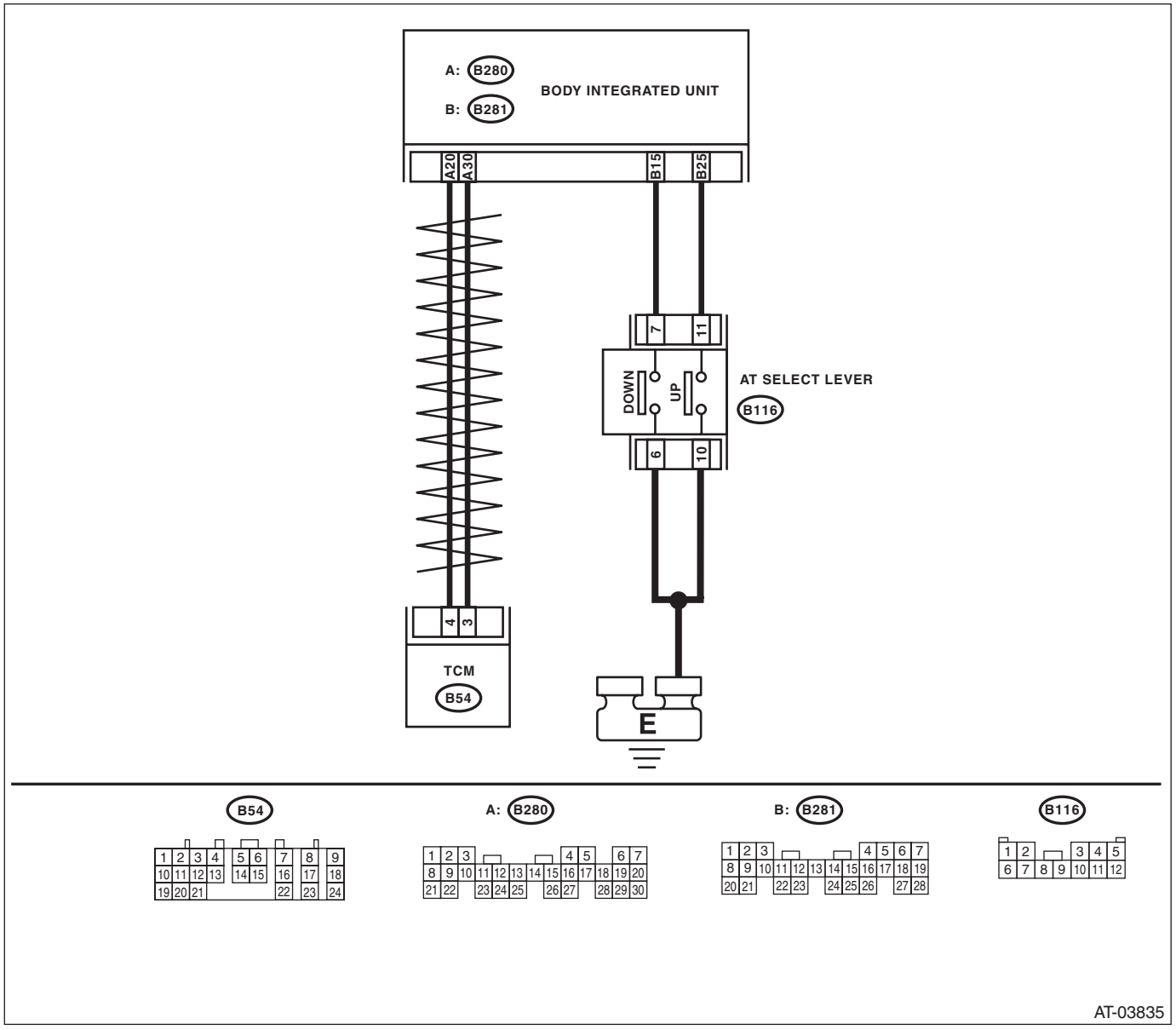
15.Diagnostic Procedure without Diagnostic Trouble Code (DTC)

