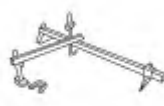


SECTION 303-01C: Engine — 5.0L (4V)
IN-VEHICLE REPAIR

2014 F-150 Workshop Manual
Procedure revision date: 10/25/2013

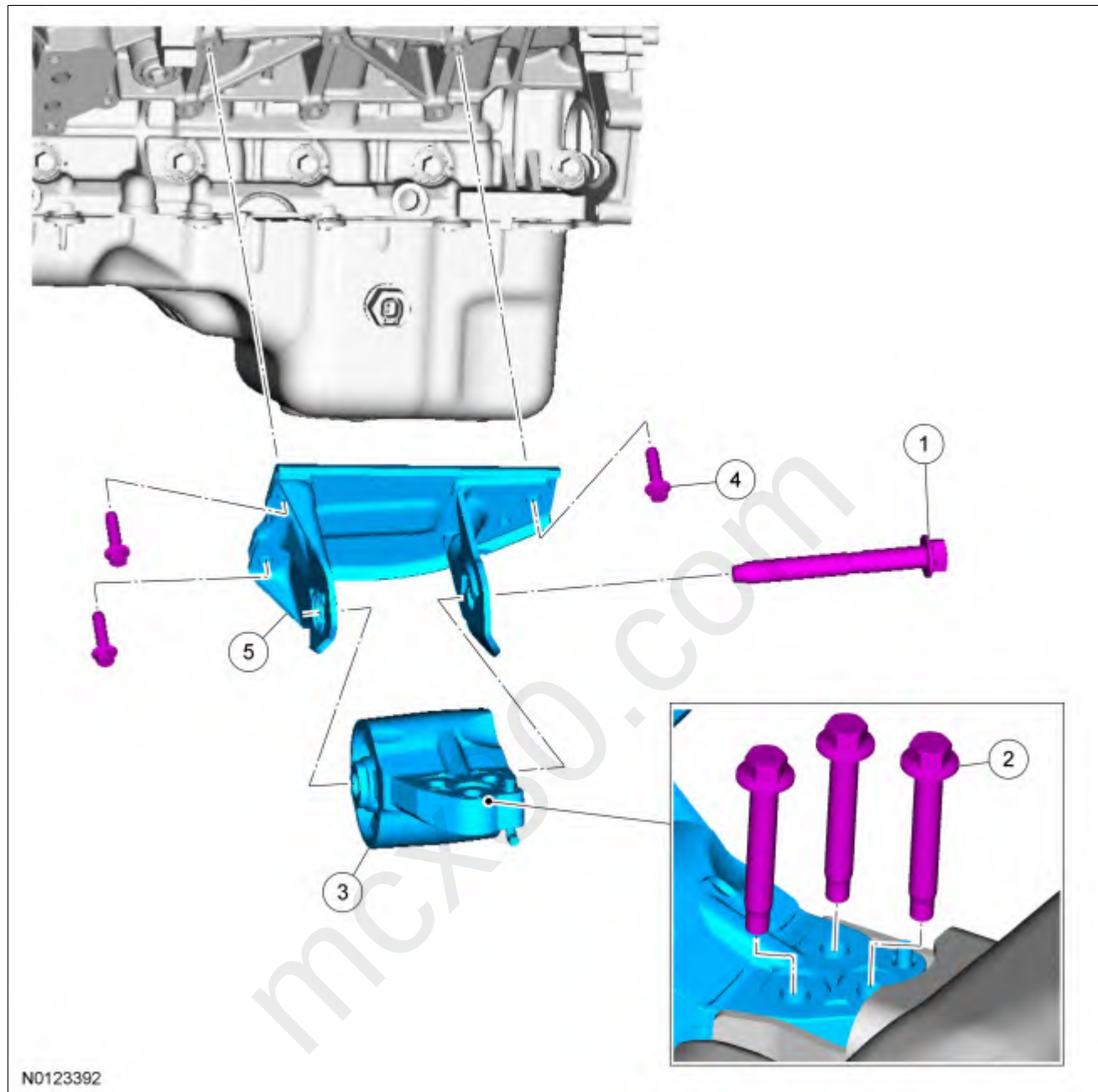
Engine Support Insulators — LH

Special Tool(s)

 ST1595-A	Lifting Bracket, Engine 303-050 (T70P-6000)
 ST2176-B	Support Bar, Engine 303-F070

Material

Item	Specification
Threadlock 262 TA-26	WSK-M2G351-A6



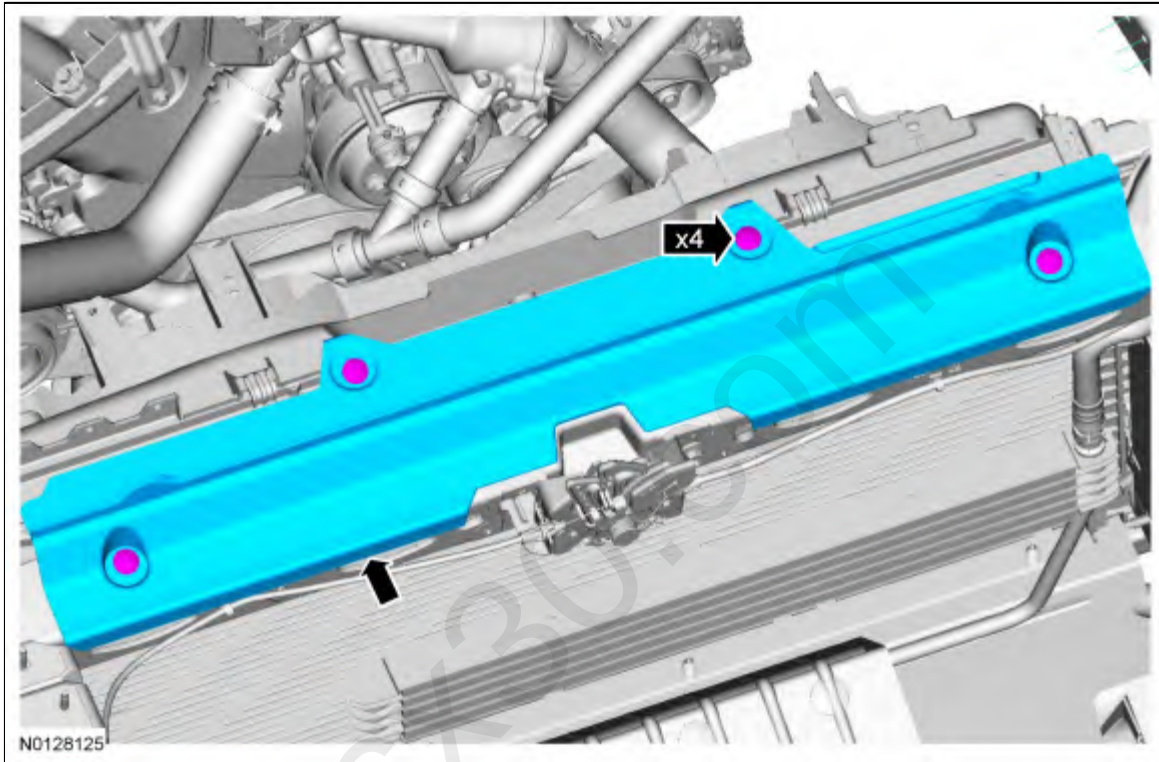
Item	Part Number	Description
1	W715211	LH engine support insulator through bolt - 350 Nm (258 lb-ft)
2	W713244	LH engine support insulator bolt (3 required)
3	6038	LH engine support insulator
4	W714735	LH engine support insulator bracket bolt (3 required) - 63 Nm (46 lb-ft)
5	—	LH engine support insulator bracket (part of 6038)

Removal

NOTE: Apply threadlock to the LH and RH engine support insulator through bolt threads prior to installation.

All vehicles

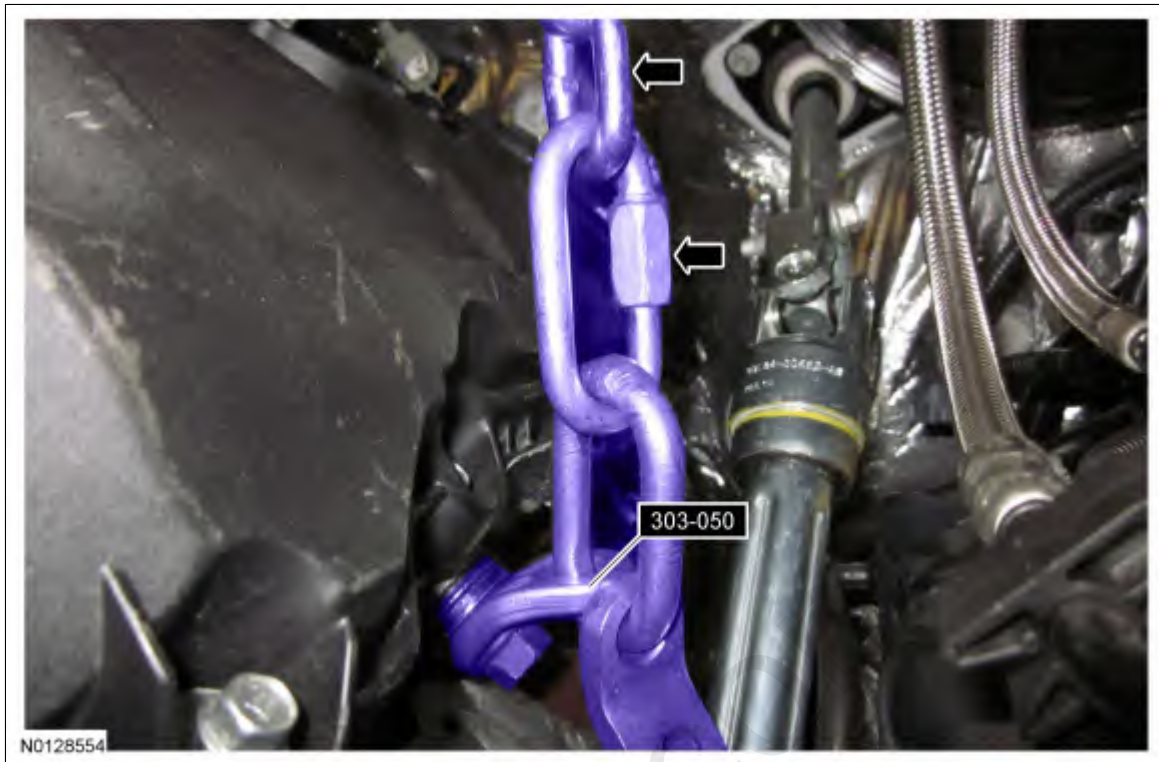
1. With the vehicle in NEUTRAL, position it on a hoist. For additional information, refer to [Section 100-02](#).
2. Remove the 4 pin-type retainers and the upper radiator air deflector.



