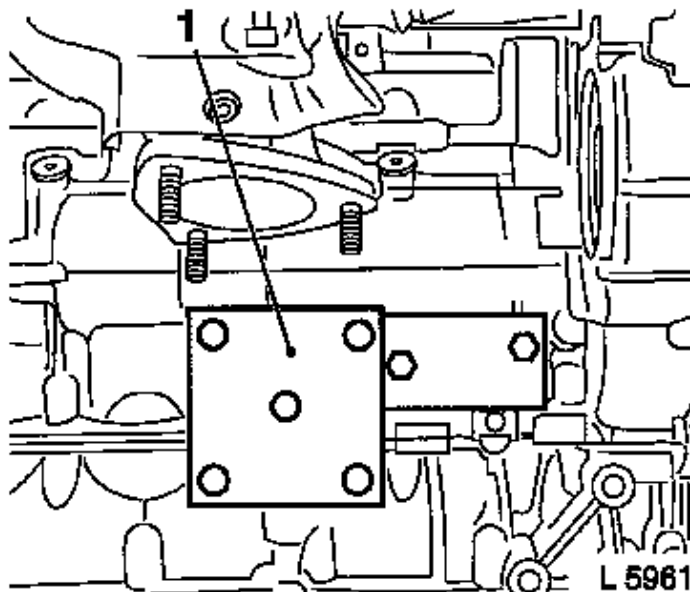
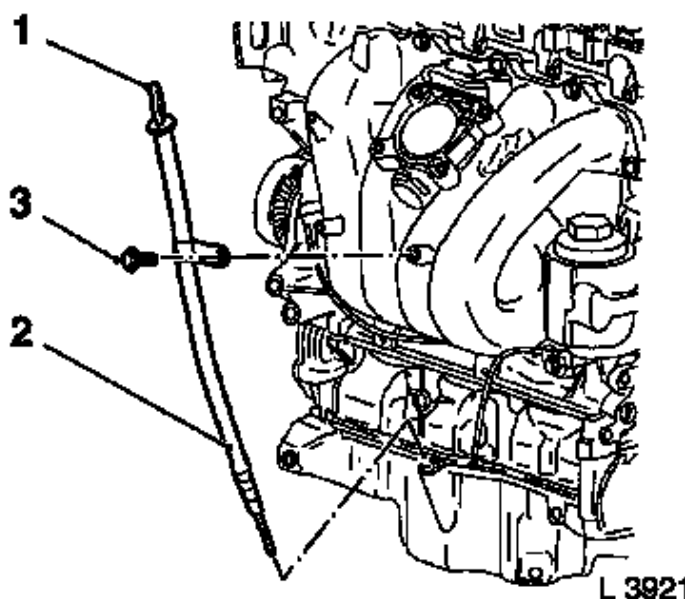


Manual Transmission and Engine, Separate and Reattach (Z 22 SE, MT, engine removed)

