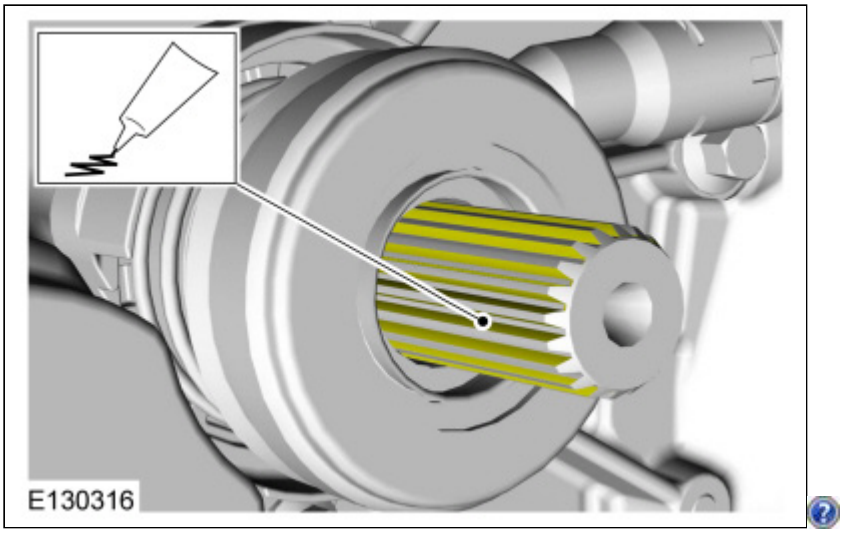
Transmission

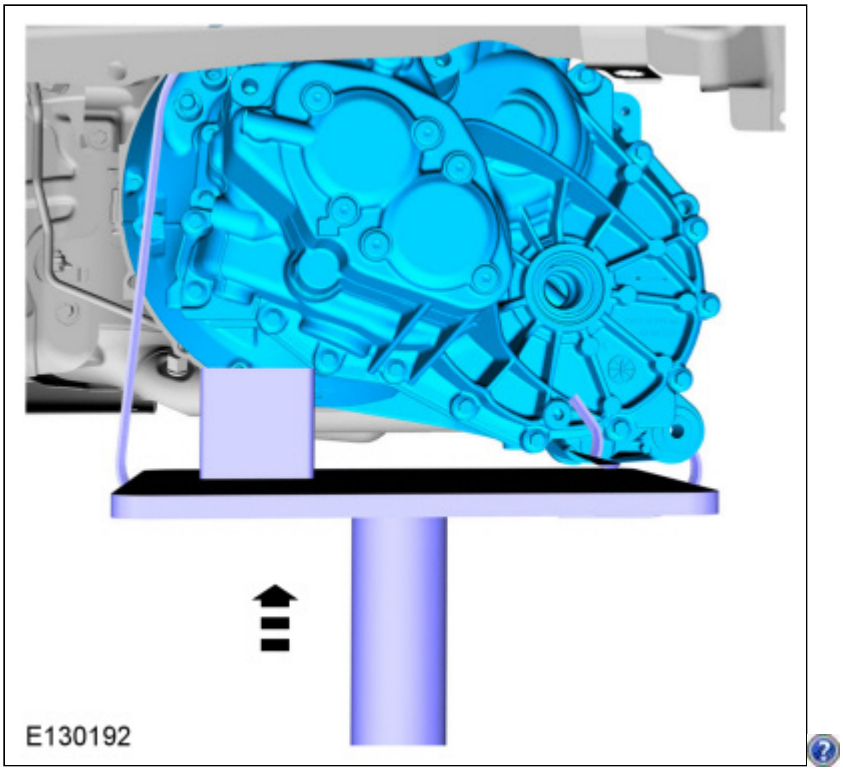
1. *Material* : High Temperature 4x4 Front Axle and Wheel Bearing Grease / XG-11 (WSS-M1C267-A1)



So this stuff sells for like $20 a tube. If you need some, EMAIL ME and I'll send you a few teaspoons.

Only put a very small amount, and wipe it off. You don't need much! Just needs to go inside the spline grooves and you only need a tiny bit!

2. Install the following items:
   - *General Equipment* : Wooden Block
   - *General Equipment* : Transmission Jack
   - *General Equipment* : Retaining Strap

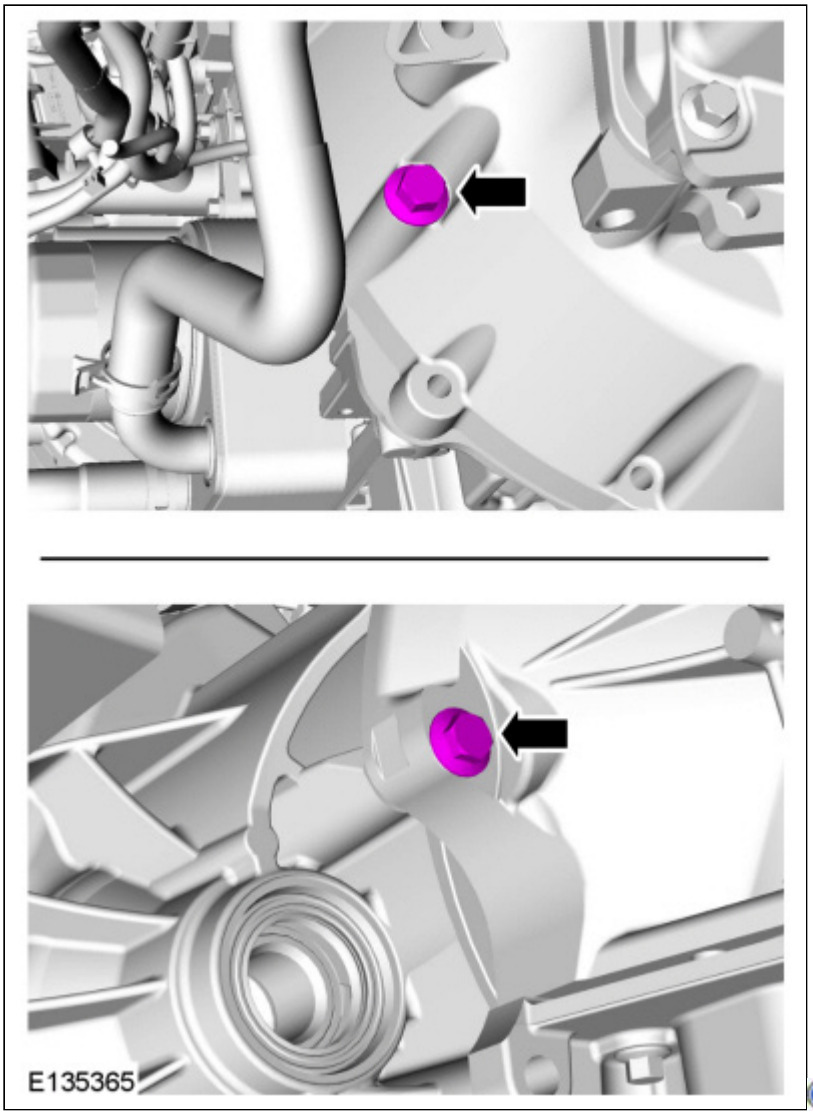


Set up your trans so when it is on the jack it is oriented as CLOSE TO the final orientation as possible! This is very important. If you don't, you'll be doing a lot of wrestling. Remember, the trans needs to be nearly dead-on, lining up the splined shaft into the engine. It is probably the second hardest part of this project; getting that thing in. I set up a few ratchet straps hooked over the top of the engine support bar to provide additional assistance in positioning the trans. I also let the engine droop down a little bit to make it easier to mate the two.

Also, be sure to check the brackets at the top of the housing near the starter. There is one in particular that fouled the trans case as I was attempting to install it, making it feel like something was hanging it up.

3. *Torque* : 48 Nm

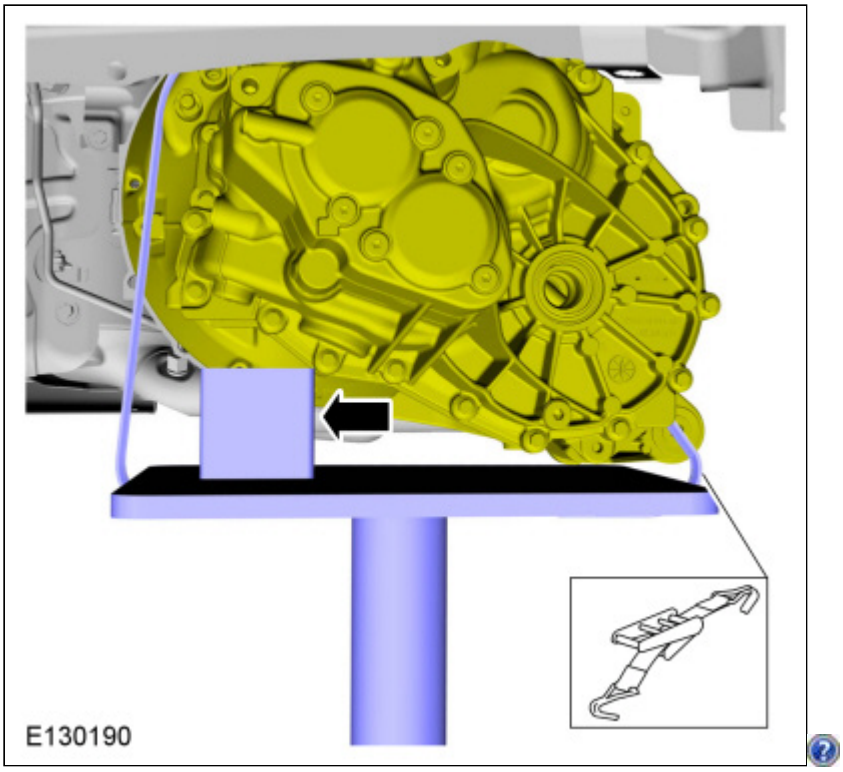
I recommend getting a friend to help!



Remember there are two locator pins on the trans case. Once the two halves are together and touching all around, THEN you can put bolts in. DO NOT attempt to use bolts to “cinch” the case to the engine. You will probably break something.