A: CHECK MANUAL MODE SWITCH

DIAGNOSIS:
Input signal circuit of manual mode switch is open or shorted.
TROUBLE SYMPTOM:
Does not shift on manual mode.
WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK BODY INTEGRATED UNIT.** 1) Perform ON/OFF operation on the manual mode switch. 2) Read the data of manual mode switch signal using Subaru Select Monitor.	Is the ON/OFF normally detected?	Go to step **2**.	Go to step **7**.
2	**CHECK DTC OF BODY INTEGRATED UNIT.**	Is DTC of CAN detected?	Perform the diagnosis according to DTC.	Go to step **3**.
3	**CHECK TCM.** 1) Perform ON/OFF operation on the manual mode switch. 2) Read the data of manual mode switch signal using Subaru Select Monitor.	Is the ON/OFF normally detected?	Go to step **4**.	Go to step **5**.
4	**CHECK SPORT SHIFT INDICATOR LIGHT OF COMBINATION METER.**	Is the SPORT shift indicator light OK?	Go to step **6**.	Replace the combination meter assembly. <Ref. to IDI-19, Combination Meter.>
5	**CHECK DTC OF TCM.**	Is DTC of CAN detected?	Perform the diagnosis according to DTC.	Replace the TCM. <Ref. to 5AT-58, Transmission Control Module (TCM).>
6	**CHECK DTC OF METER.**	Is DTC of CAN detected?	Perform the diagnosis according to DTC.	Replace the meter.
7	**CHECK GROUND CIRCUIT OF MANUAL MODE SWITCH.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from manual mode switch. 3) Measure the resistance of harness between manual mode switch connector and chassis ground. ***Connector & terminal*** ***(B116) No. 6 — Chassis ground:***	Is the resistance less than 1 Ω?	Go to step **8**.	Repair the open circuit of harness between manual mode switch and chassis ground.
8	**CHECK MANUAL MODE SWITCH.** Measure the resistance between manual mode switch terminals. ***Connector & terminal*** ***(B116) No. 6 — No. 7:***	Is the resistance 1 MΩ or more?	Go to step **9**.	Replace the guide plate assembly.
9	**CHECK MANUAL MODE SWITCH.** 1) Move the select lever to manual mode. 2) Measure the resistance between manual mode switch terminals. ***Connector & terminal*** ***(B116) No. 6 — No. 7:***	Is the resistance less than 1 Ω?	Go to step **10**.	Replace the guide plate assembly.
10	**CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND MANUAL MODE SWITCH.** 1) Disconnect the connector from body integrated unit. 2) Measure the resistance of harness between body integrated unit connector and manual mode switch connector. ***Connector & terminal*** ***(B116) No. 7 — (B281) No. 15:***	Is the resistance less than 1 Ω?	Go to step **11**.	Repair the open circuit of harness between manual mode switch connector and TCM connector, or poor contact in connector.

