

## SYSTEM DESCRIPTION

### 1. BRIEF DESCRIPTION

- (a) The CAN (Controller Area Network) is a serial data communication system for real time application. It is a vehicle multiplex communication system which has a high communication speed (500 kbps) and the ability to detect malfunctions.
- (b) By pairing the CANH and CANL bus lines, the CAN performs communication based on differential voltages.
- (c) Many ECUs (sensors) installed on the vehicle operate by sharing information and communicating with each other.
- (d) The CAN has 2 resistors of 120  $\Omega$  which are necessary to communicate with the main wire.

### 2. DEFINITION OF TERMS

- (a) Main wire
  - (1) The main wire is a wire harness between the 2 terminus circuits on the bus (communication line). This is the main bus in the CAN communication system.
- (b) Branch wire
  - (1) The branch wire is a wire harness which diverges from the main wire to an ECU or sensor.
- (c) Terminus circuit
  - (1) The terminus circuit is a circuit which converts the communication current of the CAN communication into the bus voltage. It consists of a resistor and condenser. 2 terminus circuits are necessary on a bus.
- (d) CAN J/C
  - (1) The CAN J/C is a junction designed for CAN communication, which contains a terminus circuit.

### 3. ECU OR SENSOR WHICH COMMUNICATE VIA CAN COMMUNICATION SYSTEM

- (a) ABS and traction actuator (Skid control ECU)
- (b) Power steering ECU
- (c) Steering Angle sensor
- (d) Yaw rate sensor
- (e) ECM
- (f) Center airbag sensor
- (g) Air conditioning amplifier
- (h) Combination meter ECU
- (i) Main body ECU
- (j) 4WD control ECU\*

HINT:

\*: for 4WD

**4. DIAGNOSTIC CODES FOR CAN COMMUNICATION SYSTEM**

- (a) DTCs for the CAN communication system are as follows: U0073, U0100, U0105, U0121, U0122, U0123, U0124, U0126, U0129, C1280, C1296, C1297, and B1499.

**5. NOTES REGARDING TROUBLESHOOTING**

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

**NOTICE:**

**Do not connect the tester directly to the DLC3 connector. Be sure to use a service wire.**

- (b) DTCs regarding the CAN communication system can be checked using the intelligent tester.
- (c) The CAN communication system cannot detect trouble in the branch line of the DLC3 even though the DLC3 is also connected to the CAN communication system.