

INSPECTION MODE

ENGINE (DIAGNOSTICS)

11. Inspection Mode

A: OPERATION

Carry out trouble diagnosis shown in the following DTC table.

When performing trouble diagnosis which is not shown in the DTC table, refer to the next item Drive cycle.

<Ref. to EN(H4DOTC)-41, Drive Cycle.>

DTC	Item	Condition
P0011	"A" Camshaft Position-Timing Over-Advanced or System Performance (Bank 1)	—
P0021	"A" Camshaft Position-Timing Over-Advanced or System Performance (Bank 2)	—
P0030	HO2S Heater Control Circuit (Bank 1 Sensor 1)	—
P0031	HO2S Heater Control Circuit Low (Bank 1 Sensor 1)	—
P0032	HO2S Heater Control Circuit High (Bank 1 Sensor 1)	—
P0037	HO2S Heater Control Circuit Low (Bank 1 Sensor 2)	—
P0038	HO2S Heater Control Circuit High (Bank 1 Sensor 2)	—
P0101	Mass or Volume Air Flow Circuit Range/Performance	—
P0102	Mass or Volume Air Flow Circuit Low Input	—
P0103	Mass or Volume Air Flow Circuit High Input	—
P0107	Manifold Absolute Pressure/Barometric Pressure Circuit Low Input	—
P0108	Manifold Absolute Pressure/Barometric Pressure Circuit High Input	—
P0112	Intake Air Temperature Circuit Low Input	—
P0113	Intake Air Temperature Circuit High Input	—
P0117	Engine Coolant Temperature Circuit Low Input	—
P0118	Engine Coolant Temperature Circuit High Input	—
P0122	Throttle/Pedal Position Sensor/Switch "A" Circuit Low Input	—
P0123	Throttle/Pedal Position Sensor/Switch "A" Circuit High Input	—
P0129	Atmospheric Pressure Sensor Circuit Range/Performance	—
P0131	O ₂ Sensor Circuit Low Voltage (Bank 1 Sensor 1)	—
P0132	O ₂ Sensor Circuit High Voltage (Bank 1 Sensor 1)	—
P0134	O ₂ Sensor Circuit No Activity Detected (Bank 1 Sensor 1)	—
P0137	O ₂ Sensor Circuit Low Voltage (Bank 1 Sensor 2)	—
P0138	O ₂ Sensor Circuit High Voltage (Bank 1 Sensor 2)	—
P0182	Fuel Temperature Sensor "A" Circuit Low Input	—
P0183	Fuel Temperature Sensor "A" Circuit High Input	—
P0222	Throttle/Pedal Position Sensor/Switch "B" Circuit Low Input	—
P0223	Throttle/Pedal Position Sensor/Switch "B" Circuit High Input	—
P0230	Fuel Pump Primary Circuit	—
P0245	Turbo/Super Charger Wastegate Solenoid "A" Low	—
P0327	Knock Sensor 1 Circuit Low Input (Bank 1 or Single Sensor)	—
P0328	Knock Sensor 1 Circuit High Input (Bank 1 or Single Sensor)	—
P0335	Crankshaft Position Sensor "A" Circuit	—
P0336	Crankshaft Position Sensor "A" Circuit Range/Performance	—
P0340	Camshaft Position Sensor "A" Circuit (Bank 1 or Single Sensor)	—
P0341	Camshaft Position Sensor "A" Circuit Range/Performance (Bank 1 or Single Sensor)	—
P0345	Camshaft Position Sensor "A" Circuit (Bank 2)	—
P0447	Evaporative Emission Control System Vent Control Circuit Open	—
P0448	Evaporative Emission Control System Vent Control Circuit Shorted	—
P0452	Evaporative Emission Control System Pressure Sensor Low Input	—
P0453	Evaporative Emission Control System Pressure Sensor High Input	—

