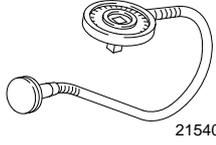
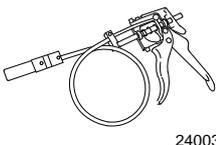


## Engine and A4LDE Automatic Transmission – Remove and Install (21 132 0)

### Special Tools

 21-068A	<b>21-068A</b> Engine lifting bracket
 21540	<b>21-540</b> Bolt tightening angle gauge
 24003	<b>24-003</b> Remover/installer, cooling hose clamps

### Workshop Equipment

Transmission jack	
Workshop crane	
Assembly table with retaining strap	GV 2166
Auxiliary plugs for automatic transmission	

### Materials

High-temperature grease	ESDM-1C220-A
Automatic transmission fluid	ESPM-2C166-H

### Remove

#### 1. Preparatory measures.

- Make a note of the radio keycode.
- Make a note of the preset radio stations.
- Detach the battery cover

**⚠ CAUTION:** Disconnect the battery earth lead.

Withdraw the automatic transmission dipstick.

**⚡ WARNING:** There is a risk of scalding when the engine is hot.

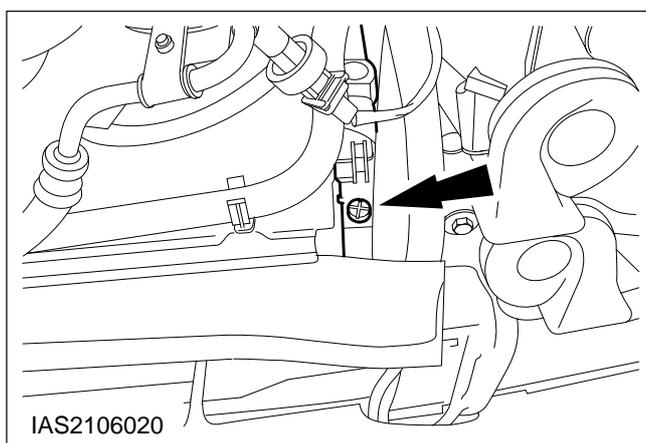
Unscrew the coolant expansion tank lid.

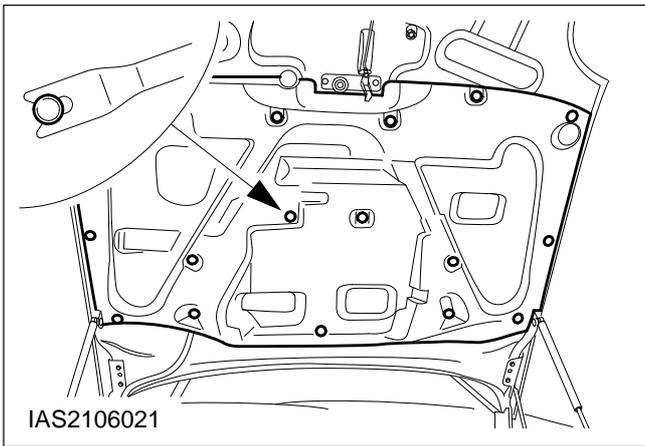
#### 2. Raise the vehicle.

#### 3. Detach the engine undershield.

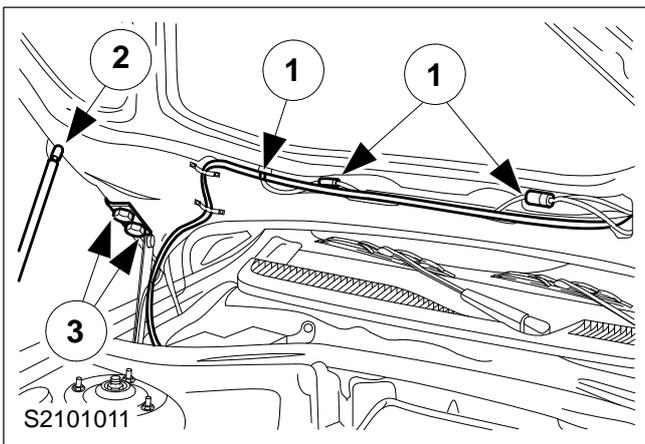
#### 4. Drain off the coolant.

#### 5. Lower the vehicle.



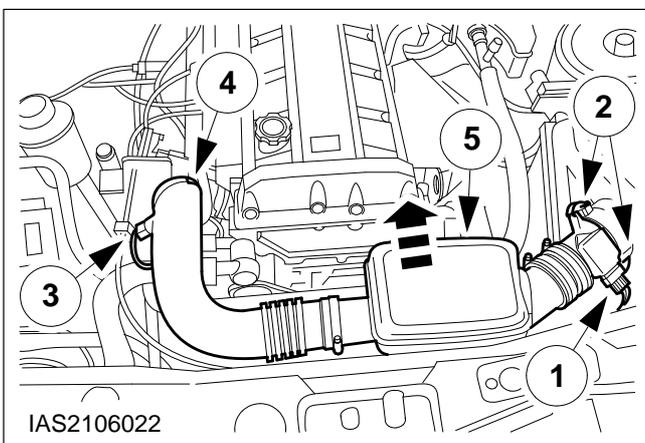


**6. Remove the hood insulation panel (17 expanding pins).**



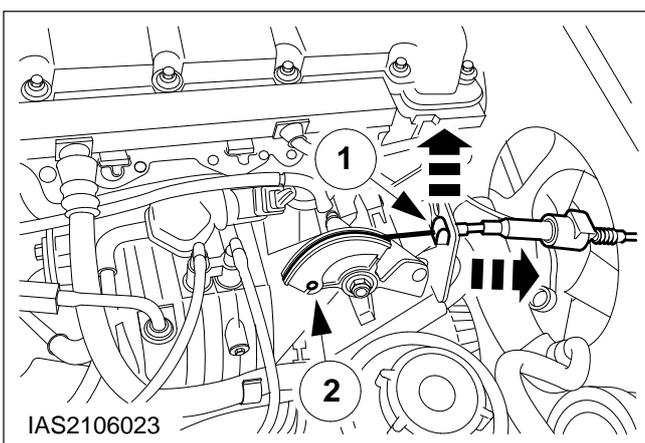
**7. Detach the hood.**

- 1 Disconnect the hose and plug of the windscreen wash system and unclip them.
- 2 Detach the two hydraulic struts from the hood.
- 3 Detach the two hood hinges.



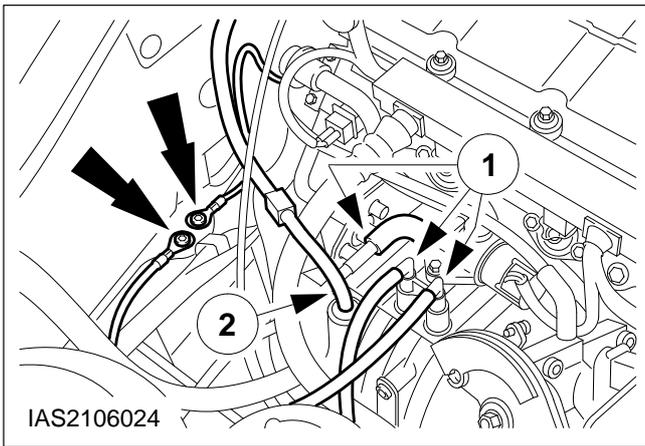
**8. Remove the intake pipe.**

- 1 Disconnect the multiplug from the air charge temperature sensor.
- 2 Detach the intake pipe from the air cleaner housing (two clips).
- 3 Disconnect the multiplug from the mass air flow (MAF) sensor.
- 4 Detach the intake pipe.
- 5 Lift the resonator (push-fit) and remove the intake pipe complete.



**9. Detach the accelerator cable.**

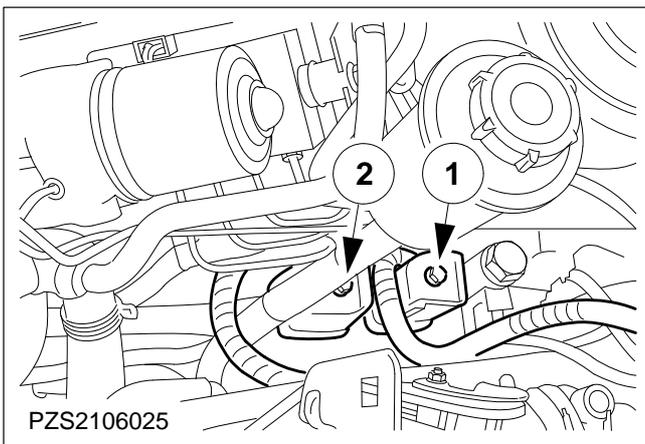
- 1 Remove the retaining clip from above.
- 2 Unhook the cable.



**10. Remove the vacuum hoses and vacuum line.**

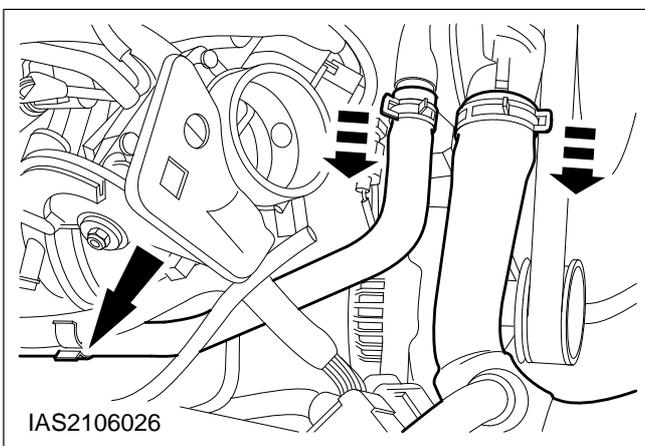
- 1 Vacuum hoses:
- 2 Vacuum line to the brake servo.

**11. Detach the earth lead from the bulkhead.**



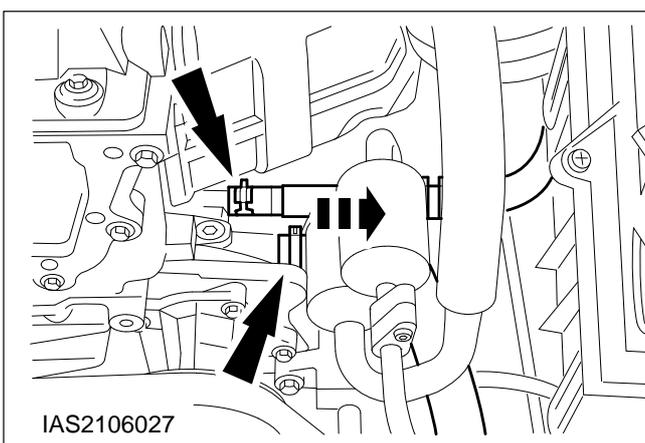
**12. Detach the wiring loom plugs.**

- 1 Main wiring loom plug
- 2 Automatic transmission wiring loom plug



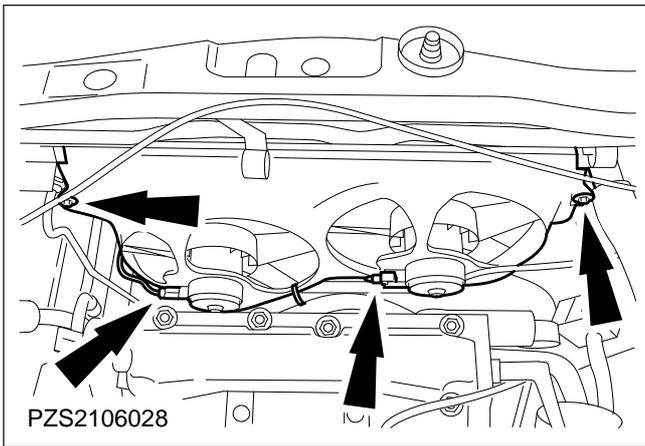
**13. Detach the coolant hoses from the thermostat housing.**

Unclip the coolant hose.



