

ON-VEHICLE INSPECTION

1. CHECK ELECTRICAL DOOR LOCK OPERATION

- (a) Check that all doors lock when the door control switch (for manual operation) is turned to LOCK and all doors unlock when turned to UNLOCK.
- (b) Check that all doors lock when the door lock key cylinder is turned to LOCK using the mechanical key and unlock when turned to UNLOCK using the mechanical key.
- (c) Check that only the driver side door unlocks when the driver side door lock key cylinder is turned to UNLOCK and all doors unlock when turned to UNLOCK once again within 3 seconds using the key (2-step unlocking function).
- (d) Check the key lock-in prevention function.

NOTICE:

Perform this operation with the driver door window open to prevent the key from being locked inside the vehicle.

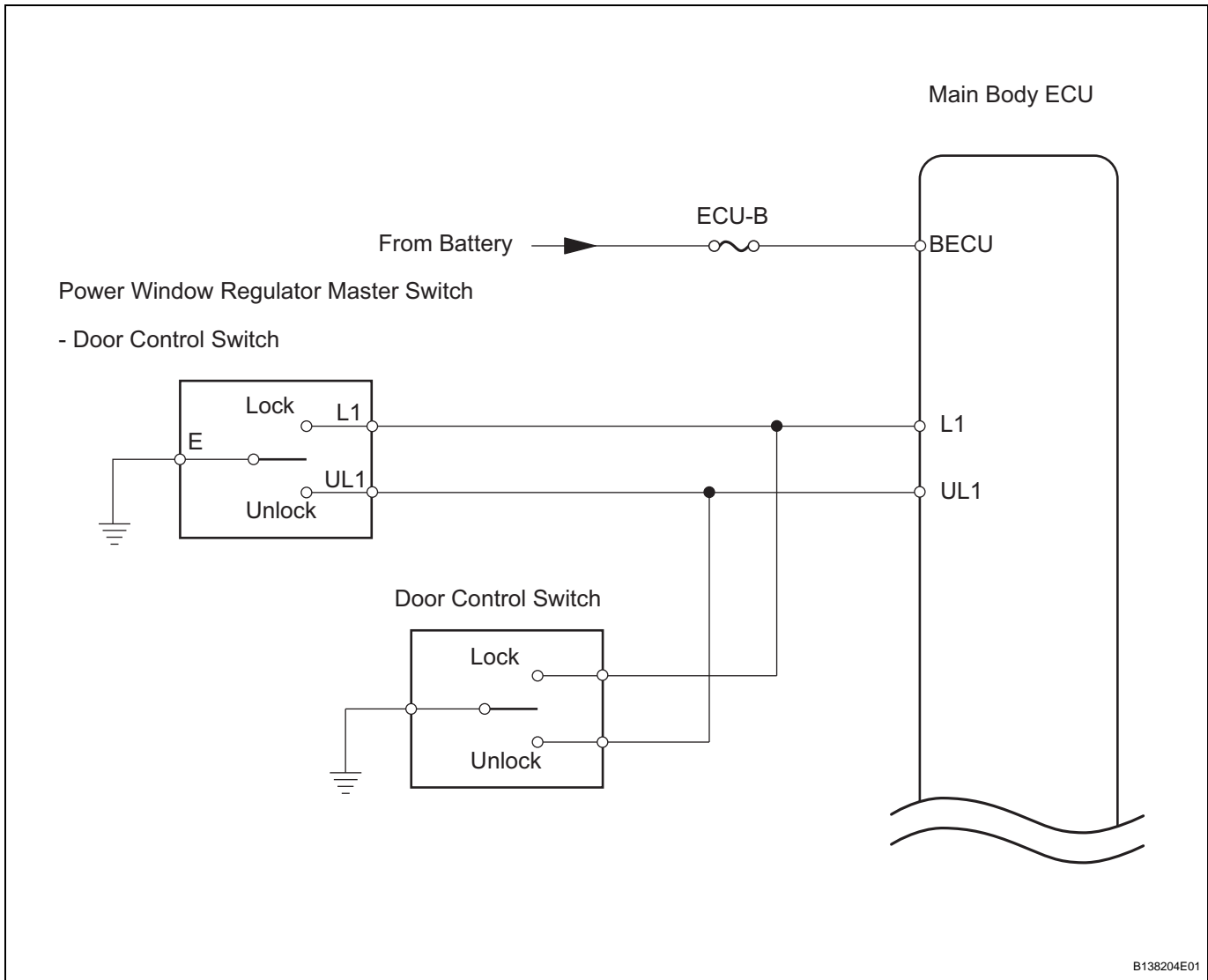
- (1) Insert the ignition key into the ignition key cylinder.
- (2) Check that all doors are immediately unlocked when the driver side door lock knob is turned to the lock position with the driver door open.
- (3) Check that all doors are immediately unlocked when the door control switch (for driver side) or door control switch (for front passenger side) is turned to the lock position with the driver door open.
- (4) Check that all doors are unlocked when the driver door is closed after the driver door lock knob is held in the lock position for 2 seconds with the driver door open.

