

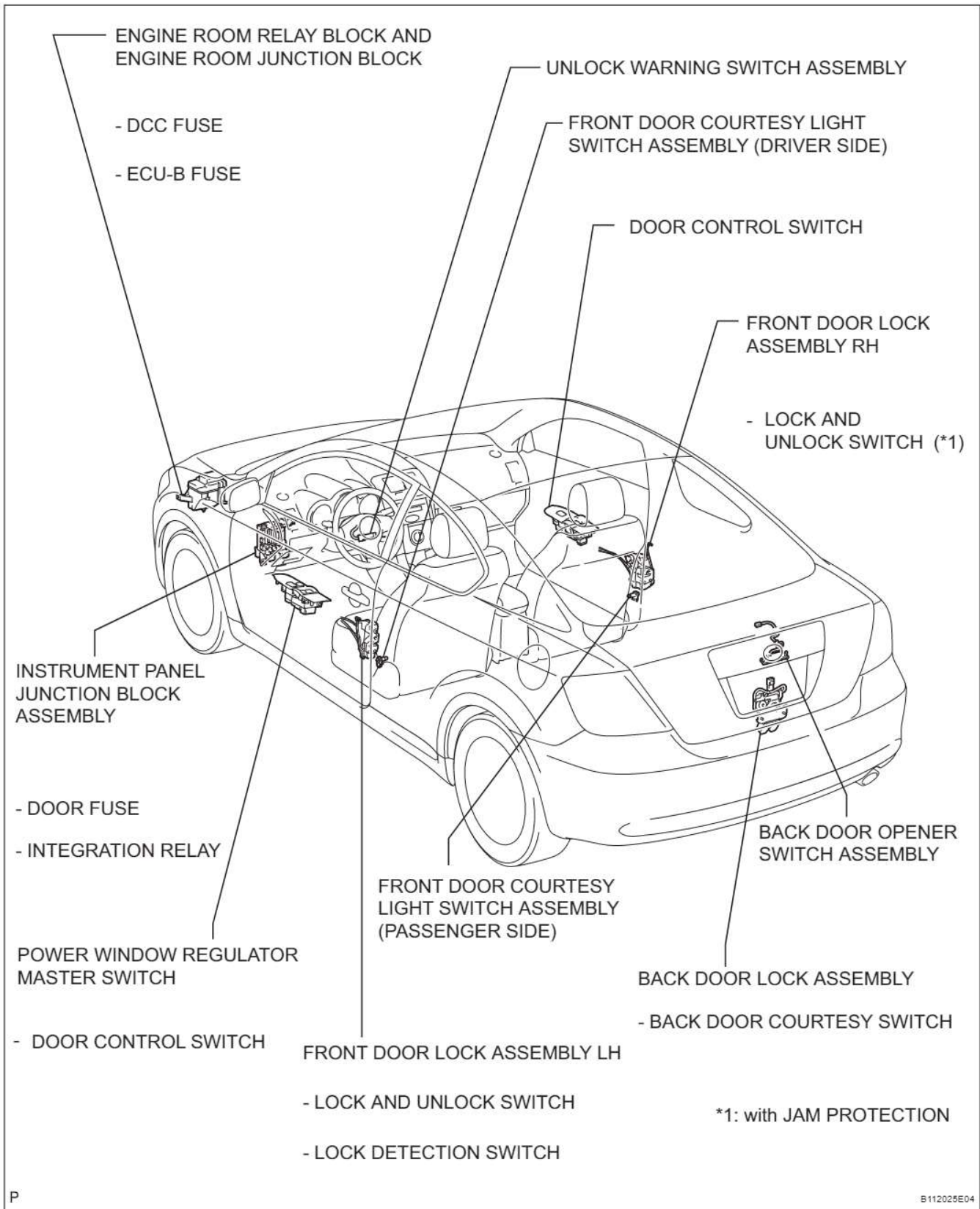
POWER DOOR LOCK CONTROL SYSTEM

PRECAUTION

NOTICE:
When disconnecting the cable from the negative (-) battery terminal, initialize the following system(s) after the cable is reconnected.

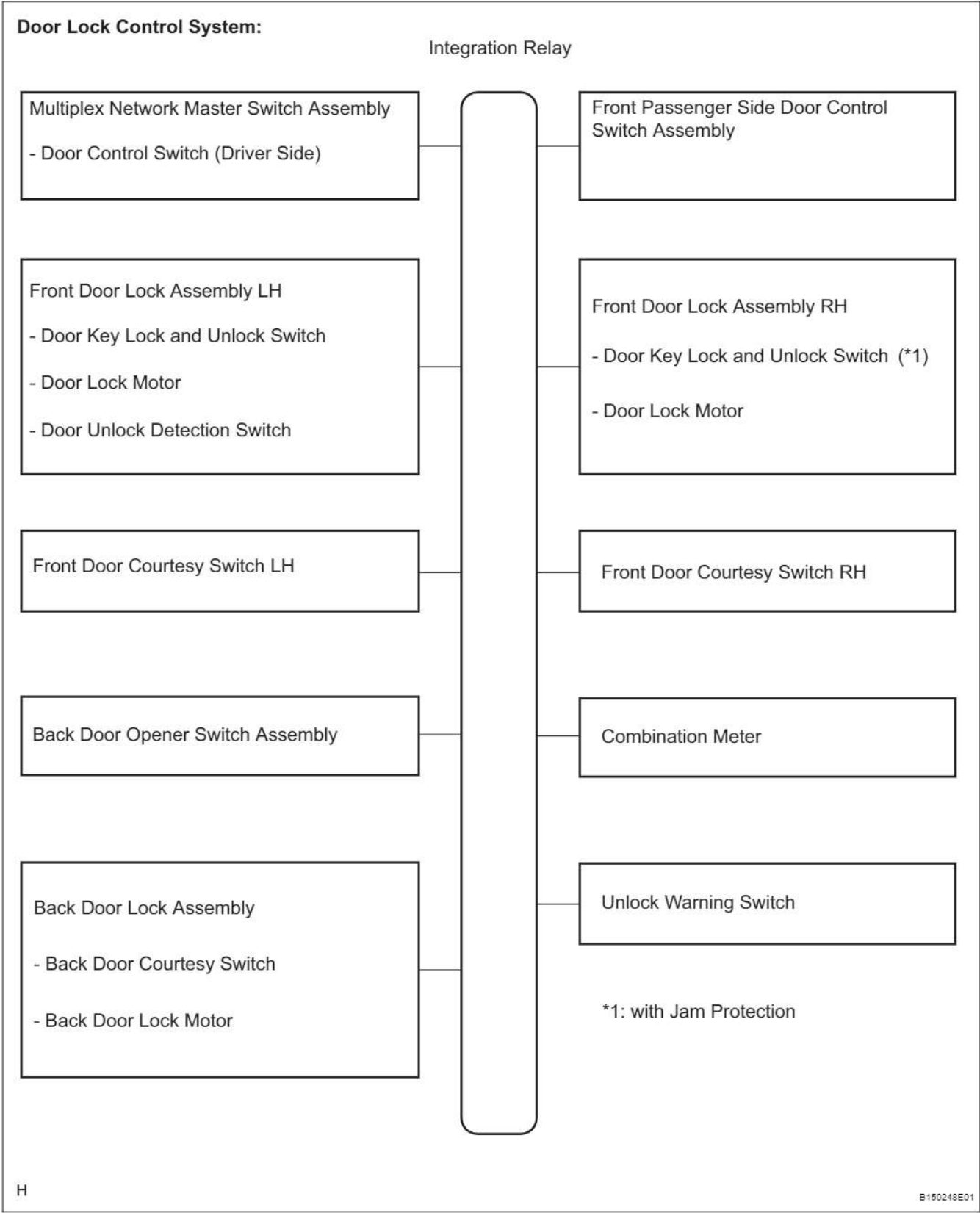
System Name	See Page
Power Window Control System	WS-5
Sliding Roof System	RF-3

DL-2

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM**PARTS LOCATION**

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

SYSTEM DIAGRAM



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DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

SYSTEM DESCRIPTION

All doors are locked and unlocked simultaneously by the door lock motor. The motors are operated by the integration relay (instrument panel junction block). The integration relay receives lock/unlock signals from the driver and passenger door key cylinders, and the driver and passenger side door control switches. The signals are sent when: 1) the driver/passenger door key cylinder is turned with the key, and 2) the driver/passenger side door control switch is pressed. The power door lock system has the following functions:

Function	Description
All doors unlock with transmitter (2-step unlock)	Pressing UNLOCK twice unlocks all doors.
All doors unlock with driver door key cylinder (2-step unlock)	Turning key cylinder twice with key unlock all doors.
All doors unlock with passenger door key cylinder (*1)	Turning key cylinder with key unlocks all doors.
All doors unlock with driver side door control switch	Operating switch unlocks all doors.
All doors unlock with passenger door control switch	Operating switch unlocks all doors.
All doors lock with transmitter	Pressing LOCK locks all doors.
All doors lock with driver door key cylinder	Turning key cylinder with key locks all doors.
All doors lock with passenger door key cylinder (*1)	Turning key cylinder with key locks all doors.
All doors lock with driver side door control switch	Operating switch locks all doors.
All doors lock with passenger door control switch	Operating switch locks all doors.
Key reminder function	All door lock is cancelled when: • Key is in ignition key cylinder • Driver side door is open
Unlock prohibition for security purposes	All doors cannot be unlocked with driver side door control switch and passenger side door control switch when they have been locked with key or transmitter.

*1: with Jam Protection

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:
Use this procedure to troubleshoot the power door lock control system.

1

VEHICLE BROUGHT TO WORKSHOP

NEXT

2

INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V
If the voltage is below 11 V, recharge or replace the battery before proceeding.

DL

NEXT

3

PROBLEM SYMPTOMS TABLE

Result

Result	Proceed to
Fault is not listed in problem symptoms table.	A
Fault is listed in problem symptoms table.	B

B

Go to step 4

A

4

OVERALL ANALYSIS AND TROUBLESHOOTING

(a) Terminal of ECU (See page [DL-6](#))

NEXT

5

ADJUST, REPAIR OR REPLACE

NEXT

6

CONFIRMATION TEST

NEXT

END

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DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

PROBLEM SYMPTOMS TABLE

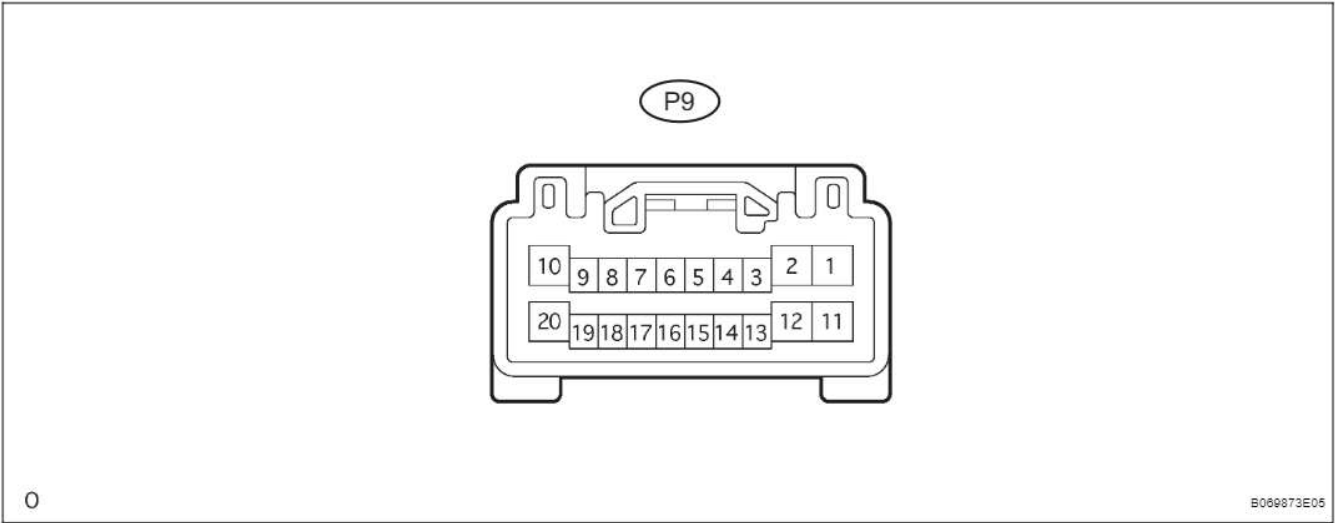
HINT:

Use the table below to help determine the cause of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Symptom	Suspected Area	See page
All doors cannot be locked/unlocked simultaneously	1. DCC fuse	DL-14
	2. ECU-B fuse	DL-14
	3. DOOR fuse	DL-14
	4. IG1 relay	DL-14
	5. Power window regulator master switch assembly	DL-14
	6. Door control switch assembly (passenger side)	DL-14
	7. Front door lock assembly RH	DL-14
	8. Front door lock assembly LH	DL-14
	9. Wire harness	DL-14
	10. Instrument panel junction block assembly (integration relay)	DL-14
Key lock-in prevention function does not work properly (manual operation and key-linked lock are active)	1. Front door courtesy light switch assembly	DL-30
	2. Unlock warning switch assembly	DL-30
	3. Wire harness	DL-30
	4. Instrument panel junction block assembly (integration relay)	DL-30
Only back door cannot be opened (unlocked)	1. Back door lock assembly	DL-36
	2. Back door opener switch assembly	DL-36
	3. Wire harness	DL-36
	4. Instrument panel junction block assembly (integration relay)	DL-36

TERMINALS OF ECU

1. CHECK POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY (with Jam Protection)



- (a) Disconnect the P9 switch connector.
- (b) Measure the voltage and resistance of the wire harness side connector.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
B (P9-10) - Body ground	B - Body ground	+B power supply	Always	10 to 14 V
IG (P9-20) - Body ground	R - Body ground	Ignition power supply	Ignition switch OFF	Below 1 V
IG (P9-20) - Body ground	R - Body ground	Ignition power supply	Ignition switch ON	10 to 14 V
GND (P9-2) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
L (P9-4) - Body ground	R - Body ground	Door control switch door lock input	Door control switch OFF	10 kΩ or higher
L (P9-4) - Body ground	R - Body ground	Door control switch door lock input	Door control switch LOCK	Below 1 Ω
U (P9-14) - Body ground	P - Body ground	Door control switch door unlock input	Door control switch OFF	10 kΩ or higher
U (P9-14) - Body ground	P - Body ground	Door control switch door unlock input	Door control switch UNLOCK	Below 1 Ω

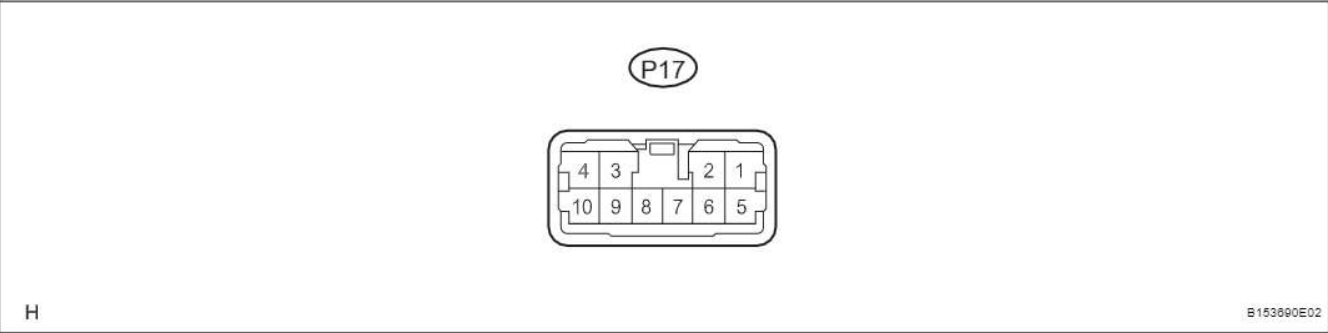
If the result is not as specified, there may be a malfunction on the wire harness side.

HINT:
After disconnecting the P9 switch connector, be sure to reconnect it and then reset the power window motor (See page [WS-5](#)).

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DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

2. CHECK POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY (without Jam Protection)



- (a) Disconnect the P17 switch connector.
- (b) Measure the voltage and resistance of the wire harness side connector.

