1046 – 2013- PRESENT - FORD TRANSIT RWD 2.0” FRONT LIFT SPINDLE

Version 1.0

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.
- **A proper alignment must be done immediately after installation of this lift kit.**
- This is a bolt on suspension package that can be installed with simple hand tools and removed at a later time to return the vehicle to stock configuration if desired.
- This spindle provides 2.0” of lift and .50” of additional front track width per side regardless of weight configuration.
- The following instructions document the installation on a 2017 Transit, installation on other year ranges will be similar.
- We recommend a maximum tire size of 245/75/16 tires with this spindle lift alone. A 265/75/16 can be fitted if trimming of the pinch seam is performed. There are details regarding pinch seam trimming for tire clearance at the end of these instructions.
- A 285/75/16 tire can be fitted if this spindle is paired with our Topo 2.0 kit for a total of 4.0” of lift.
    - Note, pinch seam trimming and proper wheel offset is required for this tire to fit.

Parts List

1046 – 2013-PRESENT, FORD TRANSIT RWD, 2.0” FRONT LIFT SPINDLE

- (1) 104601-L — FRONT 2.0” LIFT SPINDLE, DRIVER SIDE
- (1) 104601-R — FRONT 2.0” LIFT SPINDLE, PASSENGER SIDE
- (10) SM10-1.50-40-12.9 — M10-1.50 X 40MM LONG, SOCKET CAP SCREW, GR12.9
- (10) WL-M10 — SPLIT LOCK WASHER, M10, ZINC
- (2) SM06-1.00-12-12.9 — M6-1.00 X 12MM LONG, SOCKET CAP SCREW, GR12.9
- (4) HM16-2.0-35-10.9 — M16-2.0 X 35MM LONG, HEX HEAD BOLT, GR10.9
- (2) HC8-8-31 — ½-13 X 3.25” LONG, HEX HEAD BOLT, GR8
- (2) NSC-8 — ½-13 UNC STOVER NUT, CLEAR ZINC
- (4) WF-8 — ½” GR8 FLAT WASHER, YELLOW ZINC

Tools Needed

- One quality floor jack and 2 jack stands.
    - Optional – Automobile lift, one transmission jack, and two screw jacks.
- Small 3” air sander / Dremel or similar tool for removing plastic.

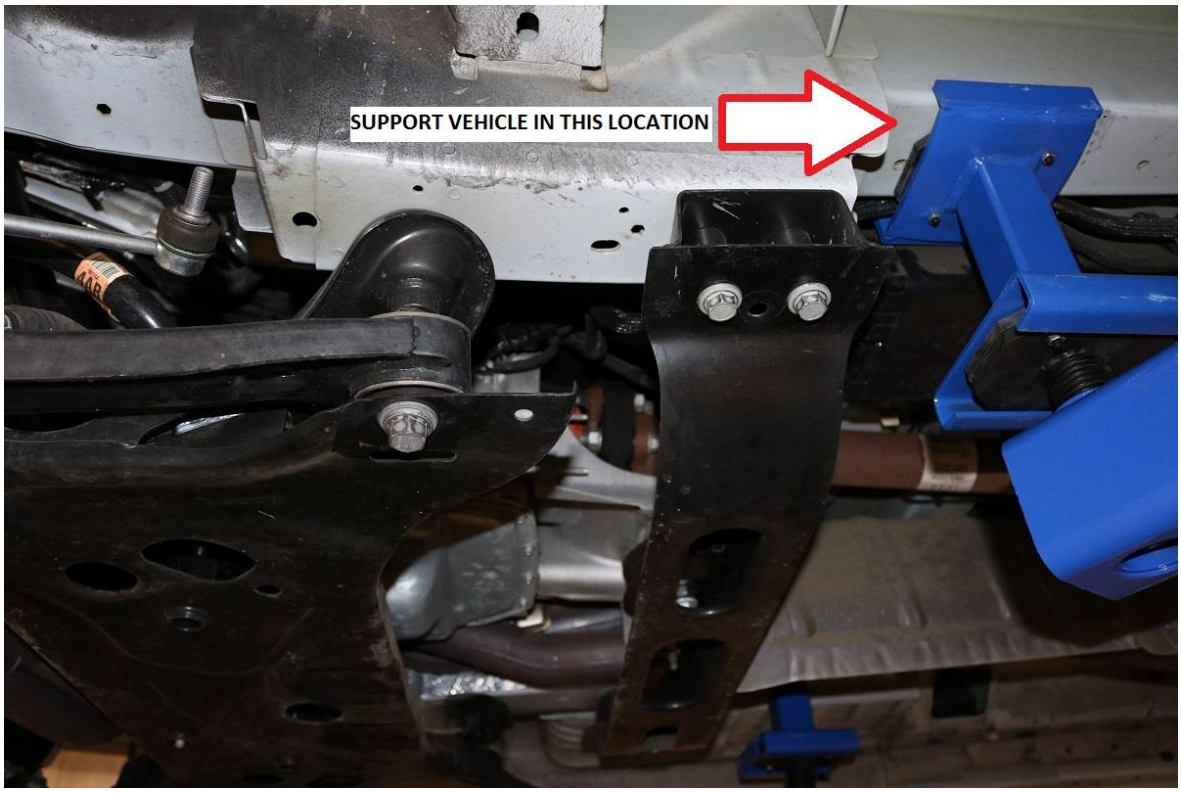
- Simple hand tools:
    - Torque Wrench
    - Hammer, dead blow, pry bar
    - Drill with metal cutting 3/16” drill bit (or 5mm drill bit)
    - Basic wrench and socket set:
        - Metric sizes: 8mm, 10mm, 13mm, 15mm, 17-18mm, 21mm, 24mm, 30mm
        - 6mm allen
        - T-50 Torx bit

Approximate Installation Time

- Professional shop with automotive lift: 4-5 hours
- Driveway install with jack and jack stands: 5-6 hours

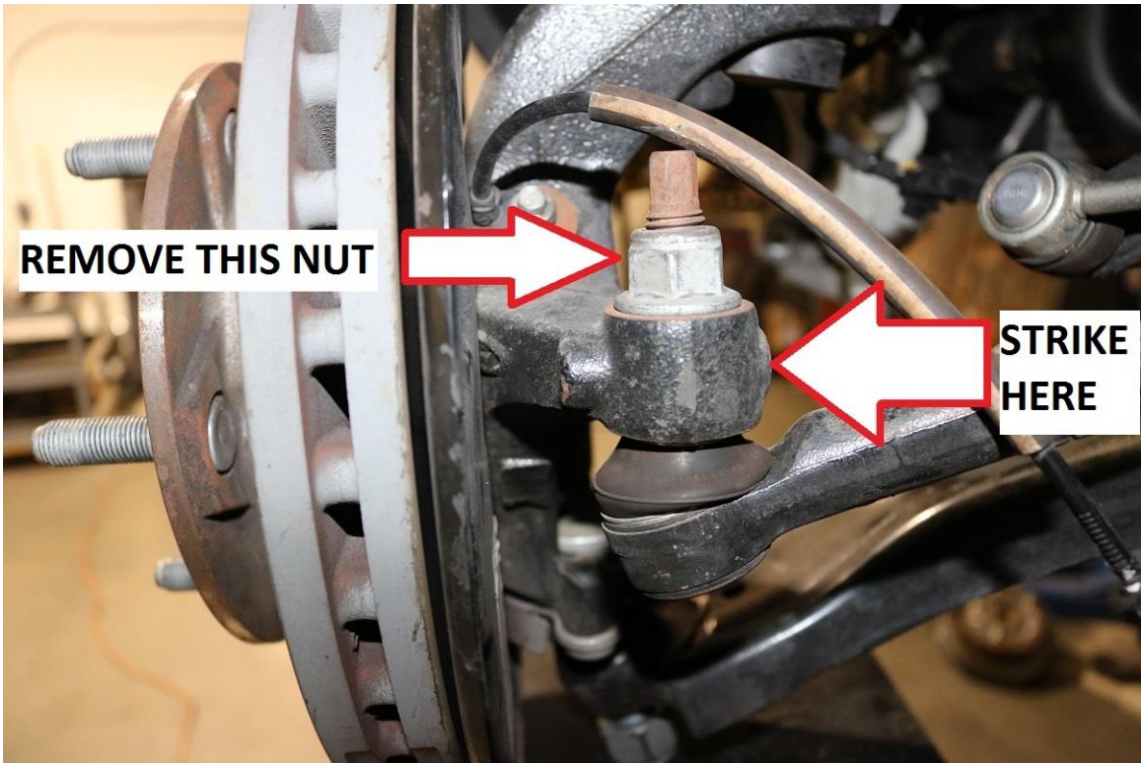
Installation

1) Lift the vehicle using a vehicle lift or a floor jack to safely support it on jackstands. Be sure that the entirety of the front suspension sub frame is not supported and can allow the front suspension to fully drop out.
    a. We recommend supporting the vehicle just behind the transmission cross member as shown in the image below.
2) Note the installation of this spindle kit can be done simultaneously on both the left and right sides of the vehicle. Complete steps on both sides of the vehicle unless otherwise specified.