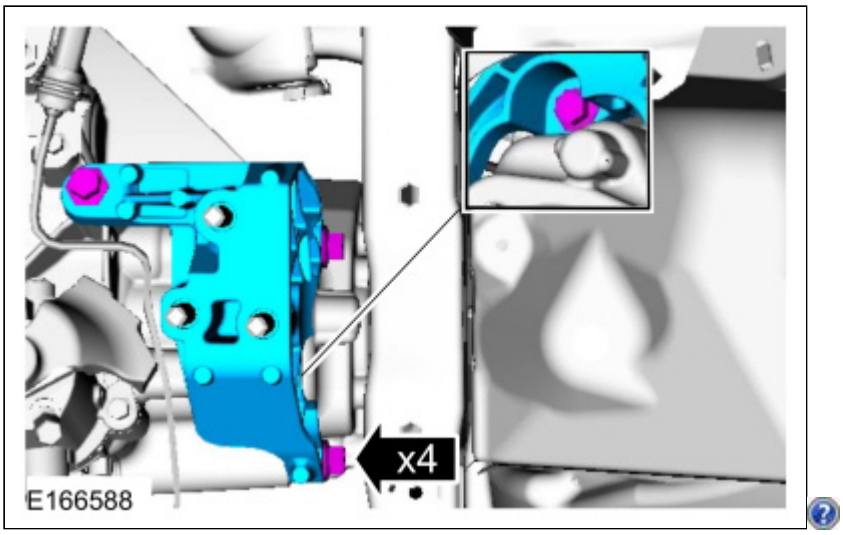
The manual says you should put these two bolts in, but I threaded in several others and snugged them up, because WHY NOT!?

4. Remove the following items:
    - *General Equipment* : Retaining Strap
    - *General Equipment* : Transmission Jack
    - *General Equipment* : Wooden Block



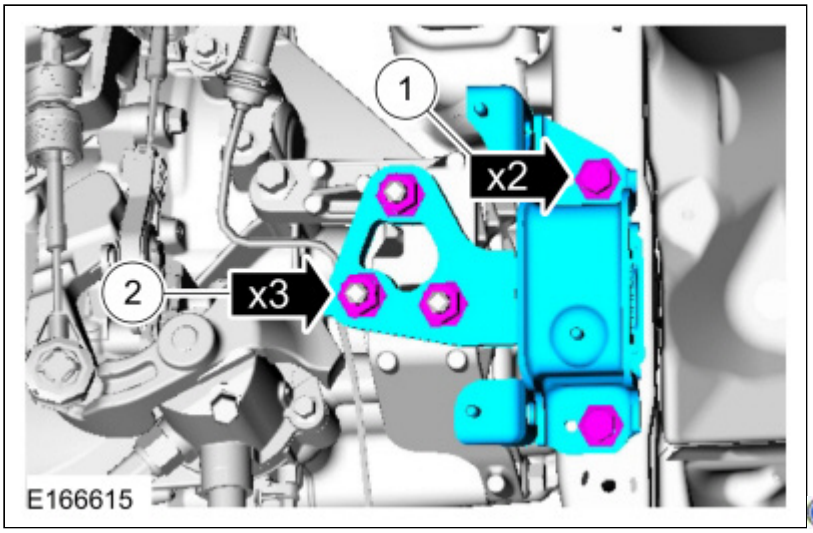
Yay!

5. *Torque* : 80 Nm



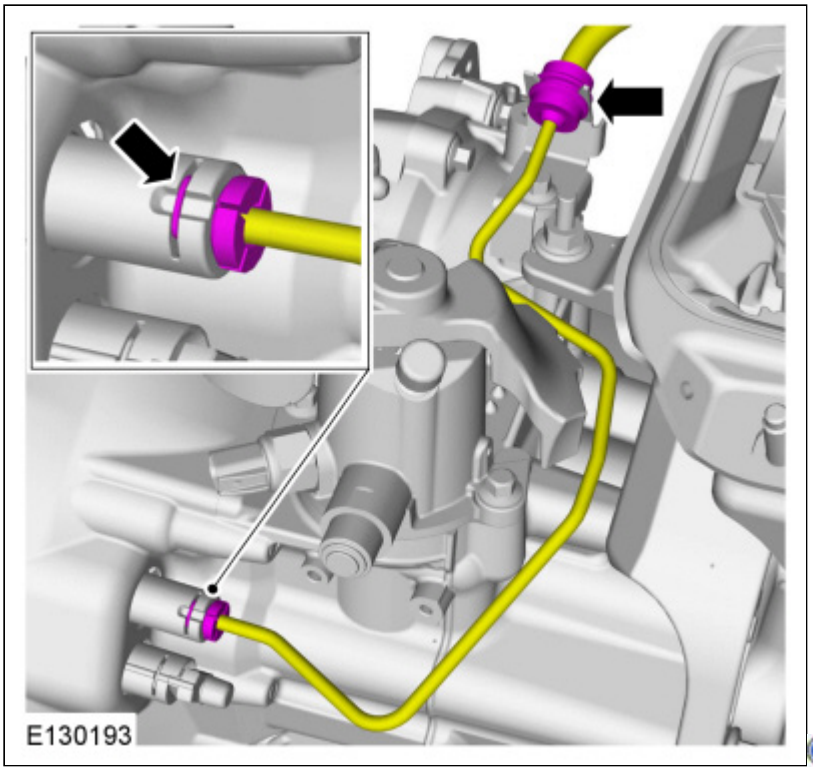
This is another challenging step. Remember when you removed this, you had to pass the socket wrench with an extension to reach the socket with a universal joint? Do that again, but attempt to put 80 Nm of torque on it! Ha! Do your best here. I used various racheting wrenches for these bolts. It's very tight quarters.

6. *Torque* :
   1 90 Nm
   2 125 Nm



Another extremely challenging step. My engine/trans tended to be toward the front of the engine bay. The mount needs to go much further back! This made it VERY hard to get the two to line up. I ended up wrapping a ratchet strap around the trans (VERY CAREFULLY SO AS NOT TO WRAP AROUND ANY SENSORS, ETC.) and hooked it to the subframe below the drivers seat. I then ratcheted the engine/trans BACK and checked the position until the mount could go into place. This took some good effort - a friend with muscle would help here.

7.

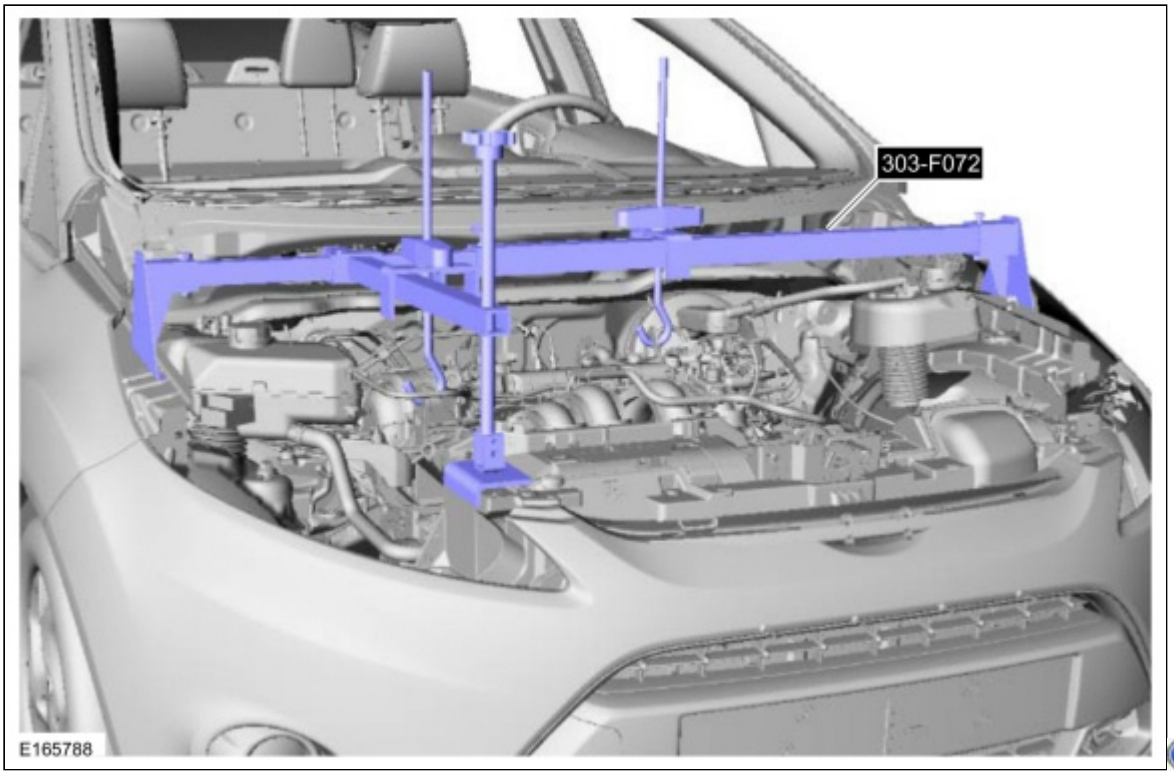


One more note - the bolts that go into the frame are very unforgiving. I failed on my first removal and cross-threaded the bolts. I had to go to a local hardware store and get the proper tap to clean out the hole. It worked perfectly fine (took my time, used cutting fluid) but be careful here! Don't force those bolts.

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

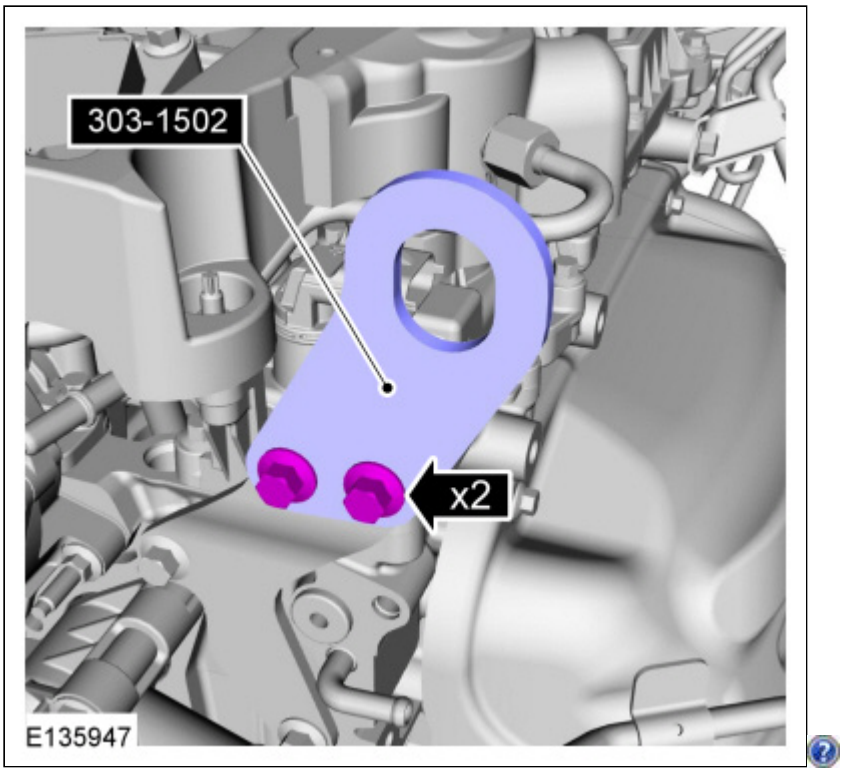
On the removal procedure, I reminded you that when you pull the hose out of this fitting, the little black rubber tip will usually stay INSIDE the housing. It is not supposed to, but it will. Fish it out and put it on the end of the hose before you install this hose. If you don't, fluid will continue to leak all over the housing and floor as you scratch your head and wonder why. (ask me how I know!)