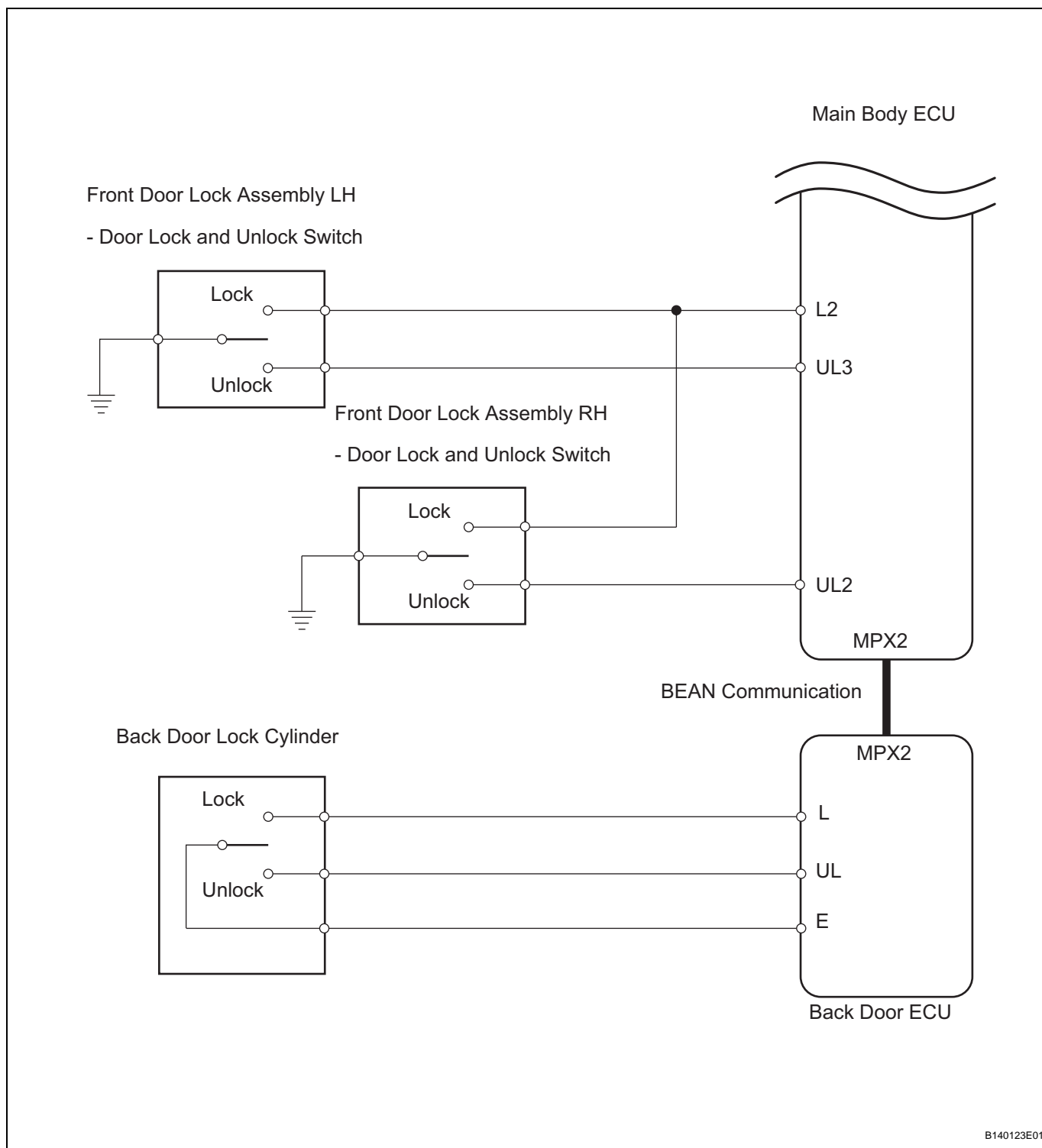
All Doors cannot be Locked / Unlocked Simultaneously

