

REMOVAL

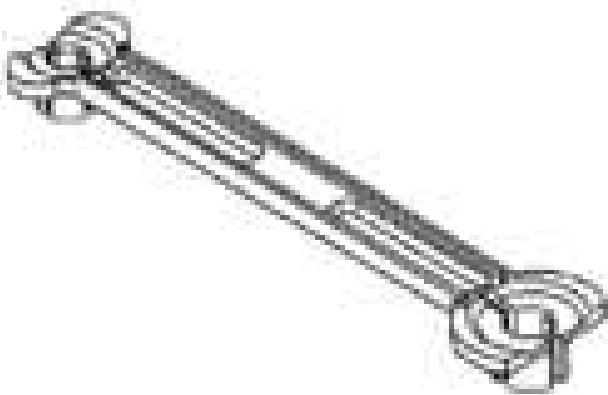
ENGINE

SPECIAL TOOLS



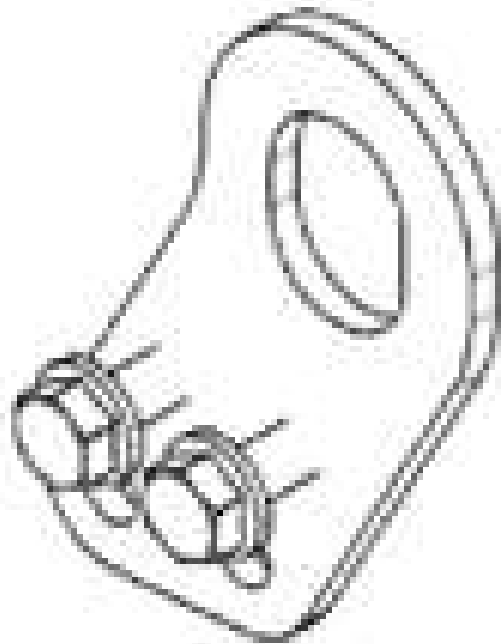
ST1341-A

2, 200# Floor Crane, Fold Away
300-OTC1819E



ST3298-A

Disconnect Tool, Fuel Line
310-250



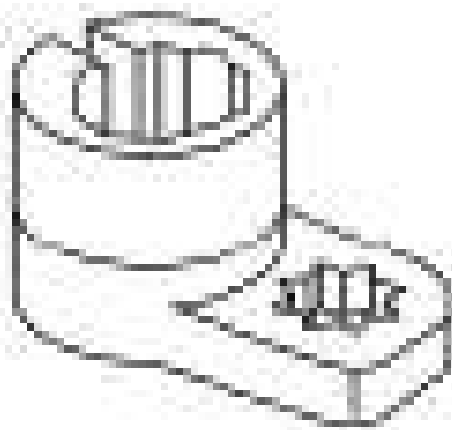
Lifting Eye
303-1502

ST3294-A



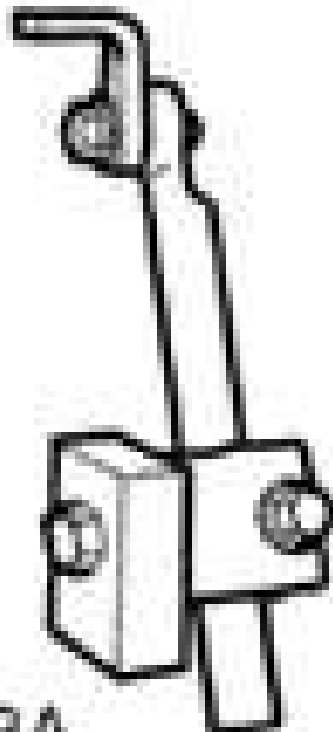
Powertrain Lift
300-OTC1585AE

ST1652-A



Socket, Exhaust Gas Oxygen Sensor
303-476 (T94P-9472-A)

ST1447-A



Adjustable Grip Arm, 1735A
014-00001

ST2743A

GENERAL EQUIPMENT

Hose Clamp Remover/Installer

Spreader Bar

Strap Wrench

MATERIAL SPECIFICATIONS

| Item | Specification |
|--|---------------|
| Motorcraft® Penetrating and Lock Lubricant (US); Motorcraft® Penetrating Fluid (Canada) XL-1 (US); CXC-51-A (Canada) | - |

All vehicles

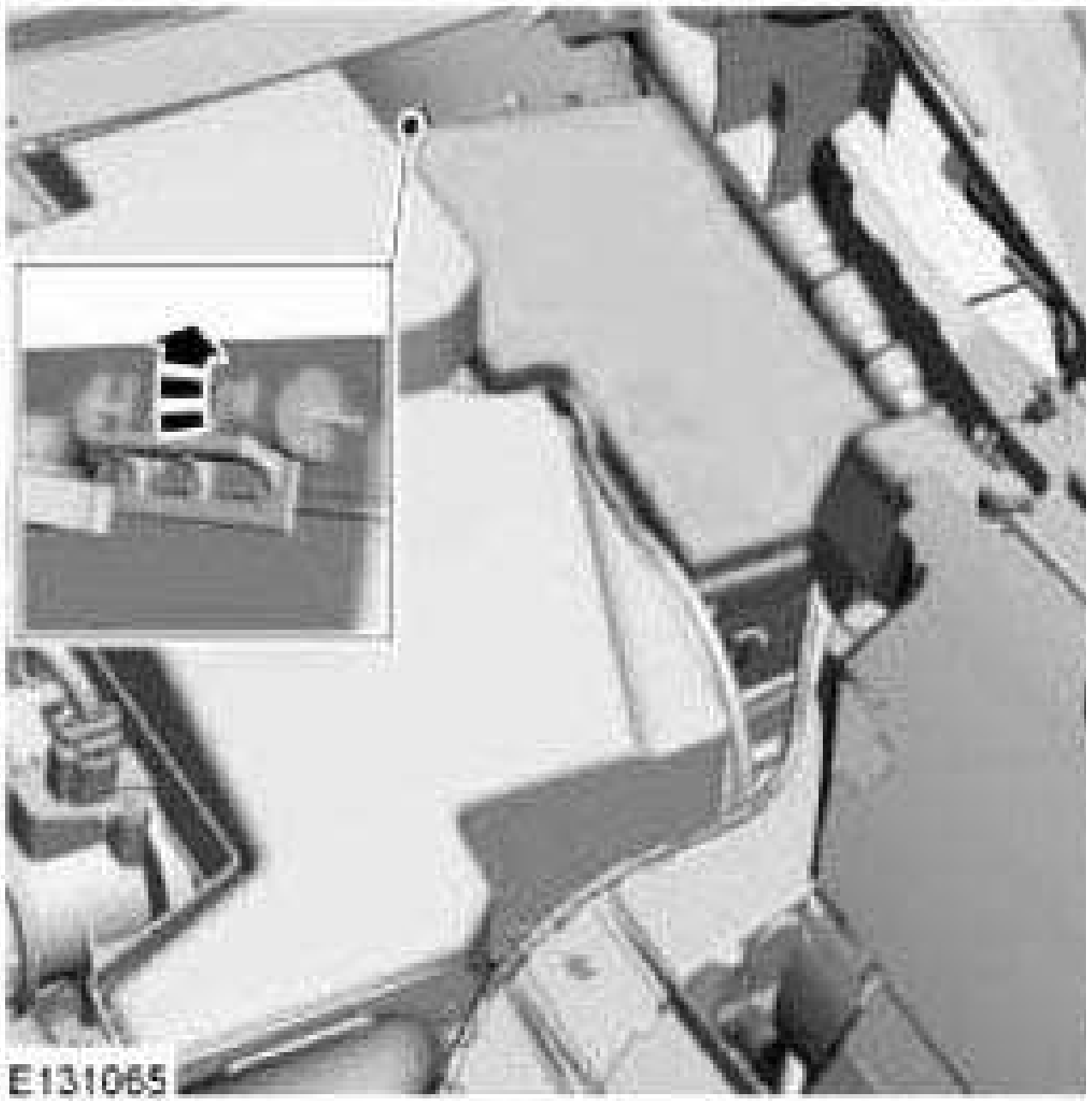
WARNING: Do not smoke, carry lighted tobacco or have an open flame of any type when working on or near any fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

WARNING: Before working on or disconnecting any of the fuel tubes or fuel system components, relieve the fuel system pressure to prevent accidental spraying of fuel. Fuel in the fuel system remains under high pressure, even when the engine is not running. Failure to follow this instruction may result in serious personal injury.

WARNING: Clean all fuel residue from the engine compartment. If not removed, fuel residue may ignite when the engine is returned to operation. Failure to follow this instruction may result in serious personal injury.

WARNING: Always disconnect the battery ground cable at the battery when working on an evaporative emission (EVAP) system or fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

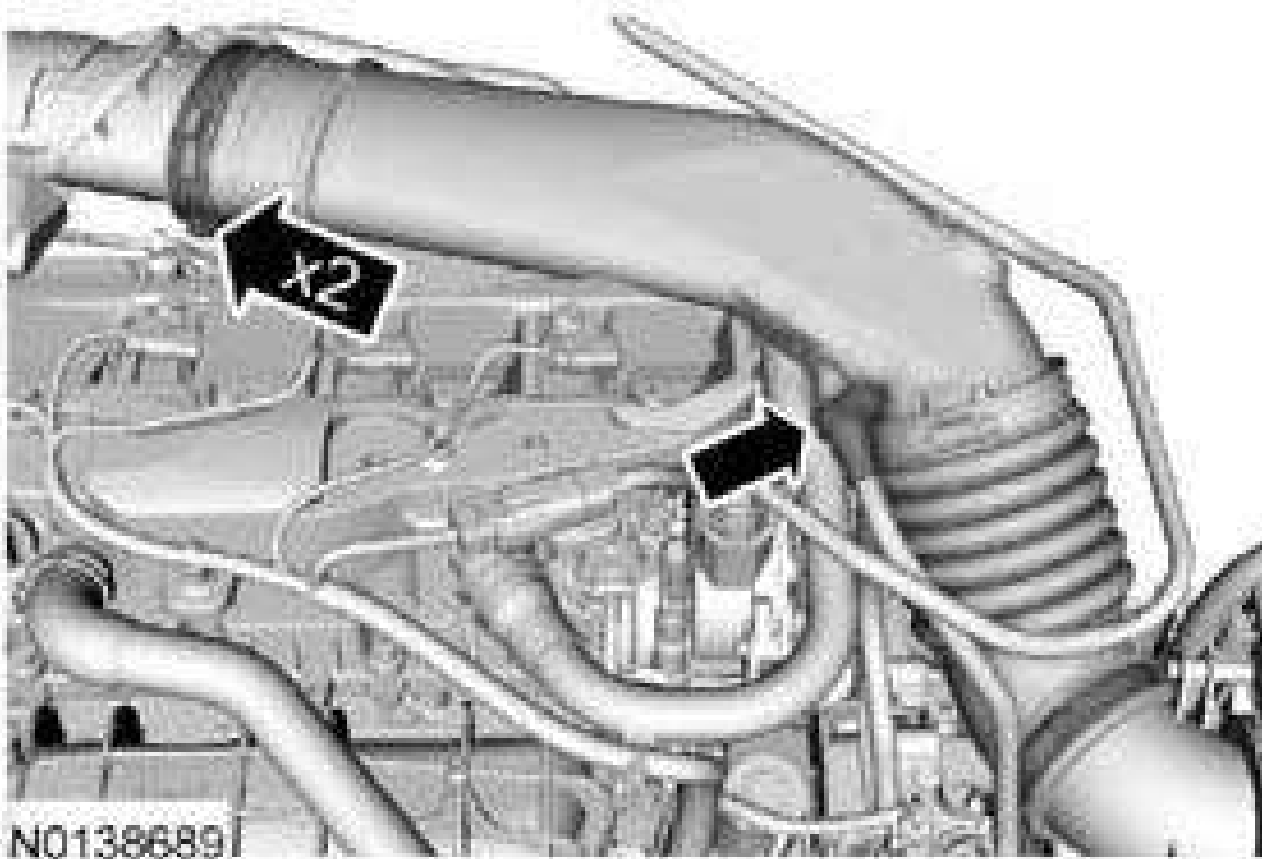
1. With the vehicle in NEUTRAL, position it on a hoist. Refer to **JACKING & LIFTING** .
2. Release the fuel system pressure. Refer to **FUEL SYSTEM - GENERAL INFORMATION** .



3.

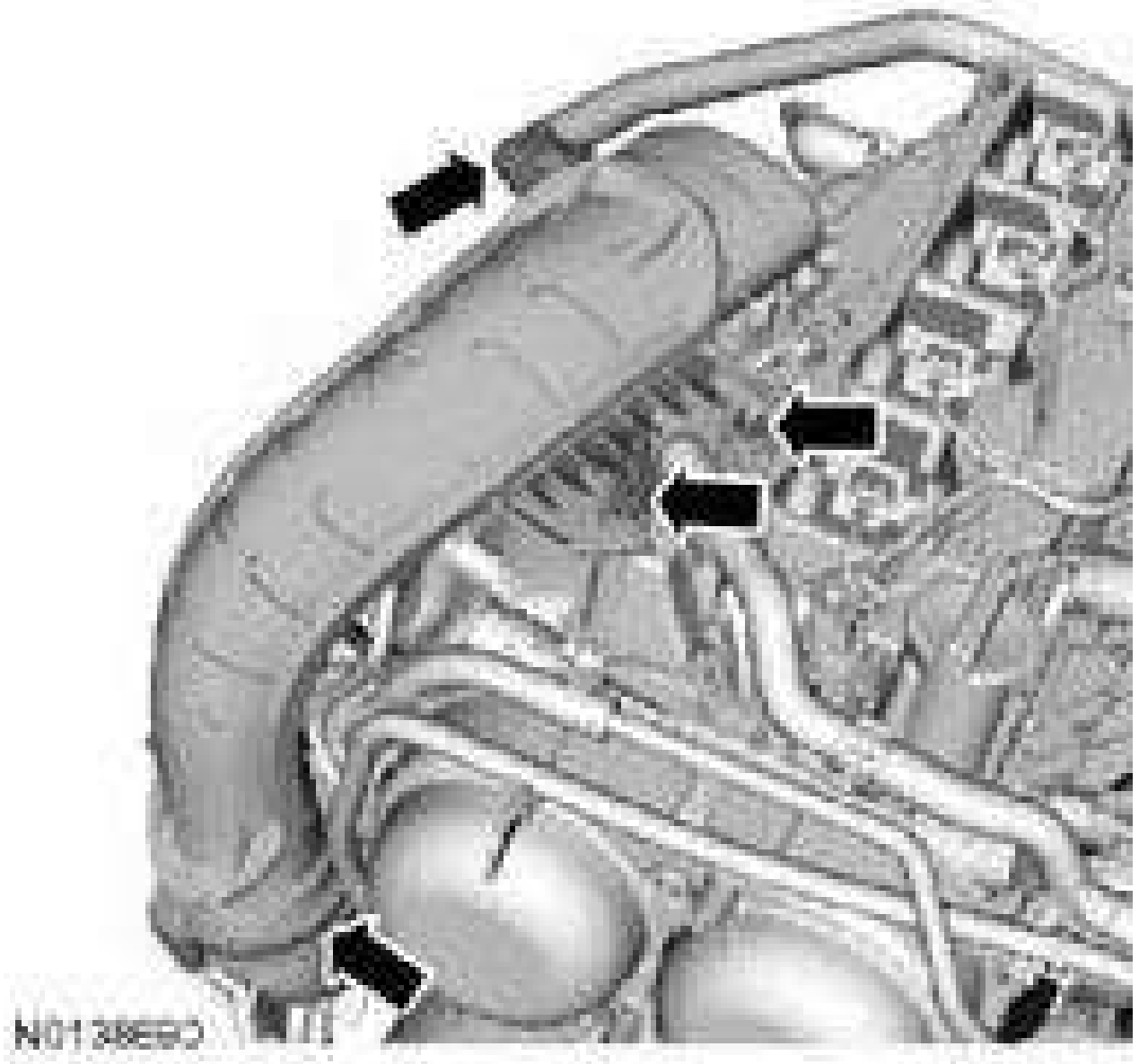
4. Remove the cowl panel. Refer to **FRONT END BODY PANELS** .

5.

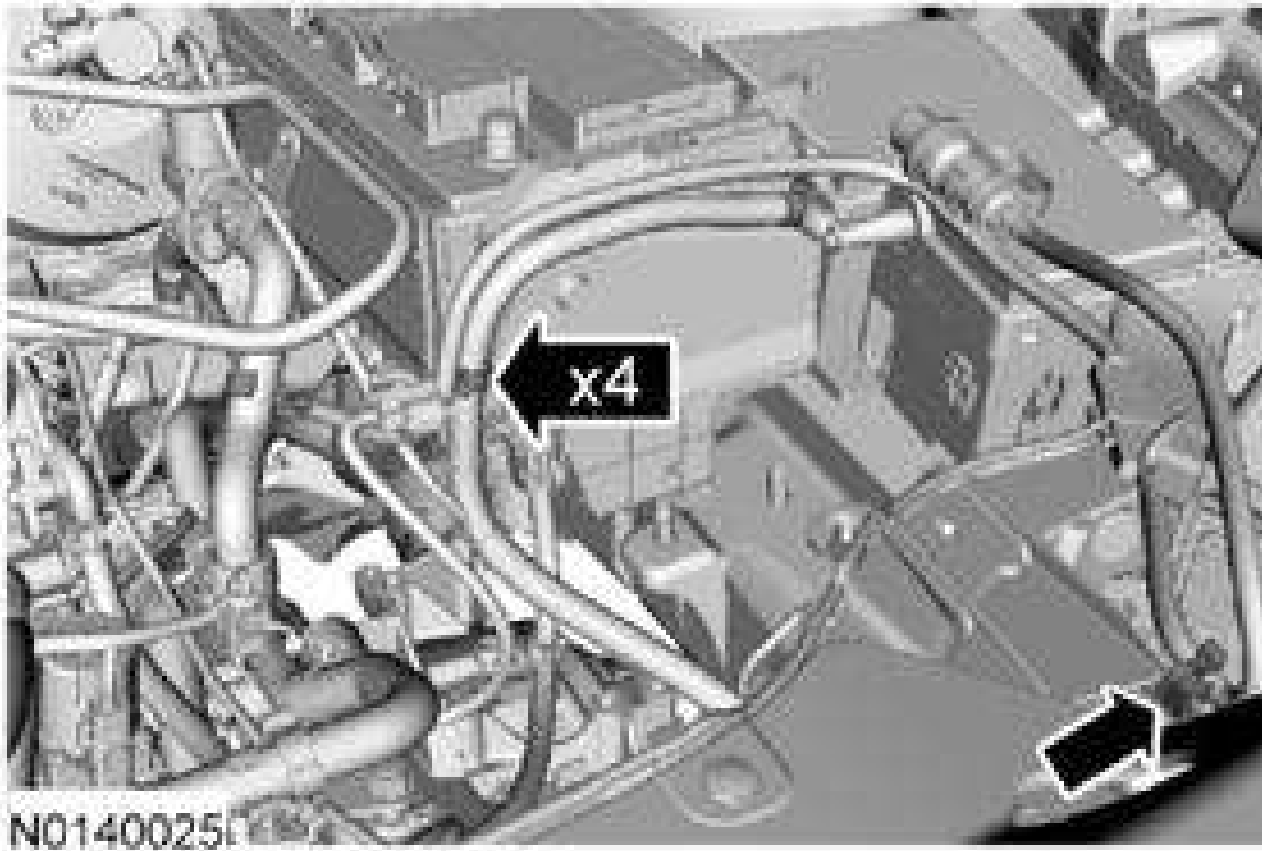


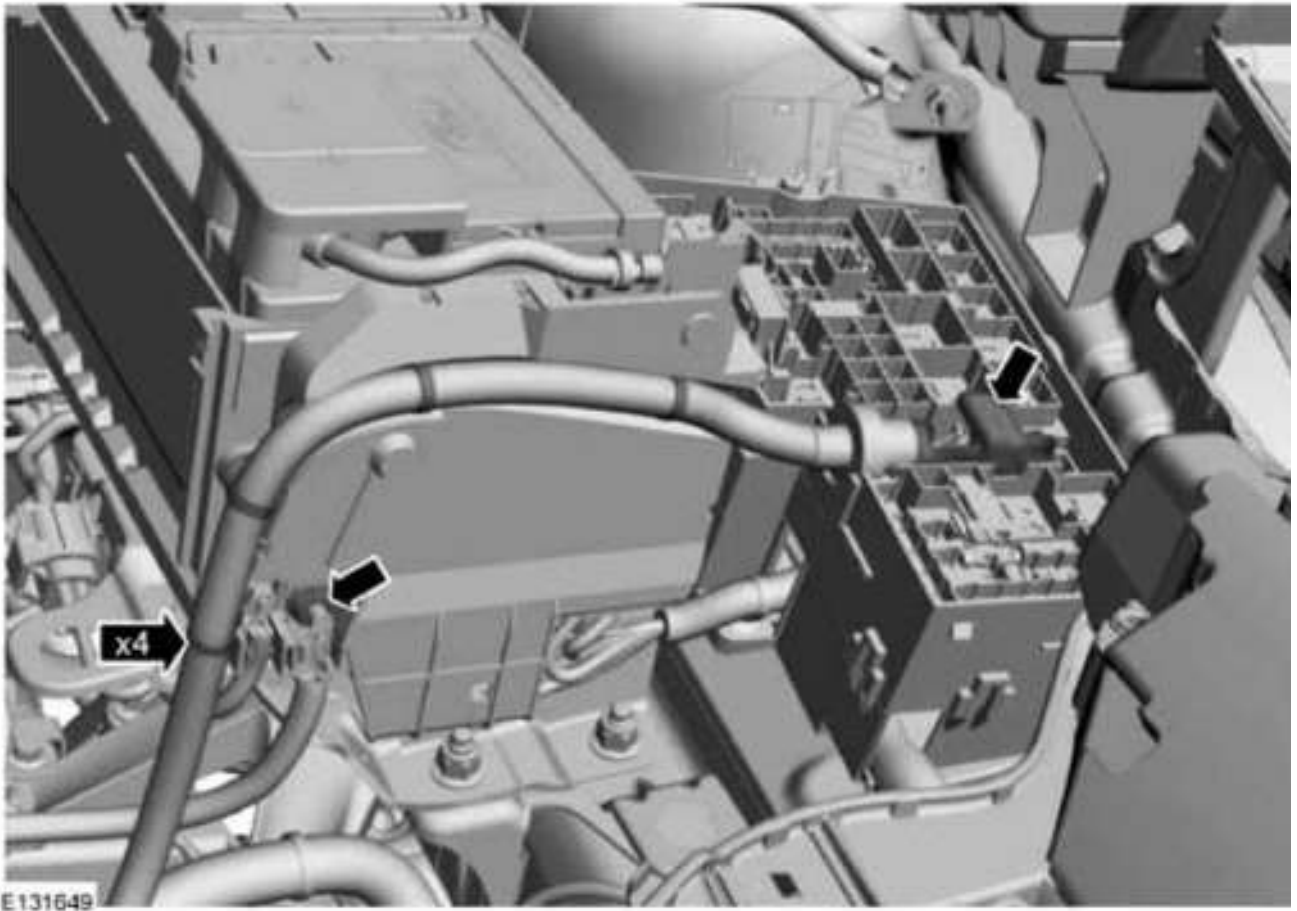
5.

6.



- 6.
7. Remove the ACL. Refer to **INTAKE AIR DISTRIBUTION & FILTERING** .
8. If equipped with block heater.

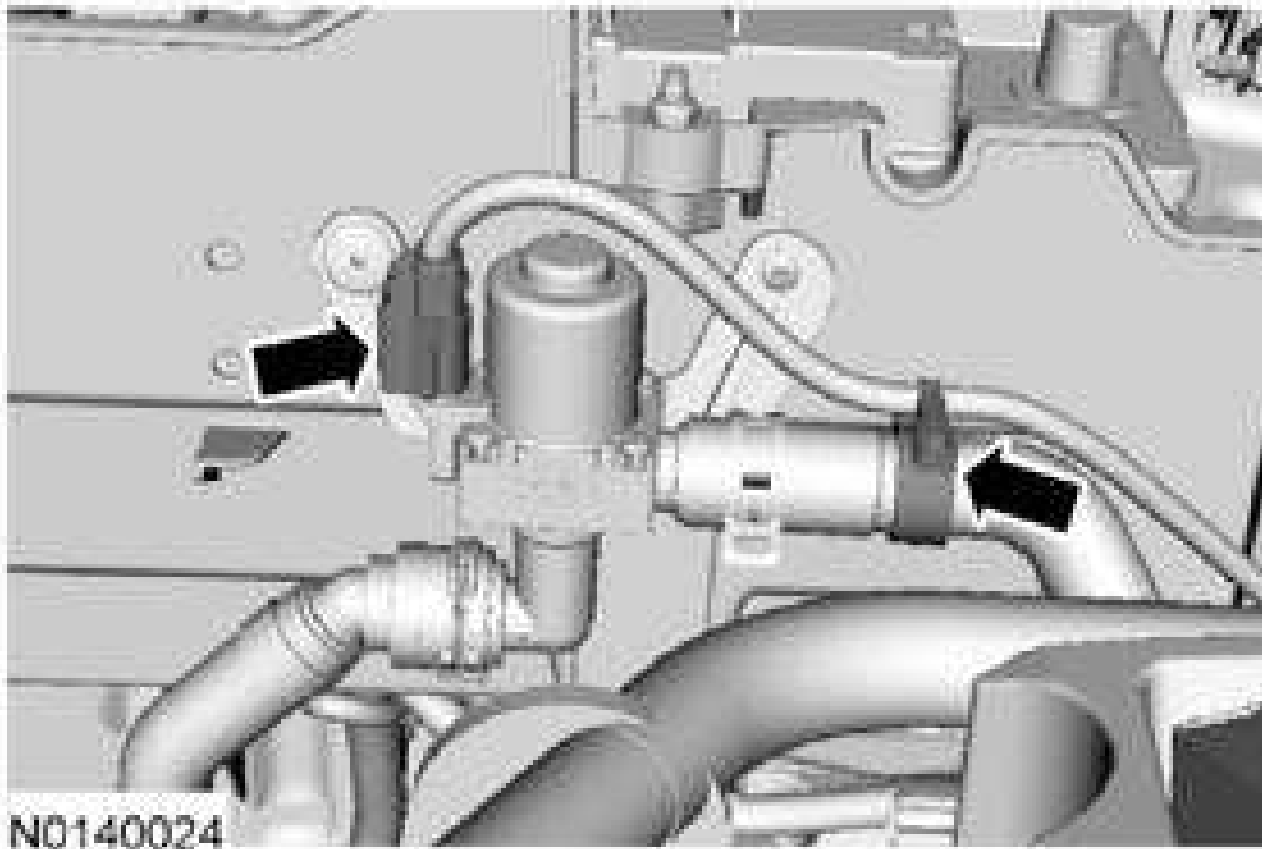




9.

