



SI 0076

For technical personnel only!

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SERVICE INFORMATION

PRESSURE TRANSDUCER

COMPLAINT: INSUFFICIENT PERFORMANCE, NOISES

PRODUCT DESCRIPTION

Pressure transducers are used in large numbers for exhaust gas recirculation systems (EGR) and VTG-superchargers ("Variable Turbo Geometry", turbochargers with variable vanes).

Their function is similar to that of a "Dimmer" in an electrical circuit: From a vacuum and atmospheric pressure a mixed pressure (control pressure) is formed in the Pressure transducer that can be infinitely varied via the pneumatic actuator ("vacuum cell").

COMPLAINT

- The pressure transducers is the source of a well audible noise („squawking“).
- The turbocharger does not perform.
- No exhaust gas is returned i.e. increased nitrogen oxide levels in the exhaust gas.

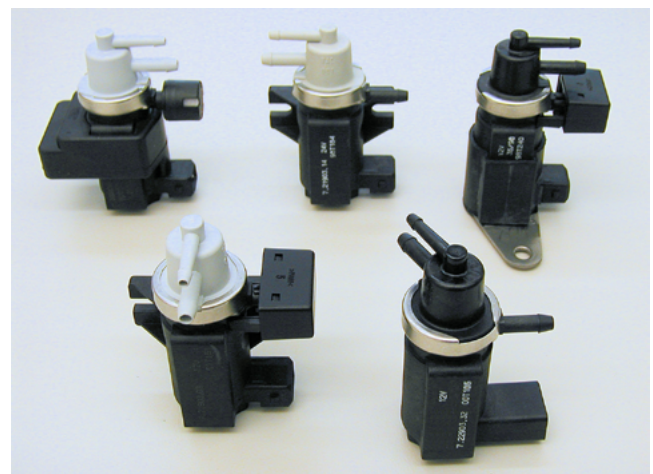


Fig. 1: Product view pressure transducers



The corresponding pressure transducers is not defective. Its operation is only impaired through the resonance of the oscillating column of air in the connecting hose.

CAUSES

Our analyses indicate that the cause for the malfunction cannot be attributed to a defective pressure transducers. In particular in the case of very stiff connecting hose and those having small cross-sections, the column of air trapped in the connecting hoses between actuator and pressure transducers may oscillate.

In certain cases, a resonance may then occur which will prevent the pressure transducers from operating properly.

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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POSSIBLE REMEDY

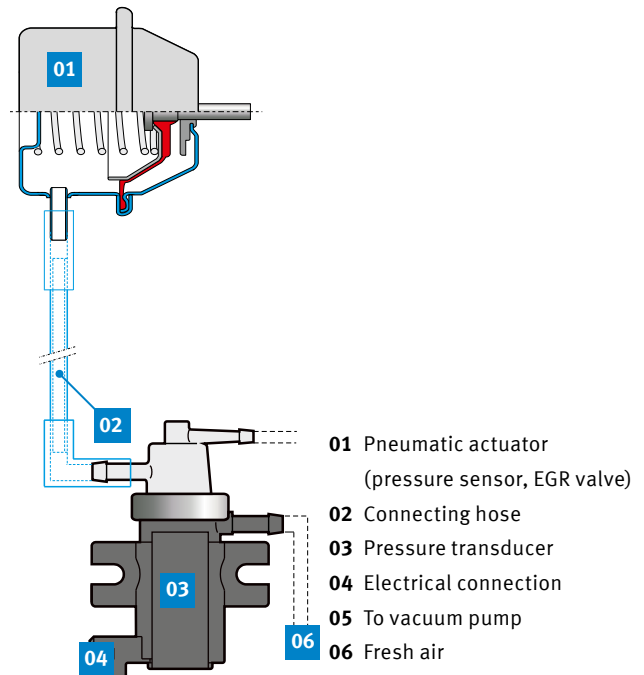
- Replace the connection hose with a slightly longer or shorter hose.
- Use a connection hose with a larger inside diameter or lower rigidity.
- Swap over the connections on the connection hose:
If fitted, detach an elbow from the "OUT" connection of the pressure transducer and swap it with the connecting piece on the actuator.
- If necessary, attach an additional damper.



ATTENTION

Make sure that no hoses are buckled. Prevent the hoses from coming into contact with hot engine parts. In such cases there is the risk of a fire.

The work described above must only be done by qualified personnel.



PRESSURE TRANSDUCER AND EOBD

Pressure transducers are electrically monitored on vehicles with OBD systems.

Possible EOBD fault codes can be			
P0033	Boost pressure control valve - Circuit malfunction	P0245	Boost pressure control valve A - Signal too low
P0034	Boost pressure control valve - Signal too low	P0246	Boost pressure control valve A - Signal too high
P0035	Boost pressure control valve - Signal too high	P0247	Boost pressure control valve B - Circuit malfunction
P0234	Engine supercharging - Limit exceeded	P0248	Boost pressure control valve B - Range / malfunction
P0235	Engine supercharging - Limit not reached	P0249	Boost pressure control valve B - Signal too low
P0243	Boost pressure control valve A - Circuit malfunction	P0250	Boost pressure control valve B - Signal too high
P0244	Boost pressure control valve A - Range / malfunction		

Indirect monitoring of the Pressure transducer takes place by monitoring the function of the EGR valve			
P0400	Exhaust gas recirculation - Flow rate malfunction	P0405	EGR valve - Sensor A - Input signal too low
P0401	Exhaust gas recirculation - Insufficient flow rate detected	P0406	EGR valve - Sensor A - Input signal too high
P0402	Exhaust gas recirculation - Excessive flow rate detected	P0407	EGR valve - Sensor B - Input signal too low
P0403	Exhaust gas recirculation - Circuit malfunction	P0408	EGR valve - Sensor B - Input signal too high
P0404	Exhaust gas recirculation - Range / malfunction		

