

Diagnosis – Complaint Related Diagnostic Chart – Injection/Ignition

Complaint/Problem	Possible cause	Test step/Remedy ¹⁾	Actual value Engine test Menu item
Engine starts and accelerates poorly when cold	Injector (Y62) activation and injection duration. Hot film MAF sensor (B2/5). ECT sensor (B11/4). Ignition voltage too low. Intake air leak.	23 ⇒ 17.0 – 24.0 23 ⇒ 4.0 – 5.0 23 ⇒ 8.0 24 ⇒ 30.0 Remedy leak.	2/7 1/7 3/7 – –
Engine does not start	No voltage supply from base module (N16/1). Malfunction of drive authorization system (DAS) . Fuel pumps defective. No compression, oil pressure too high. Ignition voltage too low.	23 ⇒ 1.0 – 3.0 23 ⇒ 37.0 34 ⇒ 2.0 check compression and oil pressure. 24 ⇒ 30.0	– DAS 1/1 – – –
Engine has uneven idle	Camshaft timing. Injector (Y62) activation and injection duration. Intake air leak.	23 ⇒ 27.0 – 30.0 23 ⇒ 17.0 – 24.0 Remedy leak.	2/7 2/7 –
Engine has insufficient output	TWC flow restricted. Left or right O2S 1 (G3/3 or G3/4) (before TWC). ECT sensor (B11/4). Hot film MAF sensor (B2/5). Camshaft timing.	Check exhaust back pressure, see DM, Engines, Vol. 1, section A, "Engine Output" 23 ⇒ 11.0 – 12.0 23 ⇒ 8.0 23 ⇒ 4.0 – 5.0 23 ⇒ 27.0 – 30.0	– 5/7 3/7 1/7 2/7

¹⁾ Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart – Injection/Ignition

Complaint/Problem	Possible cause	Test step/Remedy ¹⁾	Actual value Engine test Menu item
Engine runs unevenly (shakes)	Injector (Y62) activation and injection duration. Injector leaking, poor spray pattern. Left or right O2S 1 (G3/3 or G3/4) (before TWC). Ignition voltage too low. Compression on one or more cylinders too low. Intake air leak.	23 ⇒ 17.0 – 24.0 36 ⇒ 1.0 23 ⇒ 11.0 – 12.0 24 ⇒ 30.0 Check compression. Remedy leak.	2/7 – 5/7 – – –
Engine runs unevenly (misfiring)	Ignition voltage too low. Hot film MAF sensor (B2/5).	24 ⇒ 30.0 23 ⇒ 4.0 – 5.0	– 1/7
Engine surges after cold start	Intake air leak.	Remedy leak.	–
Transition failure during warm-up	ECT sensor (B1 1/4). Hot film MAF sensor (B2/5). Intake air leak.	23 ⇒ 8.0 23 ⇒ 4.0 – 5.0 Remedy leak.	3/7 1/7 –
Transition failure when warm or high fuel consumption	Left or right O2S 1 (G3/3 or G3/4) (before TWC). Purge control valve (Y58/1) stuck in open position.	23 ⇒ 11.0 – 12.0 23 ⇒ 31.0	5/7 3/7
Engine vibrates	Hot film MAF sensor (B2/5). Ignition voltage too low. Left or right O2S 1 (G3/3 or G3/4) (before TWC).	23 ⇒ 4.0 – 5.0 24 ⇒ 30.0 23 ⇒ 11.0 – 12.0	1/7 – 5/7
EPC MIL (A1e43) illuminates and EA is in “limp-home” mode	Nominal value potentiometer in pedal value sensor (B37). EA/CC/ISC actuator actual value potentiometer.	25 ⇒ 4.0 – 5.0 25 ⇒ 6.0 – 7.0	4/7 4/7

¹⁾ Observe Preparation for Test, see 22.