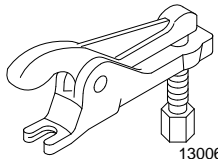
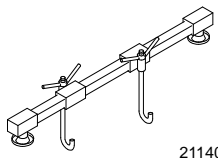
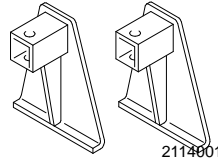
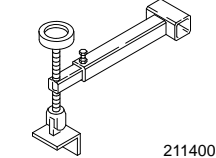
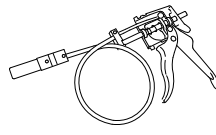


Engine and Transmission Assembly – Remove and Install (21 132 0)

Special Tools

 13006	13-006 Ball joint remover
 21140	21-140 Engine support bar
 21140-01	21-140-01 Adaptor for 21-140

 2114003	21-140-03 Adaptor for 21-140
	24-003 Remover/installer, radiator hose clip

Workshop Equipment

Assembly stand
Transmission jack

Materials

Cable ties

Remove

1. Standard preparatory measures:

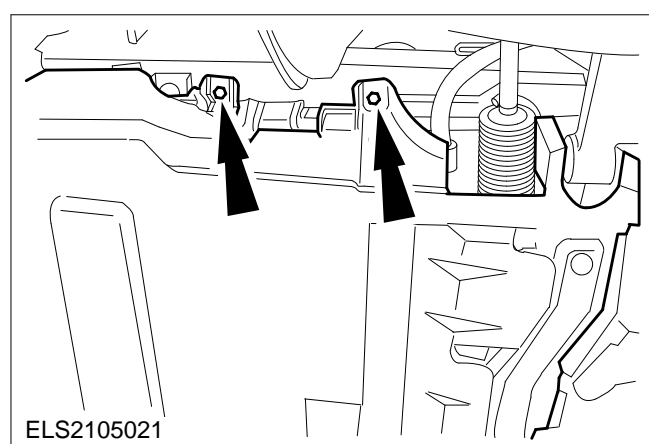
- Make a note of the radio keycode.
- Make a note of the preset radio stations.
- Disconnect the battery ground lead.
- Slacken the front wheel nuts.

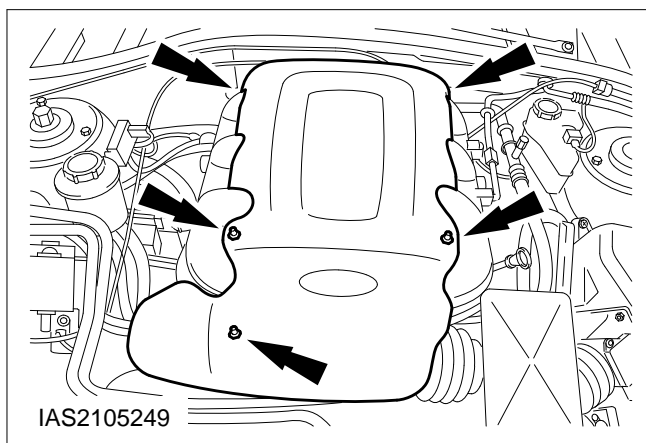
2. Raise the vehicle.

3. Detach the engine undershield (left-hand side shown).

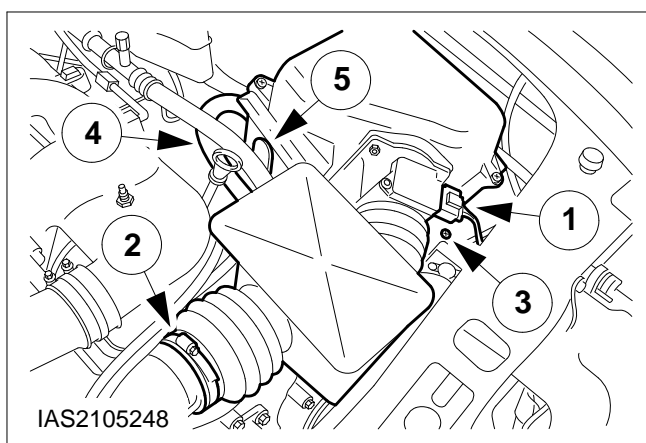
Drain off the coolant.

4. Lower the vehicle.



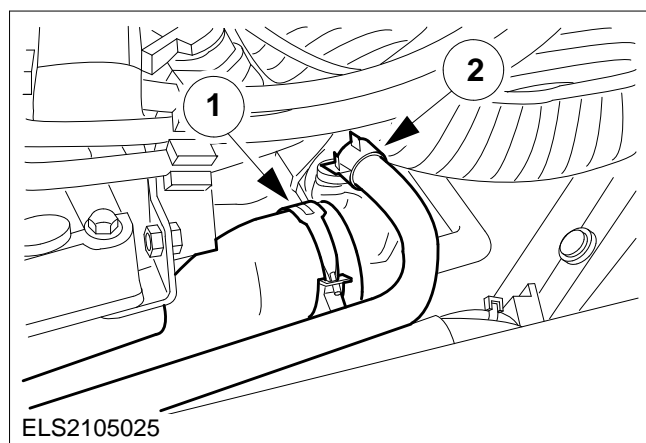


5. Remove the cover from the intake system.



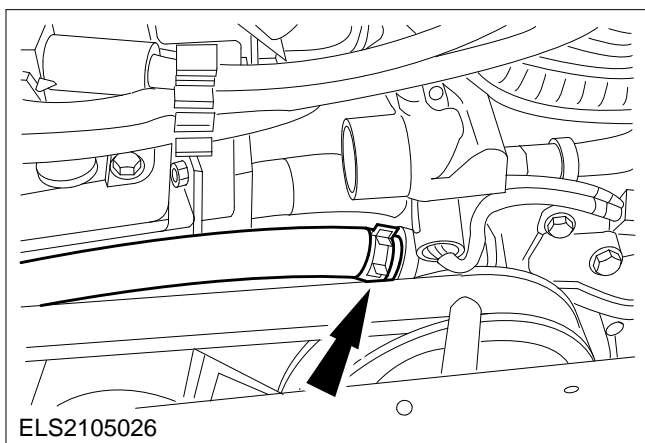
6. Remove the air cleaner.

- 1 Disconnect the plug from the mass air flow (MAF) sensor.
 - 2 Detach the intake hose.
 - 3 Remove the intake pipe bolt.
 - 4 Detach the positive crankcase ventilation (PCV) hose.
 - 5 Remove the two rubber retainers.
- Pull the air cleaner off the intake pipe and pull it upwards out of the grommets on the body.

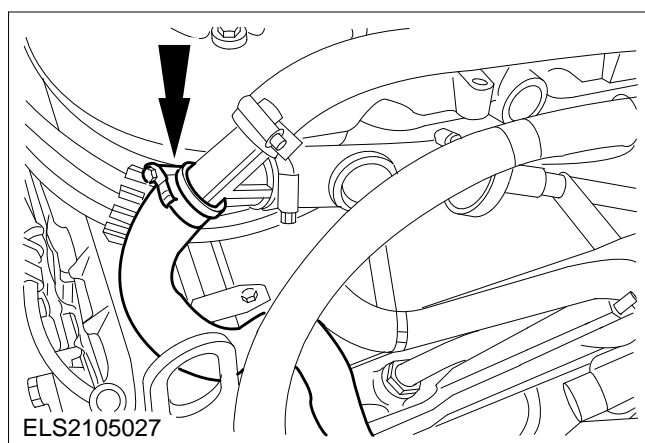


7. Disconnect the coolant hoses.

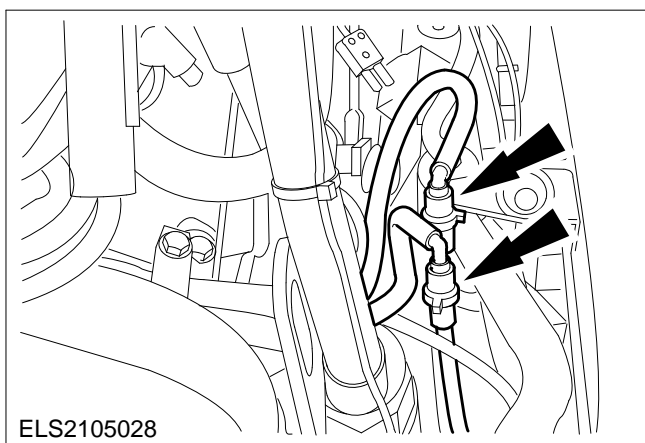
- 1 From the distributor housing.
- 2 To the expansion tank.



- 8. Detach the coolant hose from the coolant pump.**

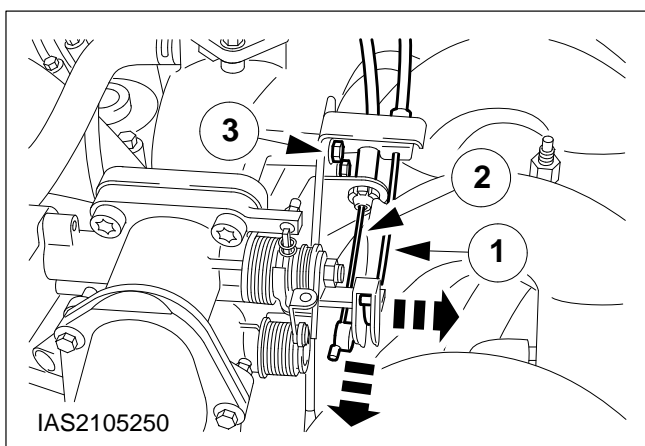


- 9. Disconnect the crankcase breather hose and place it to one side.**



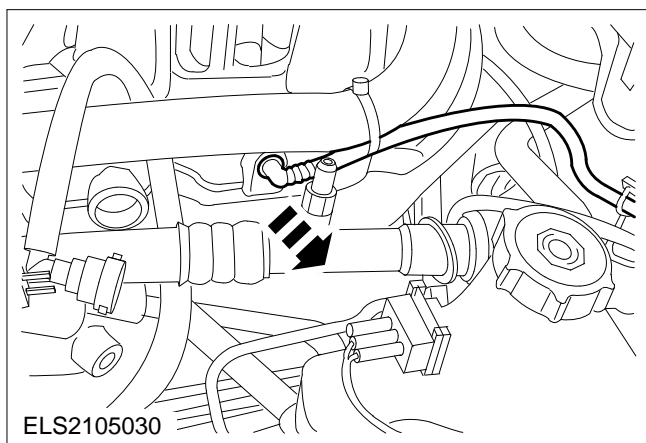
NOTE: Mark the fuel pipes.

- 10. Disconnect the fuel pipe quick-release couplings.**



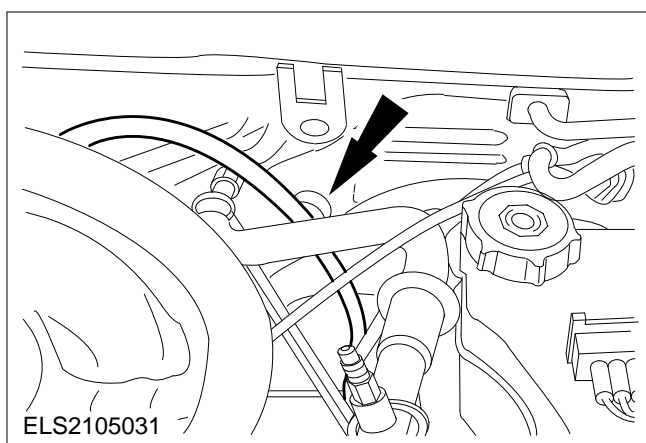
- 11. Detach the throttle cable and the speed control system cable.**

- 1 Unhook the throttle cable and detach it from the bracket.
- 2 Unhook the cable of the speed control system.
- 3 Detach the bracket for the speed control system cable.