DESCRIPTION

The main body ECU receives switch signals from the door control switch on the power window regulator master switch, driver side door key cylinder, passenger side door key cylinder and back door key cylinder, and activates the door lock motor on each door accordingly.

WIRING DIAGRAM





DL

INSPECTION PROCEDURE

1 | PERFORM ACTIVE TEST BY INTELLIGENT TESTER (DOOR LOCK)

- (a) Connect the intelligent tester with CAN VIM to the DLC3.
- (b) Turn the ignition switch ON and turn the tester ON.
- (c) Select the item below in the ACTIVE TEST and then check that the security indicator operates.

BODY

Item	Test Details	Diagnostic Note
DOOR LOCK	Operate door lock motor LOCK/UNLOCK	-

OK:

Doors can lock / unlock.

OK

Go to step 4

NG

2 INSPECT FUSE (ECU-B)

(a) Remove the ECU-B fuse from the engine room R/B No.2.

(b) Measure the resistance.

Standard resistance:**Below 1 Ω**

(c) Reinstall the ECU-B fuse.

NG

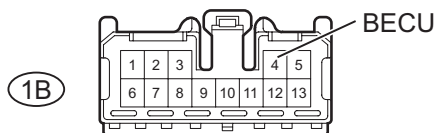
REPLACE FUSE

OK

3 CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BATTERY, BODY GROUND)

Wire Harness Side:

Main Body ECU Connector



Front View

Main Body ECU Connector



Front View

B140114E01

(a) Disconnect the 1B and 1H main body ECU connectors.

(b) Measure the voltage.

Standard voltage

Tester Connection	Specified Condition
IB-4 (BECU) - Body ground	11 to 14 V

(c) Measure the resistance.

Standard resistance

Tester Connection	Specified Condition
IH-2 (GND1) - Body ground	Below 1 Ω

(d) Reconnect the main body ECU connectors.

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MAIN BODY ECU

4 CHECK OPERATION (ALL DOORS LOCK/ UNLOCK)

- (a) All doors can be locked/unlocked at once using the following:
- Door control switch on the power window regulator master switch (switch operation)
 - Door control switch on the front passenger side (switch operation).
 - Door key cylinder linked with door lock on the driver side (key operation)
 - Door key cylinder linked with door lock on the passenger side (key operation)
 - Door key cylinder linked with door lock on the back door (key operation)
- (b) Proceed to the next step according to the symptom if all the doors cannot be locked / unlocked at once.

Result

Symptom	Proceed to
All doors cannot be locked / unlocked at once using door control switch.	A
All doors cannot be locked / unlocked at once using door key cylinder	B

B

Go to step 12

A

DL

5 CHECK OPERATION (DOOR CONTROL SWITCH)

- (a) Proceed to the next step according to the symptom listed in the table below.

Result

Symptom	Proceed to
All doors cannot be locked / unlocked at once using door control switch on power window regulator master switch	A
All doors cannot be locked / unlocked at once using door control switch on front passenger side	B

B

Go to step 9

A

6 READ VALUE OF INTELLIGENT TESTER (DOOR CONTROL SWITCH)

- (a) Connect the intelligent tester with CAN VIM to the DLC3.
- (b) Turn the ignition switch ON and turn the intelligent tester main switch ON.
- (c) Select the items below in the "DATA LIST" and read the display on the intelligent tester.

