



Haynes
shows you how

BMW 3-Series (92-98) & Z3 (96-98) Haynes Online Manual

4 Knock sensor - removal and installation

Four-cylinder models

Removal

1 Two knock sensors are fitted, screwed into the left-hand side of the cylinder block. One sensor detects knocking in No. 1 and 2 cylinders, and the other sensor detects knocking in No. 3 and 4 cylinders.

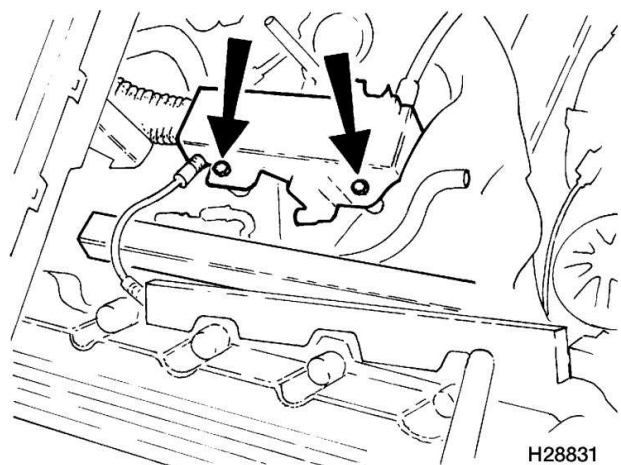
2 Disconnect the battery negative lead. **Caution:** *If the radio in your vehicle is equipped with an anti-theft system, make sure you have the correct activation code before disconnecting the battery.*

3 Release the securing clips, and pull the wiring ducting from the fuel injectors.

4 Remove the upper section of the intake manifold (see [Chapter 4A](#)).

5 Unscrew the bolts securing the wiring ducting to the lower section of the intake manifold (see illustration) .

4.5 Wiring ducting-to-manifold securing bolts (arrows) - four-cylinder model



6 Release the securing clips and pull the wiring ducting from the knock sensor wiring connectors. Move the wiring ducting to one side.

7 Remove the idle speed control valve (see [Chapter 4A](#)).

8 Disconnect the wiring from the starter motor and the alternator.

9 Trace the wiring back from the relevant sensor and release the wiring plug from the clip. **Warning:** *If both sensors are being removed, take note of the plug locations, as if the plugs are mixed up and incorrectly reconnected, engine damage could result.*

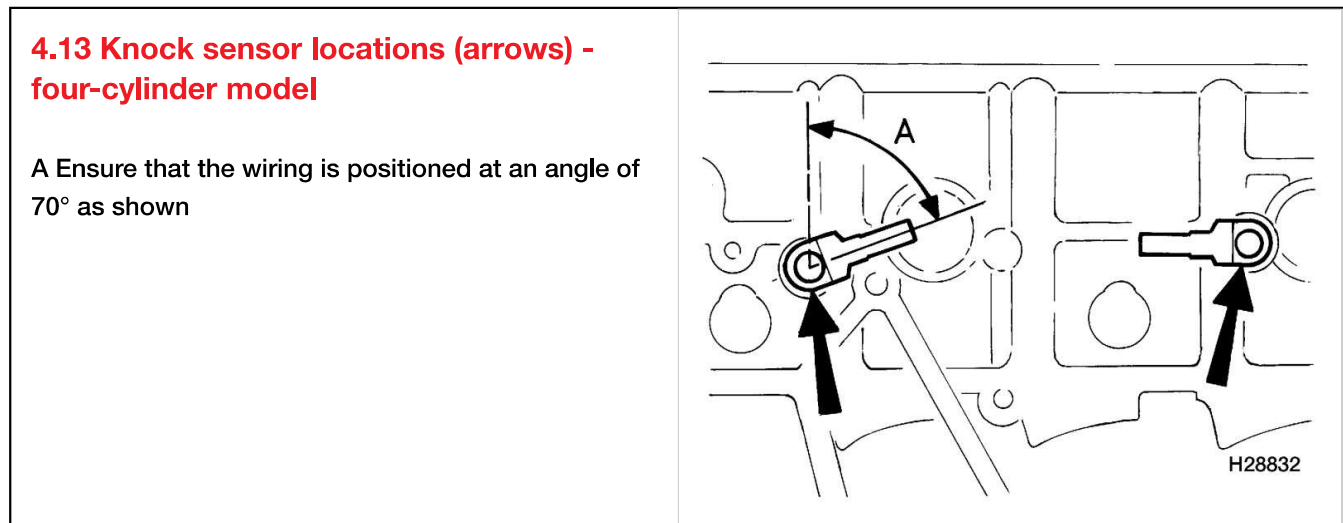
10 Disconnect the coolant hose, and move it to one side for access to the sensors. Be prepared for coolant spillage, and plug the openings to prevent further coolant loss.

11 Unscrew the securing bolt and withdraw the sensor from the engine. Note the angle of the wiring in relation to the cylinder block.

Installation

12 Commence installation by thoroughly cleaning the mating faces of the sensor and the cylinder block.

13 Install the sensor to the cylinder block ensuring that the wiring is positioned as shown (see illustration) . Ensure that the wiring is routed so that it will not chafe on surrounding components.



