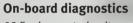


OBD and exhaust gas return system Finding and remedying faults



09 Engine control unit 10 Malfunction indicator lamp (MIL) 11 Diagnostic plug 12 OBD data scan tool

From practical use









08 Electropneumatic pressure transducer (EPW) for

Pierburg products 01 EGR cooler 02 Intake manifold 03 Air mass sensor (LMS) 04 Pneumatic EGR valve (petrol) 05 Electric EGR valve (petrol) 06 Electromotive EGR valve (diesel) 07 Pneumatic EGR valve (diesel)

pneumatic EGR valves



Blocked air mass sensor (LMS)

Stuck EGR valve (diesel) and in new condition

Carbonised EGR valve (petrol) with zoom

Code	P0400	P0401	P0402	P0403	P0404	P0405/P0406 P0407/P0408
Fault	 EGR system – flow malfunction The EGR valve does not open: There is no exhaust gas recirculation, or it is not detected Output not reached Engine goes into limp home function Driving behaviour is deficient Uneven idling 	EGR system – insufficient flow rate Not enough exhaust gas is being recirculated: • EGR valve does not open wide enough • Cross section restricted by impurities (carbon deposits) • EGR valve opening time too short • Air mass sensor defective or soiled	EGR system – excessive flow rate Too much exhaust gas is being recirculated: • EGR valve opens to an extent that deviates from the set-point values • Valve does not close completely • Air mass sensor defective or soiled	EGR system – control loop malfunction EGR signals incorrect or implausible: • Wear/soiling of the potentiometer in the EGR valve, temperature sensor	EGR System – control loop measurement/ power problem • Exhaust gas recirculation outside set-point range • EGR signals incorrect or implausible • Wear/soiling of potentiometer in the EGR valve, pressure sensor, temperature sensor, air mass sensor, electrical plug-in connections and lines	EGR system – sensor A/B circuit too small/ large • EGR signals incorrect or implausible • Wear/soiling of potentiometer in the EGR valve, pressure sensor, temperature sensor, air mass sensor, electrical plug-in connections and lines
Next steps/ Possible remedies	 Check pneumatic EGR valve with vacuum hand pump: If the vacuum is not maintained, replace the EGR valve If it is not actuated, check the vacuum lines for free flow/tightness Examine the EGR valve for visible damage or discolouration: Exhaust gas back pressure could be too high or the actuation could be incorrect Check the exhaust system for free flow Check the boost pressure control valve for functioning and actuation If there is sticking, replace the EGR valve and check the fuel injection system and the oil vapour separator (blow-by separator) Check the power supply to the EGR valve and electropneumatic pressure transducer, replace any defective parts 	 Check electric actuators Check pneumatic actuators (vacuum) If there is sticking, replace the EGR valve and check the fuel injection system and the oil vapour separator (blow-by separator) Especially for electric EGR valves, check actuators and sensors Check the air mass sensor and replace if necessary 	 Check sensors and actuators If there is sticking, replace the EGR valve and check the fuel injection system and the oil vapour separator (blow-by separator) Check the air mass sensor and replace if necessary 	• Check signals and compare with set-point values	 Check signals and compare with set-point values Check lines, plug-in connections and components 	 Check signals and compare with set-point values Check lines, plug-in connections and components

Emission control and OBD". www.ms-motorservice.com

Further details on this subject can be found in our brochure "Service Tips & Info -Further information can be obtained directly from your local Motorservice partner or at The Motorservice Group is the sales organisation for the worldwide aftermarket activities of Rheinmetall Automotive. It is a leading supplier of engine components for the independent aftermarket. With the premium brands Kolbenschmidt, Pierburg, TRW Engine Components and the BF brand, Motorservice offers its customers a wide and comprehensive range of top quality products from a single source.