BODY

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
D/L SW-LOCK	Door manual lock switch signal / ON or OFF	ON: Door control switch on power window regulator master switch is pushed to lock position OFF: Door control switch on power window regulator master switch is not pushed	-
D/L SW-UNLOCK	Door manual unlock switch signal / ON or OFF	ON: Door control switch on power window regulator master switch is pushed to unlock position OFF: Door control switch on power window regulator master switch is not pushed	-

OK:

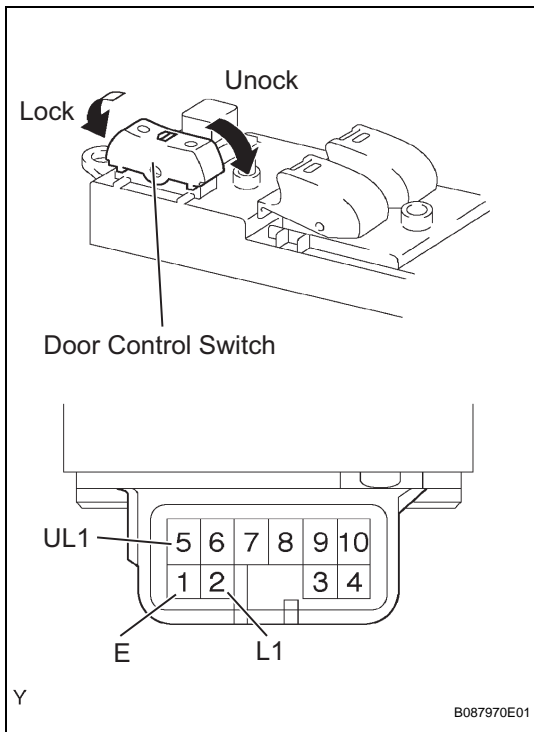
When the switch is operated, the intelligent tester displays ON and OFF as shown in the table.

OK → **REPLACE MAIN BODY ECU**

NG

7 INSPECT POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY (DOOR CONTROL SWITCH)

DL



- (a) Remove the power window regulator master switch (door control switch).
- (b) Measure the resistance
Standard resistance

Tester Connection	Switch Condition	Specified Condition
1 (E) - 2 (L1)	Locked	Below 1 Ω
1 (E) - 2 (L1)	OFF	10 kΩ or higher
1 (E) - 5 (UL1)	OFF	10 kΩ or higher
1 (E) - 5 (UL1)	Unlocked	Below 1 Ω

- (c) Reinstall the power window regulator master switch.

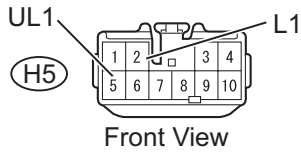
NG → **REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY**

OK

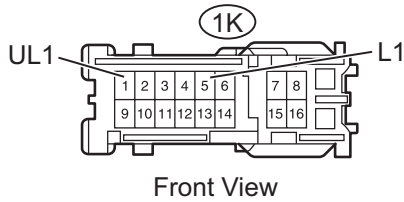
8 CHECK HARNESS AND CONNECTOR (DOOR CONTROL SWITCH - MAIN BODY ECU, BODY GROUND)

Wire Harness Side:

Power Window Regulator Master Switch Connector



Main Body ECU Connector



B140115E01

- (a) Disconnect the 1K main body ECU connector.
- (b) Disconnect the H5 power window regulator master switch (door control switch) connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
H5-2 (L1) - 1K-5 (L1)	Below 1 Ω
H5-5 (UL1) - 1K-1 (UL1)	Below 1 Ω
H5-2 (L1) or 1K-5 (L1) - Body ground	10 kΩ or higher
H5-5 (UL1) or 1K-1 (UL1) - Body ground	10 kΩ or higher

- (d) Reconnect the main body ECU connector.
- (e) Reconnect the the power window regulator master switch connector.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE MAIN BODY ECU

9 READ VALUE OF INTELLIGENT TESTER (DOOR CONTROL SWITCH)

- (a) Connect the intelligent tester with CAN VIM to the DLC3.
- (b) Turn the ignition switch ON and turn the intelligent tester main switch ON.
- (c) Select the items below in the "DATA LIST" and read the display on the intelligent tester.