3. Remove the Air Cleaner (ACL) outlet pipe and ACL cover as an assembly. For additional information, refer to [Section 303-12](#).
4. **NOTE:** It may be necessary to install washers between the Engine Lifting Bracket and the cylinder head to prevent the Engine Lifting Bracket from contacting the valve cover while supporting the engine.

Install an Engine Lifting Bracket on the side of the LH cylinder head.

- Attach a length of chain and a connecting link to the Engine Lifting Bracket.



5. Install the Engine Support Bar.

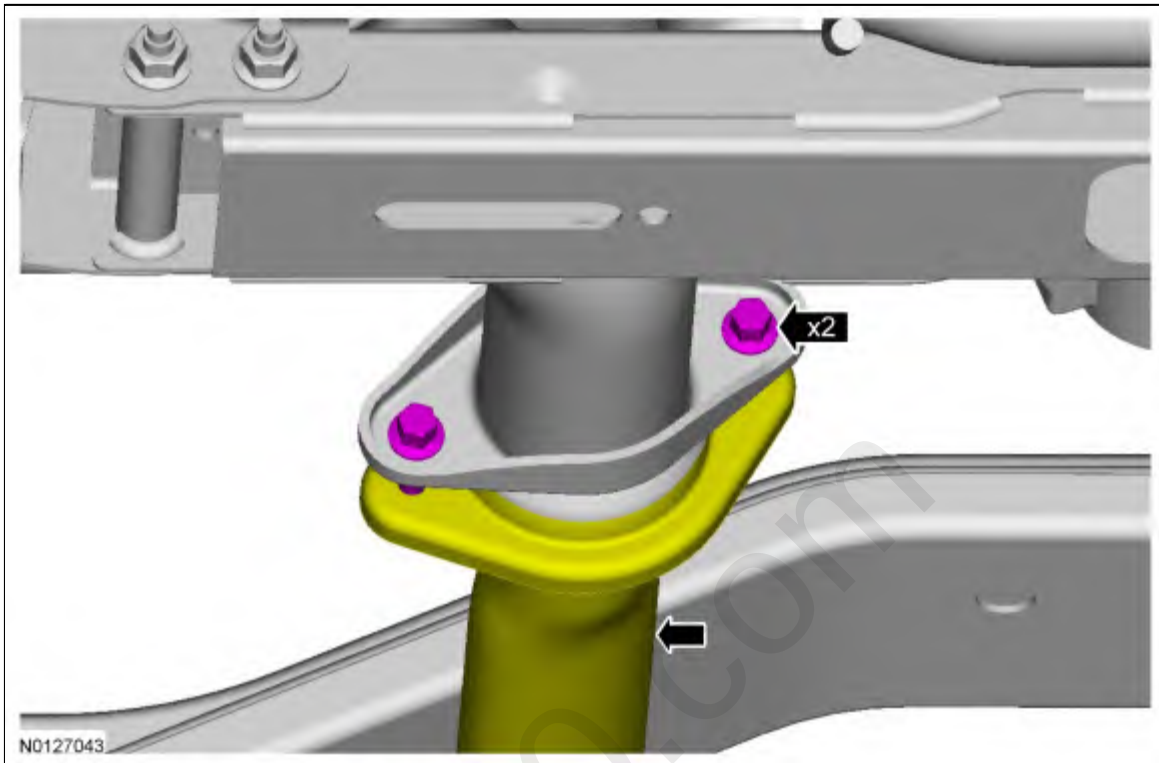
- Attach the chain installed in the previous step to the Engine Support Bar hook to support the engine.



6. Remove the 2 exhaust Y-pipe dual catalytic converter-to-exhaust intermediate pipe bolts and

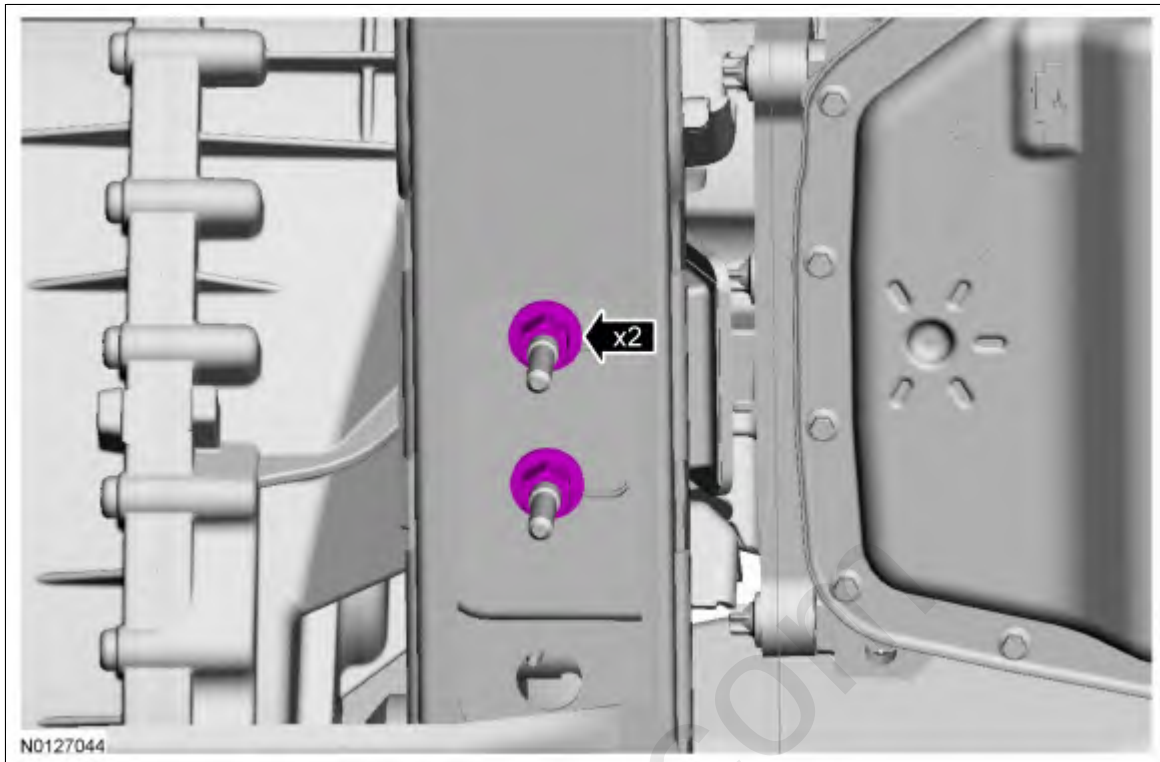
separate.

- Discard the 2 bolts.



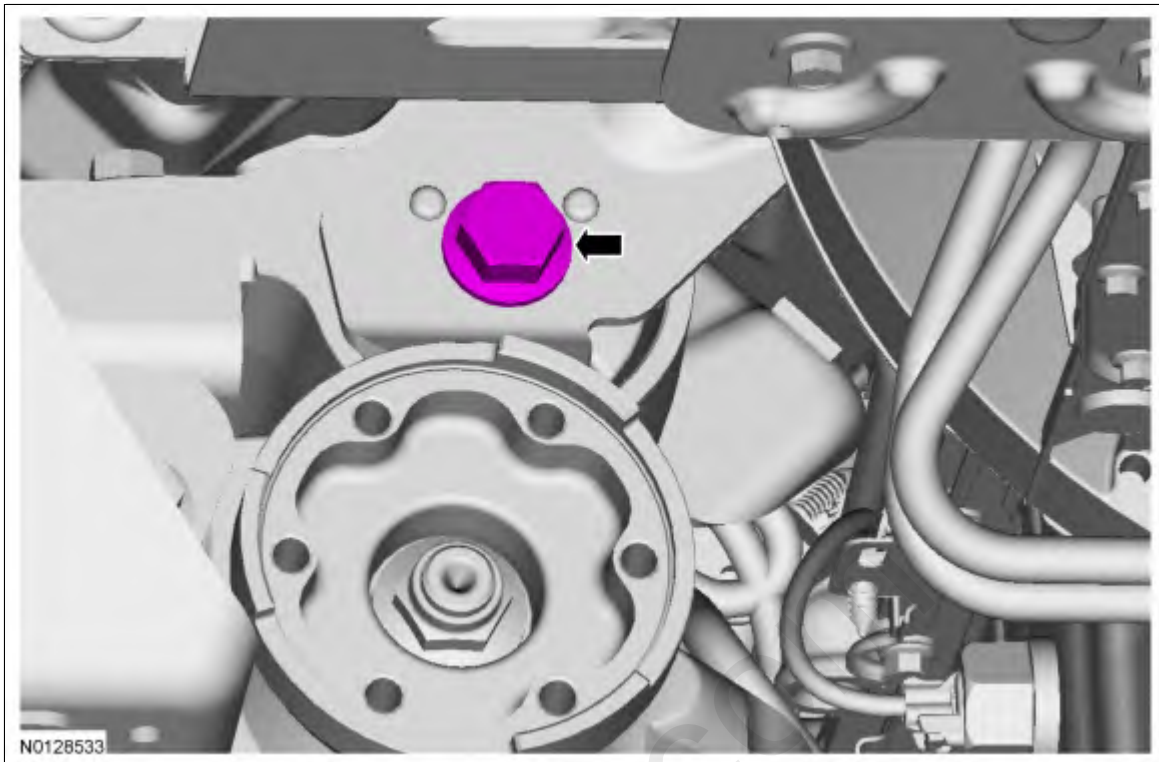
7. **NOTICE:** Only use hand tools when removing the transmission mount-to-crossmember nuts or damage to the transmission mount can occur.

