

Inspection Mode

ENGINE (DIAGNOSTICS)

11. Inspection Mode

A: PROCEDURE

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 Drive Cycle. <Ref. to EN(H4SO)(diag)-57, Drive Cycle.>

DTC	Item
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)
P0077	Intake Valve Control Solenoid Circuit High (Bank 1)
P0083	Intake Valve Control Solenoid Circuit High (Bank 2)
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 Sensor 1 Circuit Low
P0113	Intake Air Temperature Sensor 1 Circuit High
P0117	Engine Coolant Temperature Circuit Low
P0118	Engine Coolant Temperature Circuit High
P0122	Throttle/Pedal Position Sensor/Switch "A" Circuit Low
P0123	Throttle/Pedal Position Sensor/ Switch "A" Circuit High
P0131	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 1)
P0132	O2 Sensor Circuit High Voltage (Bank 1 Sensor 1)
P0137	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 2)
P0138	O2 Sensor Circuit High Voltage (Bank 1 Sensor 2)
P0140	O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 2)
P0182	Fuel Temperature Sensor "A" Circuit Low
P0183	Fuel Temperature Sensor "A" Circuit High
P0197	Engine Oil Temperature Sensor Low
P0198	Engine Oil Temperature Sensor High
P0222	Throttle/Pedal Position Sensor/Switch "B" Circuit Low
P0223	Throttle/Pedal Position Sensor/Switch "B" Circuit High
P0327	Knock Sensor 1 Circuit Low (Bank 1 or Single Sensor)
P0328	Knock Sensor 1 Circuit High (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)
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
P0458	Evaporative Emission System Purge Control Valve Circuit Low
P0462	Fuel Level Sensor "A" Circuit Low
P0463	Fuel Level Sensor "A" Circuit High
P0502	Vehicle Speed Sensor "A" Circuit Low Input
P0503	Vehicle Speed Sensor "A" Intermittent/Erratic/High
P0512	Starter Request Circuit
P0519	Idle Air Control System Performance

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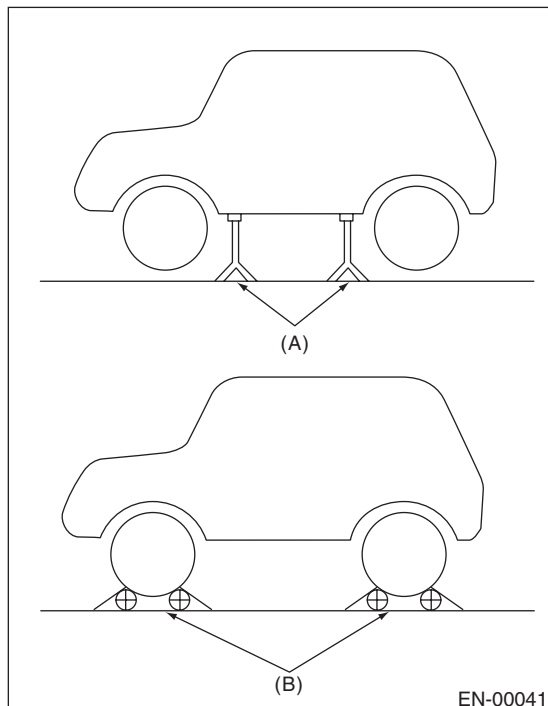
DTC	Item
P0600	Serial Communication Link
P0604	Internal Control Module Random Access Memory (RAM) Error
P0605	Internal Control Module Read Only Memory (ROM) Error
P0607	Control Module Performance
P0638	Throttle Actuator Control Range/Performance (Bank 1)
P0691	Fan 1 Control Circuit Low
P0692	Fan 1 Control Circuit High
P0700	Transmission Control System (MIL Request)
P0851	Park/Neutral Switch Input Circuit Low
P0852	Park/Neutral Switch Input Circuit High
P1152	O2 Sensor Circuit Range/Performance (Low) (Bank 1 Sensor 1)
P1153	O2 Sensor Circuit Range/Performance (High) (Bank 1 Sensor 1)
P1160	Return Spring Failure
P1400	Fuel Tank Pressure Control Solenoid Valve Circuit Low
P1420	Fuel Tank Pressure Control Sol. Valve Circuit High
P1491	Positive Crankcase Ventilation (Blow-by) Function Problem
P1518	Starter Switch Circuit Low Input
P1560	Back-up Voltage Circuit Malfunction
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 Correlation
P2138	Throttle/Pedal Position Sensor/Switch "D"/"E" Voltage Correlation
P2227	Barometric Pressure Circuit Range/ Performance
P2228	Barometric Pressure Circuit Low
P2229	Barometric Pressure Circuit High