And don't forget to snap little metal clip into the housing to retain the hose fitting AND clip the hose into the retainer near the back of the trans!



Yay!

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

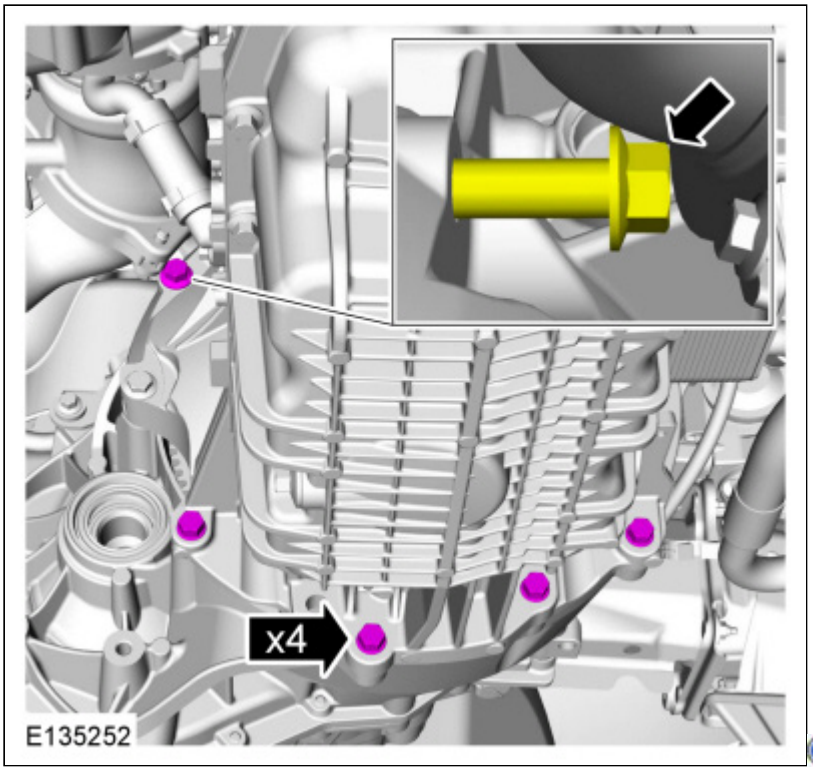


Yay!

And just a note here - there is a wire that wraps around the metal here on my engine. I had to unplug it to install this bracket. If you did too, be sure to plug it back in now.

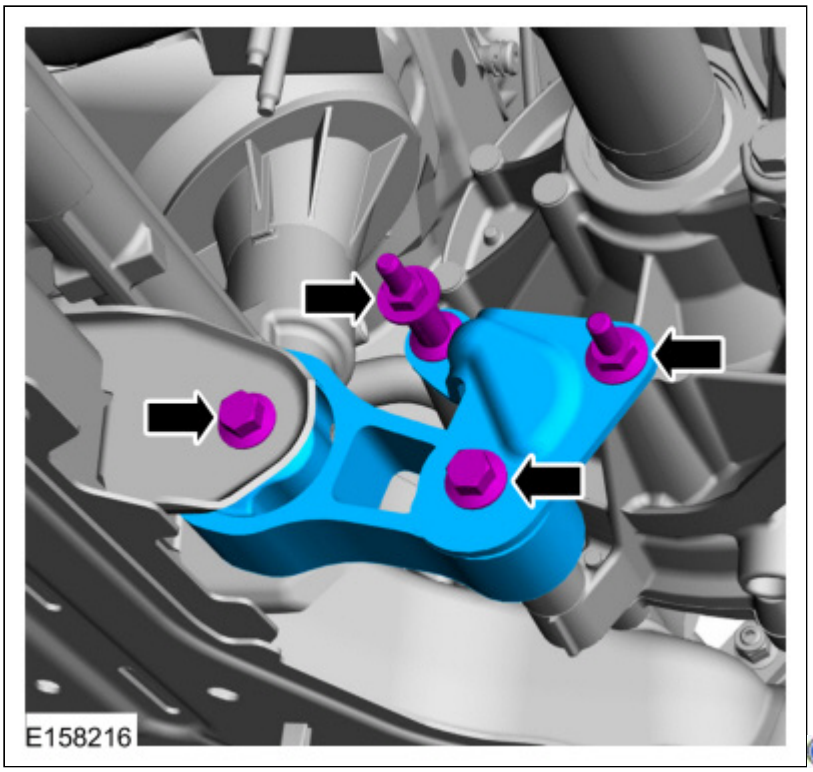
10. **NOTE:** *Note the different lengths of the bolts.*

    Torque : 48 Nm

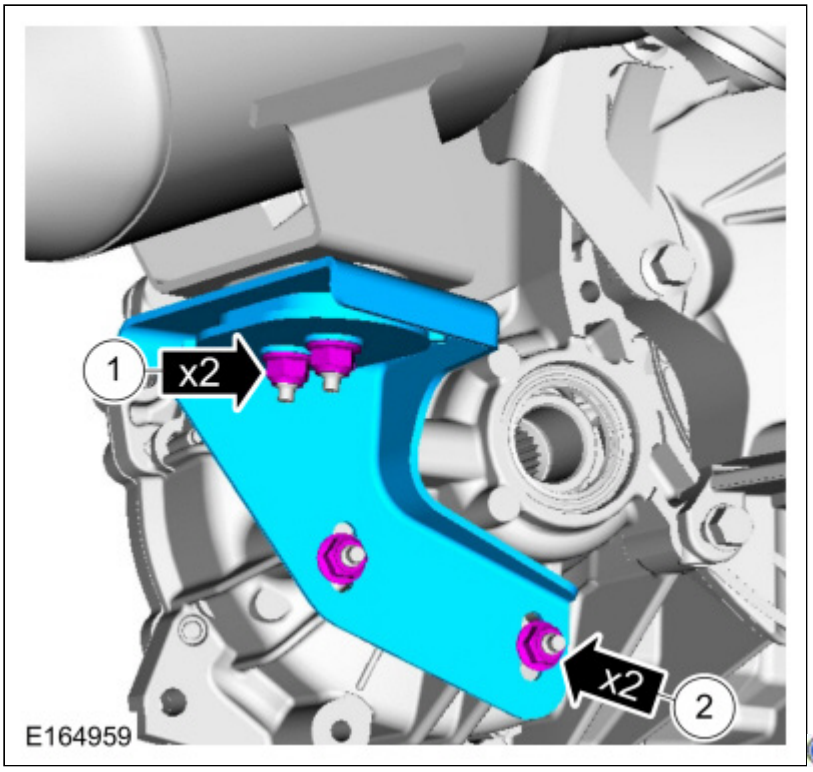


Here is that "impossible" bolt that needs to go back in. You will need that 13mm ratcheting wrench again. You should be able to put the bolt in mostly by hand. You may need to grind the head down a bit, but you can do it.

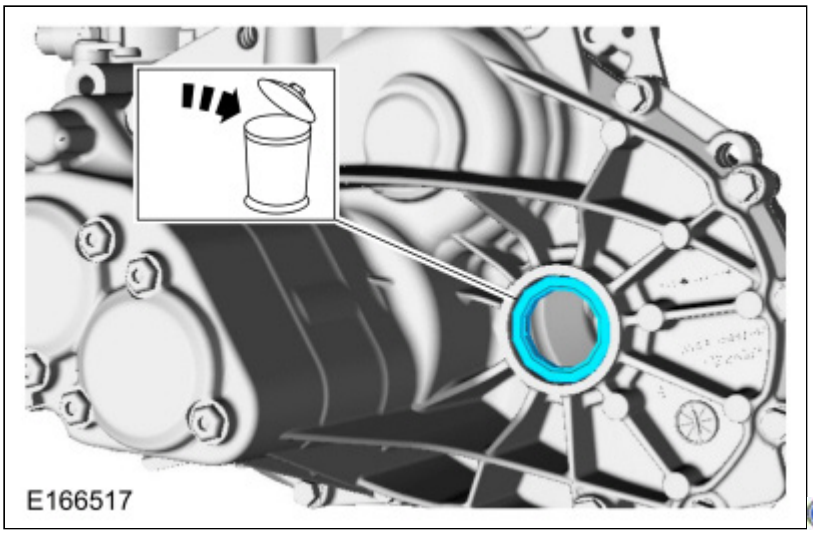
11. *Torque* : 70 Nm



12. *Torque* : 24 Nm

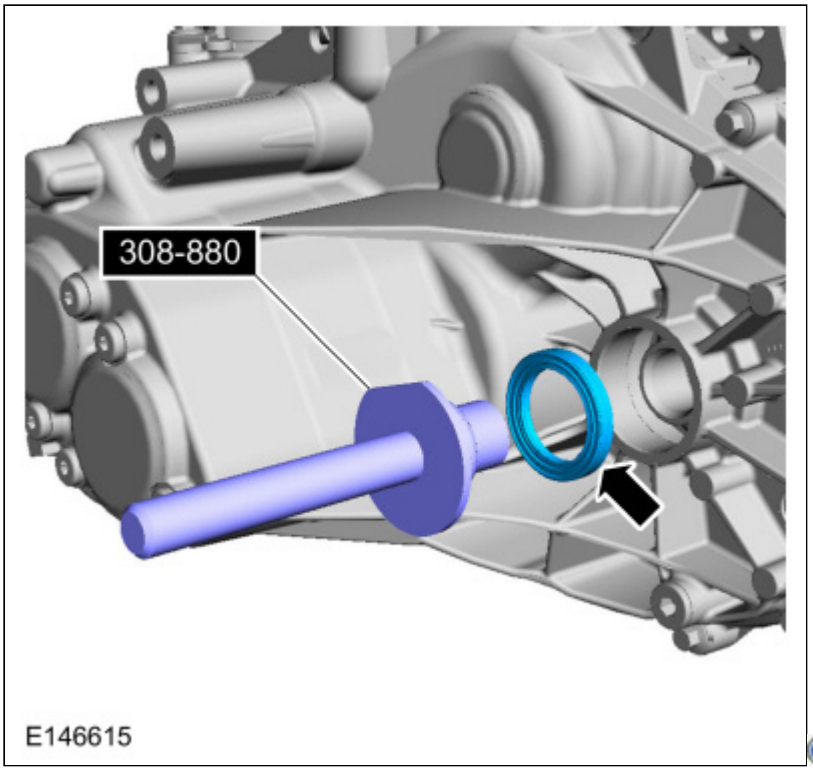


13. **NOTE:** *If the transmission has been replaced or overhauled, the seals do not need to be replaced.*



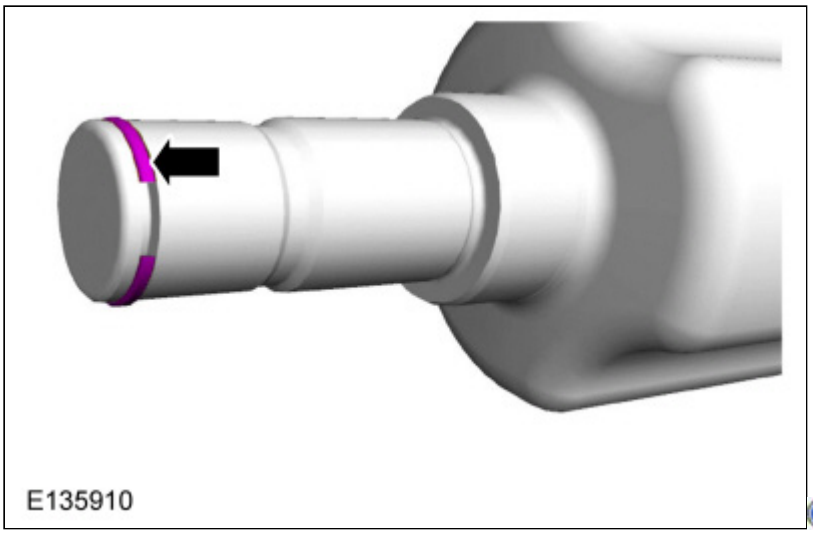
You did this earlier, and don't need to do this now.