10. Remove the cooling module. Refer to **ENGINE COOLING** .

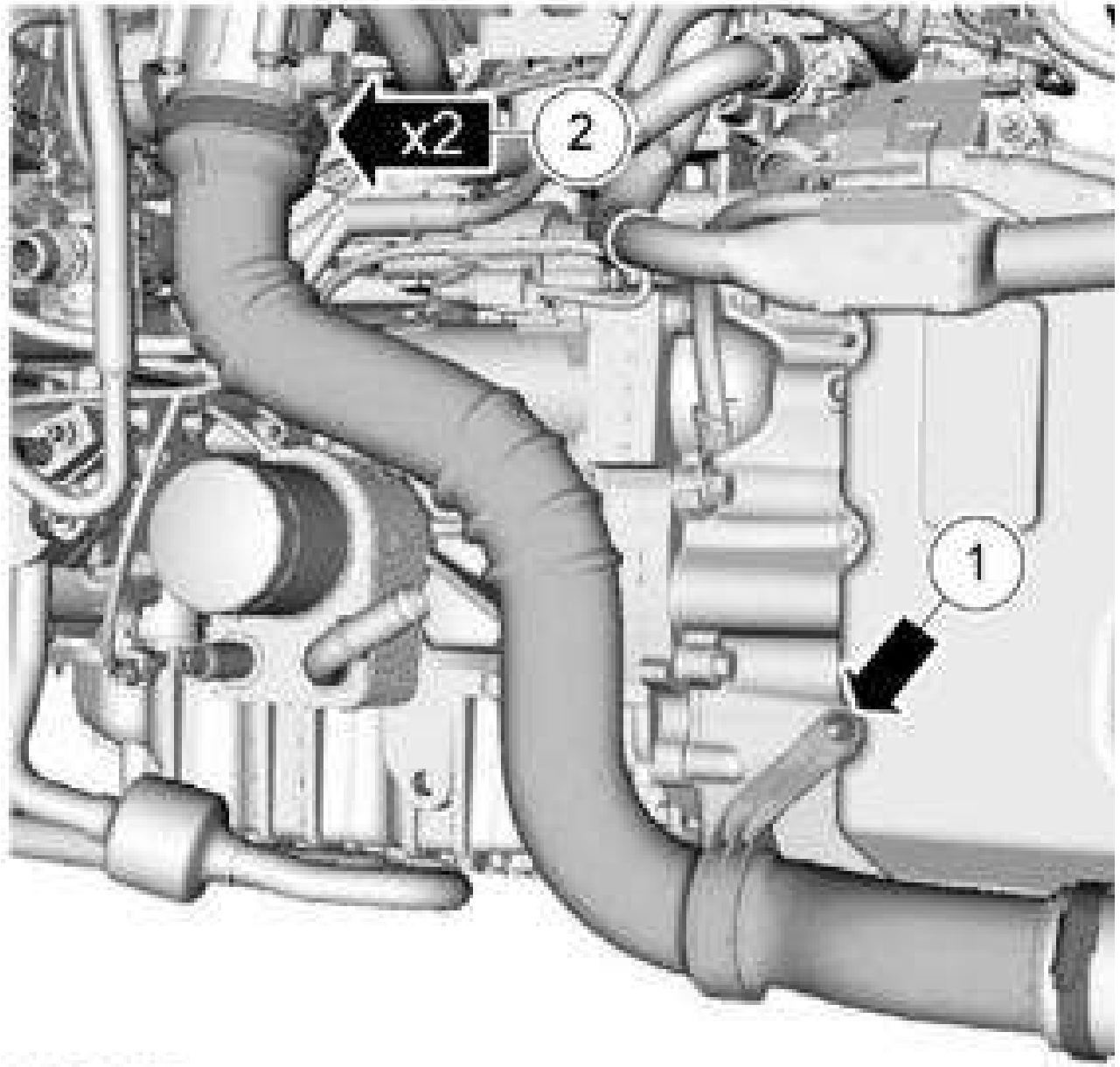
11.



11.

12. Remove the degas bottle. Refer to **ENGINE COOLING** .
13. Remove the battery tray. Refer to **BATTERY, MOUNTING AND CABLES** .
14. Remove the RF and LF wheel and tire. Refer to **WHEELS AND TIRES** .
15. Remove the RH fender splash shield. Refer to **FRONT END BODY PANELS** .

16.

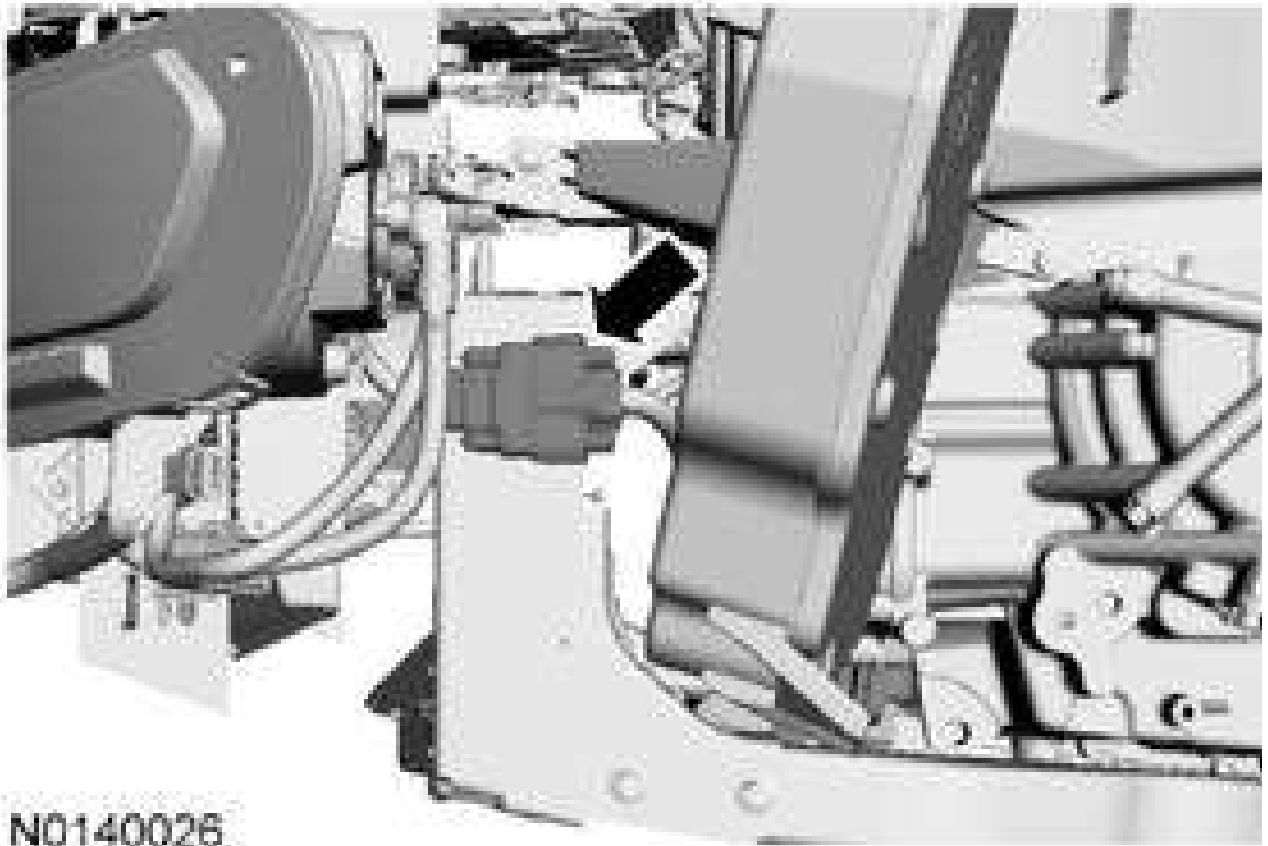


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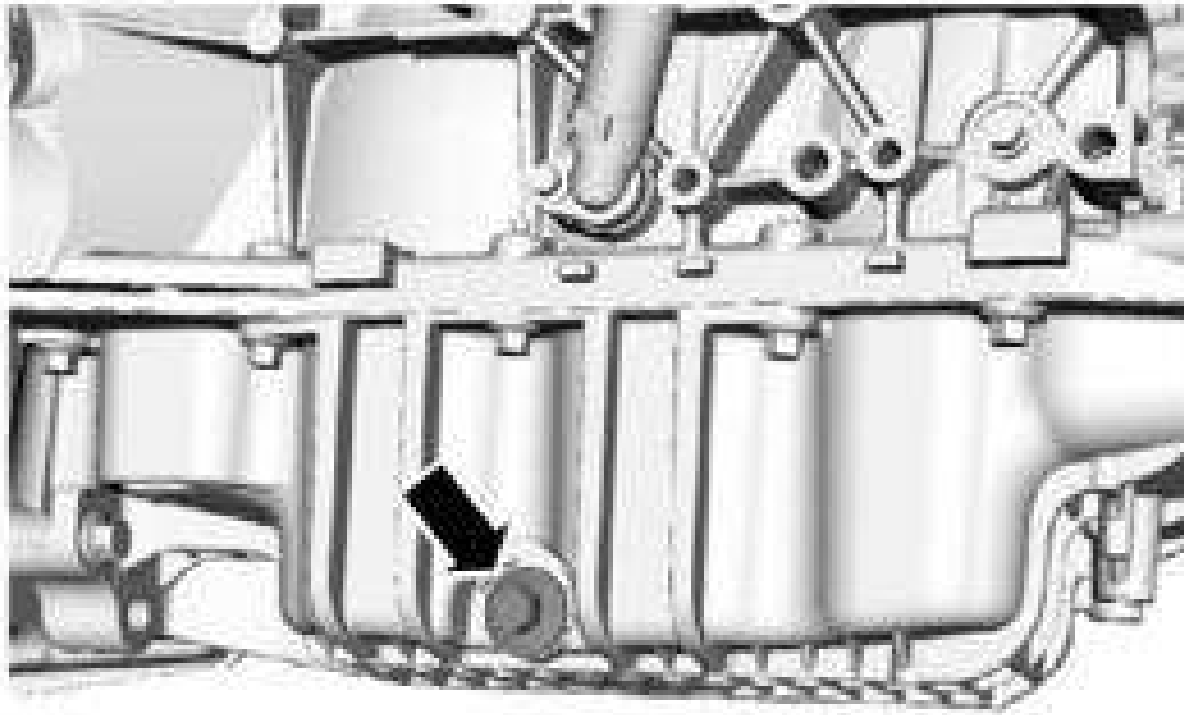
16.

17. **NOTE:** Front bumper cover removed for clarity.





18. Remove the PCM. Refer to **ELECTRONIC ENGINE CONTROLS** .
19. Drain the transmission fluid. Refer to **AUTOMATIC TRANSAXLE/TRANSMISSION - 6F35** .
20.
 - Install the drain plug.
 - To install, tighten to 28 Nm (21 lb-ft).

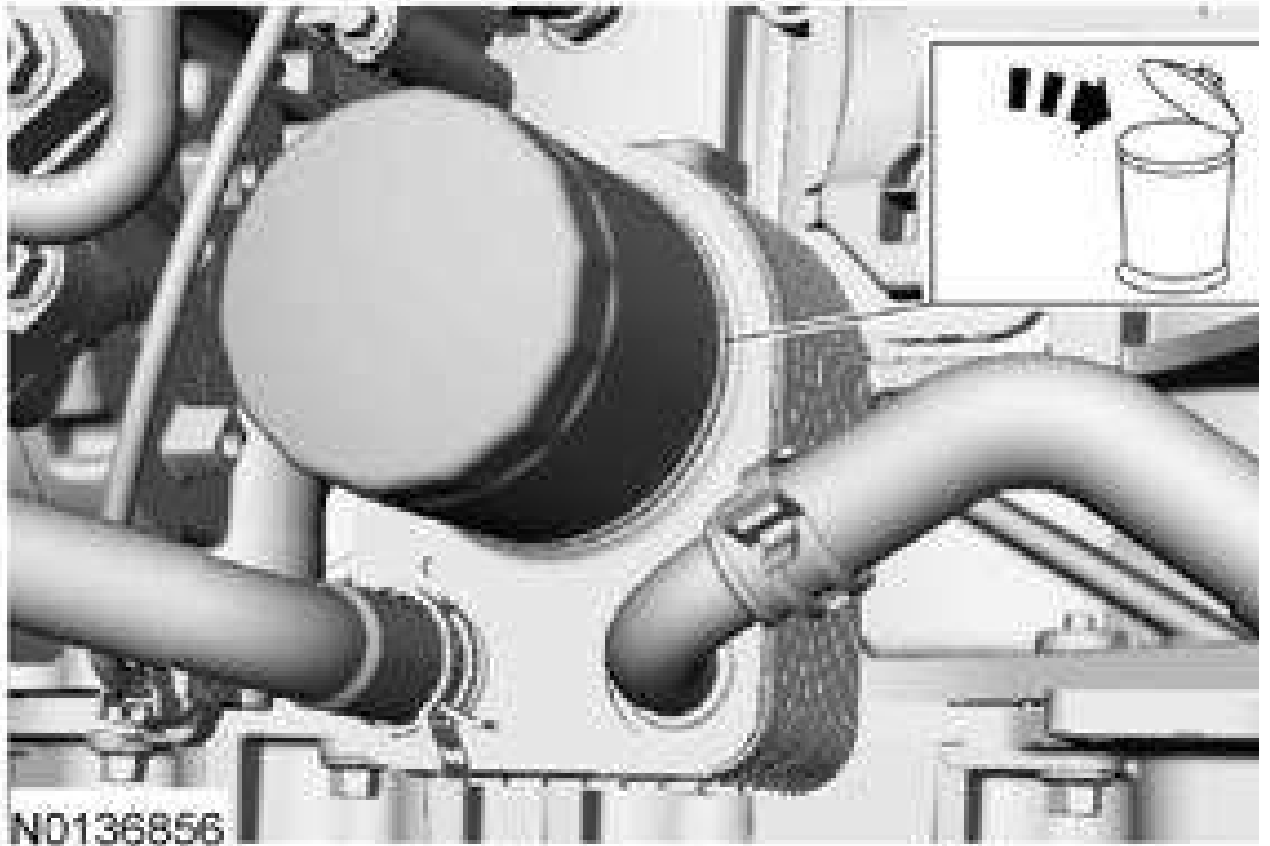


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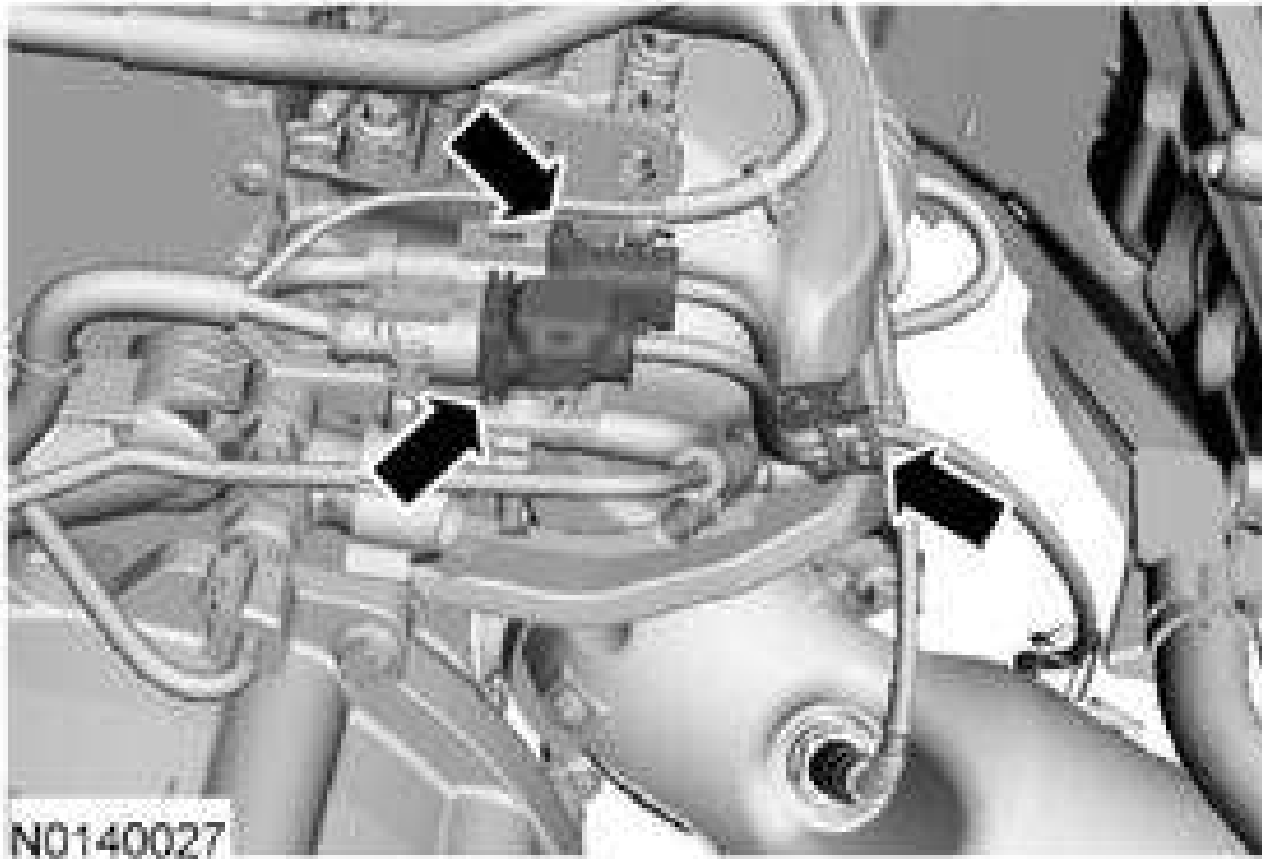
21. Discard the specified component. Following local disposal regulations.

General Equipment: Strap Wrench.





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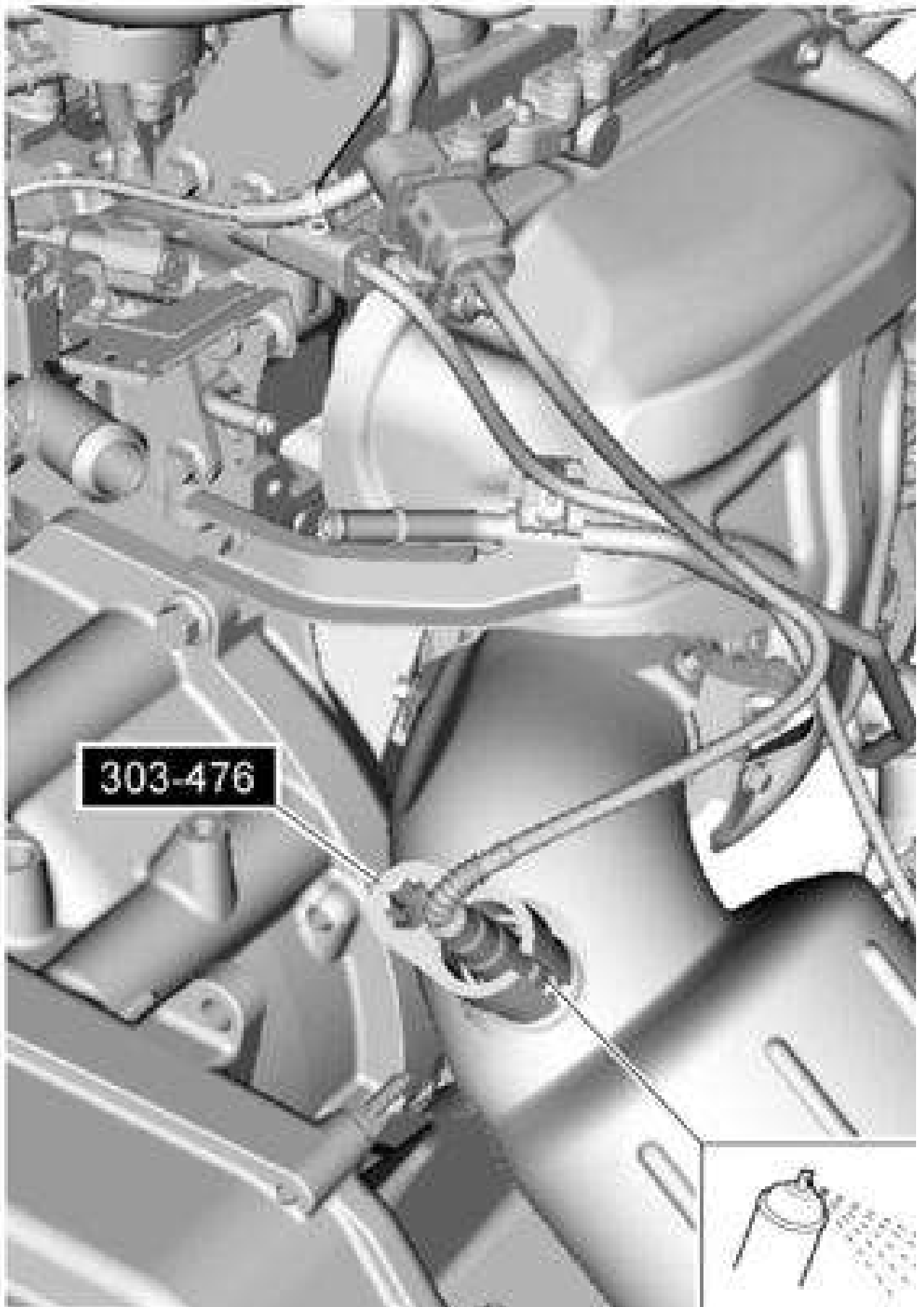
22.

23. **NOTE: If necessary, lubricate the sensor threads with penetrating and lock lubricant to assist in removal.**

Special Tool(s): Socket, Exhaust Gas Oxygen Sensor 303-476 (T94P-9472-A).

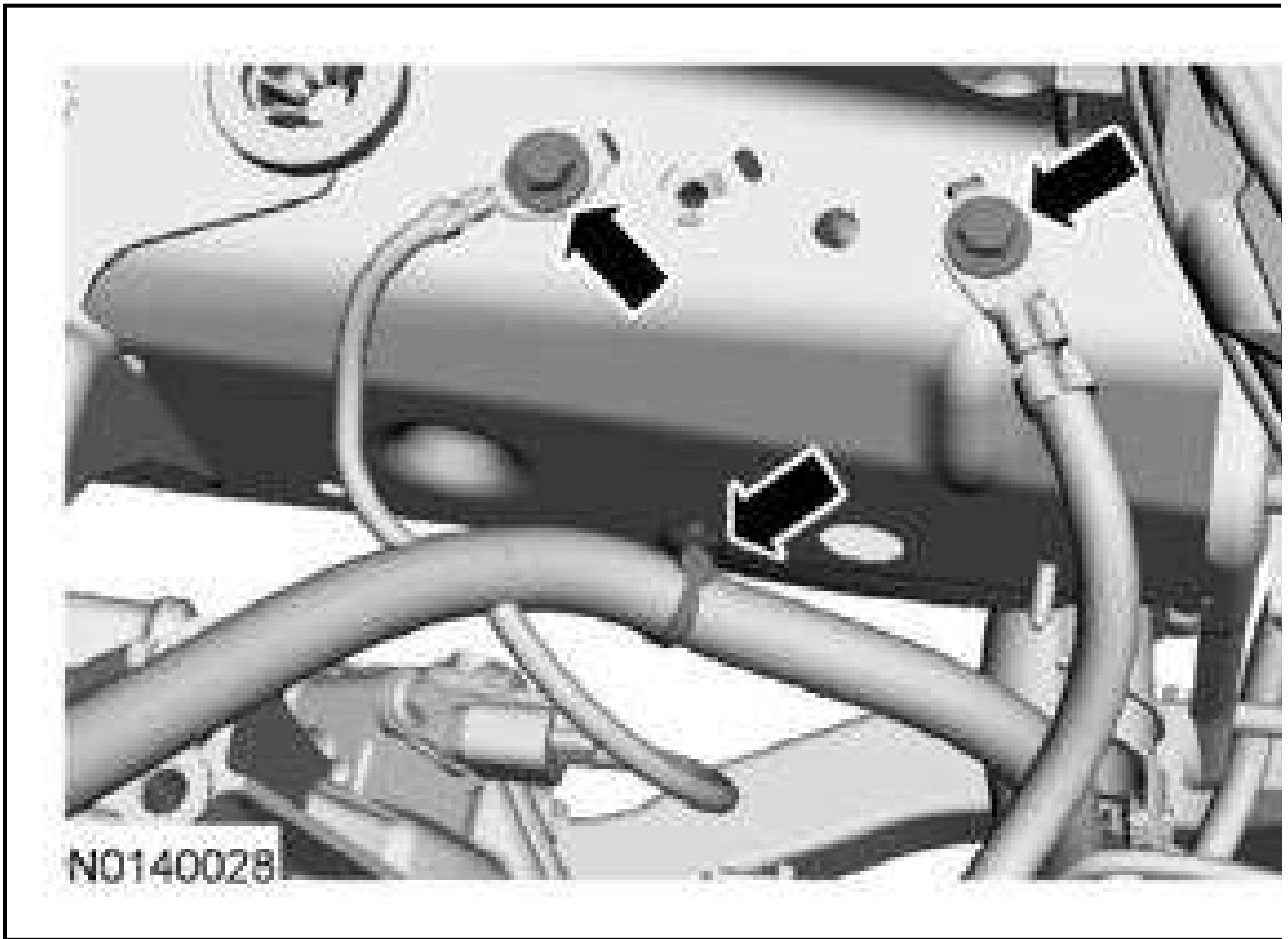
Apply the specified lubricant to the specified component.

Material: Penetrating and Lock Lubricant.



