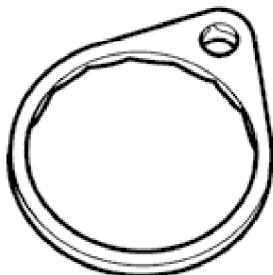


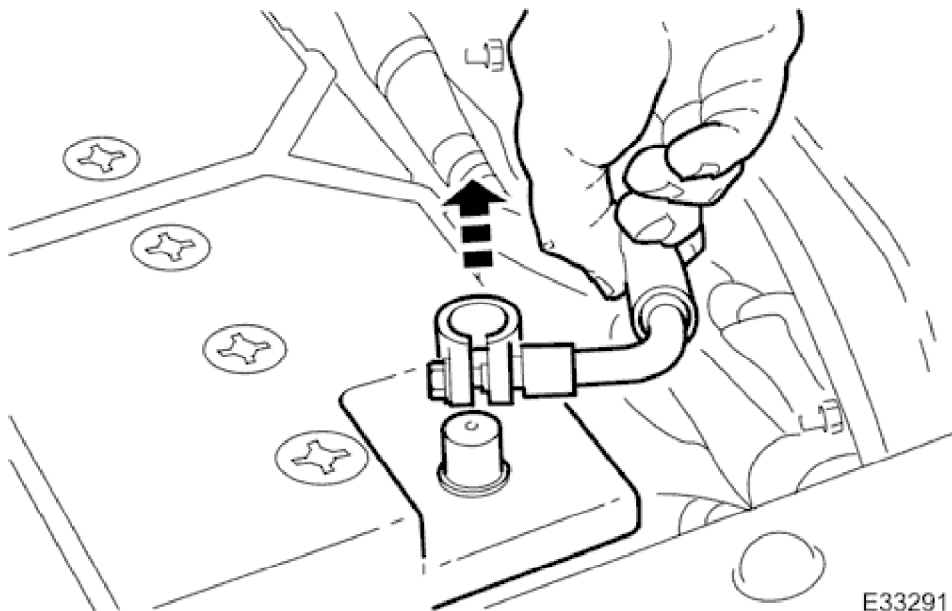
Upper Oil Pan 4.0L, Vehicles Without: Supercharger 12.60.48

Special Service tools



303-752
Installer/remover, Oil Filter
303-752

Removal

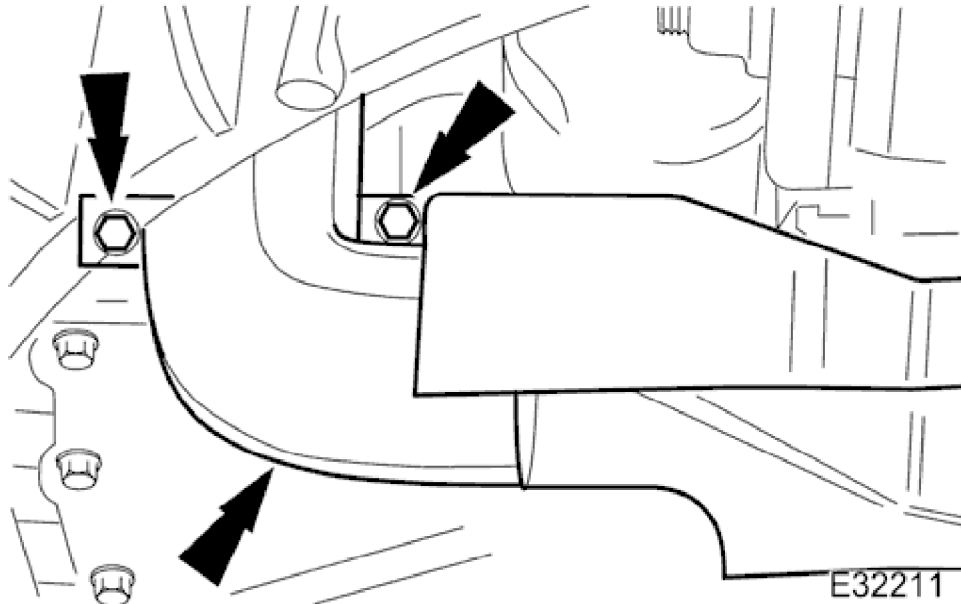


1. Disconnect the battery ground cable.
 - Remove the battery cover.
2. Open the engine compartment and fit paintwork protection sheets.
3. Set the engine compartment cover to the service access position.
4. Remove the timing cover and all associated components, as detailed in Operation <<12.65.01>>.

1998 XJ RANGE - Engine - 303-01

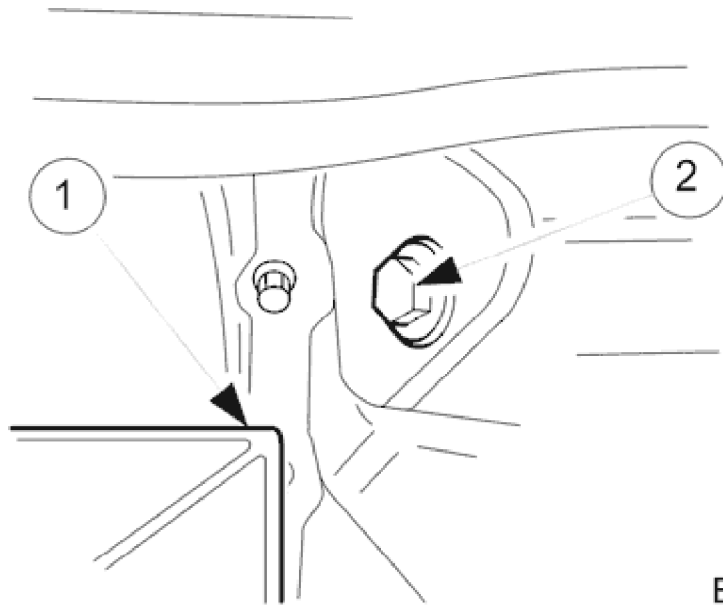
5. Remove both front wheel and tyre assemblies. Refer to Operation <<74.20.05>>.

6. Remove the undertray. Refer to Operation <<76.22.90>>.



7. Remove the two bolts which secure the generator cooling duct to the oil pan body and remove the duct.

8. Remove the front cross member for access. Refer to Operation 76.10.05.

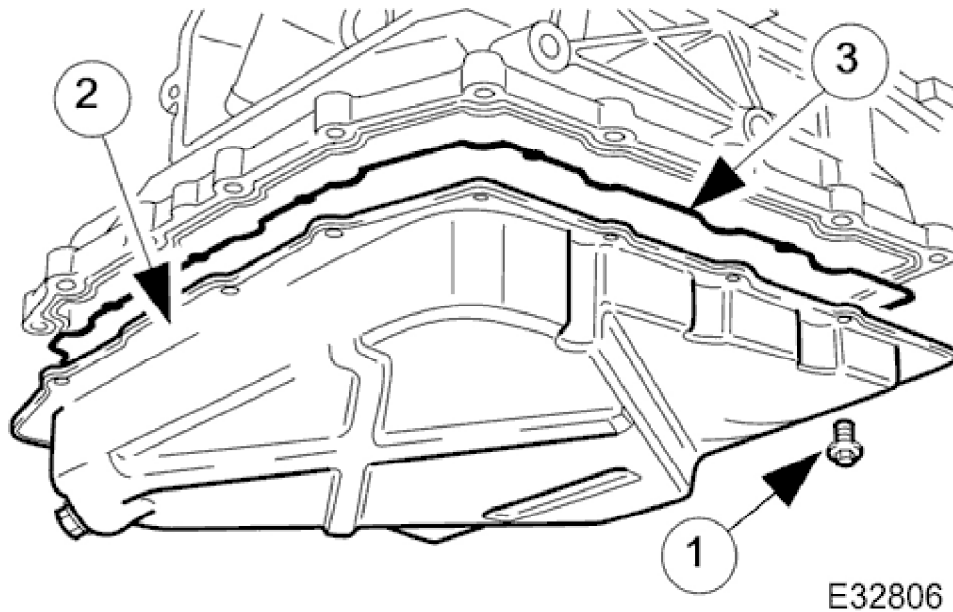


9. Drain the engine oil.

1. Position the waste oil bowser.
 2. Remove the drain plug from the oil pan and drain the engine oil.
- Fit a new sealing washer to the drain plug.