BODY

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
D/L SW-LOCK	Door manual lock switch signal / ON or OFF	ON: Passenger side door control switch is pushed to lock position OFF: Passenger side door control switch is not pushed	-
D/L SW-UNLOCK	Door manual unlock switch signal / ON or OFF	ON: Passenger side door control switch is pushed to unlock position OFF: Passenger side door control switch is not pushed	-

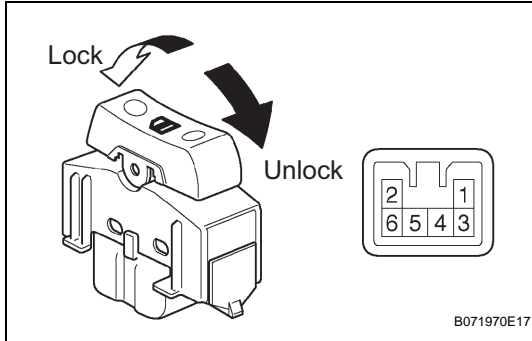
OK:

When the door key cylinder is operated, the intelligent tester displays ON and OFF as shown in the table.

OK

REPLACE MAIN BODY ECU

NG

10 INSPECT DOOR CONTROL SWITCH ASSEMBLY

- (a) Remove the door control switch (front passenger side).
 (b) Measure the resistance

Standard resistance

Tester Connection	Switch Condition	Specified Condition
3 - 6	Locked	Below 1 Ω
3 - 6	OFF	10 k Ω or higher
3 - 5	OFF	10 k Ω or higher
3 - 5	Unlocked	Below 1 Ω

- (c) Reinstall the door control switch.

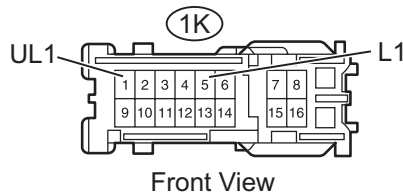
NG

REPLACE DOOR CONTROL SWITCH ASSEMBLY

OK

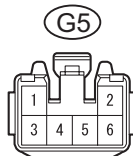
11 CHECK HARNESS AND CONNECTOR (DOOR CONTROL SWITCH - MAIN BODY ECU, BODY GROUND)**Wire Harness Side:**

Main Body ECU Connector



Front View

Door Control Switch Connector



Front View

B140116E01

- (a) Disconnect the 1K main body ECU connector.
 (b) Disconnect the G5 door control switch (front passenger side) connector.
 (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
G5-6 - 1K-5 (L1)	Below 1 Ω
G5-5 - 1K-1 (UL1)	Below 1 Ω
G5-6 or 1K-5 (L1) - Body ground	10 k Ω or higher
G5-5 or 1K-1 (UL1) - Body ground	10 k Ω or higher

- (d) Reconnect the main body ECU connector.
 (e) Reconnect the the door control switch connector.

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

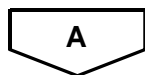
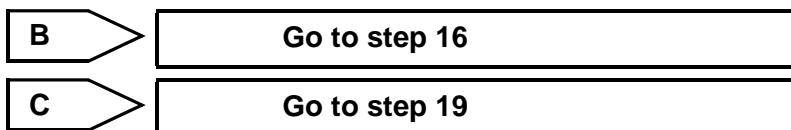
REPLACE MAIN BODY ECU

12 CHECK OPERATION (DOOR KEY CYLINDER)

- (a) Proceed to the next step according to the symptom listed in the table below.

Result

Symptom	Proceed to
All doors cannot be locked / unlocked at once using door key cylinder on driver side	A
All doors cannot be locked / unlocked at once using door key cylinder on front passenger side	B
All doors cannot be locked / unlocked at once using door key cylinder on back door	C



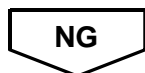
13 READ VALUE OF INTELLIGENT TESTER (DOOR KEY SWITCH)

- (a) Connect the intelligent tester with CAN VIM to the DLC3.
- (b) Turn the ignition switch ON and turn the intelligent tester main switch ON.
- (c) Select the items below in the "DATA LIST" and read the display on the intelligent tester.

