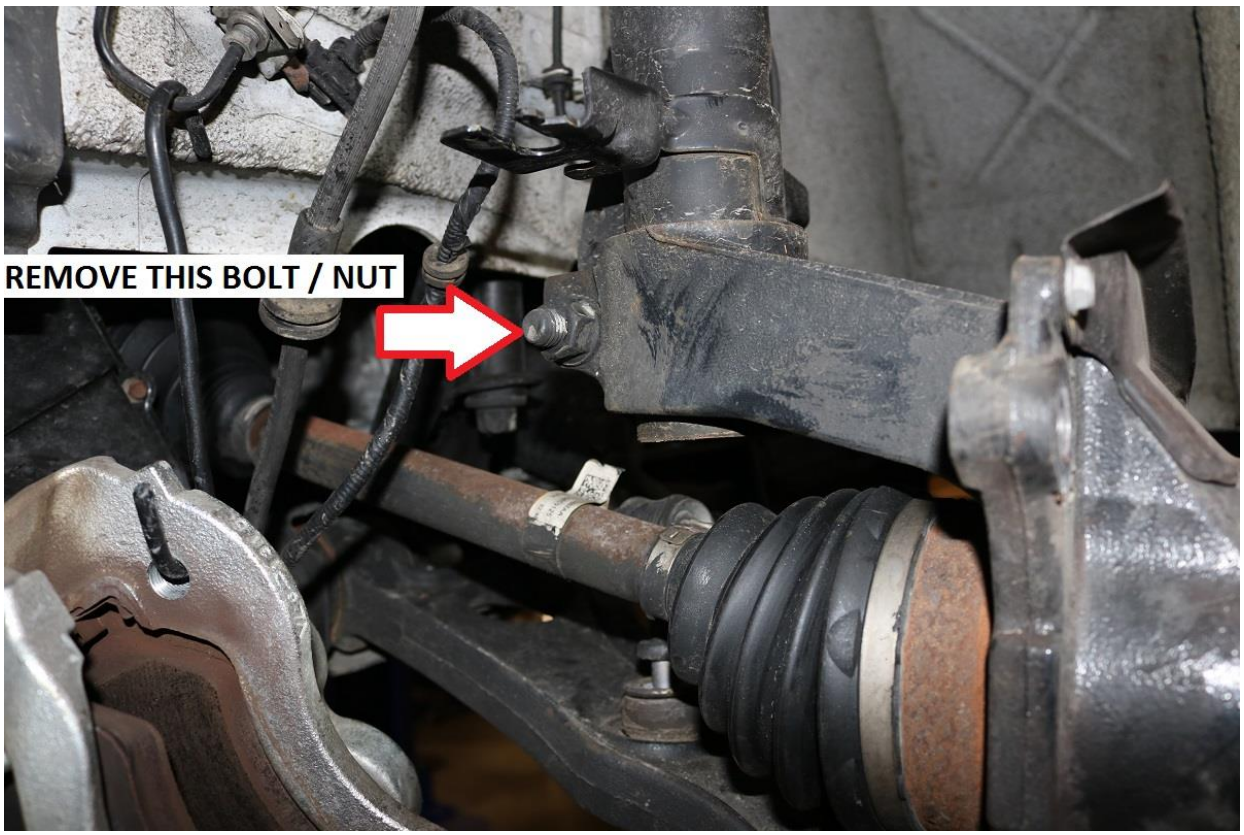

25) Remove the tie rod end from the steering knuckle. Use a 22mm socket / wrench to remove the tie rod end nut. To break the tapered end of the tie rod end loose from the steering knuckle, use a 5lb sledge hammer and strike the steering knuckle a few times near the tie rod end to break the taper loose.