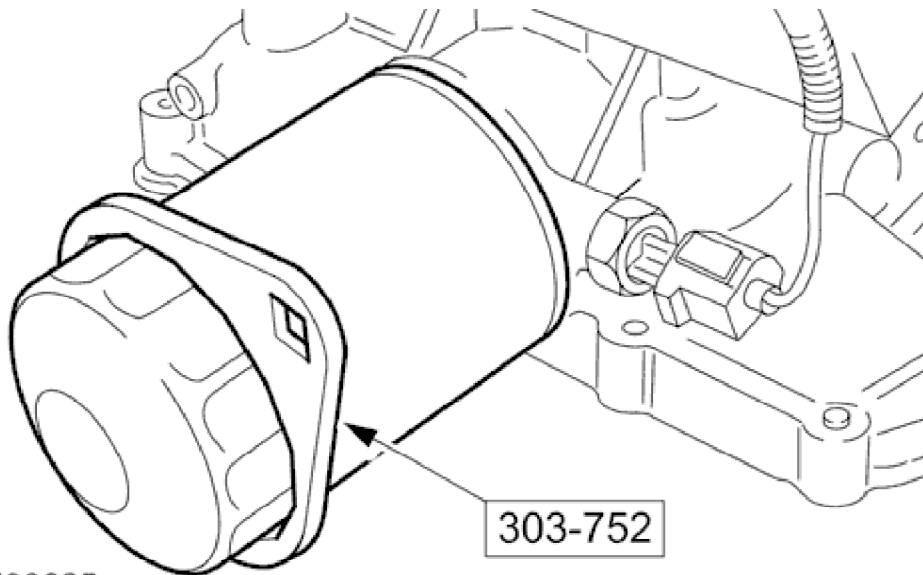
1998 XJ RANGE - Engine - 303-01

- Wipe the drain plug and install it to the oil pan to prevent oil dripping.
- Move the oil bowser away from the vehicle.



10. Remove the oil pan.

1. Remove the eighteen bolts which secure the oil pan to the oil pan body.
2. Remove the oil pan.
3. Remove the gasket from the oil pan body assembly.

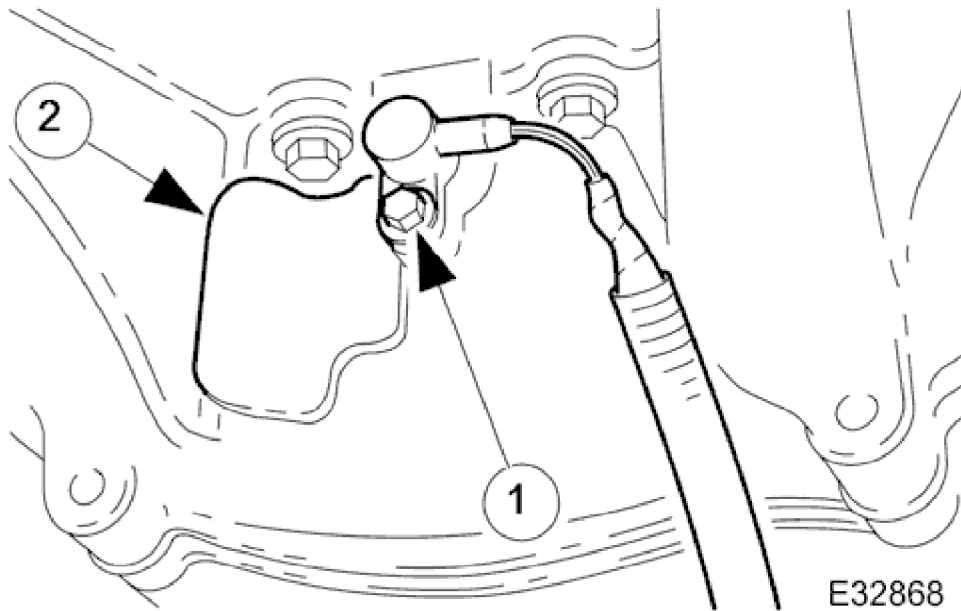


11. **NOTE:**

Place a suitable container underneath filter to prevent oil spillage.

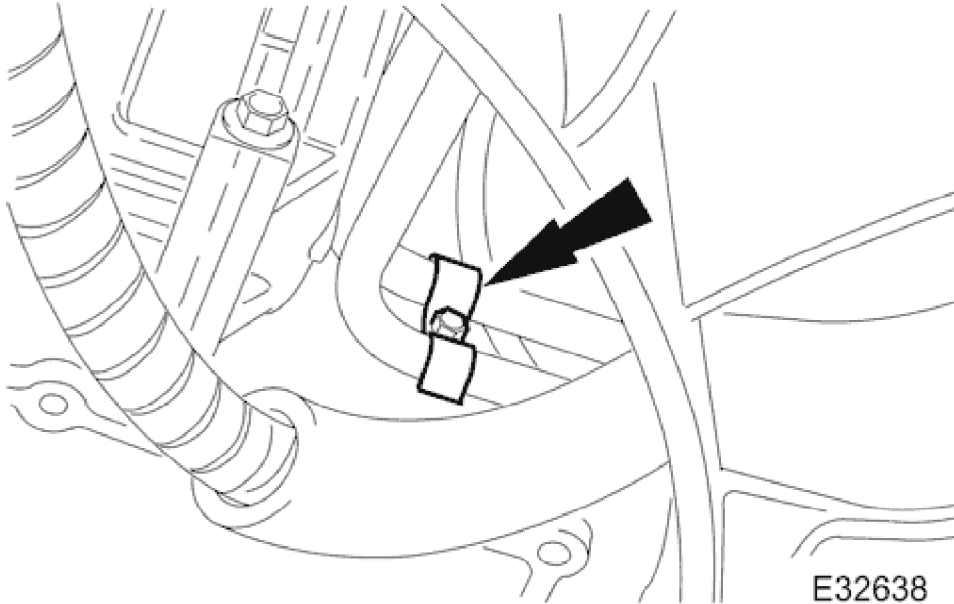
Using the special tool, remove the oil filter.

12. Remove the oil pressure switch. <<Oil Pressure Switch - >>



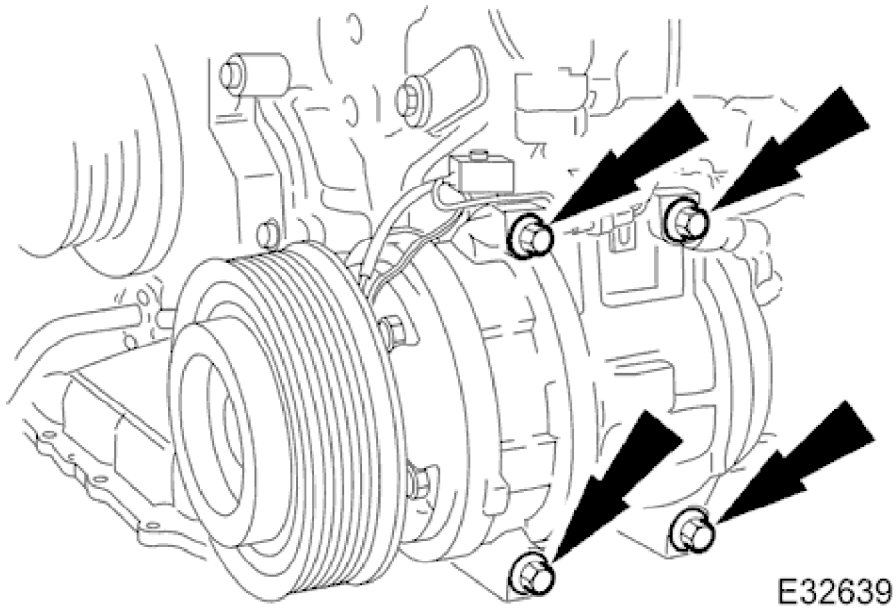
13. Remove the crankshaft position sensor.