Loosen the 2 transmission mount-to-crossmember nuts.



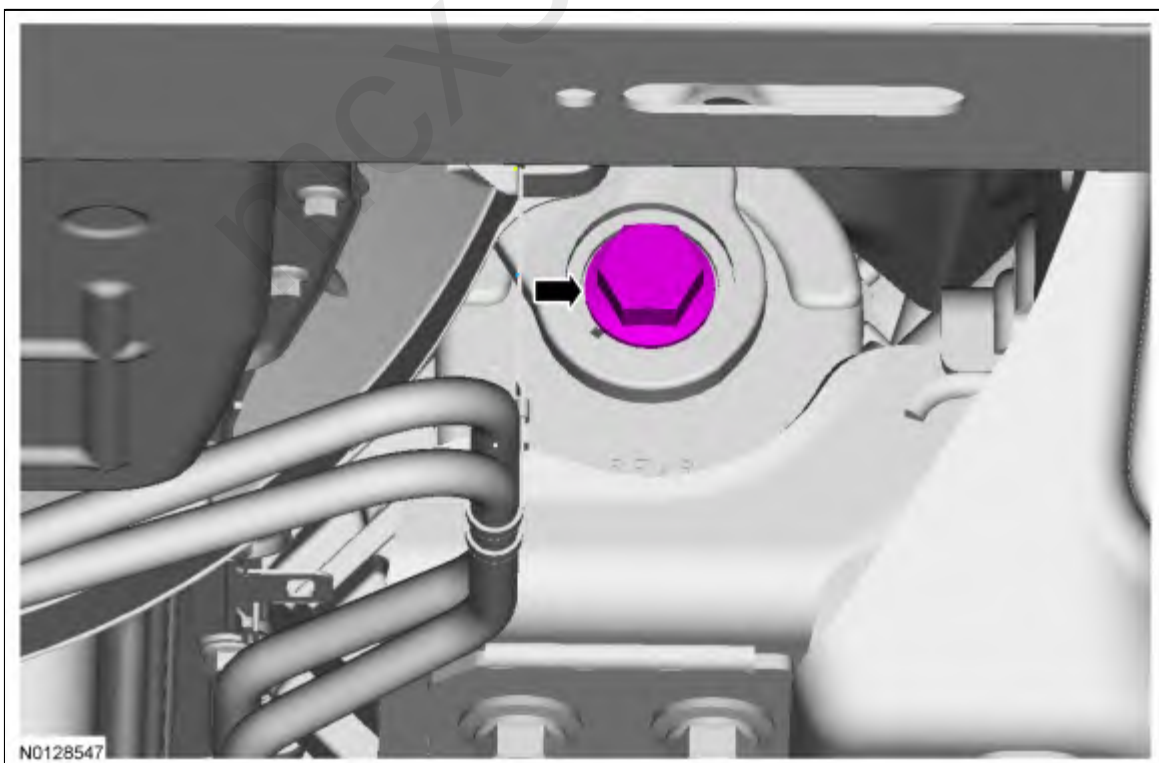
8. Remove the starter. For additional information, refer to [Section 303-06](#).
9. If equipped, remove the front driveshaft. For additional information, refer to [Section 205-01](#).
10. **NOTICE:** Only use hand tools when loosening or tightening the engine support insulator through bolts or damage to the engine support insulator-to-cylinder block bracket can occur.

Remove the LH engine support insulator through bolt.



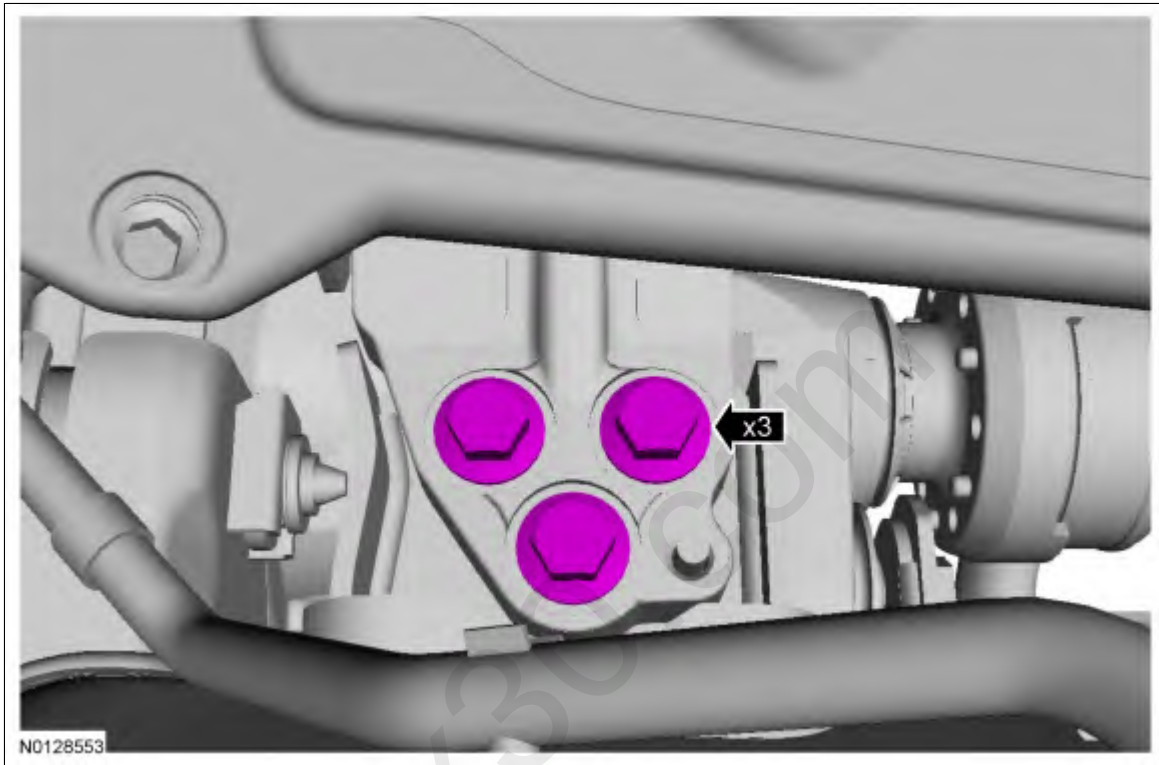
11. **NOTICE:** Only use hand tools when loosening or tightening the engine support insulator through bolts or damage to the engine support insulator-to-cylinder block bracket can occur.

Loosen the RH engine support insulator through bolt.



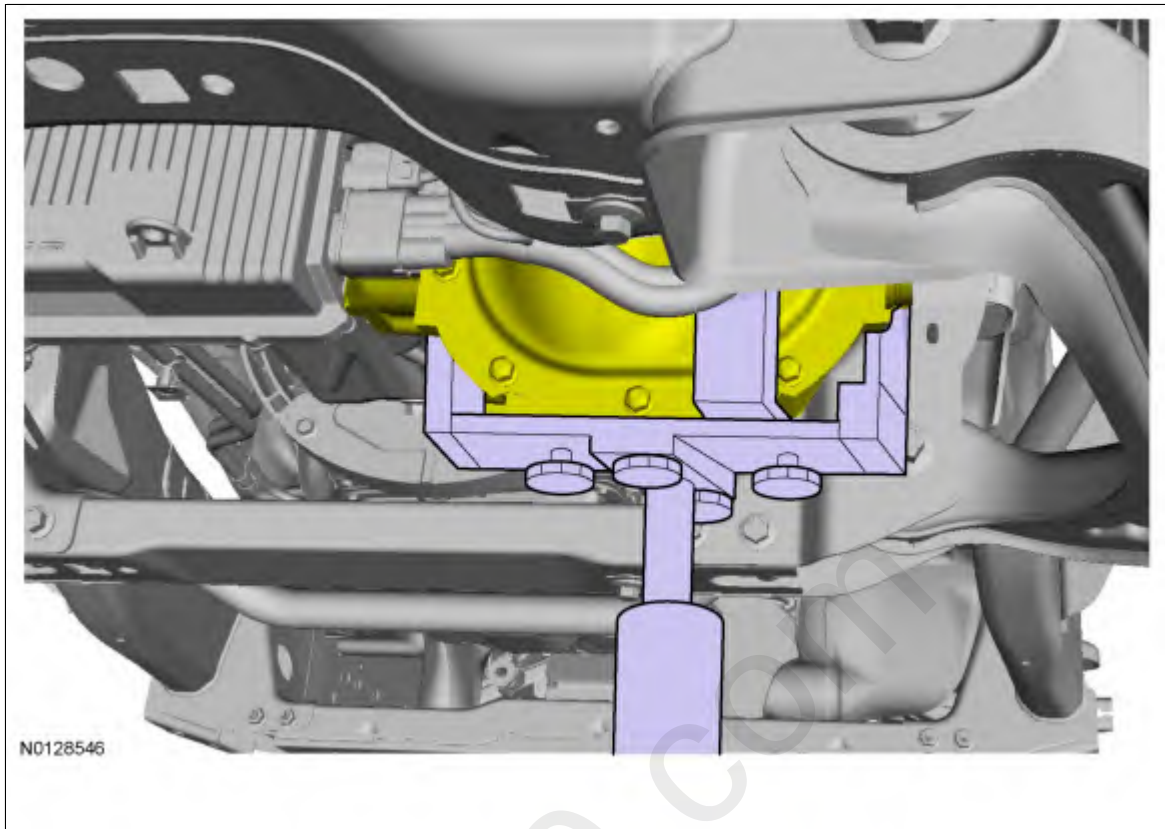
12. Raise the LH side of the engine 50 mm (1.968 in).
13. **NOTICE:** Only use hand tools when removing or installing the engine support insulator-to-frame bolts or damage to the engine support insulator-to-frame nut plate can occur.

Remove the 3 LH engine support insulator-to-frame bolts.