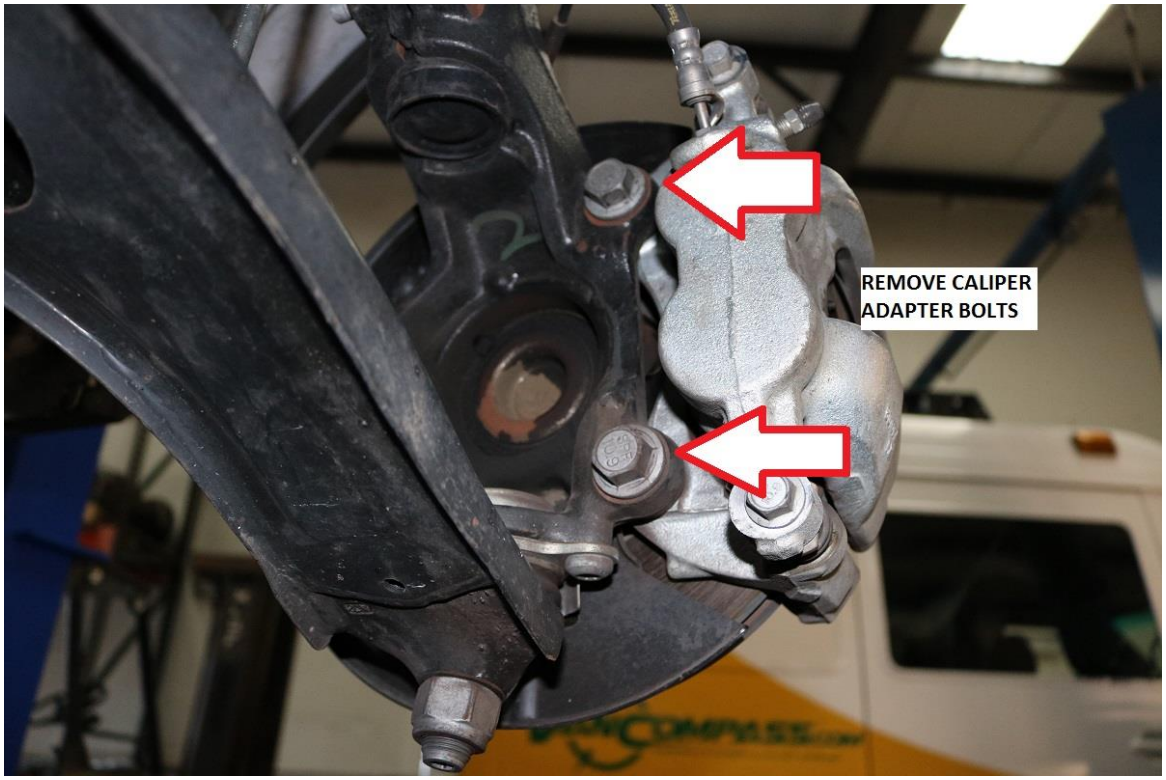


3) With the vehicle safely raised so the front suspension is completely unloaded, remove the front wheels / tires.

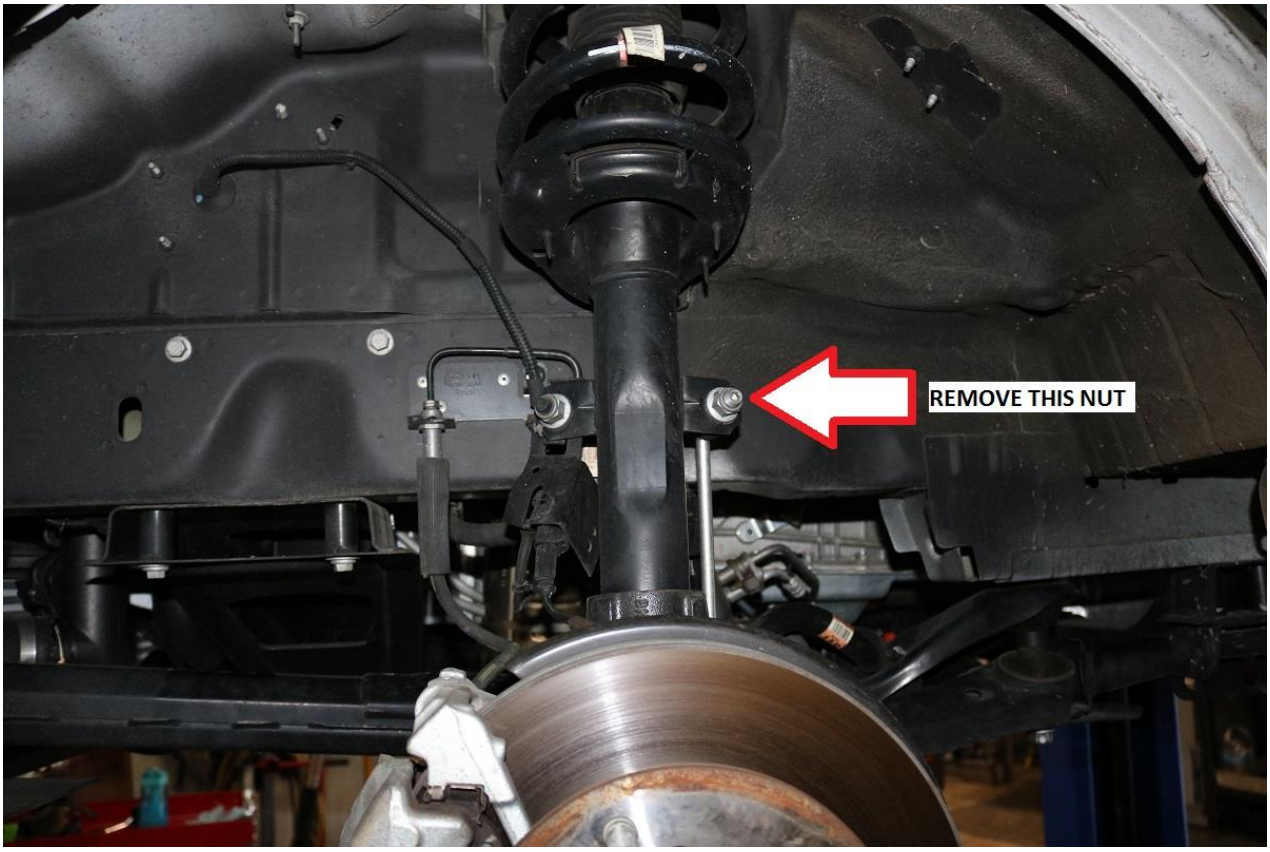
4) Remove the tie rod end at the steering knuckle. Use a 21mm socket / wrench for removal. A tie rod end puller or pickle fork may be used to separate the tie rod end from the steering knuckle. Alternatively, a couple firm blows with a 5lb sledge to the steering knuckle will often easily break the taper free.



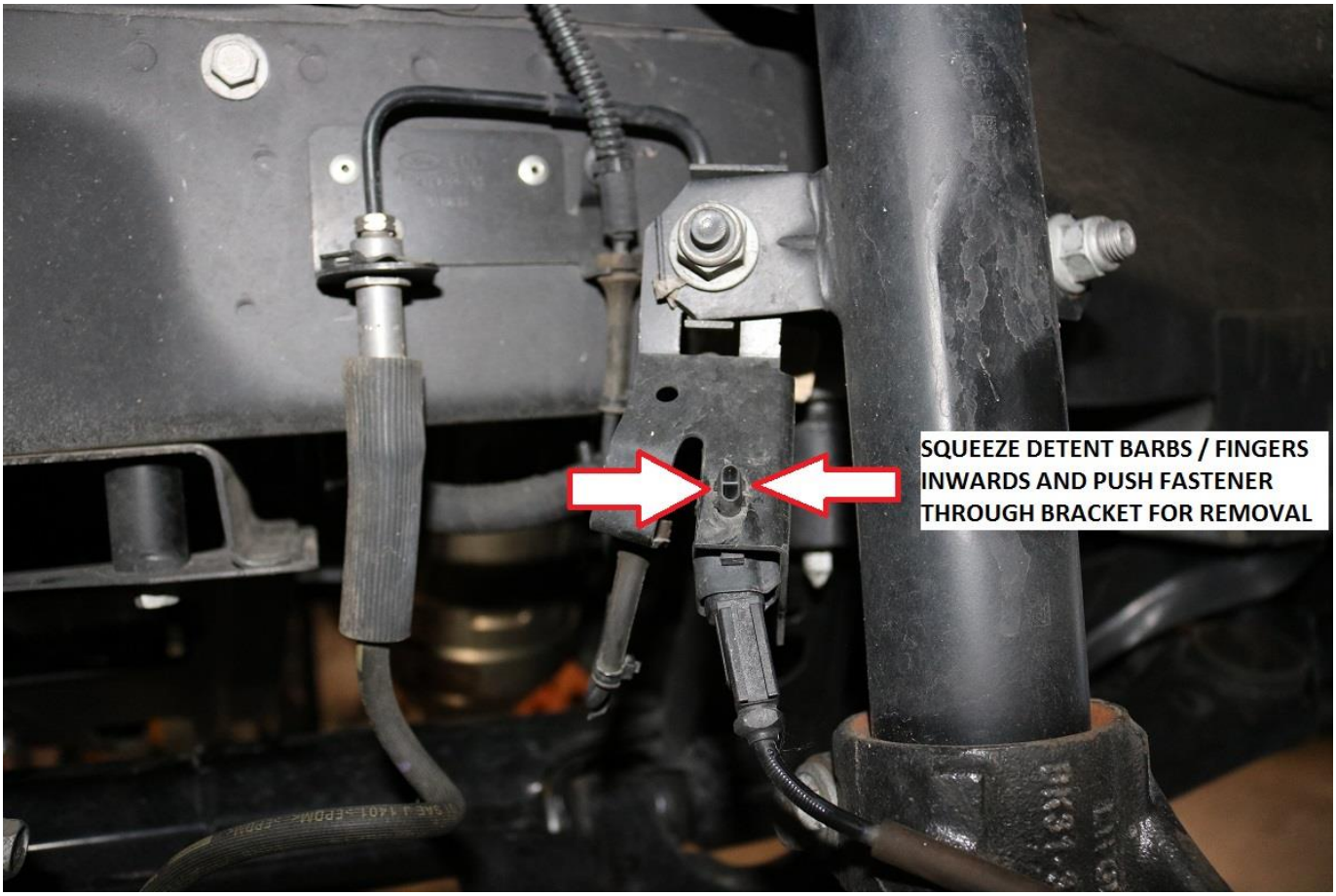
5) Use a 21mm socket / wrench to remove the brake caliper adapter bolts at the steering knuckle. There are two bolts per caliper.
    a. Secure the brake caliper out of the way, forward of the front suspension. Do not allow the caliper to hang by the brake hose.