1. Remove the bolt which secures the crankshaft position sensor to the flywheel housing.
 2. Remove the access grommet from the housing.
- Remove the sensor and allow it to hang free under the engine.
 - Release the harness clips from the oil pan body.

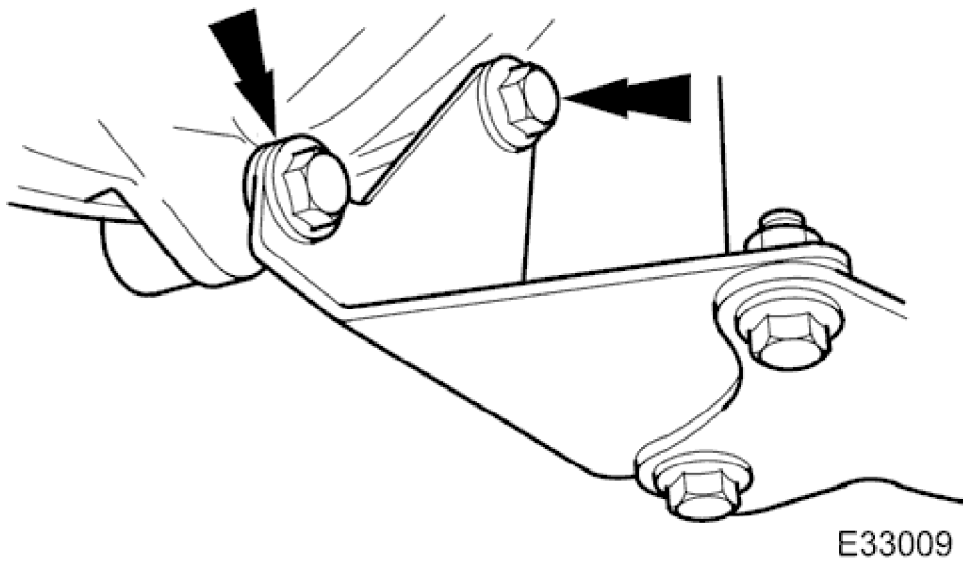


14. Remove the bolt which secures the transmission cooler pipes and remove the clamping bracket.

1998 XJ RANGE - Engine - 303-01

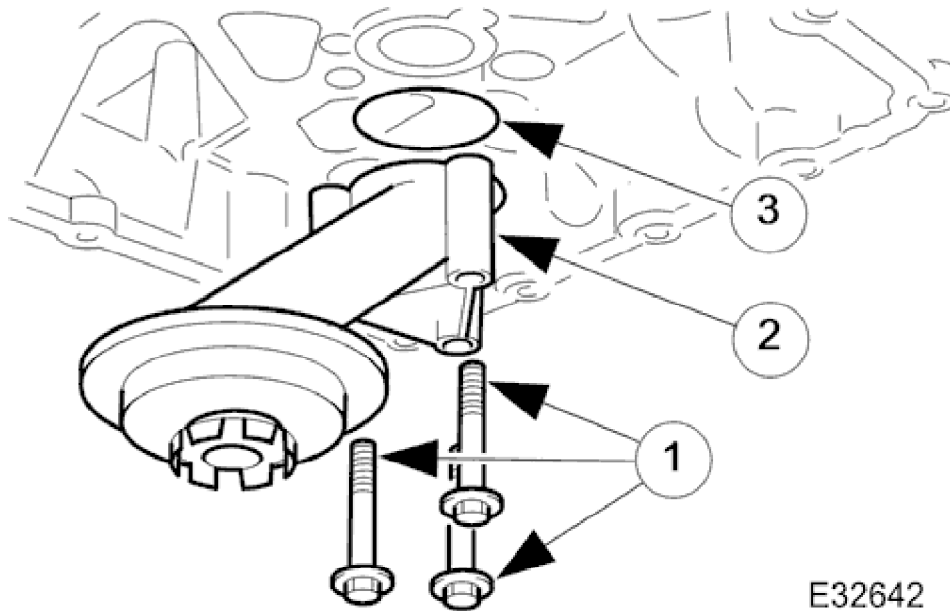


15. Release the air conditioning compressor.
- Remove the lower securing bolts.
 - Loosen, but do not remove, the upper securing bolts.
 - Release the compressor from the lower dowel.



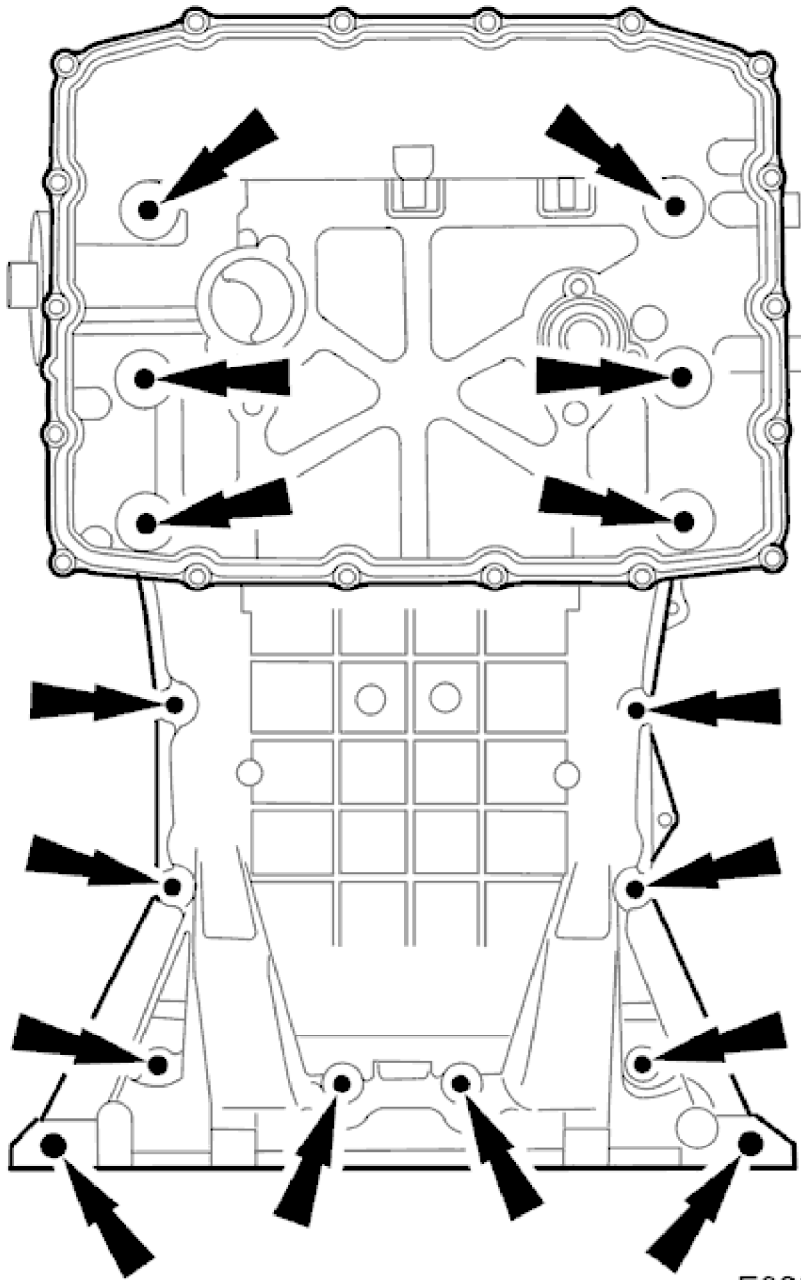
16. Remove the four bolts (two each side) which secure the exhaust downpipes to the oil pan body.

