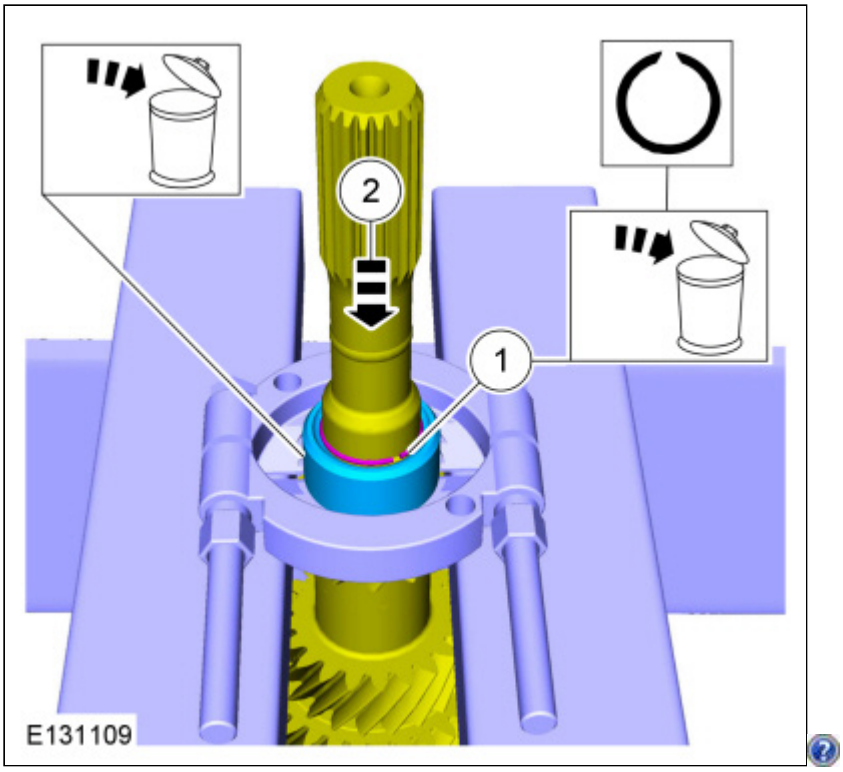
Input Shaft

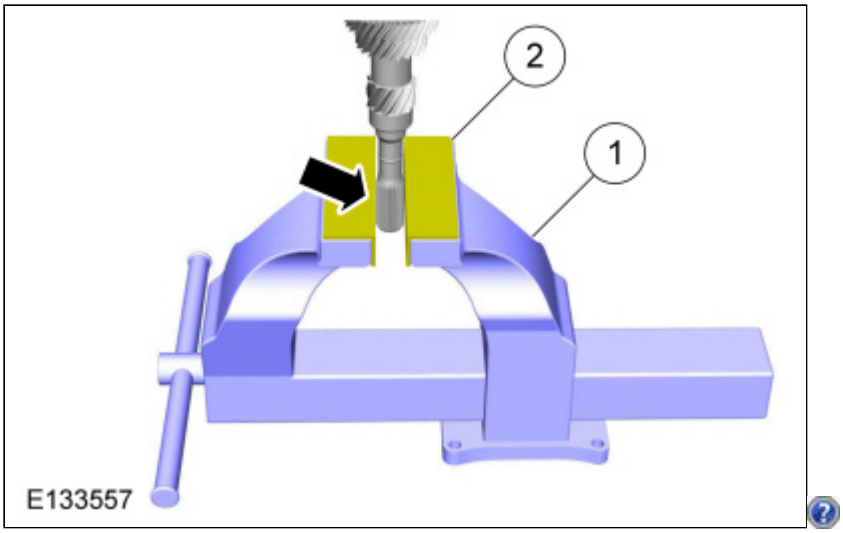
DISASSEMBLY

1. *General Equipment* : Hydraulic Press
   General Equipment : Bearing Separator



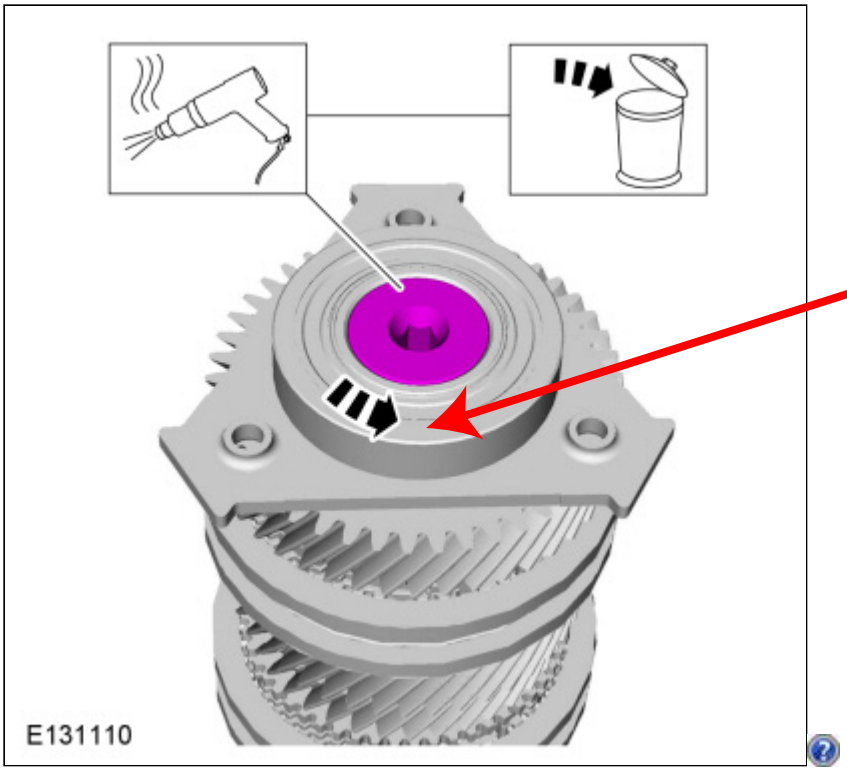
This race was fairly easy to get off with the puller. A good bit of area to bite onto. I did not use the press, but rather the bearing separator and the included puller arms and bolts.

2. **NOTICE: Use vise jaw protectors.**
   1. *General Equipment* : Vise
   2. *General Equipment* : Vise Jaw Protectors



