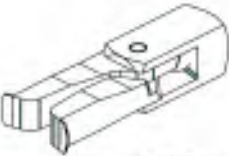
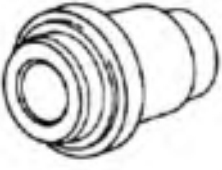


Transfer Case - Raptor, Vehicles With: 2-Speed Torque On Demand Transfer Case

Base Part Number: Base Part Number: 7251

Special Tool(s) / General Equipment

 E133913	205-153 (T80T-4000-W) Handle
 E231407	205-293 (T89P-4850-A) Installer, Differential Oil Seal TKIT-1989-F TKIT-1989-FLM TKIT-1989-FM TKIT-1989-LM
 E231408	205-504 Installer, Halfshaft Pilot Bearing TKIT-2002N-F/FM TKIT-2002N-FLM TKIT-2002N-LM
 E142012	307-318 Remover, Stator Bearing TKIT-1994-FH TKIT-1994-FMH/FLMH TKIT-1994-LMH/MH

 E231409	307-582A Cover Axle Seal Installer TKIT-2008AS-FLM
 E231410	308-047 (T77F-1102-A) Remover, Bearing Cup
 E231411	308-085 (T83T-7025-C) Installer, Input Shaft Bearing TKIT-1983-F TKIT-1983-FLM TKIT-1983-FX
 E231411	308-250 (T96T-7127-B) Installer, Output Shaft Oil Seal TKIT-1996-F/FM TKIT-1996-FLM2
Slide Hammer	
Adjustable Mounting Arm	

Materials

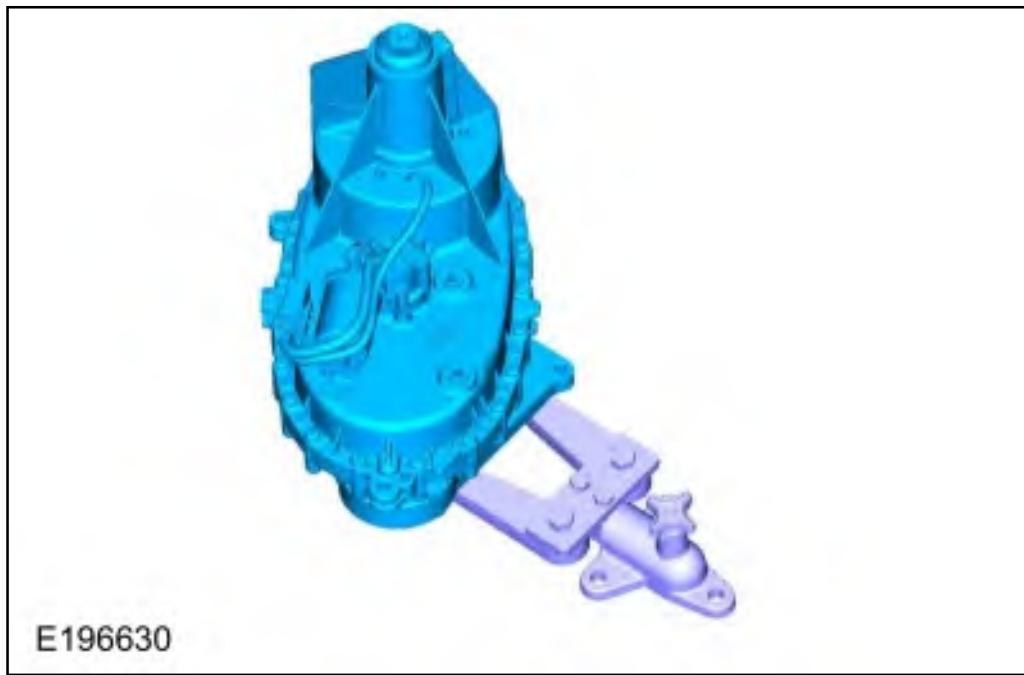
Name	Specification
Motorcraft® Ultra Silicone Sealant TA-29	-

DISASSEMBLY

- NOTICE:** Seal all openings before cleaning the transfer case exterior. This will prevent entry of dirt and water, which may cause damage to internal components.

Using a transmission adjustable mounting arm, secure the transfer case to the bench. Clean the transfer case with solvent and dry with compressed air.

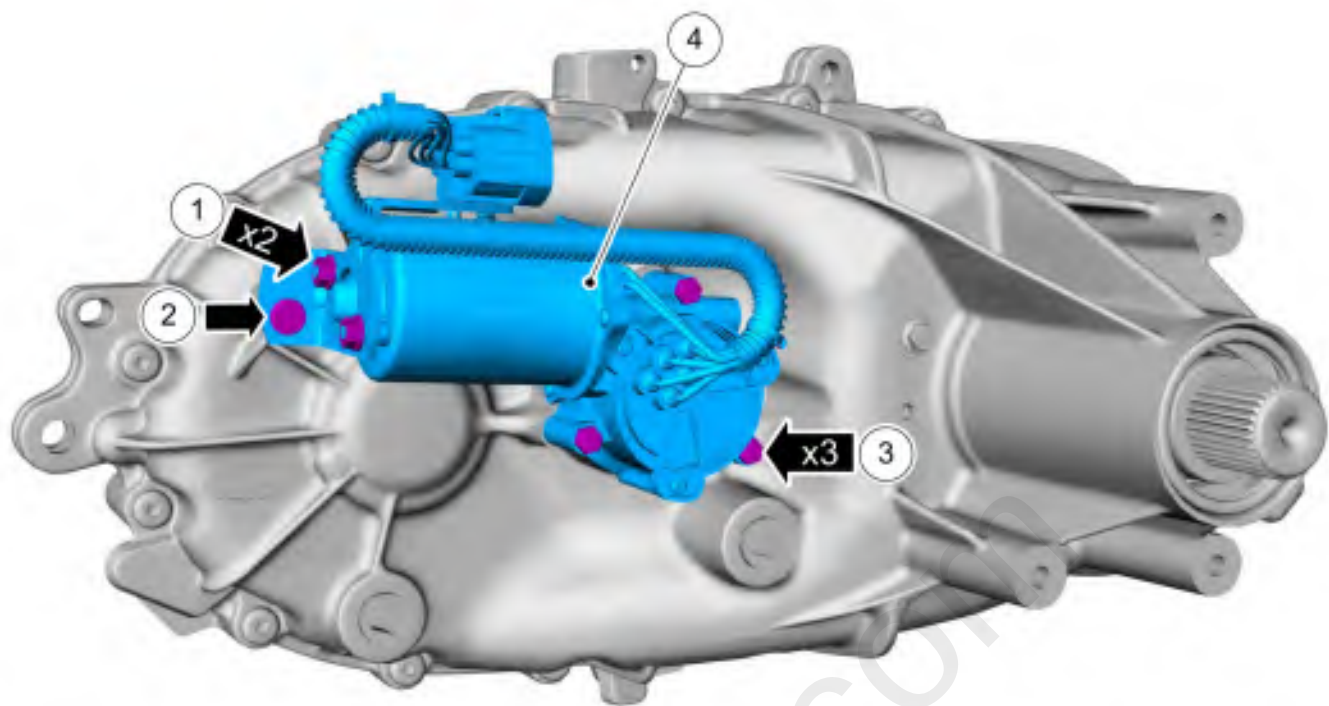
Use the General Equipment: Adjustable Mounting Arm



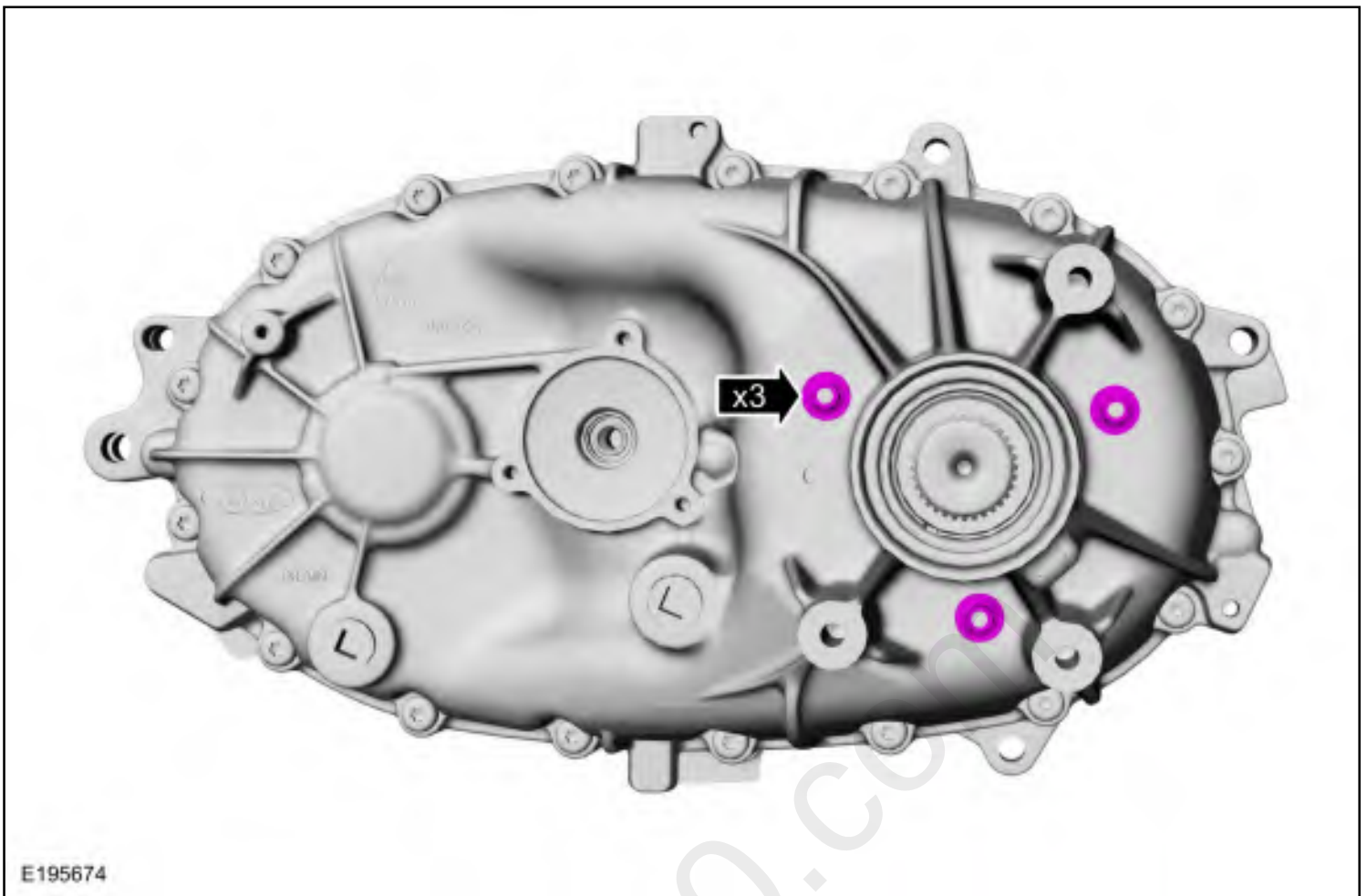
2. Remove the transfer case rear seal.
Refer to: [Transfer Case Rear Seal](#) (308-07B Transfer Case, Removal and Installation).
3. Remove the coil wire pin from the electrical connector.
 1. Remove the inner retainer from the wire connector.
 2. Press the release tab and remove the coil wire pin.



1. Loosen the transfer case shift motor bracket nuts.
2. Remove the transfer case shift motor bracket bolt.
3. Remove the transfer case shift motor bolts.
4. Remove the transfer case shift motor.

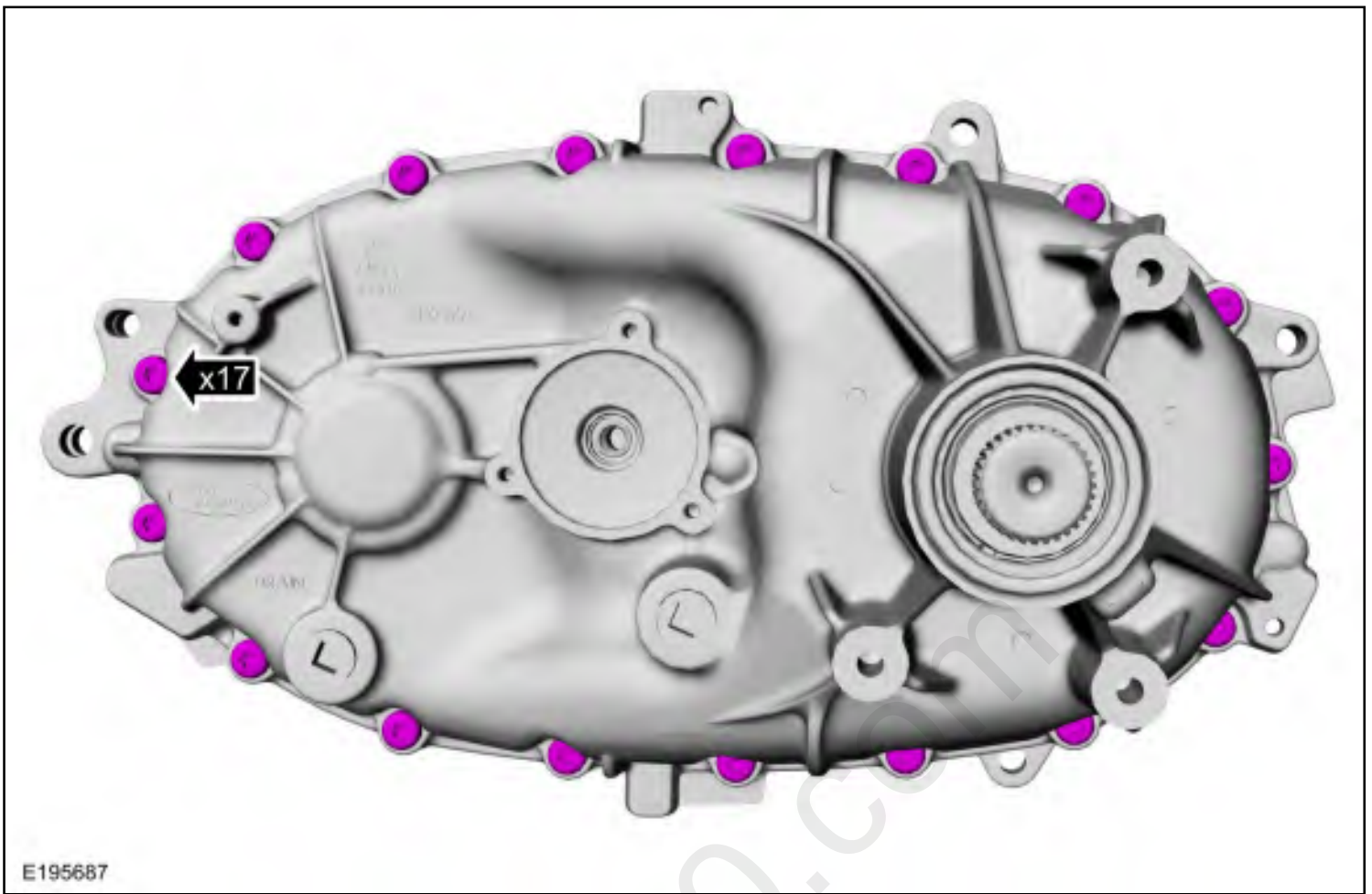


5. Remove the coil nuts and washers.

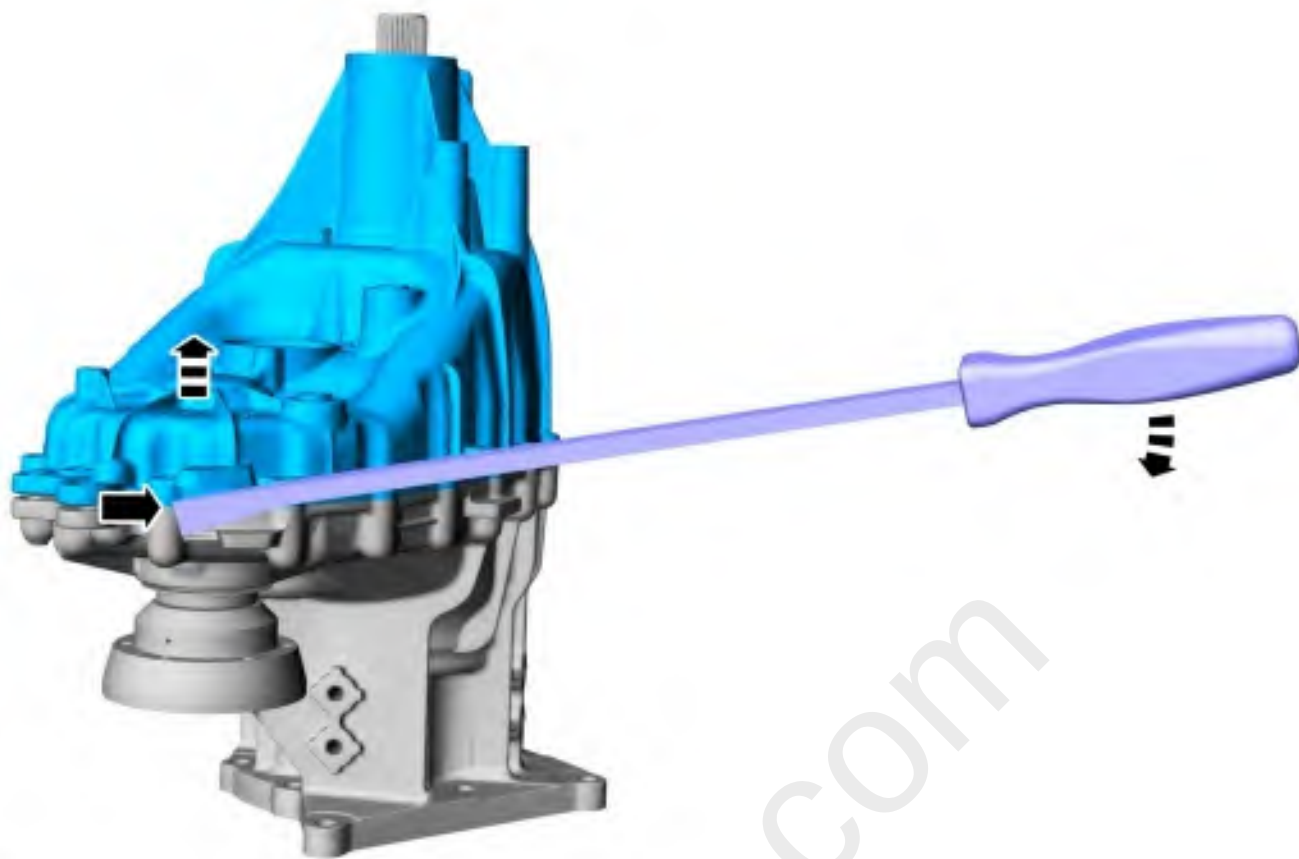


6. **NOTE:** The transfer case bolts are self tapping, and it is normal to find metal shavings while removing the cover.

Remove the transfer case bolts.



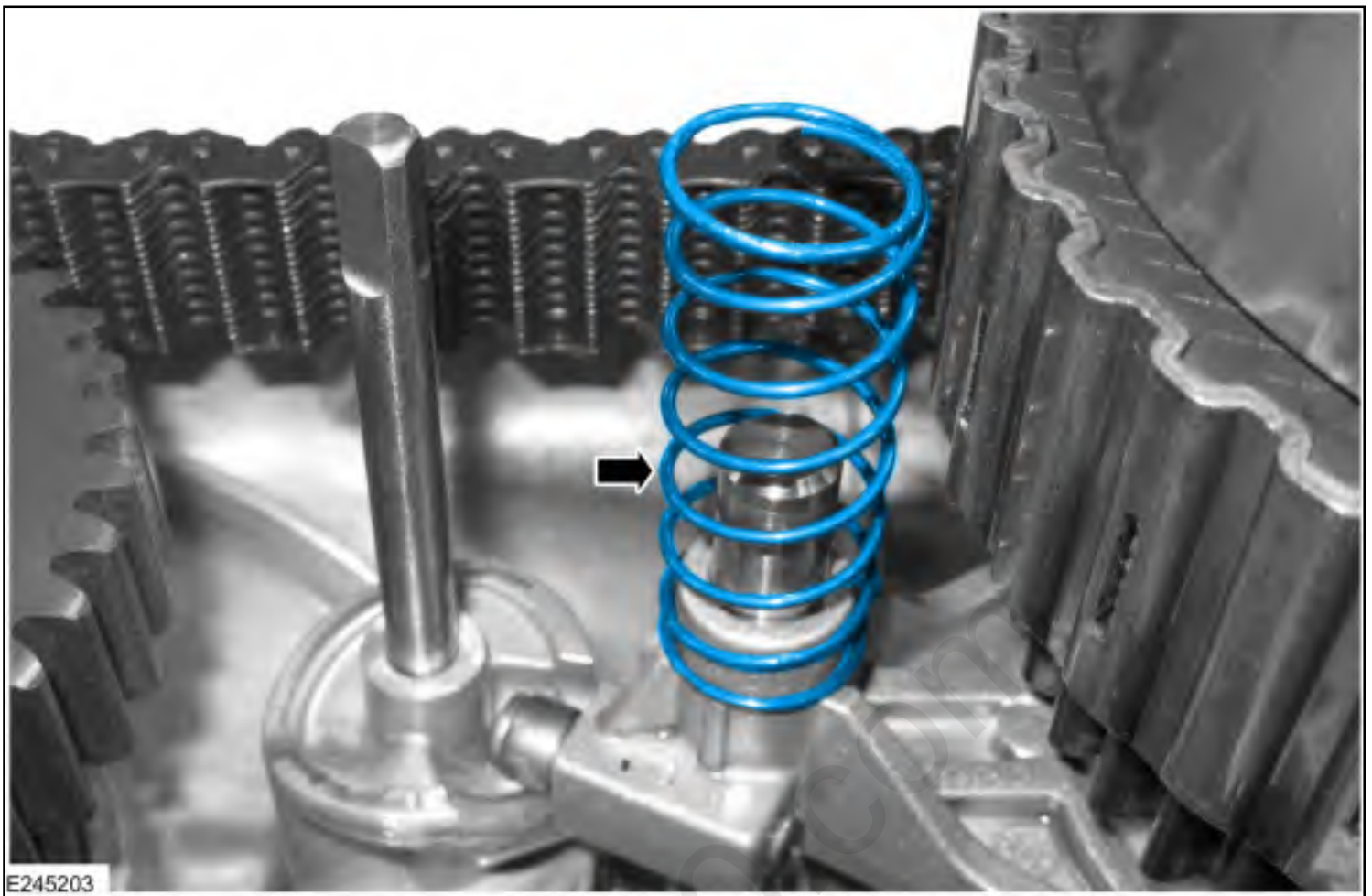
7. Using the pry bosses, separate the transfer case covers.



