

## Preparation:

- Disconnect the negative battery terminal. Park the vehicle on level ground and set the emergency brake.
- We recommend reading through the installation instructions in whole before performing the work.
- Estimated Installation Time: **4 Hours**

***\*\*This installation requires 2 people for best results\*\****

## You will need the following tools:

- |                           |               |               |
|---------------------------|---------------|---------------|
| - Ratchet                 | - 8mm Socket  | - 10mm Socket |
| - 15mm Socket             | - 18mm Socket | - 21mm Socket |
| - 5mm Allen Wrench/Socket |               |               |

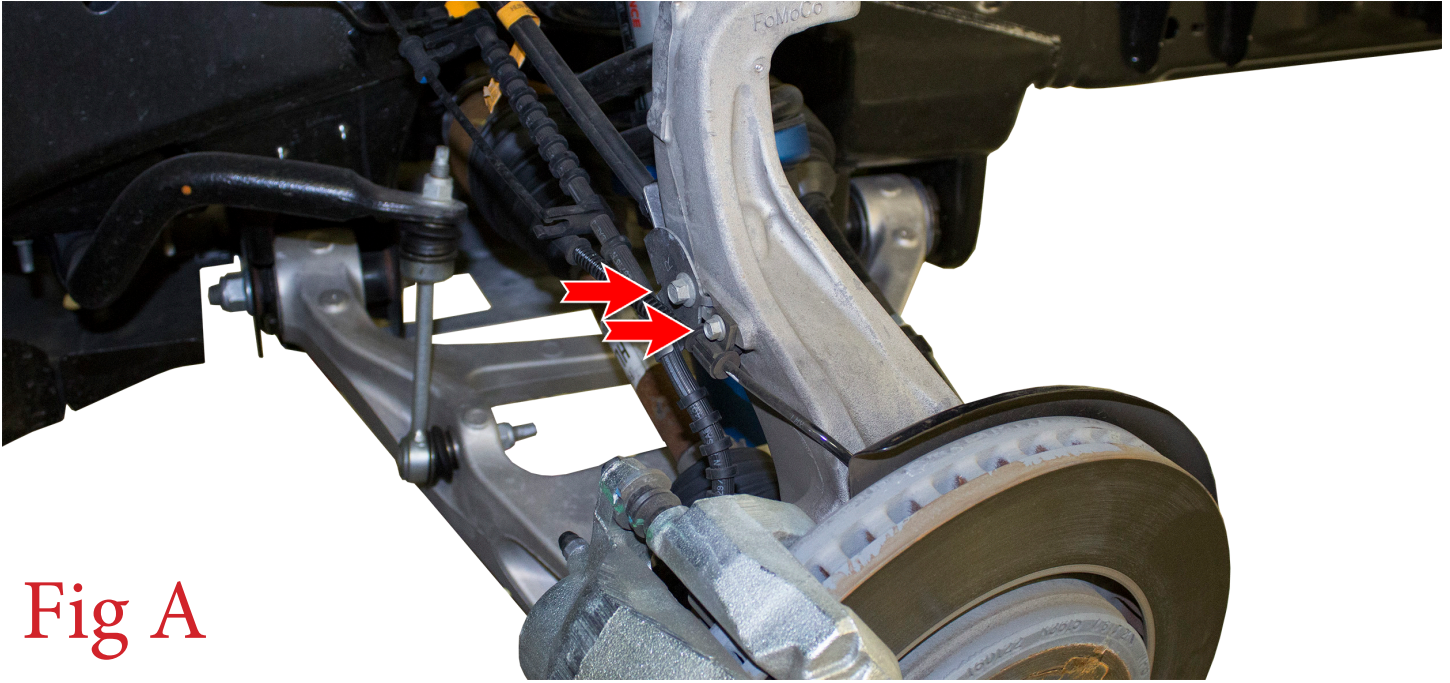
## Included in Kit:

- |   |   |
|---|---|
| <b>4</b> - Caliper Mounting Spacers ( <i>Fully Round</i> )<br>( <i>Only Used with After Market Brakes</i> ) | <b>4</b> - Lower Ball Joint Washers ( <i>Have Flat Spots</i> )<br>( <i>Only Used with OEM Lower Control Arm</i> ) |
|---|---|

