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GENERAL INFORMATION

State Emission Standards - Gasoline

ALASKA

NOTE: **Because of frequent revisions in state emission standards, the emission standards listed in this article should only be used as a guide.**

NOTE: **As of March 1, 2012, Alaska is not testing for tailpipe emissions.**

ALASKA EMISSION STANDARDS - ANCHORAGE & FAIRBANKS (2-SPEED IDLE TEST)

Application	Idle HC ppm (CO %)	2500 RPM HC ppm (CO %)
Passenger Cars (1)		
1968-71	1000 (5.0)	1000 (4.0)
1972-74	1000 (4.0)	1000 (3.0)
1975-80	1000 (2.0)	1000 (2.0)
1981-83	1000 (1.0)	1000 (1.0)
1984-93	750 (1.0)	750 (1.0)
1994-	200 (0.5)	200 (0.5)
Light & Medium Duty Trucks (1)		
1968-72	1000 (5.0)	1000 (4.0)
1973-78	1000 (4.0)	1000 (3.0)
1979-83	1000 (2.0)	1000 (2.0)
1984-93	750 (1.0)	750 (1.0)
1994-	220 (0.5)	220 (0.5)
Heavy Duty Vehicles (2)		
1968-73	1000 (5.0)	1000 (5.0)
1974-93	1000 (4.0)	1000 (4.0)
1994-	220 (1.0)	220 (1.0)

(1) 8500 GVWR or less.

(2) 8500 GVWR or more.

ARIZONA

NOTE: **Curb idle only test are for vehicles with full-time 4WD, non-defeatable traction control and motorcycles. Curb idle and loaded cruise tests are performed on 1967-80 light-duty gasoline powered vehicles and all heavy-duty gasoline powered vehicles.**

ARIZONA EMISSION STANDARDS - PHOENIX AREA (CURB IDLE & LOADED CRUISE TESTS)

Application (1)	Idle HC ppm (CO %)	(2) Loaded/Cruise HC ppm (CO %)
Light Duty Vehicles (6000 GVWR Or Less)		
1967-71 4-Cyl. Or Less	500 (5.50)	500 (4.20)
1967-71 More Than 4-Cyl.	450 (5.00)	450 (3.75)
1972-74 4-Cyl. Or Less	400 (5.50)	400 (4.20)
1972-74 More Than 4-Cyl.	400 (5.00)	400 (3.75)
1975-78 4-Cyl. Or Less	250 (2.20)	250 (1.65)

Is the resistance greater than 10, 000 ohms?

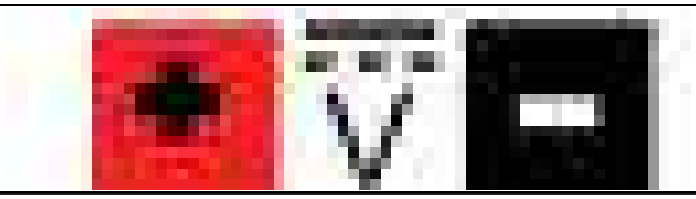
Yes	INSTALL a new headlamp switch. REFER to: **Headlamp Switch** . TEST the system for normal operation. If the low beams continue to illuminate, GO to B9

No	REPAIR the circuit.

B9 CHECK THE LOW BEAM CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: BCM C2280G.
- Disconnect: LH Headlamp C1284 or RH Headlamp C1285.
- Ignition ON.
- Measure:

  LH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1284-1		Ground

  RH Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1285-1		Ground

Is any voltage present?

Yes	REPAIR the circuit.

No	GO to B22

B10 DETERMINE IF ONE OR BOTH LOW BEAMS ARE INOPERATIVE

- Ignition ON.
- Place the headlamp switch in the HEADLAMPS position.

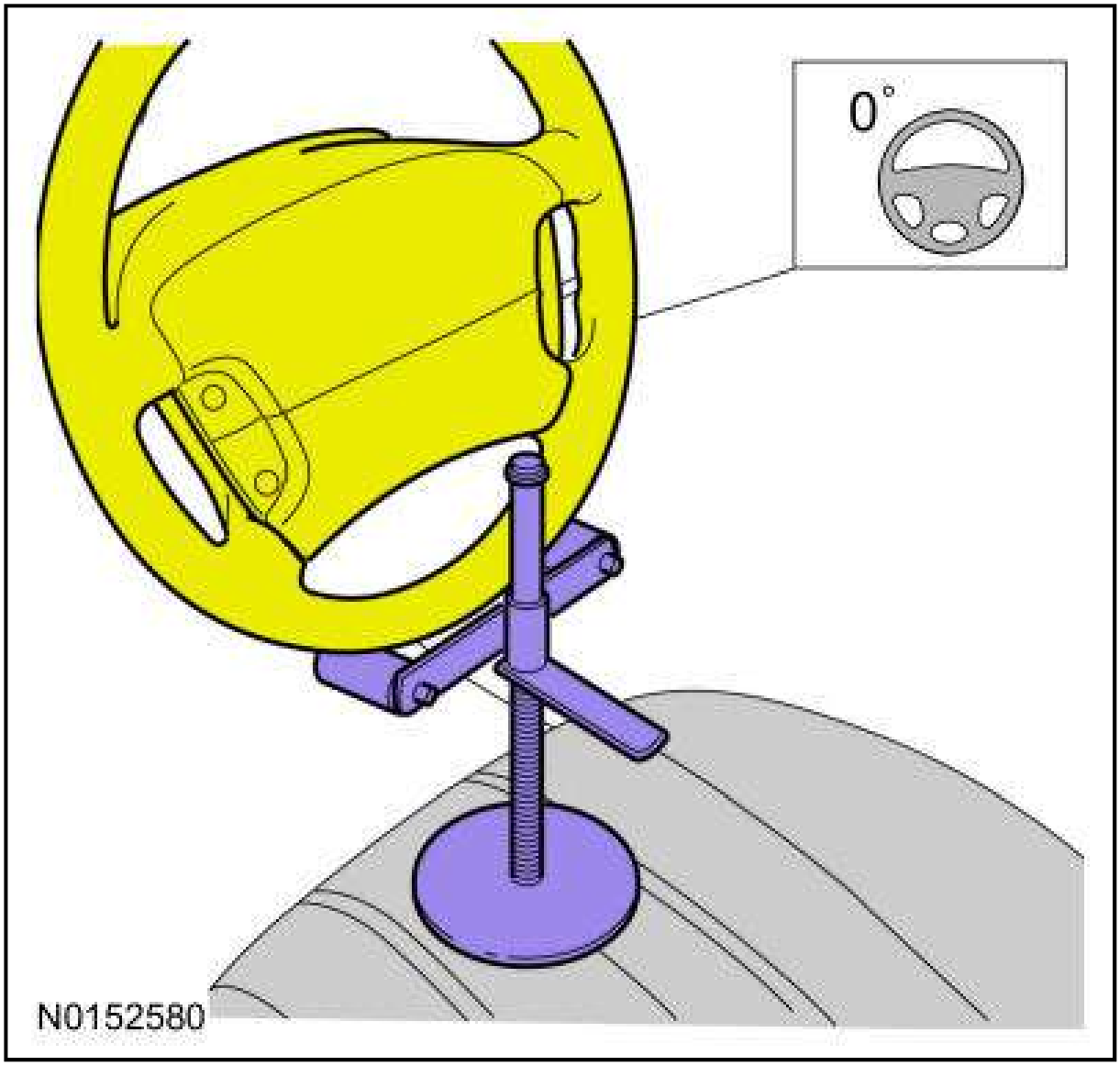
Are both low beams inoperative?

Yes	GO to B11

No	GO to B12

B11 CHECK THE HEADLAMP RELAY GROUND CIRCUIT FOR AN OPEN

- Place the headlamp switch in the OFF position.
- Ignition OFF.



2. Drain the cooling system. Refer to: **Engine Cooling System Draining, Vacuum Filling and Bleeding** . Refer to: **Engine Cooling System Draining, Vacuum Filling and Bleeding** . Refer to: **Engine Cooling System Draining, Vacuum Filling and Bleeding** . Refer to: **Engine Cooling System Draining, Vacuum Filling and Bleeding** . Refer to: **Engine Cooling System Draining, Vacuum Filling and Bleeding** .
3. Recover the A/C refrigerant. Refer to: **Air Conditioning (A/C) System Recovery, Evacuation and Charging - Vehicles With: R1234YF Refrigerant** . Refer to: **Air Conditioning (A/C) System Recovery, Evacuation and Charging - Vehicles With: R134A Refrigerant** .
4. Disconnect the battery cables.

   Torque

   : 1: 80 lb.in (9 Nm)

   2: 177 lb.in (20 Nm)

   3: 53 lb.in (6 Nm)

   4: 80 lb.in (9 Nm)

DTC sets to identify which speaker circuits are causing the concern.

Remote Audio Controls - Vehicles Not Equipped With Adaptive Steering

The steering wheel switches contain a series of resistors. Each steering wheel audio function switch has a specific resistance value. The SCCM and switch assembly are connected in a voltage divider circuit. The voltage drop over an internal SCCM resistor is changed by the different audio switch function resistances. The SCCM monitors the voltage drop across its internal resistor to determine which steering wheel switch is pressed. The SCCM transmits the steering wheel switch inputs over the CAN to the ACM, to control audio functions.