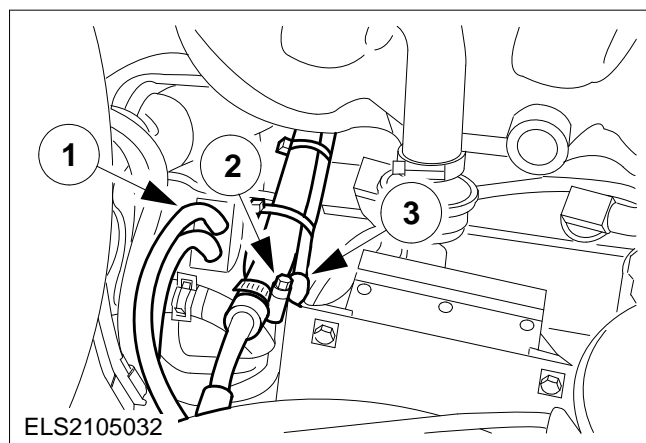


12. Disconnect the vacuum line running to the brake servo.

- Push the plastic ring in using a screwdriver.
- Disconnect the vacuum line.

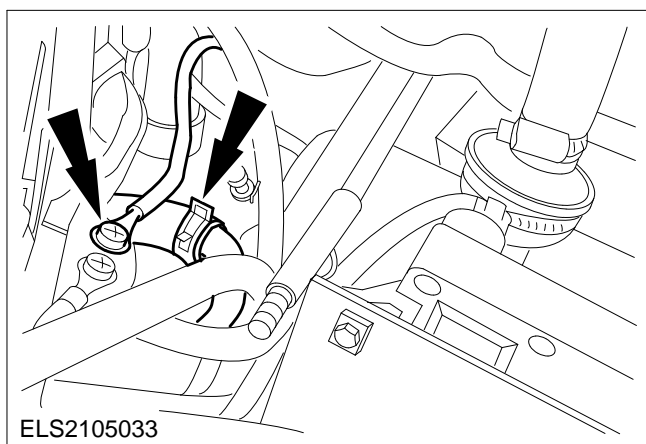


13. Disconnect the vacuum hose from the air plenum chamber.



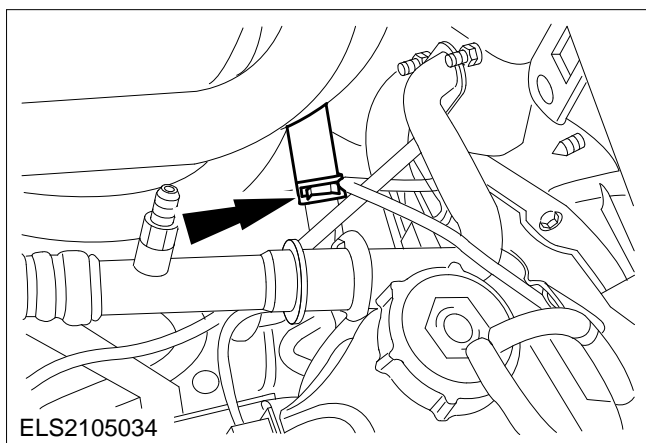
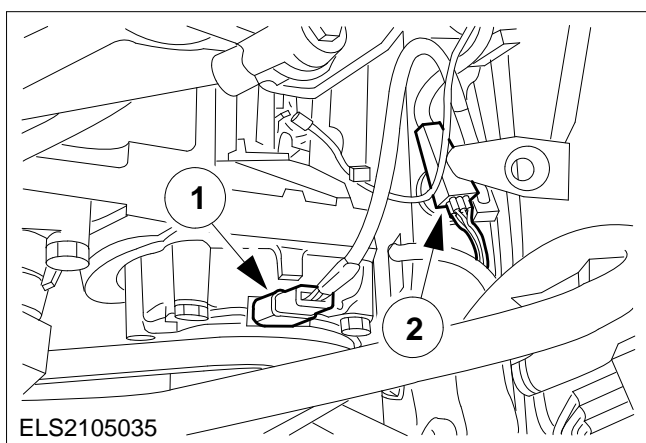
14. Disconnect the vacuum hoses and the engine breather hose.

- 1 Mark the vacuum hoses of the exhaust gas recirculation (EGR) system and disconnect them.
- 2 Detach the engine breather hose.
- 3 Disconnect the vacuum hose from the electronic vacuum regulator.

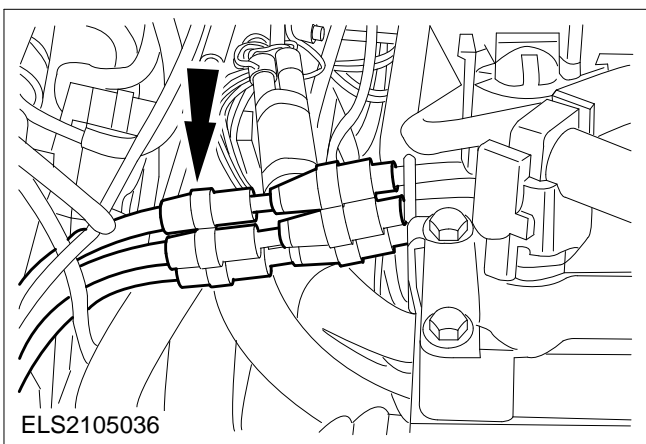
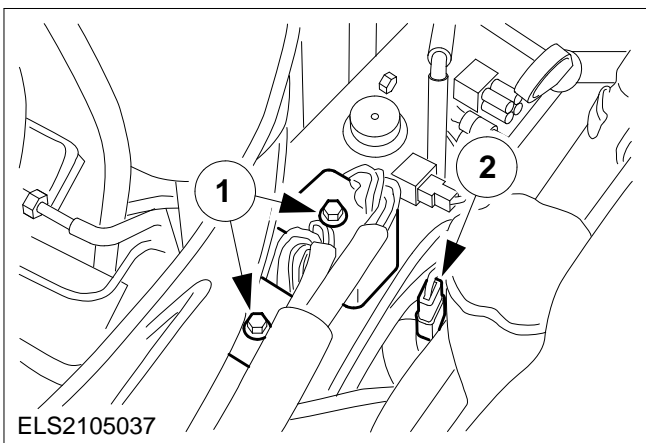


15. Detach the ground lead from the body.

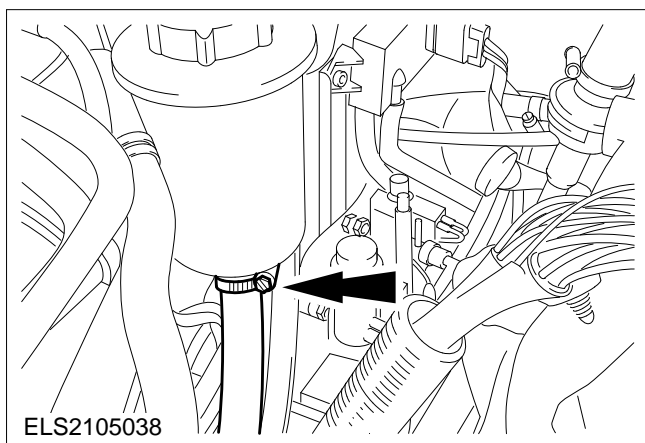
16. Detach the right-hand heater coolant hose.

**17. Detach the left-hand heater coolant hose.****18. Disconnect the plugs.**

- 1 Disconnect the air conditioning compressor plug.
- 2 Disconnect the heated oxygen (HO2S) plug on the left-hand side.

**19. Disconnect the vacuum lines.****20. Disconnect the central connectors and plug.**

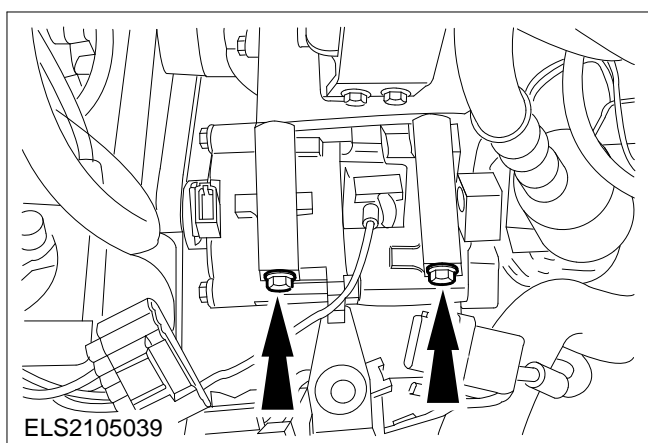
- 1 Disconnect the two central connectors.
- 2 Disconnect the heated oxygen sensor (HO2S) plug.



NOTE: Watch out for escaping fluid.

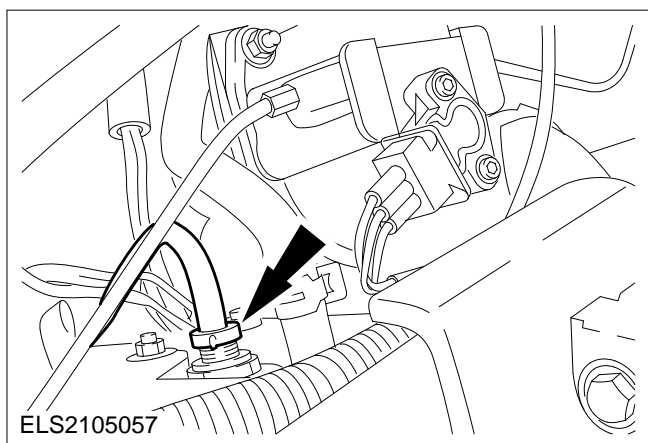
21. Disconnect the fluid hose from the power steering fluid reservoir.

Catch any escaping fluid.

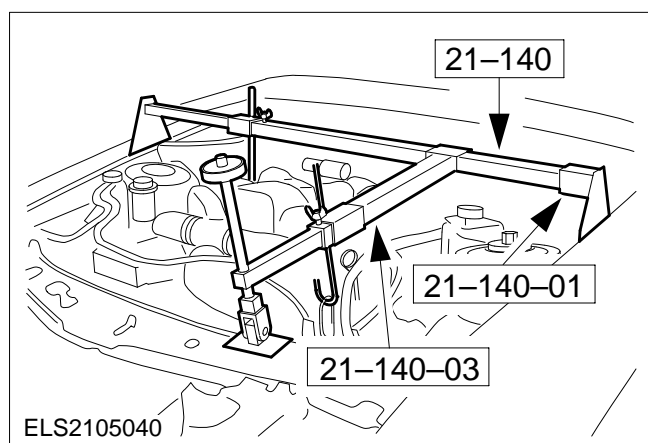


NOTE: The bolts are removed at a later stage.

22. Unscrew the upper bolts of the air conditioning compressor.



23. Detach the upper oil pipe from the oil cooler.

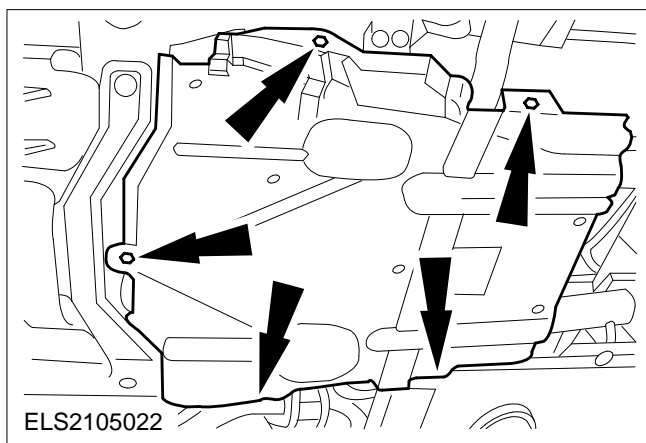


24. Attach the engine support bar.

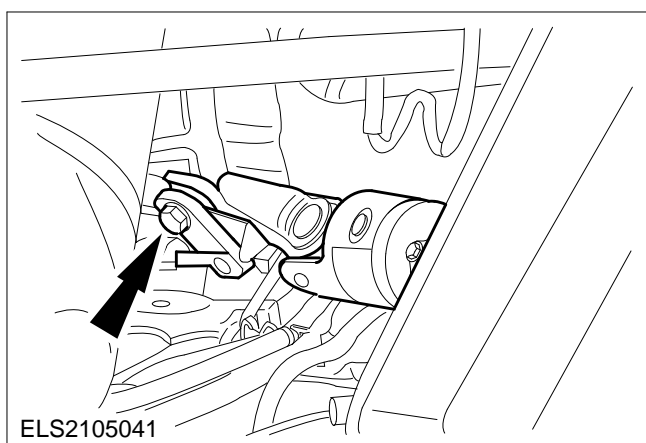
Attach the shackle to the right-hand engine lifting eye.

