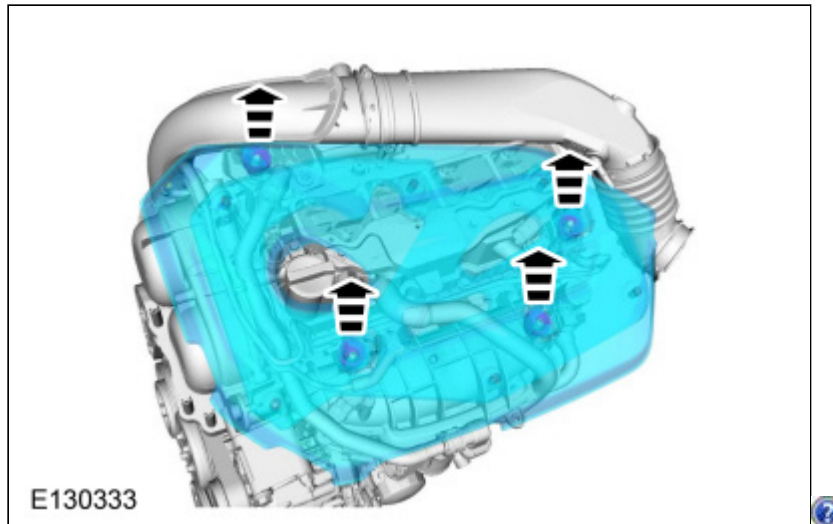


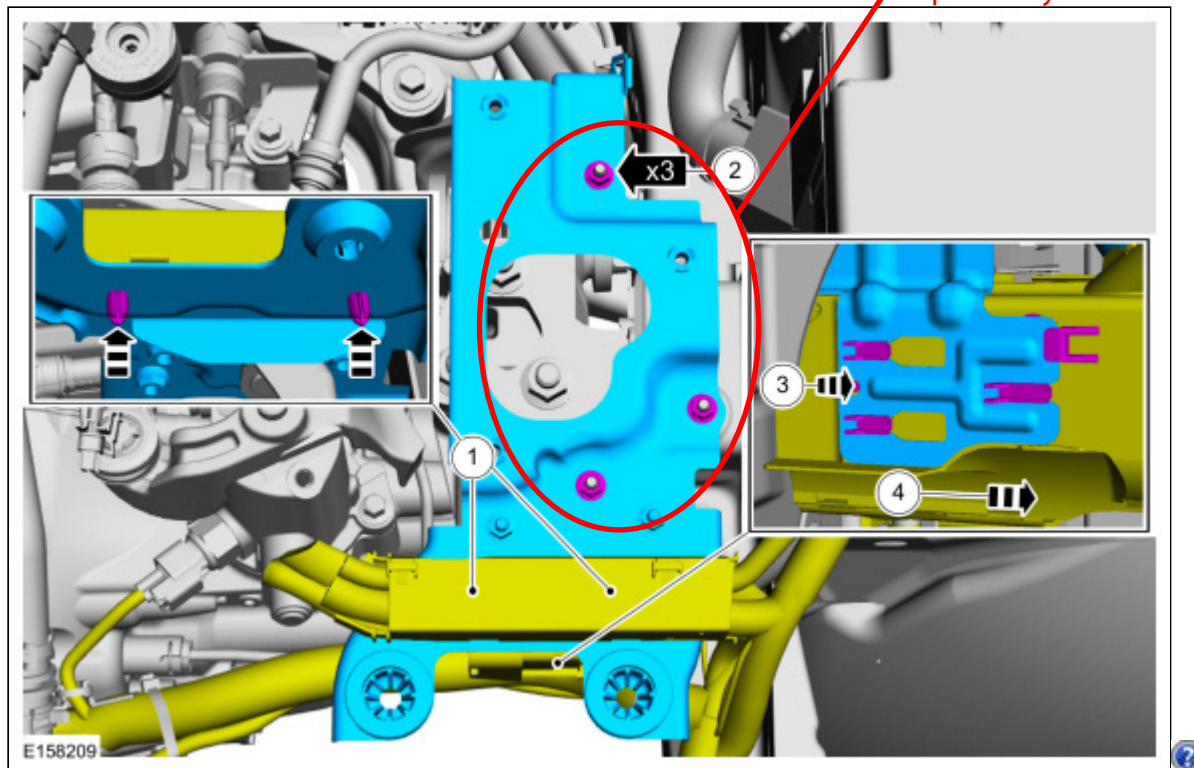
Transmission

1. If equipped.



2. Refer to: [Battery Tray - 1.0L EcoBoost \(90kW/120PS\)/1.6L EcoBoost \(132kW/180PS\) - Sigma](#) (414-01 Battery, Mounting and Cables, Removal and Installation).

- 3.

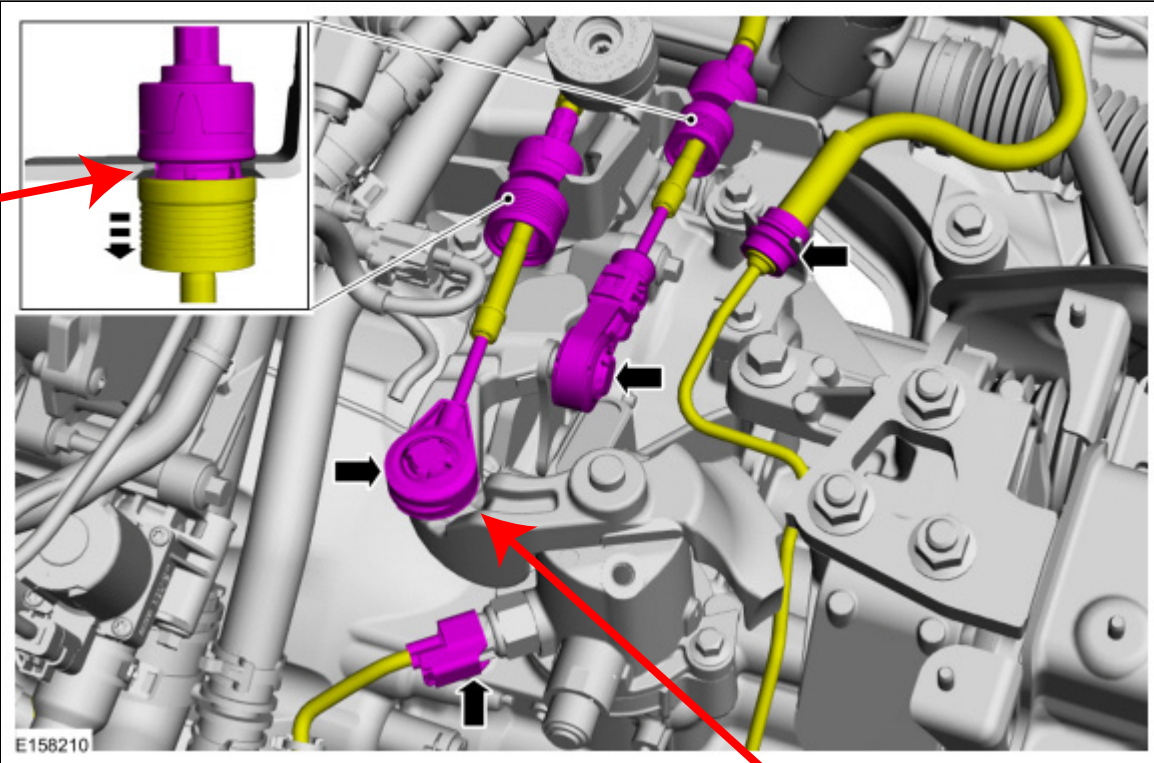


- 4.

Once the battery tray was out, I used a zip tie to bundle and hold back all of the wiring going to the ECU. I then wrapped it in a plastic bag to keep it dry and dust-free during the process.

This step was particularly challenging. Used large pliers. A LOT of force required to pull the sleeve forward. Spray with penetrating oil prior to attempting.