Remote Audio Controls - Vehicles With Adaptive Steering

The steering wheel switches contain a series of resistors. Each steering wheel audio function switch has a specific resistance value. The SECM and switch assembly are connected in a voltage divider circuit. The voltage drop over an internal SECM resistor is changed by the different audio switch function resistances. The SECM monitors the voltage drop across its internal resistor to determine which steering wheel switch is pressed. The SECM transmits the steering wheel switch inputs over a private CAN to the SASM which relays the message over the HS-CAN to the ACM, to control audio functions.

SYNC System

NOTE: Refer to the Owner Literature for additional details of the SYNC system.

The APIM contains the SYNC software. The SYNC system connects various inputs over Bluetooth or USB connections to the car audio system. The SYNC system allows driver control of a phone, media device, and vehicle systems (navigation and climate control for example).

The APIM is powered at all times and uses the BCM ignition status message to control the on/off mode. The accessory delay feature is controlled by an ignition status message from the BCM.

SYNC Inputs

- USB - media players or flash drives
- Bluetooth - phones or media players
- Display unit and radio control panel switches
- Steering wheel switches
- Voice microphone input
- GPS data
- Serial data link wired input from the ACM
- Network data input from the CAN

SYNC Outputs

- Display unit CAN messages
    - Audio system commands from the touchscreen equipped vehicles
    - HVAC commands from touchscreen-equipped vehicles
- Wired outputs to the ACM
    - Stereo (2 channel) audio
    - Monaural voice responses, including navigation guidance (if equipped)
    - Monaural phone call audio and phone ringtone
- Commands to a USB or Bluetooth device

- SODCMC
- SODCMD
- SODL
- SODR
- PCM

NOTE: **Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.**

NOTE: **Failure to disconnect the battery when instructed results in false resistance readings. REFER to BATTERY DISCONNECT AND CONNECT .**

W1 RECHECK THE SODCMC (SIDE OBSTACLE DETECTION CONTROL MODULE C), SODCMD (SIDE OBSTACLE DETECTION CONTROL MODULE D), SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) OR SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, perform the SODCMC, SODCMD, SODL and SODR self-test.

Is DTC U3003:16 still present?

Yes	GO to W2

No	The system is operating correctly at this time. The DTC may have been set due to a previous low battery voltage condition.

W2 CHECK FOR PCM (POWERTRAIN CONTROL MODULE) CHARGING SYSTEM DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, perform the PCM self-test.

Are any charging system DTCs present in the PCM?

Yes	REFER to the appropriate DTC Chart.

No	GO to W3

W3 CHECK THE BATTERY CONDITION AND STATE OF CHARGE

- Check the battery condition and verify the battery is fully charged. REFER to: **Battery** .

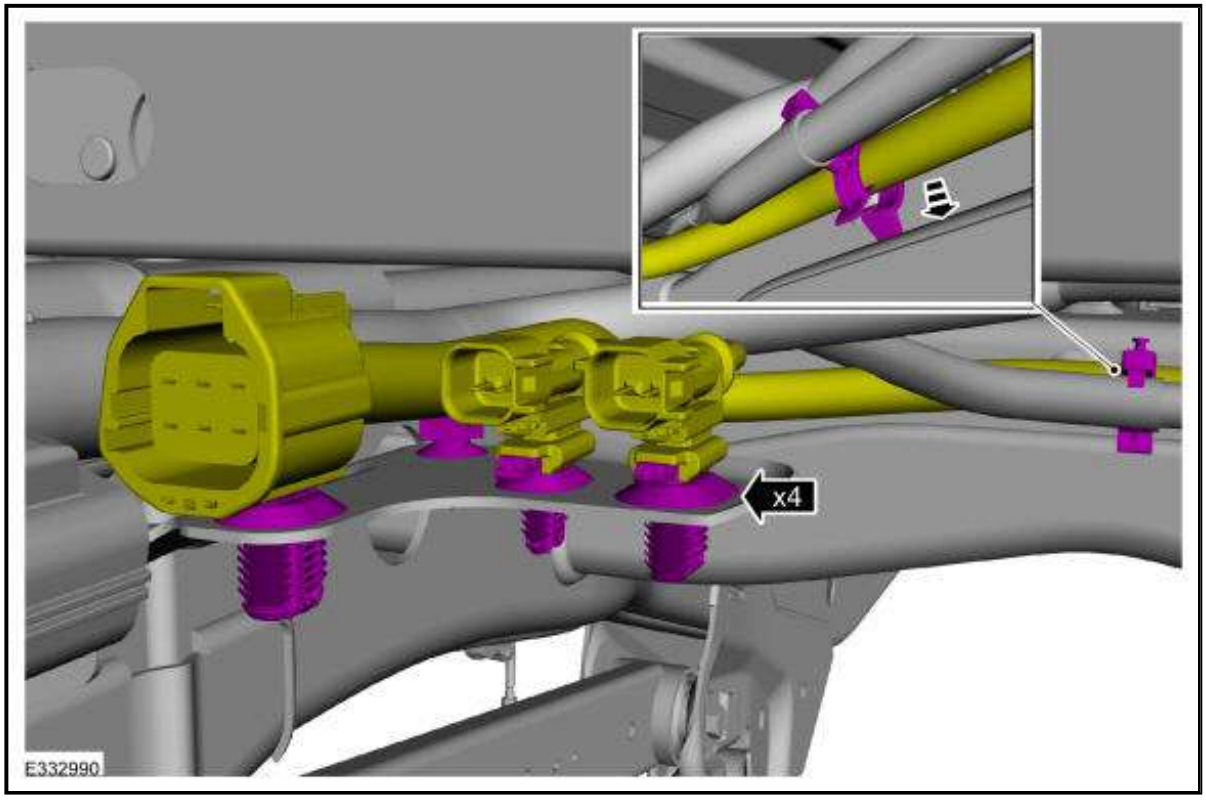
Is the battery OK and fully charged?

Yes	GO to W4

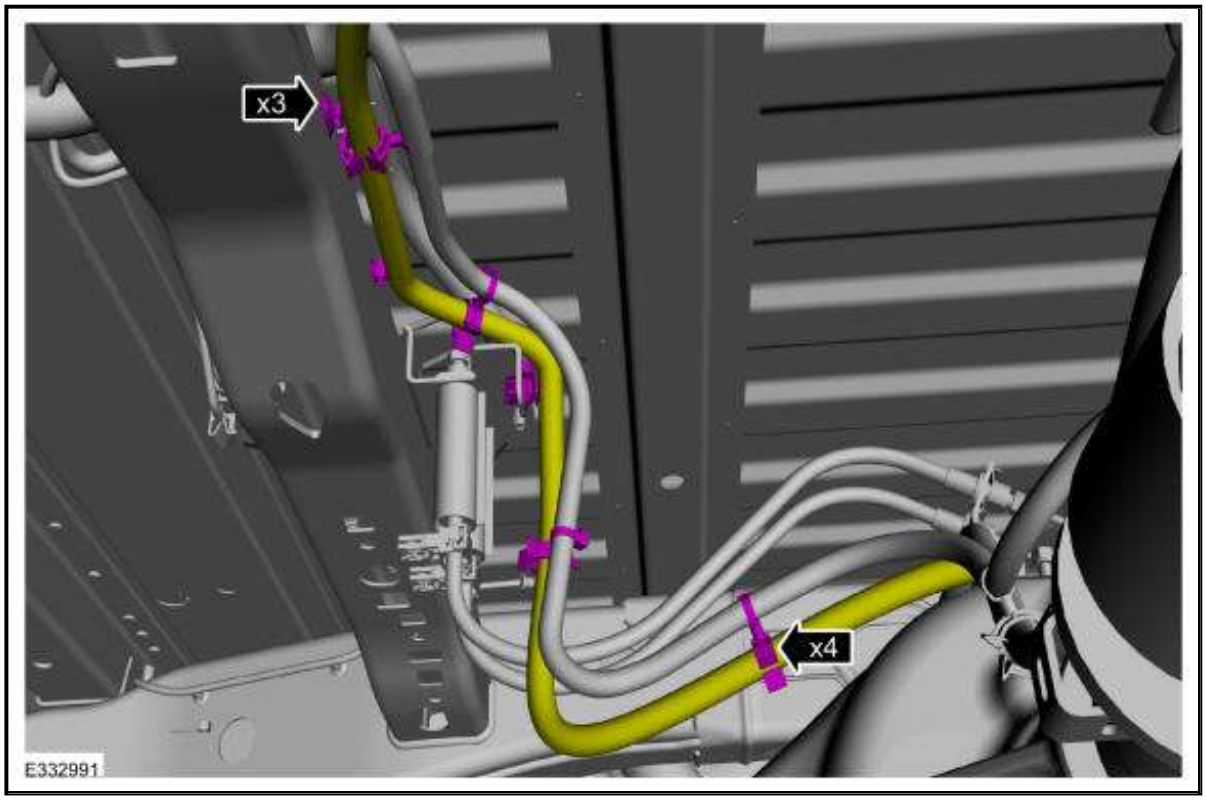
No	INSTALL a new battery. REFER to: **Battery** .

W4 CHECK THE SODCMC (SIDE OBSTACLE DETECTION CONTROL MODULE C), SODCMD (SIDE OBSTACLE DETECTION CONTROL MODULE D), SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) OR SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) VOLTAGE SUPPLY

- Ignition OFF.
- Disconnect SODCMC C1483.
- Disconnect SODCMD C1484.
- For Incandescent rear lamps.
- Disconnect SODL C412B.

