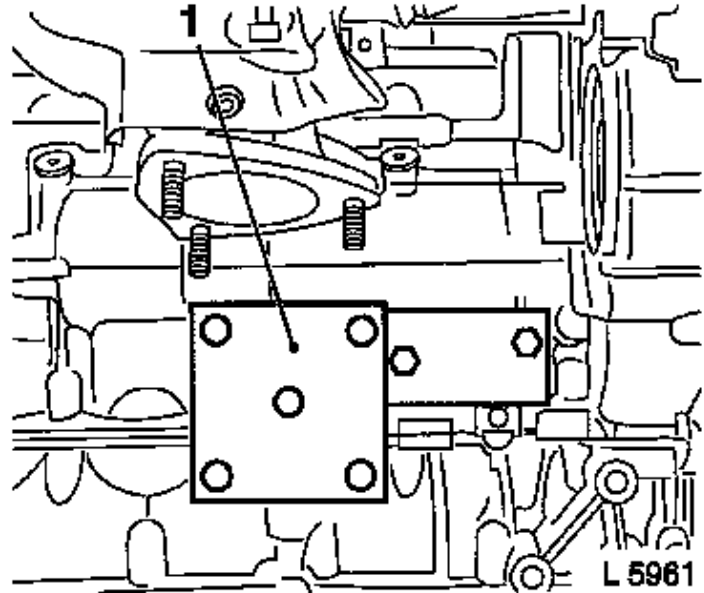


## Transmission, Remove and Install (Engine Removed) (Z 22 SE)

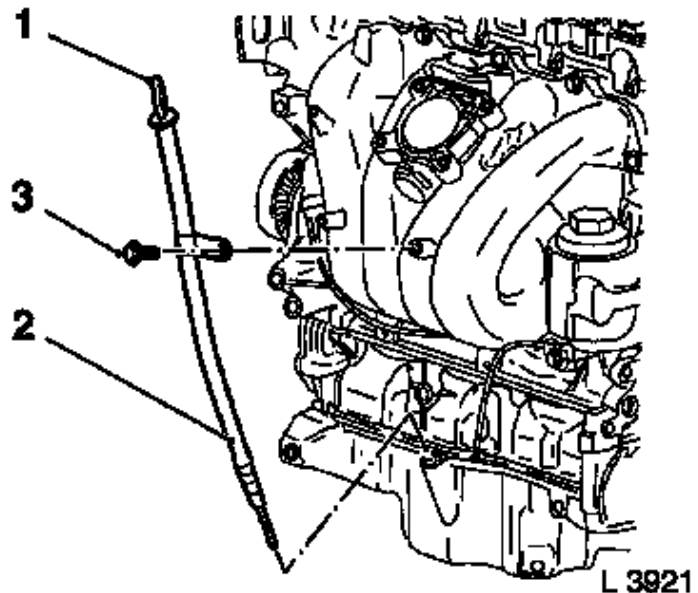


### Remove

1. Attach the adapter **KM-412-27** (1) on the right-hand side.

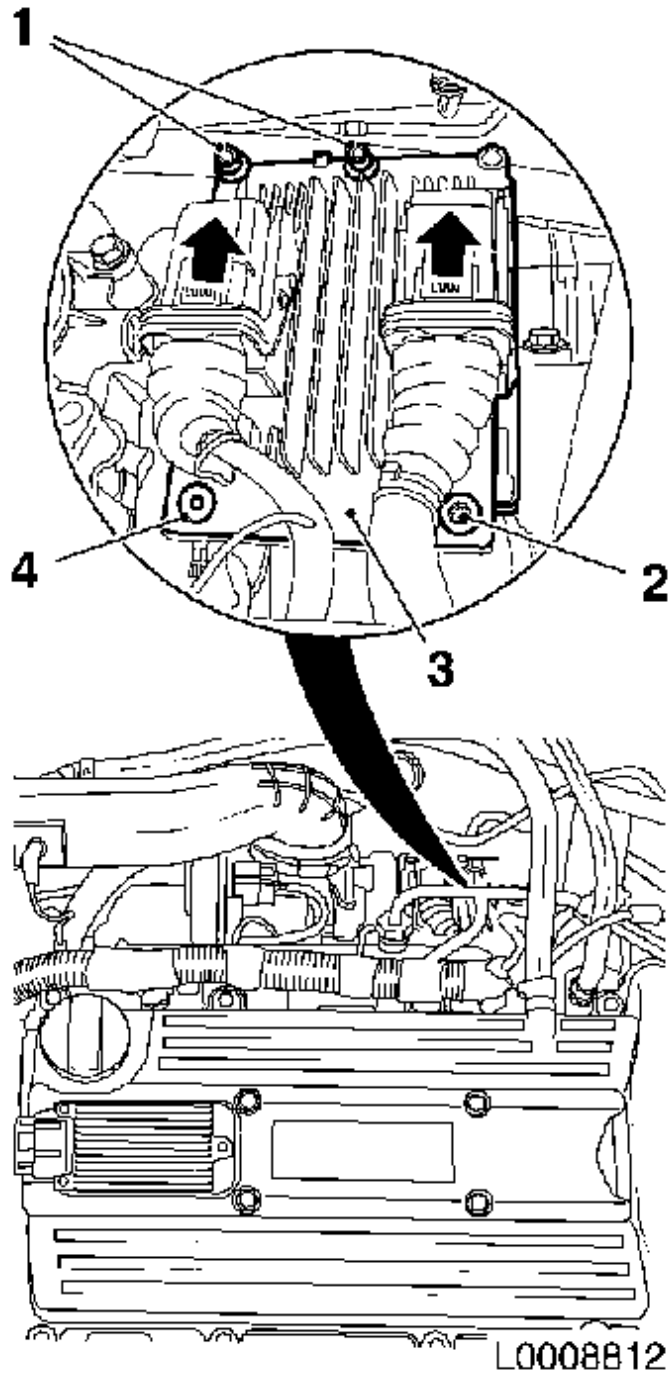


2. Remove the oil dipstick guide tube (2).
  - Detach the knock sensor wiring harness connector from the oil dipstick guide tube.
