

## FAIL-SAFE CHART

### 1. FAIL-SAFE FUNCTION

- (a) The ECU stops operating the multiplex tilt and telescopic steering column when a changed signal is not input to the ECU while the unit is in operation.

HINT:

Each motor has a built in position sensor.

- (b) The ECU temporarily stops operating the tilt or telescopic steering column when the power supply to the ECU decreases to approx. 8+-1 V or less while the unit is in operation.

HINT:

When the power supply returns to normal within 10 seconds after the signal to operate the tilt or telescopic steering column is input to the ECU, the ECU starts operating the unit. When the power supply returns to normal after 10 seconds or more elapses, the ECU starts operating it the next time the tilt or telescopic steering column operational signal input to the ECU.

- (c) If the communication of ECU related to this system is interrupted, the ECU effects the controls listed below.

Tilt and telescopic operation	Multiplex network body ECU	Power seat ECU	Multiplex communication interruption
Manual	○ (IG switch ON position)	○	○ (IG switch ON position)
Auto away / return	X	○	X
Position memory (Memorize)	X	X	X
Position memory (Play back)	○ (IG switch ON position)	X	X

## DATA LIST / ACTIVE TEST

### 1. DATA LIST

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch to the ON position.
- (c) Operate the intelligent tester according to the steps on the display and select "DATA LIST".

Item	Measurement Item / Range (Display)	Normal Condition	Diagnostic Note
T & T AUTO AWAY	Auto away and return function / ON or OFF	ON: Auto away and return function is allowed OFF: Auto away and return function is restrained	-
TILT POS	Current tilt position data / min.: 0000 H (0 edge), max.: FFFF H (65535 edge)	7000 - 9000 H (28672 - 36864 edge)	-
TELSC POS	Current telescopic position data / min.: 0000 H (0 edge), max.: FFFF H (65535 edge)	7000 - 9000 H (28672 - 36864 edge)	-
TILT RETURN POS	Memorized tilt return position data / min.: 0000 H (0 edge), max.: FFFF H (65535 edge)	7000 - 9000 H (28672 - 36864 edge)	-
TELSC RETURN POS	Memorized telescopic return position data / min.: 0000 H (0 edge), max.: FFFF H (65535 edge)	7000 - 9000 H (28672 - 36864 edge)	-
T & T MEM 1	Tilt and telescopic memory position 1 / NOT MEM or MEM	NOT MEM: Position is not memorized MEM: Position is memorized	-
TILT MEM 1 POS	Tilt data of memory position 1 / min.: 0000 H (0 edge), max.: FFFF H (65535 edge)	7000 - 9000 H (28672 - 36864 edge)	-
TELSC MEM 1 POS	Telescopic data of memory position 1 / min.: 0000 H (0 edge), max.: FFFF H (65535 edge)	7000 - 9000 H (28672 - 36864 edge)	-
T & T MEM 2	Tilt and telescopic memory position 2 / NOT MEM or MEM	NOT MEM: Position is not memorized MEM: Position is memorized	-
TILT MEM 2 POS	Tilt data of memory position 2 / min.: 0000 H (0 edge), max.: FFFF H (65535 edge)	7000 - 9000 H (28672 - 36864 edge)	-
TELSC MEM 2 POS	Telescopic data of memory position 2 / min.: 0000 H (0 edge), max.: FFFF H (65535 edge)	7000 - 9000 H (28672 - 36864 edge)	-
TELSC MEM 3 POS	Telescopic data of memory position 3 / min.: 0000 H (0 edge), max.: FFFF H (65535 edge)	7000 - 9000 H (28672 - 36864 edge)	-
UP LIMIT	Uppermost tilt position / NOT MEM or MEM	NOT MEM: Position is not memorized MEM: Position is memorized	-
UP LIMIT POS	Uppermost tilt position data / min.: 0000 H (0 edge), max.: FFFF H (65535 edge)	7000 - 9000 H (28672 - 36864 edge)	-
DOWN LIMIT	Lowermost tilt position / NOT MEM or MEM	NOT MEM: Position is not memorized MEM: Position is memorized	-
DOWN LIMIT POS	Lowermost tilt position data / min.: 0000 H (0 edge), max.: FFFF H (65535 edge)	7000 - 9000 H (28672 - 36864 edge)	-
SHORT LIMIT	Shortest telescopic position / NOT MEM or MEM	NOT MEM: Position is not memorized MEM: Position is memorized	-