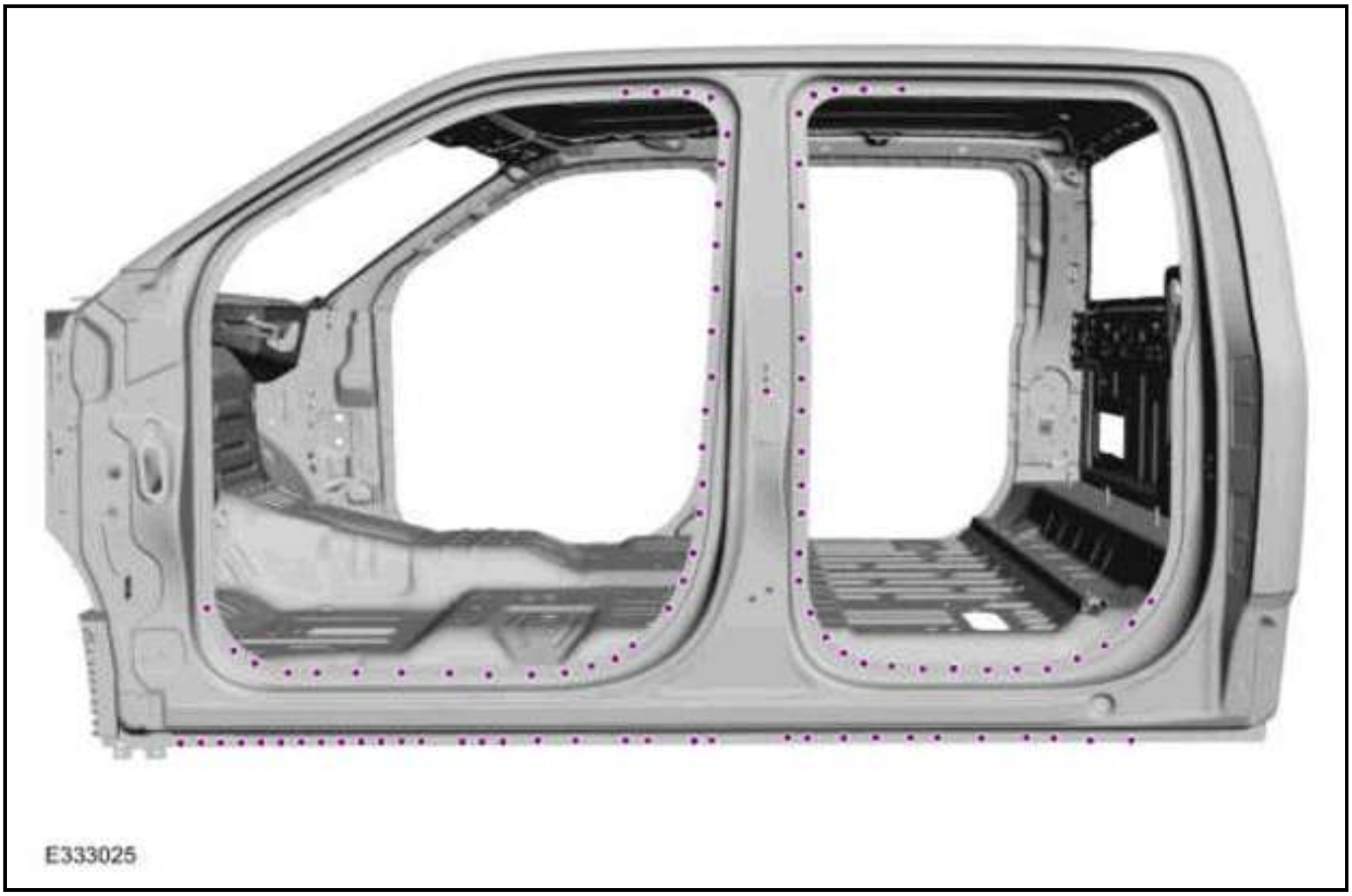


4. Detach the wiring harness.



5.

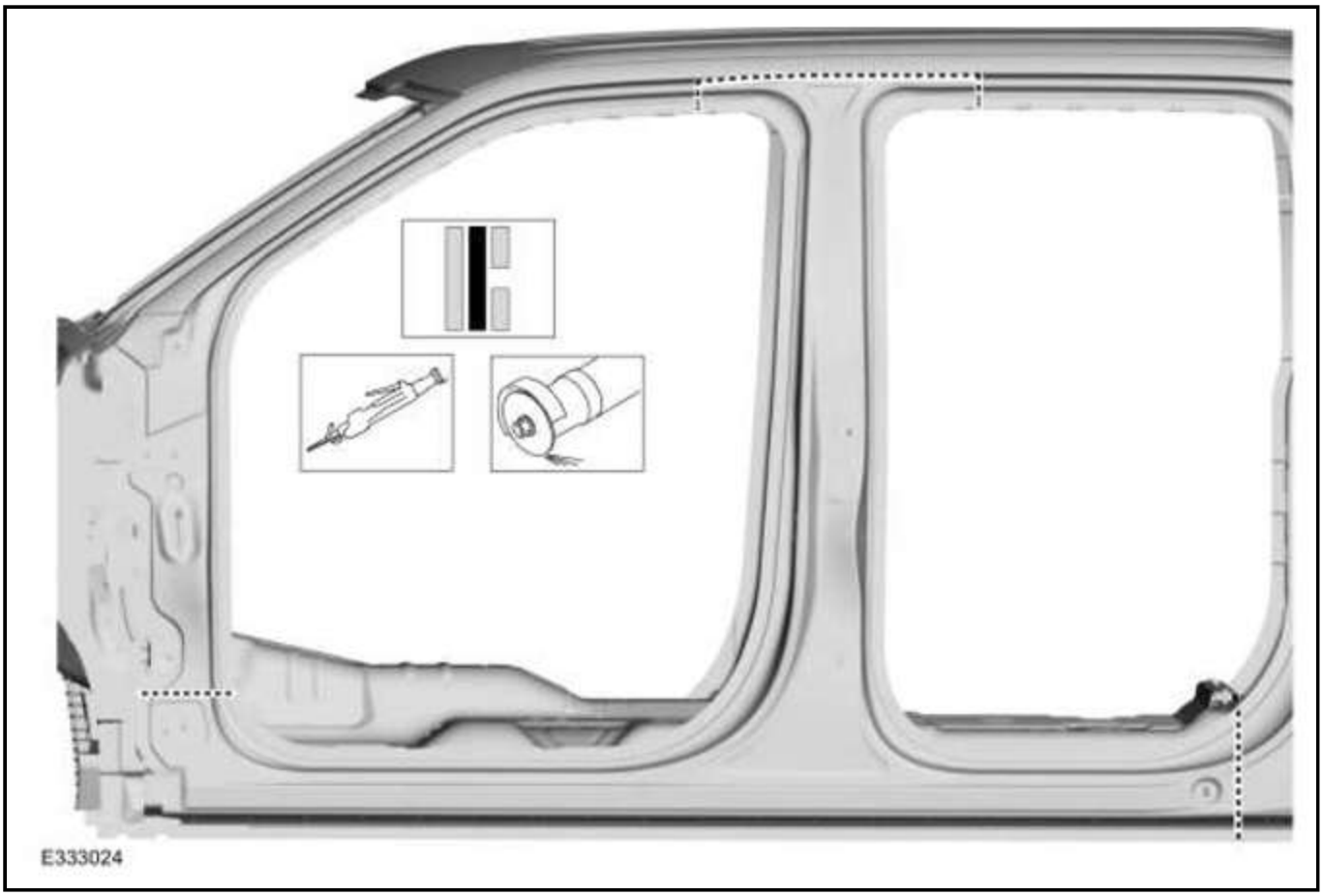
1. Disconnect the rear differential electrical connector.
2. Detach the harness from the axle vent hose.
3. Detach the harness retainer from the rear axle.
4. Detach the harness routing bracket.