    - 1 clip
  - Pull the oil dipstick out of the oil dipstick tube.
  - 2 clips
  - 1 bolt (3)
  - Pull the oil dipstick guide tube out of the oil pan.

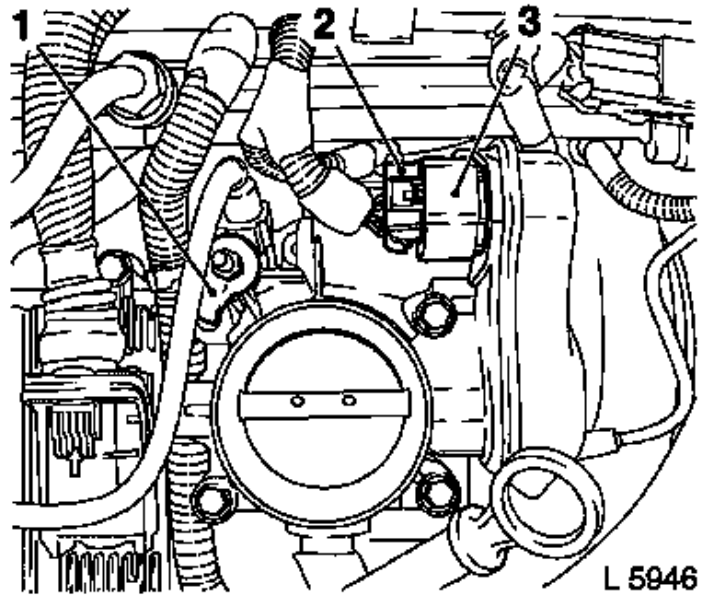


3. Drill out the shear bolt (4).
  - Centre-punch
  - Pre-drill
    - Use a 3 mm drill.
    - Max. depth 10 mm
  - Drill out

