13.Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC P1521 BRAKE SWITCH CIRCUIT RANGE/PERFORMANCE PROBLEM (HIGH INPUT)

DIAGNOSIS:
Stop light switch circuit is open or shorted.
TROUBLE SYMPTOM:
ABS does not operate.

	Step	Check	Yes	No
1	**CHECK DTC.**	Does the DTC related to stop light SW appear in the VDC diagnostics test mode?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK IGNITION POWER SUPPLY CIRCUIT OF DCCD CONTROL MODULE.** 1) Connect the Subaru Select Monitor to the vehicle. 2) Turn the ignition switch to ON. 3) Read the data of «Battery voltage» using Subaru Select Monitor.	Is the voltage 11 V or more?	Go to step **3**.	Repair the open circuit of harness between fuse (F/B No. 12) and DCCD control module, or between fuse (F/B No. 12) and battery.
3	**CHECK DTC.**	Is DTC P1720 displayed?	Perform the diagnosis according to DTC.	Go to step **4**.
4	**CHECK DCCD CONTROL MODULE.** 1) Turn the ignition switch to ON. 2) Read the data of «Stop Light Switch» using Subaru Select Monitor.	Does the «Stop Light Switch» change to ON/OFF according to the depressing/releasing operation of the brake?	Go to step **5**.	Check the poor contact.
5	**CHECK OTHER DTC.**	Is a DTC other than DTC P1521 displayed?	Perform the diagnosis according to DTC.	The stop light switch is currently normal.

B: DTC P1720 DCCD CAN SYSTEM CIRCUIT

NOTE:
Refer to “LAN SYSTEM” for diagnostic procedure. <Ref. to LAN(diag)-55, DTC U1216 HIGH-SPEED CAN (DCCD) DATA ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

C: DTC P1767 DCCD STEERING ANGLE SENSOR

DIAGNOSIS:
Open, short or communication failure of the steering angle sensor circuit
TROUBLE SYMPTOM:
A tight corner braking symptom occurs.

	Step	Check	Yes	No
1	**CHECK DTC.**	Does the DTC related to steering angle sensor appear in the VDC diagnostics test mode?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK IGNITION POWER SUPPLY CIRCUIT OF DCCD CONTROL MODULE.** 1) Connect the Subaru Select Monitor to the vehicle. 2) Turn the ignition switch to ON. 3) Read the data of «Battery voltage» using Subaru Select Monitor.	Is the voltage 11 V or more?	Go to step **3**.	Repair the open circuit of harness between fuse (F/B No. 12) and DCCD control module, or between fuse (F/B No. 12) and battery.
3	**CHECK DTC.**	Is DTC P1720 displayed?	Perform the diagnosis according to DTC.	Go to step **4**.
4	**CHECK DCCD CONTROL MODULE.** 1) Turn the ignition switch to ON. 2) Read the data of «Steering Angle Sensor» using Subaru Select Monitor.	Does the Subaru Select Monitor value change according to the input from the steering to the right and left?	Go to step **5**.	Go to step **6**.
5	**CHECK DTC.** 1) Clear the memory. 2) Start the engine. 3) Read the DTC.	Is DTC P1767 displayed?	Replace the steering angle sensor.	Go to step **6**.
6	**CHECK OTHER DTC.**	Is a DTC other than DTC P1767 displayed?	Perform the diagnosis according to DTC.	The steering angle sensor circuit is currently operating properly.