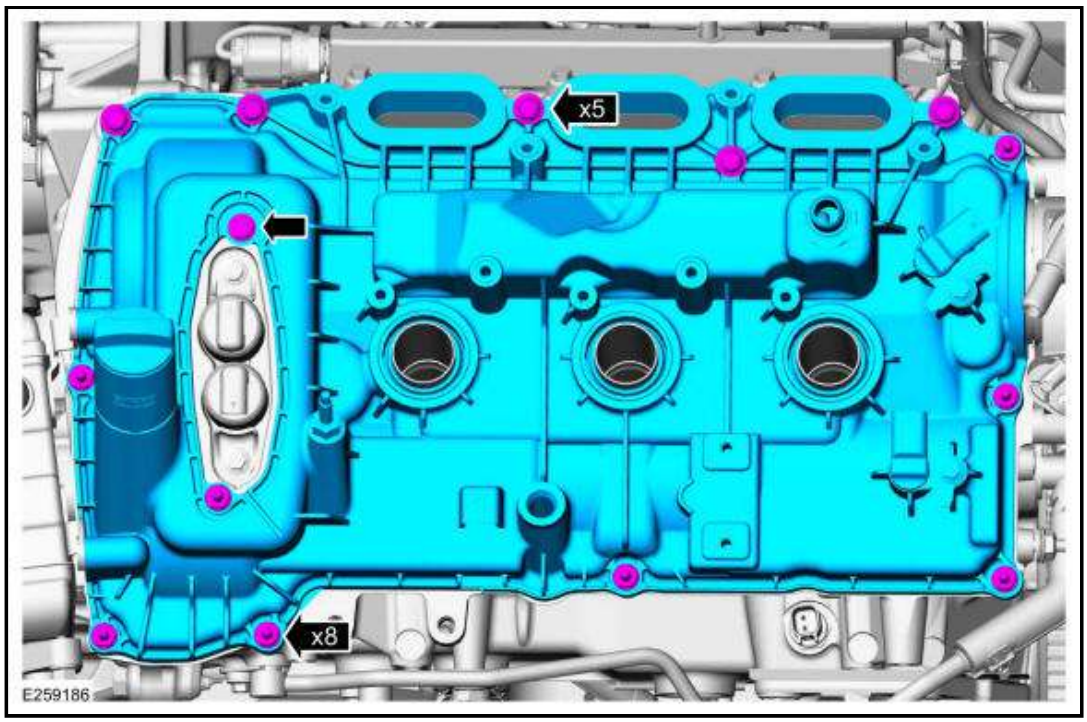


10. Measure and cut **the outer panel only** of the body side panel.

    Use the General Equipment: Air Body Saw

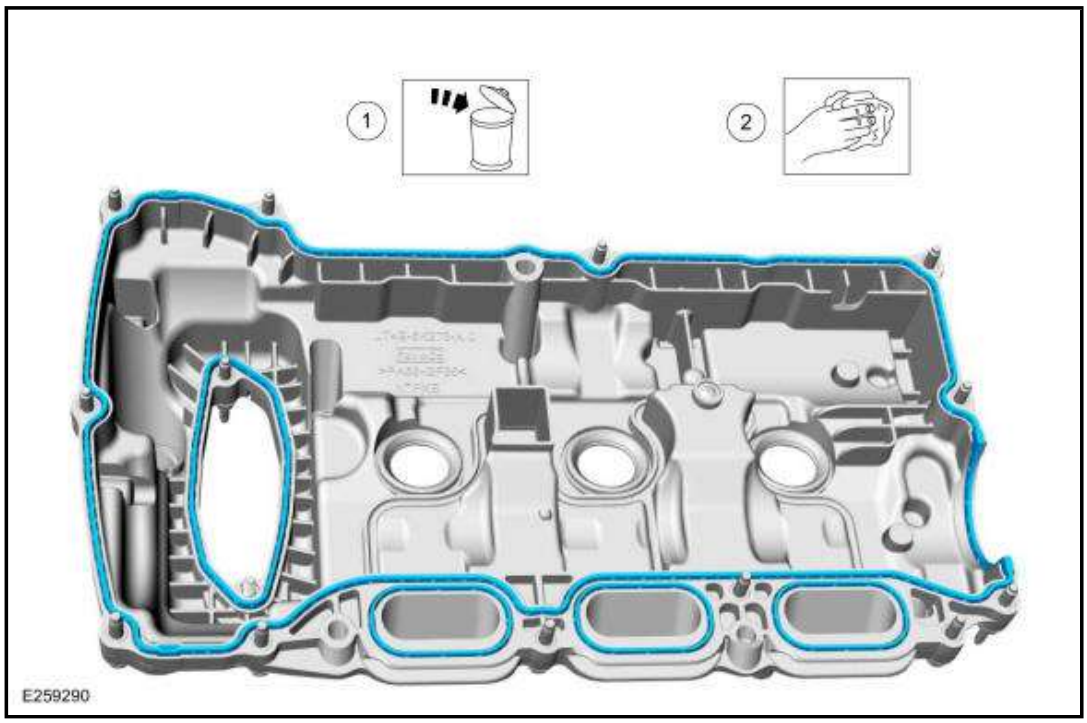
    Use the General Equipment: Spherical Cutter



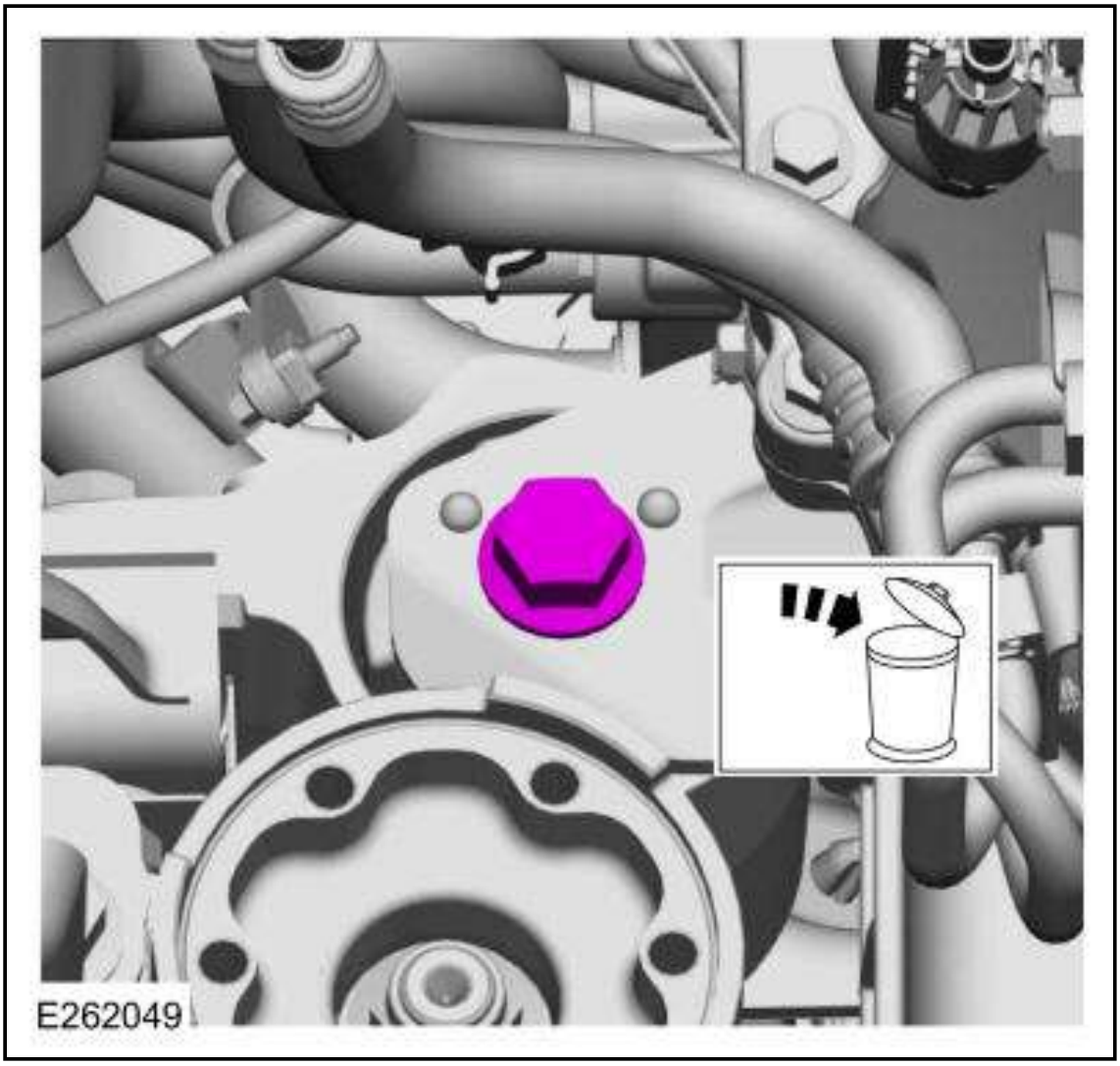


49.

1. Remove and discard the gasket.
2. Clean the valve cover gasket groove with soap and water or a suitable solvent.

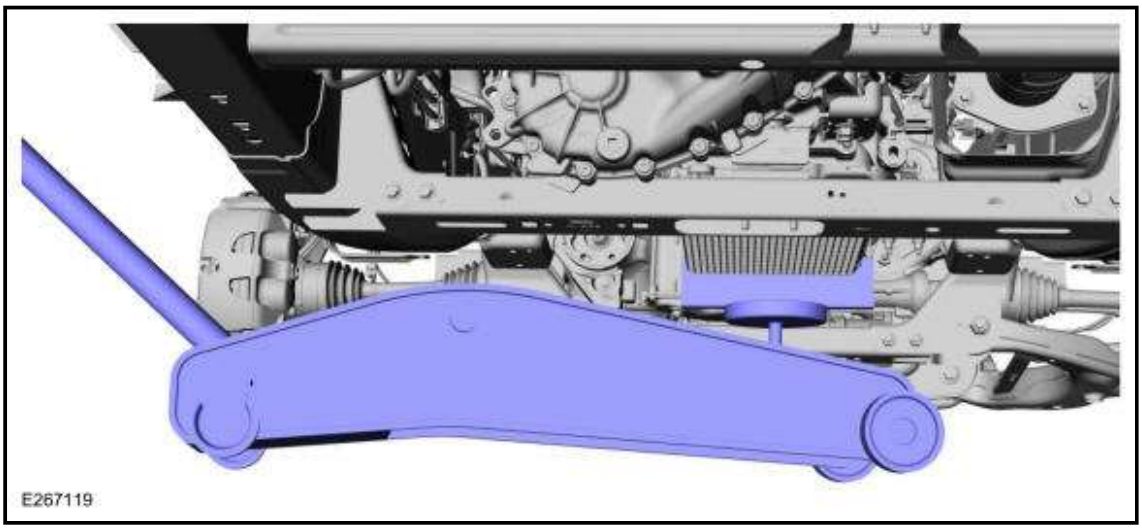


50. Inspect the spark plug seals. Remove any damaged seals using the special tools. Use Special Service Tool: 205-153 (T80T-4000-W) Handle., 303-1247 VCT Spark Plug Tube Seal Remover and Installer.