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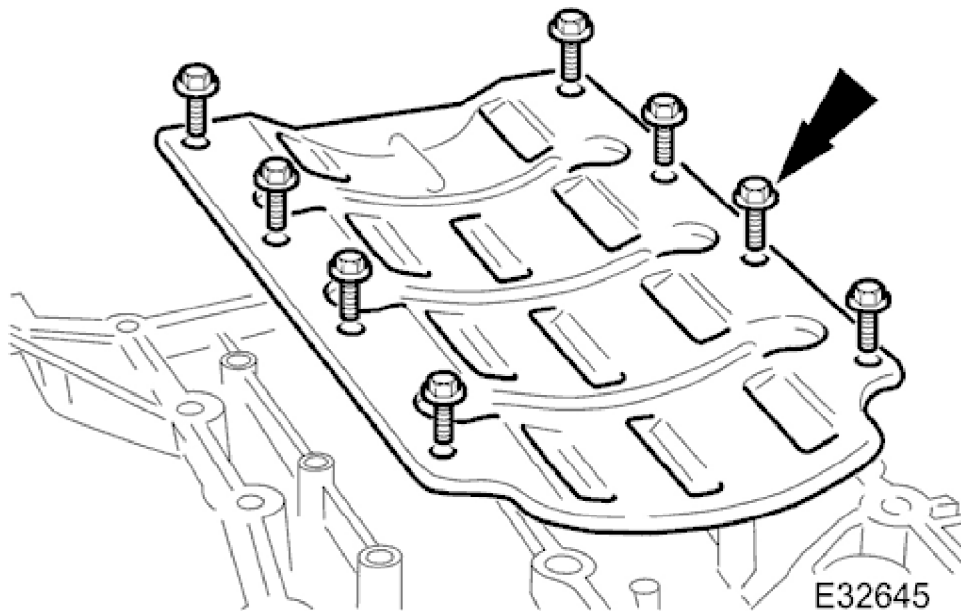
E32642

- 17. Remove the oil pick-up pipe.
 - 1. Remove the bolts which secure the pipe.
 - 2. Remove the pipe.
 - 3. Remove and discard the seal.

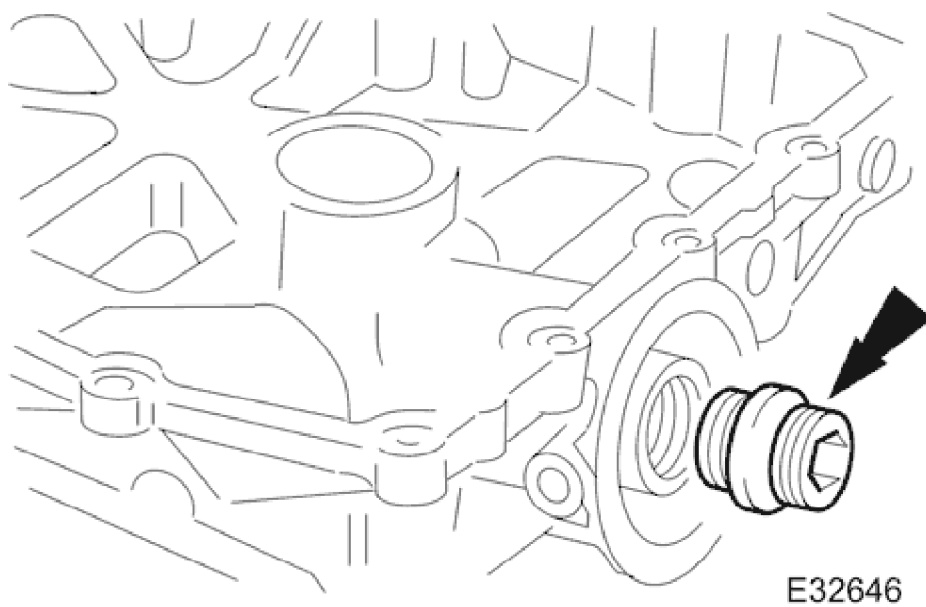


E32644

18. Remove the bolts, ten outer and six inner, which secure the oil pan body.
- Remove the oil pan body.



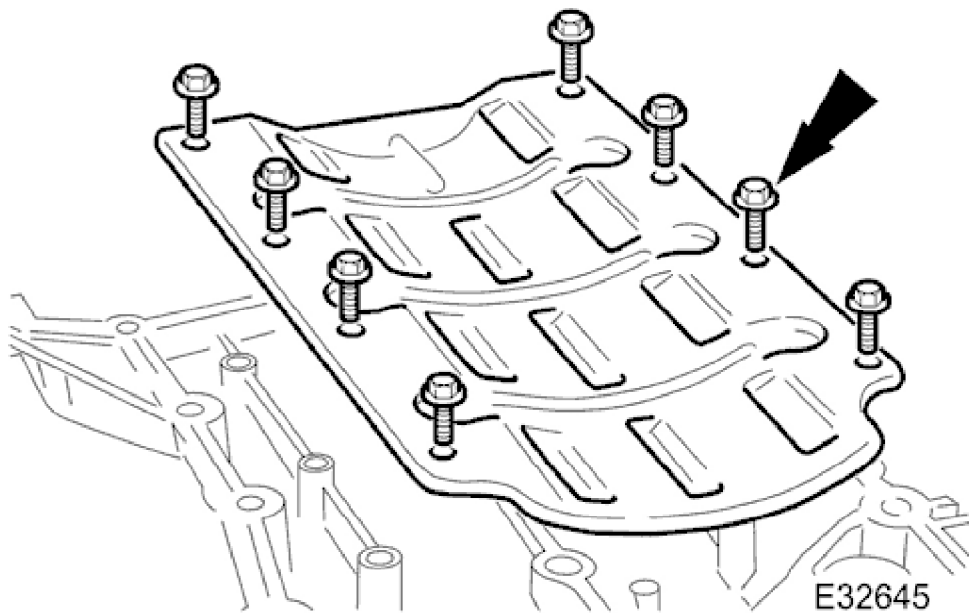
19. Remove the eight screws and release the windage tray.



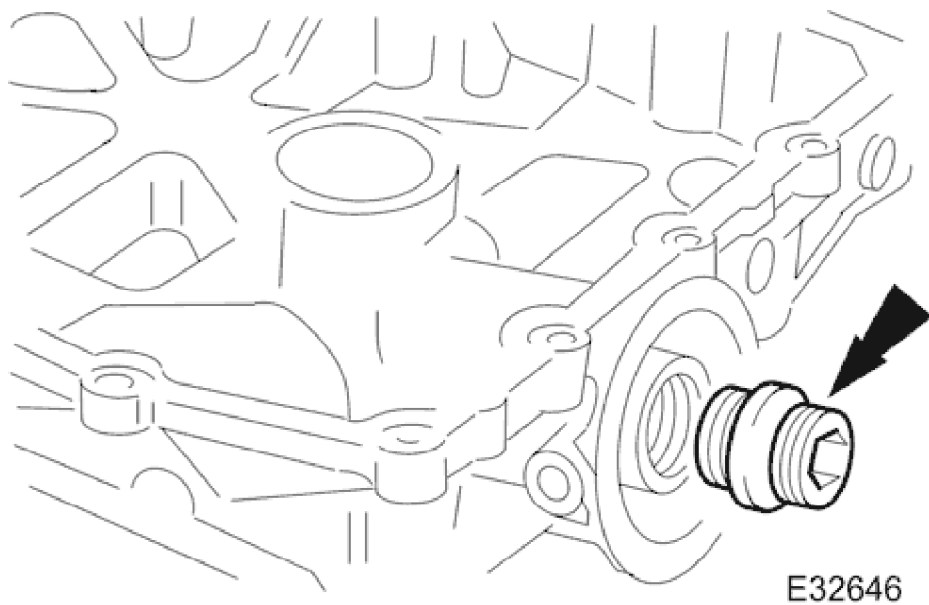
20. Remove the oil filter adaptor.

21. Clean all components and relevant mating faces; cylinder block, oil pan, oil pan body, windage tray, oil pick-up pipe, diverter valve and timing cover.

