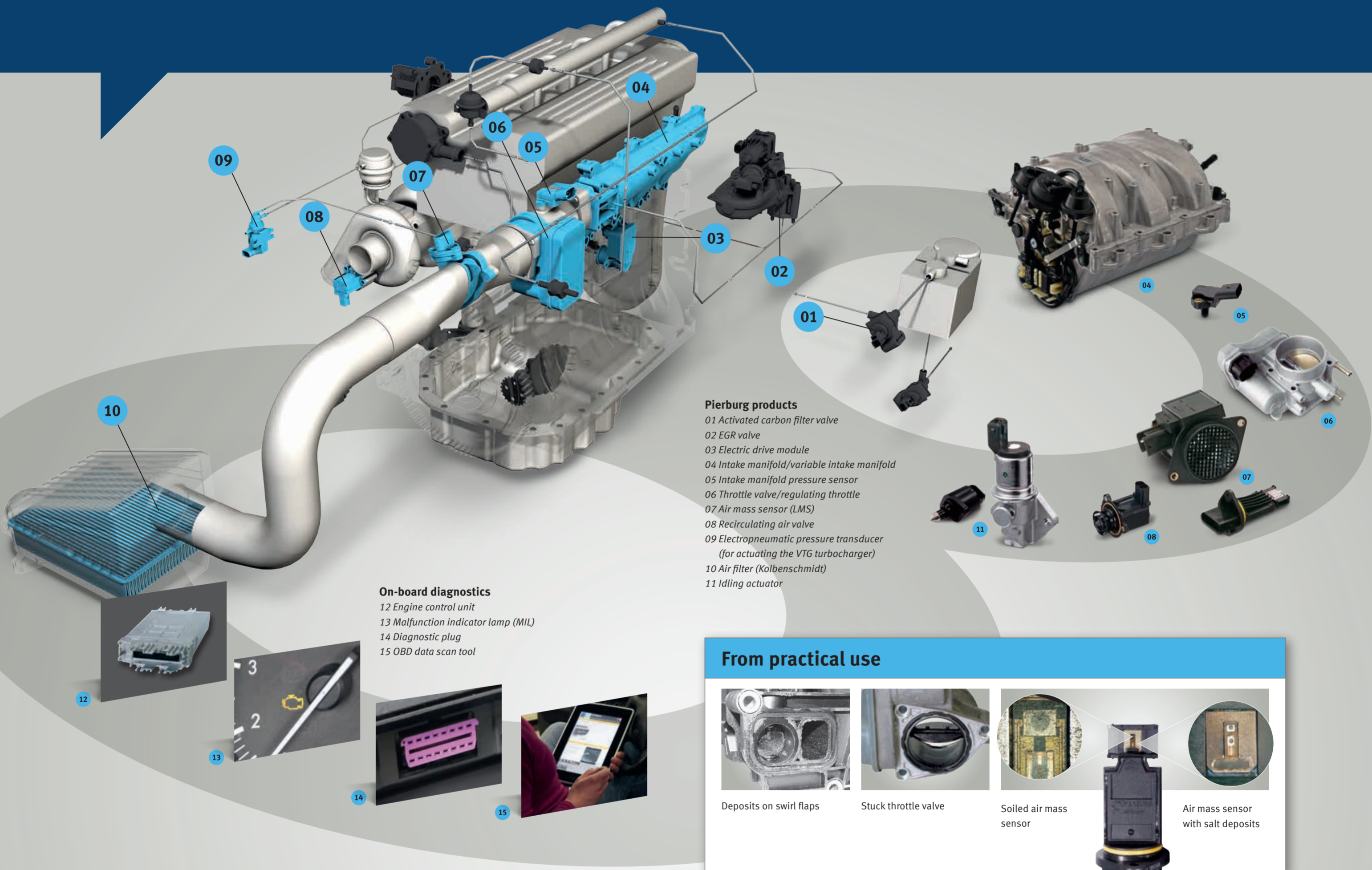


OBD and air supply

Finding and remedying faults



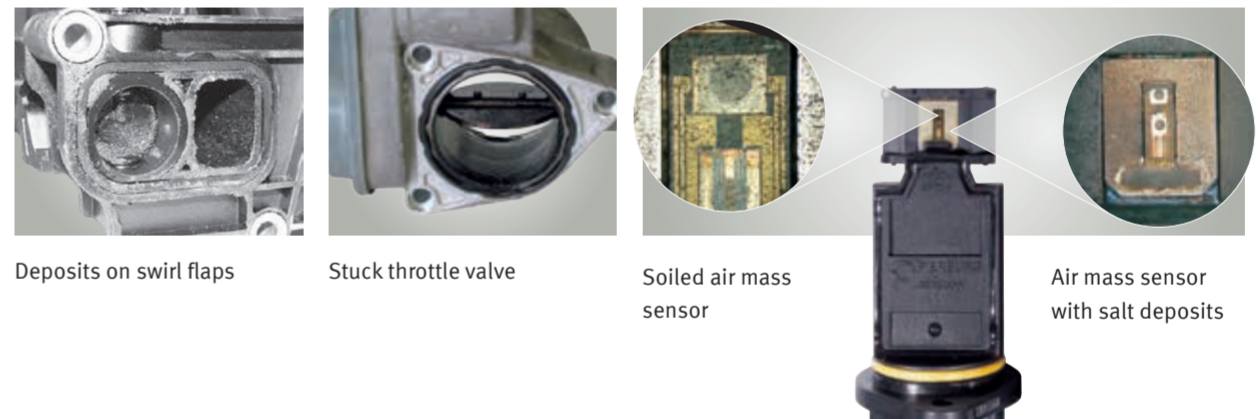
Pierburg products

- 01 Activated carbon filter valve
- 02 EGR valve
- 03 Electric drive module
- 04 Intake manifold/variable intake manifold
- 05 Intake manifold pressure sensor
- 06 Throttle valve/regulating throttle
- 07 Air mass sensor (LMS)
- 08 Recirculating air valve
- 09 Electropneumatic pressure transducer (for actuating the VTG turbocharger)
- 10 Air filter (Kolbenschmidt)
- 11 Idling actuator

On-board diagnostics

- 12 Engine control unit
- 13 Malfunction indicator lamp (MIL)
- 14 Diagnostic plug
- 15 OBD data scan tool

From practical use



Deposits on swirl flaps

Stuck throttle valve

Soiled air mass sensor

Air mass sensor with salt deposits

Code	P0097	P0102 P0400	P0172	P0506
Fault	Intake air temperature sensor – input signal too low <ul style="list-style-type: none"> • Plausibility check yields incorrect reference values • Temperature sensor on air mass sensor is defective • Intake air temperature sensor is defective 	Mass air flow meter or air flow meter – input signal too low/exhaust gas recirculation – flow rate malfunction <ul style="list-style-type: none"> • Air mass sensor defective • Stuck/carbonised EGR valve is always open • Basic setting of EGR valve not performed 	Mixture too rich <ul style="list-style-type: none"> • Activated carbon filter solenoid valve stuck (permanently open): Fuel-enriched air from the activated carbon filter is drawn into the intake air system • Diaphragm of the pneumatic fuel pressure regulator leaking: Fuel is drawn into the intake