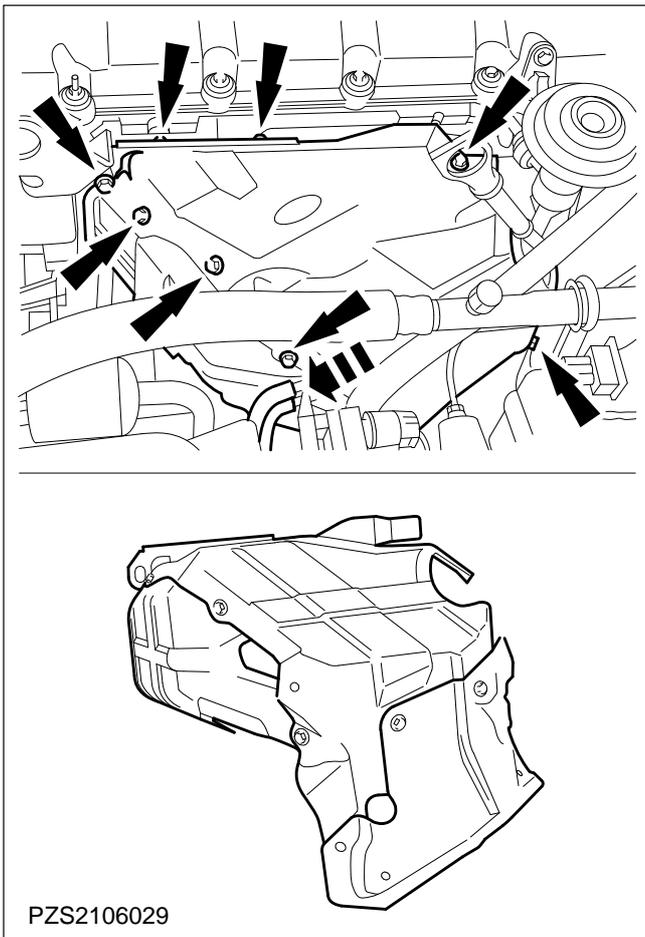
**14. Detach the coolant hoses from the coolant pump.**

Use Special Tool 24-003.



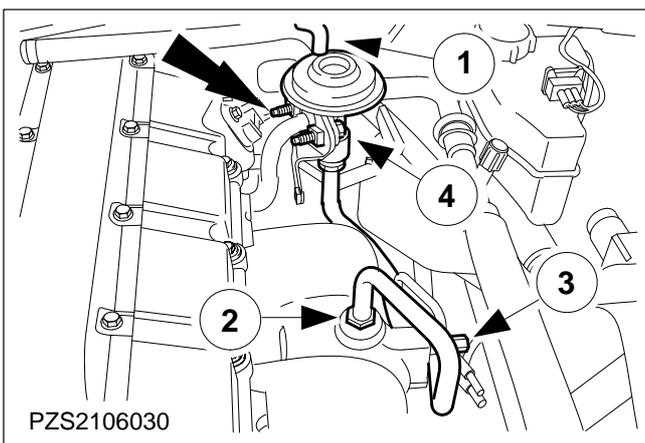
**15. Remove the fan motors and air baffle complete.**

- Disconnect the fan motor plugs.
- Unscrew the nuts.



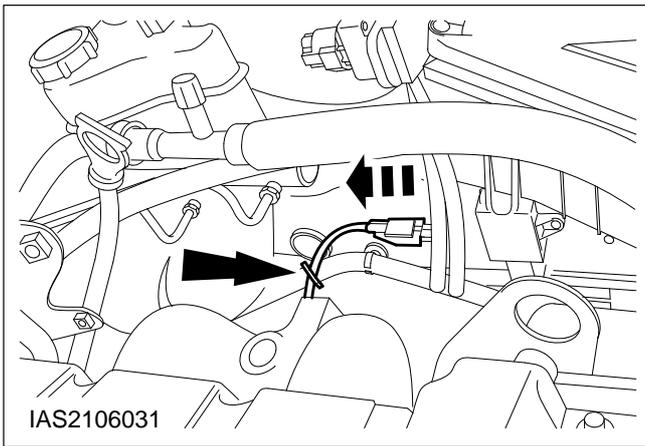
**16. Remove the three-part exhaust manifold heatshield.**

**17. Disconnect the two vacuum hoses.**



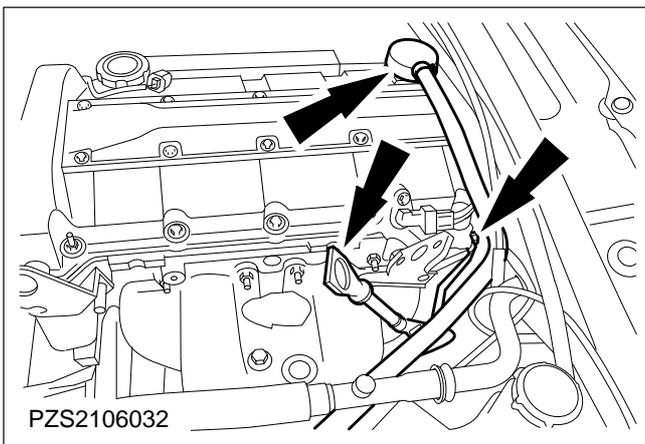
**18. Detach the exhaust gas recirculation valve (EGR valve) and the EGR pipe.**

- 1 Disconnect the vacuum hose.
- 2 Detach the EGR pipe.
- 3 Detach the EGR pipe bracket.
- 4 Detach the EGR valve from the bracket.



**19. Disconnect the heated oxygen sensor (HO2S) plug.**

Cut the cable tie.

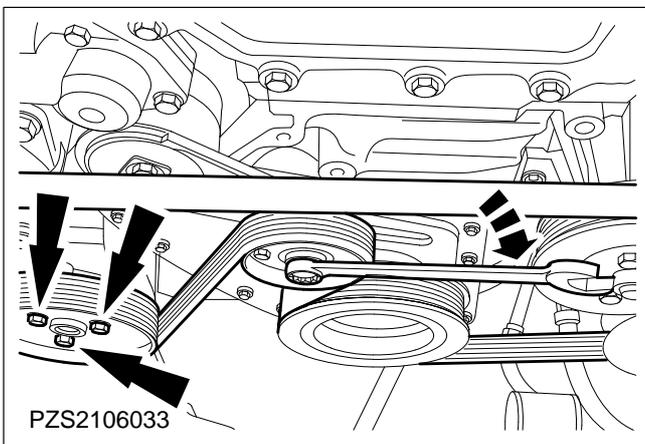


**20. Remove the valve with the crankcase breather hose and unclip it.**

**NOTE:** Only slacken the bolt.

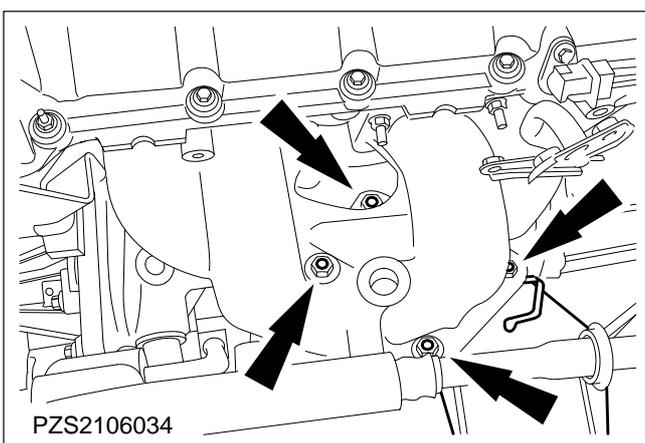
**21. Detach the bracket from the oil dipstick tube.**

Withdraw the oil dipstick.

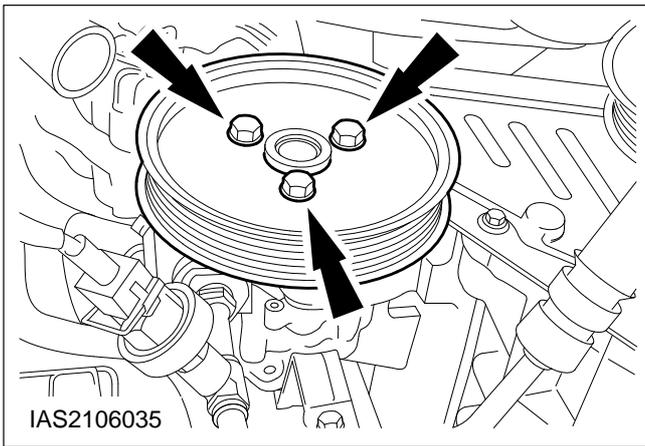


**22. Loosen the power steering pump pulley.**

**23. Relax the drive belt and remove it.**

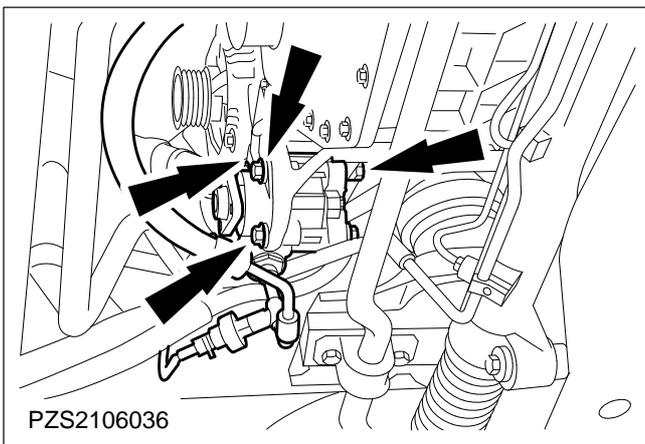


**24. Detach the catalytic converter from the exhaust manifold.**

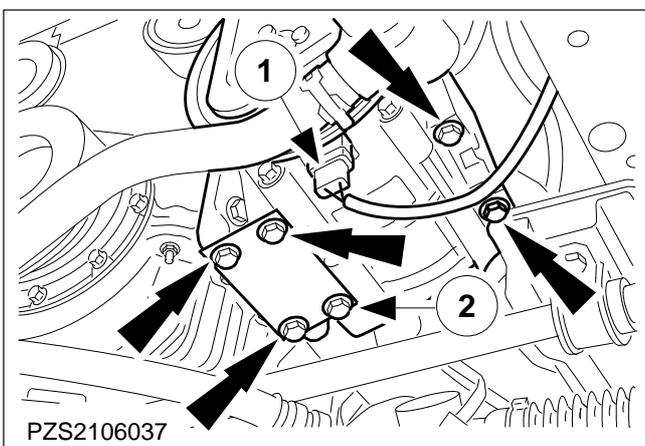


**25. Raise the vehicle.**

**26. Detach the power steering pump pulley.**



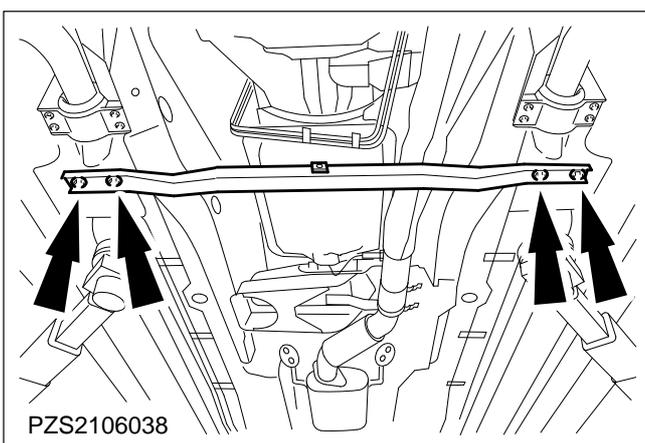
**27. Detach the power steering pump and tie it up.**



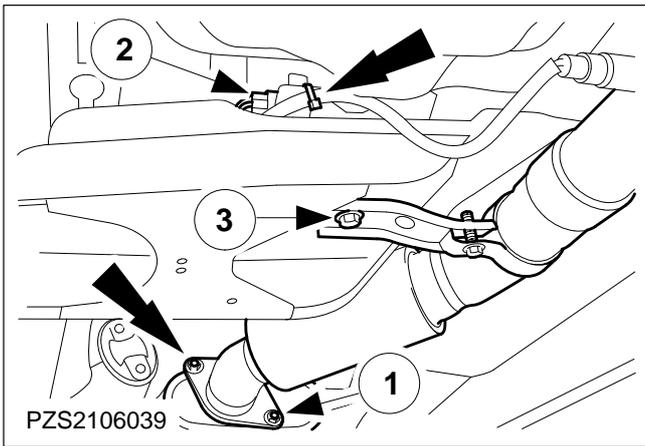
**NOTE:** The air conditioning system should not be opened.

**28. Remove the air conditioning compressor.**

- 1 Disconnect the plug of the magnetic clutch.  
Cut the wiring loom cable ties.
- 2 Remove the bolts.  
Tie up the air conditioning compressor.

