DIAZO–01

PRE–CHECK

1. POWER SEAT CONTROL SYSTEM FOR DRIVER'S SEAT

(a) Description

This system sends a signal from the driver's seat control switch to the power seat control ECU when manual operation for seat position.

HINT:

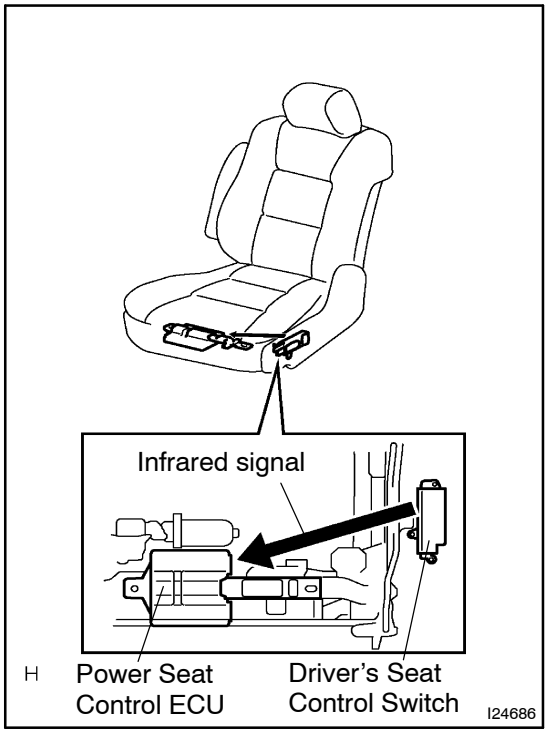
Indicator, etc. that indicates such as operating conditions does not exist at the infrared signal transmission and reception part.

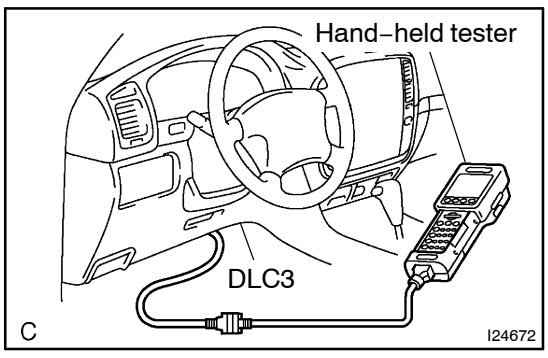
(b) Fail–safe function

When infrared data communication is blocked by an object placed under the seat, etc. or the driver's seat control switch has an abnormality, the system enters fail–safe functions and only slide operation (back and forward) can be operated.

(c) Clean the infrared light reception and emission part

Extreme dirt on the power seat control ECU and on the reception and emission part of the infrared signal of the driver's seat control switch does not allow to send and to receive the signal. In this case, wipe the lens with a soft cloth.



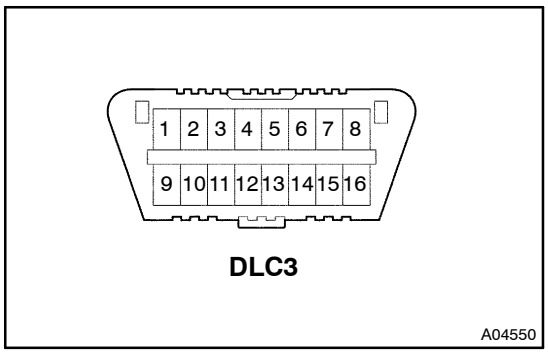


2. DIAGNOSIS SYSTEM

(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.

3. 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.

(a) Turn the ignition switch OFF.
(b) Connect the hand–held tester to the DLC3.
(c) Turn the ignition switch ON.
(d) According to the display on tester, read the ”DATA LIST”.

POWER SEAT CONTROL ECU:

Item	Condition	Normal Condition	Diagnostic Note
RECLIN SW REAR	Reclining rear switch free → ON	OFF → ON	–
RECLIN SW FRONT	Reclining front switch free → ON	OFF → ON	–
F VTCL SW DOWN	Front vertical switch free → DOWN	OFF → ON	–
F VTCL SW UP	Front vertical switch free → UP	OFF → ON	–
R VTCL SW DOWN	Rear vertical switch free → DOWN	OFF → ON	–
R VTCL SW UP	Rear vertical switch free → UP	OFF → ON	–
SLIDE SW REAR	Slide switch free → REAR	OFF → ON	–
SLIDE SW FRONT	Slide switch free → FRONT	OFF → ON	–
SLIDE SW RR (W/H)	Slide switch free → REAR	OFF → ON	–
SLIDE SW FR (W/H)	Slide switch free → FRONT	OFF → ON	–
POWER VOLTAGE	Ignition switch ON	Battery positive voltage	–
MOTOR STATUS	–	STANDBY/MOVING/LOCK	–
IG SW	Ignition switch ON	OFF → ON	–
KEY UNLOCK SW	Ignition switch ON	OFF → ON	–