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

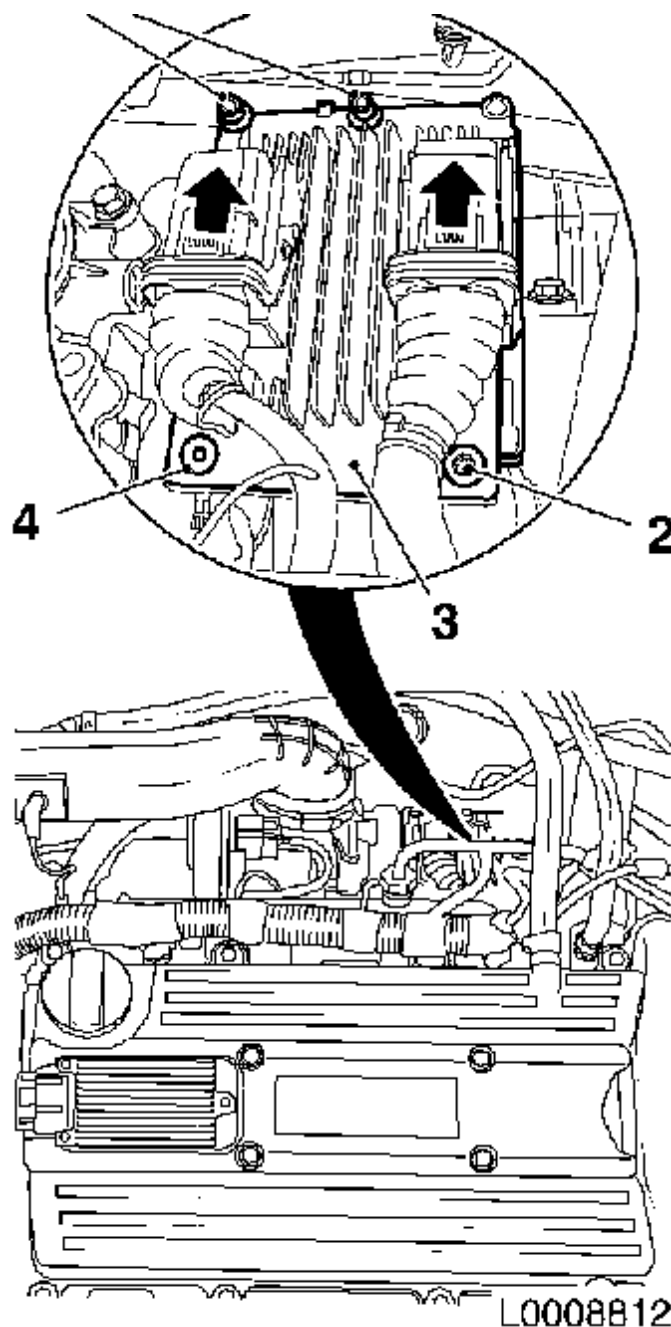


2. Remove the oil dipstick guide tube (2).
 - Detach the knock sensor wiring harness connector from the oil dipstick guide tube.
 - 1 clip
 - Pull the oil dipstick out of the oil dipstick tube.
 - 2 clips
 - 1 bolt (3)
 - Pull the oil dipstick guide tube out of the oil pan.



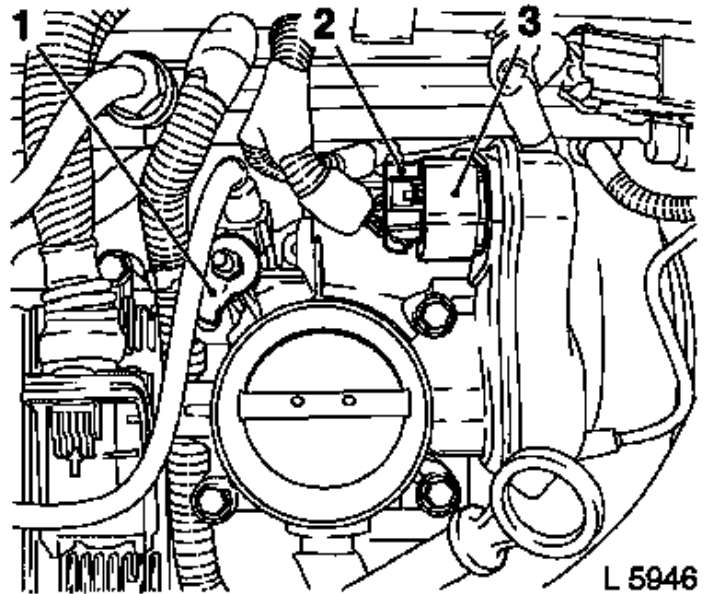
3. Drill out the shear bolt (4).
 - Centre-punch
 - Pre-drill
 - Use a 3 mm drill.
 - Max. depth 10 mm
 - Drill out
 - Use a 6.5 mm drill.

- 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.