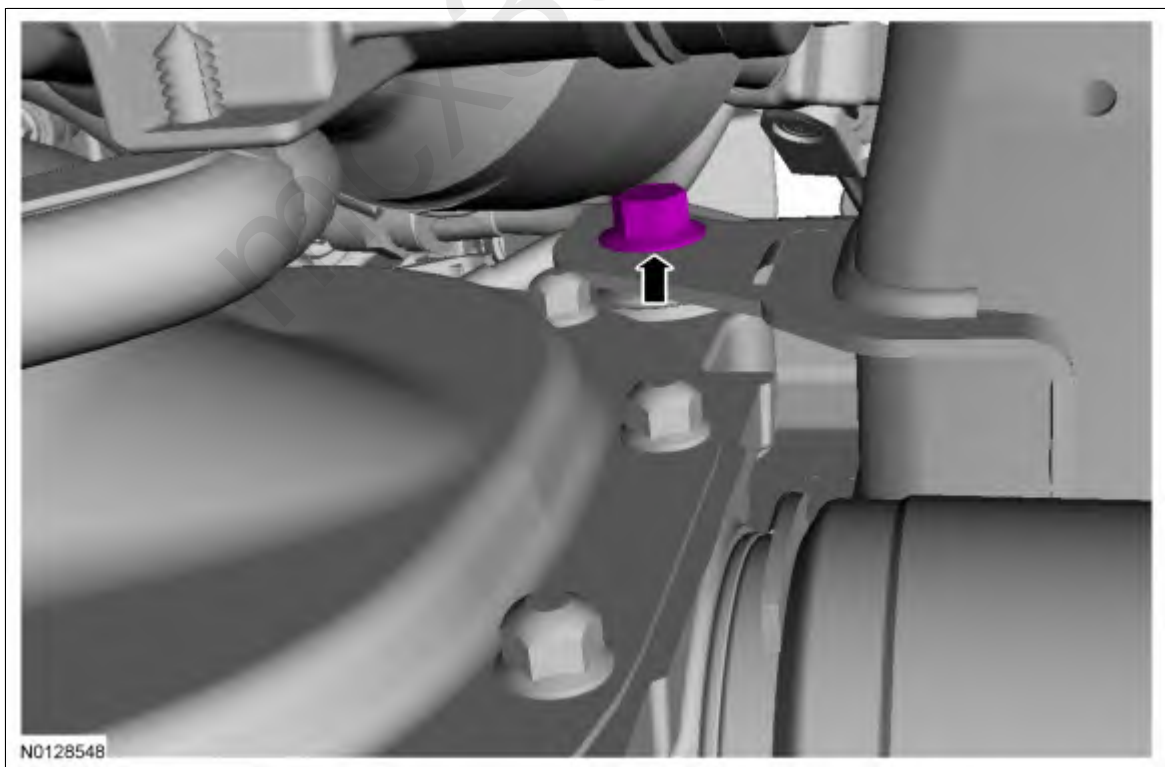


Four-Wheel Drive (4WD) vehicles

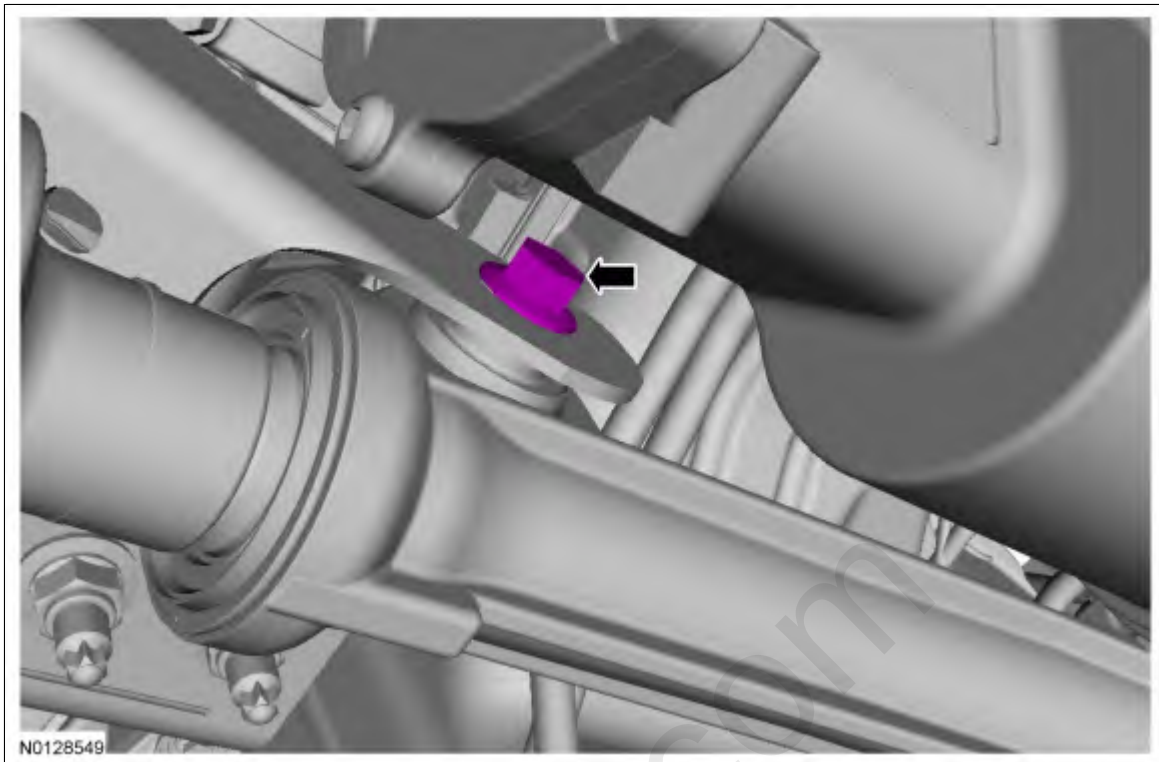
14. Position a suitable hydraulic jack under the front axle. Securely strap the jack to the axle.



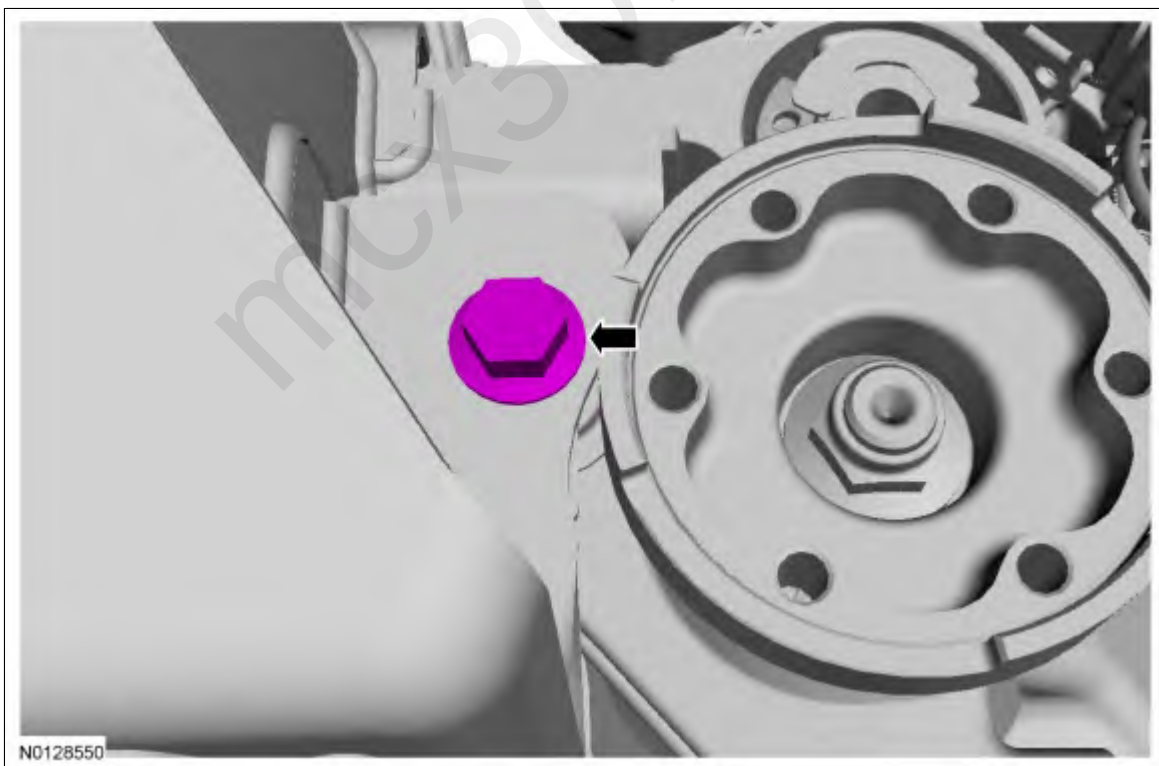
15. Remove the upper front axle carrier mounting bushing bolt.