1. PREPARATION FOR THE INSPECTION MODE

- 1) Check battery voltage is more than 12 V and fuel remains half [20 — 40 ℓ (5.3 — 10.6 US gal, 4.4 — 8.8 Imp gal)].
- 2) Lift up the vehicle using a garage jack and place it on rigid racks, or drive the vehicle onto free rollers.

WARNING:

- Before raising the vehicle, ensure parking brakes are applied.
- Do not use a pantograph jack in place of a rigid rack.
- Secure a rope or wire to the front or rear towing hooks to prevent the lateral runout of front wheels.
- Do not abruptly depress/release clutch pedal or accelerator pedal during works even when the 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 rigid racks and 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.

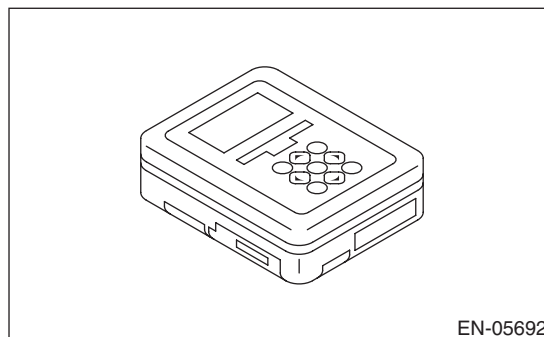


EN-00041

- (A) Rigid rack
(B) Free rollers

2. SUBARU SELECT MONITOR

- 1) After clearing the memory, check for any remaining unresolved trouble data. <Ref. to EN(H4SO)(diag)-63, Clear Memory Mode.>
- 2) Warm up the engine.
- 3) Prepare the Subaru Select Monitor kit. <Ref. to EN(H4SO)(diag)-7, PREPARATION TOOL, General Description.>

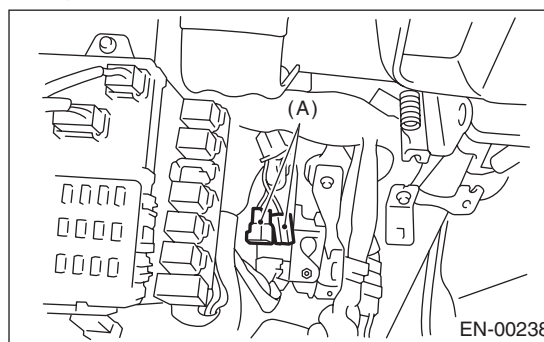


- 4) Prepare the personal computer which has been installed the Subaru Select Monitor.
- 5) Connect the USB cable between SDI (Subaru Diagnosis Interface) and USB port on the personal computer (dedicated port for the Subaru Select Monitor).

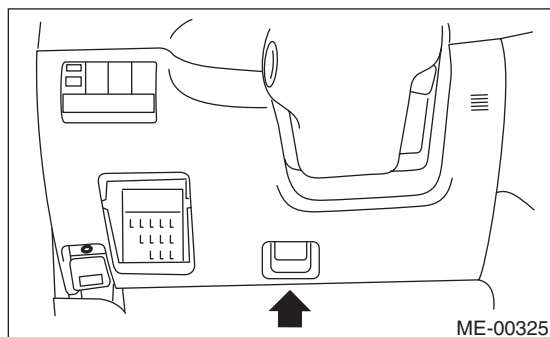
NOTE:

The dedicated port for the Subaru Select Monitor means the USB port which was used to install the Subaru Select Monitor.

