05JZ2–01

PRE–CHECK

1. POWER WINDOW OPERATION MODE

HINT:

When the hand–held tester's custmize function is not selected, the initial condition is as shown below.

Standard:

Power window operation	Ignition switch ON	Ignition switch OFF Operative after key–OFF	Ignition switch OFF Inoperative after key–OFF
Manual UP	Operative	Jam protection function operative	Inoperative
Manual DOWN	Operative	Operative	Inoperative
AUTO UP	Jam protection function operative	Jam protection function operative	Inoperative
AUTO DOWN	Operative	Operative	Inoperative
UP operation interlocked with key	Inoperative	Jam protection function operative	Jam protection function operative
DOWN operation interlocked with key	Inoperative	Operative	Operative

2. POWER WINDOW FAIL–SAFE FUNCTION

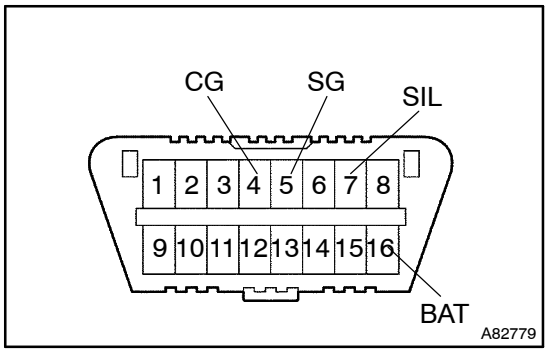
(a) When an abnormality is detected in the limit switch and pulse sensor, which operates for operating the jam protection function, the following power window operations will be prohibited by the fail–safe function.

Standard:

Power window operation	Ignition switch ON	Ignition switch OFF Operative after key–OFF	Ignition switch OFF Inoperative after key–OFF
Manual UP	Operative	Operation prohibited	–
Manual DOWN	Operative	Operation prohibited	–
AUTO UP	Operation prohibited	Operation prohibited	–
AUTO DOWN	Operation prohibited	Operation prohibited	–
UP operation interlocked with key	–	Operation prohibited	Operation prohibited
DOWN operation interlocked with key	–	Operation prohibited	Operation prohibited

HINT:

When the limit switch is functioning normally again, the fail–safe function can be cancelled by fully oclosing the door glass whith manual operation and then fully opening the door grass with manual operation. Then AUTO operations will be possible again.



3. CHECK DLC3

HINT:

The vehicle's uses the ISO 14230 communication protocol. The terminal arrangement of the DLC3 complies with SAE J1962 and matches the ISO 14230 format.

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.

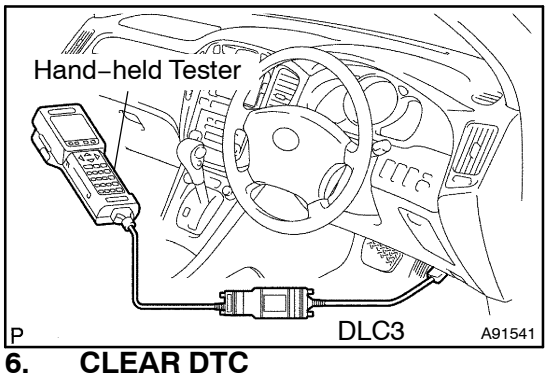
HINT:
Connect the cable of the hand–held tester to the DLC3, turn the ignition switch ON and attempt to use the hand–held tester. If the screen displays UNABLE TO CONNECT TO VEHICLE, a problem may be on the vehicle side or the tester side.

- If communication is normal when the tester is connected to another 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.

4. CHECK BATTERY VOLTAGE

Standard: 11 to 14 V

If the voltage is below 11 V, replace the battery before proceeding.



5. CHECK DTC

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

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

6. CLEAR DTC

(a) Connect the hand–held tester to the DLC3.
(b) Turn the ignition switch ON.
(c) Erase the DTCs according to the display on the tester.

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

7. DATA LIST

HINT:
Using the hand–held tester DATA LIST allows switch, sensor, actuator and other item value 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 DATA LIST according to the display on the tester.

Standard:

Power window regulator master switch (Door ECU) switch condition

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
P/W AUTO SW	Driver door power window auto switch signal/ON or OFF	ON: Driver door power window AUTO switch operates OFF: Driver door power window AUTO switch does not operate	–
LIMIT SW	Jam protection limit switch	ON: Jam protection limit switch is ON OFF: Jam protection limit switch is OFF	–

Power window regulator master switch (Door ECU) jam protection threshold

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
GLASS POS – 1/4	Door glass position (Fully closed – 1/4 open) signal/OK or CAUTION	OK: Power window is moving UP by manual operation CAUTION: CAUTION may be displayed even when no resistance is applied in each position. A foreign object may be stuck in that position	–
GLASS POS – 2/4	Door glass position (1/4 open – 2/4 open) signal/OK or CAUTION	OK: Power window is moving UP by manual operation CAUTION: CAUTION may be displayed even when no resistance is applied in each position. A foreign object may be stuck in that position	–
GLASS POS – 3/4	Door glass position (2/4 open – 3/4 open) signal/OK or CAUTION	OK: Power window is moving UP by manual operation CAUTION: CAUTION may be displayed even when no resistance is applied in each position. A foreign object may be stuck in that position	–
GLASS POS – 3/4	Door glass position (3/4 open – Fully open) signal/OK or CAUTION	OK: Power window is moving UP by manual operation CAUTION: CAUTION may be displayed even when no resistance is applied in each position. A foreign object may be stuck in that position	–

8. 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.

Standard:

Power window regulator master switch (Door ECU)

Item	Test Detail	Diagnostic Note
P/W UP/DOWN	Operates power window UP/DOWN	–

9. CUSTOMIZING FUNCTION (REFERENCE)

(a) Using the hand–held tester, select a setting from the following items on the power window.

Standard:

Power window regulator master switch (Door ECU)

Item	DEFAULT	Contents	Setting
UP/Door key	Avail	Power window UP operation interlocked with door	Avail/Not Avl
DOWN/Door key	Avail	Power window UP operation interlocked with door	Avail/Not Avl