16. Remove the axle shaft housing carrier bushing bolt.



17. Remove the lower front axle carrier mounting bushing bolt.

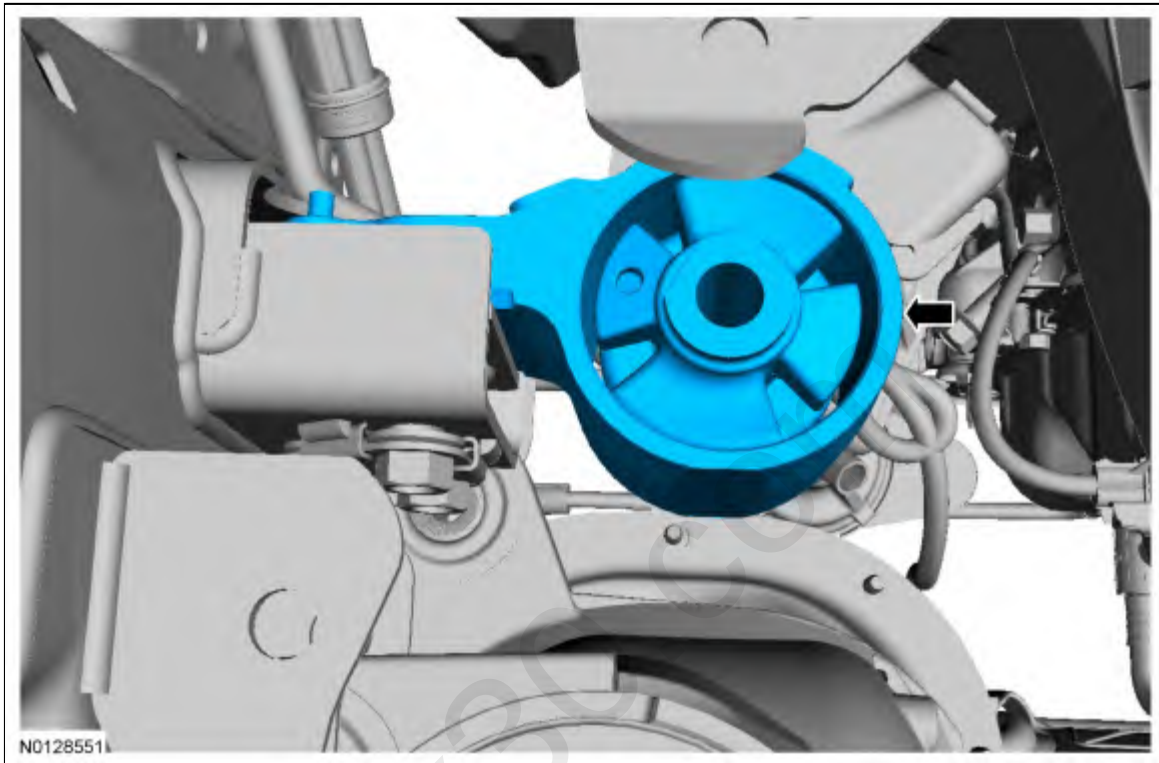


18. **NOTICE:** Use care when positioning the front axle housing or the vacuum lines to the axle solenoid may become disconnected or damaged.

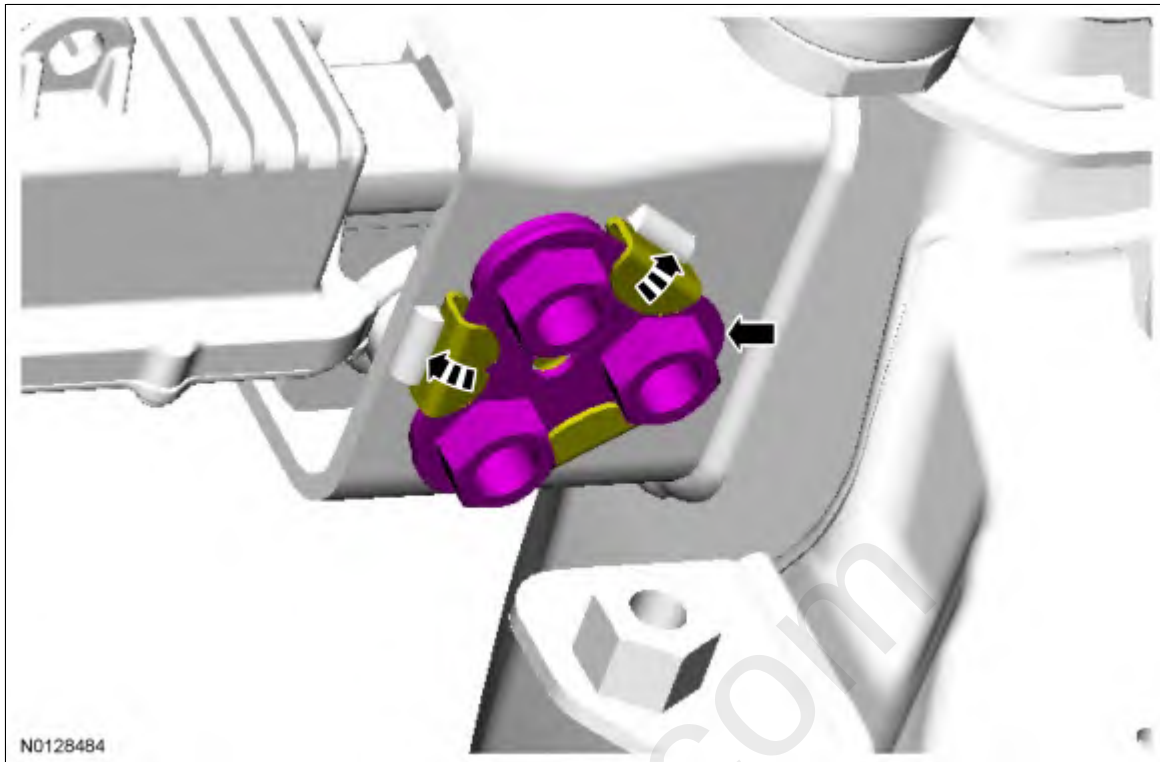
Lower the front axle to allow clearance to the LH engine support insulator.

All vehicles

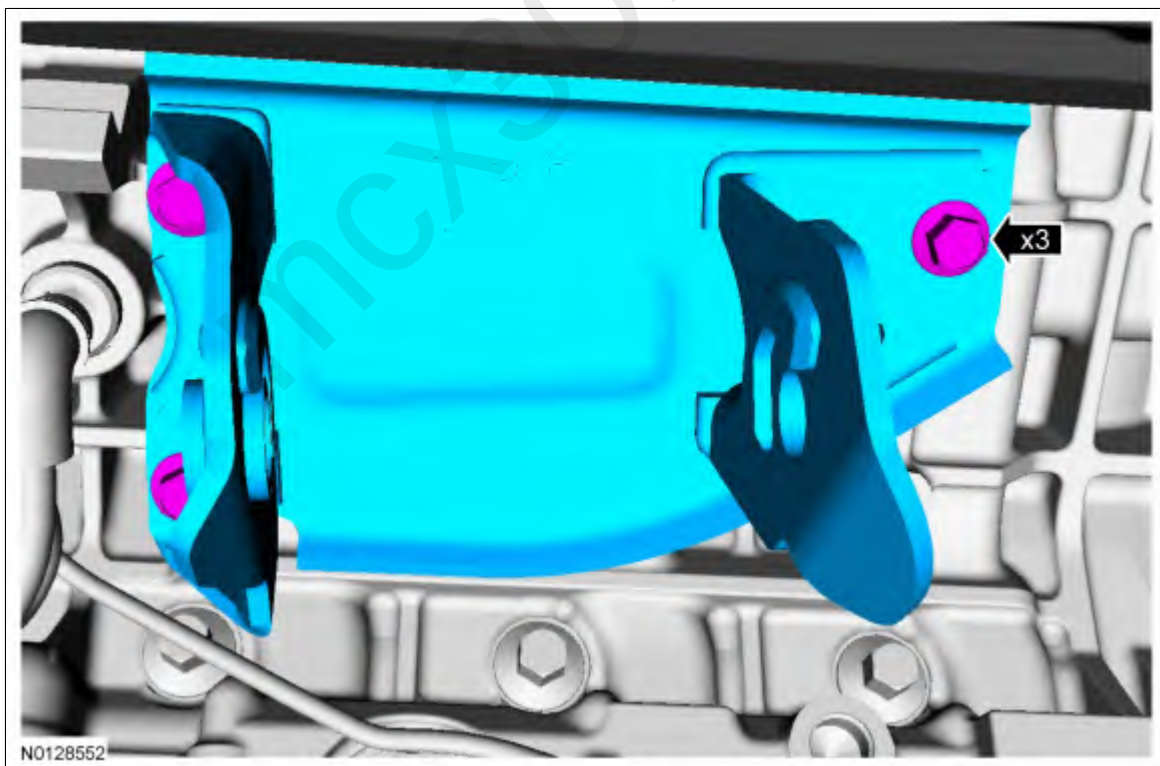
19. Remove the LH engine support insulator.



20. Inspect the engine support insulator-to-frame nut plate for thread damage. If the nut plate is damaged, bend 2 tabs back and remove the nut plate. Replace the nut plate with service part number 56190 and bend the 2 tabs back to the original position.



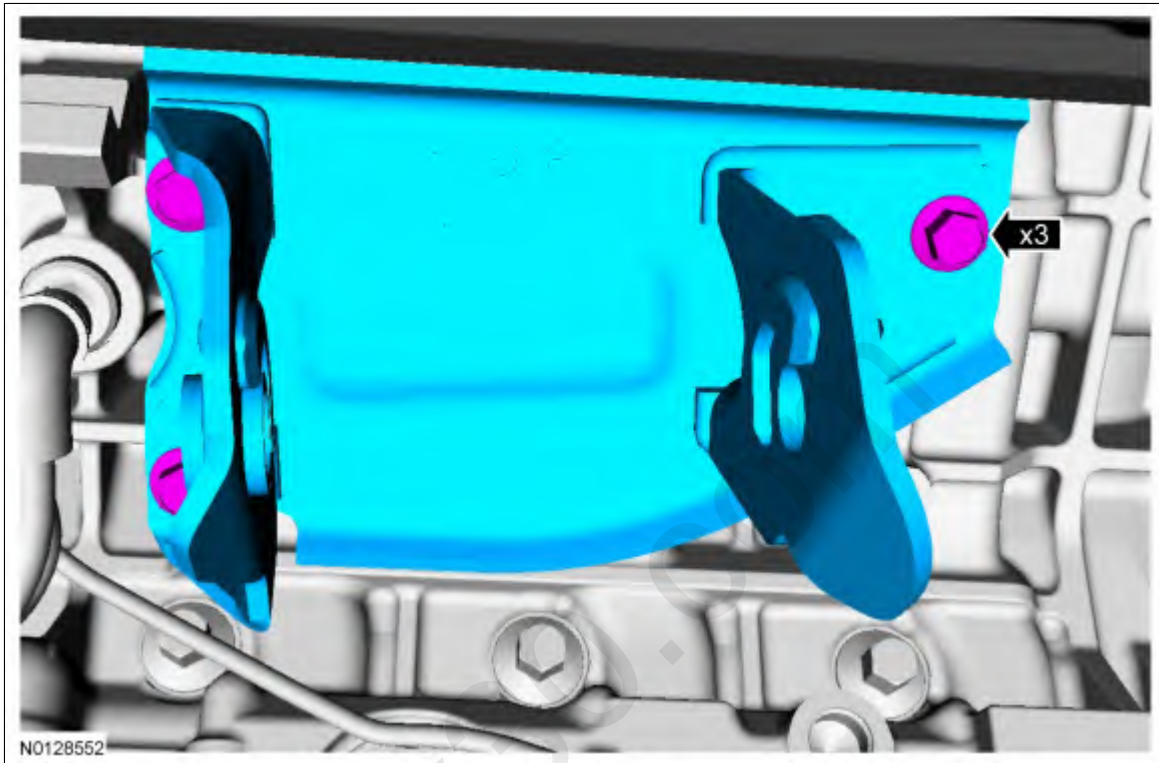
21. If necessary, remove the 3 bolts and the LH engine support insulator-to-cylinder block bracket.