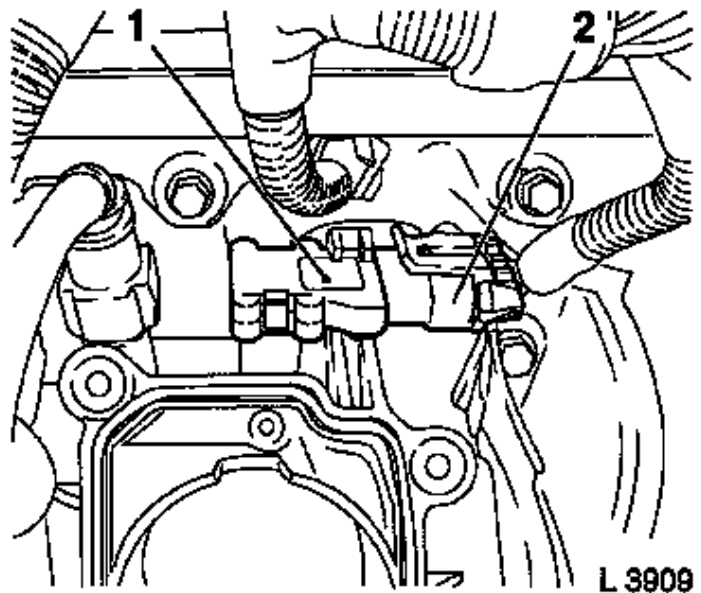


L0008812

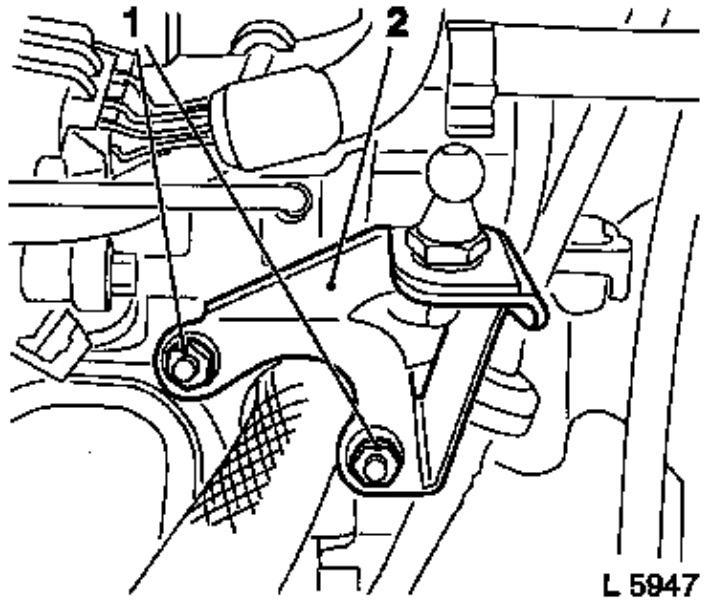
- 8. Detach the wiring harness bracket (1).
 - 1 nut
- 9. Detach the throttle body wiring harness connector (3).
 - Release the wiring harness connector (s) (2).