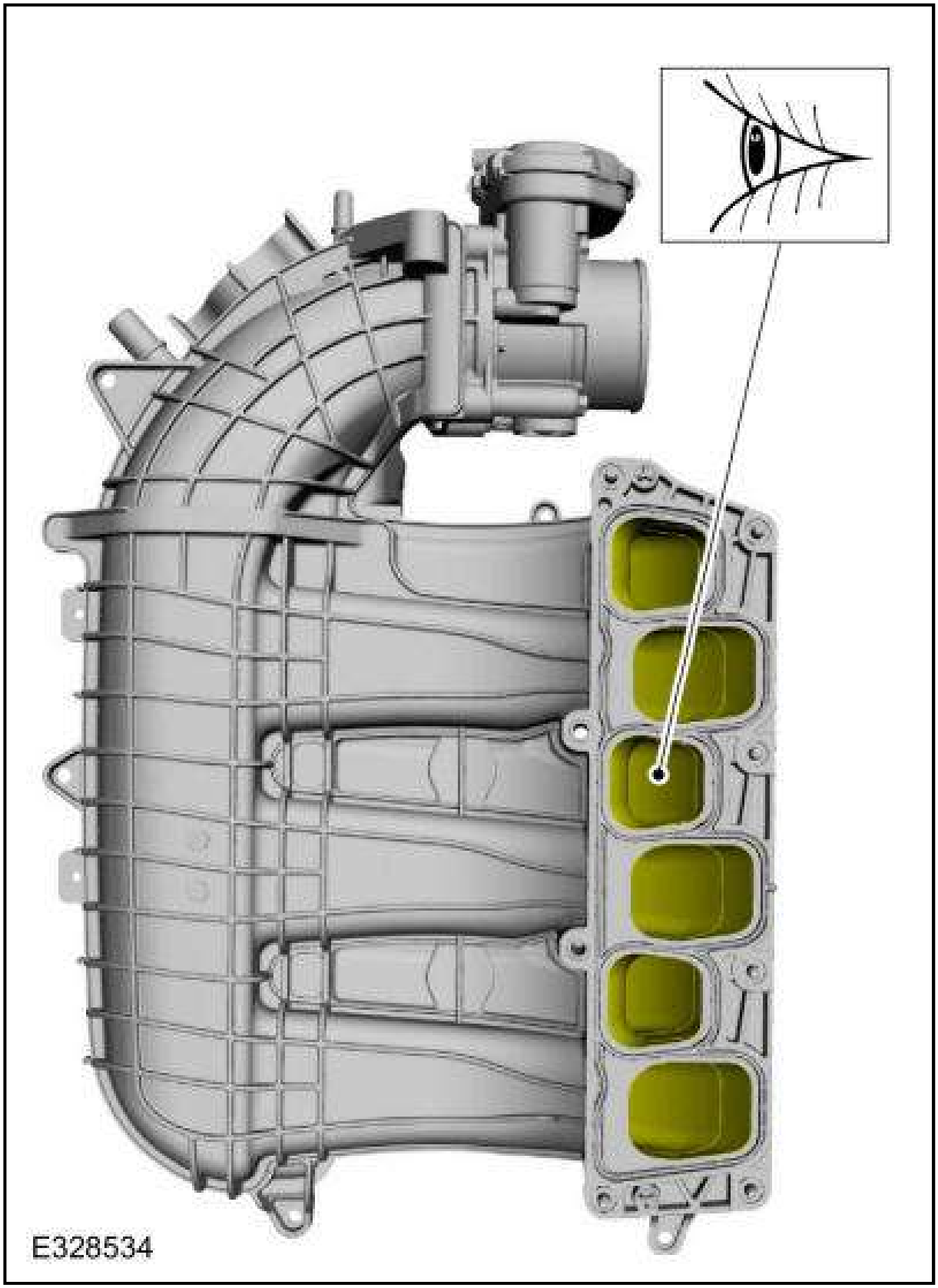


NOTE: **Do not support the transmission by the fluid pan, failure to follow instruction may result in serious damage to the transmission.**

44. Support the bellhousing of the transmission with a suitable floor jack and a block of wood. Use the General Equipment: Trolley JackUse the General Equipment: Wooden Block