25. Raise the vehicle.

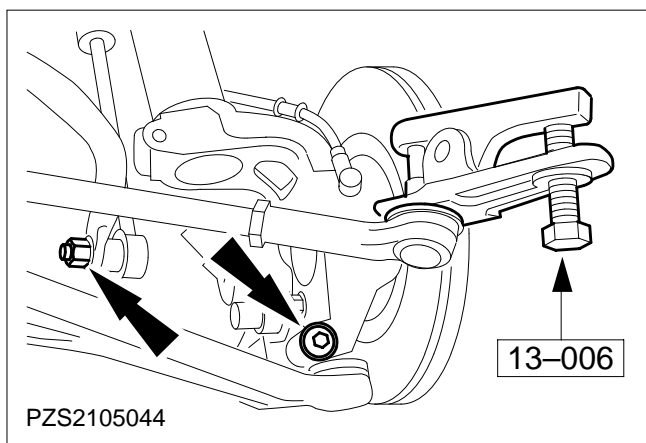
Remove the wheels.



26. Detach the transmission cover.

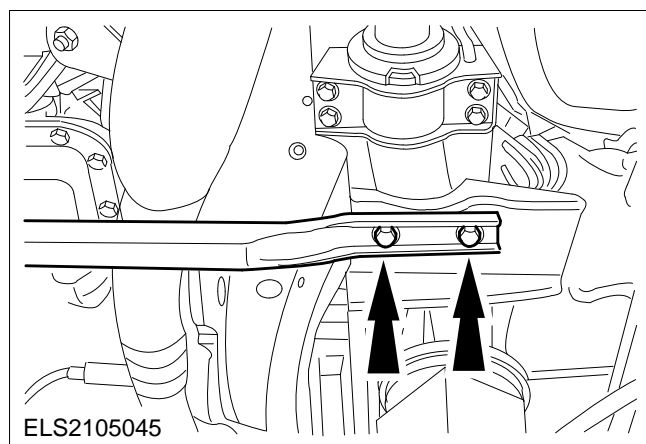


27. Detach the steering intermediate shaft.

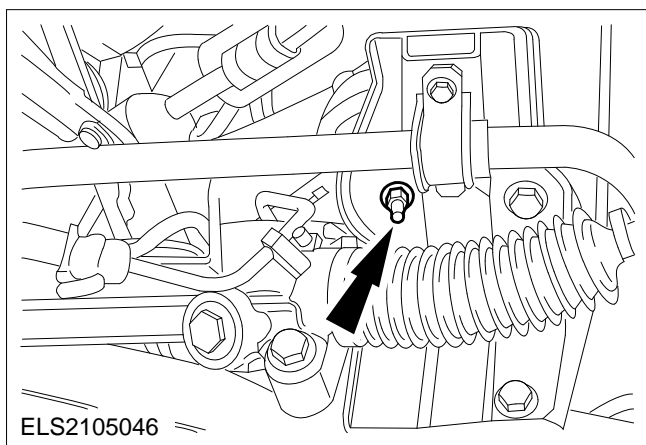


28. Remove the axle mounting (left-hand side shown).

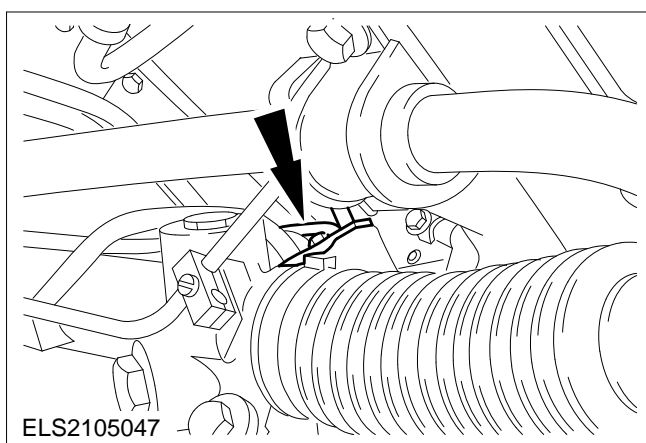
- Track rods.
- Link rods from stabiliser.
- Lower suspension arm from spindle carrier.



29. Detach the front axle transverse brace (left-hand side shown).

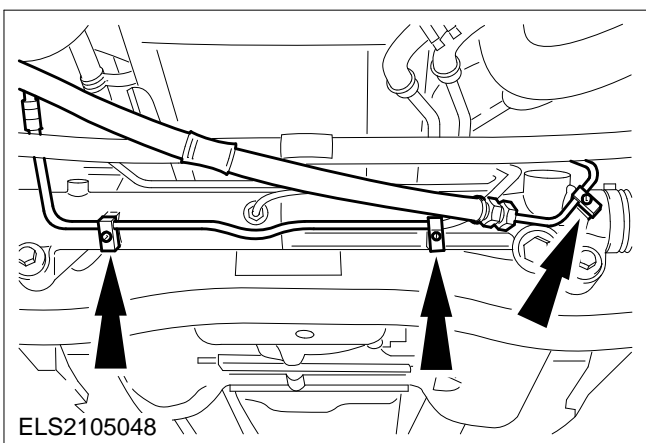


30. Detach the engine mounting (left-hand side shown).



31. Detach the two oil pipes from the steering gear.

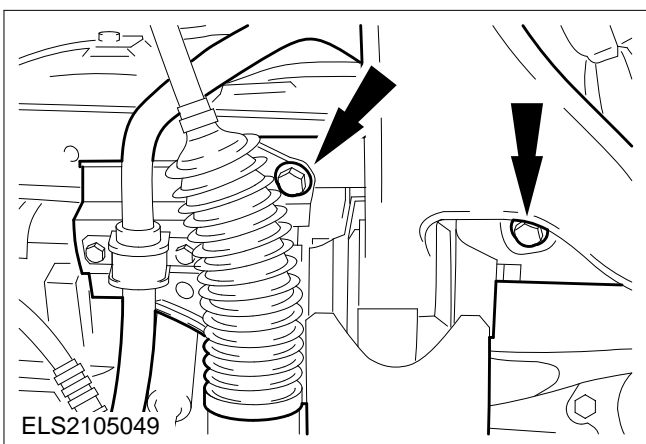
Detach the retaining plate (one bolt).



32. Detach the oil pipe clips.

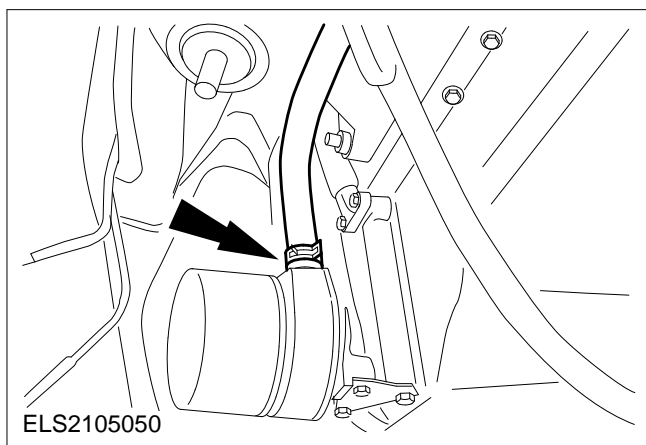
Lay the pipes to the front.

33. Support the front crossmember with a transmission jack.

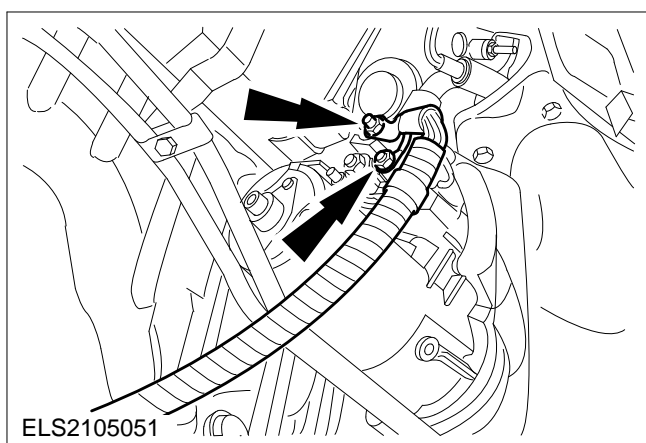


34. Detach the front crossmember (left-hand side shown).

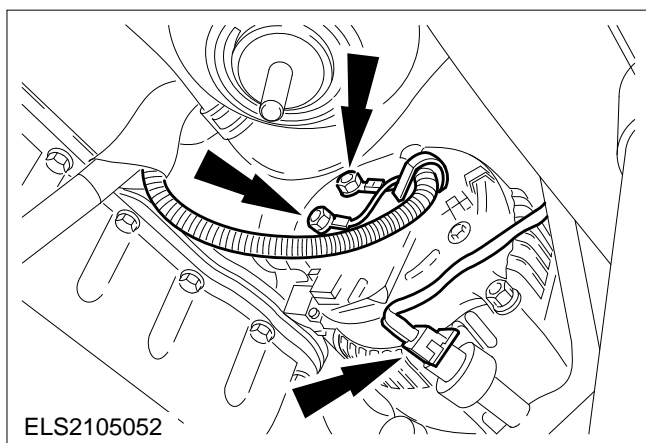
Lower the front crossmember on a transmission jack.