DL

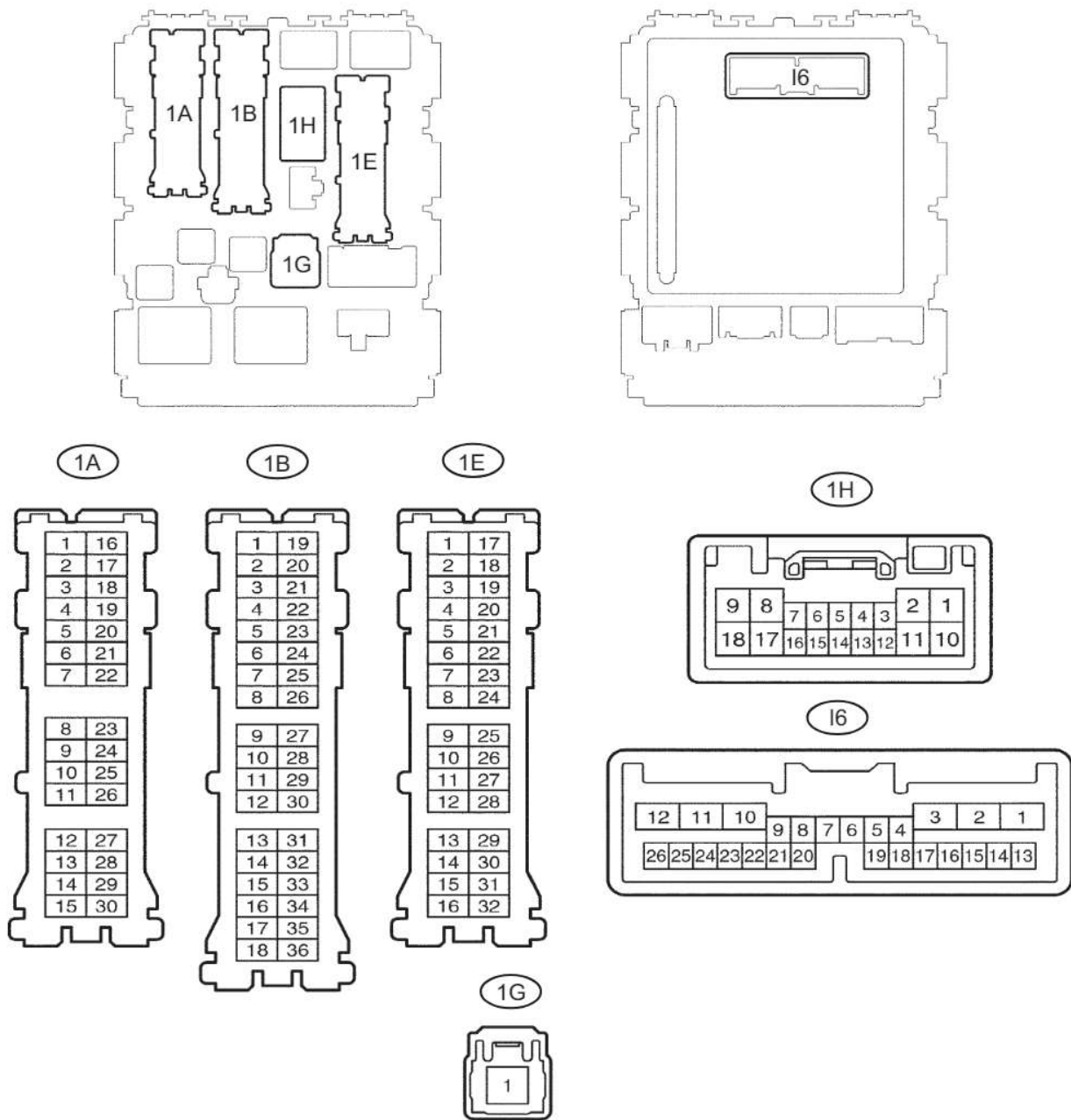
Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
B (P17-3) - Body ground	G - Body ground	IG power supply	IG switch ON	10 to 14 V
E (P17-1) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
L (P17-2) - Body ground	R - Body ground	Door control switch door lock input	Door control switch OFF	10 kΩ or higher
L (P17-2) - Body ground	R - Body ground	Door control switch door lock input	Door control switch LOCK	Below 1 Ω
U (P17-7) - Body ground	P - Body ground	Door control switch door unlock input	Door control switch OFF	10 kΩ or higher
U (P17-7) - Body ground	P - Body ground	Door control switch door unlock input	Door control switch UNLOCK	Below 1 Ω

If the result is not as a specified, there may be a malfunction on the wire harness side.

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

3. CHECK INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (INTEGRATION RELAY)

DL



- (a) Disconnect the 1A, 1B, 1E, 1G and 1H junction block connectors.
- (b) Disconnect the I6 relay connector.

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DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

(c) Measure the voltage and resistance of the wire harness side connectors.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
ALTB (1G-1) - Body ground	W - Body ground	+B (power system, generator system) power supply	Always	10 to 14 V
ECUB (1B-30) - Body ground	V - Body ground	+B (ECUB) power supply	Always	10 to 14 V
GND (1E-17) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
KSW (1E-26) - Body ground	B - Body ground	Key unlock warning switch input	No key in ignition key cylinder	10 k Ω or higher
KSW (1E-26) - Body ground	B - Body ground	Key unlock warning switch input	Key inserted	Below 1 Ω
L1 (1H-13) - Body ground	GR - Body ground	Driver side door control switch lock input	Driver side door control switch OFF	10 k Ω or higher
L1 (1H-13) - Body ground	GR - Body ground	Driver side door control switch lock input	Driver side door control switch LOCK	Below 1 Ω
UL1 (1H-14) - Body ground	V - Body ground	Driver side door control switch unlock input	Driver side door control switch OFF	10 k Ω or higher
UL1 (1H-14) - Body ground	V - Body ground	Driver side door control switch unlock input	Driver side door control switch UNLOCK	Below 1 Ω
L1 (1H-4) - Body ground	L - Body ground	Passenger side door control switch lock input	Passenger side door control switch OFF	10 k Ω or higher
L1 (1H-4) - Body ground	L - Body ground	Passenger side door control switch lock input	Passenger side door control switch LOCK	Below 1 Ω
UL1 (1H-5) - Body ground	B - Body ground	Passenger side door control switch unlock input	Passenger side door control switch OFF	10 k Ω or higher
UL1 (1H-5) - Body ground	B - Body ground	Passenger side door control switch unlock input	Passenger side door control switch UNLOCK	Below 1 Ω
L2 (1H-16) - Body ground	L - Body ground	Driver side door key-linked door lock input	Driver side door key cylinder OFF	10 k Ω or higher
L2 (1H-16) - Body ground	L - Body ground	Driver side door key-linked door lock input	Driver side door key cylinder LOCK	Below 1 Ω
UL3 (I6-18) - Body ground	P - Body ground	Driver side door key-linked door unlock input	Driver side door key cylinder OFF	10 k Ω or higher
UL3 (I6-18) - Body ground	P - Body ground	Driver side door key-linked door unlock input	Driver side door key cylinder UNLOCK	Below 1 Ω
LSWD (I6-20) - Body ground	W - Body ground	Driver side door lock position switch input	Driver side door UNLOCK	10 k Ω or higher
LSWD (I6-20) - Body ground	W - Body ground	Driver side door lock position switch input	Driver side door LOCK	Below 1 Ω
L2 (1H-7) - Body ground (*1)	O - Body ground	Passenger side door key-linked door lock input	Passenger side door key cylinder OFF	10 k Ω or higher
L2 (1H-7) - Body ground (*1)	O - Body ground	Passenger side door key-linked door lock input	Passenger side door key cylinder LOCK	Below 1 Ω
UL2 (1H-6) - Body ground (*1)	LG - Body ground	Passenger side door key-linked door unlock input	Passenger side door key cylinder OFF	10 k Ω or higher
UL2 (1H-6) - Body ground (*1)	LG - Body ground	Passenger side door key-linked door unlock input	Passenger side door key cylinder UNLOCK	Below 1 Ω
DCTY (1A-21) - Body ground	O - Body ground	Driver side courtesy switch input	Driver side door closed	10 k Ω or higher
DCTY (1A-21) - Body ground	O - Body ground	Driver side courtesy switch input	Driver side door open	Below 1 Ω
BCTY (1A-7) - Body ground	V - Body ground	Back door courtesy switch input	Back door closed	10 k Ω or higher
BCTY (1A-7) - Body ground	V - Body ground	Back door courtesy switch input	Back door open	Below 1 Ω

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM**DL-11**

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
BDSU (I6-19) - Body ground	O - Body ground	Back door opener switch input	Back door opener switch OFF	10 k Ω or higher
BDSU (I6-19) - Body ground	O - Body ground	Back door opener switch input	Back door opener switch ON	Below 1 Ω
SPD (I6-11) - Body ground	V - Body ground	Vehicle speed signal	Ignition switch on, rotate front wheel slowly	Pulse generation (See waveform 1)

*1: with Jam Protection

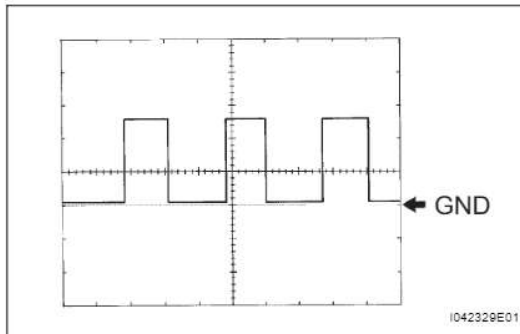
If the result is not as specified, there may be a malfunction on the wire harness side.

- (d) Using an oscilloscope, check the signal waveform of the ECU.

(1) Waveform 1

Waveform 1 (Reference):

Terminal No.	SPD (I6-11) - Body ground
Tool Setting	5 V/DIV., 10 ms./DIV.
Vehicle Condition	Driving at approx. 20 km/h (12 mph)

DL**HINT:**

As the vehicle speed increases, the wavelength shortens.

- (e) Reconnect the 1A, 1B, 1E, 1G and 1H junction block connectors.
 (f) Reconnect the I6 relay connector.
 (g) Measure the voltage of the connectors.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
ACT+ (1H-8) - Body ground	BR - Body ground	Door lock motor LOCK drive output (driver and passenger doors)	Drivers' door control switch OFF	Below 1 V
			Drivers' door control switch LOCK	10 to 14 V
			Drivers' door key cylinder OFF	Below 1 V
			Drivers' door key cylinder LOCK	10 to 14 V
			Passengers' door control switch OFF	Below 1 V
			Passengers' door control switch LOCK	10 to 14 V
			Passengers' door key cylinder OFF	Below 1 V
			Passengers' door key cylinder LOCK	10 to 14 V

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DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
ACT+ (1H-17) - Body ground	R - Body ground	Door lock motor LOCK drive output (driver and passenger doors)	Drivers' door control switch OFF	Below 1 V
			Drivers' door control switch LOCK	10 to 14 V
			Drivers' door key cylinder OFF	Below 1 V
			Drivers' door key cylinder LOCK	10 to 14 V
			Passengers' door control switch OFF	Below 1 V
			Passengers' door control switch LOCK	10 to 14 V
			Passengers' door key cylinder OFF	Below 1 V
			Passengers' door key cylinder LOCK	10 to 14 V
ACTD (I6-2) - Body ground	L - Body ground	Door lock motor UNLOCK drive output (driver door)	Drivers' door control switch OFF	Below 1 V
			Drivers' door control switch UNLOCK	10 to 14 V
			Drivers' door key cylinder OFF	Below 1 V
			Drivers' door key cylinder UNLOCK	10 to 14 V
			Passengers' door control switch OFF	Below 1 V
			Passengers' door control switch UNLOCK	10 to 14 V
			Passengers' door key cylinder OFF	Below 1 V
			Passengers' door key cylinder UNLOCK	10 to 14 V
ACT- (1H-9) - Body ground	W - Body ground	Door lock motor UNLOCK drive output (passenger door)	Drivers' door control switch OFF	Below 1 V
			Drivers' door control switch UNLOCK	10 to 14 V
			Drivers' door key cylinder OFF	Below 1 V
			Drivers' door key cylinder UNLOCK	10 to 14 V
			Passengers' door control switch OFF	Below 1 V
			Passengers' door control switch UNLOCK	10 to 14 V
			Passengers' door key cylinder OFF	Below 1 V
			Passengers' door key cylinder UNLOCK	10 to 14 V
BACT (I6-1) - Body ground	LG - Body ground	Back door lock motor OPEN drive output	Door control switch UNLOCK, back door opener switch OFF	Below 1 V
			Door control switch UNLOCK, back door opener switch ON	10 to 14 V

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

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Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
BACT (I6-1) - Body ground	LG - Body ground	Back door lock motor OPEN drive output	Door control switch LOCK, back door opener switch OFF	Below 1 V
			Door control switch LOCK, back door opener switch ON	Below 1 V

If the result is not as specified, the junction block (integration relay) may have a malfunction.

DL

ON-VEHICLE INSPECTION

1. CHECK POWER DOOR LOCK OPERATION

- (a) Check the basic function.
 - (1) For the door control switch (manual operation):
 - 1) pushing LOCK causes all the doors to lock
 - and 2) pushing UNLOCK causes all the doors to unlock.
 - (2) For the door key cylinder lock function: turning the driver or passenger side door lock key cylinder to LOCK causes all the doors to lock.
 - (3) For the passenger side door key cylinder unlock function: turning the passenger side door lock key cylinder to UNLOCK causes all the doors to unlock.
 - (4) For the driver side door key cylinder unlock function: 1) turning the driver side door key cylinder to UNLOCK once causes the driver side door to unlock, and 2) turning it again to UNLOCK within 3 seconds causes all the doors to unlock (2-step unlock function).
- (b) Check the key lock-in prevention function.

NOTICE:

To prevent the key from being locked in the vehicle, the following inspection should be made with the driver side door window open.

- (1) Have the key inserted into the ignition key cylinder.
- (2) With the driver side door open, turn the driver side door control knob to LOCK and check that all the doors unlock immediately.
- (3) With the driver side door open, push LOCK on the door control switch (manual operation) and check that all the doors unlock immediately.
- (4) With the driver side door open, turn the driver side door control knob to LOCK, hold it for 2 seconds or more and then close the driver side door. Check that all the doors unlock.
- (c) Check the security function.
 - (1) Open the driver side door window so that the door control switch can be operated from outside of the vehicle. Then, close all the doors.
 - (2) Pull out the key, open the driver side door and then close and lock the door without using the key. Check that pushing UNLOCK on the door control switch (manual operation) from outside of the vehicle does not unlock the doors.
 - (3) Pull out the key, close and lock the driver side door using the key operation. Check that pushing UNLOCK on the door control switch (manual operation) from outside of the vehicle does not unlock the doors.

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM**DL-15**

- (4) Pull out the key, close the driver side door and lock the door by wireless door lock operation. Check that pushing UNLOCK on the door control switch (manual operation) from outside of the vehicle does not unlock the doors.

HINT:

Check that the security function is canceled when any of the following conditions is met:

- The ignition switch is turned ON.
- The driver side door is unlocked using the key.
- UNLOCK on the door control switch (for manual operation) is pushed after the door control knob is turned to UNLOCK manually.
- The doors are unlocked with the wireless operation.

- (d) Check the illumination function.

- (1) Set the room light switch to the DOOR position.
- (2) With all doors locked, check that all doors unlock when the driver side door lock key cylinder is turned to UNLOCK using the key. At the same time, the room light should illuminate.
- (3) Check that the room light turns off in approximately 15 seconds if the doors have not been opened.

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DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

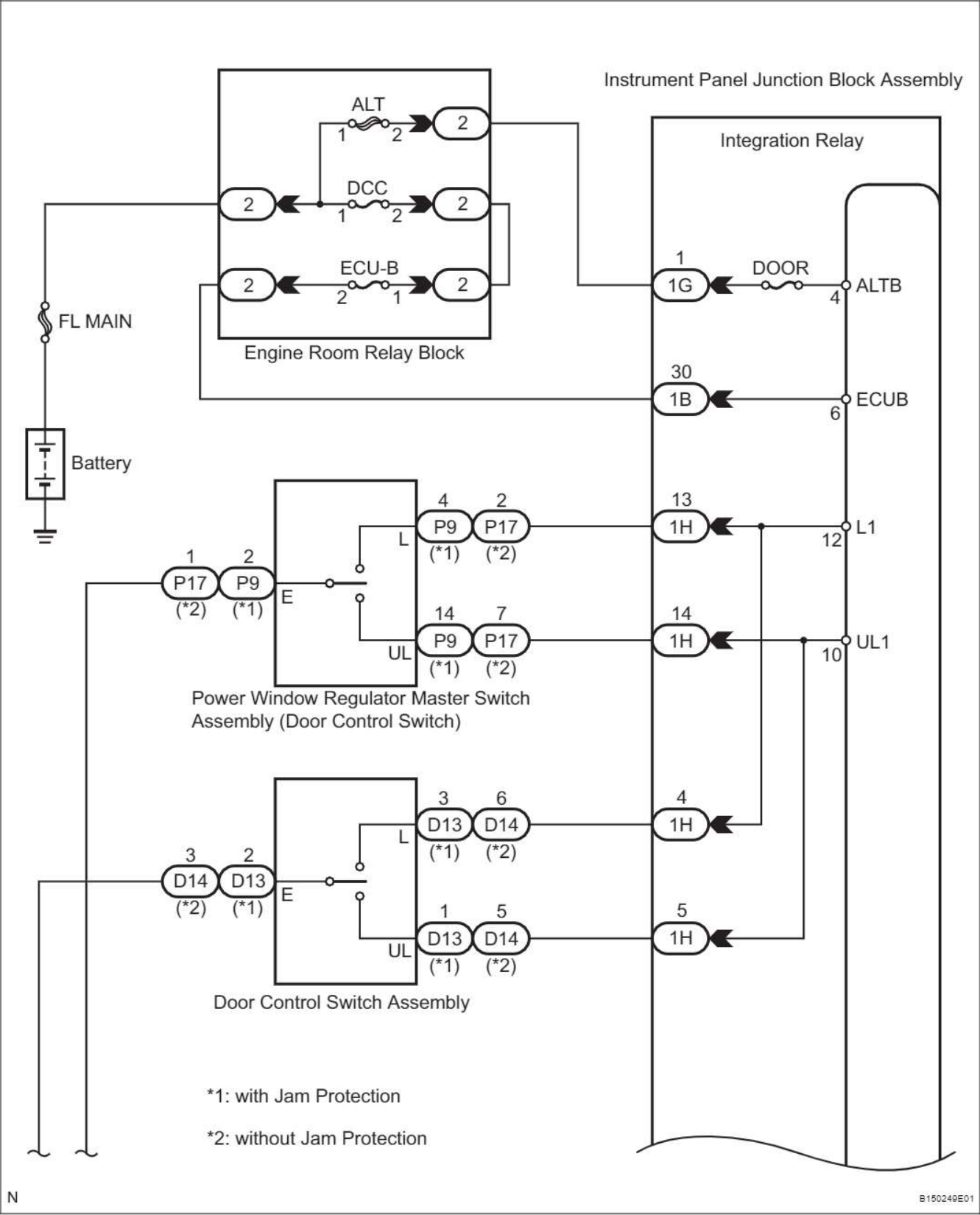
All Doors cannot be Locked / Unlocked Simultaneously**DESCRIPTION**

The integration relay drives the door lock motors with driver/passenger side door control switch signals, or driver/passenger side door key cylinder signals.

