

13. Drive Cycle

A: OPERATION

There are three drive patterns for trouble diagnosis. Driving in the specified pattern allows to diagnose malfunctioning items listed below. After the malfunctioning items listed below are repaired, always check whether they correctly resume their functions by driving in the required drive pattern.

1. PREPARATION FOR THE DRIVE CYCLE

- 1) Make sure that the fuel remains approx. half amount [20 — 40 ℓ (5.3 — 10.6 US gal, 4.4 — 8.8 Imp gal)], and battery voltage is 12 V or more.
- 2) After performing the diagnostics and clearing the memory, check for any remaining unsolved trouble data. <Ref. to EN(H4DOTC)-49, Clear Memory Mode.>
- 3) Separate the test mode connector.

NOTE:

- Except for when the water temperature at starting is specified, diagnoses should always be carried out after the engine is warmed up.
- DTCs marked with * must be diagnosed twice; after the first diagnosis is finished, stop the engine and carry out the second time under same conditions.

2. DRIVE AT 80 KM/H (50 MPH) FOR 20 MINUTES AND THEN IDLE THE ENGINE FOR 1 MINUTE.

DTC No.	Description	Condition
*P0111	Intake Air Temperature Circuit Range/Performance	Coolant temperature at start lower than 30°C (86°F)
*P0125	Insufficient Coolant Temperature for Closed Loop Fuel Control	Coolant temperature at start lower than 20°C (68°F)
*P0128	Coolant Thermostat (Coolant Temperature Below Thermostat Regulating Temperature)	Coolant temperature at start lower than 55°C (131°F)
*P0130	O ₂ Sensor Circuit (Bank 1 Sensor 1)	—
*P0133	O ₂ Sensor Circuit Slow Response (Bank 1 Sensor 1)	—
*P0181	Fuel Temperature Sensor “A” Circuit Range/Performance	—
*P0420	Catalyst System Efficiency Below Threshold (Bank 1)	—
*P0442	Evaporative Emission Control System Leak Detected (small leak)	—
*P0451	Evaporative Emission Control System Pressure Sensor Range/Performance	—
*P0456	Evaporative Emission Control System Leak Detected (very small leak)	—
*P0457	Evaporative Emission Control System Leak Detected (fuel cap loose/off)	—
P0461	Fuel Level Sensor Performance Problem (Travel Distance)	—
*P0464	Fuel Level Sensor Circuit Intermittent	—
P0545	Exhaust Gas Temperature Sensor Circuit Low-Bank1	—
P0546	Exhaust Gas Temperature Sensor Circuit High-Bank1	—
P1312	Exhaust Gas Temperature Sensor Malfunction	Coolant temperature at start lower than 40°C (104°F)
P1443	Vent Control Solenoid Valve Function Problem	—
*P1448	Fuel Tank Sensor Control Valve Range/Performance	—

DRIVE CYCLE

ENGINE (DIAGNOSTICS)

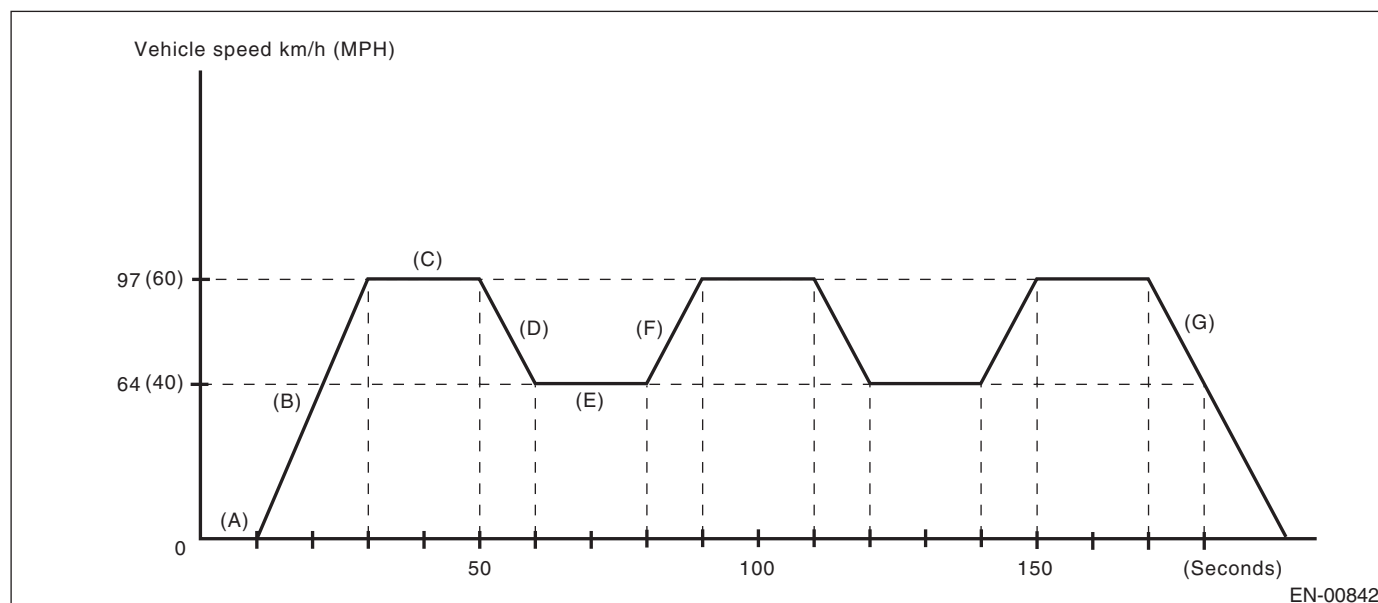
3. IDLE FOR 10 MINUTES

NOTE:

Before the diagnosis, drive the vehicle at 10 km/h (6 MPH) or more.

DTC No.	Description	Condition
*P0483	Cooling Fan Rationality Check	—
*P0506	Idle control system RPM lower than expected	—
*P0507	Idle control system RPM higher than expected	—

4. DRIVE ACCORDING TO THE FOLLOWING DRIVE PATTERN



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|---|--|--|
| (A) Idle engine for more than 10 seconds. | (D) Decelerate with fully closed throttle to 64 km/h (40 MPH). | (G) Stop vehicle with throttle fully closed. |
| (B) Accelerate to 97 km/h (60 MPH) within 20 seconds. | (E) Drive vehicle at 64 km/h (40 MPH) for 20 seconds. | |
| (C) Drive vehicle at 97 km/h (60 MPH) for 20 seconds. | (F) Accelerate to 97 km/h (60 MPH) within 10 seconds. | |

DTC No.	Description	Condition
*P0121	Throttle/Pedal Position Sensor/Switch "A" Circuit Range/Performance	—
*P0139	O ₂ Sensor Circuit Slow Response (Bank 1 Sensor 2)	—
*P0301	Cylinder 1 Misfire Detected	Diagnosis may be performed only once.
*P0302	Cylinder 2 Misfire Detected	Diagnosis may be performed only once.
*P0303	Cylinder 3 Misfire Detected	Diagnosis may be performed only once.
*P0304	Cylinder 4 Misfire Detected	Diagnosis may be performed only once.
*P0101	Mass or Volume Air Flow Circuit Range/Performance	—
P0244	Turbo/Super Charger Wastegate Solenoid "A" Range/Performance	—
P1301	Misfire Detected (High Temperature Exhaust Gas)	—
P1544	Exhaust Gas Temperature Too High	—