35. Detach the coolant hose from the oil cooler.

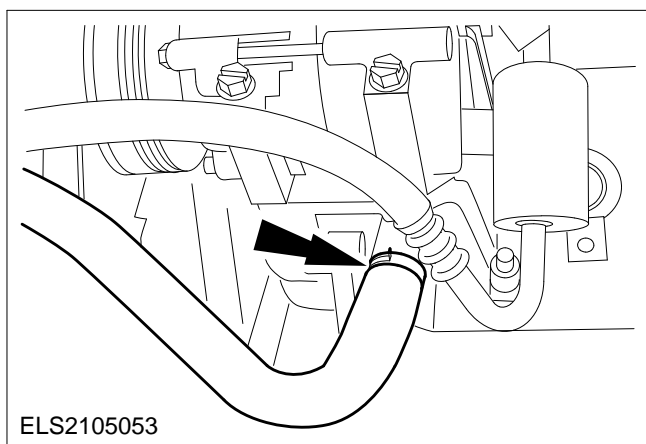


36. Disconnect the starter motor.

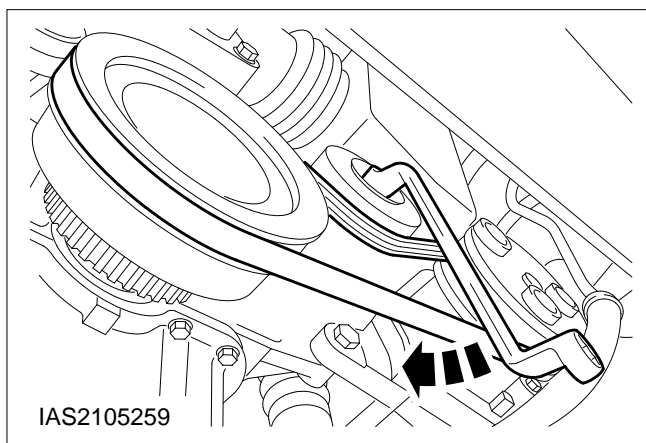


37. Disconnect the alternator.

38. Disconnect the plug from the power steering pressure switch (PSPS).

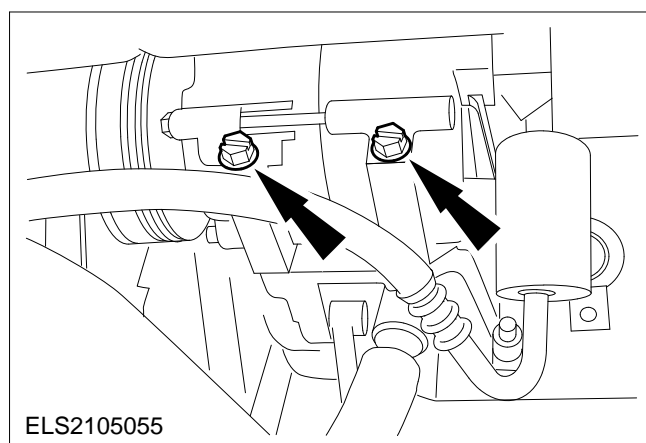


39. Detach the coolant hose at the bottom.



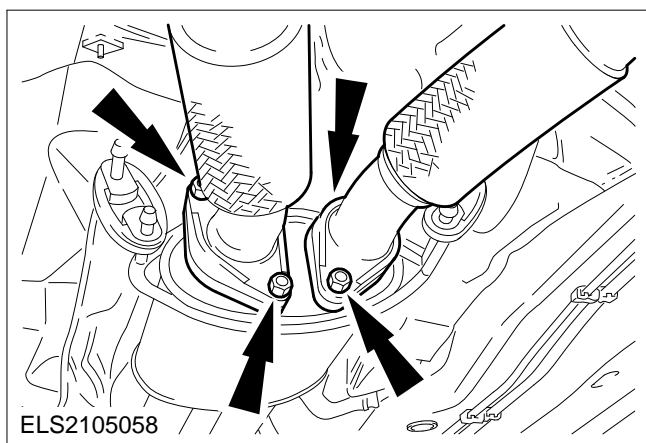
40. Detach the air conditioning multi-groove belt.

- Take the pressure off the belt by turning the tensioning pulley clockwise.
- Take off the multi-groove belt.



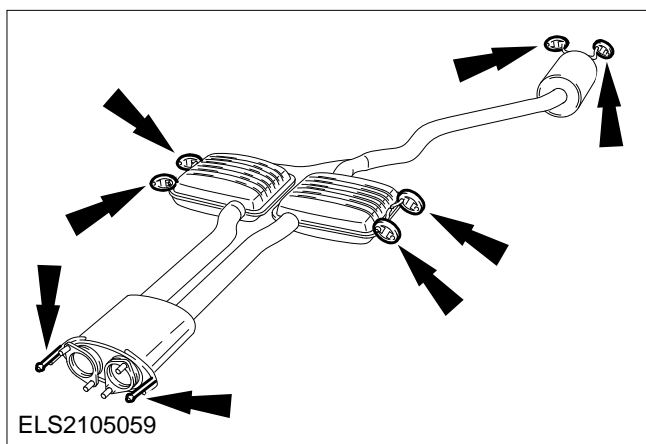
41. Remove the air conditioning compressor.

- Remove the two bolts at the bottom.
- Remove the two bolts at the top.
- Tie the compressor up to one side.



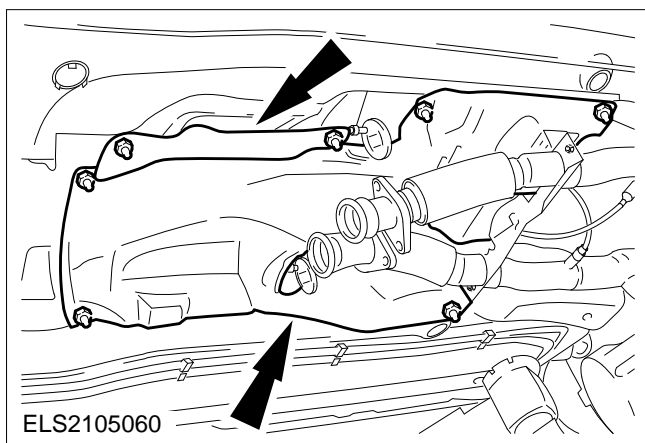
42. Remove the exhaust system.

Detach the exhaust pipes from the middle muffler (two nuts each).

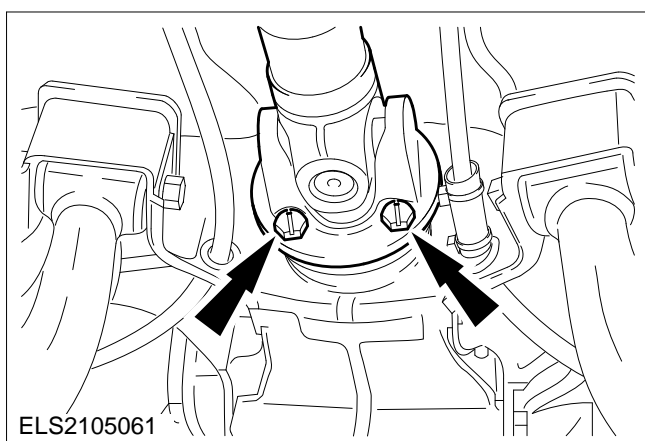


43. Remove the exhaust system (continued)(shown removed).

Unhook the exhaust system from the eight rubber insulators.

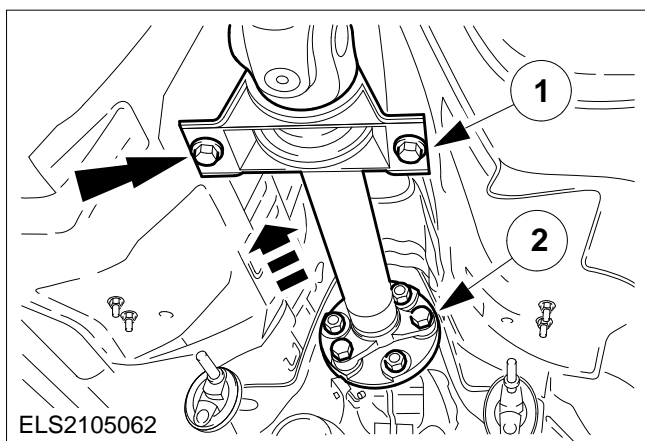


44. Detach the two heat shields.



45. Remove the driveshaft.

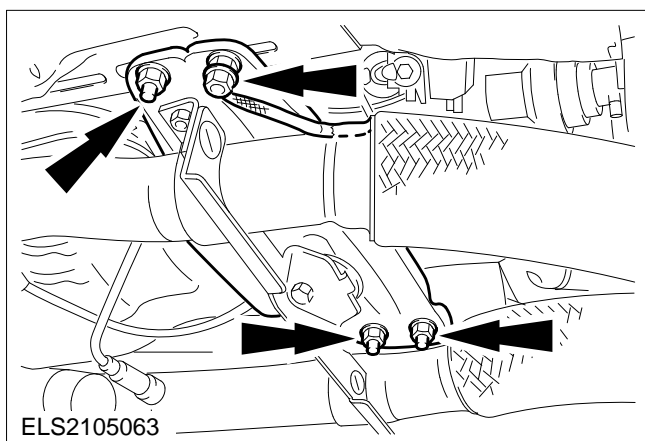
Detach the driveshaft from the drive flange (four bolts).



NOTE: Have the plug ready to hand as transmission fluid will escape when the driveshaft is withdrawn.

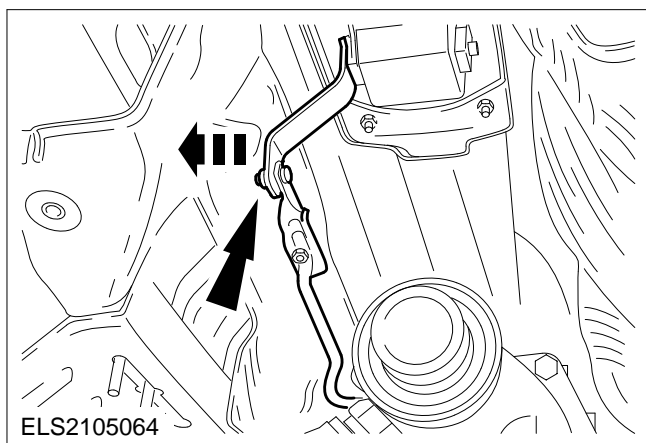
46. Remove the driveshaft (continued).

- 1 Detach the centre bearing from the floor assembly.
- 2 Withdraw the driveshaft from the automatic transmission.

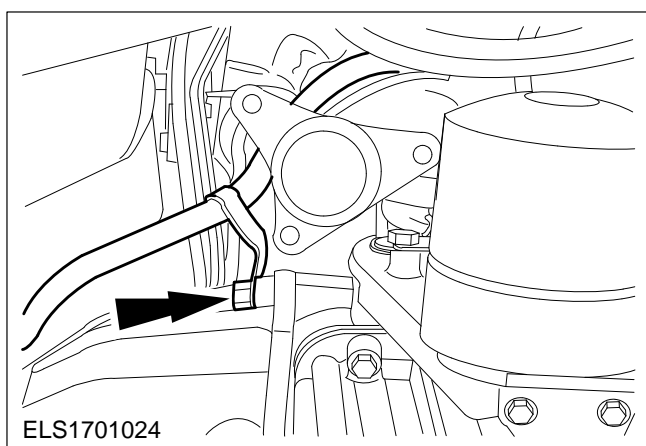
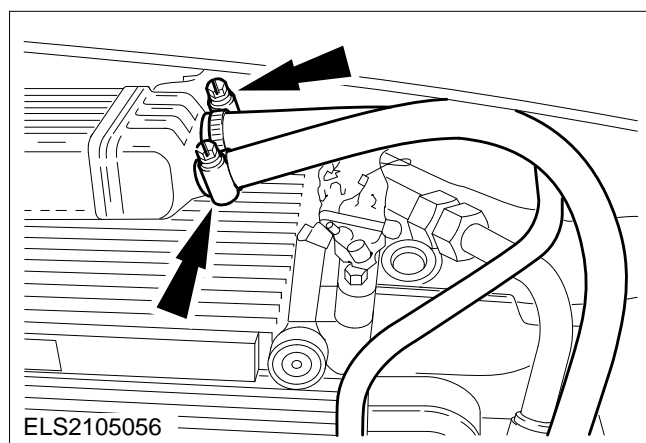


47. Support the transmission with a transmission jack.

48. Detach the transmission crossmember.

**49. Detach the selector rod.**

Remove the clip and press out the selector rod.

**50. Detach the wiring bracket from the transmission.**

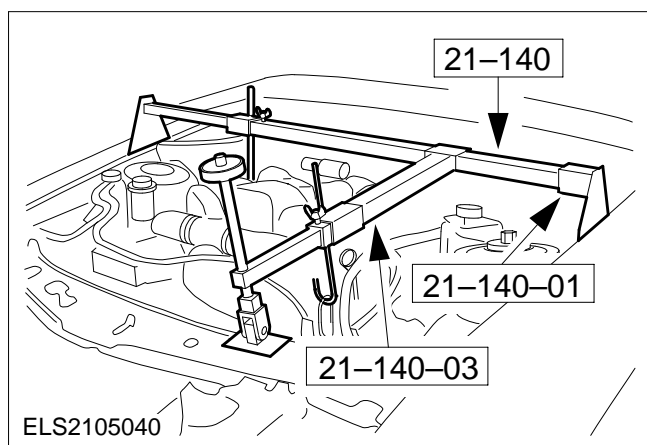
NOTE: Escaping oil.

51. Disconnect the two oil pipes from the oil cooler at the bottom.

Catch any escaping oil.

52. Position the assembly stand under the engine/transmission assembly.

- Lower the vehicle until the engine/transmission assembly is resting on the assembly stand.
- Fix the engine/transmission assembly with wooden blocks.