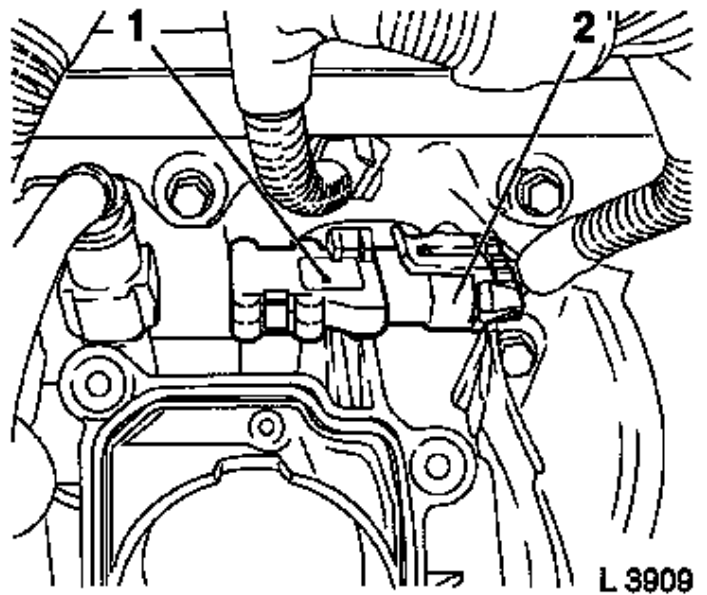
- Use a 6.5 mm drill.
  - Until the head of the bolt comes free.
4. Remove retaining bolt (2).
  5. Remove the bridge piece (3).
    - Reposition the ground cable to one side.
  6. Remove the retaining bolts (1).
    - 2 bolts
  7. Take out the engine control unit.



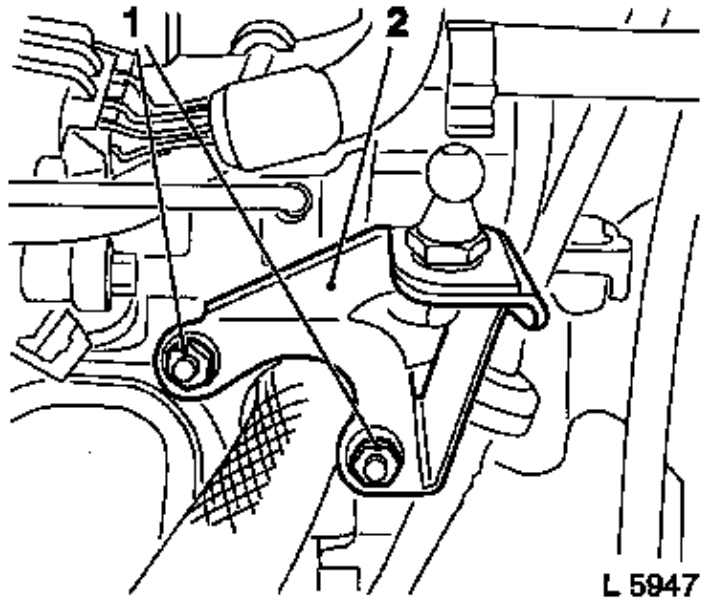
8. Detach the wiring harness bracket (1).
  - 1 nut
9. Detach the throttle body wiring harness connector (3).
  - Release the wiring harness connector (s) (2).



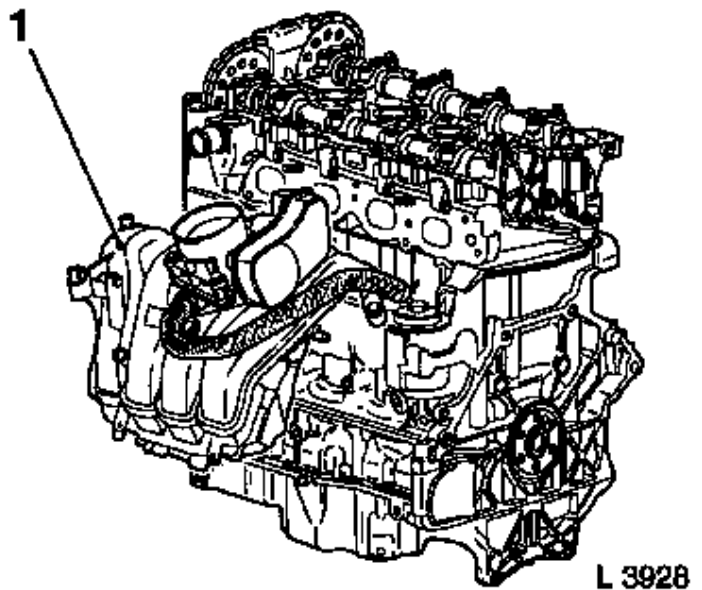
10. Detach the wiring harness connector (2) from the intake manifold pressure sensor (1).