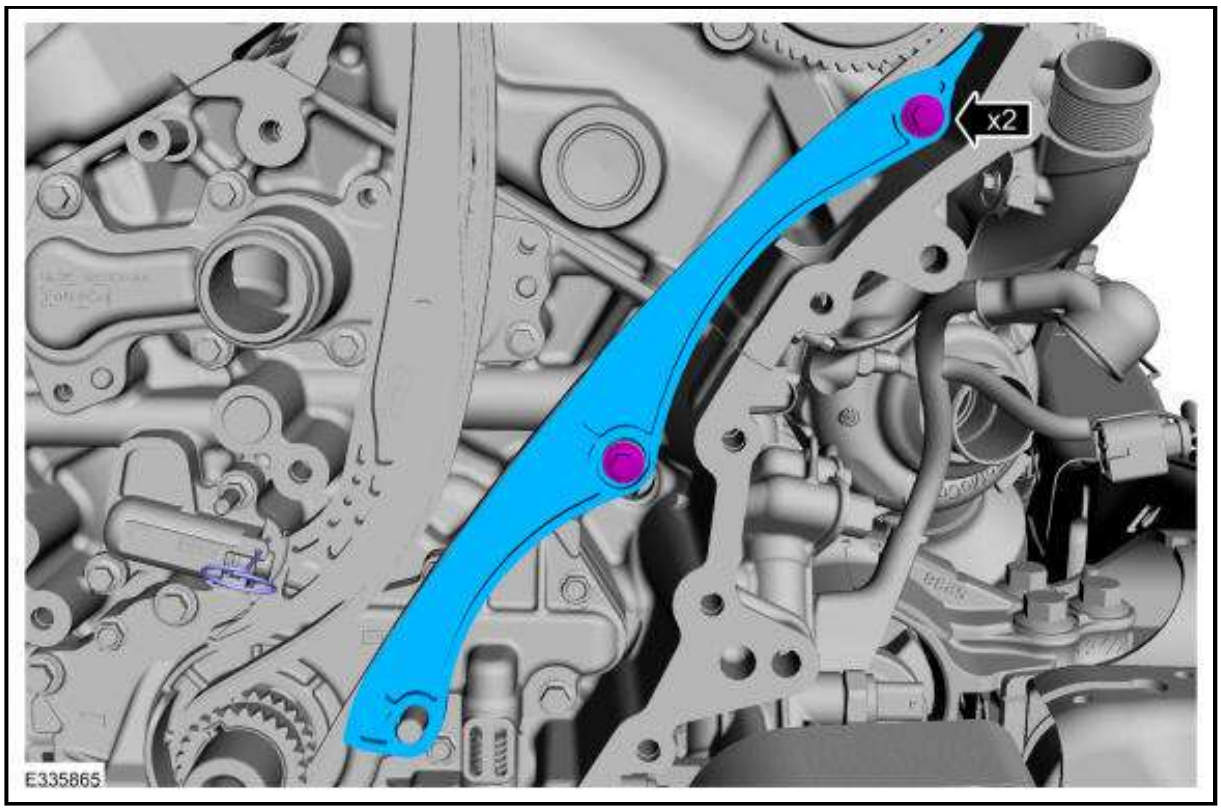


45. Remove the upper bellhousing bolts.

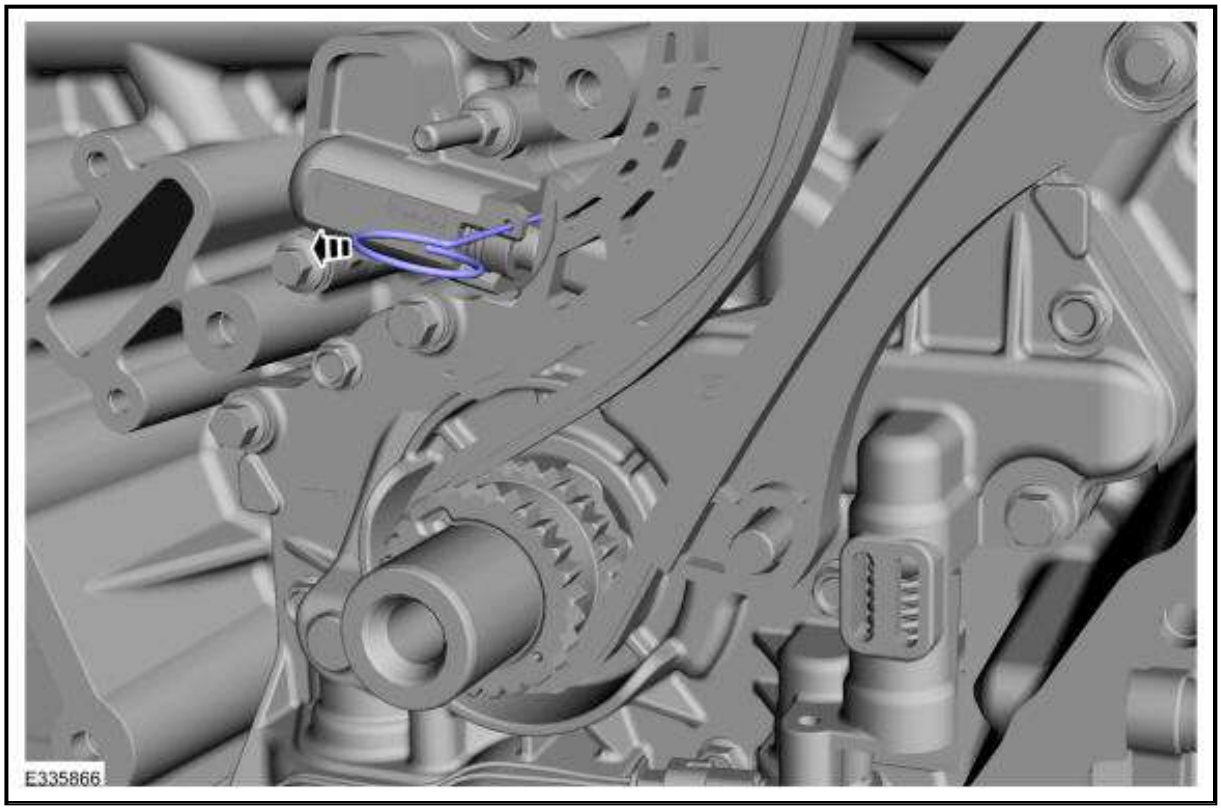


2. Install the upper intake manifold and tighten the bolts in sequence shown.

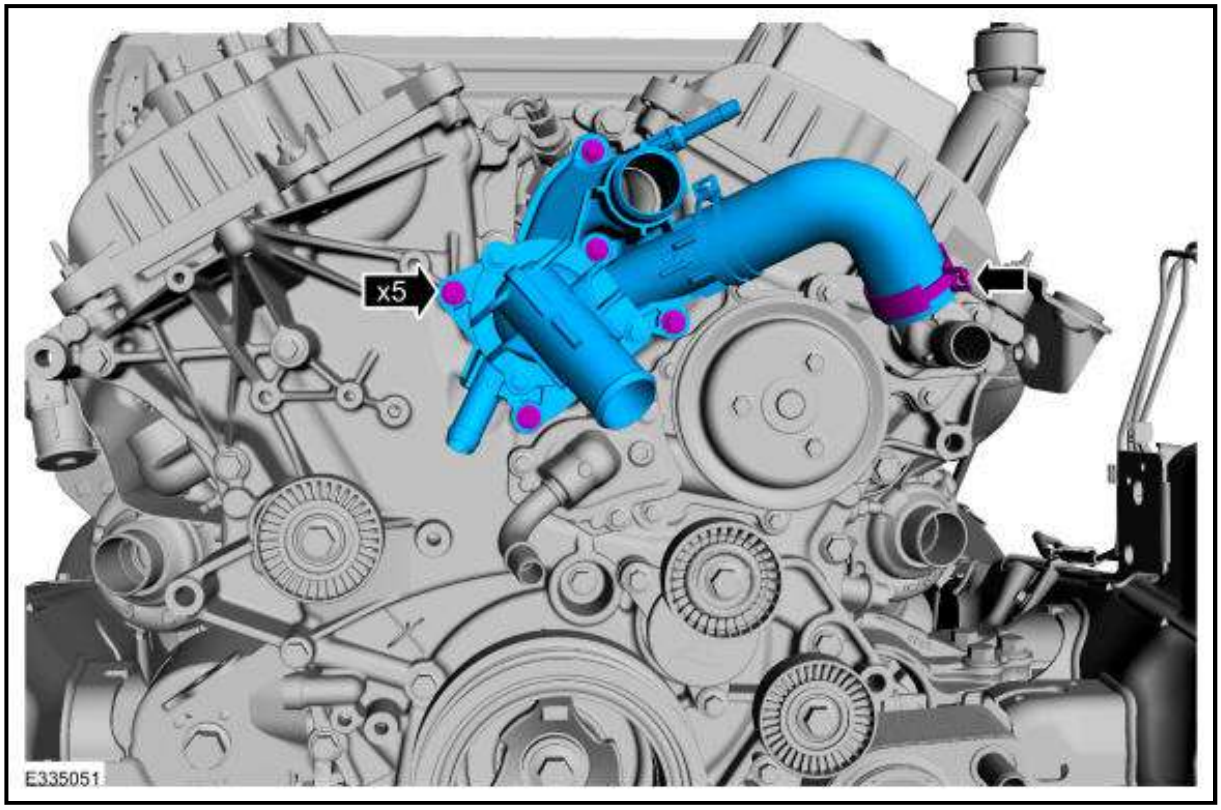
   Torque:Stage 1: 89 lb.in (10 Nm); Stage 2: 45 deg.



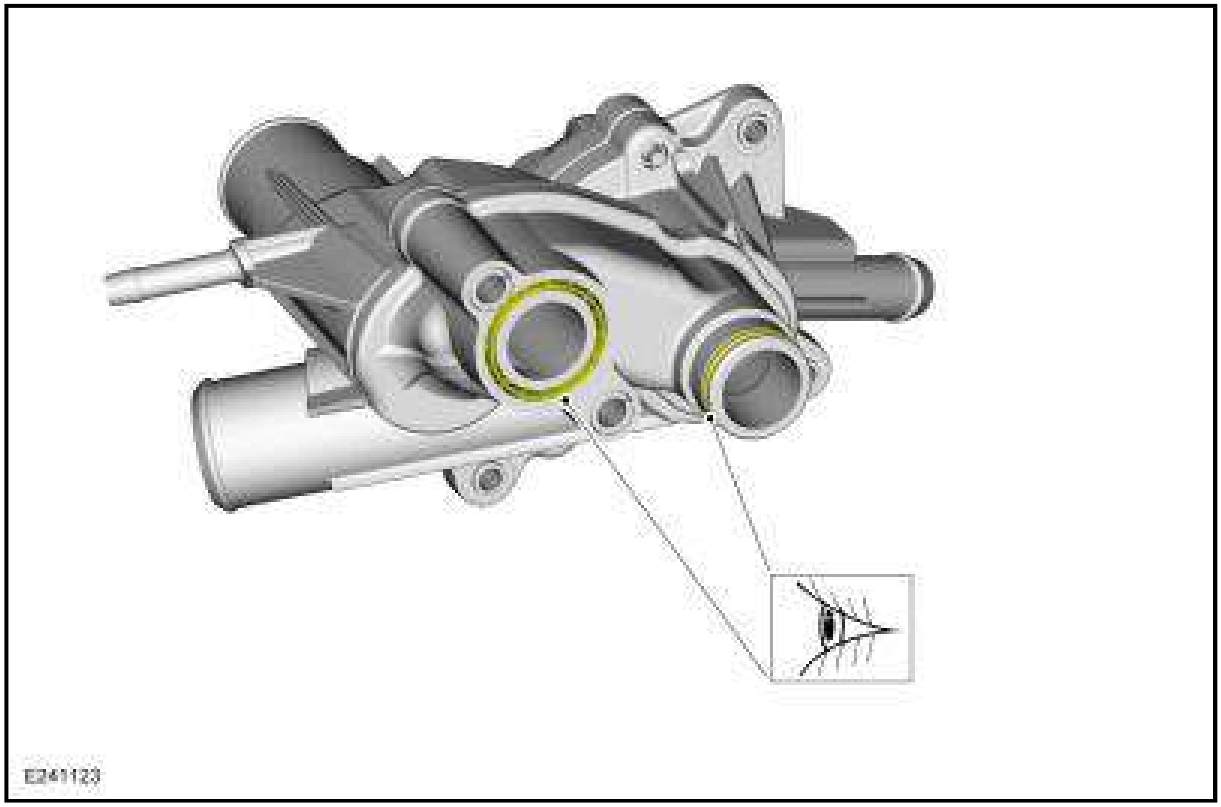
9. Remove the tensioner pins.