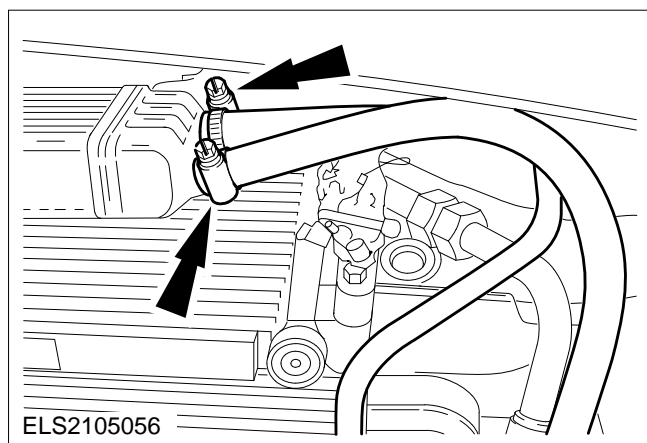


- 53. Unhook the engine support bracket from the engine lifting eyes and carefully raise the vehicle.**

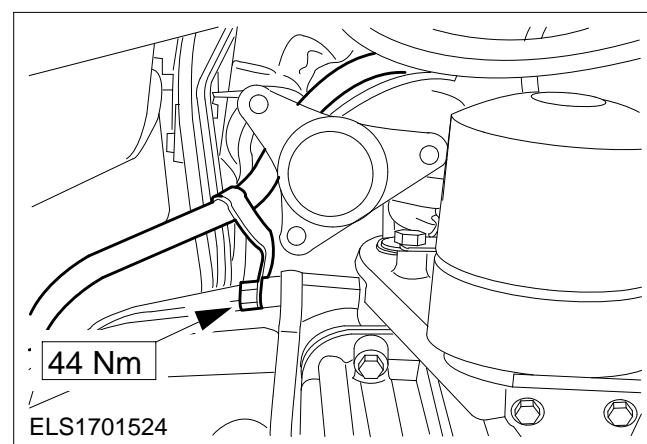
Install

- 54. Position the engine/transmission assembly on the assembly stand under the vehicle.**

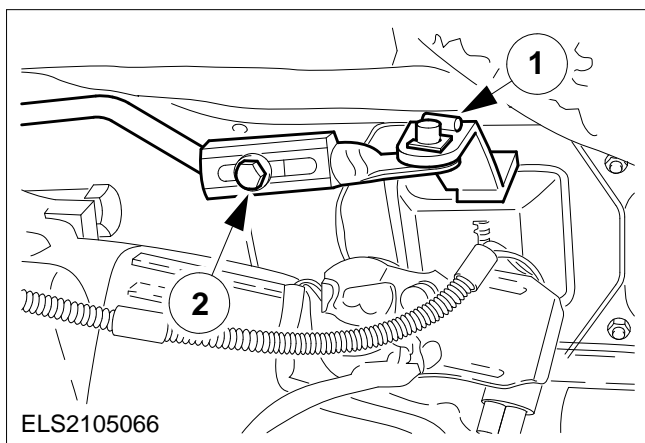
Carefully lower the vehicle and hook the engine support bracket into the engine lifting eyes.



- 55. Attach the two oil pipes to the bottom of the oil cooler.**

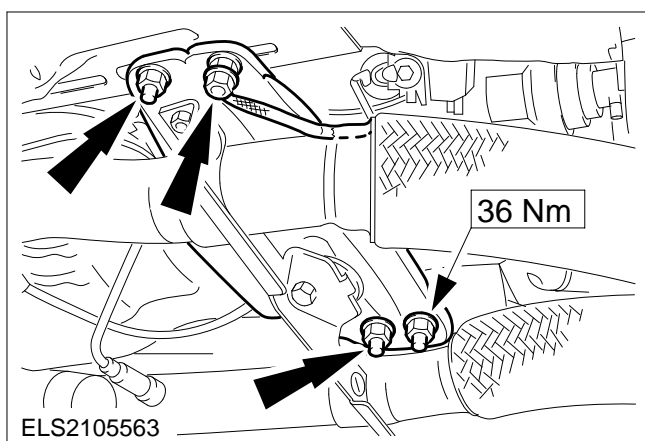


- 56. Attach the wiring bracket to the transmission.**



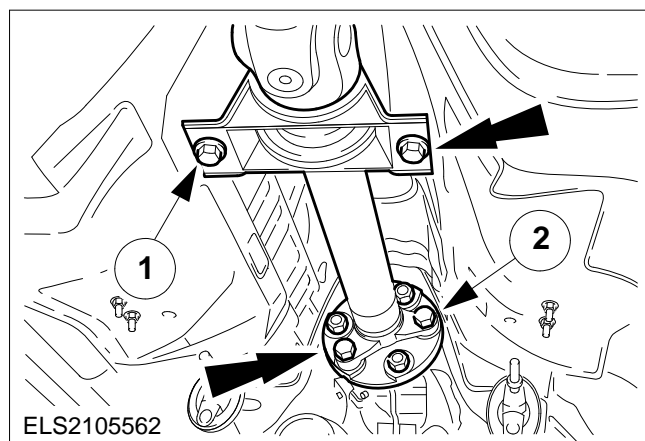
57. Attach the selector rod.

- 1 Press the selector rod into place and press on the clip.
- 2 Check that the selector mechanism has engaged and tighten the bolt again.



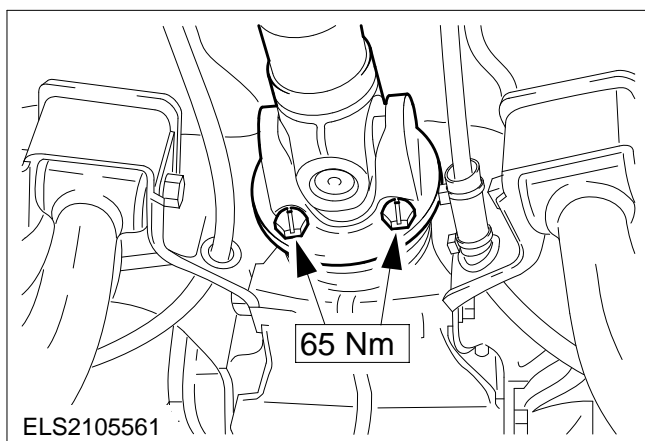
58. Attach the transmission crossmember.

Attach the ground lead.



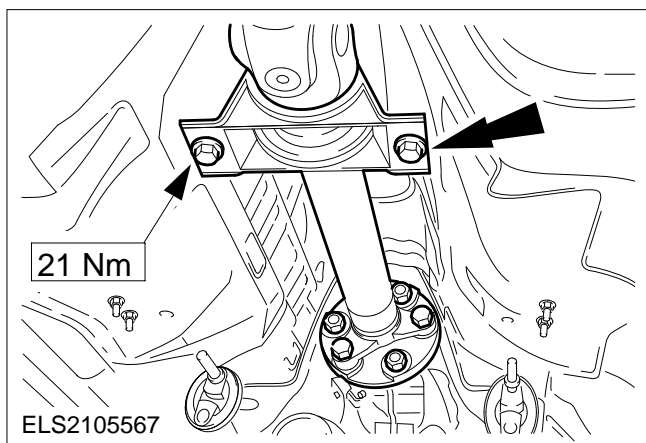
59. Install the driveshaft.

- 1 Bring the centre bearing into position on the floor assembly and screw the bolts in a couple of turns.
- 2 Insert the driveshaft in the output flange of the automatic transmission.

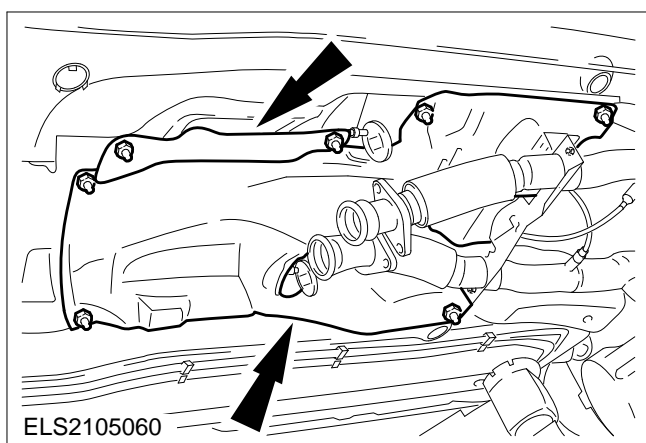
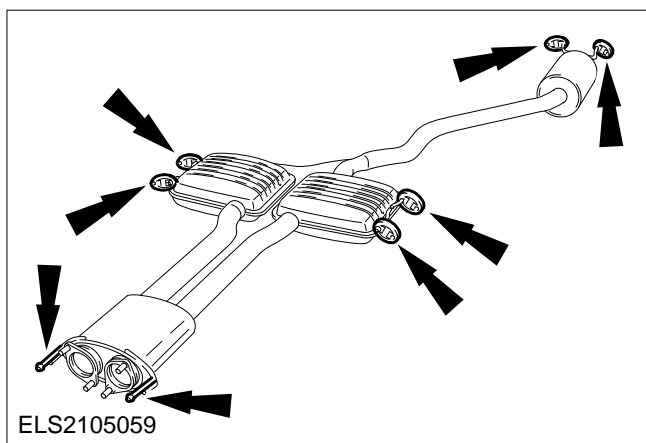


60. Fit the driveshaft (continued).

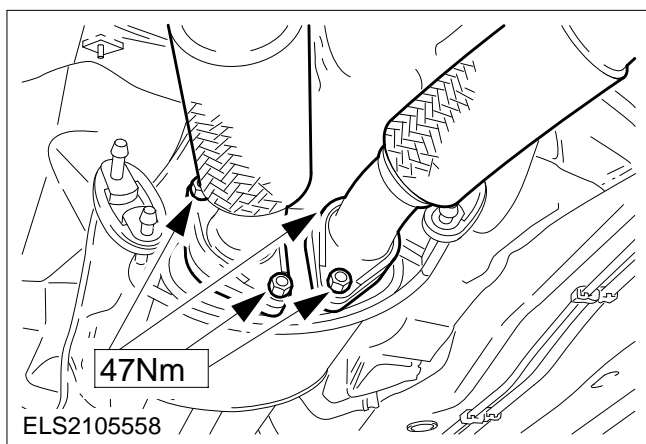
Attach the driveshaft to the drive flange.

**61. Attach the centre bearing.**

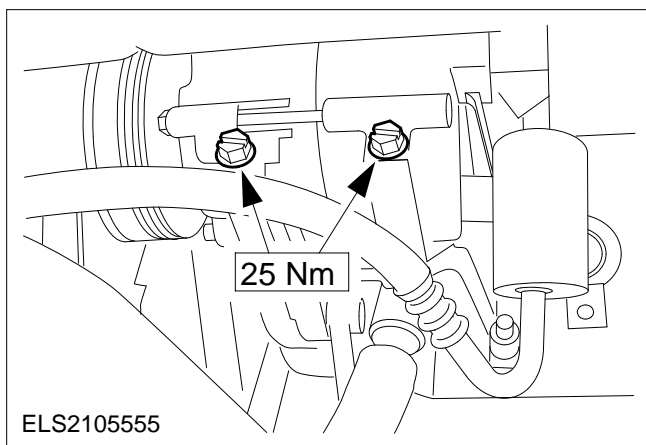
Align the centre bearing so that it is free of strain and tighten the bolts.

**62. Fit the two heat shields.****63. Fit the exhaust system (shown removed).**

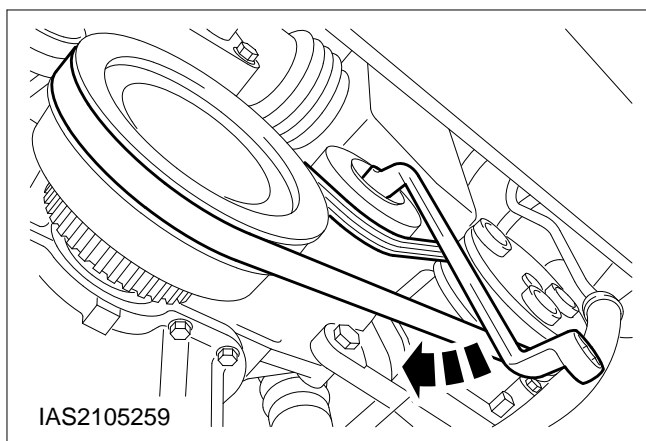
Hook the exhaust system into the eight rubber insulators.