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

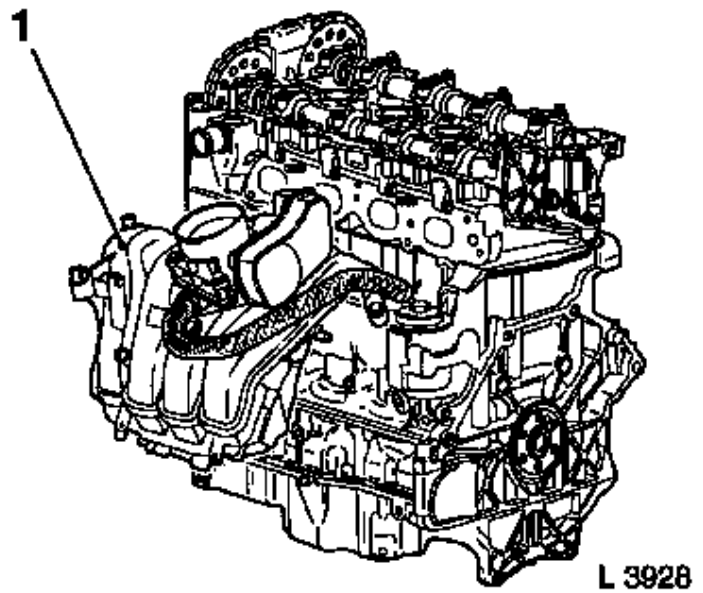


11. Unbolt the exhaust gas recirculation pipe.
- Engine cover bracket (2)
 - 2 nuts (1)
 - 2 bolts



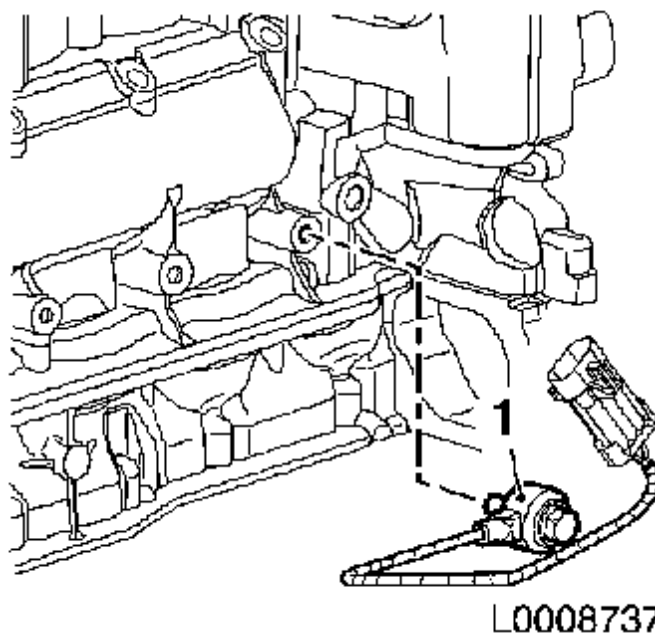
12. Detach the intake manifold (1).

- 4 clips
- 5 bolts, 2 nuts



13. Remove the knock sensor (1).

- Detach the wiring harness connector.