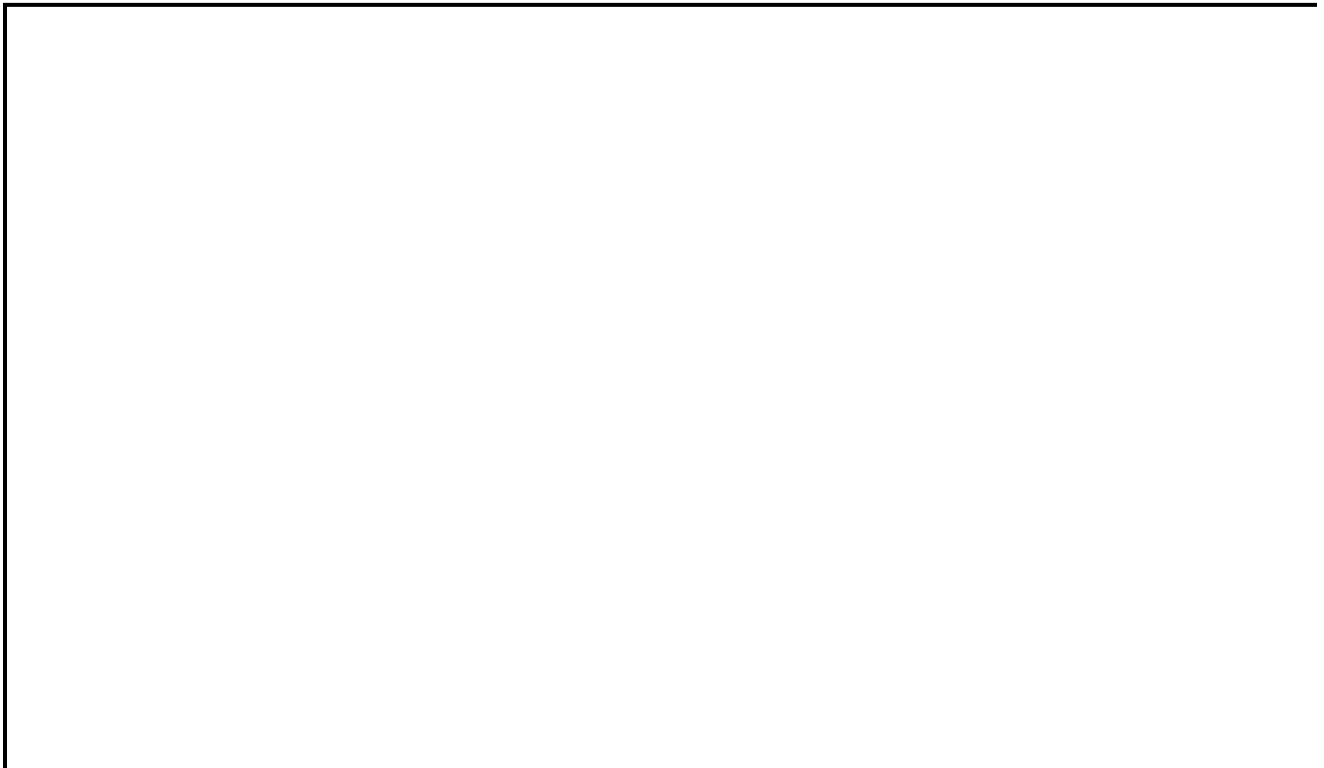
303-476

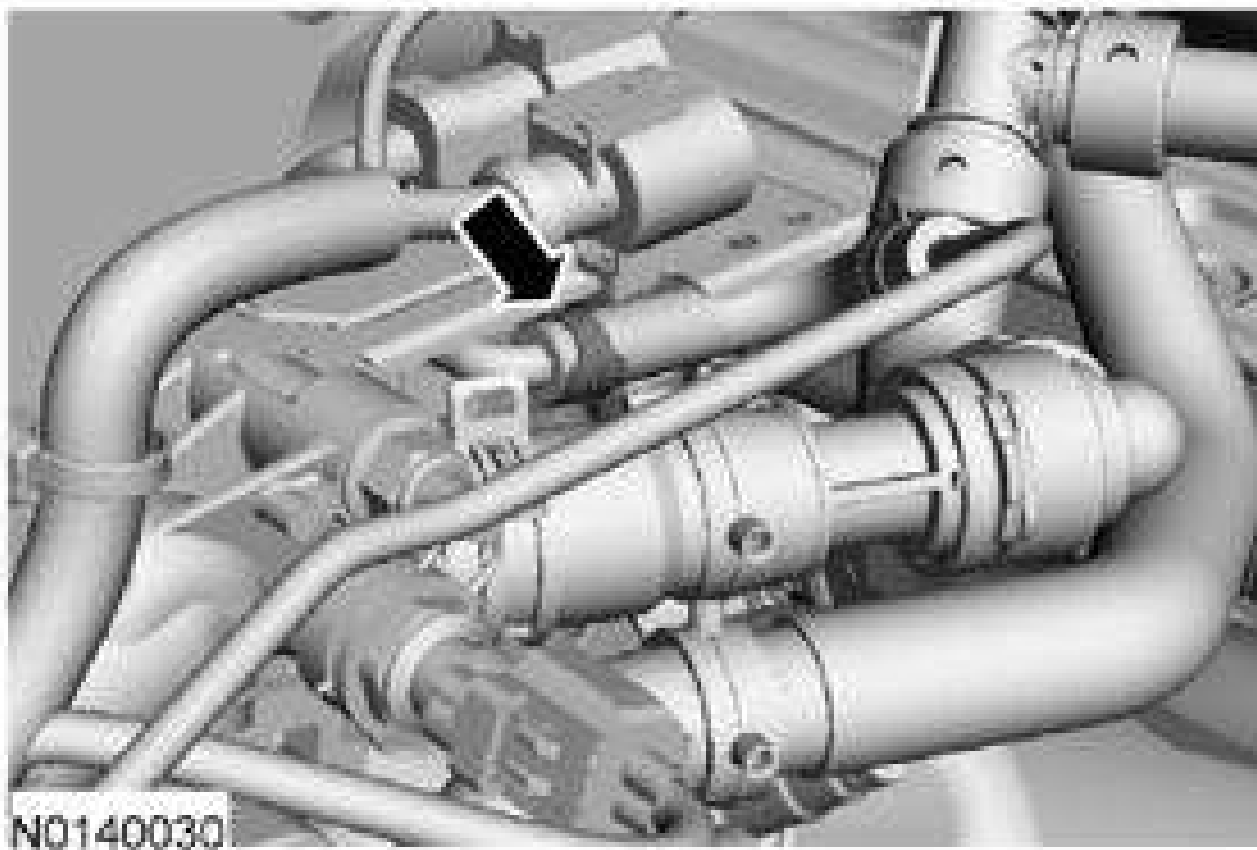


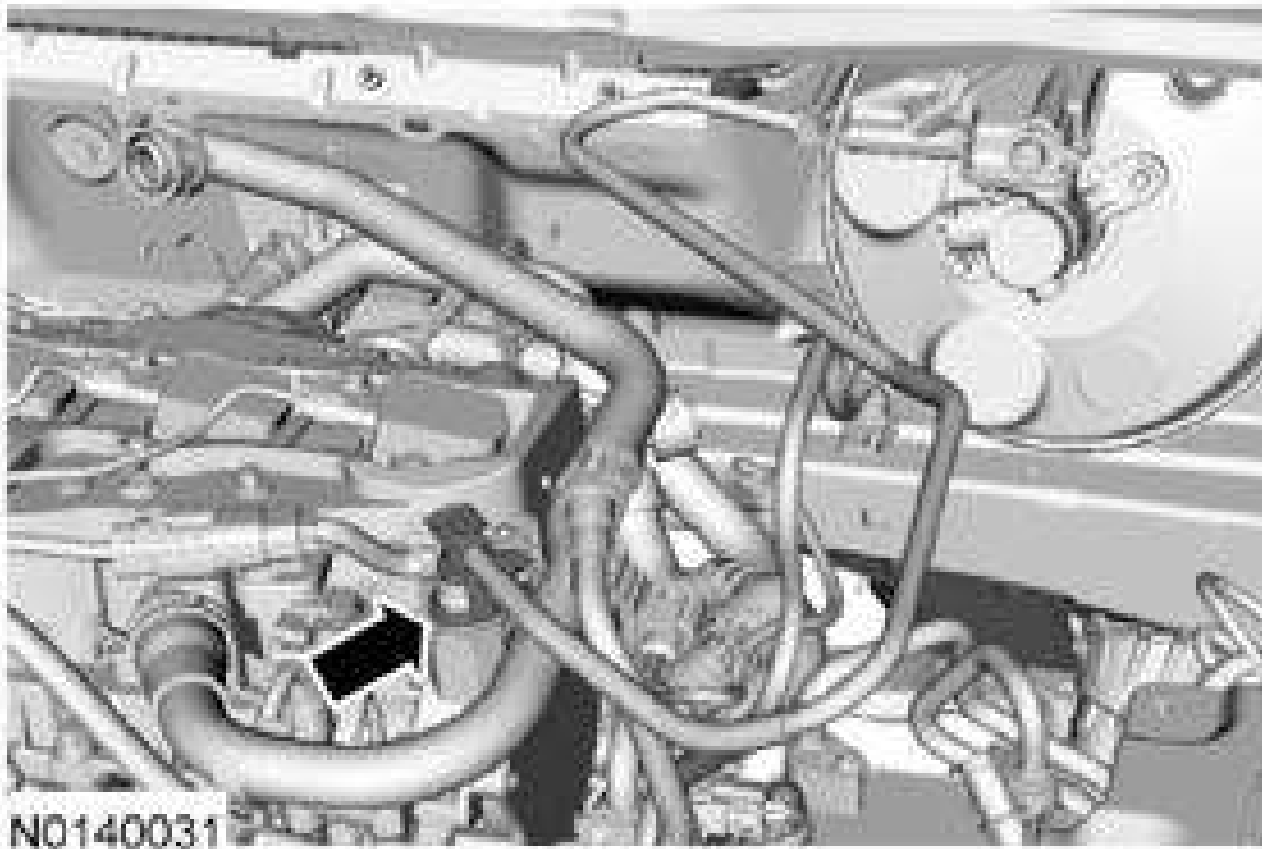


24.

25. General Equipment: Hose Clamp Remover/Installer.

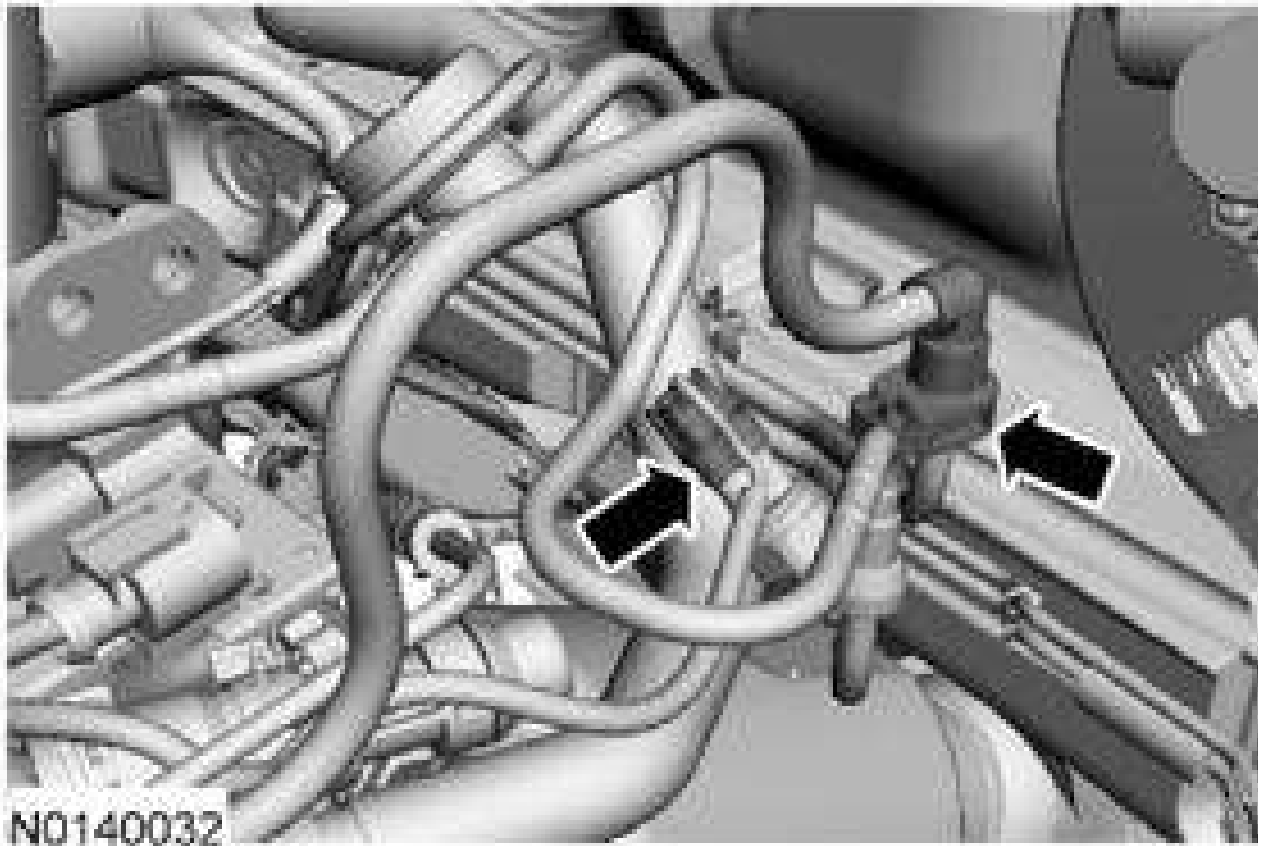






26.

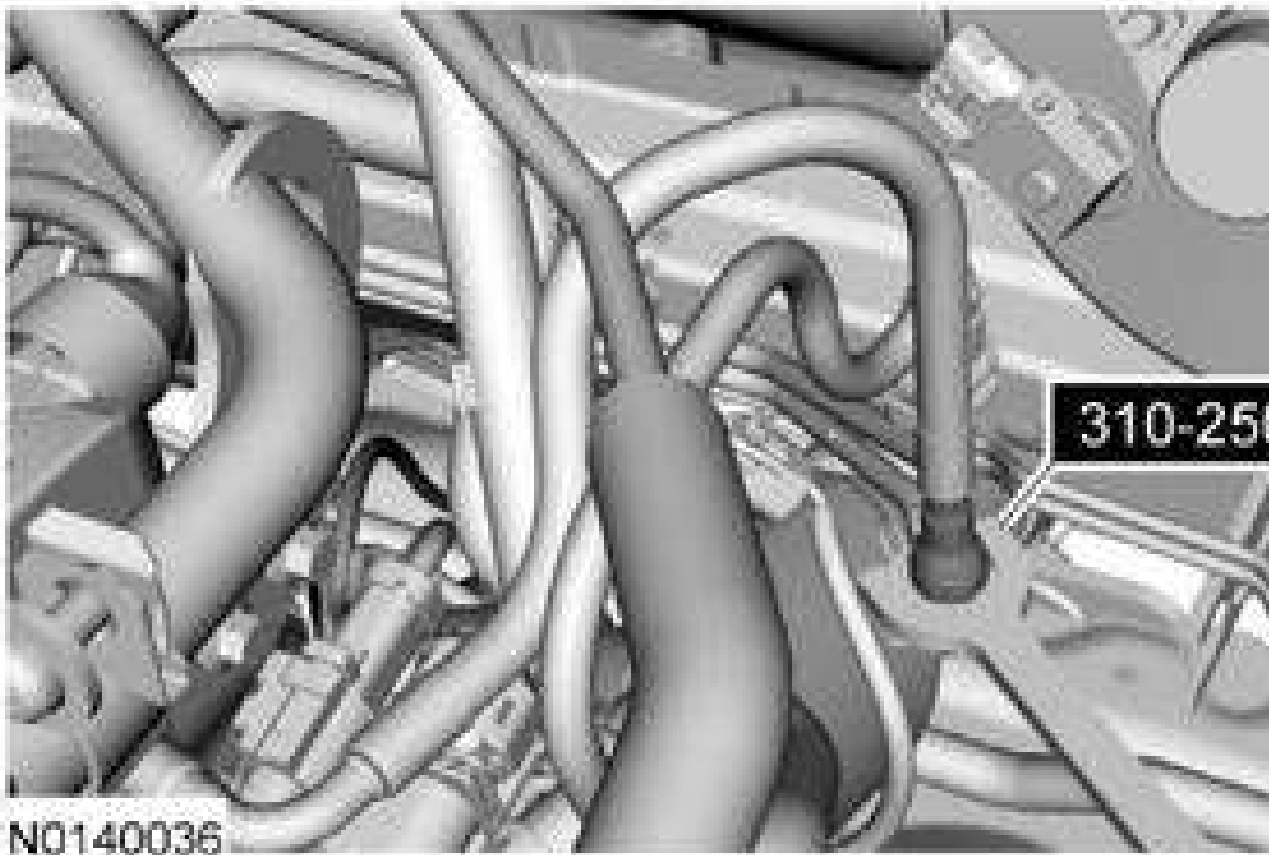
27. Refer to **FUEL SYSTEM - GENERAL INFORMATION** .



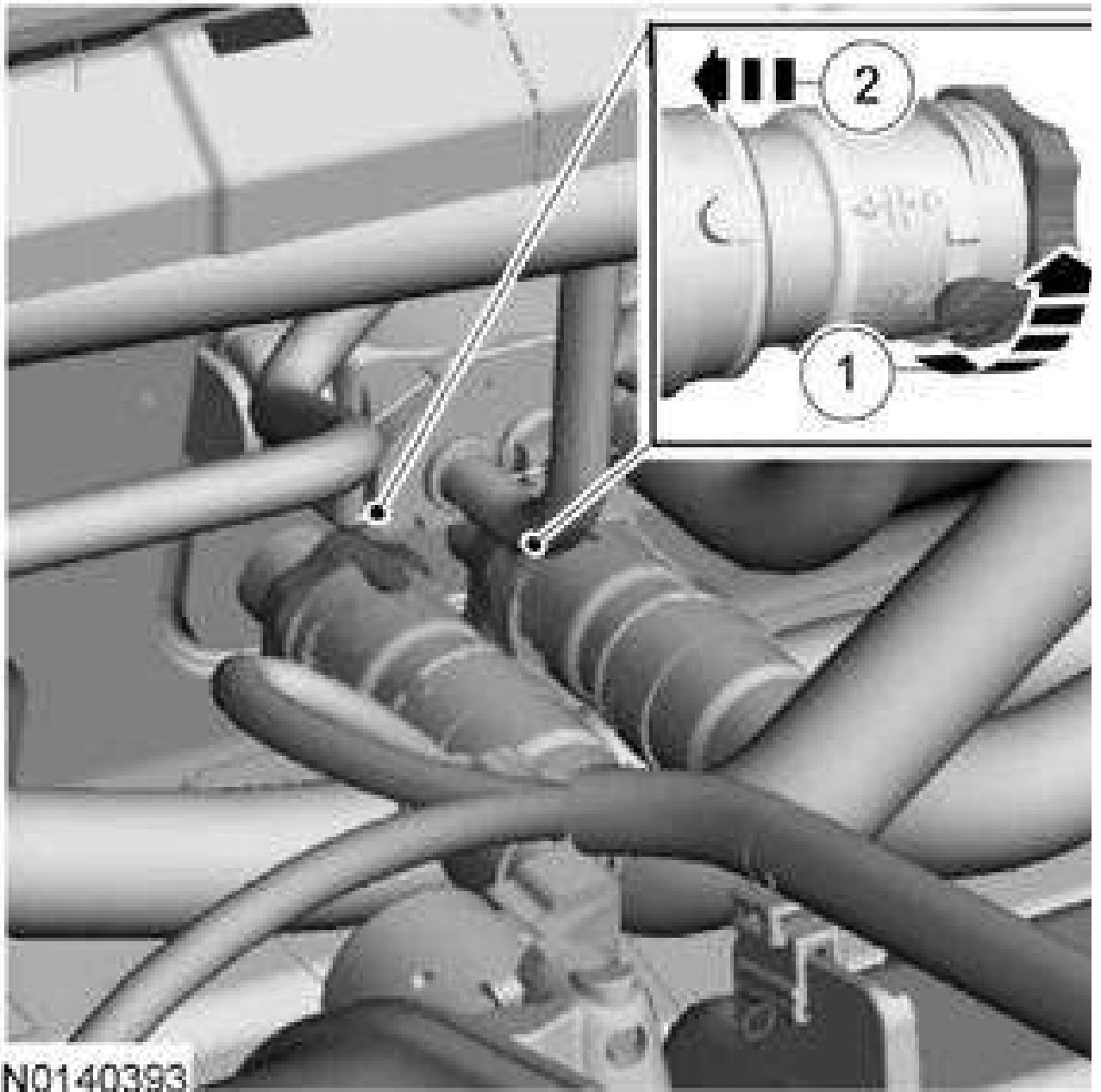
28. **NOTE:** Always wrap the fuel line connection with a towel before disconnecting it.

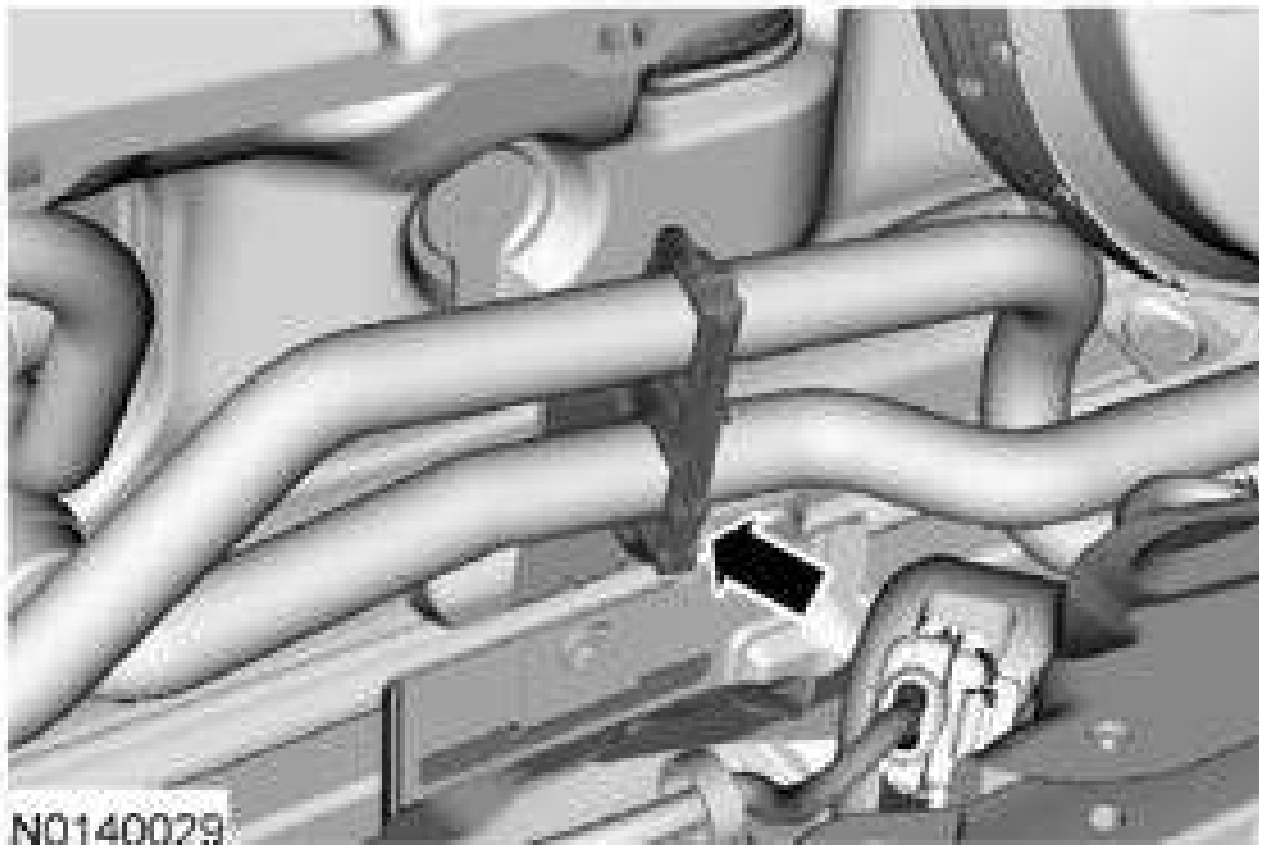
Special Tool(s): Disconnect Tool, Fuel Line 310-250.

Refer to **FUEL SYSTEM - GENERAL INFORMATION** .