**64. Fit the exhaust system (continued).**

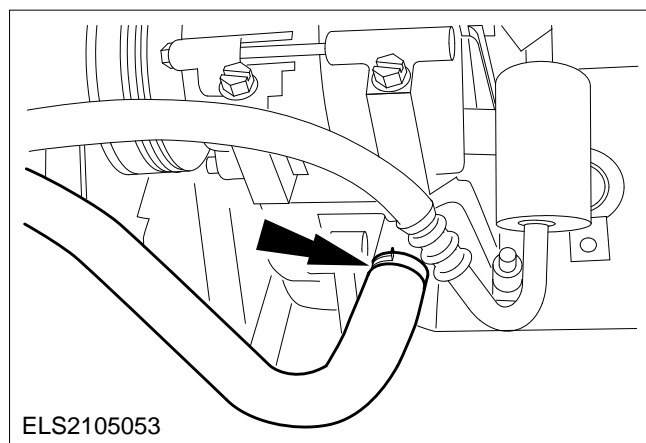
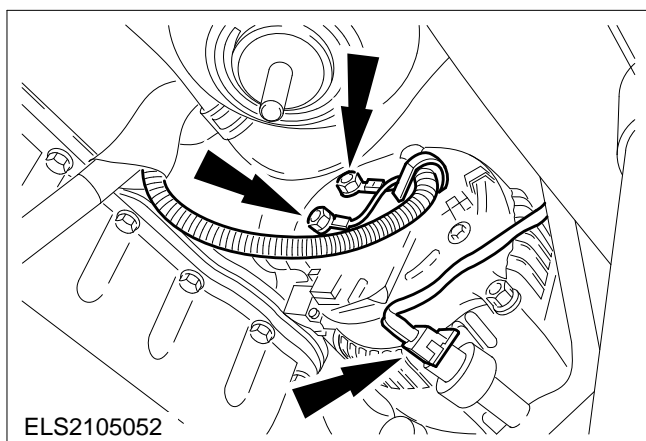
Attach the exhaust pipes to the middle muffler.

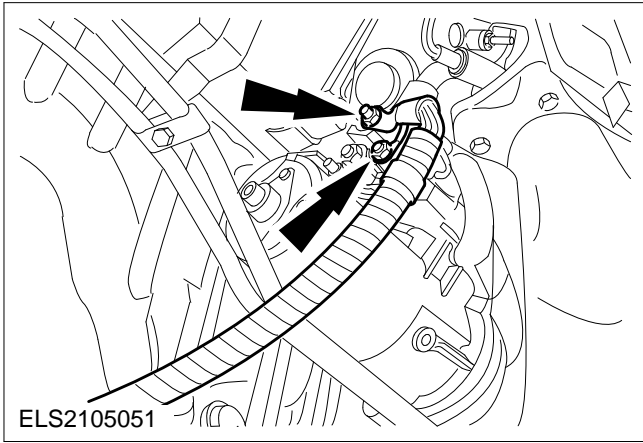
**65. Attach the air conditioning compressor.**

- Screw in the two bolts at the top.
- Screw in the two bolts at the bottom.

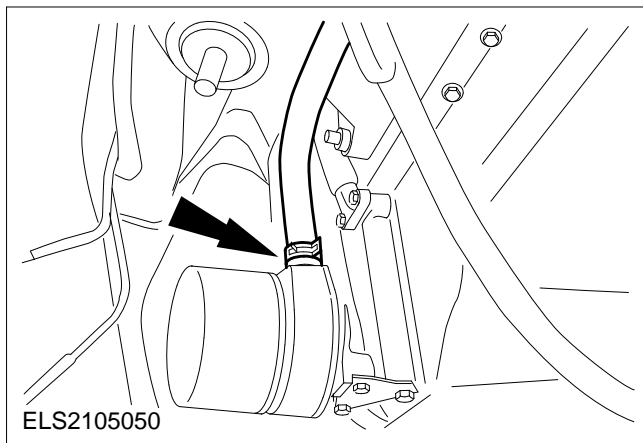
**66. Fit the air conditioning multi-groove belt.**

- Take the pressure off the belt by turning the tensioning pulley clockwise.
- Fit the multi-groove belt.

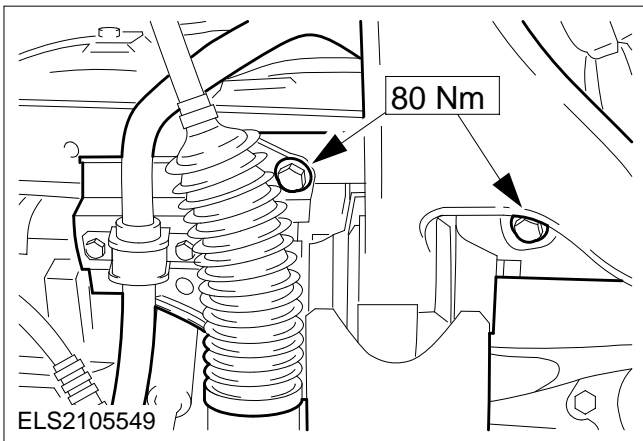
**67. Attach the coolant hose at the bottom.****68. Connect the alternator.****69. Connect the plug to the power steering pressure switch (PSPS).**



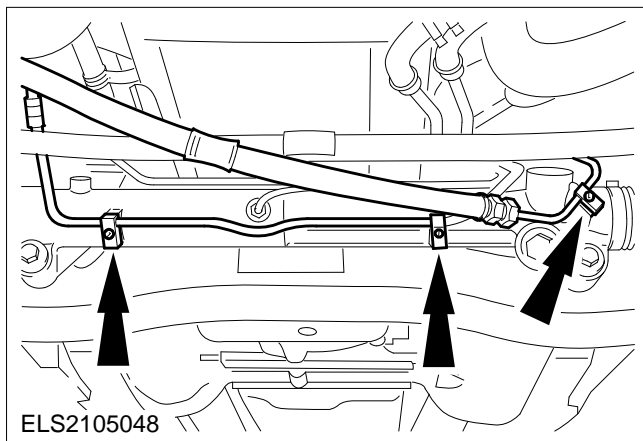
70. Connect the starter motor.



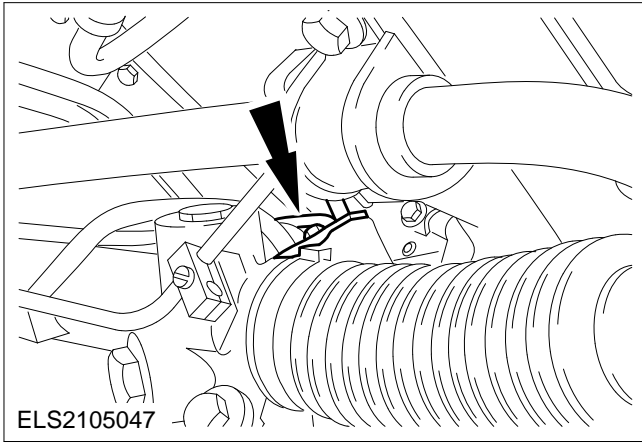
71. Attach the coolant hose to the oil cooler.



72. Bring the front crossmember into position using the transmission jack and fit it (left-hand side shown).

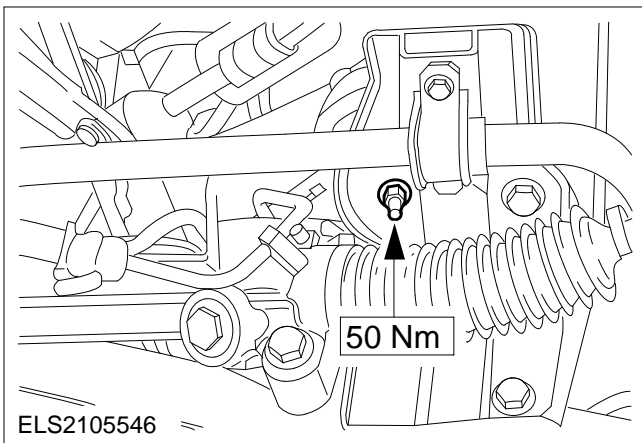


73. Attach the oil pipe clips.

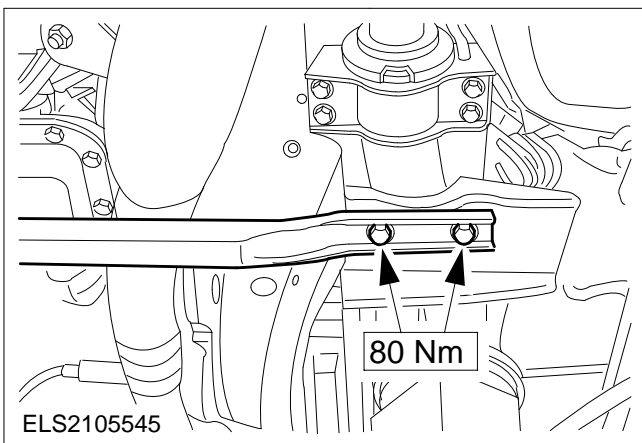


74. Attach the two oil pipes to the steering gear.

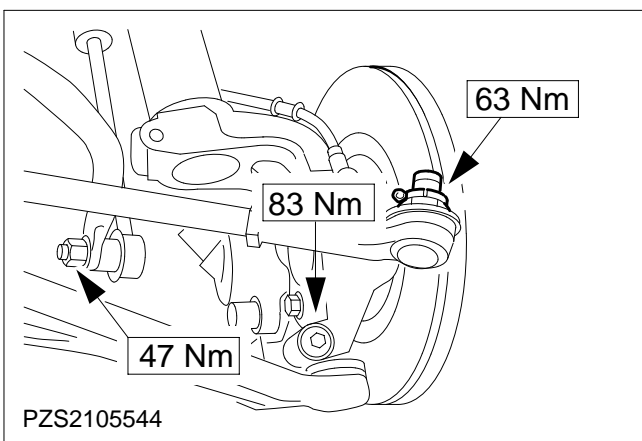
Attach the retaining plate with a bolt.



75. Attach the engine mounting (left-hand side shown).

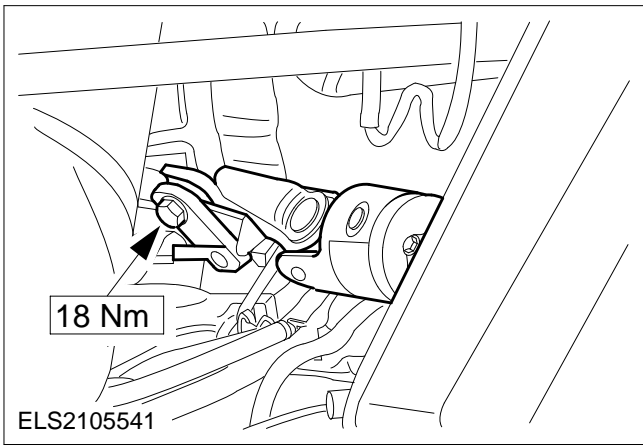


76. Attach the front axle transverse brace (left-hand side shown).

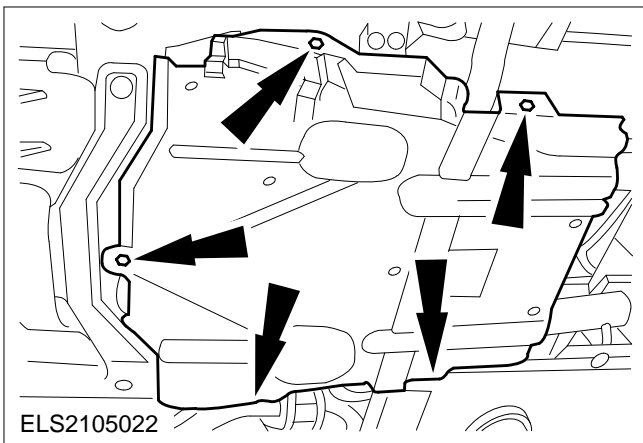


77. Fit the axle mounting (left-hand side shown).

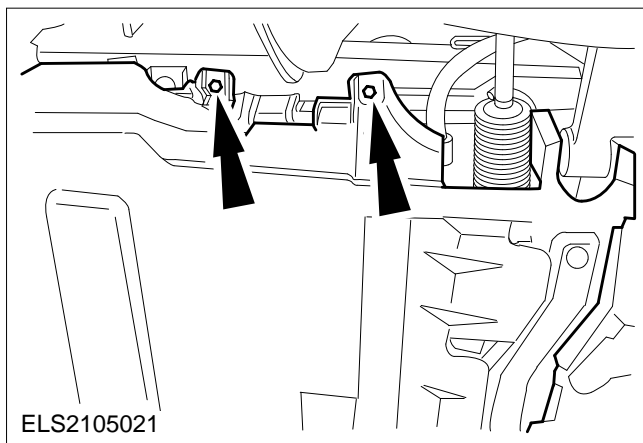
- Suspension arm to spindle carrier
- Link rod to stabiliser bar
- Track rod.