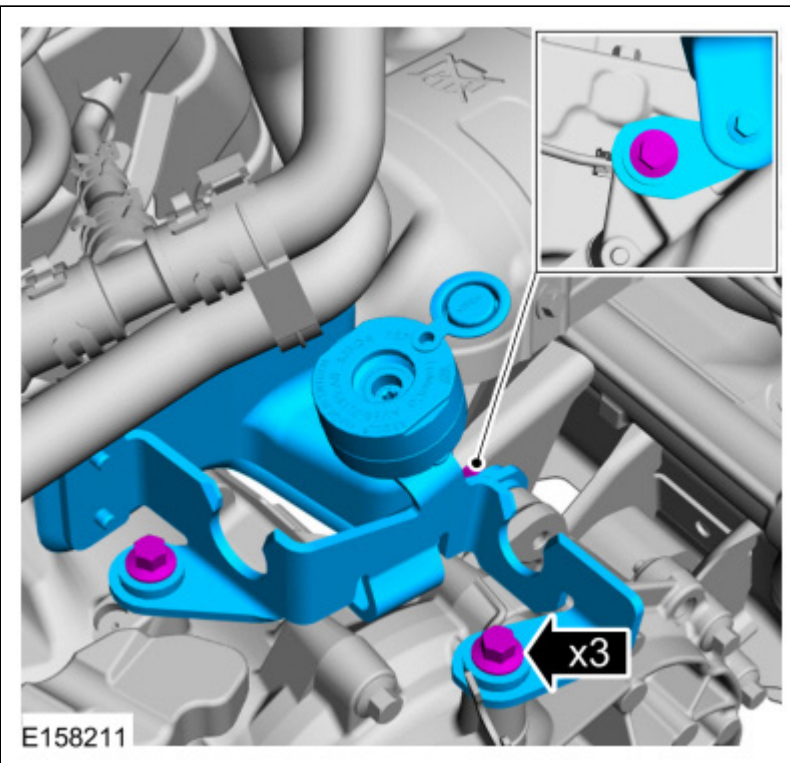
oil first



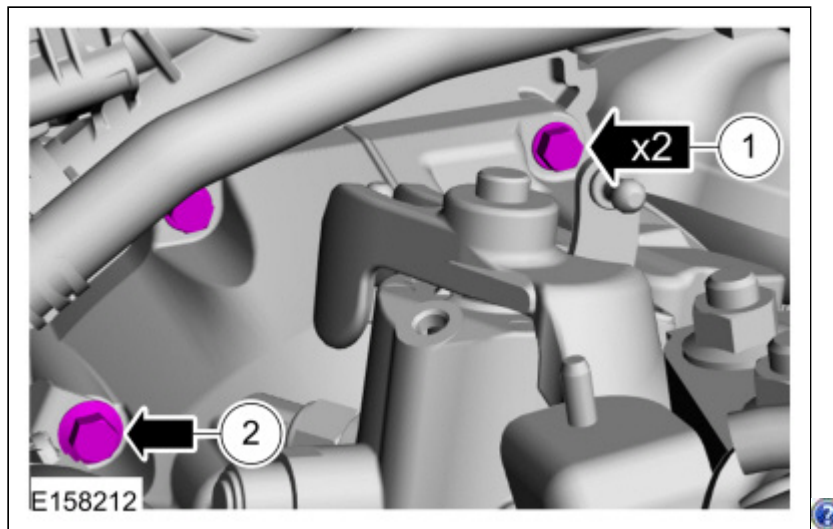
5.

Removing the shift linkages - the best method here was to put a screw driver on each side and gently pry up. It will take a decent amount of force.

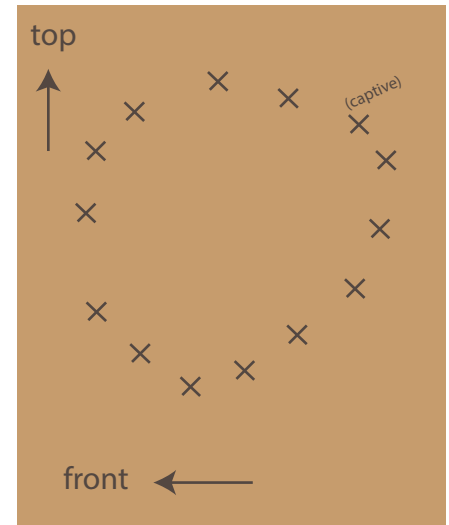
Once they were removed, I used a bungee cord hooked on the opposite side of the engine, wrapped around the two cables to pull them up out of the way.



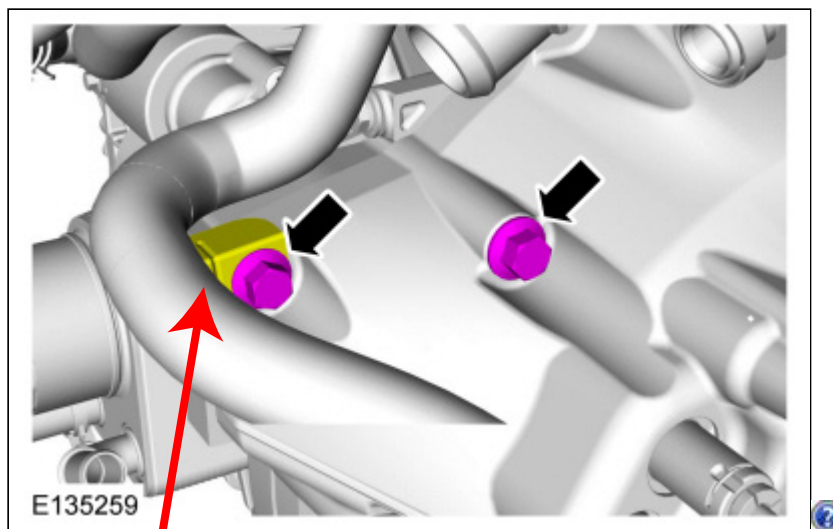
6.



IMPORTANT: Get a piece of cardboard and mark it with each bolt that comes out. Cut little X's in the cardboard and stick the bolts in as you pull them out to keep track of where they go. Mine looked something like this:



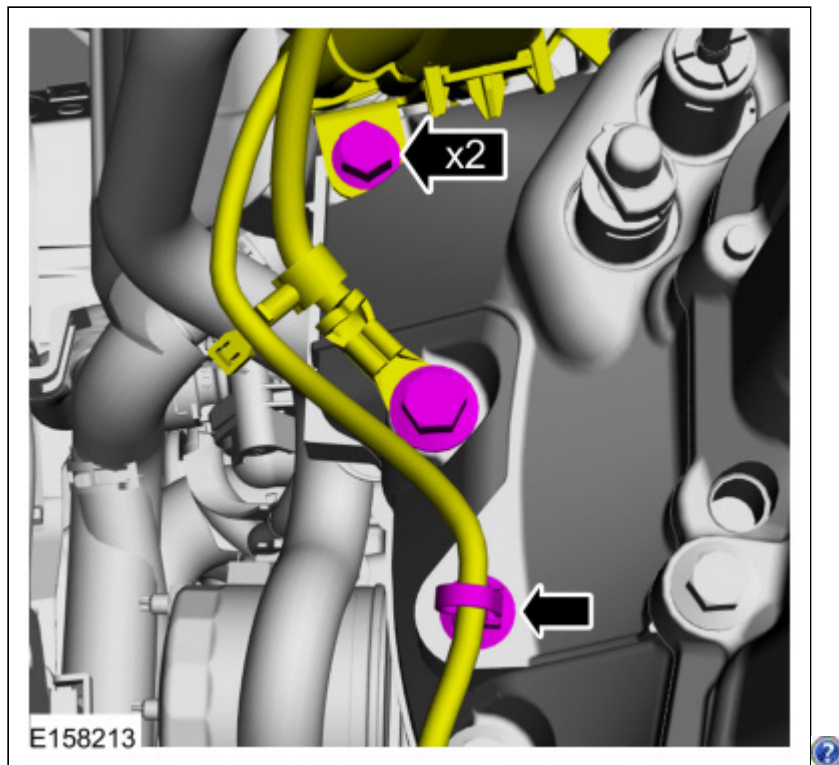
7. **NOTE:** Note the different lengths of the bolts.



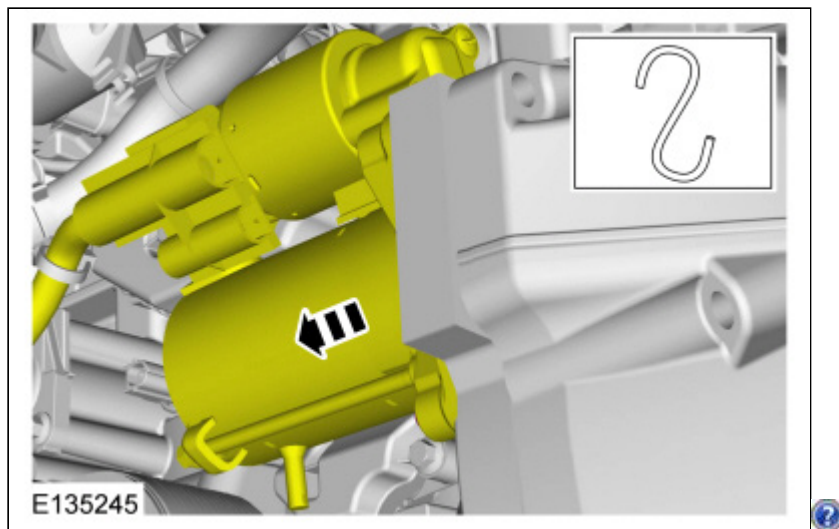
8. If equipped.

Just a small note here - that little yellow bracket is very stiff. It hangs down over the trans case and can hold it IN (when you are removing it) or can block it (when you are installing it) - pay close attention to it and the nearby brackets when you are removing or installing the trans case.

I also numbered the bolts that were underneath so I could double check. I wrote the numbers on the case and on each bolt head with a paint pen.



