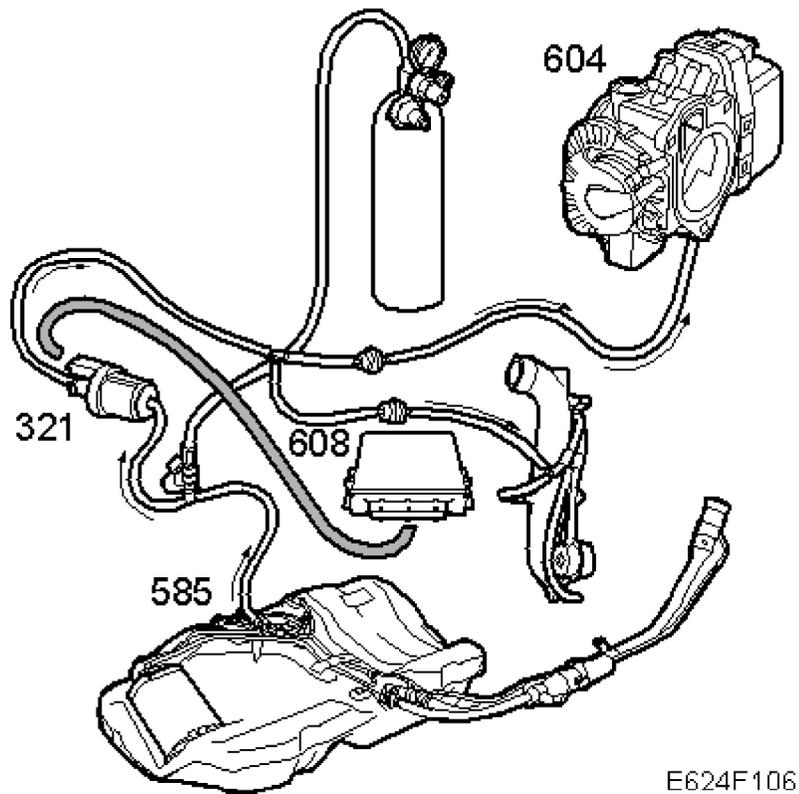


**P0456****Important**

Read the introductory instructions below and then click on the tab to start the fault diagnosis procedure.

**Tank purging, Very minor leak in system****Fault symptoms**

- CHECK ENGINE.
- Possible smell of petrol.

**On-Board Diagnostics****Type of diagnosis:**

- Once per driving cycle. Interrupted when fault criteria fulfilled or OK reported.

Restarts next driving cycle.

### Test 1, Stationary idling speed

#### Enable criteria:

- Run the engine at idling speed. Max one status change for brake light switch. Venting adaptation higher than 7%. Intake air pressure is at least 20 kPa lower than ambient pressure. The fuel volume in the tank is between 11 - 60 litres. The battery voltage is between 10 - 16 Volts. Tank pressure between -300 to +100Pa.

When the above criteria have been fulfilled for a duration of 100 ms, the diagnosis can be started. If the diagnosis is interrupted, the speed must be in excess of 45 km/h for 30 s before it can be re-started. The diagnosis is divided into three phases, A-C:

**Phase A) Evaporation control** Shut-off valve is activated (closes) and any venting is interrupted for 8 s. Monitor the tank pressure. A drop in pressure can indicate a leaking evap canister purge valve. A rise in pressure of more than 7 Pa/s may indicate fuel evaporation and the test should be stopped. If the rise in pressure is less than 7 Pa/s, phase A is completed and the diagnosis continues towards a pressure reduction.

**Phase B) Pressure reduction** Shut-off valve still closed, evap canister purge valve pulse ratio is set to 23-24.5 % until the tank pressure has reached -1500 Pa. The duration of the pressure reduction may not exceed 25 seconds.

**Phase C) Retaining pressure** Shut-off valve still closed, evap canister purge valve is closed. Monitor the tank pressure for approximately 10 seconds.

### Test 2, Driving

#### Enable criteria:

- The following criteria must be fulfilled for a duration of 3 seconds before the diagnosis can be started: Speed between 70-130 km/h. Venting adaptation higher than -6%. Tank pressure is between -300 to +100 Pa. Intake air pressure is at least 20 kPa lower than ambient pressure. The fuel volume in the tank is between 11-60 litres. The battery voltage is between 10-16 Volts. The tank pressure gauge diagnostic should not have reported an incorrect value.

When the above criteria have been fulfilled for a duration of more than 3 seconds, the diagnosis can be started. The diagnosis should be stopped if the venting adaptation exceeds 6 %. If the diagnosis is interrupted, the speed must exceed 50 km/h for 1 minute before the diagnosis can be re-started. The diagnosis is divided into three phases, A-C.

**Phase A) Evaporation control** Shut-off valve is activated (closes) and any venting is interrupted for 10s. Monitor the tank pressure and stop the diagnosis if the pressure drops. A rise in pressure of more than 5 Pa/s may indicate fuel evaporation and the test should be stopped. If the rise in pressure is less than 5 Pa/s, phase A is

completed and the diagnosis continues to phase B (pressure drop).

**Phase B) Pressure reduction** Shut-off valve still closed, evap canister purge valve pulse ratio is set to 40 % until the tank pressure has reached -2000 Pa. The duration of the pressure reduction may not exceed 23 seconds.

**Phase C) Retaining pressure** Shut-off valve is still closed and the evap canister purge valve closes. Monitor the tank pressure for approximately 14 seconds.

#### **Fault criteria:**

- **Phase A) If evaporation control** shows that the pressure rises by more than 5 Pa/s, the diagnosis should be stopped due to substantial fuel evaporation. In order to re-start the diagnosis, the car must be moving. If the increase in pressure is under 5 Pa/s, the diagnosis continues to phase B.
- **Phase B) Pressure reduction** If it is not possible to reduce the pressure in three 8-second stages of approximately -500 Pa each, a large leak has been discovered. (24 s total)
- **Phase C) Retaining pressure** An increase in pressure indicates a small or large leak.

#### **Fault code generation**

- Diagnostic trouble codes are generated when the above fault criteria are fulfilled and the dependents are OK.

P0455, P1455 are set if faults are reported during Phase B

P0442, P0456, P1442 or P1456 are set if faults are reported during Phase C.

#### **Dependents:**

- P0444, P0445, P0501, P0502, P0506, P0507, P1444, P1445, P1576 and P1577.

#### **OK report:**

- Test 1 **or** Test 2 performed once and fault criteria not fulfilled.

#### **Note**

Diagnostic trouble codes P0455 and P1455 are erased immediately after an OK report from the diagnosis.

**Fault handling:**

- Type III.

**Diagnostic help**

Fault diagnosis concerns a leak.

Functions in the diagnostic tool related to the fault:

- Diagnostic status for the diagnosis.
- Activate EVAP diagnosis.

For more information, see [Fault tracing strategy for electronic systems](#)