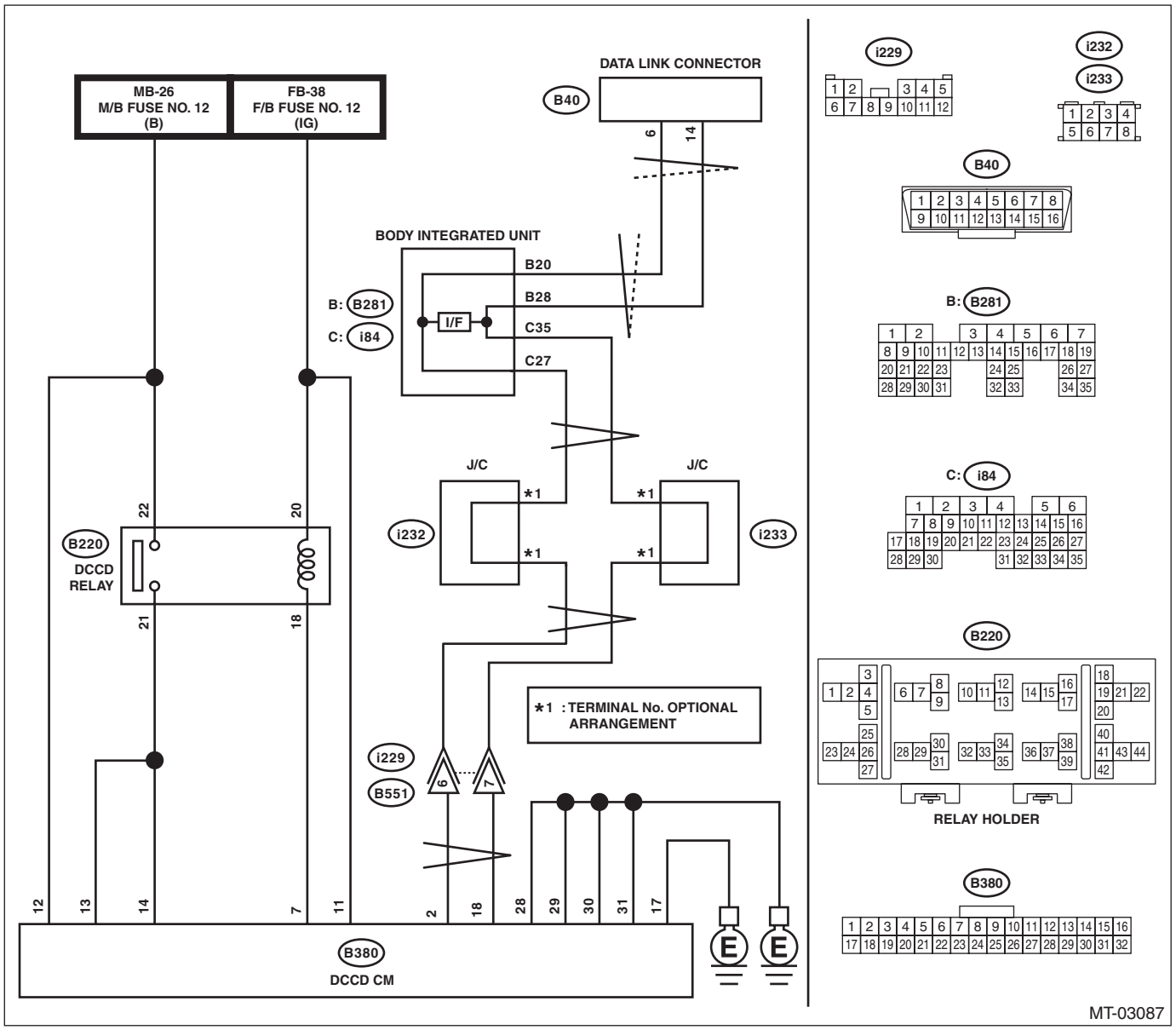
14.Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC P0606 MICRO-COMPUTER (CPU FAILURE)

DIAGNOSIS START CONDITION:
At DCCD control module initialization (when power is turned to ON)
Malfunction judgment criteria:
When CAN function of microcomputer is abnormal (when CAN register read/write is abnormal)
TROUBLE SYMPTOM:
- Center differential does not operate.
- An oversteer tendency will become apparent.