9.

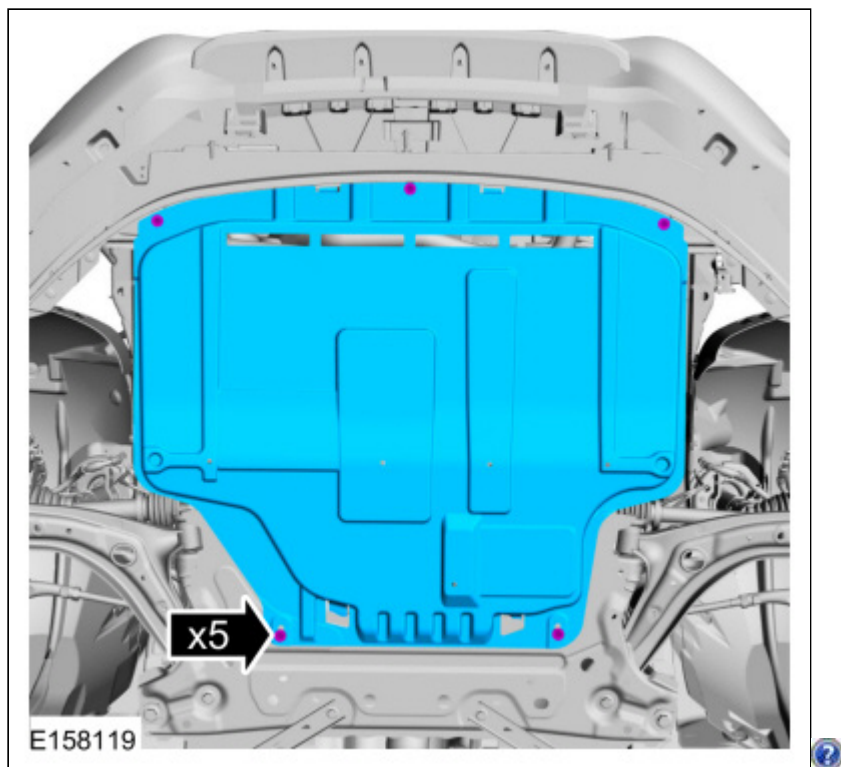


Note: I did not need to support the starter, as once unbolted it really had no where to go.

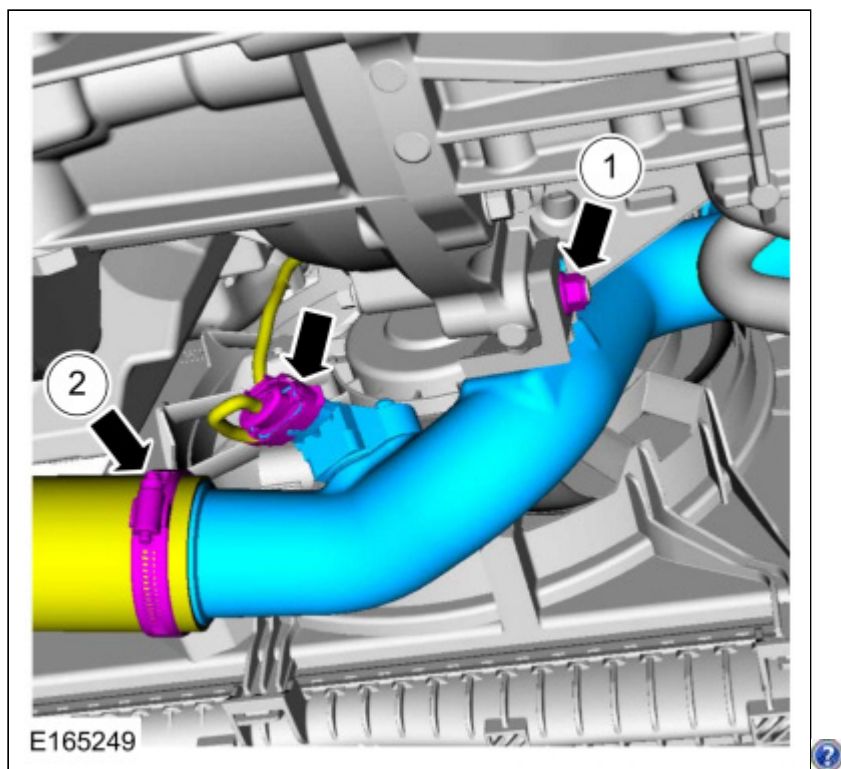
10. Refer to: [Jacking and Lifting - Overview](#) (100-02 Jacking and Lifting, Description and Operation).

11. If equipped.

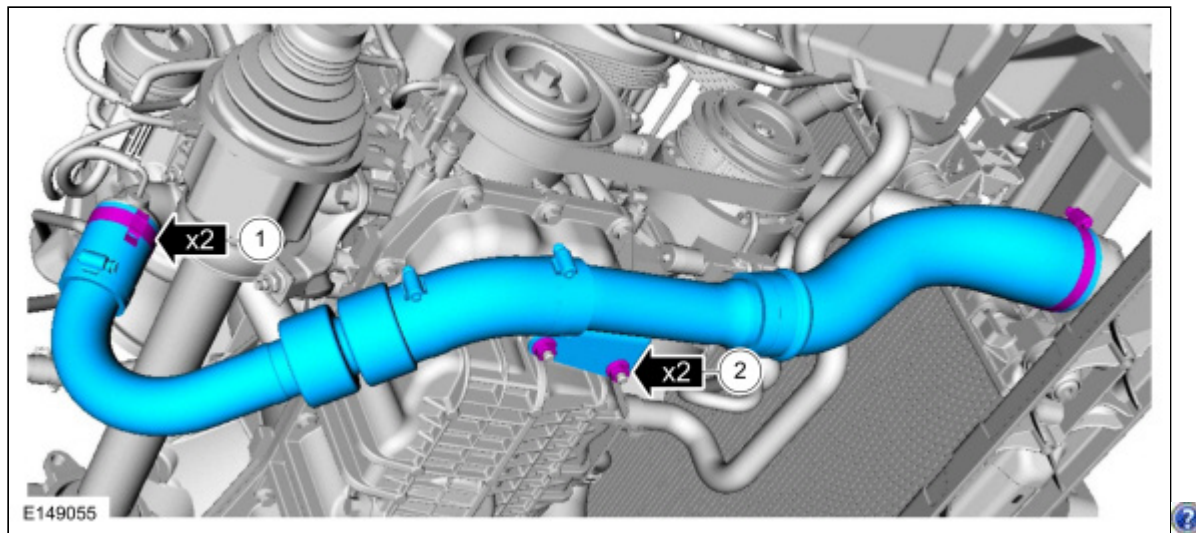
Jack up the car, set on jack stands. Be sure to have it secured. I would also recommend chocking the rear wheels and using a second set of stands as insurance/backup.



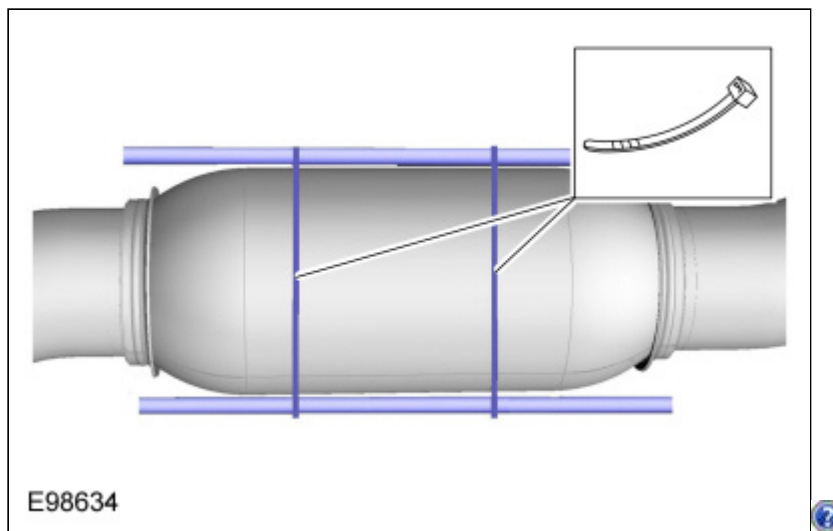
12.



13.

