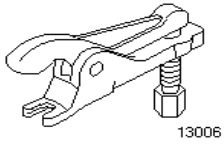
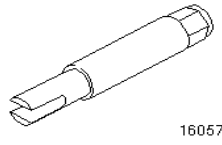


Manual Transmission Assembly - Remove and Install (16 114 0)

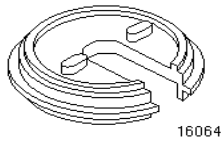
Special Tools



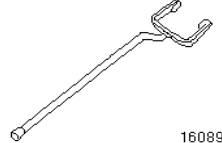
13-006 Ball joint separator



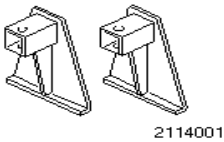
16-057 Remover, front axle driveshaft



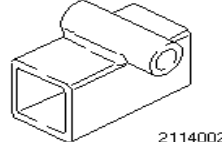
16-064 Aligner, gear lever



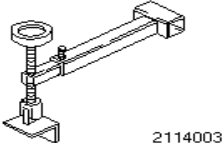
16-089 Remover, front axle driveshaft



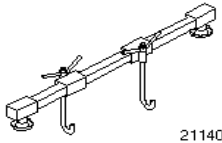
21-140-01 Adaptor for 21-140



21-140-02 Adaptor for 21-140



21-140-03 Adaptor for 21-140



21-140 Engine support bar

Workshop Equipment

| | |
|-------------------|--|
| Auxiliary plugs | |
| Retaining strap | |
| Transmission jack | |

Materials

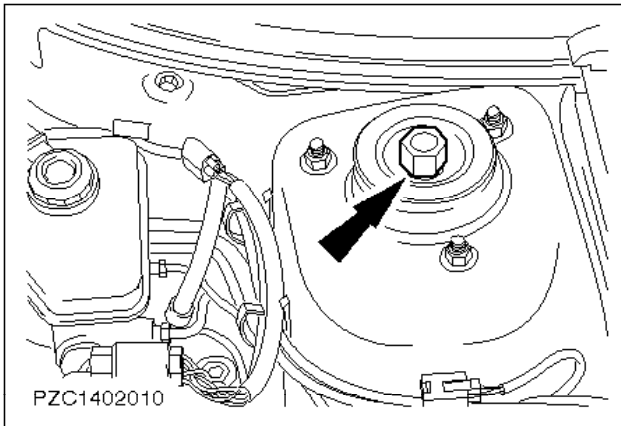
| | |
|--------------------|--------------|
| Transmission fluid | ESD-M2C186-A |
| Cable ties | |

Remove

- Standard preparatory measures.
 - Make a note of the radio keycode.
 - Make a note of the preset radio stations.
 - Put the transmission in neutral.

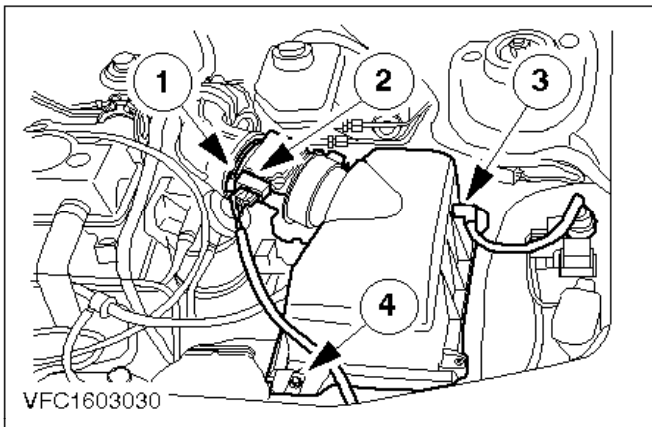
- Separate cable ties when necessary.
- Detach the battery cover.

⚠ CAUTION:
Disconnect the battery negative lead.

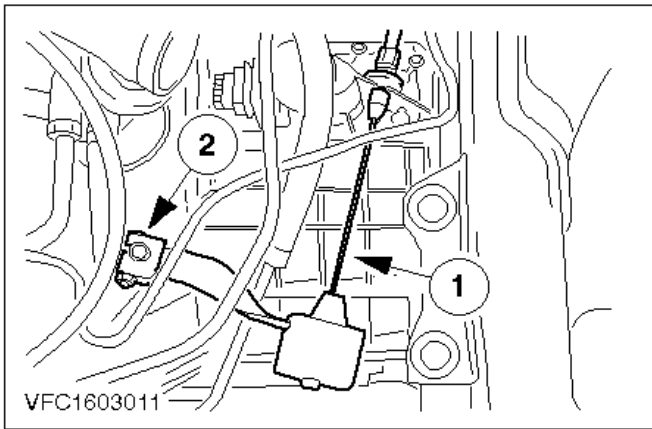


Note:
 Hold the piston rod steady with an Allen key.

- ⌚ 2. Slacken the nuts on the left and right-hand suspension struts five turns.

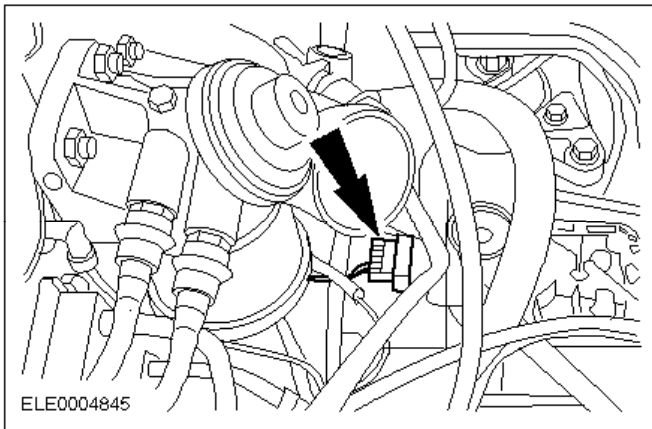


- ⌚ 3. Remove the air cleaner housing.
 - 1 Undo the hose clip.
 - 2 Detach the mass air flow (MAF) multiplug.
 - 3 Pull off the vent hose.
 - 4 Remove the nut and lift off the air cleaner housing.

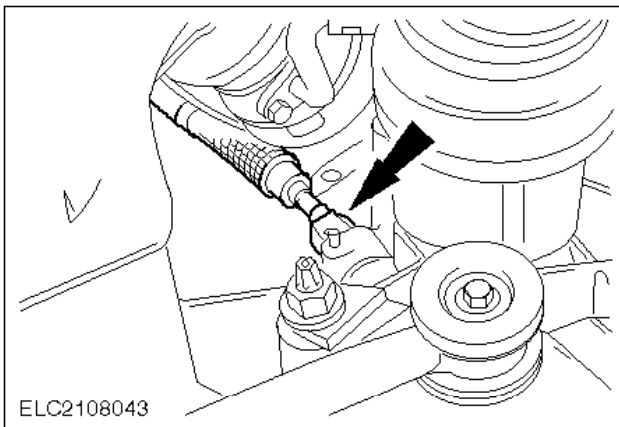


4. Detach the clutch operating mechanism.

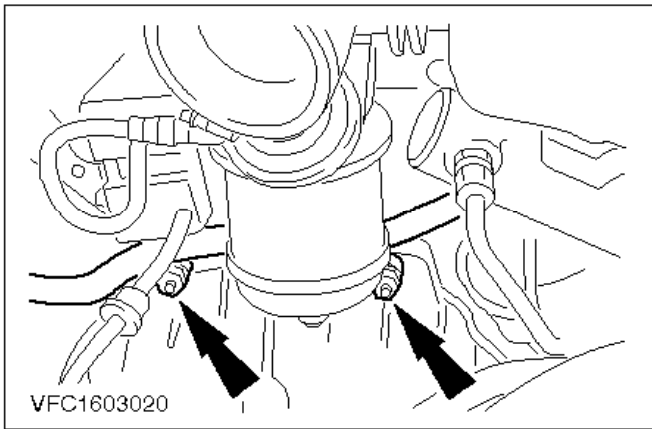
- 1 Unhook the clutch cable from the clutch release lever and bracket.
- 2 Detach the clutch release lever.