Item	Measurement Item / Range (Display)	Normal Condition	Diagnostic Note
SHORT LIMIT POS	Shortest telescopic position data / min.: 0000 H (0 edge), max.: FFFF H (65535 edge)	7000 - 9000 H (28672 - 36864 edge)	-
LONG LIMIT	Longest telescopic position / NOT MEM or MEM	NOT MEM: Position is not memorized MEM: Position is memorized	-
LONG LIMIT POS	Longest telescopic position data / min.: 0000 H (0 edge), max.: FFFF H (65535 edge)	7000 - 9000 H (28672 - 36864 edge)	-
UP SW	Tilt up input by manual switch / ON or OFF	ON: Tilt up is activated by manual switch OFF: Tilt up is not activated by manual switch	-
UP SW (MPX)	Communication state of tilt up input by manual switch / ON or OFF	ON: Tilt up is activated by manual switch OFF: Tilt up is not activated by manual switch	-
DOWN SW	Tilt down input by manual switch / ON or OFF	ON: Tilt down is activated by manual switch OFF: Tilt down is not activated by manual switch	-
DOWN SW (MPX)	Communication state of tilt down input by manual switch / ON or OFF	ON: Tilt down is activated by manual switch OFF: Tilt down is not activated by manual switch	-
SHORT SW	Telescopic short input by manual switch / ON or OFF	ON: Telescopic short is activated by manual switch OFF: Telescopic short is not activated by manual switch	-
SHORT SW (MPX)	Communication state of telescopic short input by manual switch / ON or OFF	ON: Telescopic short is activated by manual switch OFF: Telescopic short is not activated by manual switch	-
LONG SW	Telescopic long input by manual switch / ON or OFF	ON: Telescopic long is activated by manual switch OFF: Telescopic short is not activated by manual switch	-
LONG SW (MPX)	Communication state of telescopic long input by manual switch / ON or OFF	ON: Telescopic long is activated by manual switch OFF: Telescopic short is not activated by manual switch	-
T & T MANUAL SW	Voltage data of manual switch / min.: 0 V, max.: 5 V	Neutral position: Below 0.2 V Tilt up: 1.67 - 2.13 V Tilt down: 0.54 - 0.74 V Telescopic contract: 1.08 - 1.40 V Telescopic Extend: 2.22 - 2.77 V	-
POWER VOLTAGE	Voltage data of power supply / min.: 0 V, max.: 20 V	Actual power supply voltage 10 - 14 V	-
FREEZ SPD INFO	Vehicle speed data / 0 km/h (0ph), max. : 255 km/h (158 mph)	Available only for vehicles with the freeze frame data	-
IG SW (MPX)	Communication state of ignition switch / ON or OFF	ON: Communication is normal OFF: Communication is interrupted	-
IG SW	Input state of ignition switch / ON or OFF	ON: Input signal is normal OFF: Input signal is interrupted	-
KEYSW (MPX)	Communication state of un-lock warning switch / ON or OFF	ON: Communication is normal OFF: Communication is interrupted	-
BODY 1 ECU INFO	Communication state of body ECU signal/ ON or Interruption	ON: Communication is normal Interruption: Input signal is interrupted	-

SR

Item	Measurement Item / Range (Display)	Normal Condition	Diagnostic Note
SEAT ECU INFO	Communication state of seat ECU signal/ ON or Interruption	ON: Communication is normal Interruption: Input signal is interrupted	-

**2. ACTIVE TEST LIST**

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch to the ON position.
- (c) Following the display on intelligent tester, perform the "ACTIVE TEST".

**SR**

Item	Vehicle Condition / Test Details	Diagnostic Note
TILT	Tilt operation / UP or DOWN	-
TELESCO	Telescopic operation / LONG or SHORT	-