D: DTC P1769 YAW RATE & LATERAL G SENSOR MALFUNCTION

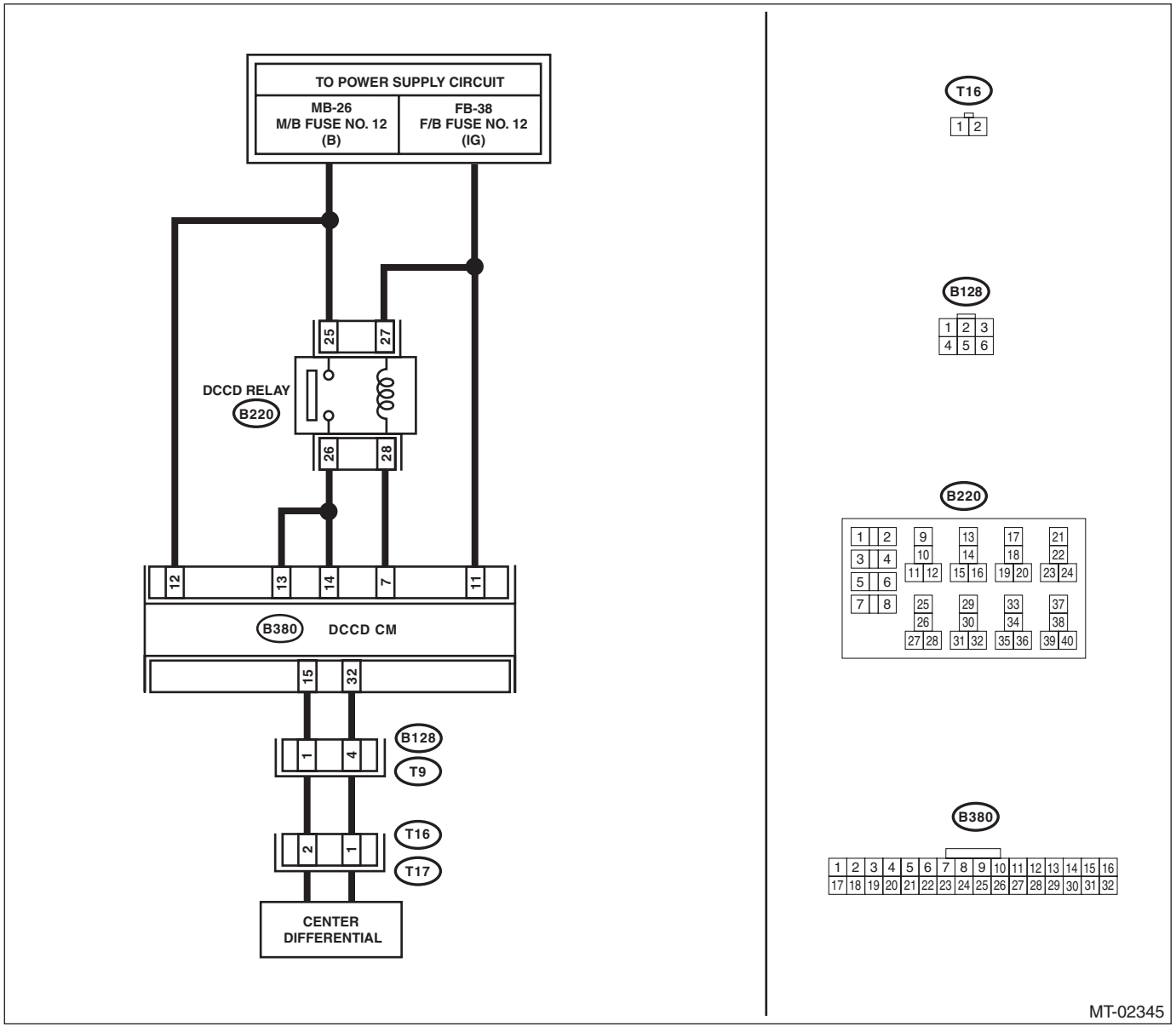
DIAGNOSIS:
Malfunction information transmitted from the yaw rate & G sensor
TROUBLE SYMPTOM:
A tendency to understeer occurs during high speed cornering.

	Step	Check	Yes	No
1	**CHECK DTC.**	Does the DTC related to G sensor or yaw rate sensor appear in the VDC diagnostics test mode?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK IGNITION POWER SUPPLY CIRCUIT OF DCCD CONTROL MODULE.** 1) Connect the Subaru Select Monitor to the vehicle. 2) Turn the ignition switch to ON. 3) Read the data of «Battery voltage» using Subaru Select Monitor.	Is the voltage 11 V or more?	Go to step **3**.	Repair the open circuit of harness between fuse (F/B No. 12) and DCCD control module, or between fuse (F/B No. 12) and battery.
3	**CHECK DTC.**	Is DTC P1720 displayed?	Perform the diagnosis according to DTC.	Go to step **4**.
4	**CHECK DCCD CONTROL MODULE.** 1) Drive the vehicle on a flat road. 2) Stop the vehicle with the front wheels in a straight forward direction. 3) Read the data of «Yaw Rate» and «Lateral G» using the Subaru Select Monitor.	Does the yaw rate and lateral G value change according to the vehicle behavior? When the vehicle stops, is the yaw rate value within –4 — 4 deg/s, and also is the lateral G value within –1.5 — 1.5 m/s^2?	Go to step **5**.	Go to step **6**.
5	**CHECK DTC.** 1) Clear the memory. 2) Start the engine. 3) Read the DTC.	Is DTC P1769 displayed?	Replace the yaw rate & G sensor.	Go to step **6**.
6	**CHECK OTHER DTC.**	Is a DTC other than DTC P1769 displayed?	Perform the diagnosis according to DTC.	Yaw rate & G sensors are currently normal.