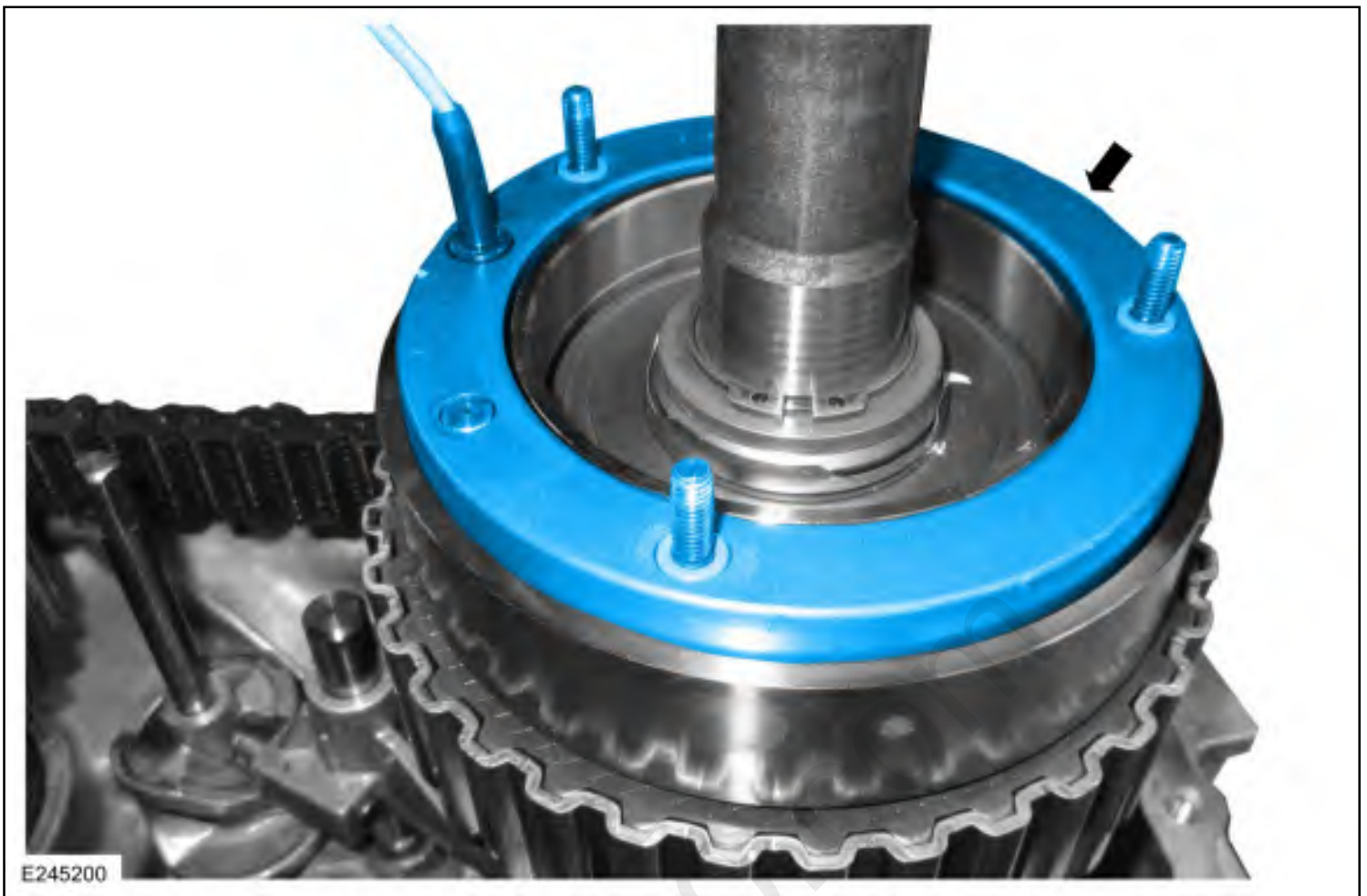
E195688



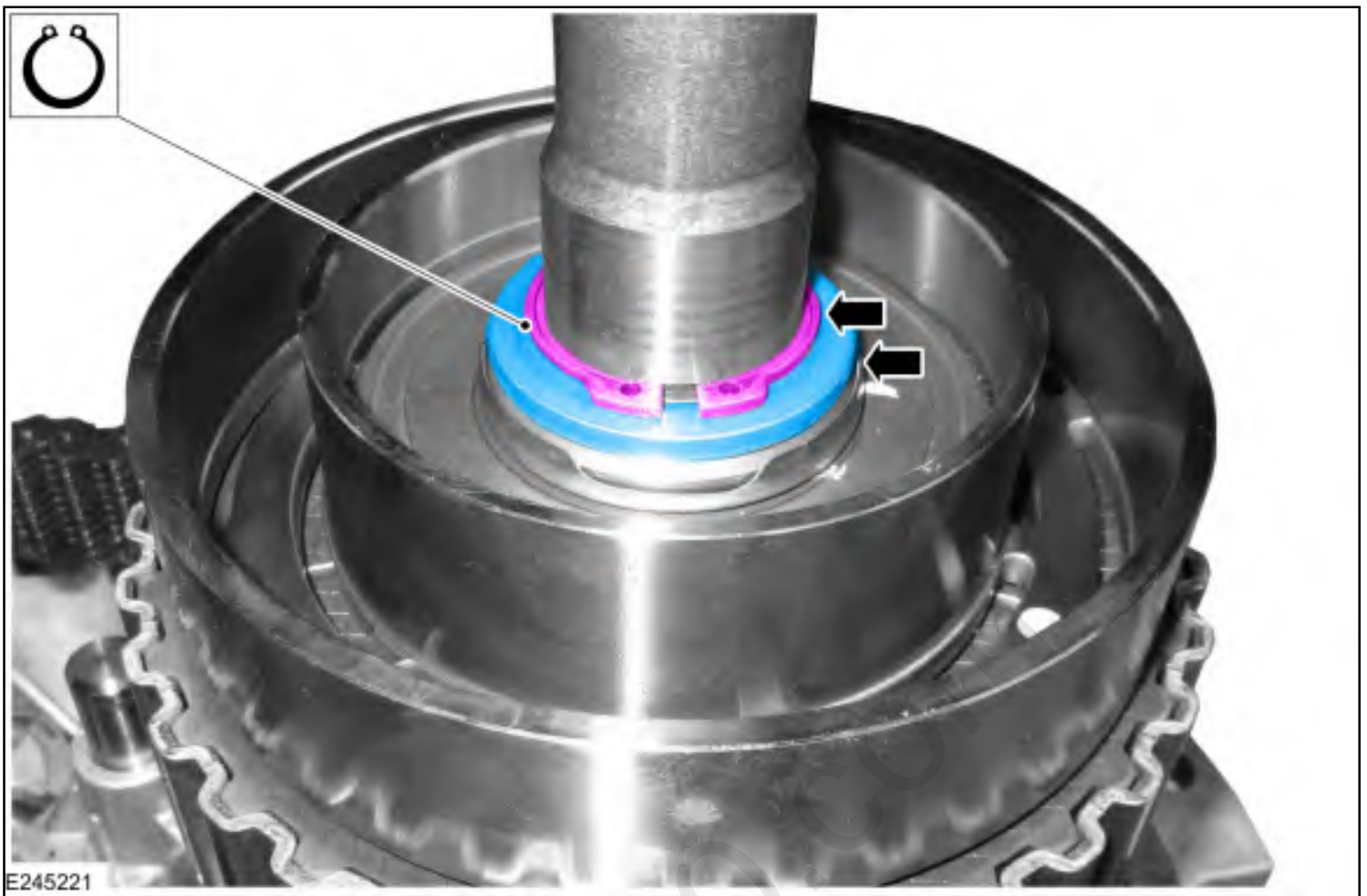
8. Remove the lock up fork spring.



9. Remove the transfer case field coil.



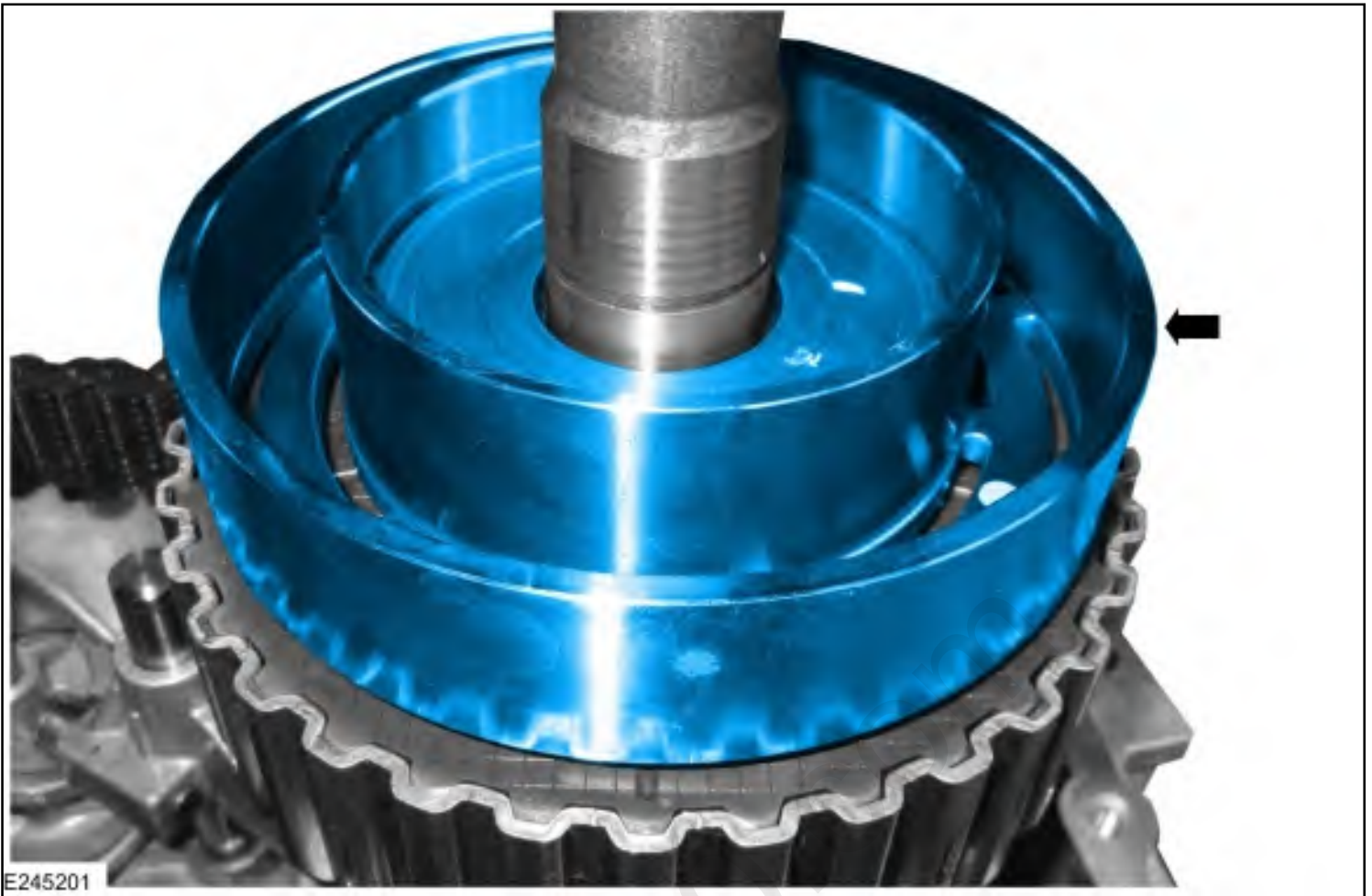
10. Remove the coil housing snap ring and spacer.



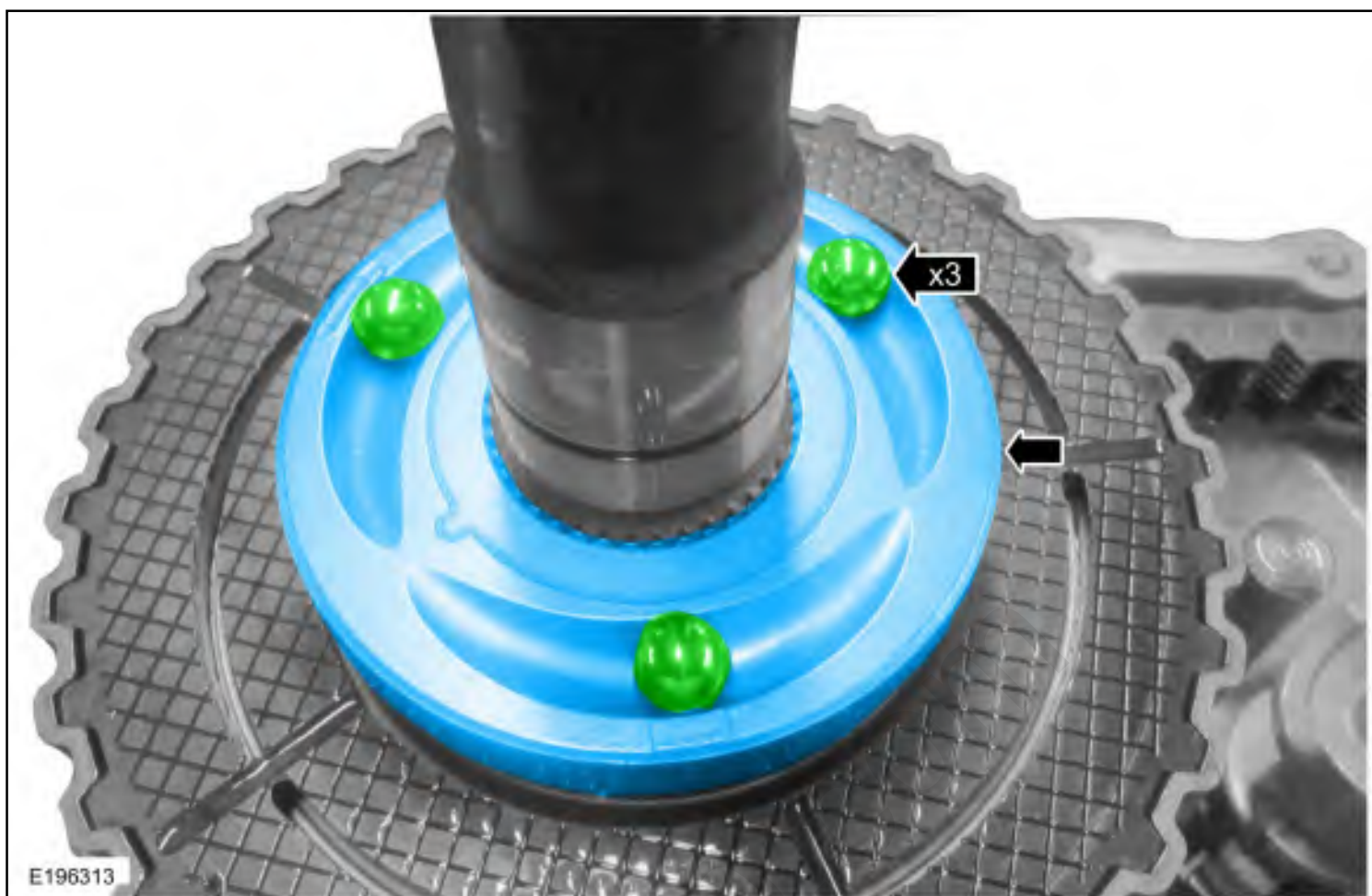
11. Remove the caged thrust bearing assembly.
 - Install a new bearing as necessary.



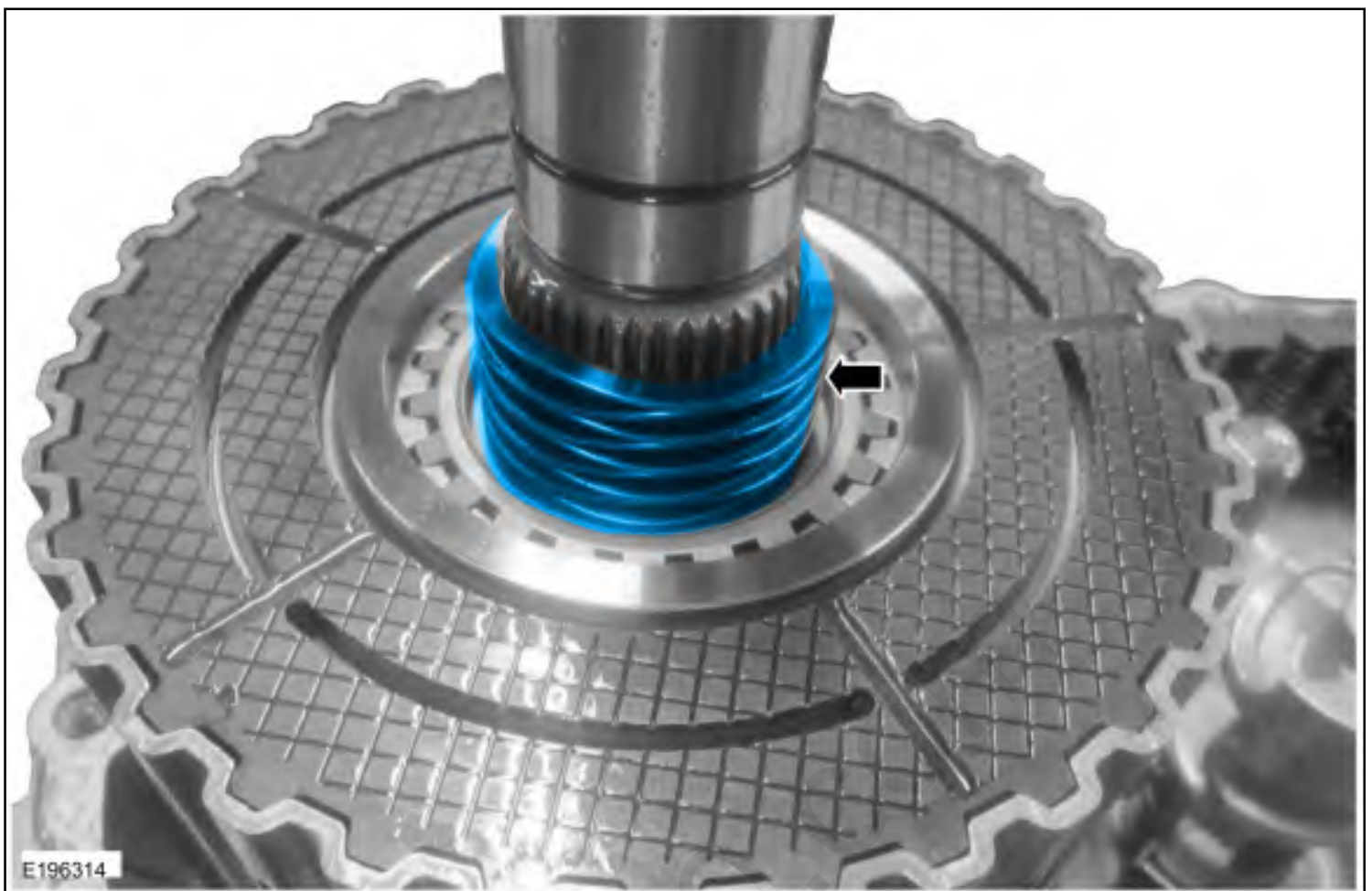
12. Remove the coil housing.



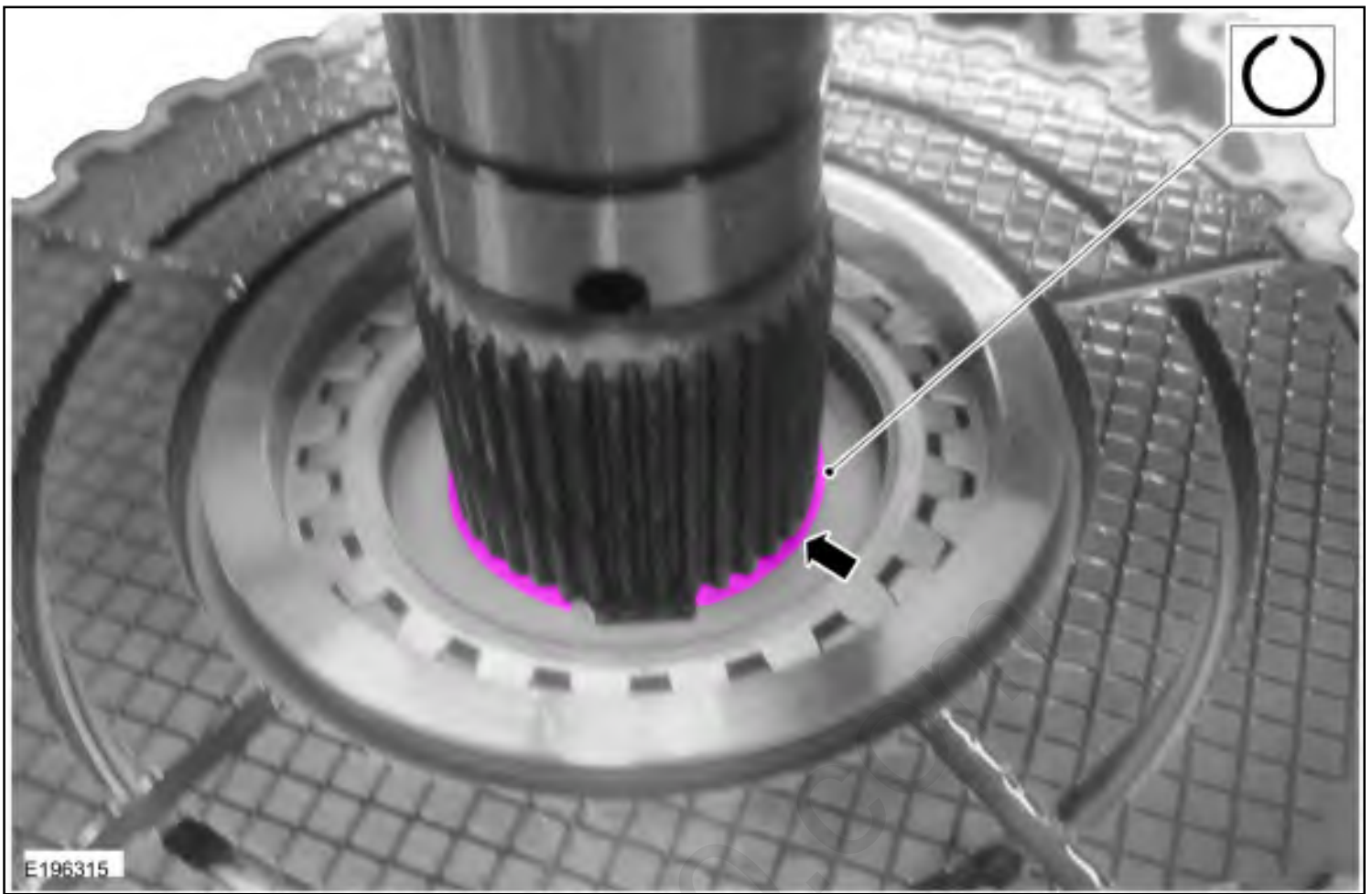
13. Remove the steel balls and the cam.



14. Remove the wave spring.



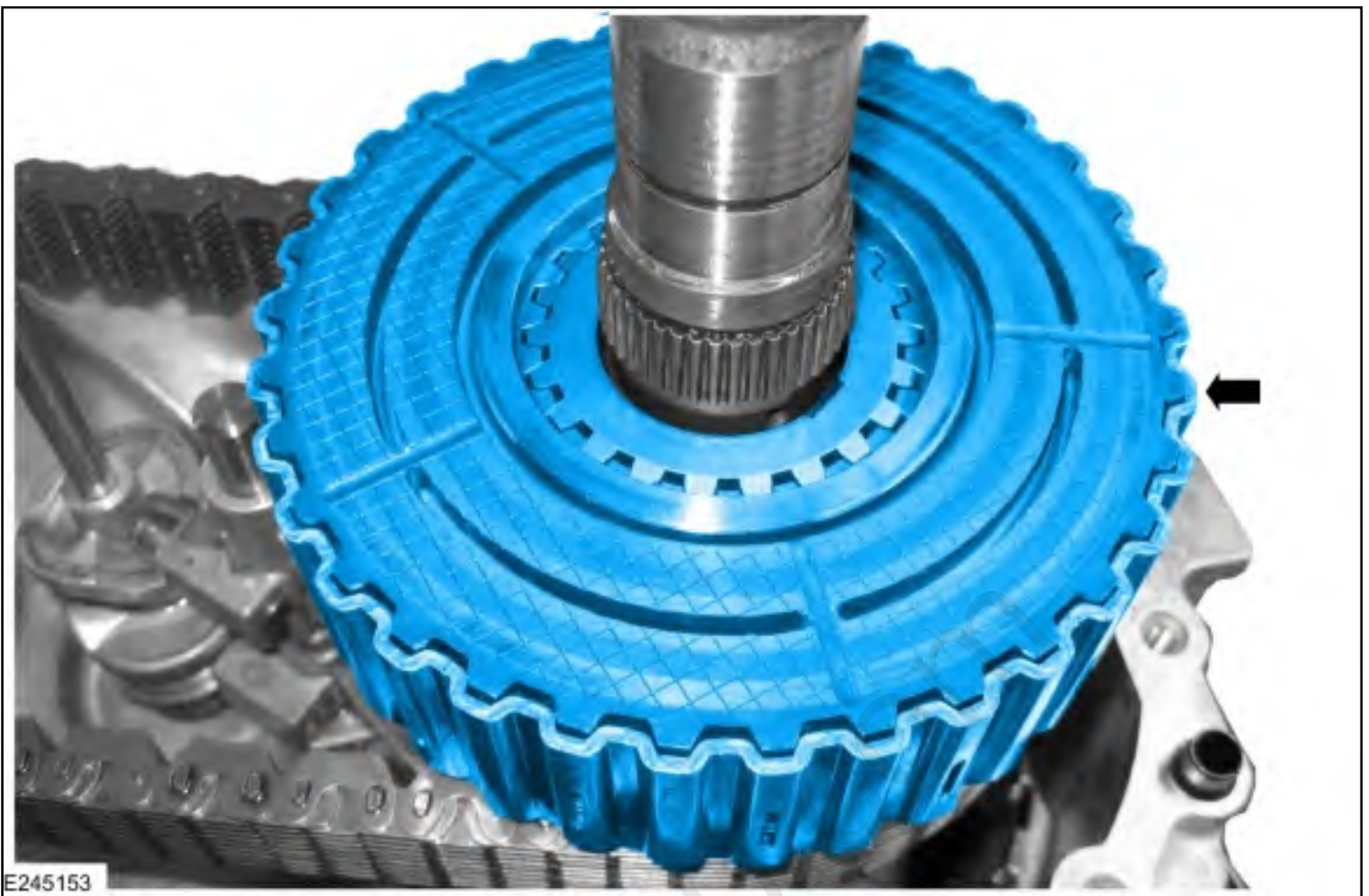
15. Remove clutch pack circlip.



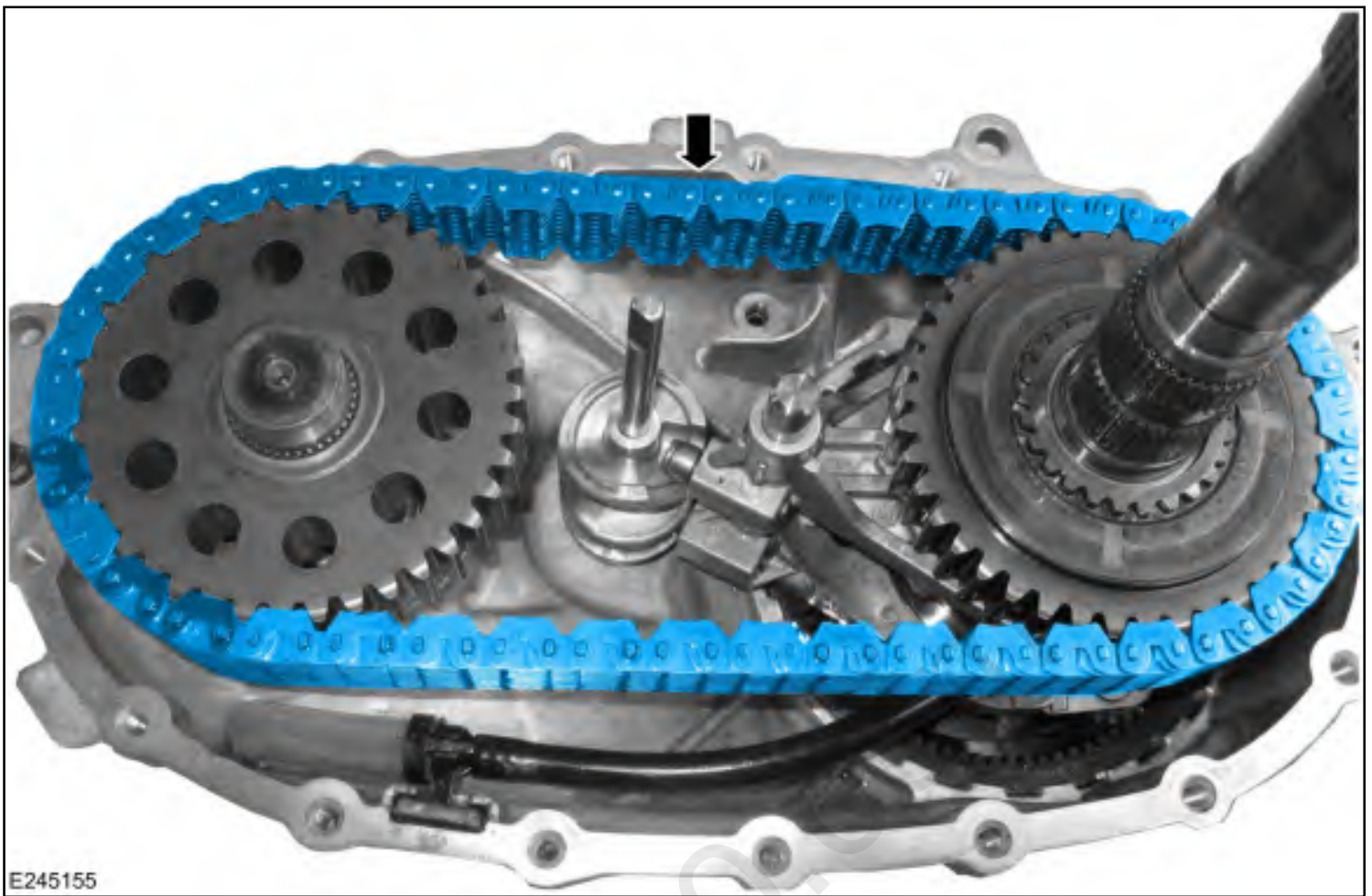
16. **NOTICE:** When removing the clutch pack assembly, do not separate the clutch pack assembly. Keep tension on the clutch pack during removal. Set the clutch pack assembly on the bench in the same position as located in the transfer case. The thrust washer in the lower clutch pack uses tabs to hold it in place. If the thrust washer is not in place, a transfer case clearance problem will occur.