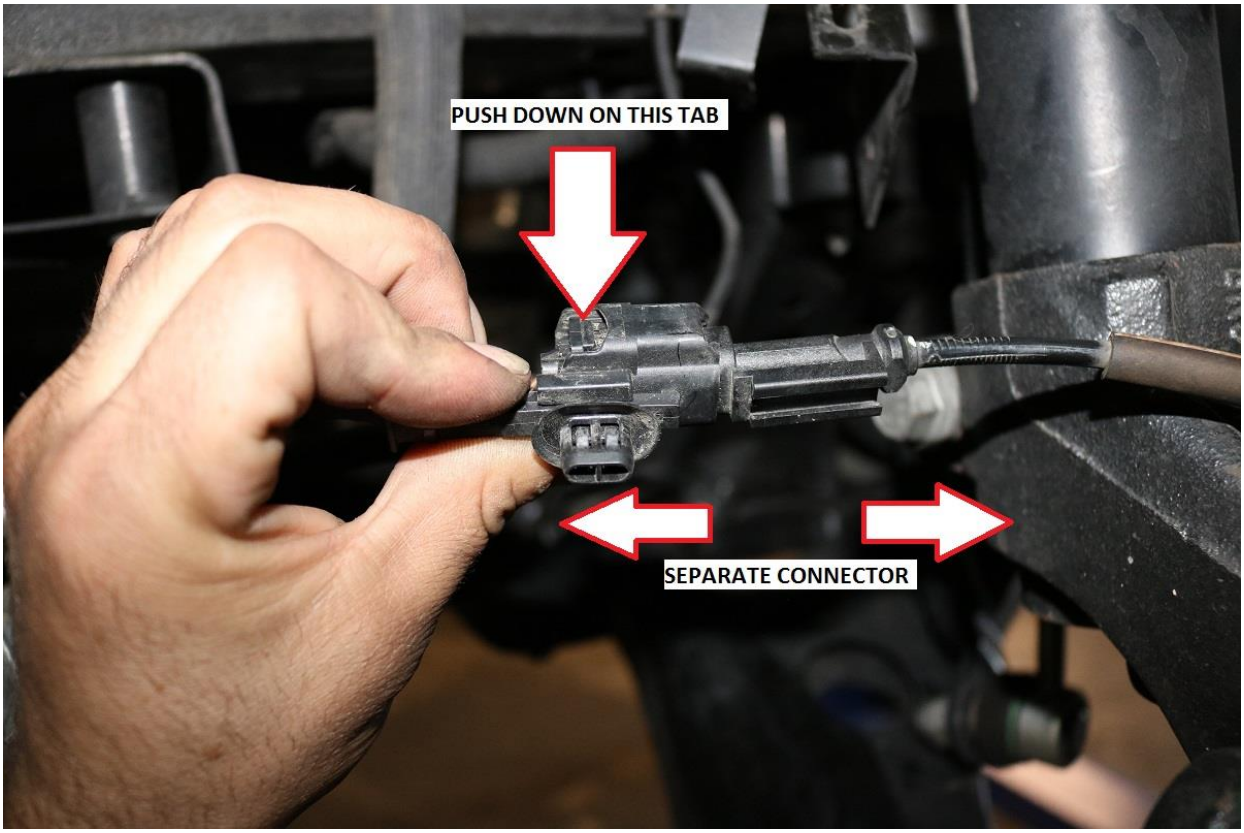
6) Disconnect the sway bar end link from the strut. Use an 18mm wrench and 6mm allen to remove the nut from the sway bar end link stud.



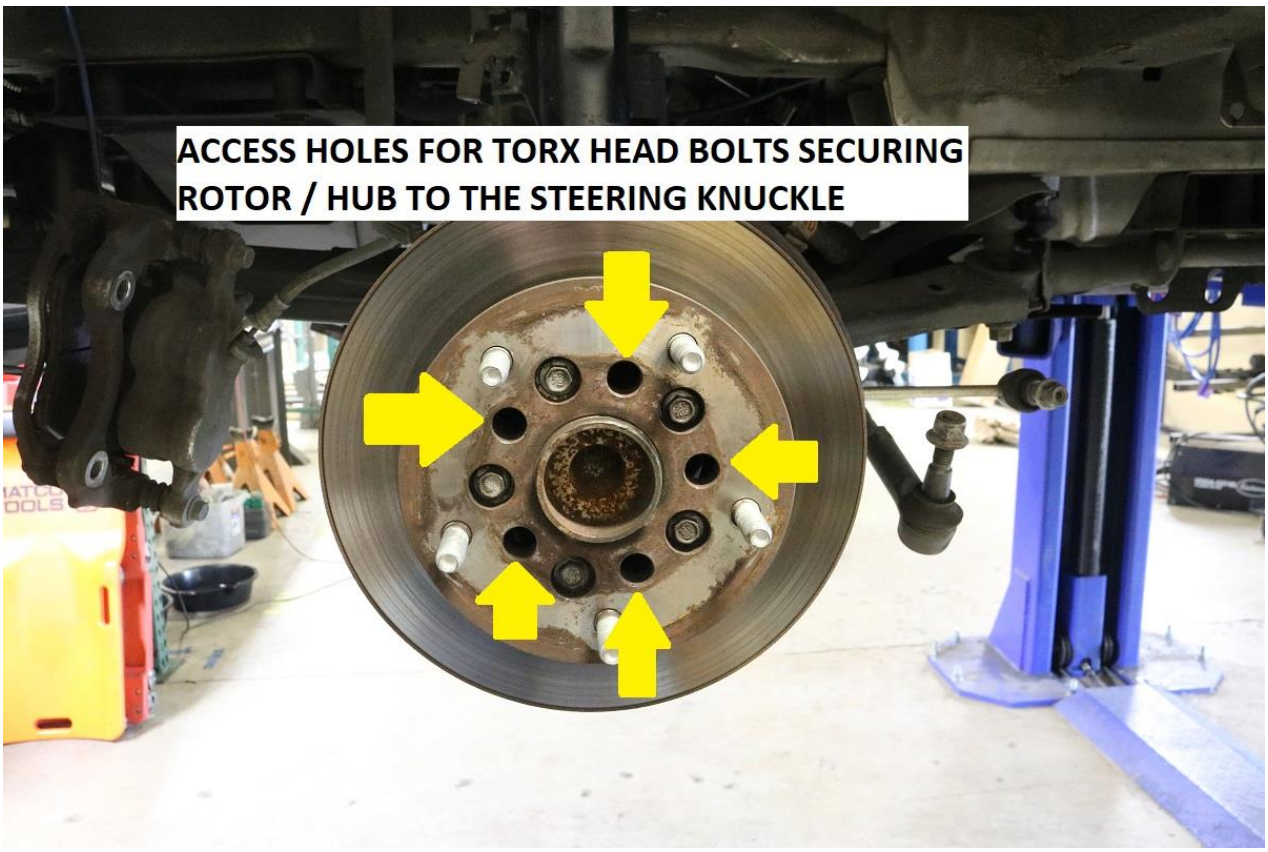
7) Remove the wheel speed sensor wiring from the strut. See image below for reference.



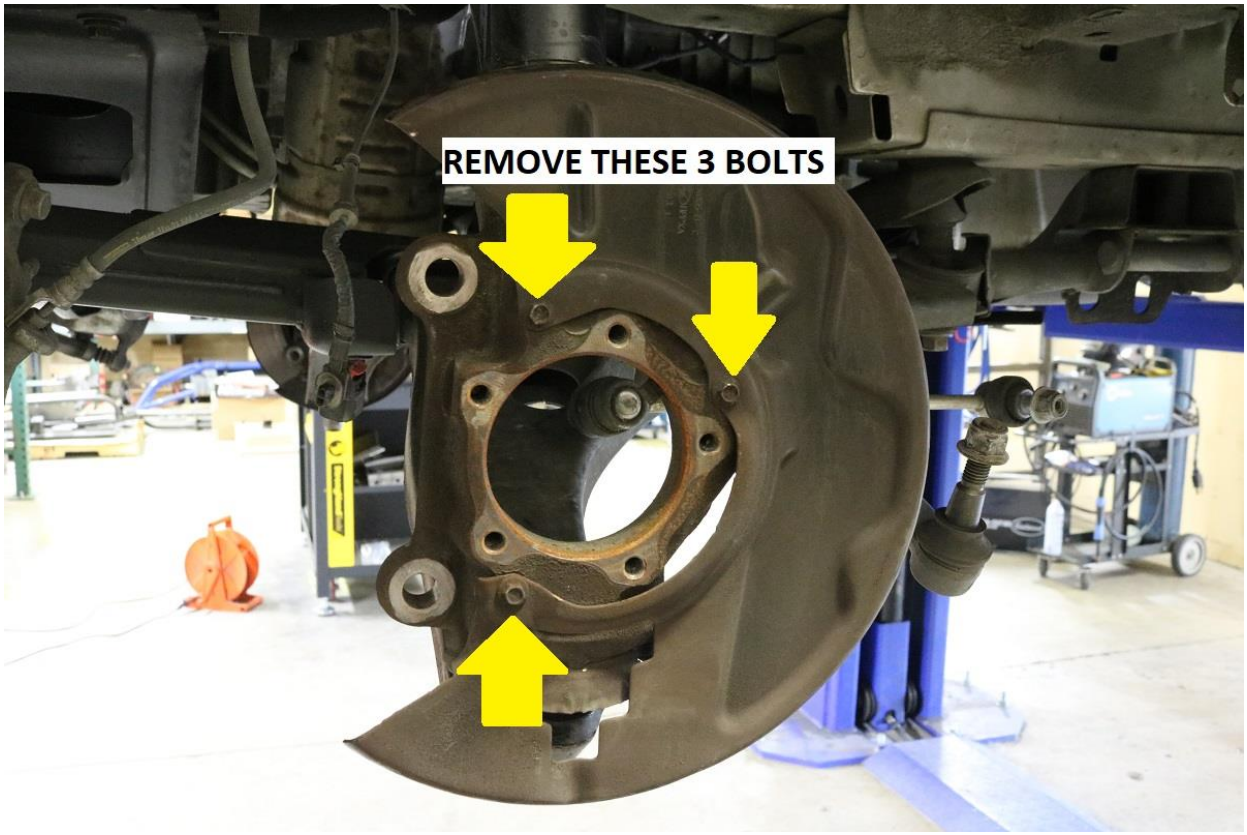
8) Completely remove the wheel speed sensor wiring from the strut. Separate the wheel speed sensor from the chassis harness. See image below for reference.