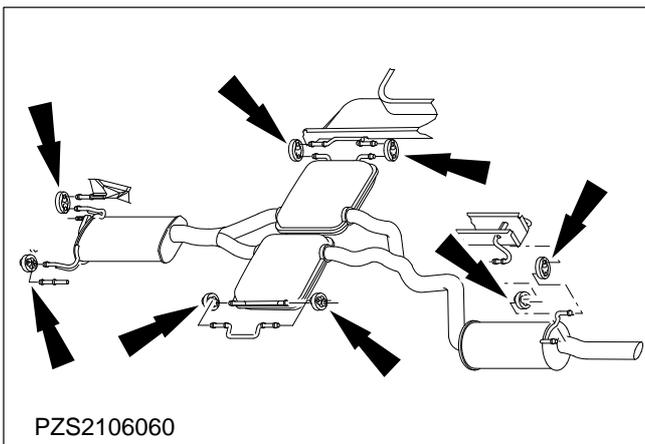


**29. Detach the front axle transverse brace.**



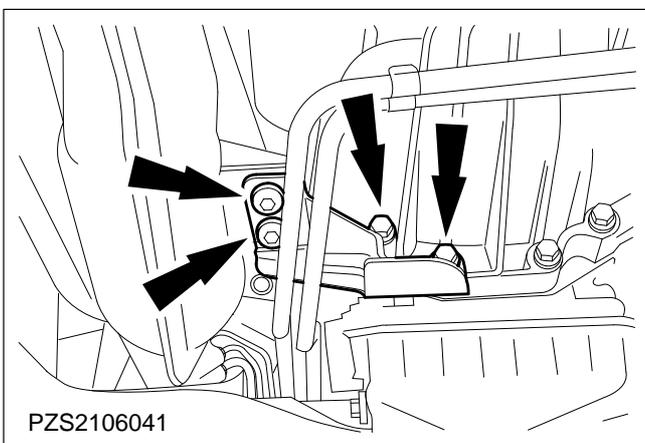
### 30. Remove the catalytic converter with the front exhaust pipe.

- 1 Disconnect the exhaust system.  
Remove the gasket.
- 2 Disconnect the HO2S plug.  
Cut the cable tie.
- 3 Detach the front exhaust pipe bracket from the transmission crossmember.

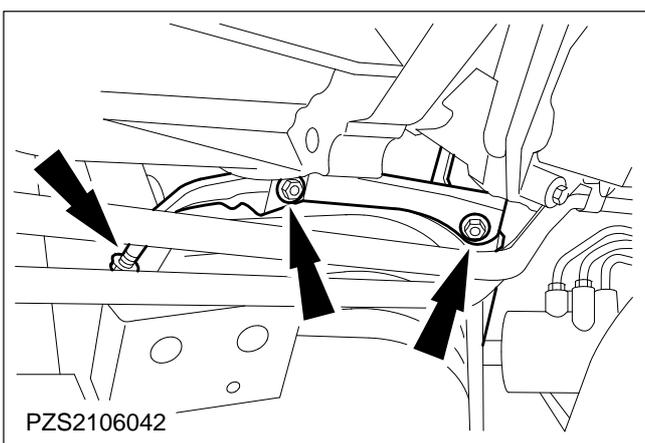


### 31. Remove the rear part of the exhaust system.

- Unhook the mountings.

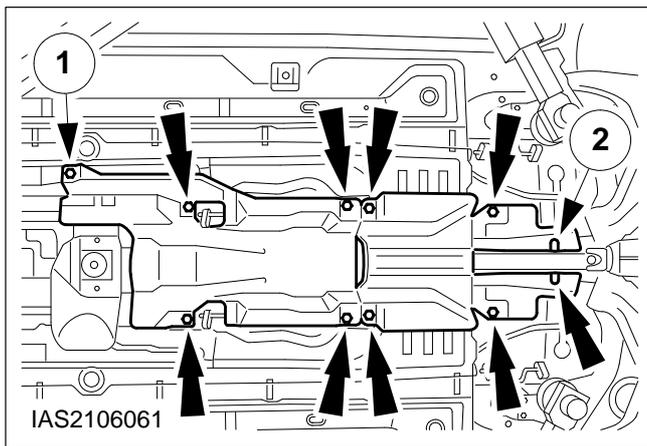


### 32. Detach the bracket from the catalytic converter and the automatic transmission.

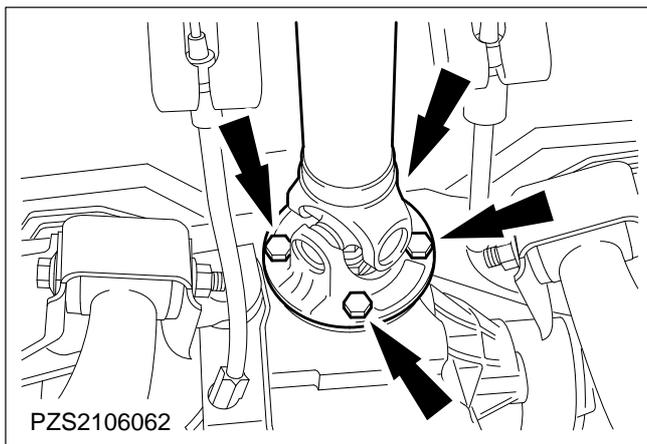
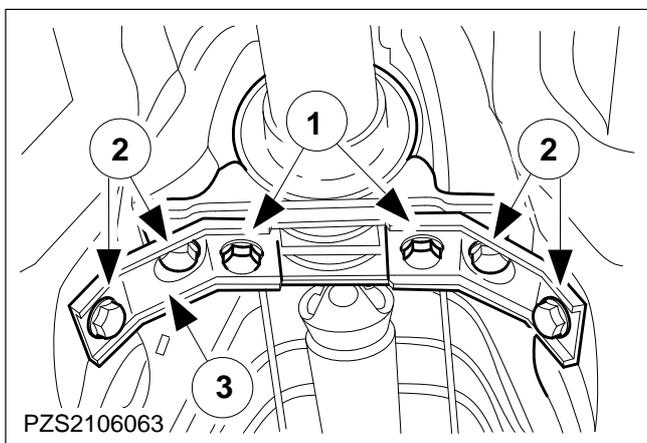


### 33. Remove the catalytic converter with the front exhaust pipe.

- Open the front catalytic converter bracket and detach it.
- Remove the catalytic converter with the front exhaust pipe.

**34. Detach the exhaust system heat shields.**

- 1 Nine nuts.
- 2 Two clips.

**35. Detach the driveshaft from the rear axle.****36. Detach the driveshaft centre bearing.**

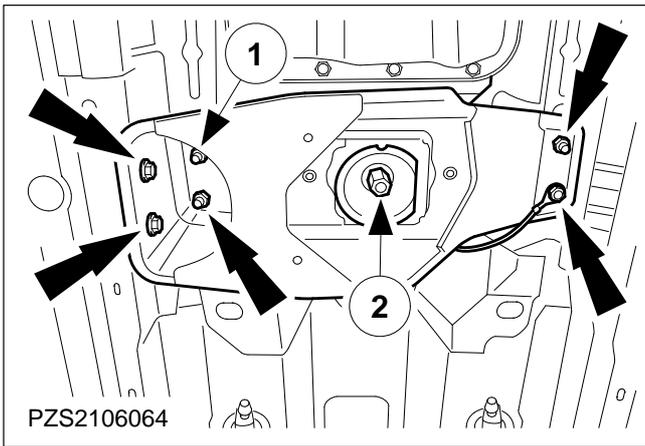
**NOTE:** There are spacer washers between the floor assembly and the centre bearing.

- 1 Slacken the bolts.
- 2 Remove the bolts.
- 3 Turn the two brackets 90°.

**NOTE:** Escaping oil.

**37. Withdraw the driveshaft from the automatic transmission.**

Close the opening in the automatic transmission with an auxiliary plug.

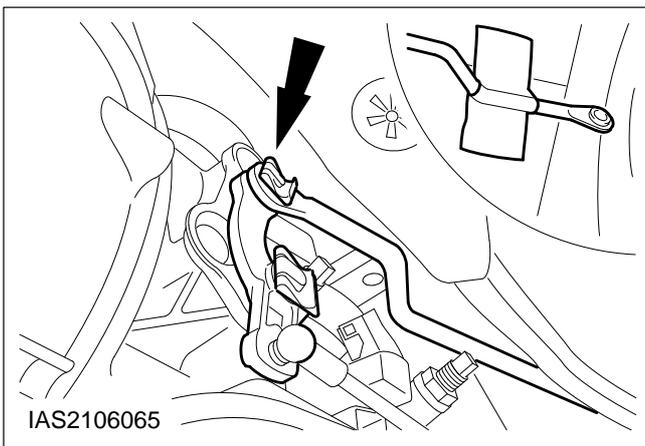


**NOTE:** Support the automatic transmission with a transmission jack.

**38. Detach the transmission crossmember.**

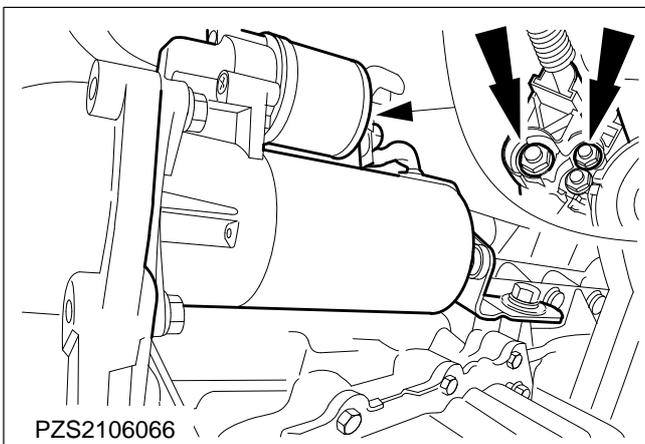
- 1 Detach it from the body.
- 2 Detach it from the automatic transmission.

Lower the automatic transmission and remove the transmission jack.

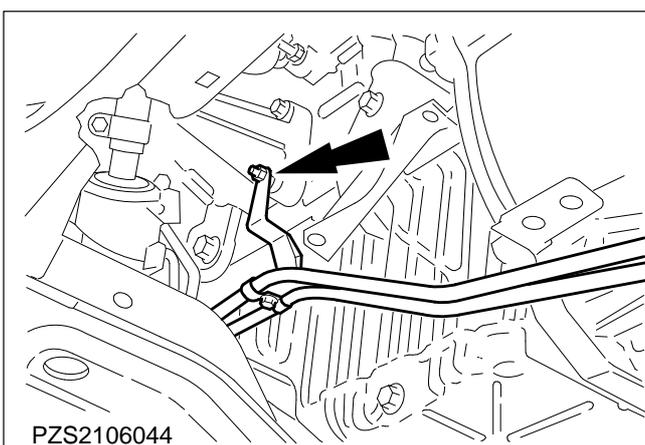


**39. Detach the shift rod from the cranked lever.**

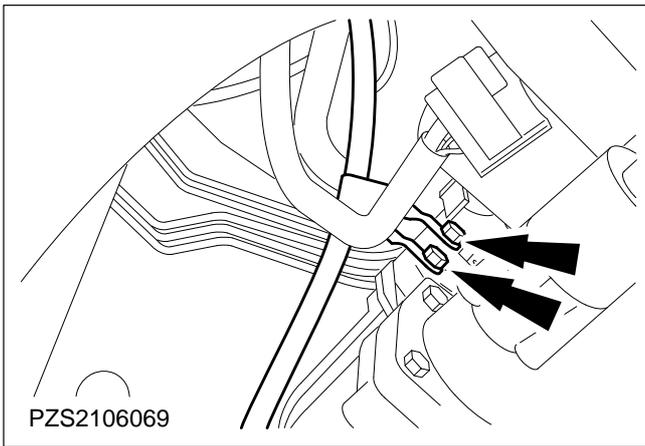
Secure the shift rod to the inside of the body with adhesive tape.



**40. Disconnect the starter motor lead.**

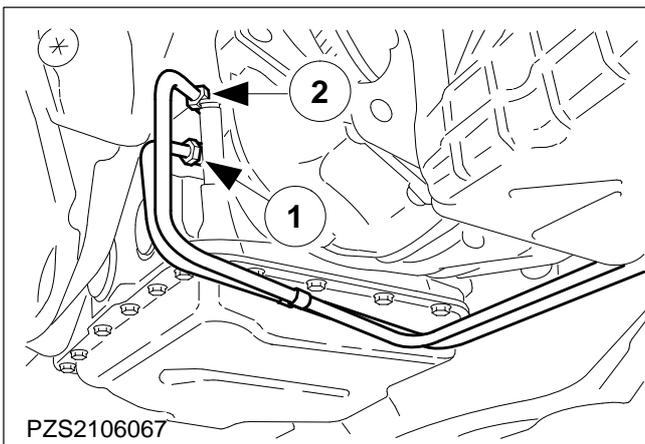


**41. Detach the bracket for the oil pipes.**



**42. Detach the oil dipstick tube and the earth lead.**

Unclip the automatic transmission wiring loom.

