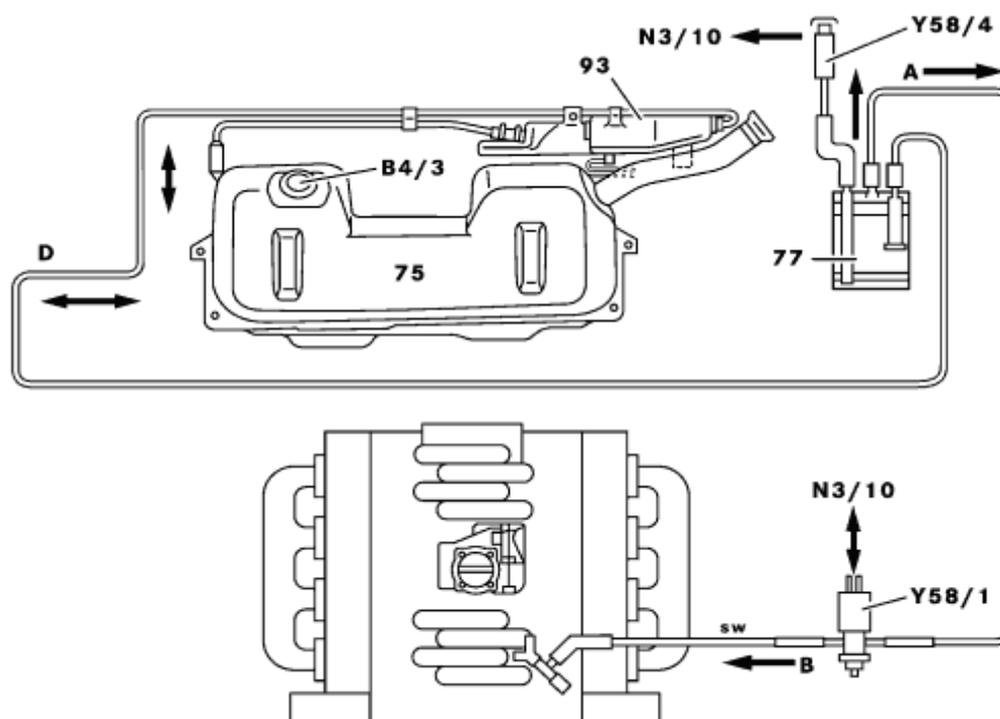


1	Fault code	<b>P0440</b> Leak <b>P0441</b> Purge control valve function <b>P0442</b> Slight leak <b>P0455</b> Severe leak
2	Fault storage  Actuation of "CHECK ENGINE" MIL (MIL)	after expiry of test duration and fault  after two successive driving cycles with faults
3	Checking frequency	once per driving cycle
4	Checked signal or status	Pressure values from fuel tank pressure sensor (B4/3)
5	<b>Fault setting conditions</b> General leak test Fine leak test  Checking duration	Vacuum build-up of approx. 0.4 mbar per second is not achieved Vacuum removal with system closed greater than approx. 15 % of the vacuum achieved with the general leak test Approx. 30 seconds
6	Check prerequisites	<ul style="list-style-type: none"> <li>- Engine at idle</li> <li>- Vehicle stationary</li> <li>- Coolant temperature &lt; 100 °C</li> <li>- Intake air temperature &lt; 45 °C</li> <li>- Blocking time after engine start elapsed (approx. 16 minutes) or mixture adaptation completed</li> <li>- Lambda control enabled</li> <li>- Secondary air injection not active</li> <li>- Air pressure more than approx. 780 hPa (i.e. no test is performed above a height of approx. 2500 m)</li> <li>- Low loading of activated charcoal canister</li> <li>- lambda during the test &gt; 0.9</li> <li>- with fuel level &lt; 1/4 or &gt; 3/4, only general leak test is performed</li> <li>- If the fuel in the fuel tank sloshes about excessively (inadmissible pressure surges), this is recognized by the fuel tank pressure sensor (B4/3) and the test is terminated</li> <li>- No fault in activated charcoal canister shut-off valve</li> <li>- No fault in fuel tank pressure sensor</li> <li>- no fault in fuel gage sensor</li> <li>- No fault in purge switchover valve function (opening/closing)</li> </ul>
7	 After a repair, carry out test and driving instructions	Let engine run at idle speed for approx 20 minutes in drive position P.  If the test is performed, this is displayed in the HHT as follows: If the test is passed without a fault, "-V-" is placed in dark (repair is successful). If the test is passed with a fault, "-F-" is placed in dark. After ignition OFF the tests are again restored (white field). Only after the test has been performed once again, the corresponding fields are once again placed in dark. Carry out a new test only after approx. 10 seconds ignition OFF.
8		If the tank pressure sensor is defective, fault code <b>P0455</b> is set.

The leak test of the fuel evaporation control system must detect leaks starting from approx. 1 mm in diameter. The legislator requires that no fuel vapors reaches the open air.

**Illustrated on engine 119 without ORVR (Onboard Refueling Vapor Recovery)**  
 75 Fuel tank  
 77 Activated charcoal canister  
 93 Fuel expansion reservoir  
 A Line for activated charcoal canister-purge control valve  
 B Lines for purge control valve-intake pipe  
 D Line for fuel tank-activated charcoal canister  
 B4/3 Tank pressure sensor  
 N3/10 ME-SFI control unit  
 Y58/1 Purge control valve  
 Y58/4 Activated charcoal canister shutoff valve



The leak test (causal chain) is performed in two phases:

- general leak test
- fine leak test

### 1. General leak test

The activated charcoal canister shut-off valve (Y58/4) is closed and the purge control valve (Y58/1) opened. The intake pipe vacuum arrives at the fuel tank and is detected via the tank pressure sensor (B4/3).

If there is no vacuum build-up in the fuel tank

(e.g. by approx. -4 mbar within approx. 10 s), there is a relatively large leak (e.g. filler cap open, loose hose line). The test is interrupted and the fault **P0440** and **P0445** is stored.

If the ME-SFI control unit detects a severely leaking fuel system, the fuel reserve indicator lamp in the instrument cluster flashes.

### 2. Fine leak test

If the general leak test has been performed without faults, the fine leak test is performed. To do this, on reaching the vacuum (approx. -7 mbar) the purge control valve (Y58/1) is closed and then the vacuum is assessed further for approx. 30 s.

The vacuum must remain approximately constant during this time. If there is a leak, a fault is detected **P0442**.

The function of the purge control valve is checked at the same time by the activation.

After the tests, the activated charcoal canister shut-off valve (Y58/4) is reopened.



- In the case of an implausible fuel level resulting from a faulty fuel level sensor, the tests are not inhibited.



If no leakage for the fault major leak is found (there is a clear hissing noise if a leak of more than 3 mm exists), replace fuel tank pressure sensor. The fuel tank pressure sensor may have a fault which results in a signal which is constant but still plausible (sensor sticking).