NOTICE: If the clutch pack is disassembled, a new clutch pack and armature must be installed. Failure to install a new clutch pack can result in component failure.

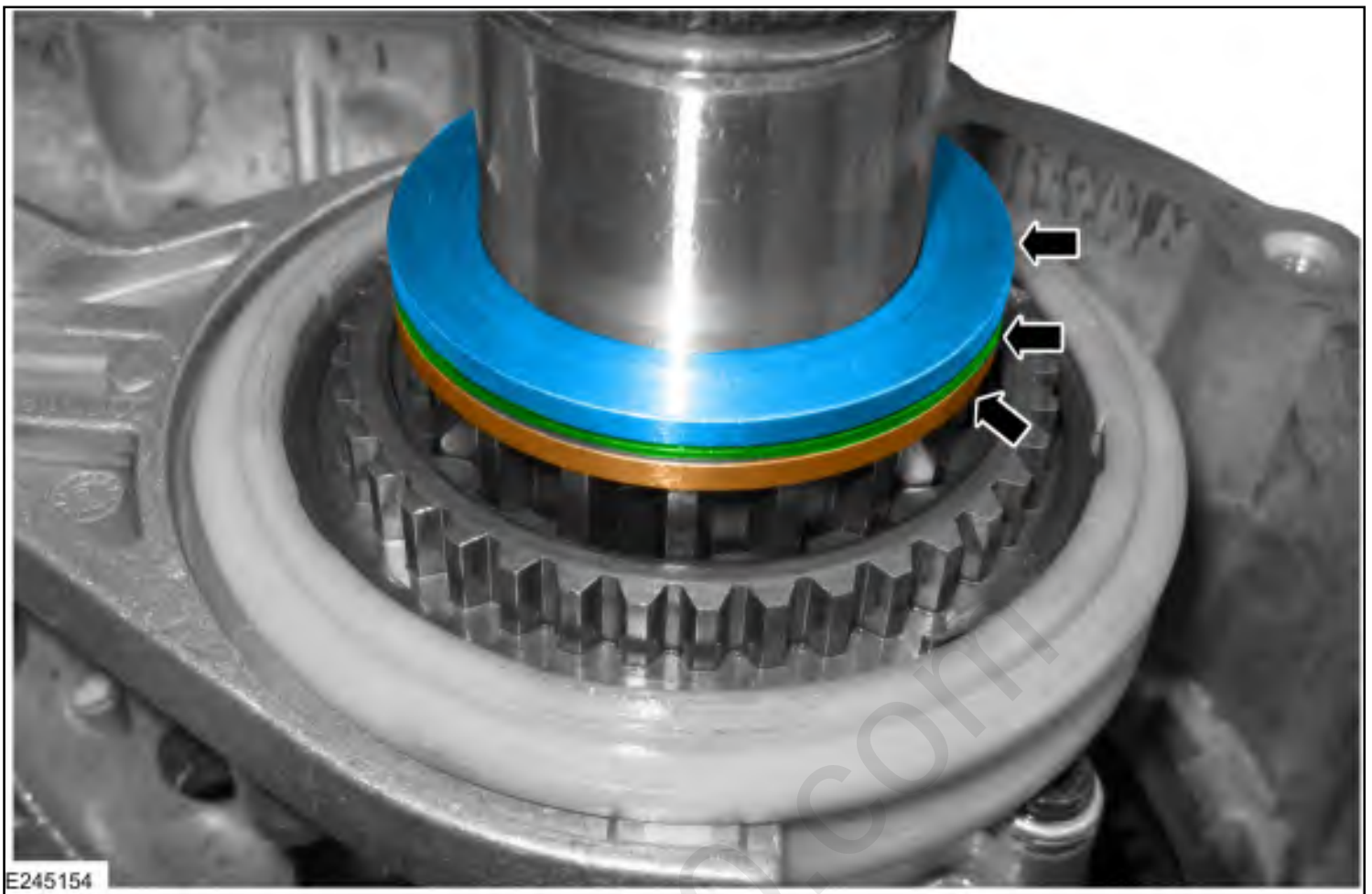
Remove the clutch pack assembly with the armature.



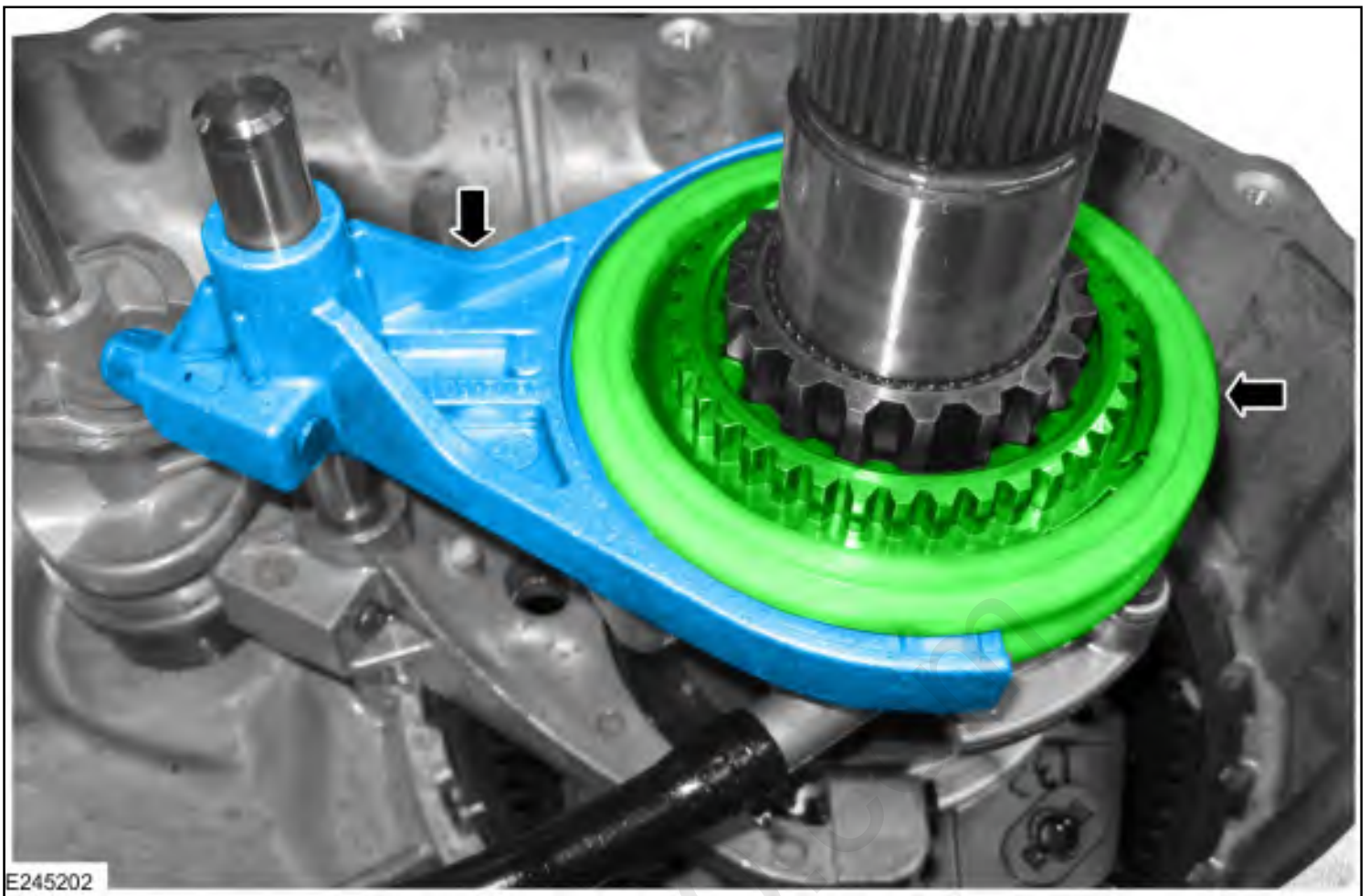
17.
 - Remove the drive chain and the sprockets as an assembly.
 - Install new components as necessary.



18. Remove the thrust bearing assembly.
- **NOTE:** *The upper thrust washer may be attached to the sprocket.*
- Remove the thrust washer.
- Remove the thrust bearing.
 - Remove the thrust washer.
 - Install new components as necessary.



19. Remove the lock up fork and the lock up hub.



20. Remove the lock up hub spacer.

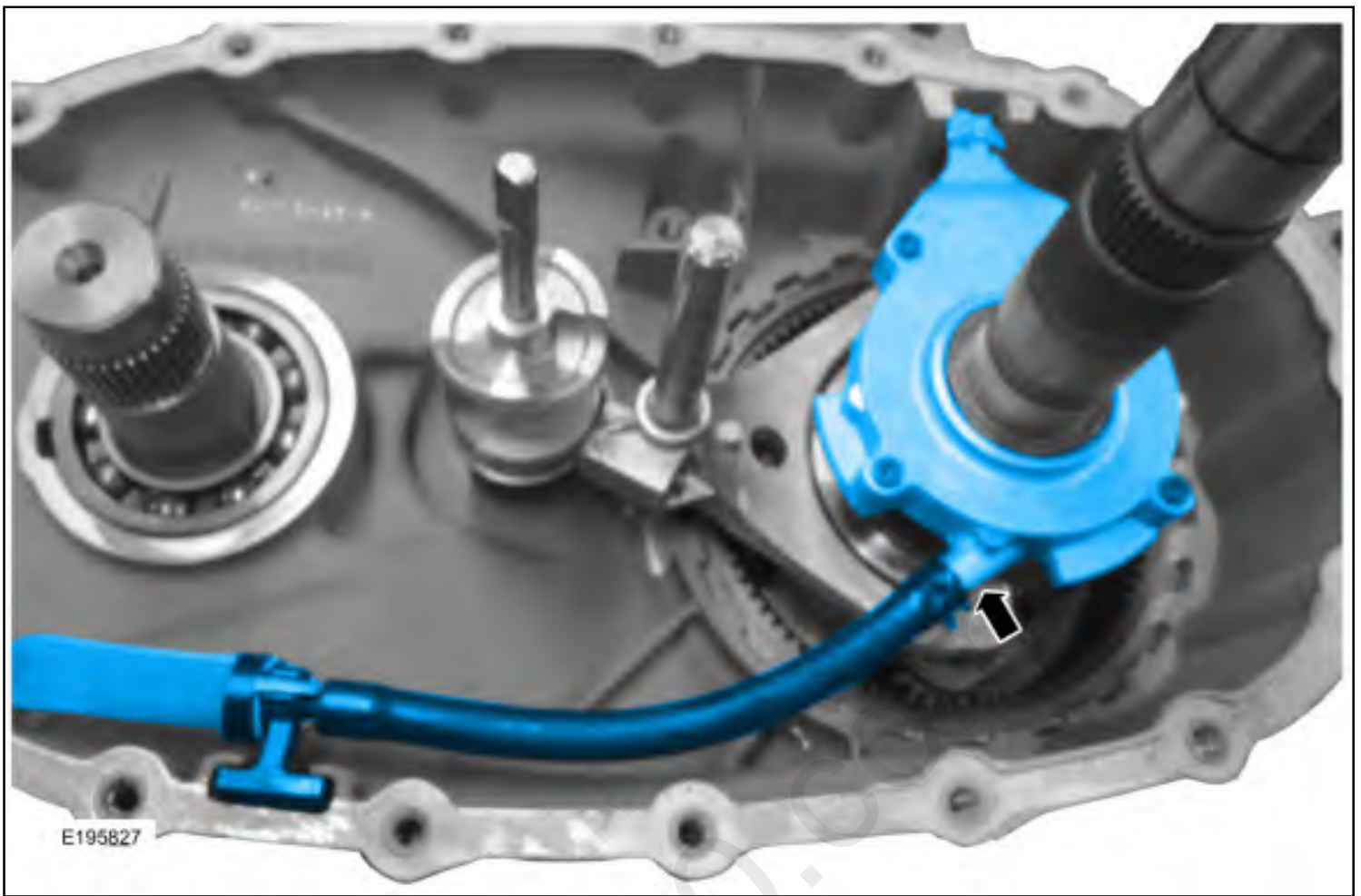


21. Remove the magnet from its slot in the case.



22. **NOTE:** *The pump assembly is not repairable.*

Remove the oil pump assembly.



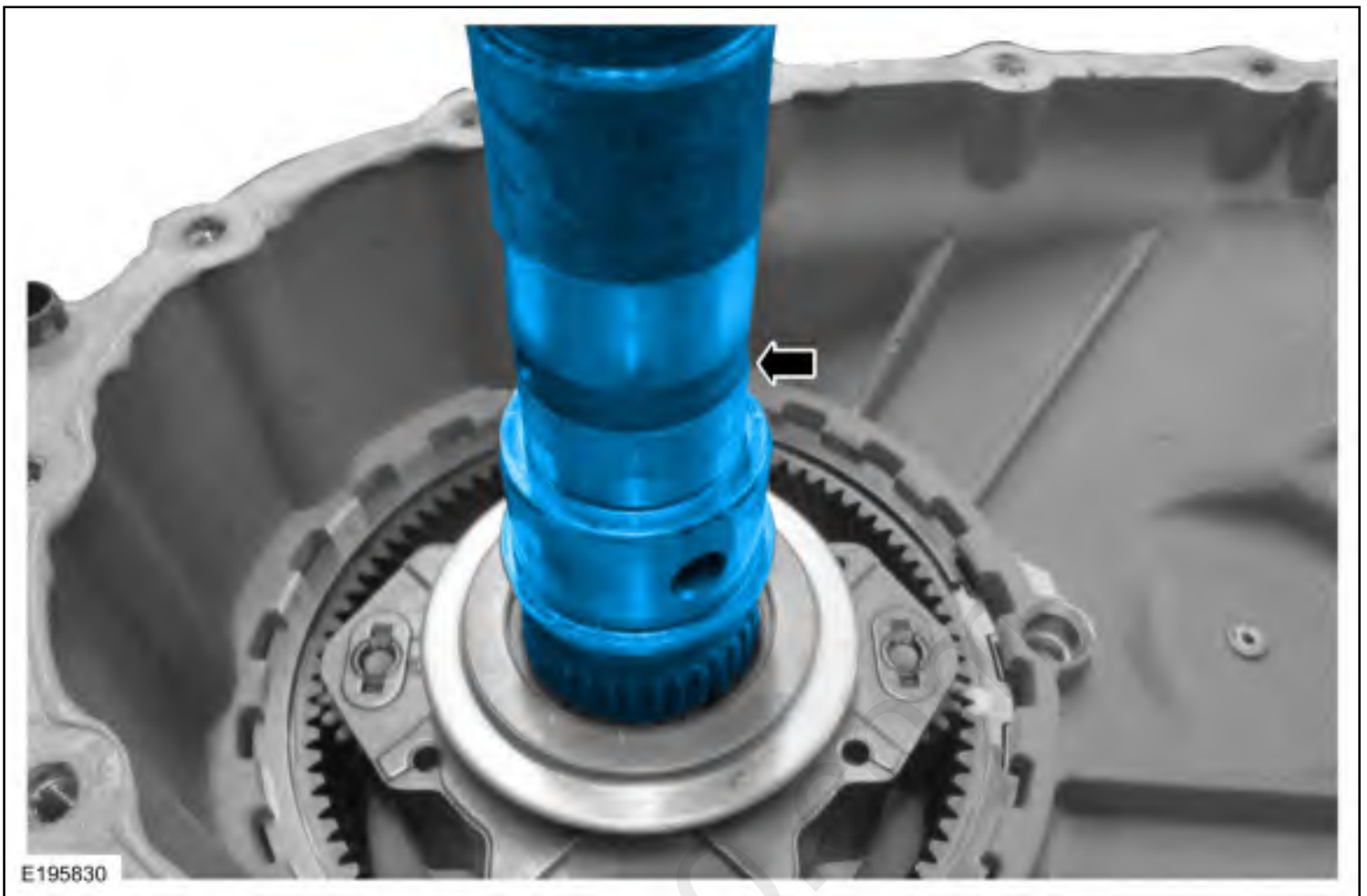
23. Remove the shift rail.



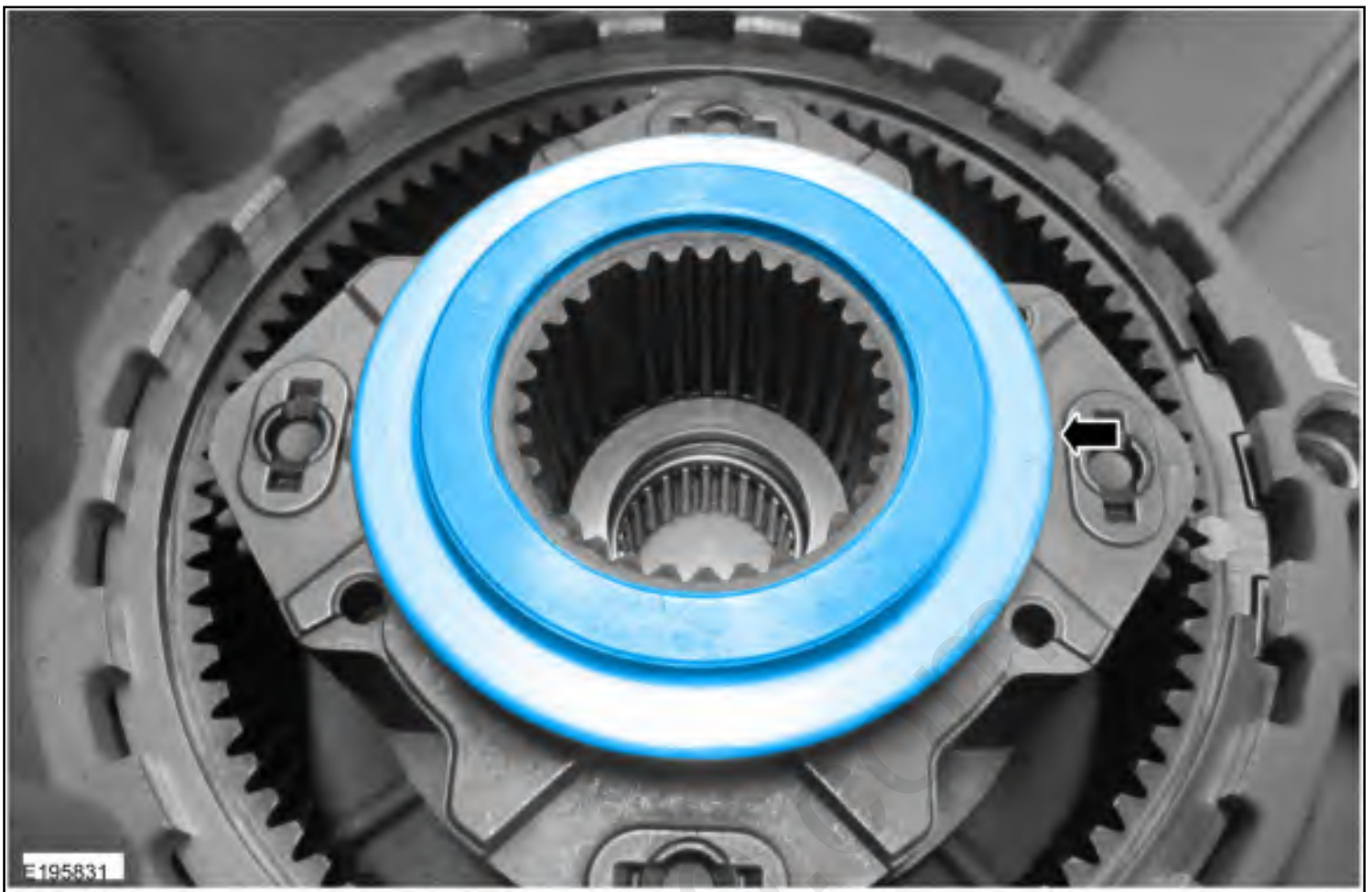
24. Remove the shift fork.



25. Remove the output shaft.



26. Remove the reduction hub.

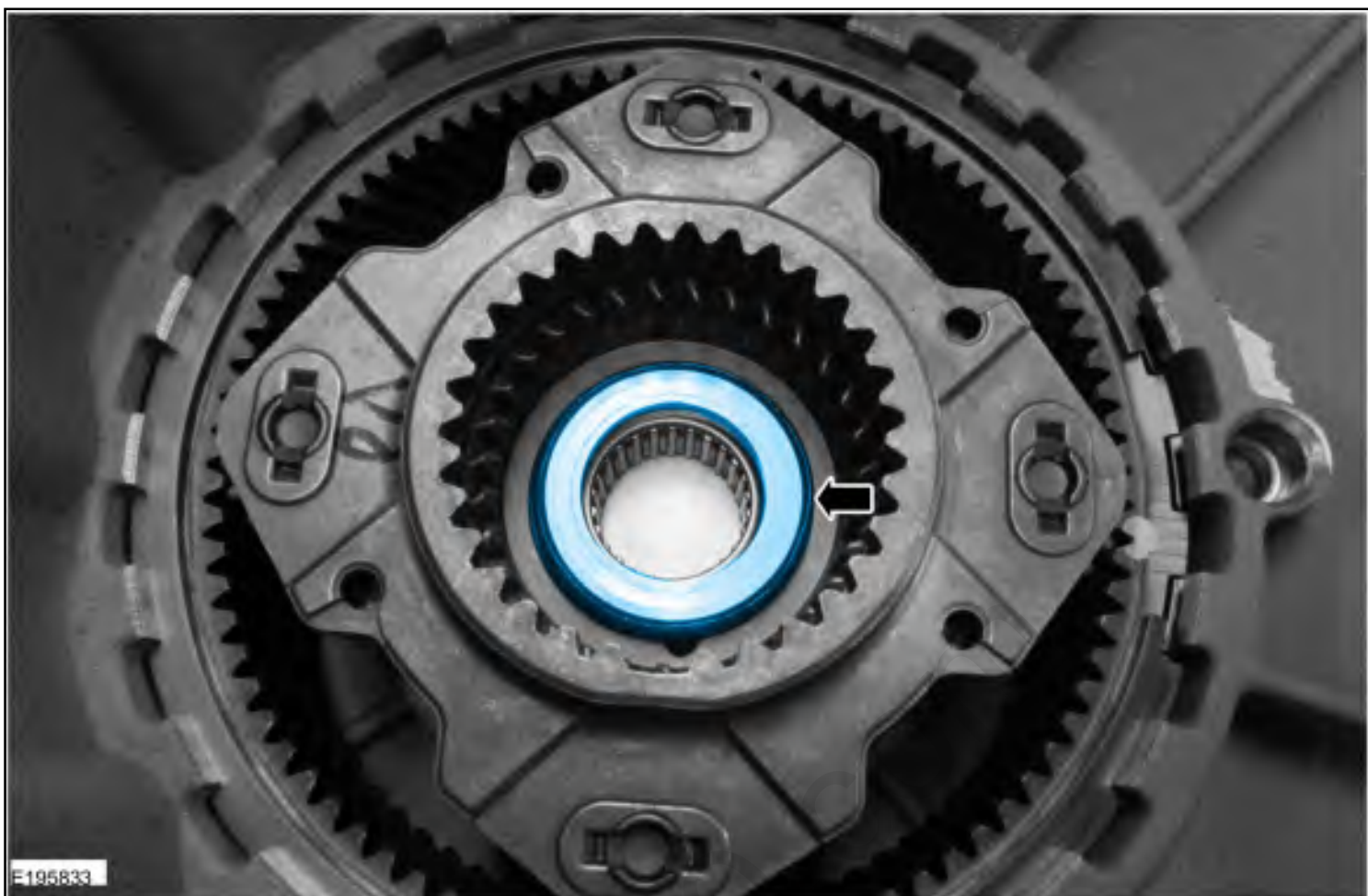


27. **NOTE:** *The electric shift cam is serviced as an assembly. Do not disassemble the shift cam assembly.*

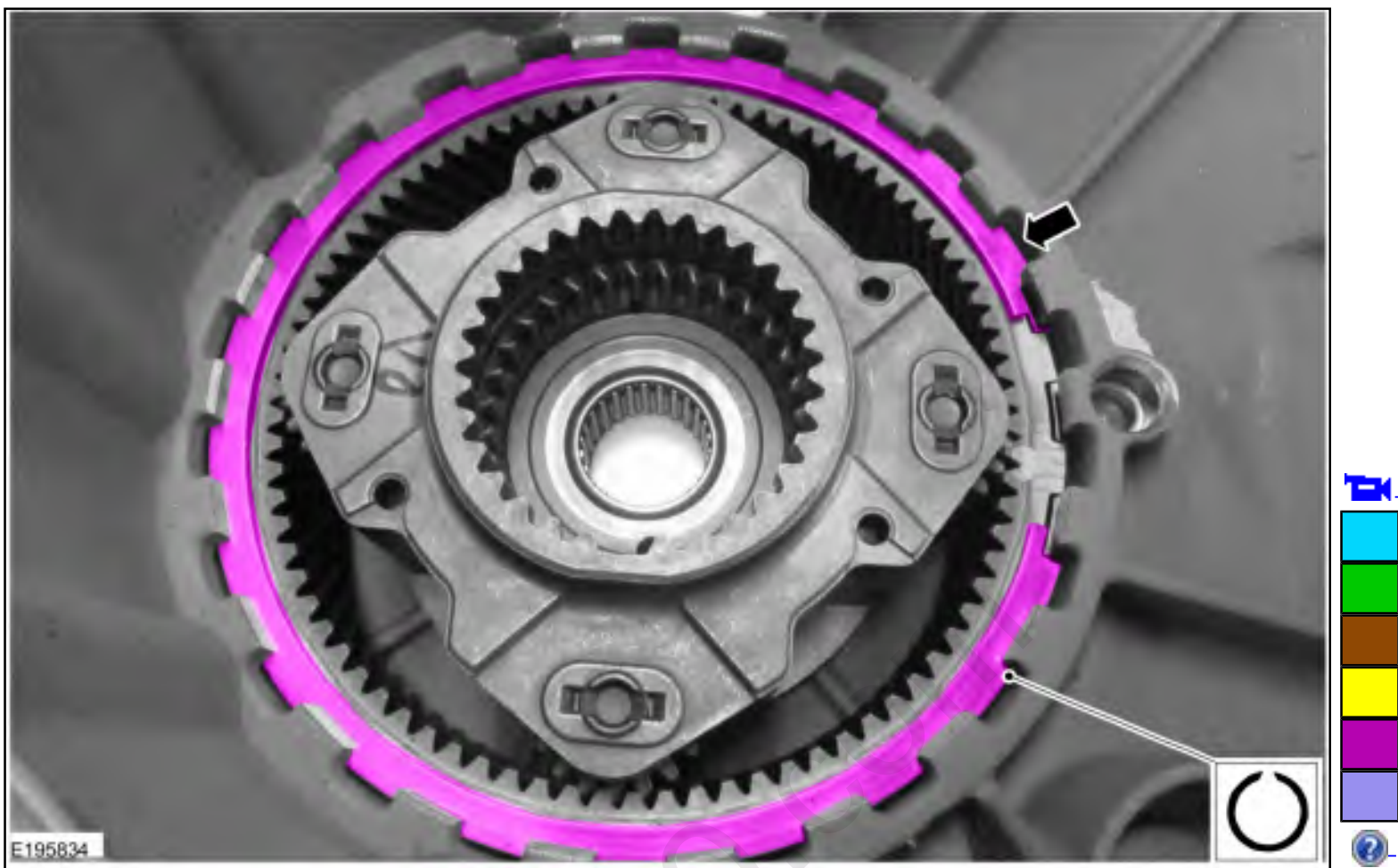
Remove the electric shift cam assembly.