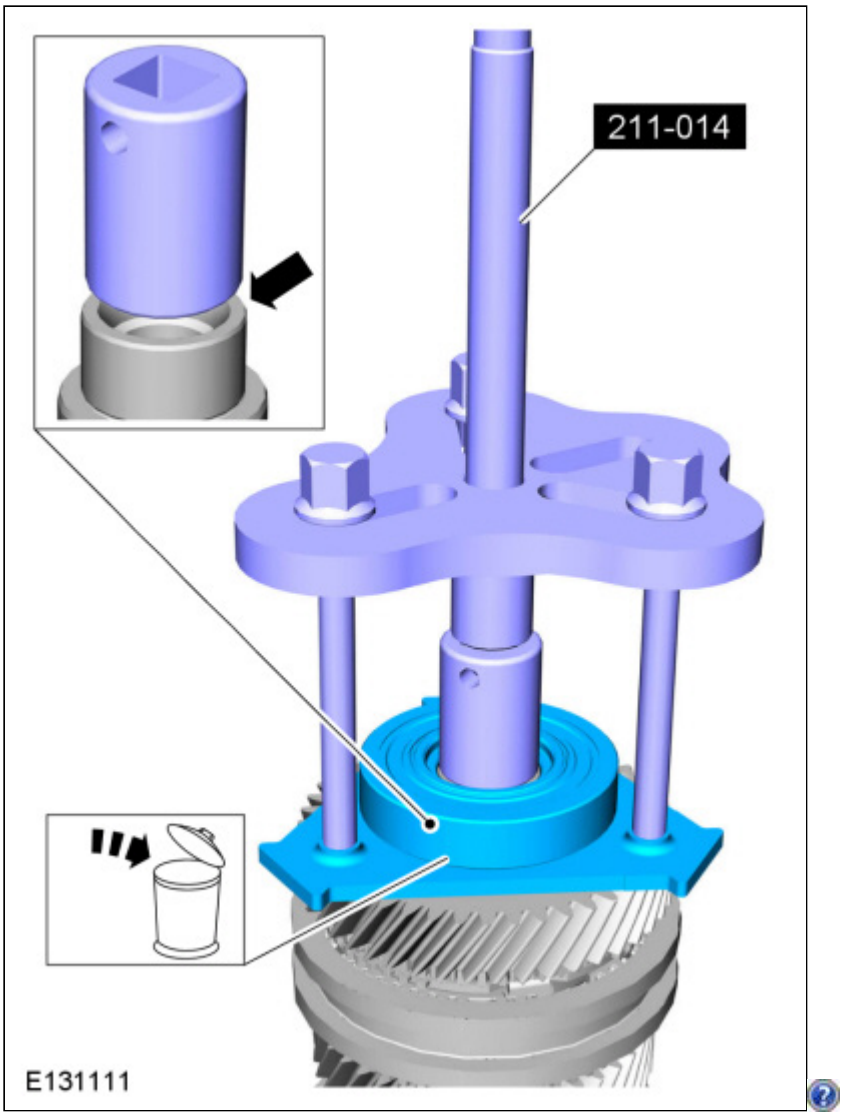
Make sure you have the plastic vice jaw protectors installed. Do not put your shafts into a vice that does not have jaw protectors installed! You'll screw up the shaft!

3. *General Equipment* : Hot Air Gun



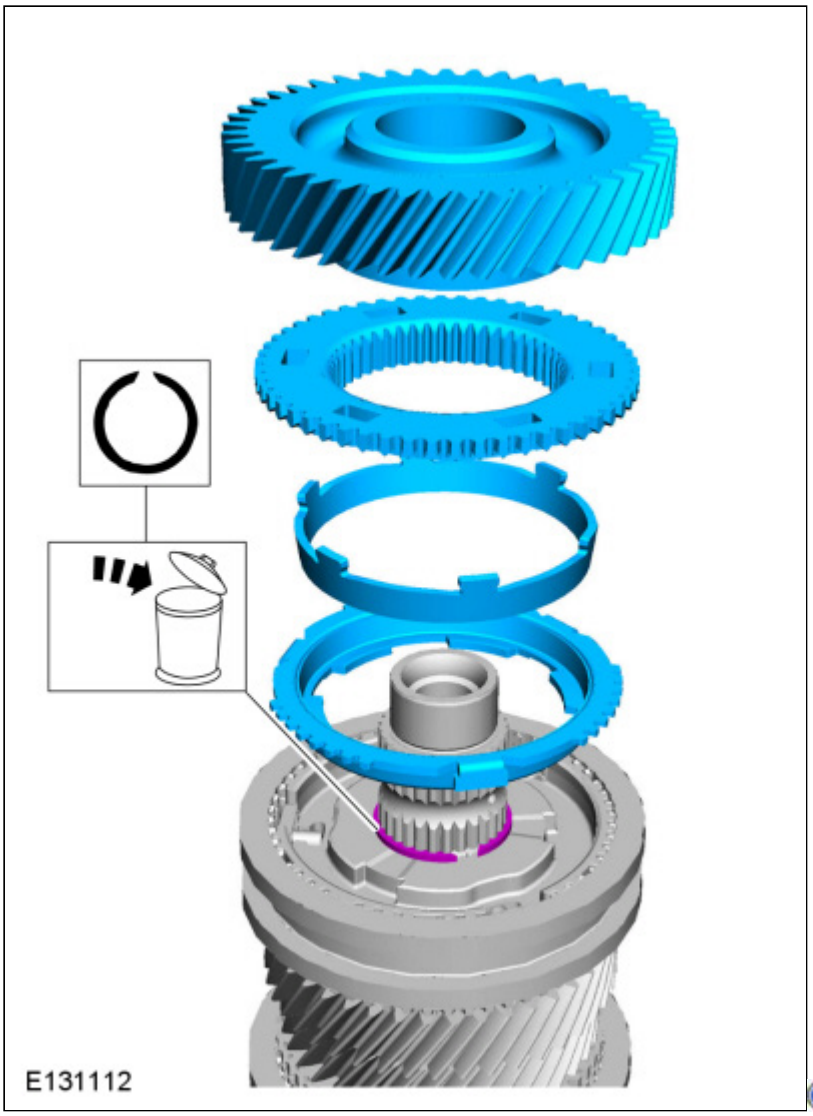
Note - this has normal right-hand thread. Remove in a count-er-clockwise motion. I would recommend a large impact gun here - the bolt is on VERY TIGHT. I tried to do it by hand with two people and injured my wrist. There is also lock-tite on the bolt so you will need to heat it up prior to loosening.

4. *Special Tool(s)* : 211-014 Remover, Steering Wheel



DO NOT try to remove this bearing with a simple three arm puller. IT WILL NOT WORK AND YOU WILL BEND THE METAL PLATE. You will need one of these “steering wheel” or “flywheel” pullers. I bought a set on Amazon and they worked like a charm.

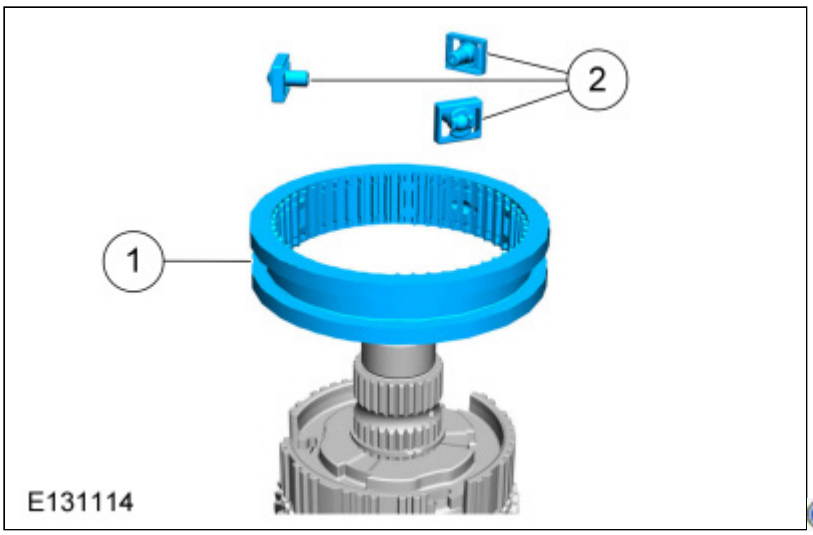
5.