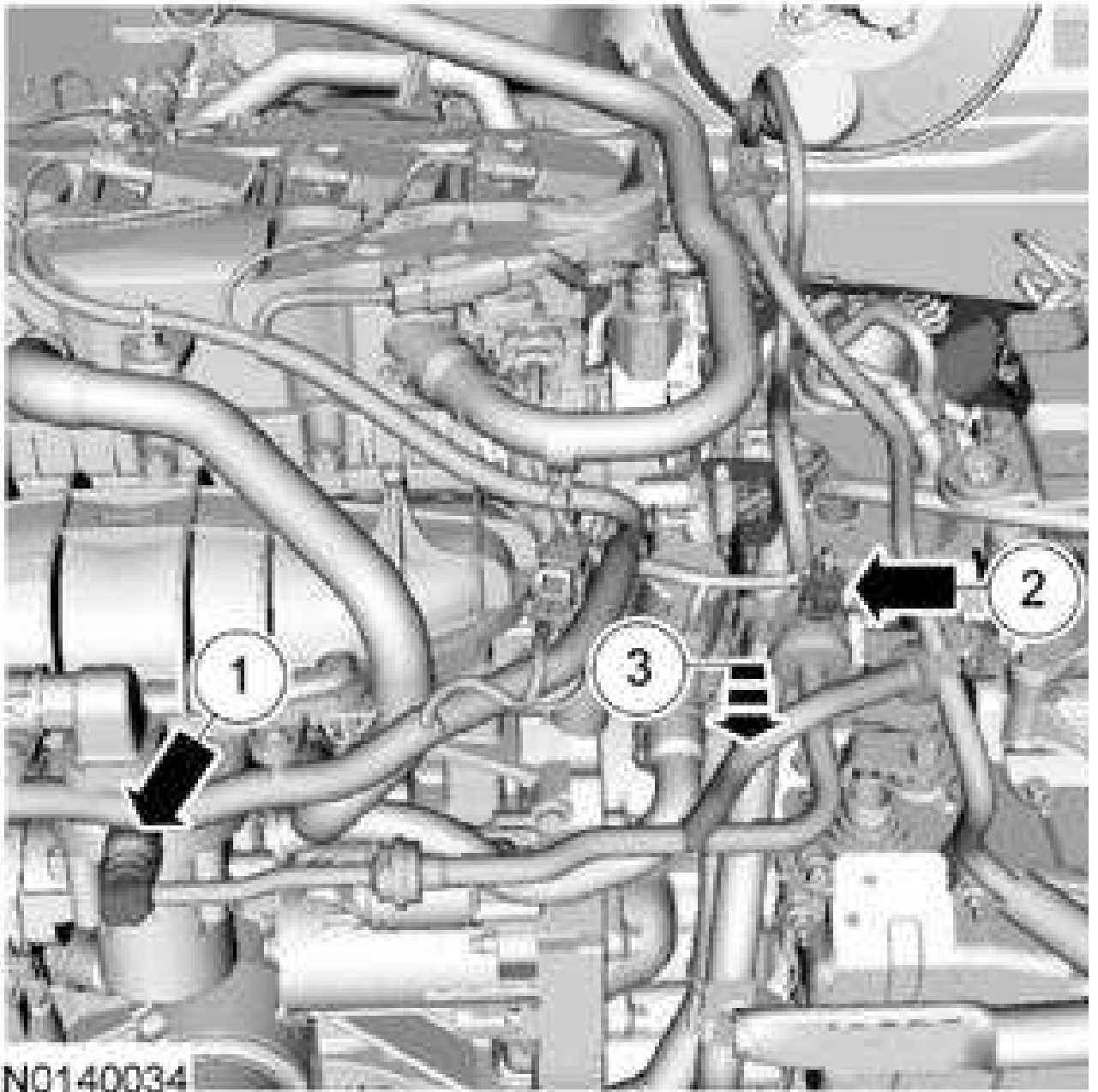
29. **NOTE:** Note the position of the coolant hoses for installation.





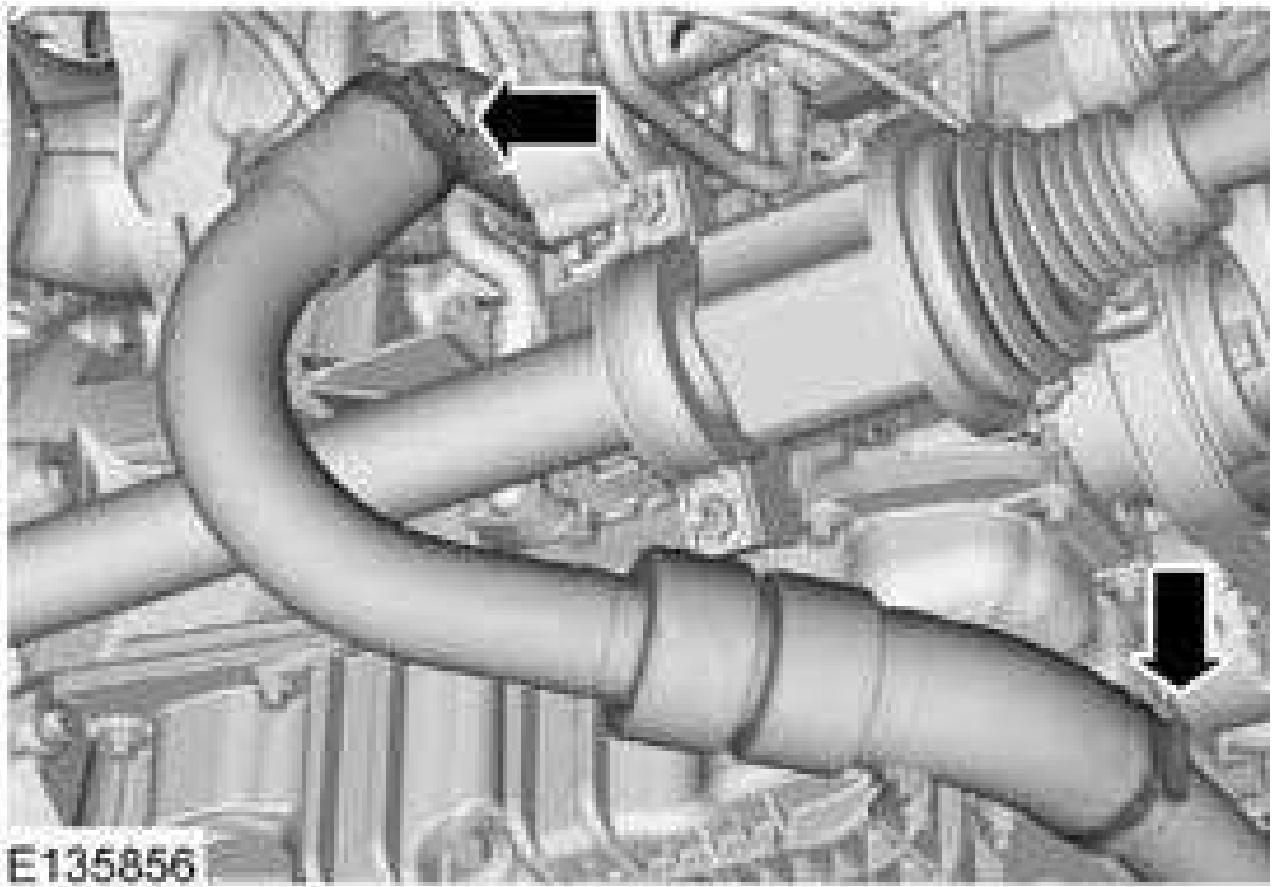
30.

31.



31.

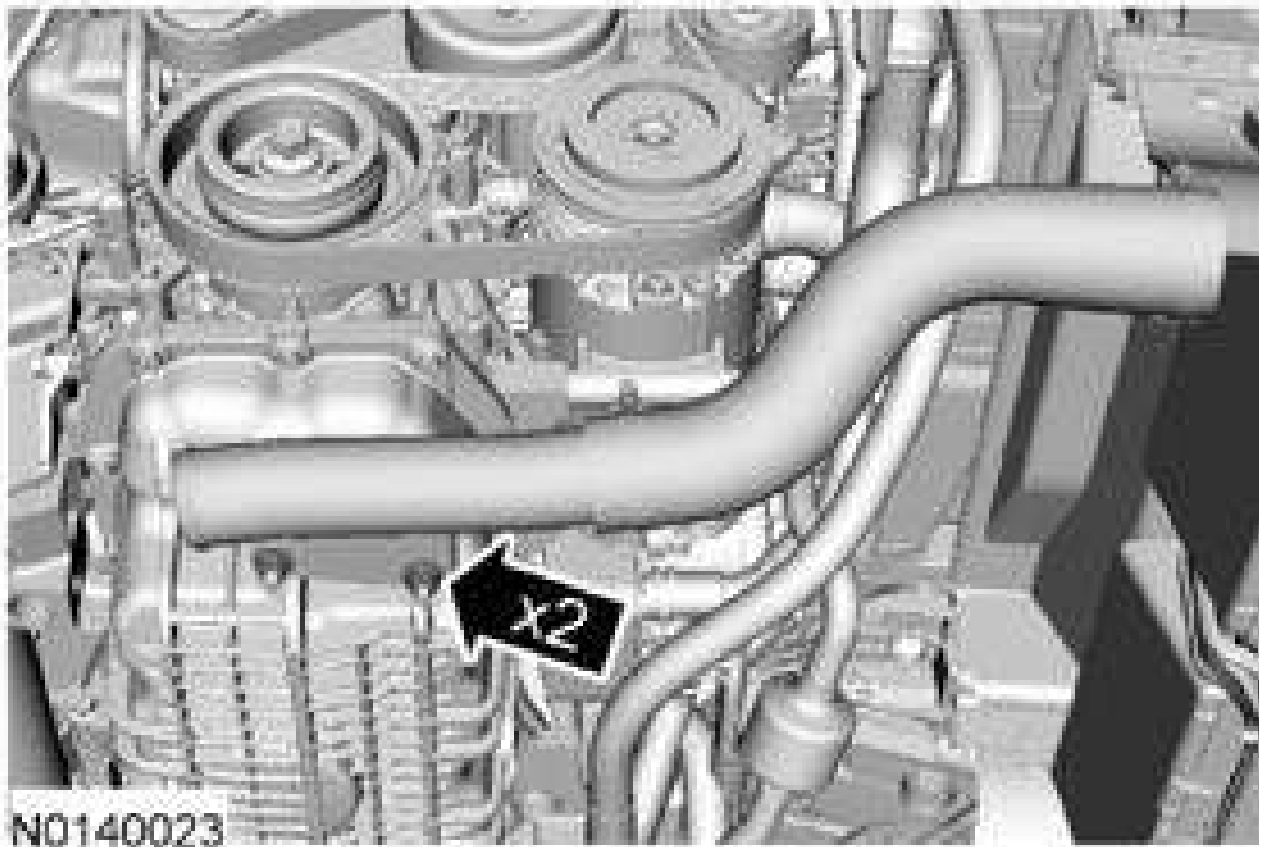
32.



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32.

33.



33.

Vehicles with AWD

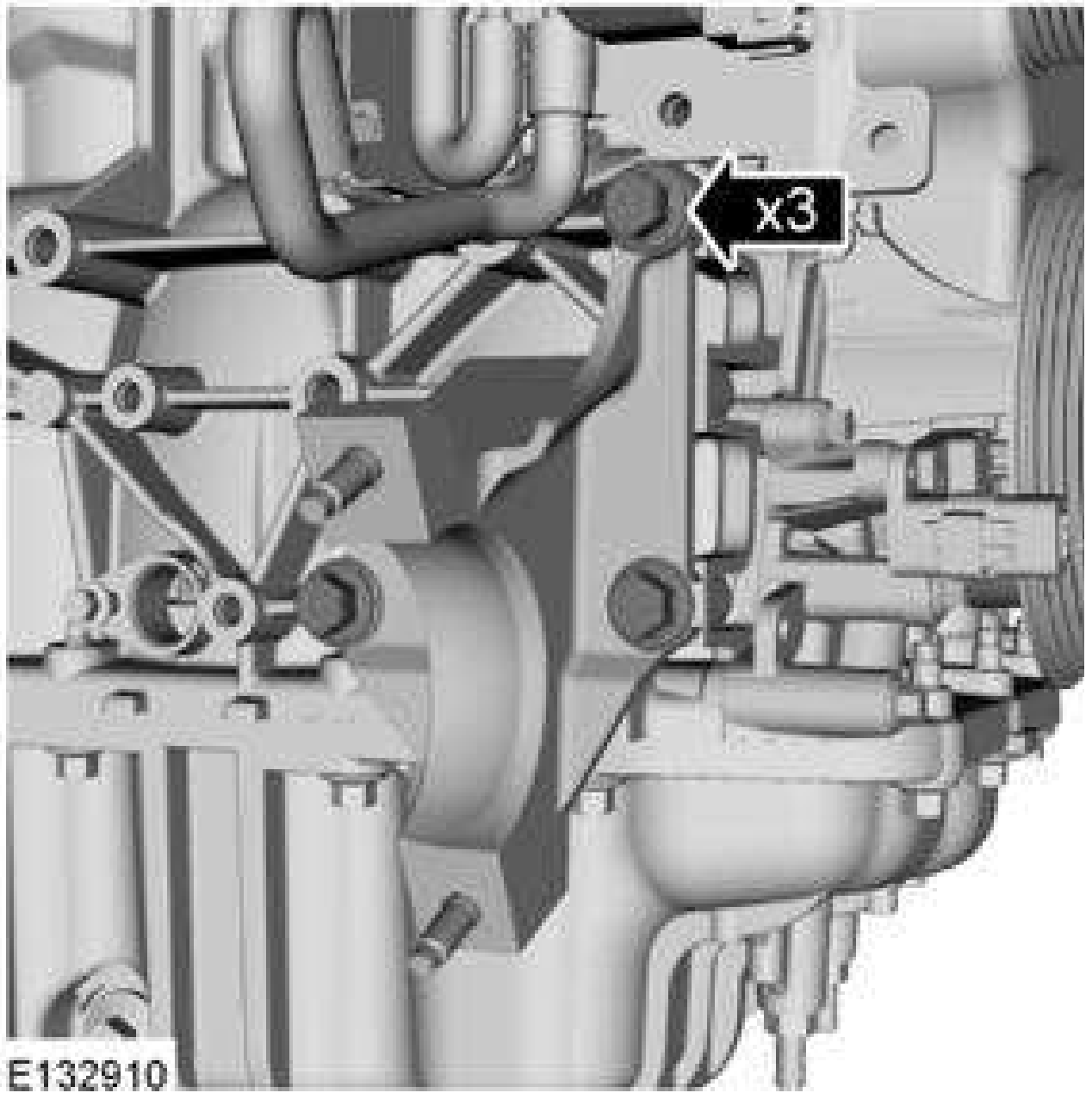
34. Remove the PTU. Refer to **TRANSFER CASE - POWER TRANSFER UNIT (PTU)** .
35. Remove the LH halfshafts. Refer to **FRONT DRIVE HALFSHAFTS** .

Vehicles with FWD

36. Remove the LH and RH halfshafts. Refer to **FRONT DRIVE HALFSHAFTS** .

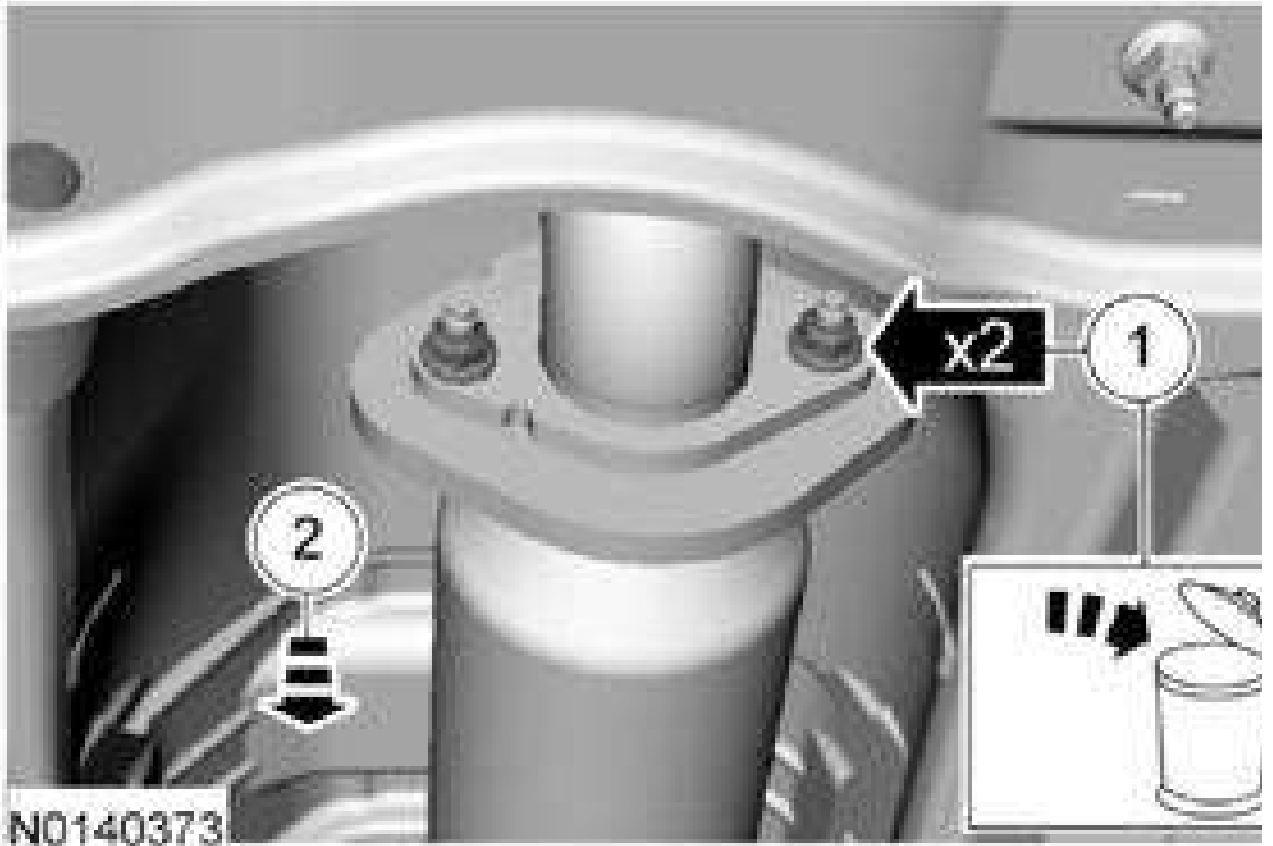
All vehicles

37.

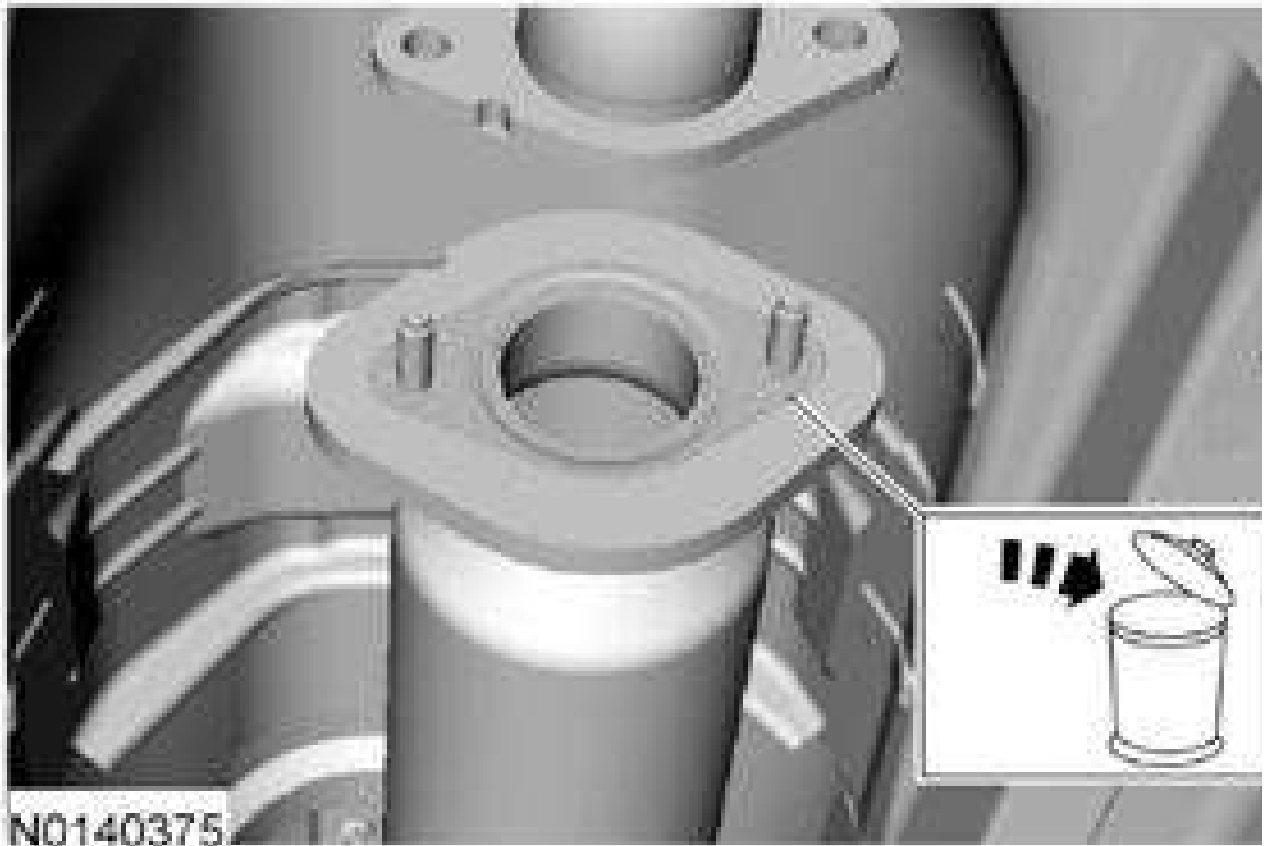


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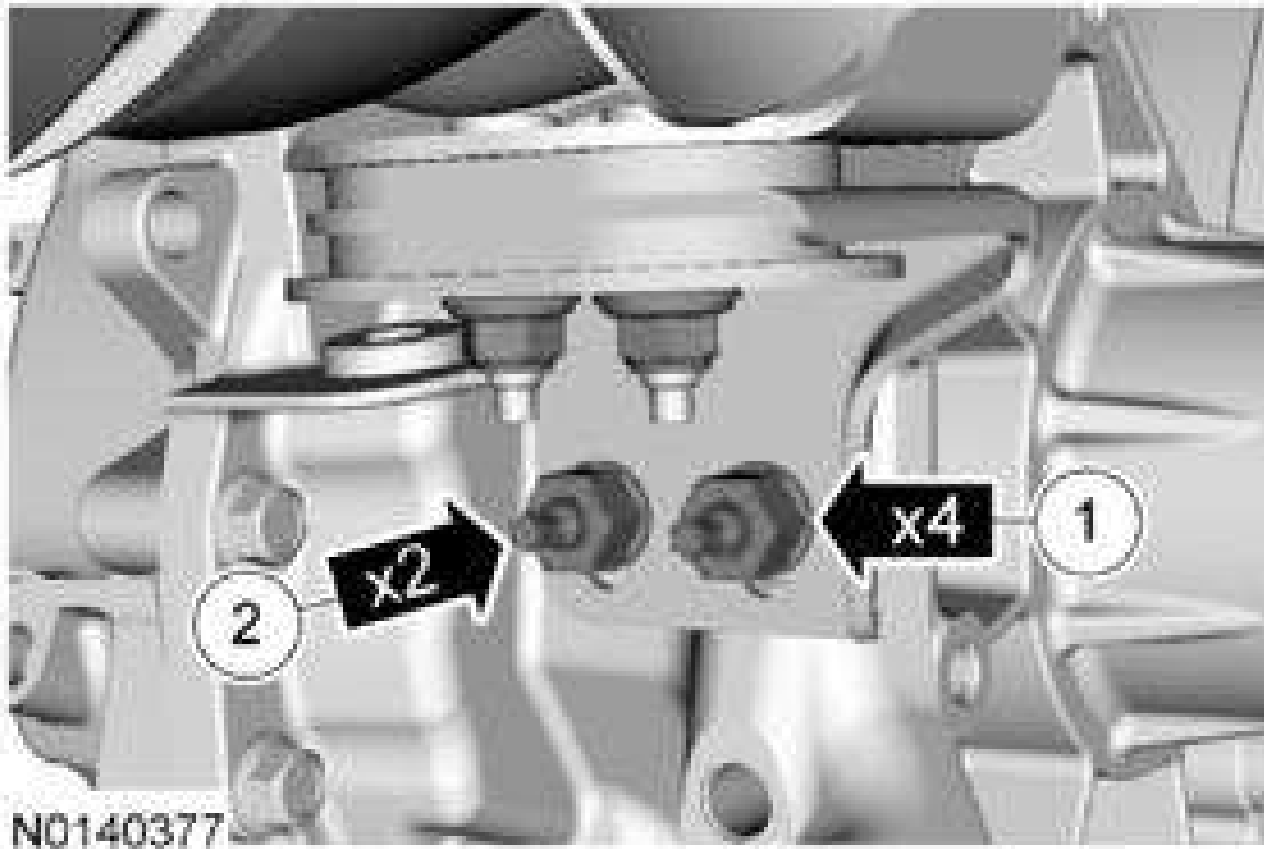
38. Discard the specified component. Follow local disposal regulations.