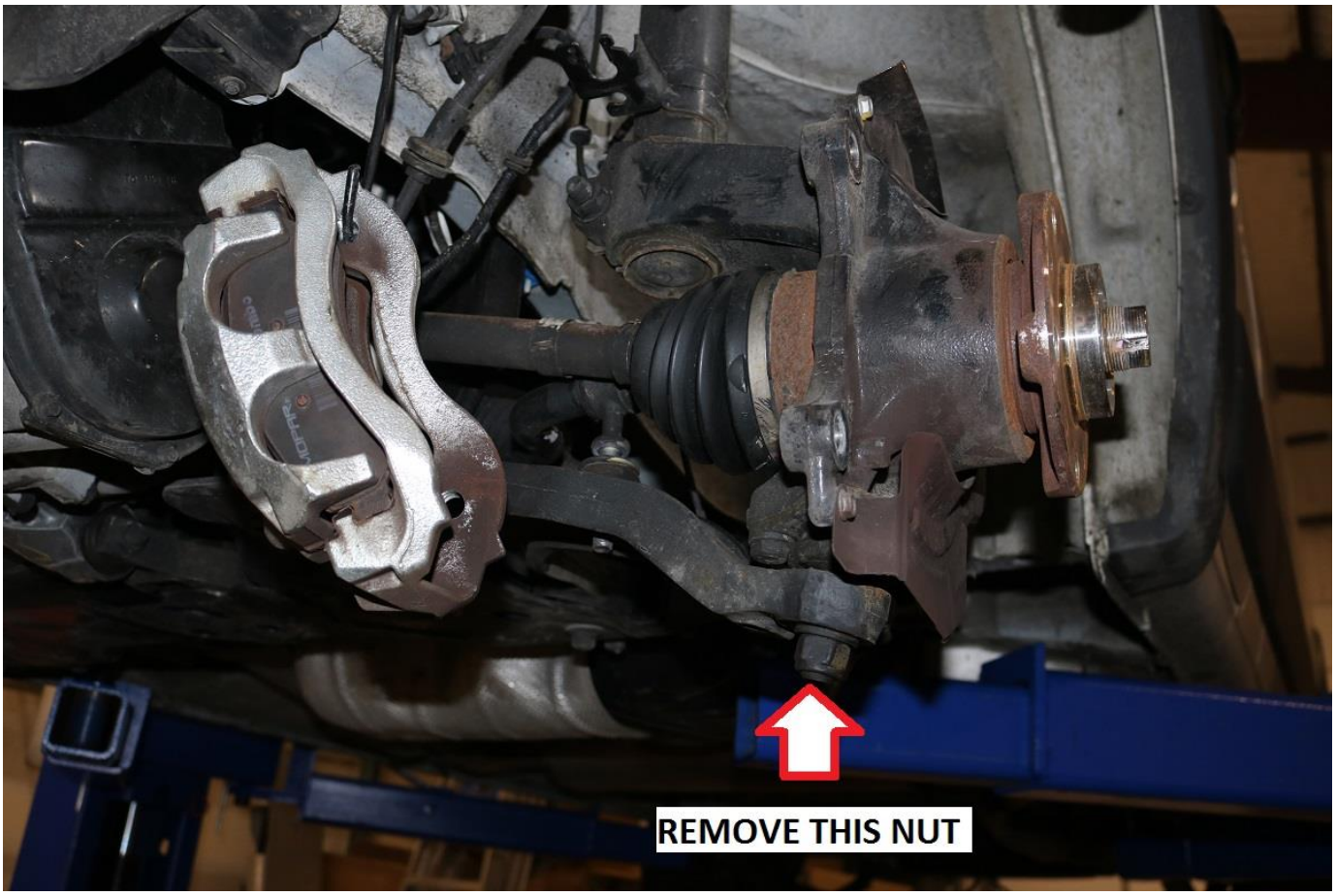

26) Pry the staked tabs of the axle nut up so they clear the groove in the axle shaft. Once the indents are clear of the notches in the axle shaft, remove the axle nut using a 46mm or 1-13/16” socket.