***\*\*You must install either our Tie Rod Conversion Kit or our Full Billet Tie Rod Kit to finish this install\*\****

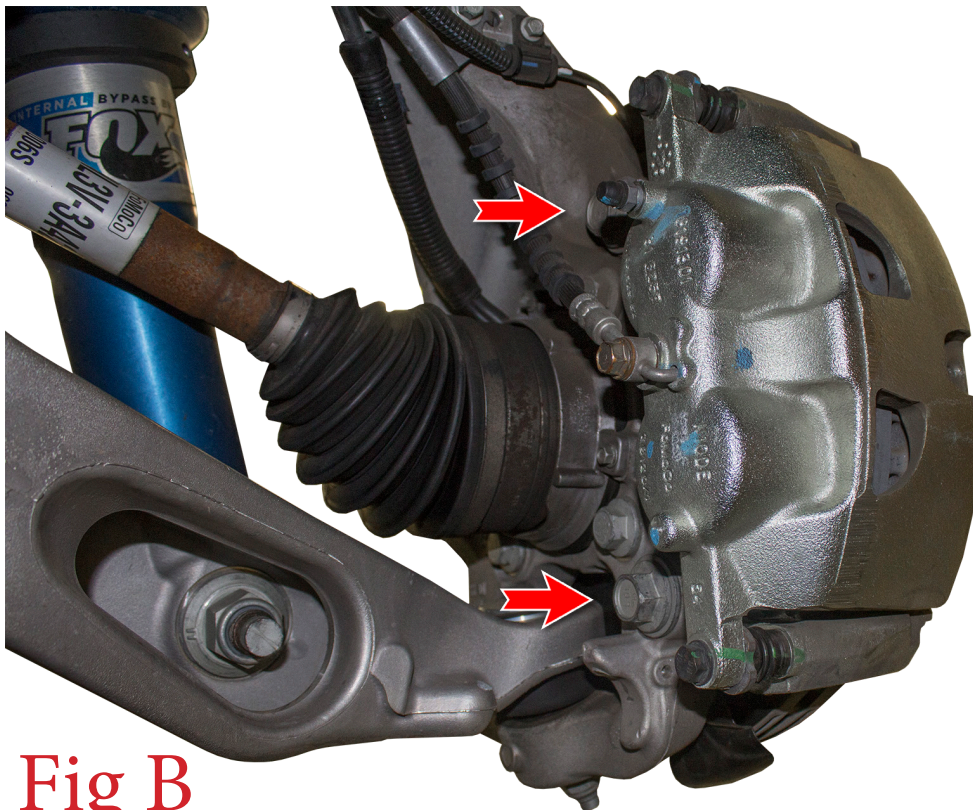
**Removal:**

1. Place the vehicle on jack stands and remove the front wheels.
2. Remove the two brake line bracket bolts on the side of the spindle. (Fig A)



**Fig A**

3. Remove the two caliper bracket mounting bolts. Then, secure the brake caliper/bracket safely out of the way. (Fig B)



**Fig B**

- 4. Remove your brake rotor.
- 5. Remove the ABS line from the front hub using a 5mm Allen Wrench. (Fig C)



**Fig C**

- 6. Remove the axle nut dust cap. Using a 15mm Socket, remove the axle nut. (Fig D)