39. Discard the specified component. Follow local disposal regulations.

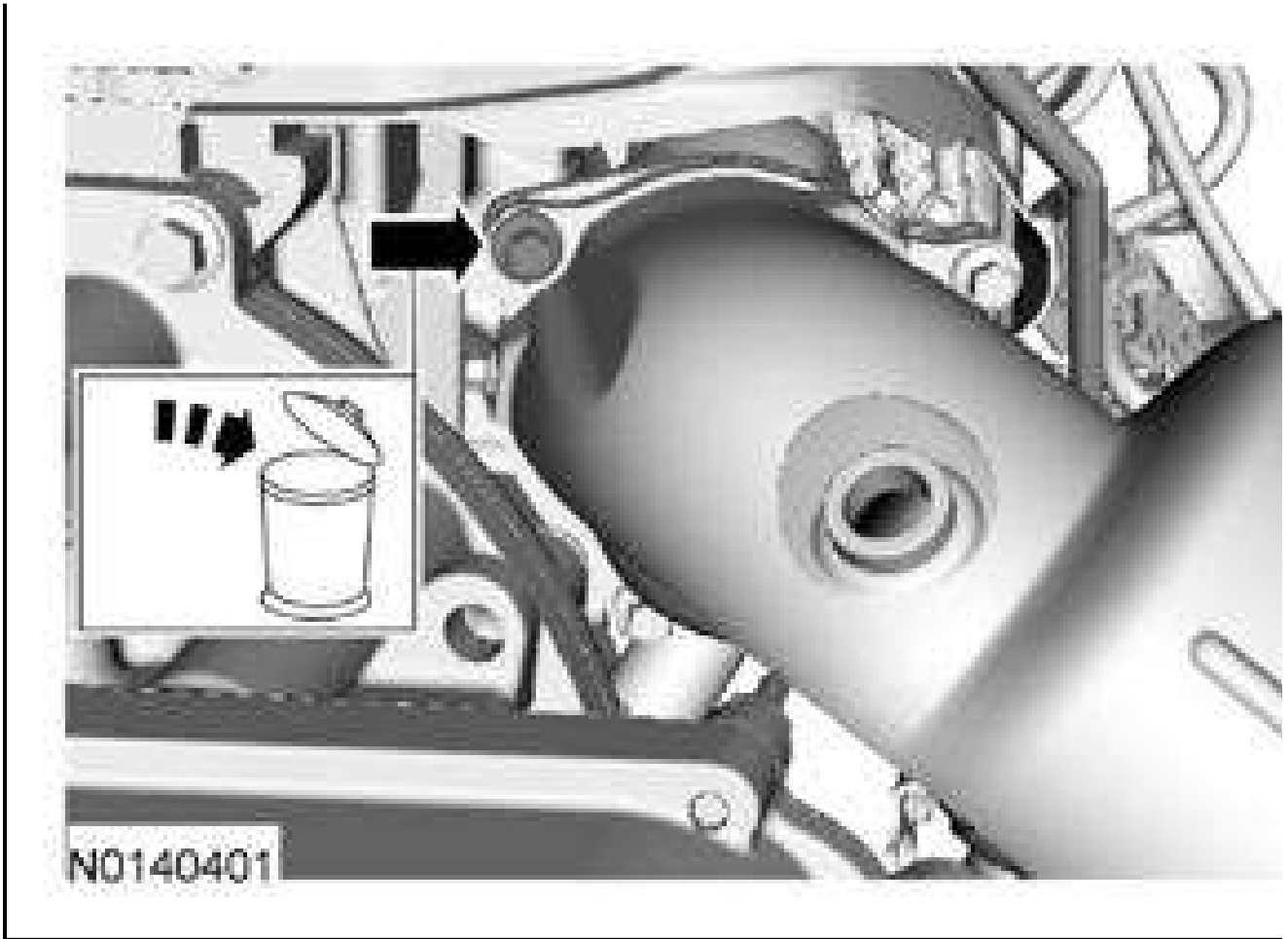


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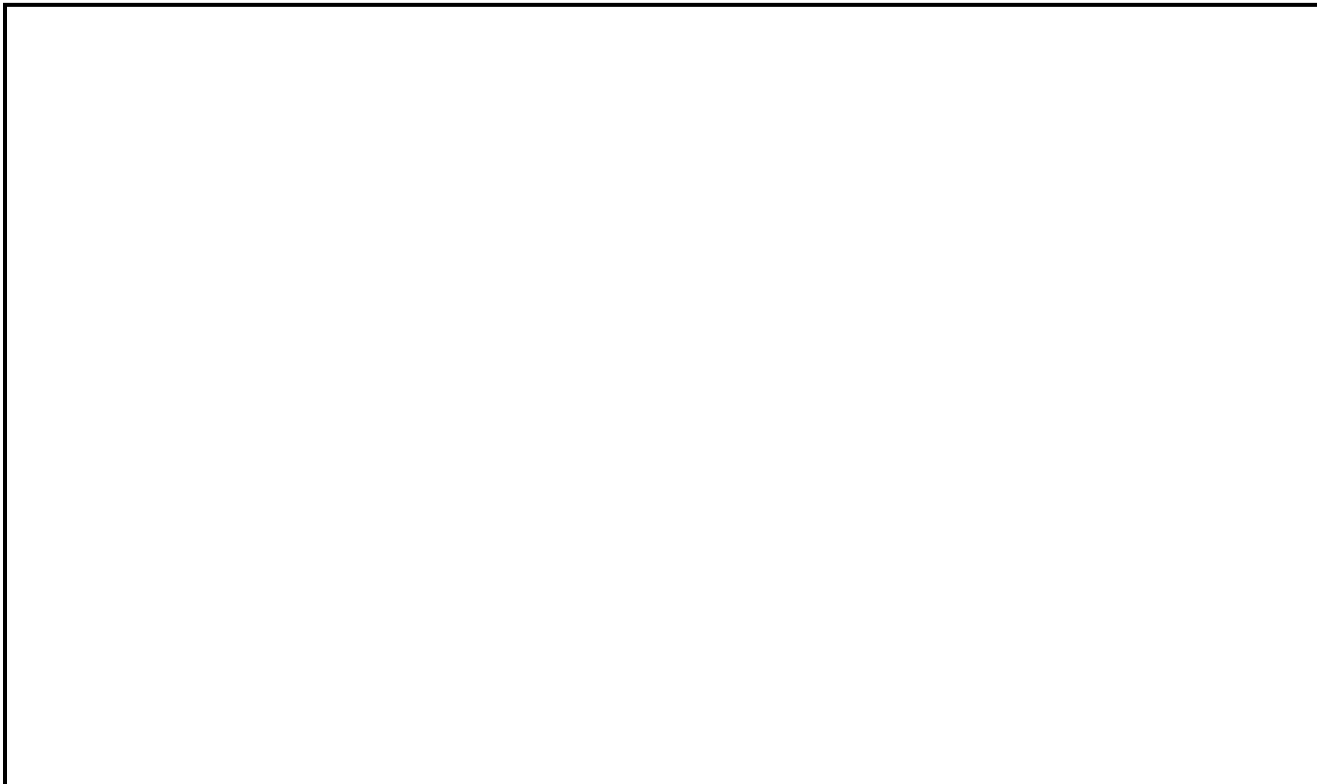


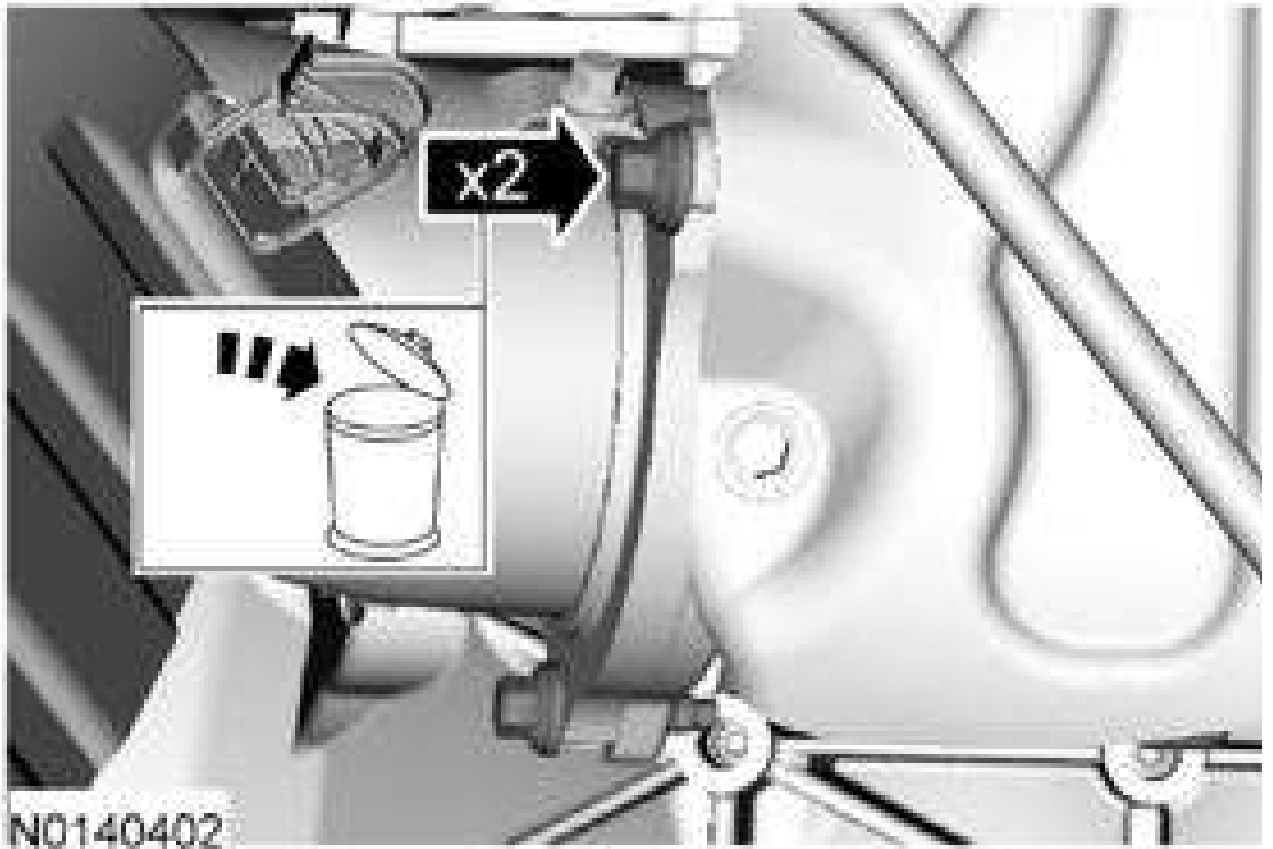
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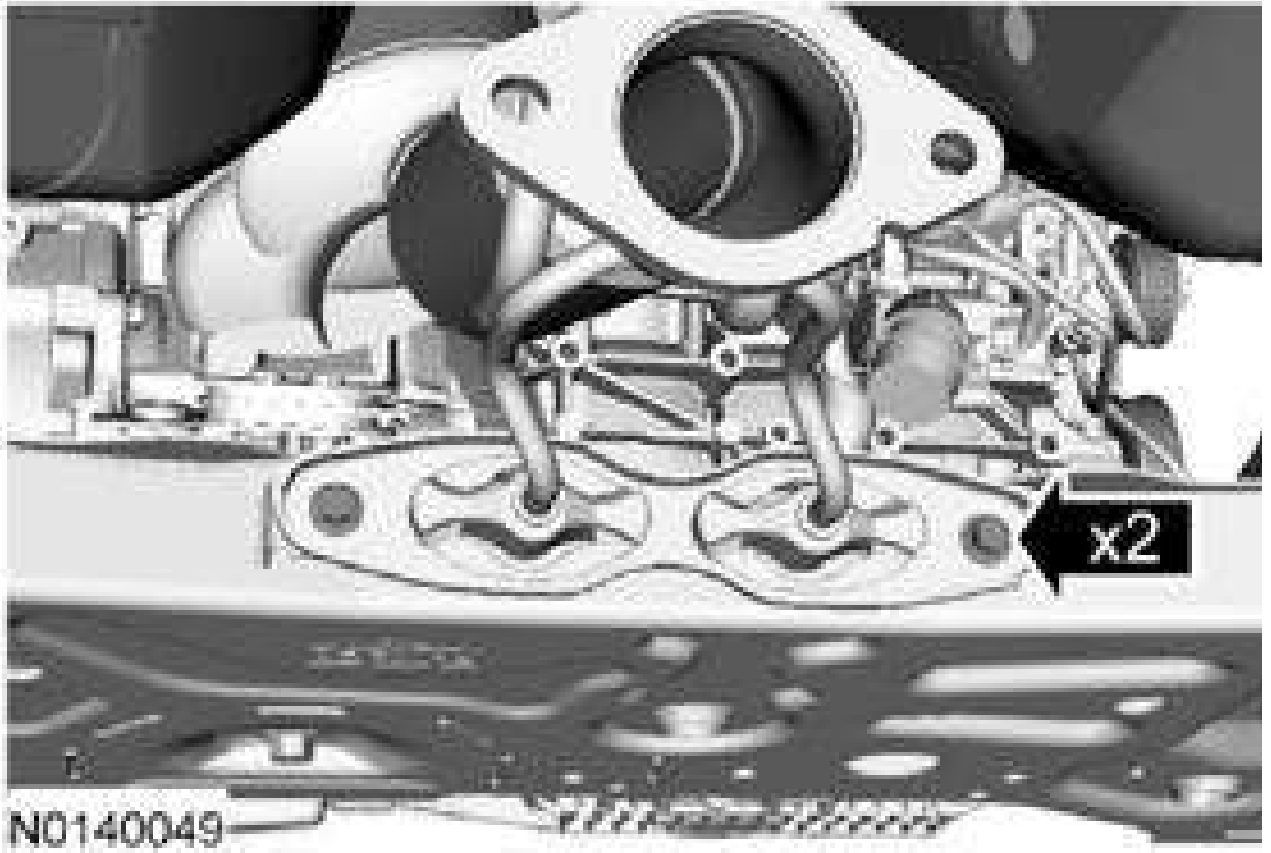
41. Discard the specified component. Follow local disposal regulations.



42. Discard the specified component. Follow local disposal regulations.

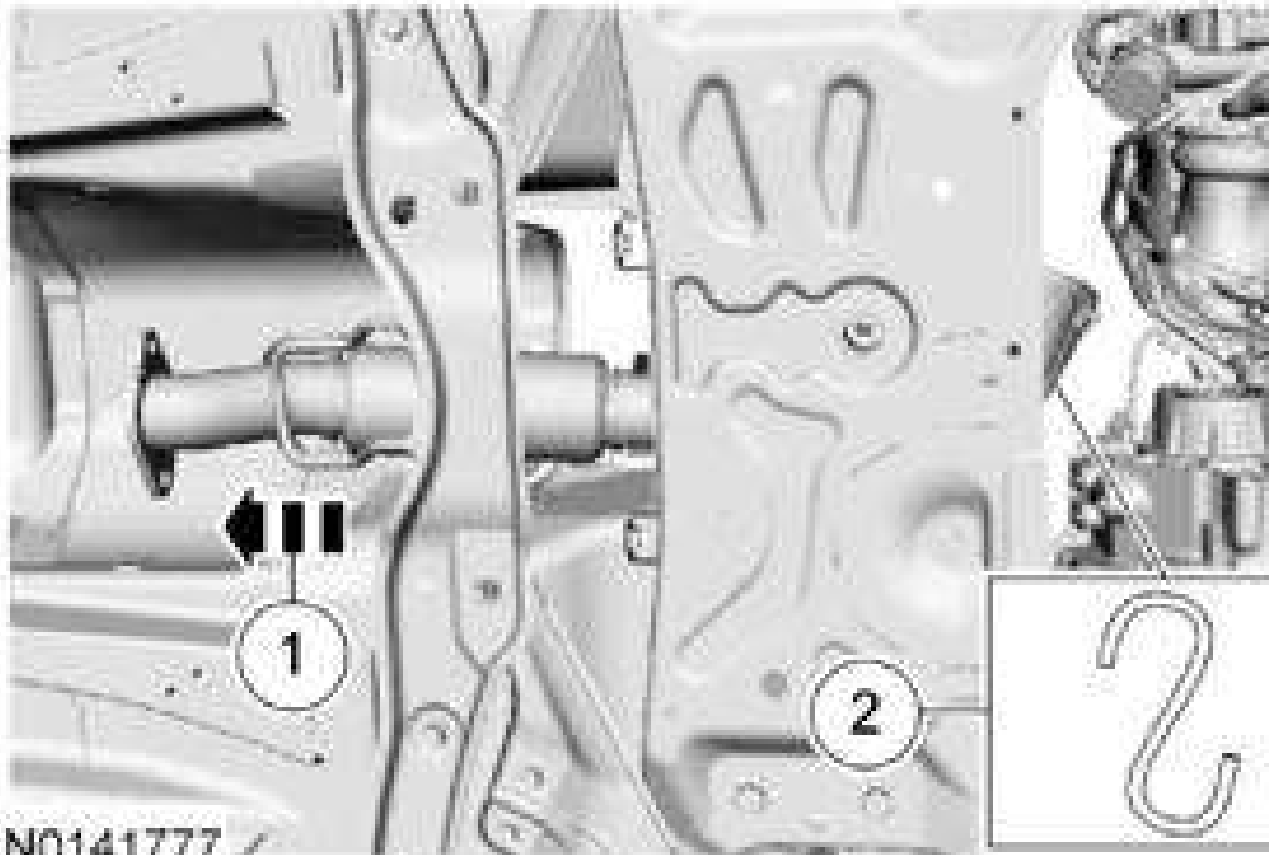




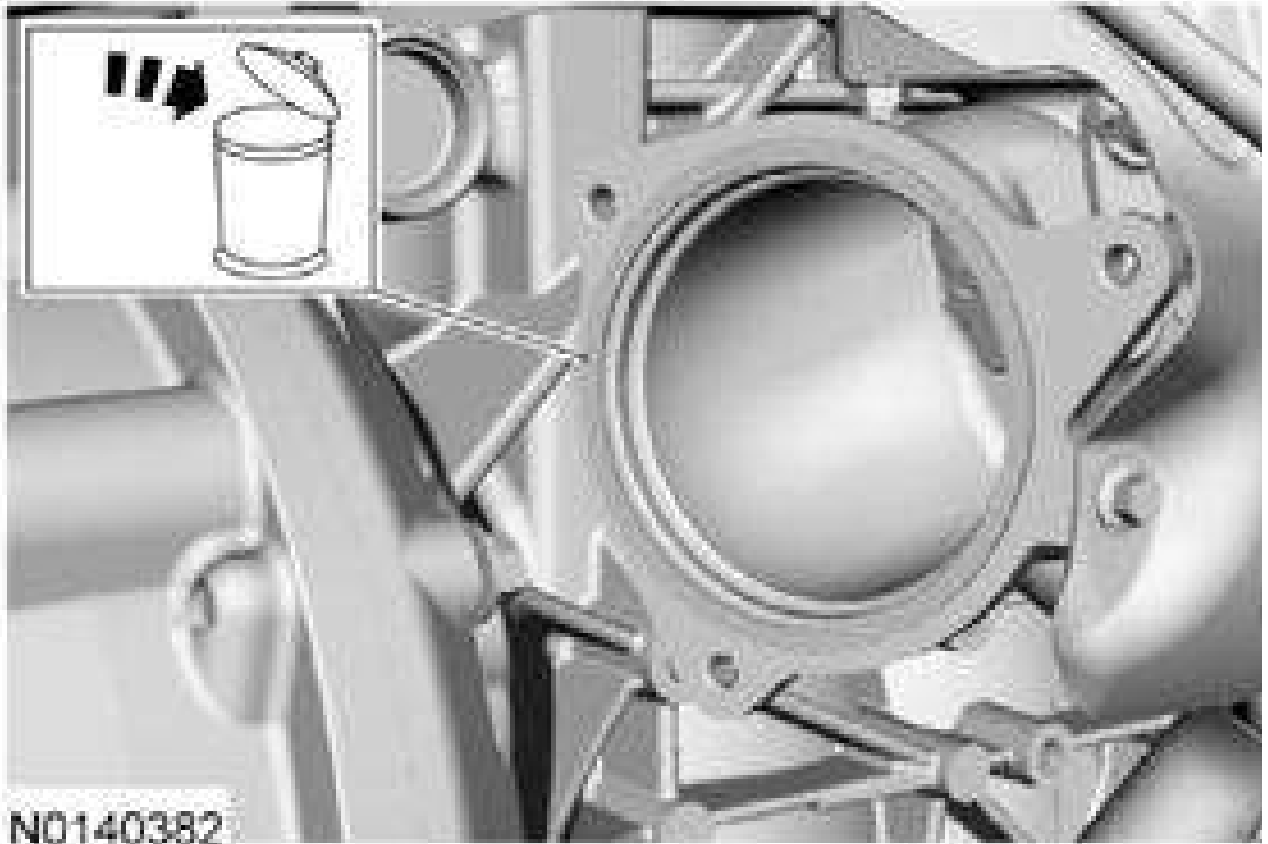


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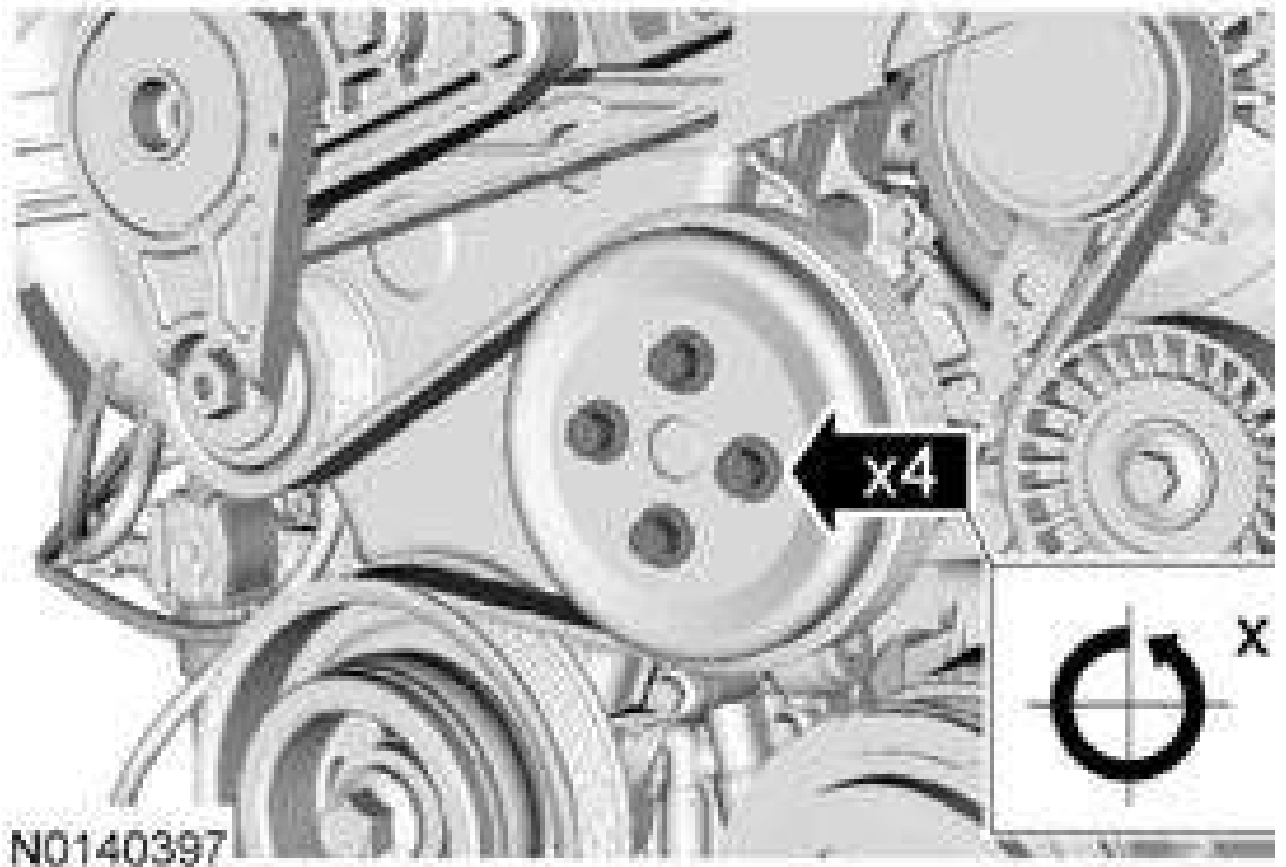
44. Relocate and support the component.