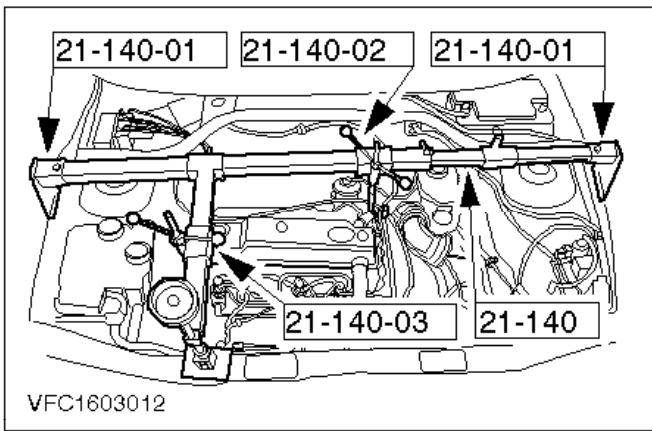
5. Pull off the plug of the multifunction switch.



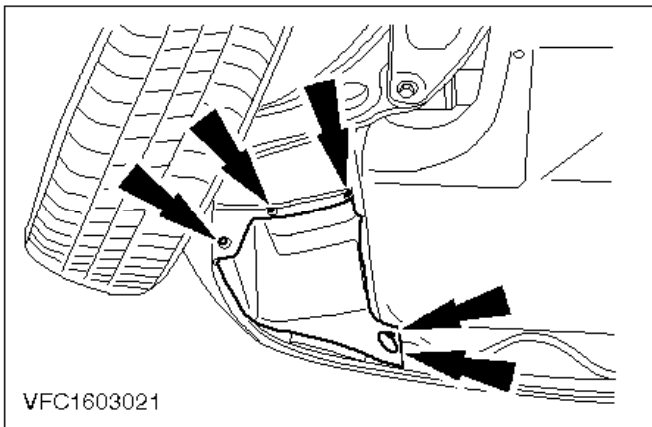
6. Detach the speedometer drive.



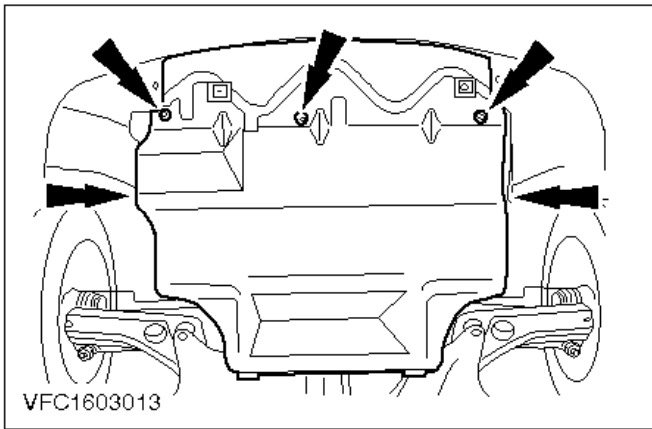
- ⌚ 7. Detach the coolant pipe from the transmission (two nuts, two studs - transmission housing).



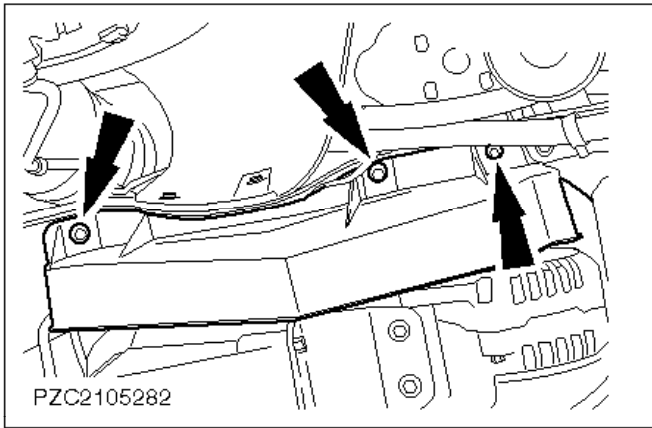
- ⌚ 8. Attach the special tool.
- 9. Raise the vehicle.
- 10. Drain the transmission fluid.
 - Tighten the drain plug again to 45 Nm.



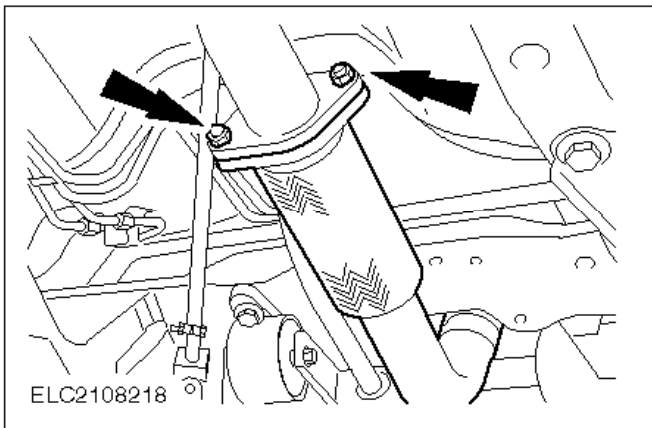
- ⌚ 11. Remove the left-hand wheel arch trim (if fitted).



- 12. Detach the lower engine cover (if fitted).

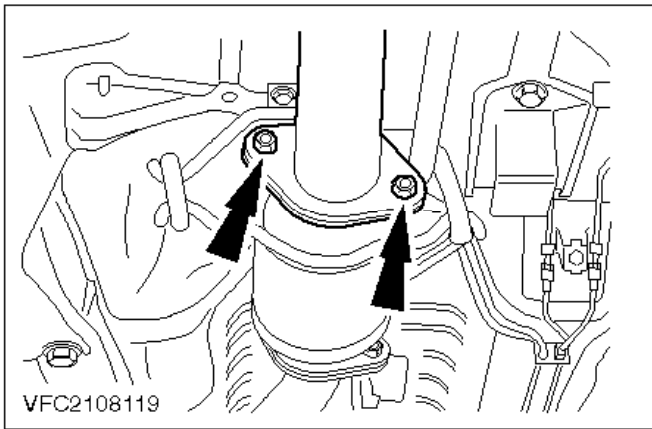


- 13. Remove the lower drive belt cover (if fitted).



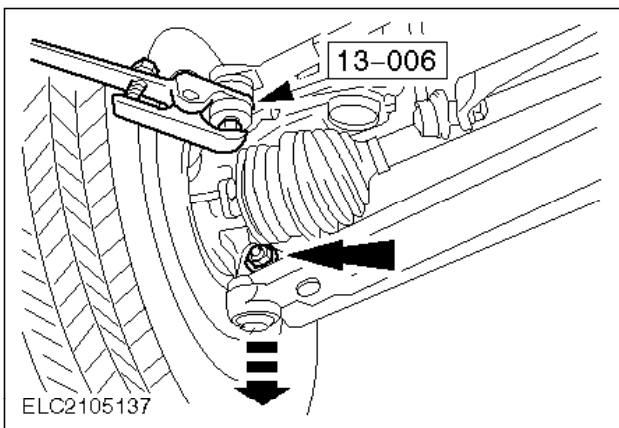
Vehicles with 1,8 Endura-DE (TC) engine only.

- 14. Detach the rear exhaust pipe from the flexible pipe.

