

## DIAGNOSIS SYSTEM

### 1. DESCRIPTION

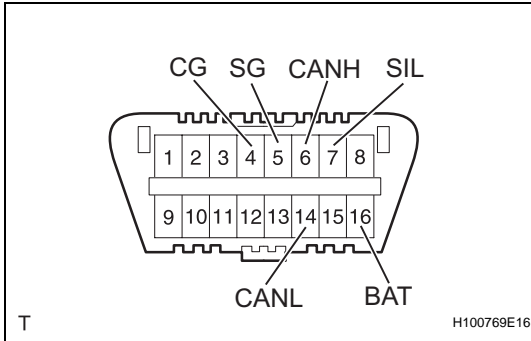
Active torque control 4WD system data can be read in the Data Link Connector 3 (DLC3) of the vehicle. When the system seems to be malfunctioning, use the intelligent tester (with CAN VIM) to check for malfunctions and perform repairs. Therefore when there seems to be a problem with the active torque control 4WD, use the intelligent tester (with CAN VIM) or SST to check and troubleshoot it.

**SST 09843-18040**

### 2. CHECK DLC3

(a) The ECU uses CAN (ISO11898-1) and ISO9141-2 for communication protocol. The terminal arrangement of the DLC3 complies with SAE J1962 and matches the ISO9141-2 format.

Verify the conditions listed in the table below.



Symbols (Terminal No.)	Terminal Description	Condition	Specified Condition
SIL (7) - SG (5)	Bus + line	During transmission	Pulse generation
CG (4) - Body Ground	Chassis ground	Always	Below 1Ω
SG (5) - Body Ground	Signal ground	Always	Below 1Ω
BAT (16) - Body Ground	Battery positive	Always	11 to 14 V
CANH (6) - CANL (14)	HIGH-level CAN bus line	Ignition switch OFF*	54 to 69 Ω
CANH (6) - BAT (16)	HIGH-level CAN bus line	Ignition switch OFF*	1 MΩ or higher
CANH (6) - CG (4)	HIGH-level CAN bus line	Ignition switch OFF*	200 Ω or higher
CANL (14) - BAT (16)	LOW-level CAN bus line	Ignition switch OFF*	1 MΩ or higher
CANL (14) -CG (4)	LOW-level CAN bus line	Ignition switch OFF*	200 Ω or higher

#### NOTICE:

**\*: Before measuring the resistance, leave the vehicle as is for at least 1 minute and do not operate the ignition switch, other switches or the doors.**

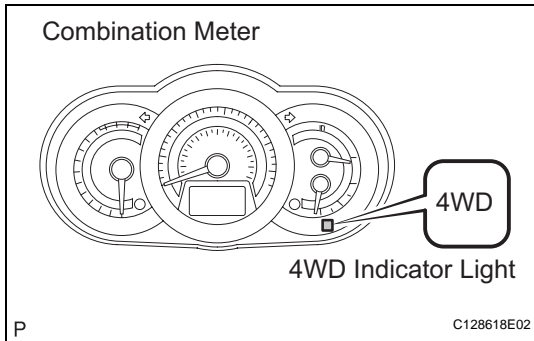
If the result is not as specified, the DLC3 may have a malfunction. Repair or replace the harness and connector.

#### HINT:

Connect the cable of the intelligent tester (with CAN VIM) to the DLC3, turn the ignition switch ON and attempt to use the tester. If the display indicates that a communication error has occurred, there is a problem either with the vehicle or with the tester.

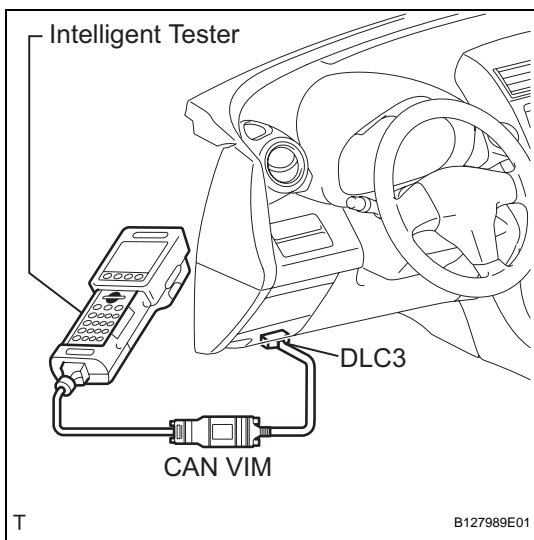
- If communication is normal when the tester is connected to another vehicle, inspect the DLC3 of the original vehicle.

- If communication is still not possible when the tester is connected to another vehicle, the problem may be in the tester itself. Consult the Service Department listed in the tester's instruction manual.



### 3. INDICATOR LIGHT

- (a) When a problem occurs in the active torque control 4WD system, the 4WD indicator light on the combination meter comes ON to inform the driver of the problem.