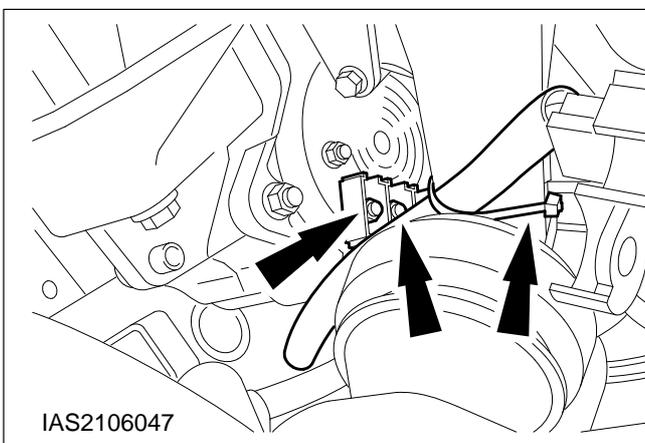


**43. Detach the oil pipes from the automatic transmission.**

1 Return pipe

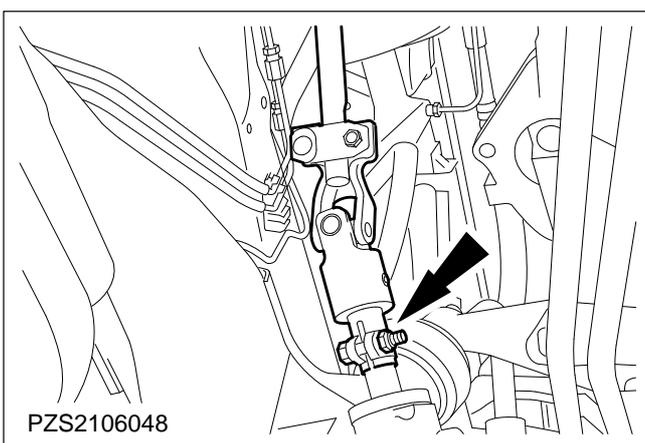
2 Feed pipe

Close off the openings.

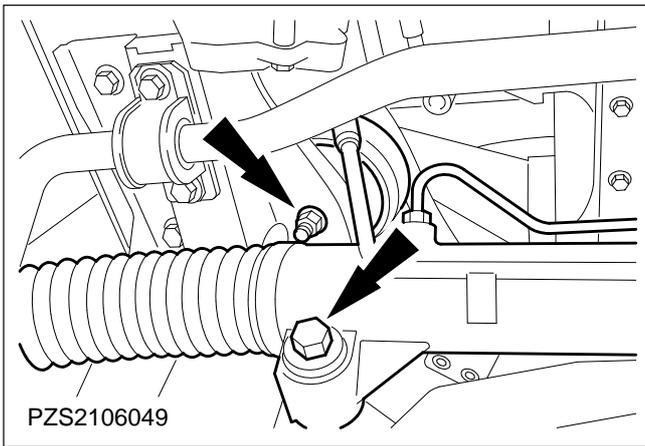


**44. Disconnect the alternator lead.**

Cut the cable ties.

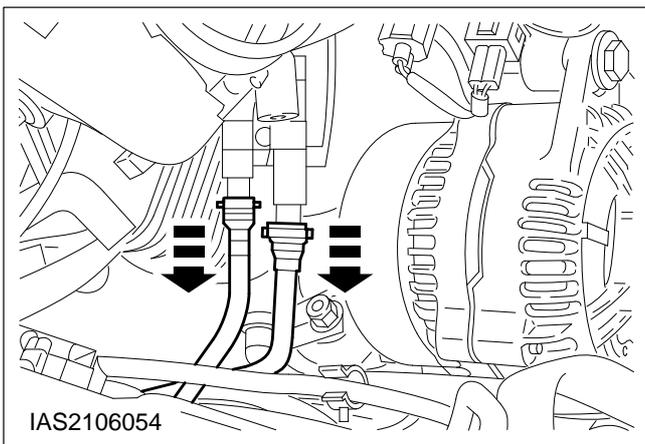


**45. Detach the steering intermediate shaft.**



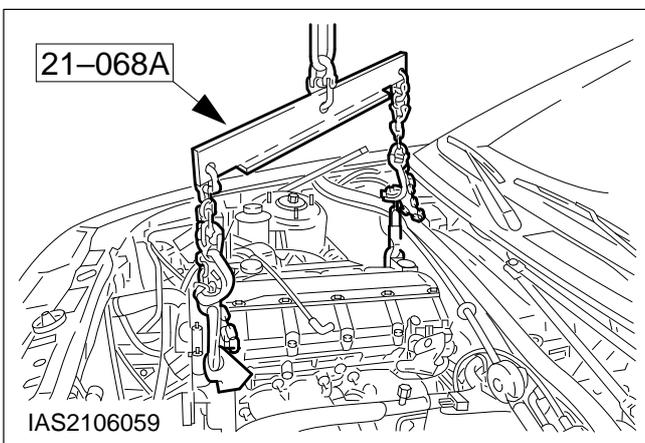
**46. Detach the steering gear (one bolt on either side) and lower it.**

**47. Detach both engine mountings (one nut on each mounting).**



**48. Lower the vehicle.**

**49. Disconnect the fuel lines.**



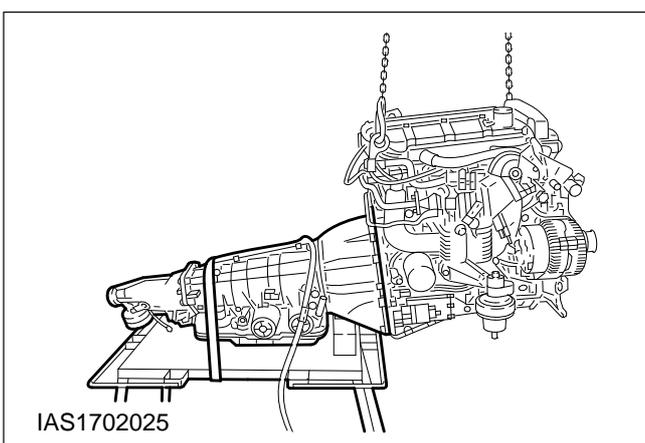
**50. Attach the engine lifting bracket.**

**NOTE:** The front chain should be shorter.



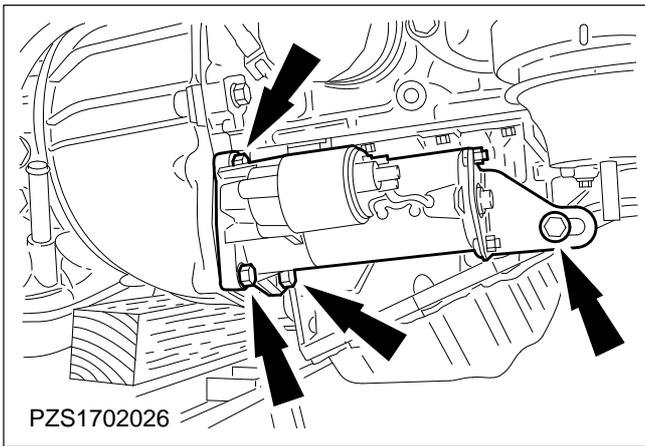
**CAUTION:** Do not damage the radiator.

**51. Lift the engine and automatic transmission assembly out using the workshop hoist.**

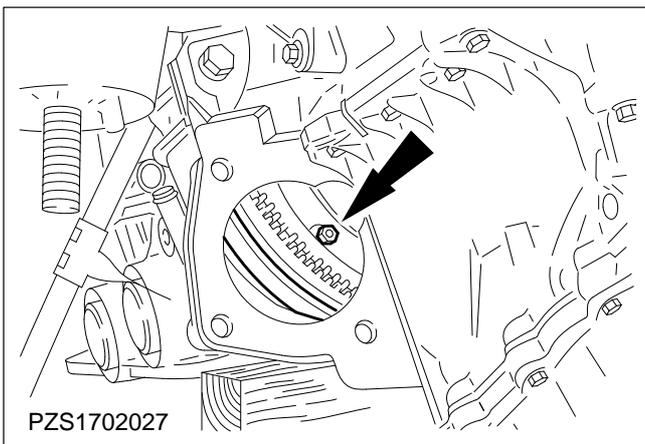


**Engine from/to Automatic Transmission – Disconnect and Connect – Engine and Transmission Assembly Removed (21 132 7)**

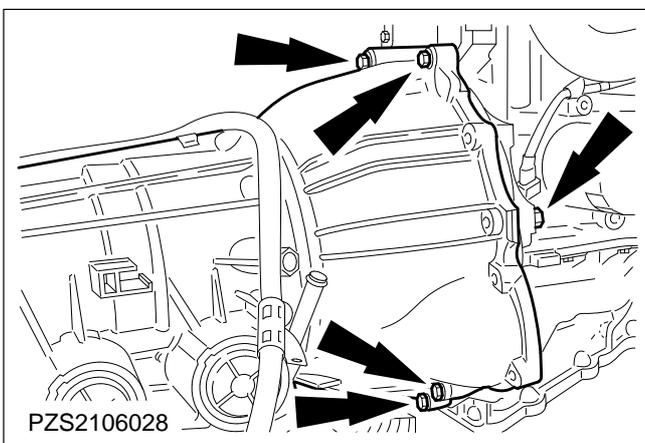
**52. Secure the automatic transmission to the assembly table using the retaining strap.**



**53. Remove the starter motor and bracket.**

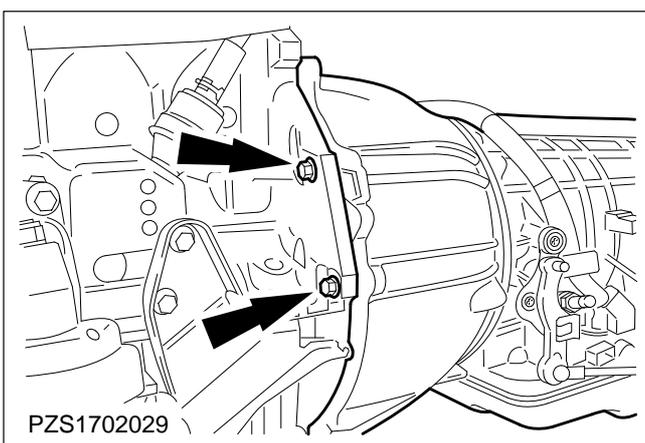


**54. Detach the torque converter from the engine drive plate (four nuts).**



**55. Disconnect the automatic transmission from the engine.**

Undo the five flange bolts on the right-hand side.

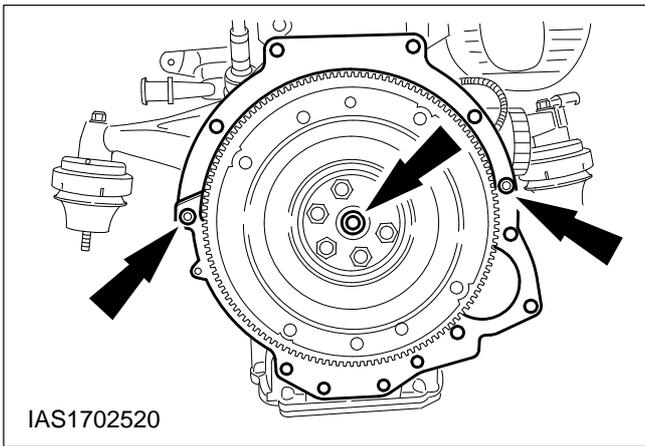


**56. Disconnect the automatic transmission from the engine (continued).**

Undo the two flange bolts on the left-hand side.