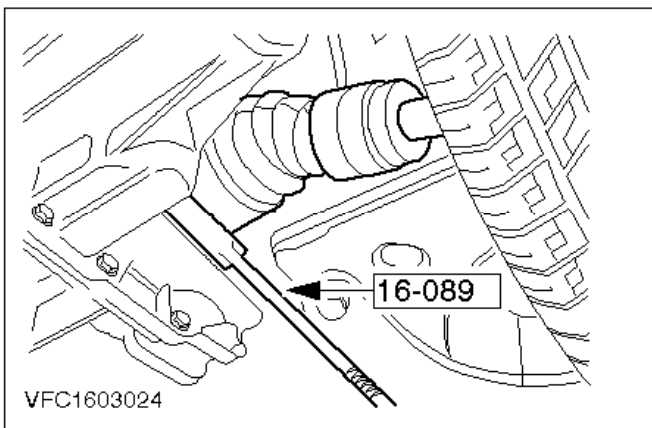


All vehicles

- ⦿ 15. Detach the catalytic converter from the front exhaust pipe.



- ⦿ 16. Detach the left-hand track rod and the left and right-hand lower suspension arms.



CAUTION:

The inner joint must not be bent more than 18 degrees, the outer joint no more than 45 degrees.



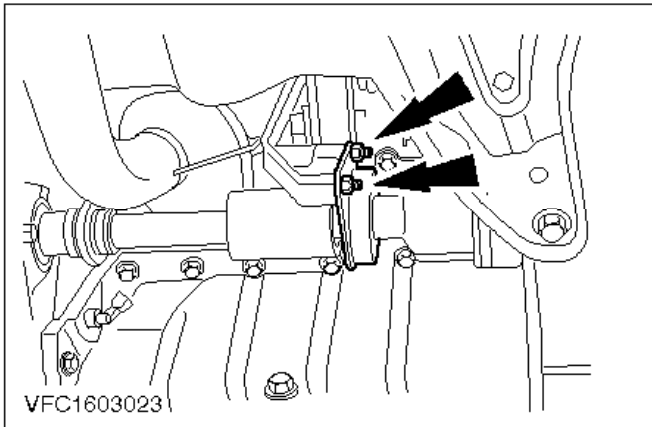
CAUTION:

Put wood underneath the transmission to prevent it from being damaged.

Note:

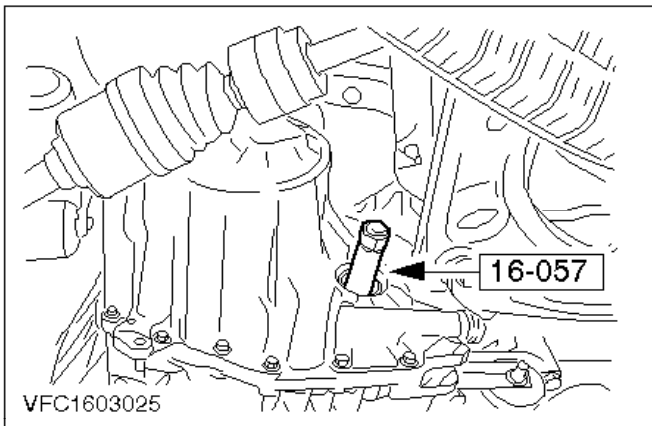
Close off the holes in the transmission with auxiliary plugs.

- ⌚ 17. Detach the left-hand front axle driveshaft.
 - Free the left-hand front axle driveshaft from the transmission using the special tool.
 - Press the wheel outwards and pull the left-hand front axle driveshaft out of the transmission.
 - Bend the left-hand front axle driveshaft forwards and tie it up.



Vehicles with 1,8 Endura-DE (TC) engine only.

- ⌚ 18. Detach the intermediate shaft bearing.



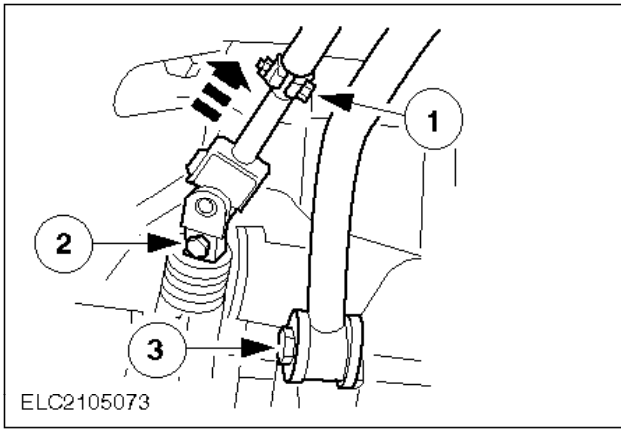
All vehicles



CAUTION:

The inner joint must not be bent more than 18 degrees, the outer joint no more than 45 degrees.

- ⌚ 19. Detach the right-hand front axle driveshaft.
 - Drive the right-hand front axle driveshaft out of the transmission by hitting it gently from the other side.
 - Push the wheel outwards and pull the right-hand driveshaft out of the transmission.
 - Bend the right-hand front axle driveshaft forwards and tie it up.



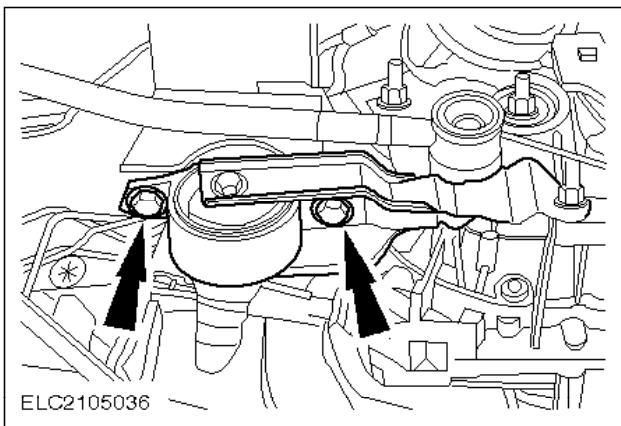
20. Remove the shift rod and shift rod stabiliser.

- 1 Loosen the clamp bolt.
- 2 Take out the bolt and slide one part of the shift rod inside the other.

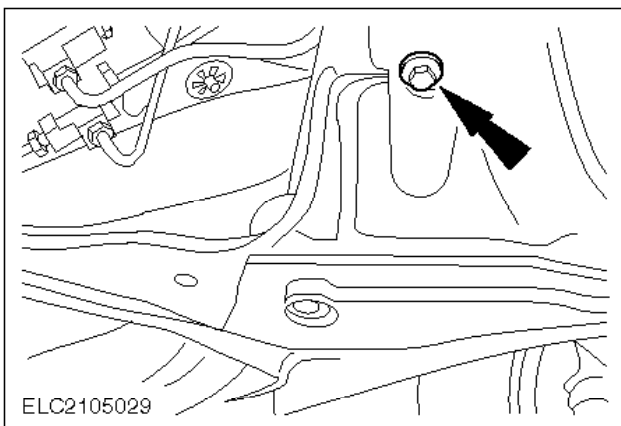
Note:

There is a washer between the shift rod stabiliser and the transmission housing.

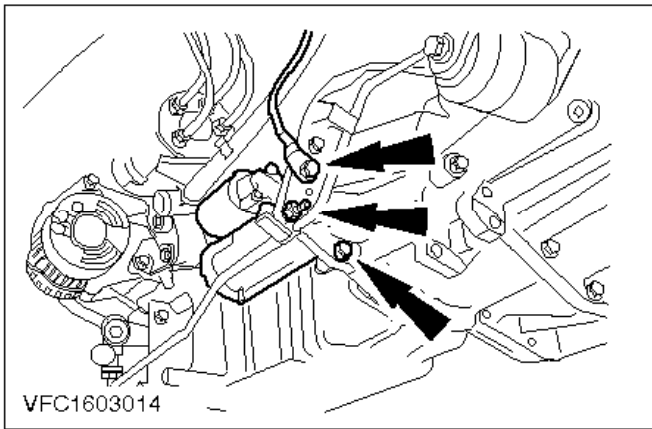
- 3 Remove the shift rod stabiliser.