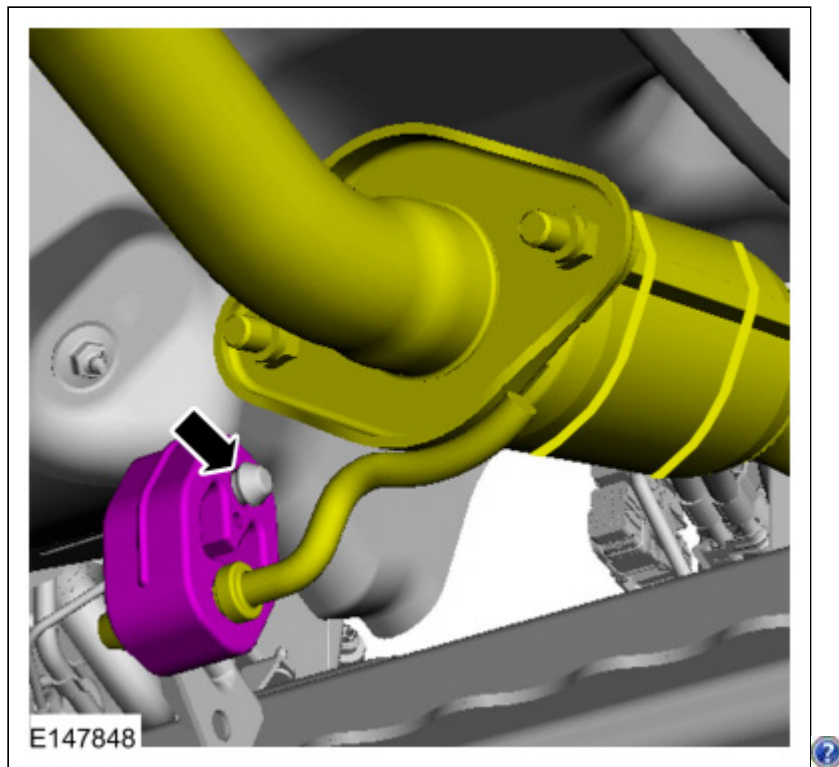


14.

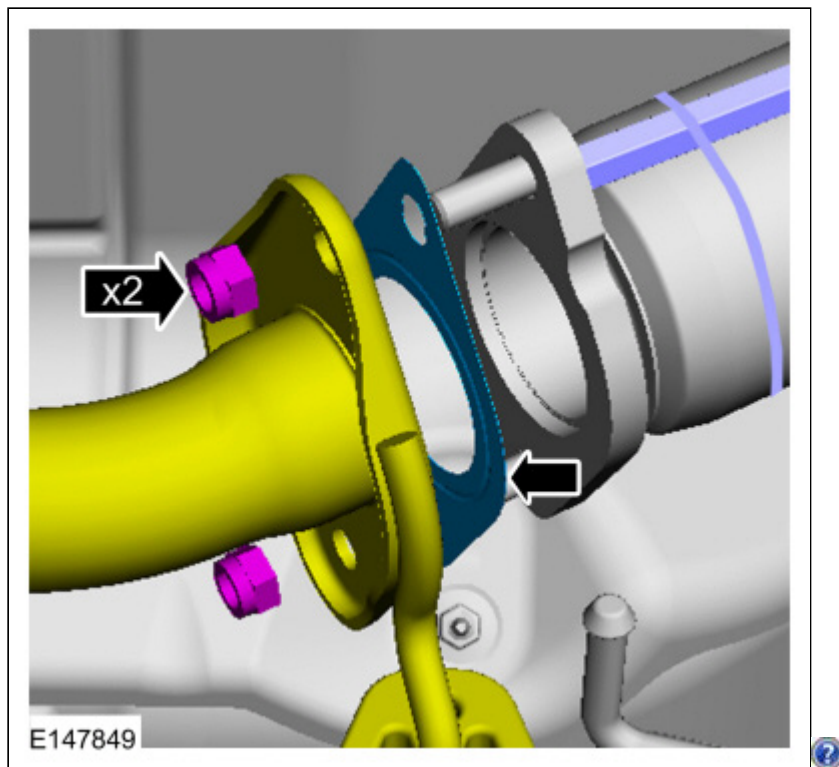


This step was not necessary.

15.

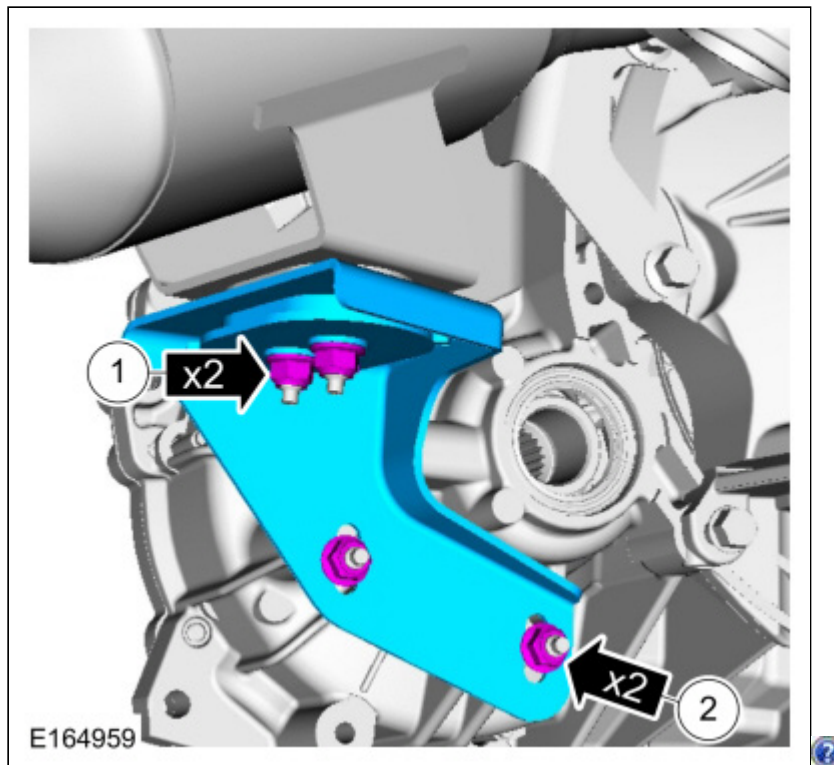


16.

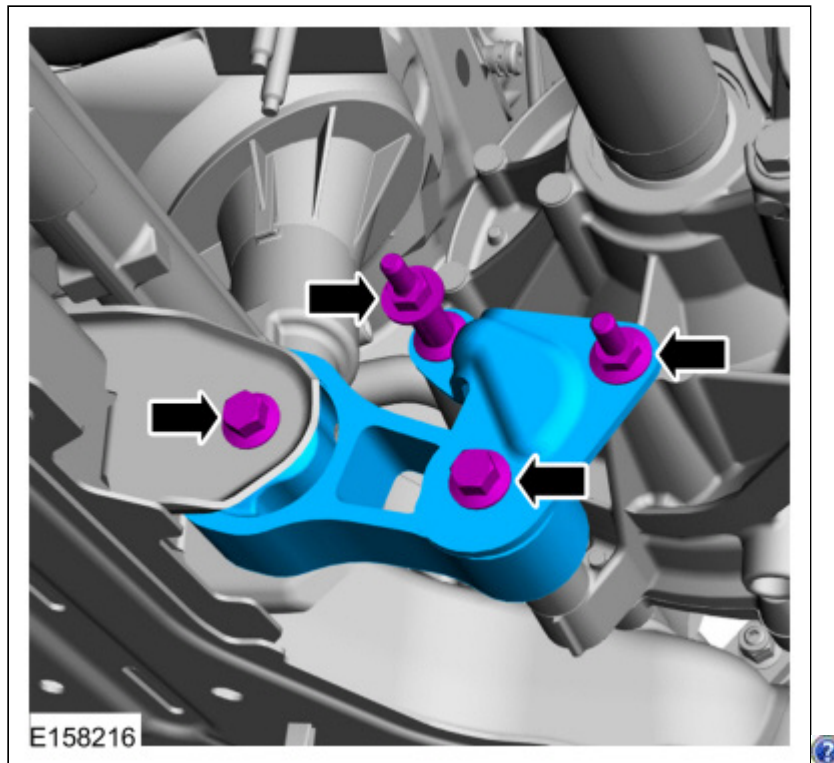


Things are a bit tight here.

17.

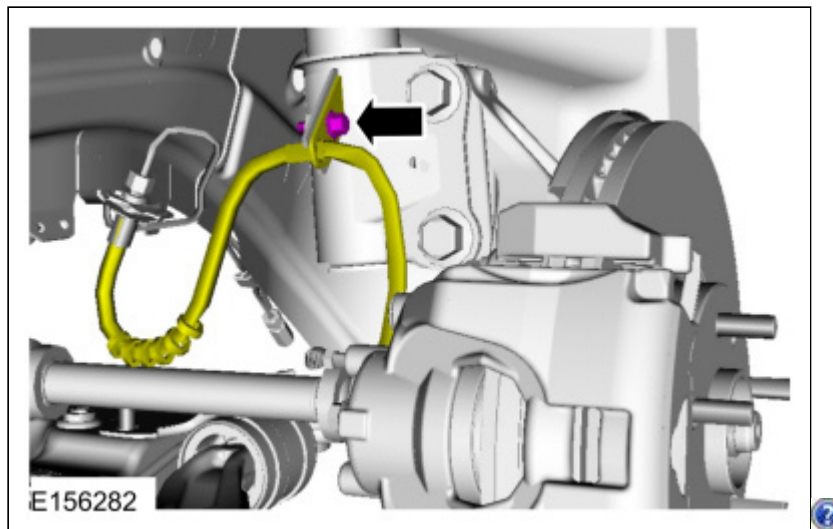


18. **NOTE:** Note the different lengths of the bolts.