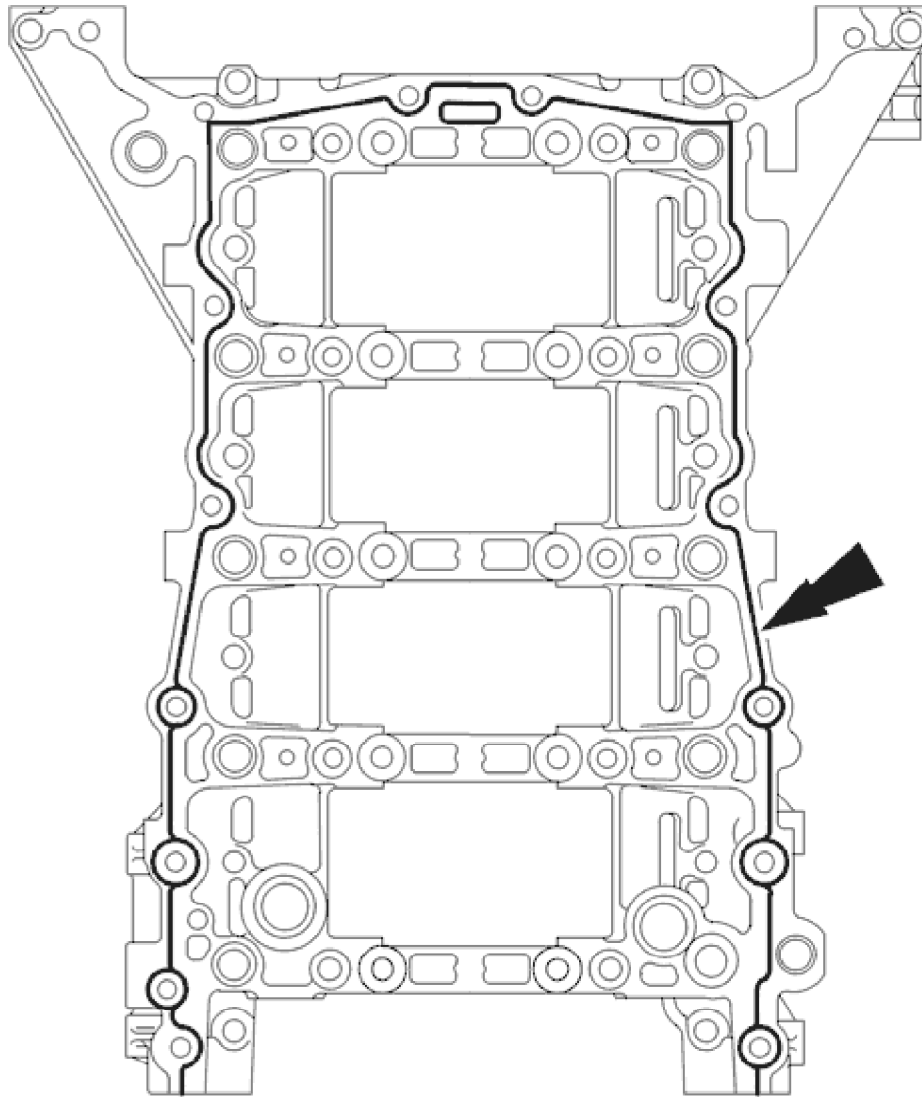
Installation



1. Reposition the windage tray and install the eight screws, tighten to 5-7 Nm.

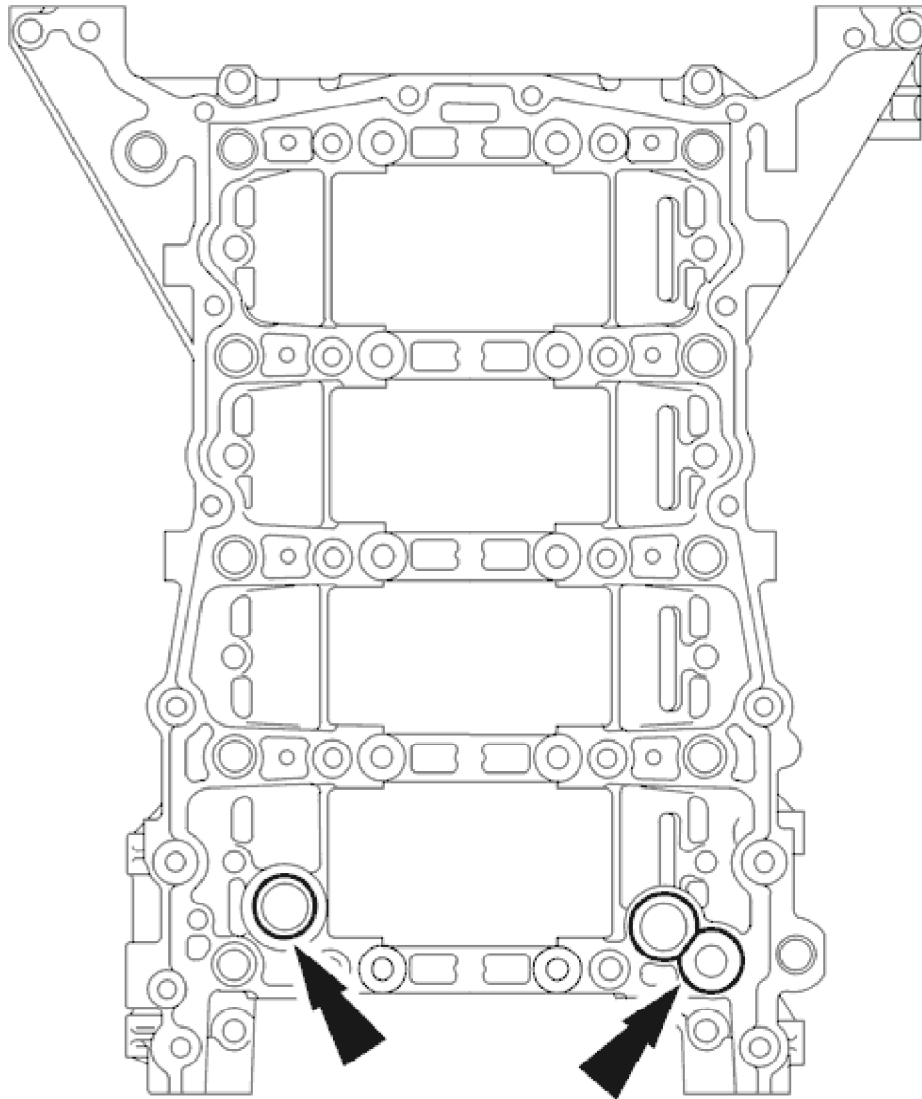


2. Install the oil filter adaptor and tighten to 26-34 Nm.



E32647

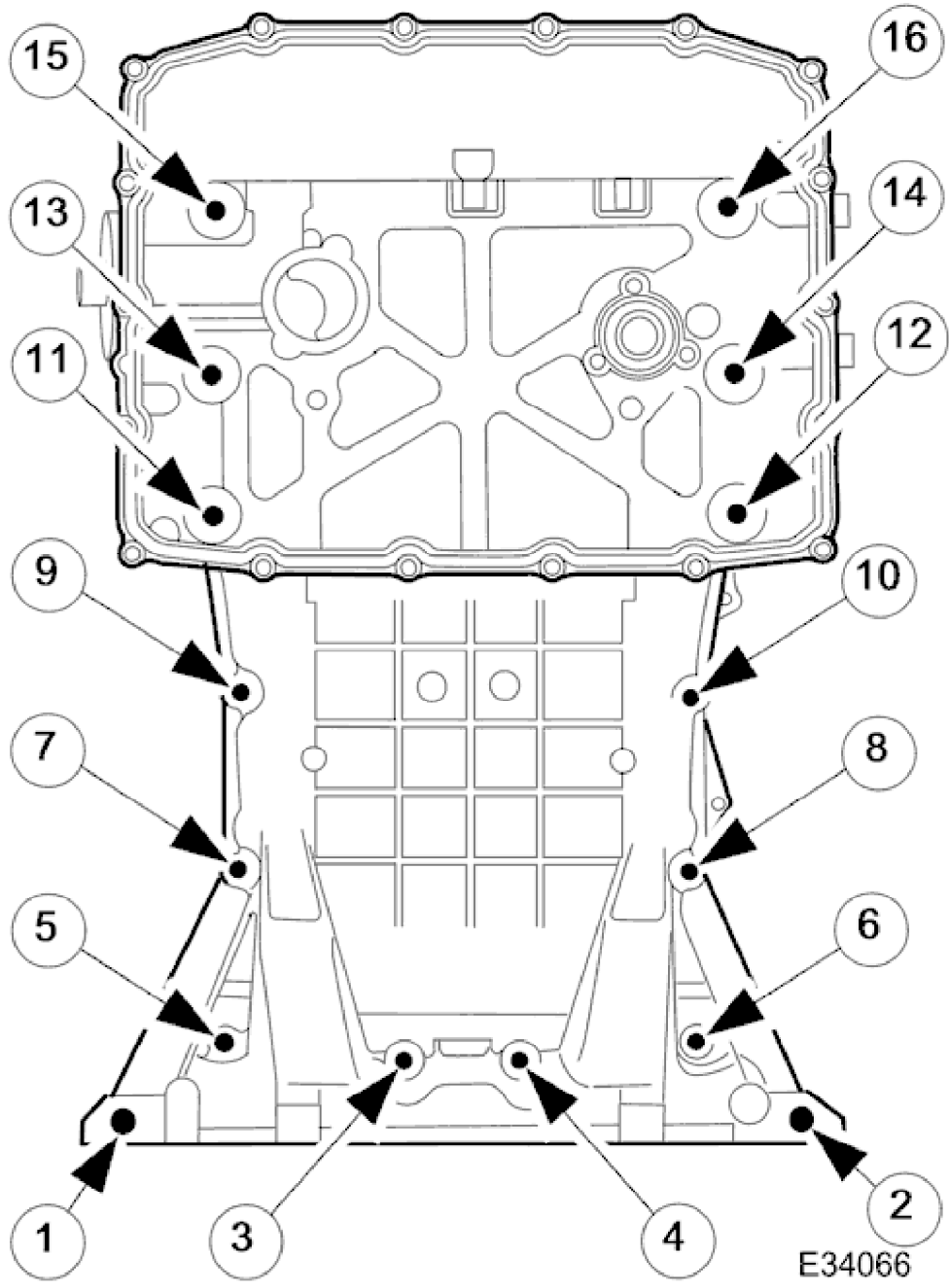
3. Apply a continuous bead of RTV sealant (Loctite 5699) 3 mm diameter, around the bed plate flange OR around the oil pan body flange; as indicated.
 - It is important that the oil pan body is bolted to the bedplate within twenty minutes of applying the RTV sealant.



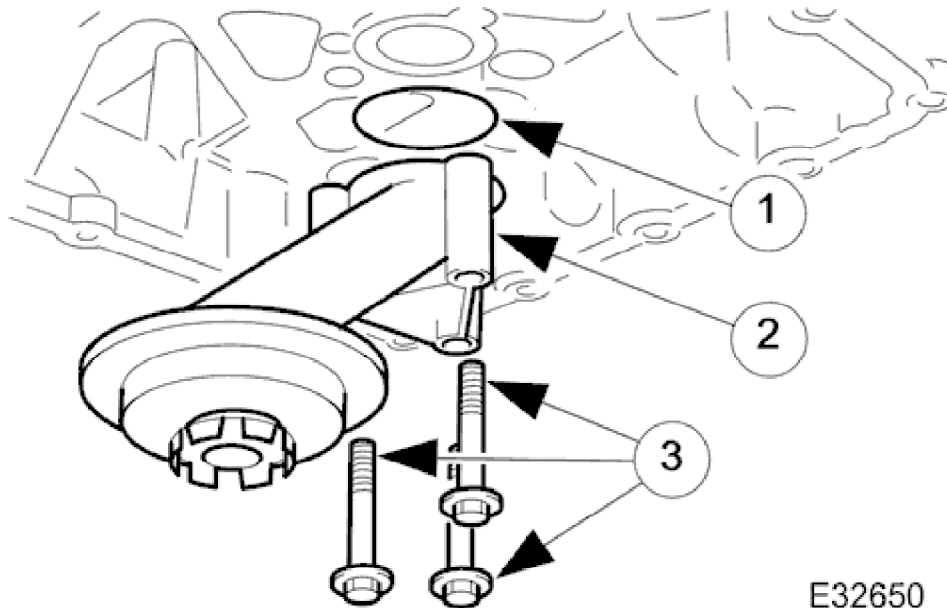
E32648

4. Apply a continuous bead of RTV sealant (Loctite 5699) 2 mm diameter, around the oil pick-up pipe and the diverter valve flanges; as indicated.

