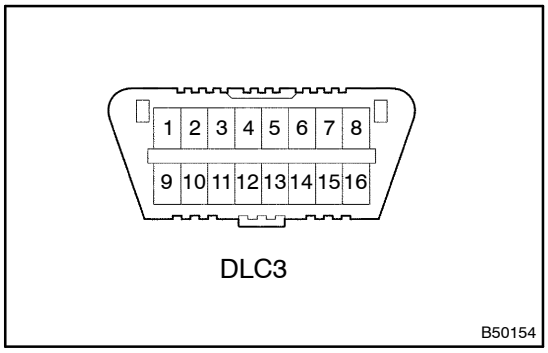
05B0A–02

PRE–CHECK

1. DIAGNOSIS SYSTEM

(a) Description

(1) The ECM controls the function of the immobiliser system on this vehicle.
Data of the immobiliser system and the Diagnostic Trouble Code (DTC) can be read in the Data Link Connector 3 (DLC3) of the vehicle. When trouble occurs in the immobiliser system, even though the security Indicator lamp does not come on, DTCs can be checked.
Therefore, when there seems to be trouble with the immobiliser system, use the hand–held tester to check for trouble and troubleshoot it.



(b) Inspect the DLC3.
The vehicle's ECM uses the ISO 9141–2 (Euro–OBD)/ISO 14230 (M–OBD) communication protocol.
The terminal arrangement of the DLC3 complies with the ISO 15031–3 and matches the ISO 9141–2/ISO 14230 format.

Standard:

Terminal No.	Condition	Specified Condition
7 (Bus + Line) ⇔ 5 (Signal ground)	During communication	Pulse generation
4 (Chassis Ground) ⇔ Body ground	Always	1 Ω or less
5 (Signal Ground) ⇔ Body ground	Always	1 Ω or less
16 (B+) ⇔ Body ground	Always	9 – 14 V

HINT:
If the display shows "UNABLE TO CONNECT TO VEHICLE" when you have connected the cable of the hand–held tester to the DLC3, turned the ignition switch ON and operated the hand–held tester, the problem may be on the vehicle side or the tester side.

- If communication is normal when the tester is connected to other vehicle, inspect the DLC3 of the original vehicle.
- If communication is still impossible when the tester is connected to another vehicle, the problem may be in the tester itself, so consult the Service Department listed in the tester's instruction manual.

2. INSPECT DIAGNOSIS

(a) Using the hand–held tester, check for DTC.

NOTICE:

Hand–held tester only:

When the diagnosis system is switched from the normal mode to the check mode, all the DTCs and freeze frame data recorded in the normal mode are erased. So before switching modes, always check the DTCs and freeze frame data, and make a note of them.

(1) Prepare the hand–held tester.
(2) Connect the hand–held tester to the DLC3 under the instrument panel lower pad.
(3) Turn the ignition switch ON and push the hand–held tester switch ON.
(4) Use the hand–held tester to check for DTCs and freeze frame data, and make a note of them (For operating instructions, see the hand–held tester instruction book).
(5) Confirm the details of the DTCs.

(b) Either of the following procedures will erase the DTCs and freeze frame data.
  (1) Operating the hand–held tester to erase the codes (See the hand–held tester instruction book for operating instructions).
  (2) Disconnecting the battery terminals or ECU–B fuse.

3. DATA LIST

HINT:

Using the DATA LIST displayed by the hand–held tester, you can read the value of the switch, sensor, actuator, etc. without parts removal. Reading the DATA LIST as the first step of troubleshooting is one way to shorten the labor time.

(a) Connect the hand–held tester to the DLC3.
(b) Turn the ignition switch ON.
(c) Read the DATA LIST, according to the display on the tester.

Transponder key ECU assy:

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
KEY SW	Un–lock warning SW signal/ ON or OFF	OFF: Key is in IG key cylinder ON: No key is in IG key cylinder	–
IG SW	IG SW signal/ ON or OFF	OFF: IG SW is ON or START position ON: IG SW is OFF or ON position	–
IMMOBILISER	Immobiliser system status/ SET or UNSET	UNSET: Without key SET: Ignition switch ON	–
RESPONSE	NG/OK	–	–
FRAME	NG/OK	–	–
SERIAL NUMBER	NG/OK	–	–
ENCRYPT CODE	NG/OK	–	–
STATUS	NG/OK	–	–
BCC	NG/OK	–	–
SUB KEY	NOMATCH/MATCH	–	–
MASTER KEY	NOMATCH/MATCH	–	–
REGIST SUB CODE	Number of registered master key/ min. 0, max. 15	Number of registered master key	–
REGIST MAS CODE	Number of registered sub–key/ min. 0, max. 15	Number of registered sub–key	–
REG CODE SPACE	NOT FUL/FULL	–	–
+B	NORMAL/BREAK	–	–
ANTENNA COIL	NORMAL/FAIL	–	–
G–CODE SUPPORT	NOT SUP/SUPPORT	–	–

4. ACTIVE TEST

HINT:

Performing the ACTIVE TEST using the hand–held tester allows you to operate the relay, VSV, actuator, etc. without parts removal. Performing the ACTIVE TEST as the first step of troubleshooting is one way to shorten the labor time.

(a) Connect the hand–held tester to the DLC3.
(b) Turn the ignition switch ON.
(c) Perform the ACTIVE TEST, according to the display on the tester.

Transponder key ECU assy:

Item	Test Details	Diagnostic Note
SECURITY INDIC	Turn security indicator ON/OFF	Key reminder buzzer is installed in combination meter