28. Remove the planet carrier thrust bearing.



29. Remove the ring gear circlip.

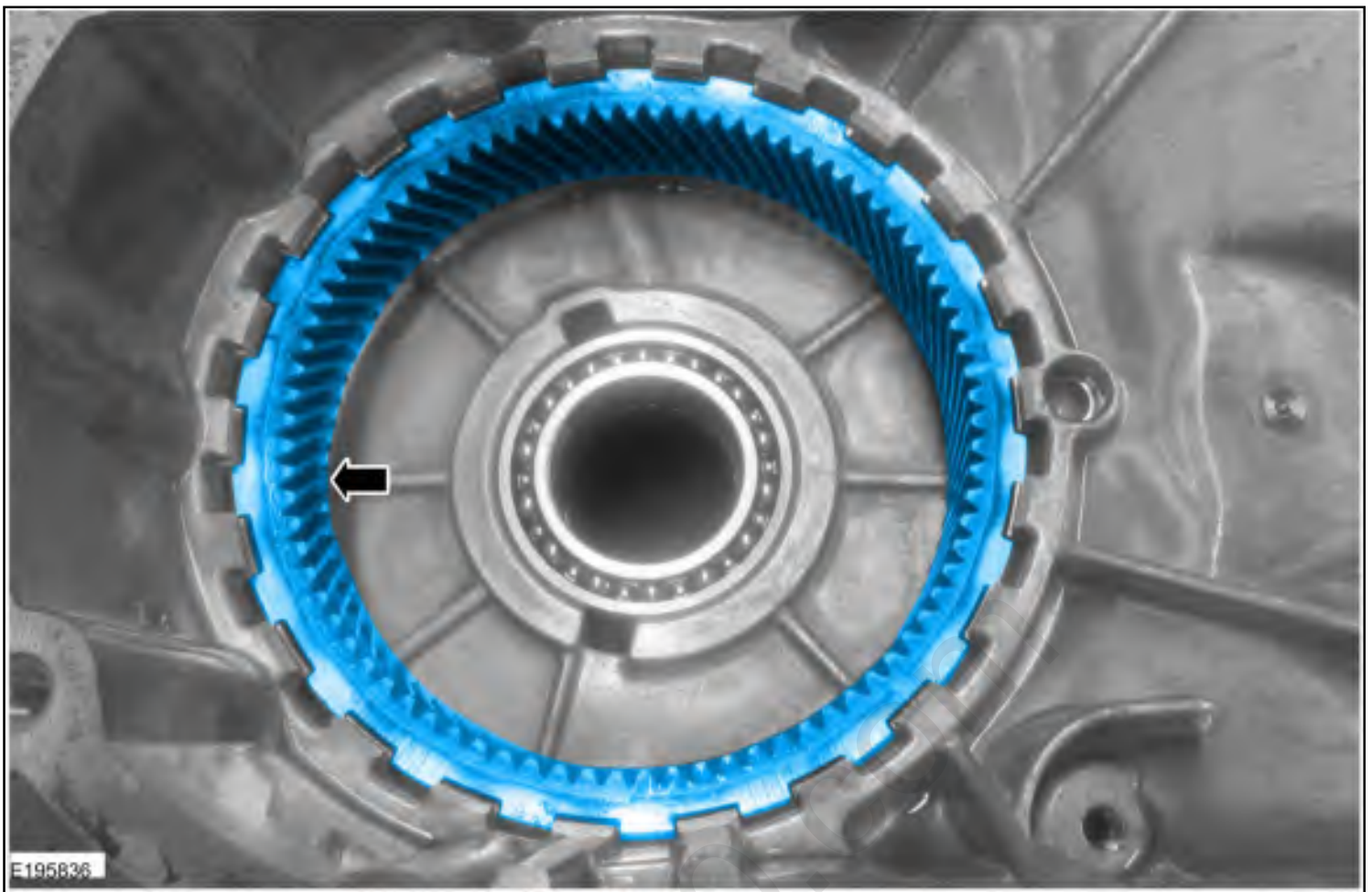


30. **NOTE:** *Replace the inner planet carrier needle bearing if necessary.*

Remove the front planet carrier.

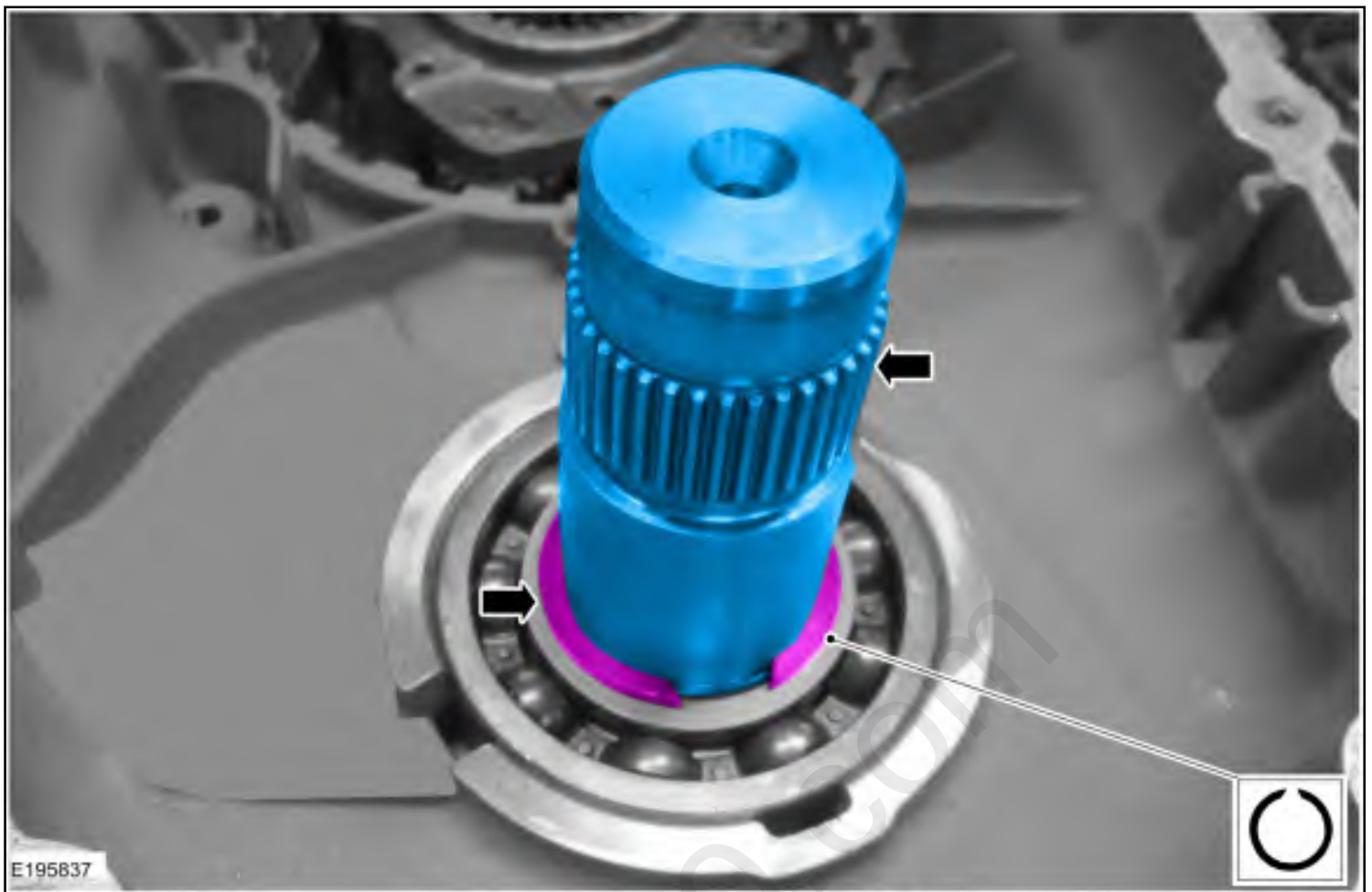


31. Remove the ring gear.

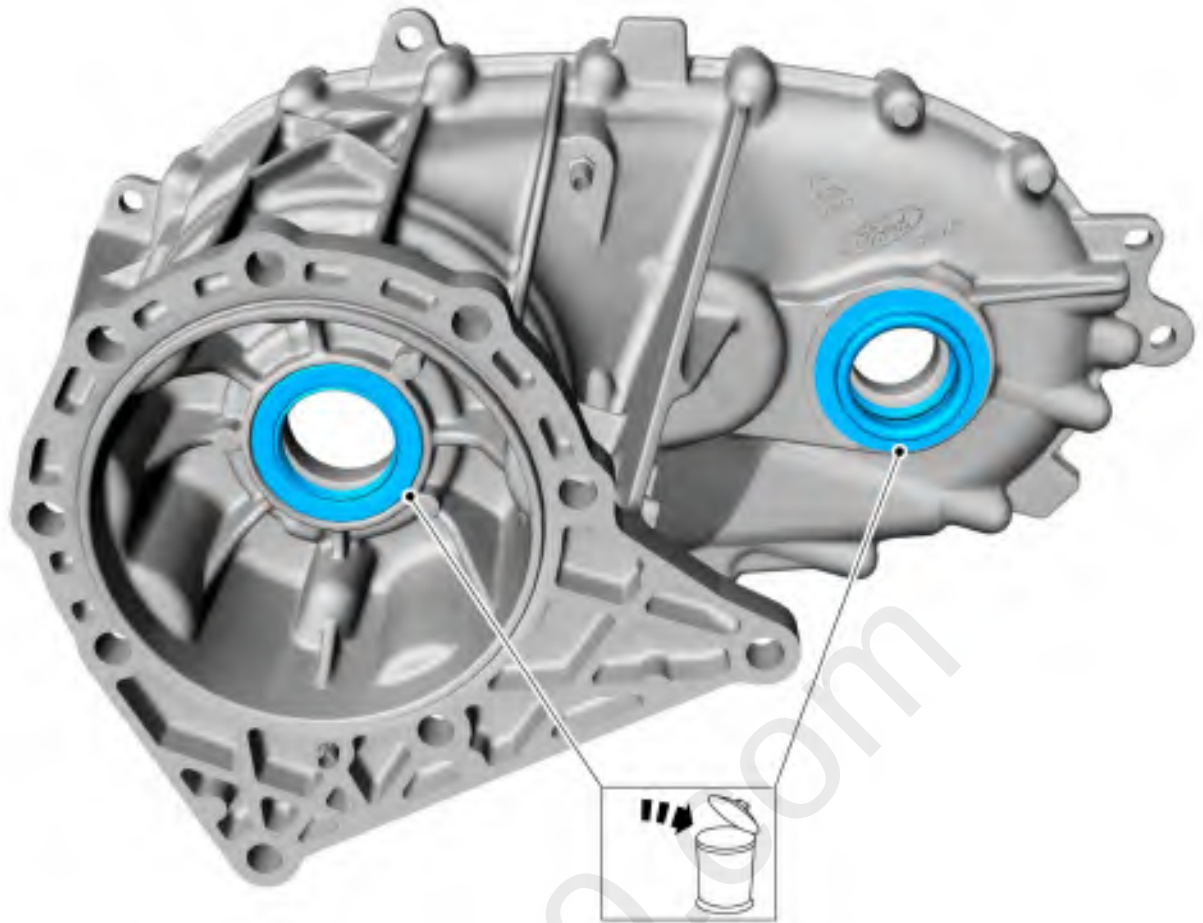


32. **NOTICE:** Do not let the front output shaft fall while removing the snap ring or damage to the component may occur.

Remove the output shaft circlip and the out put shaft.



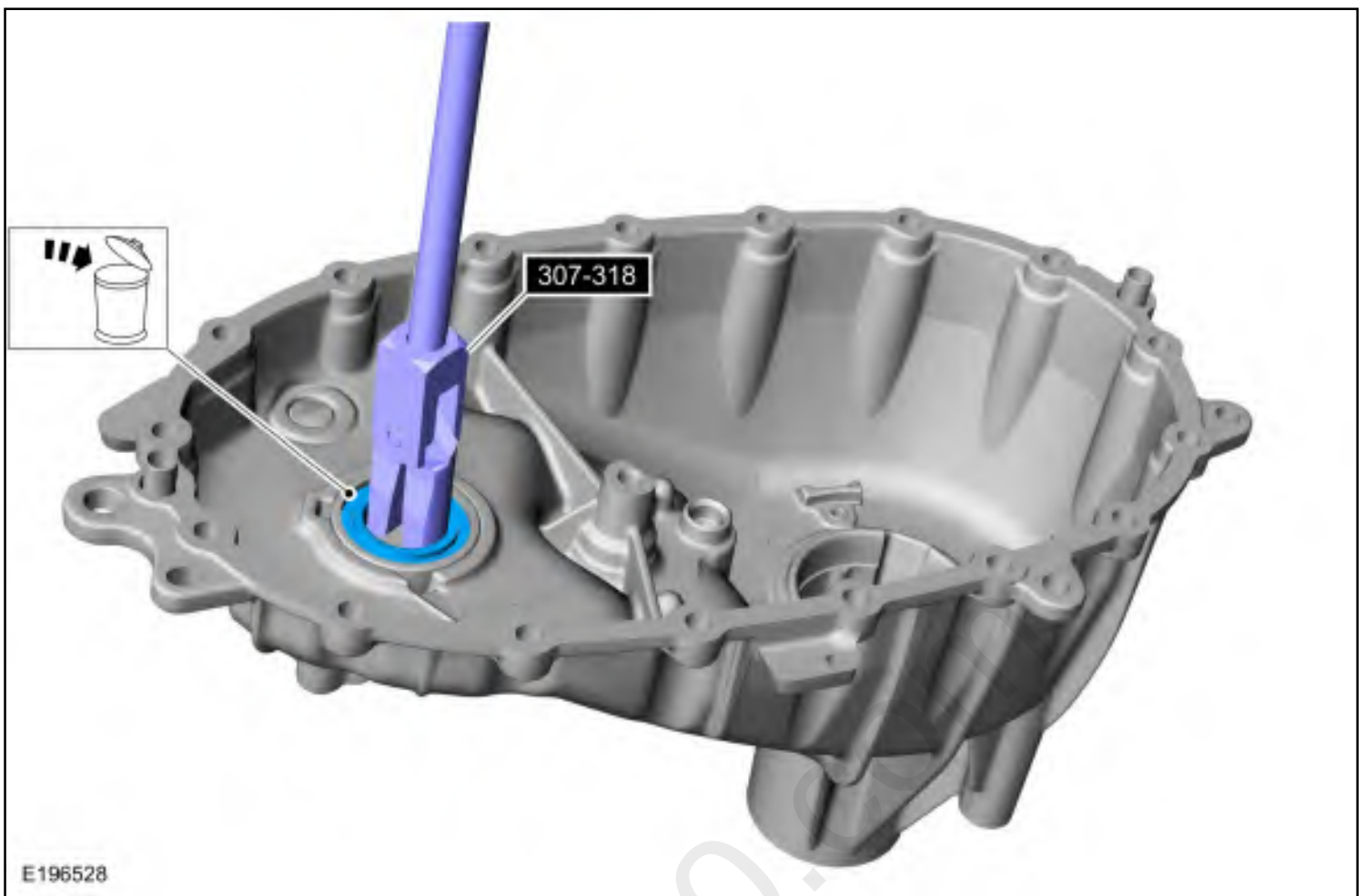
33. Remove and discard the front input shaft seal and the front output shaft seal.



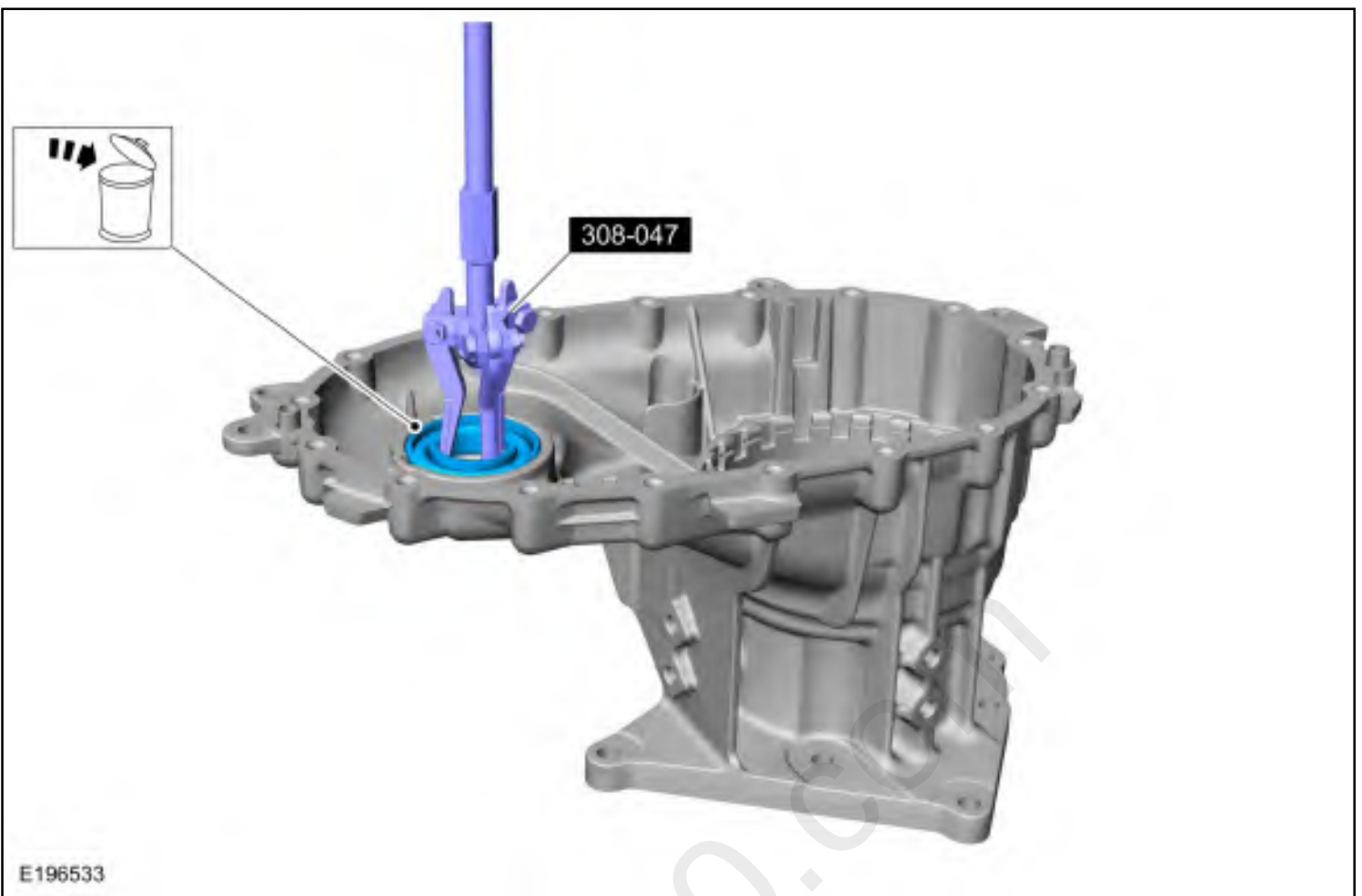
34. Using the special tool with the Slide Hammer, remove the rear output shaft bearing.
Use Special Service Tool: 308-047 (T77F-1102-A) Remover, Bearing Cup.
Use the General Equipment: Slide Hammer



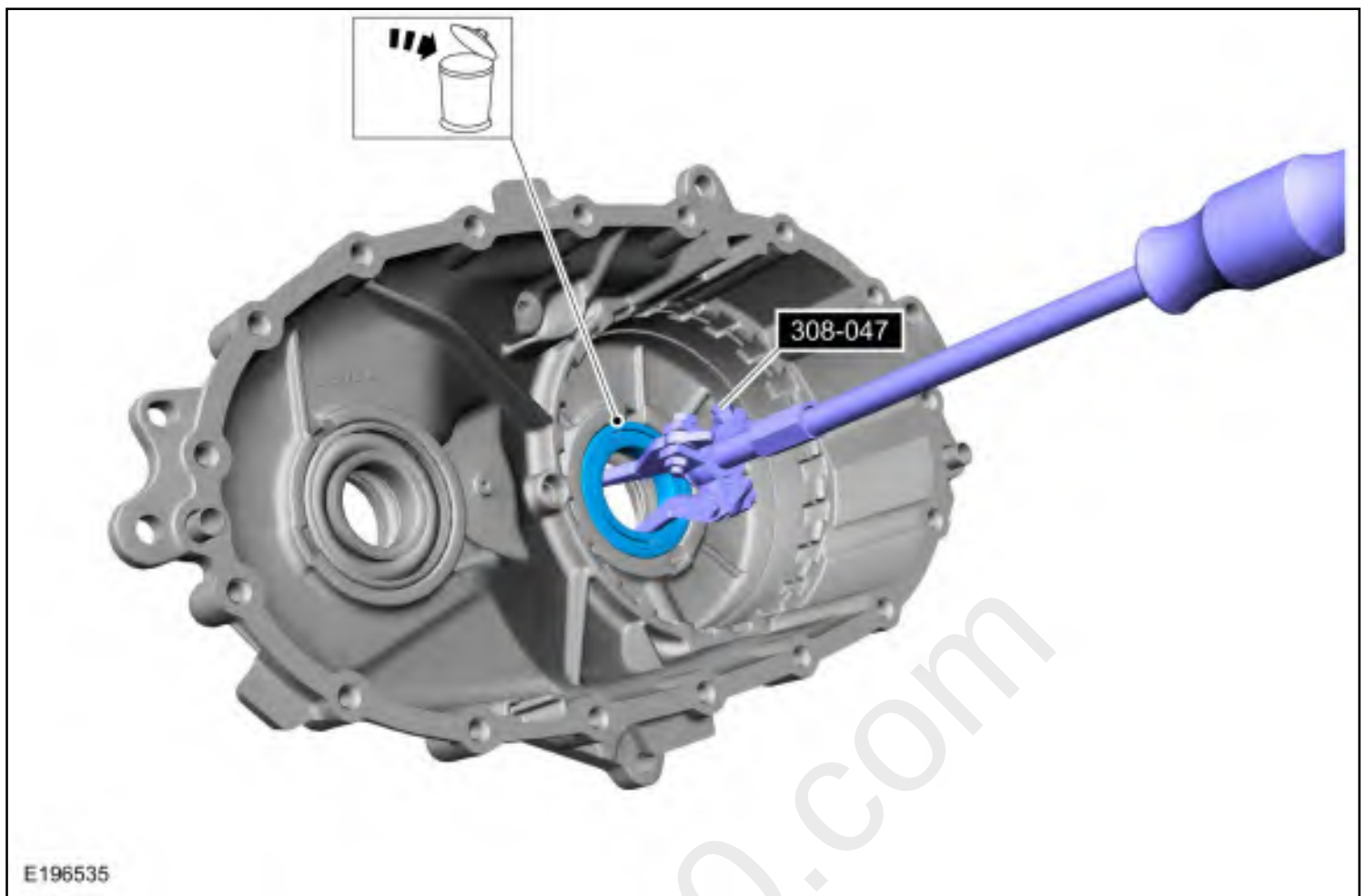
35. Using the special tool and a Slide Hammer, remove the front output shaft support bearing.
Use Special Service Tool: 307-318 Remover, Stator Bearing.
Use the General Equipment: Slide Hammer



36. Using the special tool with the Slide Hammer, remove the front output shaft bearing.
Use Special Service Tool: 308-047 (T77F-1102-A) Remover, Bearing Cup.
Use the General Equipment: Slide Hammer



37. Using the special tool and a Slide Hammer, remove the front planet carrier bearing.
Use Special Service Tool: 308-047 (T77F-1102-A) Remover, Bearing Cup.
Use the General Equipment: Slide Hammer



38. Clean and inspect the components of the transfer case for damage and install new components as necessary.

ASSEMBLY

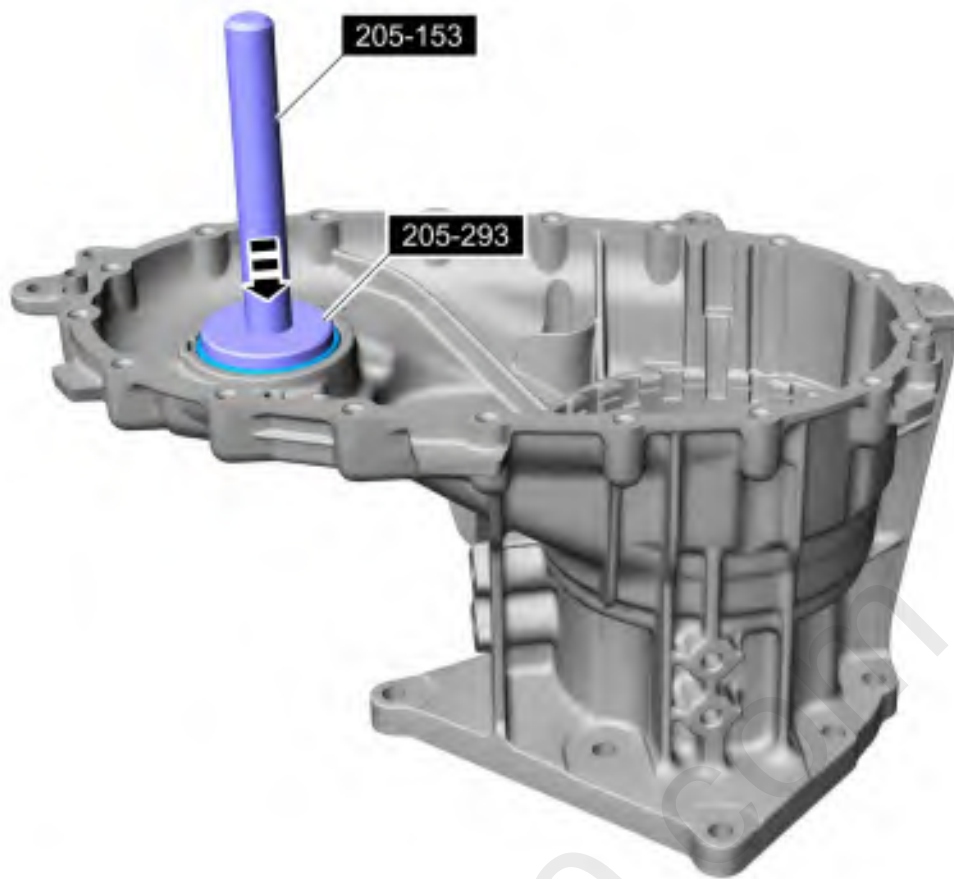
NOTE: *Lubricate all internal components with the recommended transfer case lubricant during reassembly.*

1. Using the special tools, install the front planet carrier bearing.
Use Special Service Tool: 205-153 (T80T-4000-W) Handle. , 205-504 Installer, Halfshaft Pilot Bearing.