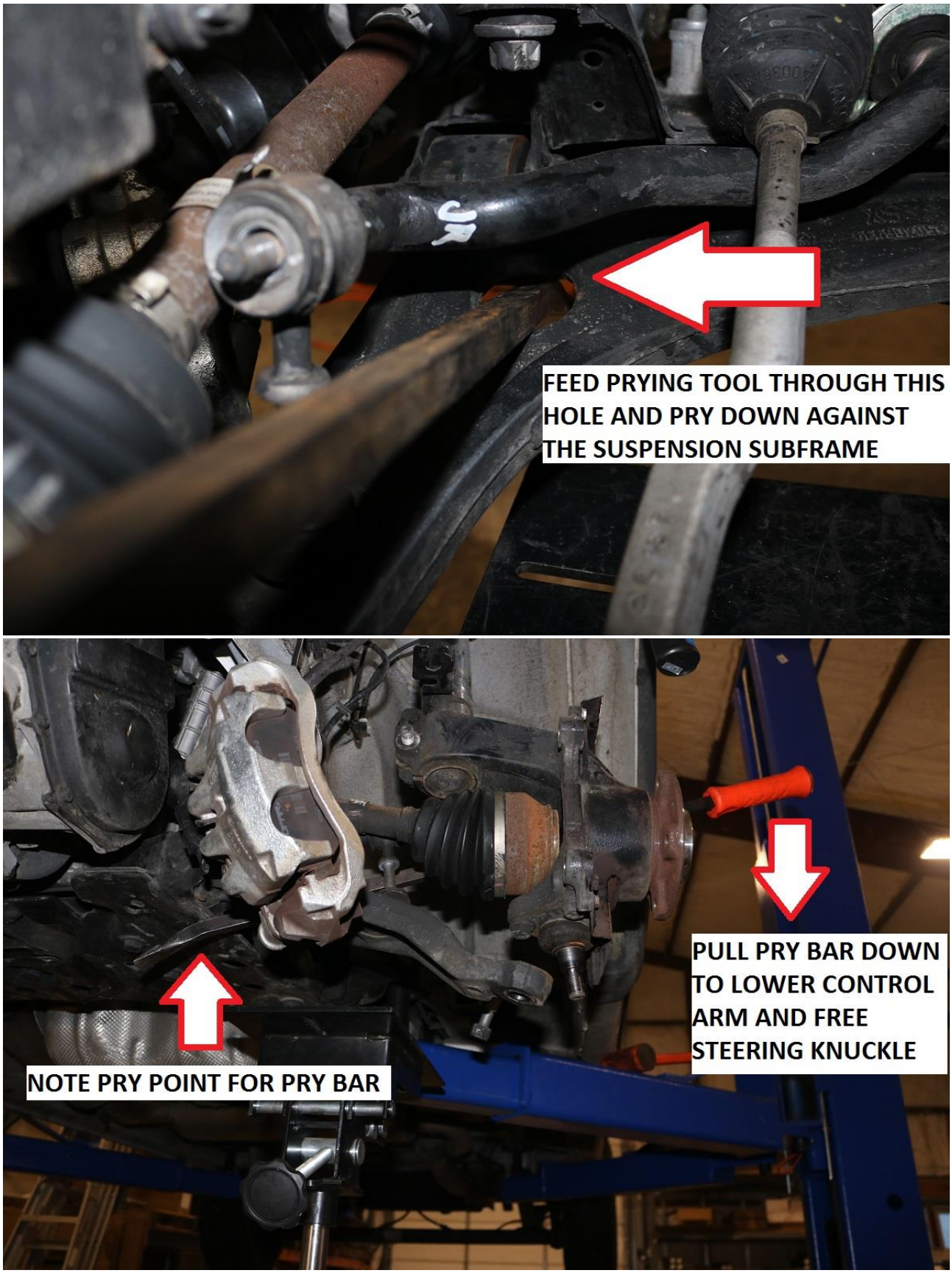

27) Remove the nut at the lower strut bolt which secures the strut to the steering knuckle. Use a 12 point 16mm socket for the bolt head or an inverted torx socket. Use a 21mm socket / wrench for the nut.
    a. Leave the bolt in the strut / steering knuckle at this time.




28) Remove the lower ball joint nut using a 24mm socket / wrench. Again, use a small sledge hammer as before to separate the knuckle from the control arm.

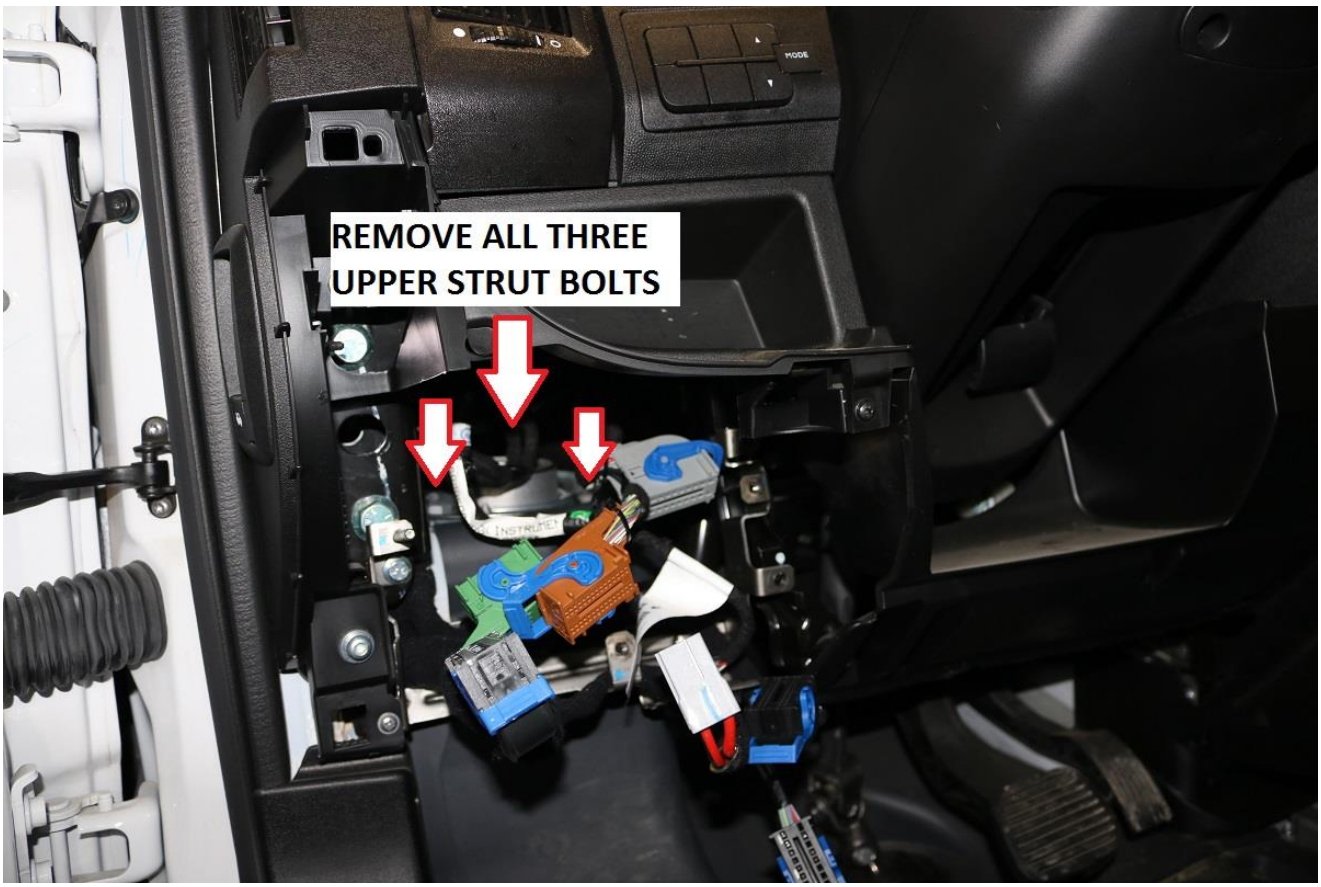



29) At this time, have a helper come lend a hand with the steering knuckle removal. With the lower ball joint nut removed and the lower ball joint unseated from its tapered hole in the control arm, use a long pry bar or similar tool through the large hole in the lower control arm to pull the control arm down so the steering knuckle can be removed from the lower arm.
    a. Have a helper operate the pry bar tool to hold the lower control arm down and pull the steering knuckle up and out of the ball joint hole. Since the strut bolt is still in place, the knuckle will be supported from falling out completely.
    b. See the two images below for reference.

