05I6M–01

SYSTEM DESCRIPTION

1. BRIEF DESCRIPTION

(a) The CAN (Controller Area Network) is a serial data communication system for real time application. It is a multiplex communication system equipped for a vehicle and has a high communication speed (500 kbps) and the function to detect malfunctions.

(b) By pairing the CANH and CANL bus lines, the CAN performs communication based on differential voltage.

(c) The many ECUs (sensors) installed on the vehicle operate by sharing information and communicating with each other.

(d) The CAN has two resistors of 120 Ω which are necessary to communicate with the main bus line.

2. DEFINITION OF TERMS

(a) Main bus line

(1) The main bus line is the wire harness between the two terminus circuits on the bus (communication line). This is the main bus in the CAN communication system.

(b) Sub bus line

(1) The sub bus line is the wire harness which diverges from the main bus line to the ECU or sensor.

(c) Terminus circuit

(1) The terminus circuit is a circuit which is placed to convert communication current of the CAN communication into bus voltage. It consists of a resistor and condenser. Two terminus circuits are necessary on a bus.

3. ECUs OR SENSORS WHICH COMMUNICATE THROUGH CAN COMMUNICATION SYSTEM

(a) Hybrid Vehicle Control ECU

(b) Battery ECU

(c) ECM

(d) Skid Control ECU

(e) Steering Sensor

(f) Yaw Rate Sensor

(g) Power Steering ECU

(h) Gateway ECU

4. DIAGNOSTIC CODE FOR CAN COMMUNICATION SYSTEM

(a) DTCs for the CAN communication system are as follows:
U0123, U0124, U0126, U0293, U0100, U0073, U0111, U0129, U0131, U0146, P3108–594

NOTICE:

- **P3108–594, output by the hibrid vehicle control ECU, is a DTC in the CAN communication system. However, it is not displayed on the intelligent tester II "Communication Mulfunction DTC" screen (see page 05–2328).**
- **If U0146 or P3108–594 is output, the multiplex communication system may be malfunctioning.**

5. REMARK FOR TROUBLESHOOTING

(a) Trouble in the CAN bus (communication line) can be checked from the DLC3 (except when there is a wire break other than in the sub bus line of the DLC3).

NOTICE:

Do not insert the tester directly into the DLC3 connector. Be sure to use a service wire.

(b) DTCs regarding the CAN communication system can be checked using the intelligent tester II.

(c) The CAN communication system cannot detect trouble on the sub bus line of the DLC3 even though the DLC3 is also connected to the CAN communication system.