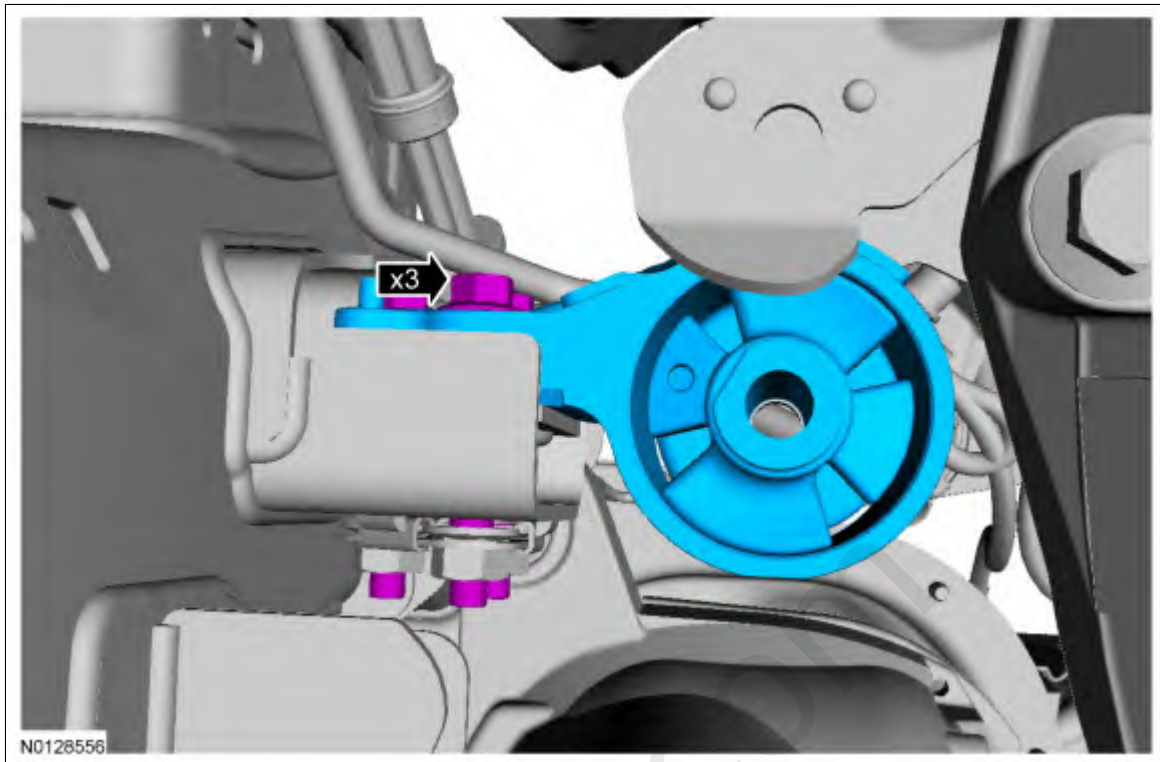
Installation

All vehicles

1. Clean the engine support insulator-to-cylinder block and engine support insulator-to-frame mating surfaces of any dirt or foreign material prior to installation.
2. If removed, install the LH engine support insulator-to-cylinder block bracket and install the 3 bolts.
 - Tighten to 63 Nm (46 lb-ft).



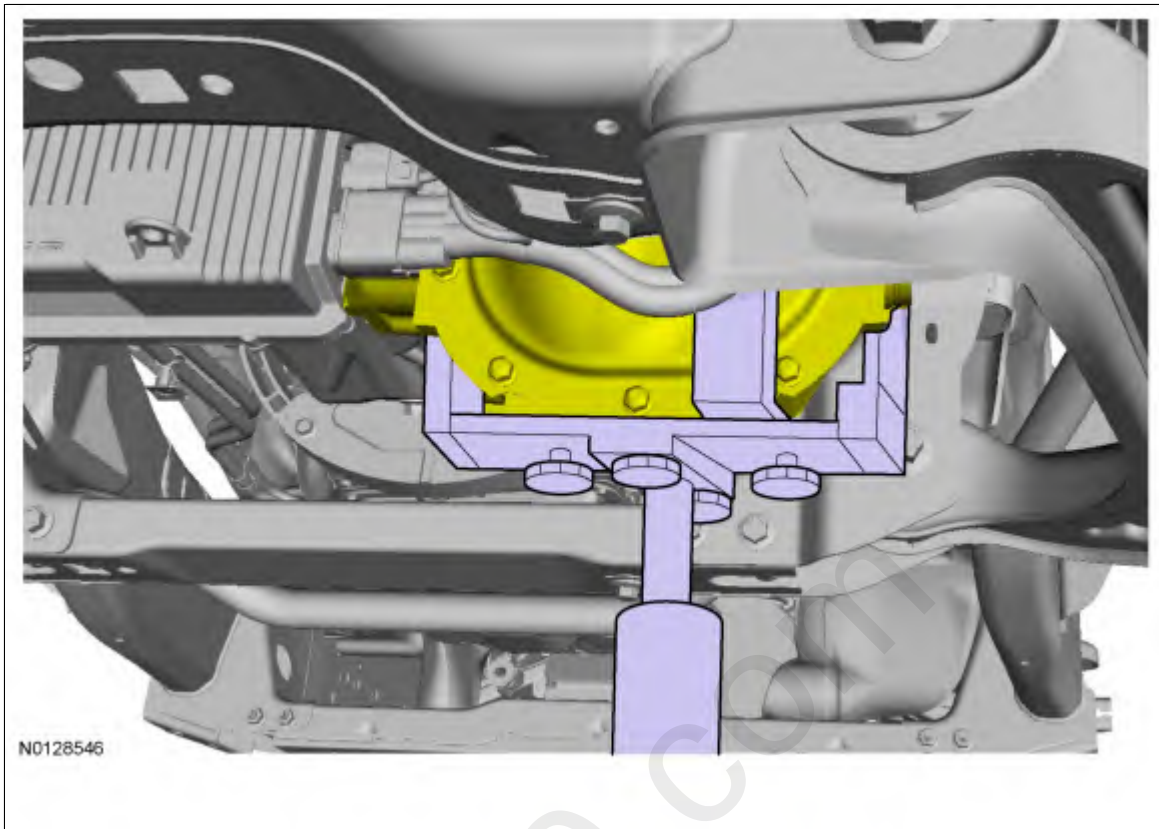
3. Position the LH engine support insulator and hand start the 3 new engine support insulator-to-frame bolts.
 - Do not tighten at this time.



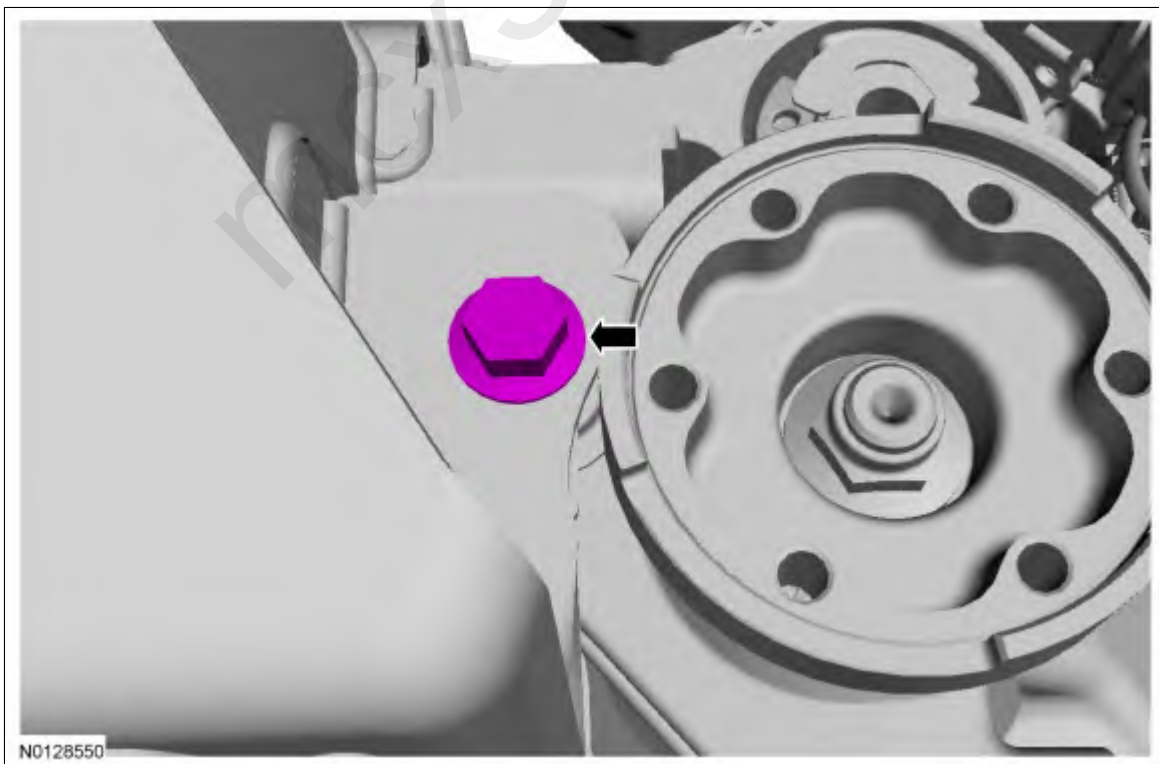
Four-Wheel Drive (4WD) vehicles

4. **NOTICE:** Use care when positioning the front axle housing or the vacuum lines to the axle solenoid may become disconnected or damaged.

