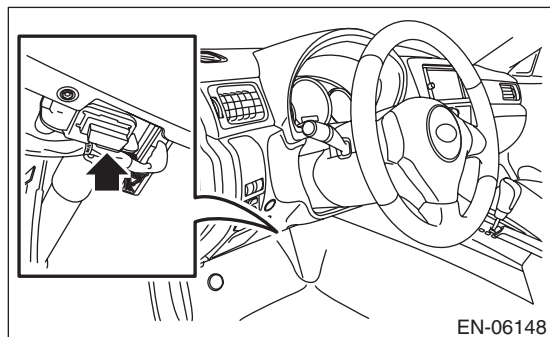# 6. Subaru Select Monitor

A: OPERATION

1. READ DIAGNOSTIC TROUBLE CODE (DTC)

1) Prepare the Subaru Select Monitor kit.

2) Prepare PC with Subaru Select Monitor installed.

3) Connect the USB cable to 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.

4) Connect the diagnosis cable to SDI.

5) Connect SDI to data link connector located in the lower portion of the instrument panel (on the driver's side).

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CAUTION:
Do not connect the scan tools other than the Subaru Select Monitor.

6) Start the PC.

7) Turn the ignition switch to ON.

8) Run the "PC application for Subaru Select Monitor".

9) On «Main Menu» display, select {Each System Check}.

10) On «System Selection Menu» display, select {Transmission Control System}.

11) After transmission type information pops up, select [OK].

12) On «Transmission Diagnosis» display, select {Diagnostic Code(s) Display}.

13) On «Diagnostic Code(s) Display» display, select {Temporary Diagnostic Code(s)} or {Memorized Diagnostic Code(s)}.

NOTE:
• For details concerning the operation procedure, refer to "PC application help for Subaru Select Monitor".

• For details concerning DTC, refer to "List of Diagnostic Trouble Code (DTC)". <Ref. to 4AT(diag)-30, List of Diagnostic Trouble Code (DTC).>

2. READ CURRENT DATA

1) On «Main Menu» display, select {Each System Check}.
2) On «System Selection Menu» display, select {Transmission Control System}.
3) After transmission type information pops up, select [OK].
4) On «Transmission Diagnosis» display, select {Current Data Display & Save}.
5) On «Current Data Display & Save» display, select {Normal sampling}.
6) Using the scroll key, scroll the display screen up or down until the desired data is shown.
The list of support data is as shown below.

Item	Display	Unit of measure
Battery voltage	Battery Voltage	V
Rear vehicle speed sensor signal	Rear Wheel Speed	km/h or MPH
Front vehicle speed sensor signal	Front Wheel Speed	km/h or MPH
Engine speed signal	Engine Speed	rpm
Automatic transmission fluid temperature signal	ATF Temp.	°C or °F
Gear position	Gear Position	—
Line pressure control duty ratio	Line Pressure Duty Ratio	%
Lock up clutch control duty ratio	Lock Up Duty Ratio	%
Transfer clutch control duty ratio	Transfer Duty Ratio	%
Torque converter turbine speed signal	Turbine Revolution Speed	rpm
2 — 4 brake timing pressure control duty ratio	Brake Clutch Duty Ratio	%
Low clutch duty ratio	Low Clutch Duty	%
High clutch duty ratio	High Clutch Duty	%
Low & reverse brake duty ratio	L&R B Duty	%
Accelerator position	Accel. Opening Angle	%
FWD switch signal	FWD Switch	ON or OFF
Stop light switch signal	Stop Light Switch	ON or OFF
Anti lock brake system signal	ABS Signal	ON or OFF
Parking range signal	P Range	ON or OFF
Neutral range signal	N Range	ON or OFF
Reverse range signal	R Range Signal	ON or OFF
Drive range signal	D Range Signal	ON or OFF
AT diagnosis light output signal	Diagnosis Lamp	ON or OFF
Cruise control signal	Cruise Control Signal	ON or OFF
ATF temperature light	ATF temperature light	ON or OFF
Up shift signal	Up Switch	ON or OFF
Down shift signal	Down Switch	ON or OFF
Sport mode signal	Tiptronic Mode Switch	ON or OFF

NOTE:
For details concerning the operation procedure, refer to "PC application help for Subaru Select Monitor".