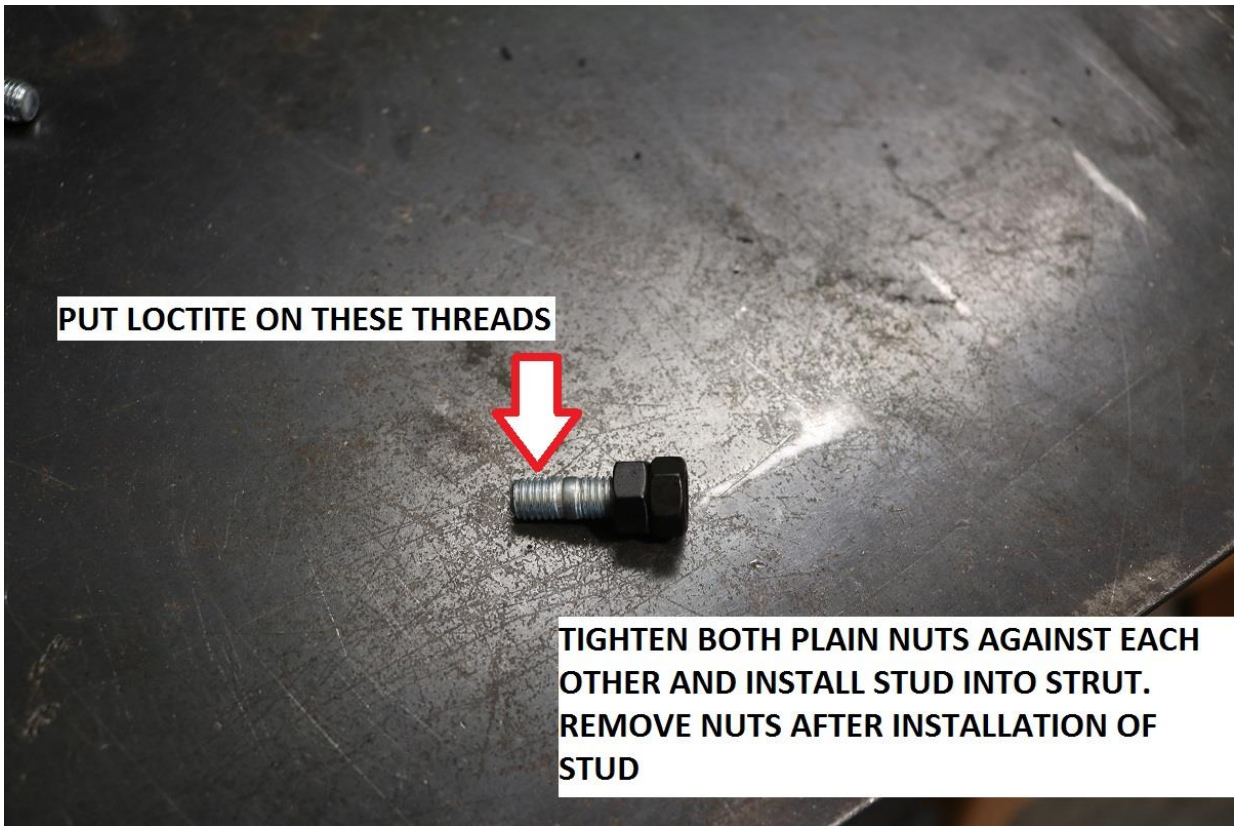


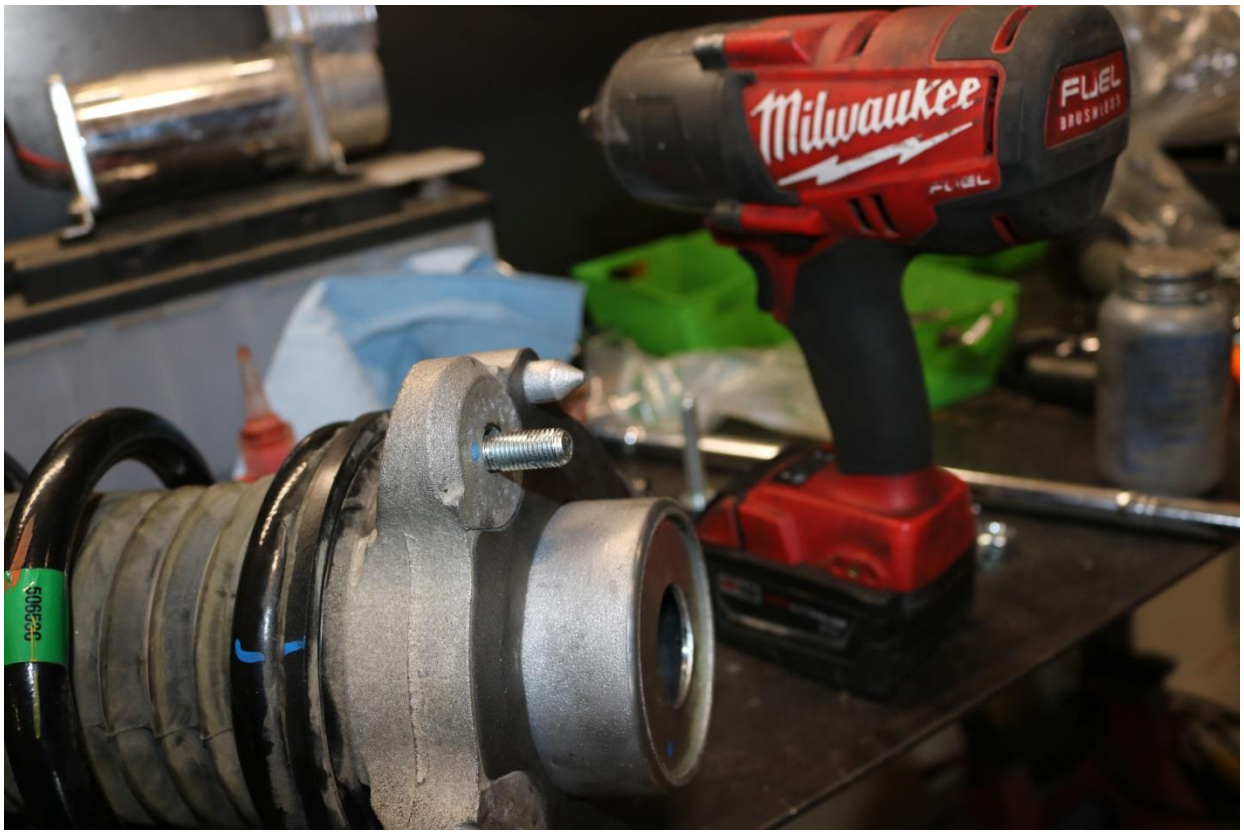

30) Remove the lower strut bolt from the steering knuckle and slide the knuckle free of the axle shaft. Take care to support the axle stub shaft with one hand to prevent the CV joint from pulling apart as the steering knuckle is removed.

31) The strut can now be pulled from the vehicle. Locate the three upper strut mounting bolts now accessible from under the dash. Use a 16mm socket / wrench for removal. Have a helper support and remove the strut while the bolts are removed from inside the vehicle.