9) Remove the wheel bearing / rotor assembly from the factory steering knuckle.
   a. The wheel bearing assembly is secured to the steering knuckle via five, T-50 torx head bolts accessible through the holes in the rotor denoted with the yellow arrows below.



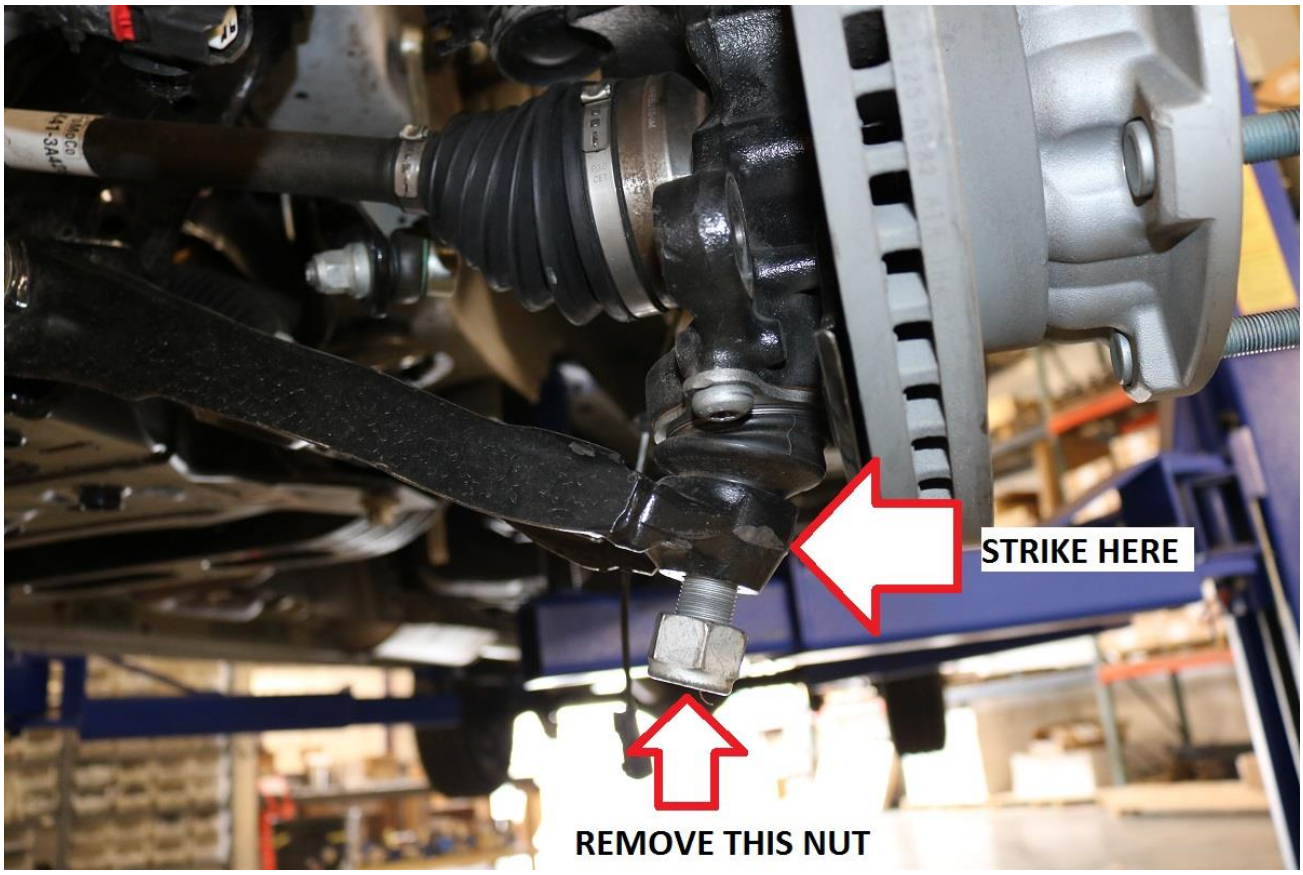
10) Use a T-50 torx bit and remove all 5 bolts. Once all 5 bolts are removed, remove the wheel bearing / rotor assembly from the knuckle.
    a. Note, the wheel bearing is a snug fit to the bore on the knuckle, a couple taps with the dead blow or a rubber mallet may be needed to unseat the bearing.
11) With the wheel bearing assembly removed, remove the dust shield by removing the three 8mm bolt securing it to the factory knuckle.



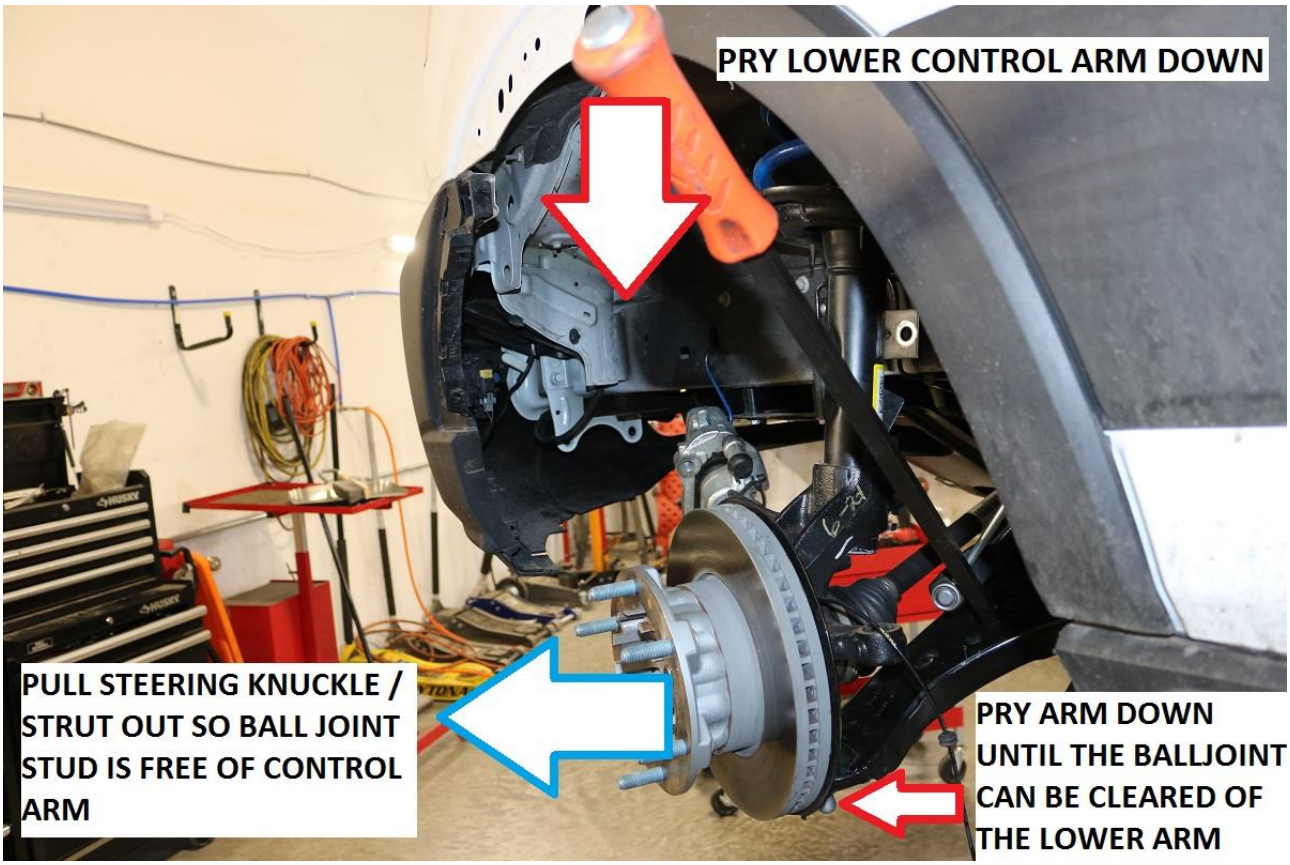
12) With the dust shield removed, locate the small 8mm bolt securing the wheel speed sensor (WSS) to the knuckle. Remove the bolt and remove the sensor.