14. *Special Tool(s)* : 308-880 Installer, Driveshaft Seal



You did this earlier, and don't need to do this now.

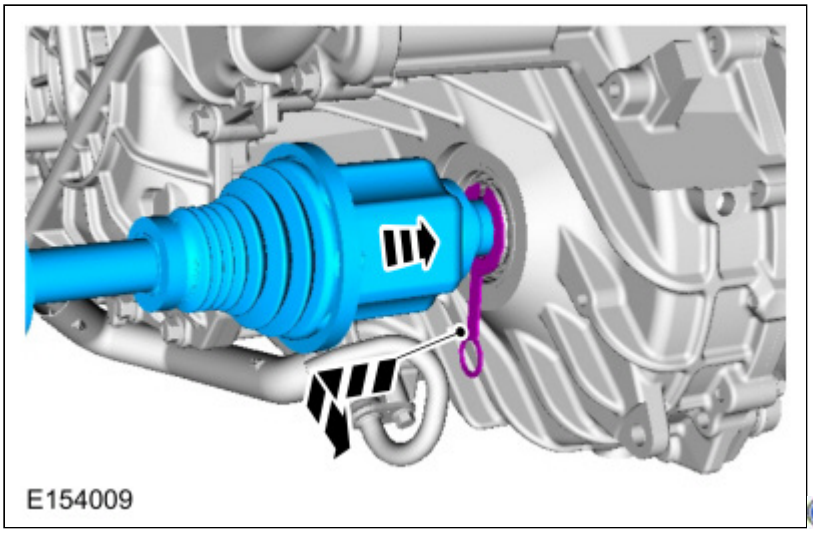
15.



I re-used the one on my shaft.

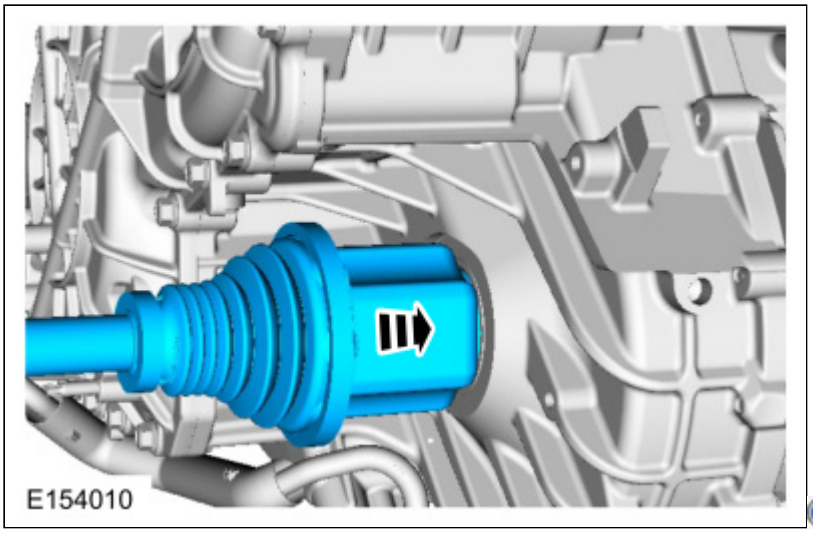
16. **NOTE:** *Do not fully install halfshaft at this time.*

    Using part: AA5P-4N206-A.



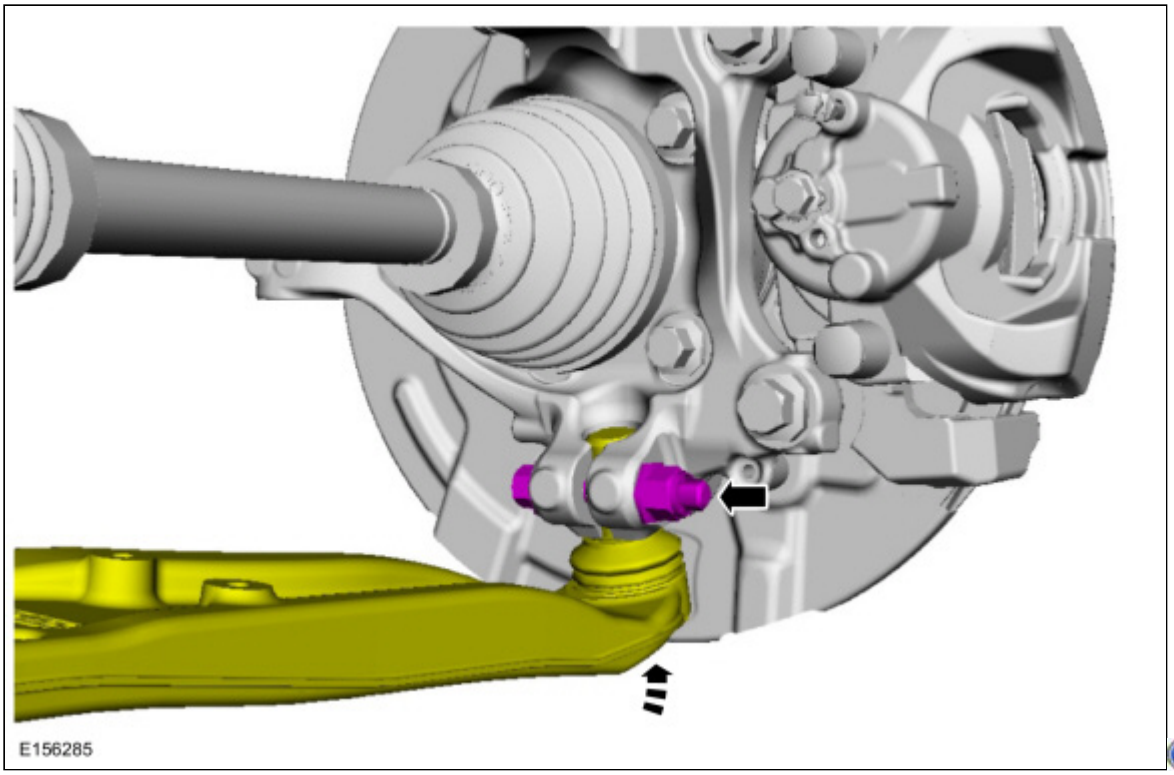
I don't know what that purple thing is. A search for the part number doesn't yield anything. I imagine it's some sort of retainer for the clip, but I'm not sure. I was able to press the shaft into the diff with some good muscle.

17. **NOTE:** *Insert halfshaft until circlip is fully seated. When checking if circlip is seated do not pull on CV joints or damage can result.*



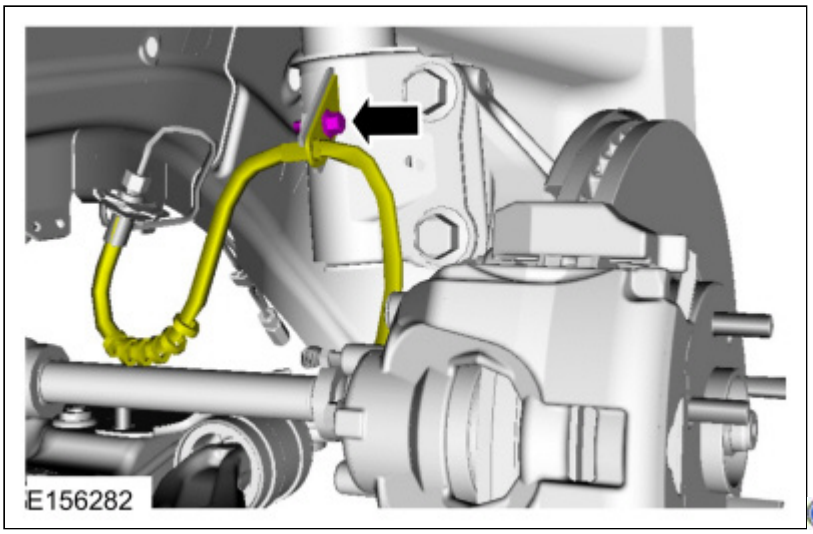
Make sure it's fully seated and do not pull on the shaft. Only the housing.

18. *Torque* : 52 Nm



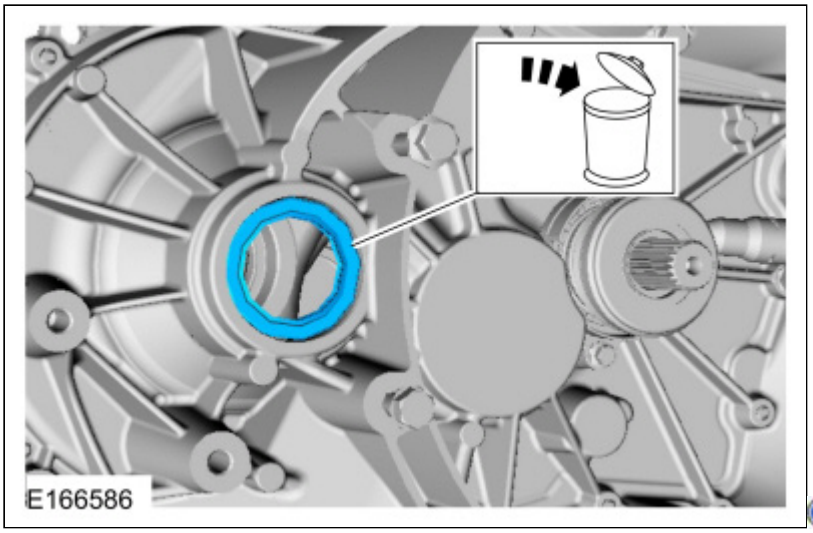
19. *Torque* : 26 Nm

This should be a fairly easy install. I tapped with a rubber mallet to get it all the way up. Bolt and nut went right in, no prob.