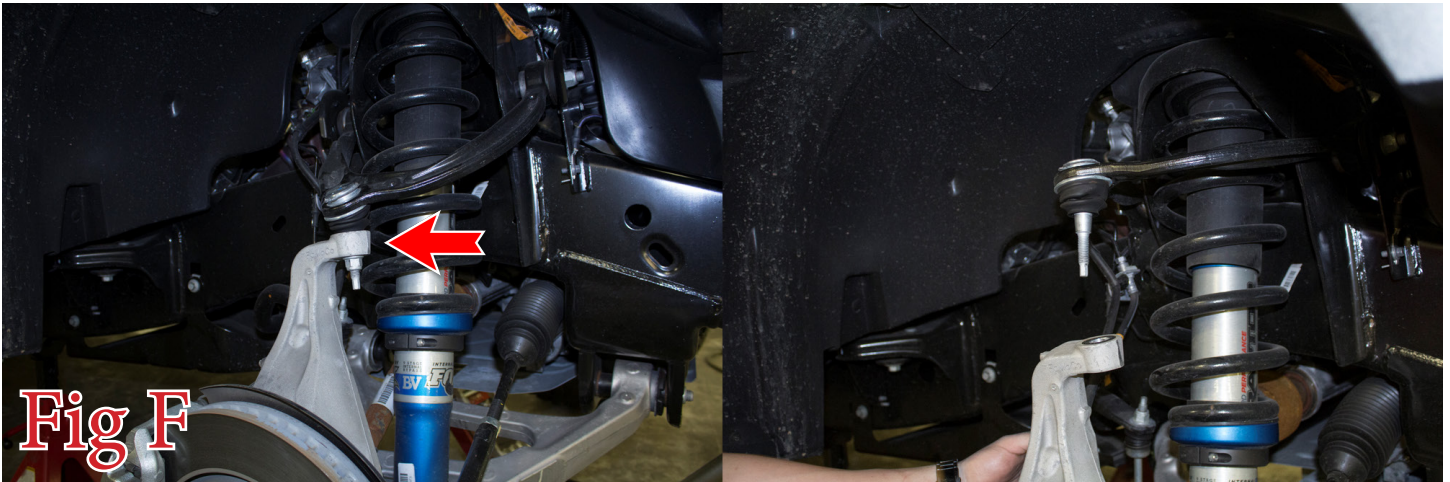
**Fig D**

7. Using a 21mm Socket, remove the outer tie rod end nut. Then, pop the outer tie rod free from the spindle.  
(Fig E)



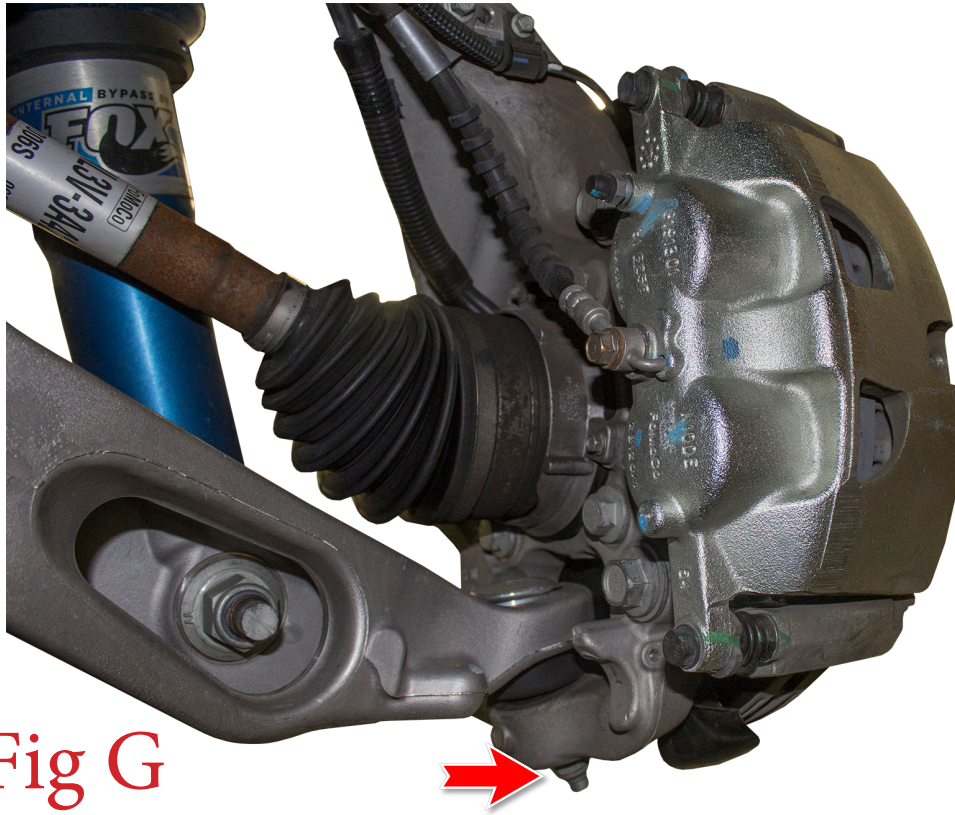
**Fig E**

8. Using an 18mm Socket, remove the upper ball joint nut. Then, pop the upper ball joint free from the spindle.  
(Fig F)