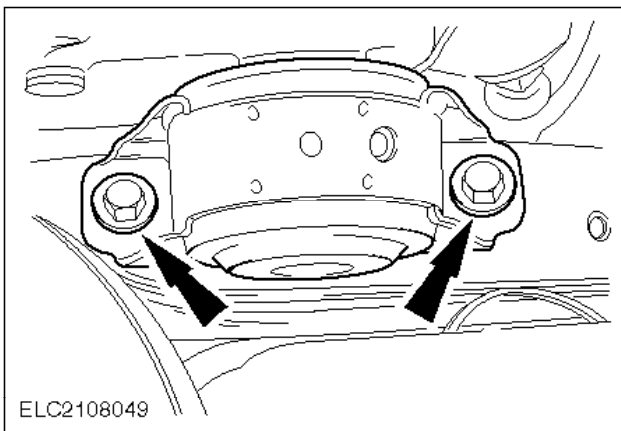
21. Detach the engine roll restrictor.



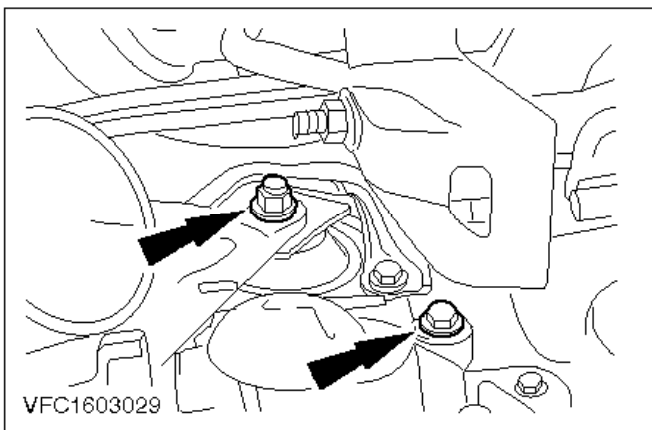
22. Remove the rear right-hand engine mounting bolt.



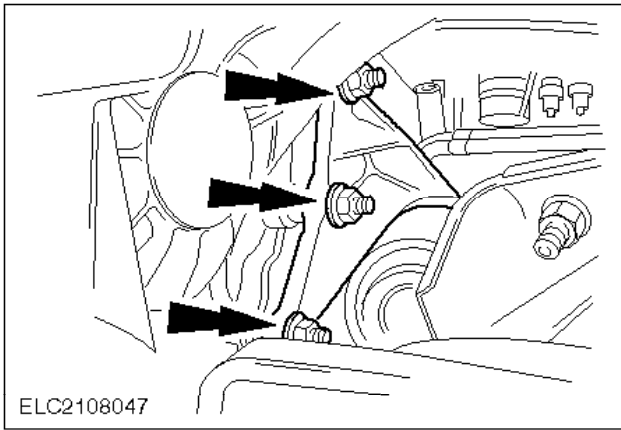
- 23. Remove the starter flange bolts.
 - Detach the ground lead.



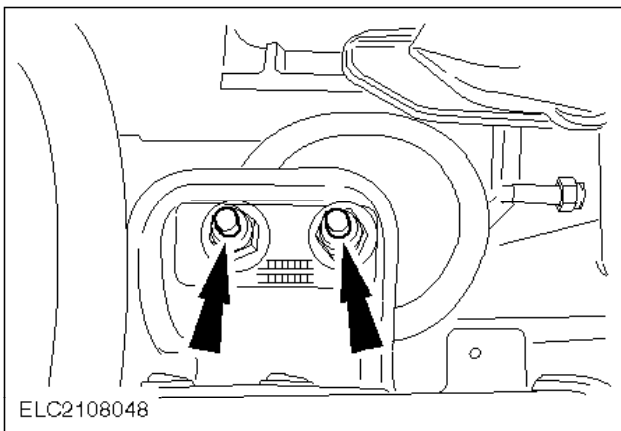
- 24. Detach the left-hand rear engine mounting from the crossmember.
Lower the vehicle.



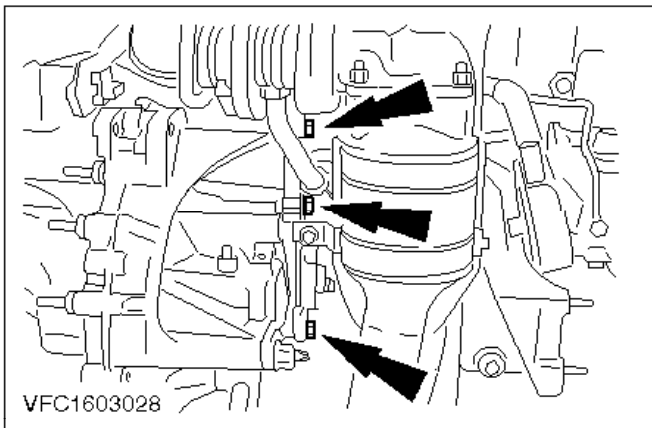
- 25. Detach the right-hand rear engine mounting.
Remove the nut and the bolt.



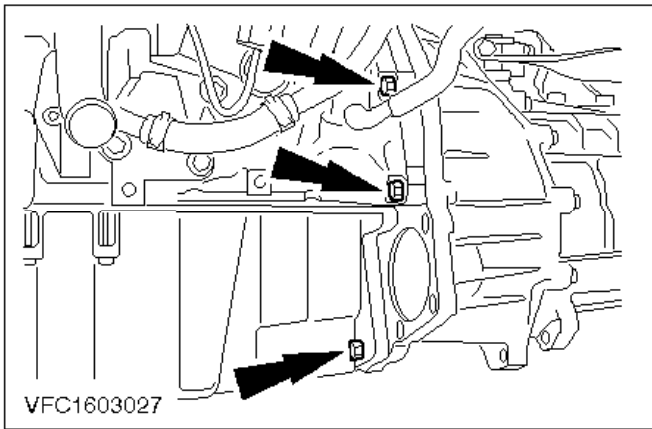
- ⌚ 26. Detach the right-hand rear engine mounting (cont.).
Remove the three nuts and remove the engine mounting.



- ⌚ 27. Undo the right-hand front engine mounting.
- Lower the engine/transmission assembly with Special Tool 21-140 until the transmission can be removed.
 - Raise the vehicle.



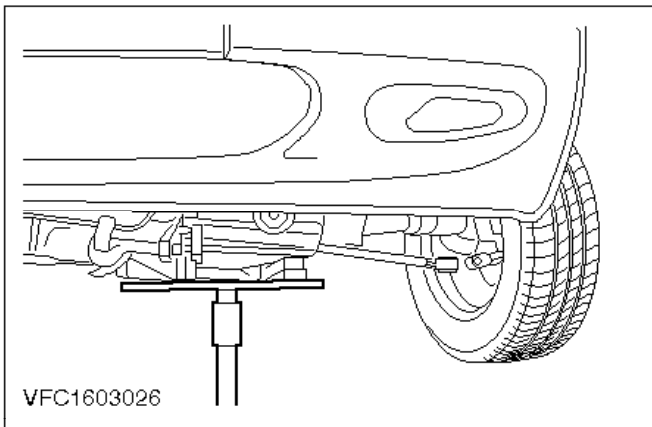
- ⌚ 28. Remove the engine/transmission flange bolts.



⚠ CAUTION:

Only remove the last flange bolt after the transmission is secured to the transmission jack by a retaining strap.

- 29. Remove the engine/transmission assembly flange bolts (shown with starter removed) (continued).