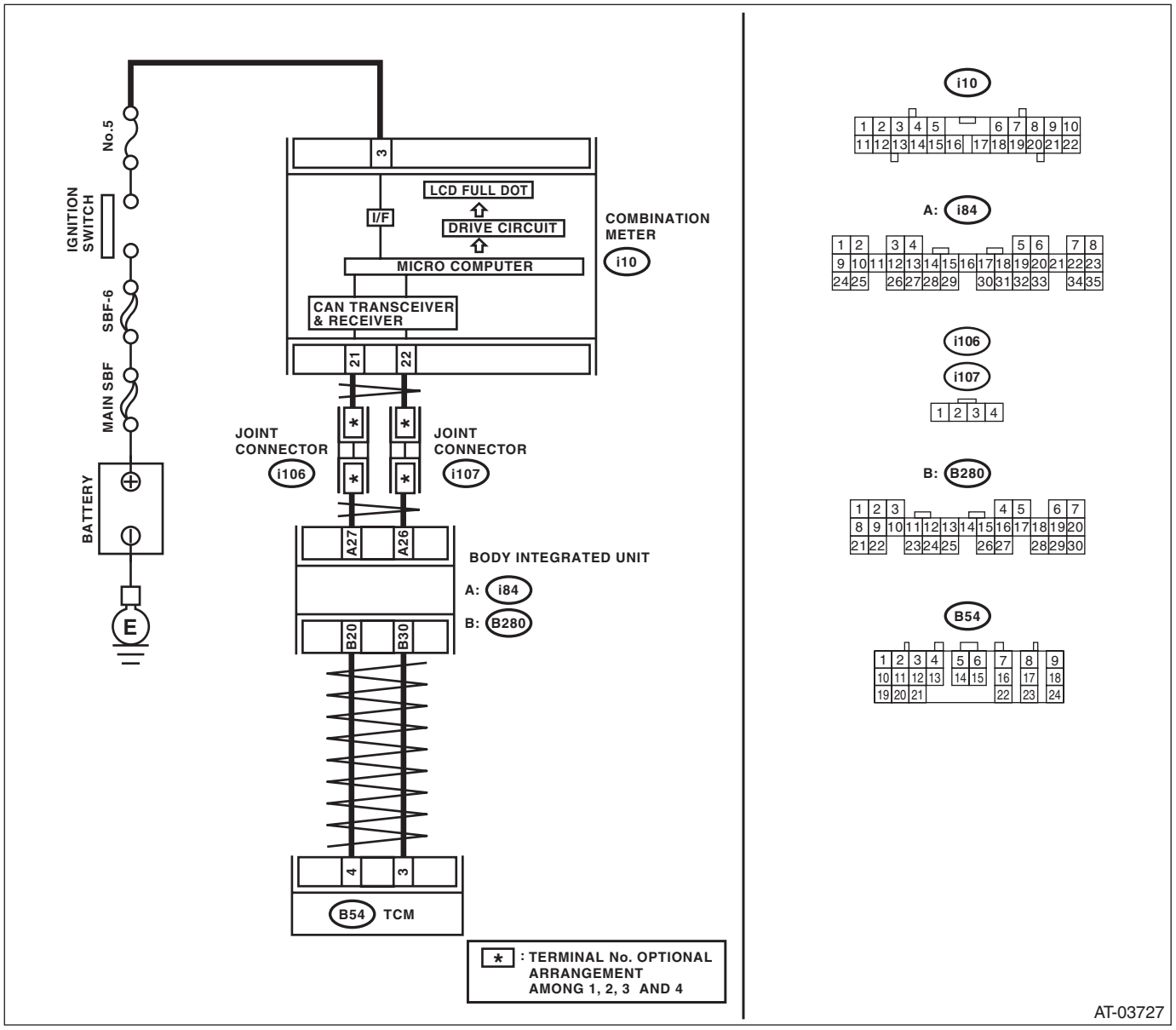
	Step	Check	Yes	No
11	**CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND MANUAL MODE SWITCH.** 1) Disconnect the connector from body integrated unit. 2) Measure the resistance of harness between manual mode switch connector and chassis ground. ***Connector & terminal*** ***(B116) No. 7 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **12**.	Repair the short circuit of harness between manual mode switch connector and TCM connector.
12	**CHECK INPUT SIGNAL TO TCM.** 1) Connect all connectors. 2) Turn the ignition switch to ON. (engine OFF) 3) Measure the voltage of signal to TCM. ***Connector & terminal*** ***(B281) No. 15 (+) — Chassis ground (–):***	Is the voltage 9 V or more?	Go to step **13**.	Replace the body integrated unit. <Ref. to SL-53, Body Integrated Unit.>
13	**CHECK INPUT SIGNAL TO TCM.** 1) Shift and hold the select lever to up side. 2) Measure the voltage of signal to TCM. ***Connector & terminal*** ***(B281) No. 15 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **14**.	Replace the body integrated unit. <Ref. to SL-53, Body Integrated Unit.>
14	**CHECK GROUND CIRCUIT OF MANUAL MODE SWITCH.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from manual mode switch. 3) Measure the resistance of harness between manual mode switch connector and chassis ground. ***Connector & terminal*** ***(B116) No. 10 — Chassis ground:***	Is the resistance less than 1 Ω?	Go to step **15**.	Repair the open circuit of harness between manual mode switch and chassis ground.
15	**CHECK MANUAL MODE SWITCH.** Measure the resistance between manual mode switch terminals. ***Connector & terminal*** ***(B116) No. 10 — No. 11:***	Is the resistance 1 MΩ or more?	Go to step **16**.	Replace the guide plate assembly.
16	**CHECK MANUAL MODE SWITCH.** 1) Move the select lever to manual mode. 2) Measure the resistance between manual mode switch terminals. ***Connector & terminal*** ***(B116) No. 10 — No. 11:***	Is the resistance less than 1 Ω?	Go to step **17**.	Replace the guide plate assembly.
17	**CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND MANUAL MODE SWITCH.** 1) Disconnect the connector from body integrated unit. 2) Measure the resistance of harness between body integrated unit connector and manual mode switch connector. ***Connector & terminal*** ***(B116) No. 11 — (B281) No. 25:***	Is the resistance less than 1 Ω?	Go to step **18**.	Repair the open circuit of harness between the manual mode switch connector and body integrated unit connector, or poor contact of connector.