**Fig F**

9. Using a 21mm Socket, remove the lower ball joint nut. Then, pop the lower ball joint free from the spindle.  
(Fig G)

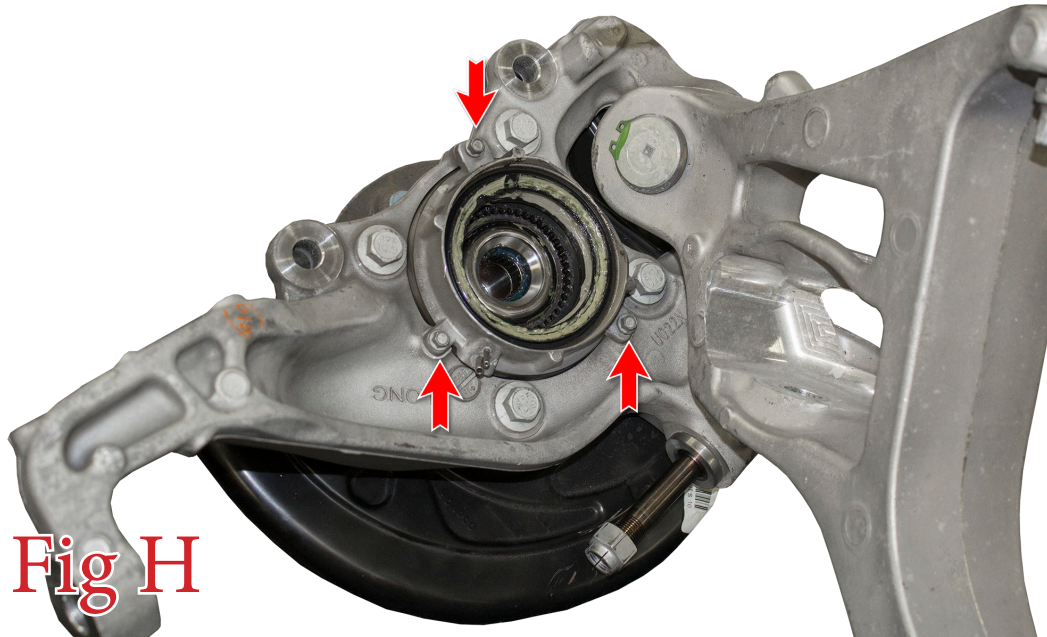


**Fig G**

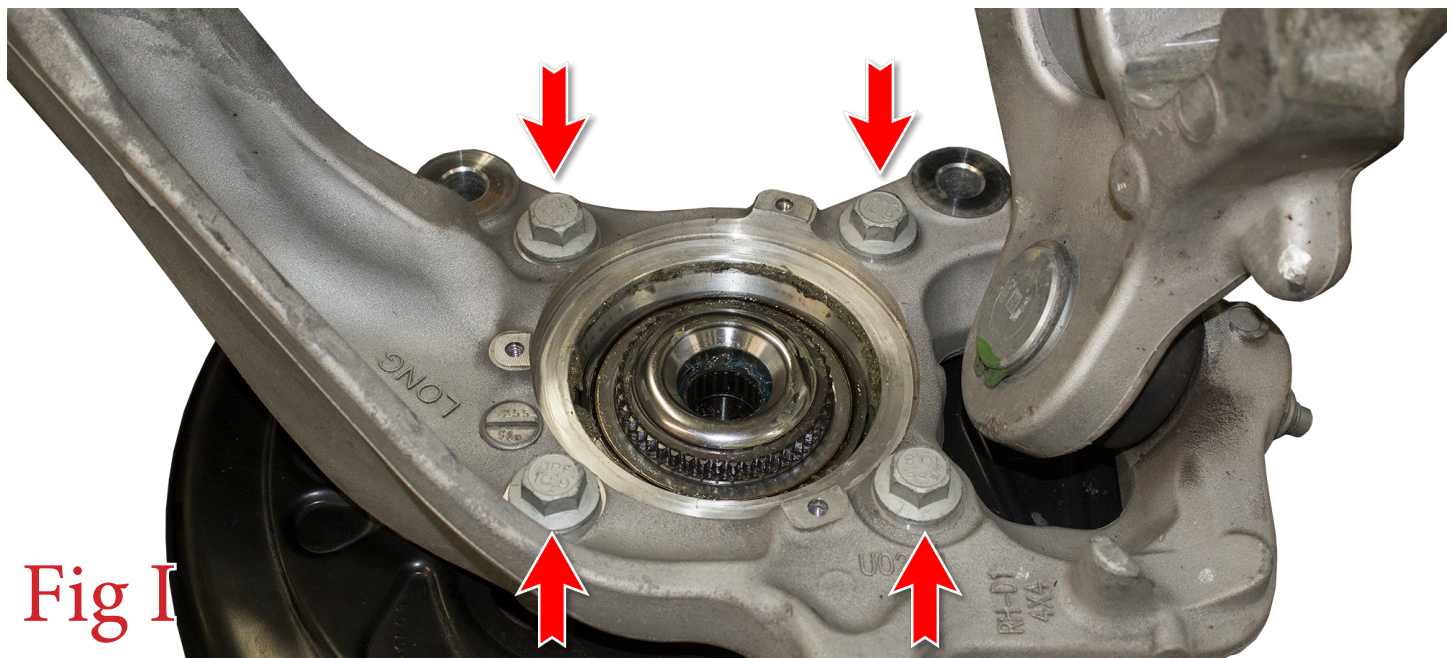
10. Remove the OEM spindle from the truck. Be sure to remove the vacuum line from the back side of the spindle as you pull it off the vehicle.

**Installation:**

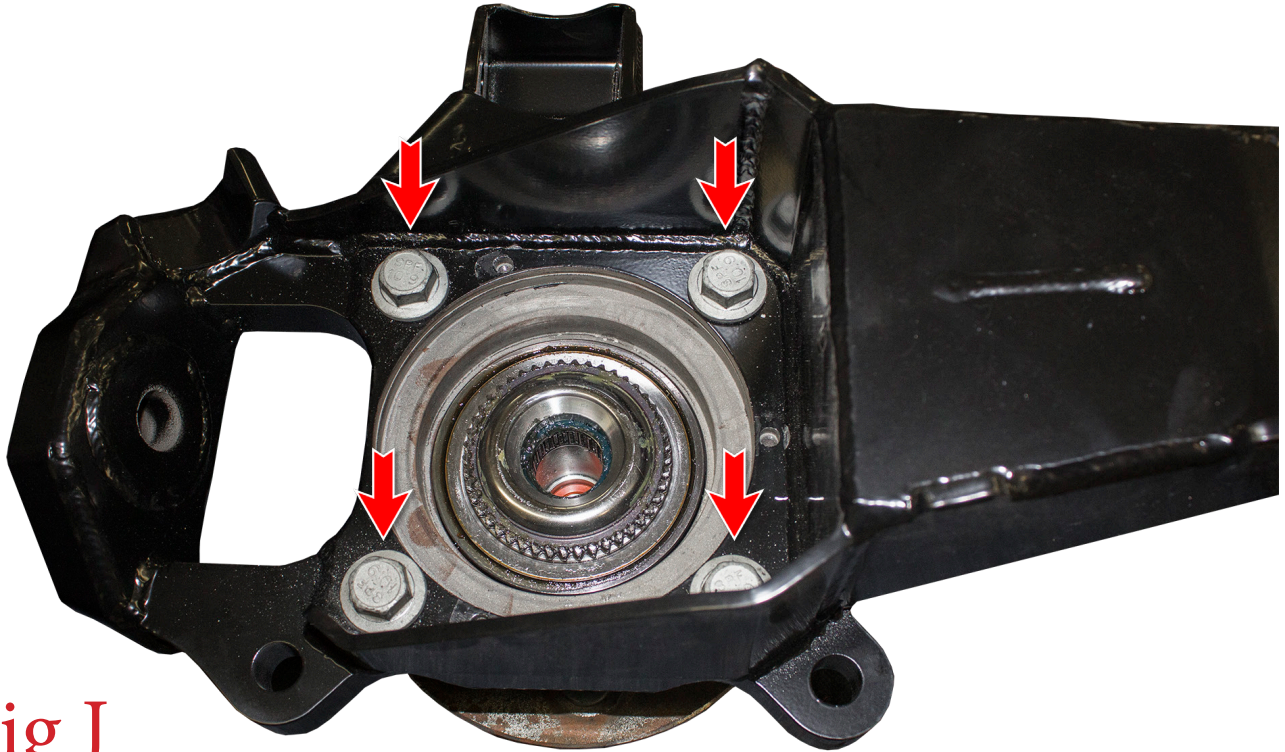
11. Lay your OEM spindle on the ground with the hub face down. Then, use an 8mm Socket to remove the bolts (x3) holding the vacuum actuator hub to the spindle. (Fig H)