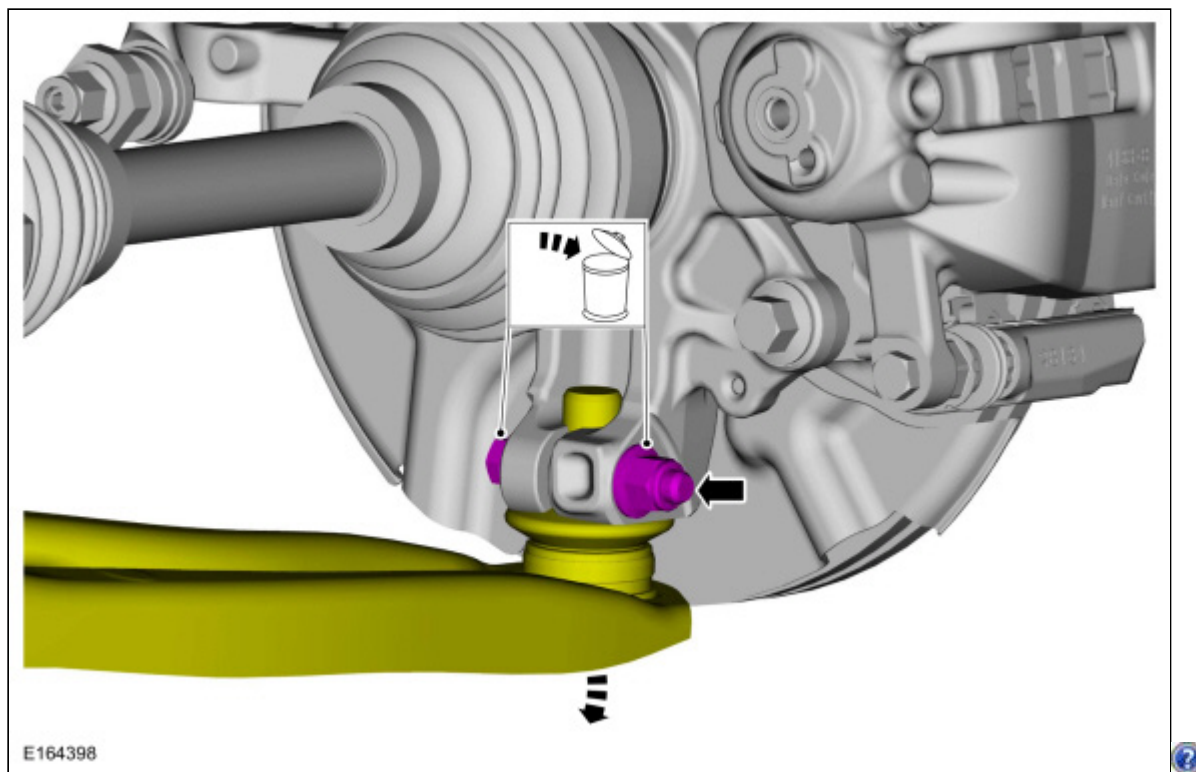


19. Refer to: [Front Subframe](#) (502-00 Uni-Body, Subframe and Mounting System, Removal and Installation).

20. OK, so the Manual tells you to remove the Subframe at this point. I will tell you it is not necessary and you should do so only if you want to follow the procedure. If you do not remove it, you will have substantially less room to remove the trans, but it is definitely doable. I did it both ways.

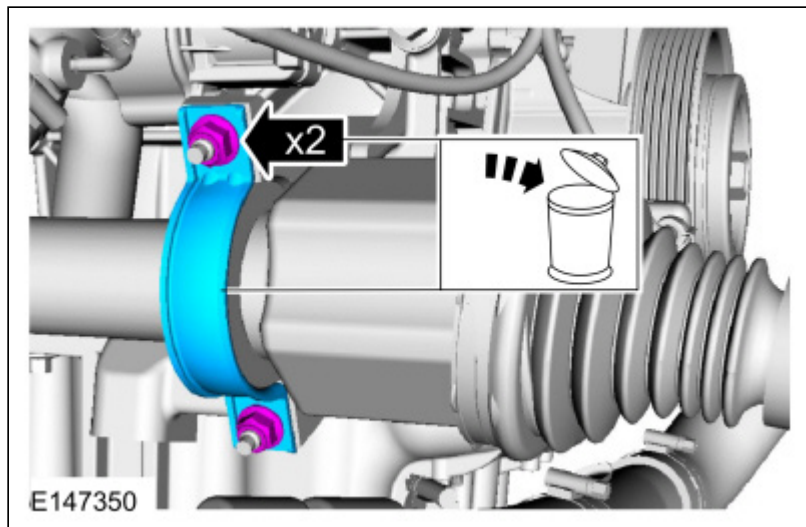


21.



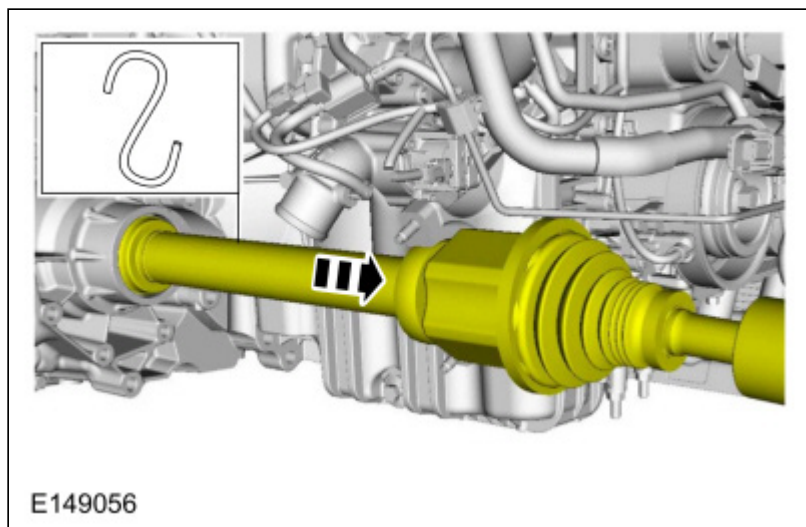
22.

A note here - I had tremendous difficulty removing both control arm ball joints. So much so, I ended up using an air tool with a pickle fork and a pry bar to get them apart. In doing so, I destroyed the boot/joints. I found aftermarket replacements on Rock Auto, but damaged the arm in the process of pressing out the old ball joints. So I replaced both A-arms, which come with a ball joint factory installed. SO - BE CAREFUL. Don't be afraid to use force on the hub where the joint fits into to get the ball joint off. It may take a lot of hammering and prying to get it to come free. Also, use penetrant overnight!



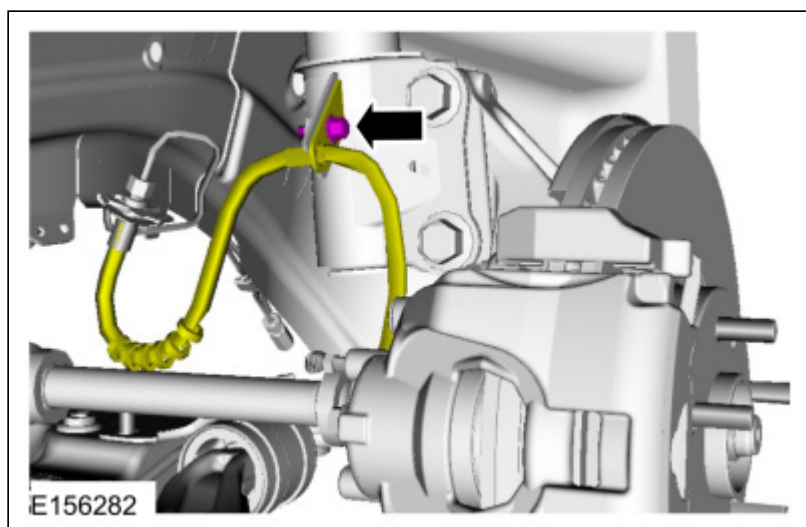
I kept and re-used these nuts. Up to you.

23.