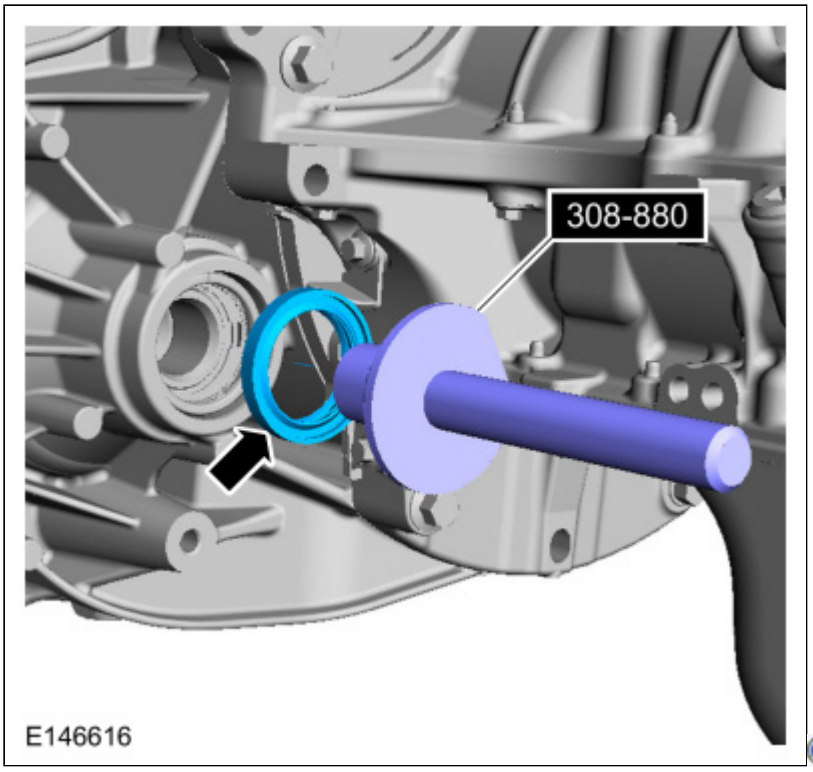
don't forget to reinsall these bolts like I did!

20. **NOTE:** *If the transmission has been replaced or overhauled, the seals do not need to be replaced.*



You already did this - skip this step.

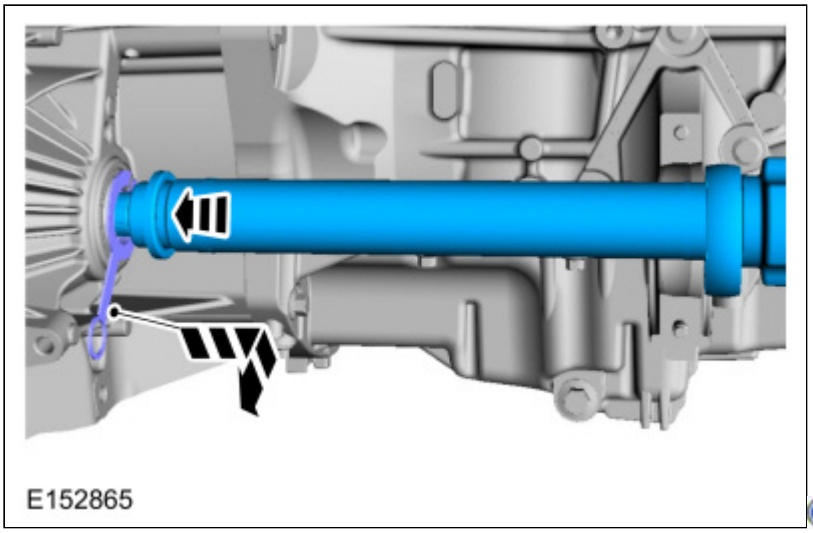
21. *Special Tool(s)* : 308-880 Installer, Driveshaft Seal



You already did this - skip this step.

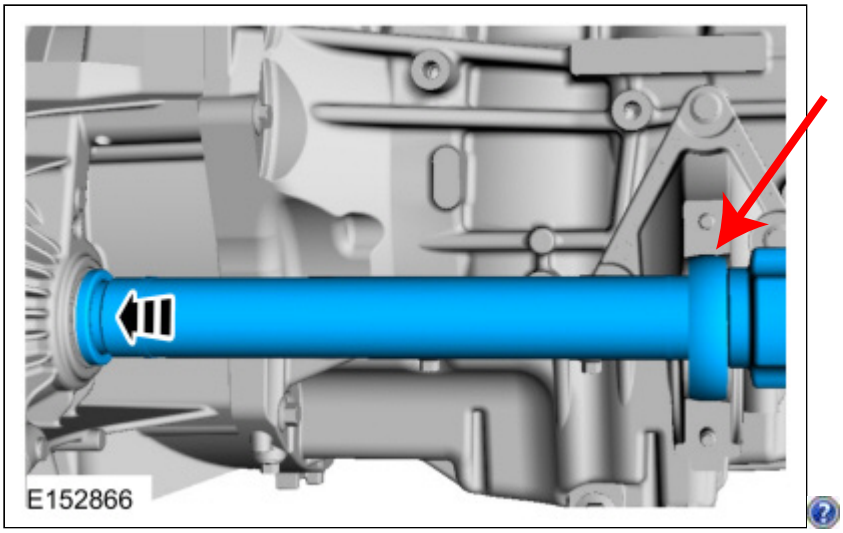
22. **NOTE:** *Do not fully install the intermediate shaft at this time.*

    Using part: 97ZT-7M181-A.



It will take some force. A friend can help you here.

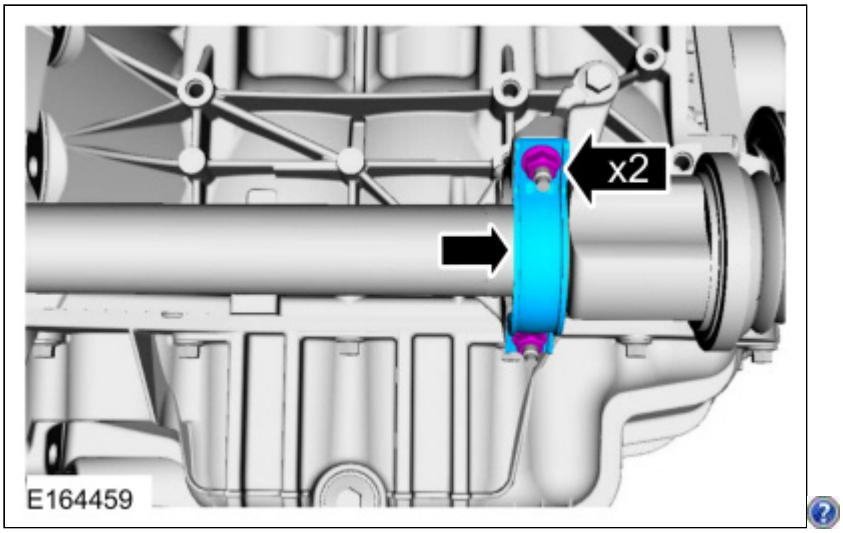
23. **NOTE:** *Insert the intermediate shaft inro the transmission until the intermediate shaft bearing is centered in the concave groove of the intermediate shaft bearing bracket.*



Here is what you need to line up to. Press the shaft INTO the trans until this is centered.

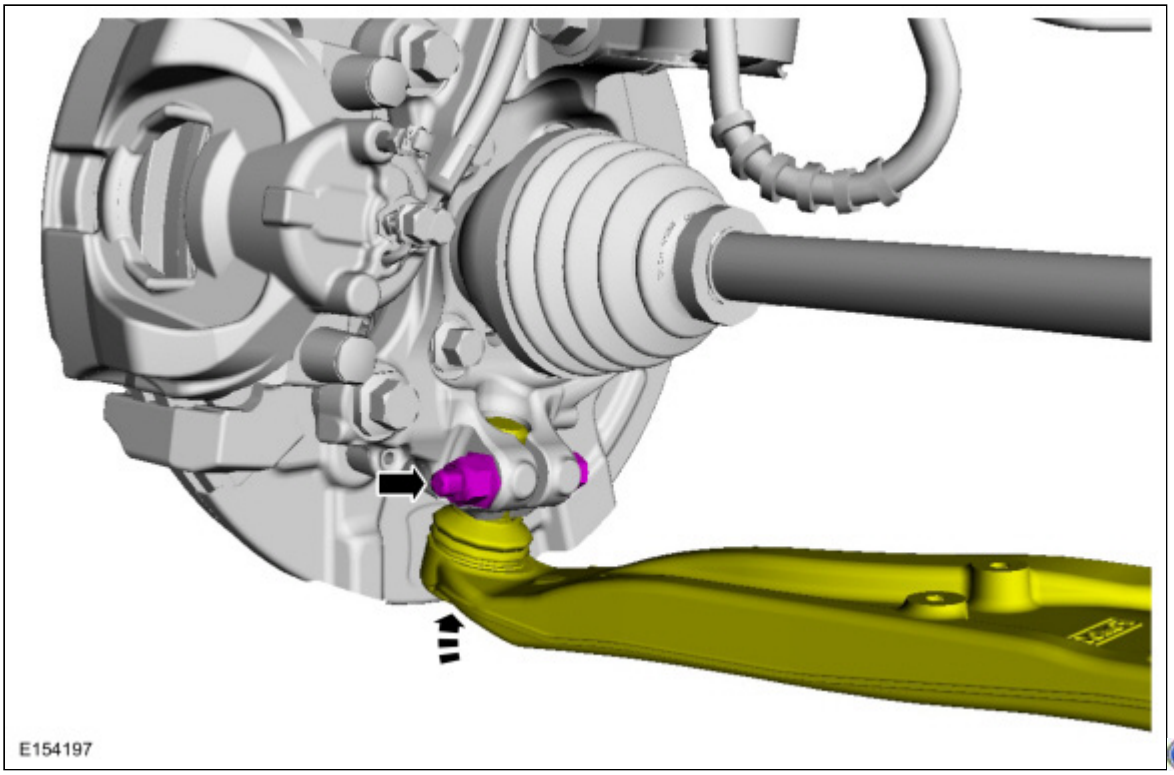
24.