These parts lift right off. Take care to keep them oriented correctly. You'll want a clean, dry work area with plenty of space.

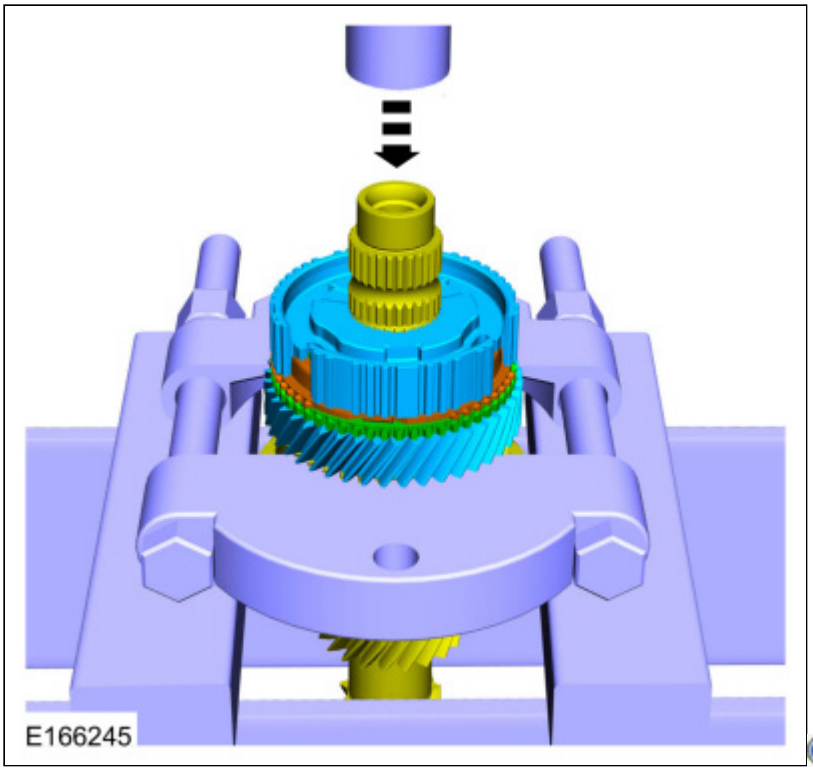
The snap ring is a bugger, as are most of them on the shaft. I foudn that the snap-ring pliers with the bent tips (as opposed to the straight tips) work best here. A small screwdriver is useful, too, to work the clip up and off.

6.



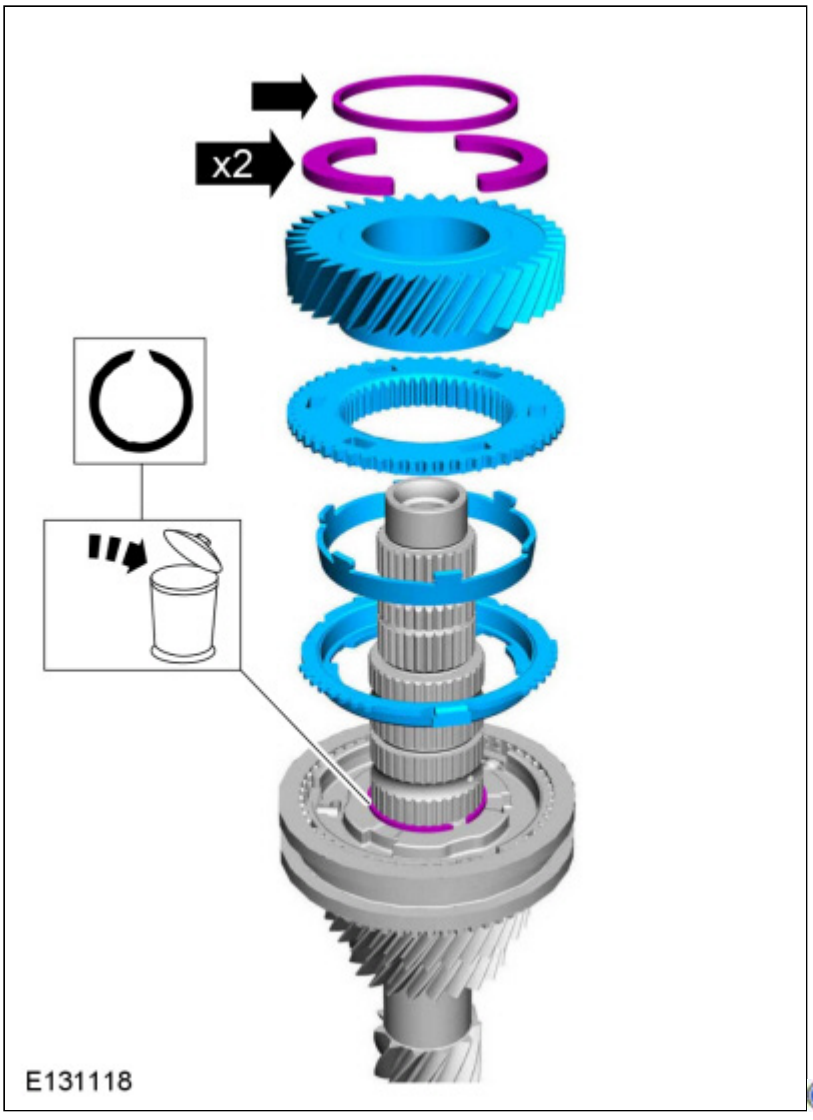
Take care to catch these small parts - they are spring-loaded and will pop out.

7. *General Equipment* : Bearing Separator
   General Equipment : Hydraulic Press



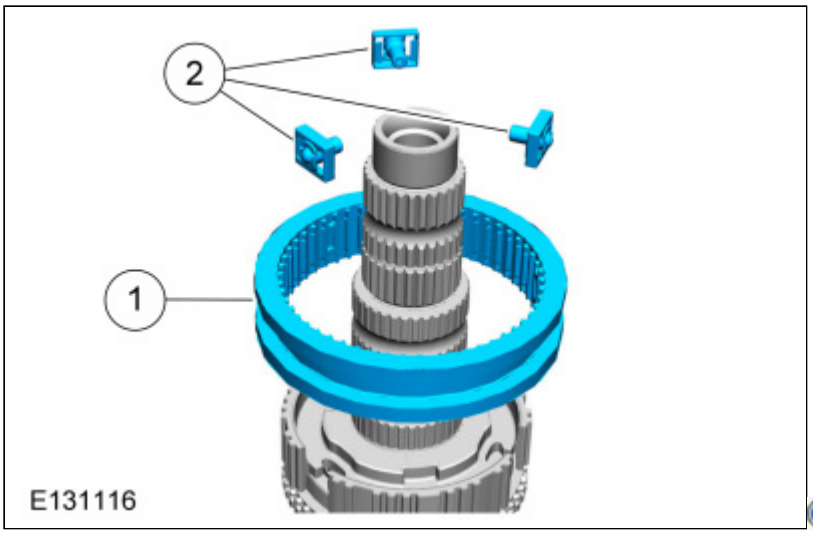
I did not need a press here. These parts came off by hand.