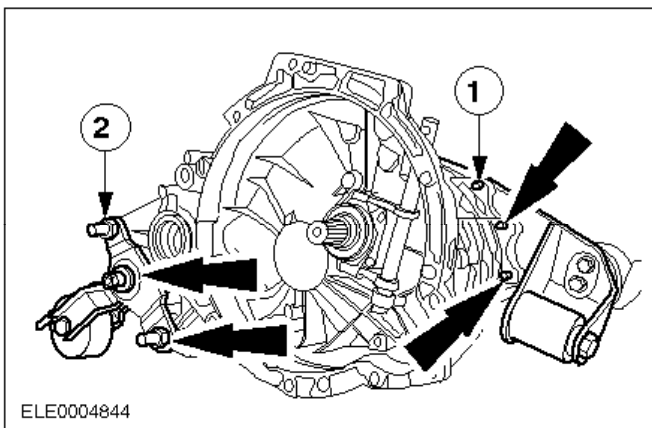


Note:

Make sure the transmission is supported safely.

- 30. Secure the transmission on the transmission jack using a retaining strap and remove the last flange bolt.

Separate the transmission from the engine and lower the transmission jack.



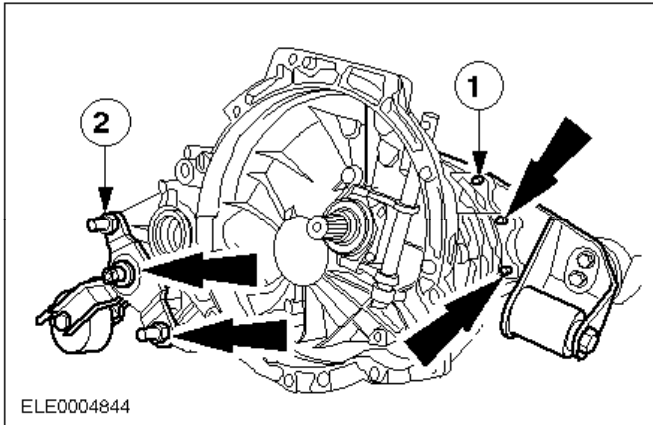
- ⌚ 31. If necessary, detach any add-on components from the transmission housing.

- 1 Left-hand engine mounting (three bolts)
- 2 Roll restrictor (three bolts)

Install

32. General note.

Renew all snap rings and self-locking nuts.



- ⌚ 33. If necessary, attach any add-on components from the transmission housing.

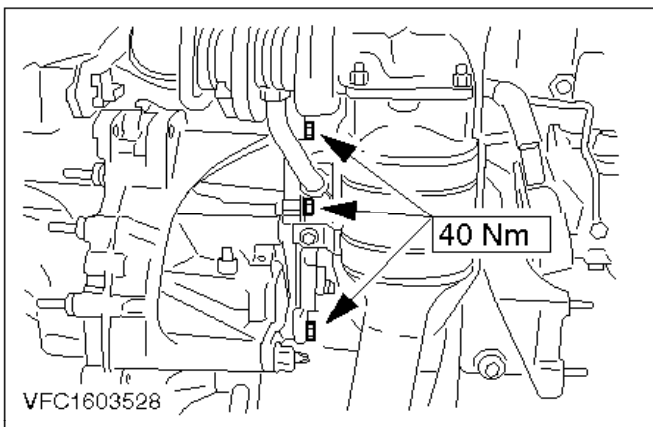
- 1 Left-hand engine mounting (three bolts)
- 2 Roll restrictor (three bolts)

Note:

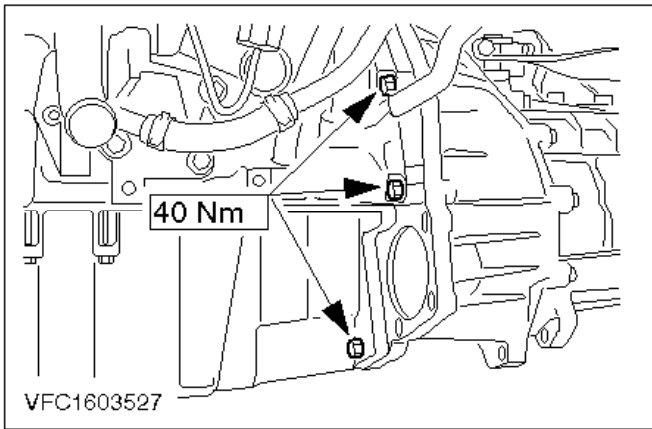
Make sure the transmission is supported safely.

34. Put the transmission on a transmission jack and move it into position.

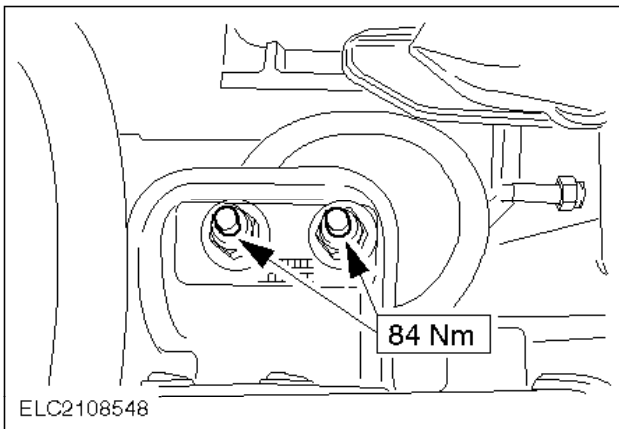
Locate the adaptor plate on the engine guide sleeves.



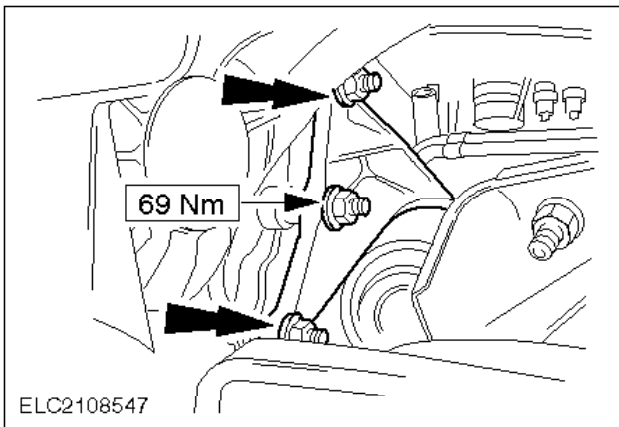
- ⌚ 35. Tighten the engine/transmission flange bolts.



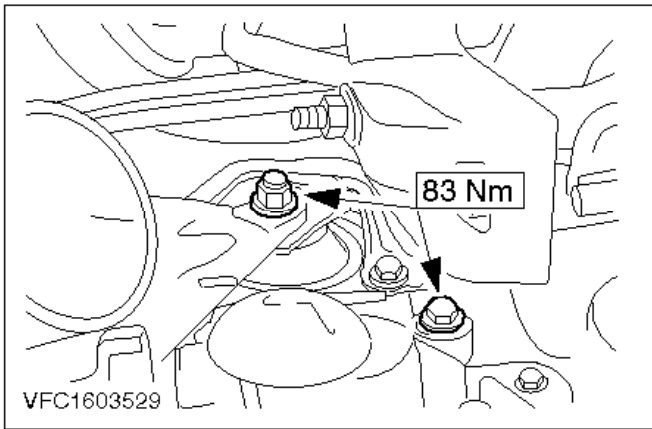
- ⌚ 36. Tighten the engine/transmission flange bolts (cont.).
- Lower the vehicle.
 - Raise the engine/transmission assembly with Special Tool 21-140.



- ⌚ 37. Install the right-hand front engine mounting.