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DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

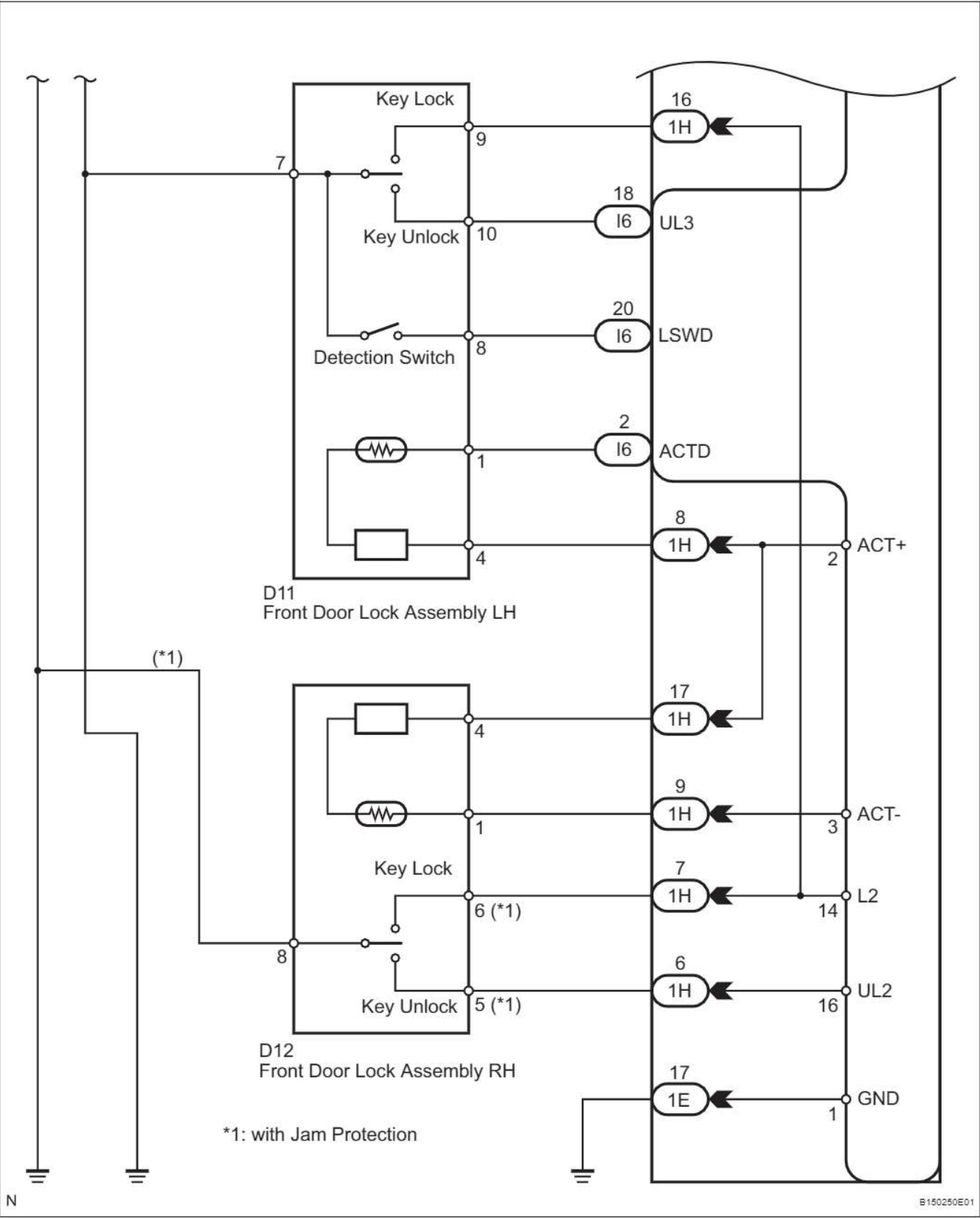
WIRING DIAGRAM



DL

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DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM



DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

INSPECTION PROCEDURE

1

CHECK ALL DOOR LOCK/UNLOCK OPERATION

- (a) All doors can be simultaneously locked/unlocked using one of the following:
- Pressing the driver side door control switch

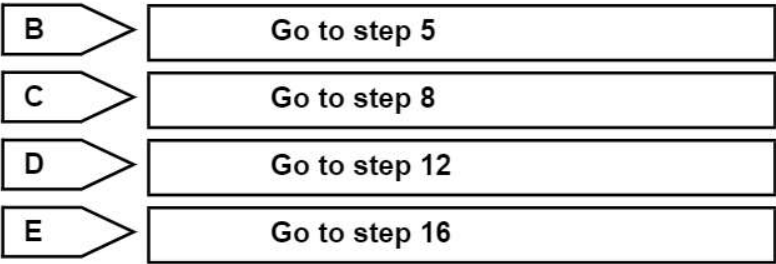
• Pressing the passenger side door control switch

• Turning the driver door key cylinder with the key

• Turning the passenger door key cylinder with the key
- (b) Proceed to the next step according to the symptom if all the doors cannot be locked/unlocked at once.

Malfunctioning Part	Proceed to
Cannot lock/unlock using driver side door control switch	A
Cannot lock/unlock using passenger side door control switch	B
Cannot lock/2-step unlock using driver door key cylinder (*1)	C
Cannot lock/unlock using passenger door key cylinder	D
All functions do not operate	E

*1: with Jam Protection



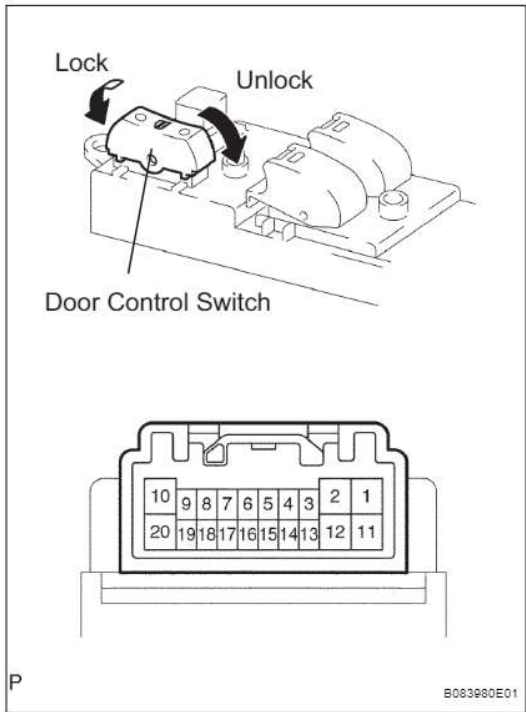
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DL-20

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

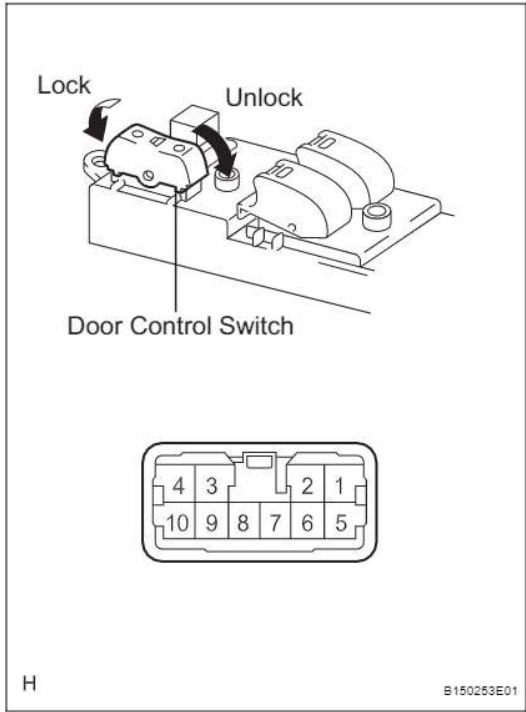
2

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



- (a) Measure the resistance of the door control switch (with Jam Protection).
Standard resistance

Tester Connection	Switch Condition	Specified Condition
2 - 4	Lock	Below 1 Ω
2 - 4	OFF	10 kΩ or higher
2 - 14	OFF	10 kΩ or higher
2 - 14	Unlock	Below 1 Ω



- (b) Measure the resistance of the door control switch (without Jam Protection).
Standard resistance

Tester Connection	Switch Condition	Specified Condition
1 - 2	Lock	Below 1 Ω
1 - 2	OFF	10 kΩ or higher
1 - 7	OFF	10 kΩ or higher
1 - 7	Unlock	Below 1 Ω

NG

REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

OK

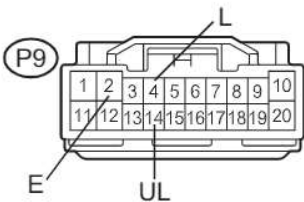
3

CHECK WIRE HARNESS (POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY AND BODY GROUND)

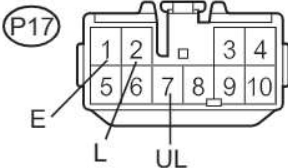
(a) Disconnect the P9 (*1) or P17 (*2) switch connector.

Wire Harness Side:

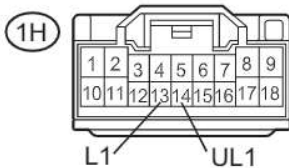
Power Window Regulator
Master Switch Assembly (*1)



Power Window Regulator
Master Switch Assembly (*2)



Instrument Panel Junction
Block Assembly



*1: with Jam Protection *2: without Jam Protection

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B150254E01

- (b) Disconnect the 1H junction block connector.
(c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
P9-4 (L) - 1H-13 (L1) (*1)	Below 1 Ω
P9-14 (UL) - 1H-14 (UL1) (*1)	Below 1 Ω
P9-2 (E) - Body ground (*1)	Below 1 Ω
P9-4 (L) or 1H-13 (L1) - Body ground (*1)	10 kΩ or higher
P9-14 (UL) or 1H-14 (UL1) - Body ground (*1)	10 kΩ or higher
P17-2 (L) - 1H-13 (L1) (*2)	Below 1 Ω
P17-7 (UL) - 1H-14 (UL1) (*2)	Below 1 Ω
P17-1 (E) - Body ground (*2)	Below 1 Ω
P17-2 (L) or 1H-13 (L1) - Body ground (*2)	10 kΩ or higher
P17-7 (UL) or 1H-14 (UL1) - Body ground (*2)	10 kΩ or higher

*1: with Jam Protection
*2: without Jam Protection

NG

REPAIR OR REPLACE HARNESS AND
CONNECTOR

OK

4

CHECK OPERATION OF INTEGRATION RELAY

- (a) After replacing the integration relay with a normally functioning relay, check that the power door lock operates normally.

OK:

Power door lock operates normally.

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DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

OK

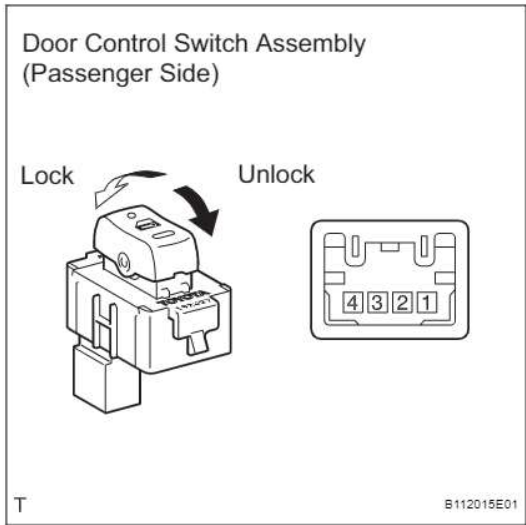
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REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

NORMAL (INTEGRATION RELAY DEFECTIVE)

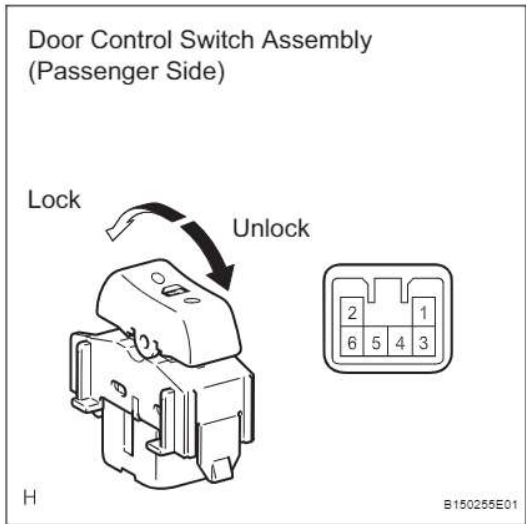
5

INSPECT DOOR CONTROL SWITCH ASSEMBLY (PASSENGER SIDE)



- (a) Measure the resistance of the switch (with Jam Protection).
- Standard resistance**

Tester Connection	Switch Condition	Specified Condition
2 - 3	Lock	Below 1 Ω
1 - 2	Unlock	Below 1 Ω



- (b) Measure the resistance of the switch (without Jam Protection).
- Standard resistance**

Tester Connection	Switch Condition	Specified Condition
3 - 6	Lock	Below 1 Ω
3 - 5	Unlock	Below 1 Ω

OK

NG

REPLACE DOOR CONTROL SWITCH ASSEMBLY

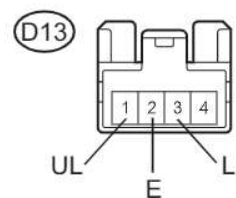
6

CHECK WIRE HARNESS (DOOR CONTROL SWITCH ASSEMBLY - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (INTEGRATION RELAY) AND BODY GROUND)

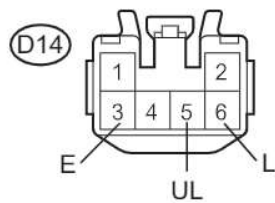
- (a) Disconnect the D13 (*1) or D14 (*2) switch connector.

Wire Harness Side:

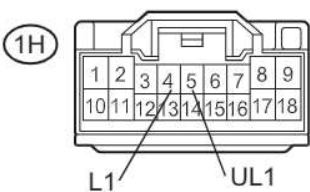
Door Control Switch Assembly
(Passenger Side) (*1)



Door Control Switch Assembly
(Passenger Side) (*2)



Instrument Panel Junction
Block Assembly



H

*1: with Jam Protection *2: without Jam Protection

B150256E01

- (b) Disconnect the 1H junction block connector.
(c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
D13-3 (L) - 1H-4 (L1) (*1)	Below 1 Ω
D13-1 (UL) - 1H-5 (UL1) (*1)	Below 1 Ω
D13-2 (E) - Body ground (*1)	Below 1 Ω
D13-3 (L) or 1H-4 (L1) - Body ground (*1)	10 kΩ or higher
D13-1 (UL) or 1H-5 (UL1) - Body ground (*1)	10 kΩ or higher
D14-6 (L) - 1H-4 (L1) (*2)	Below 1 Ω
D14-5 (UL) - 1H-5 (UL1) (*2)	Below 1 Ω
D14-3 (E) - Body ground (*2)	Below 1 Ω
D14-6 (L) - 1H-4 (L1) - Body ground (*2)	10 kΩ or higher
D14-5 (UL) or 1H-5 (UL1) - Body ground (*2)	10 kΩ or higher

*1: with Jam Protection
*2: without Jam Protection

NG

REPAIR OR REPLACE HARNESS AND
CONNECTOR

OK

7

CHECK OPERATION OF INTEGRATION RELAY

- (a) After replacing the integration relay with a normally functioning relay, check that the power door lock operates normally.

OK:

Power door lock operates normally.