E196536

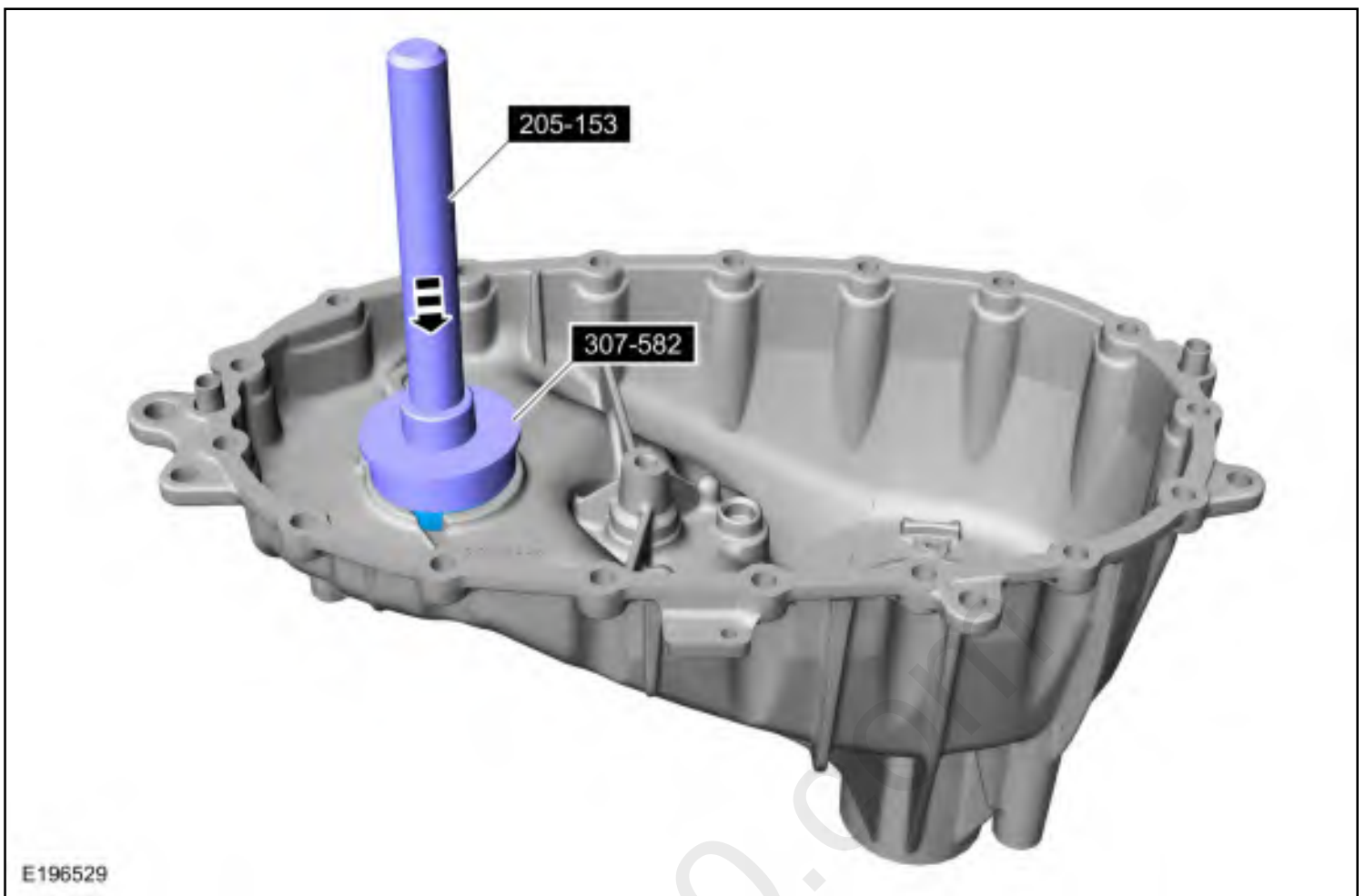
2. Using the special tools, install the front output shaft bearing.
Use Special Service Tool: 205-153 (T80T-4000-W) Handle. , 205-293 (T89P-4850-A) Installer,
Differential Oil Seal.



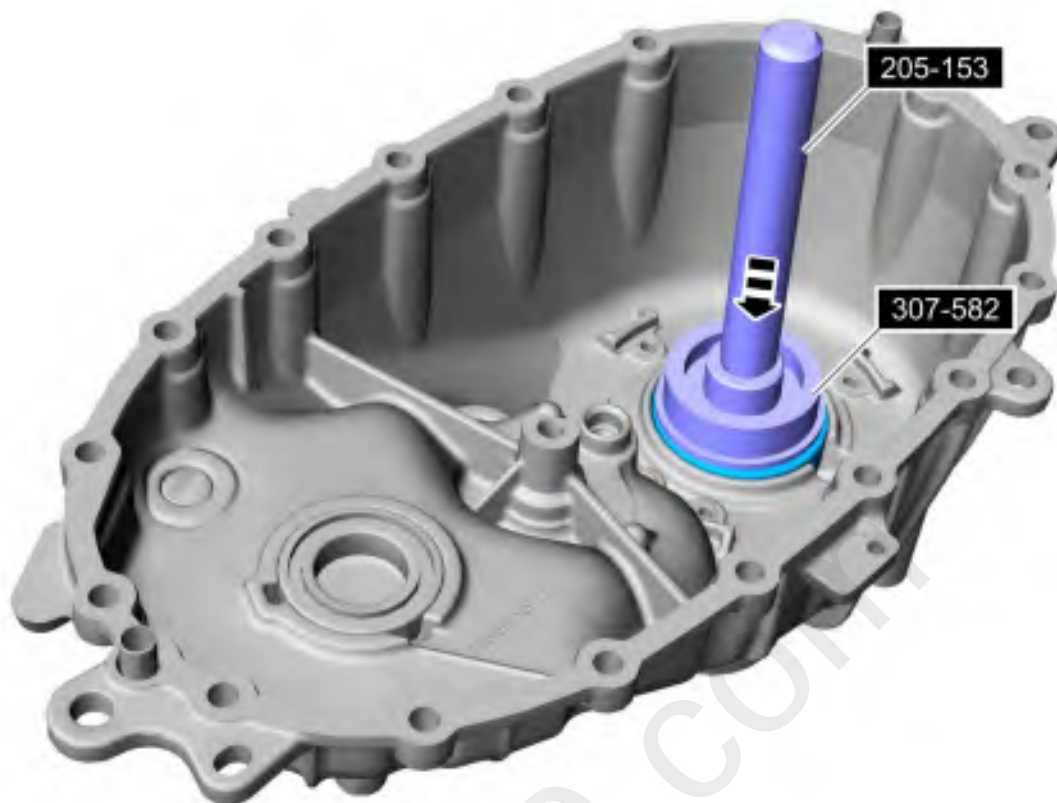
E196534



3. Using the special tool, install the front output shaft support bearing.
Use Special Service Tool: 205-153 (T80T-4000-W) Handle. , 307-582A Cover Axle Seal Installer.

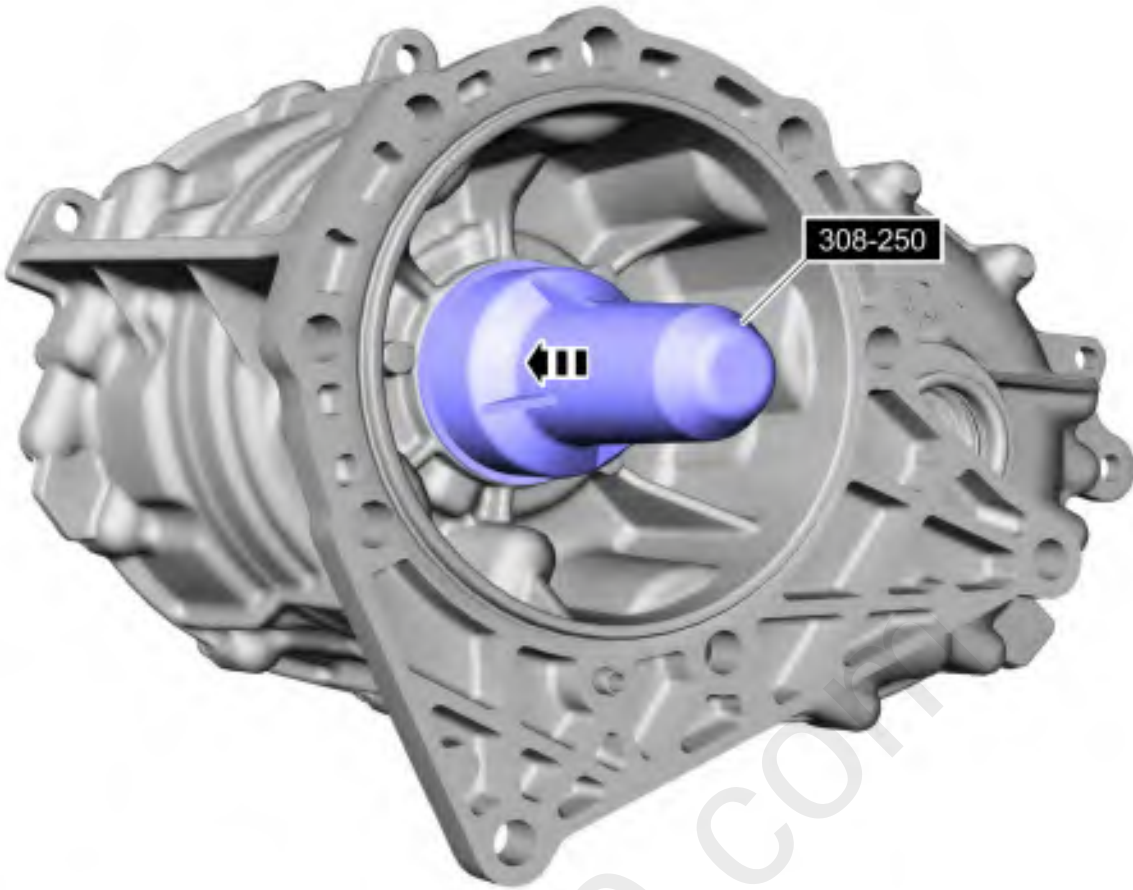


4. Using the special tool, install the rear output shaft bearing.
Use Special Service Tool: 205-153 (T80T-4000-W) Handle. , 307-582A Cover Axle Seal Installer.

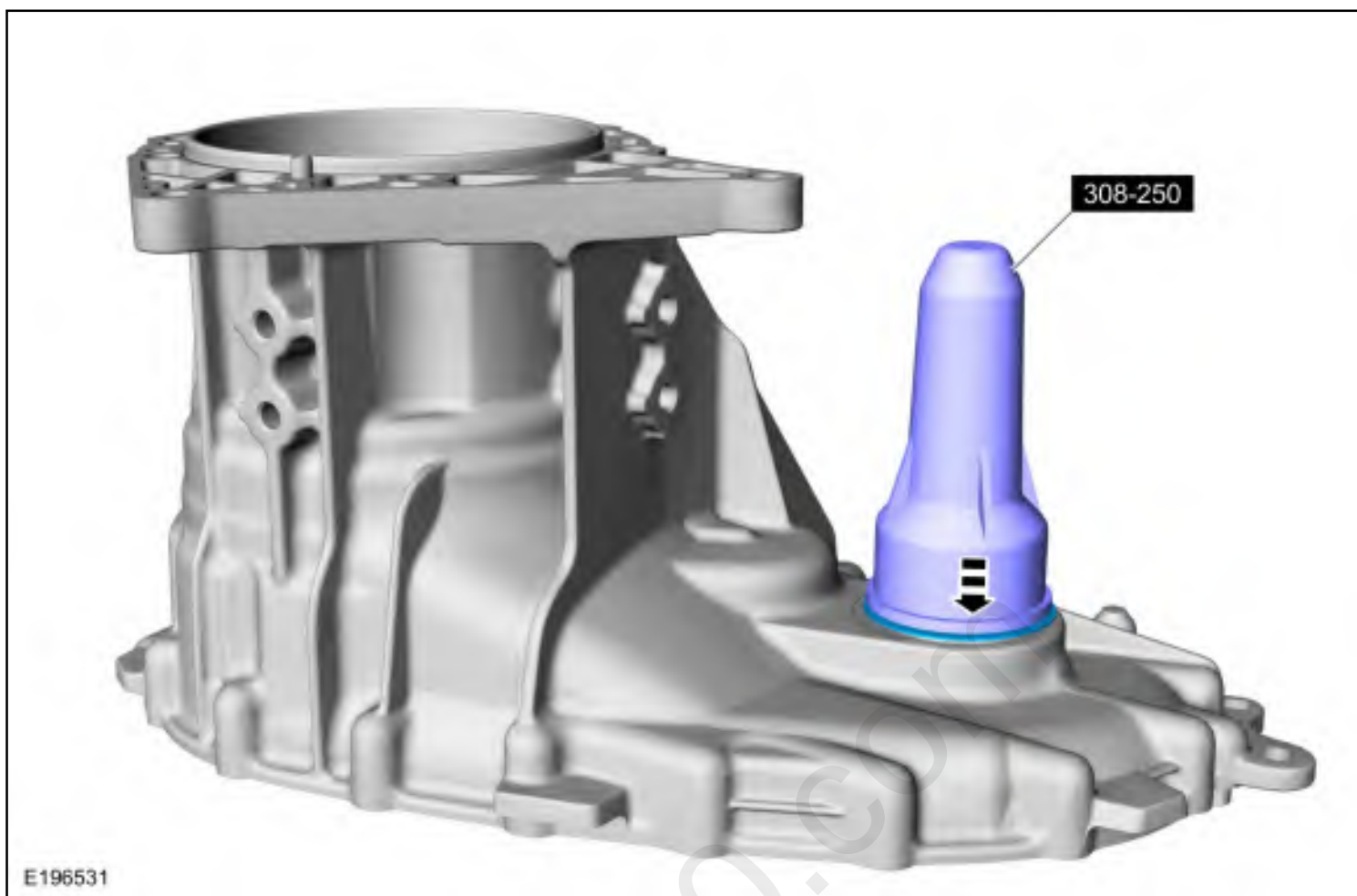


E196527

5. Using the special tool, install the input shaft seal.
Use Special Service Tool: 308-250 (T96T-7127-B) Installer, Output Shaft Oil Seal.

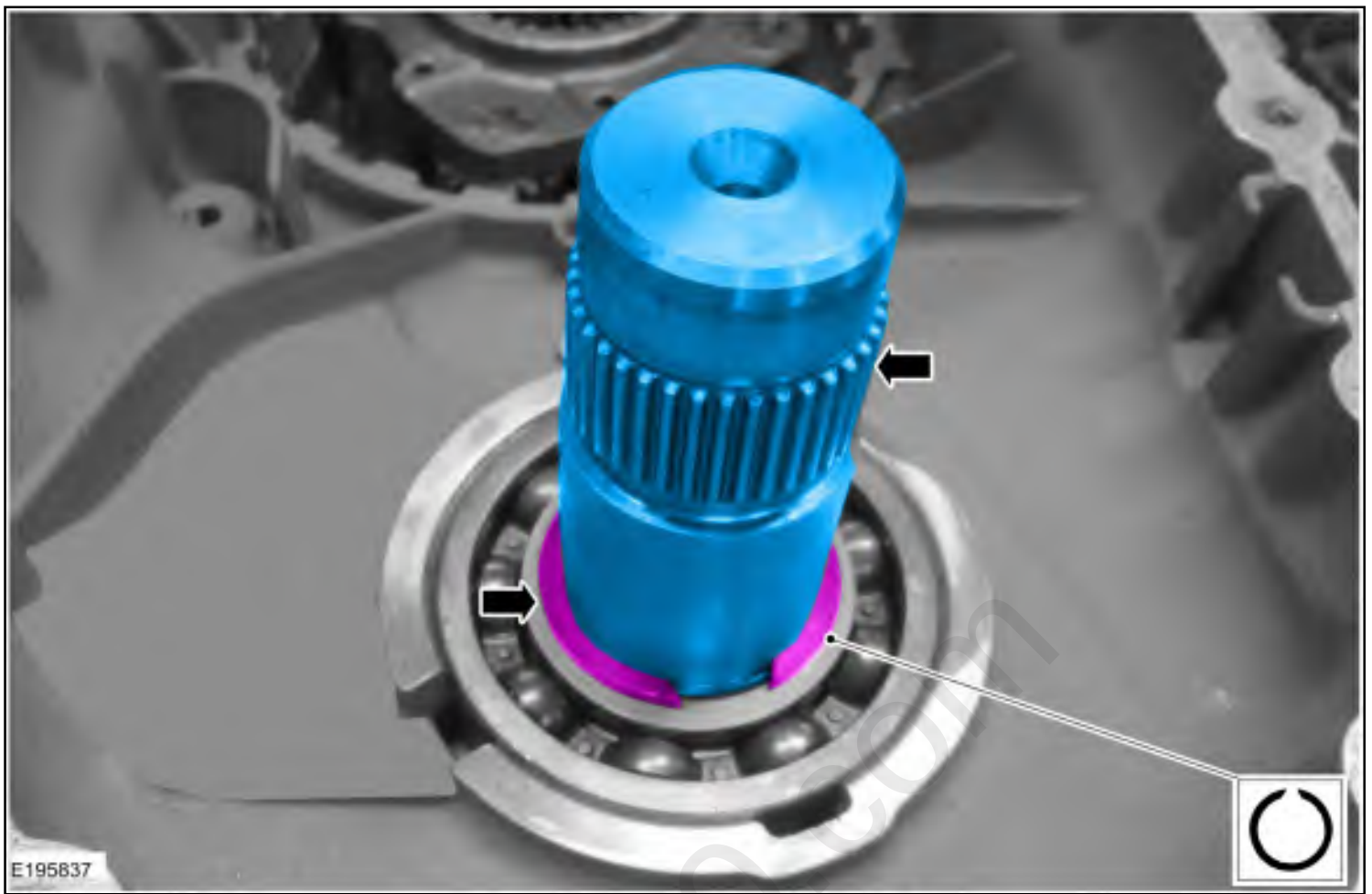


6. Using the special tool, install the front output shaft seal.
Use Special Service Tool: 308-250 (T96T-7127-B) Installer, Output Shaft Oil Seal.

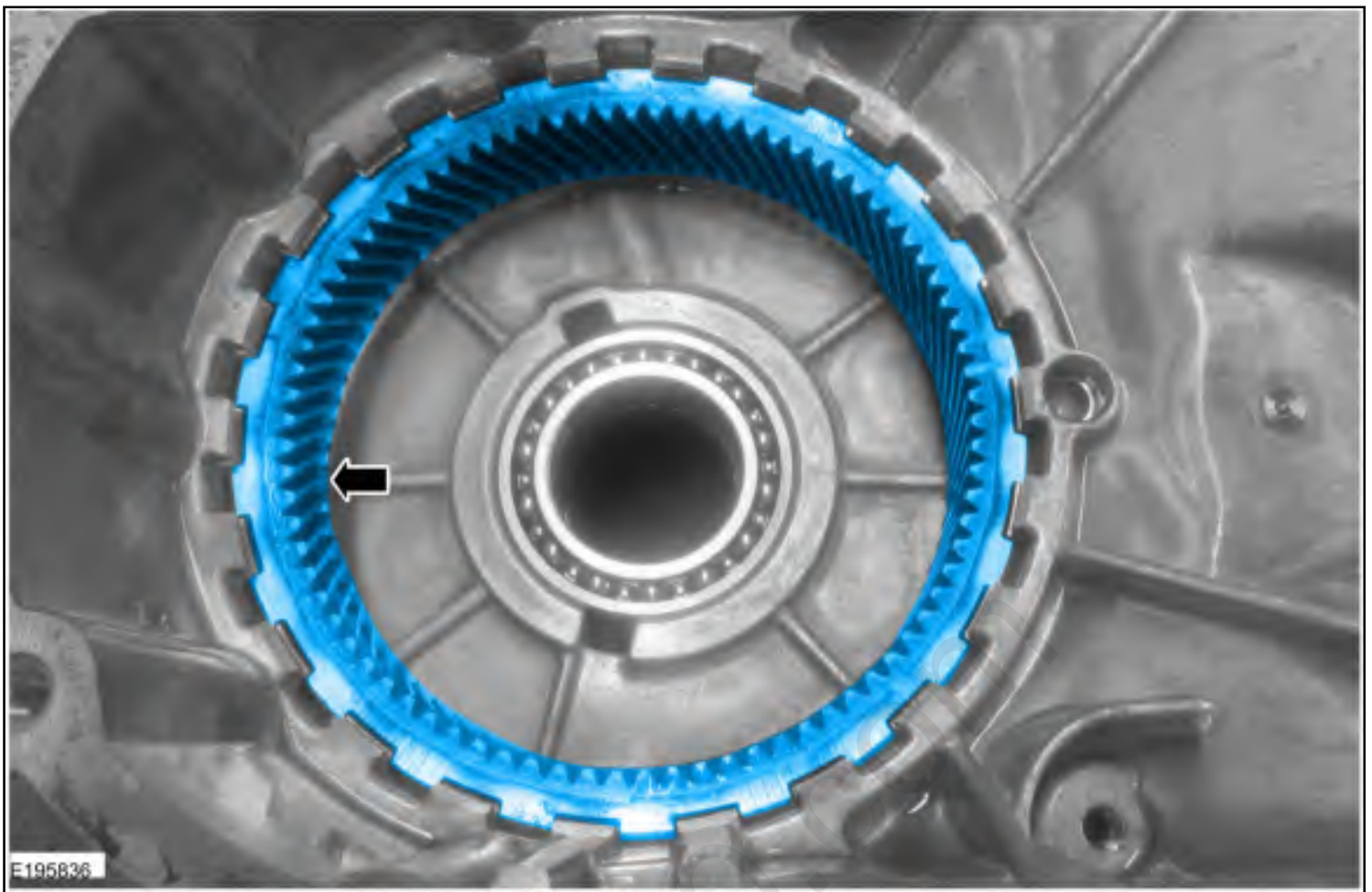


7. **NOTICE:** Do not let the front output shaft fall while removing the snap ring or damage to the component may occur.

Install the output shaft and the out put shaft circlip.