- It is important that the oil pan body is bolted to the bedplate within twenty minutes of applying the RTV sealant.

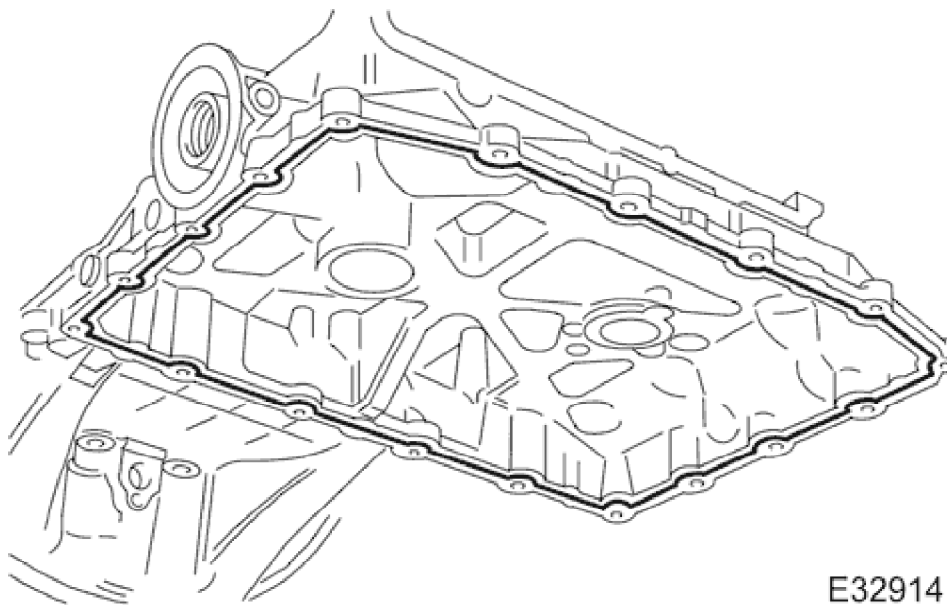


5. Position and align the oil pan body to the bedplate.
- Install the sixteen bolts and tighten to 20-22 Nm in the sequence indicated.
 - Confirm that the transmission face of the sump body is level with the transmission face of the cylinder block; within the limits 0.1 mm proud to 0.2 mm below the level of the block face.



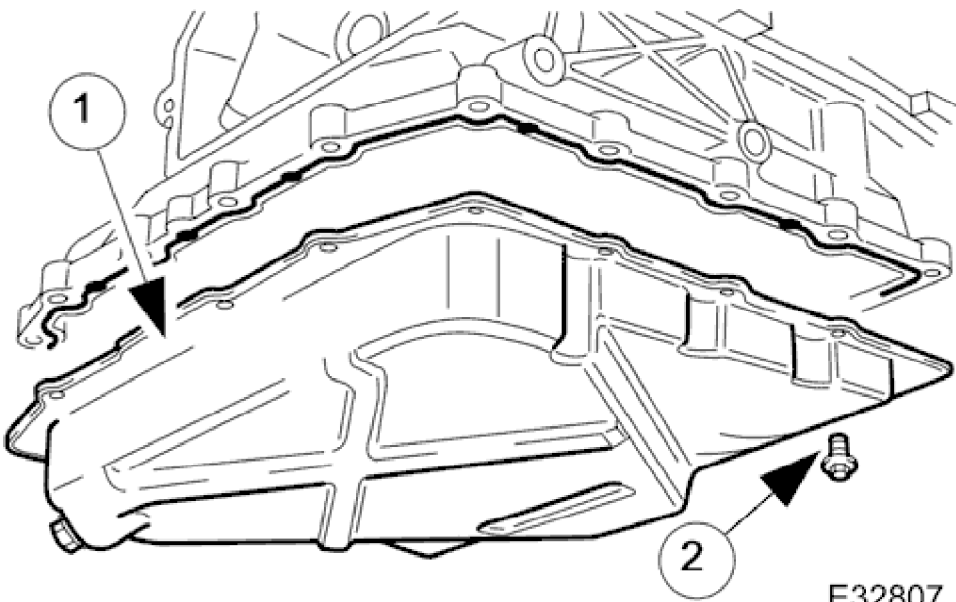
E32650

6. Install the oil pick-up pipe.
1. Install a new O-ring seal to the pick-up pipe.
 2. Lubricate the O-ring seal with clean engine oil and install the pipe to the oil pan body.
 3. Install and tighten the bolts to 11-13 Nm.