	Step	Check	Yes	No
18	**CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND MANUAL MODE SWITCH.** 1) Disconnect the steering roll connector. 2) Measure the resistance of harness between manual mode switch connector and chassis ground. ***Connector & terminal*** ***(B116) No. 11 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **19**.	Repair the short circuit of harness between manual mode switch connector and body integrated unit connector.
19	**CHECK INPUT SIGNAL TO BODY INTEGRATED UNIT.** 1) Connect all connectors. 2) Turn the ignition switch to ON. (engine OFF) 3) Check the signal voltage for body integrated unit. ***Connector & terminal*** ***(B281) No. 25 (+) — Chassis ground (–):***	Is the voltage 9 V or more?	Go to step **20**.	Replace the body integrated unit. <Ref. to SL-53, Body Integrated Unit.>
20	**CHECK INPUT SIGNAL TO BODY INTEGRATED UNIT.** 1) Shift and hold the select lever to up side. 2) Check the signal voltage for body integrated unit. ***Connector & terminal*** ***(B281) No. 25 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **21**.	Replace the body integrated unit. <Ref. to SL-53, Body Integrated Unit.>
21	**CHECK POOR CONTACT.**	Is there poor contact in the manual mode switch circuit?	Repair the poor contact.	Temporary poor contact of the manual mode switch circuit connector or harness

B: CHECK SPORT SHIFT INDICATOR LIGHT

DIAGNOSIS:
Output signal circuit of SPORT shift indicator light is open or shorted.
TROUBLE SYMPTOM:
- SPORT shift indicator light does not illuminate or remains illuminated.
- SPORT shift indicator light display does not change.