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DTC	Item	Condition
P0458	Evaporative Emission Control System Purge Control Valve Circuit Low	—
P0462	Fuel Level Sensor Circuit Low Input	—
P0463	Fuel Level Sensor Circuit High Input	—
P0502	Vehicle Speed Sensor Circuit Low Input	—
P0503	Vehicle Speed Sensor Intermittent/Erratic/High	—
P0512	Starter Request Circuit	—
P0519	Idle Control System Malfunction (Fail-Safe)	—
P0604	Internal Control Module Random Access Memory (RAM) Error	—
P0605	Internal Control Module Read Only Memory (ROM) Error	—
P0607	Control Module Performance	—
P0638	Throttle Actuator Control Range/Performance (Bank 1)	—
P0691	Cooling Fan 1 Control Circuit Low	—
P0851	Neutral Switch Input Circuit Low	—
P0852	Neutral Switch Input Circuit High	—
P1086	Tumble Generated Valve Position Sensor 2 Circuit Low	—
P1087	Tumble Generated Valve Position Sensor 2 Circuit High	—
P1088	Tumble Generated Valve Position Sensor 1 Circuit Low	—
P1089	Tumble Generated Valve Position Sensor 1 Circuit High	—
P1091	Tumble Generated Valve System 1 (Valve Close)	—
P1093	Tumble Generated Valve System 2 (Valve Close)	—
P1094	Tumble Generated Valve Signal 1 Circuit Malfunction (Open)	—
P1095	Tumble Generated Valve Signal 1 Circuit Malfunction (Short)	—
P1096	Tumble Generated Valve Signal 2 Circuit Malfunction (Open)	—
P1097	Tumble Generated Valve Signal 2 Circuit Malfunction (Short)	—
P1110	Atmospheric Pressure sensor circuit malfunction (Low input)	—
P1111	Atmospheric Pressure sensor circuit malfunction (High input)	—
P1152	O ₂ Sensor Circuit Range/Performance (Low) (Bank1 Sensor1)	—
P1153	O ₂ Sensor Circuit Range/Performance (High) (Bank1 Sensor1)	—
P1160	Return Spring Failure	—
P1400	Fuel Tank Pressure Control Solenoid Valve Circuit Low	—
P1420	Fuel Tank Pressure Control Sol. Valve Circuit High	—
P1446	Fuel Tank Sensor Control Valve Circuit Low	—
P1447	Fuel Tank Sensor Control Valve Circuit High	—
P1491	Positive Crankcase Ventilation (Blow-by) Function Problem	—
P1518	Starter Switch Circuit Low Input	—
P1560	Back-up Voltage Circuit Malfunction	—
P2088	OCV Solenoid Valve Signal A Circuit Open (Bank 1)	—
P2089	OCV Solenoid Valve Signal A Circuit Short (Bank 1)	—
P2092	OCV Solenoid Valve Signal A Circuit Open (Bank 2)	—
P2093	OCV Solenoid Valve Signal A Circuit Short (Bank 2)	—
P2101	Throttle Actuator Control Motor Circuit Range/Performance	—
P2102	Throttle Actuator Control Motor Circuit Low	—
P2103	Throttle Actuator Control Motor Circuit High	—
P2109	Throttle/Pedal Position Sensor A Minimum Stop Performance	—
P2122	Throttle/Pedal Position Sensor/Switch "D" Circuit Low Input	—
P2123	Throttle/Pedal Position Sensor/Switch "D" Circuit High Input	—
P2127	Throttle/Pedal Position Sensor/Switch "E" Circuit Low Input	—
P2128	Throttle/Pedal Position Sensor/Switch "E" Circuit High Input	—
P2135	Throttle/Pedal Position Sensor/Switch "A" / "B" Voltage Rationality	—
P2138	Throttle/Pedal Position Sensor/Switch "D" / "E" Voltage Rationality	—

INSPECTION MODE

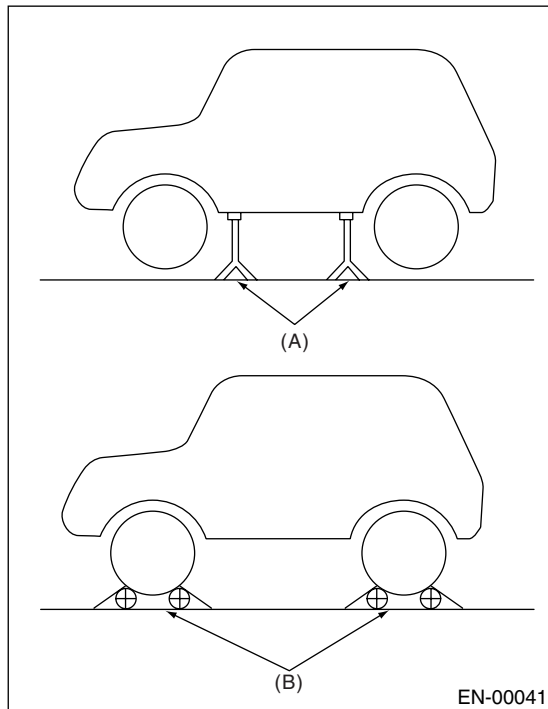
ENGINE (DIAGNOSTICS)

1. PREPARATION FOR THE INSPECTION MODE

- 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 the battery voltage is 12 V or more.
- 2) Raise the vehicle using a garage jack and place on safety stands or drive the vehicle onto free rollers.