E: DTC P1875 CIRCUIT OF CENTER DIFF

DIAGNOSIS:
Center differential output signal circuit is open or shorted.
TROUBLE SYMPTOM:
- Center differential does not operate.
- The lock ratio of the center differential does not change, or malfunction occurs.
- A tight corner braking symptom occurs.
- An oversteer tendency will become apparent.
- A tendency to understeer occurs during high speed cornering.

WIRING DIAGRAM:
Drivers control center differential control system <Ref. to WI-72, Driver's Control Center Differential Control System.>



	Step	Check	Yes	No
1	**CHECK HARNESS BETWEEN DCCD CONTROL MODULE AND TRANSMISSION HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect the DCCD control module harness connector. 3) Disconnect the transmission harness connector and the bulk harness connector. 4) Measure resistance of the harness between DCCD control module harness connector and the transmission harness connector. ***Connector & terminal*** ***(B380) No. 15 — (B128) No. 1:*** ***(B380) No. 32 — (B128) No. 4:***	Is the resistance less than 1 Ω?	Go to step **2**.	Repair the bulk harness open circuit between DCCD control module and transmission harness.
2	**CHECK HARNESS BETWEEN DCCD CONTROL MODULE AND TRANSMISSION HARNESS.** Measure the resistance between DCCD control module harness connector and chassis ground. ***Connector & terminal*** ***(B380) No. 15 — Chassis ground:*** ***(B380) No. 32 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **3**.	Repair the bulk harness short circuit between DCCD control module and transmission harness.
3	**CHECK CENTER DIFFERENTIAL.** Measure the resistance between transmission harness connector terminals. ***Connector & terminal*** ***(T9) No. 1 — No. 4:***	Is the resistance 1.2 — 2.5 Ω?	Go to step **4**.	Replace the center differential.
4	**CHECK OUTPUT SIGNAL OF DCCD CONTROL MODULE.** 1) Connect all harness connectors. 2) Turn the ignition switch to ON. 3) Release the parking brake. 4) Press the mode change switch to enter the manual mode. 5) Press the C.DIFF +/– switch to enter the lock position. 6) Measure the voltage between DCCD control module harness connectors. ***Connector & terminal*** ***(B380) No. 15 (+) — No. 32 (–):***	Is the voltage 5.5 — 8.0 V?	Go to step **5**.	Go to step **6**.
5	**CHECK OUTPUT SIGNAL OF DCCD CONTROL MODULE.** 1) Move the C.DIFF +/– switch from the differential lock position to the differential free position. 2) Read the voltage between DCCD control module harness connectors. ***Connector & terminal*** ***(B380) No. 15 (+) — No. 32 (–):***	Does the voltage drop in stages according to the DCCD manual mode display?	Circuit is currently operating properly.	Go to step **6**.