## DTC CHECK / CLEAR

### 1. CHECK DTC (When Using Intelligent Tester)

- (a) Check the DTCs.
- (1) Connect the intelligent tester (with CAN VIM) to the DLC3.
  - (2) Turn the ignition switch ON.
  - (3) Read the DTCs by following the prompts on the tester screen.

HINT:

Refer to the intelligent tester (with CAN VIM) operator's manual for further details.

### 2. CLEAR DTC (When Using Intelligent Tester)

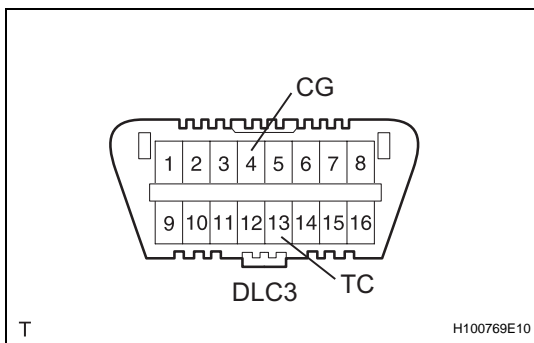
- (a) Connect the intelligent tester (with CAN VIM) to the DLC3.
- (b) Turn the ignition switch ON.
- (c) Operate the intelligent tester (with CAN VIM) to clear the codes.

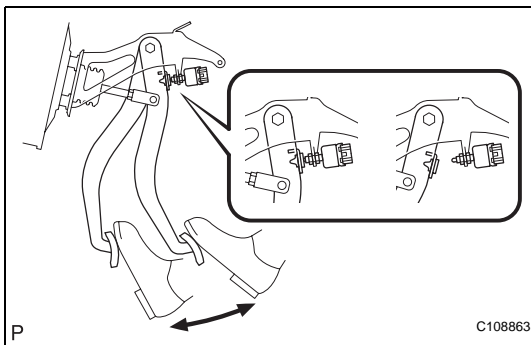
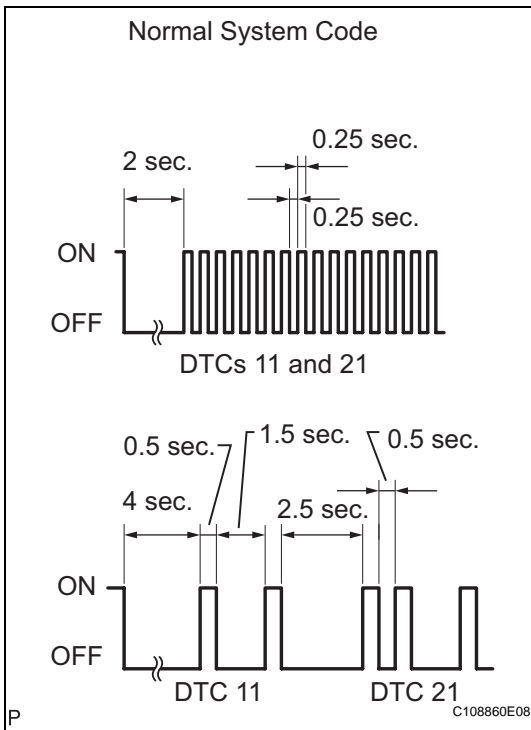
HINT:

Refer to the intelligent tester (with CAN VIM) operator's manual for further details.

### 3. CHECK DTC (When not Using Intelligent Tester)

- (a) Check the DTCs.
- (1) Using the SST, connect terminals TC (13) and CG (4) of the DLC3  
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  - (2) Turn the ignition switch ON.





(3) Read DTCs from the 4WD indicator light ON the combination meter.

HINT:

- If the 4WD indicator light does not blink, perform relevant troubleshooting procedures. The relevant troubleshooting procedures are in the sections listed in the table below.
- If more than 1 DTC is detected at the same time, the DTCs will be displayed in numerical order.
- As an example, the blinking patterns of the normal system code and DTCs 11 and 21 are shown below.
- DTCs are explained in "DIAGNOSTIC TROUBLE CODE CHART" (see page TF-19).

Section Title	See Procedure
4WD Indicator Light does not Come ON	TF-40
TC and CG Terminal Circuit	TF-42

**4. CLEAR DTC (When not Using Intelligent Tester)**

(a) Using SST, connect terminals 13 (TC) and 4 (CG) of the DLC3.

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(b) Turn the ignition switch ON.

(c) Clear the DTCs stored in the 4WD control ECU by depressing the brake pedal 8 times or more within 5 seconds.

(d) Check that the warning light blinks in the normal system code pattern.

(e) Remove SST from the terminals of the DLC3.

(f) Turn the ignition switch OFF.

HINT:

DTCs cannot be cleared by disconnecting the cable from the negative (-) battery terminal or removing the ECU-IG1 fuse.