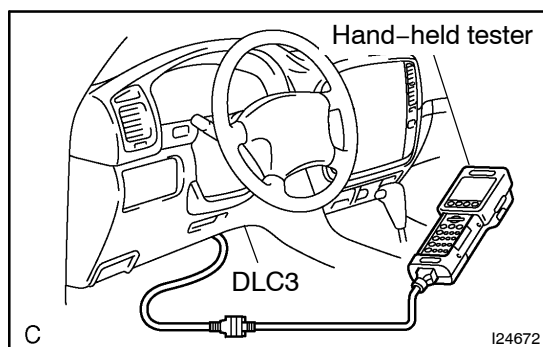




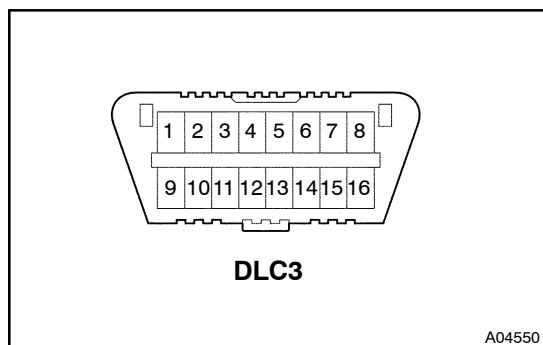
PRE-CHECK

1. DIAGNOSIS SYSTEM

(a) Description

ECU data of this system can be read from DLC3 of the vehicle.

Therefore, when there seems to be a trouble on this system, use hand-held tester to check and troubleshoot it.



(b) Check the DLC3.

The vehicle's ECM uses ISO 9141-2 for communication. The terminal arrangement of DLC3 complies with SAE J1962 and matches the ISO 9141-2 format.

Terminal No.	Connection/Specified Condition	Condition
4	Chassis Ground ↔ Body Ground/1 or less	Always
13	TC ↔ Body Ground/9 – 14 V	Always

HINT:

If the display shows "UNABLE TO CONNECT TO VEHICLE" when the cable of the hand-held tester is connected to DLC3, the ignition switch is turned ON and the hand-held tester is connected, there is a problem either on the vehicle side or tool side.

- If communication is normal when the tool is connected to another vehicle, inspect DLC3 on the original vehicle.
- If communication does not function when the tool is connected to another vehicle, the problem is probably in the tool itself, so consult the Service Department listed in the tool's instruction manual.

2. USING HAND-HELD TESTER

(a) Hook up the hand-held tester to DLC3.

(b) Monitor the ECU data by following the prompts on the tester screen.

HINT:

Hand-held tester has a "Snapshot" function which records the monitored data.

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

3. DATA LIST

HINT:

By the DATA LIST displayed on the hand-held tester, you can read the value of the switch, sensor, actuator and so on without removing any parts. Reading the DATA LIST as a first step of troubleshooting is one of the method to shorten the labor time.

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

(b) Turn the ignition switch ON.

(c) According to the display on tester, read "DATA LIST".

Power window master switch:

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
P/W AUTO SW	D door P/W auto switch	ON: D door P/W auto switch is ON position OFF: D door P/W auto switch is OFF position	–
P P/W AUTO SW	P door remote P/W auto switch	ON: P door remote P/W auto switch is ON position OFF: P door remote P/W auto switch is OFF position	–
RR P/W AUTO SW	RR door remote P/W auto switch	ON: RR door remote P/W auto switch is ON position OFF: RR door remote P/W auto switch is OFF position	–
RL P/W AUTO SW	RL door P/W auto switch	ON: RL door P/W auto switch is ON position OFF: RL door P/W auto switch is OFF position	–
LIMIT SW	Jam protection limit switch	ON: Jam protection limit switch is ON position OFF: Jam protection limit switch is OFF position	–
LOCK POS SW	Door unlock detection switch	ON: Door unlock detection switch is ON position OFF: Door unlock detection switch is OFF position	–
GLASS POS-1/4	Glass position (Fully close – 1/4open)	OK: CAUTION:	–
GLASS POS-2/4	Glass position (1/4 – 2/4open)	OK: CAUTION:	–
GLASS POS-3/4	Glass position (2/4 – 3/4open)	OK: CAUTION:	–
GLASS POS-OPEN	Glass position (3/4 – Fully open)	OK: CAUTION:	–
UP/DOOR KEY	Door key linked P/W UP	NOT AVL: AVAIL:	–
DOWN/DOOR KEY	Door key linked P/W DOWN	NOT AVL: AVAIL:	–

Body ECU (Main):

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
KEY UNLOCK WRN SW	Key unlock warning SW signal	ON: Key is IG key cylinder OFF: Key is not in IG key cylinder	–
LUGG COURTSY SW	Luggage compartment door's courtesy SW signal	ON: Luggage door is open OFF: Luggage door is close	–
D DOR CTY SW	Driver's door courtesy SW signal	ON: Driver's door is open OFF: Driver's door is close	–
P DOR CYT SW	Passenger's door courtesy SW signal	ON: Passenger's door is open OFF: Passenger's door is close	–
Rr DOR CTY SW	Rear door courtesy SW signal	ON: Either right or left rear door is open OFF: Both the right and left doors are closed.	–
P LOCK POS SW	Passenger lock position switch	ON: Passenger lock position switch is in lock position OFF: Passenger lock position switch is in unlock position	–
Rr. LOCK POS SW	Rear lock position switch	ON: Rear lock position switch is in lock position OFF: Rear lock position switch is in unlock position	–
D/L SW-LOCK	Door lock switch lock side	ON: Door lock switch is in lock position OFF: Door lock switch is in unlock position	–
D/L SW-UNLOCK	Door lock switch unlock side	ON: Door lock switch is in unlock position OFF: Door lock switch is in lock position	–

DIAGNOSTICS – DRIVER DOOR CONTROL SYSTEM

DOR KEY SW-LOCK	Passenger or back door key switch lock side	ON: Passenger or back door key switch is in lock position OFF: Passenger or back door key switch is in unlock position	–
P DOR KEY SW-UL	Passenger or back door key switch unlock side	ON: Passenger or back door key switch is in unlock position OFF: Passenger or back door key switch is in lock position	–

4. ACTIVE TEST**HINT:**

Performing ACTIVE TEST using the hand-held tester allows the relay, VSV, actuator and so on to operate without removing any parts. Performing ACTIVE TEST as a first step of troubleshooting is one of the method to shorten the labor time.

DATA LIST can be displayed during the ACTIVE TEST.

- (a) Connect the hand-held tester to DLC3.
- (b) Turn the ignition switch ON.
- (c) According to the display on tester, perform the "ACTIVE TEST".

Power window master switch:

Item	Test Details	Diagnostic Note
P/W UP/DOWN	Driver power window UP/DOWN	–

Body ECU (Main):

Item	Test Details	Diagnostic Note
P P/W UP/DOWN	Passenger power window UP/DOWN	–
RL P/W UP/DOWN	RL power window UP/DOWN	–
RR P/W UP/DOWN	RR power window UP/DOWN	–
DOOR LOCK	Drive the Door lock motor at all doors LOCK/UN-LOCK	–