WIRING DIAGRAM:
Drivers control center differential control system <Ref. to WI-156, Driver's Control Center Differential Control System.>



	Step	Check	Yes	No
1	**CHECK INPUT VOLTAGE OF DCCD CONTROL MODULE.** 1) Turn the ignition switch to ON. 2) Measure the voltage between DCCD control module and chassis ground. ***Connector & terminal*** ***(B380) No. 11 (+) — Chassis ground (–):***	Is the voltage 10 — 13 V?	Go to step **2**.	Repair the open or ground short circuit of power supply circuit.
2	**CHECK INPUT VOLTAGE OF DCCD CONTROL MODULE.** 1) Start the engine. 2) Measure the voltage between DCCD control module and chassis ground. ***Connector & terminal*** ***(B380) No. 11 (+) — Chassis ground (–):***	Is the voltage 13 — 15 V?	Go to step **3**.	Repair the open or ground short circuit of power supply circuit.
3	**CHECK DCCD CONTROL MODULE GROUND HARNESS.** 1) Turn the ignition switch to ON. 2) Measure the voltage between DCCD control module and chassis ground. ***Connector & terminal*** ***(B380) No. 28 (+) — Chassis ground (–):*** ***(B380) No. 29 (+) — Chassis ground (–):*** ***(B380) No. 30 (+) — Chassis ground (–):*** ***(B380) No. 31 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Check for poor contact of connector, if a fault is not found, replace the DCCD control module. <Ref. to 6MT(TY85)-36, Driver's Control Center Differential Control Module.>	Repair the harness and connector.

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

DIAGNOSIS START CONDITION:
DTC P0606 and U code are not recorded.
Malfunction judgment criteria:
When any of the following conditions is established
- Detect deceleration of 30 km/h (19 MPH) → 0 km/h (0 MPH) 10 consecutive times with stop light SW OFF
- Detect acceleration of 0 km/h (0 MPH) → 30 km/h (19 MPH) 10 consecutive times with stop light SW ON

DIAGNOSIS:
Stop light switch circuit is open or shorted.
TROUBLE SYMPTOM:
- Center differential does not operate.
- An oversteer tendency will become apparent.

	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 10 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 P0606 or U code 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**.	Replace the DCCD control module. <Ref. to 6MT(TY85)-36, Driver's Control Center Differential Control Module.>
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.

C: DTC P176A VEHICLE DYNAMICS CONTROL SYSTEM ERROR

DIAGNOSIS START CONDITION:
When all the following conditions are established
- DTC P0606 and U code are not recorded.
- Engine speed is 400 rpm or more

Malfunction judgment criteria:
When any of the following conditions is established
- Continuous time of VDC sensor failure status is 0.1 second or more
- Continuous time of VDC wheel speed sensor failure status is 0.1 second or more

TROUBLE SYMPTOM:
- Center differential does not operate.
- An oversteer tendency will become apparent.

Step		Check	Yes	No
1	**CHECK DTC.** Read the DTC of VDC system using the Subaru Select Monitor.	Is DTC of VDC system displayed?	Perform the diagnosis according to DTC. <Ref. to VDC(diag)-42, List of Diagnostic Trouble Code (DTC).>	System is currently normal.

D: DTC P1875 CIRCUIT OF CENTER DIFF

DIAGNOSIS START CONDITION:

- Overcurrent detection (short circuit, etc.)
  Always
- Zero current stuck detection (open circuit, defective power supply, etc.)
  Center differential indicator current ≥ 0.48 A

DIAGNOSIS:

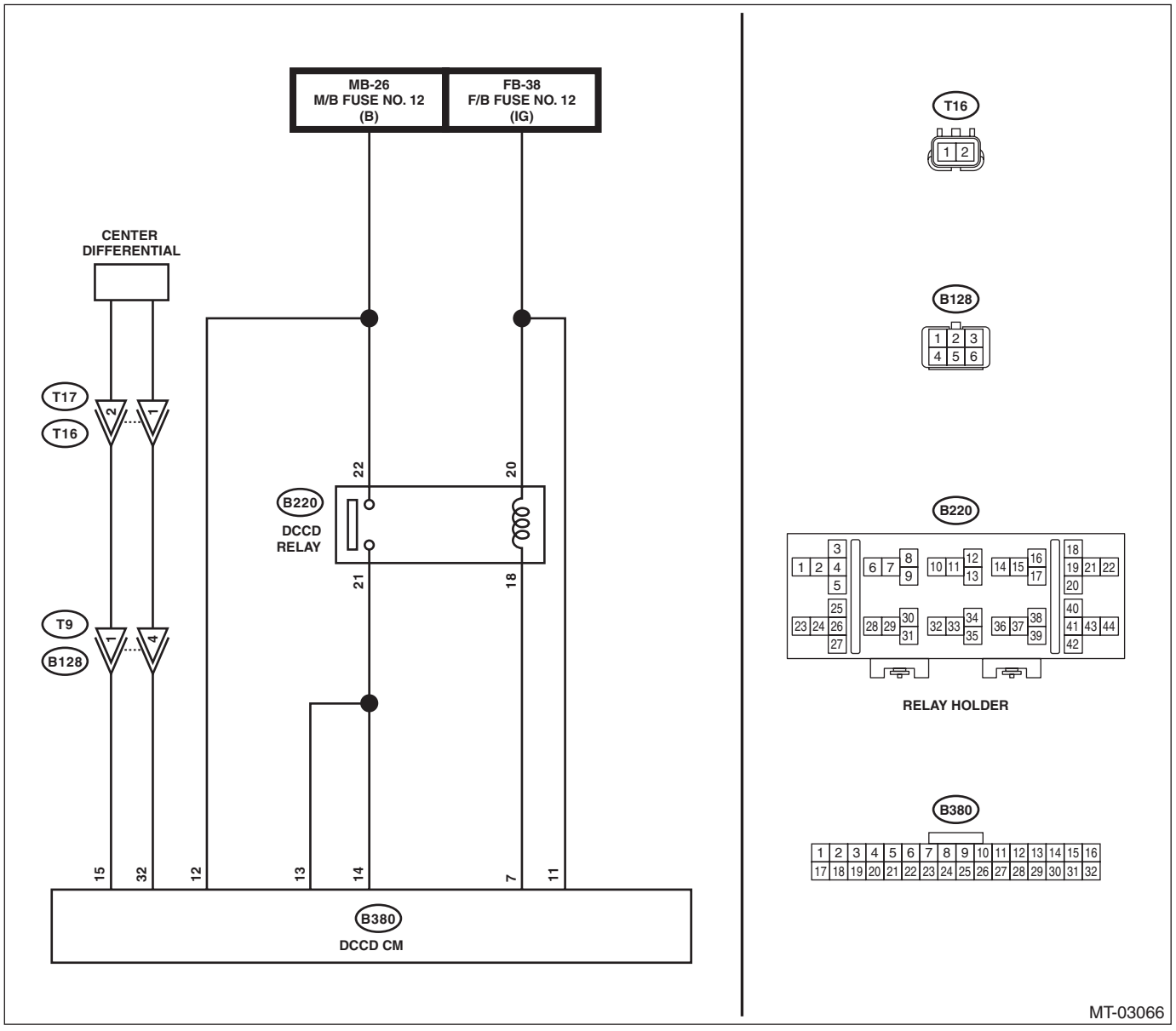
Center differential output signal circuit is open or shorted.

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-156, Driver's Control Center Differential Control System.>



	Step	Check	Yes	No
1	**CHECK DTC.**	Is a DTC other than DTC P1875 displayed?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK HARNESS BETWEEN DCCD CONTROL MODULE AND TRANSMISSION HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect the DCCD control module connector. 3) Disconnect the transmission harness connector and the bulk harness connector. 4) Measure the resistance of harness between DCCD control module connector and 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 **3**.	Repair the bulk harness open circuit between DCCD control module and transmission harness.
3	**CHECK HARNESS BETWEEN DCCD CONTROL MODULE AND TRANSMISSION HARNESS.** Measure the resistance between DCCD control module 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 **4**.	Repair the bulk harness short circuit between DCCD control module and transmission harness.
4	**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 **5**.	Replace the center differential. <Ref. to 6MT(TY85)-56, Center Differential.>
5	**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 connectors. ***Connector & terminal*** ***(B380) No. 15 (+) — No. 32 (–):***	Is the voltage 5.5 — 8.0 V?	Go to step **6**.	Go to step **7**.
6	**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 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 **7**.

	Step	Check	Yes	No
7	**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 **8**.
8	**CHECK POWER SUPPLY CIRCUIT OF DCCD RELAY.** 1) Install the fuse. 2) Turn the ignition switch to ON. 3) Measure the voltage between DCCD control module connector 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 **17**.	Go to step **9**.
9	**CHECK POWER SUPPLY CIRCUIT OF DCCD RELAY.** 1) Turn the ignition switch to OFF. 2) Disconnect the DCCD relay harness connector. 3) Measure the voltage between DCCD relay harness connector and chassis ground. ***Connector & terminal*** ***(B220) No. 22 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **10**.	Repair the open or short circuit between fuse (M/B No. 12), DCCD relay, and battery.
10	**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. 20 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **11**.	Repair the open circuit between fuse (F/B No. 12), DCCD relay, and battery.
11	**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. 18:*** ***(B380) No. 13 — (B220) No. 21:*** ***(B380) No. 14 — (B220) No. 21:***	Is the resistance less than 1 Ω?	Go to step **12**.	Repair the open circuit of harness between DCCD control module connector and DCCD relay connector.
12	**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 **13**.	Repair the short circuit of harness between DCCD control module connector and DCCD relay connector.