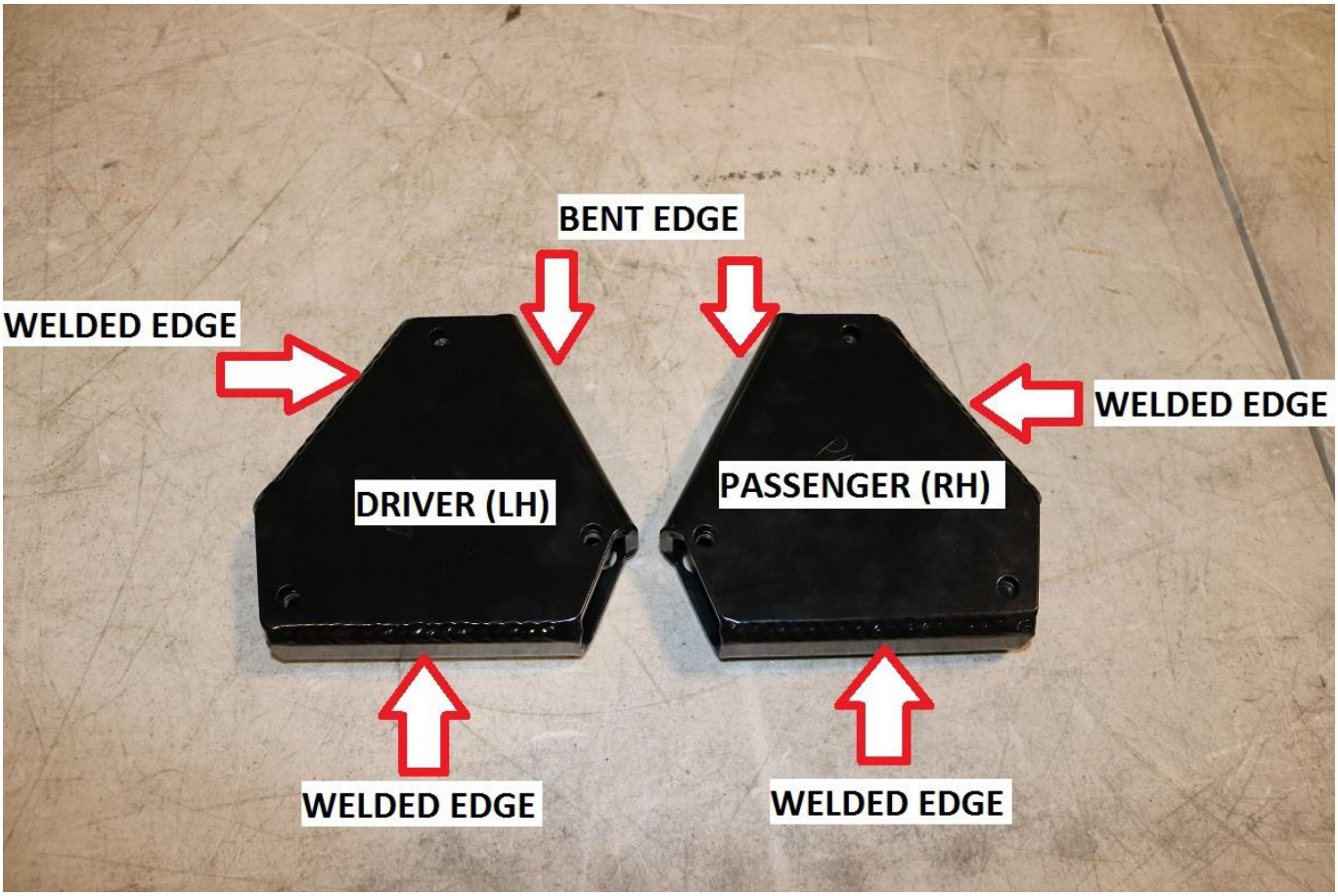


32) Locate the two plain, non-locking M10-1.25 nuts included with the kit. Install them on the double ended stud. Install them on the side with the longer threads. On the side of the stud with the shorter thread length, put a dab of blue Loctite and install this end into the top of the strut.
    a. Torque stud to 20 ft-lbs (27 N.m) using a 17mm socket / wrench.
    b. Remove the plain nuts off the stud once it is tightened into the strut.