78. Connect the steering intermediate shaft.

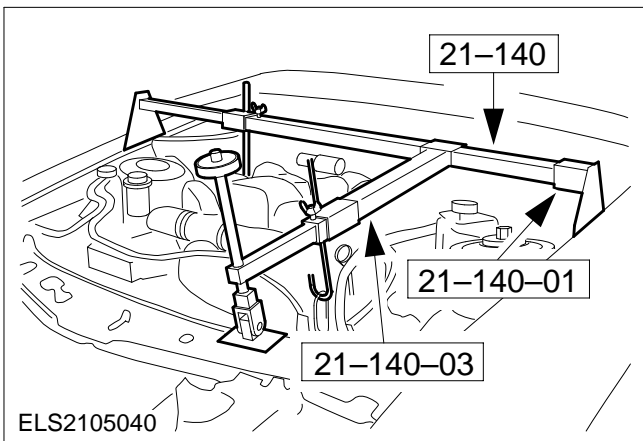


79. Attach the transmission cover.



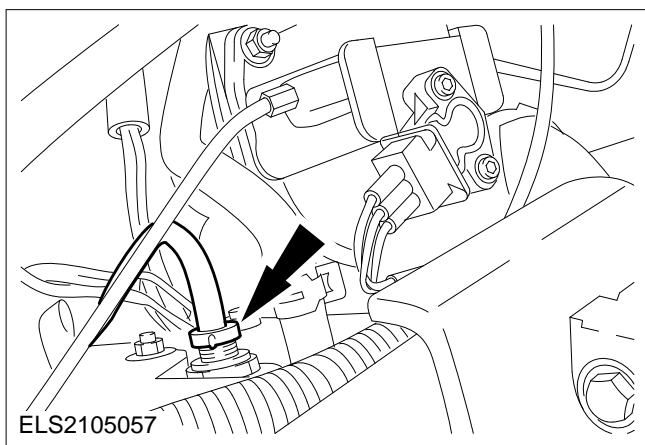
80. Attach the engine undershield (left-hand side shown).

Fit the wheels but do not yet tighten them.

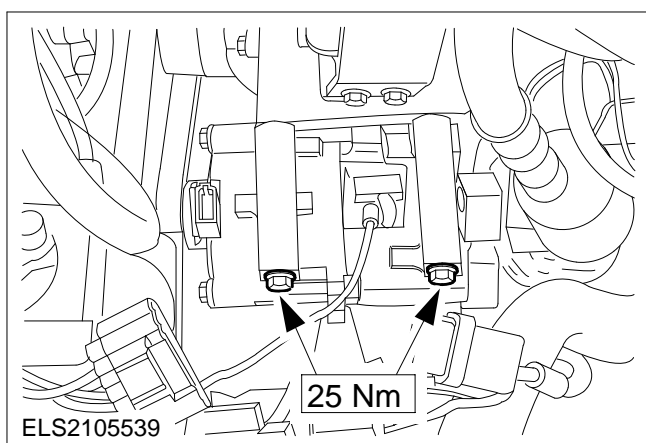


81. Lower the vehicle.

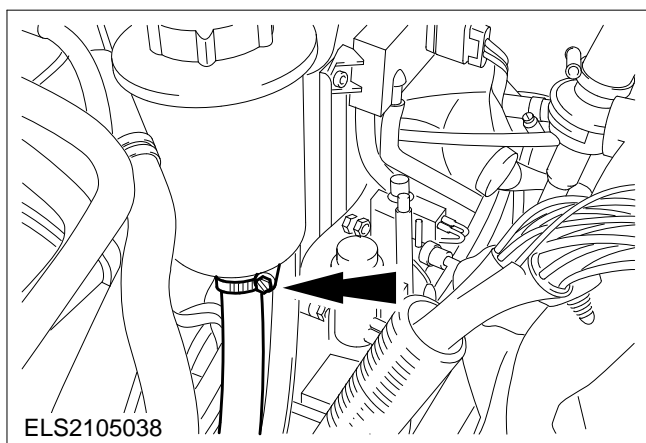
82. Detach the engine support bar.



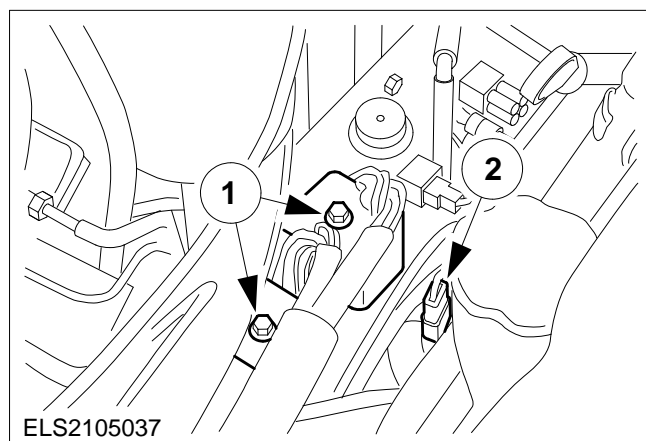
83. Attach the upper oil pipe to the oil cooler.



84. Tighten the upper bolts on the air conditioning compressor.

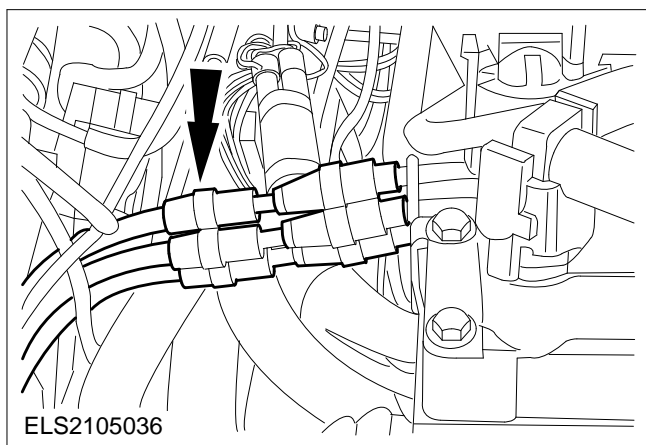


85. Attach the hydraulic fluid hose to the power steering reservoir.

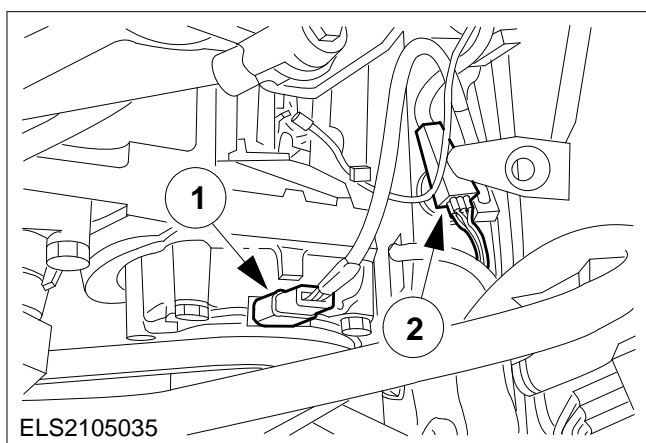


86. Connect the central connectors and the plug.

- 1 Connect the two central connectors.
- 2 Connect the heated oxygen sensor (HO2S) plug.

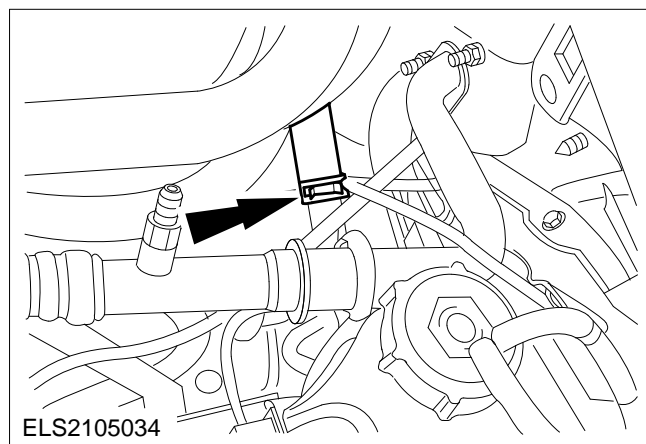


87. Connect the vacuum hoses.

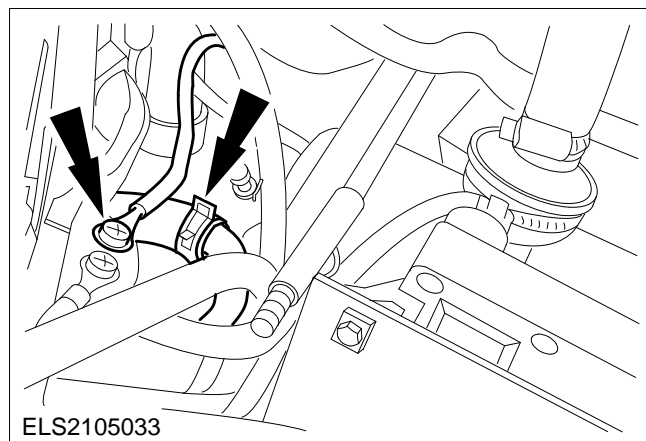


88. Connect the plugs.

- 1 Connect the two central connectors.
- 2 Connect the heated oxygen sensor (HO2S) plug.

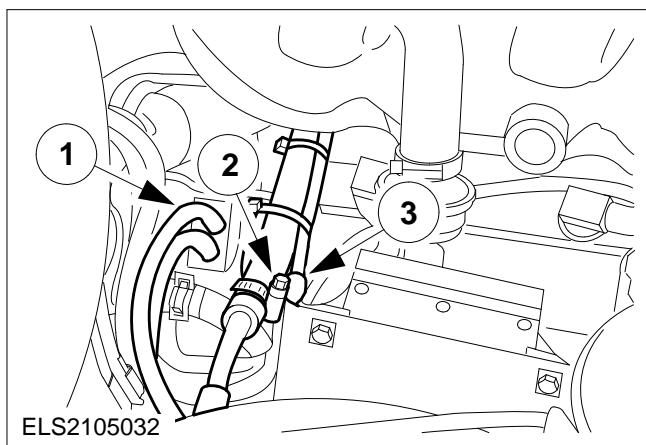


89. Attach the left-hand heater coolant hose.



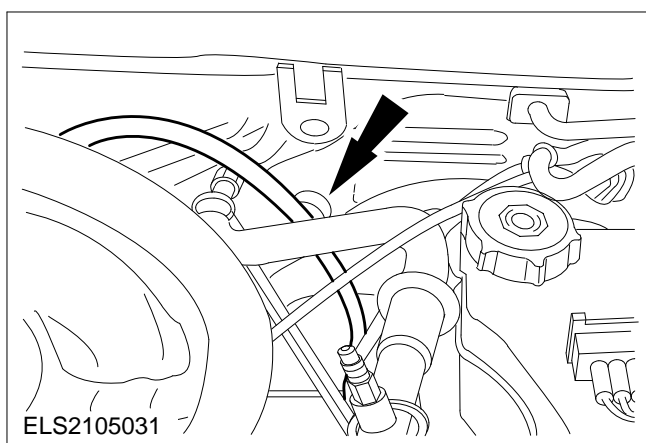
90. Attach the ground lead to the body.