	Step	Check	Yes	No
13	**CHECK DCCD RELAY.** Measure the resistance between DCCD relay terminals. ***Connector & terminal*** ***(B220) No. 21 — No. 22:***	Is the resistance 1 MΩ or more?	Go to step **14**.	Replace the DCCD relay.
14	**CHECK DCCD RELAY.** 1) Connect the battery positive lead to terminal No. 20. 2) Connect the battery negative lead to terminal No. 18. 3) Measure the resistance between DCCD relay terminals. ***Connector & terminal*** ***(B220) No. 21 — No. 22:***	Is the resistance less than 1 Ω?	Go to step **15**.	Replace the DCCD relay.
15	**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 **16**.	Go to step **19**.
16	**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 **17**.	Go to step **19**.
17	**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) Using the Subaru Select Monitor, read the data of «C-Diff. Indicate Current» and «C-Diff. Real Current».	Are «C-Diff. Indicate Current» and «C-Diff. Real Current» both approximately 3.6 — 4.0 A?	Go to step **18**.	Go to step **19**.
18	**CHECK CENTER DIFFERENTIAL.** 1) Operate the C.DIFF +/– switch so that the reading of «C-Diff. Indicate Current» becomes 1.6 A using the Subaru Select Monitor. 2) Read the data of the «C-Diff. Real Current» using the Subaru Select Monitor.	Is «C-Diff. Real Current» about the same as «C-Diff. Indicate Current»?	Go to step **20**.	Go to step **19**.
19	**CHECK POOR CONTACT OF HARNESS CONNECTORS.**	Is there poor contact of the harness connector?	Repair the poor contact.	Replace the DCCD control module. <Ref. to 6MT(TY85)-36, Driver's Control Center Differential Control Module.>

Step		Check	Yes	No
20	**CHECK DTC.** 1) Perform the Clear Memory Mode. <Ref. to 6MT(diag)-10, Clear Memory Mode.> 2) Read the DTC using the Select Monitor. <Ref. to 6MT(diag)-8, Read Diagnostic Trouble Code (DTC).>	Is P1875 displayed?	Replace the DCCD control module. <Ref. to 6MT(TY85)-36, Driver's Control Center Differential Control Module.>	Go to step **21**.
21	**CHECK DTC.**	Are DTCs other than P1875 displayed?	Perform the diagnosis according to DTC.	The center differential circuit is currently operating properly.

E: DTC U0073 CONTROL MODULE COMMUNICATION BUS OFF

NOTE:
Refer to “LAN SYSTEM (DIAGNOSTICS)” for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

F: DTC U0100 LOST COMMUNICATION WITH ECM/PCM “A”

NOTE:
Refer to “LAN SYSTEM (DIAGNOSTICS)” for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

G: DTC U0122 LOST COMMUNICATION WITH VEHICLE DYNAMICS CONTROL MODULE

NOTE:
Refer to “LAN SYSTEM (DIAGNOSTICS)” for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

H: DTC U0140 LOST COMMUNICATION WITH BODY CONTROL MODULE

NOTE:
Refer to “LAN SYSTEM (DIAGNOSTICS)” for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

I: DTC U0155 LOST COMMUNICATION WITH INSTRUMENT PANEL CLUSTER (IPC) CONTROL MODULE

NOTE:
Refer to “LAN SYSTEM (DIAGNOSTICS)” for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

J: DTC U0401 INVALID DATA RECEIVED FROM ECM/PCM “A”

NOTE:
Refer to “LAN SYSTEM (DIAGNOSTICS)” for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

K: DTC U0416 INVALID DATA RECEIVED FROM VEHICLE DYNAMICS CONTROL MODULE

NOTE:
Refer to “LAN SYSTEM (DIAGNOSTICS)” for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

L: DTC U0422 INVALID DATA RECEIVED FROM BODY CONTROL MODULE

NOTE:
Refer to “LAN SYSTEM (DIAGNOSTICS)” for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

M: DTC U0423 INVALID DATA RECEIVED FROM INSTRUMENT PANEL CLUSTER CONTROL MODULE

NOTE:
Refer to “LAN SYSTEM (DIAGNOSTICS)” for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

N: DTC U1201 CAN-HS COUNTER ABNORMAL

NOTE:
Refer to “LAN SYSTEM (DIAGNOSTICS)” for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>