NG

REPLACE INSTRUMENT PANEL JUNCTION
BLOCK ASSEMBLY

DL-24

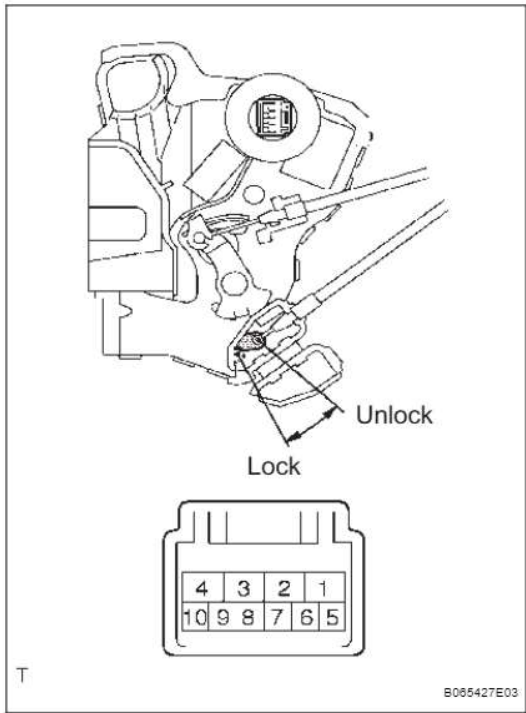
DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

OK

NORMAL (INTEGRATION RELAY DEFECTIVE)

8

INSPECT FRONT DOOR LOCK ASSEMBLY LH (DOOR LOCK MOTOR)



(a) Apply battery voltage to the door lock and check operation of the door lock motor.
OK

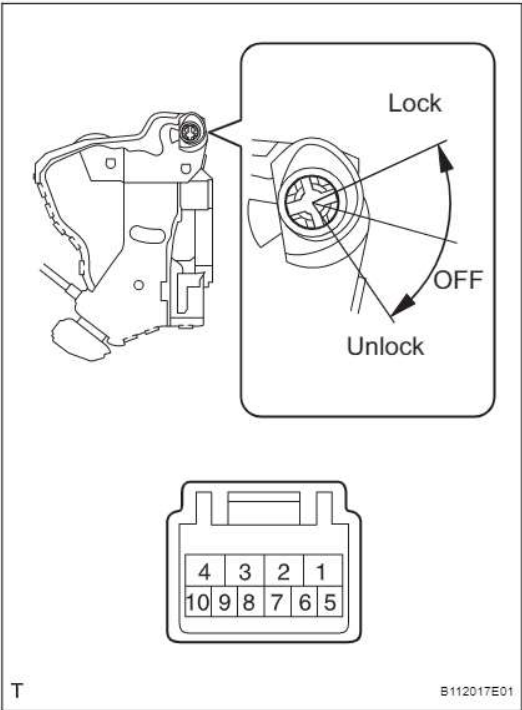
Measurement Condition	Specified Condition
Battery positive (+) → Terminal 4 Battery negative (-) → Terminal 1	Lock
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 4	Unlock

NG → REPLACE FRONT DOOR LOCK ASSEMBLY LH

OK

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

9 INSPECT FRONT DOOR LOCK ASSEMBLY LH (DOOR LOCK AND UNLOCK SWITCH AND LOCK DETECTION SWITCH)



(a) Measure the resistance of the door lock and unlock switch and lock detection switch.

Standard resistance:
Door lock and unlock switch

Tester Connection	Door lock Condition	Specified Condition
7 - 9	Lock	Below 1 Ω
7 - 9	OFF	10 k Ω or higher
7 - 10	OFF	10 k Ω or higher
7 - 10	Unlock	Below 1 Ω

Detection switch

Tester Connection	Door Lock Condition	Specified Condition
7 - 8	Lock	10 k Ω or higher
7 - 8	Unlock	Below 1 Ω

NG **REPLACE FRONT DOOR LOCK ASSEMBLY**

DL

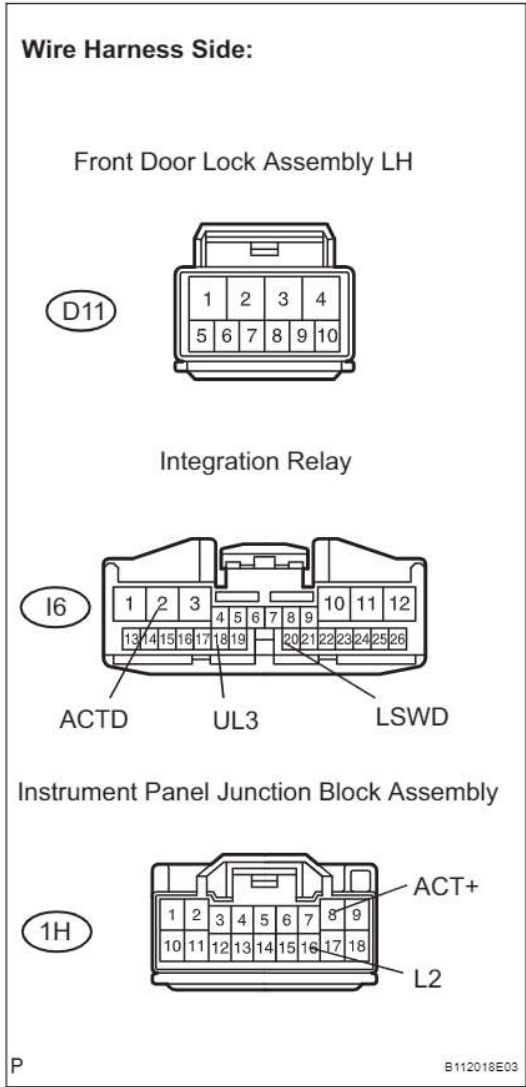
OK

DL-26

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

10

CHECK WIRE HARNESS (FRONT DOOR LOCK ASSEMBLY LH - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (INTEGRATION RELAY) AND BODY GROUND)



- (a) Disconnect the D11 lock connector.
- (b) Disconnect the I6 relay connector.
- (c) Disconnect the 1H junction block connector.
- (d) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
D11-4 - 1H-8 (ACT+)	Below 1 Ω
D11-1 - I6-2 (ACTD)	Below 1 Ω
D11-9 - 1H-16 (L2)	Below 1 Ω
D11-10 - I6-18 (UL3)	Below 1 Ω
D11-8 - I6-20 (LSWD)	Below 1 Ω
D11-7 - Body ground	Below 1 Ω
D11-4 or 1H-8 (ACT+) - Body ground	10 kΩ or higher
D11-1 or I6-2 (ACTD) - Body ground	10 kΩ or higher
D11-9 or 1H-16 (L2) - Body ground	10 kΩ or higher
D11-10 or I6-18 (UL3) - Body ground	10 kΩ or higher
D11-8 or I6-20 (LSWD) - Body ground	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

11

CHECK OPERATION INTEGRATION RELAY

- (a) After replacing the integration relay with a normally functioning relay, check that the power door lock operates normally.

OK:

Power door lock operates normally.

NG

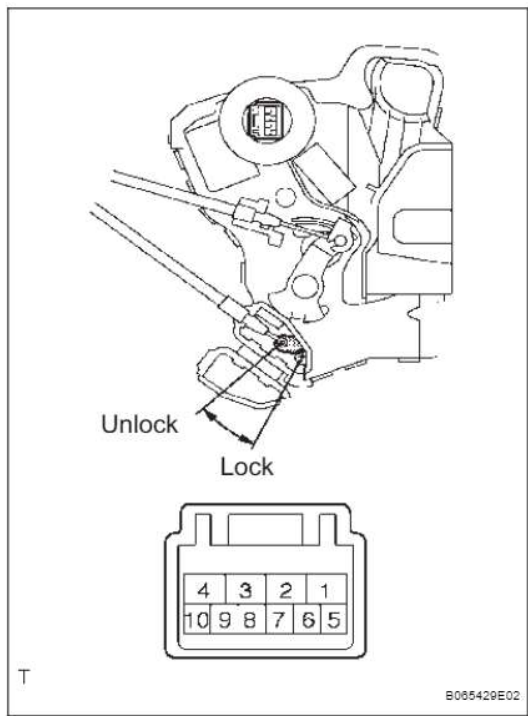
REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

OK

NORMAL (INTEGRATION RELAY DEFECTIVE)

12 INSPECT FRONT DOOR LOCK ASSEMBLY RH (DOOR LOCK MOTOR)



OK

- (a) Apply battery voltage to the door lock and check operation of the door lock motor.
OK

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 4 Battery negative (-) → Terminal 1	Lock
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 4	Unlock

NG → REPLACE FRONT DOOR LOCK ASSEMBLY RH

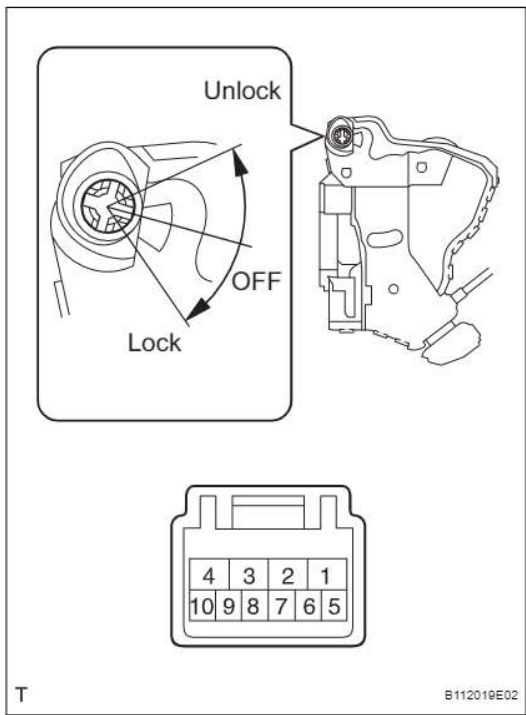
DL

DL-28

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

13

INSPECT FRONT DOOR LOCK ASSEMBLY RH (DOOR LOCK AND UNLOCK SWITCH)



(a) Measure the resistance of the door lock and unlock switch.

Standard resistance

Tester Connection	Switch Condition	Specified Condition
8 - 6	Lock	Below 1 Ω
8 - 6	OFF	10 kΩ or higher
8 - 5	OFF	10 kΩ or higher
8 - 5	Unlock	Below 1 Ω

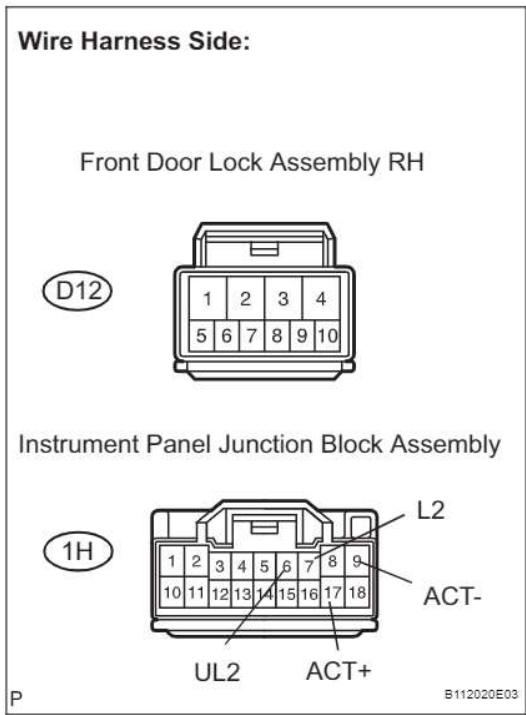
NG

REPLACE FRONT DOOR LOCK ASSEMBLY RH

OK

14

CHECK WIRE HARNESS (FRONT DOOR LOCK ASSEMBLY RH - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (INTEGRATION RELAY) AND BODY GROUND)



- (a) Disconnect the D12 lock connector.
(b) Disconnect the 1H junction block connector.
(c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
D12-4 - 1H-17 (ACT+)	Below 1 Ω
D12-1 - 1H-9 (ACT-)	Below 1 Ω
D12-6 - 1H-7 (L2)	Below 1 Ω
D12-5 - 1H-6 (UL2)	Below 1 Ω
D12-8 - Body ground	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

DL-29

OK

15 CHECK OPERATION OF INTEGRATION RELAY

- (a) After replacing the integration relay with a normally functioning relay, check that the power door lock operates normally.

OK:

Power door lock operates normally.

NG

**REPLACE INSTRUMENT PANEL JUNCTION
BLOCK ASSEMBLY**

OK

NORMAL (INTEGRATION RELAY DEFECTIVE)**DL****16** INSPECT FUSE (ECU-B, DOOR, DCC)

- (a) Remove the DOOR fuse from the instrument panel junction block.
(b) Remove the ECU-B and DCC fuses from the engine room relay block.
(c) Measure the resistance of the fuses.

Standard resistance:**Below 1 Ω**

NG

REPLACE FUSE

OK

DL-30

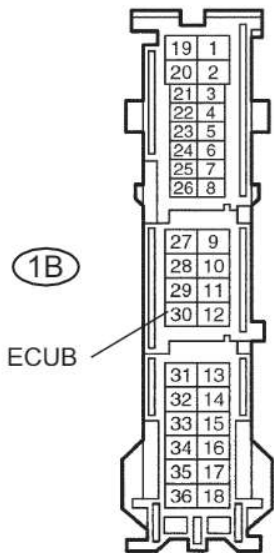
DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

17

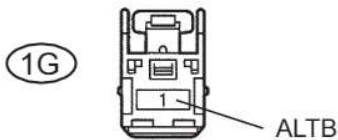
CHECK WIRE HARNESS (INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (INTEGRATION RELAY) - BATTERY AND BODY GROUND)

Wire Harness Side:

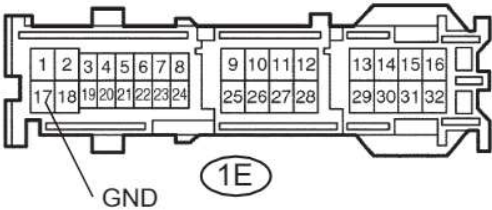
Instrument Panel Junction Block Assembly



Instrument Panel Junction Block Assembly



Instrument Panel Junction Block Assembly



B084493E03

- (a) Disconnect the 1B, 1G and 1E junction block connectors.
- (b) Measure the voltage and resistance of the wire harness side connectors.

Standard voltage

Tester Connection	Specified Condition
1B-30 (ECUB) - Body ground	10 to 14 V
1G-1 (ALTB) - Body ground	10 to 14 V

Standard resistance

Tester Connection	Specified Condition
1E-17 (GND) - Body ground	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

18 CHECK OPERATION OF INTEGRATION RELAY

- (a) After replacing the integration relay with a normally functioning relay, check that the power door lock operates normally.

OK:

Power door lock operates normally.

NG

REPLACE INSTRUMENT PANEL JUNCTION
BLOCK ASSEMBLY

OK

NORMAL (INTEGRATION RELAY DEFECTIVE)

DL

DL-32

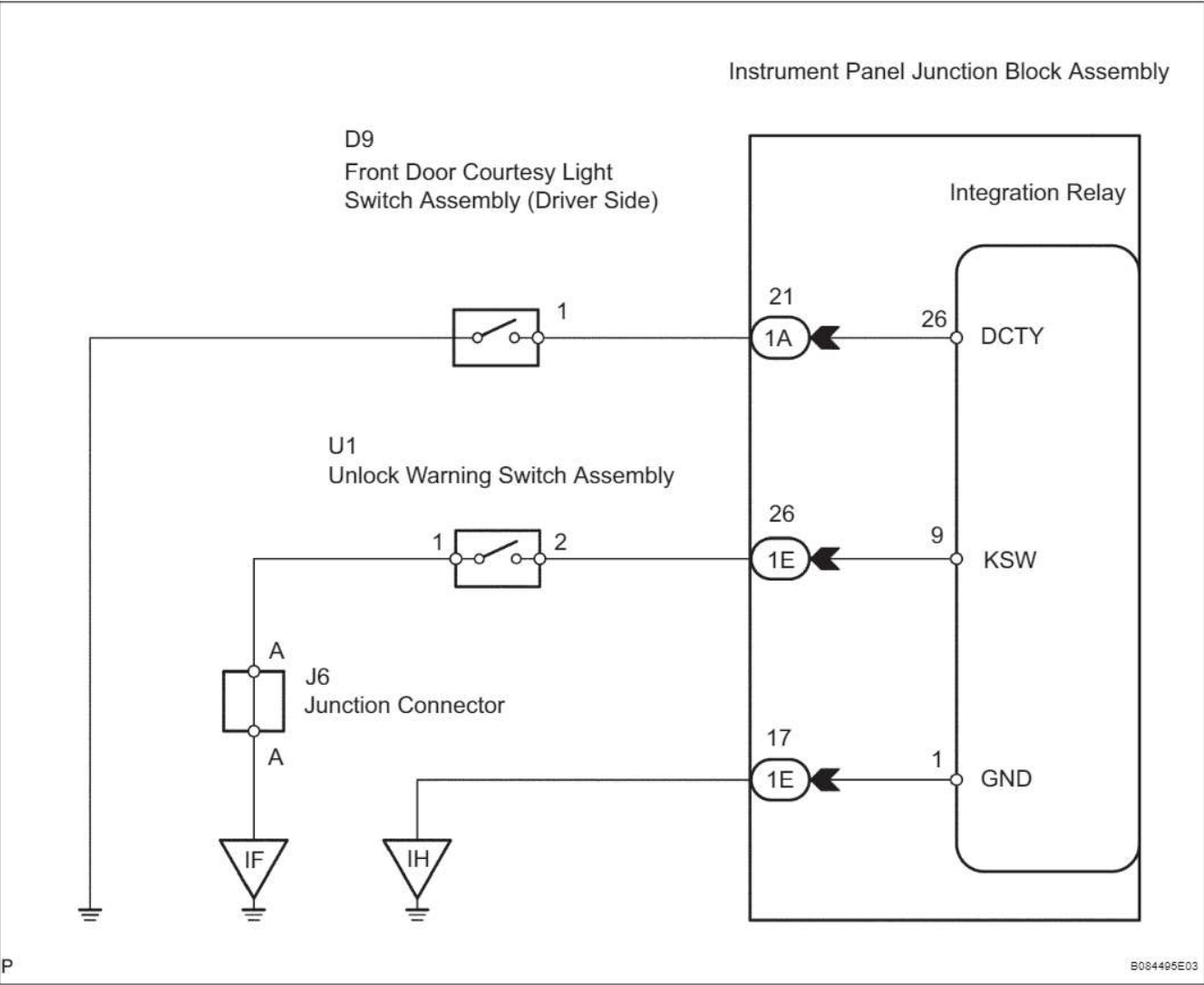
DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

Key Lock-in Prevention Function does not Work Properly

DESCRIPTION

To prevent the key from being locked in the vehicle, the integration relay prevents the door from being locked by monitoring 2 switches: 1) the unlock warning switch, which turns ON when the key is inserted into the ignition key cylinder; and 2) the driver side courtesy light switch, which turns ON when the driver side door is opened.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	CHECK NO. 1 ROOM LIGHT ASSEMBLY
---	---------------------------------

- (a) Move the room light switch to the DOOR position and open the driver side door. Then check that the room light illuminates.
- OK:**
Room light illuminates.