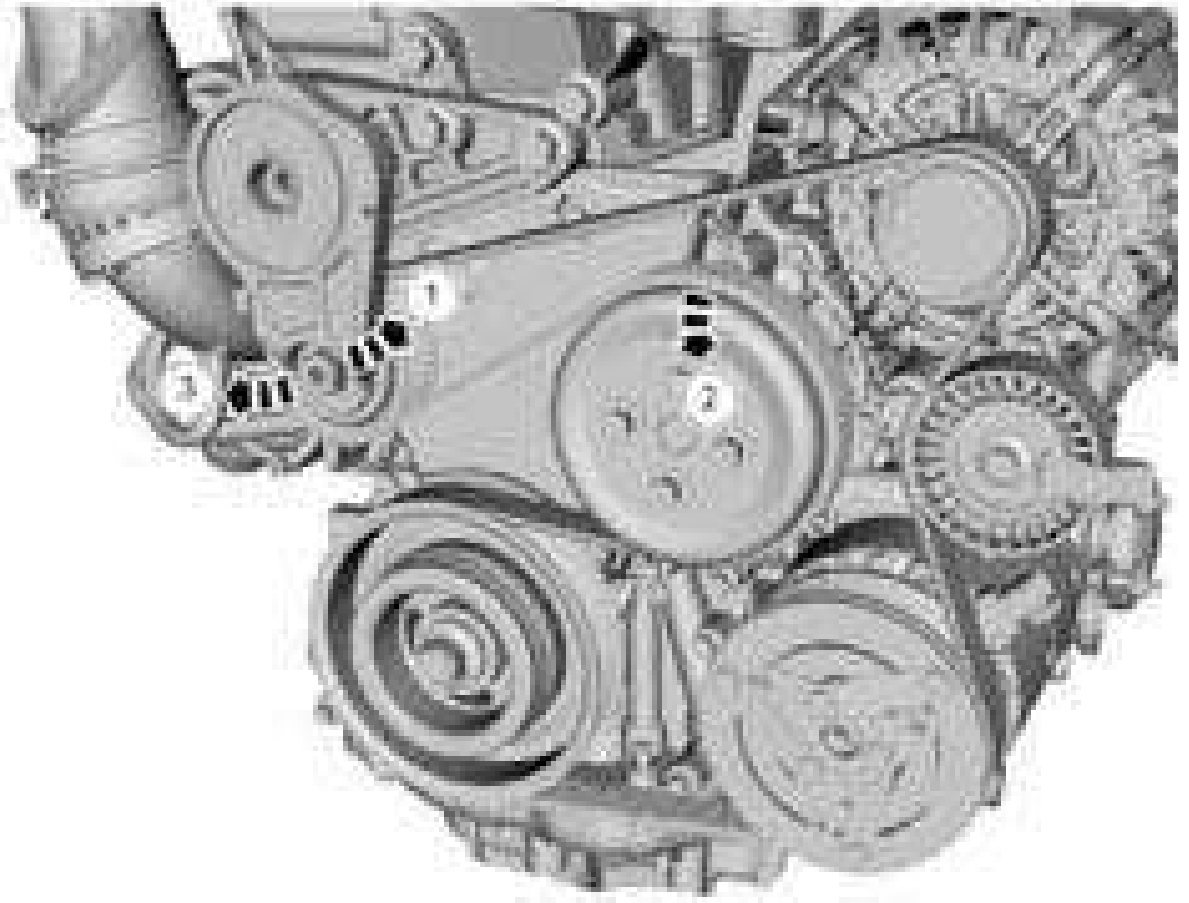


45. Discard the specified component. Follow local disposal regulations.



46. Turn the component CCW through 1 complete turn.

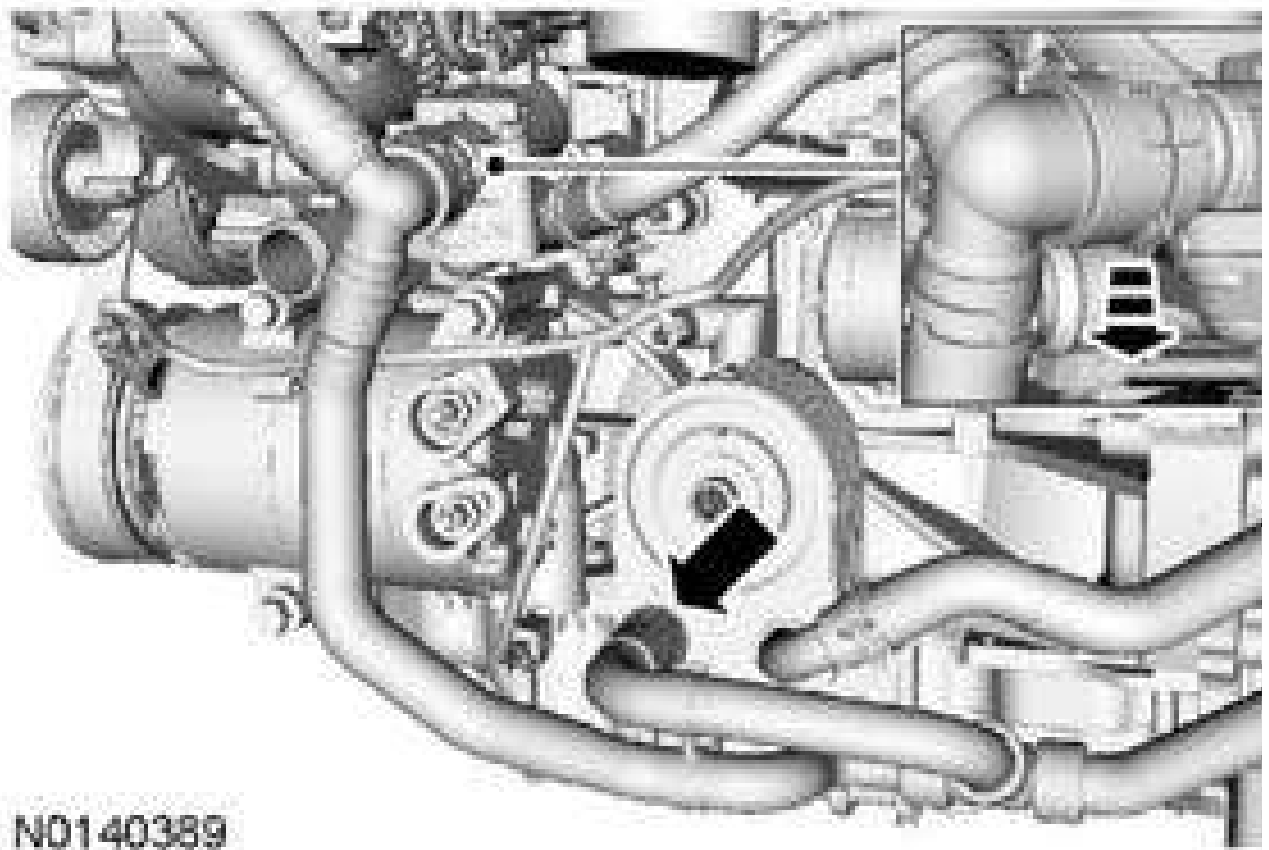




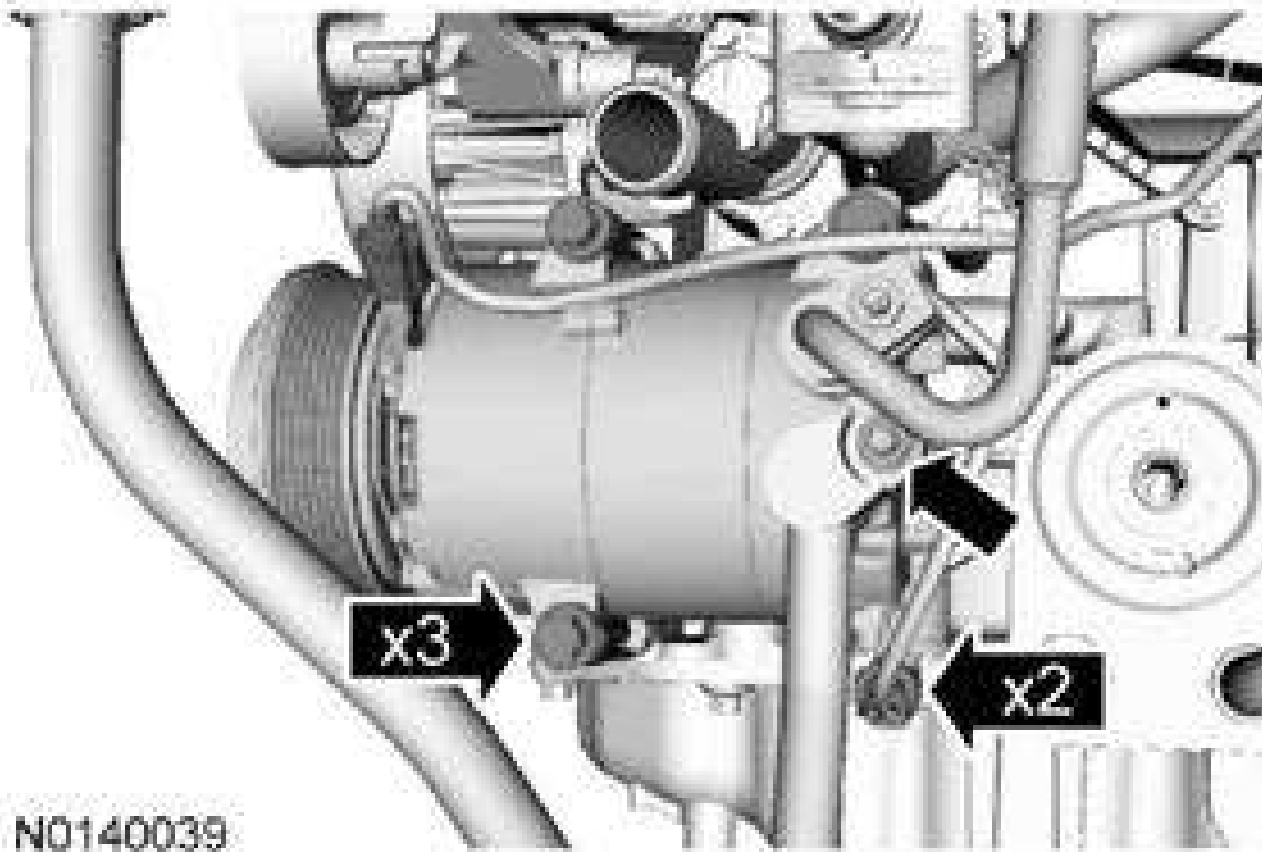
47

47.

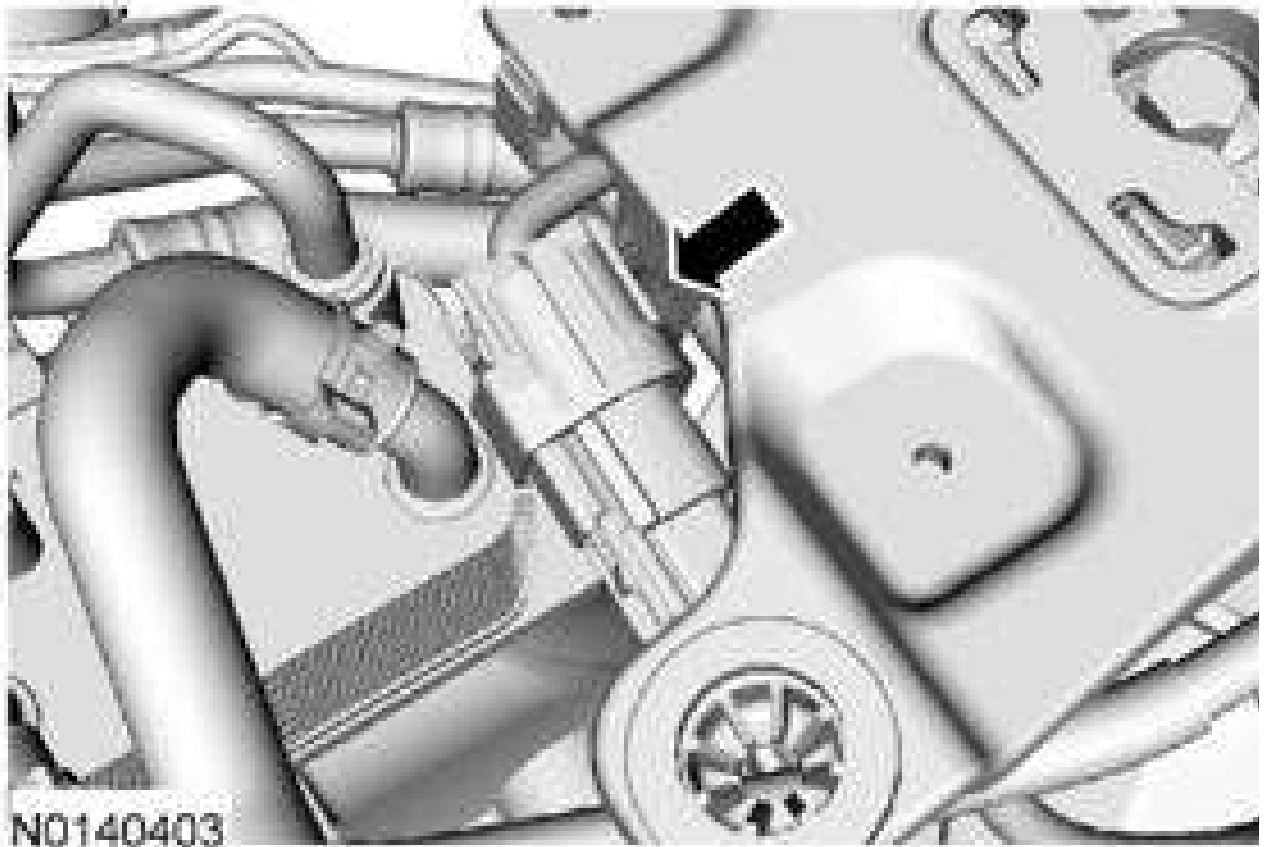
48. General Equipment: Hose Clamp Remover/Installer.



49. **NOTE:** Discard the O-ring seal and gasket seal.



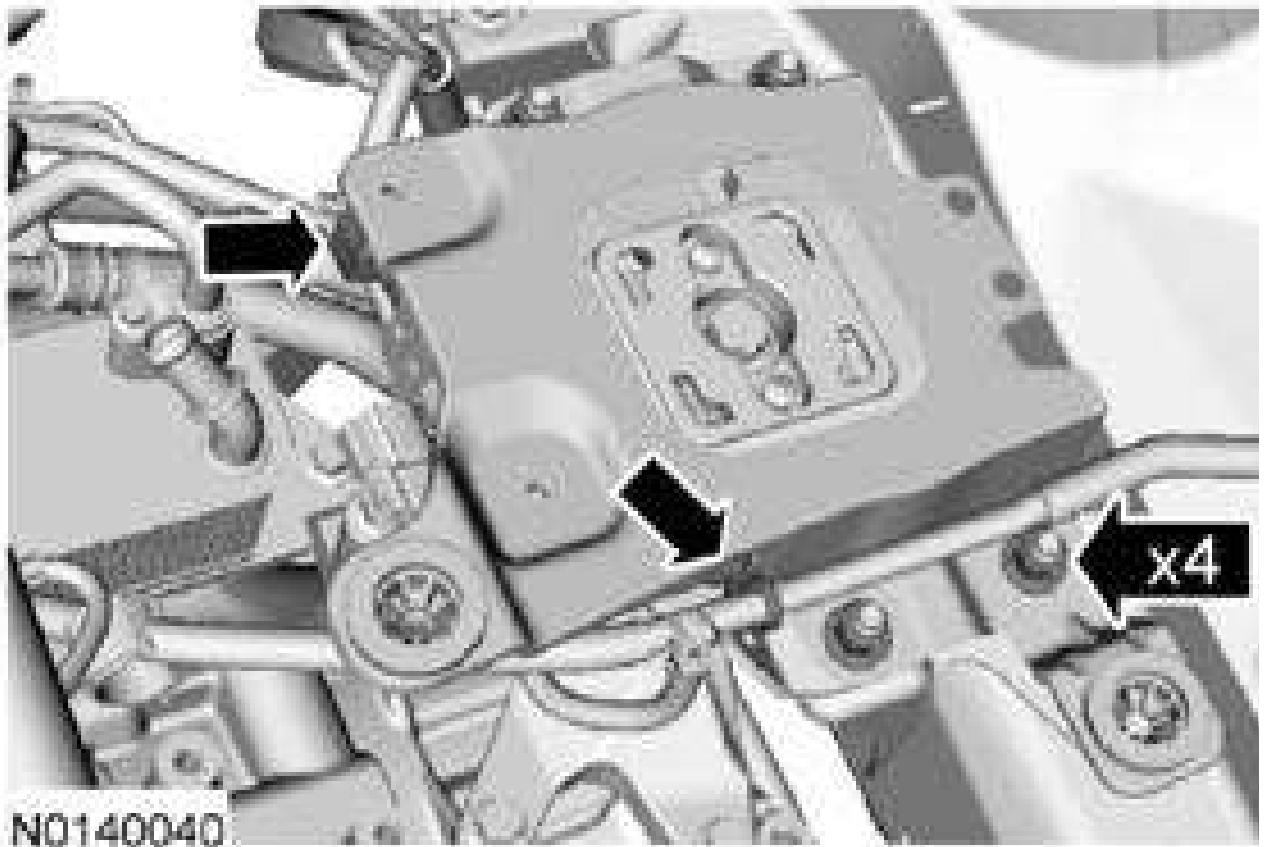
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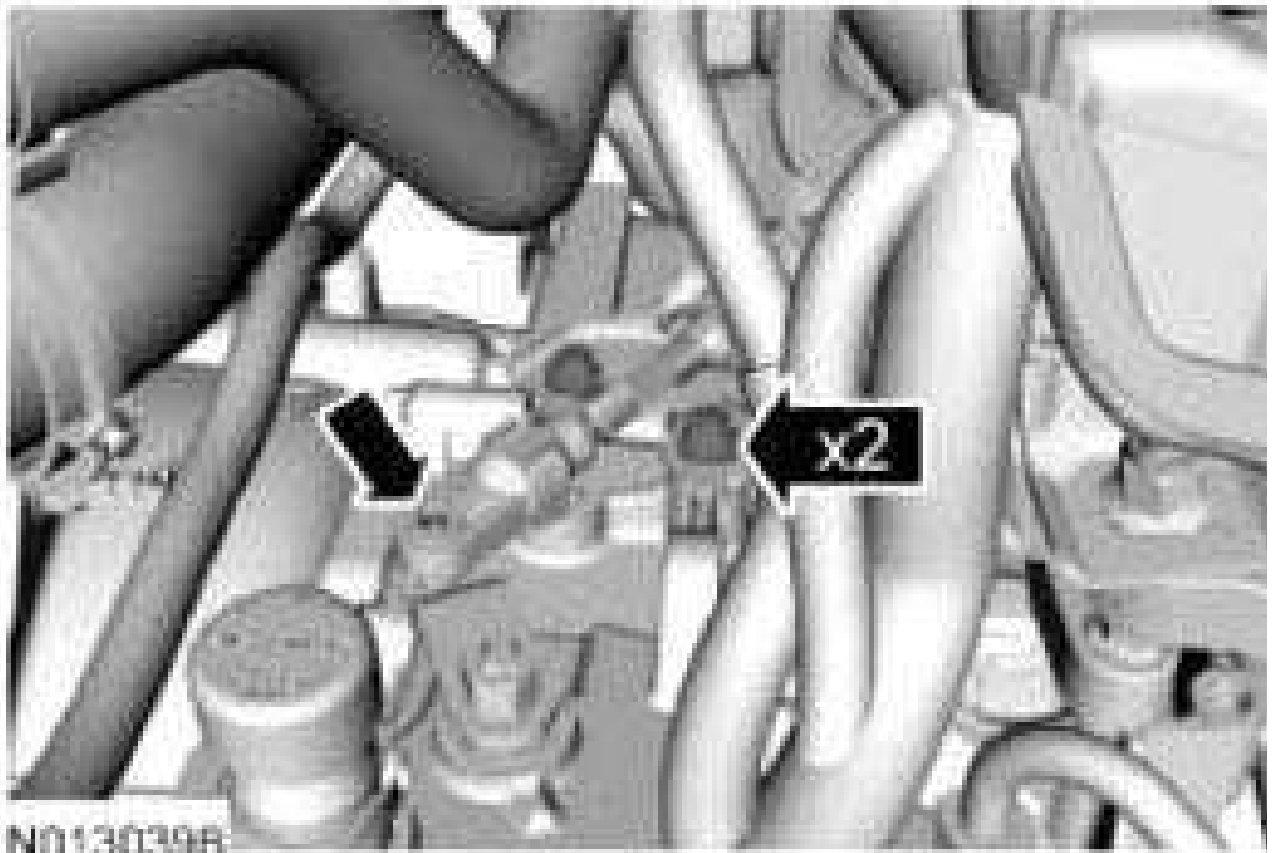
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51.



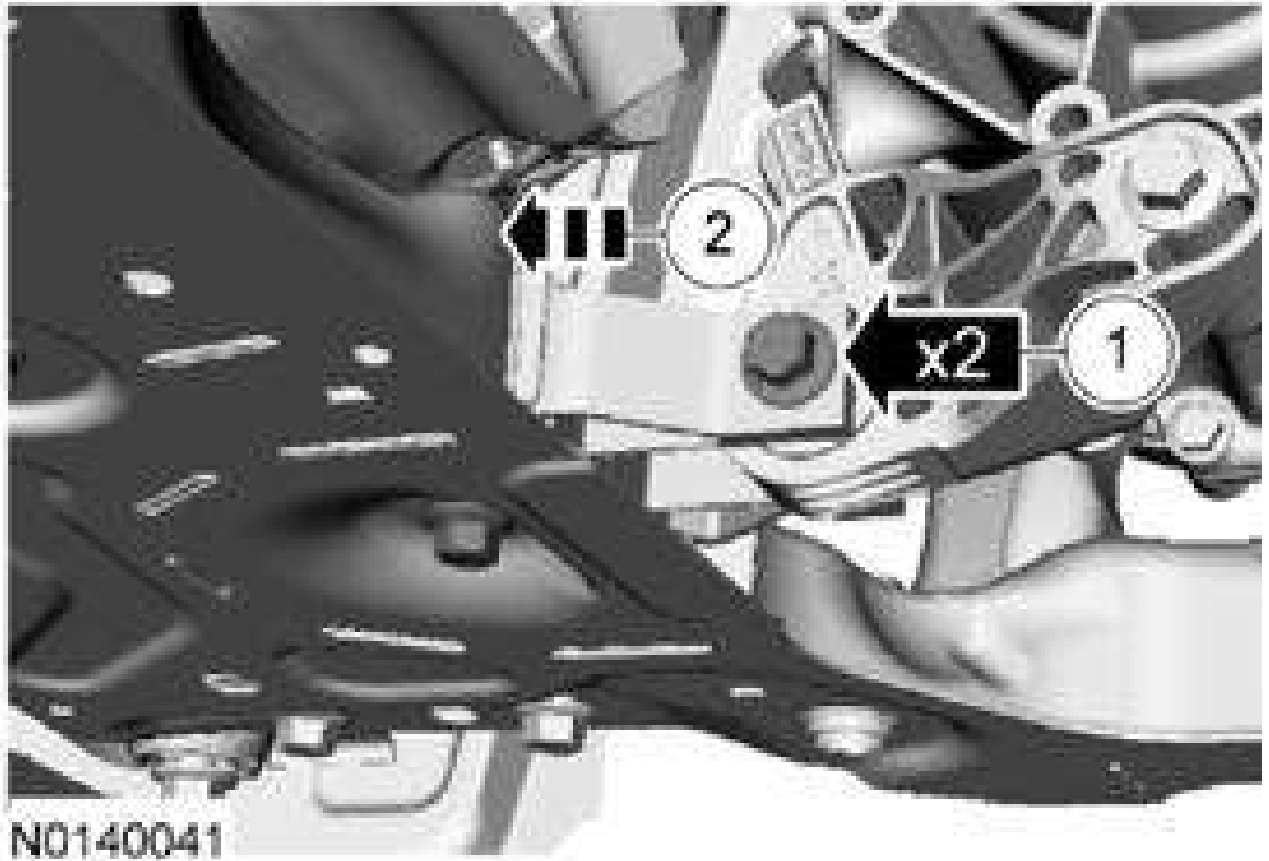
51.

52.



52.

53.



53.

54. **NOTE:** Position a wooden block under the transmission.

Special Tool(s): Powertrain Lift 300-OTC1585AE and Adjustable Grip Arm, 1735A 014-00001.

General Equipment: Wooden Block.

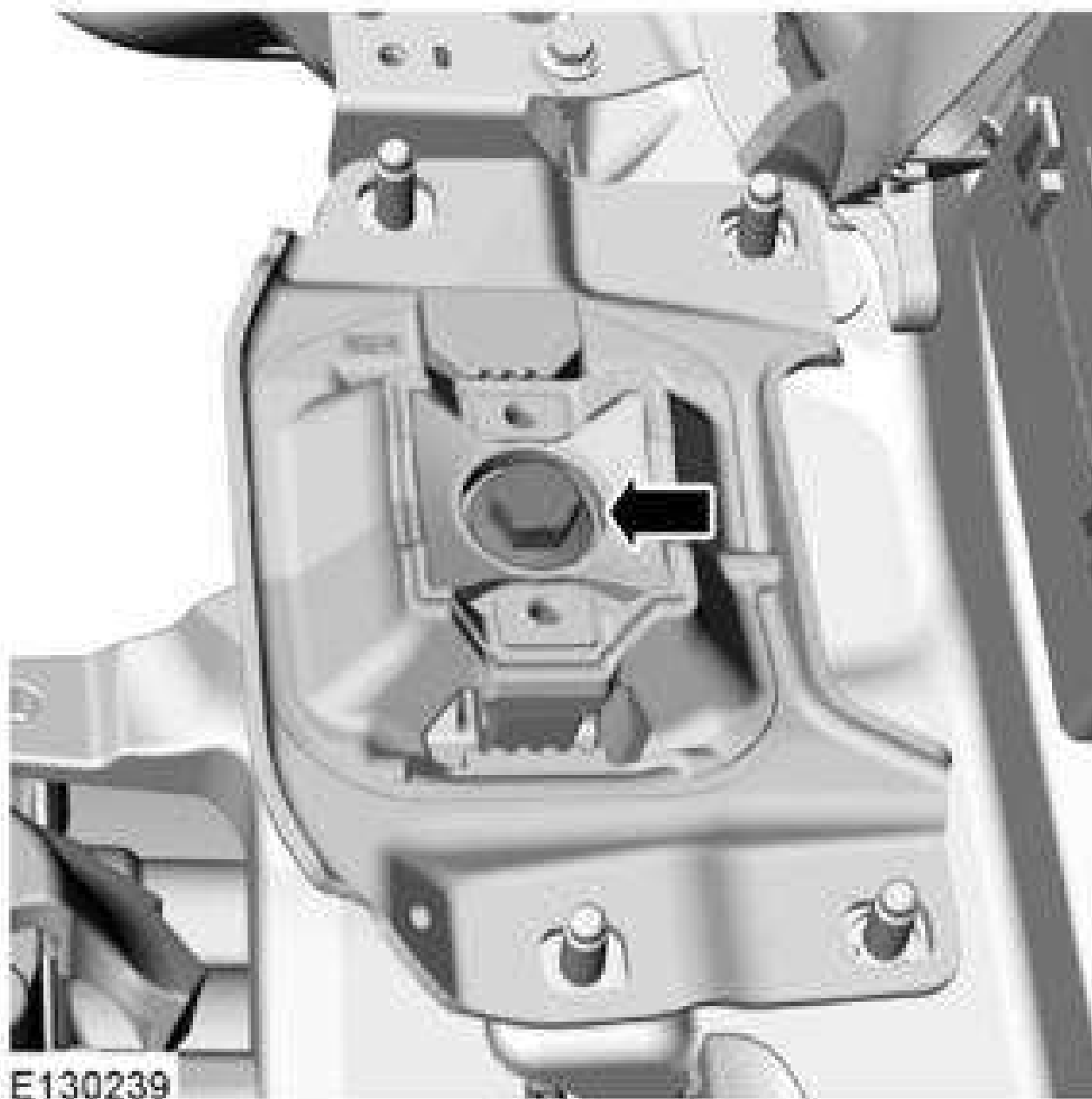


014-00001

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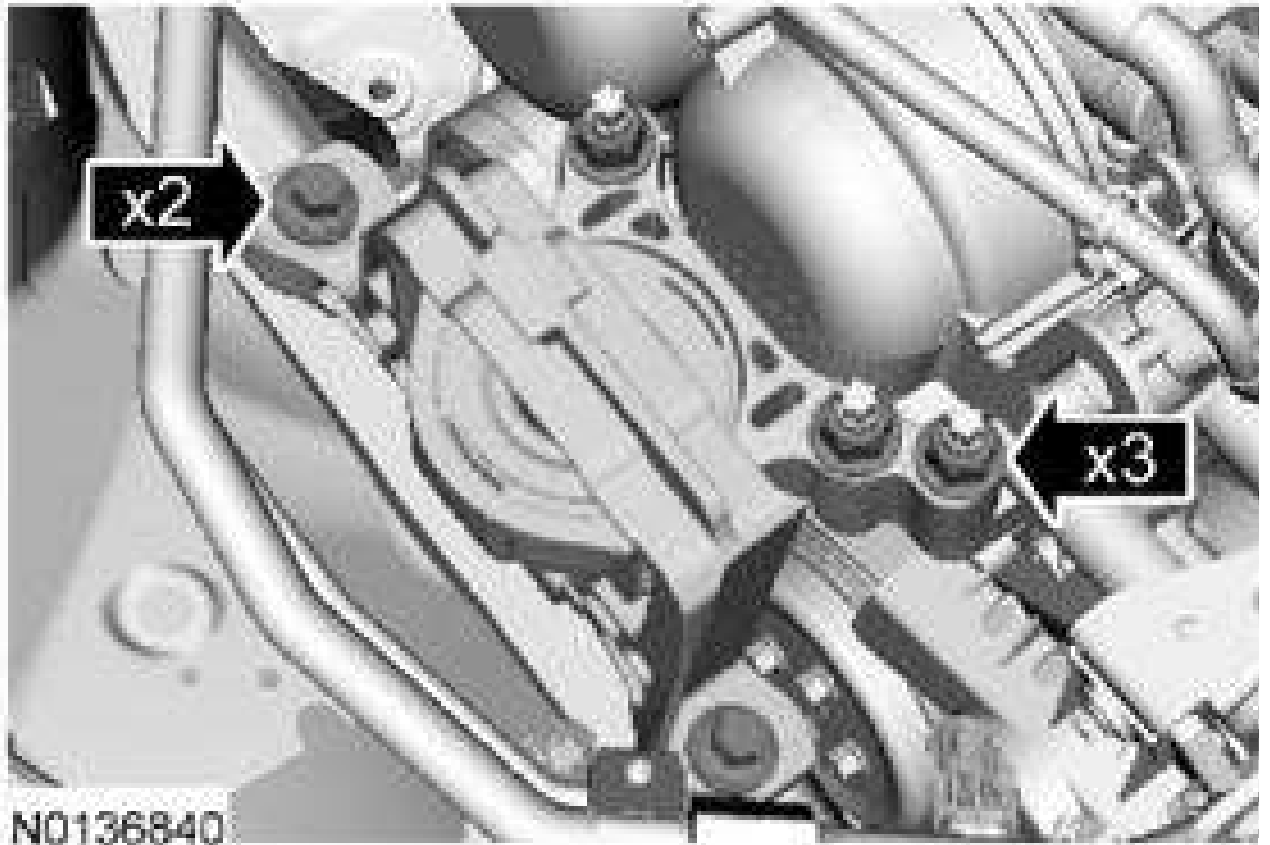
N0140357