8. **NOTE:** *Note the position of the components before removal.*



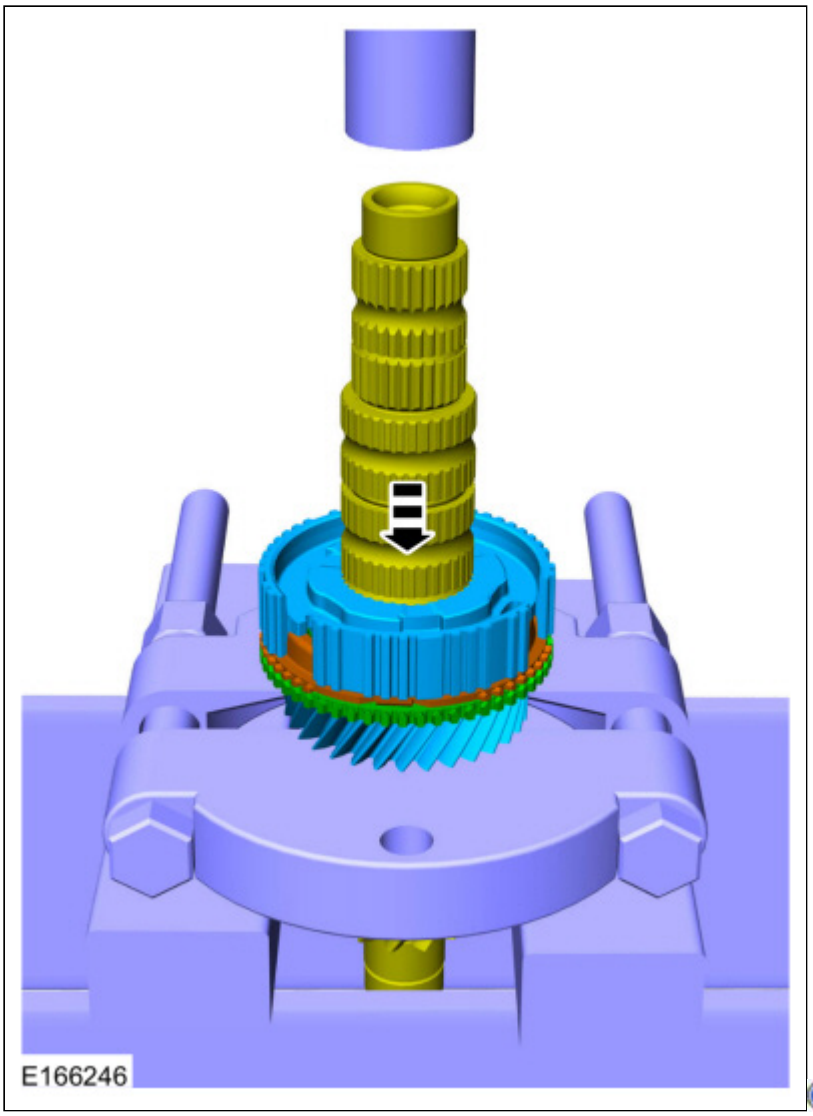
Take note of the orientation of each part before you remove it. If necessary, mark them with a paint pen.

9.



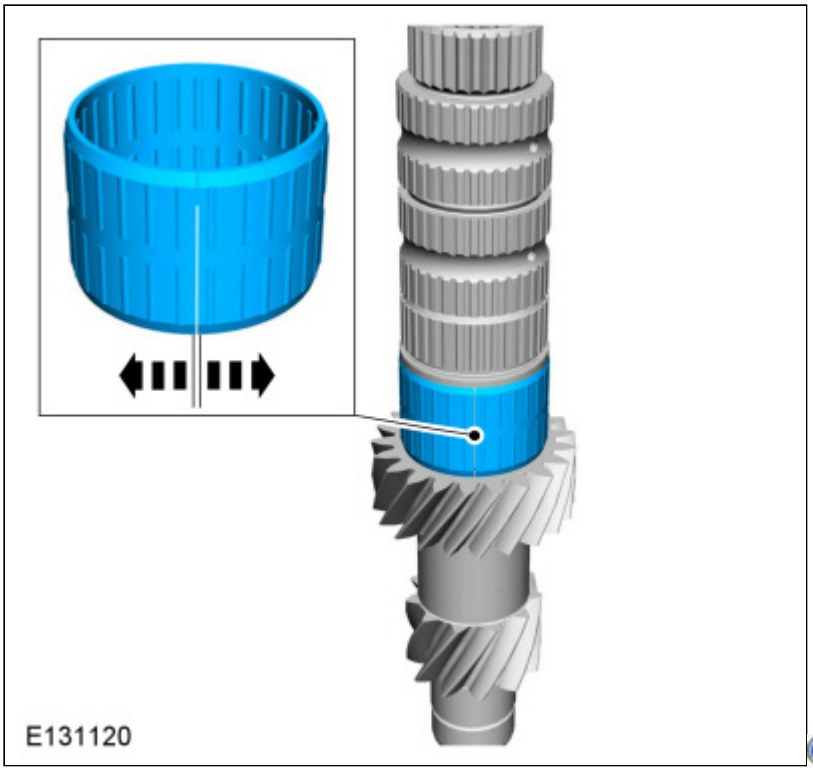
Take care to catch these small parts - they are spring-loaded and will pop out.

10. *General Equipment* : Bearing Separator
General Equipment : Hydraulic Press



I did not need a press here. These parts came off by hand.

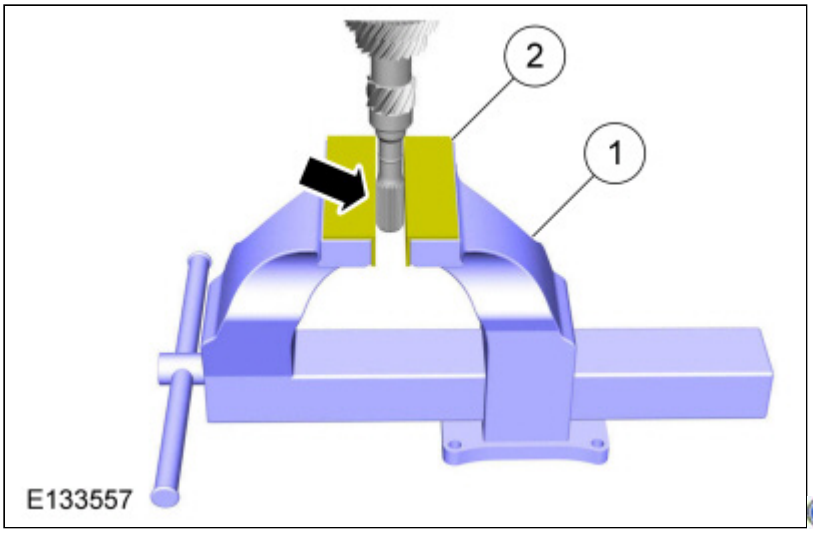
11.



And here is yor prize! The needle bearing. It will come right off by hand.