- 6) Connect the diagnosis cable to the SDI.
- 7) Connect the delivery (test) mode connector (A) at the lower portion of instrument panel (on the driver's side).



8) Connect the SDI 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 general scan tool.

9) Start up the personal computer.

10) Turn the ignition switch to ON (engine OFF), and run the "PC application for Subaru Select Monitor".

11) On the «Main Menu» display screen, select the {Each System Check}.

12) On the «System Selection Menu» display screen, select the {Engine Control System}.

13) Click the [OK] button after the information of engine type has been displayed.

14) On the «Engine Diagnosis» display screen, select the {D Check}.

15) When the «Perform Inspection (Dealer Check) Mode» is shown on the screen, click the [Next] button.

16) 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:

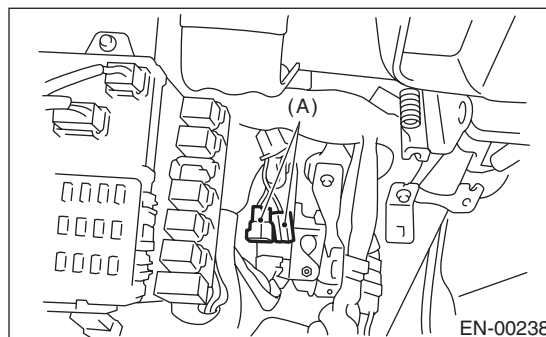
- For detailed operation procedure, refer to the "PC application help for Subaru Select Monitor".
- For details concerning DTC, refer to "List of Diagnostic Trouble Code (DTC)".
<Ref. to EN(H4SO)(diag)-88, List of Diagnostic Trouble Code (DTC).>
- Release the parking brake.
- The speed difference between front and rear wheels may illuminate the ABS warning light, but this does not indicate a malfunction. When engine control diagnosis is finished, perform the ABS memory clearance procedure of the self-diagnosis system. <Ref. to ABS(diag)-26, Clear Memory Mode.>

3. GENERAL SCAN TOOL

1) After clearing the memory, check for any remaining unresolved trouble data. <Ref. to EN(H4SO)(diag)-63, Clear Memory Mode.>

2) Warm up the engine.

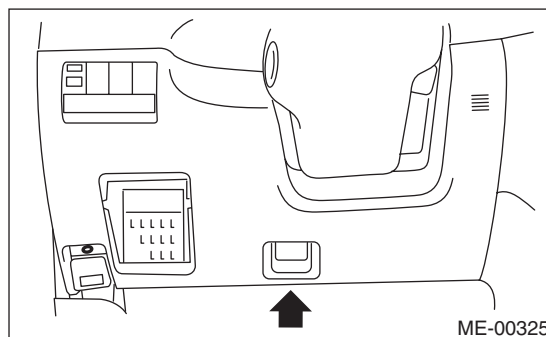
3) Connect the delivery (test) mode connector (A) at the lower portion of instrument panel (on the driver's side).



4) Connect the general scan tool 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 general scan tool.



5) Start the engine.

NOTE:

- Make sure the select lever is placed in the "P" position before starting. (AT model)
 - Depress the clutch pedal when starting engine. (MT model)
- 6) Using the select lever or shift lever, turn the "P" position switch and "N" position switch on.
- 7) Depress the brake pedal to turn the brake switch ON. (AT model)
- 8) Keep the engine speed in 2,500 — 3,000 rpm range for 40 seconds.

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

NOTE:

- For AWD model, release the parking brake.
- The speed difference between front and rear wheels may light the ABS warning light, but this indicates no malfunctions. When engine control diagnosis is finished, perform the ABS memory clearance procedure of the self-diagnosis system. <Ref. to ABS(diag)-26, Clear Memory Mode.>

10) Using the general scan tool, check DTC and record the result(s).

NOTE:

- For detailed operation procedures, refer to the "General Scan Tool Instruction Manual".
 - For details concerning DTC, refer to "List of Diagnostic Trouble Code (DTC)".
- <Ref. to EN(H4SO)(diag)-88, List of Diagnostic Trouble Code (DTC).>