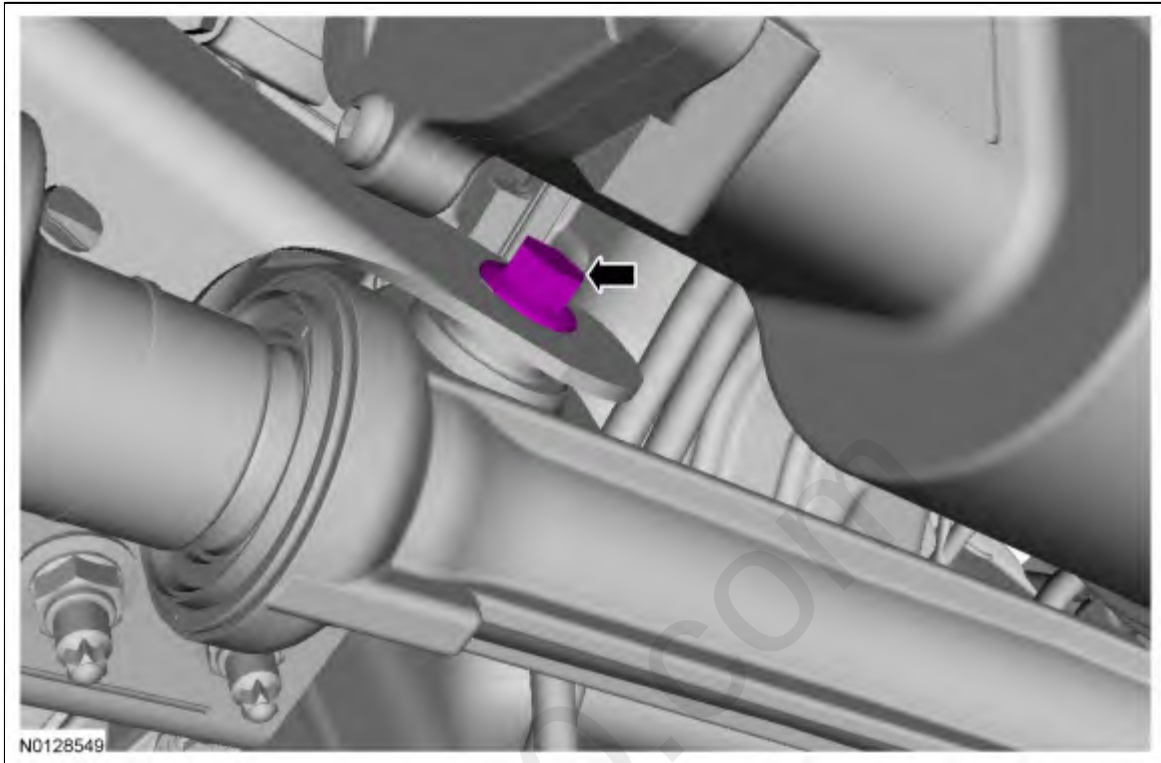
Raise the front axle carrier into position.



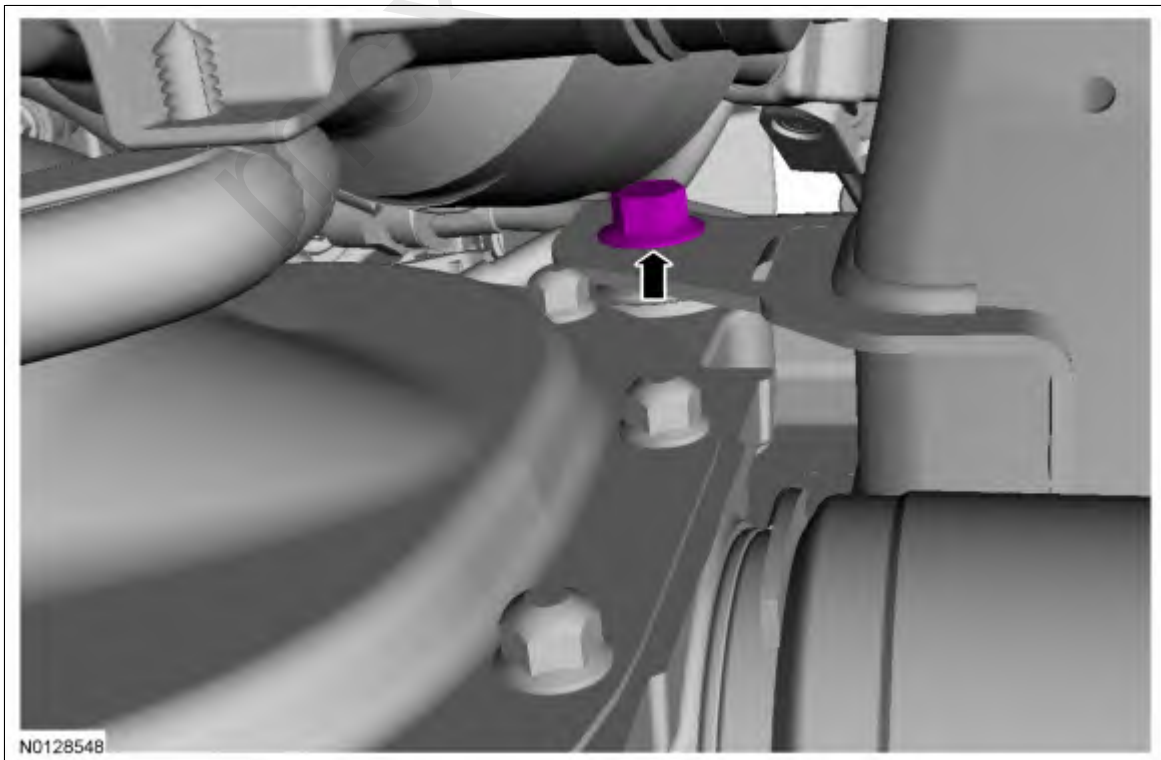
5. Install the lower front axle carrier mounting bushing bolt.
 - Tighten to 115 Nm (85 lb-ft).



6. Install the axle shaft housing carrier bushing bolt.
 - Tighten to 115 Nm (85 lb-ft).

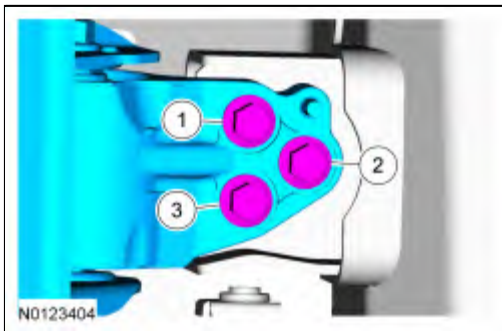


7. Install the upper front axle carrier mounting bushing bolt.
 - Tighten to 115 Nm (85 lb-ft).



All vehicles

8. Tighten the 3 LH engine support insulator bolts in the sequence shown to 175 Nm (129 lb-ft).



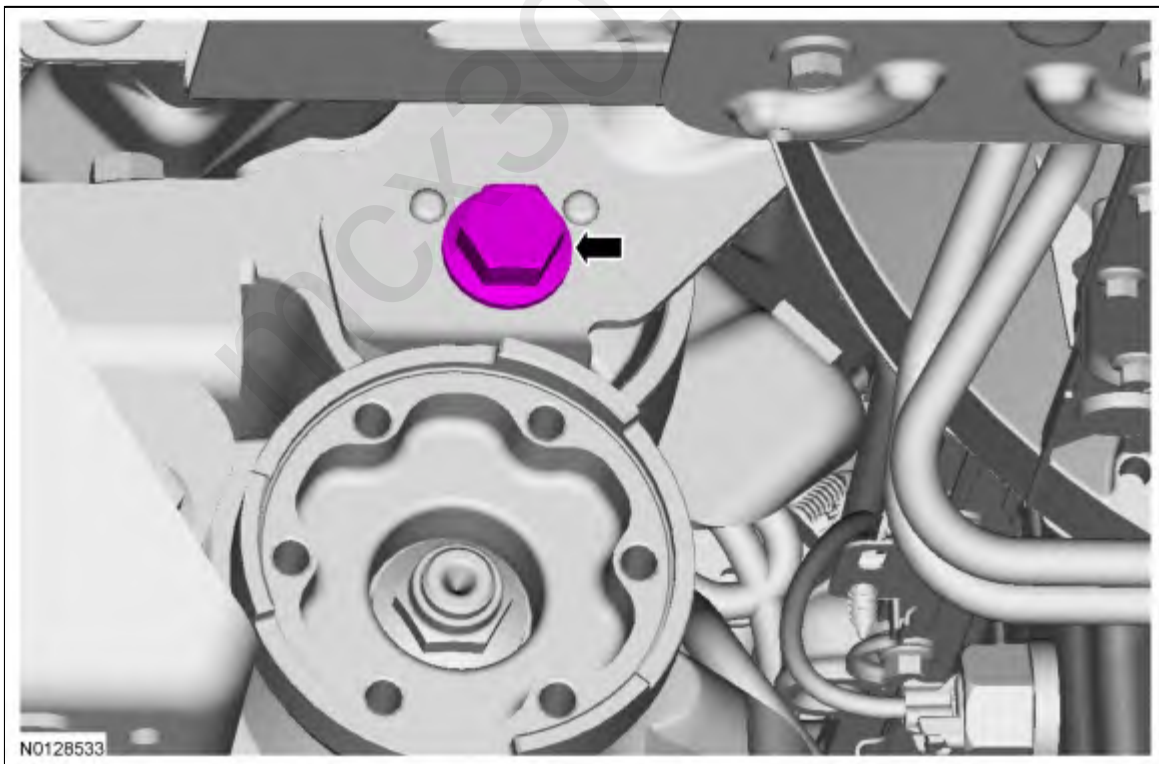
9. Lower the engine to the installed position.

10. **NOTICE:** Only use hand tools when loosening or tightening the engine support insulator through bolts or damage to the engine support insulator-to-cylinder block bracket can occur.

NOTE: Apply threadlock to the bolt threads prior to installation.