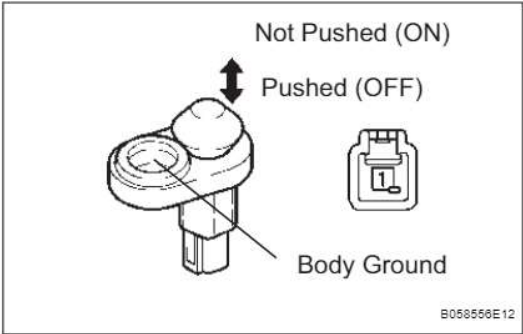
OK

Go to step 4

NG

2

INSPECT FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY (DRIVER SIDE)



- (a) Remove the courtesy light switch.
(b) Measure the resistance of the switch.

Standard resistance

Tester Connection	Switch Condition	Specified Condition
1 - Body ground	Not pushed (ON)	Below 1 Ω
1 - Body ground	Pushed (OFF)	10 k Ω or higher

NG

REPLACE FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY (DRIVER SIDE)

DL

OK

DL-34

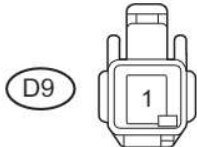
DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

3

CHECK WIRE HARNESS (FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY)

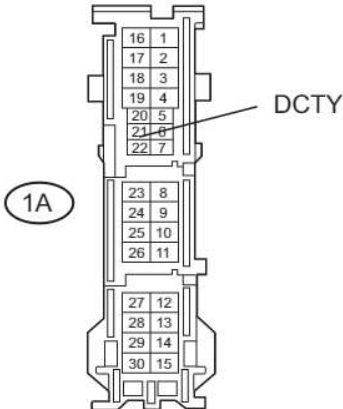
Wire Harness Side:

Front Door Courtesy Light Switch Assembly (Driver Side)



D9

Instrument Panel Junction Block Assembly



1A

DCTY

Y

B112021E20

- (a) Disconnect the D9 switch connector.
- (b) Disconnect the 1A junction block connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
D9-1 - 1A-21 (DCTY)	Below 1 Ω

NG

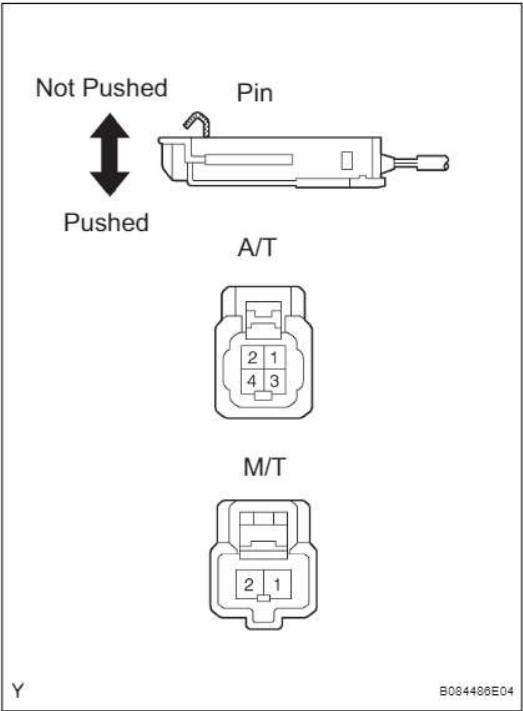
REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

DL-35

4 INSPECT UNLOCK WARNING SWITCH ASSEMBLY



- (a) Remove the unlock warning switch.
- (b) Measure the resistance of the switch.

Standard resistance

Tester Connection	Switch Condition	Specified Condition
1 - 2	Not pushed	10 kΩ or higher
1 - 2	Pushed	Below 1 Ω

NG

REPLACE UNLOCK WARNING SWITCH ASSEMBLY

OK

DL

DL-36

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

5

CHECK WIRE HARNESS (UNLOCK WARNING SWITCH ASSEMBLY - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (INTEGRATION RELAY) AND BODY GROUND)

Wire Harness Side:

Unlock Warning Switch Assembly (A/T)

U1

1

2

3

4

Unlock Warning Switch Assembly (M/T)

U1

1

2

Instrument Panel Junction Block Assembly

17

1

18

2

19

3

20

4

21

5

22

6

23

7

24

8

25

9

26

10

27

11

28

12

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13

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14

31

15

32

16

KSW

1E

Y

B112022E02

- (a) Disconnect the U1 switch connector.
- (b) Disconnect the 1E junction block connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
U1-2 - 1E-26 (KSW)	Below 1 Ω
U1-1 - Body ground	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

6

CHECK OPERATION OF INTEGRATION RELAY

- (a) After replacing the integration relay with a normally functioning relay, check that the power door lock operates normally.

OK:

Power door lock operates normally.

NG

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

DL-37

OK

NORMAL (INTEGRATION RELAY DEFECTIVE)

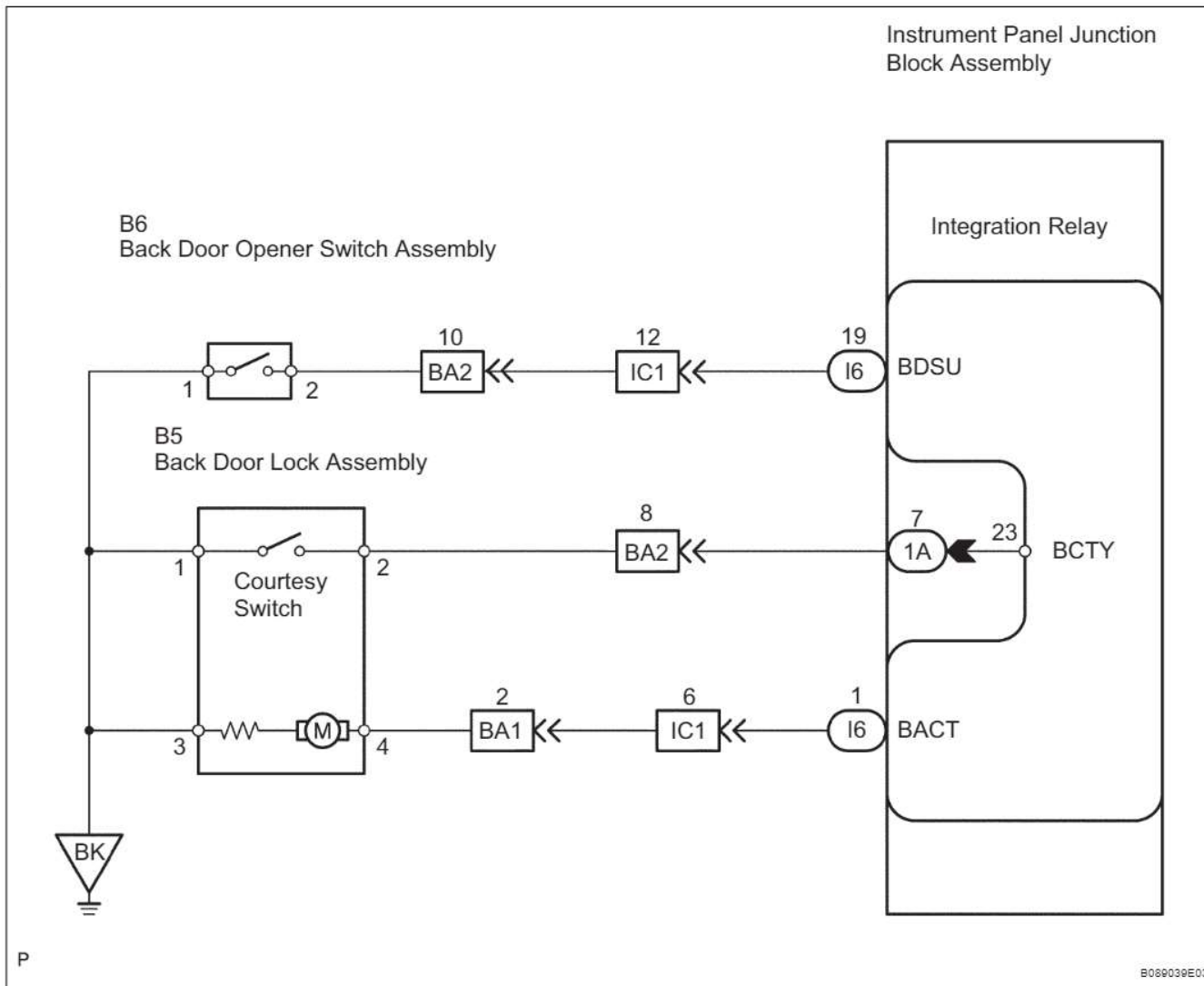
DL

DL-38

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

Only Back Door cannot be Opened**DESCRIPTION**

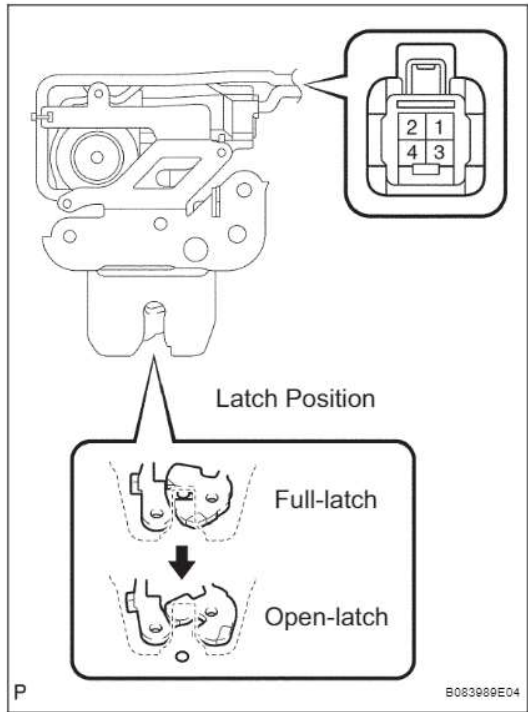
The instrument panel junction block (integration relay) receives switch signals from the driver/passenger side door control switch and activates the back door lock motor according to the signals.

WIRING DIAGRAM

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

INSPECTION PROCEDURE

1 INSPECT BACK DOOR LOCK ASSEMBLY



OK

- (a) Check the operation of the back door lock.
- (1) Using a screwdriver, move the latch to the full-latch position.
 - (2) Apply battery voltage to the door lock terminals and check the operation of the latch.
- OK**

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 3 Battery negative (-) → Terminal 4	Latch turns to open-latch position

- (b) Measure the resistance of the courtesy switch connector.
- Standard resistance**

Tester Connection	Door Lock Latch Condition	Specified Condition
1 - 2	Open-latch	Below 1 Ω
1 - 2	Full-latch	10 kΩ or higher

NG **REPLACE BACK DOOR LOCK ASSEMBLY**

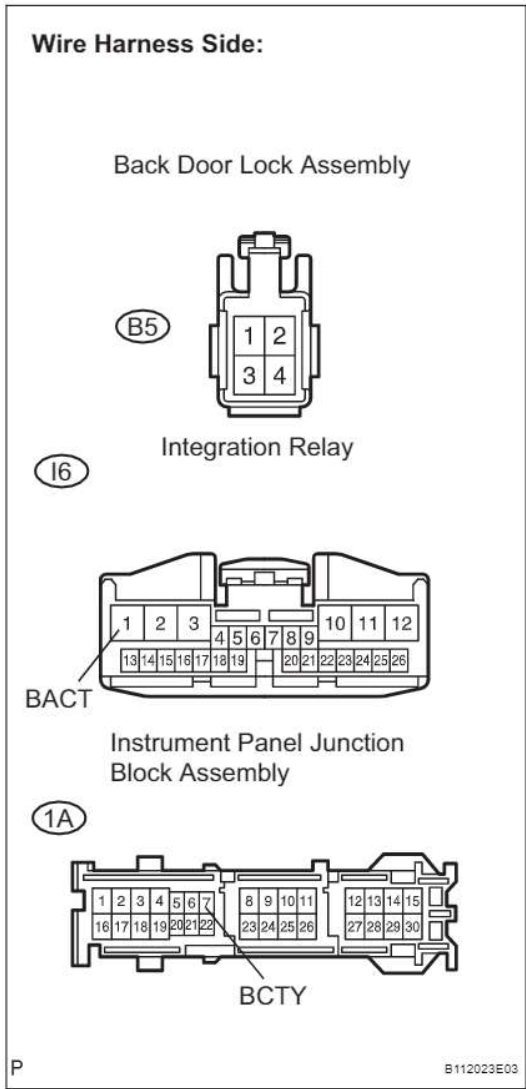
DL

DL-40

DOOR LOCK – POWER DOOR LOCK CONTROL SYSTEM

2

CHECK WIRE HARNESS BACK DOOR LOCK ASSEMBLY - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (INTEGRATION RELAY) AND BODY GROUND



- (a) Disconnect the B5 lock connector.
- (b) Disconnect the I6 relay connector.
- (c) Disconnect the 1A junction block connector.
- (d) Measure the resistance of the wire harness side connectors.

Standard resistance

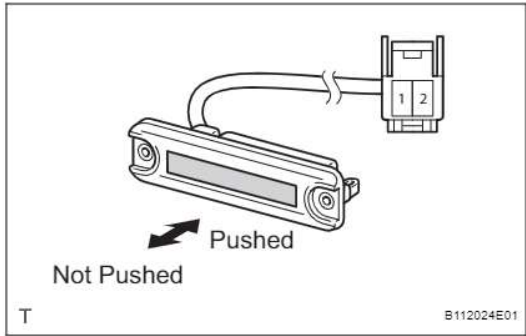
Tester Connection	Specified Condition
B5-2 - 1A-7 (BCTY)	Below 1 Ω
B5-4 - I6-1 (BACT)	Below 1 Ω
B5-1 - Body ground	Below 1 Ω
B5-3 - Body ground	Below 1 Ω

NG REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

3

INSPECT BACK DOOR OPENER SWITCH ASSEMBLY



- (a) Remove the back door opener switch.
- (b) Measure the resistance of the switch.

Standard resistance

Tester Connection	Switch Condition	Specified Condition
1 - 2	Not pushed	10 kΩ or higher
1 - 2	Pushed	Below 1 Ω

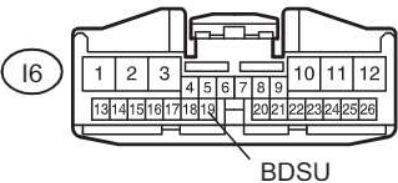
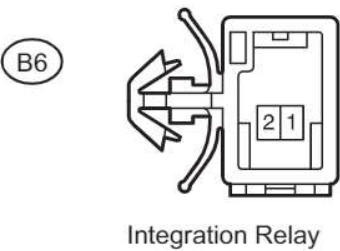
NG REPLACE BACK DOOR OPENER SWITCH ASSEMBLY

OK

4 CHECK WIRE HARNESS (BACK DOOR OPENER SWITCH ASSEMBLY - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (INTEGRATION RELAY) AND BODY GROUND)

Wire Harness Side:

Back Door Opener Switch Assembly



P

B112026E03

- (a) Disconnect the B6 switch connector.
- (b) Disconnect the I6 relay connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
B6-2 - I6-19 (BDSU)	Below 1 Ω
B6-1 - Body ground	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

DL

OK

5 CHECK OPERATION OF INTEGRATION RELAY

- (a) After replacing the integration relay with a normally functioning relay, check that the back door lock operates normally.