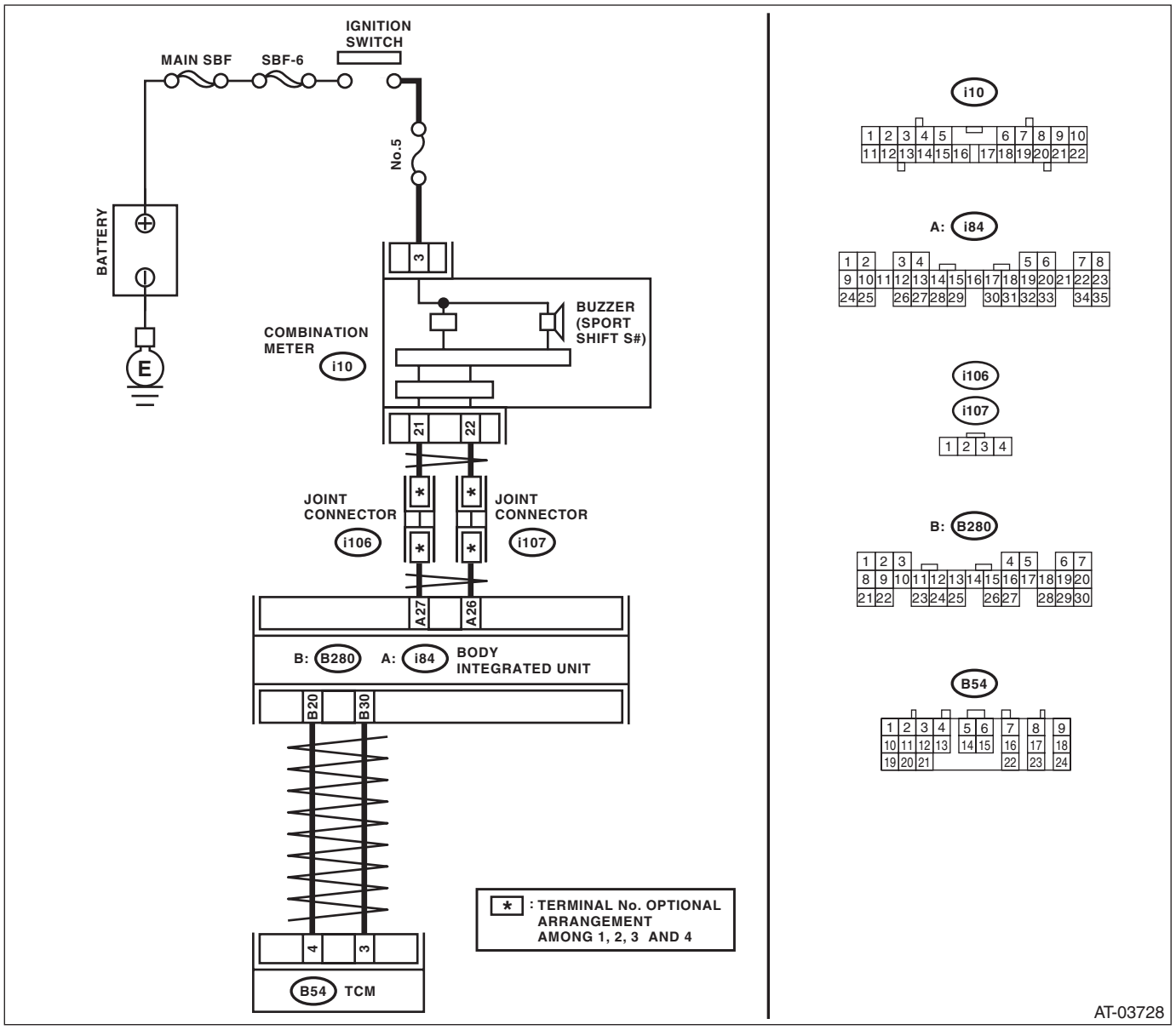
WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK BODY INTEGRATED UNIT.** Check DTC of the body integrated unit.	Is DTC of AT CAN communication circuit displayed?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK TCM.** Check DTC of TCM.	Is DTC of AT CAN communication circuit displayed?	Perform the diagnosis according to DTC.	Go to step **4**.
3	**CHECK TCM.** 1) Shift the select lever in order of P → R → N → D. 2) Read the shift position data of TCM using the Subaru Select Monitor. <Ref. to 5AT(diag)-16, READ CURRENT DATA, OPERATION, Subaru Select Monitor.>	Is each of parking range signal, reverse range signal, neutral range signal and drive range signal ON when the select lever is in each position?	Go to step **4**.	Replace the TCM with a correct part and check operation.
4	**CHECK BODY INTEGRATED UNIT.** 1) Connect the Subaru Select Monitor to the data link connector. 2) Turn the ignition switch to ON. (engine OFF) 3) Run the Subaru Select Monnitor. 4) Shift the select lever in order of P → R → N → D. 5) Read the shift position data of the body integrated unit using the Subaru Select Monitor. <Ref. to LAN(diag)-13, DISPLAY OF ANALOG DATA, OPERATION, Subaru Select Monitor.>	Does the shift position of the select lever match the shift position displayed in the Subaru Select Monitor?	Go to step **5**.	Replace the body integrated unit. <Ref. to SL-53, Body Integrated Unit.>
5	**CHECK BODY INTEGRATED UNIT.** 1) Shift the select lever to manual mode side, and then shift up the select lever. 2) Read the SPORT shift stage data of the body integrated unit using the Subaru Select Monitor. <Ref. to LAN(diag)-13, DISPLAY OF ANALOG DATA, OPERATION, Subaru Select Monitor.>	Is the SPORT shift stage “2” in the Subaru Select Monitor?	Go to step **6**.	Check the select lever. <Ref. to CS-27, INSPECTION, Select Lever.>
6	**CHECK COMBINATION METER.** Perform the self-diagnosis of combination meter. <Ref. to IDI-4, INSPECTION, Combination Meter System.>	Is there any fault in the combination meter?	Replace the combination meter assembly. <Ref. to IDI-19, Combination Meter.>	System is normal at present. A temporary poor contact of connector or harness may be the cause. Repair the poor contact in harness between combination meter and TCM connector.

C: CHECK BUZZER

DIAGNOSIS:
Output signal circuit of buzzer is open or shorted.
TROUBLE SYMPTOM:
Buzzer remains beeping.
WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK BODY INTEGRATED UNIT.** Check DTC of the body integrated unit.	Is DTC of CAN communication displayed?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK TCM.** Check DTC of TCM.	Is DTC of CAN communication displayed?	Perform the diagnosis according to DTC.	Go to step **3**.
3	**CHECK BUZZER STOP.** Disconnect the connector (B54).	Does the buzzer stop?	Replace the TCM. <Ref. to 5AT-58, Transmission Control Module (TCM).>	Go to step **4**.
4	**CHECK BODY INTEGRATED UNIT.** 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to the data link connector. 3) Turn the ignition switch to ON. (engine OFF) 4) Run the Subaru Select Monnitor. 5) Read the data of SPORT shift buzzer using Subaru Select Monitor.	Is the SPORT shift buzzer display “ON”?	Replace the body integrated unit. <Ref. to SL-53, Body Integrated Unit.>	Go to step **5**.
5	**CHECK COMBINATION METER.**	Is the buzzer OK?	Refer to “Symptom Related Diagnostic”. <Ref. to 5AT(diag)-135, General Diagnostic Table.>	Replace the combination meter assembly. <Ref. to IDI-19, Combination Meter.>