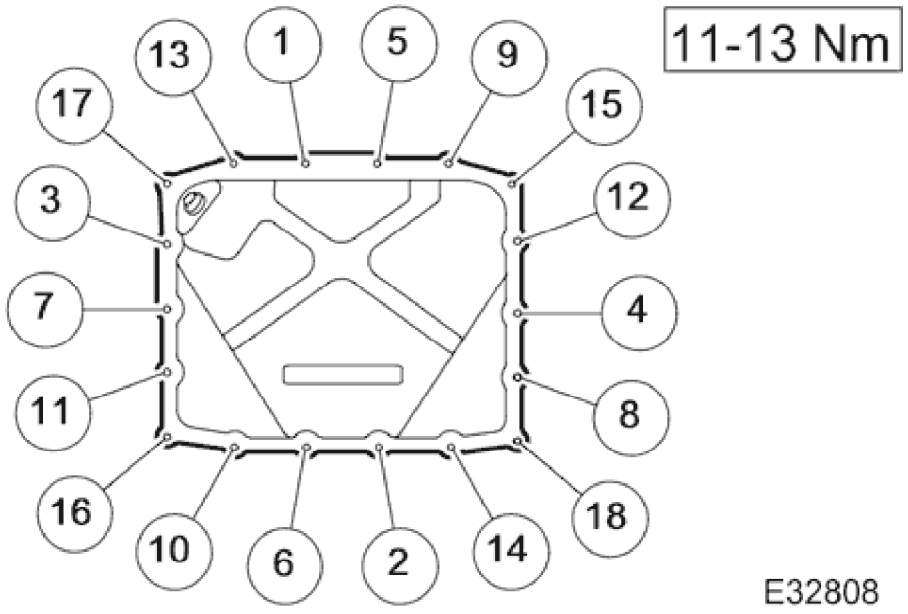


E32914

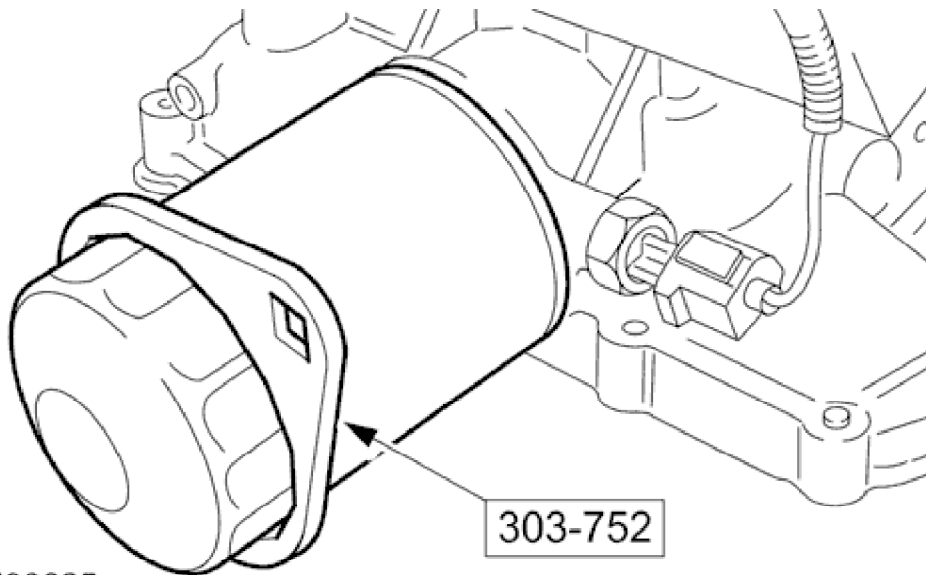
7. Install the oil pan gasket to the oil pan body assembly.
- Insert the seal into the locating positions in the groove, working around from a corner.
 - Press in the remainder of the seal, following the same procedure.



- 8. Install the oil pan to the oil pan body.
 - 1. Position and align the oil pan.
 - 2. Install, but do not tighten, all eighteen bolts which secure the oil pan.



- 9. Tighten the bolts to the correct torque figure 11-13 Nm, in the sequence indicated.
 - Tighten the drain plug to 30-40 Nm.
- 10. Install the oil pressure switch. <<Oil Pressure Switch - >>



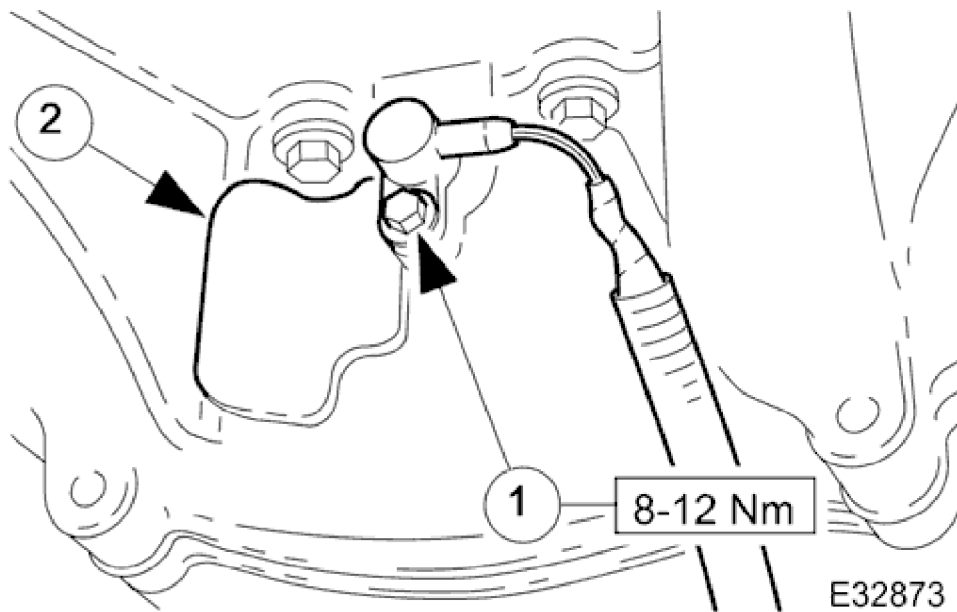
E38625

11. **NOTE:**

Apply a suitable amount of clean engine oil to lubricate the oil filter O-ring seal.

Using the special tool, install the oil filter.

- Tighten the oil filter to 15-18 Nm.

