

6. Subaru Select Monitor

A: OPERATION

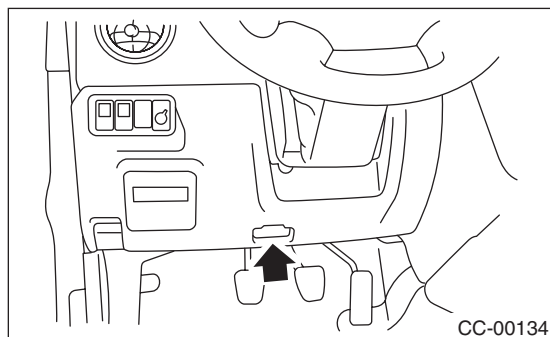
1. READ DIAGNOSTIC TROUBLE CODE (DTC)

- 1) Prepare the Subaru Select Monitor kit. <Ref. to 4AT(diag)-6, PREPARATION TOOL, General Description.>
- 2) Prepare PC with Subaru Select Monitor installed.
- 3) Connect the SDI (Subaru Diagnostic Interface) to the PC USB port (exclusively for Subaru Selector Monitor) using a USB cable.

NOTE:

Port exclusively for Subaru Select Monitor refers to the USB port used when installing Subaru Select Monitor.

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



CAUTION:

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

- 6) Start the PC.
- 7) Turn the ignition switch to ON (engine OFF) and run the "PC application for Subaru Select Monitor".
- 8) On the «Main Menu», select {Each System Check}.
- 9) On the «System Selection Menu», select {Transmission}.
- 10) After transmission type information pops up, select [OK].
- 11) On the «Transmission Diagnosis», select {DTC Display}.

- 12) On the «DTC Display», select {Temporary Diagnostic Code(s)} or {Memorized Diagnostic Code(s)}.

NOTE:

- For details concerning the operation procedure, refer to the «help on PC application for Subaru Select Monitor».
- For details concerning DTC, refer to List of Diagnostic Trouble Code (DTC). <Ref. to 4AT(diag)-31, List of Diagnostic Trouble Code (DTC).>

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2. READ CURRENT DATA

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

Contents	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
ATF temperature	ATF Temp.	°C or °F
Gear position	Gear Position	—
Line pressure control duty ratio	Line Pressure Duty Ratio	%
Lock up clutch duty ratio	Lock Up Duty Ratio	%
Transfer clutch duty ratio	Transfer Duty Ratio	%
Torque converter turbine speed signal	Turbine Revolution Speed	rpm
2-4 brake duty ratio	Brake Clutch Duty Ratio	%
Low clutch duty ratio	L/C Duty	%
High clutch duty ratio	H/C Duty	%
Low & reverse brake duty ratio	L&R/B Duty	%
Accelerator position	Accel. Opening Angle	%
ATF temperature light	ATF Temperature Lamp	ON or OFF
Stop light switch signal	Stop Light Switch Signal	ON or OFF
Parking range signal	P Range Signal	ON or OFF
Neutral range signal	N Range Signal	ON or OFF
Reverse range signal	R Range Signal	ON or OFF
Drive range signal	D Range Signal	ON or OFF
3rd range signal	3rd Range Signal	ON or OFF
2nd range signal	2nd Range Signal	ON or OFF
1st range signal	1st Range Signal	ON or OFF
AT diagnosis light output signal	Diagnosis Lamp	ON or OFF
FWD switch signal	FWD SW	ON or OFF
Shift lock solenoid signal	Shift Lock Solenoid	ON or OFF
Cruise control signal	Cruise Control Signal	ON or OFF

NOTE:

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

3. CLEAR MEMORY MODE

- 1) Check that the select lever is in "P" range.
- 2) On the «Main Menu», select {Each System Check}.
- 3) On the «System Selection Menu», select {Transmission}.
- 4) After transmission type information pops up, select [OK].
- 5) On the «Transmission Diagnosis», select {Clear Memory}.
- 6) When "Done. Turn ignition switch to OFF" 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 Memories 2} is selected and performed, DTC and learned control memory are cleared. If {Clear Memories 2} is performed, execute the advance operation of learning control. <Ref. to 4AT(diag)-17, FACILITATION OF LEARNING CONTROL, OPERATION, Subaru Select Monitor.>
- For details concerning the operation procedure, refer to the "PC application help for Subaru Select Monitor".

4. FACILITATION OF LEARNING CONTROL

NOTE:

- After performing the following services, perform the transmission learning operation.
Replacement of TCM/Replacement or disassembly of transmission assembly/Replacement of control valve body/Performing "Clear Memories 2".
- Perform the procedures according to the message displayed on the Subaru Select Monitor.
 - 1) Warm-up or cool down until the ATF temperature displayed on the Subaru Select Monitor reaches 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:

Be sure to keep the lowest edge of the tires 30 cm or more off the ground because the vehicle vibrates during the work.

- 5) Connect the Subaru Select Monitor to the data link connector.
- 6) Turn the ignition switch to ON.
- 7) Turn OFF all switches, which produce an electrical load, including headlight, air conditioner, seat heater, rear defogger, etc.
- 8) Turn the ECO switch to ON for model with ECO switch. Turn the SPORT mode switch to OFF for model with SPORT mode. Turn the POWER/HOLD switch to OFF for model with POWER/HOLD switch. Set to I mode for model with SI-DRIVE.

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 to OFF or disconnect the data link connector during the operation.

- 9) Select {Learning and inspection mode related to AT} on the «Transmission Diagnosis» display screen of Subaru Select Monitor.
- 10) Select {AT learning mode} on the «Learning and inspection mode related to AT» display screen of Subaru Select Monitor.

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11) Perform the procedures according to the message displayed on the Subaru Select Monitor.

NOTE:

During AT learning in progress, AT OIL TEMP 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 AT OIL TEMP light changes from flashing at 2 Hz to 0.5 Hz.

12) "AT learning normally ended." is displayed, simple AT learning is completed.

NOTE:

- If communication error occurs during learning, retry "AT learning mode" from the beginning.
- If "Execute AT learning again after fixing troubles of the vehicle" is displayed during learning, select [OK] to display the List of Diagnostics Trouble Code. Retry "AT learning mode" from the beginning after repairing the DTC detecting portion.
- If "AT learning ended abnormally." is displayed, retry "AT learning mode" from the beginning.

Message	Primary cause of abnormal end
"AT learning ended abnormally."	<ul style="list-style-type: none">• Fault is detected during AT learning.• The accelerator pedal is depressed during AT learning.• Operation which is not directed is performed during AT learning.• The brake pedal is not depressed fully.• The parking brake is not applied fully.• Abnormal idle rise occurs. Other similar causes are probable.

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