

P0446

EVAP canister shutoff valve (function) - below limit

Diagnosis conditions

- Oxygen sensing system active
- No secondary air diagnosis
- Engine running
- Vehicle speed = 0 km/h
- Intake air temperature between 5 °C and 50 °C
- Engine starting temperature between 5 °C and 55 °C
- Battery positive voltage greater than 11 V
- Engine load less than 30%
- EVAP canister burden less than 3
- Altitude correction factor greater than 0.75
- Time elapsed after engine start-up > 990 seconds (16.5 minutes) or mixture adaptation completed
- No fault for throttle position sensor, idle air control, vehicle speed, EVAP canister purge valve, mass air flow sensor, voltage supply, pressure sensor, shutoff valve or engine temperature in memory



Note!

- *Fuel tank ventilation diagnosis is initiated with the Porsche System Tester 2 in the "Short test" menu. This reduces the time elapsed after engine start-up to 30 seconds.*

Possible fault cause

- ◆ Purge air line blocked
- ◆ EVAP canister purge valve sticks in the opened position (this causes continuous vacuum to go from the intake manifold to the tank system)
- ◆ EVAP canister shutoff valve is blocked/sticks in the opened position
- ◆ Flow resistance of EVAP canister too high (filter deformed/blocked)

- ◆ Pressure sensor connected incorrectly (polarity reversal)

Affected terminals

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Diagnosis/troubleshooting

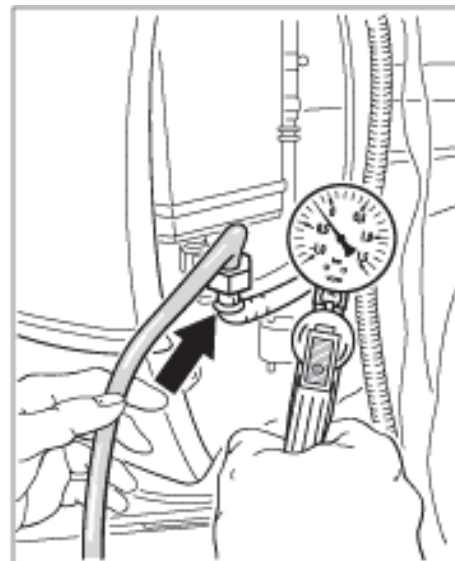


Note!

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- *The EVAP canister purge valve is very sensitive to contamination. If the lines to the EVAP canister have to be detached, the outside of the canister must be cleaned beforehand.*

Work instruction		Display OK	If not OK
1	Check purge air line for blockage	Line was clear Step 2	Clean line -> End
2	Check EVAP canister purge valve for leaks	Valve completely closed Step 3	EVAP canister purge valve stays open Replace valve -> End

Figure: Connecting special tool 9160/1



Work instruction			Display OK	If not OK
3	Check EVAP canister shutoff valve	<ul style="list-style-type: none"> ◆ Remove EVAP canister shutoff valve ◆ Check if valve without flow is also completely opened 	Valve completely opened Step 4	Valve stays closed Replace valve -> End
4	Check correct connection of pressure sensor	<ul style="list-style-type: none"> ◆ Get vehicle ready for operation ◆ Erase fault memory ◆ Unscrew tank cap ◆ Perform fuel tank leak test using Porsche System Tester 2 	A <i>major leak</i> is detected Step 5	Fault <i>P0446</i> is recorded again, (i.e. polarity reversal of pressure sensor) Connect pressure sensor correctly -> End
5	Check EVAP canister	<ul style="list-style-type: none"> ◆ Check canister for blockage (with compressed air) 	Canister is not blocked Step 6	Canister is blocked Replace EVAP canister -> End
6	Check vehicle history (previous repairs)	<ul style="list-style-type: none"> ◆ Was the EVAP canister already replaced (earlier) for this vehicle? 	YES: Replace EVAP canister shutoff valve -> End	NO: Clean EVAP canister shutoff valve and erase the fault memory -> End