12. Using an 18mm Socket, remove the bolts (x4) holding the hub to the spindle. (Fig I)

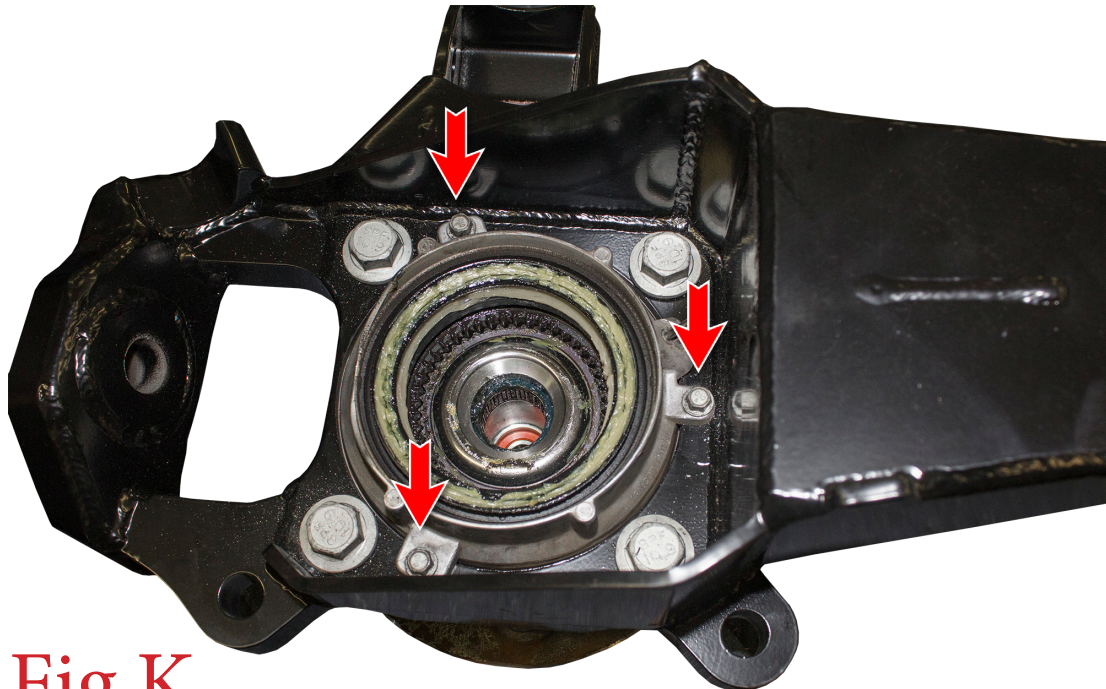


13. Place the hub onto your new spindle. Be sure to orient the ABS mounting location just like it was on the factory spindle. Place red threadlocker on the 4 bolts that secure the hub to the new spindle. Then, tighten them to factory torque spec. (Fig J)



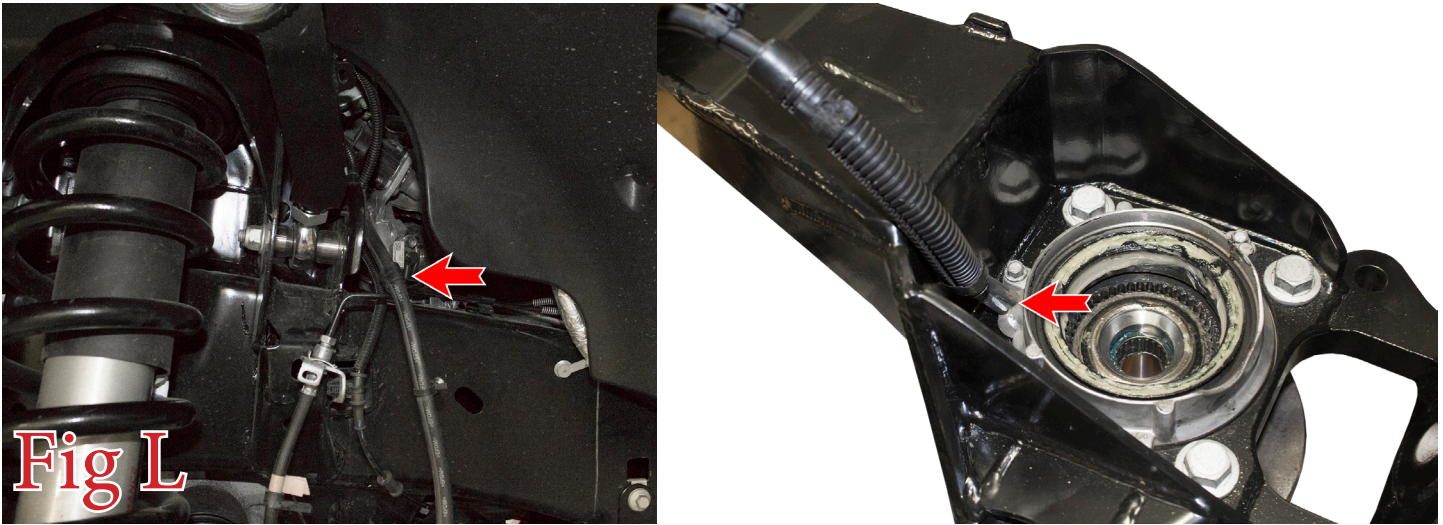
**Fig J**

14. Place the vacuum actuator on the hub. Be sure to orient the vacuum lines just as they were on the factory spindle. Using an 8mm Socket, tighten the mounting bolts (x3) to factory torque spec. (Fig K)