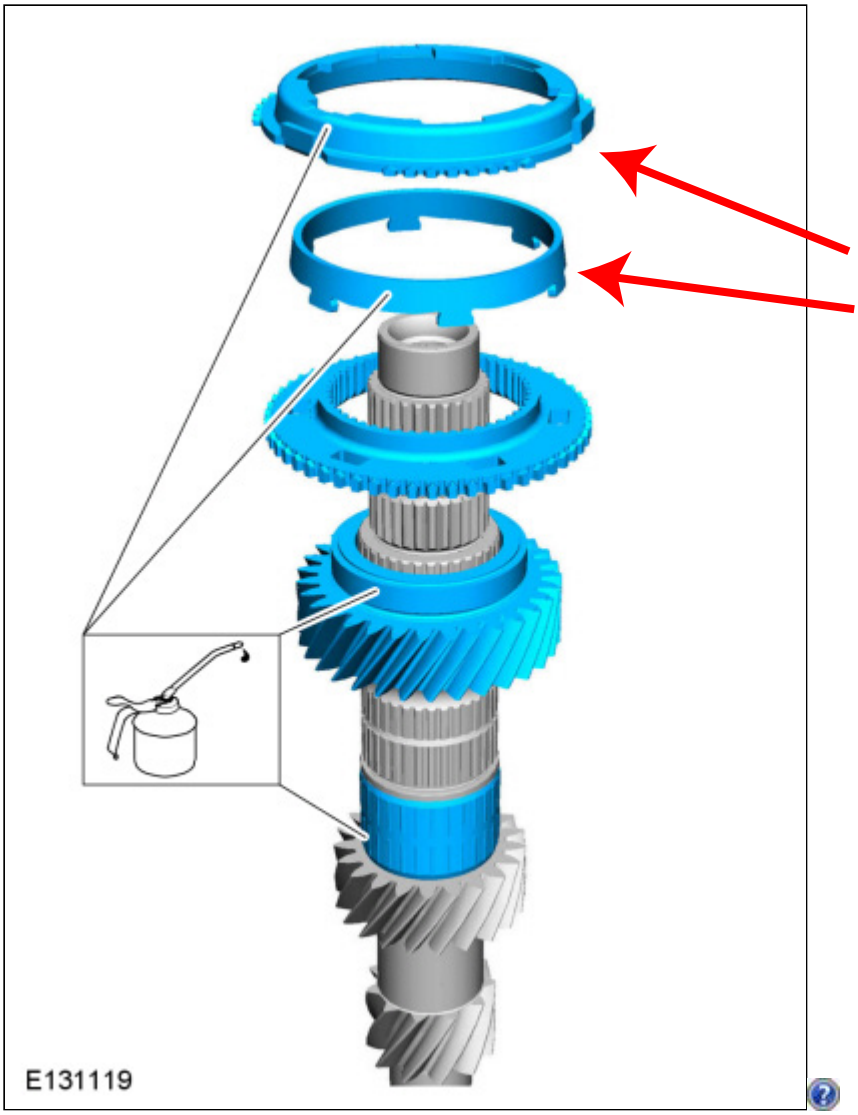
ASSEMBLY

1. **NOTICE: Use vise jaw protectors.**
    1. *General Equipment* : Vise
    2. *General Equipment* : Vise Jaw Protectors



Now to put it all back together.

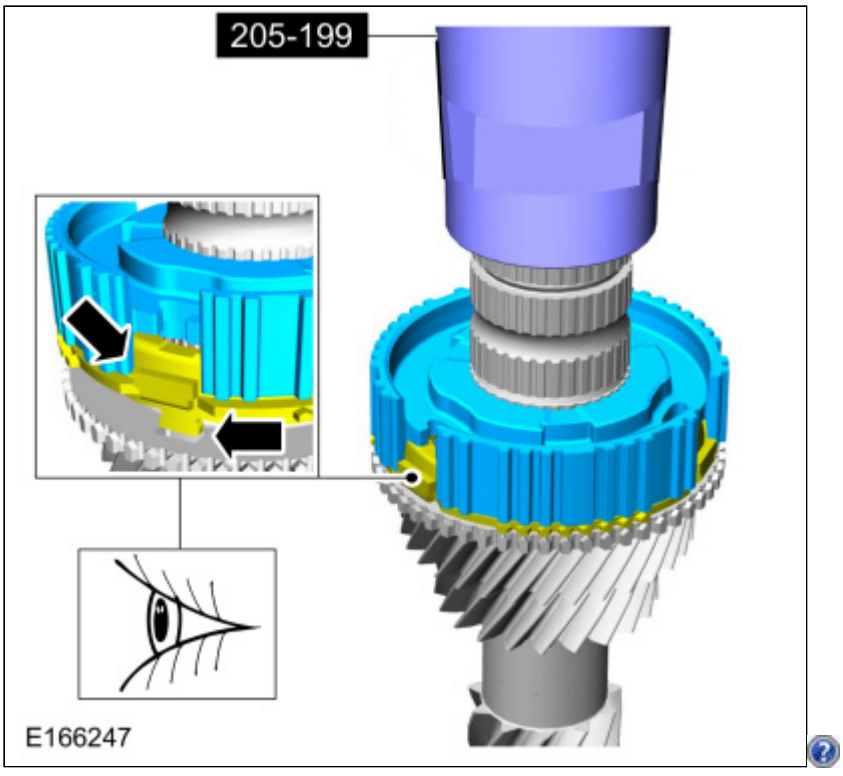
2. *Material* : Motorcraft® Dual Clutch Transmission Fluid / XT-11-QDC (WSS-M2C200-D2)



Grab your pump oiler and use it liberally. See those angled parts that have friction surfaces on them? THEY NEED LOTS OF OIL! Trust me. (When I started up my car for the first time, with the new trans, it was very "sticky" until the oil had circulated through to all these surfaces.)

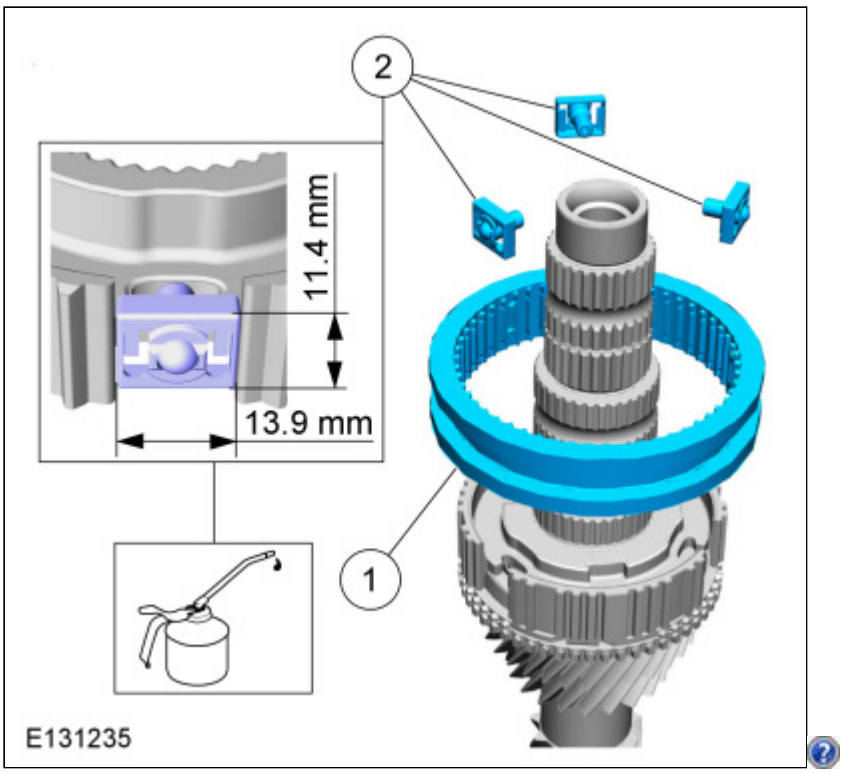
All of these parts will slide on easily.

