

OBD and secondary air system

Finding and remedying faults



Pierburg products

- 01 Secondary air valve (electrical)
- 02 Secondary air pump (SLP)
- 03 Lambda sensor
- 04 Secondary air valve (pneumatic)
- 05 Electric switchover valve (EUV)

On-board diagnostics

- 06 Engine control unit
- 07 Malfunction indicator lamp (MIL)
- 08 Diagnostic plug
- 09 OBD data scan tool

From practical use



Simple inspection of secondary air valve



Secondary air pump – corroded electrical connections



Condensate in secondary air pump



Pneumatic secondary air valve: Damage (to diaphragm and valve head) due to condensate

Code	P0410	P0411	P0412 P0415	P0413 P0416	P0414 P0417	P0418 P0419
Fault	Secondary air system – malfunction No detection of secondary air by lambda sensor (no lean signal)	Secondary air system – insufficient quantity The secondary air rate detected is too low (insufficient lean signal)	Secondary air on-off valve A (EUV 1) / B (EUV 2) Electrical fault The electric switchover valve (EUV) does not activate	Secondary air on-off valve A (EUV 1) / B (EUV 2) Interruption The electric switchover valve (EUV) does not activate	Secondary air on-off valve A (EUV 1) / B (EUV 2) Short circuit The electric switchover valve (EUV) does not activate	Secondary air system relay circuit A / circuit B Malfunction Secondary air pump relay A or B does not activate
Next steps/ Possible remedies	<ul style="list-style-type: none"> • Secondary air pump may be defective. Check SLP, relays, lines and plug-in connections • If there is condensate in SLP: Check the secondary air valve for tightness and the electric switchover valve for functioning • Check the non-return valve (see picture) – replace if soiled • If there is water in SLP: Check the vacuum line and valves for tightness 	<ul style="list-style-type: none"> • Check the function of the switchable non-return valve with vacuum hand pump • Check the electric switchover valve and the vacuum line • Check the non-return valve and secondary air lines for free flow 	<ul style="list-style-type: none"> • Check lines, plug-in connections and electric switchover valve 	<ul style="list-style-type: none"> • Check lines, plug-in connections and electric switchover valve 	<ul style="list-style-type: none"> • Actuation of electric switchover valve (EUV) not OK • Check lines, plug-in connections and electric switchover valve 	<ul style="list-style-type: none"> • Check relays, lines, plug-in connections and secondary air pump

Further details on this subject can be found in our brochure "Service Tips & Info – Emission control and OBD".
Further information can be obtained directly from your local Motorservice partner or at www.ms-motorservice.com

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