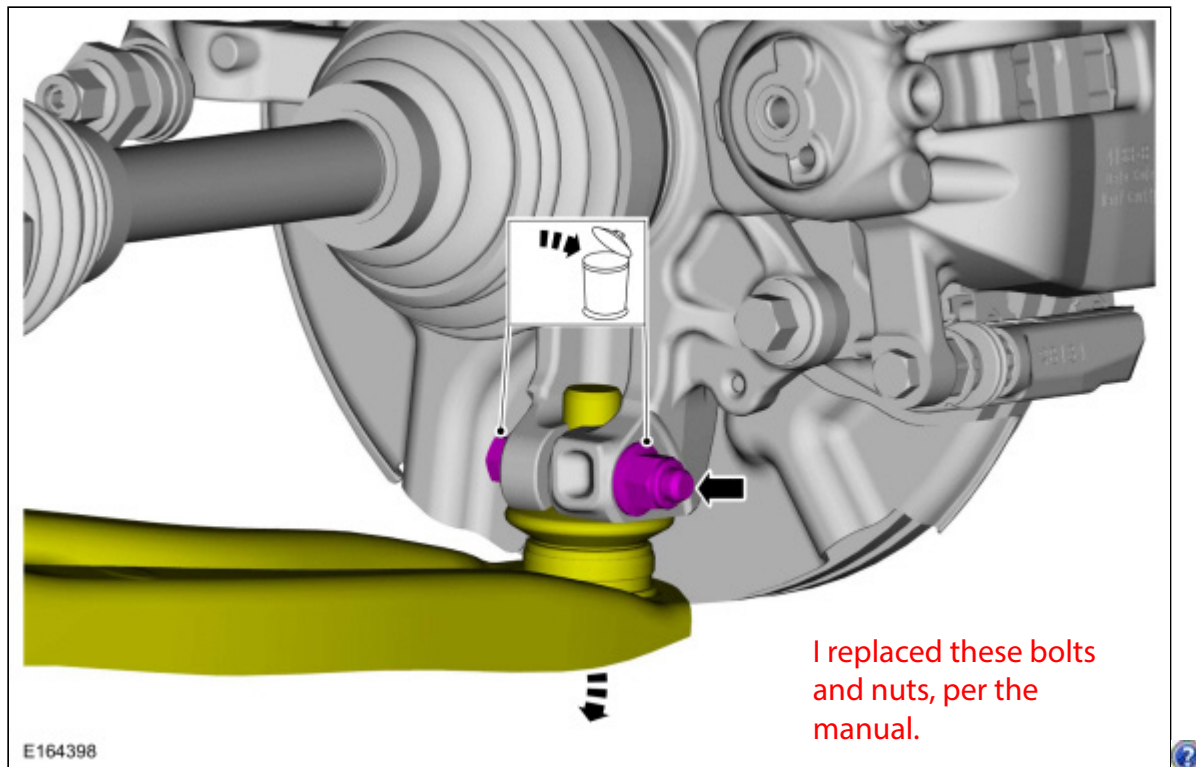
I used large zip ties to support the shaft and keep it out of the way. I was able to position it above the transmission case.

24.

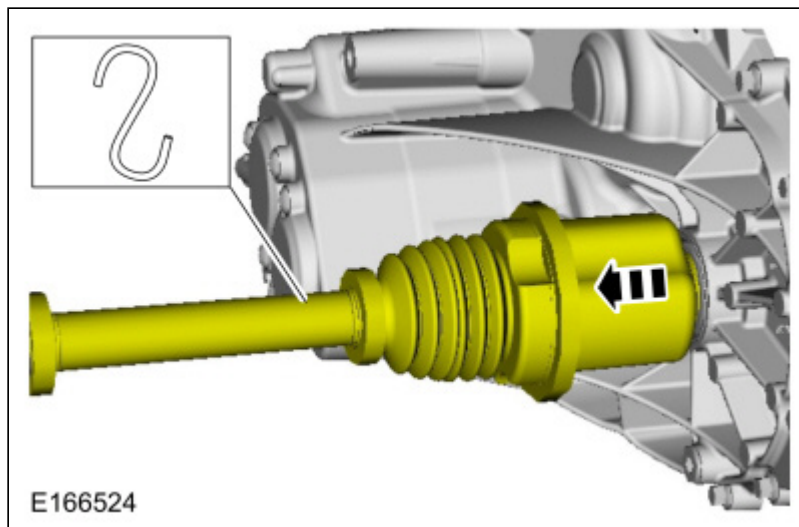


I can't recall if I used a pry bar to remove the axle. Either way, be sure NOT to pull on the shaft. Pull on the housing!

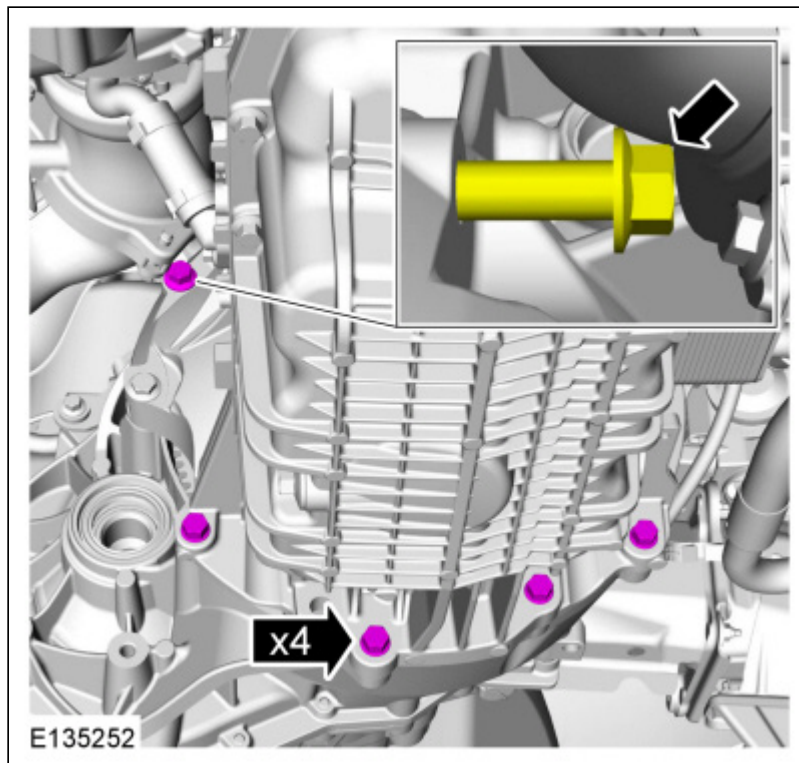
25.



26.



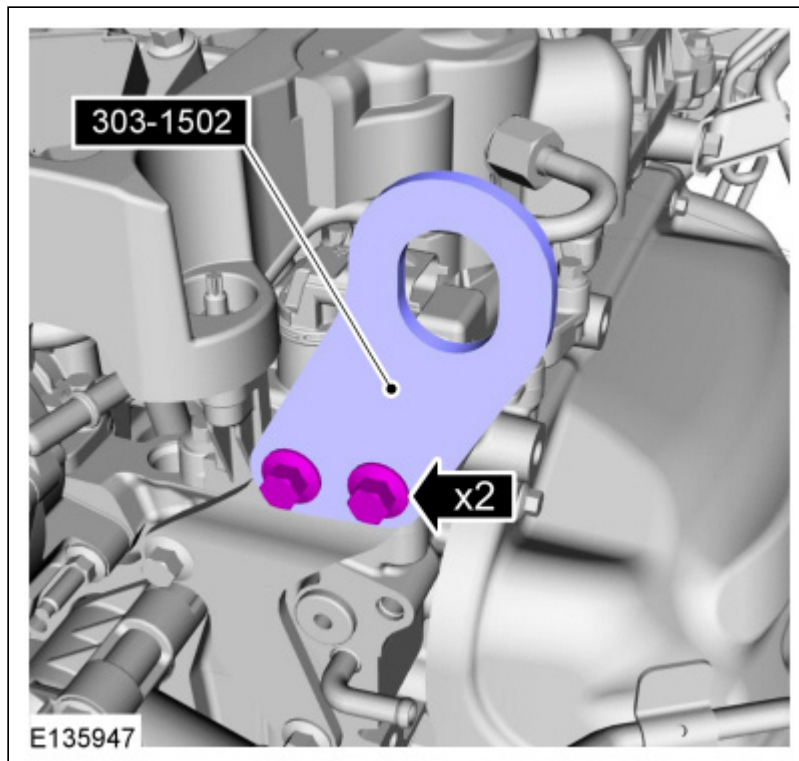
27. **NOTE:** Note the different lengths of the bolts.



This bolt is VERY TRICKY. The goal is to undo it, but not remove it. Because the turbo piping is so close, you can only undo the bolt; you can't remove it. SO - I was able to use a 13mm Harbor Freight Pittsburgh Tools ratcheting wrench. I was able to slide one side (the top) onto the bolt and then snap the bottom on. You may need a screwdriver to sort of pry it on/off, but it will work! If you can't get it that way, you may need to use some creative crow's foot arrangement. Good luck!