300-OTC1585A



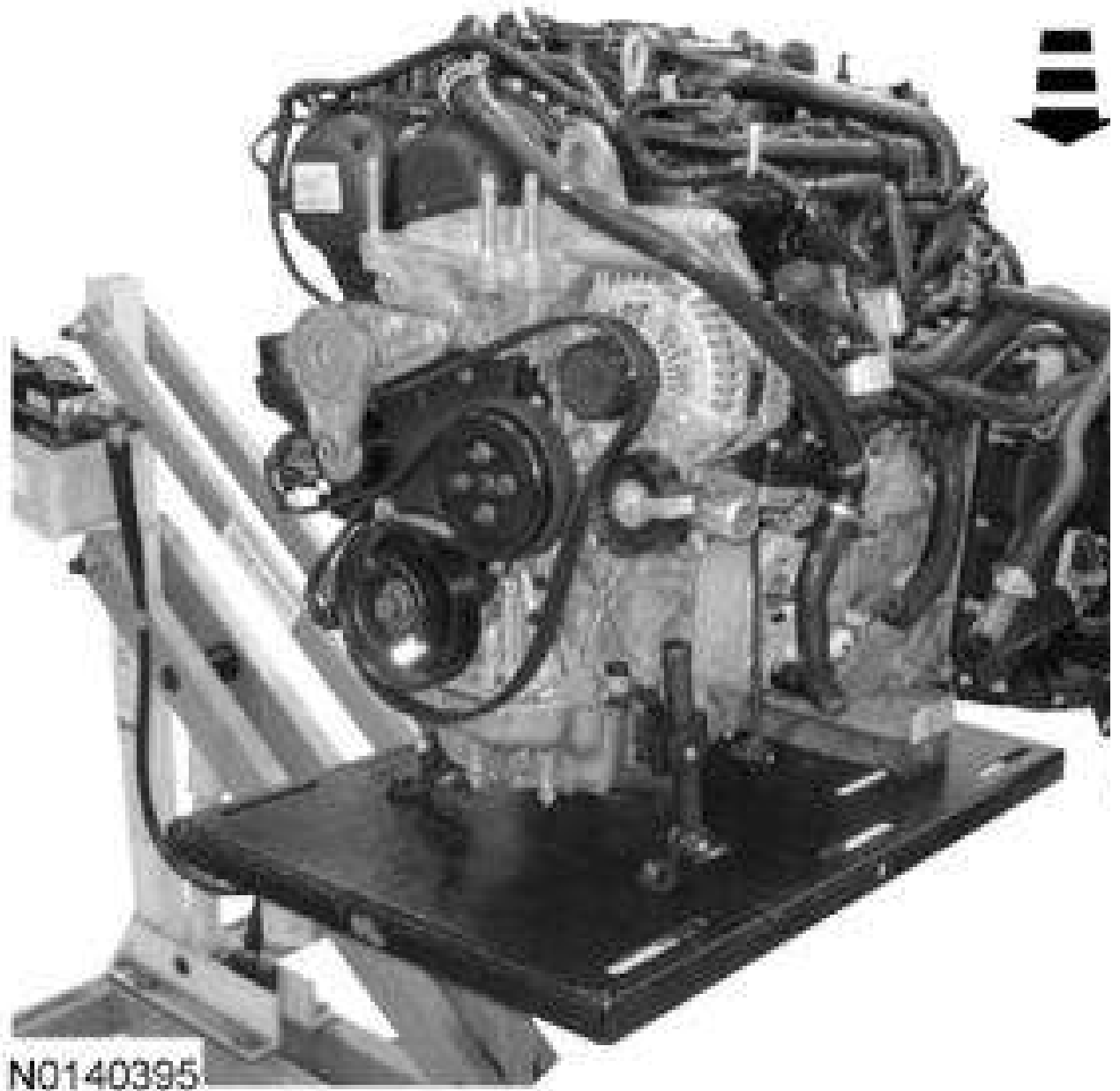
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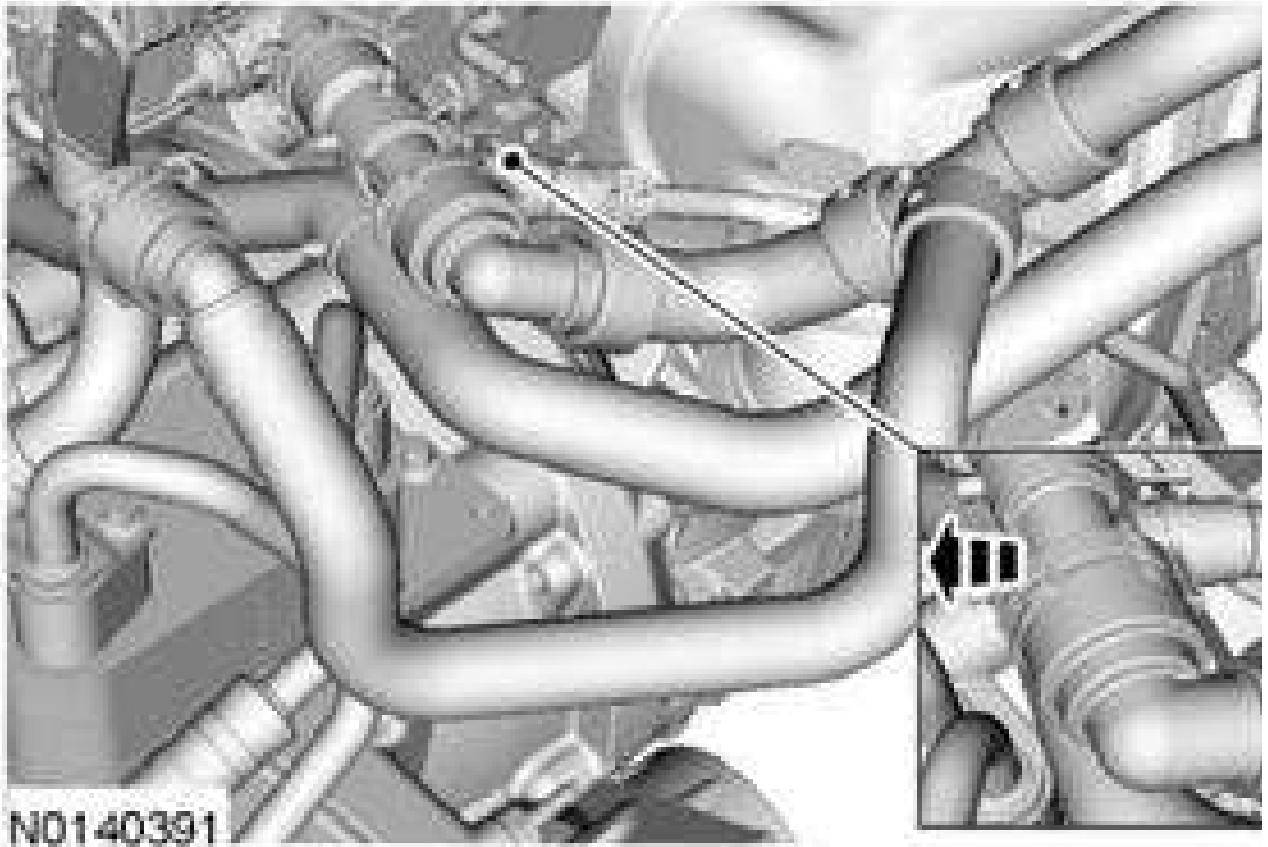
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57.



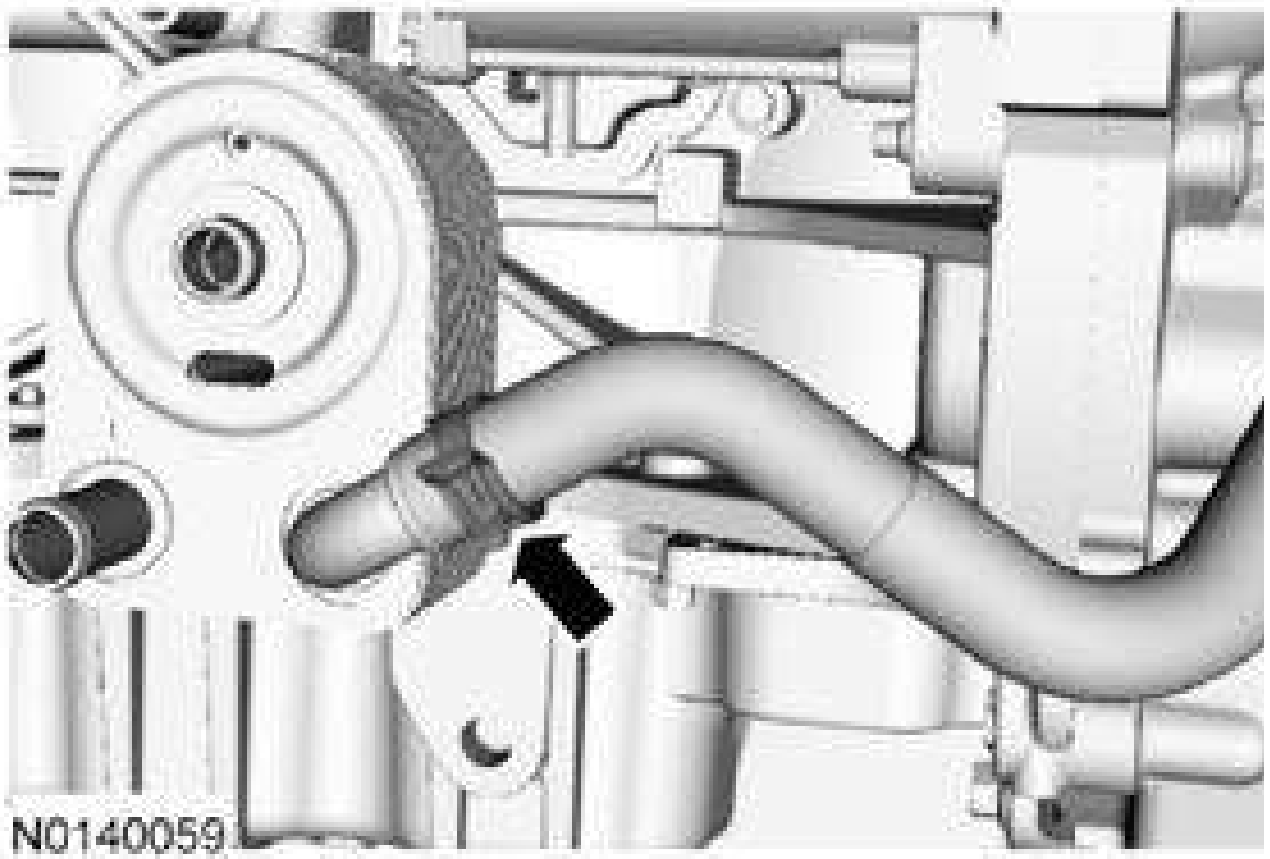
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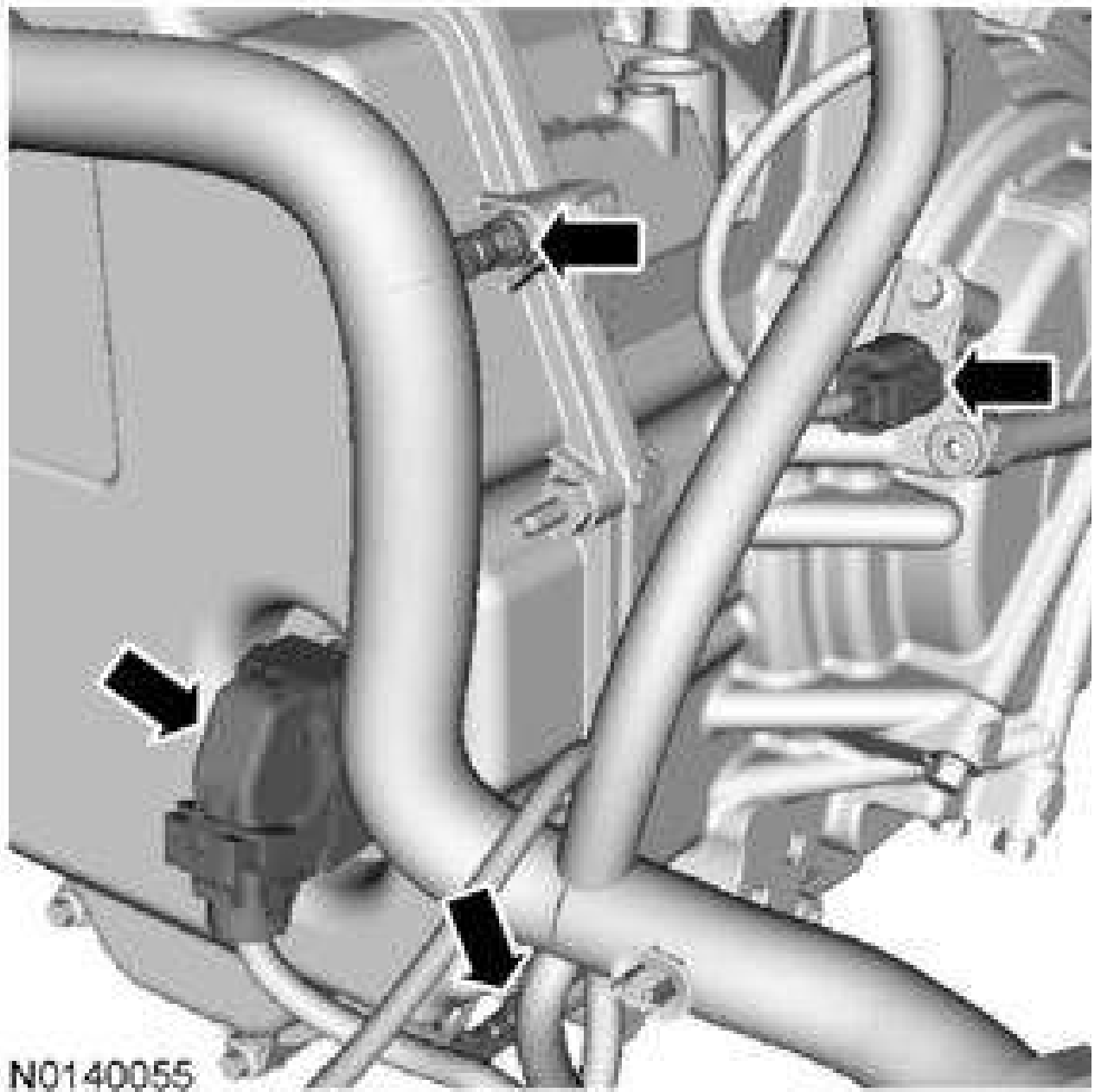
58.



58.

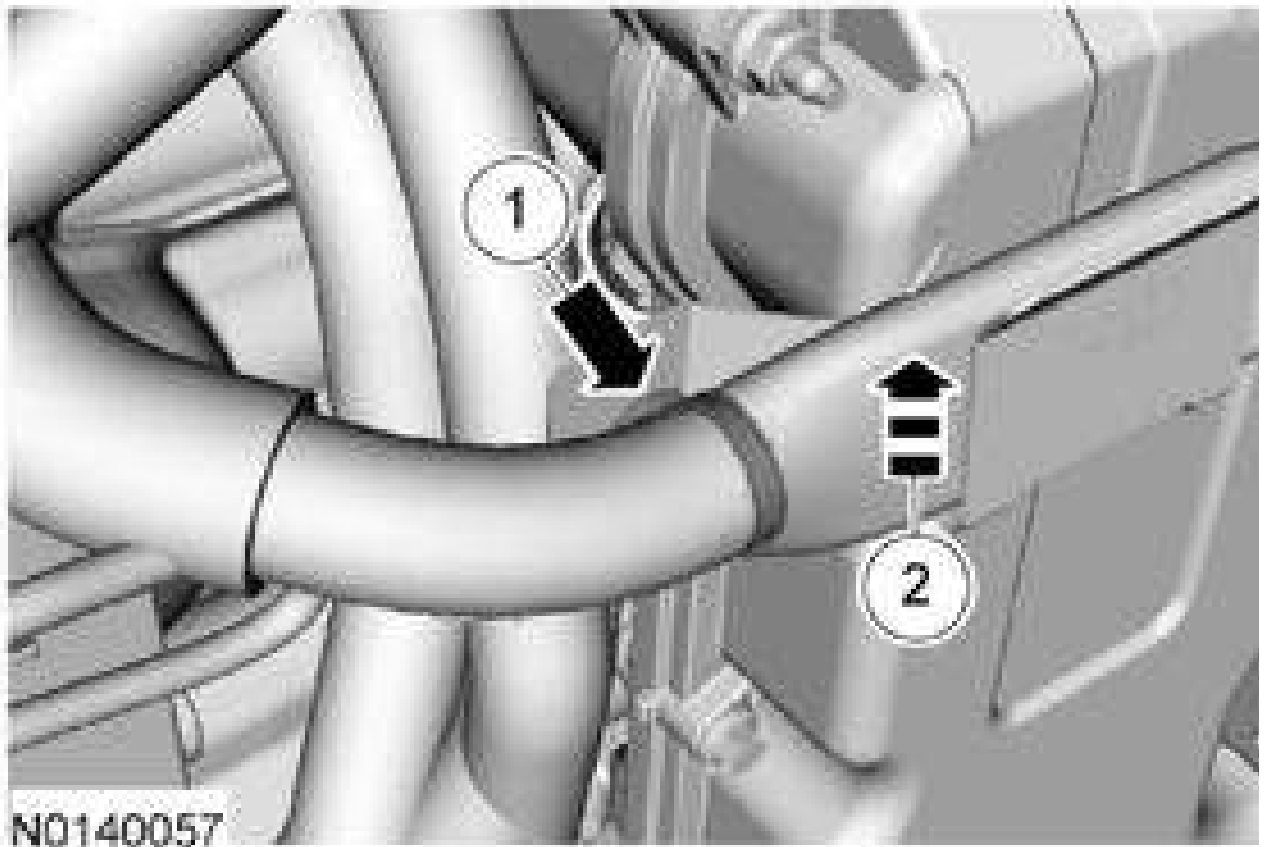
59. General Equipment: Hose Clamp Remover/Installer.





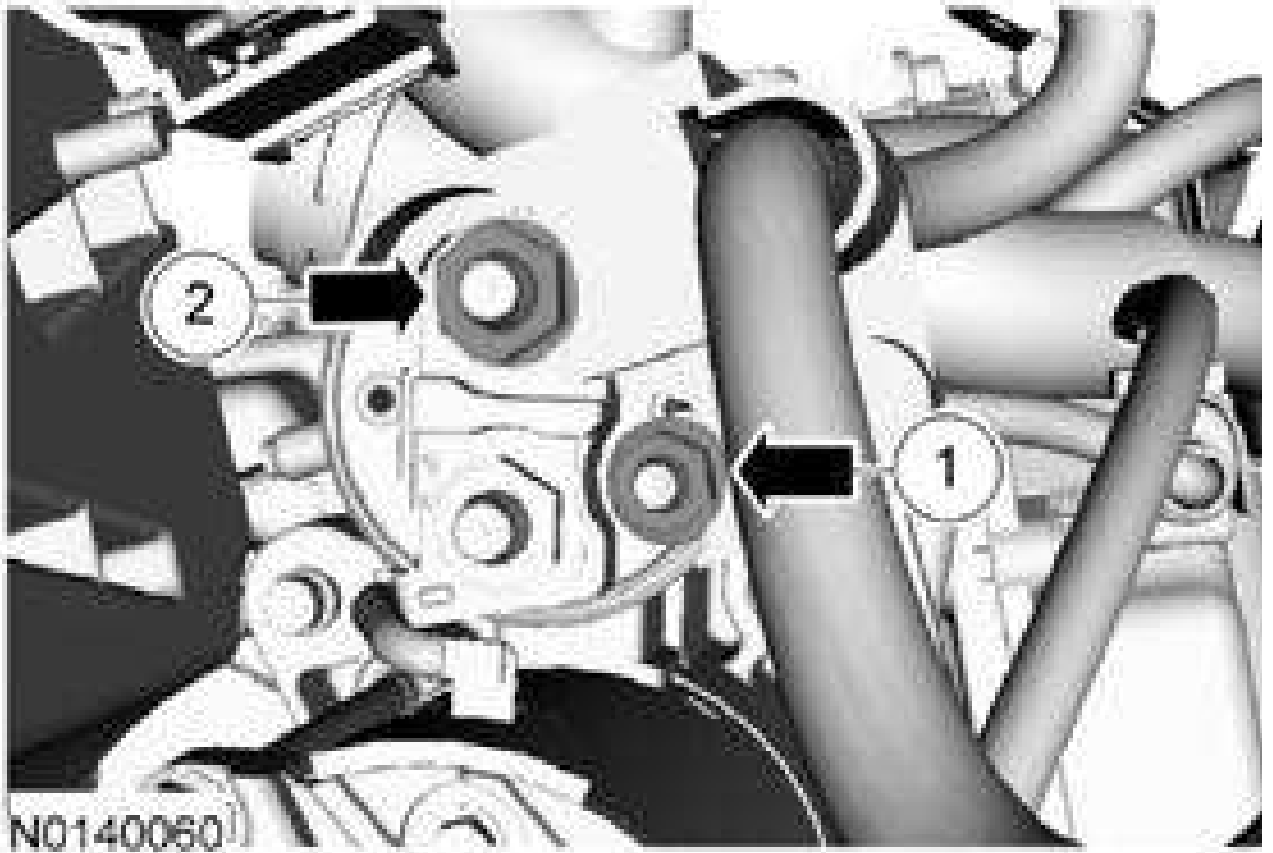
60.

61.



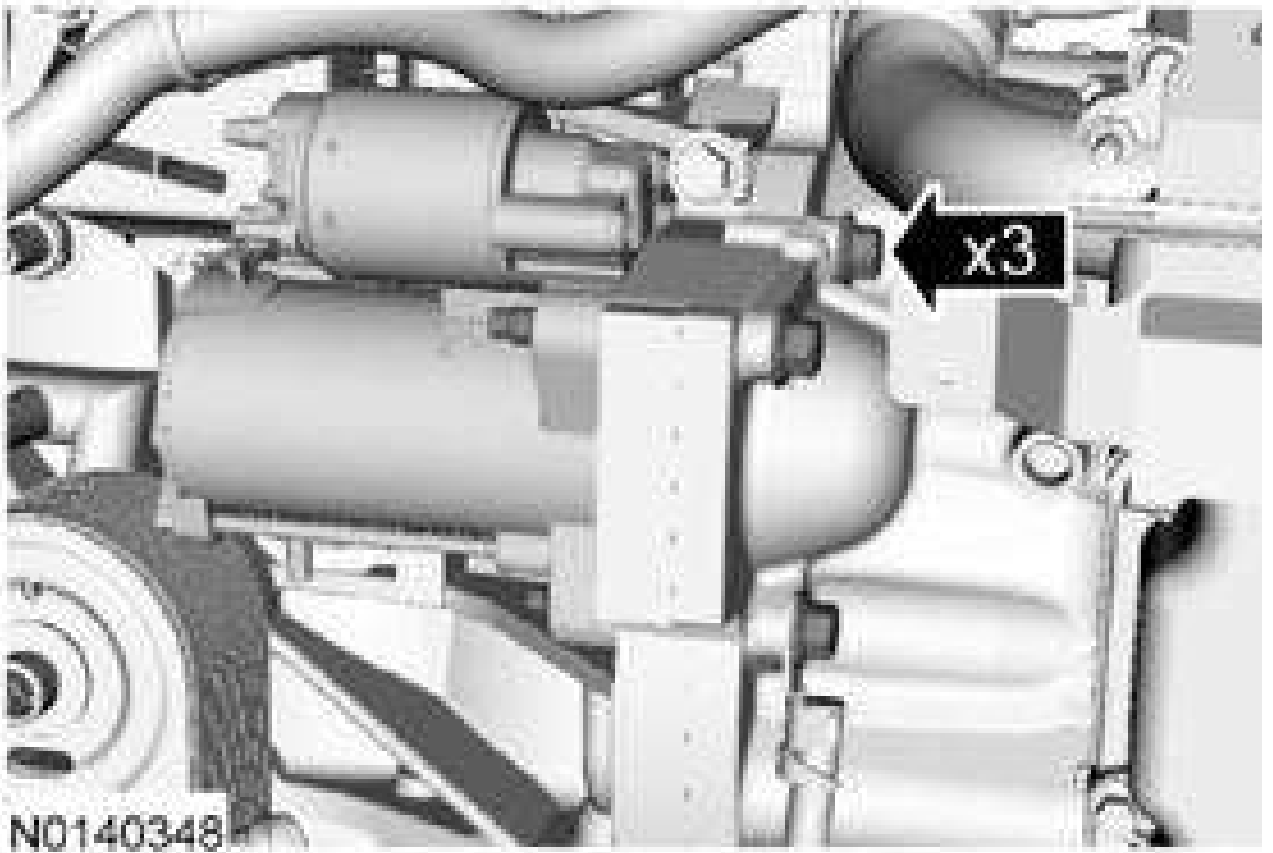
61.