1. *Torque* :
   Stage 1: Tighten the lower nut to 5 Nm
   Stage 2: Tighten the upper nut to 24 Nm
   Stage 3: Tighten the lower nut to 24 Nm



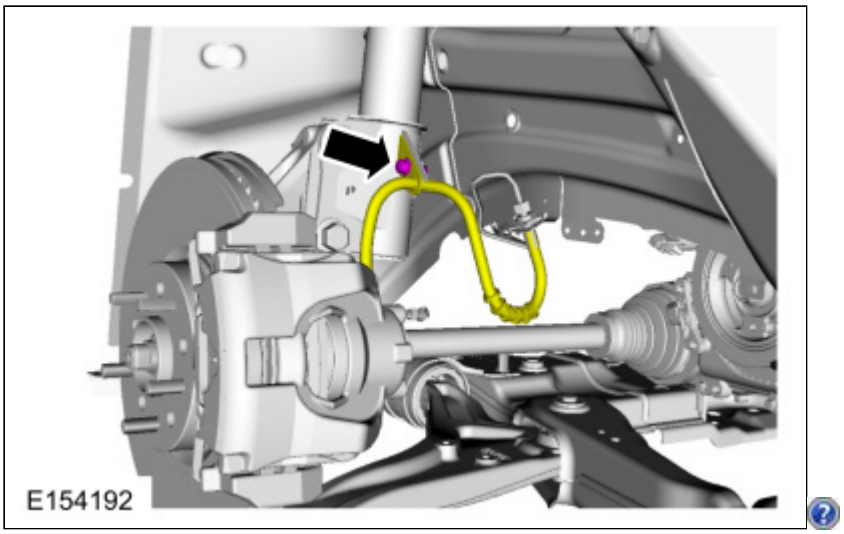
I re-used the old nuts here. You are supposed to replace them. Up to you.

25. *Torque* : 26 Nm



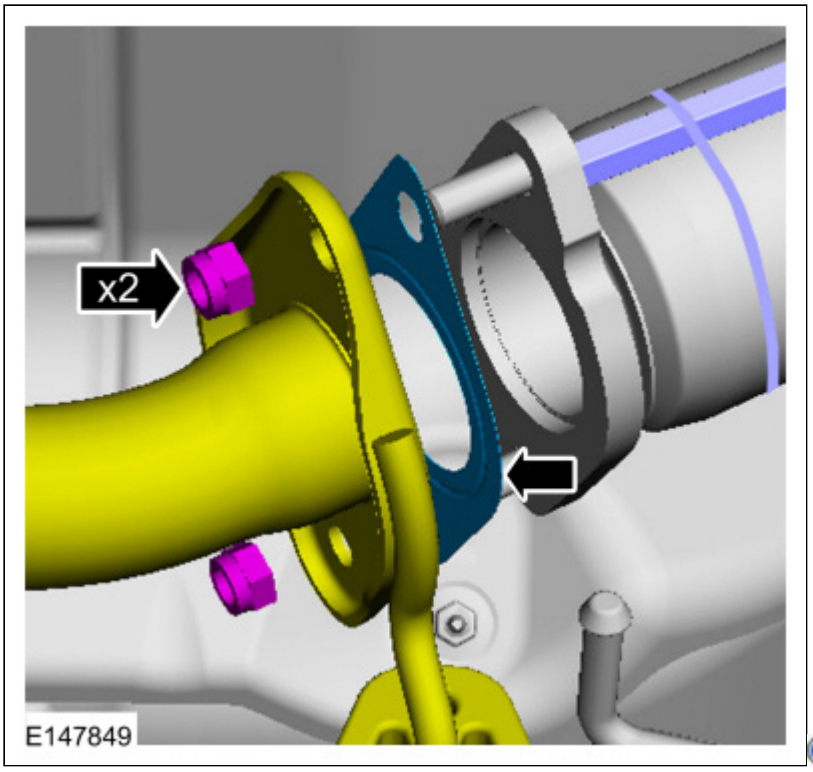
26. *Torque* : 26 Nm

This should be a fairly easy install. I tapped with a rubber mallet to get it all the way up. Bolt and nut went right in, no prob.



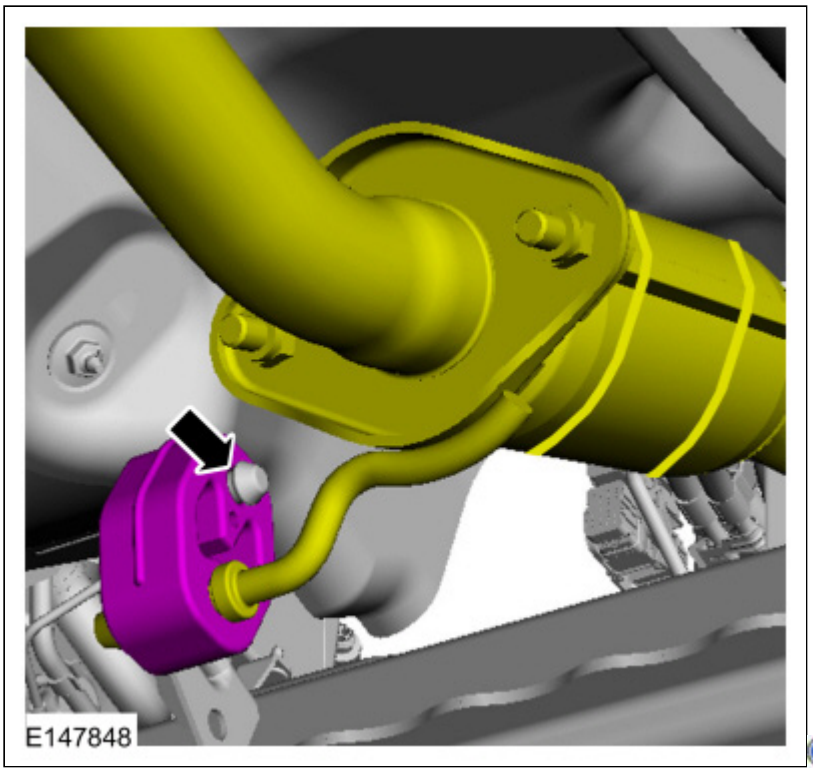
don't forget to reinsall these bolts like I did!

27. *Torque* : 48 Nm



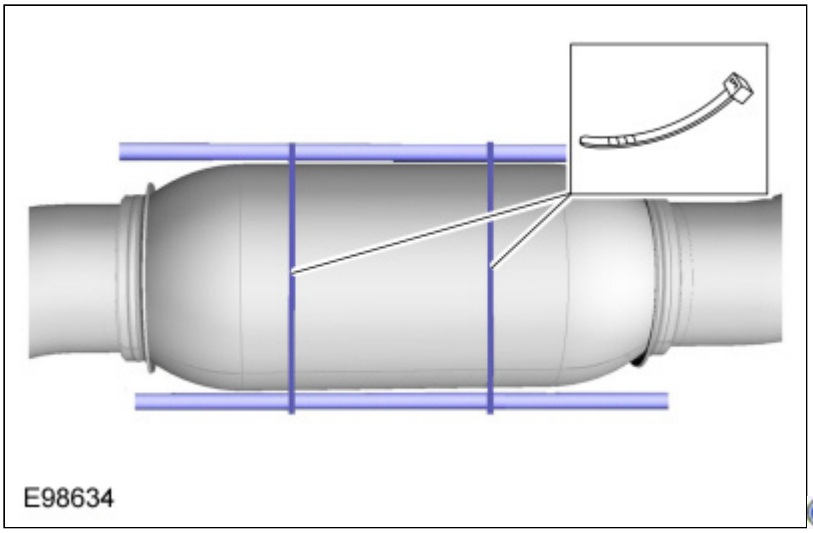
Remember to install the new exhaust gasket

28.



Consider this a good time to upgrade your exhaust hangers with something like Cobb hangers - much more rigid.

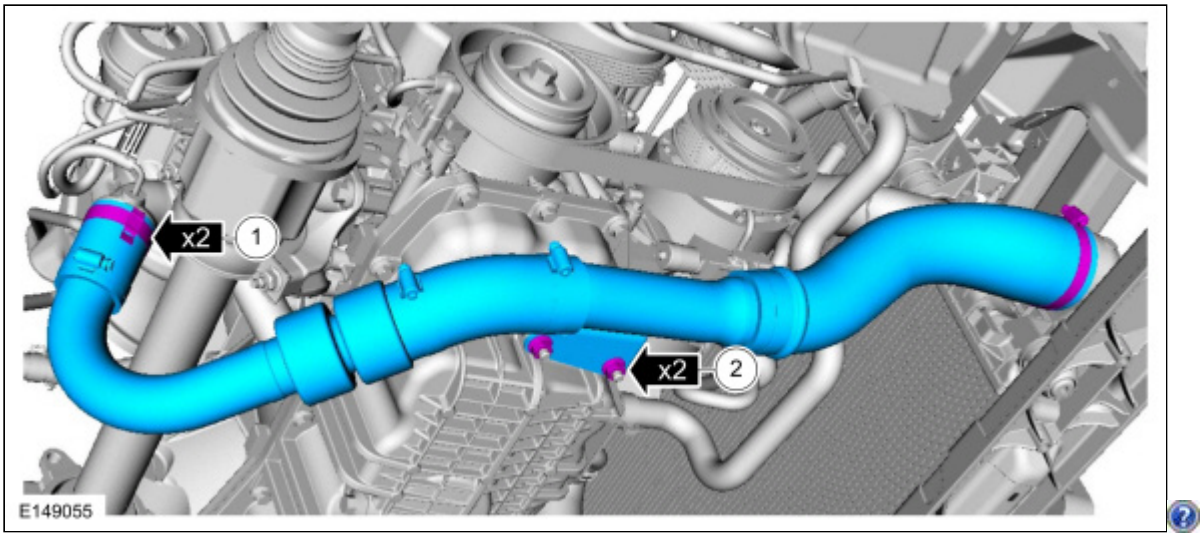
29.



I didn't do this.

30.

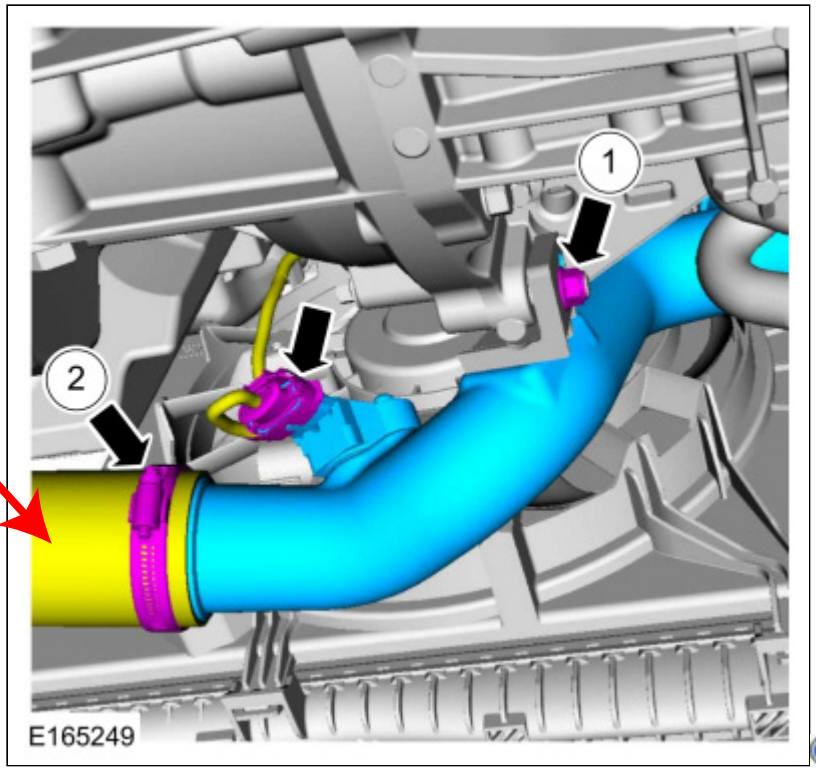
1. *Torque* : 5 Nm
2. *Torque* : 11 Nm



31.