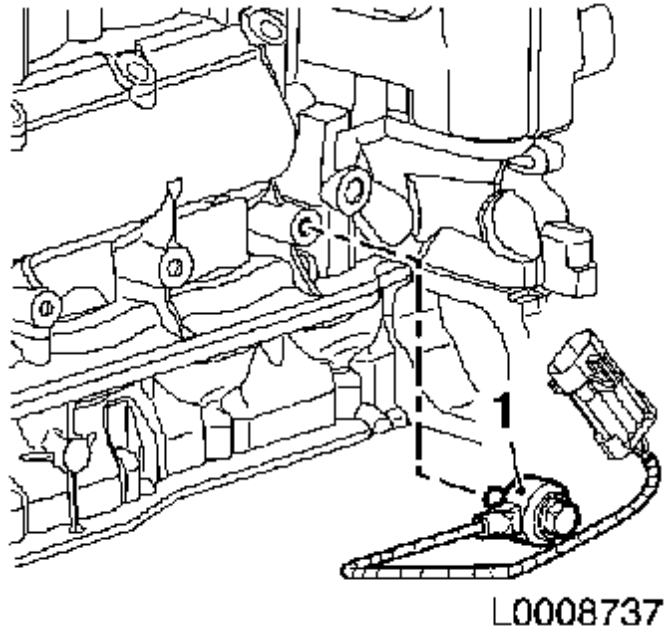
11. Unbolt the exhaust gas recirculation pipe.
- Engine cover bracket (2)
    - 2 nuts (1)
  - 2 bolts



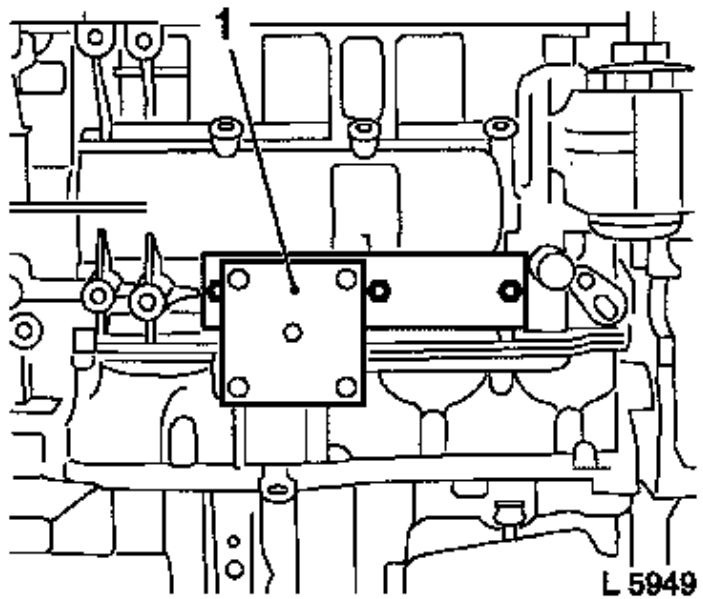
12. Detach the intake manifold (1).
- 4 clips
  - 5 bolts, 2 nuts