8. Install the ring gear.



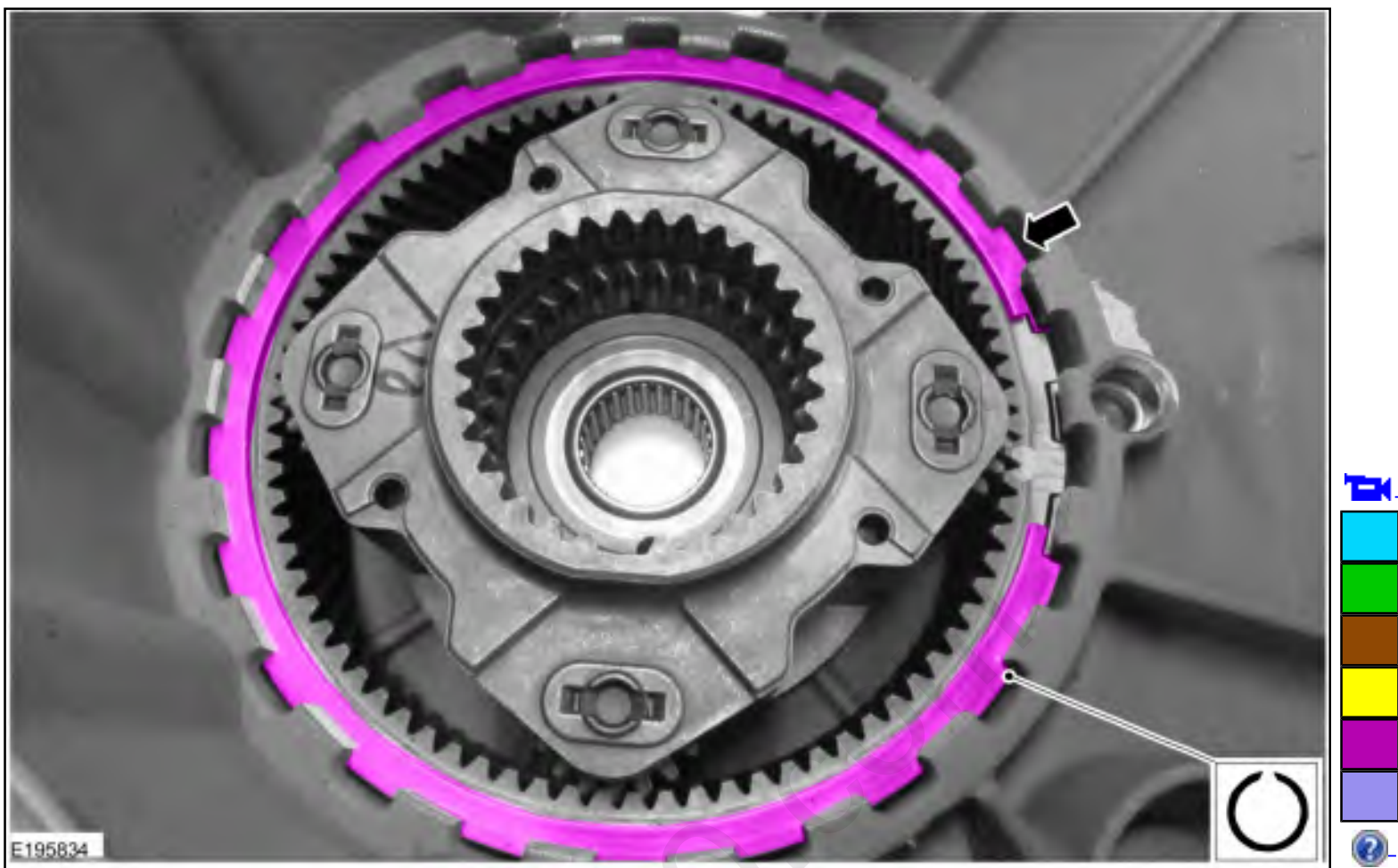
9. If removed, using a press and the special tool, install the needle bearing into the front planet carrier.
Use Special Service Tool: 308-085 (T83T-7025-C) Installer, Input Shaft Bearing.

10. **NOTE:** *Replace the inner planet carrier needle bearing if necessary.*

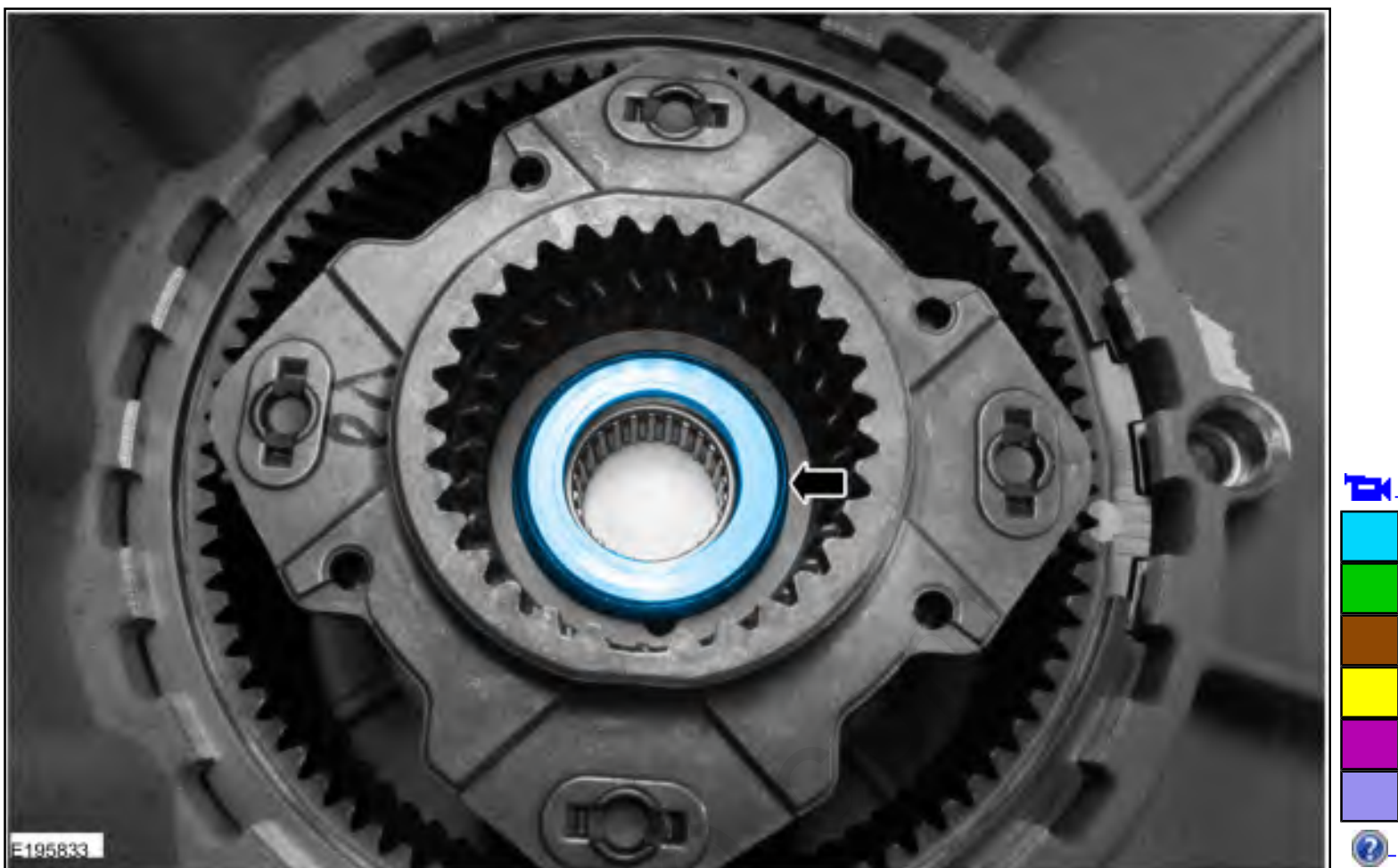
Install the front planet carrier.



11. Install the ring gear circlip.



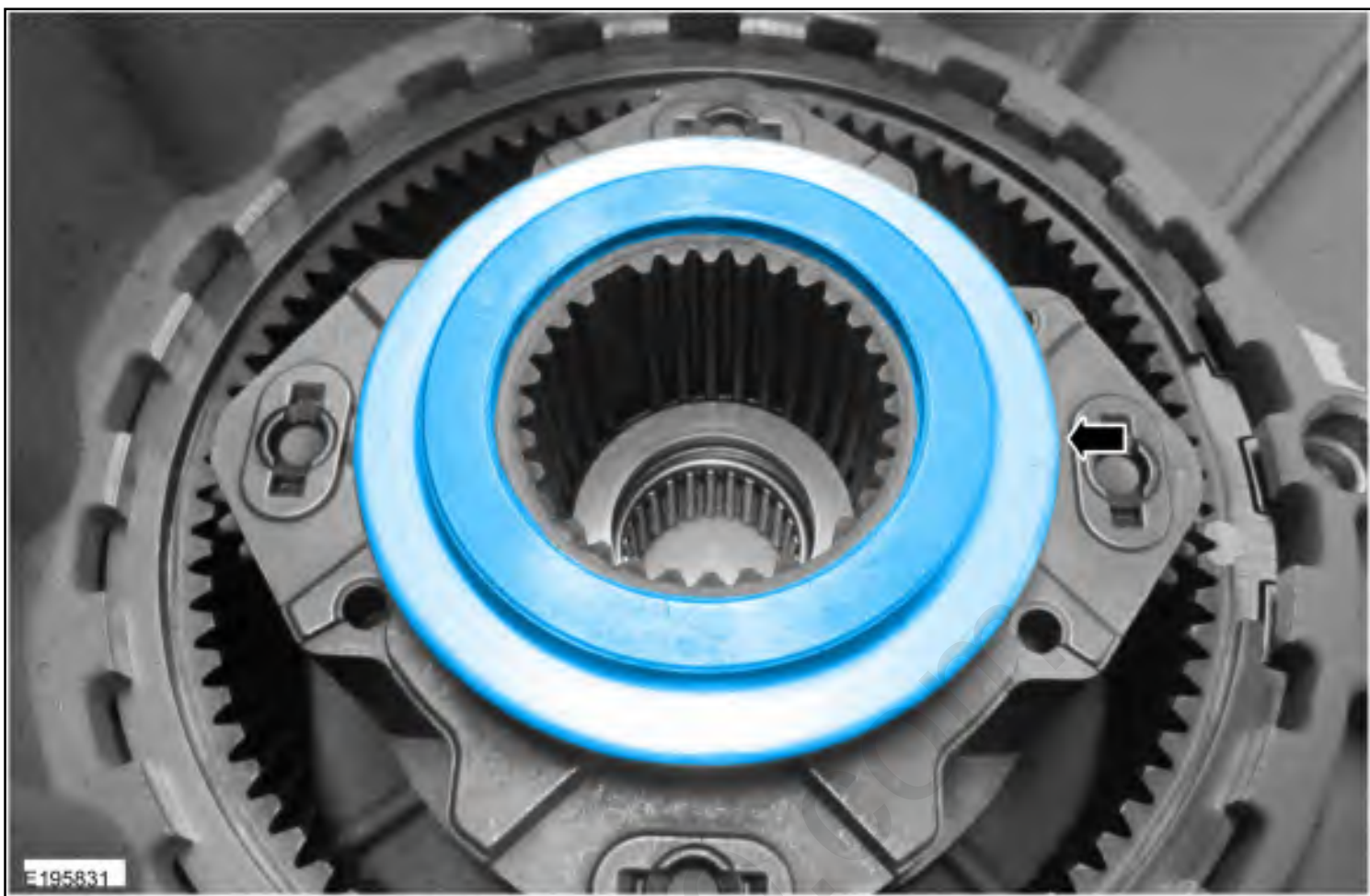
12. Install the planet carrier thrust bearing.



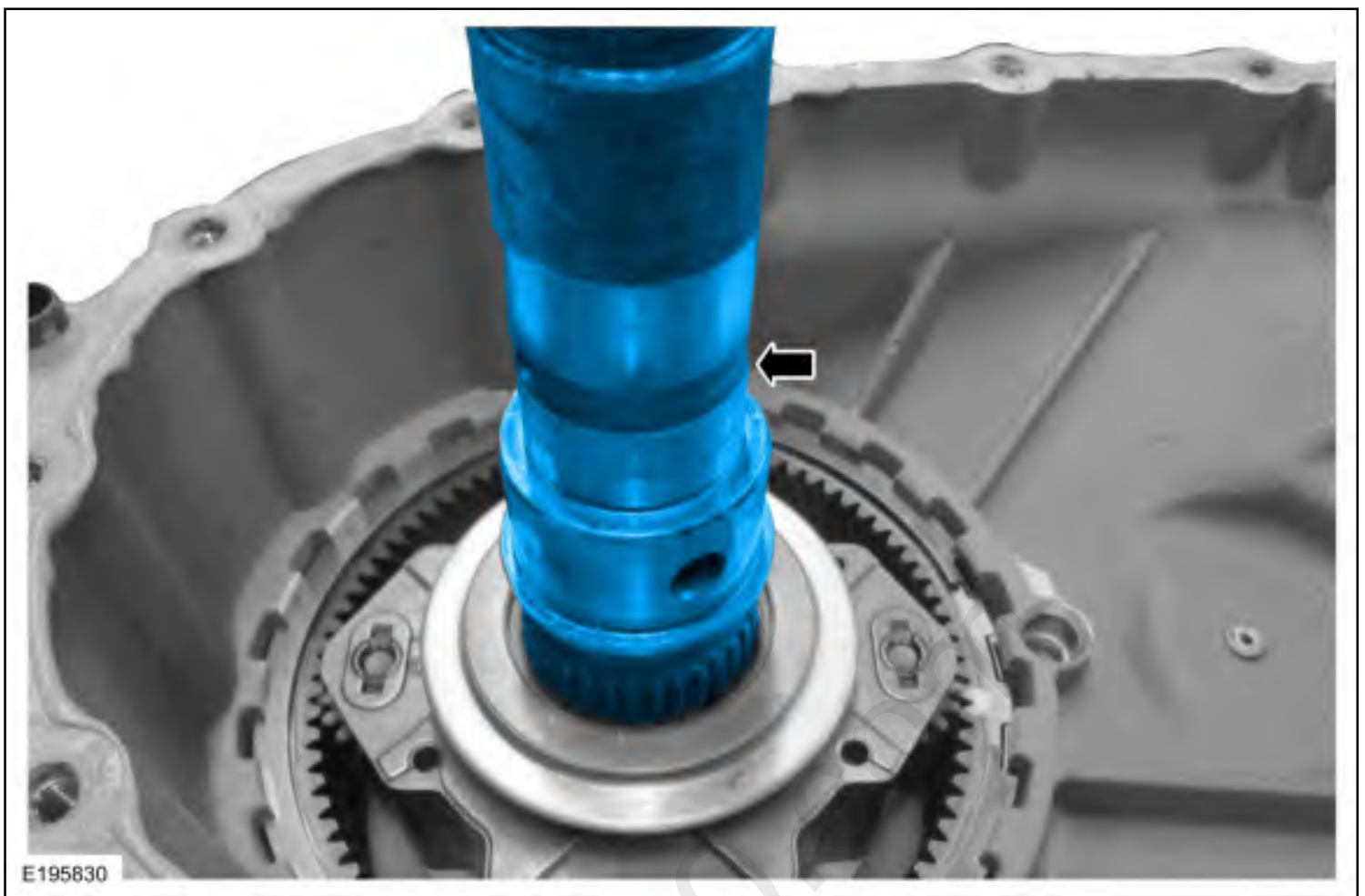
13. Install the electric shift cam assembly.



14. Install the reduction hub.



15. Install the output shaft.



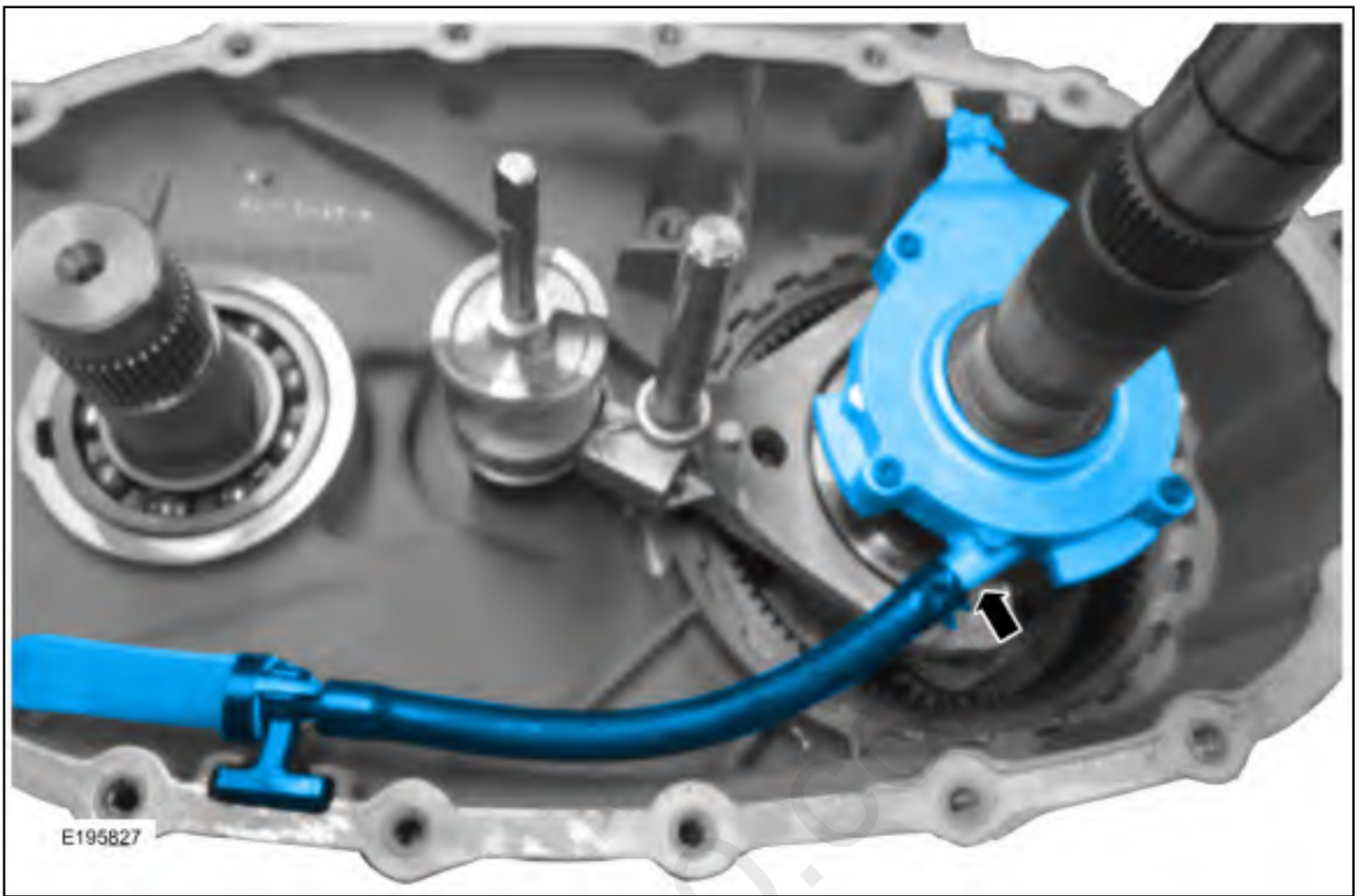
16. Install the shift fork.



17. Install the shift rail.



18. Install the oil pump assembly.



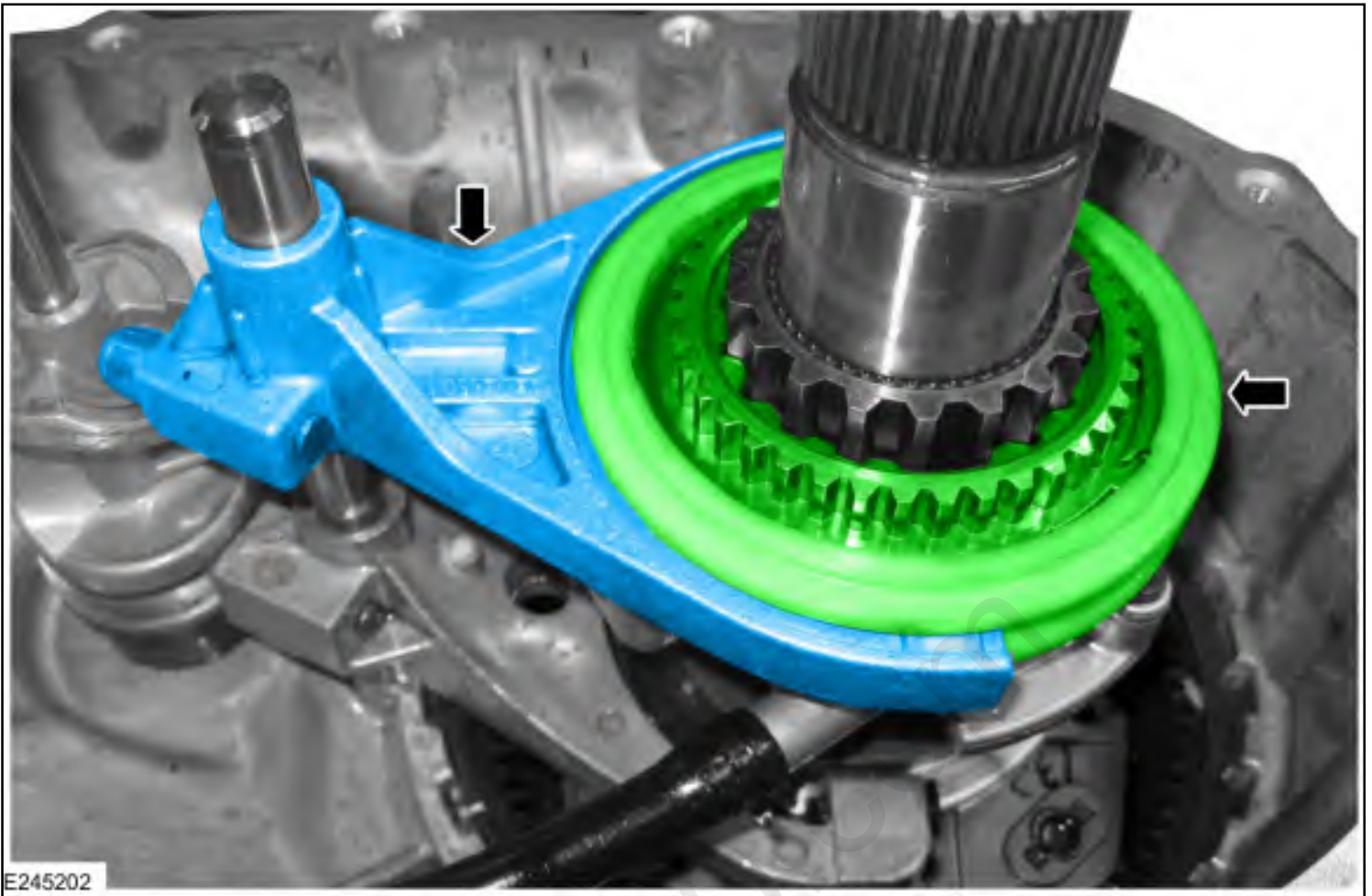
19. Install the magnet into its slot in the case.



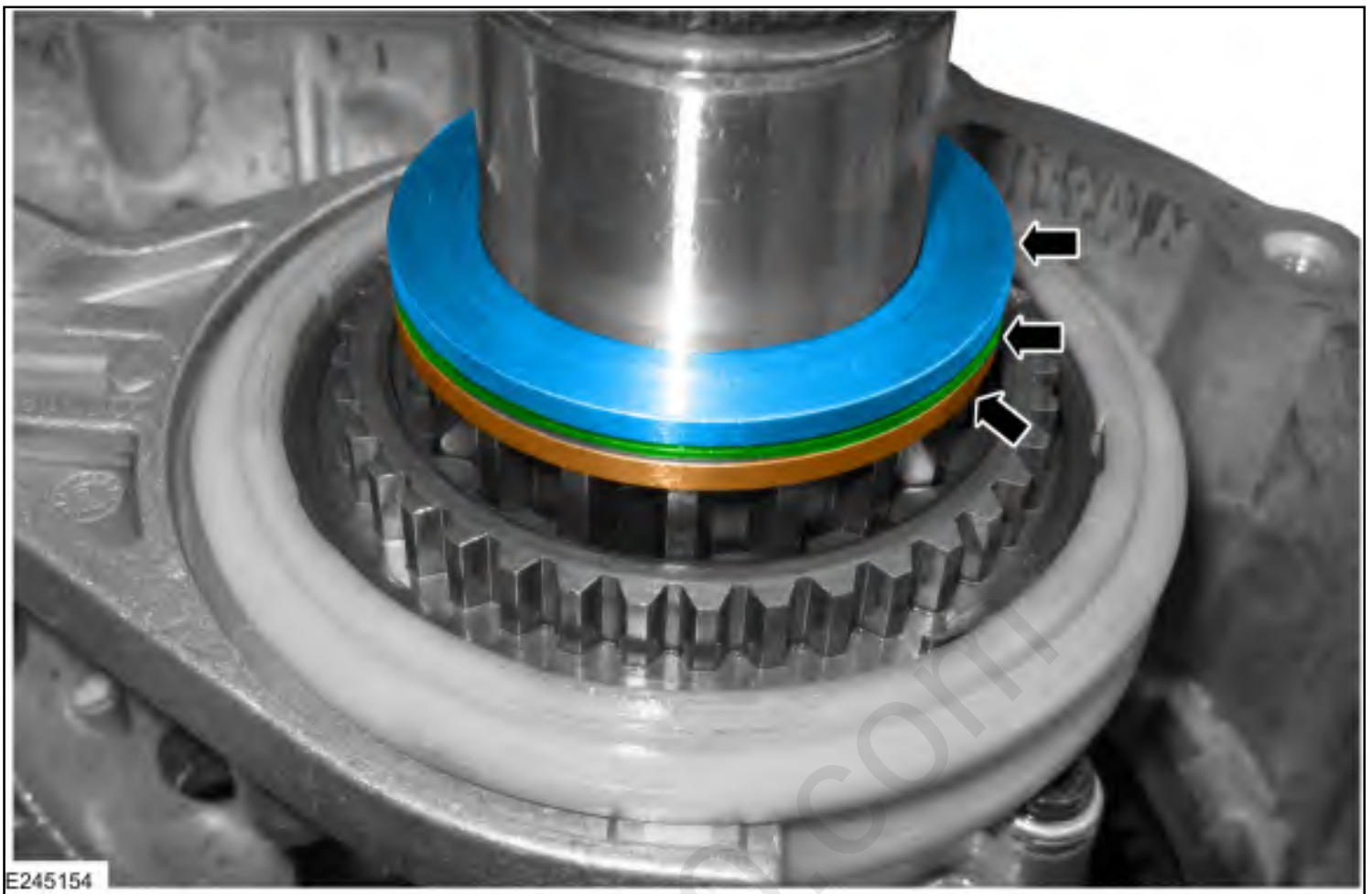
20. Install the lock up hub spacer.



