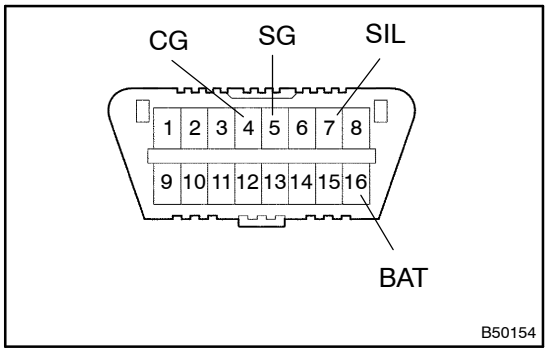
05JVH–01

PRE–CHECK

1. DIAGNOSIS SYSTEM

(a) Description

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



(b) Inspect the DLC3.
The vehicle uses ISO 14230 for communication. The terminal arrangement of the DLC3 complies with SAE J1962 and matches the ISO 14230 format.

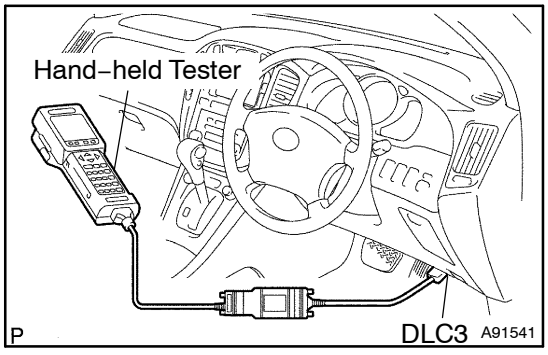
Standard:

Symbols	Terminal No.	Name	Reference terminal	Result	Condition
SIL	7	Bus" +" Line	5 – Signal ground	Pulse generation	During transmission
CG	4	Chassis Ground	Body ground	Below 1 Ω	Constant
SG	5	Signal Ground	Body ground	Below 1 Ω	Constant
BAT	16	Battery positive	Body ground	11 to 14 V	Constant

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

Connect the cable of the hand–held tester to the DLC3, turn the ignition switch ON and attempt to use the hand–held tester. If the screen displays UNABLE TO CONNECT TO TO VEHICLE, a problem exists in 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. Consult the Service Department listed in the tester's instruction manual.



2. CHECK DTC

(a) Connect the hand–held tester to the DLC3.

(b) Turn the ignition switch ON.

(c) Read DTCs by following the prompts on the tester screen.

HINT:

Refer to the hand–held tester operator's manual for further details.

3. CLEAR DTC

(a) Connect the hand–held tester to the DLC3.
(b) Turn the ignition switch ON.
(c) Erase the DTCs by following the prompts on the tester screen.

HINT:
Refer to the hand–held tester operator's manual for further details.

4. DATA LIST

HINT:
Using the hand–held tester DATA LIST allows switch, sensor, actuator and other item values to be read without removing any parts. Reading the DATA LIST early in troubleshooting is one way to shorten labor time.

(a) Connect the hand–held tester to the DLC3.
(b) Turn the ignition switch ON.
(c) Read the DTCs following the prompts on the tester screen.

Transponder key ECU assy:

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
KEY SW	Unlock warning switch signal/ ON or OFF	OFF: Key is in ignition key cylinder ON: No key is in ignition key cylinder	–
IG SW	Ignition switch signal/ ON or OFF	OFF: Ignition switch is in OFF or ACC position ON: Ignition switch is in ON position	–
IMMOBILISER	Immobilizer system status/ SET or UNSET	UNSET: Without key SET: Ignition switch ON	–
RESPONSE	Transponder chip data/ NG or OK	NG: Data error OK: Data OK	–
FRAME	Transponder chip data/ NG or OK	NG: Data error OK: Data OK	–
SERIAL NUMBER	Transponder chip data/ NG or OK	NG: Data error OK: Data OK	–
ENCRYPT CODE	Transponder chip data/ NG or OK	NG: Data error OK: Data OK	–
STATUS	Transponder chip data/ NG or OK	NG: Data error OK: Data OK	–
BCC	Transponder chip signal/ NG or OK	NG: Incorrect data sending OK: Correct data sending	–
SUB KEY	Sub–key code signal/ NOMATCH or MATCH	NOMATCH: Unmatched sub–key code is sent MATCH: Sub–key code is sent	–
MASTER KEY	Master key code signal/ NOMATCH or MATCH	NOMATCH: Unmatched master key code is sen MATCH: Master key code is sent	–
REGIST SUB CODE	Number of registered sub–key/ min.: 0; max.: 15;	Number of registered sub–keys	–
REGIST MAS CODE	Number of registered master key/ min.: 0; max.: 15;	Number of registered master keys	–
REG CODE SPACE	Memory space for key codes registration/ NOT FUL or FULL	NOT FUL: Possible to resister more key codes FULL: Cannot register any more key codes	–
ANTENNA COIL	Antenna coil condition/NORMAL or FAIL	NORMAL: Antenna coil is normal FAIL: Antenna coil is malfunctioning	–

5. ACTIVE TEST

HINT:

Performing the hand–held tester ACTIVE TEST allows relay, VSV, actuator and other items to be operated without removing any parts. Performing the ACTIVE TEST early in troubleshooting is one way to shorten labor time. The DATA LIST can be displayed during the ACTIVE TEST.

(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	Diagnositic
SECURITY INDIC	Turn security indicator ON/OFF	–