Install the LH engine support insulator through bolt.

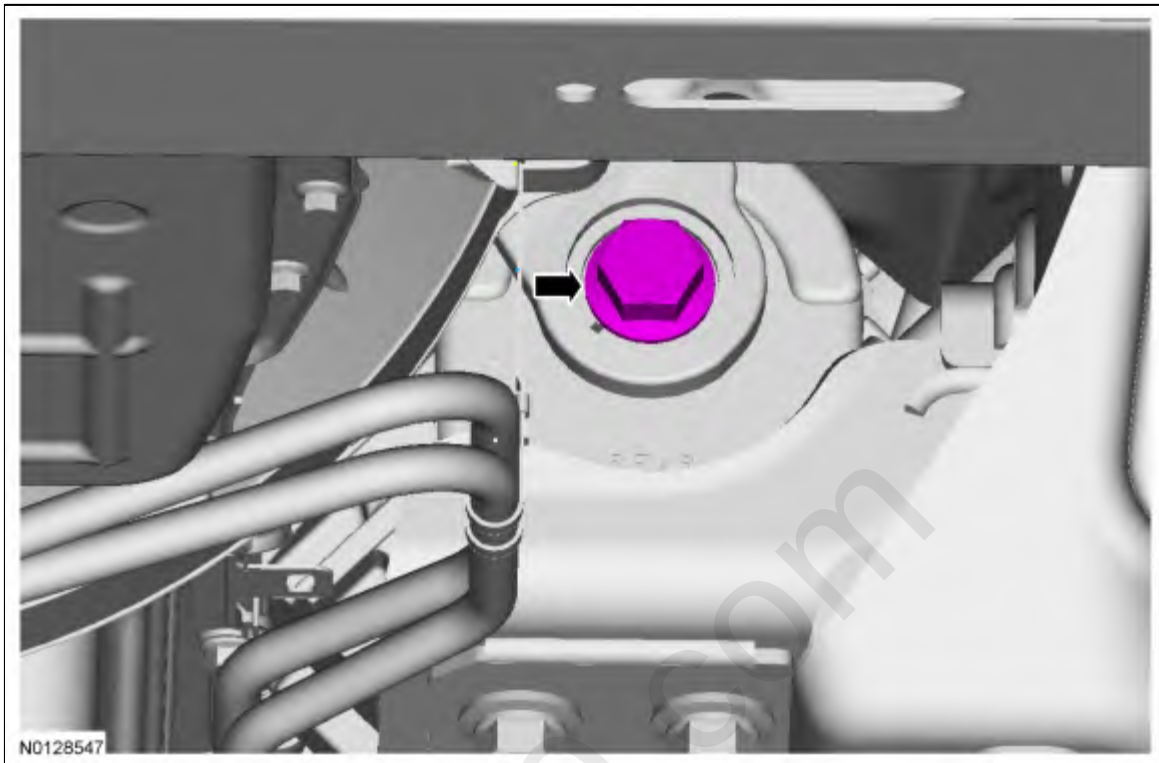
- Tighten to 350 Nm (258 lb-ft).



11. **NOTICE:** Only use hand tools when loosening or tightening the engine support insulator through bolt or damage to the engine support insulator-to-cylinder block bracket can occur.

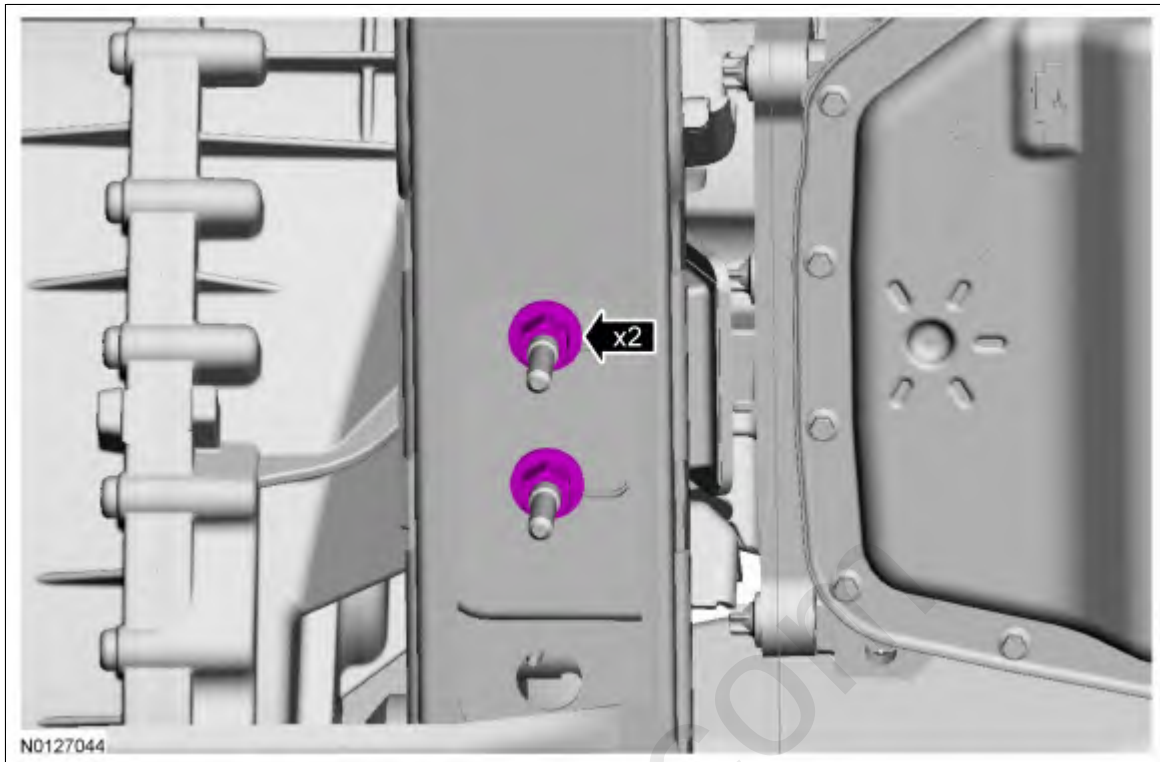
Remove the RH engine support insulator through bolt and apply threadlock to the bolt threads.

- Install the through bolt and tighten to 350 Nm (258 lb-ft).

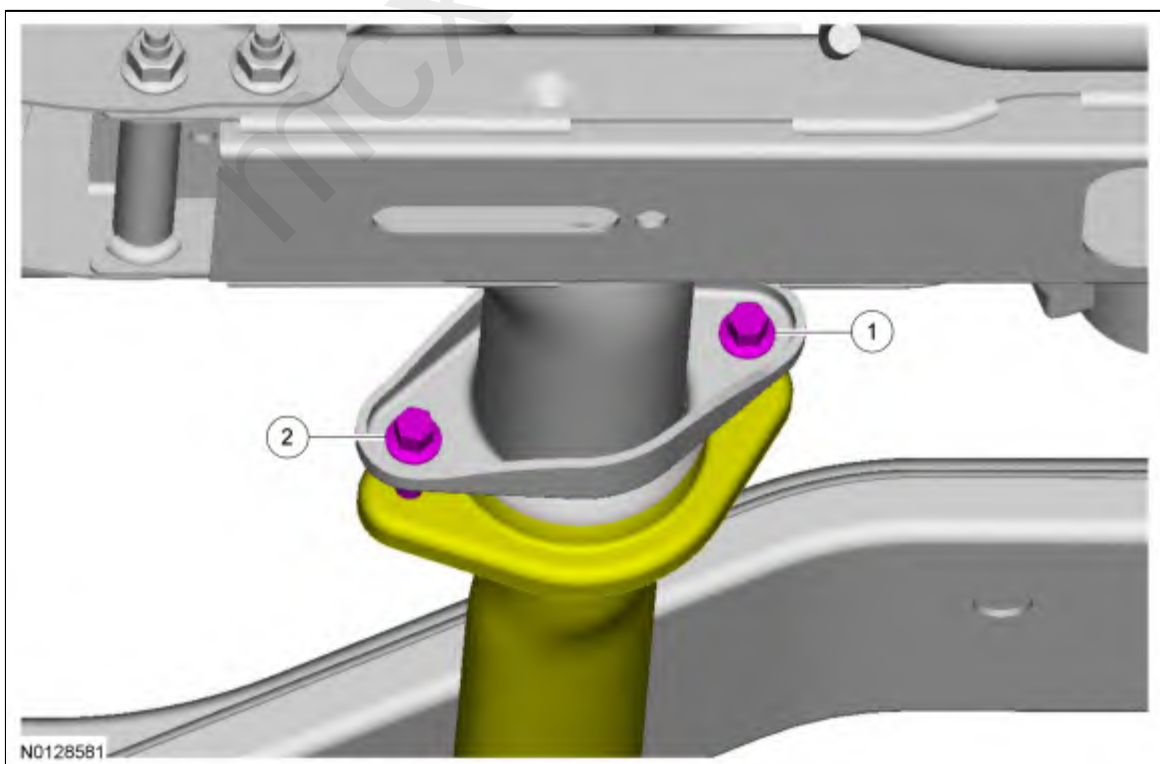


12. If equipped, install the front driveshaft. For additional information, refer to [Section 205-01](#).
13. Install the starter. For additional information, refer to [Section 303-06](#).
14. **NOTICE:** Only use hand tools when installing the transmission mount-to-crossmember nuts or damage to the transmission mount can occur.

Tighten the transmission mount-to-crossmember nuts to 103 Nm (76 lb-ft).



15. Position the exhaust Y-pipe dual catalytic converter-to-exhaust intermediate pipe and install the 2 new bolts.
1. Tighten the inner exhaust Y-pipe dual catalytic converter-to-exhaust intermediate pipe bolt to 63 Nm (46 lb-ft).
 2. Tighten the outer exhaust Y-pipe dual catalytic converter-to-exhaust intermediate pipe bolt to 63 Nm (46 lb-ft).



16. Install the Air Cleaner (ACL) outlet pipe and ACL cover assembly. For additional information, refer to [Section 303-12](#).
17. Install the upper radiator air deflector and the 4 pin-type retainers.