REMOVE THIS BOLT TO
REMOVE WSS FROM KNUCKLE

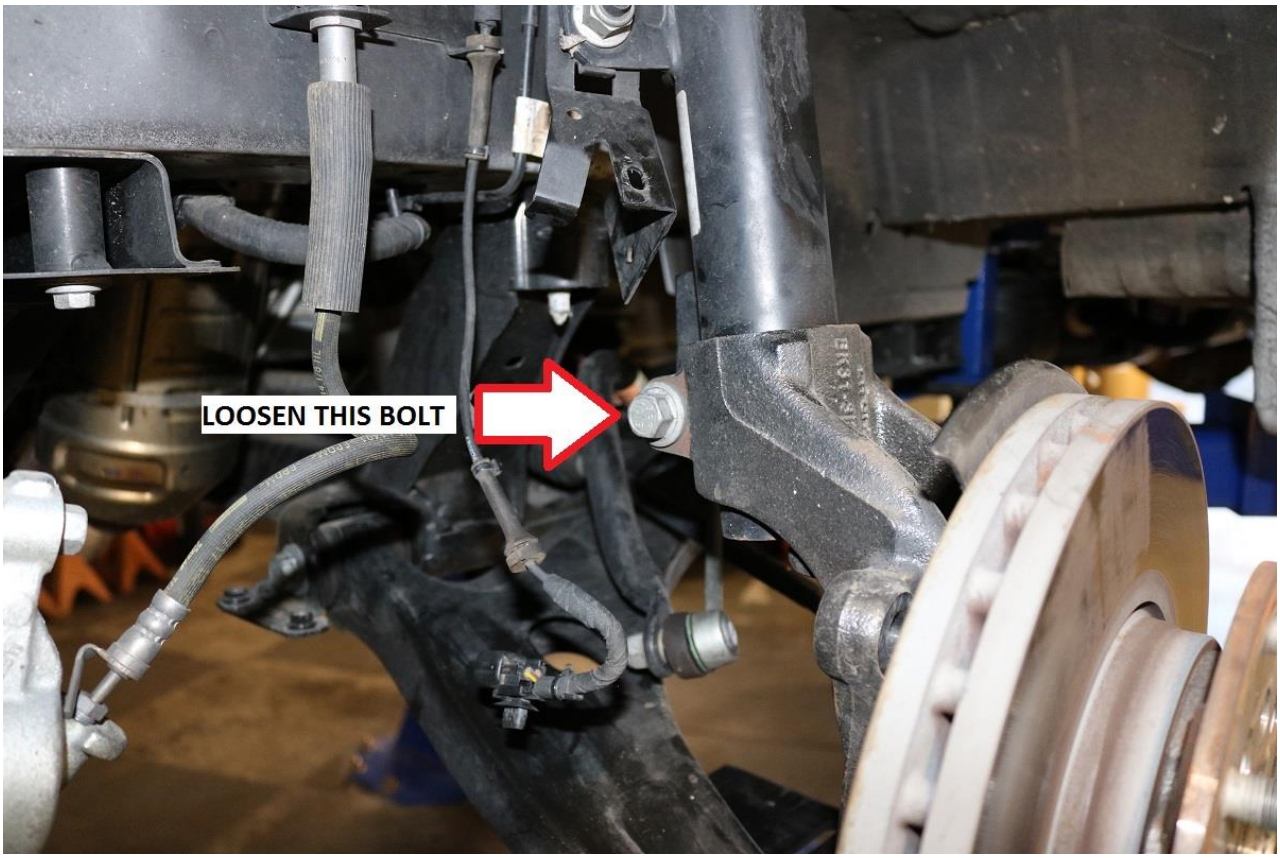
13) Remove the lower ball joint nut using a 30mm socket. Once removed, separate the taper of the ball joint stud from the lower control arm.
    a. Again, a tie rod end puller or pickle fork may be used to separate the tie rod end from the steering knuckle. However, a couple firm blows with a 5lb sledge to the lower control arm will often easily break the taper free without damaging the dust boot.



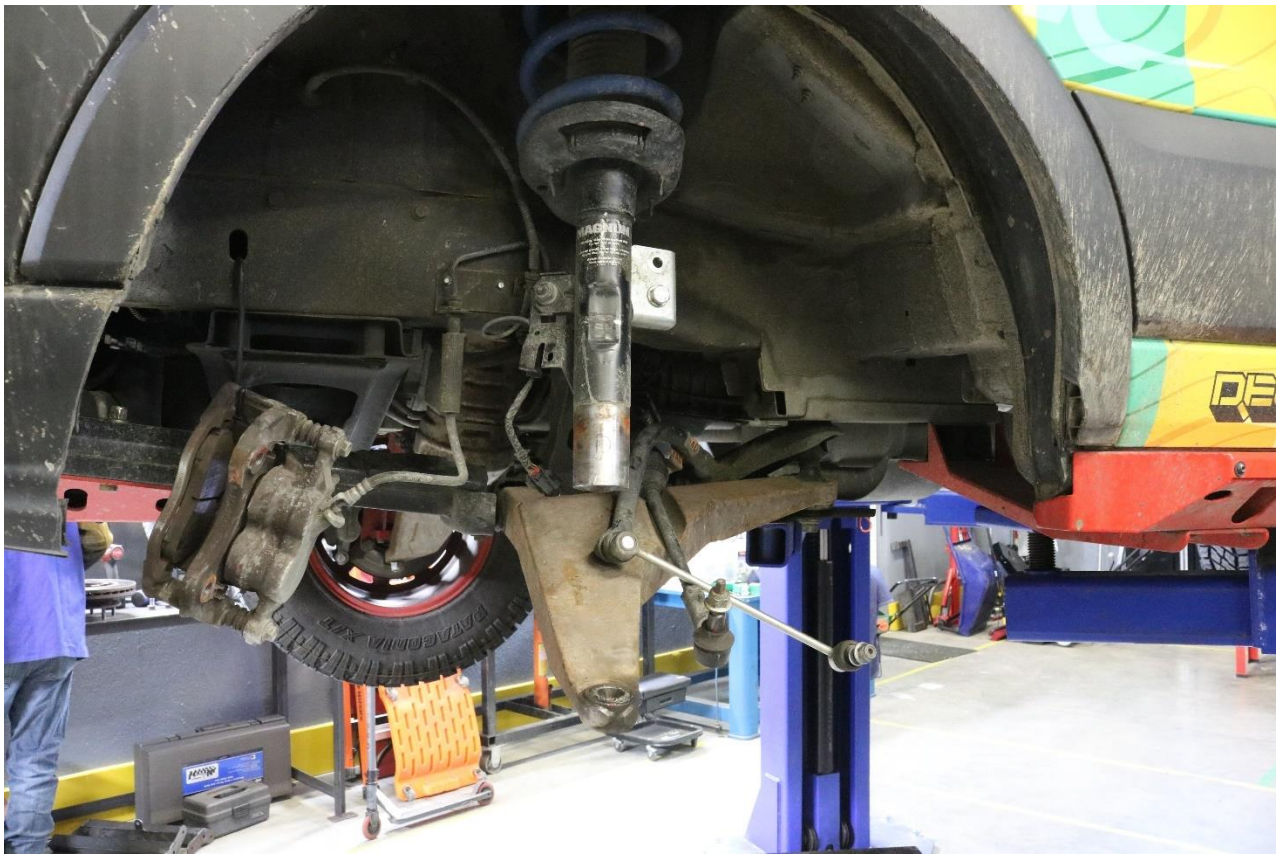
14) With the lower ball joint taper broken free from the lower control arm, use a long pry bar or similar tool to pry the lower control arm down enough to pull the bottom of the strut / steering knuckle clear of the lower control arm.
    a. There is large hole in the lower control arm near the sway bar which works as a good pry point. Be careful not to pry too heavily and bend the lower control arm. Just pry the arm downwards to the point where the stud of the lower ball joint can clear the control arm.



15) Loosen the lower strut bolt which secures the strut to the steering knuckle. Use an 18mm socket / wrench to loosen the bolt. See image below for reference.