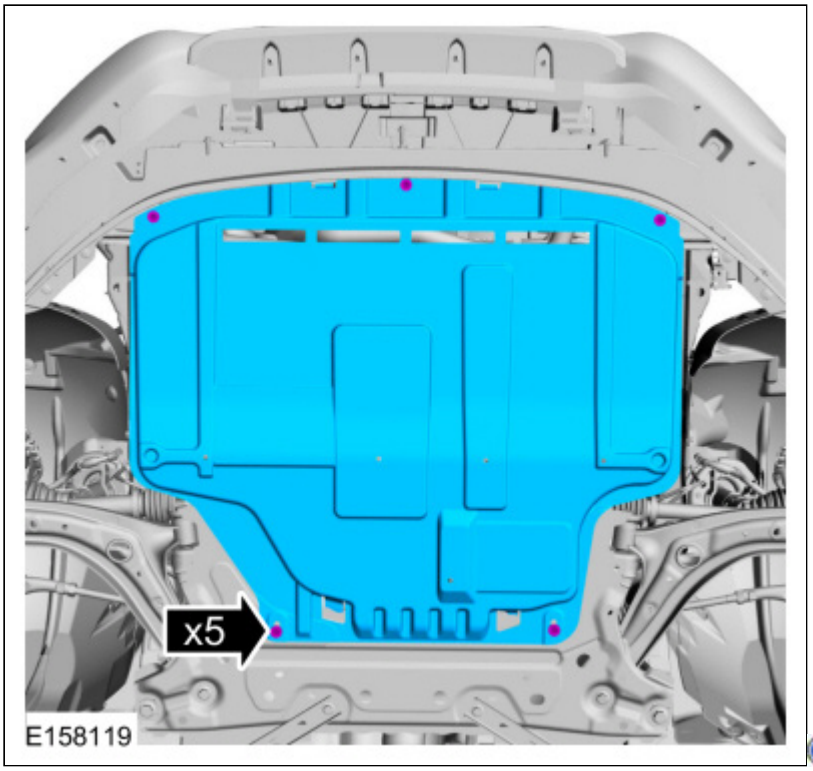
1. *Torque* : 11 Nm
2. *Torque* : 5 Nm

I completely removed this pipe. It's a pain to reinstall and optional to remove.



32. Refer to: Transmission Fluid Level Check (308-03B Manual Transmission - Vehicles With: 6-Speed Manual Transmission - B6, General Procedures).

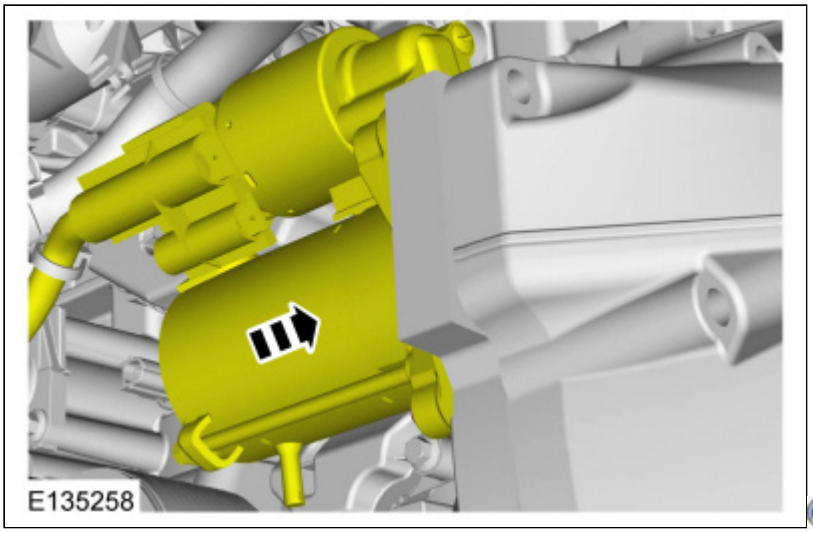
33. If equipped.



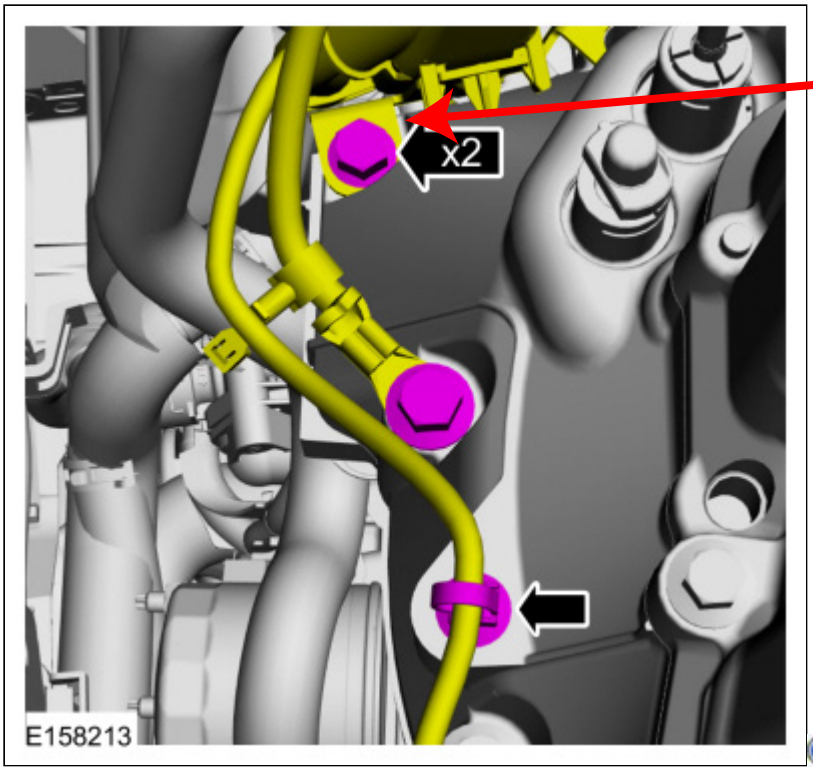
LOL

Never seen one of these on a USA Fiesta ST.

34.

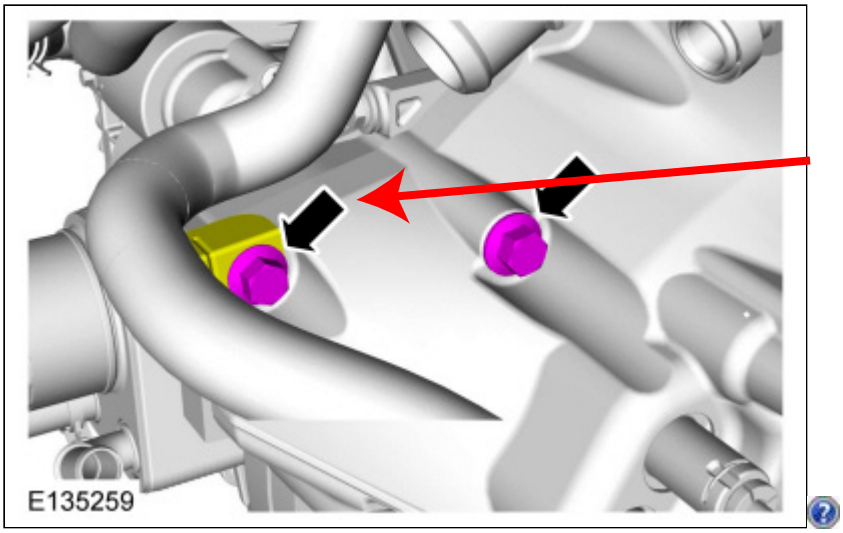


35. If equipped.
    Torque : 48 Nm



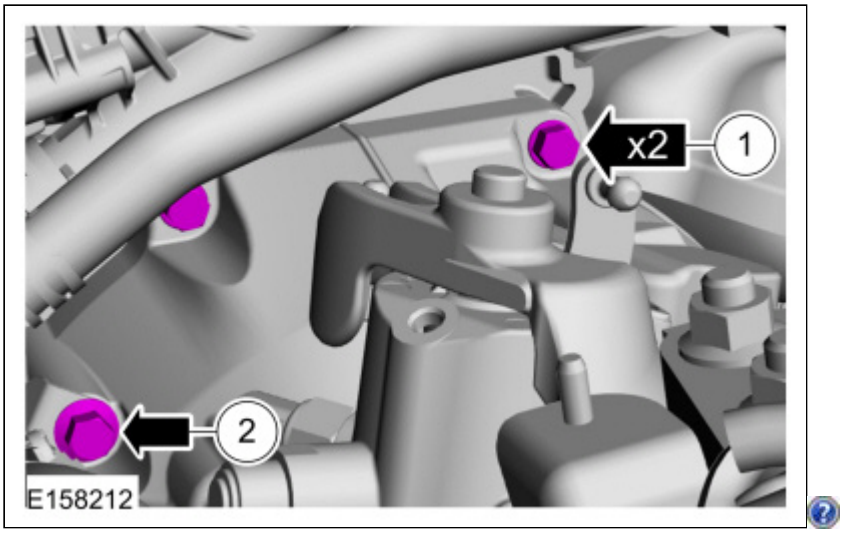
This little bracket is the one that gets hung up on the transmission when you are installing/removing it.