10. Remove Special Service Tool: 303-1655 Tool, Camshaft Holding.

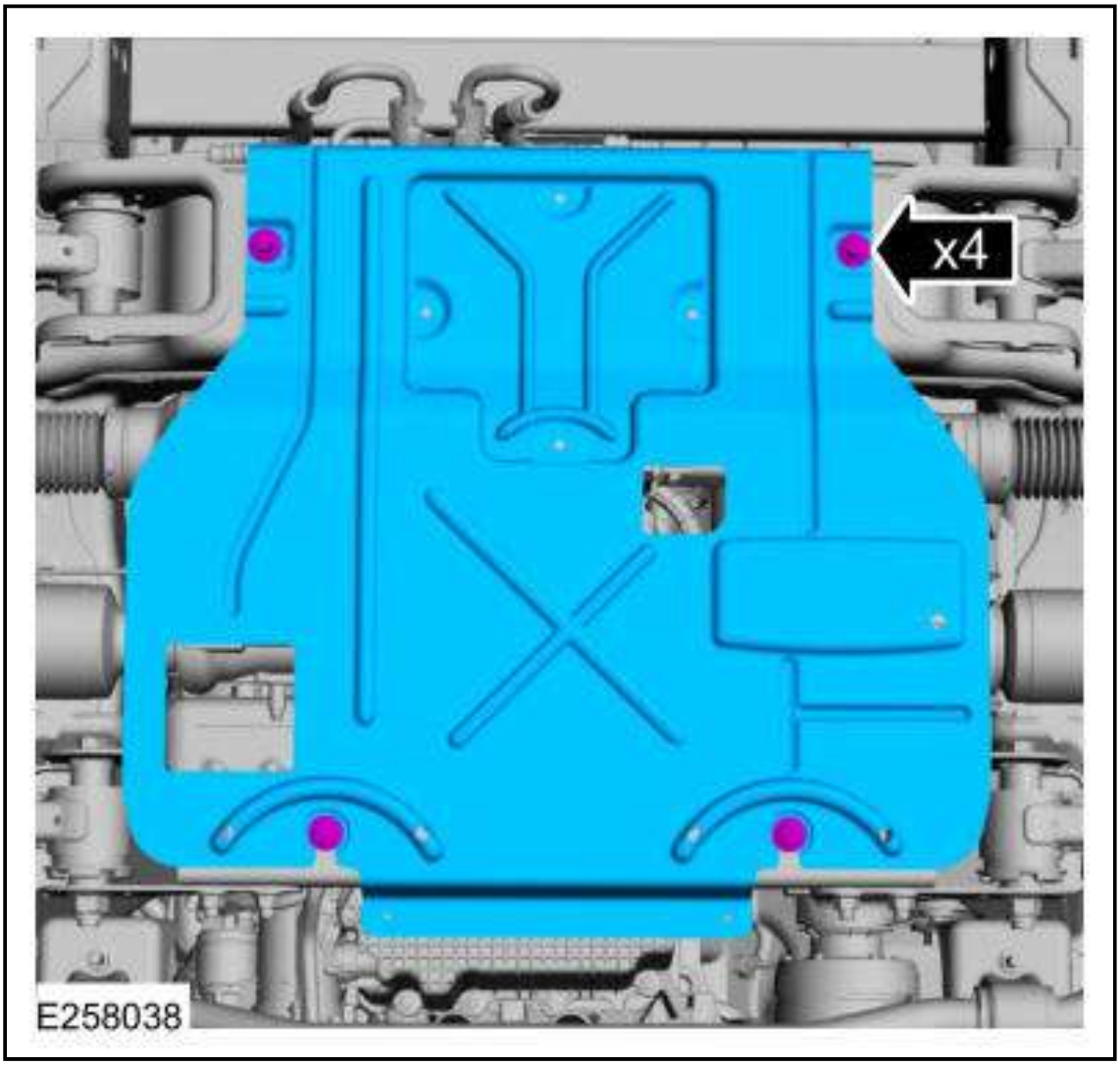


72. Inspect the O-ring seal and replace if necessary.



73.

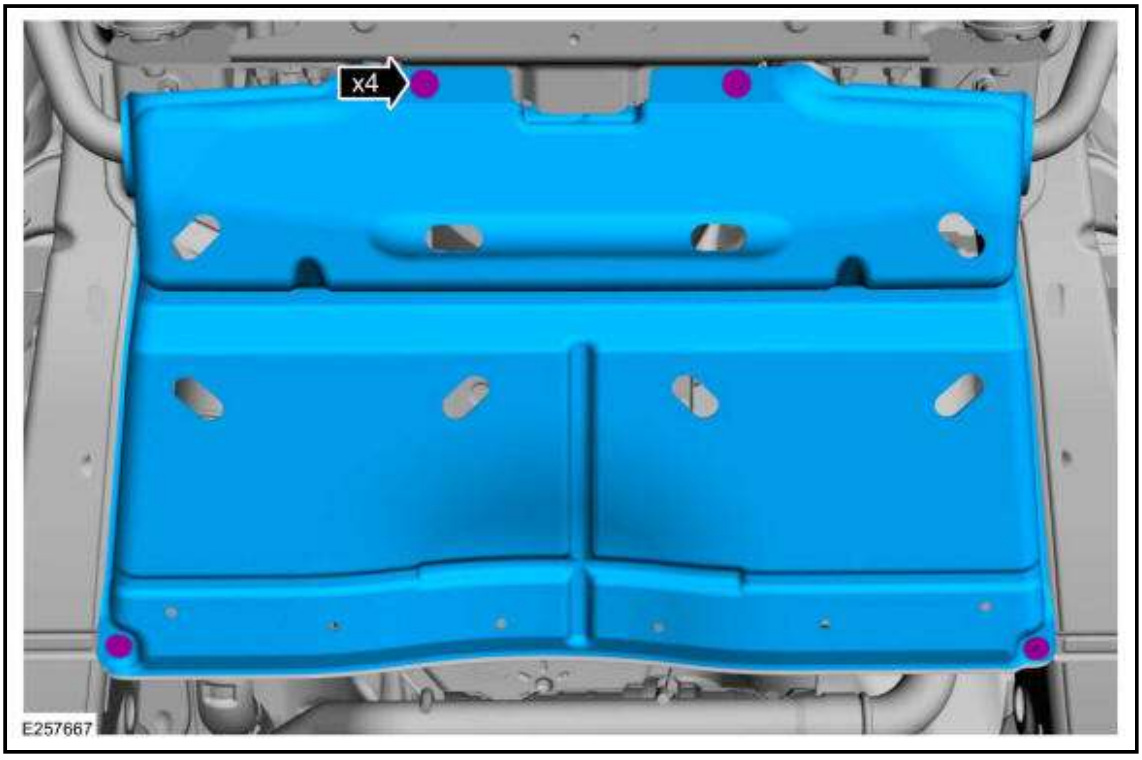
- Remove the crankshaft pulley bolt and washer.
- Discard the bolt.

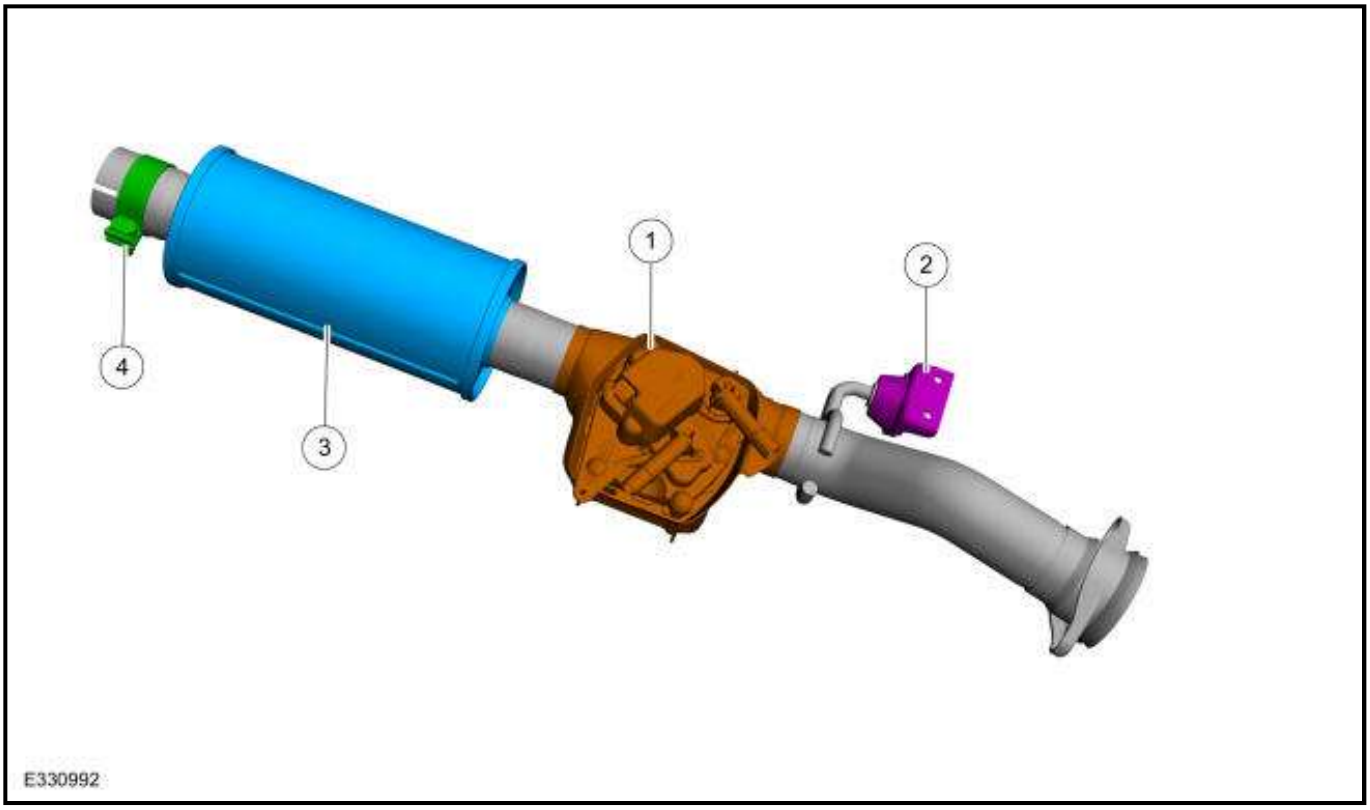


35. **NOTE:** **If equipped.**

Install the underbody shield and the bolts.