3. CLEAR MEMORY MODE

1) Shift the select lever to "P" range.
2) On «Main Menu» display, select {Each System Check}.
3) On «System Selection Menu» display, select {Transmission Control System}.
4) After transmission type information pops up, select [OK].
5) On «Transmission Diagnosis» display, select {Clearing Memory}.
6) When "Done. Turn off the ignition switch." pops up, select [OK].
7) Turn Subaru Select Monitor and ignition switch to OFF. To turn the ignition switch to ON again, wait for 10 seconds or more.

NOTE:
• If {Clear Memory 2} is selected and performed, DTC and learned control memory are cleared. If {Clear Memory 2} is performed, perform learning control promotion. <Ref. to 4AT(diag)-18, FACILITATION OF LEARNING CONTROL, OPERATION, Subaru Select Monitor.>
• For details concerning the operation procedure, refer to "PC application help for Subaru Select Monitor".

4. FACILITATION OF LEARNING CONTROL

NOTE:
• Follow the messages displayed on the Subaru Select Monitor when working.
• When the following work is performed, perform learning work for the transmission.
Replacement of TCM/Replacement or disassembly of transmission assembly/Replacement of control valve body/Performing "Clear Memory 2".
1) Warm up or cool down until the ATF temperature displayed on the Subaru Select Monitor is 60 — 80°C (140 — 176°F).
2) Shift the select lever to "P" range.
3) Fully apply the parking brake.
4) Lift up the vehicle.

CAUTION:
While working, be sure to keep the lower edge of the tires 30 cm or more above the ground as vehicle will vibrate.
5) Connect the Subaru Select Monitor to data link connector.
6) Turn the ignition switch to ON.
7) Turn off all switches causing an electrical load, such as headlights, A/C, seat heater and rear defogger, etc.

8) On vehicles equipped with an ECO switch, turn the ECO switch to ON. On vehicles equipped with an SPORT mode, turn the SPORT mode to OFF. On vehicles equipped with an POWER/HOLD switch, turn the POWER/HOLD switch to OFF. On vehicles equipped with SI-DRIVE, set to I mode.

NOTE:
Error message is not displayed even when an incorrect mode is set. While the operation is continued, "AT learning promoting" is displayed, but it cannot end normally. If the message does not change after 2 minutes have passed, retry "AT learning mode" from the beginning.

CAUTION:
Do not turn the power of the Subaru Select Monitor OFF during work, and do not disconnect the data link connector.
9) Select {AT related learning & inspecting mode} in the «Transmission Diagnosis» display screen of the Subaru Select Monitor.
10) Select {AT learning mode} in the «AT related learning & inspecting mode» screen of the Subaru Select Monitor.
11) Follow the messages displayed on the Subaru Select Monitor screen when working.

NOTE:
During AT learning in progress, SPORT indicator light in the combination meter starts flashing at 2 Hz and the learning operation starts. The following message is displayed on the screen when the SPORT indicator light turns off.
12) "AT learning normally ended." is displayed, simple AT learning is completed.

NOTE:
• If communication error occurs during learning, retry the "AT learning mode" from the beginning.
• If the message "Execute AT learning again after fixing troubles of the vehicle" is displayed during learning, select [OK] to display the List of Diagnostics Trouble Code. After repairing the locations indicated by the DTC, start the "AT learning mode" over from the beginning.
• When communication error occurs during learning, select lever does not shift occasionally. If select lever does not shift, turn the ignition switch to OFF before operating the lever.

• If the message "AT learning ended abnormally" is displayed, start the "AT learning mode" over from the beginning.

Message	Main reasons for abnormal termination
"AT learning ended abnormally"	• A malfunction was detected during AT learning. • The accelerator pedal is depressed during AT learning. • Operation which is not directed is performed during AT learning. • Brake pedal is not depressed fully. • Parking brake not applied strongly enough. • Abnormal idle speed increase, etc.

• For details concerning the operation procedure, refer to "PC application help for Subaru Select Monitor".