	Step	Check	Yes	No
6	**CHECK FUSE (M/B NO. 12).** 1) Turn the ignition switch to OFF. 2) Remove the fuse (M/B No. 12).	Is the fuse (M/B No. 12) blown out?	Replace the fuse (M/B No. 12). If the new fuse (M/B No. 12) has blown out easily, check for the short circuit to chassis ground of harness between fuse (M/B No. 12) and DCCD control module, or between fuse (M/B No. 12) and relay.	Go to step **7**.
7	**CHECK POWER SUPPLY CIRCUIT OF DCCD RELAY.** 1) Install the fuse. 2) Turn the ignition switch to OFF. 3) Disconnect the DCCD relay harness connector. 4) Measure the voltage between DCCD relay harness connector and chassis ground. ***Connector & terminal*** ***(B220) No. 25 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **8**.	Repair the open or short circuit between fuse (M/B No. 12), DCCD relay, and battery.
8	**CHECK IGNITION POWER SUPPLY CIRCUIT OF DCCD RELAY.** 1) Turn the ignition switch to ON. 2) Measure the voltage between DCCD relay and chassis ground. ***Connector & terminal*** ***(B220) No. 27 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **9**.	Repair the open circuit between fuse (F/B No. 12), DCCD relay, and battery.
9	**CHECK HARNESS BETWEEN DCCD CONTROL MODULE AND DCCD RELAY.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from DCCD control module. 3) Measure resistance of the harness between DCCD control module connector and DCCD relay connector. ***Connector & terminal*** ***(B380) No. 7 — (B220) No. 28:*** ***(B380) No. 13 — (B220) No. 26:*** ***(B380) No. 14 — (B220) No. 26:***	Is the resistance less than 1 Ω?	Go to step **10**.	Repair the open circuit of harness between DCCD control module connector and DCCD relay connector.
10	**CHECK HARNESS BETWEEN DCCD CONTROL MODULE AND DCCD RELAY.** Measure the resistance of harness between DCCD control module connector and chassis ground. ***Connector & terminal*** ***(B380) No. 7 — Chassis ground:*** ***(B380) No. 13 — Chassis ground:*** ***(B380) No. 14 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **11**.	Repair the short circuit of harness between DCCD control module connector and DCCD relay connector.
11	**CHECK DCCD RELAY.** Measure the resistance between DCCD relay terminals. ***Connector & terminal*** ***(B220) No. 25 — No. 26:***	Is the resistance 1 MΩ or more?	Go to step **12**.	Replace the DCCD relay.

	Step	Check	Yes	No
12	**CHECK DCCD RELAY.** Connect the battery positive lead to terminal No. 27 and the negative lead to terminal No. 28, then measure the resistance between DCCD relay terminals. ***Connector & terminal*** ***(B220) No. 25 — No. 26:***	Is the resistance less than 1 Ω?	Go to step **13**.	Replace the DCCD relay.
13	**CHECK DCCD CONTROL MODULE RELAY DRIVE CIRCUIT.** 1) Connect all connectors. 2) Turn the ignition switch to ON. 3) Measure the voltage between DCCD control module and chassis ground. ***Connector & terminal*** ***(B380) No. 7 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **14**.	Go to step **17**.
14	**CHECK IGNITION POWER SUPPLY CIRCUIT OF DCCD CONTROL MODULE.** Measure the voltage between DCCD control module and chassis ground. ***Connector & terminal*** ***(B380) No. 13 (+) — Chassis ground (–):*** ***(B380) No. 14 (+) — Chassis ground (–):***	Is the voltage 8 V or more?	Go to step **15**.	Go to step **17**.
15	**CHECK CENTER DIFFERENTIAL.** 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to data link connector. 3) Turn the ignition switch to ON. 4) Run the Subaru Select Monitor. 5) Press the mode change switch to enter the manual mode. 6) Release the parking brake. 7) Press the C.DIFF +/– switch to enter the lock position. 8) Read the data of «C-Diff. Indicate Current» and «C-Diff. Real Current» using Subaru Select Monitor.	Are «C-Diff. Indicate Current» and «C-Diff. Real Current» both approximately 3.6 — 4.0 A?	Go to step **16**.	Go to step **17**.
16	**CHECK CENTER DIFFERENTIAL.** 1) Using Subaru Select Monitor, operate the C.DIFF +/– switch so that «C-Diff. Indicate Current» becomes 1.6A. 2) Read the data of «C-Diff. Real Current» using Subaru Select Monitor.	Is «C-Diff. Real Current» about the same as «C-Diff. Indicate Current»?	Go to step **18**.	Go to step **17**.
17	**CHECK POOR CONTACT OF HARNESS CONNECTORS.**	Is there poor contact of the harness connector?	Repair the poor contact.	Go to step **18**.
18	**CHECK DTC.** 1) Clear the memory. <Ref. to 6MT(diag)-13, Clear Memory Mode.> 2) Read the DTC using the Select Monitor. <Ref. to 6MT(diag)-12, Read Diagnostic Trouble Code (DTC).>	Is P1875 displayed?	Check the poor contact.	Go to step **19**.
19	**CHECK DTC.**	Are DTCs other than P1875 displayed?	Perform the diagnosis according to DTC.	The center differential circuit is currently operating properly.