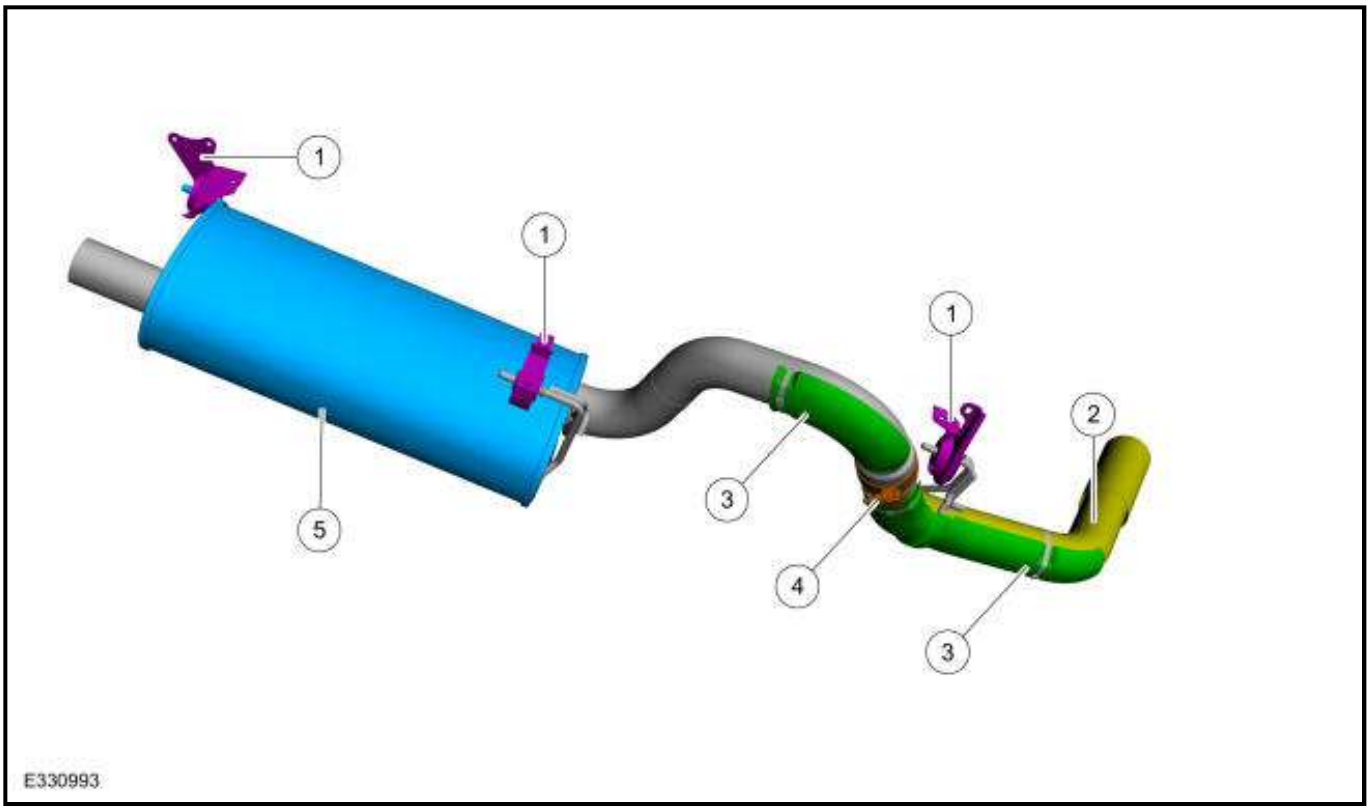
Torque: 71 lb.in (8 Nm)



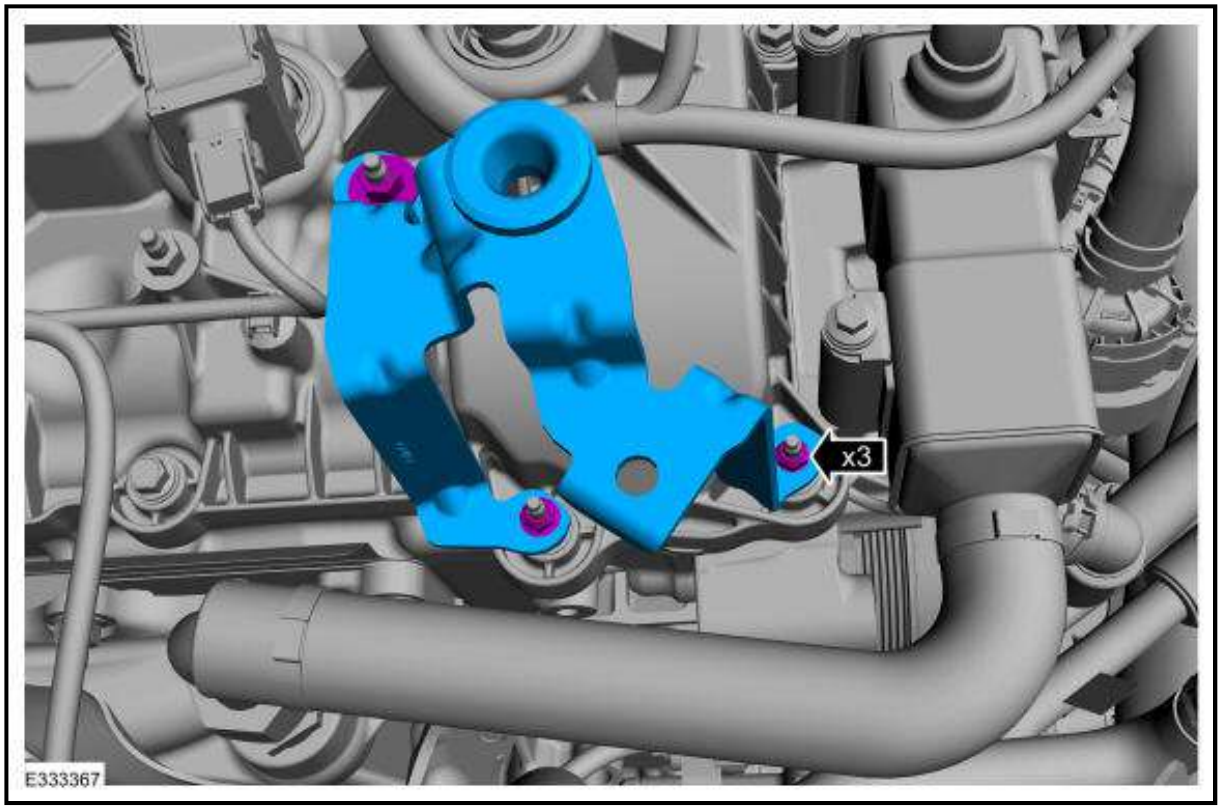


Exhaust intermediate pipe

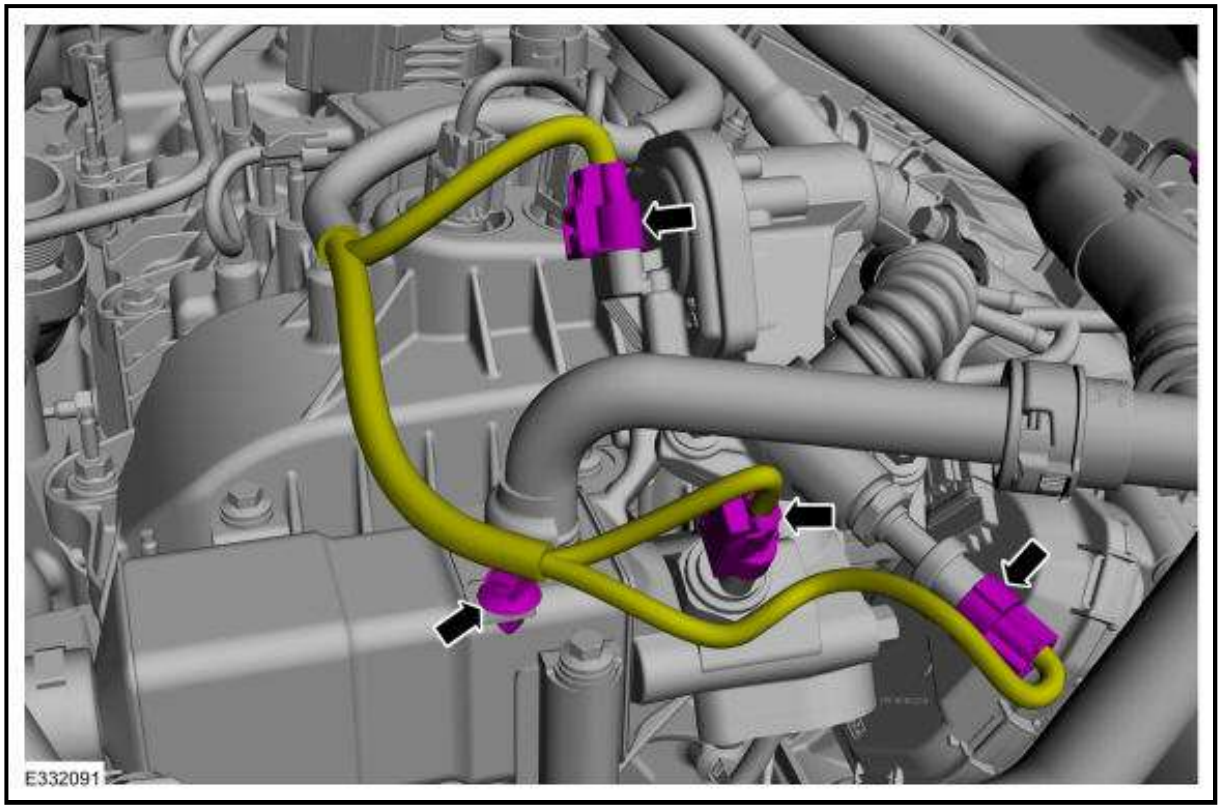
Item	Description
1	Heat exhanger
2	Isolator
3	Resonator
4	Inlet pipe clamp



Muffler and tailpipe assembly



6. Disconnect the electrical connectors and wiring harness retainer. Position aside the wiring harness.



7. Disconnect the lower coolant hose from the EGR cooler assembly. Refer to: **Quick Release Coupling** .