air system through the vacuum line • Stuck/carbonised EGR valve is always open 	Idle control – engine speed below set-point value <ul style="list-style-type: none"> • Idling actuator soiled/stuck • Incorrect input signals arriving from the engine control unit • Throttle valve stiff/stuck
Next steps/Possible remedies	<ul style="list-style-type: none"> • Check air mass sensor, replace if defective • Check intake air temperature sensor, replace if necessary 	<ul style="list-style-type: none"> • Check power supply to mass air flow meter and EGR valve • Check mass air flow meter, replace if defective • Check EGR valve: <ul style="list-style-type: none"> - If the EGR valve is always open, exhaust gas is recirculated permanently - If the EGR valve is stuck, replace and find out the causes of the sticking • Once a new EGR valve has been installed: perform basic setting (engine tester) 	<ul style="list-style-type: none"> • Check activated carbon filter solenoid valve, replace if necessary • Check fuel pressure regulator, replace if necessary • Check EGR valve: <ul style="list-style-type: none"> - If the EGR valve is always open, exhaust gas is recirculated permanently - If the EGR valve is stuck, replace and find out the causes of the sticking 	<ul style="list-style-type: none"> • Check idling actuator using an oscilloscope • Replace stuck/carbonised idling actuator • Read out input signals of the idling actuator using the diagnostic tester • Replace stuck/carbonised throttle valve and find out the causes of the sticking

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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