OK:

Back door lock operates normally.

NG

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

OK

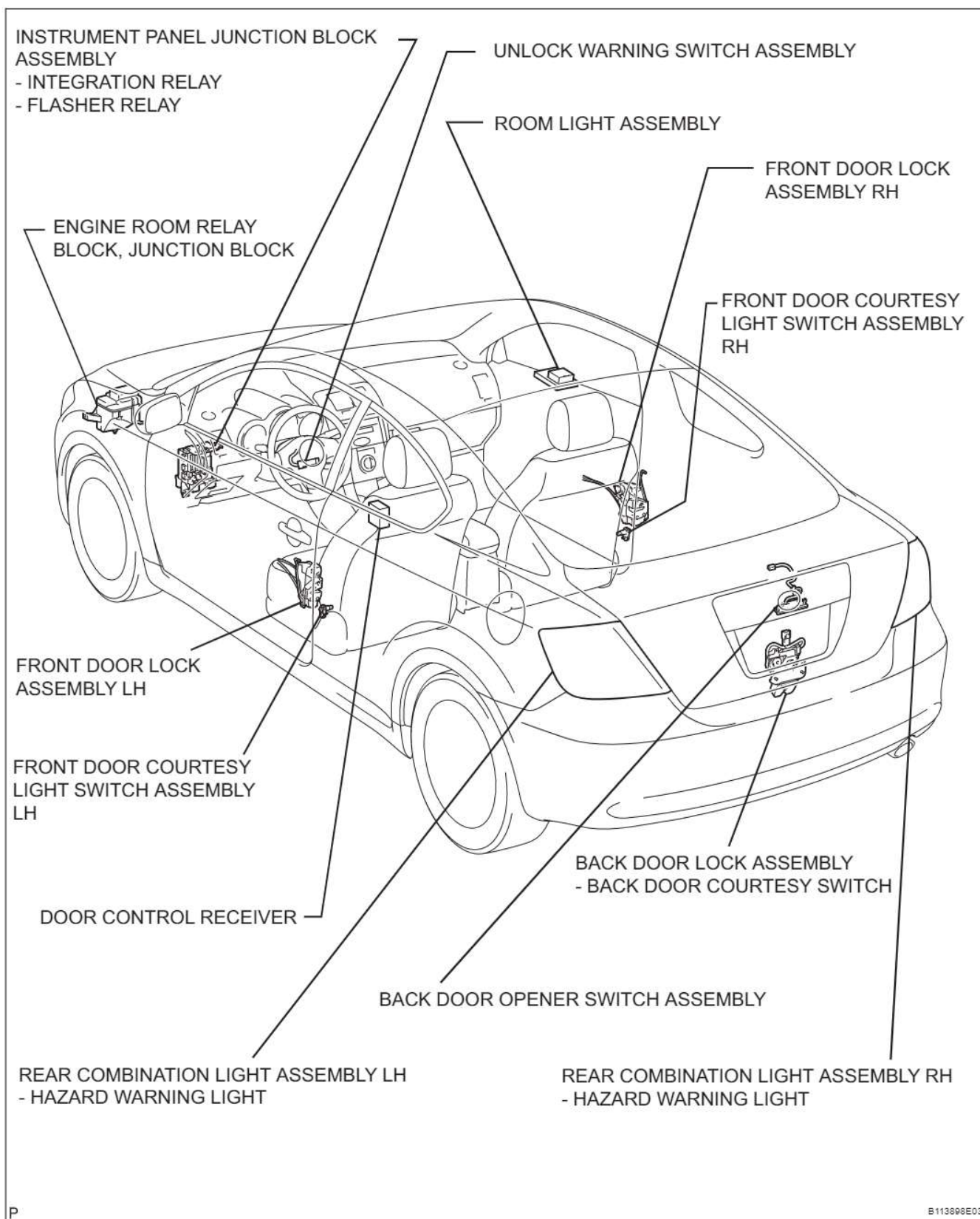
NORMAL (INTEGRATION RELAY)

WIRELESS DOOR LOCK
CONTROL SYSTEM

PRECAUTION

NOTICE:
When disconnecting the cable from the negative (-) battery terminal, initialize the following systems after the cable is reconnected.

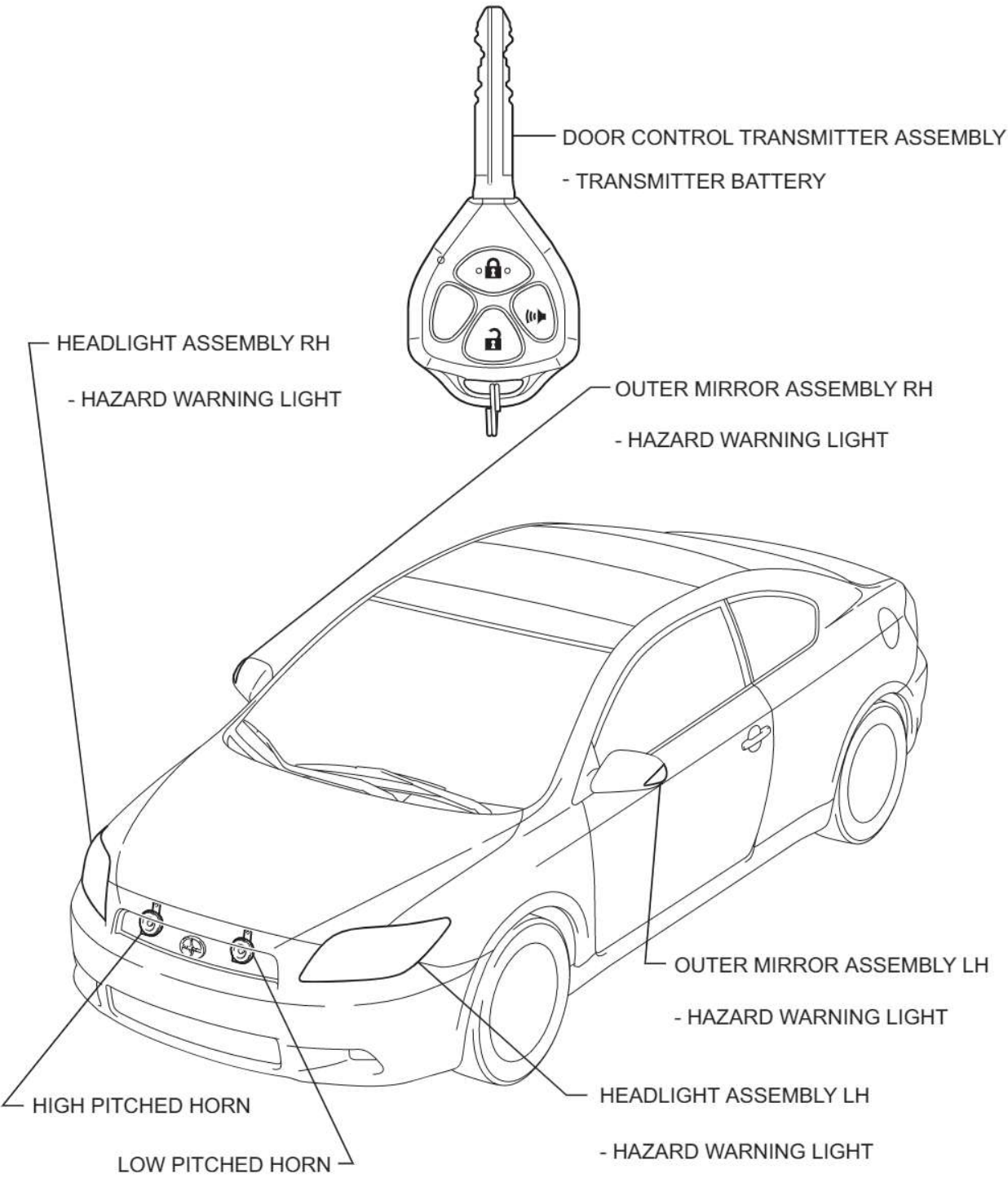
System Name	See procedure
Power Window Control System (w/ Jam Protection Function)	IN-23
Sliding Roof System	

DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM**DL-41****PARTS LOCATION****DL**

DL-42

DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

DL



P

S150402E01

DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM**DL-43****SYSTEM DESCRIPTION****1. WIRELESS DOOR LOCK CONTROL SYSTEM**

This system locks and unlocks the vehicle's doors remotely. The wireless control system has the following features:

- The door control receiver performs the code identification process and the instrument panel junction block (integration relay) operates the door lock control.
A serial data link is provided for communication between the receiver and integration relay.
- A key-integrated type transmitter is used and it has a door lock switch, door unlock switch and panic switch.

2. FUNCTION OF MAIN COMPONENTS

Component	Function
Door control transmitter	• Has LOCK, UNLOCK, and PANIC switches. • Transmits weak radio waves (recognition codes and function codes) to the door control receiver. • Illuminates the indicator light (LED) during transmission.
Door control receiver	Receives weak radio waves (recognition codes and function codes) and outputs them as code data to the integration relay.
• Front door courtesy light switch • Rear door courtesy light switch • Back door courtesy light switch	Turns on when a door is opened and turns off when it is closed. Outputs door status codes (open or closed) to the integration relay.
Unlock warning switch	Detects if the key is inserted in the ignition key cylinder or not.
Door lock position switch	Transmits the door lock positions of each door to the integration relay.
Integration relay	Sends wireless door lock control signals in response to the code data from the door control receiver and signals from each switch.

DL**3. SYSTEM FUNCTION**

The door control transmitter has the LOCK, UNLOCK and PANIC switches. Operating these switches activates each function.

The wireless door lock control system has the following functions:

Function	Operation
All door lock function	Pressing LOCK switch locks all doors when all doors are closed.
All door unlock function (2-step unlock function)	Pressing UNLOCK switch once will unlock driver side door. Pressing UNLOCK switch again within 3 seconds will unlock passenger side door and back door.
Answer-back function	Hazard warning lights flash once when doors are locked, and flash twice when doors are unlocked to indicate that operation has been completed.
Panic alarm function	Holding down PANIC switch sets off theft deterrent alarm, which consists of sounding horn intermittently, illuminating room light and flashing headlights, taillights and hazard warning lights.
Automatic lock function	If no doors are opened within 30 seconds after they are unlocked by wireless operation, all doors will lock again automatically.
Illuminated entry function	With all doors locked, pressing UNLOCK switch causes room lights to illuminate simultaneously with unlocking operation.

DL-44**DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM****4. TRANSMITTER RECOGNITION CODE
REGISTRATION FUNCTION**

The table below shows the 4 ID registration function modes by which up to 6 different codes can be registered. The codes are electronically registered (written and stored) in the EEPROM that is contained in the door control receiver.

Mode	Function
Add mode	Adds a newly received code while preserving any previously registered codes. This mode is used when adding a new transmitter. If the number of registered codes exceeds 4, the oldest registered code is erased first.
Rewrite mode	Erases all previously registered codes and registers only newly input codes.
Confirmation mode	Confirms how many codes are currently registered. When adding a new code, this mode is used to check how many codes already exist.
Prohibition mode	Deletes all the registered codes and disables the wireless door lock function. This mode is used when the transmitter is lost.

DL**5. CONDITIONS THAT WIRELESS FUNCTIONS DO NOT OPERATE**

- (a) Lock operation is not available when:
- Any of the doors is open.
 - The key is inserted in the ignition key cylinder.
- (b) Unlock operation is not available when:
- The key is inserted in the ignition key cylinder.

DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:
Use this procedure to troubleshoot the wireless door lock control system.

1 VEHICLE BROUGHT TO WORKSHOP

NEXT

2 INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V
If the voltage is below 11 V, recharge or replace the battery before proceeding.

DL

NEXT

3 CUSTOMER PROBLEM ANALYSIS CHECK AND SYMPTOM CHECK

NEXT

4 PROBLEM SYMPTOMS TABLE

Result

Result	Proceed to
Fault is not listed on problem symptoms table	A
Fault is listed on problem symptoms table	B

B

Go to step 5

A

5 OVERALL ANALYSIS AND TROUBLESHOOTING

- (a) Terminals of ECU (See page [DL-53](#))
(b) Operation check (See page [DL-45](#))

NEXT

6 ADJUST, REPAIR OR REPLACE

NEXT

DL-46

DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

7	CONFIRMATION TEST
---	-------------------

NEXT

END

DL

OPERATION CHECK

1. FUNCTIONS AND OPERATING CONDITIONS

- (a) The wireless door LOCK/UNLOCK function:
This function operates only when the following 3 conditions are met:
- (1) There is no key in the ignition key cylinder.
 - (2) All the doors are closed.
 - (3) The power door lock system is functioning normally.
- HINT:
The UNLOCK function operates even when any of the doors are open.
- (b) Remote panic function:
This function operates only when the following condition is met:
- (1) The ignition switch is OFF.
- HINT:
The key can be inserted.
However the ignition switch must be OFF.
- (c) The wireless transmitter operational range differs depending on the situation.
- (1) The operational range differs depending on the user, the way the transmitter is held and the location.
 - (2) In certain areas, the operational range will be reduced due to the vehicle body shape and the influence of the surrounding environment.
 - (3) Since the transmitter uses weak radio waves, the operational range may be reduced or the transmitter may not function if interference or stronger radio waves occur in the area where the transmitter is used.
 - (4) When the battery is low, the operational range is reduced and/or the transmitter may not function.
- HINT:
If the transmitter has been left in a place that is exposed to direct sunlight, such as on the instrument panel, the battery may be weakened or other problems may occur.

2. CHECK WIRELESS DOOR LOCK CONTROL FUNCTIONS

HINT:

- The switches built into the door control transmitter send radio waves to the door lock control receiver.
 - The operational range must be taken into account during checks.
- (a) Establish conditions that allow the wireless control function to be operated successfully.

DL

DL-48**DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM****DL**

- (b) Check the following basic functions.
 - (1) Check that the transmitter's LED lights up 3 times when each switch is pressed 3 times and that the LED blinks when each switch is pressed and held down.
 HINT:
 If the LED does not illuminate when the switch has been pressed 3 times or more, the battery may be depleted.
 - (2) Check that all the doors lock when the LOCK switch is pressed.
 - (3) Check that the driver's door unlocks when the UNLOCK switch is pressed once, and all the doors unlock when pressed twice within 3 seconds.
- (c) Check the automatic lock function.
 - (1) Check that if the driver's door or all doors are unlocked with the UNLOCK switch and none of the doors are opened or locked within approximately 30 seconds, the doors automatically re-lock.
 - (2) Check that if the driver's door or all doors are unlocked with the UNLOCK switch and a door is opened or locked within approximately 30 seconds, the automatic lock function does not operate.
- (d) Check the illuminated entry function.
 HINT:
 Turn the interior light switch to the DOOR position before the check.
 - (1) Check that the interior light comes on simultaneously with the unlocking operation when the UNLOCK switch is pressed.
 - (2) Check that the interior light goes off in approximately 15 seconds if none of the doors is opened after the unlocking operation.
- (e) Check the answer back function.
 - (1) When the doors are locked by wireless operation, the hazard warning lights flash once.
 - (2) When the doors are unlocked by wireless operation, the hazard warning lights flash twice.
- (f) Check the switch operation fail-safe function.
 - (1) Check that the doors cannot be locked by operating a switch while the key is in the ignition key cylinder.
 HINT:
 This check cannot be made when the system is in recognition code registration mode.

DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM**DL-49**

- (g) Check the chattering prevention function.
 - (1) Check that the corresponding operation occurs only once, and does not repeat itself while the switch is kept pressed. Check that the corresponding operation is carried out when the switch is operated repeatedly at 1-second intervals.
- (h) Check the door ajar warning function.
 - (1) Check that the buzzer sounds when the LOCK switch is pressed when any of the doors are ajar. When all the doors are closed or when the UNLOCK switch is pressed, the buzzer will stop after it sounds for 10 seconds continuously.
- (i) Check the panic alarm function.
 - (1) Check that the following alarms operate for 60 sec. when the PANIC switch is pressed longer than about 0.8 seconds or more:
 - The vehicle horns sound.
 - The hazard warning lights, headlights and taillights flash.
 - (2) Check that during the panic alarm is operating, pressing any switch of transmitter cancels the alarm operation.

DL

DL-50**DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM****REGISTRATION****HINT:**

- If replacing the door control transmitter or the door control receiver, register its recognition code to the integration relay.
- Add mode is used to register new recognition codes while still retaining codes already registered. This mode is used when a new transmitter is added. If the number of registered codes exceeds 4, the previously registered codes will be erased in order, starting from the code that was registered first.
- Rewrite mode is used to erase all the previously registered recognition codes in order to register all new recognition codes. This mode is used when the transmitter or the door control receiver is replaced.
- Confirmation mode is used to confirm how many recognition codes have already been registered before another recognition code is registered.
- Prohibition mode is used to erase all the registered codes and disable the wireless door lock function. This mode is used when the transmitter is lost.
- All of the following registration procedures must be performed in order.