3. *Special Tool(s)* : 205-199 (T83T-3132-A1) Installer, Spindle/Axle Shaft



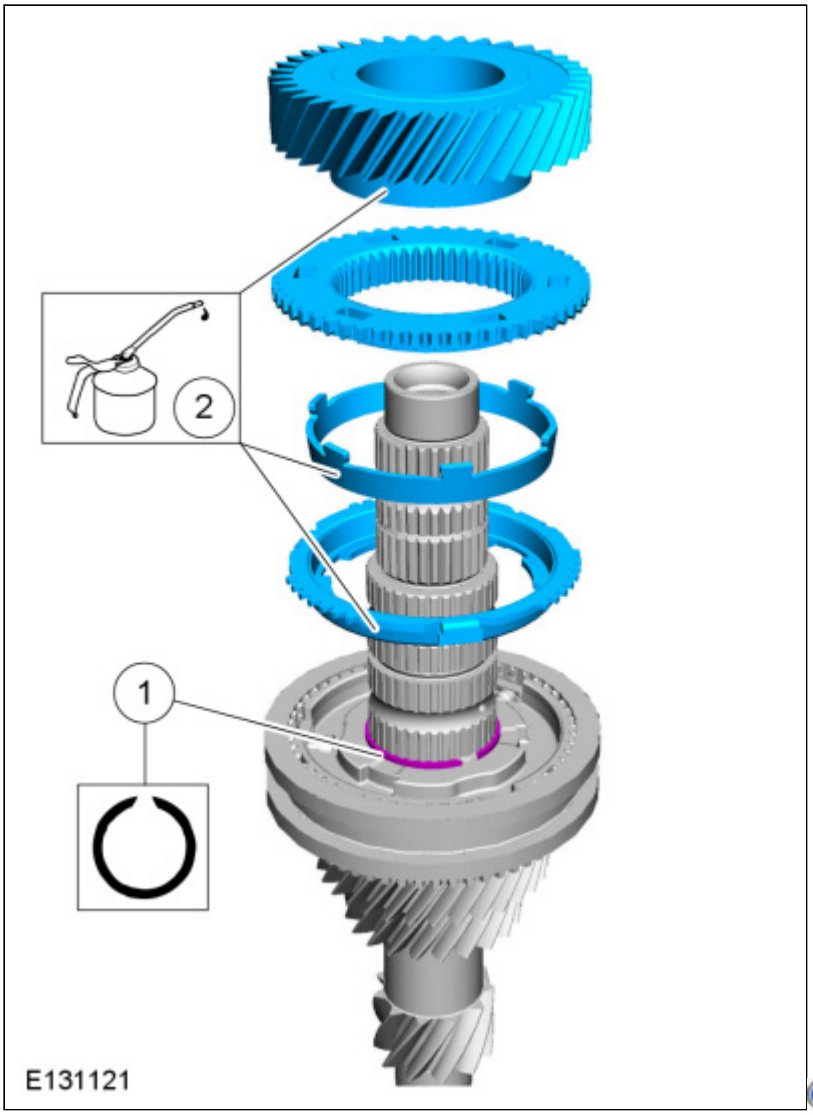
I didn't need the shaft installer here. All of these parts went on easily by hand and seated nicely. Take note that all of the tabs line up.

4.
1.
2. *Material* : Motorcraft® Dual Clutch Transmission Fluid / XT-11-QDC (WSS-M2C200-D2)



Take time with this. Make sure plenty of oil goes on these parts!

5.
1.
2. *Material* : Motorcraft® Dual Clutch Transmission Fluid / XT-11-QDC (WSS-M2C200-D2)

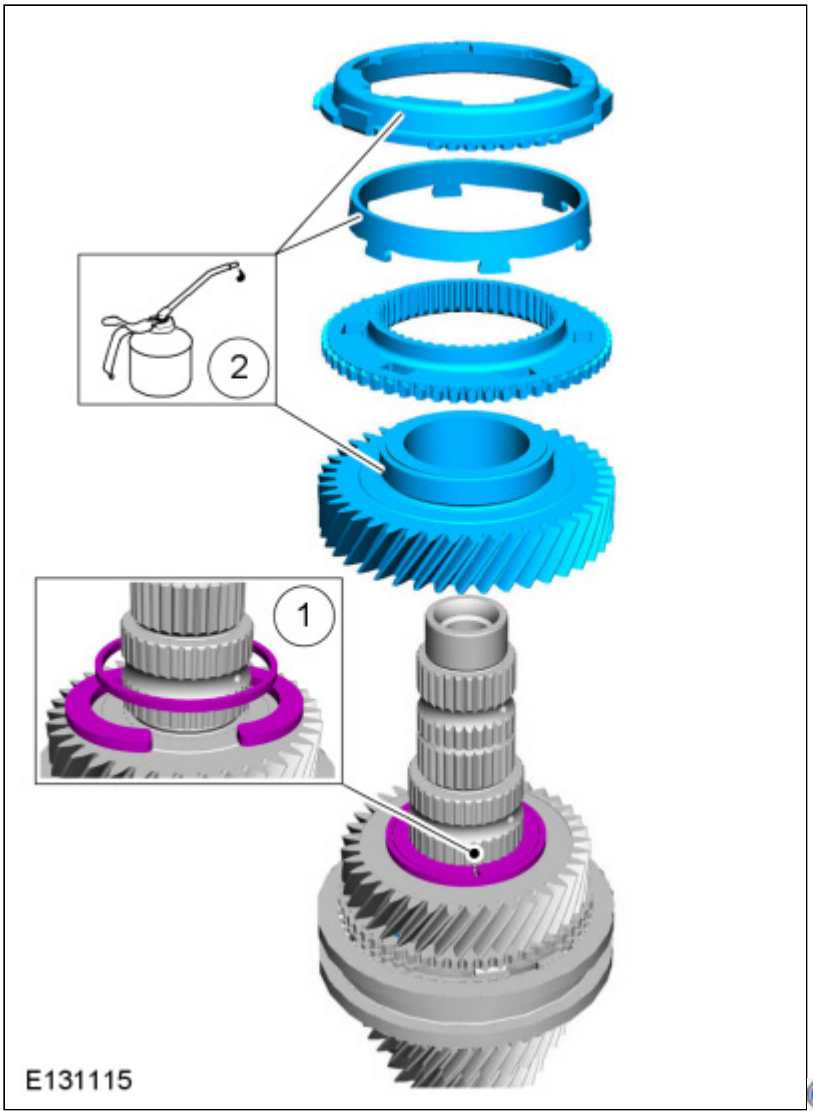


Don’t forget the snap ring!!

As usual, oil the heck out of these parts, especially the friction surfaces.