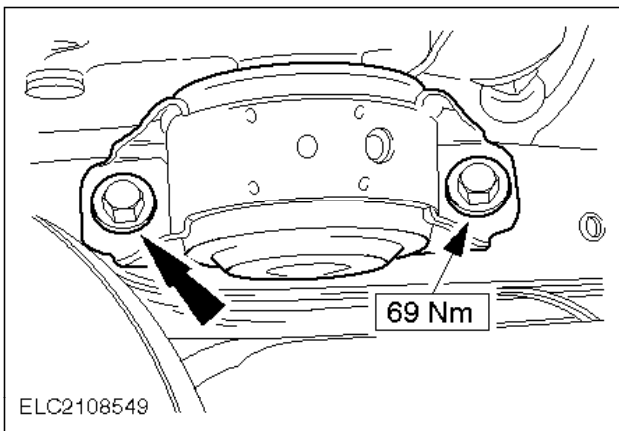


- ⌚ 38. Install the right-hand rear engine mounting.

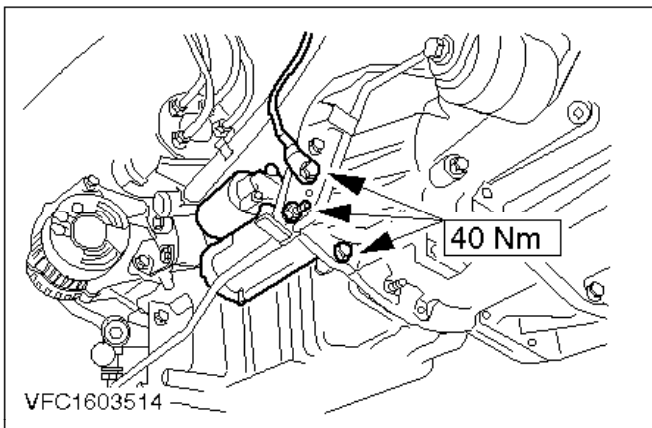


- 39. Install the right-hand rear engine mounting (cont.).

Raise the vehicle.



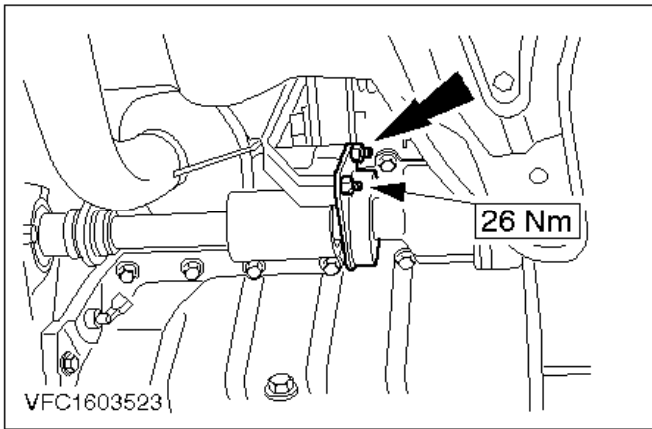
- 40. Attach the left-hand rear engine mounting to the crossmember.



Note:

Attach the transmission ground cable.

- 41. Tighten the starter flange bolts.

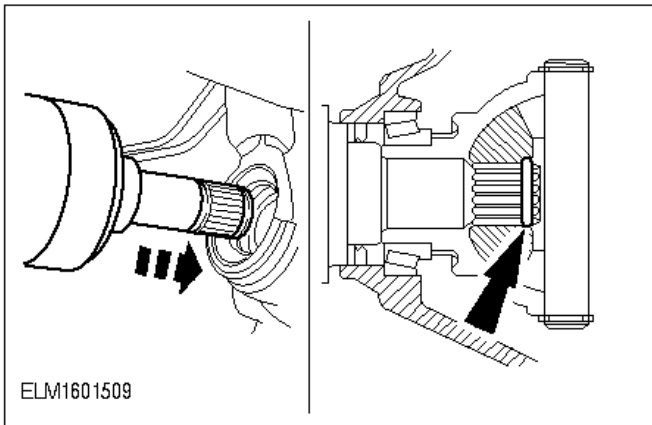


Vehicles with 1,8 Endura-DE (TC) engine only.

Note:

Position of the intermediate shaft bearing.

- ⌚ 42. Install the intermediate shaft bearing.



All vehicles



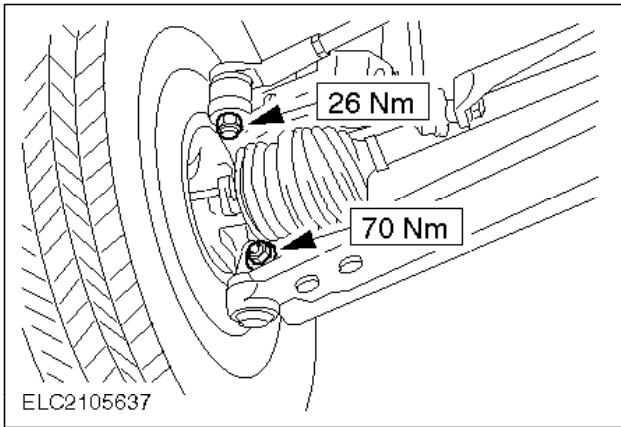
CAUTION:

The inner joint must not be bent more than 18 degrees, the outer joint more than 45 degrees.

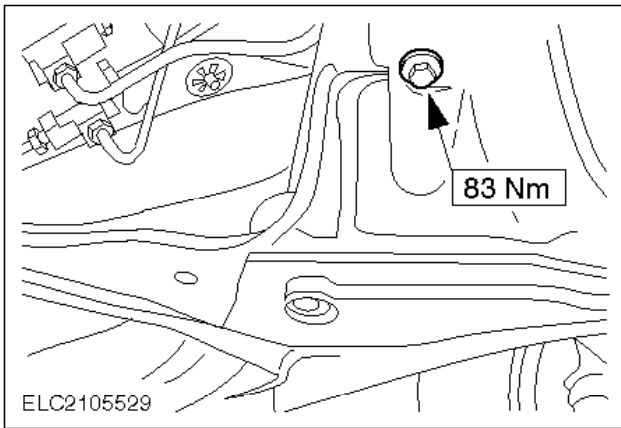
Note:

Make sure the circlip engages securely into place.

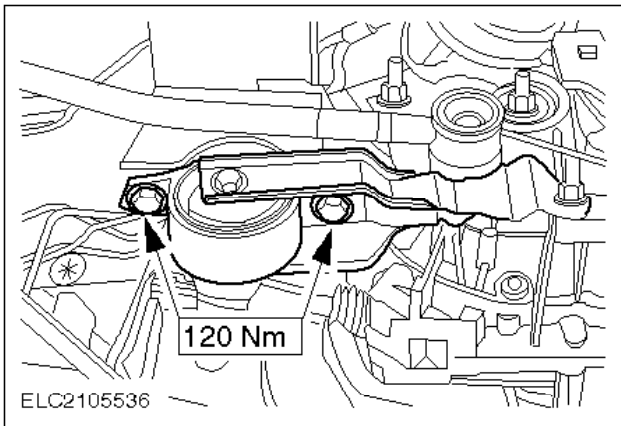
- ⌚ 43. Install the left-hand and right-hand front axle driveshafts using new circlips.



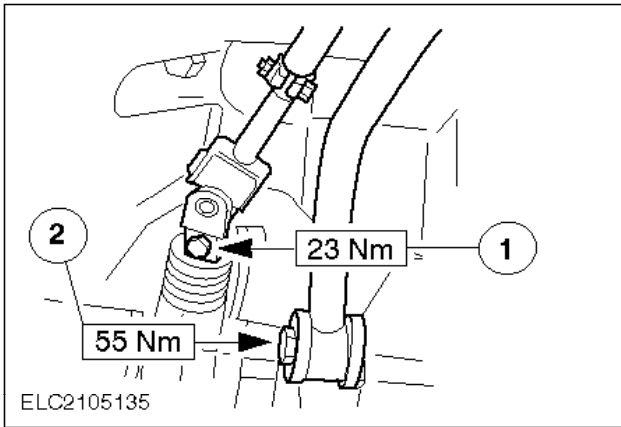
44. Fit the left-hand track rod and the right and left-hand lower suspension arms.