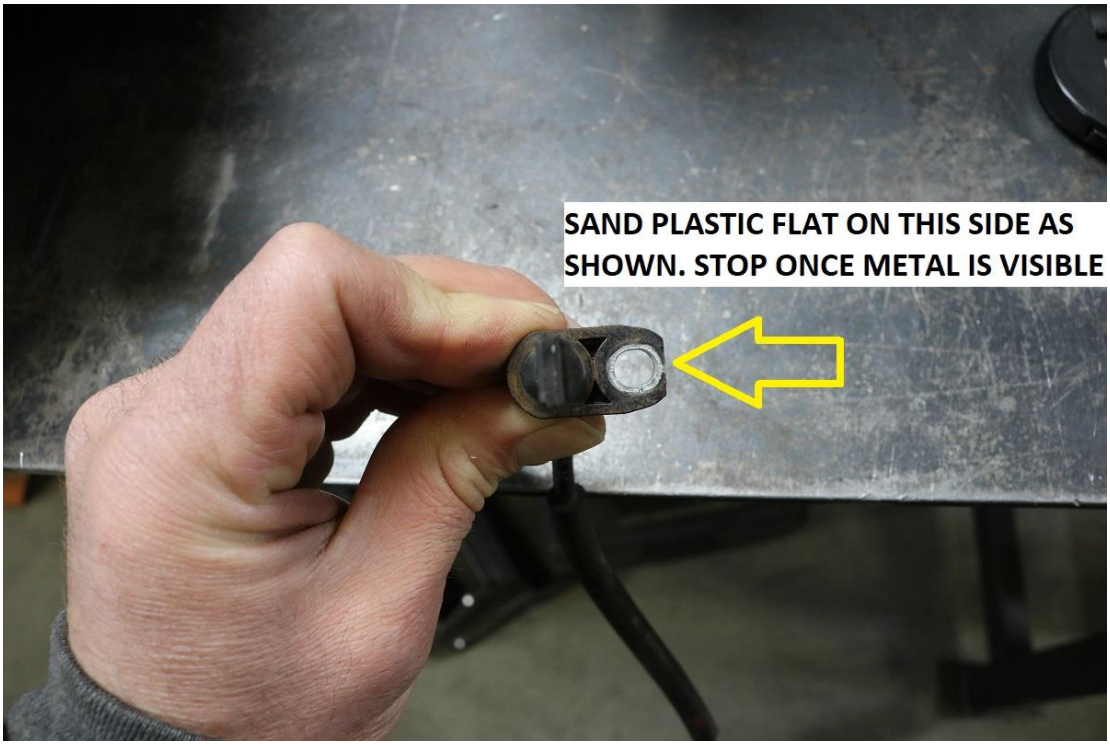


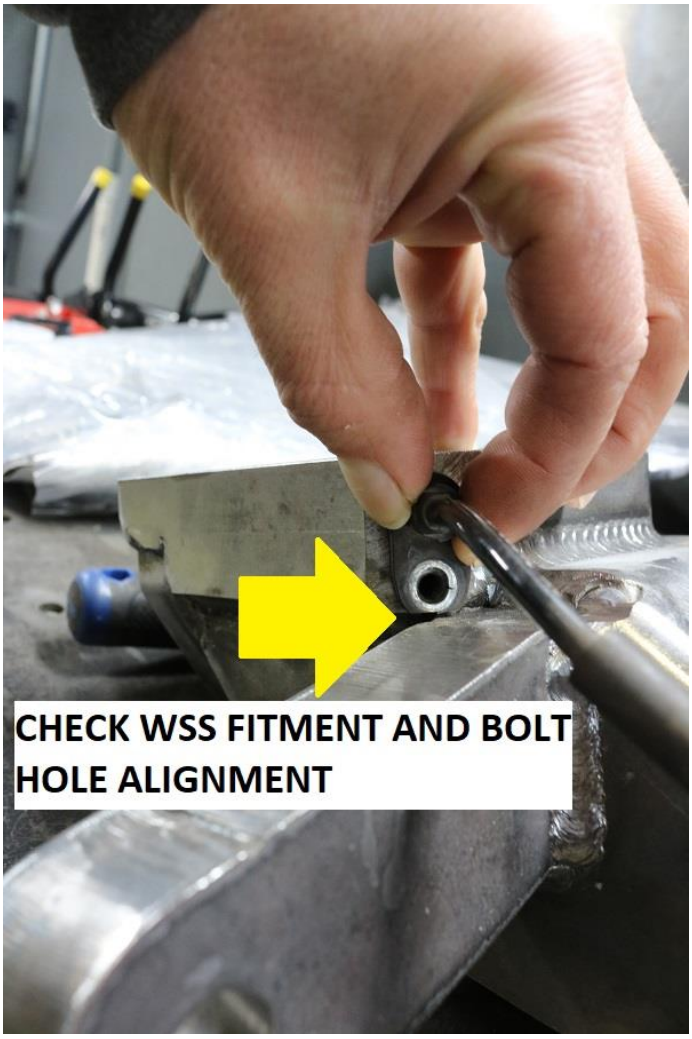
16) Support the steering knuckle with a transmission or floor jack and remove the 18mm lower strut bolt. Remove the steering knuckle from the strut and set it aside.



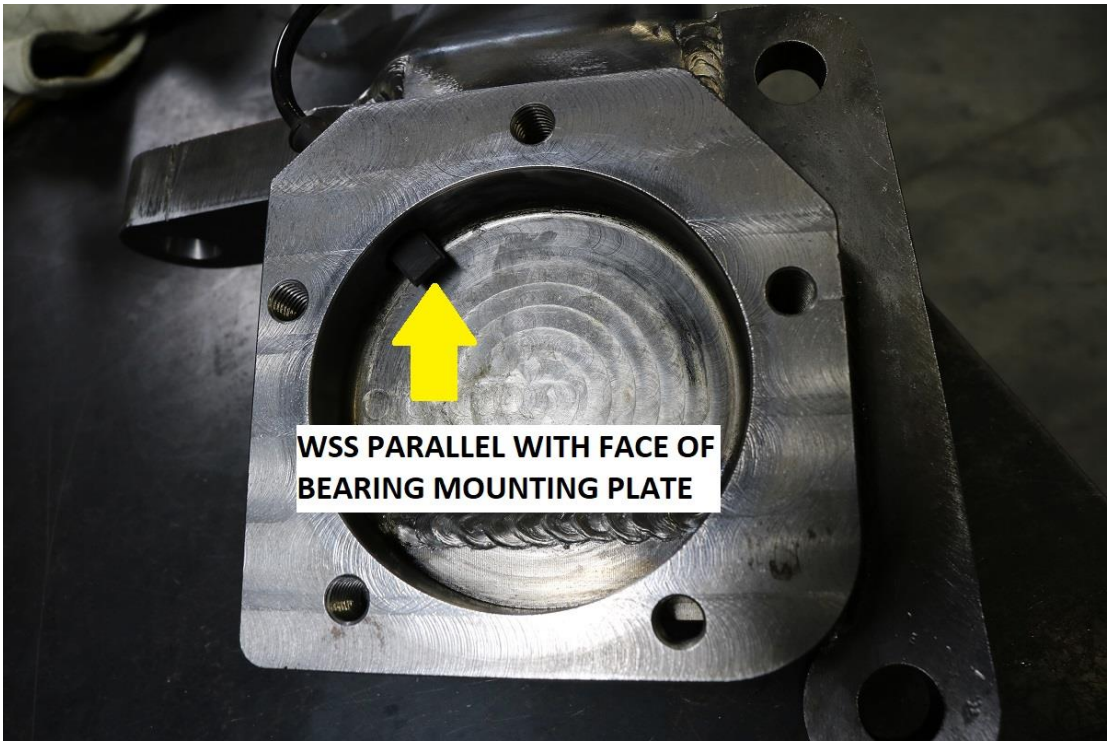
17) Installation of the new lift spindle will begin by installing the wheel speed sensor (WSS). First a small modification must be done on the WSS.

a. Use a 3” air sander or similar tool to remove the outer rounded portion of the WSS attachment boss.
b. Test fit in spindle bore for WSS to confirm fitment.