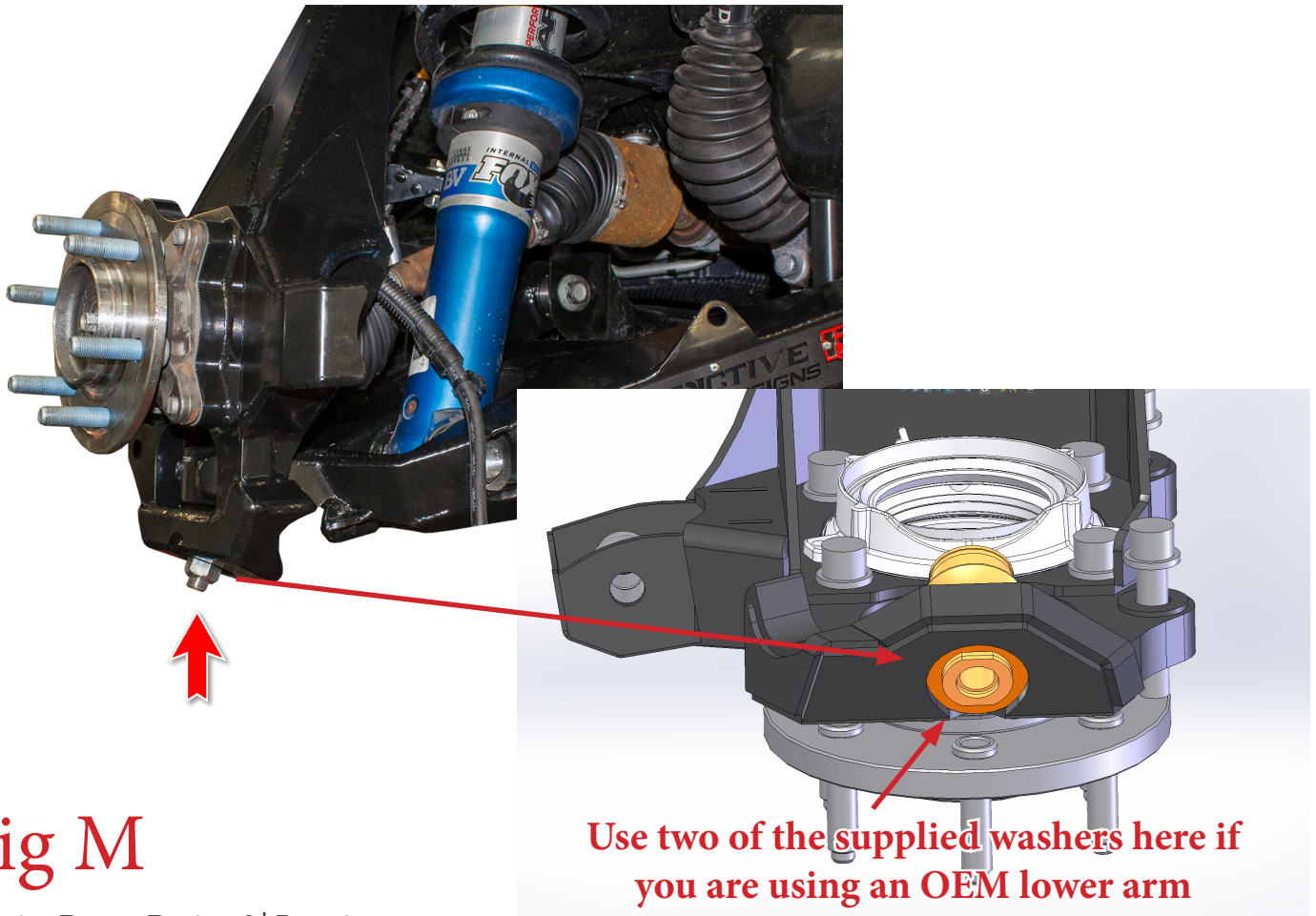


**Fig K**

15. Remove the vacuum line referenced in (Fig L) from the vehicle. Then, connect the vacuum lines to its original position on the back of the hub that is now attached to your new spindle.



16. Mount the lower control and spindle together using the OEM lower ball joint nut or (if you are using our lower control arm) the bolt supplied with lower control arm. **If you are using an OEM Lower Control Arm, you must install two (per side) of the supplied Lower Ball Joint Washers (with Flat Spot Cutouts) between the spindle and the ball joint nut.** Tighten this bolt to OEM torque spec or the torque spec given in the lower arm installation guide. (Fig M)