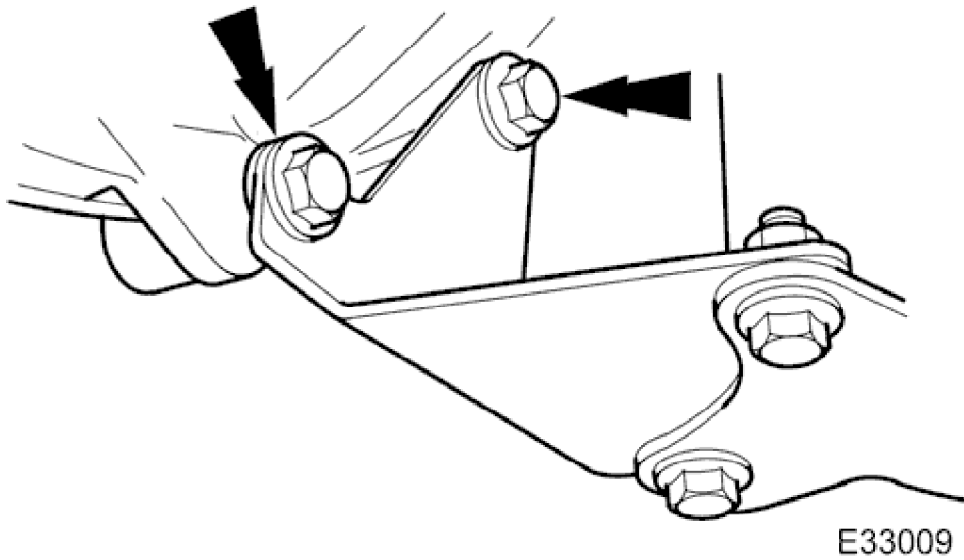


12. Install the crankshaft position sensor.

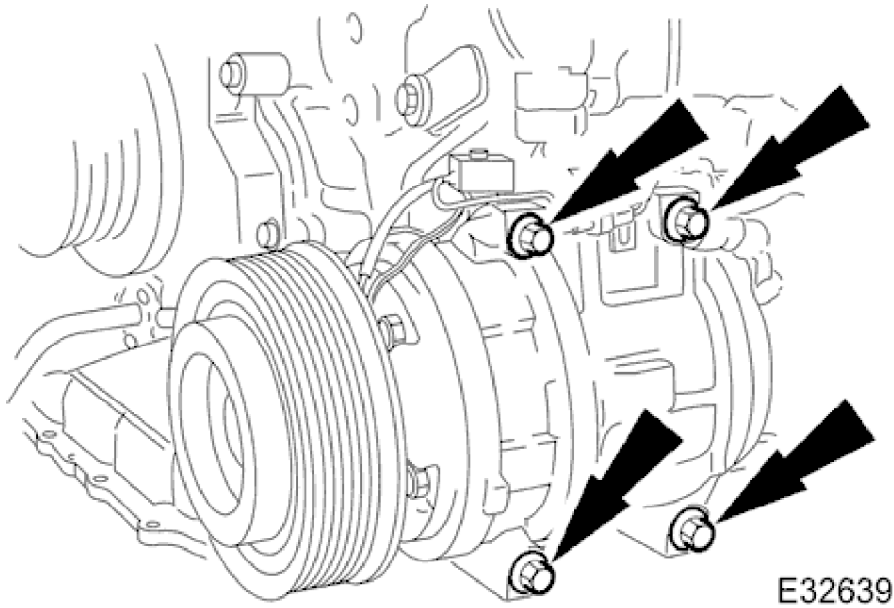
1. Install the sensor to the flywheel housing and fit the securing bolt. Tighten to 8-12 Nm.

2. Install the access grommet to the housing.

- Connect the harness clips to the oil pan body.

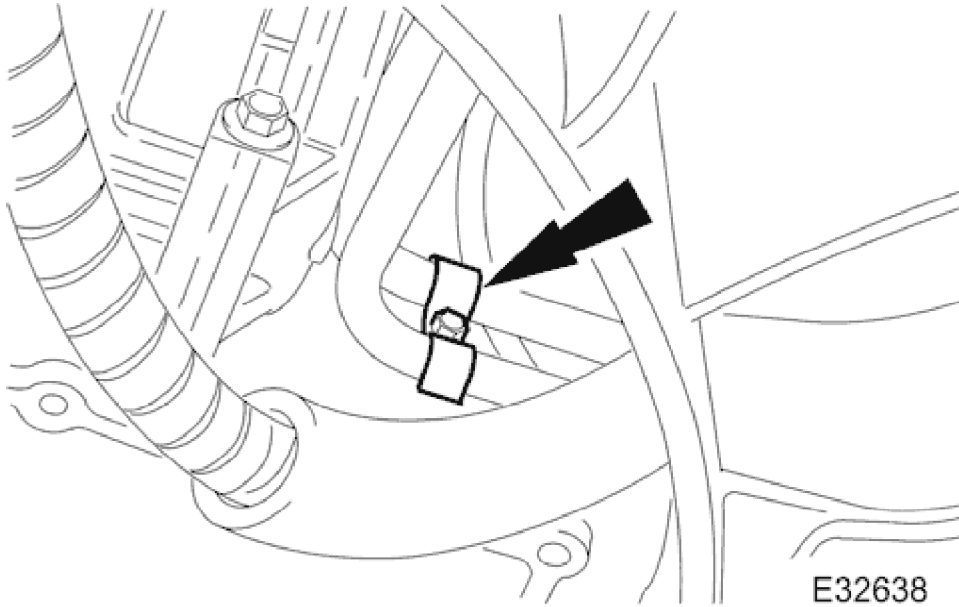


13. Install the four bolts (two each side) which secure the exhaust downpipes to the oil pan body and transmission casing.



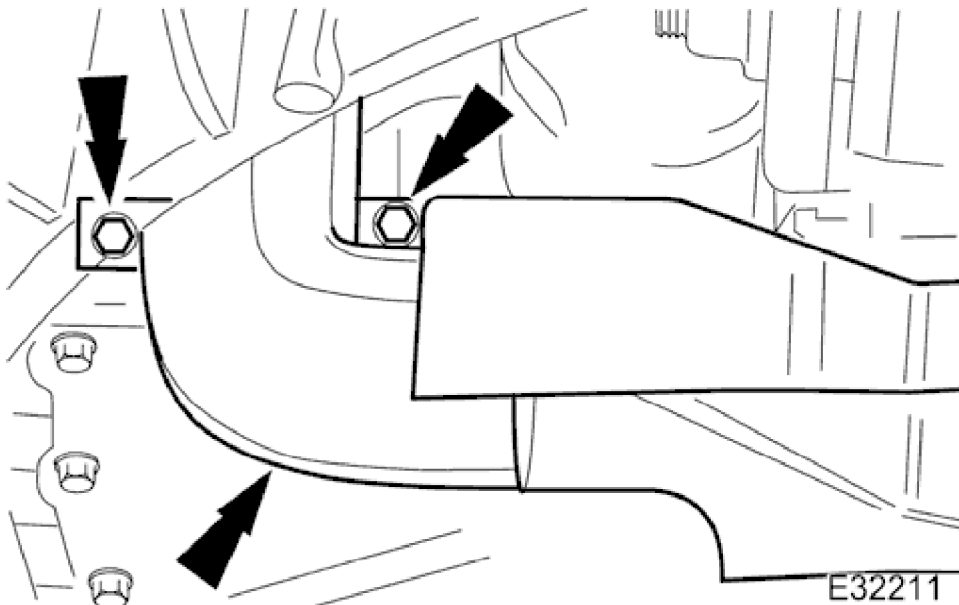
14. Install the air conditioning compressor.
- Locate the compressor onto the lower dowel.
 - Tighten the upper securing bolts.
 - Install and tighten the lower securing bolts to 18-24 Nm.
 - Tighten the upper securing bolts to 18-24 Nm.

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15. Position the transmission cooler pipes and the clamping bracket. Install the bolt to secure the clamp and tighten to 7-9 Nm.

16. Install the front crossmember. Refer to Operation 76.10.05.



17. Position the generator cooling duct to the oil pan body and install the two bolts.

18. Install the undertray. Refer to Operation <<76.22.90>>.

19. Install both front wheel and tyre assemblies. Refer to Operation <<74.20.05>>.

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20. Install the timing cover and all associated components, as detailed in Operation <<12.65.01>>.

21. **NOTE:**

When the engine is started from cold and run for a short period only, before being switched off, a quantity of oil will be 'hung up' within the engine because it is not up to operating temperature.

Should the oil level subsequently be topped-up, the level could become too high, causing oil burning.

Typically, 0.875 L is hung up.

Refill the engine with the correct specification engine oil.

22. Connect the battery and install the battery cover.

- Refer to the Battery Reconnection Procedure <<86.15.15>>.

23. Check the oil level and start the engine. Check for leaks and that the engine runs correctly.

24. Reposition the engine compartment cover and connect the gas struts.

25. Remove the paintwork protection sheets and close the engine compartment cover.