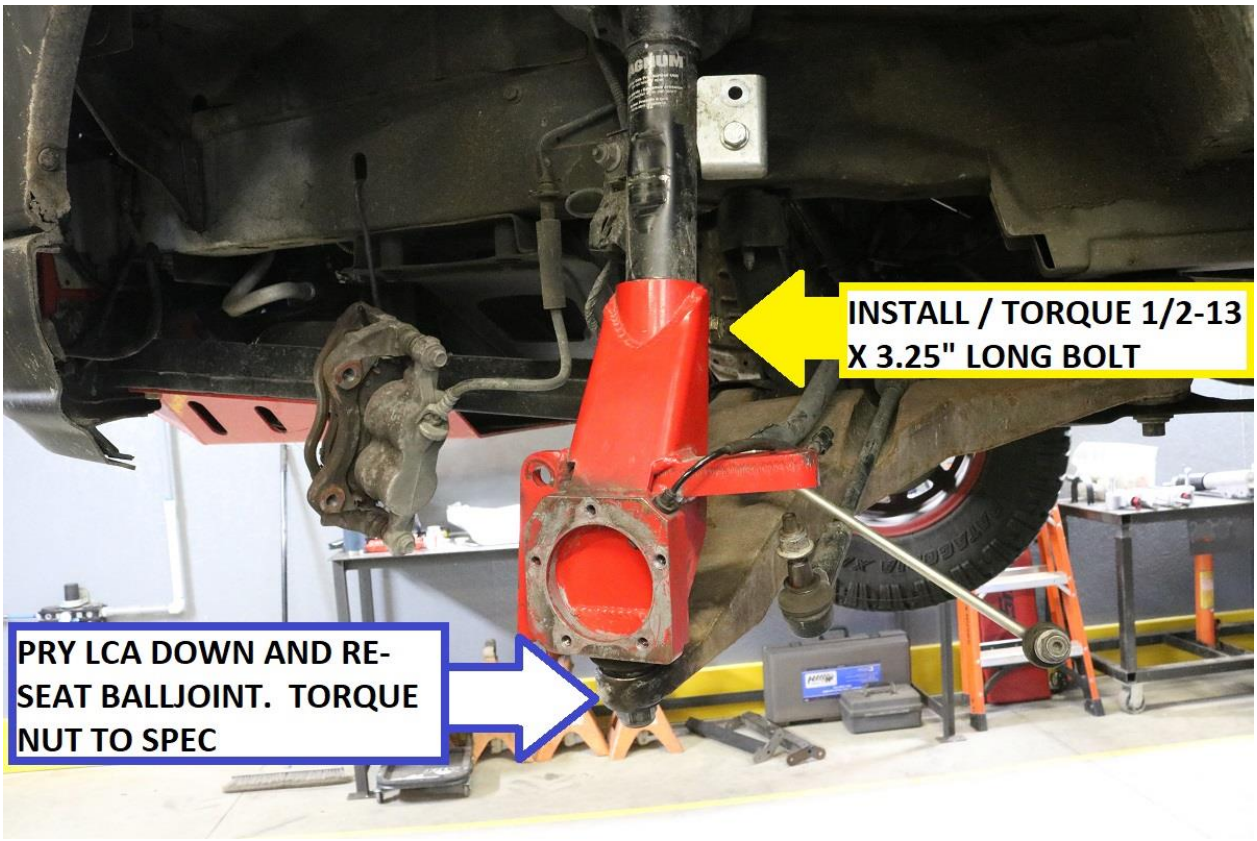




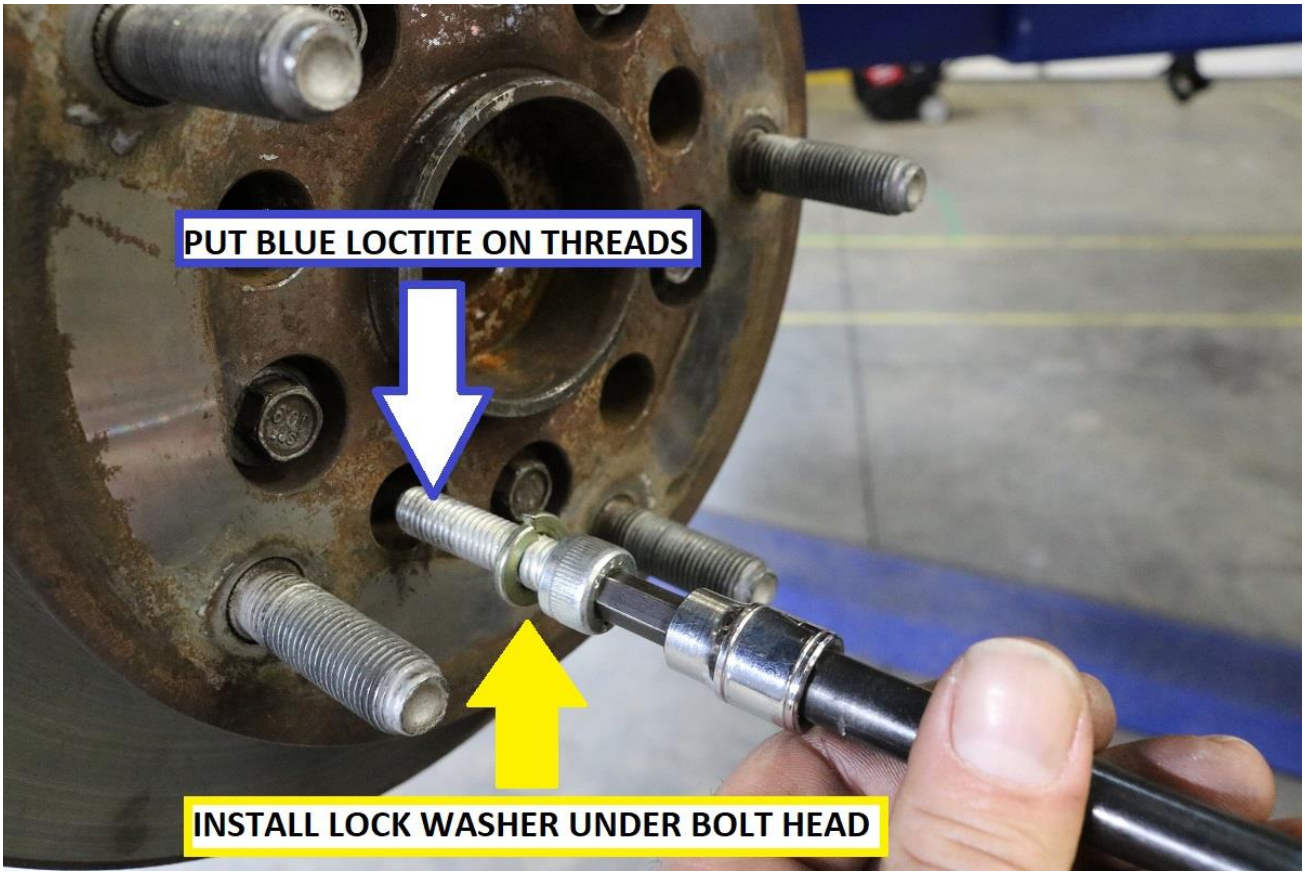
18) Bolt the WSS in place using the included M6-1.0 x 12mm long socket cap screw. Ensure the flat of the WSS is parallel with the face of the bearing plate on the spindle.
    a. Torque WSS mounting bolt to 97 in-lb (11 N.m) using a 5mm allen socket.



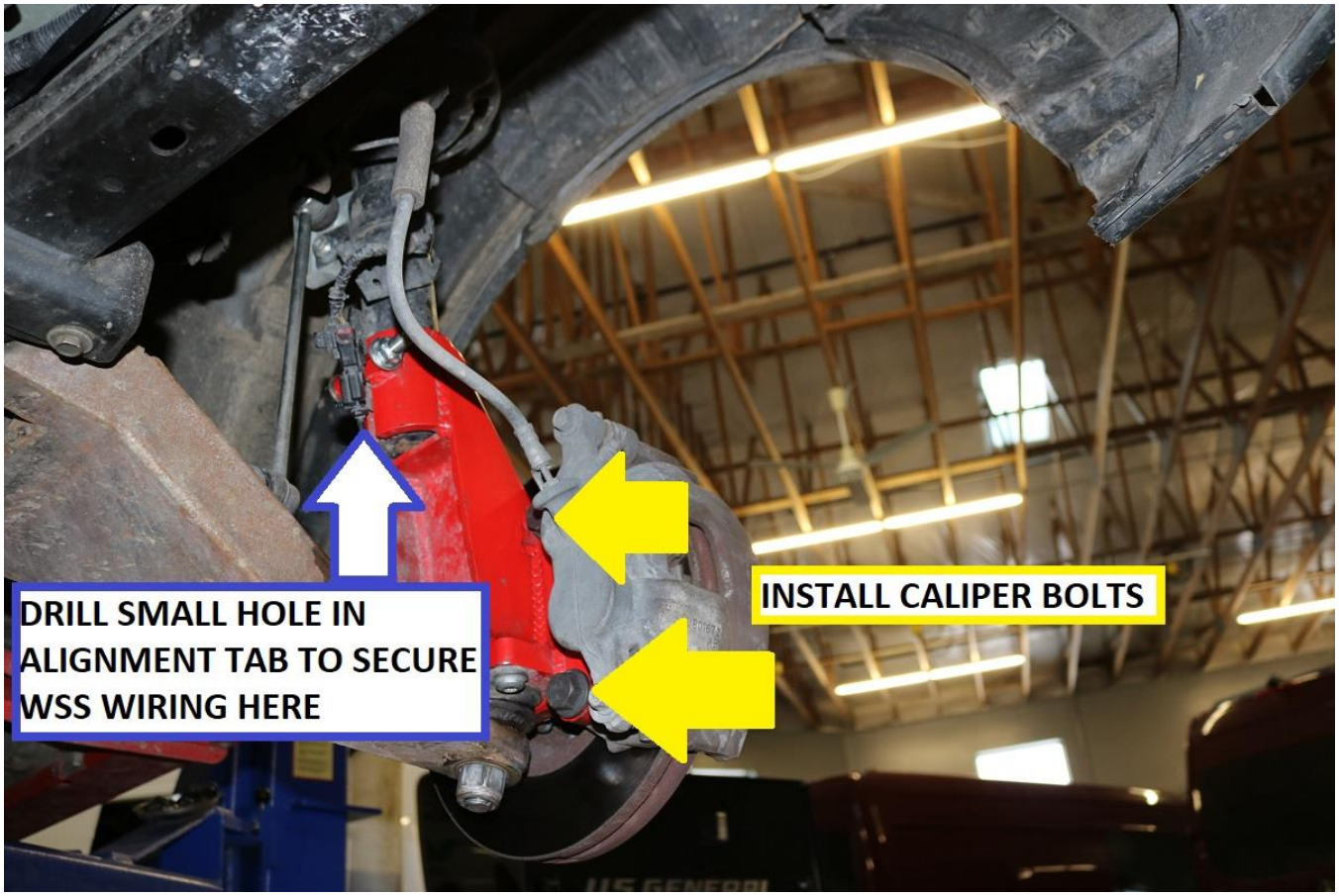
19) At this point, re-installation is the reverse order of removal of the factory steering knuckle.
20) We recommend coating the inside of the new lift spindle where the strut slides into place with some anti-seize. This will not only allow for easier installation, but will also allow for simpler removal of the strut down the line should replacement / service be required.
21) Install the lift spindle onto the strut. Be careful not to damage the balljoint boot at all during installation. Make sure the tab on the back of the strut aligns into the slot on the back of the lift spindle. A floor jack or trans jack is helpful in holding the knuckle back in place.
    a. Make sure the strut is bottomed out in the spindle.
    b. Use the new included ½-13 UNC x 3.25” long bolt included with the kit. Use a washer under the bolt head and under the stover nut.
    c. Use a ¾” socket / wrench and torque to 100 ft-lbs (135 N.m).
22) Pry down the lower control arm until the lower ball joint can be re-seated into the lower control arm.
    a. Re-install the ball joint nut and torque to 184 ft-lbs (250 Nm) with a 30mm socket.
    b. Note; while not necessary, it is beneficial to have a helper aide in prying the arm down and re-seating the lower ball joint.



23) Install the wheel bearing / rotor assembly onto the lift spindle. Use the included M10-1.50 x 40mm long socket cap screws included in the kit. Be sure to use one of the included M10 lock washers on each bolt. Use a dab of blue Loctite on the threads of each bolt. Install using an 8mm allen bit and torque to 46 ft-lbs (62 N.m)



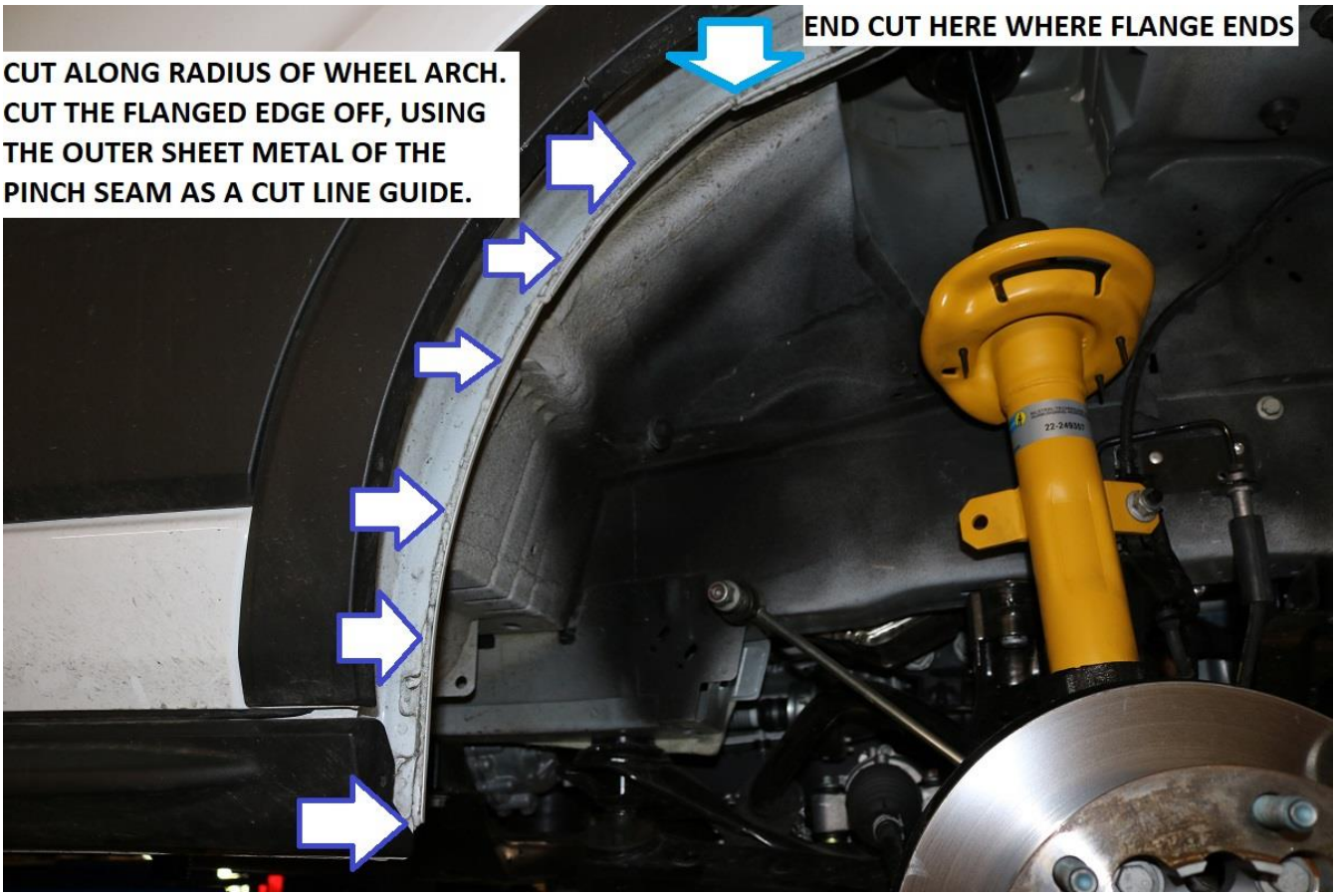
24) Reconnect the sway bar end link to the strut.
    c. An 18mm socket / wrench and 6mm allen will be needed. Use the OEM nut and torque to 76 ft-lbs (103 N.m)
25) Install the caliper back onto the steering knuckle. Use the new M16-2.0 x 35mm long flanged hex head bolts included in the kit. Use a dab of blue Loctite on the threads and torque to 203 ft-lbs (275 N.m) with a 24mm socket.
    a. Due to the added height of the lift spindle, the wheel speed sensor wiring is not long enough to clip back into the factory clips in the same manner as before.
    b. Drill a small 3/16" hole (5mm) into the alignment tab on the bottom of the strut to secure the WSS wiring as shown in the image below.