28. Refer to: [Cowl Panel](#) (501-02 Front End Body Panels, Removal and Installation).

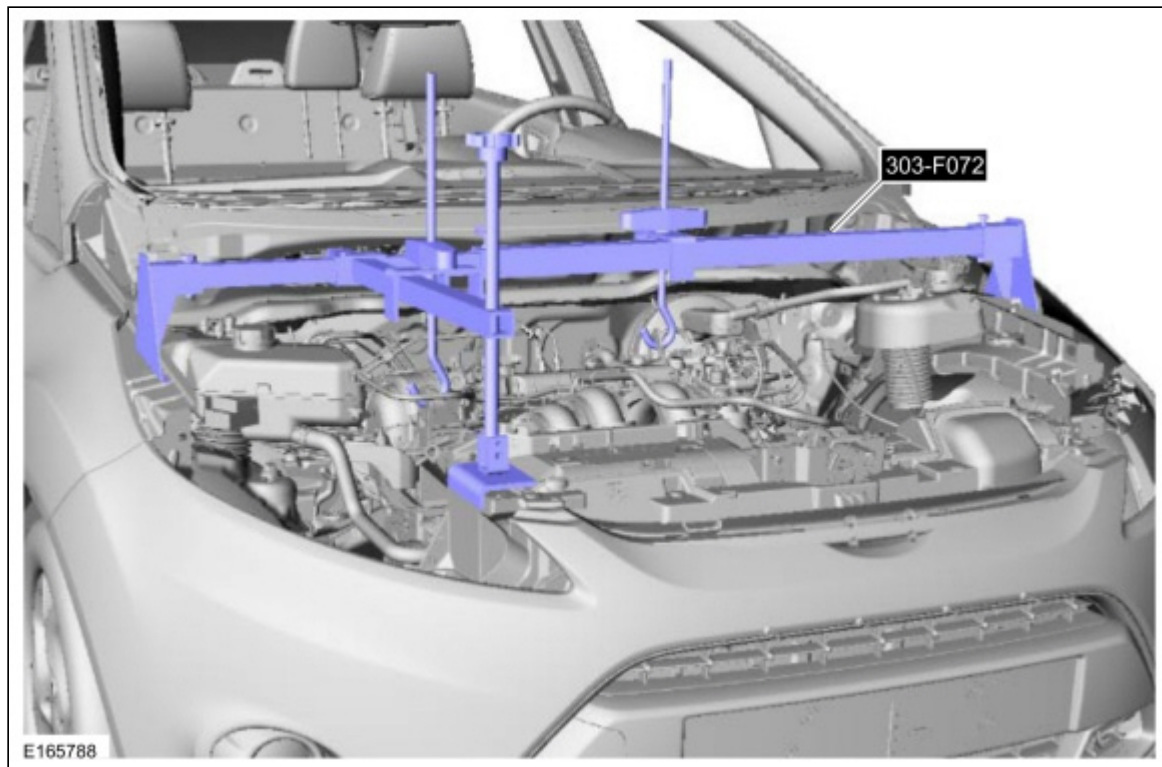
29. *Special Tool(s)* : 303-1502 Lifting Device Engine



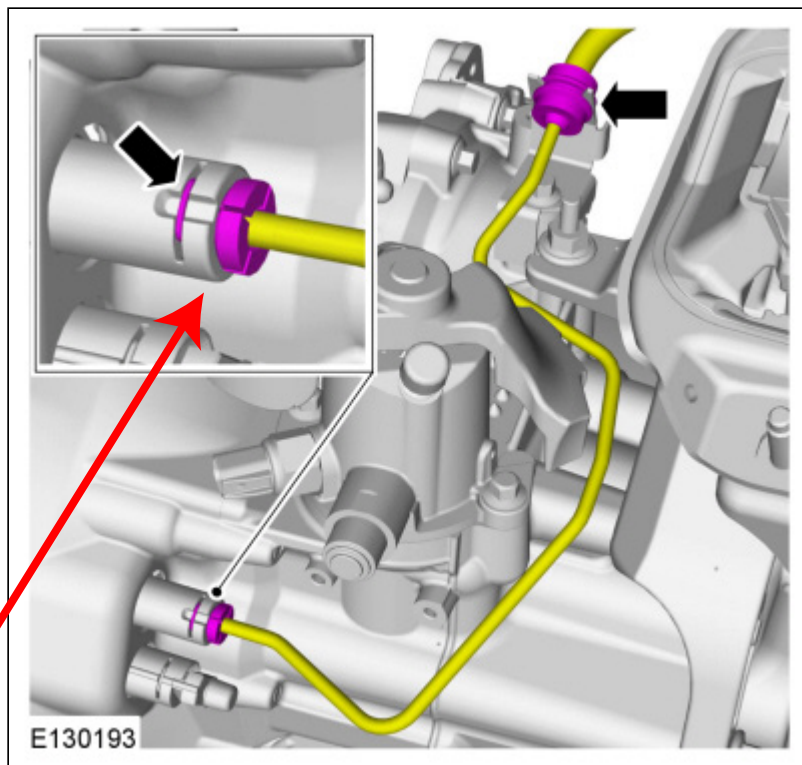
At this step, remove the cowlings above the engine, below the windshield. There are two large black plastic pieces. You'll have to remove the wipers, too, and will need a wiper arm puller for this.

For this piece - my friend brought some scrap metal pieces, including one that resembled this device. He just needed to cut it to size, drill the holes and found a couple bolts in my scrap bin. You can buy this part online, too. You will need this.

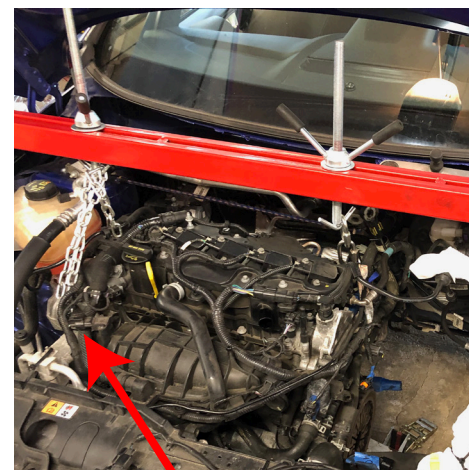
30. *Special Tool(s)* : 303-F072 Support Bar, Engine



31. **NOTICE:** Make sure that all openings are sealed.



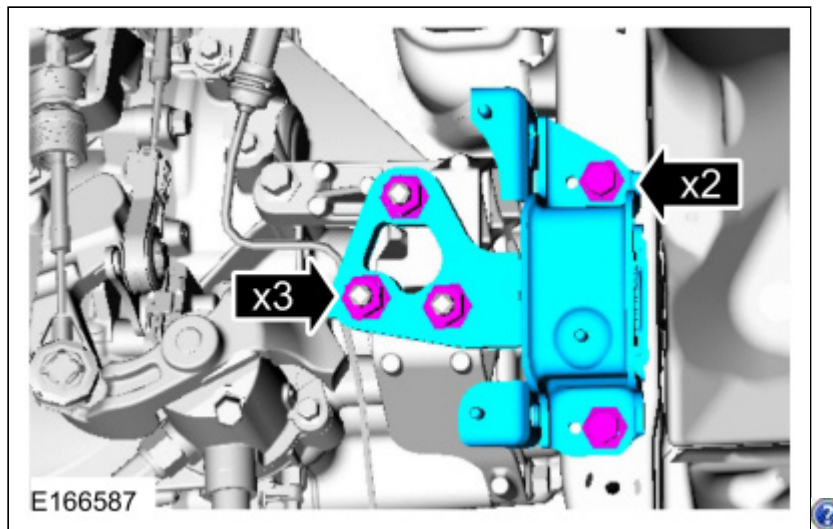
I used the Harbor Freight engine support bar. It does not have the extension arm that reaches out and touches the radiator. You can either fabricate one yourself from steel or you can ignore it like I did. The challenge there is that the engine will rotate a bit. You can mitigate this by adding a second chain on the left side. There is a loop on the engine block to pass the chain through.



loop is here

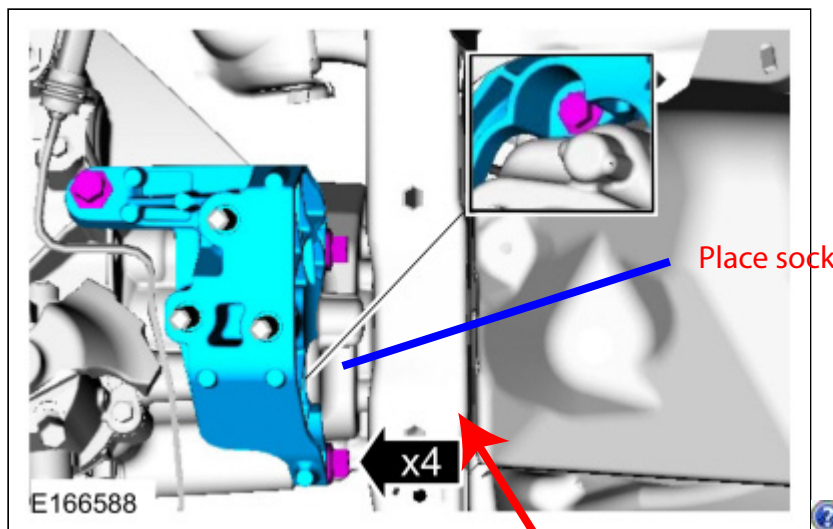
32.