**⚠ WARNING:** Make sure that the torque converter remains in the transmission.

**57. Disconnect the engine from the automatic transmission.**

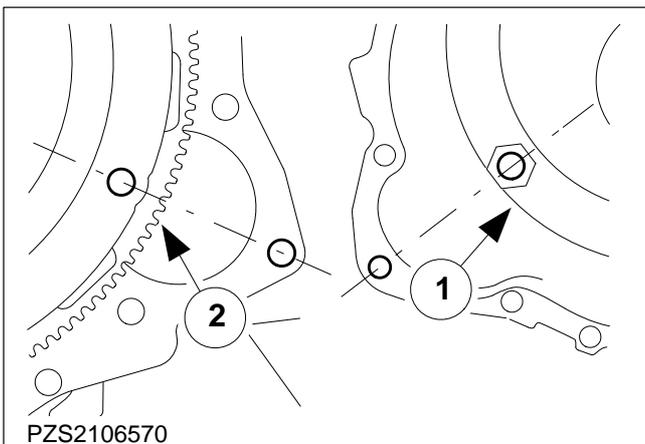


**58. If necessary move the locating sleeves from the automatic transmission flange to the engine flange.**

**59. Align the adaptor plate on the two locating sleeves.**

Fix the adaptor plate in position using a little grease.

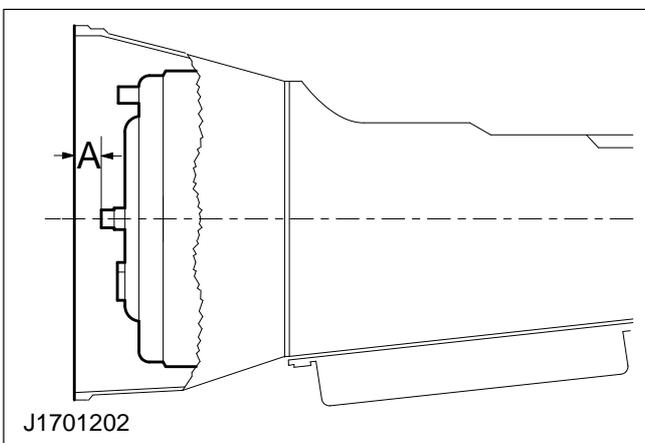
**60. Apply a thin coating of high temperature grease (ESDM-1C220-A) to the torque converter guide bore.**



**61. Move the torque converter into the installation position on the automatic transmission and the drive plate into the installation position on the engine.**

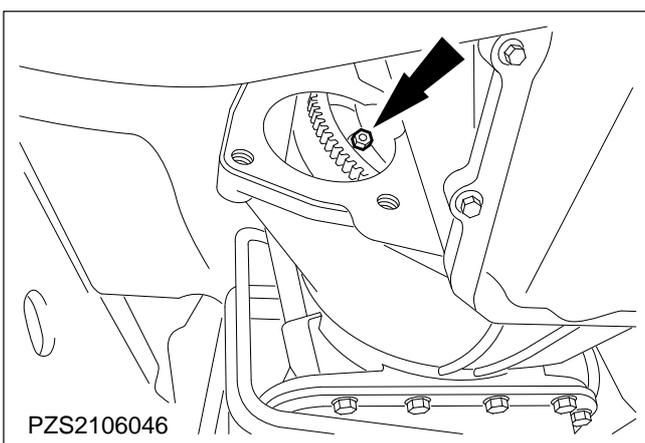
1 Torque converter

2 Engine drive plate.



**62. Check the fitted measurement of the torque converter:**

The fitted measurement "A" between the torque converter housing flange and the torque converter centring pin is 9 mm.

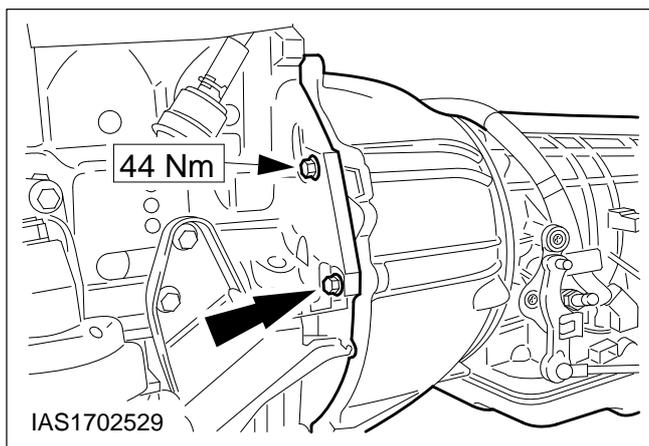


**NOTE:** Ensure the torque converter is correctly fitted in the engine drive plate.

**63. Connect the automatic transmission to the engine.**

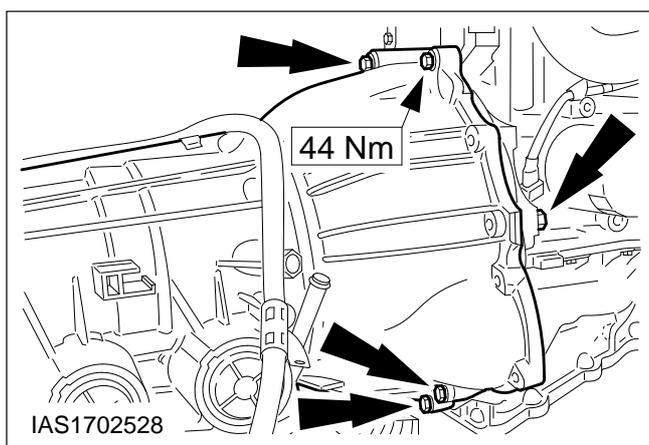
- Insert the torque converter attachment studs into the engine drive plate and do up the nuts (x 4).

- Screw in the flange bolts.



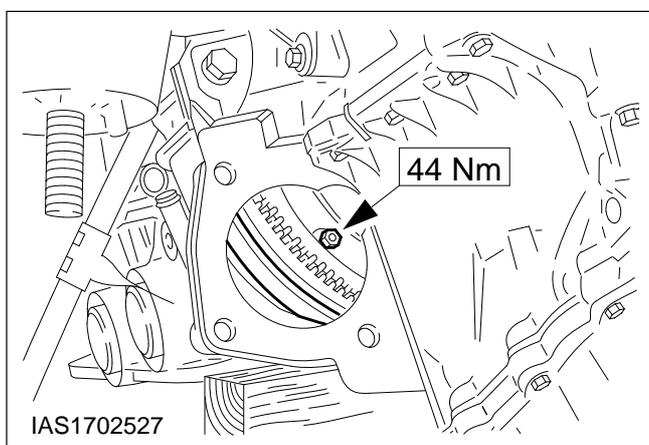
**64. Connect the automatic transmission to the engine (continued).**

Tighten the two bolts on the left-hand side.

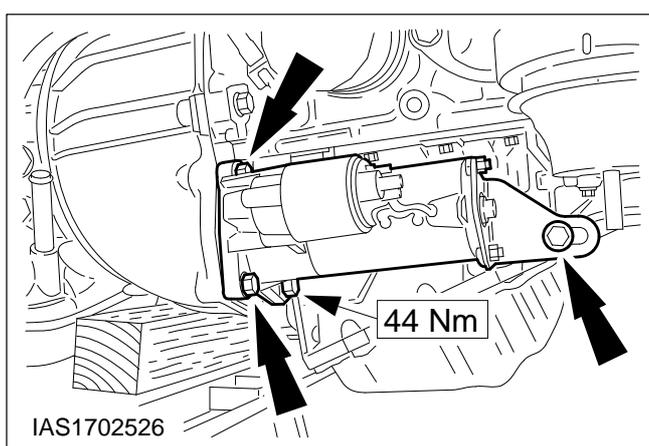


**65. Connect the automatic transmission to the engine (continued).**

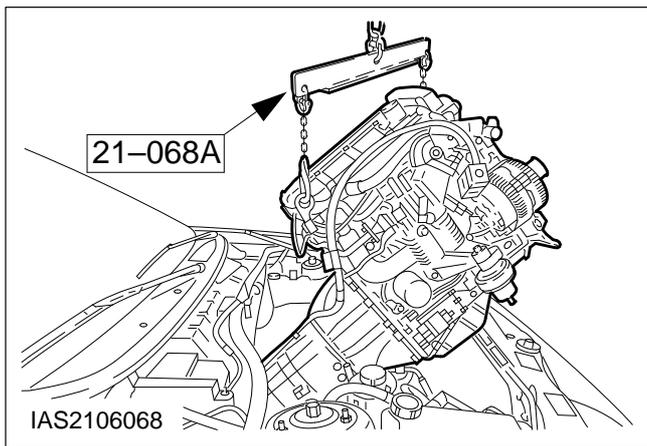
Tighten the five bolts on the right-hand side.



**66. Secure the torque converter.**



**67. Fit the starter motor and bracket.**

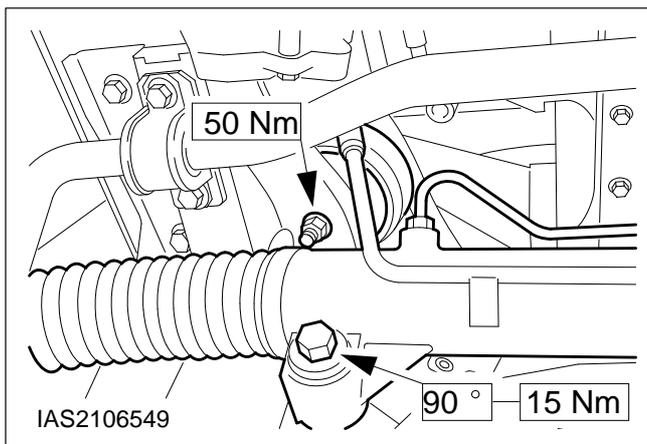


Install

**NOTE:** Suspend the engine and the transmission assembly from the engine lifting bracket with the shorter chain at the front.

**68. Install the engine and transmission assembly.**

**69. Detach the engine lifting bracket.**



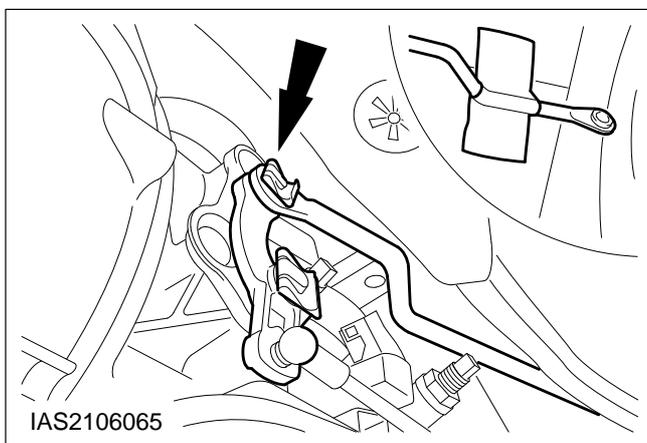
**70. Raise the vehicle.**

**NOTE:** Ensure the engine mounting locking pin is correctly seated in relation to the crossmember.

**71. Fit both engine mountings (one nut for each mounting).**

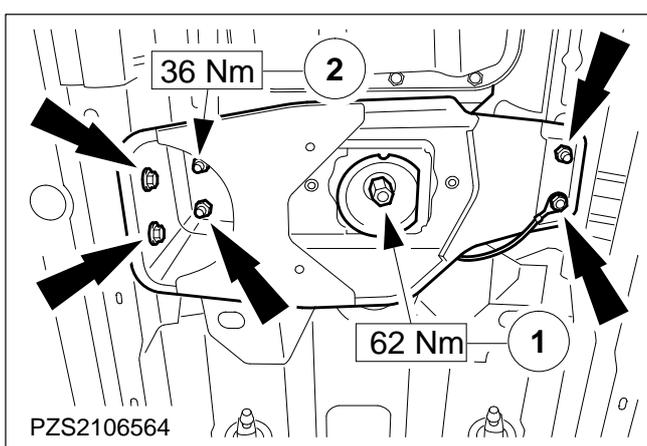
**NOTE:** Use Special Tool 21-540.

**72. Fit the steering gear (one bolt on either side).**



**73. Attach the shift rod to the cranked lever.**

Remove the adhesive tape.



**74. Raise the automatic transmission using the transmission jack.**

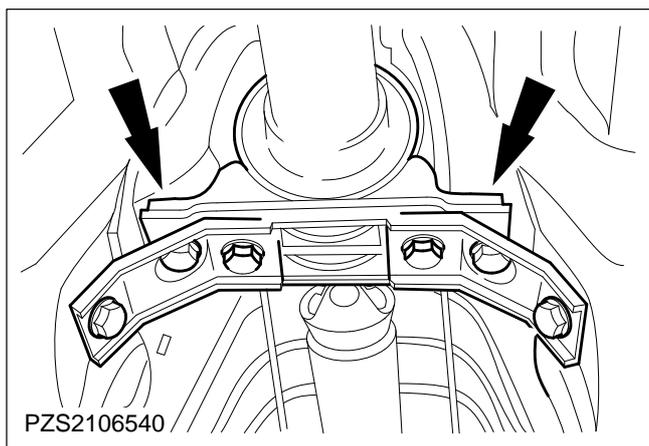
**NOTE:** Attach the earth lead.