62.



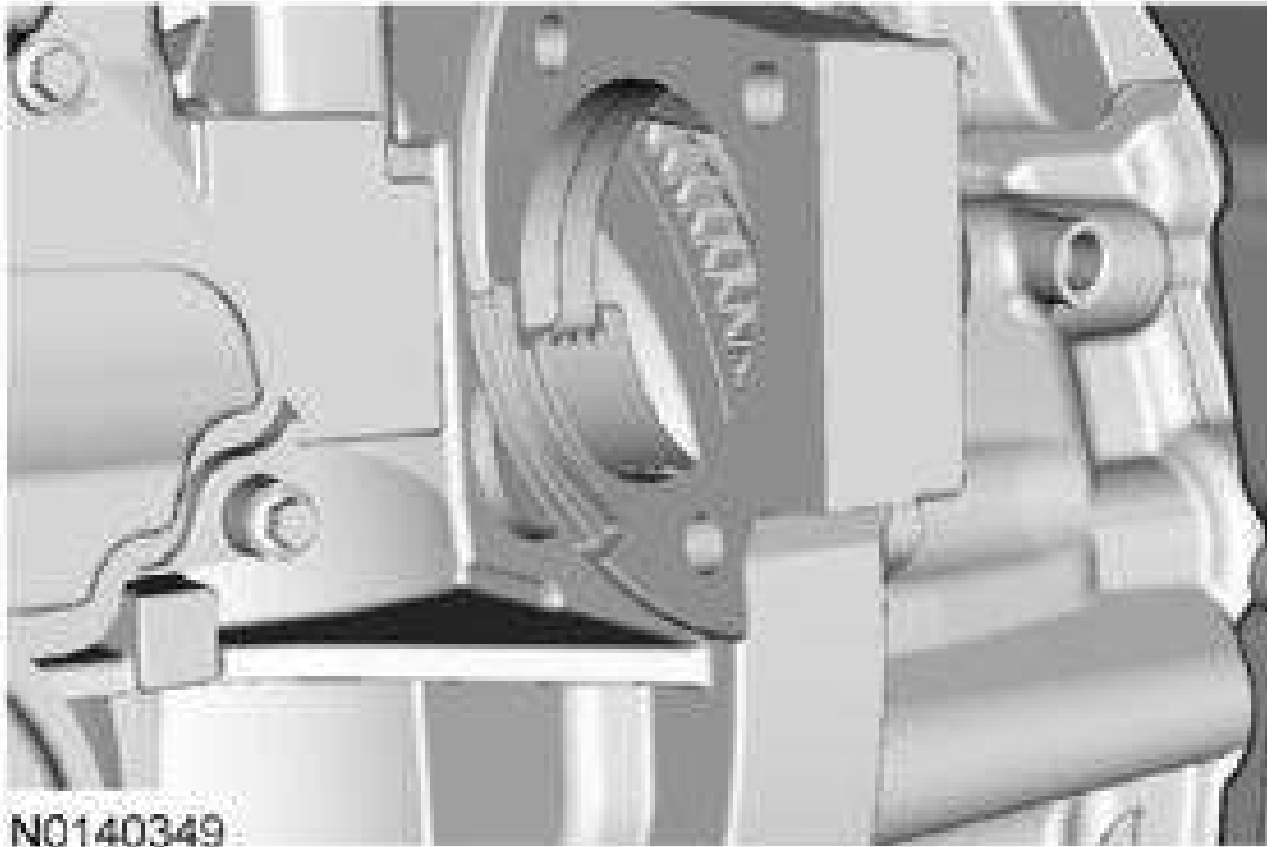
62.

63.



63.

64.



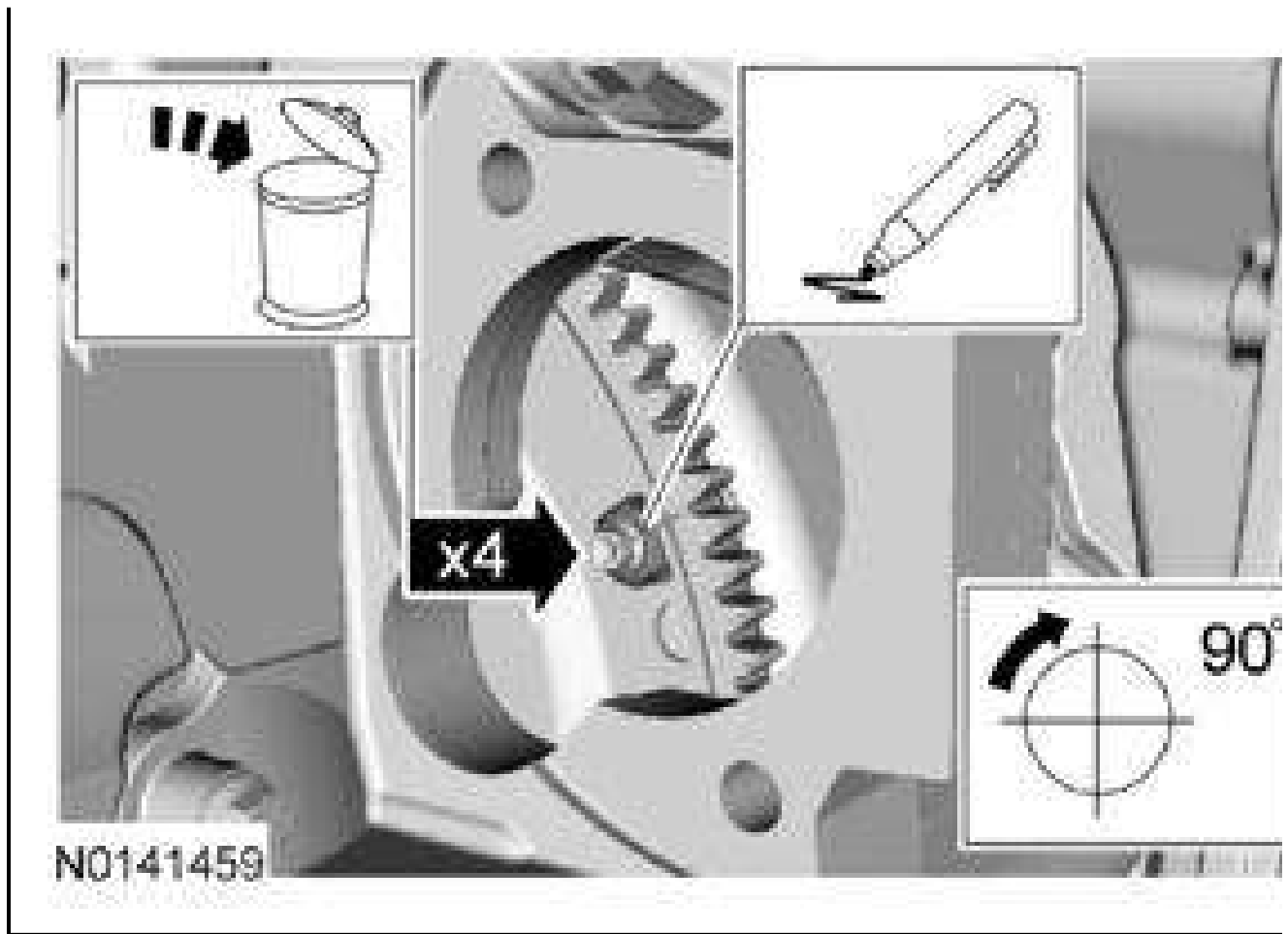
64.

65. **NOTE:** Only rotate the crankshaft in a clockwise direction.

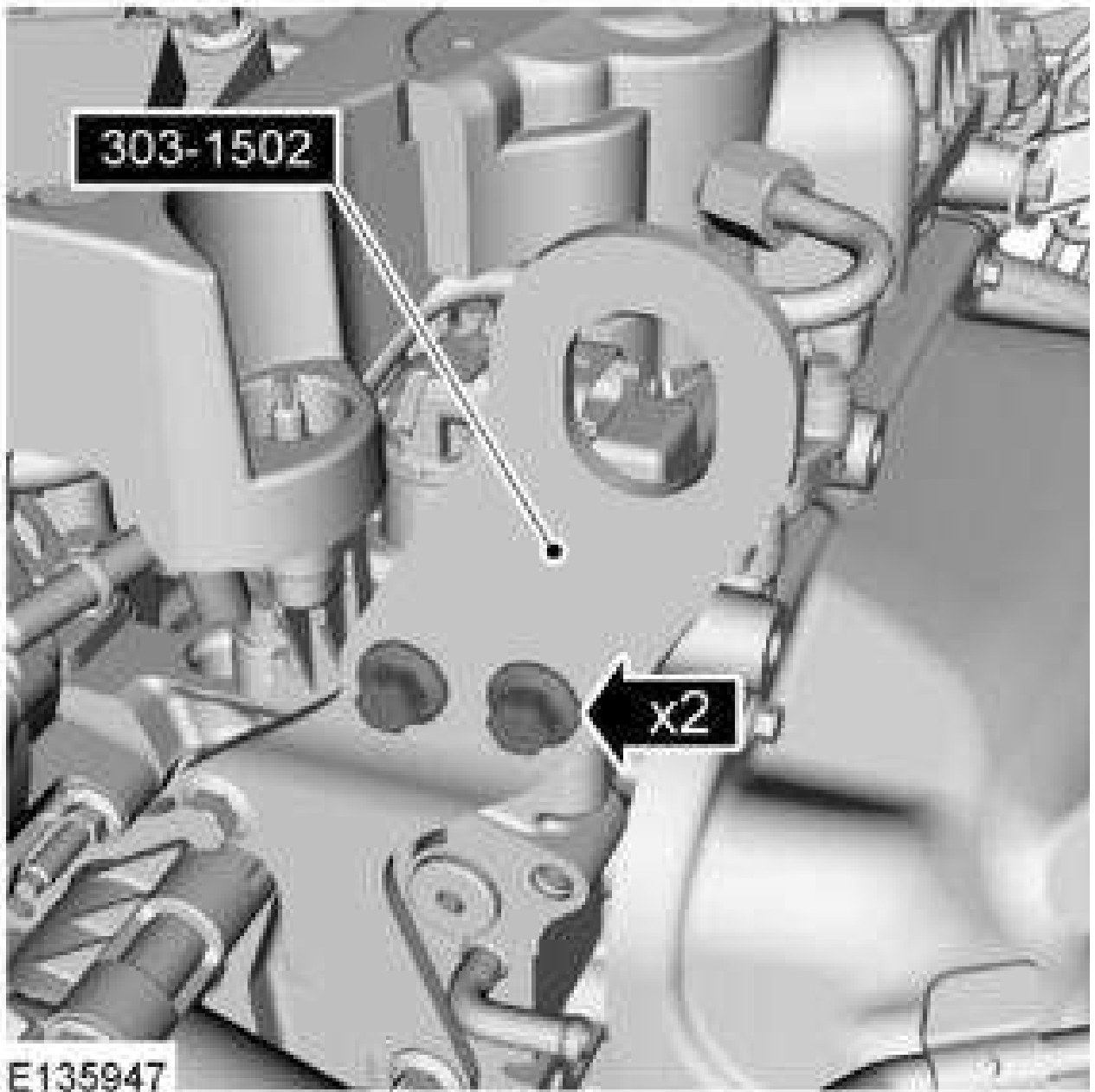
Marker.

Turn the component clockwise through 90 degrees.

Discard the specified component. Follow local disposal regulations.

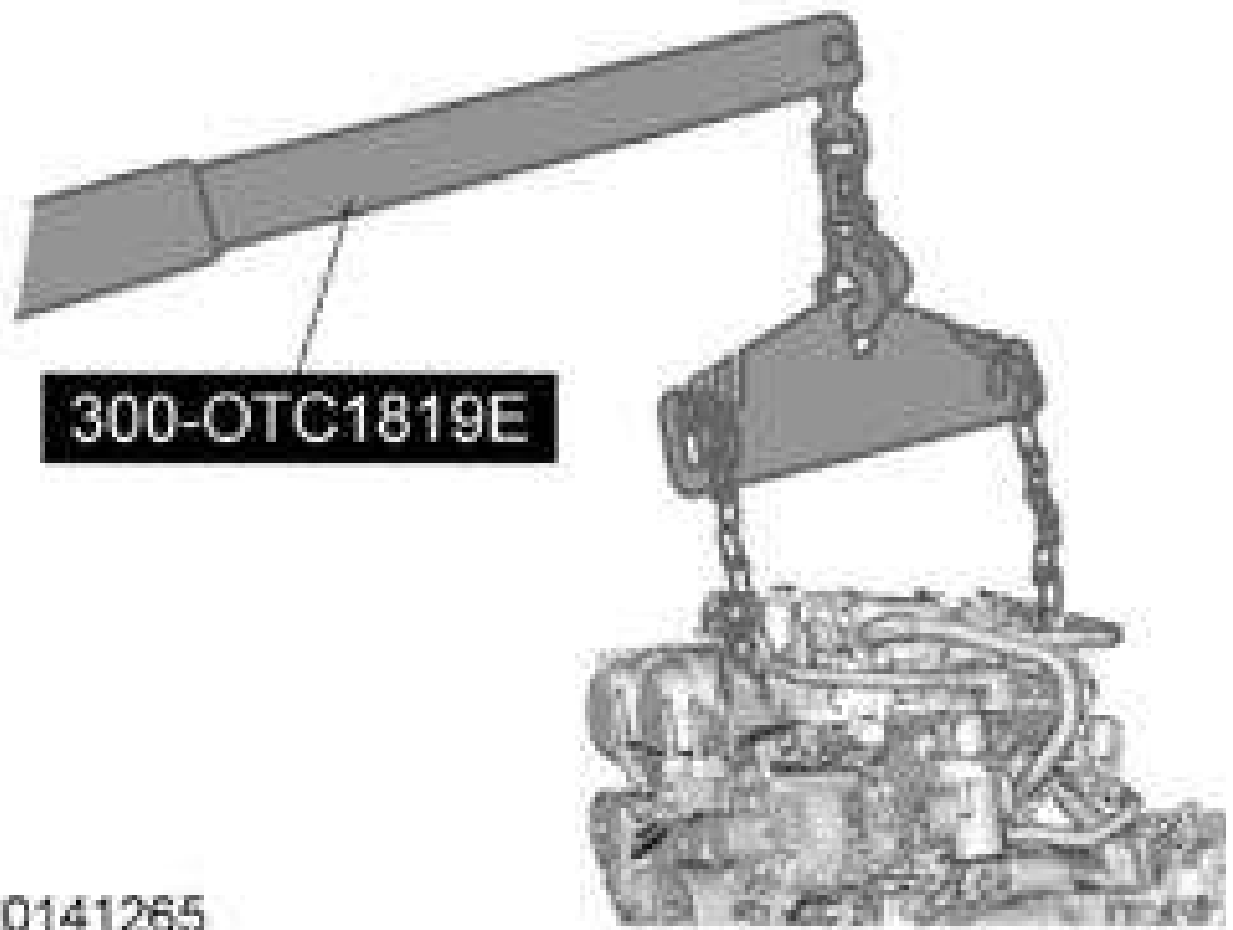


66. Install the Special Tool(s): Lifting Eye 303-1502.



67. Install the Special Tool(s): 2, 200# Floor Crane, Fold Away 300-OTC1819E.

General Equipment: Spreader Bar.



68. Remove the Special Tool(s): Powertrain Lift 300-OTC1585AE and Adjustable Grip Arm, 1735A 014-00001.

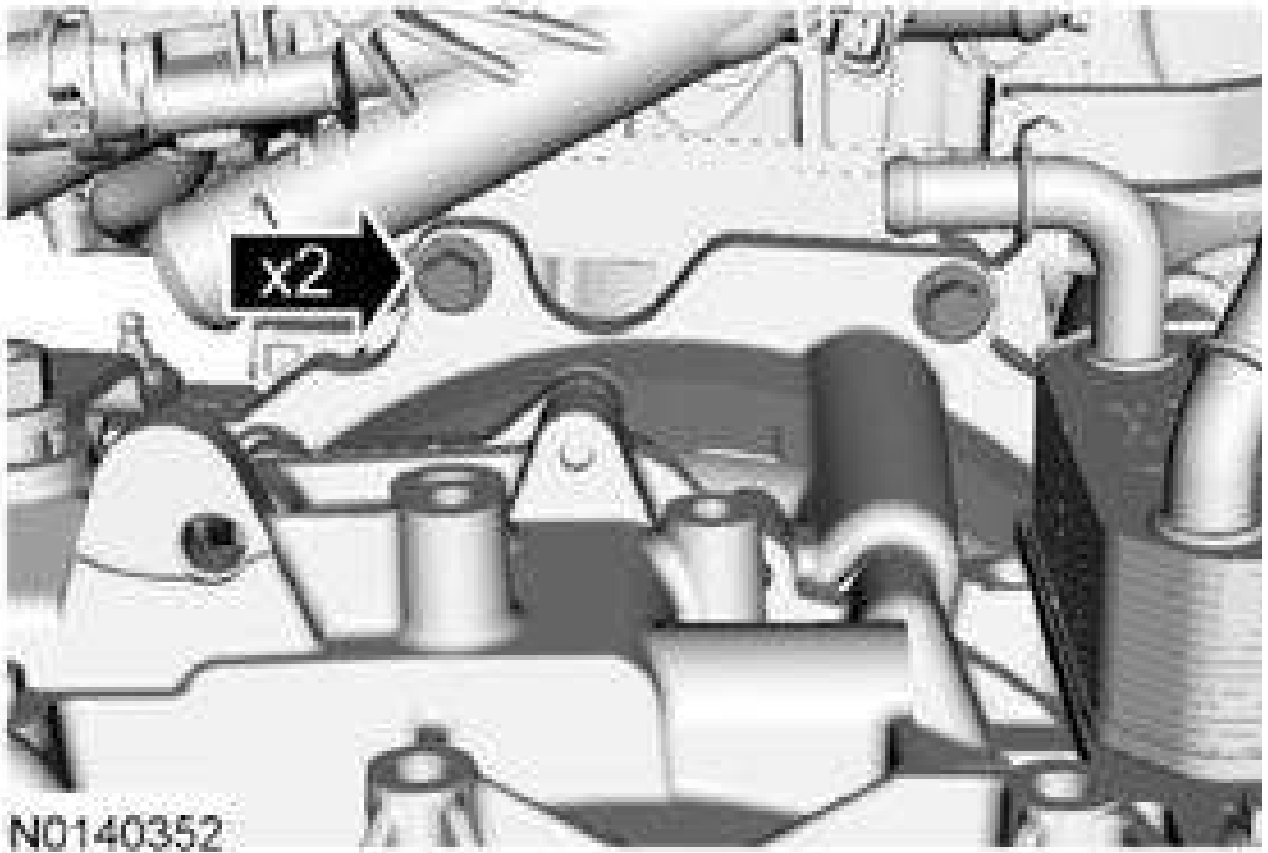


014-00001

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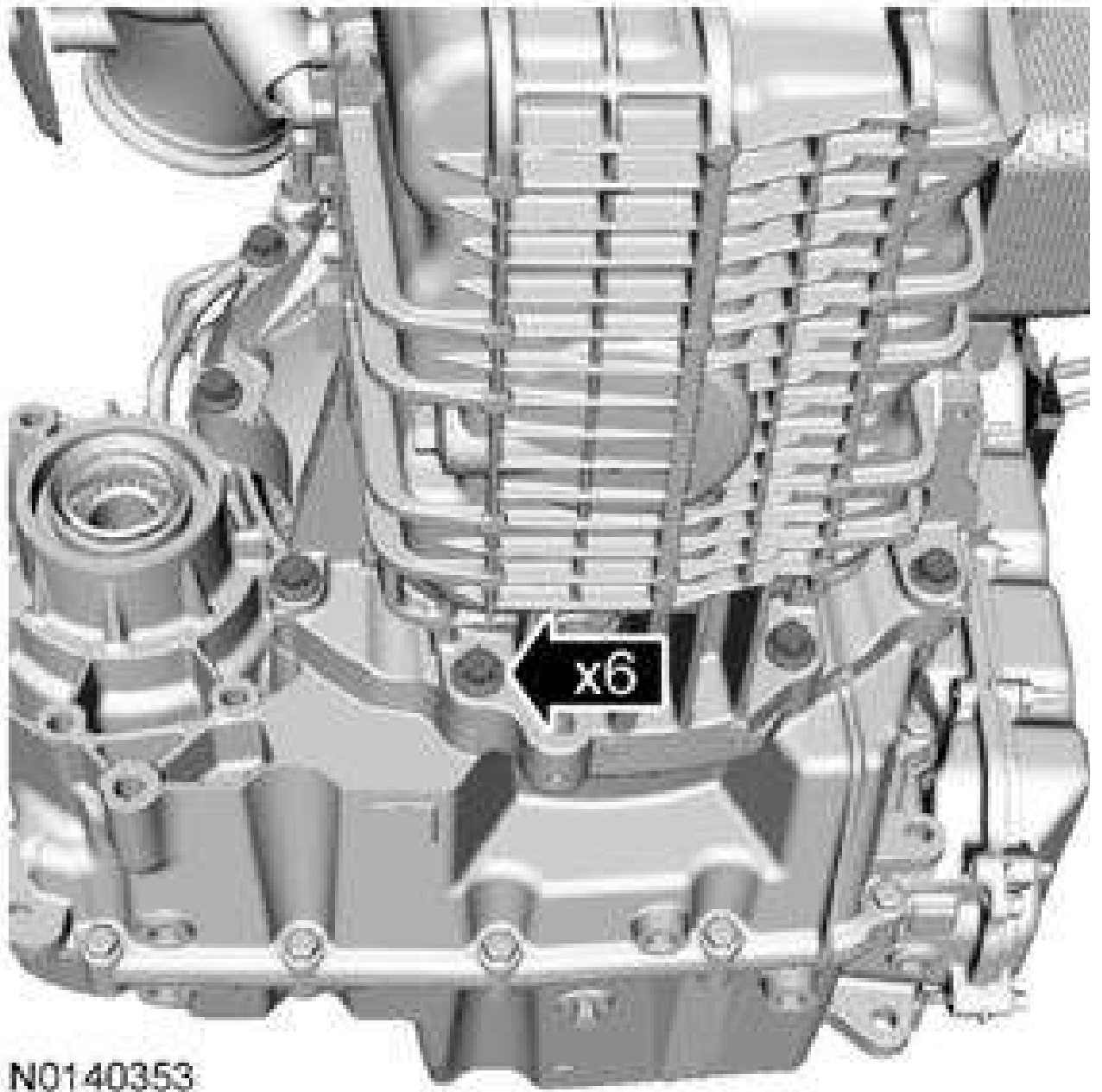
300-OTC1585A



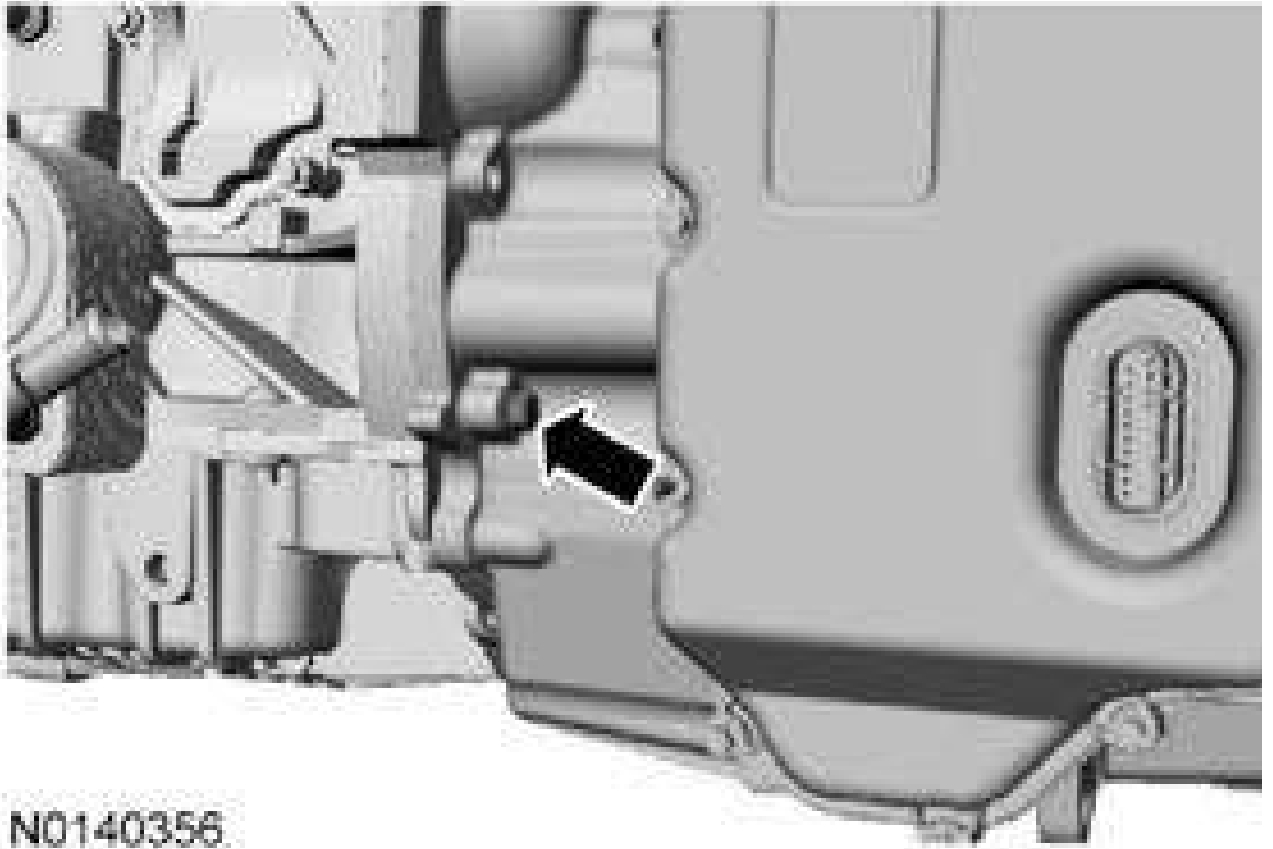
69.

NOTE: The transaxle-to-engine bolts differ in length. Mark the bolts for correct installation.

70.



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71.