BODY

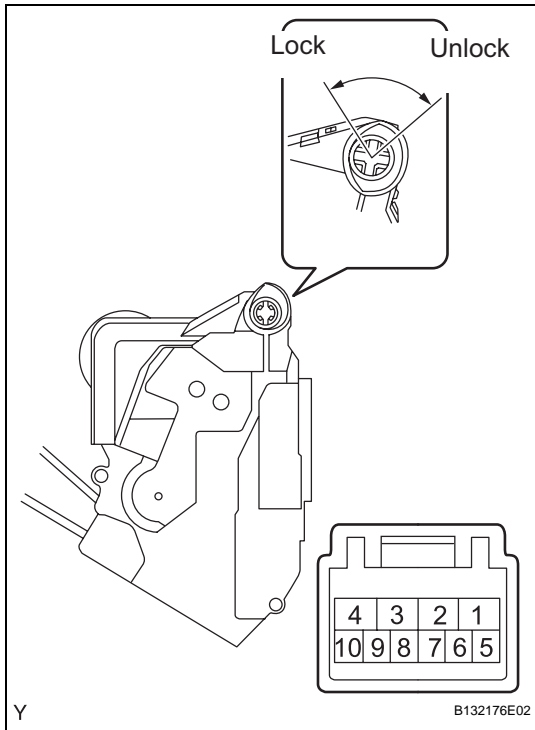
Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
DOR KEY SW-LOCK	Door key linked lock switch signal / ON or OFF	ON: Driver side door key cylinder is turned to lock position OFF: Driver side door key cylinder is not turned	-
D DOR KEY SW-UL	Door key linked unlock switch signal / ON or OFF	ON: Driver side door key cylinder is turned to unlock position OFF: Driver side door key cylinder is not turned	-

OK:
When the switch is operating, the intelligent tester should display as shown in the table.



DL

14 INSPECT FRONT DOOR LOCK ASSEMBLY LH



- (a) Remove the front door lock assembly LH (driver side).
- (b) Measure the resistance of the door lock and unlock switch.

Standard resistance

Tester Connection	Door Lock Condition	Specified Condition
7 - 9	Locked	Below 1 Ω
7 - 9	Unlocked	10 kΩ or higher
7 - 10	Locked	10 kΩ or higher
7 - 10	Unlocked	Below 1 Ω

- (c) Reinstall the front door lock assembly LH.

NG → **REPLACE FRONT DOOR LOCK ASSEMBLY LH**

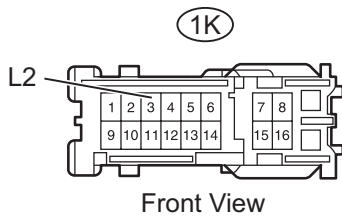
DL

OK

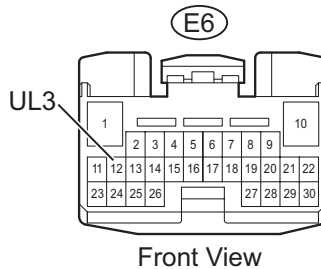
15 CHECK HARNESS AND CONNECTOR (FRONT DOOR LOCK ASSEMBLY LH - MAIN BODY ECU)

Wire Harness Side:

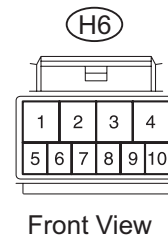
Main Body ECU Connector



Main Body ECU Connector



Front Door Lock Assembly LH Connector



B140117E01

- (a) Disconnect the 1K and E6 main body ECU connectors.
- (b) Disconnect the H6 front door lock assembly LH connector.
- (c) Measure the resistance.