D–DOOR WARN SW	Door (door courtesy switch) CLOSE → OPEN	OFF → ON	–
PNP SW	PNP switch except P → P	OFF → ON	–
PKBS SW	Perking brake switch OFF → ON	OFF → ON	–
M2 SW	Memory switch (M2) free → ON	OFF → ON	–
M1 SW	Memory switch (M1) free → ON	OFF → ON	–
SET SW	Memory switch (SET) free → ON	OFF → ON	–
SLIDE POS	–	–4096 – 4096	–
RECLIN POS	–	–4096 – 4096	–
F VTCL POS	–	–4096 – 4096	–
R VTCL POS	–	–4096 – 4096	–
MEM M1 SW	Memorize (M1) None → Exist	NOT MEM → MEM	–
MEM M2 SW	Memorize (M2) None → Exist	NOT MEM → MEM	–
SEAT MEM M1	Memorize seat position (M1) None → Exist	NOT MEM → MEM	–
SEAT MEM M2	Memorize seat position (M2) None → Exist	NOT MEM → MEM	–
D–MIRR MEM M1	Memorize driver side mirror position (M1) None → Exist	NOT MEM → MEM	–
D–MIRR MEM M2	Memorize driver side mirror position (M2) None → Exist	NOT MEM → MEM	–
P–MIRR MEM M1	Memorize front passenger side mirror position (M1) None → Exist	NOT MEM → MEM	–
P–MIRR MEM M2	Memorize front passenger side mirror position (M2) None → Exist	NOT MEM → MEM	–
SLIDE MEM POS 1	Memorized slide position (M1)	–4096 – 4096	–
RECLN MEM POS 1	Memorized reclining position (M1)	–4096 – 4096	–
F VTCL MEM POS1	Memorized front vertical position (M1)	–4096 – 4096	–
R VTCL MEM POS1	Memorized rear vertical position (M1)	–4096 – 4096	–
SLIDE MEM POS 2	Memorized slide position (M2)	–4096 – 4096	–
RECLN MEM POS 2	Memorized reclining position (M2)	–4096 – 4096	–
F VTCL MEM POS2	Memorized front vertical position (M2)	–4096 – 4096	–
R VTCL MEM POS2	Memorized rear vertical position (M2)	–4096 – 4096	–
D–MIR MEM POS 1	Memorized driver side outer mirror position (M1)	0 – 65535	–
P–MIR MEM POS 1	Memorized front passenger side outer mirror position (M1)	0 – 65535	–

D–MIR MEM POS 2	Memorized driver side outer mirror position (M2)	0 – 65535	–
P–MIR MEM POS 2	Memorized front passenger side outer mirror position (M2)	0 – 65535	–

MIRROR CONTROL ECU:

Item	Condition	Normal Condition	Diagnostic Note
MIRR POS SW R	Mirror switch position RIGHT OFF → ON	OFF → ON	–
MIRR POS SW L	Mirror switch position LEFT OFF → ON	OFF → ON	–
MIRR POS SW DWN	Mirror switch DOWN OFF → ON	OFF → ON	–
MIRR POS SW UP	Mirror switch UP OFF → ON	OFF → ON	–
MIRR SEL SW	Mirror switch select direction	MID (P)/D (P)	–
REV POS SW	Shift lever position except R → R	OFF → ON	–
ACC	Ignition switch ON (ACC)	ON	–
IG (MPX)	Ignition switch ON	ON	BEAN signal
D MIR POS SEN V	Driver side outer mirror VERTICAL position (LSB 0.01953 V)	0 – 5	–
D MIR POS SEN H	Driver side outer mirror HORIZON position (LSB 0.01953 V)	0 – 5	–
P MIR POS SEN V	Passenger side outer mirror VERTICAL position (LSB 0.01953 V)	0 – 5	–
P MIR POS SEN H	Passenger side outer mirror HORIZON position (LSB 0.01953 V)	0 – 5	–

4. 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.

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

POWER SEAT CONTROL ECU:

Tester Display	Item (Condition)	Parameter	Parameter (Min. – Max.)	Step (Unit)	Diagnostic Note
RECLINING	Seat reclining operation	FRONT/REAR	–	–	Confirm that the vehicle is stopped./Caution: This test cases vehicle parts to move. Please watch your hands and feet.

F VERTICAL	Front vertical operation	UP/DOWN	–	–	Confirm that the vehicle is stopped./Caution: This test cases vehicle parts to move. Please watch your hands and feet.
R VERTICAL	Rear vertical operation	UP/DOWN	–	–	Confirm that the vehicle is stopped./Caution: This test cases vehicle parts to move. Please watch your hands and feet.
SLIDE	Seat slide operation	FRONT/REAR	–	–	Confirm that the vehicle is stopped./Caution: This test cases vehicle parts to move. Please watch your hands and feet.

MIRROR CONTROL ECU:

Tester Display	Item (Condition)	Parameter	Parameter (Min. – Max.)	Step (Unit)	Diagnostic Note
D MIRR UP/DN	Driver side outer mirror UP or DOWN operation	UP/DOWN	–	–	–
D MIRR R/L	Driver side outer mirror RIGHT or LEFT operation	LEFT/RIGHT	–	–	–
P MIRR UP/DN	Passenger side outer mirror UP or DOWN operation	UP/DOWN	–	–	–
P MIRR R/L	Driver side outer mirror RIGHT or LEFT operation	LEFT/RIGHT	–	–	–