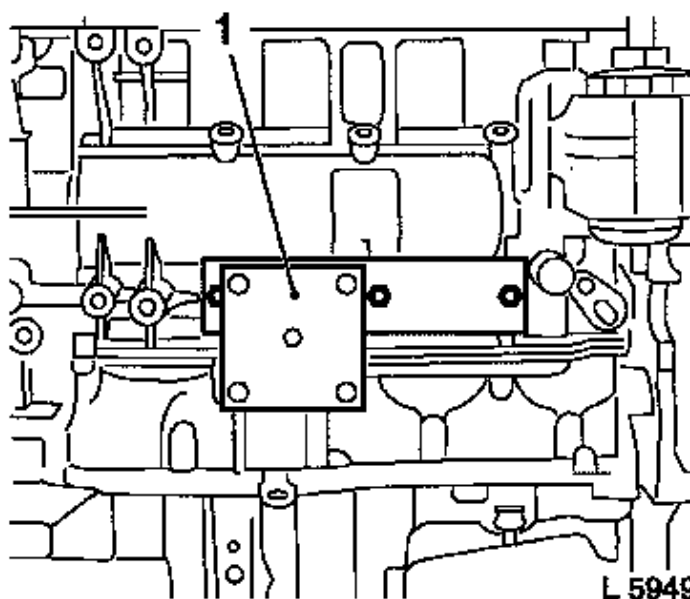


14. Attach the adapter **KM-412-27** (1) on the left-hand side.

15. Attach the engine to the assembly stand **KM-412**.

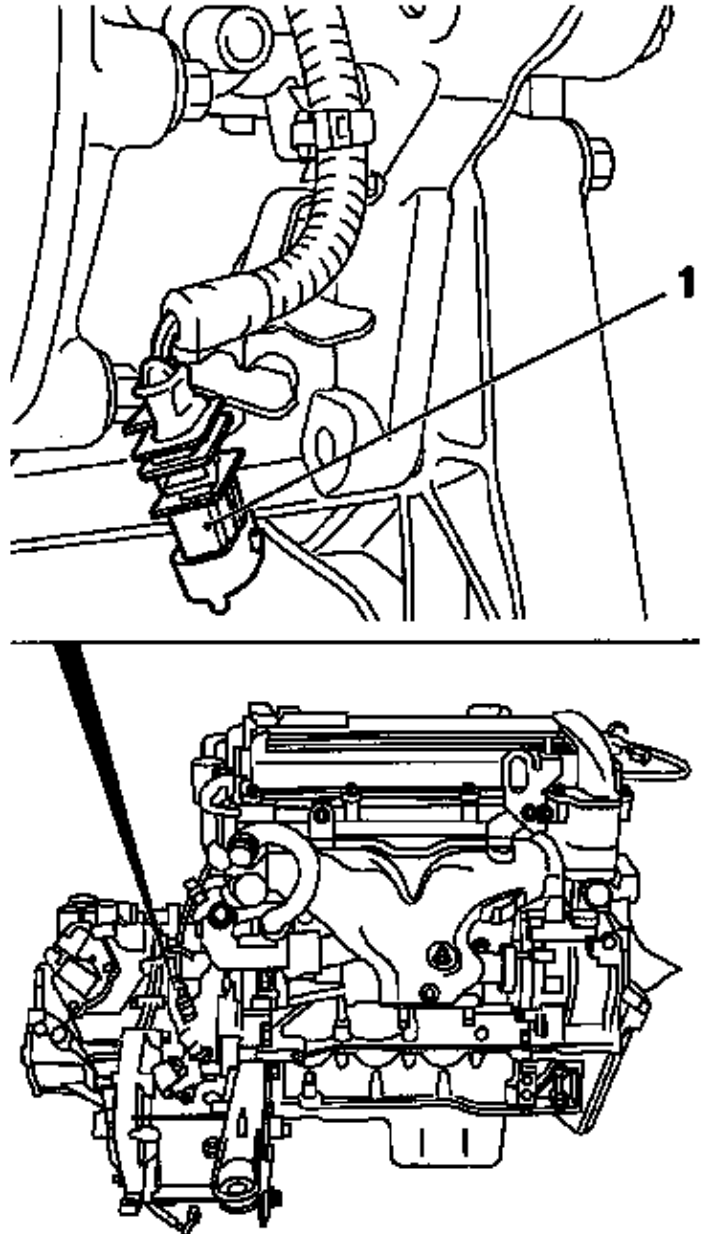
Note: 2 technicians required

- Detach the retaining cables from the engine lifting eyes.



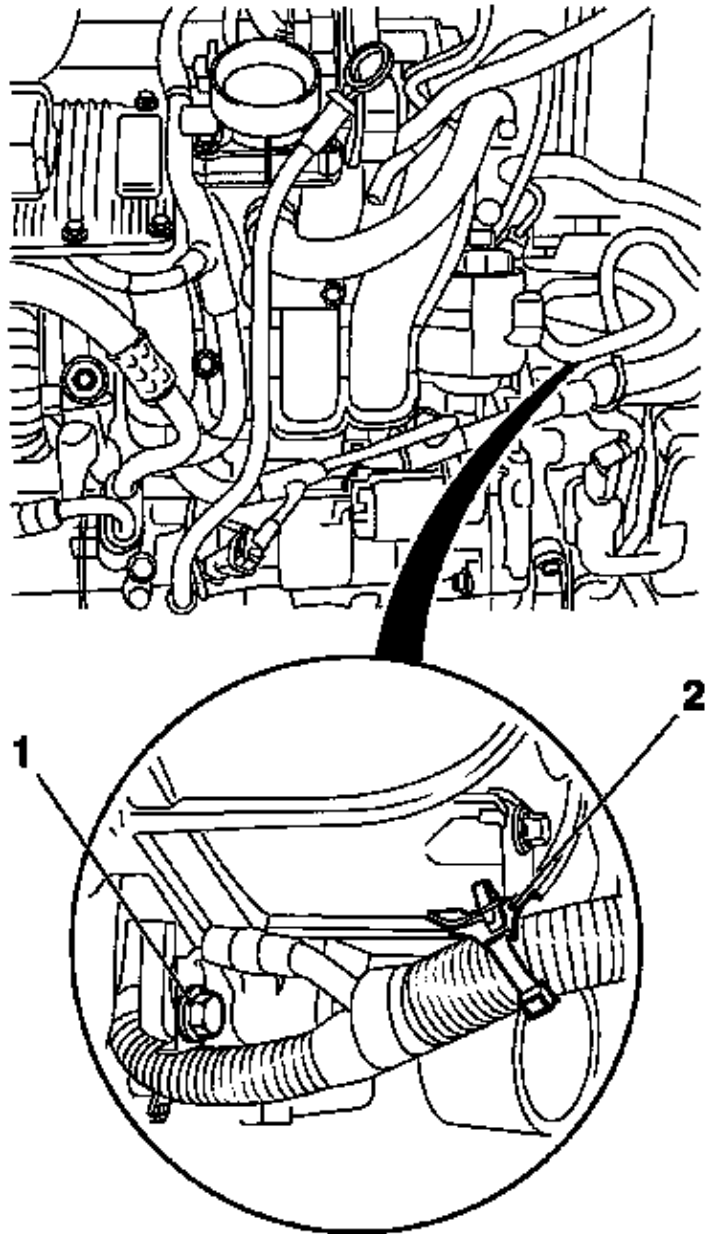
16. Detach the lambda probe wiring harness connector (1).