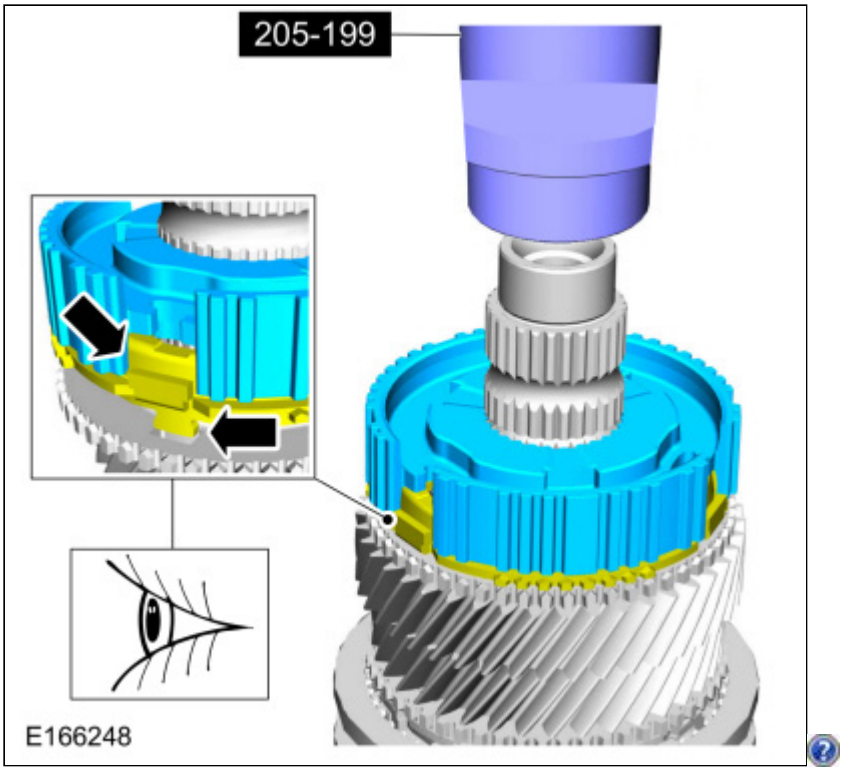
6.

1. **NOTE:** *Make sure that the components are installed to the position noted before removal.*
2. *Material* : Motorcraft® Dual Clutch Transmission Fluid / XT-11-QDC (WSS-M2C200-D2)



All of these go in easily. Use lots of oil!

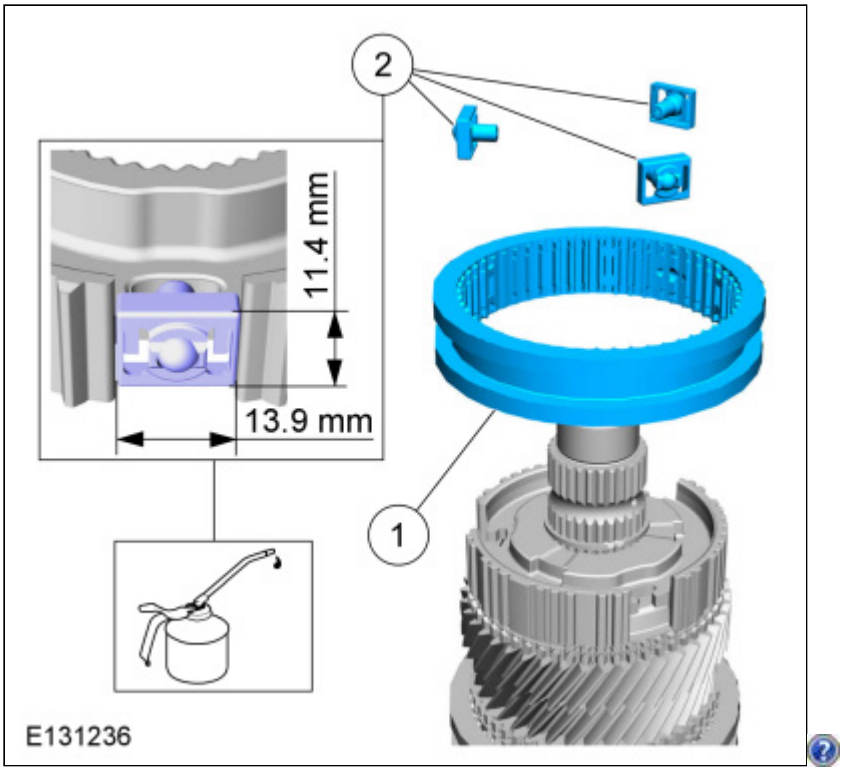
7. *Special Tool(s)* : 205-199 (T83T-3132-A1) Installer, Spindle/Axle Shaft
   General Equipment : Hydraulic Press



As before, I did not need a press here. Just seat them by hand. Take time and align everything carefully.

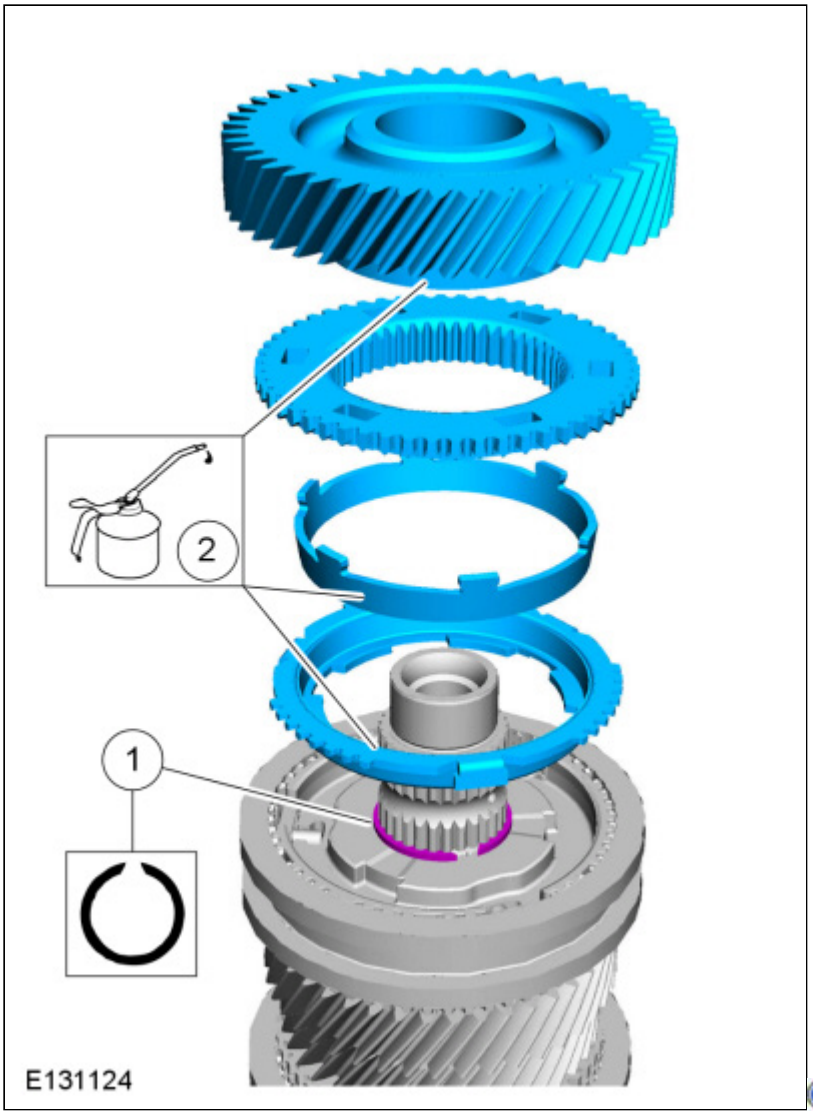
8.