Standard resistance

Tester Connection	Specified Condition
H6-9 - 1K-3 (L2)	Below 1 Ω
H6-10 - E6-12 (UL3)	Below 1 Ω
H6-9 or 1K-3 (L2) - Body ground	10 k Ω or higher
H6-10 or E6-12 (UL3) - Body ground	10 k Ω or higher

- (d) Reconnect the main body ECU connectors.
(e) Reconnect the front door lock assembly LH connector.

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MAIN BODY ECU

16 READ VALUE OF INTELLIGENT TESTER (DOOR KEY SWITCH)

- (a) Connect the intelligent tester with CAN VIM to the DLC3.
(b) Turn the ignition switch ON and turn the intelligent tester main switch ON.
(c) Select the items below in the "DATA LIST" and read the display on the intelligent tester.

BODY

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
DOR KEY SW-LOCK	Door key linked lock switch signal / ON or OFF	ON: Front passenger side door key cylinder is turned to lock position OFF: Front passenger side door key cylinder is not turned	-
P DOR KEY SW-UL	Door key linked unlock switch signal / ON or OFF	ON: Front passenger side door key cylinder is turned to unlock position OFF: Front passenger side door key cylinder is not turned	-

OK:

When the door key cylinder is operated, the intelligent tester displays ON and OFF as shown in the table.

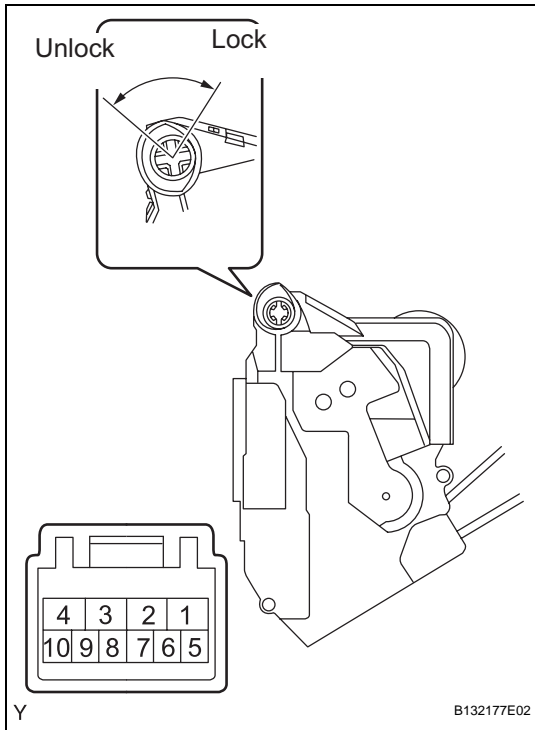
OK

REPLACE MAIN BODY ECU

NG

DL

17 INSPECT FRONT DOOR LOCK ASSEMBLY RH



- (a) Remove the front door lock assembly RH (front passenger side).
- (b) Measure the resistance of the door lock and unlock switch.

Standard resistance

Tester Connection	Door Lock Condition	Specified Condition
6 - 8	Locked	Below 1 Ω
6 - 8	Unlocked	10 kΩ or higher
5 - 8	Locked	10 kΩ or higher
5 - 8	Unlocked	Below 1 Ω

- (c) Reinstall the front door lock assembly RH.

NG → **REPLACE FRONT DOOR LOCK ASSEMBLY RH**

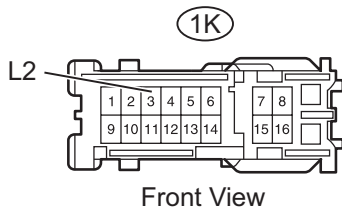
DL

OK

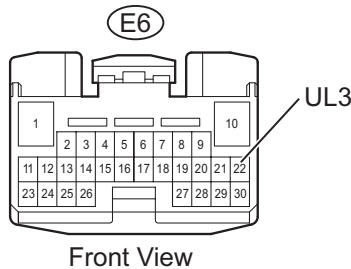
18 CHECK HARNESS AND CONNECTOR (FRONT DOOR LOCK ASSEMBLY RH - MAIN BODY ECU)

Wire Harness Side:

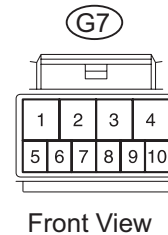
Main Body ECU Connector



Main Body ECU Connector



Front Door Lock Assembly RH Connector



B140117E03

- (a) Disconnect the 1K and E6 main body ECU connectors.
- (b) Disconnect the G7 front door lock assembly RH connector.
- (c) Measure the resistance.