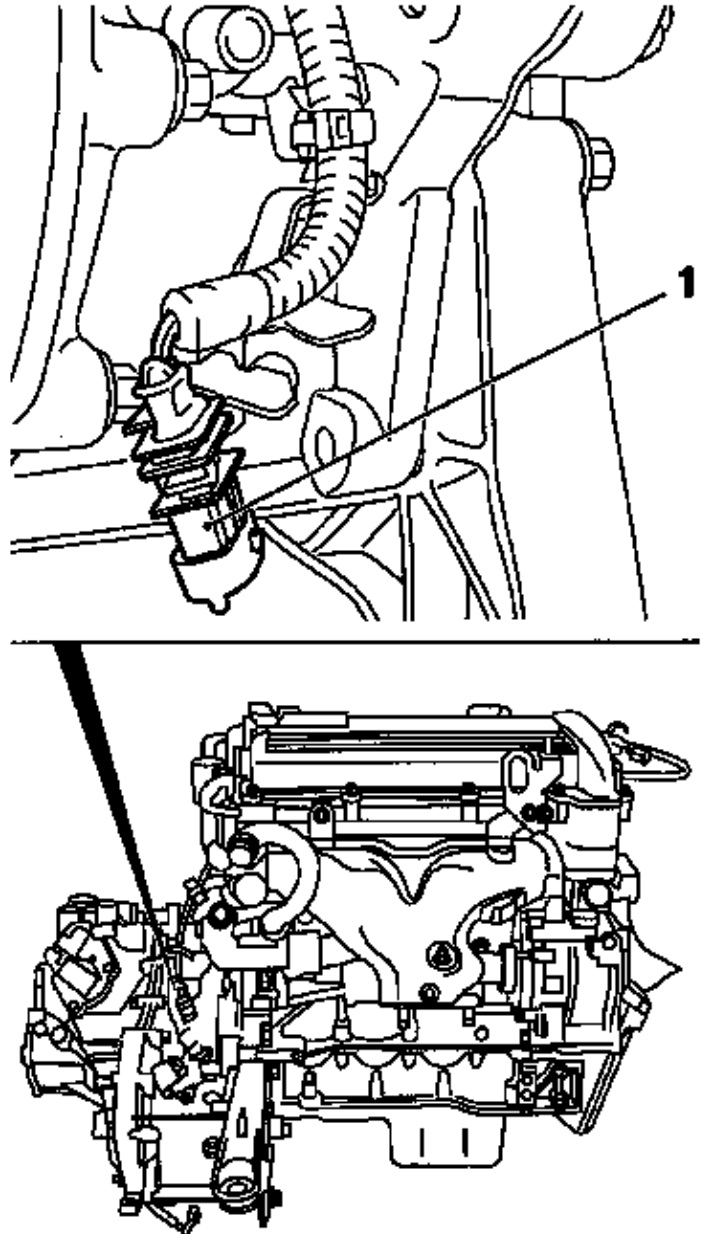
13. Remove the knock sensor (1).
- Detach the wiring harness connector.



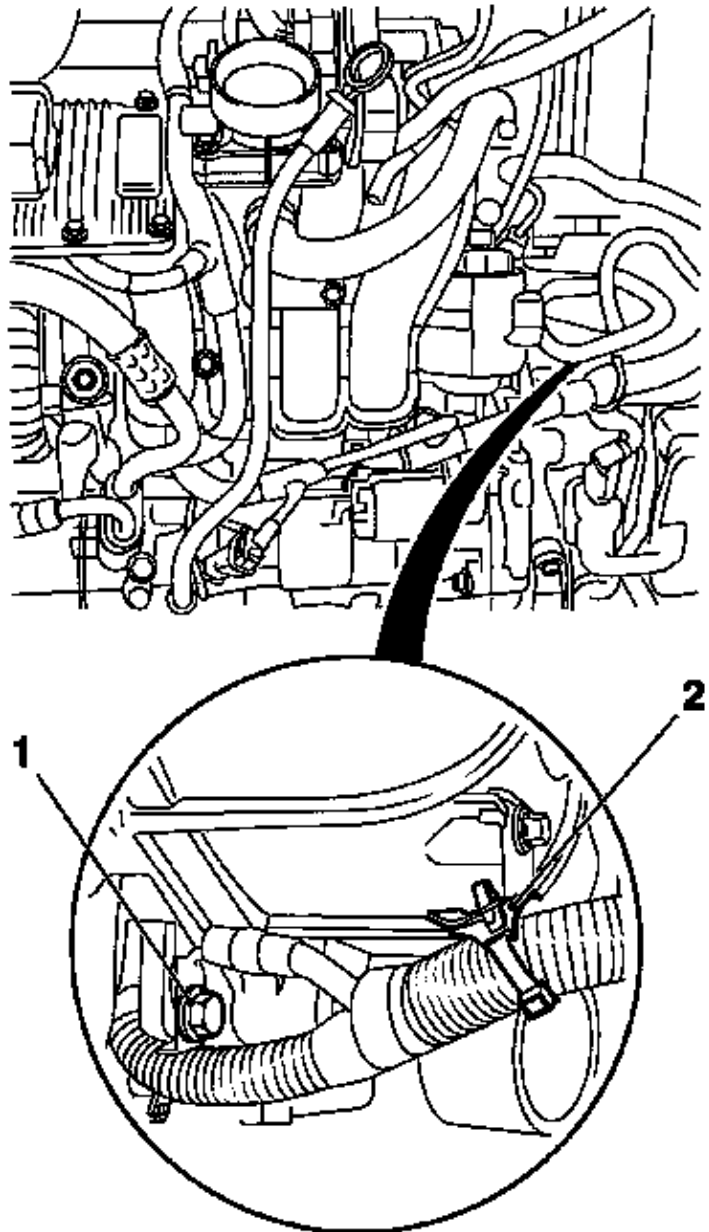
14. Attach the adapter **KM-412-27** (1) on the left-hand side.
15. Attach the engine to the assembly stand **KM-412**.  
**Note:** 2 technicians required
  - Detach the retaining cables from the engine lifting eyes.