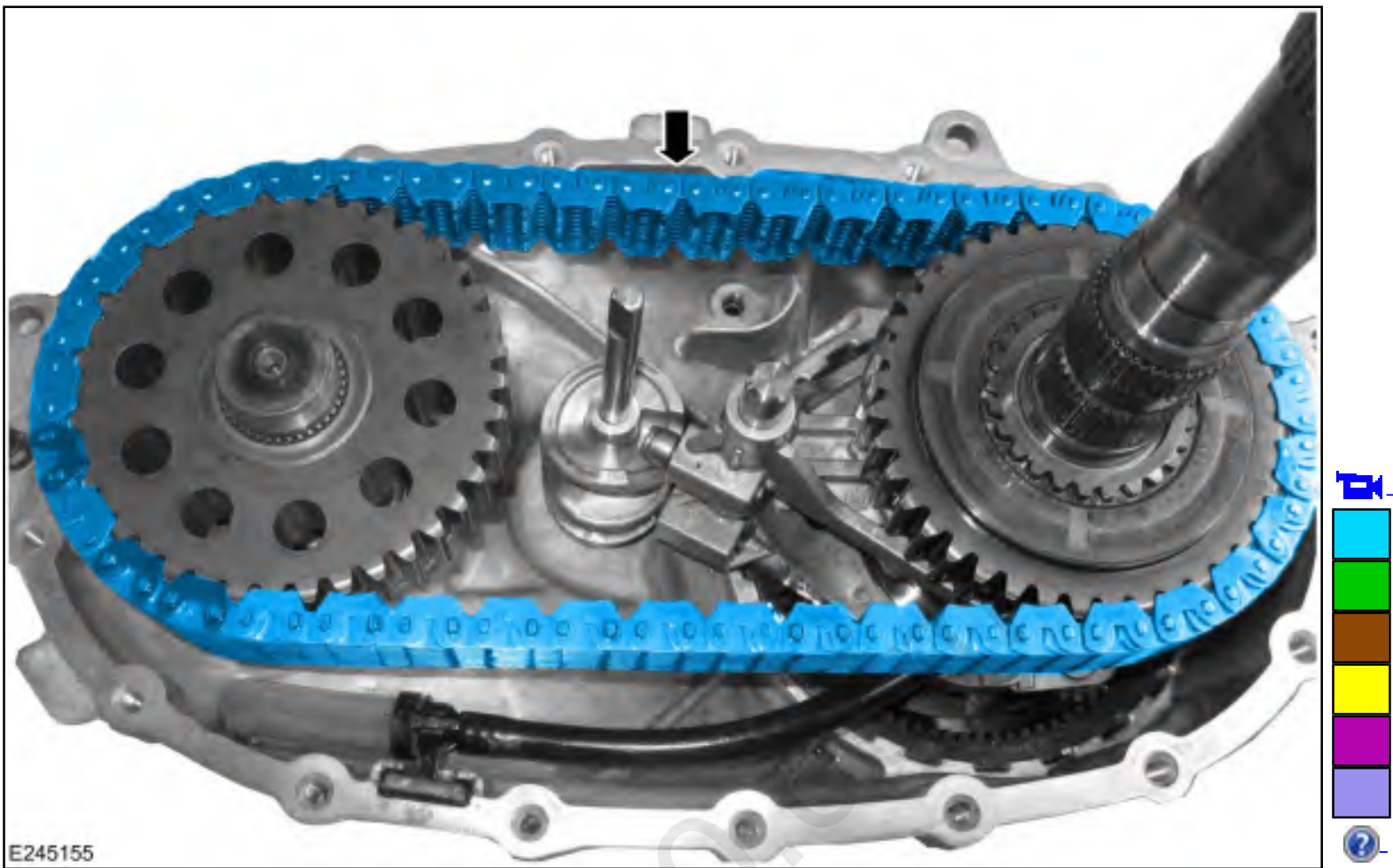
21. Install the lock up fork and the lock up hub.



22. Install the thrust bearing assembly.
- Install the thrust washer.
 - Install the thrust bearing.
 - Install the thrust washer.



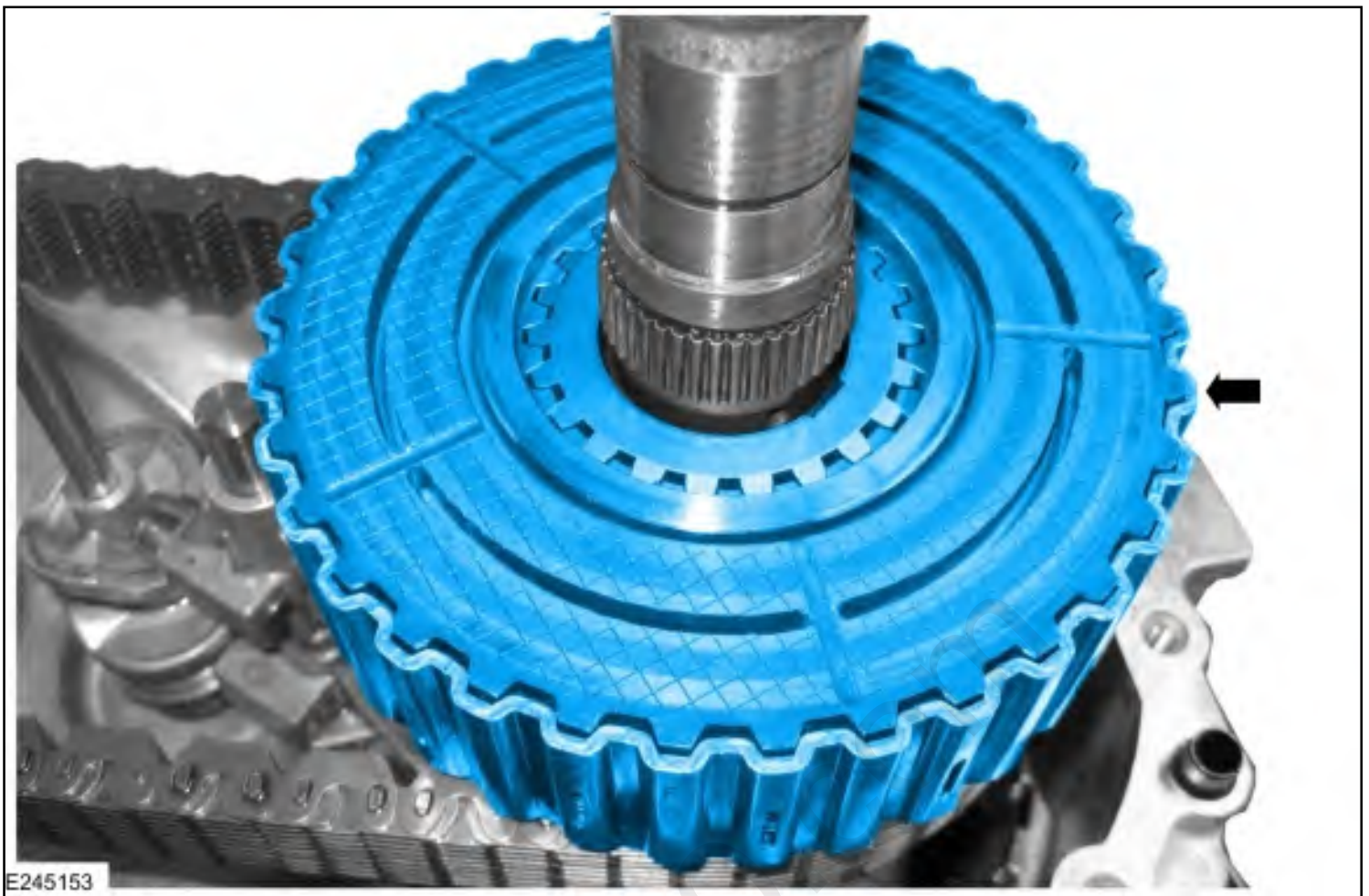
23. Install the drive chain and the sprockets as an assembly.



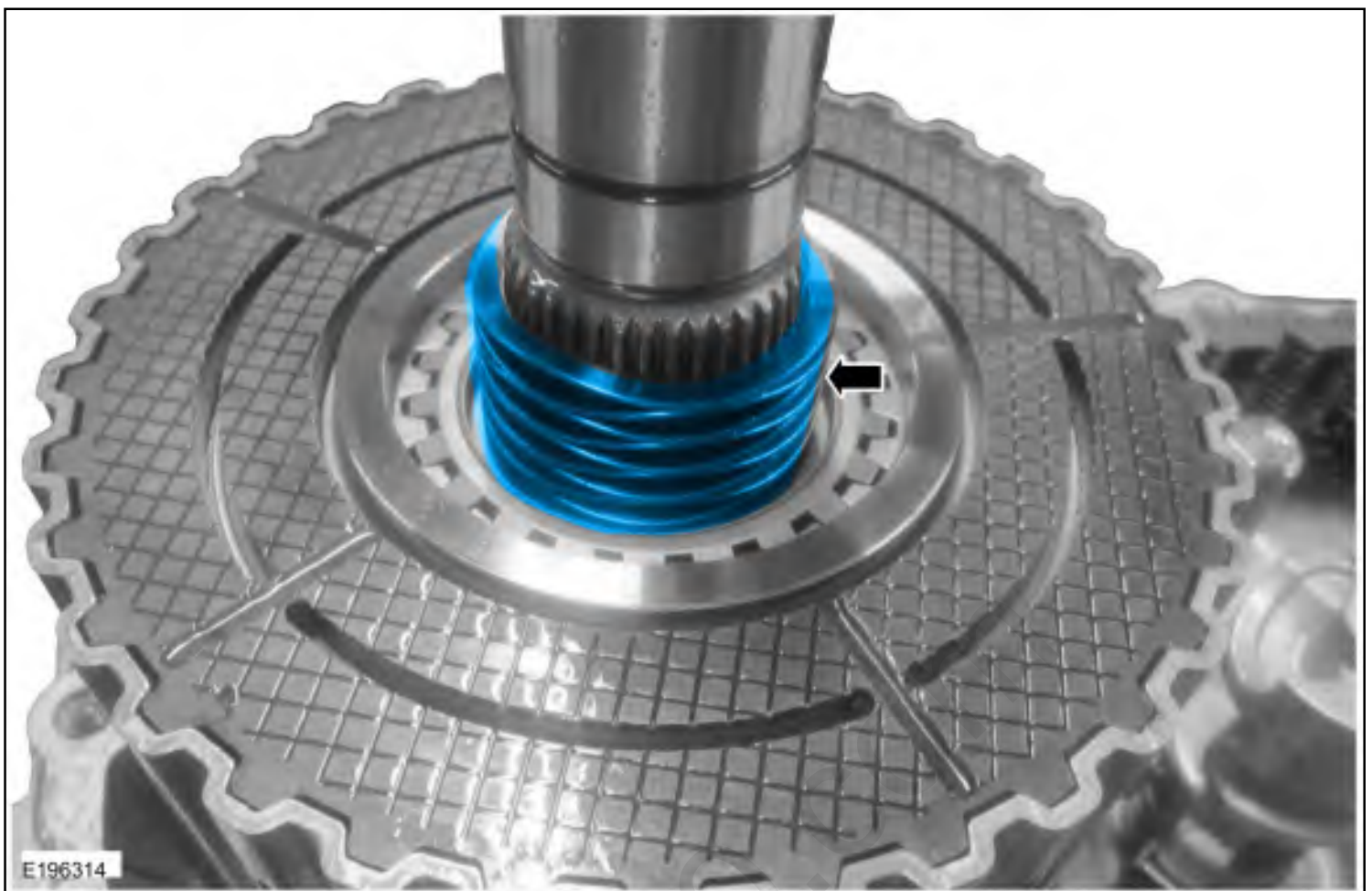
24. **NOTICE:** When installing the clutch assembly, do not separate the clutch pack assembly. The thrust washer in the lower clutch pack uses tabs to hold it in place. If the thrust washer is not in place, a transfer case clearance problem will occur.

NOTICE: If the clutch pack is disassembled, a new clutch pack and armature must be installed. Failure to install a new clutch pack can result in component failure.

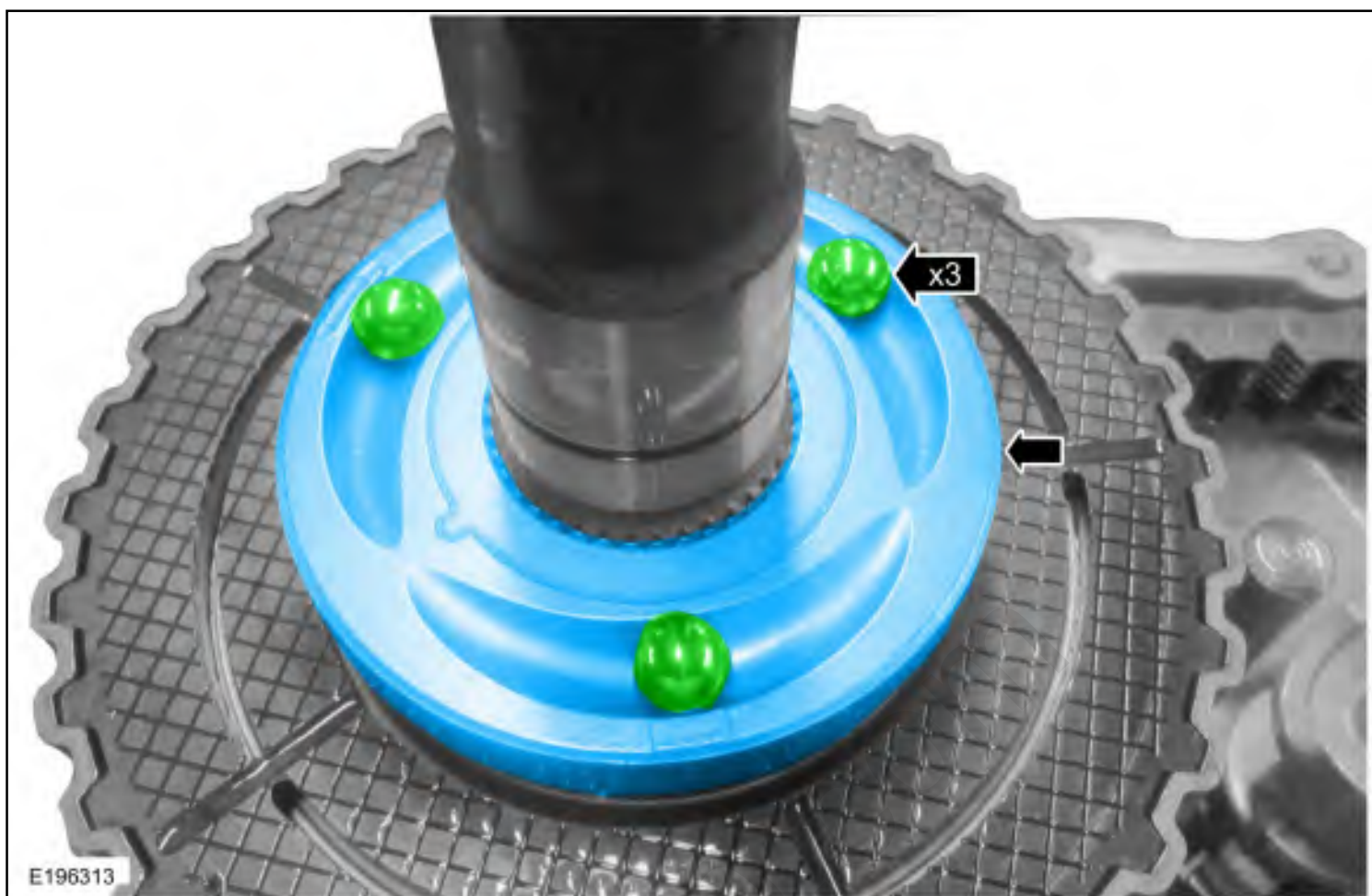
Install the clutch pack assembly with the armature.



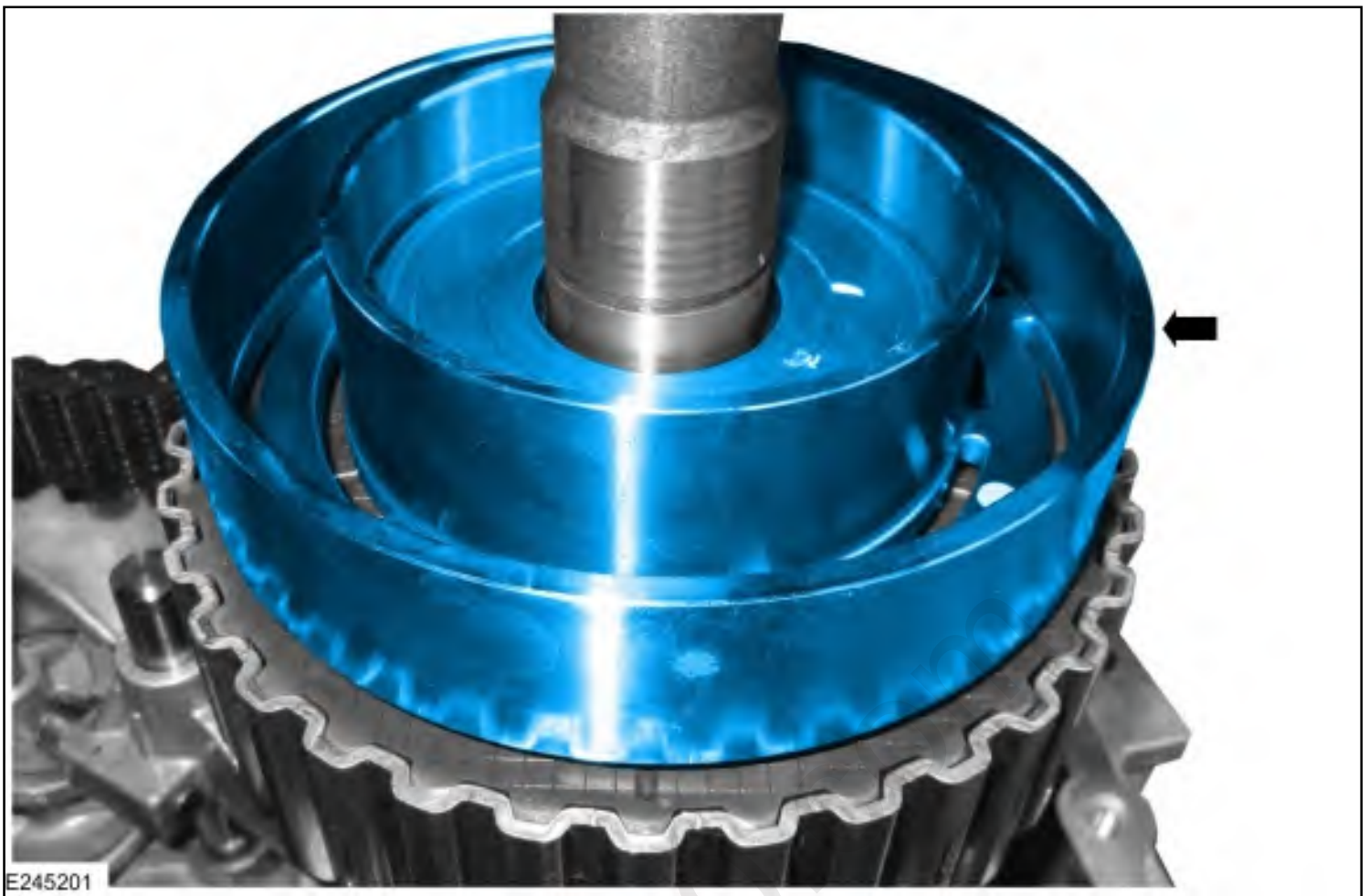
25. Install the clutch pack circlip.



27. Install the cam and the steel balls.



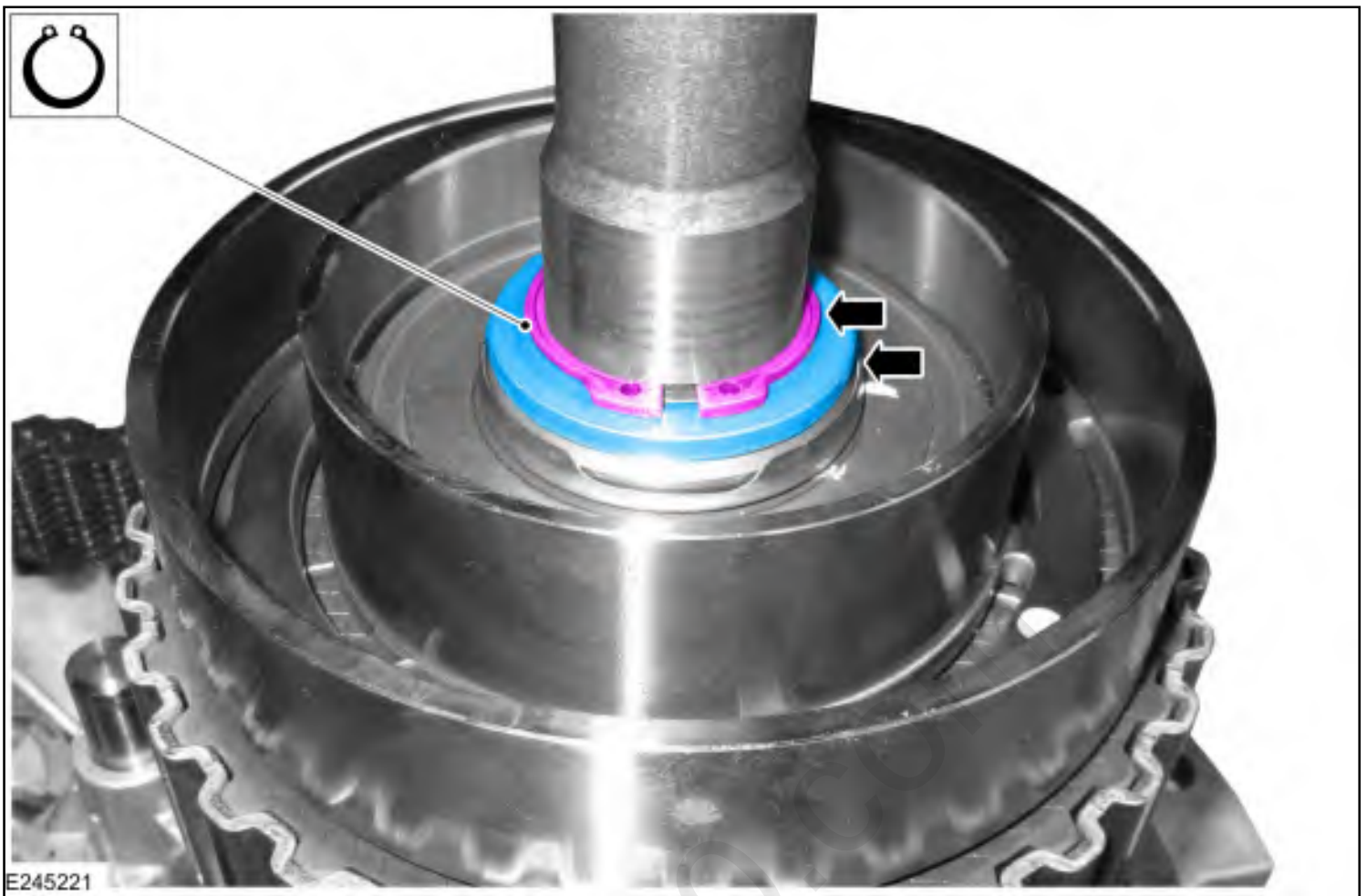
28. Install the coil housing.



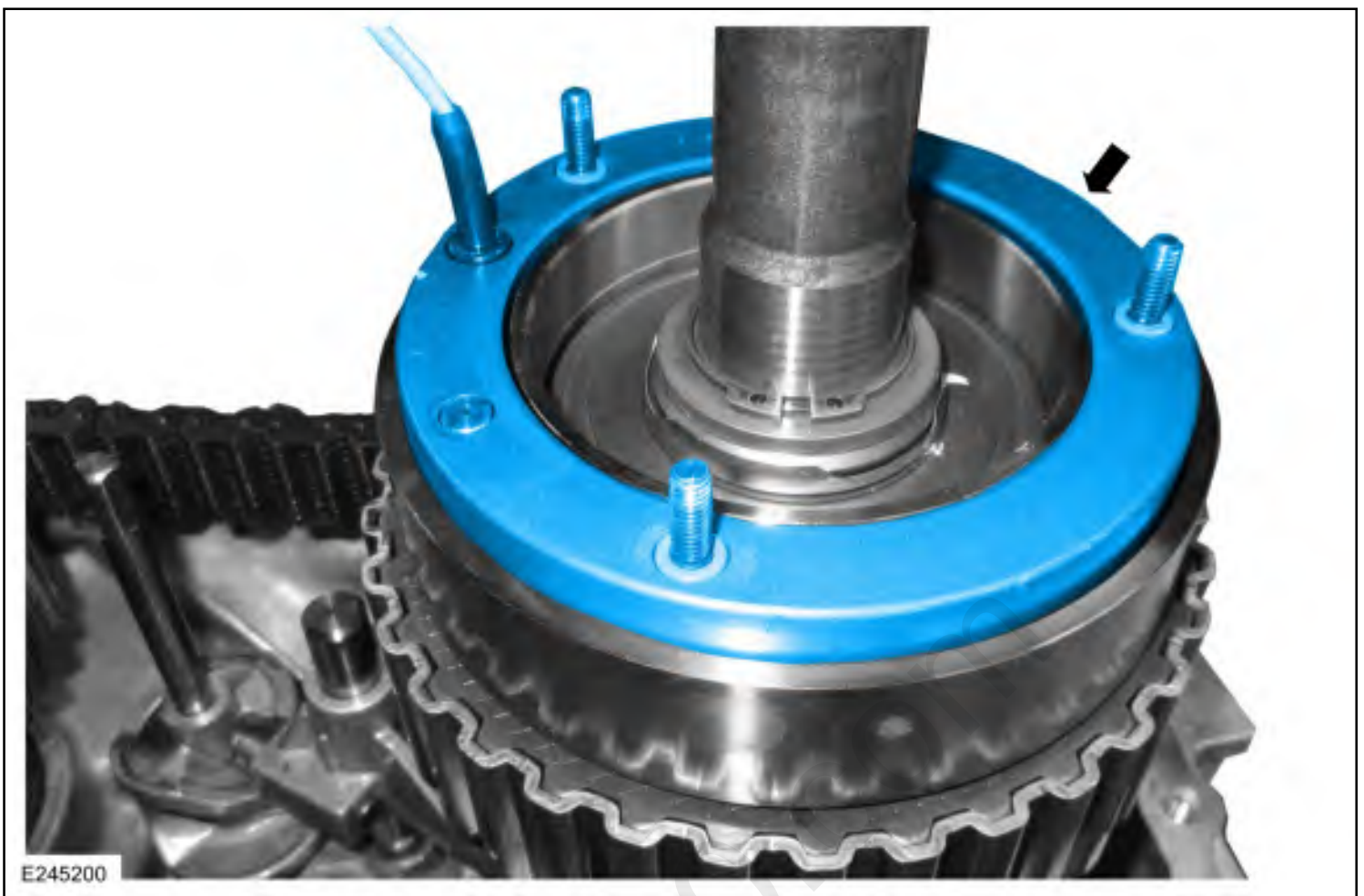
29. Install the coil housing thrust bearing assembly.