14 With the sensor correctly positioned, tighten the securing bolt to the specified torque.

15 Install the wiring connector to the clip, ensuring that it is correctly positioned as noted before removal.

Warning: *If the plugs for the two sensors are incorrectly connected (i.e., mixed up), engine damage may result. Ensure that the plugs are reconnected as noted before removal. Normally the connectors are positioned so that they cannot be mixed up.*

16 Further installation is a reversal of removal, bearing in mind the following points.

A. Install the idle speed control valve with reference to [Chapter 4A](#) .

B. Install the upper section of the intake manifold with reference to [Chapter 4A](#) .

C. On completion, check and if necessary top-up the coolant level (see [Chapter 1](#)).

Six-cylinder models

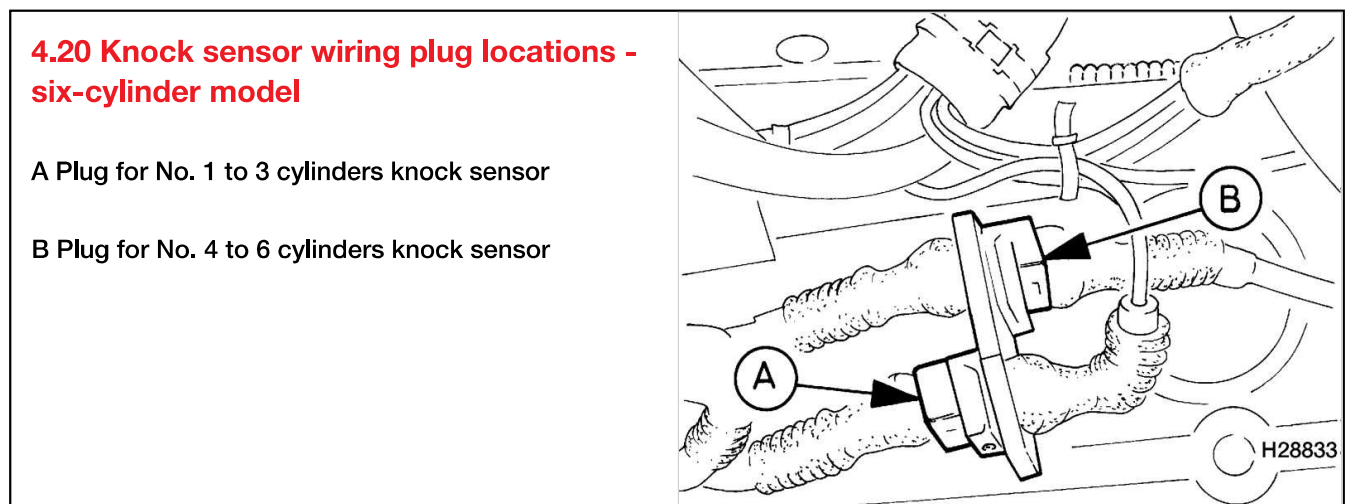
Removal

17 Two knock sensors are fitted, screwed into the left-hand side of the cylinder block. One sensor detects knocking in No. 1 to 3 cylinders, and the other sensor detects knocking in No. 4 to 6 cylinders.

18 Disconnect the battery negative lead. **Caution:** *If the radio in your vehicle is equipped with an anti-theft system, make sure you have the correct activation code before disconnecting the battery.*

19 Remove the intake manifold (see [Chapter 4B](#)).

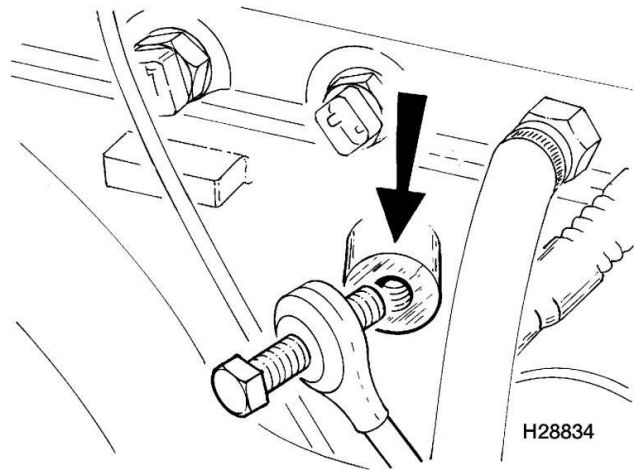
20 Locate the sensor connector bracket which is located beneath the idle speed control valve (see illustration) . **Warning:** *If both knock sensors are to be removed, mark the wiring connectors to ensure correct installation. Incorrect reconnection may result in engine damage.*



21 Disconnect the sensor wiring connector(s).

22 Unscrew the securing bolt and remove the knock sensor, noting the routing of the wiring. The sensor for cylinders 1 to 3 is located beneath the temperature sensors in the cylinder head (see illustration) . The sensor for cylinders 4 to 6 is located to the rear of the sensor wiring connector bracket.

4.22 Removing the knock sensor (arrow) for cylinders 1 to 3 - six-cylinder model



Installation

23 Commence installation by thoroughly cleaning the mating faces of the sensor and the cylinder block.

24 Install the sensor to the cylinder block, tightening the securing bolt to the specified torque.

25 Route the wiring as noted before removal, then reconnect the connector(s) to the bracket, ensuring that the connectors are positioned as noted before removal. **Warning:** *Ensure that the wiring connectors are correctly connected as noted before removal. If the connectors are incorrectly connected (i.e., mixed up), engine damage may result.*

26 Install the intake manifold (see [Chapter 4B](#)).