91. Attach the right-hand heater coolant hose.

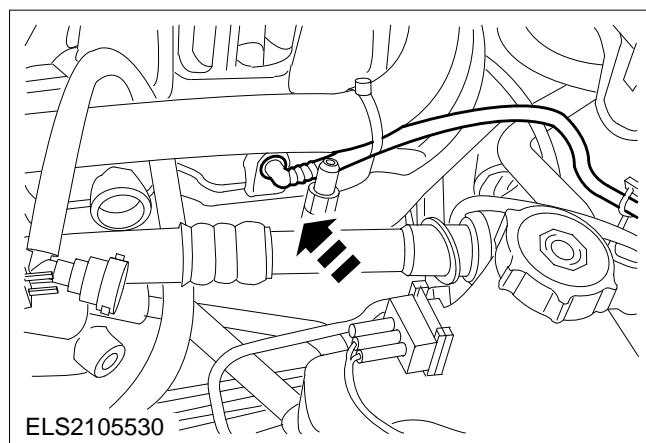


92. Connect the vacuum hoses and the engine breather hose.

- 1 Connect the vacuum hoses to the exhaust gas recirculation (EGR) system.
- 2 Fit the engine breather hose.
- 3 Attach the vacuum hose to the electronic vacuum regulator.

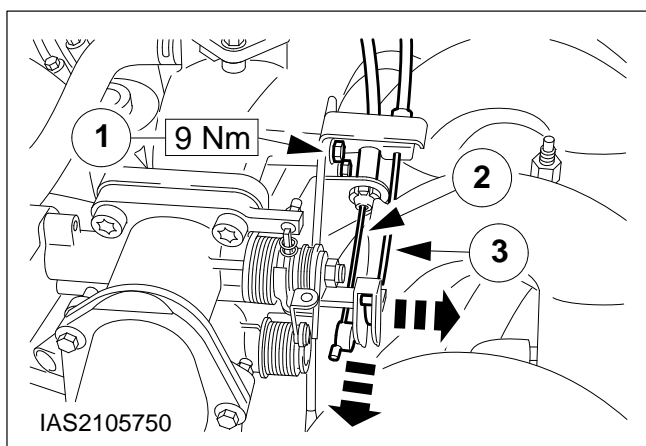


93. Connect the vacuum hose to the air plenum chamber.



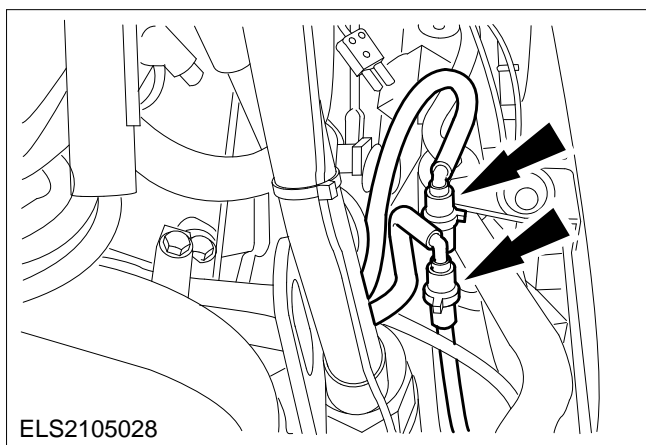
94. Connect the vacuum line to the brake servo.

- Push the plastic ring in using a screwdriver.
- Connect the vacuum line.



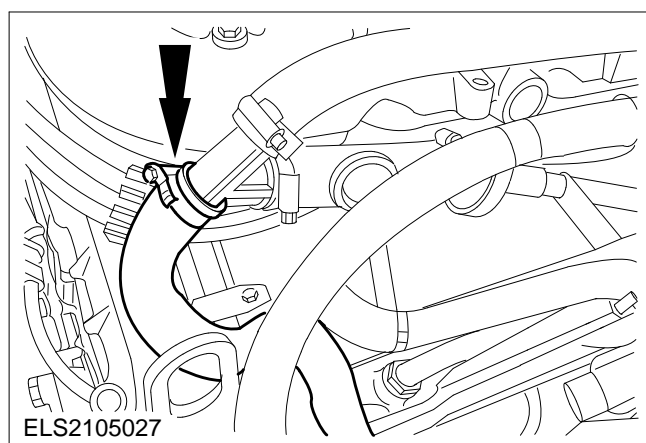
95. Attach the cables.

- 1 Fit the bracket for the speed control system cable.
- 2 Hook the speed control system cable in place.
- 3 Attach the throttle cable to the bracket and hook it in place.

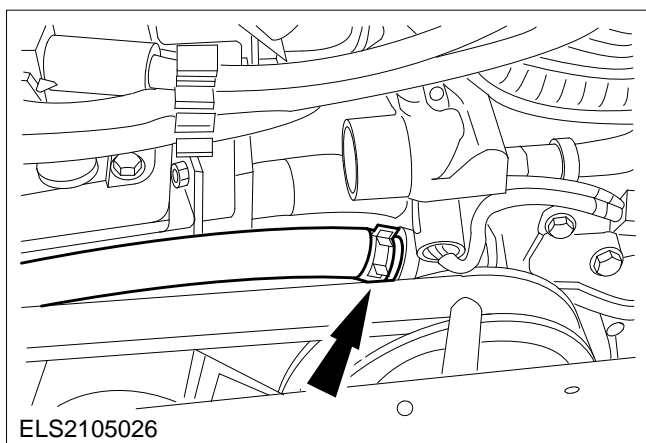


NOTE: Coloured markings.

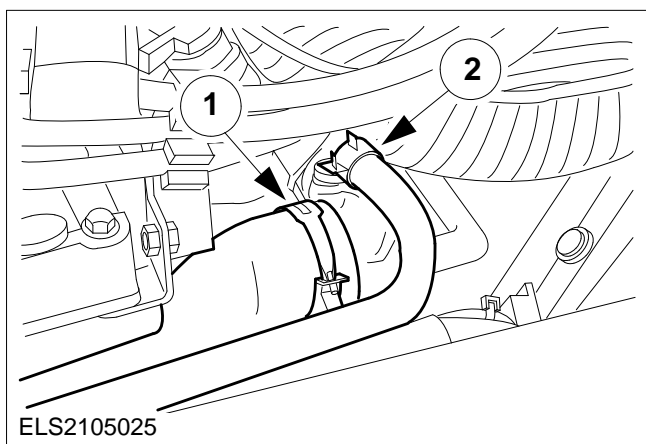
96. Connect the fuel lines.



97. Attach the crankcase breather hose.



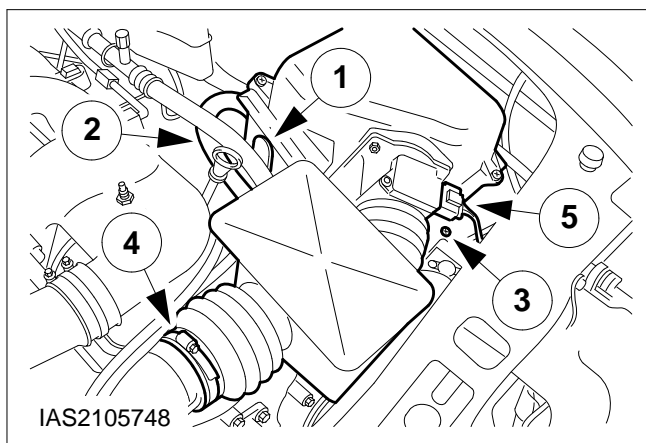
98. Attach the coolant hose to the coolant pump.



99. Attach the coolant hoses.

1 To the distributor body.

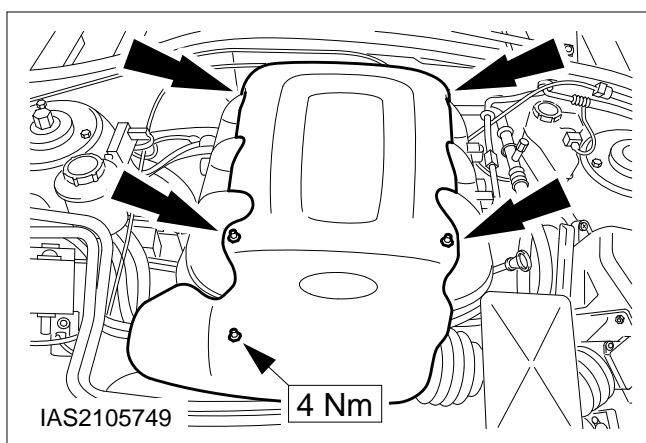
2 From the expansion tank.



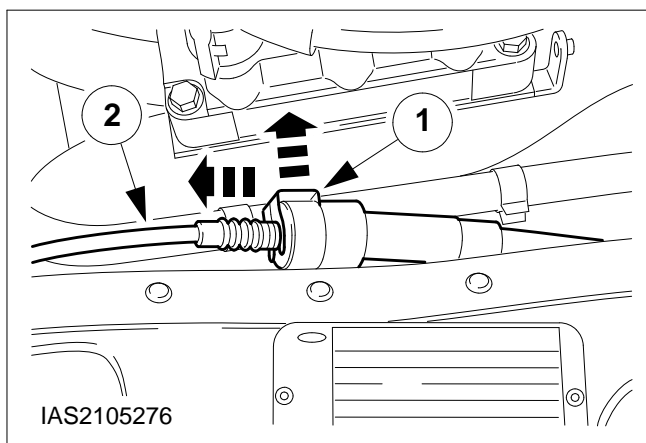
100. Fit the air cleaner.

- Push the air cleaner into the grommets on the body and onto the intake pipe.

- 1 Fit the two rubber retainers.
- 2 Attach the PCV hose.
- 3 Insert the bolt for the intake pipe.
- 4 Fit the intake hose.
- 5 Connect the MAF sensor plug.

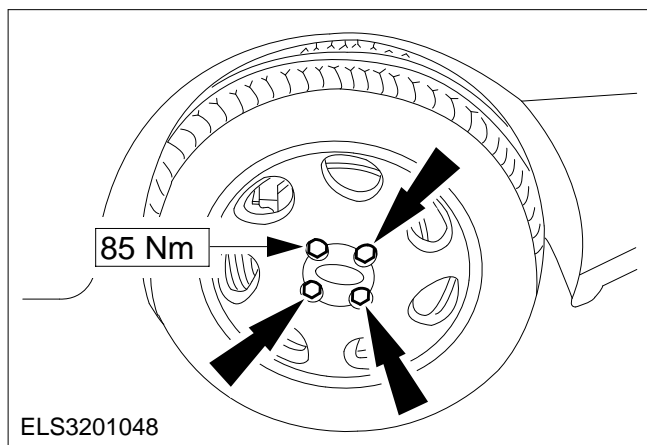


101. Fit the intake system cover.



102. Adjust the throttle cable.

- 1 Pull off the clip from the throttle cable.
 - 2 Pull the throttle cable out a few notches.
- Fully depress the accelerator pedal once and push the clip back in place.
 - Check whether the throttle valve opens fully when the accelerator pedal is fully depressed, and repeat the adjustment if necessary.
 - Check the routing of hoses and wiring and correct them if necessary.

**103. Tighten the wheel nuts.****104. Standard finishing operations:**

- Top up the coolant.
- Connect the battery ground lead.
- Check the fluid levels and rectify as necessary.
- Check the engine and cooling system for leaks (visual check).
- Secure all wiring and hoses using cable ties.
- Carry out a road test to enable the PCM to gather data, check the fluid levels again and correct as necessary.
- Enter the radio keycode.
- Reprogramme the preset radio stations.
- Reset the clock.