36. *Torque* : 48 Nm

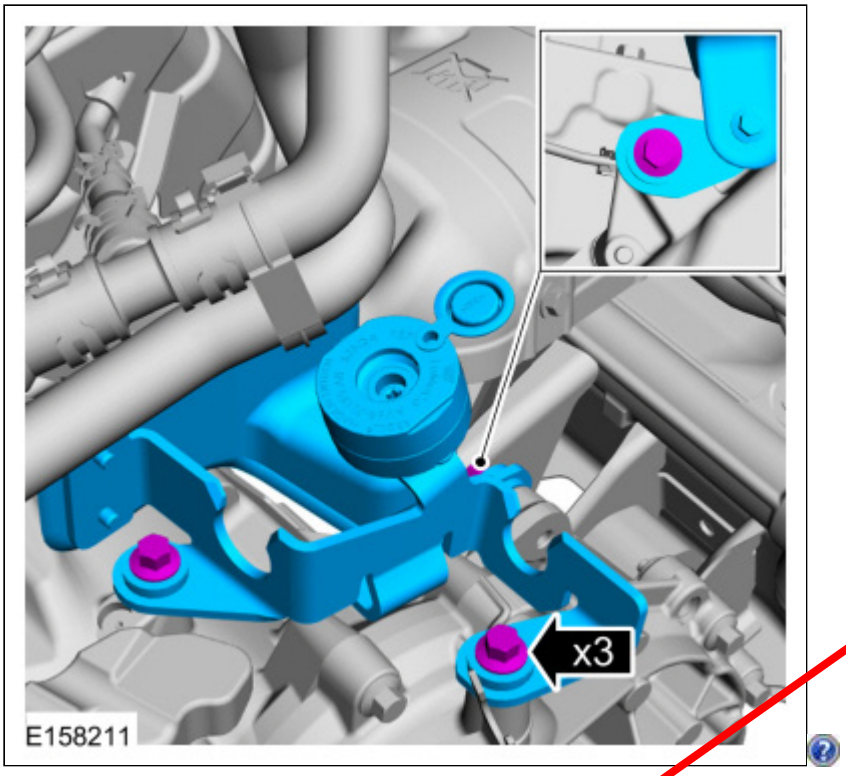


This little bracket is the one that gets hung up on the transmission when you are installing/removing it.

37. *Torque* : 48 Nm

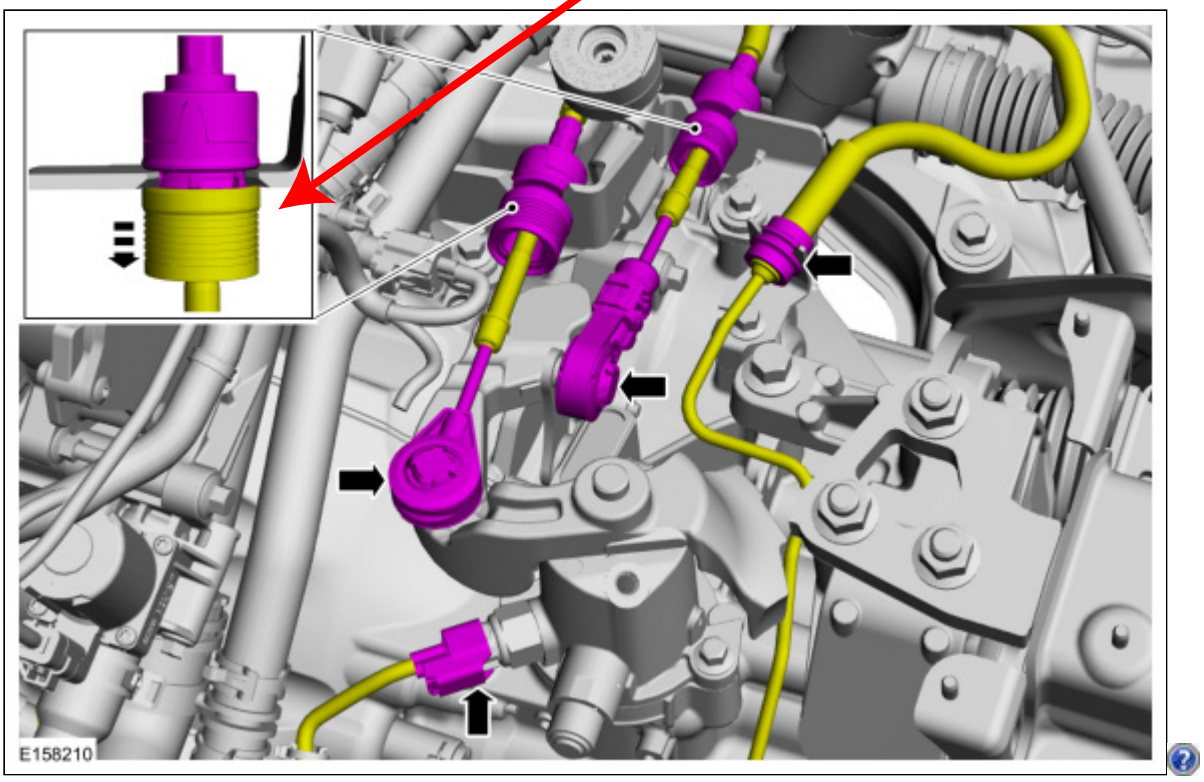


38. *Torque* : 25 Nm



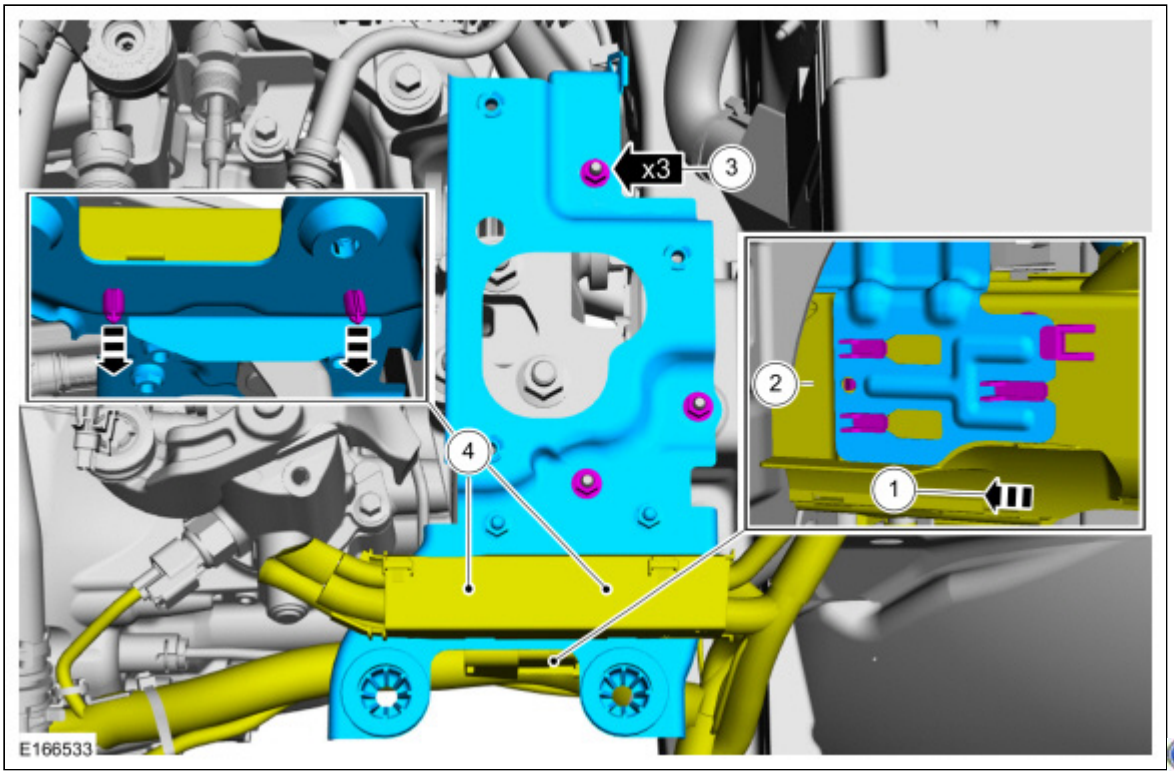
Take this opportunity to lubricate and work the collars of the linkages back and forth a lot to loosen them up. If you have to remove them in the future, you will be glad you did. Snapping the heads back on to the balls is very easy; much easier than coming off.

39.



40. Refer to: Gearshift Cable Adjustment - Vehicles With: 6-Speed Manual Transmission - B6 (308-06 Manual Transmission External Controls - Vehicles With: 5-Speed Manual Transmission - B5/IB5/6-Speed Manual Transmission - B6, General Procedures).

41. *Torque* : 10 Nm



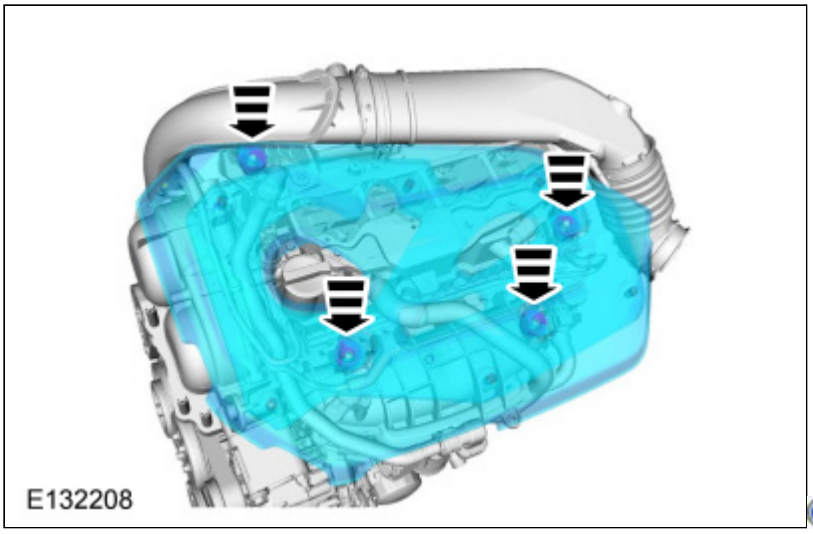
These nuts were pretty rusty in my case, so I cleaned them up with a wire wheel and put some anti-seize on them.

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

43. Refer to: Cowl Panel (501-02 Front End Body Panels, Removal and Installation).

44. Refer to: Clutch System Bleeding (308-02 Clutch Controls - Vehicles With: 5-Speed Manual Transmission - B5/IB5/6-Speed Manual Transmission - B6, General Procedures).

45. If equipped.



At this point it is very likely that you will start your car up for the first time after replacing the transmission. Let me tell you what happened when I did this. I kept the front wheels up in the air. When I first started up, in neutral, clutch pedal out, the wheels spun. (!!!) I tried putting it into gear and the car would nearly stall out, buck and die. I was pissed and confused. I thought I had screwed something up. I wanted to give up. A friend encouraged me. After a few min we tried again. This time, the wheels didn't spin in neutral. We put it in gear, and the wheels spun. No noises. No issues. It worked!
Why? Well, what we figure is that the friction surfaces on the gears were bound up and things were "tight." As the engine turned the gears in neutral, oil passed through the channels and lubricated the surfaces, eventually freeing them up and working properly. Now, things are fine.

Congrats!!!!!!!!