WARNING:

- Before raising the vehicle, ensure the parking brake is applied.
- Do not use a pantograph jack in place of a safety stand.
- Secure a rope or wire to the front and rear towing or tie-down hooks to prevent the lateral runout of front wheels.
- Do not abruptly depress/release the clutch pedal or accelerator pedal during works even when engine is operating at low speeds since this may cause vehicle to jump off free rollers.
- In order to prevent the vehicle from slipping due to vibration, do not place any wooden blocks or similar items between the safety stands and the vehicle.
- Since the rear wheels will also rotate, do not place anything near them. Also, make sure that nobody goes in front of the vehicle.

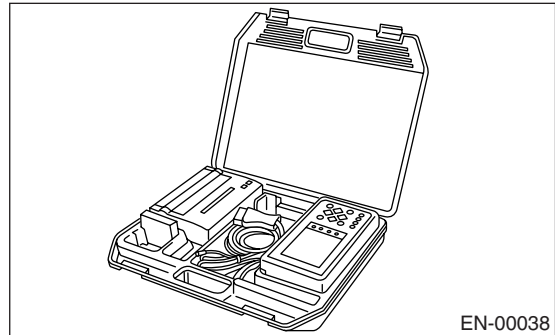


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- (A) Safety stand
(B) Free rollers

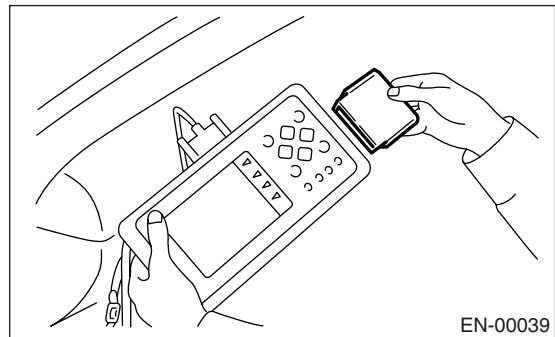
2. SUBARU SELECT MONITOR

- 1) Warm up the engine.
- 2) Prepare the Subaru Select Monitor kit. <Ref. to EN(H4DOTC)-7, PREPARATION TOOL, General Description.>



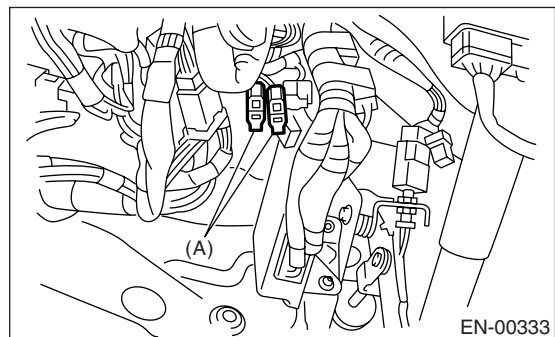
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- 3) Connect the diagnosis cable to Subaru Select Monitor.
- 4) Insert the cartridge into Subaru Select Monitor. <Ref. to EN(H4DOTC)-7, PREPARATION TOOL, General Description.>



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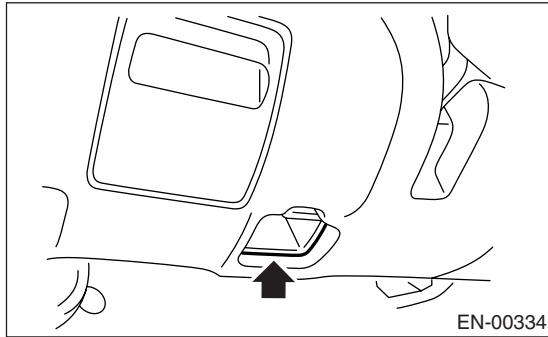
- 5) Connect the test mode connector (A) at the lower portion of instrument panel (on the driver's side).



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- (A) Test mode connector

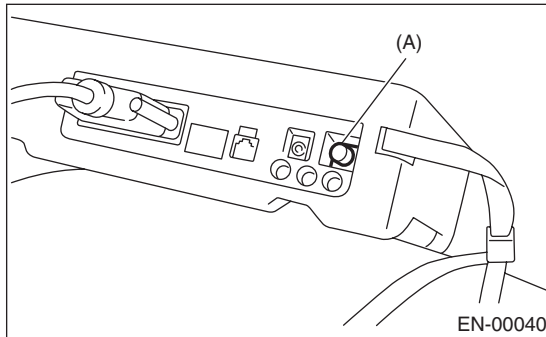
6) Connect the Subaru Select Monitor to data link connector located in the lower portion of the instrument panel (on the driver's side).