45. Tighten the rear right engine mounting bolts.



46. Tighten the engine roll restrictor bolts.



Note:

If the stabiliser is under high stress, re-align the engine mounting. If slightly stressed, loosen the gearshift lever housing from the body (see next step).

Note:

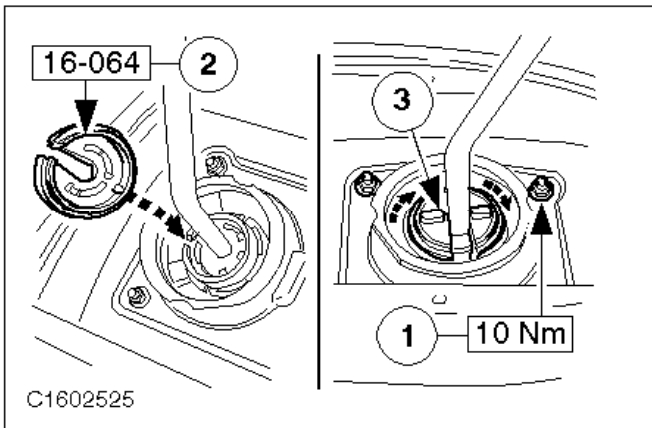
The inner shift rod must be able to slide freely into the outer one (do not tighten the shift rod clamp bolt yet). Put the transmission into neutral.

Note:

There is a washer between the shift rod stabiliser and the transmission housing.

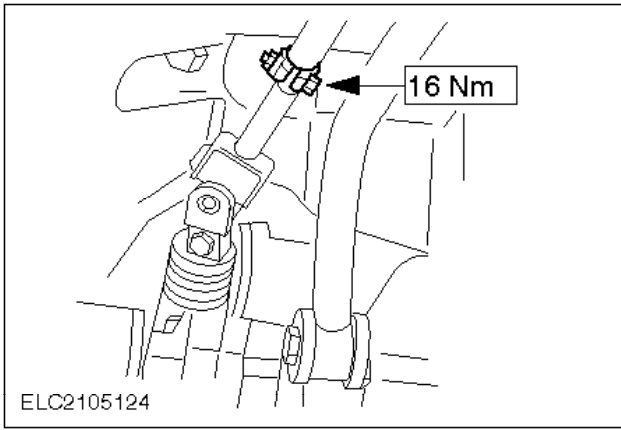
- Ⓒ 47. Install the shift rod stabiliser and the shift rod.

- 1 Shift rod
- 2 Shift rod stabiliser



- Ⓒ 48. Adjust the gearshift mechanism.

- Lower the vehicle.
- Pull off gaiter and bellows.
- 1 Slacken the four nuts. Align the gearshift lever housing so that it is not under tension and tighten the nuts.
- 2 Put the alignment tool in position.
- 3 Turn the upper part of the tool.
- Tighten the shift rod clamp bolt (see next step).
- Remove the Special Tool.
- Put the gaiter and bellows in place.
- Raise the vehicle.

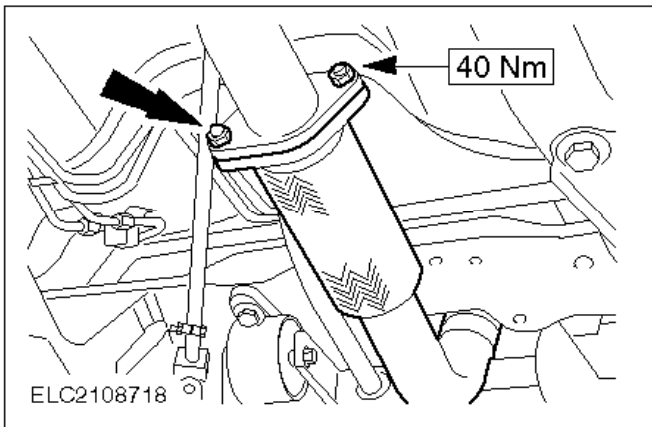


Note:

The shift rod must not move or twist during tightening.

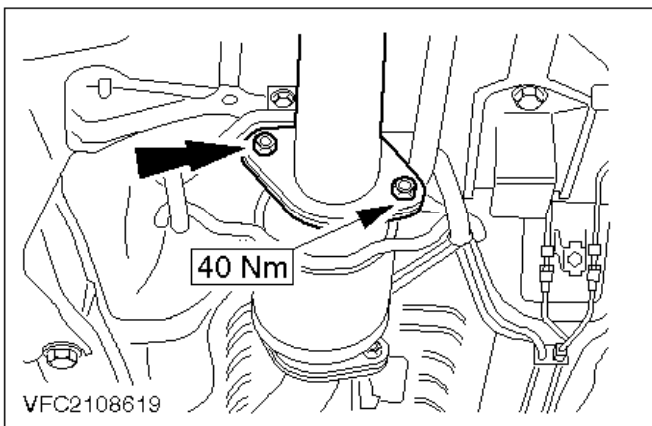
- 49. Adjust the gearshift mechanism (contd).

Tighten the shift rod clamp bolt.



Only on vehicles with 1,8 Endura-DE (TC) engines.

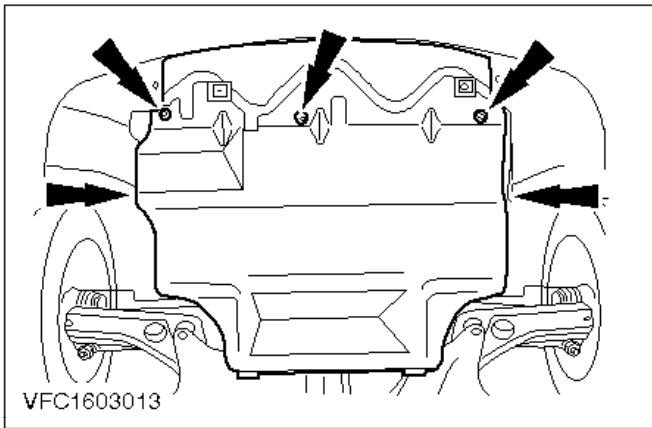
- 50. Attach the rear exhaust pipe to the flexible pipe.



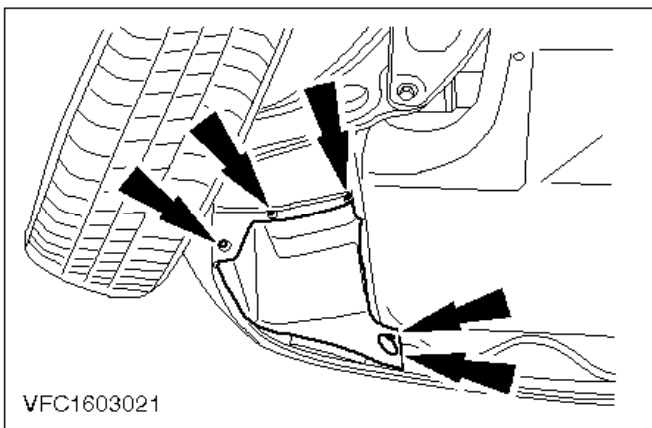
All vehicles

- 51. Attach the rear exhaust pipe to the catalytic converter.
- 52. Top up with transmission fluid (ESD-M2C186-A) to 0 to 5 mm below the lower edge of the check

bore.