- Expose the wiring harness.
 - 1 clip



L 6086

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

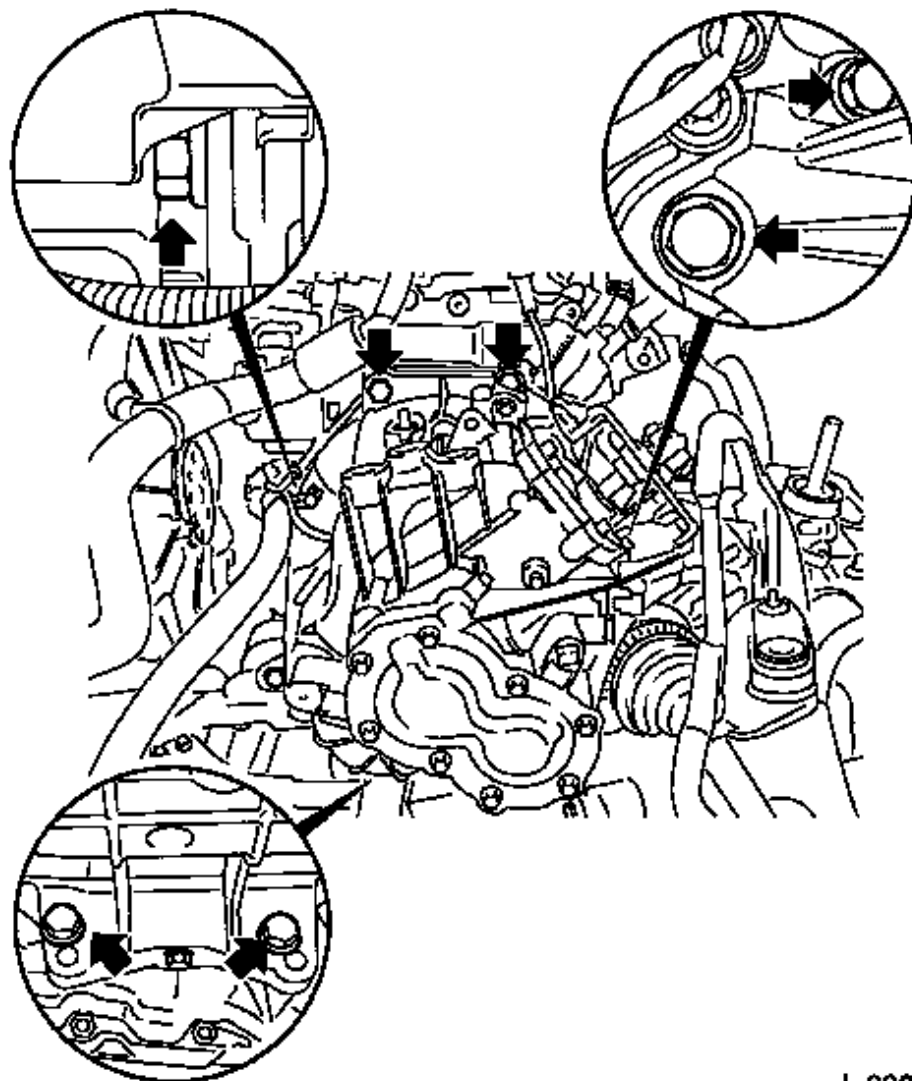


L 6098

- 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

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.

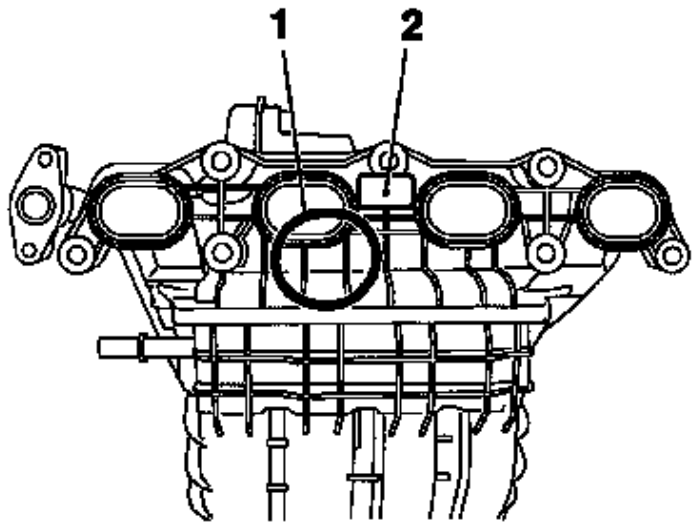
27. Install the knock sensor.

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.