33) Install all three studs on each strut. Install the strut spacer. The spacers are left and right specific for proper alignment of the vehicle. Reference the image below for proper orientation.

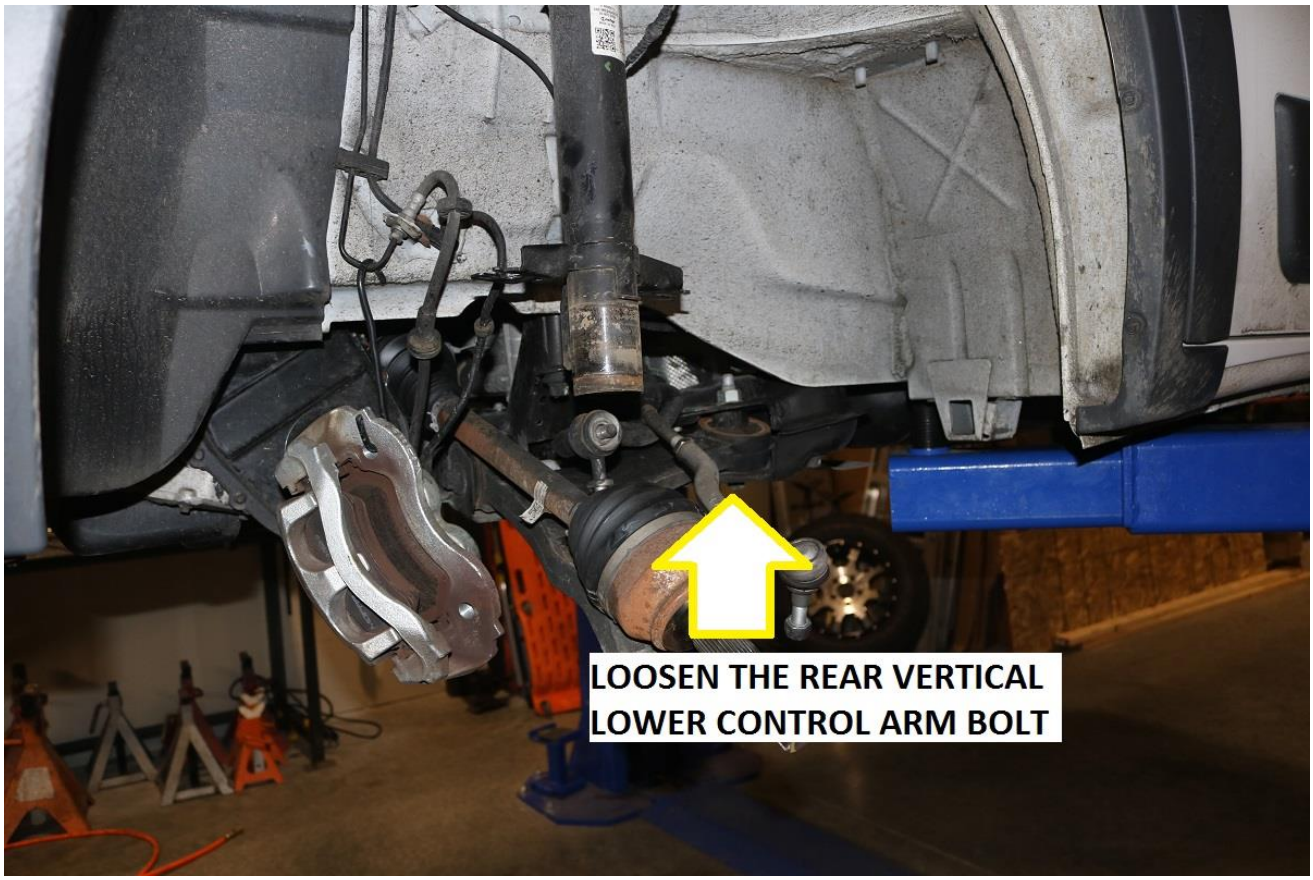



34) Install the strut spacer on the corresponding strut. Align the alignment pins on the top of the strut with their corresponding holes in the strut spacer. Secure the strut spacer to the strut using an included flat washer and stover nut. Tighten to 41 ft-lbs. (56 N.m)

35) Re-install the strut into the strut tower on the vehicle. Again, have a helper aide in either fitting the strut to the vehicle or installing the included M10 flat washers and M10-1.25 stover nuts to the top of the strut inside the vehicle.
    a. Start all three nuts with a washer under each one. Tighten using a 17mm socket / wrench to 41 ft-lbs. (56 N.m)