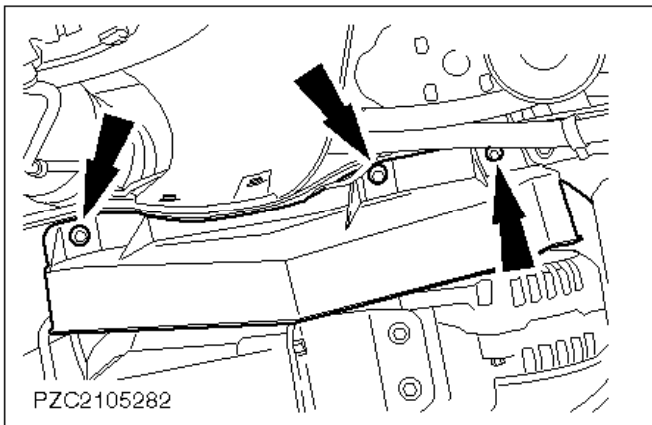


53. Fit the lower engine cover (if removed).

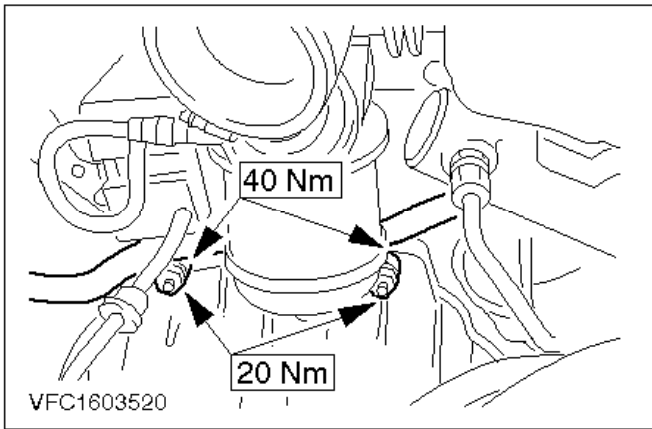


54. Fit the left-hand wheel arch trim (if removed).

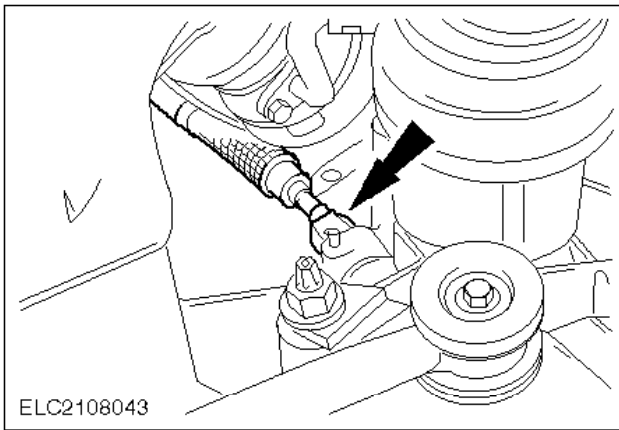
- Lower the vehicle.
- Remove Special Tool 21-140.



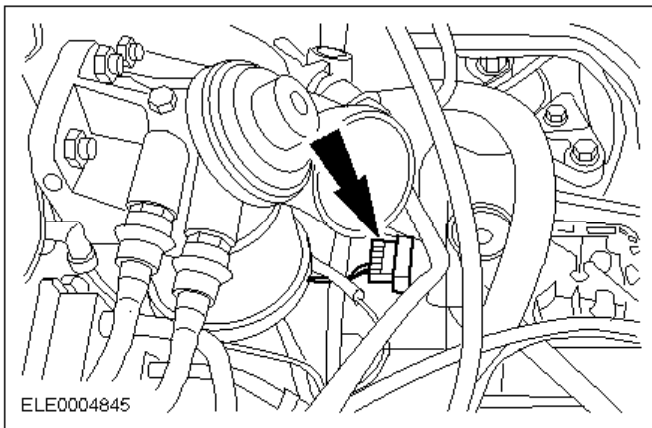
55. Install the drive belt lower cover (if removed).



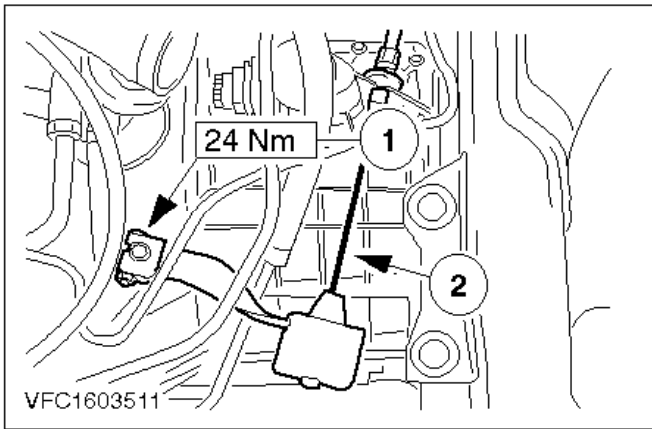
- ⌚ 56. Connect the coolant pipe to the transmission (two studs - transmission housing, two nuts).



- ⌚ 57. Install the speedometer drive cable.

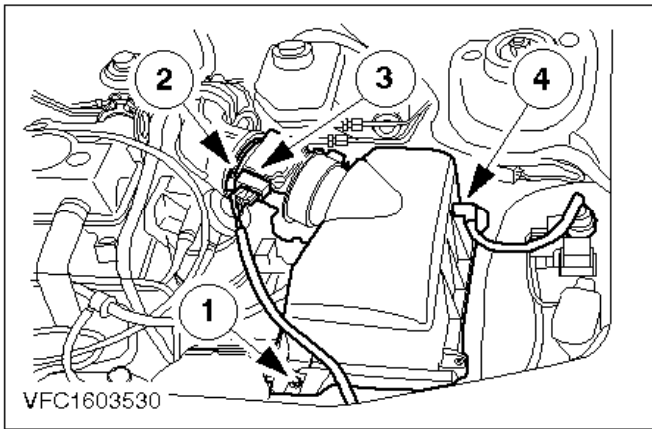


- ⌚ 58. Connect the multifunction switch plug.



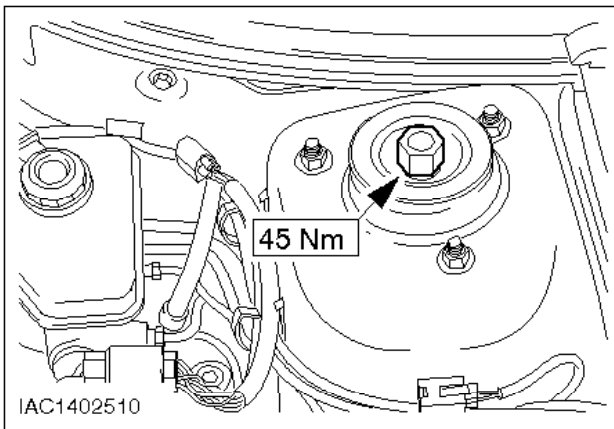
⌚ 59. Install the clutch operating mechanism.

- 1 Install the clutch release lever.
- 2 Attach the clutch cable to the clutch release lever and to the bracket.



⌚ 60. Install the air cleaner housing.

- 1 Put the air cleaner housing in place and tighten the nut.
- 2 Tighten the hose clamp.
- 3 Connect the MAF multiplug.
- 4 Push on the breather hose.



Note:
Hold the piston rod steady with an Allen key.

- ⬅ 61. Tighten the nuts of the right and left-hand suspension struts.
 - 62. Standard finishing operations.
 - Fix the cables and hoses in place using cable ties.
 - Connect the battery negative lead.
 - Remove the protective covers.
 - Enter the radio keycode.
 - Reprogramme the preset radio stations.
 - Set the clock.
 - Carry out a road test to allow the PCM to re-learn values.
-