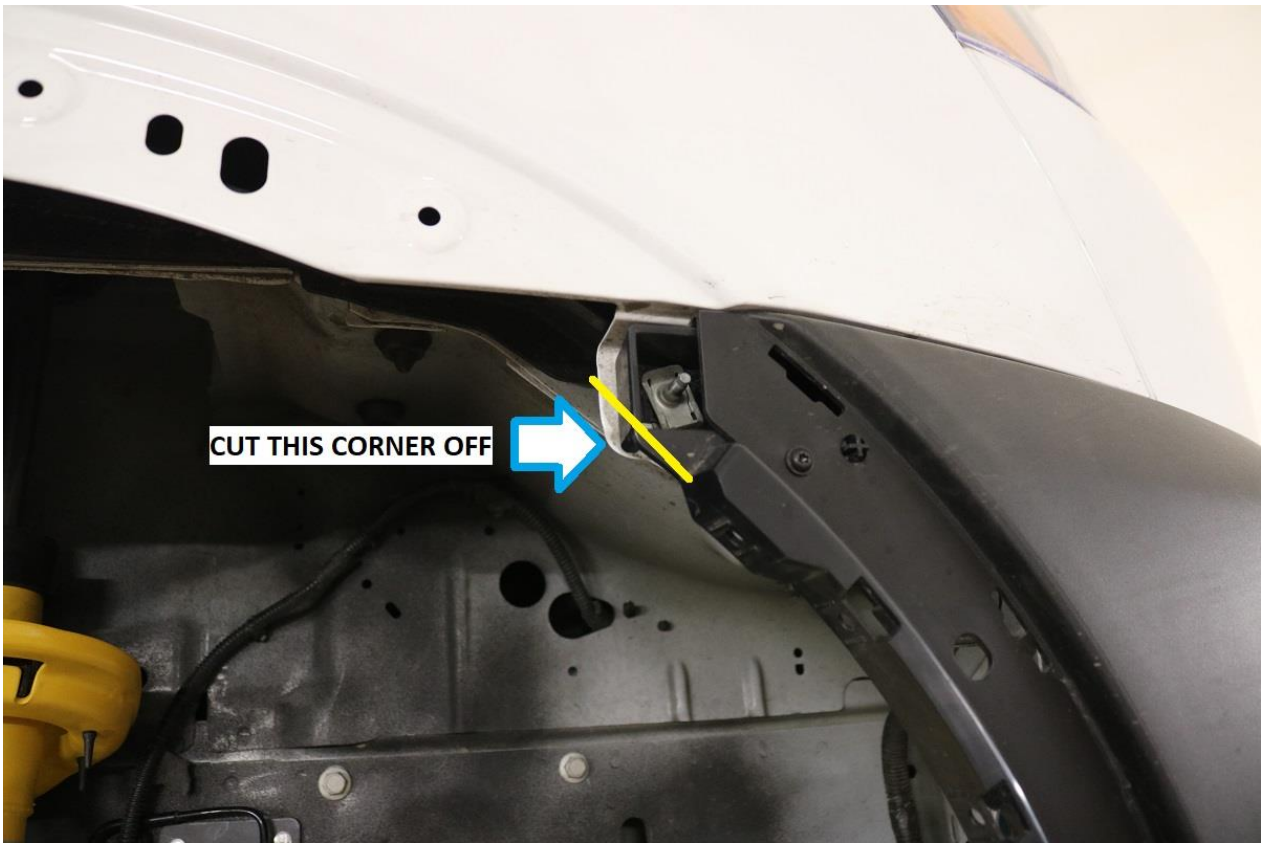
26) Install the tie rod end back onto the steering knuckle. Use a 21mm socket / wrench and torque to 59 ft-lbs (80 N.m)

<u>Pinch Seam Trimming for 265/75/16 tire</u>

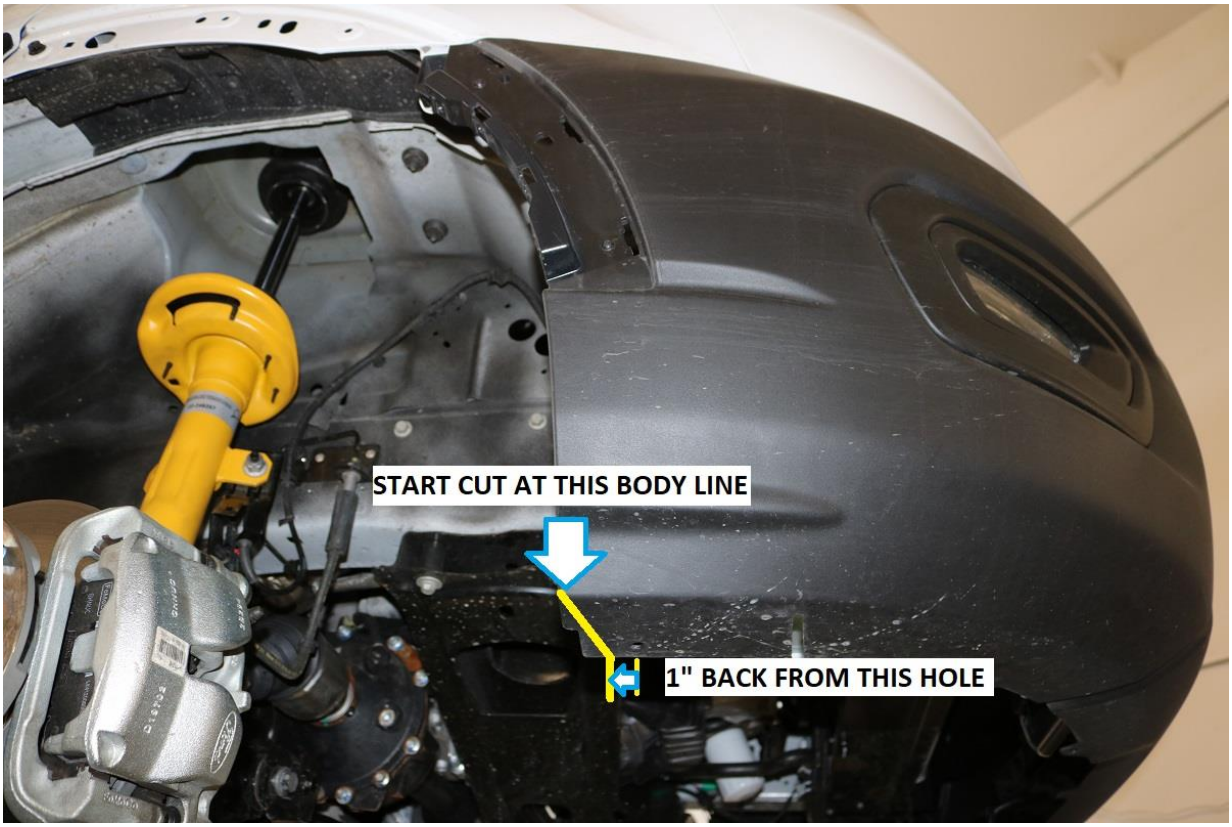
27) If fitting 265/75/16 tires to the vehicle, the inner pinch seam will need to be trimmed to prevent tire contact at full compression. The flanged edge of the pinch seam needs to be cut off. Use a 4-1/2" angle grinder or similar cutting tool to cut off approximately ¼" off the pinch seam.
    d. Use the outer layer of the pinch seam metal as a guide. Cut off the glued portion towards the flanged edge. Continue cut all the way up to where the flange ends. See images below for reference.



28) Towards the front of the wheel opening, locate the inner M6 bolt securing the front bumper fascia to the vehicle. There is a small flange that needs the corner cut off. Note, the outer fender trim piece is removed in this photo for clarity.



29) Lastly, the front bottom corner of the plastic front bumper fascia needs to be trimmed slightly for tire clearance.



30) Re-install wheels / tires.

d. Lug nut torque for OEM steel wheels / lug nuts is 148 ft-lbs (200 N.m).
e. Refer to wheel manufacturer's instructions for aftermarket aluminum wheels torque specs.

31) Take vehicle to alignment shop for a proper alignment to be done.
32) Re-check all bolt torques after 100 miles of driving.

Installation is Complete

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.