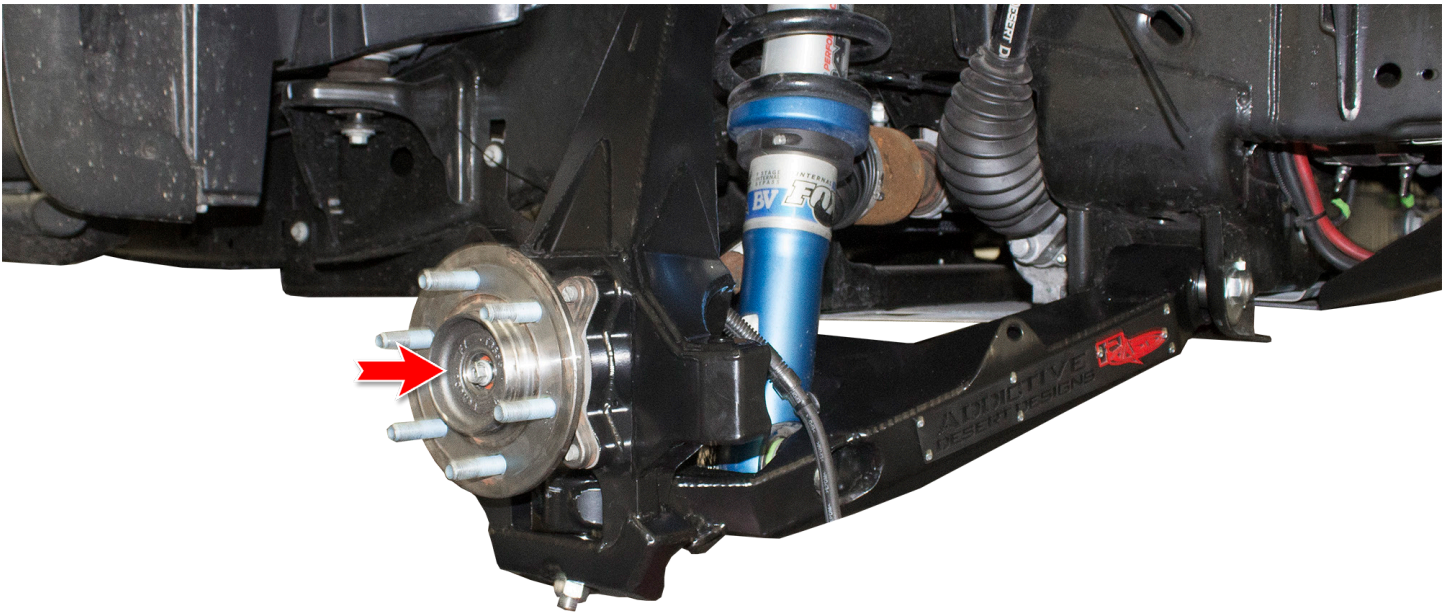


**Fig M**

**Use two of the supplied washers here if you are using an OEM lower arm**

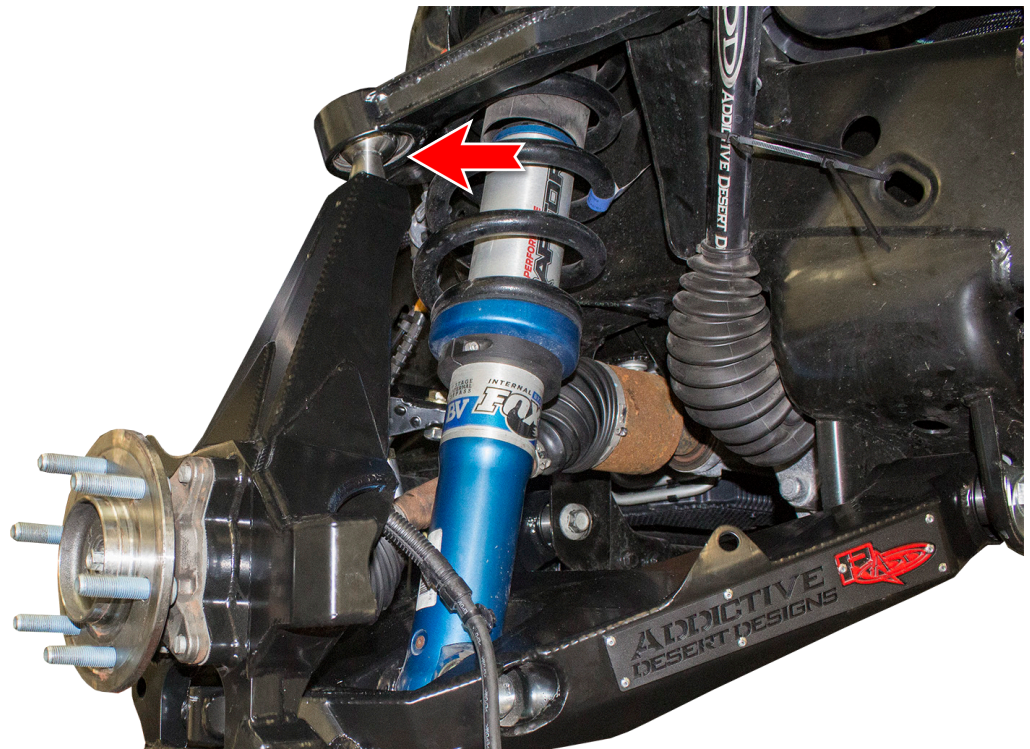


17. Raise the lower control arm assembly and guide the CV axle back into the hub. Start the axle nut on the CV axle but do not tighten at this time. (Fig N)