**75. Attach the transmission crossmember.**

1 Attach it to the automatic transmission.

2 Attach it to the body.

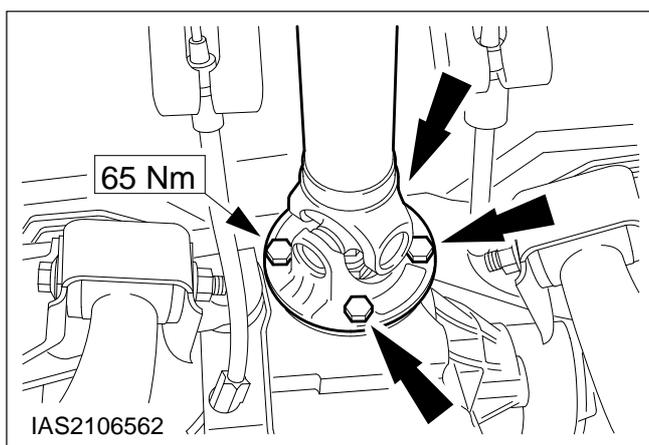
Remove the transmission jack.



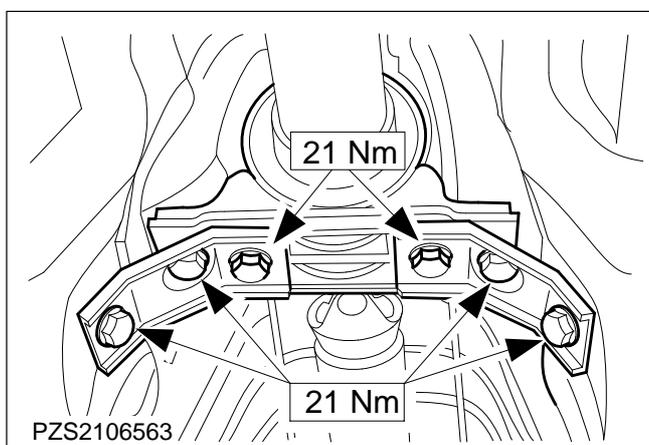
**76. Push the driveshaft into the automatic transmission.**

**NOTE:** There are spacer washers between the floor assembly and the centre bearing.

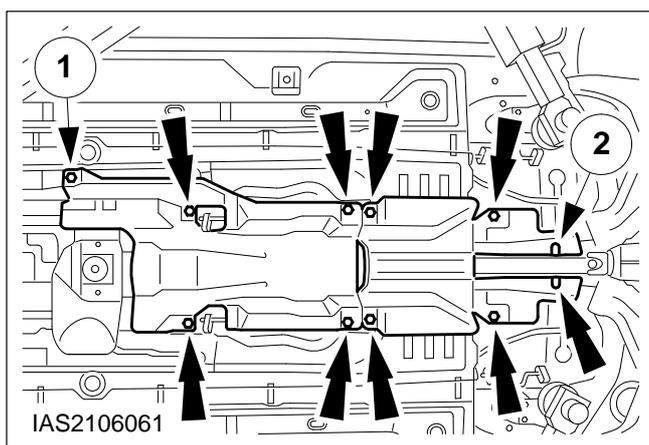
**77. Loosely fit the driveshaft centre bearing.**



**78. Attach the driveshaft to the rear axle.**

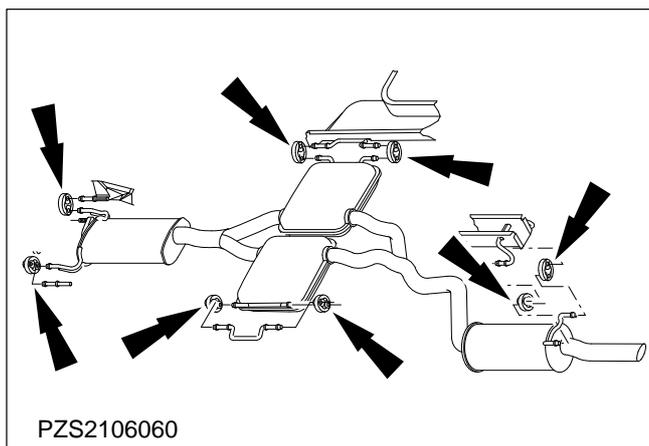


**79. Align the centre bearing so that it is free of strain and tighten it.**



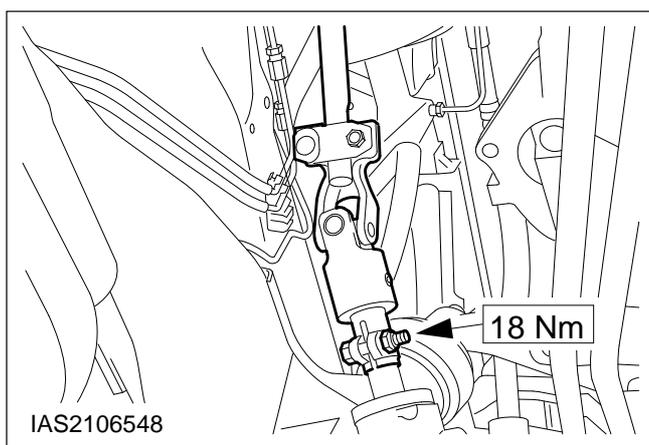
**80. Fit the exhaust system heat shields.**

- 1 Nine nuts.
- 2 Two clips.

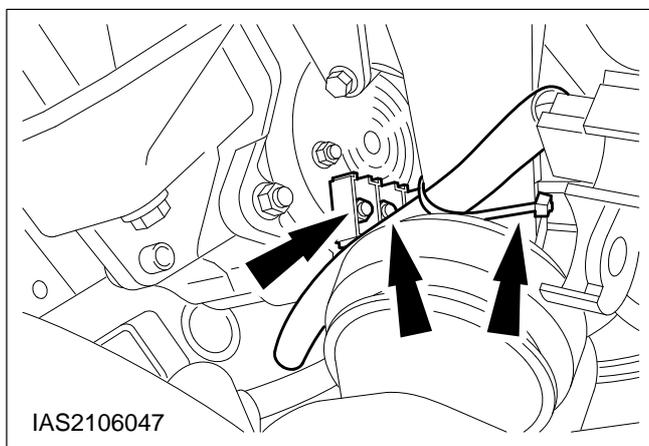


**81. Install the rear exhaust system.**

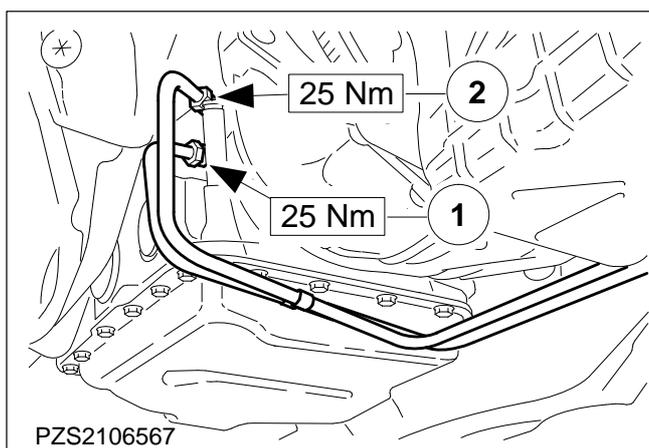
Attach the rubber insulators.



**82. Connect the steering intermediate shaft.**

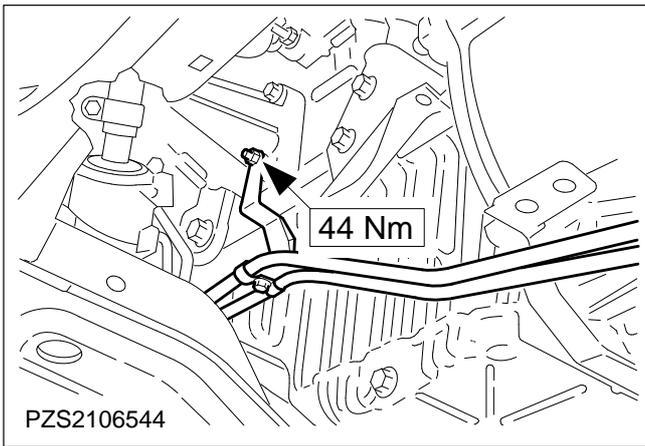


**83. Connect the alternator lead.**

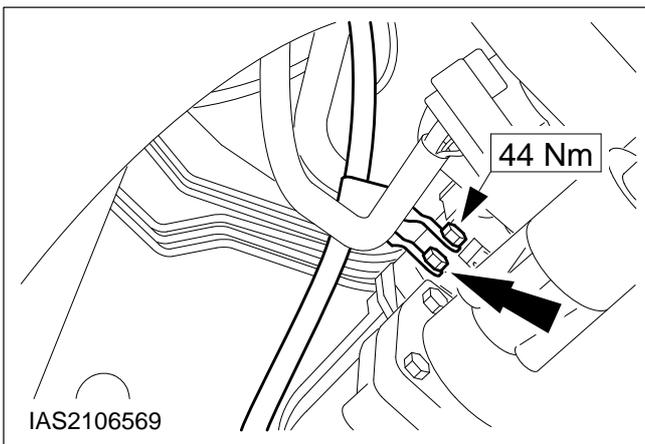


**84. Attach the oil pipes to the automatic transmission.**

- 1 Return pipe.
- 2 Feed pipe.

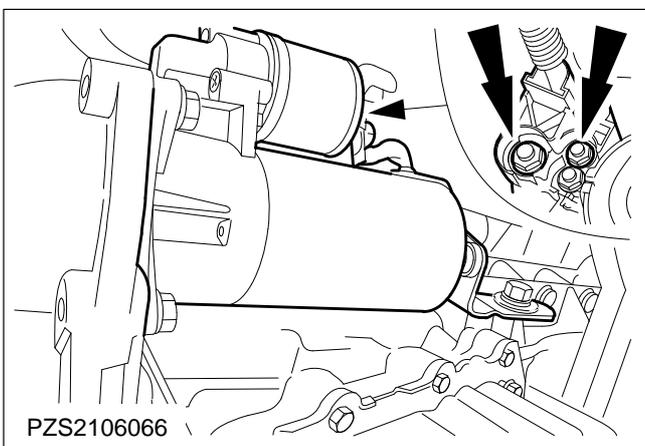


**85. Attach the bracket for the oil pipes.**

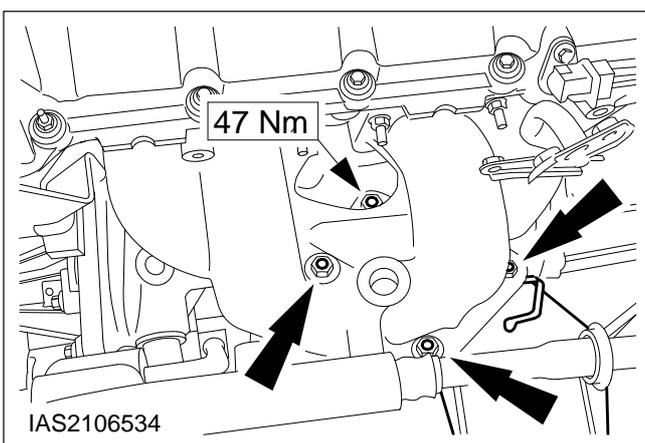


**86. Fit the oil dipstick tube and the earth lead.**

Clip the automatic transmission wiring loom into place.