Standard resistance

Tester Connection	Specified Condition
G7-6 - 1K-3 (L2)	Below 1 Ω
G7-5 - E6-22 (UL2)	Below 1 Ω
G7-6 or 1K-3 (L2) - Body ground	10 kΩ or higher
G7-5 or E6-22 (UL2) - Body ground	10 kΩ or higher

- (d) Reconnect the main body ECU connectors.
- (e) Reconnect the front door lock assembly RH connector.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE MAIN BODY ECU

19 CHECK DTC OUTPUT

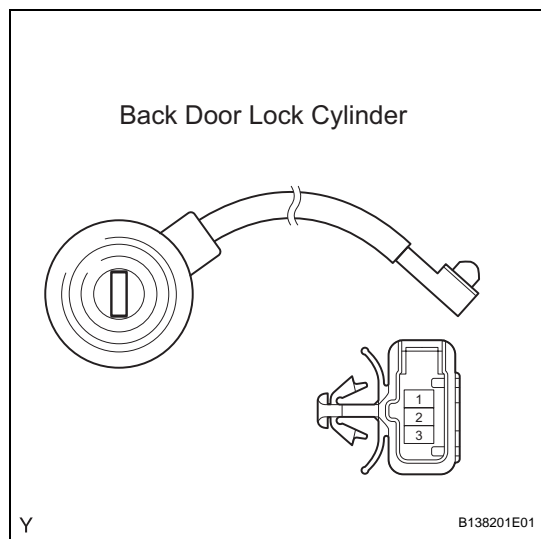
- (a) Connect the intelligent tester with CAN VIM to the DLC3.
- (b) Turn the ignition switch ON and turn the tester ON.
- (c) Clear the DTCs.
- (d) Check whether DTC B1287 recurs 10 seconds or more after the ignition switch is turned on.

OK:
No DTC is output.

NG → **GO TO MULTIPLEX COMMUNICATION SYSTEM**

OK

20 INSPECT BACK DOOR LOCK CYLINDER



- (a) Remove the back door lock cylinder.
- (b) Measure the resistance of the the back door lock cylinder (door lock and unlock switch).

Standard resistance

Tester Connection	Key Condition	Specified Condition
2 - 1	Lock position	Below 1 Ω
2 - 1	Unlock position	10 kΩ or higher
3 - 1	Lock position	10 kΩ or higher
3 - 1	Unlock position	Below 1 Ω

- (c) Reinstall the the back door lock cylinder.

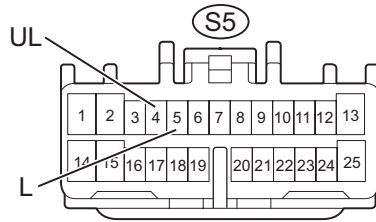
NG → **REPLACE BACK DOOR LOCK CYLINDER**

OK

21 CHECK HARNESS AND CONNECTOR (BACK DOOR LOCK CYLINDER - BACK DOOR ECU)

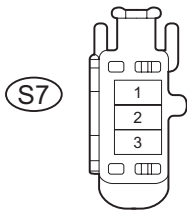
Wire Harness Side:

Back Door ECU Connector



Front View

Back Door Lock Cylinder Connector



Front View

- (a) Disconnect the S5 back door ECU connector.
- (b) Disconnect the S7 back door lock cylinder connector.
- (c) Measure the resistance.

Standard resistance

Tester Connection	Specified Condition
S7-2 - S5-5 (L)	Below 1 Ω
S7-3 - S5-4 (UL)	Below 1 Ω
S7-2 or S5-5 (L) - Body ground	10 k Ω or higher
S7-3 or S5-4 (UL) - Body ground	10 k Ω or higher

- (d) Reconnect the back body ECU connector.
- (e) Reconnect the back door lock cylinder connector.

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

DL

OK

REPLACE BACK DOOR ECU