16. Detach the lambda probe wiring harness connector (1).
  - Expose the wiring harness.
    - 1 clip

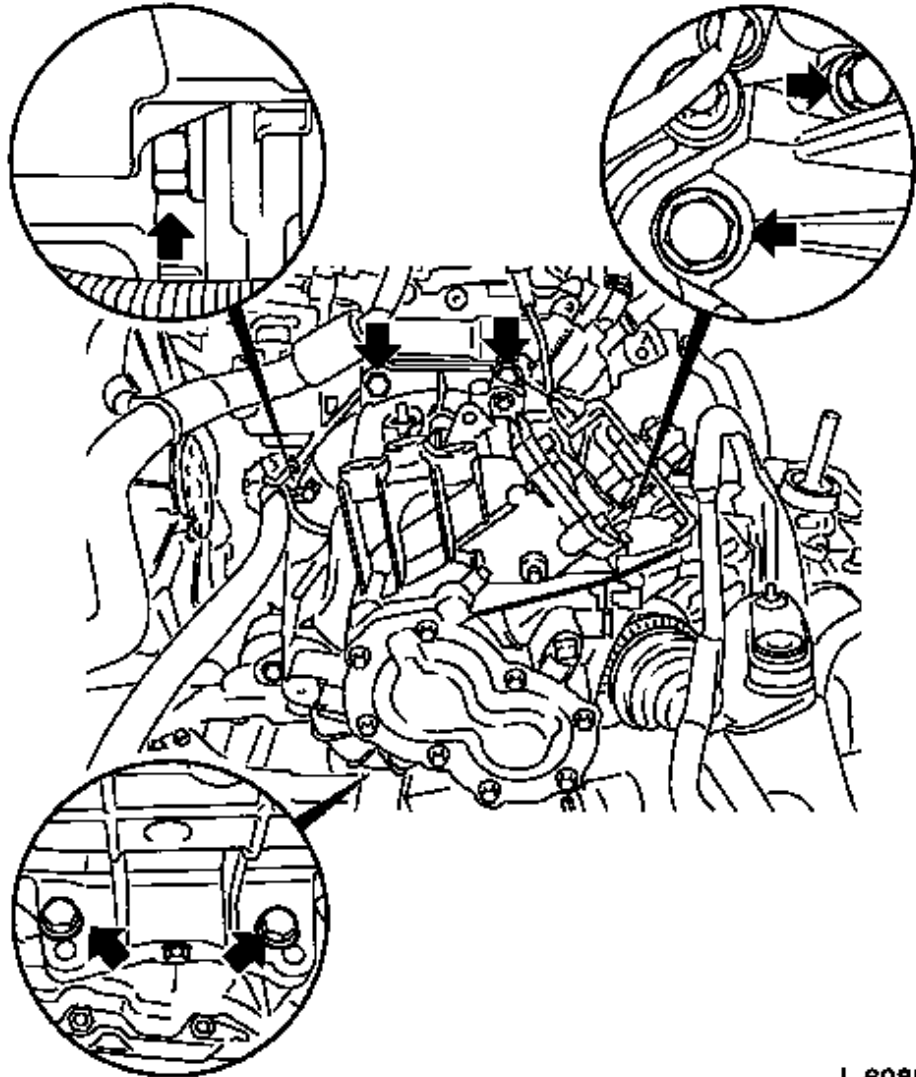
**L 6086**

17. Detach the starter motor wiring harness.
- 1 clip (2), 1 bolt (1)

**L 6098**

18. Unscrew the transmission.
  - 7 bolts (arrows)
    - Take out 6 bolts.
  
19. Detach the transmission.
  - Attach the securing cables.
  - Hook the transmission into the workshop crane.

- Remove 1 bolt.
  - Detach the engine/transmission flanges.
- Note:** Make sure that no attached parts or wiring harnesses are damaged.