1. REGISTER RECOGNITION CODE (SWITCH OPERATION)

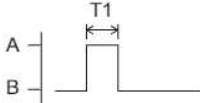
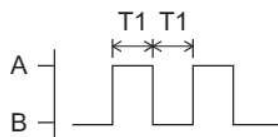
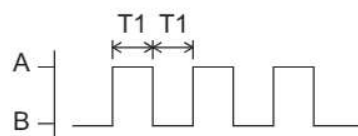
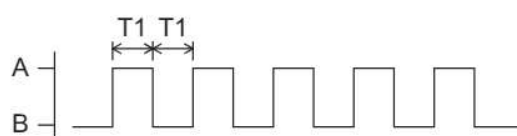
- (a) The following conditions should be met:
 - No key in ignition key cylinder.
 - Only driver side door is opened.
- (b) Insert the key into the ignition key cylinder and pull it out (Procedure "A").
- (c) Insert the key into the ignition key cylinder, and then pull it out within 5 seconds after Procedure "A" (Procedure "B").
- (d) Close and open the driver side door twice.
- (e) Insert the key into the ignition key cylinder, and then pull it out within 40 seconds after Procedure "B" (Procedure "C").
- (f) Close and open the driver side door twice.
- (g) Insert the key into the ignition key cylinder and close all doors within 40 seconds after Procedure "C" (Procedure "D").

DL

DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

- (h) Turn the ignition switch from LOCK to ON and back to LOCK at approximately 1 second intervals according to the number of times shown in the table below.

Number of ON-LOCK operations of ignition switch:

Mode Selection	Ignition Switch ON-LOCK Operation	Ignition Key Status
Add mode	Once	A: Ignition switch status "ON" B: Ignition switch status "LOCK" T1: Approximately 1 second 
Rewrite Mode	Twice	A: Ignition switch status "ON" B: Ignition switch status "LOCK" T1: Approximately 1 second 
Confirmation Mode	3 times	A: Ignition switch status "ON" B: Ignition switch status "LOCK" T1: Approximately 1 second 
Prohibition Mode	5 times	A: Ignition switch status "ON" B: Ignition switch status "LOCK" T1: Approximately 1 second 

DL

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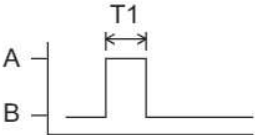
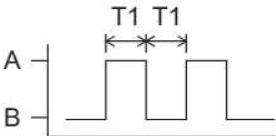
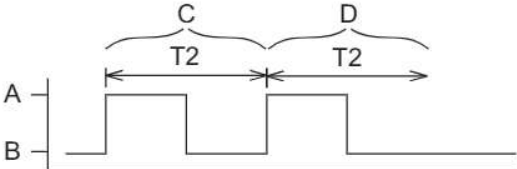
DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

HINT:
If the number of the ON-LOCK operations of the ignition switch is 0, 4 or 6 or more, there will be no response (power door LOCK-UNLOCK operation) to show which mode has been selected.

(i) Remove the key from the ignition key cylinder within 40 seconds after Procedure "D" (Procedure "E").

(j) The integration relay automatically performs power door LOCK-UNLOCK operations to indicate which mode has been selected.

Response to selected mode (Power door lock operation):

Mode Selection	Power Door Lock LOCK-UNLOCK	Door Lock Status
Add mode	Once	A: Door lock motor status "LOCK" B: Door lock motor status "UNLOCK" T1: Approximately 1 second 
Rewrite Mode	Twice	A: Door lock motor status "LOCK" B: Door lock motor status "UNLOCK" T1: Approximately 1 second 
Confirmation Mode	The number of registered codes (1 to 5 times)	A: Door lock motor status "LOCK" B: Door lock motor status "UNLOCK" C: 1st time D: 2nd time T1: Approximately 1 second T2: Approximately 2 seconds 

DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

Mode Selection	Power Door Lock LOCK-UNLOCK	Door Lock Status
Prohibition Mode	5 times	A: Door lock motor status "LOCK" B: Door lock motor status "UNLOCK" T1: Approximately 1 second 

- HINT:
- In confirmation mode, the LOCK-UNLOCK operation will occur once for each recognition code that has been registered. For example, if 2 recognition codes have been registered, the LOCK-UNLOCK operation will occur twice.
 - In confirmation mode, if no recognition codes have been registered, the LOCK-UNLOCK operation will occur 5 times.

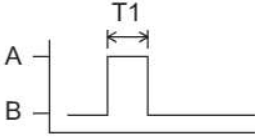
DL

Next step

Mode Selection	Procedure
Add Mode	Continued in next step.
Rewrite Mode	
Confirmation Mode	Registration procedures are completed.
Prohibition Mode	

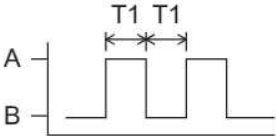
- (k) Press both the LOCK and UNLOCK switches on the transmitter simultaneously (Procedure "F").
- (l) Press a single switch (LOCK or UNLOCK) within 45 seconds after Procedure "E".
- (m) The integration relay automatically performs power door LOCK-UNLOCK operations to show whether registration has been completed correct or not.

Response to registration completion:

Power Door Lock LOCK-UNLOCK Opearation	Result	Door Lock Status
Once	Registration of recognition code has been completed.	A: Door lock motor status "LOCK" B: Door lock motor status "UNLOCK" T1: Approximately 1 second 

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DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

Power Door Lock LOCK-UNLOCK Opearation	Result	Door Lock Status
Twice	Registration of recognition code has failed.	A: Door lock motor status "LOCK" B: Door lock motor status "UNLOCK" T1: Approximately 1 second 

HINT:
If registration of a recognition code has failed, perform registration procedures again from the beginning.

DL

Next step

Next Operation	Procedure
When another transmitter needs to registered.	Return to procedure "F" within 40 seconds *.
When registration procedures are completed.	Continued in next step.

- HINT:
*: All 4 recognition codes can be registered consecutively.
- (n) Perform either of the following:
 - Open a door.
 - Insert key into ignition key cylinder.
 - (o) Registration of recognition codes (add mode and rewrite mode) is completed.

DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM**DL-55****PROBLEM SYMPTOMS TABLE****HINT:**

Use the table below to help determine the cause of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Wireless door lock control system:

Symptom	Suspected Area	See page
Only wireless control function is inoperative	1. Transmitter battery	DL-78
	2. Door control transmitter assembly	DL-80
	3. Door control receiver	DL-92
	4. Unlock warning switch assembly	EI-42
	5. Instrument panel junction block assembly (integration relay)	-
	6. Lighting system	LI-1
	7. Wire harness	-
No answer-back (hazard warning light)	1. Lighting system	LI-1
	2. Instrument panel junction block assembly (integration relay)	-
	3. Wire harness	-

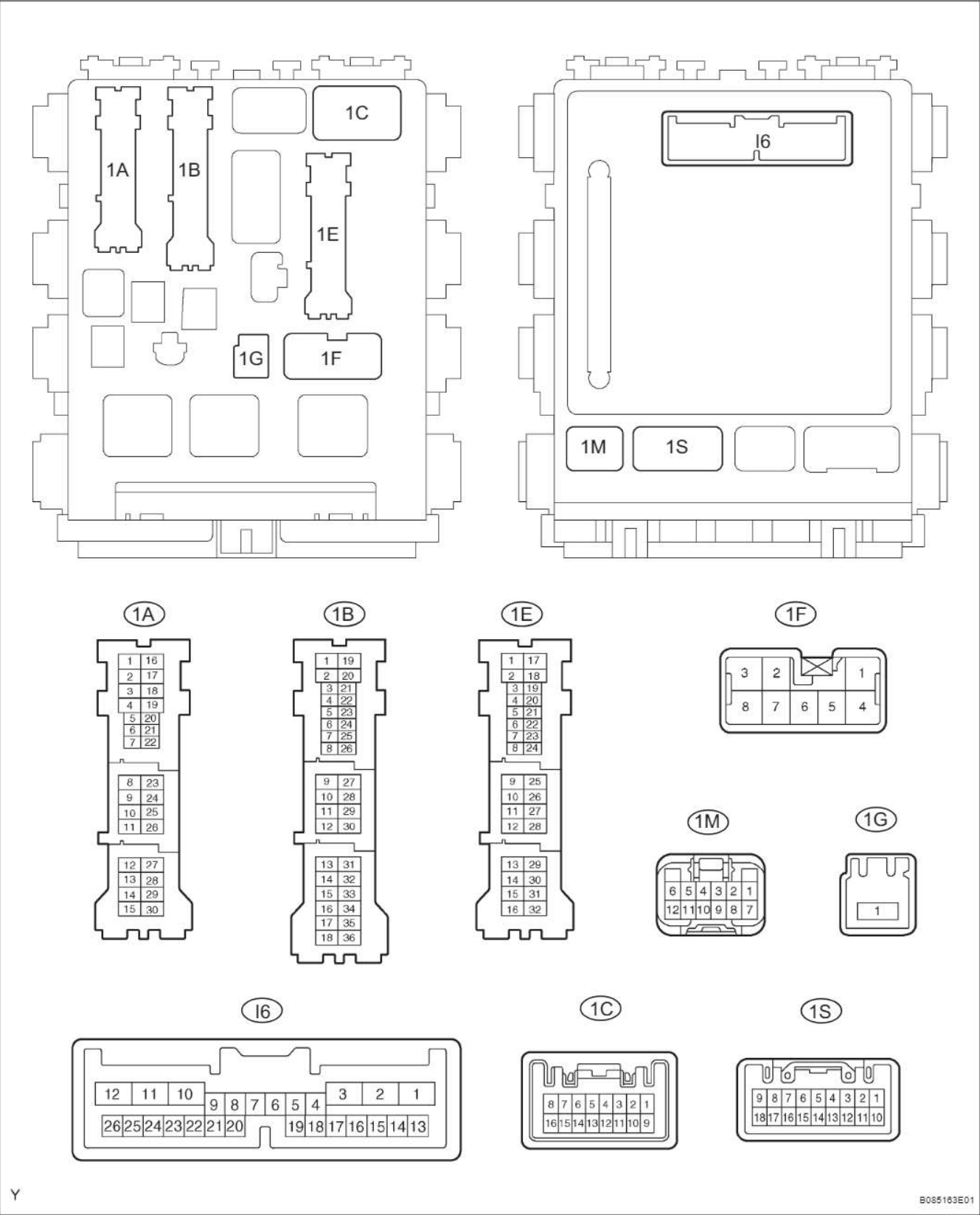
DL

DL-56

DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

TERMINALS OF ECU

1. CHECK INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (INTEGRATION RELAY)



DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM**DL-57**

- (a) Disconnect the 1A, 1B, 1C, 1E, 1F, 1G and 1M junction block connectors.
- (b) Measure the resistance and voltage of the wire harness side connectors.

Standard resistance

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
KSW (1E-26) - Body ground	B - Body ground	Key unlock warning switch input	No key in ignition key cylinder	10 kΩ or higher
KSW (1E-26) - Body ground	B - Body ground	Key unlock warning switch input	Key inserted	Below 1 Ω
DCTY (1A-21) - Body ground	O - Body ground	Driver side courtesy switch input	Driver side door closed	10 kΩ or higher
DCTY (1A-21) - Body ground	O - Body ground	Driver side courtesy switch input	Driver side door open	Below 1 Ω
PCTY (1C-14) - Body ground	L - Body ground	Passenger side courtesy switch input	Passenger side door closed	10 kΩ or higher
PCTY (1C-14) - Body ground	L - Body ground	Passenger side courtesy switch input	Passenger side door open	Below 1 Ω
BCTY (1A-7) - Body ground	V - Body ground	Back door courtesy switch input	Back door closed	10 kΩ or higher
BCTY (1A-7) - Body ground	V - Body ground	Back door courtesy switch input	Back door open	Below 1 Ω
GND (1M-7) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
GND (1E-17) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

DL**Standard voltage**

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
SIG (1G-1) - Body ground	W - Body ground	Ignition power supply	Ignition switch OFF	Below 1 V
SIG (1G-1) - Body ground	W - Body ground	Ignition power supply	Ignition switch ON	10 to 14 V
ALTB (1F-1) - Body ground	W - Body ground	+B (ALTB) power supply	Always	10 to 14 V
ECUB (1B-30) - Body ground	V - Body ground	+B (ECUB) power supply	Always	10 to 14 V

If the result is not as specified, there may be a malfunction on the wire harness side.

- (c) Reconnect the 1A, 1B, 1C, 1E, 1F, 1G and 1M junction block connectors.
- (d) Measure the voltage of the connectors.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
HAZ (1S-17) - Body ground	O - Body ground	Hazard warning light drive	Answer-back OFF	10 to 14 V
HAZ (1S-17) - Body ground	O - Body ground	Hazard warning light drive	Answer-back ON	Pulse generation
RDA (I6-7) - Body ground	GR - Body ground	Door control receiver input	No key in ignition key cylinder, all doors closed and each transmitter switch OFF to ON	Below 1 V → 10 to 14 V → Below 1 V

If the result is not as specified, the junction block assembly (integration relay) may have a malfunction.

DL-58

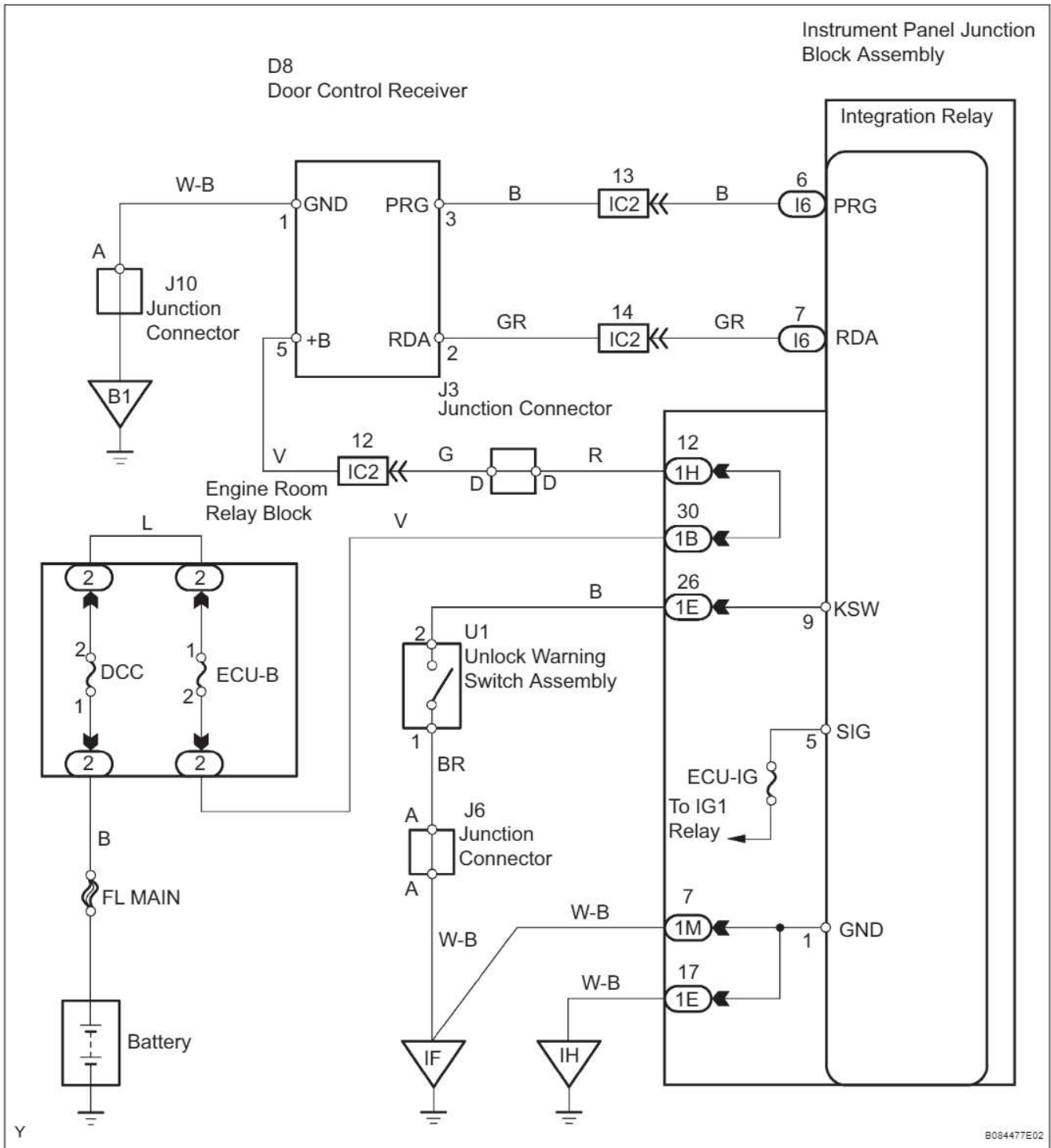
DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

Only Wireless Control Function is Inoperative

SYSTEM DESCRIPTION

The door control receiver receives signals from the transmitter and sends these signals to the integration relay. The integration relay then controls all the doors by sending LOCK / UNLOCK signals to each door lock actuator.