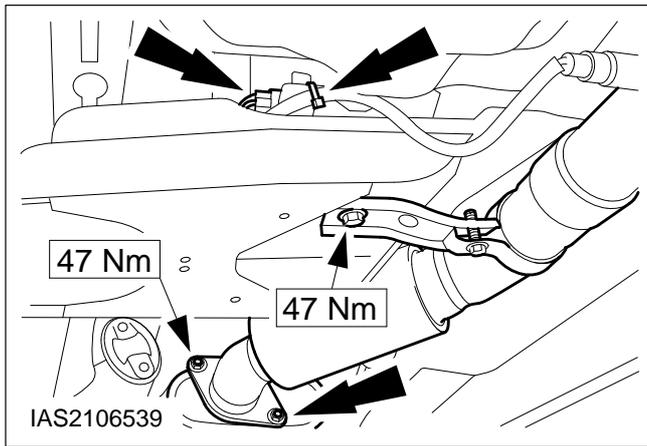
**87. Connect the starter motor lead.**



**88. Move the catalytic converter with the front exhaust pipe and with a new gasket into the installation position.**

**89. Lower the vehicle.**

**90. Secure the catalytic converter to the exhaust manifold.**



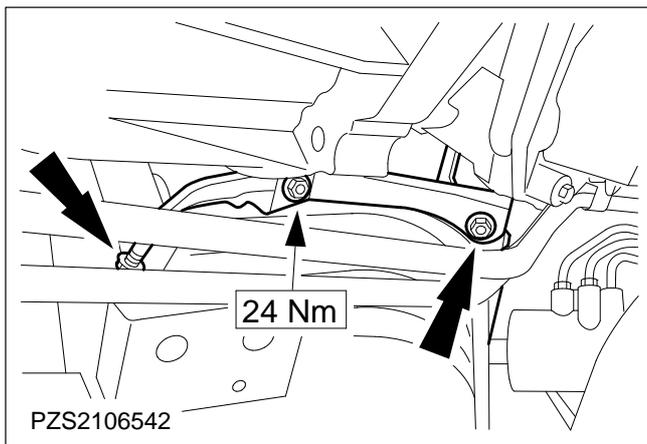
**91. Raise the vehicle.**

**92. Attach the front exhaust pipe bracket to the transmission crossmember.**

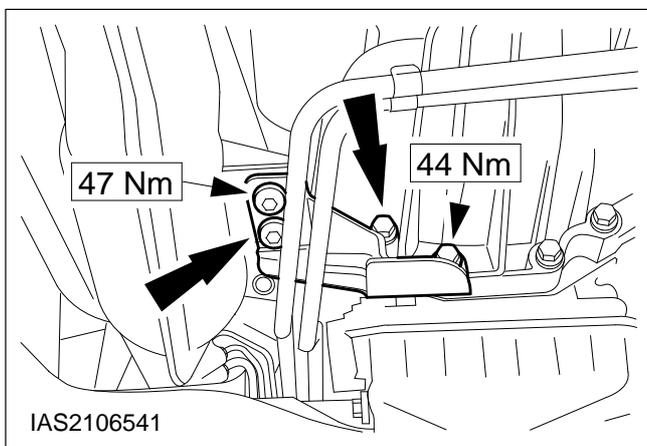
**93. Connect the HO2S plug.**

Secure the cable with a cable tie.

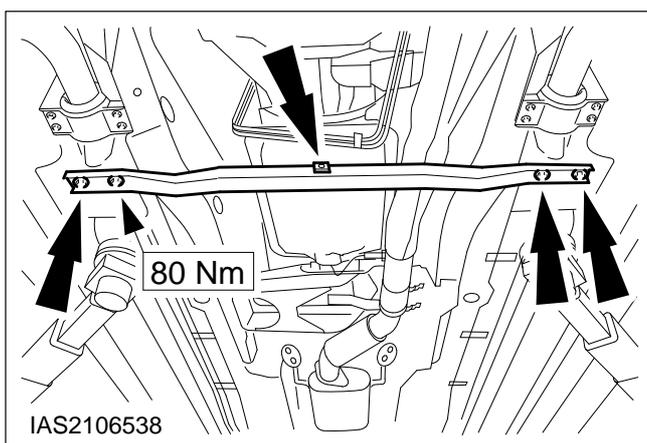
**94. Attach the front exhaust pipe to the rear exhaust pipe using a new gasket.**



**95. Fit the front catalytic converter bracket.**

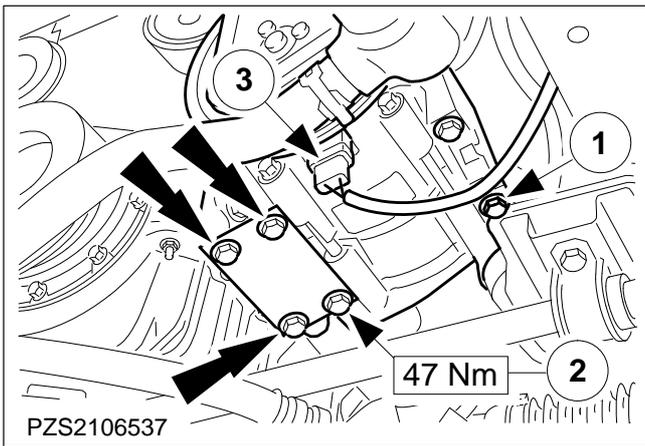


**96. Attach the bracket to the automatic transmission and the catalytic converter.**



**NOTE:** The tab points forwards.

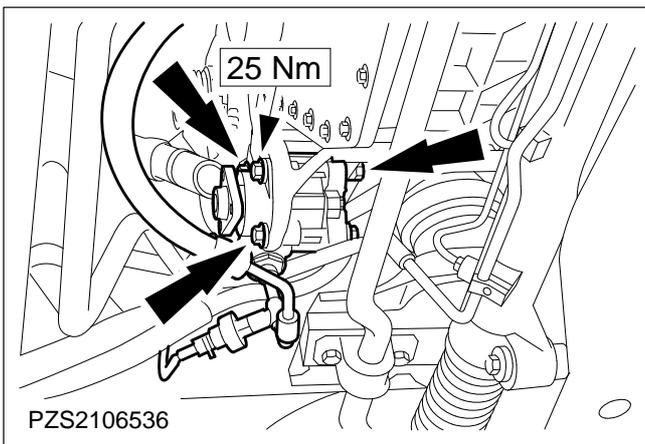
**97. Fit the front axle transverse brace.**



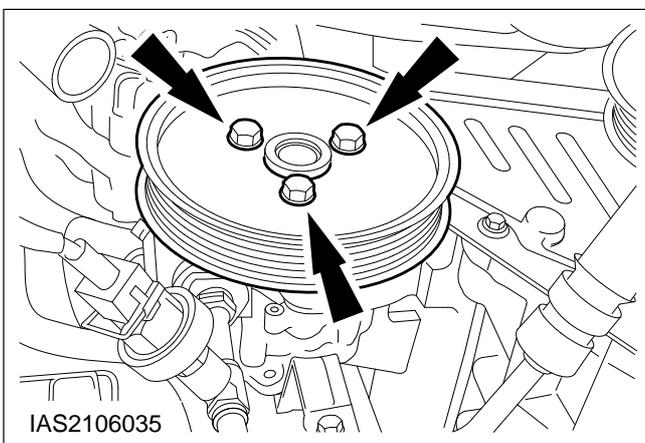
**NOTE:** Insert one bolt beforehand.

**98. Attach the air conditioning compressor.**

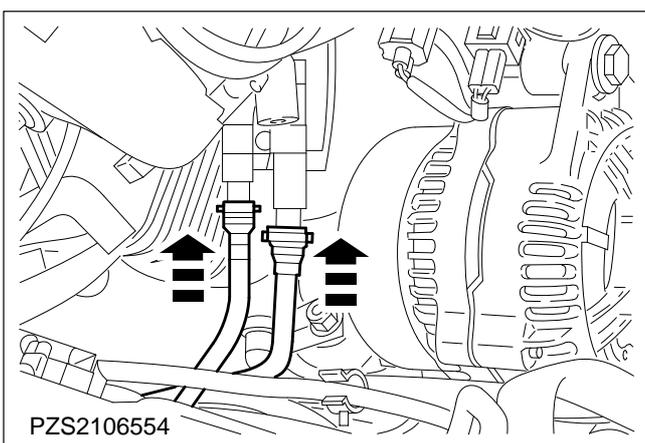
- 1 Insert the bolt before installing the compressor.
- 2 Tighten the bolts.
- 3 Connect the plug of the magnetic clutch.



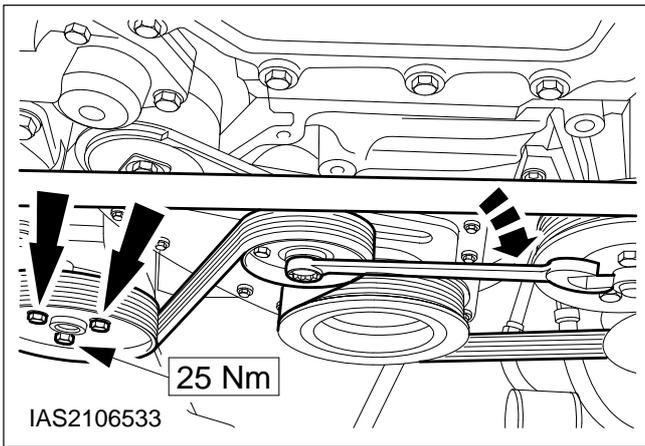
**99. Fit the power steering pump.**



**100. Attach the pulley to the power steering pump.**

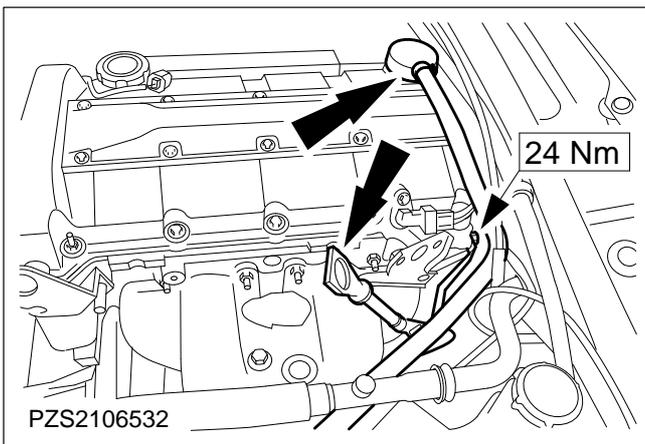


**101. Connect the fuel lines.**



**102. Relax the belt tensioner and fit the drive belt.**

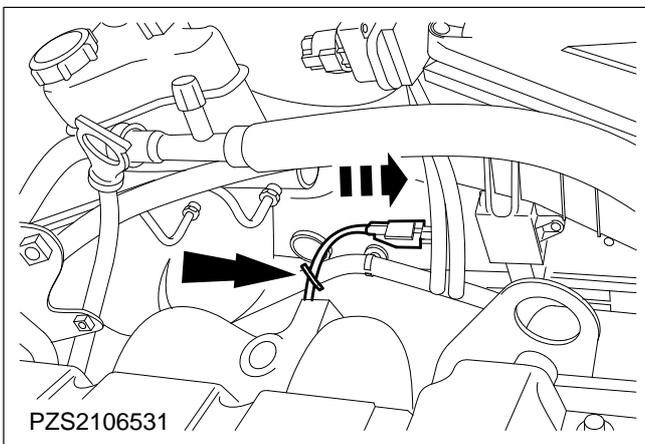
**103. Tighten the power steering pump pulley.**



**104. Connect the valve with the crankcase breather hose and clip it into place.**

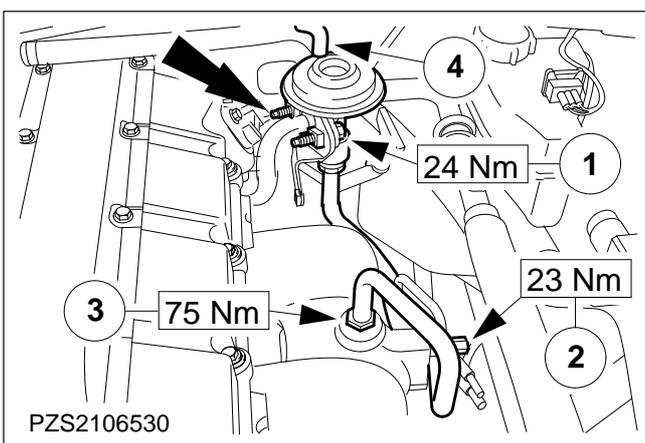
**105. Fit the oil dipstick tube bracket.**

Insert the oil dipstick.



**106. Connect the HO2S plug.**

Secure the cable to the heater coolant hose using a cable tie.