L 6088

**Install**

20. Attach the transmission.
  - Hook the transmission into the workshop crane.
  - Attach the gearbox/engine flanges.
  - Install 1 bolt.
  - Unhook from the workshop crane.
  - Detach the securing cables.
21. Tighten the bolts on the transmission.
  - Transmission to cylinder block
    - Tightening torque **60 Nm**
  - Transmission to oil pan
    - Tightening torque **22 Nm**
22. Attach the starter motor wiring harness.
  - 1 bolt, 1 clip
23. Attach the lambda probe wiring harness connector.



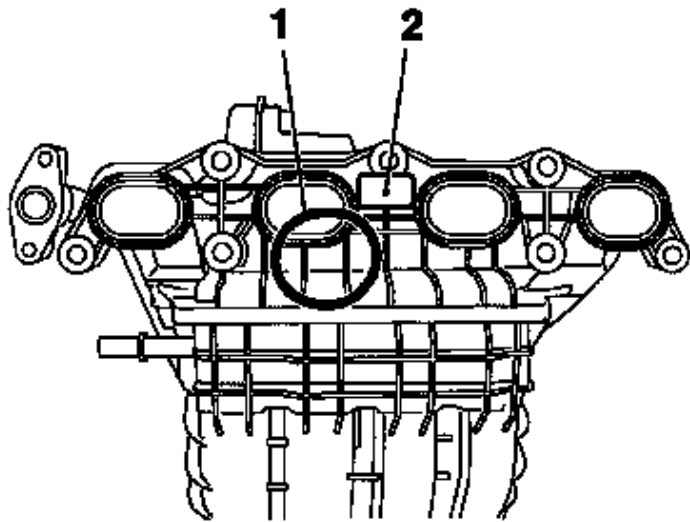
- Route the wiring harness.
  - 1 clip
- 24. Hook the engine into the workshop crane.
  - Attach the securing straps to the engine lifting eyes.
- 25. Detach the engine from the assembly stand **KM-412**.
 

**Note:** 2 technicians required

  - Carefully set down the engine.
- 26. Detach the adapter **KM-412-27** on the left-hand side.
- 27. Install the knock sensor.
 

**Important:** The knock sensor must make full contact with the cylinder block across its entire contact surface – ensure utmost cleanliness. Make sure that the tightening torque is exactly as specified.

  - Tightening torque **23 Nm**
  - Attach the wiring harness connector.
- 28. Attach the intake manifold.
  - Use new gaskets (1) and (2).
  - Tightening torque **9 Nm**
  - Attach the 4 clips.



L 5738

- 29. Attach the exhaust gas recirculation pipe.
  - Clean the sealing surfaces.
  - Use a new gasket.
  - Tightening torque **9 Nm**
  - Attach the engine cover bracket.
    - Tightening torque **8 Nm**
- 30. Attach the wiring harness connector for the intake manifold pressure sensor.
- 31. Attach the wiring harness connector for the throttle body.
  - Secure the wiring harness connector(s).
- 32. Attach the wiring harness bracket
  - Tightening torque **8 Nm**
- 33. Clean the engine control unit.
  - Clean the engine control unit and the plug contacts with compressed air.
- 34. Install the engine control unit.
  - 2 bolts
    - Tightening torque **9 Nm**

- Attach and secure the wiring harness connector.  
**Note:** Check for proper seating and good electrical contact.
  - Attach the bridge piece with a new shear bolt.
    - Route the ground cable.
  - 1 bolt
    - Tightening torque **10 Nm**
- 35.** Install the oil dipstick guide tube.
- Use new oil seals.
    - Coat the oil seals with silicone grease (white).
  - Insert the oil dipstick guide tube as far as the stop into the oil pan.
  - Tightening torque **9 Nm**
  - Insert the oil dipstick.
  - Attach the knock sensor wiring harness to the oil dipstick guide tube.
  - 2 clips
- 36.** Detach the adapter **KM-412-27** on the right-hand side.
- 37.** Attach the engine to the workshop crane.  
**Note:** 2 technicians required
- 38.** Raise the engine.