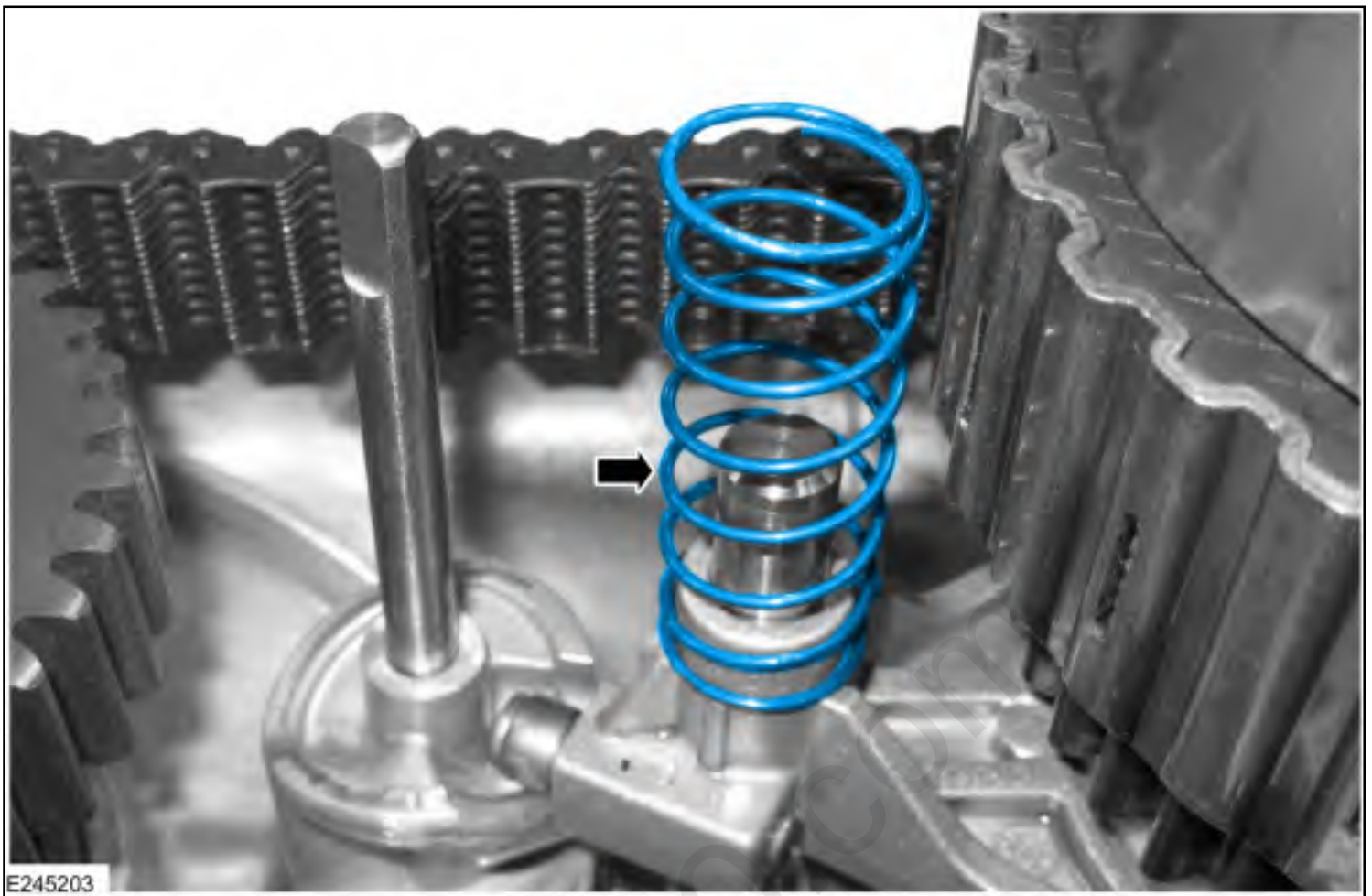
30. Install the coil housing spacer and snap ring.



31. Install the transfer case field coil.



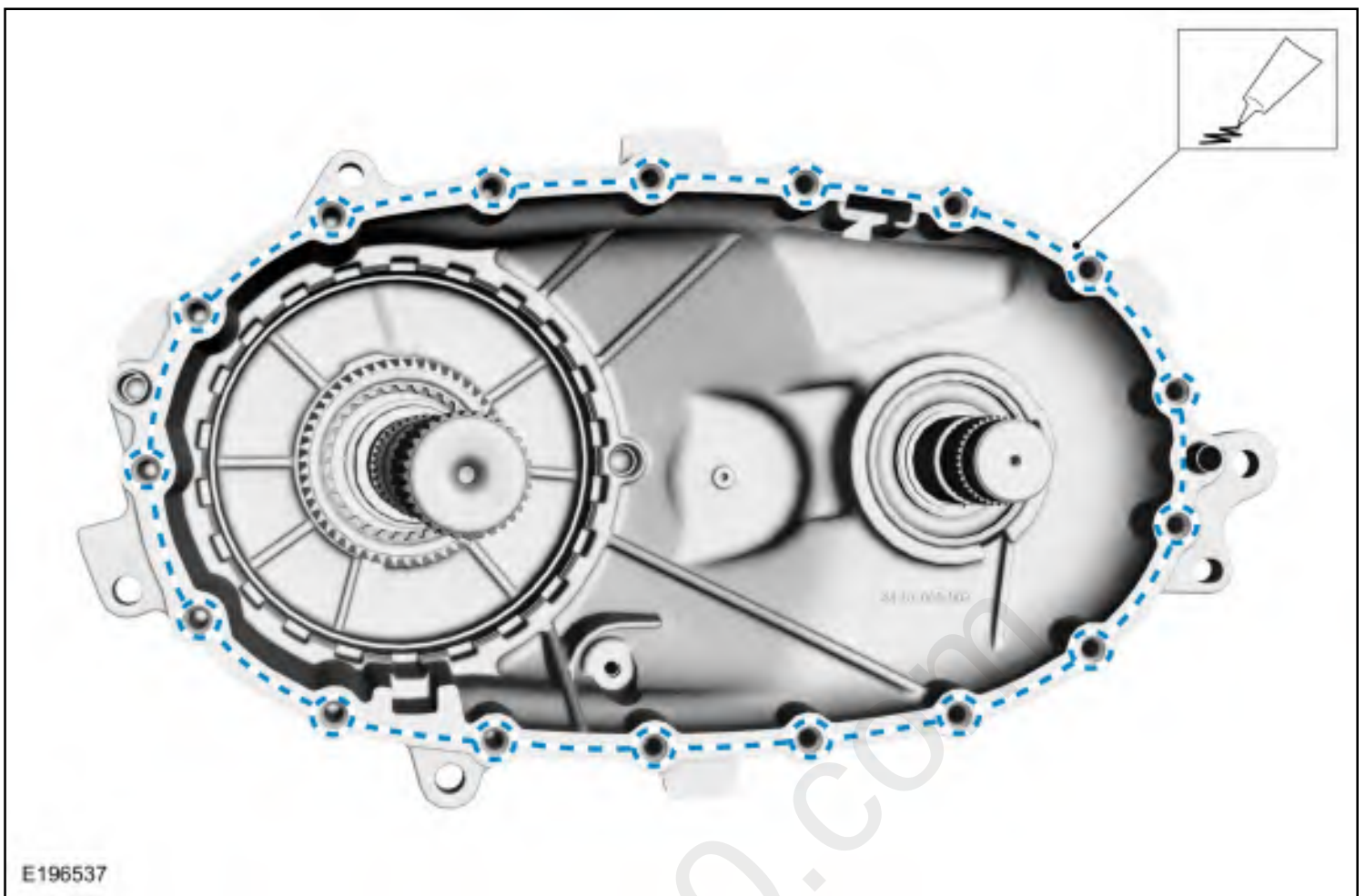
32. Install the lock up fork spring.



33. **NOTE:** Only apply enough silicone sealant to seal the transfer case halves together.

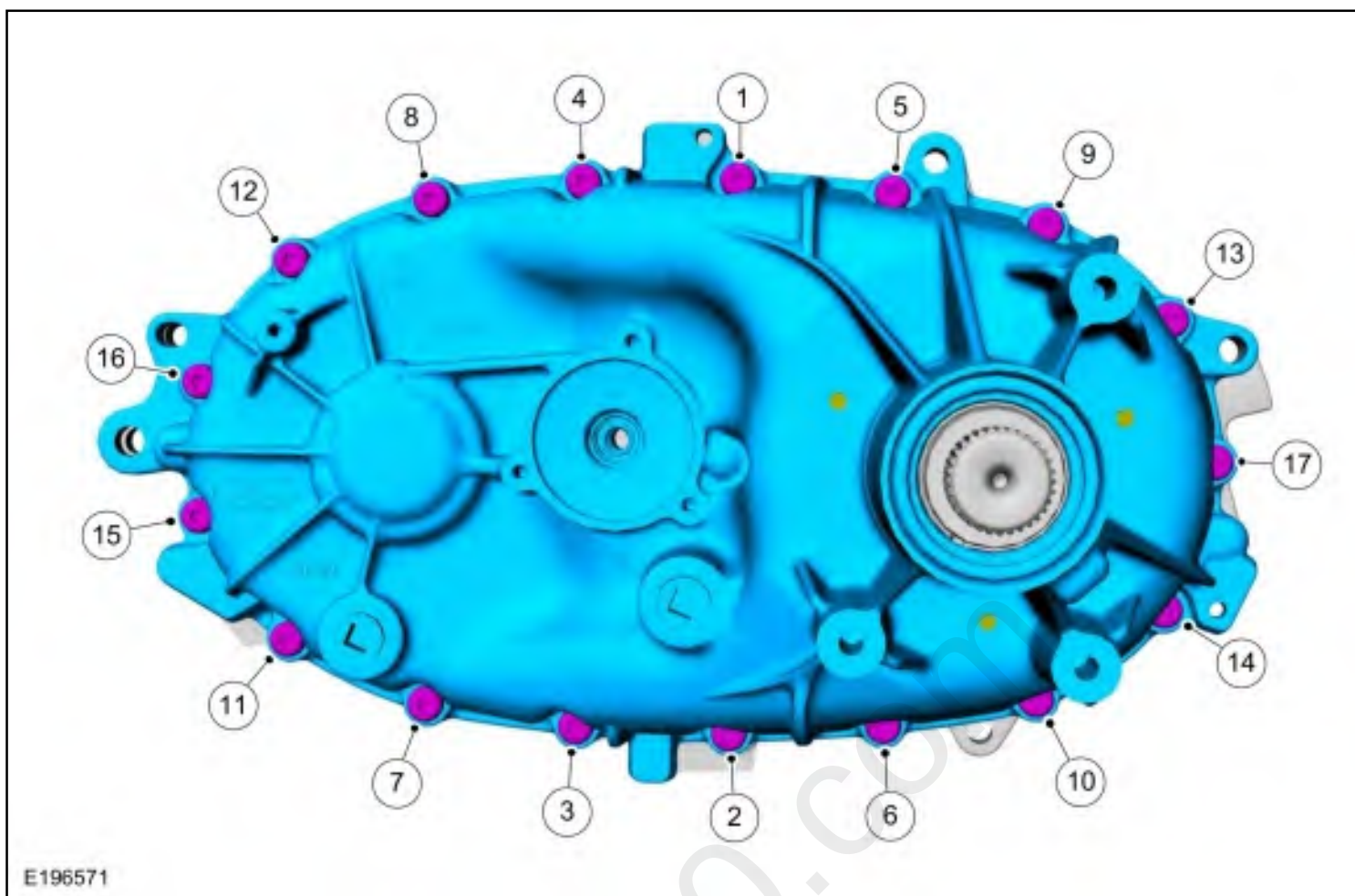
Apply a small bead of silicone sealant to the mating surface of the case half.

Material: Motorcraft® Ultra Silicone Sealant / TA-29

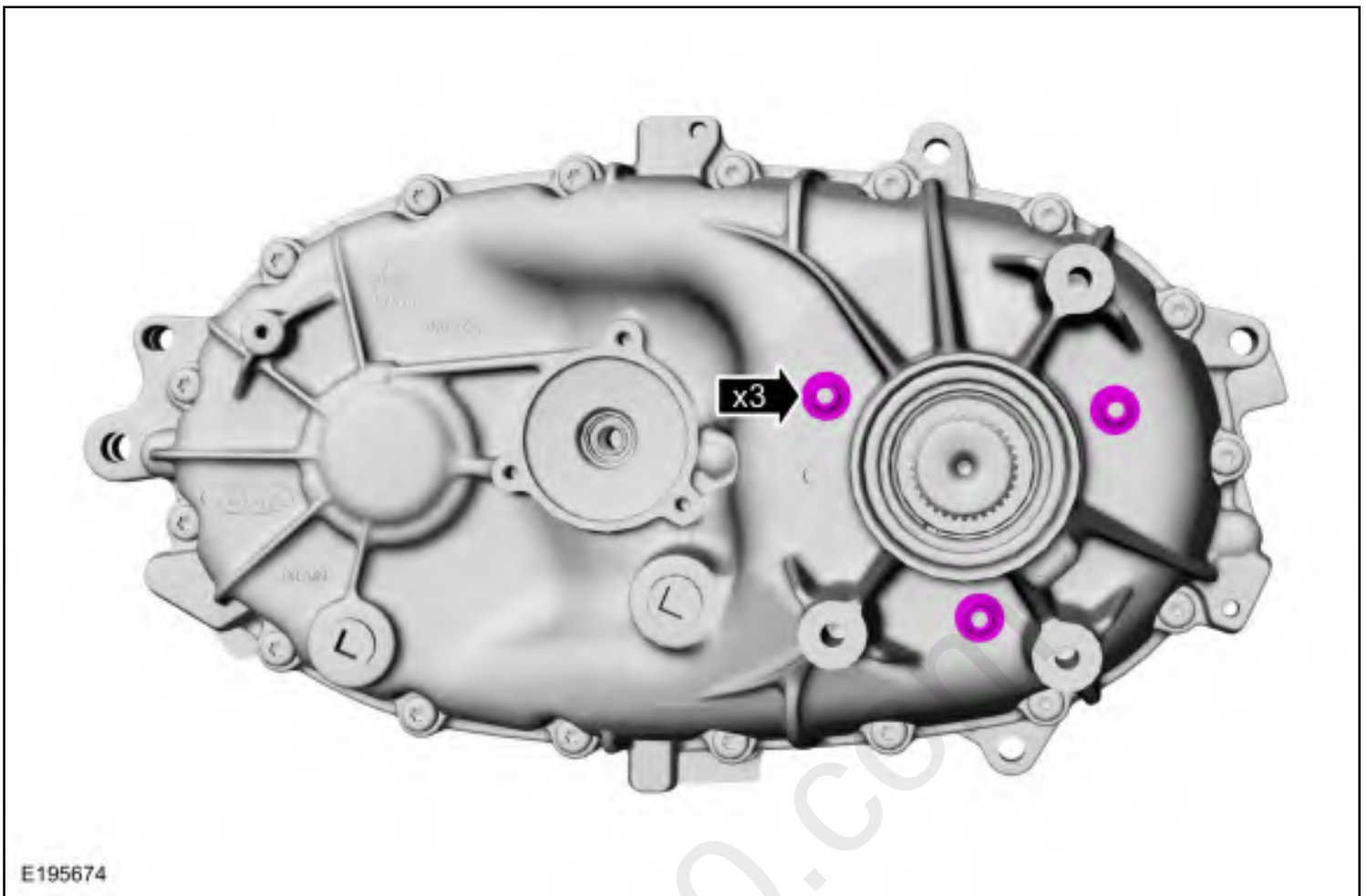


34. **NOTE:** Position the field coil bolts to align with the field coil bolt holes in the rear case. Position field coil wire through the field coil wire through hole in the case.

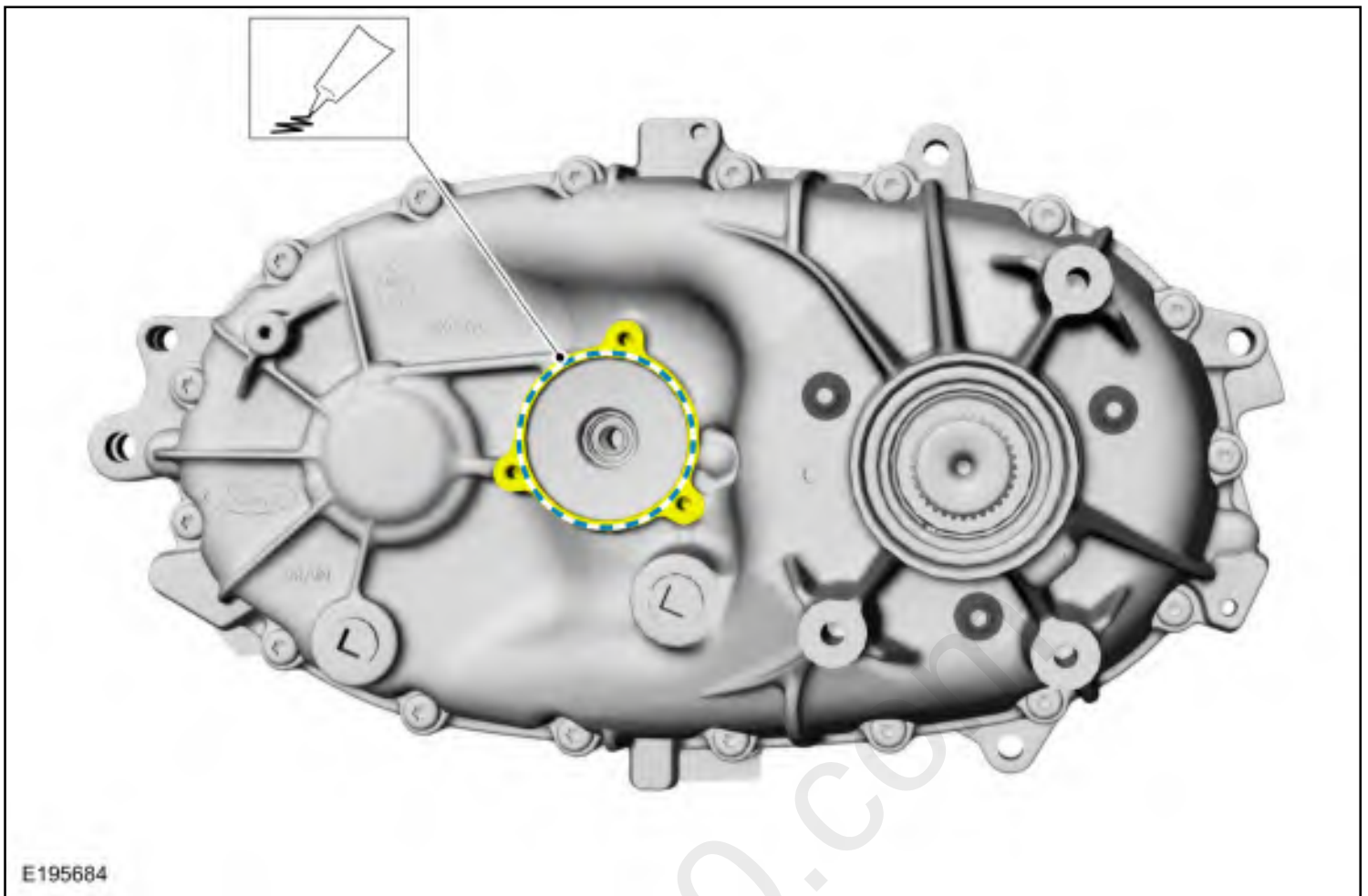
Position the transfer case halves and tighten the bolts in the sequence shown.
Torque: 21 lb.ft (29 Nm)



35. Install the coil washers and nuts.
Torque: 89 lb.in (10 Nm)

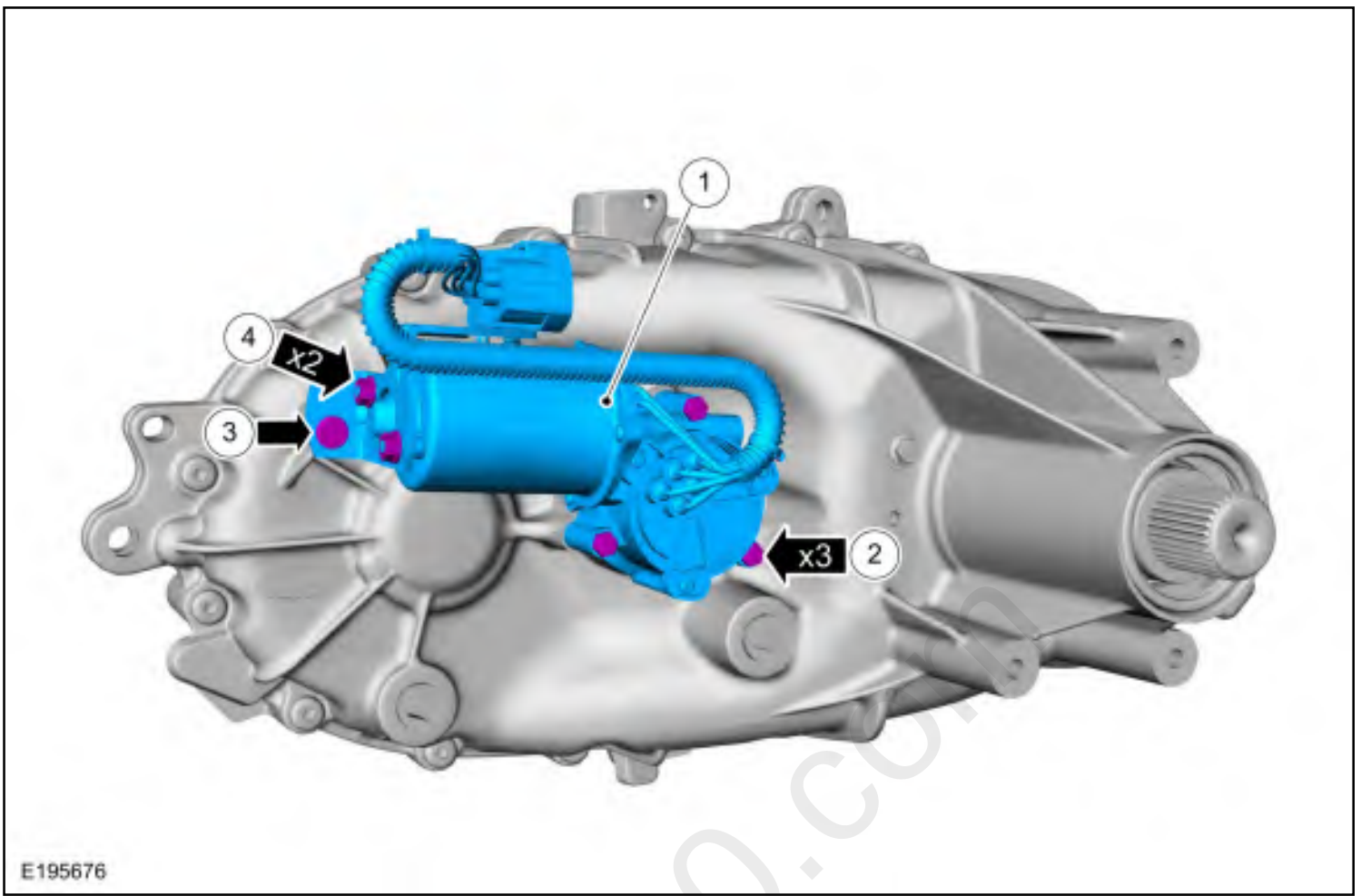


36. Install the transfer case rear seal.
Refer to: [Transfer Case Rear Seal](#) (308-07B Transfer Case, Removal and Installation).
37. Apply a small bead of silicone sealant to the transfer case shift motor mating surface.
Material: Motorcraft® Ultra Silicone Sealant / TA-29



38. **NOTICE:** When installing the shift motor, tighten the bracket nuts last. Failure to follow the steps in the correct order may result in damage to the component.

1. Install the transfer case shift motor.
2. Install the transfer case shift motor bolts.
Torque: 89 lb.in (10 Nm)
3. Install the transfer case shift motor bracket bolt.
Torque: 89 lb.in (10 Nm)
4. Tighten the transfer case shift motor bracket nuts.
Torque: 27 lb.in (3 Nm)



39. **NOTE:** After the coil wire is inserted into the connector, gently pull the wire back to verify the pin is locked inside the connector.

Install the coil wire pin in the electrical connector.

1. Insert the coil wire pin in the electrical connector.
2. Install the inner connector retainer.



40. Remove the transfer case from the transmission adjustable mounting arms.
Use the General Equipment: Adjustable Mounting Arm