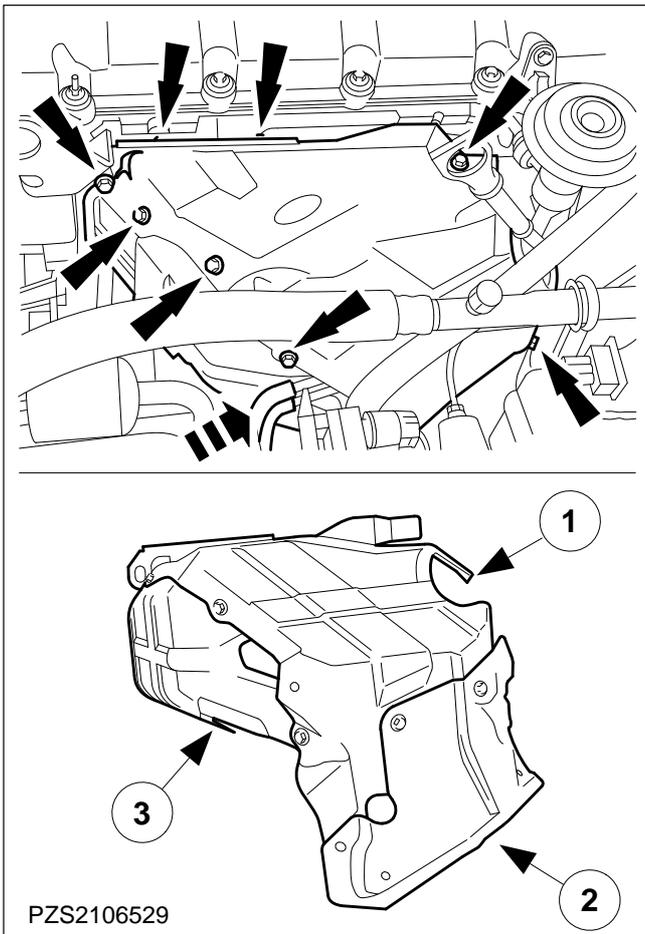
**107. Fit the EGR valve and the EGR pipe.**

1 Attach the EGR valve to the bracket.

2 Fit the EGR pipe bracket.

3 Fit the EGR pipe.

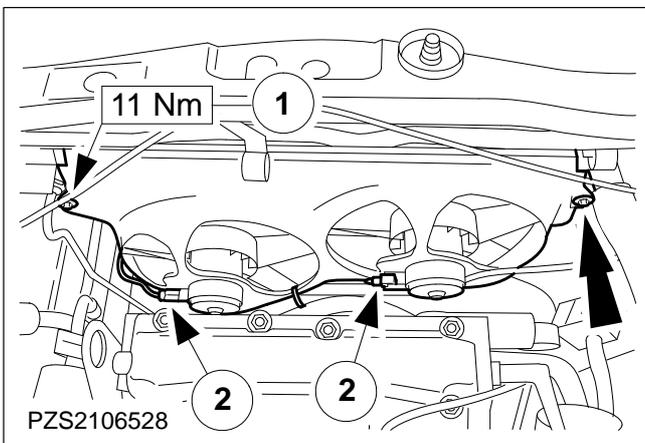
4 Connect the vacuum hose.



**108. Fit the three-part exhaust manifold heatshield.**

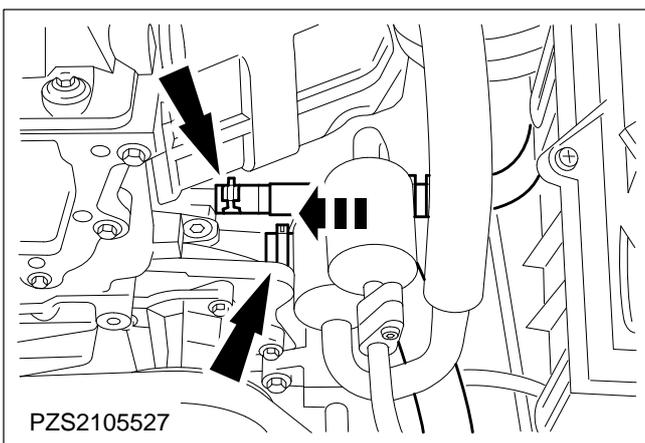
- Loosely fit the parts in the order shown.
- Tighten the bolts.

**109. Slide on the two vacuum hoses.**



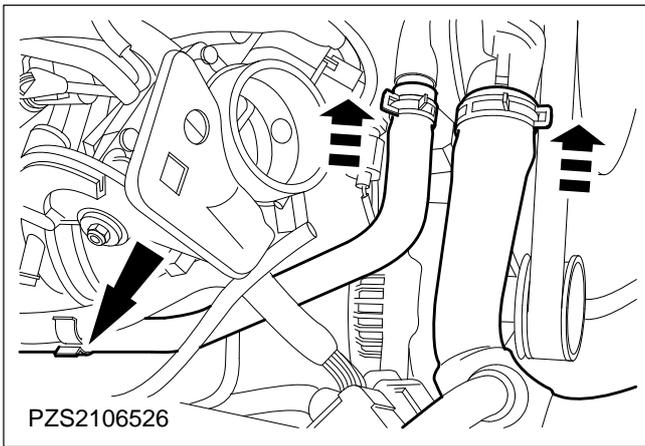
**110. Install the fan motors with the air baffle.**

- 1 Tighten the nuts.
- 2 Connect the fan motor plugs.



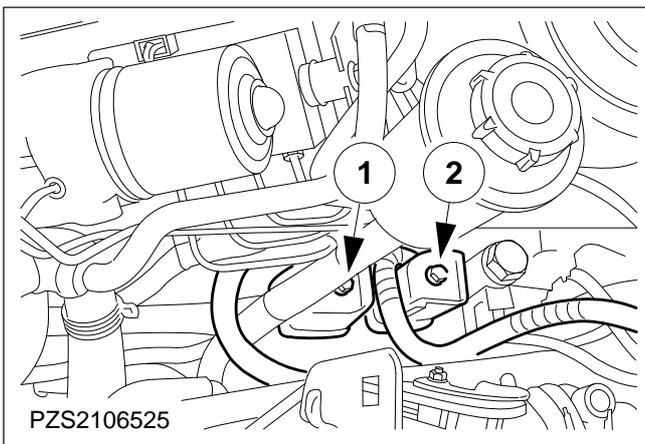
**111. Attach the coolant hoses to the coolant pump.**

Use Special Tool 24-003.



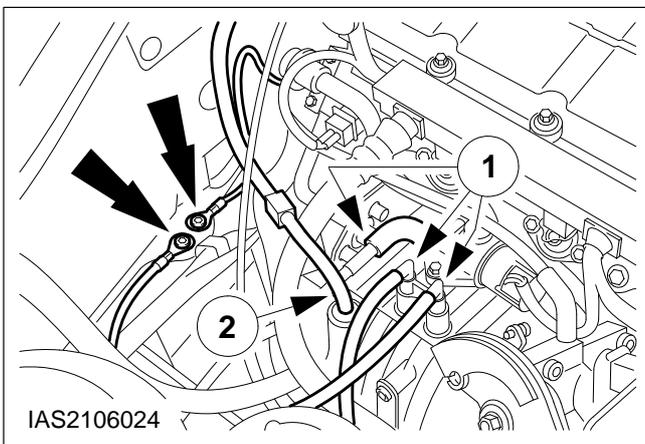
**112. Attach the coolant hoses to the thermostat housing.**

Clip the coolant hose into place.



**113. Fit the wiring loom plugs.**

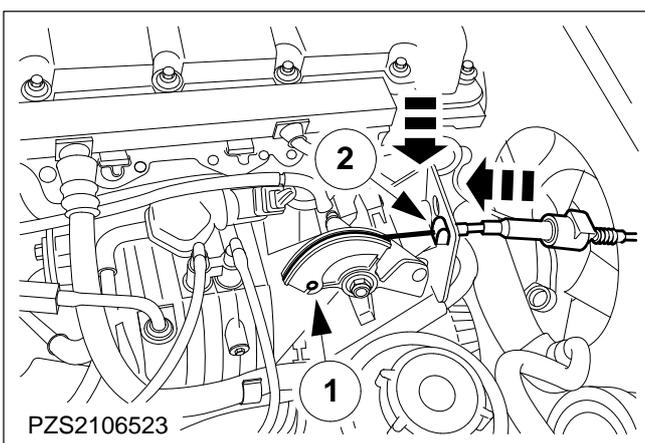
- 1 Main wiring loom plug
- 2 Automatic transmission wiring loom plug



**114. Fit the vacuum hoses and vacuum line.**

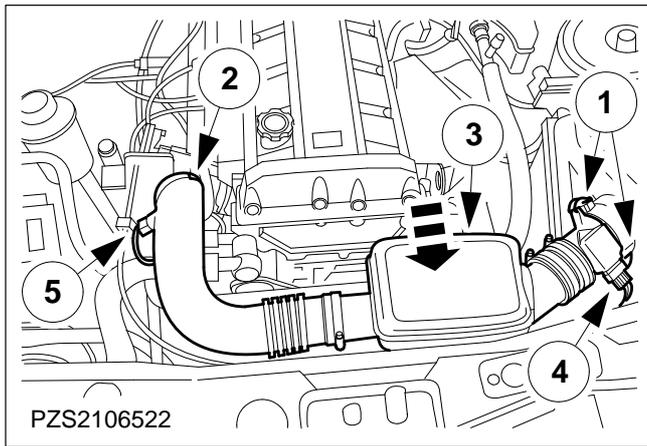
- 1 Vacuum hoses
- 2 Vacuum line to the brake servo.

**115. Attach the earth lead to the bulkhead.**

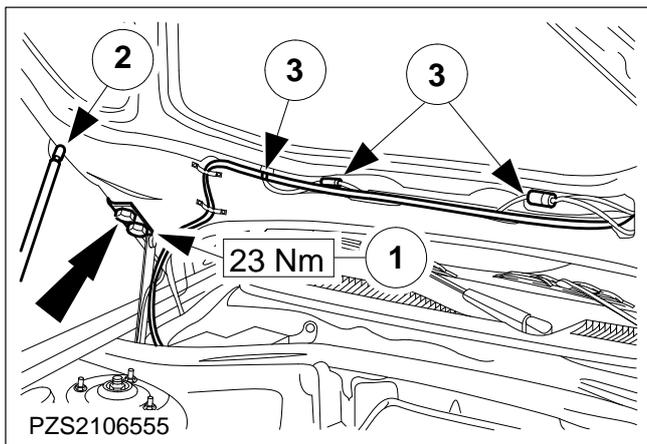


**116. Attach the throttle cable.**

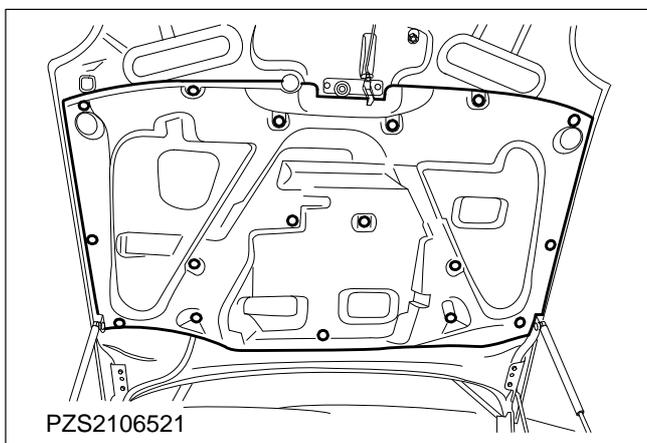
- 1 Hook the cable in place.
- 2 Insert the circlip.

**117. Install the air intake pipe.**

- 1 Attach the air intake pipe to the air cleaner housing (two clips).
- 2 Fit the air intake pipe.
- 3 Move the resonator into the installation position (push-fit).
- 4 Connect the IAT sensor plug.
- 5 Connect the MAF sensor plug.

**118. Attach the hood.**

- 1 Fit the two hood hinges.
- 2 Attach the two hydraulic struts to the hood.  
Close the hood and check that it fits. Open the hood.
- 3 Connect the hose and the multiplug of the washer system and clip them in place.

**119. Fit the hood insulation panel (17 expanding pins).**

**120. Finishing operations.**

- Fill up with coolant.
- Check that the vacuum hoses and wires are routed correctly and secure them with cable ties.
- Insert the transmission dipstick.
- Connect the battery earth lead.
- Fit the battery cover.
- Reprogramme the preset radio stations.
- Reset the clock.
- Carry out a road test to enable the PC module (EEC V) to collect data.
- Check the engine and cooling system for leaks (visual check).
- Check the fluid levels after the road test and rectify them as necessary.