



SI 1013
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SERVICE INFORMATION

INTAKE MANIFOLD PRESSURE ERRORS WHEN IDLING

TROUBLESHOOTING IN VEHICLES WITH MAP SENSORS

POTENTIAL COMPLAINTS:

- Fluctuating idle speed
- Loss of power
- Jerking on acceleration
- Malfunction indicator lamp lights up
- Diagnostic trouble code P0105 – P0109



SITUATION

Error messages relating to the intake manifold pressure often appear in petrol engines that have intake manifold pressure measurement via a MAP sensor (MAP = Manifold Absolute Pressure). Deviation from the set-point values does not, however, lead to the diagnostic trouble code being stored in all operating states.

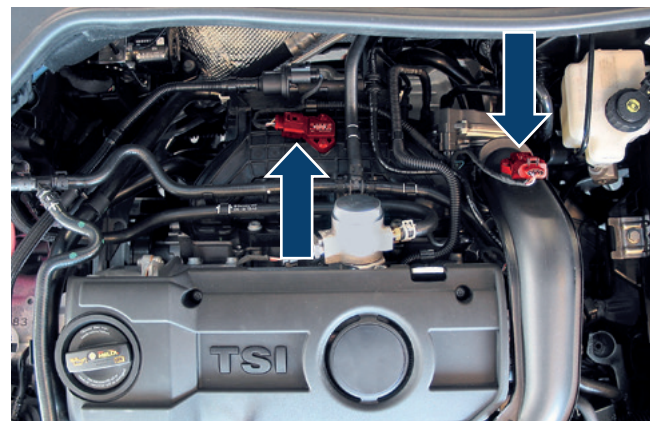
DETERMINING THE SOURCE

A scan tool can be used to compare the actual values with the set-point values. If the intake manifold pressure measured by the system deviates from the set-point value, the actual value must be checked using a separate vacuum pressure gauge.

- If the measured intake manifold pressure is within the set-point values, the MAP sensor and the electrical lines must be checked.
- If the measured intake manifold pressure is outside of the set-point values, the reason for the loss of pressure in the engine must be established (see test instruction below).



Intake manifold pressure sensor/MAP sensor



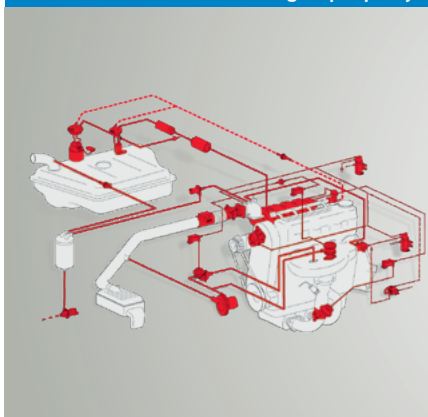
Intake manifold pressure sensors (red) in a VW Golf IV

All content including pictures and diagrams is subject to change. For assignment and replacement, refer to the current catalogues or systems based on TecAlliance.

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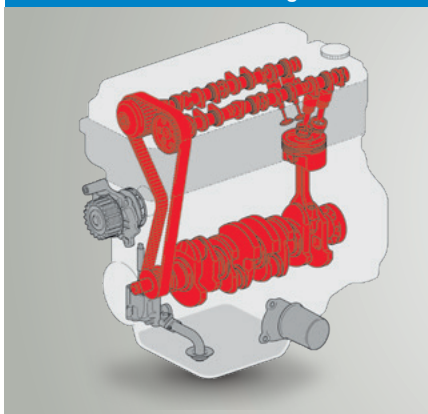
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Possible fault sources in the engine periphery

Leaking intake manifolds downstream of the throttle valve (e.g. due to defective intake manifold gaskets, hoses, etc.)
Defective engine exhaust valves/hoses
Leaking brake boosters
Leakages in the vacuum system (e.g. vacuum-operated actuators, brake boosters, lines, etc.)
Defective EGR valves (permanently open)
Defective idler valves
Idling status of the engine is not recognised by the control unit (defective throttle potentiometer, throttle switch)
Defective or dirty throttle valves
Incorrect or faulty air filter inserts
Carbon deposits or other blockages in the intake manifold

If the problem is not found in the engine periphery, it must be assumed that there is a mechanical problem with the engine.

Possible fault sources in the engine mechanics

Piston ring wear or piston damage (piston seizure, fusion and similar damage) – a further sign of this is high blow-by gas emission during idling with the oil filler cap open.
Leaking intake and exhaust valves
Insufficient valve clearance
Worn valve seat inserts (especially in engines with gas conversion)
Malfunction of the hydraulic valve clearance compensating elements (hydraulic tappets)
Incorrectly set valve timing or skipped toothed belt
Leaking cylinder head gaskets
Incorrect or worn camshafts

**INSPECTIONS TO BE CARRIED OUT**

- Valve clearance
- Valve timing check
- Compression test
- Cylinder compression test

