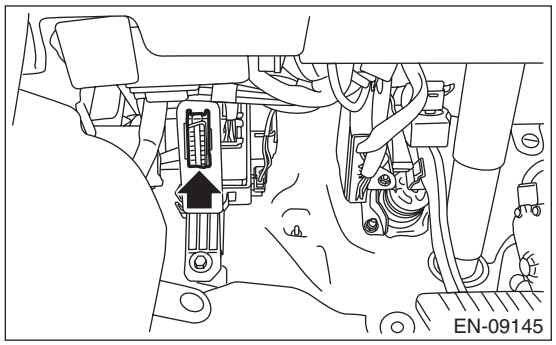
6. General Scan Tool

A: OPERATION

1. HOW TO USE GENERAL SCAN TOOL

1) Prepare a scan tool (general scan tool) required by SAE J1978.
2) Connect the general scan tool to data link connector located in the lower portion of the instrument panel (on the driver's side).



3) Using the general scan tool, call up each data. General scan tool functions consist of:
   (1) MODE $01: Current diagnostic data
   (2) MODE $02: Freeze frame data
   (3) MODE $03: Emission-related DTC
   (4) MODE $04: Clear/Reset emission-related diagnostic information
   (5) MODE $07: Request on-board monitoring test results for continuously monitored systems
   (6) MODE $09: Request vehicle information
   (7) MODE $0A: Emission-related DTC (with Permanent Status)
4) Read out the data according to repair procedures. (For detailed operation procedures, refer to the general scan tool operation manual.)

NOTE:
For details concerning DTC, refer to "List of Diagnostic Trouble Code (DTC)". <Ref. to HEV(diag)-74, List of Diagnostic Trouble Code (DTC).>

2. MODE $01: (CURRENT DIAGNOSTIC DATA)

Refer to data denoting the current operating condition of analog input/output, digital input/output or the powertrain system.
A list of the support data and PID (Parameter Identification) codes are shown in the following table.

- Hybrid powertrain control system

PID	Data	Unit of measure
$01	Number of emission-related DTC, and malfunction indicator light status and diagnosis support information	—
$51	Fuel used at present	—

- Drive motor control system

PID	Data	Unit of measure
$01	Number of emission-related DTC, and malfunction indicator light status and diagnosis support information	—

- Battery energy control system

PID	Data	Unit of measure
$01	Number of emission-related DTC, and malfunction indicator light status and diagnosis support information	—
$5B	Hybrid/EV battery pack level	%

NOTE:
Refer to general scan tool manufacturer's operation manual to access current diagnostic data (MODE $01).

3. MODE $02 (FREEZE FRAME DATA)

Refer to data denoting the operating condition when trouble is detected by on-board diagnosis system.
A list of the support data and PID (Parameter Identification) codes are shown in the following table.

- Hybrid powertrain control system

PID	Data	Unit of measure
$02	DTC that caused freeze frame data to be stored	—
$51	Fuel used at present	—

- Battery energy control system

PID	Data	Unit of measure
$02	DTC that caused freeze frame data to be stored	—
$5B	Hybrid/EV battery pack level	%

NOTE:
Refer to general scan tool manufacturer's instruction manual to access current freeze frame data (MODE $02).

4. MODE $03 (EMISSION-RELATED DTC)

Refer to “List of Diagnostic Trouble Code (DTC)” for information about data denoting emission-related DTC. <Ref. to HEV(diag)-74, List of Diagnostic Trouble Code (DTC).>

5. MODE $04 (CLEAR/RESET EMISSION-RELATED DIAGNOSTIC INFORMATION)

Refer to the mode used to clear or reset emission-related diagnostic information.

NOTE:
Refer to general scan tool manufacturer’s instruction manual to clear the emission-related diagnostic information (MODE $04).

6. MODE $07 (REQUEST ON-BOARD MONITORING TEST RESULTS FOR CONTINUOUSLY MONITORED SYSTEMS)

Refer to the data of DTC (pending code) for troubleshooting result about emission in the first time.

7. MODE $09 (REQUEST VEHICLE INFORMATION)

Refer to the data of the vehicle specification.

8. MODE $0A (EMISSION-RELATED DTC (WITH PERMANENT STATUS))

Refer to “List of Diagnostic Trouble Code (DTC)” for information about data denoting emission-related DTC. <Ref. to HEV(diag)-74, List of Diagnostic Trouble Code (DTC).>