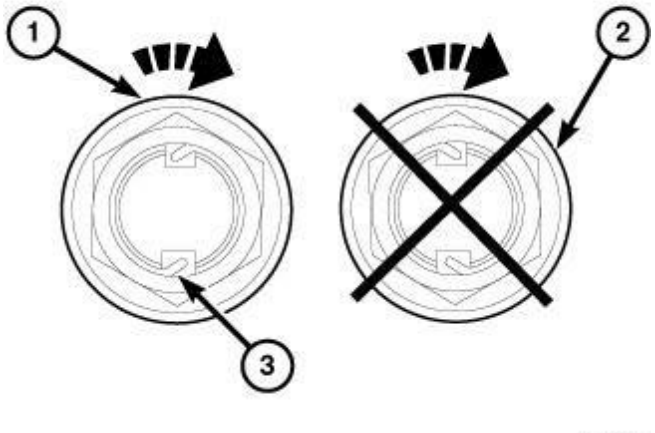
36) With the strut re-installed in the vehicle, assemble the steering knuckle onto the axle shaft and fit the steering knuckle onto the strut body. Install the lower strut bolt to hold the knuckle in place.
    a. Note; for future serviceability, it is beneficial to coat the inside of the steering knuckle with anti-seize where the strut body slides in.

37) Use the appropriate inverted torx socket or a 19mm 12 point socket to loosen the rear lower control arm bolt. Loosen this vertical bolt at least 4 full turns to allow the lower control arm to pull down easier during reassembly. See the image below for reference.
    a. Note; refer to the images from step 29 and use the same Pry bar technique to simultaneously pull the lower control arm down and fit the lower ball joint back on the steering knuckle back into the tapered hole on the lower control arm. Again, it is helpful to have a helper aide in this process.




38) Reassemble the front suspension in the reverse order of removal. The only exception in reassembly is the sway bar link attachment to the lower control arm.

a. Re-install lower strut bolt and nut; torque with a 21mm socket to 124 ft-lbs. (168 N.m)
b. Re-install lower ball joint nut and washer; torque with a 24mm socket to 124 ft-lbs. (168 N.m)
c. Re-install rotor and brake caliper. Torque brake caliper adapter bolts with a 14mm allen to 125 ft-lbs. (169 N.m)
d. Re-install axle nut with a 46mm or 1-13/16" socket; torque to 350 ft-lbs. (475 N.m). Apply the brakes to torque the axle nut to spec. After axle nut is torqued, stake the nut as shown below.




e. Torque the vertical lower control arm bolt to 263 ft-lbs. (356 N.m)

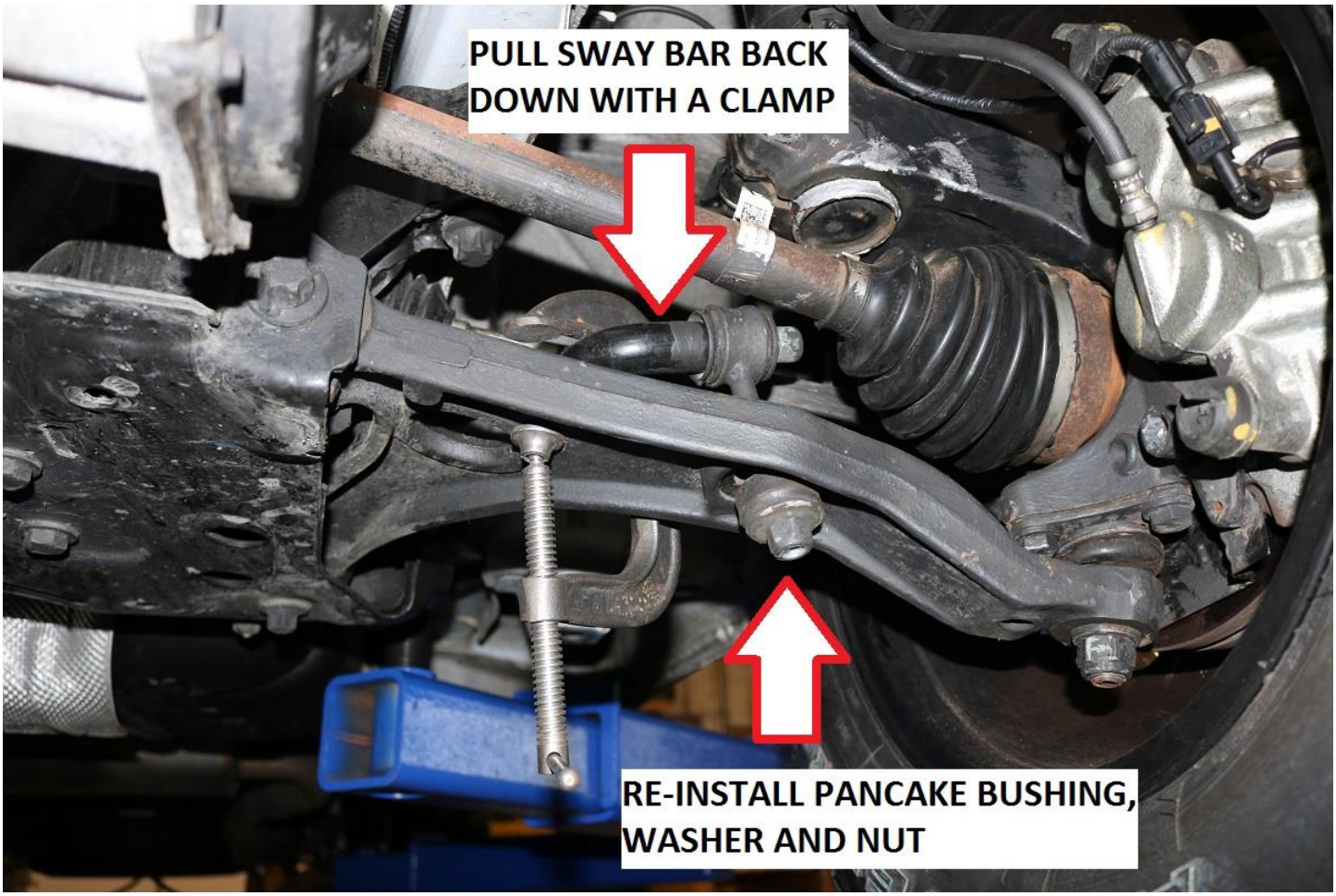
f. Re-install the wheel speed sensor onto the knuckle. Torque the 5mm allen bolt to 55 in-lbs (6 N.m)