CAUTION:

Do not connect the scan tools except for Subaru Select Monitor and OBD-II general scan tool.

7) Turn the ignition switch to ON (engine OFF) and Subaru Select Monitor switch to ON.



(A) Power switch

8) On the «Main Menu» display screen, select the {2. Each System Check} and press the [YES] key.

9) On the «System Selection Menu» display screen, select the {Engine Control System} and press the [YES] key.

10) Press the [YES] key after the information of engine type is displayed.

11) On the «Engine Diagnosis» display screen, select the {Dealer Check Mode Procedure} and press the [YES] key.

12) When the "Perform Inspection (Dealer Check Mode?)" is shown on the display screen, press the [YES] key.

13) Perform subsequent procedures as instructed on the display screen.

- If trouble still remains in the memory, the corresponding DTC appears on the display screen.

NOTE:

- For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MANUAL.

- For detailed concerning the DTC, refer to the List of Diagnostic Trouble Code (DTC).

<Ref. to EN(H4DOTC)-68, List of Diagnostic Trouble Code (DTC).>

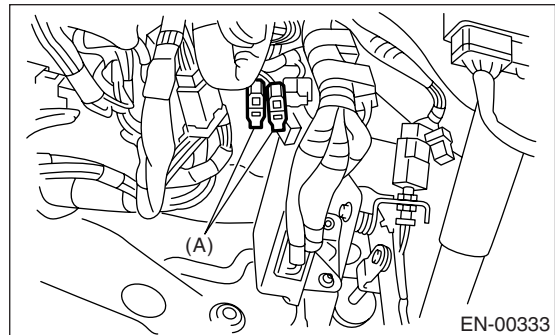
- Release the parking brake.

- The speed difference between front and rear wheels may light either the ABS warning light, but this indicates no malfunctions. When the engine control diagnosis is finished, perform the ABS memory clearance procedure of self-diagnosis function. <Ref. to ABS-23, Clear Memory Mode.>

3. OBD-II GENERAL SCAN TOOL

1) Warm up the engine.

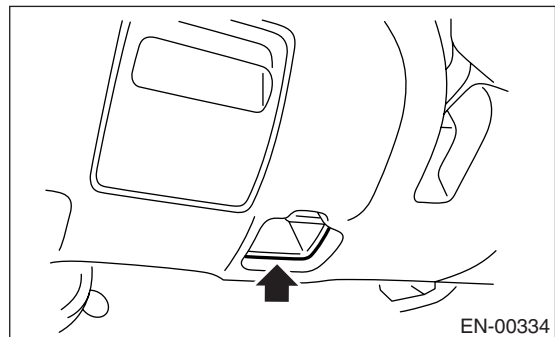
2) Connect the test mode connector (A) at the lower side of instrument panel (on the driver's side).



3) Connect the OBD-II general scan tool to its data link connector in the lower portion of instrument panel (on the driver's side).

CAUTION:

Do not connect the scan tools except for Subaru Select Monitor and OBD-II general scan tool.



4) Start the engine.

NOTE:

- Ensure the selector lever is placed in "P" position before starting. (AT model)

- Depress the clutch pedal when starting engine. (MT model)

5) Using the selector lever or shift lever, turn the "P" position switch and "N" position switch to ON.

6) Depress the brake pedal to turn brake switch ON. (AT model)

7) Keep the engine speed in 2,500 — 3,000 rpm range for 40 seconds.

8) Place the selector lever or shift lever in “D” position (AT model) or “1st” gear (MT model) and drive the vehicle at 5 to 10 km/h (3 to 6 MPH).

NOTE:

- On AWD model, release the parking brake.
- The speed difference between front and rear wheels may light ABS warning light, but this indicates no malfunctions. When the engine control diagnosis is finished, perform the ABS memory clearance procedure of self-diagnosis function.
<Ref. to ABS-23, Clear Memory Mode.>

9) Using the OBD-II general scan tool, check for DTC and record the result(s).

NOTE:

- For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.
- For detailed concerning DTC, refer to the List of Diagnostic Trouble Code (DTC).
<Ref. to EN(H4DOTC)-68, List of Diagnostic Trouble Code (DTC).>