

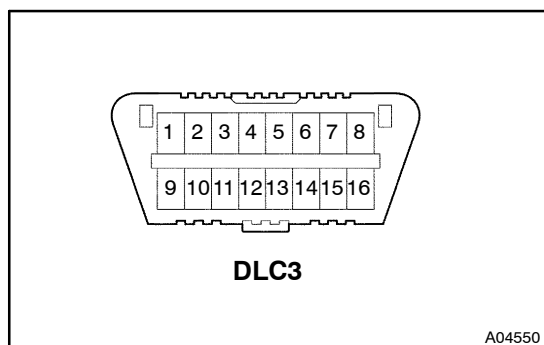
## PRE-CHECK

### 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 your display shows "UNABLE TO CONNECT TO VEHICLE" when you have connected the cable of the hand-held tester to DLC3, turned the ignition switch ON and operated the hand-held tester, there is a problem 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 is still not possible 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. DATA LIST

#### HINT:

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

- Turn the ignition switch OFF.
- Connect the hand-held tester to the DLC3.
- Turn the ignition switch ON.
- According to the display on tester, read the "DATA LIST".

Item	Condition (Parameter)	Normal Condition	Diagnostic Note
OPEN SW	Sliding roof switch free → OPEN (OFF/ON)	OFF → ON	–

## DIAGNOSTICS – SLIDING ROOF SYSTEM

CLOSE SW	Sliding roof switch free → CLOSE (OFF/ON)	OFF → ON	–
UP SW	Sliding roof switch free → UP (OFF/ON)	OFF → ON	–
DOWN SW	Sliding roof switch free → DOWN (OFF/ON)	OFF → ON	–
LIMIT SW1	Sliding roof operation (OFF/ON)	OFF → ON → OFF	–
LIMIT SW2	Sliding roof operation (OFF/ON)	OFF → ON → OFF	–
MOTOR PULSE	Sliding roof motor stop → moving (HI/LO)	HI ↔ LO	–
MOTOR STATUS	Sliding roof motor stop → moving (LOCK/NORMAL)	NORMAL	–
IG (DIRCT SIG)	IG switch ON (OFF/ON)	ON	–
IG (MPX)	IG switch ON (OFF/ON)	ON	–
KEY OPEN OPERT	Door key operation free → OPEN (OFF/ON)	OFF → ON	–
KEY CLOSE OPERT	Door key operation free → CLOSE (OFF/ON)	OFF → ON	–
WIRLES OPN OPRT	Wireless key operation free → OPEN (OFF/ON)	OFF → ON	–
WIRLES CL OPRT	Wireless key operation free → CLOSE (OFF/ON)	OFF → ON	–
CLOSE SIGNAL	Sliding roof close signal (CLOSE/OPEN)	CLOSE	–
KEY OFF PERMS	Key OFF permission (OFF/ON)	–	–
OPEN /DOOR KEY	Door key related OPEN operation (NOT AVL/AVAIL)	–	–
CLOSE /DOOR KEY	Door key related CLOSE operation (NOT AVL/AVAIL)	–	–
OPEN /WIRELESS	Wireless key related CLOSE operation (NOT AVL/AVAIL)	–	–
DOOR KEY OPER	Door key related operation (SLIDE/TILT)	–	–

WIRELESS OPER	Wireless key related operation (SLIDE/TILT)	–	–
D-DOOR WARN SW	Driver's door courtesy (OFF/ON)	–	–

### 3. ACTIVE TEST

#### HINT:

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

It is possible to display the DATA LIST during the ACTIVE TEST.

- Turn the ignition switch OFF.
- Connect the hand-held tester to the DLC3.
- Turn the ignition switch ON.
- According to the display on tester, perform the "ACTIVE TEST".

Item	Condition	Parameter	Diagnostic Note
SLIDE ROOF	Sliding roof operation	CLOS/UP – OPN/DWN	Confirm that the vehicle is stopped./Caution: this test causes vehicle parts to move. Please watch your hands and feet.