g. Re-clip all the ABS wiring and brake hoses into their corresponding locations on the strut body.

39) During the front strut removal, the sway bar link will likely come free of its attachment point in the lower control arm. Due to the 1.5" increase in ride height, it is easiest to reconnect the sway bar link to the lower control arm with the vehicle sitting under its own weight at ride height.

a. Re-install the front wheels and tires and lower the vehicle to the ground. At ride height, use a 4-6" C –clamp to pull and hold the sway bar link down into its mounting hole on the lower control arm. See image below for reference.

b. Once through the control arm mounting point, re-install the pancake bushing, washer and nut removed in step 24. Torque with a 19mm socket to 46 ft-lbs. (62 N.m)




40) Raise vehicle back up and fit tie rod end back into the tapered hole on the steering knuckle. Torque to 66 ft-lbs (89 N.m) with a 22mm socket.

41) Torque lug bolts to manufacturer specifications. Note- OEM wheel bolts call for a torque spec of 146 ft-lbs (198 N.m)

42) Re-assemble the interior components in the reverse order of disassembly. Refer to steps 18 thru 3 for reference.

43) Re-check all bolt torques after 100 miles of driving.

<u>Installation is Complete</u>

RELEASE OF LIABILITY

I, the customer, do hereby release and forever discharge Van Compass LLC, their agents, employees, successors and assigns, and their respective heirs, personal representatives, affiliates, successors and assigns, and any and all persons, firms or corporations liable or who might be claimed to be liable, whether or not herein named, from any and all claims, demands, damages, actions, causes of action or suits of any kind or nature whatsoever, whether known or unknown, fixed or contingent, which I now have or may hereafter have or claim to have, as a result of or in any way relating to the following: Parts sold & installed by Van Compass LLC or parts sold & installed by end-user; any parts sold online, any parts sold online or installed by a re-seller, any parts installed by an installation shop.

It is understood and agreed that this payment is made and received in full and complete settlement and satisfaction of the aforesaid actions, causes of action, claims and demands; that this Release contains the entire agreement between the parties; and that the terms of this Agreement are contractual and not merely a recital. Furthermore, this Release shall be binding upon the undersigned, and his respective heirs, executors, administrators, personal representatives, successors and assigns. This Release shall be subject to and governed by the laws of the State of Idaho.

PRODUCT SAFETY WARNING:

Van Compass LLC strongly recommends the installation of products be done by a certified mechanic. If this does not occur, be certain the person(s) installing the product read, understand and follow all instructions and warnings pertaining to the application before installation. Do not add, alter, or fabricate any factory or aftermarket parts to increase vehicle height over the intended height of the Van Compass LLC product purchased. Mixing component brands is not recommended.

Installation of suspension lift kits or any other lifting kits or devices will raise the center of gravity. For this reason, Van Compass LLC urges that extreme caution be used when encountering driving conditions which may cause vehicle imbalance. Furthermore, the driver's field of vision and judgment will not be as good due to the height of the vehicle. Due to the installation of larger tires, the speedometer will read slower than the actual speed being traveled and more distance will be required to stop the vehicle. It is the owner's responsibility to caution and warn any potential driver of the vehicle about these driving and handling conditions. Van Compass LLC will not be held liable or responsible for damages or personal injuries resulting from the use of lifting devices and or related products. The tires and rims should be changed to sufficiently increase the vehicle's total overall width and stability to help accommodate lifting devices.

Van Compass LLC aftermarket suspension products and accessories modify a vehicle for uses which exceed conditions anticipated by the vehicle manufacturer. The uses include the high performance demands required during off-road. These conditions vary in the degree of extremity and cannot be controlled by the vehicle or product manufacturer. If the components within the suspension system or accessories become worn due to frequent and/or extreme use, the safety and reliability of the vehicle is at risk. The maintenance of aftermarket equipment to ensure the vehicle occupants safety is entirely your responsibility. Do not purchase Van Compass LLC products unless you are willing to accept this responsibility. Do not install any Van Compass LLC suspension products or accessories unless you feel competent at installing the product without causing present or future injury to yourself or other vehicle occupants; seek an authorized installation center.

Most states have some type of law limiting vehicle height. The amount of lift allowed, and how the lift can be achieved, varies greatly. Several states offer exemptions for farm and commercial registered vehicles. It is the vehicle owner's responsibility to check state and local laws to ensure that their vehicle will be incompliance. Van Compass LLC reserves the right to make changes in design, materials and specifications as deemed necessary without prior notice and without assuming obligation to modify any product previously manufactured. Obligation or liabilities will not be assumed with respect to similar products previously advertised.

This Release of Liability and Product Safety Warning has been read and fully understood by the undersigned and has been explained to me.