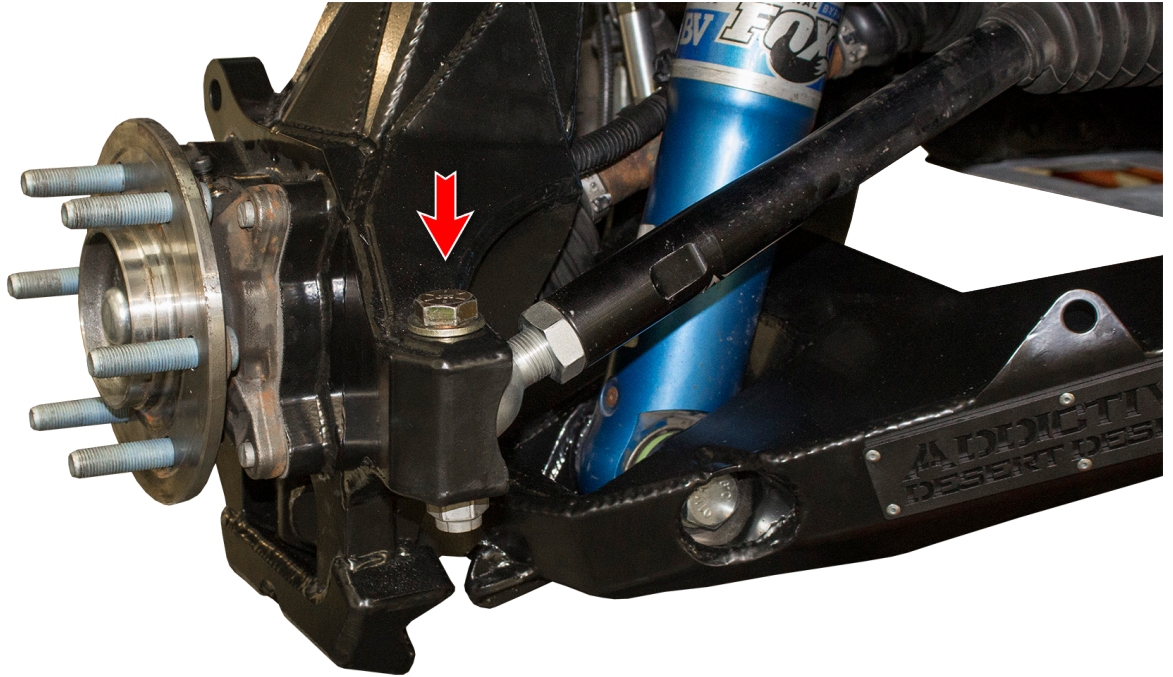
**Fig N**

18. Raise the lower control arm/spindle assembly while aligning the upper control arm ball joint or misalignment spacer with the mounting hole on top of the spindle. Secure the upper arm to the spindle using either the OEM upper ball joint nut or (if you are using our upper control arm) the bolt that comes with the upper arm. Tighten this bolt to OEM torque spec or the torque spec given in the upper arm installation guide. (Fig O)



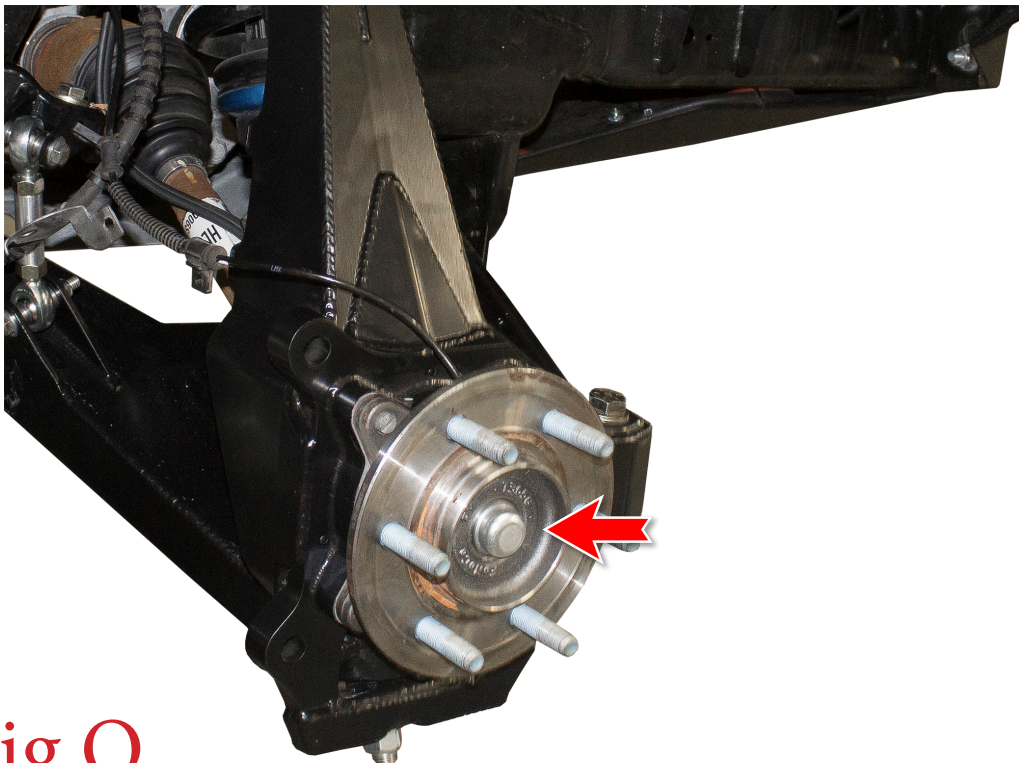
**Fig O**

19. Attach the outer tie rod heim to the spindle using the bolt supplied with tie rod kit. Tighten this bolt to the torque spec given in the tie rod installation guide. (Fig P)



**Fig P**

20. Using a 15mm Socket, tighten the axle nut to OEM torque spec. Make sure to use caution when tightening this nut. The axle splines will slide/line up with the vacuum actuated 4WD hub. Once the axle nut is tightened, reinstall the factory dust cap. (Fig Q)



**Fig Q**

21. Reinstall your brake rotor, brake caliper mounting bracket, and brake caliper. Tighten all hardware to factory torque spec.

**\*\*\*\*IF YOU ARE INSTALLING AFTERMARKET BRAKES, YOU MAY HAVE TO USE THE SUPPLIED CALIPER MOUNTING SPACERS (FULLY ROUND SUPPLIED WASHERS) BETWEEN THE SPINDLE AND THE CALIPER MOUNTING BRACKET TO CENTER YOUR AFTERMARKET BRAKE CALIPER.\*\*\*\***

22. Reinstall your ABS line.

23. Reconnect the vacuum line you disconnected in Step 15.

24. Zip tie your brake lines, ABS lines, and vacuum lines to the spindle using the slots that are cut into the spindle. Make sure the lines are out of harm's way at all points of suspension and steering cycle.

25. Repeat this entire procedure on the other side of the vehicle.

26. Reinstall your front wheels and take your vehicle off its jack stands.

27. Your vehicle requires an alignment after this installation.

28. Stand back and enjoy your new ADD Spindles.

29. Check and re-tighten , if needed, all mounting bolts after 100 miles and periodically thereafter.