1.
2. *Material* : Motorcraft® Dual Clutch Transmission Fluid / XT-11-QDC (WSS-M2C200-D2)



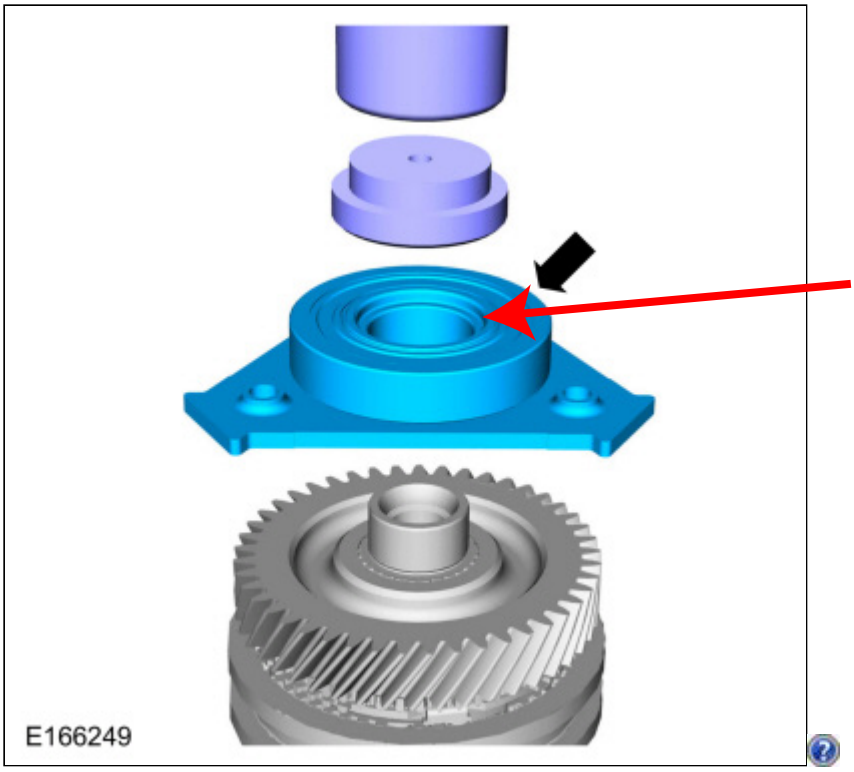
9.

1.
2. *Material* : Motorcraft® Dual Clutch Transmission Fluid / XT-11-QDC (WSS-M2C200-D2)



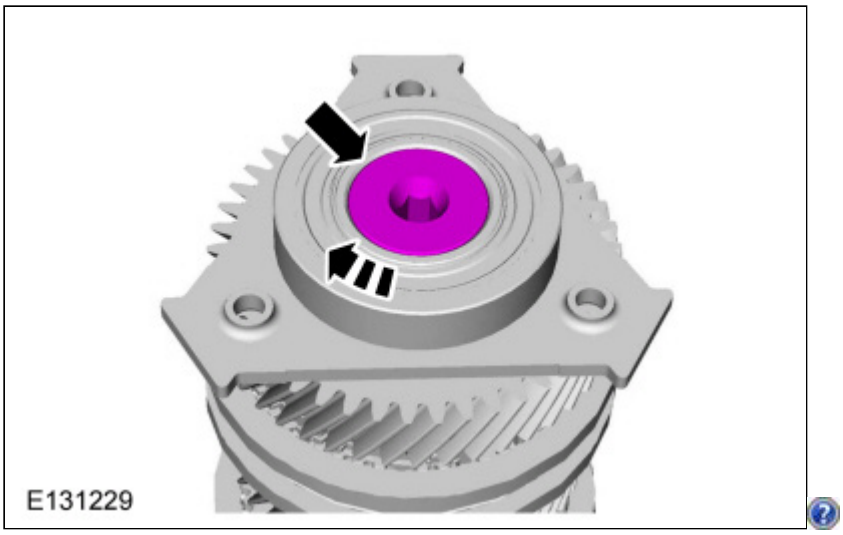
All of these go in easily. Use lots of oil!

10. *Special Tool(s)* : 205-D015 (D80L-630-4) Step Plate
    General Equipment : Hydraulic Press



Be sure you are pressing on the inner race ONLY. I would recommend a socket that fits in the recessed area, as it does not go all the way down on the shaft. (will site a few thousandths proud) ALSO note the orientation of the bearing - the metal plate is DOWN.

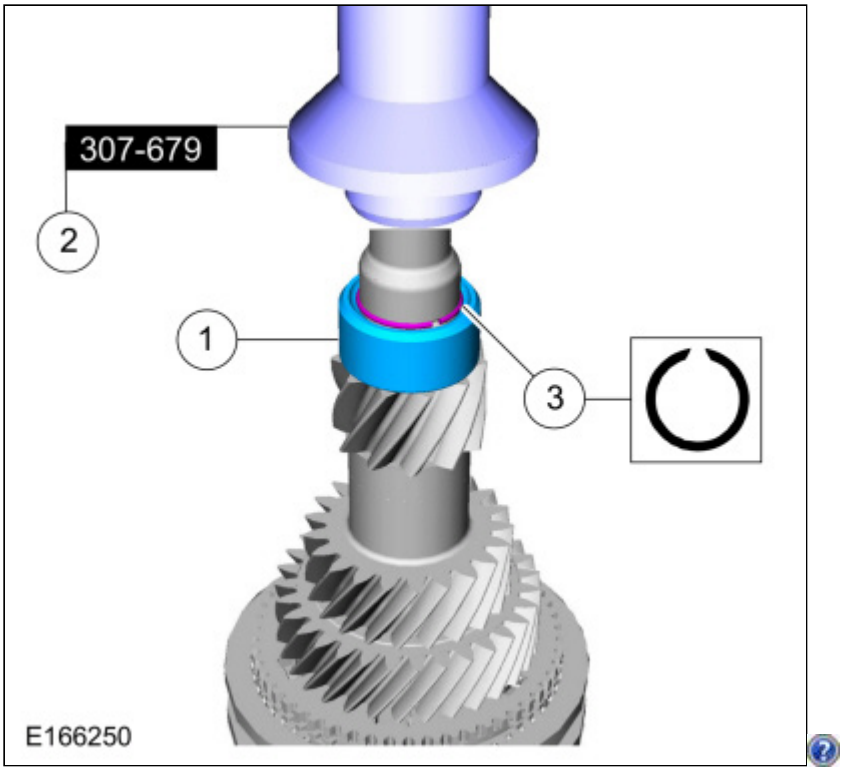
11. *Torque* : 110 Nm



Good luck torquing this. I had a friend help, we used a strap wrench, vise and various implements to do our best. We couldn't quite get the torque wrench to click 110, but we got close. Another option is to use a power tool/air gun, but that is up to you.

12.

1.
2. *Special Tool(s)* : 307-679 Installer, Countershaft Needle Bearing
   General Equipment : Hydraulic Press
3.



I will admit, I didn't have the exact tool, so I used a combination of steel bar stock and a shaft seal installer to get this to work. It's a relatively easy install.