TWO THINGS - when you remove the small metal clip and pull the hose out, brake fluid will flow out. **PUT A CATCH CAN BELOW!** Also, some towels below it to prevent fluid getting all over the trans case. I lifted the hose up, put a silicone stopper in it and set it up high off to the side so it wouldn't leak. **ANOTHER VERY IMPORTANT THING** - there is a tiny rubber o-ring/tip on the part that comes out. **IT WILL LIKELY STAY INSIDE THE SLAVE CYLINDER!** Later, when you reinstall the line and fluid is pouring out, you will wonder why. This is why. Use a small pick to gently walk it out of the master cylinder and replace it on the hose before inserting into slave cylinder.



The bolts on the right go into the frame and may have corrosion. They are torqued pretty high, so you will need a breaker bar. Penetrating fluid helps here.

33.



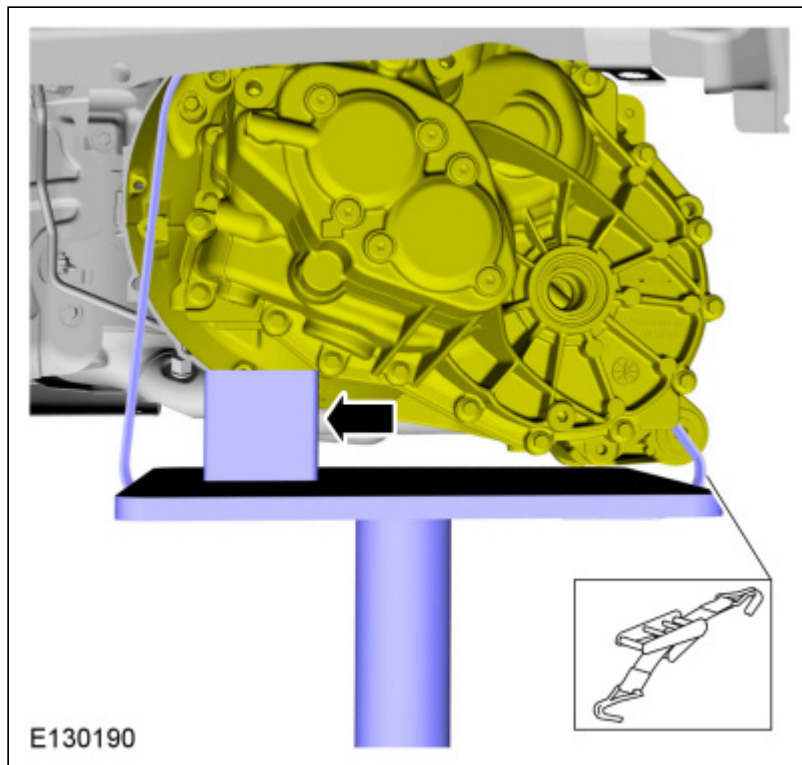
34. Install the following items:

- *General Equipment* : Transmission Jack
- *General Equipment* : Wooden Block
- *General Equipment* : Retaining Strap

Car Frame member

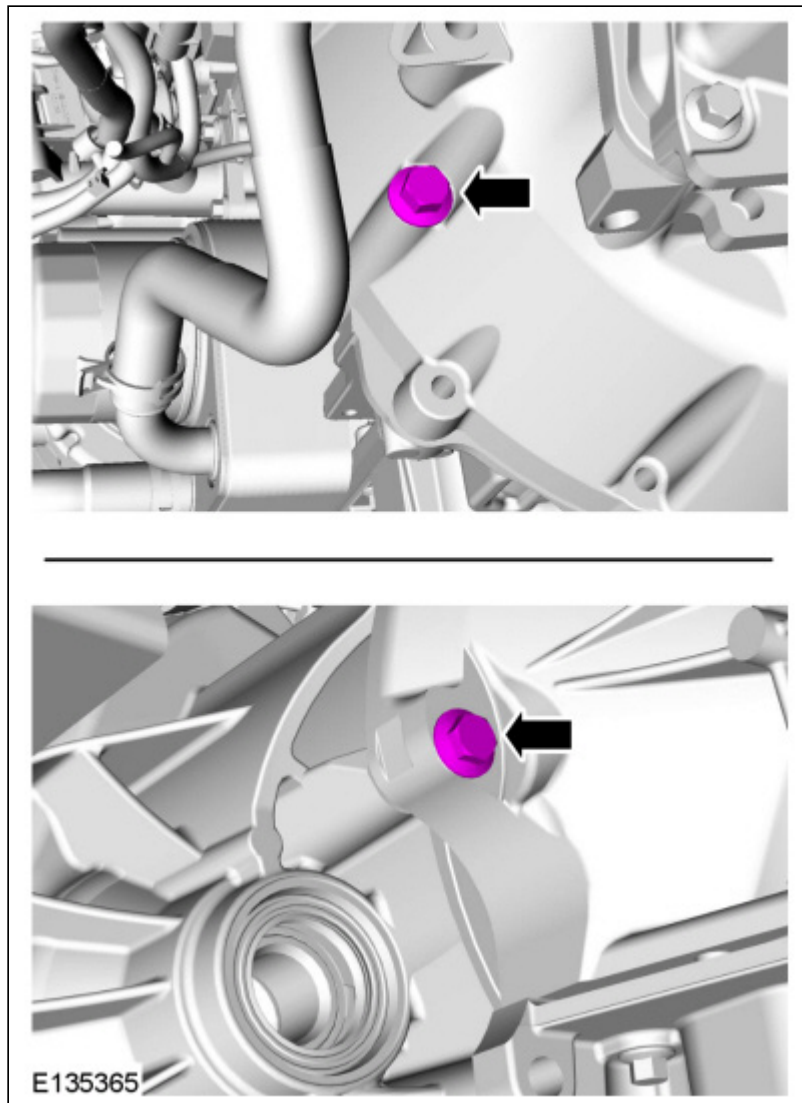
This bracket has a secret. There is a small hole in the frame/body of the vehicle for you to pass a socket extension through to access the lower bolt. It is a royal pain in the butt. I found that this combo worked for me: Attach your 3/8" 15mm socket to your 3/8" socket universal joint. Then attach a medium length (about 8") extension to your 3/8" socket wrench. Fish the socket and universal joint down and place it on the bolt head. Next, fish the extension and wrench through the hole and into the universal joint. It will take a bit of finagling, and you'll need to hold the universal in place, but it will work.

The other bolts aren't that easy to get to either. I found a combination of ratcheting wrenches and sockets worked for me. It's a tight fit.

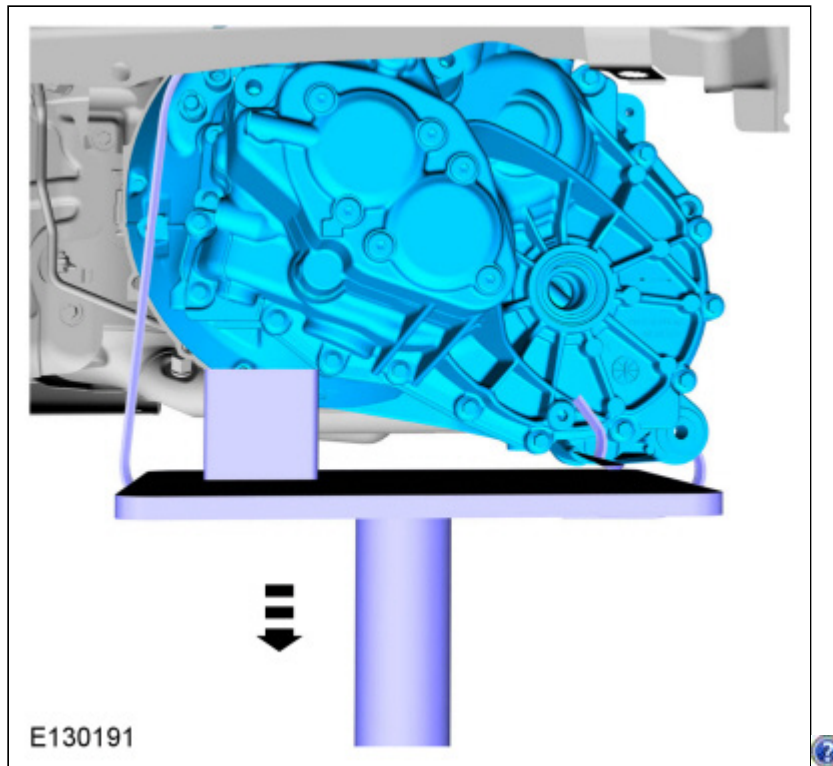


Do use the strap around the trans and plenty of wood chocking to secure it to the lift. You may need two straps. During removal, you will need to do a significant amount of wiggling and wrestling.

35.



36.



The trans will need to be wiggled out a lot. Pay attention to the brackets and wires on the top, front area. They will catch on the housing.

Once down, the trans will roll out through the wheel well area.

CONGRATS!