WIRING DIAGRAM



DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

DL-59

INSPECTION PROCEDURE

1 CHECK WIRELESS DOOR LOCK CONTROL FUNCTIONS

- (a) Check that the wireless door lock control (See page [DL-45](#)).

OK

NORMAL

NG

2 CHECK THAT TRANSMITTER LED ILLUMINATES

- (a) Check that the transmitter LED illuminates 3 times when the switch is pressed 3 times.

OK:

Transmitter LED illuminates 3 times when the switch is pressed 3 times.

NG

Go to step 4

OK

3 CHECK WIRELESS DOOR LOCK FUNCTIONS (STANDARD OPERATION)

- (a) Check standard LOCK / UNLOCK switch operation.

NOTICE:

Standardized test procedure: press the transmitter switch for 1 second, directing the transmitter to the driver side door outside handle from a distance of 1 m (3.28 ft.). The transmitter should be pointed directly at the door handle, i.e. at a 90° angle to the vehicle body.

NG

Go to step 5

OK

REPLACE DOOR CONTROL TRANSMITTER**4 REPLACE TRANSMITTER BATTERY**

- (a) After replacing the transmitter battery, check that the doors can be locked and unlocked by using the transmitter LOCK / UNLOCK switch.

OK:

Doors can be locked and unlocked with transmitter.

NG

REPLACE DOOR CONTROL TRANSMITTER

DL

DL-60

DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

OK

NORMAL

5

CHECK ROOM LIGHT

- (a) Check that the room light illuminates.

HINT:

When the room light does not illuminate, proceed to self-diagnostic mode after repairing the room light.

NEXT

DL

6

SWITCH TO SELF-DIAGNOSTIC MODE

- (a) Switch to self-diagnostic mode by operating the ignition switch.

- (1) Make sure the vehicle is in a condition where wireless control functions can be operated, and then insert the key into the ignition key cylinder and remove it.
- (2) Within 5 seconds of removing the key, insert the key into the ignition key cylinder. Then turn the ignition switch ON and OFF.
- (3) Within 30 seconds of turning the ignition switch ON and OFF, perform the following 9 times: turn the ignition switch ON and OFF.

HINT:

- Turning the ignition switch ON after performing all of the steps above will end self-diagnostic mode.
- Do not lock or unlock doors during self-diagnostic mode.

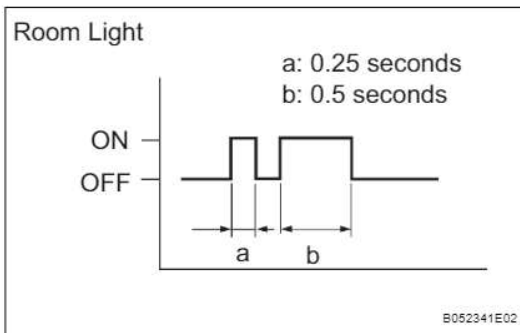
NOTICE:

If the change to the self-diagnostic mode has failed, the system will return to normal mode.

- (b) Check that the system has switched to self-diagnostic mode by comparing the flash patterns of the room light to the timing chart.

OK:

The flash patterns of the room light should be the same as the patterns shown in the timing chart.



OK

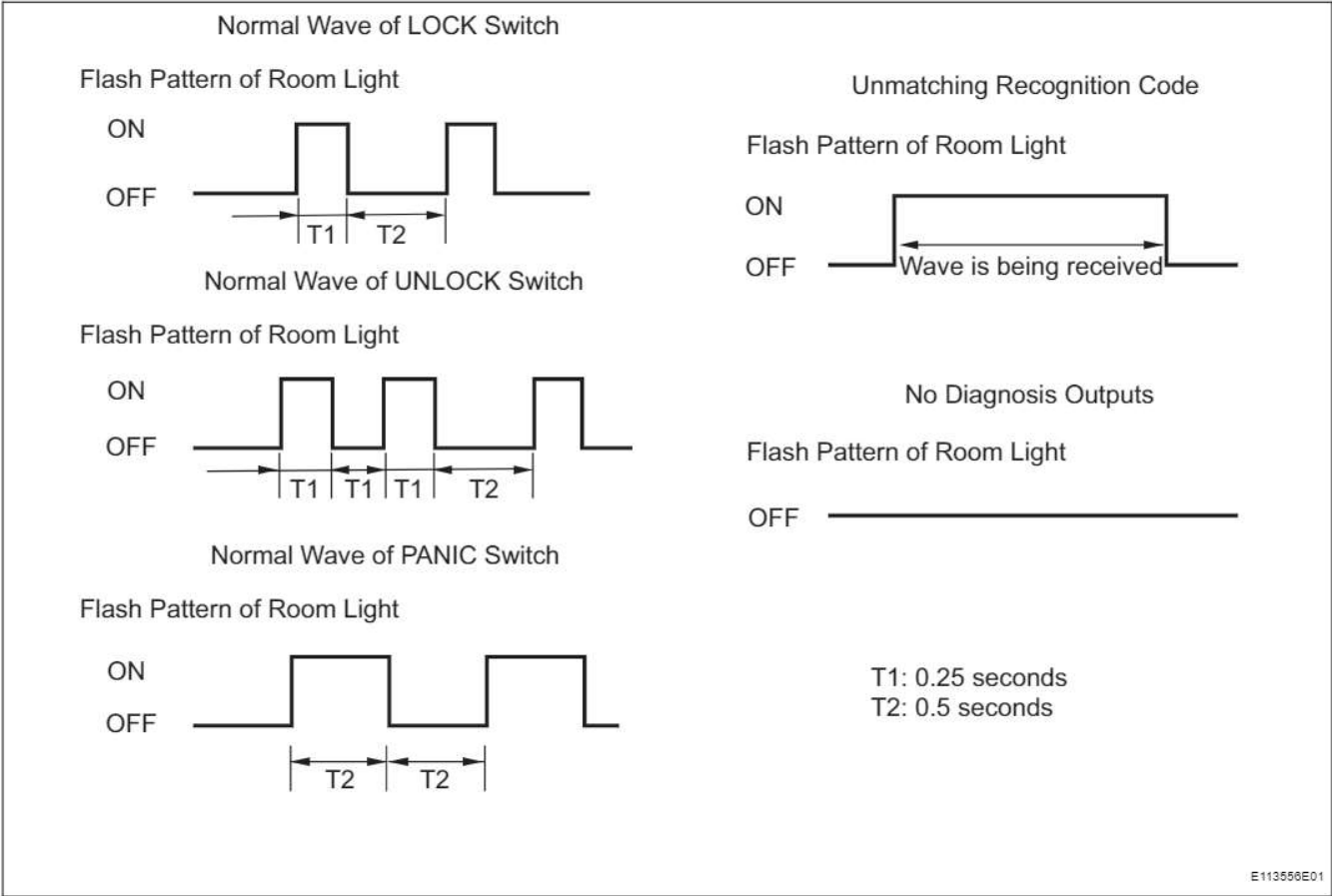
NG

Go to step 11

7

CHECK SELF-DIAGNOSTIC MODE

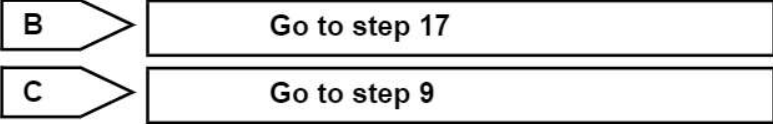
- (a)
- Check the diagnosis outputs when the door control transmitter switch is held down. The diagnosis outputs can be checked by observing the flash patterns of the room light.



DL

Result

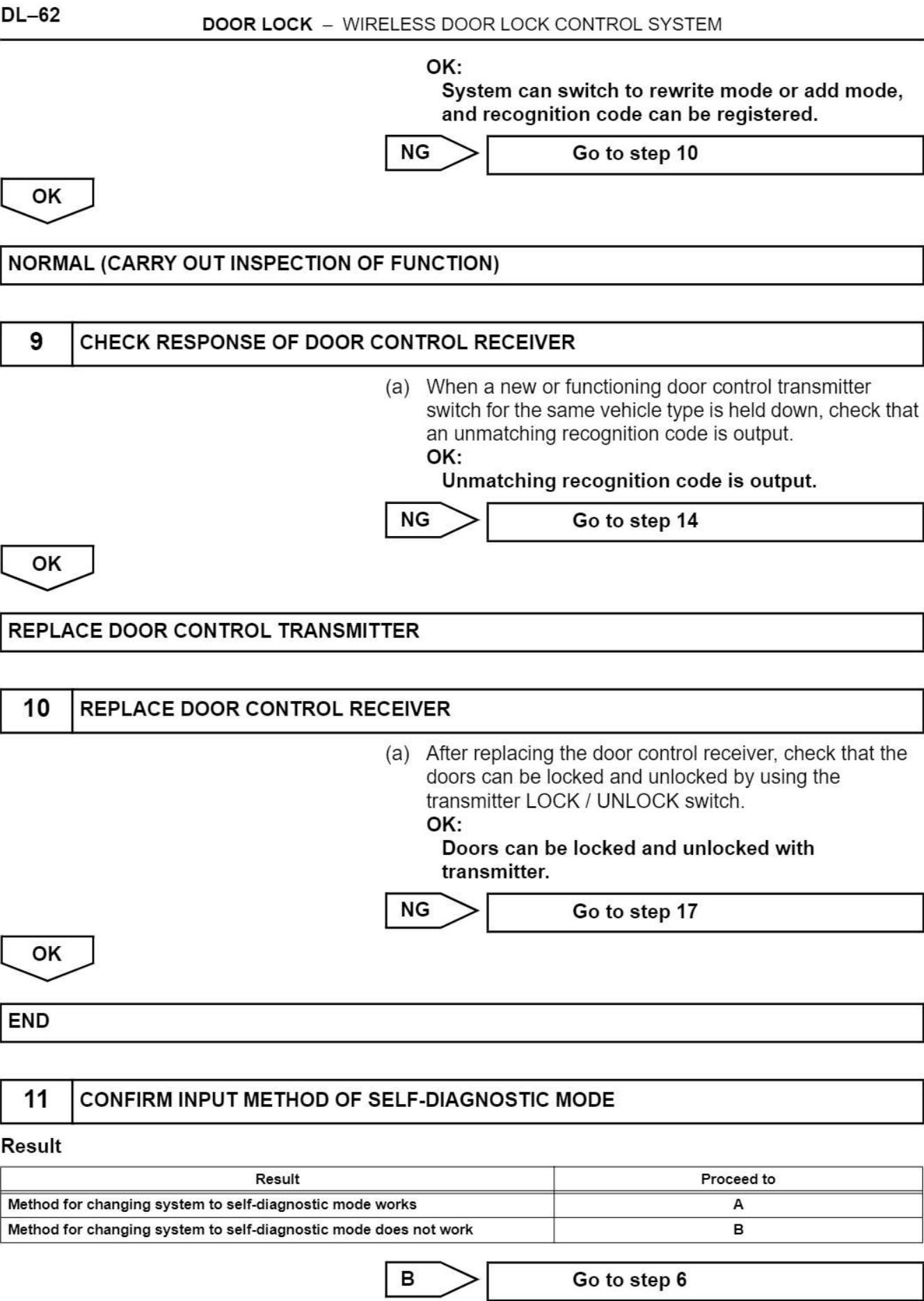
Result	Proceed to
Unmatching recognition code is output	A
Normal waves of LOCK, UNLOCK and PANIC switches are output	B
There are no diagnosis outputs (room light is OFF)	C



8

RESISTER RECOGNITION CODE

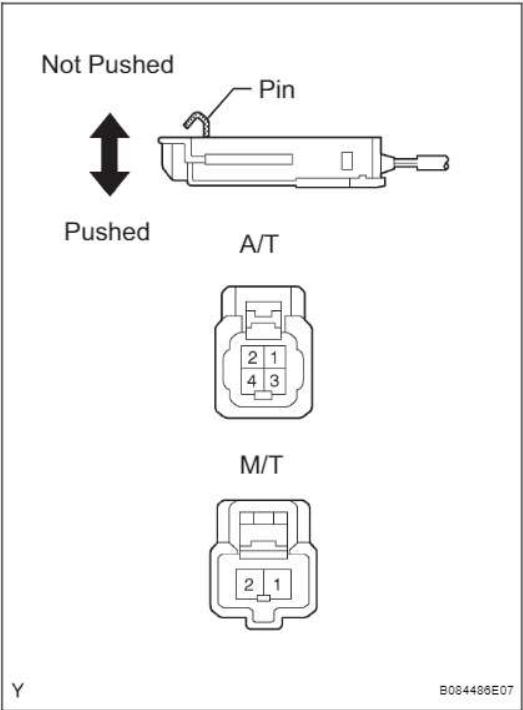
- (a)
- Check that the system can switch to rewrite mode or add mode, and that a recognition code can be registered.



DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

A

12 INSPECT UNLOCK WARNING SWITCH ASSEMBLY



(a) Measure the resistance of the switch.

Standard resistance

Tester Connection	Switch Condition	Specified Condition
1 - 2	Not pushed	10 kΩ or higher
1 - 2	Pushed	Below 1 Ω

NG

REPLACE UNLOCK WARNING SWITCH ASSEMBLY

DL

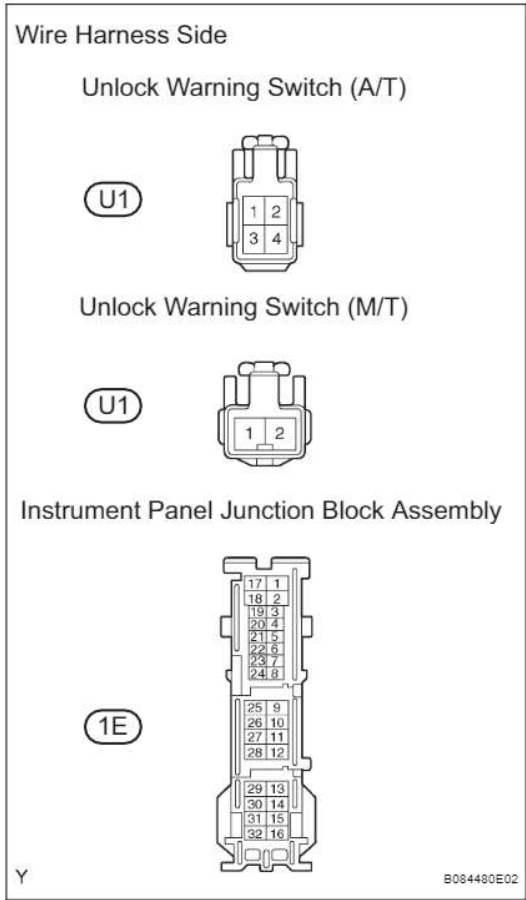
OK

13 CHECK WIRE HARNESS (UNLOCK WARNING SWITCH ASSEMBLY - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY AND BODY GROUND)

- (a) Disconnect the U1 switch connector.
- (b) Disconnect the 1E junction block connector.

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DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM



(c) Measure the resistance of the wire harness side connectors.

Standard resistance

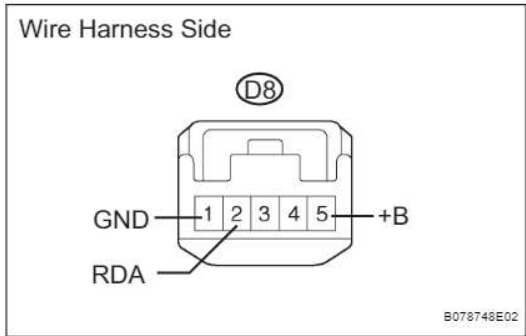
Tester Connection	Specified Condition
U1-2 - 1E-26	Below 1 Ω
U1-1 - Body ground	Below 1 Ω

NG REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

14

CHECK WIRE HARNESS (DOOR CONTROL RECEIVER - BATTERY AND BODY GROUND)



- (a) Disconnect the D8 receiver connector.
(b) Measure the resistance of the wire harness side connector.

Standard resistance

Tester Connection	Specified Condition
D8-1 (GND) - Body ground	Below 1 Ω

- (c) Measure the voltage of the wire harness side connector.
- Standard voltage

Tester Connection	Specified Condition
D8-5 (+B) - Body ground	10 to 14 V

NG REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

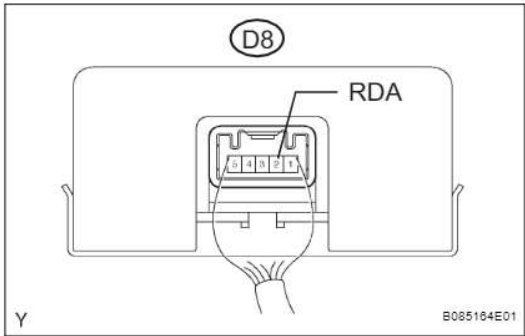
15

CHECK DOOR CONTROL RECEIVER (OUTPUT)

- (a) Reconnect the D8 receiver connector.

DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

DL-65



- (b) Measure the voltage of the connector.
Standard voltage

Tester Connection	Condition	Specified Condition
D8-2 (RDA) - Body ground	No key in ignition key cylinder, all doors closed and each transmitter switch OFF to ON	Below 12 V → Approx. 6 to 7 V → Below 12 V

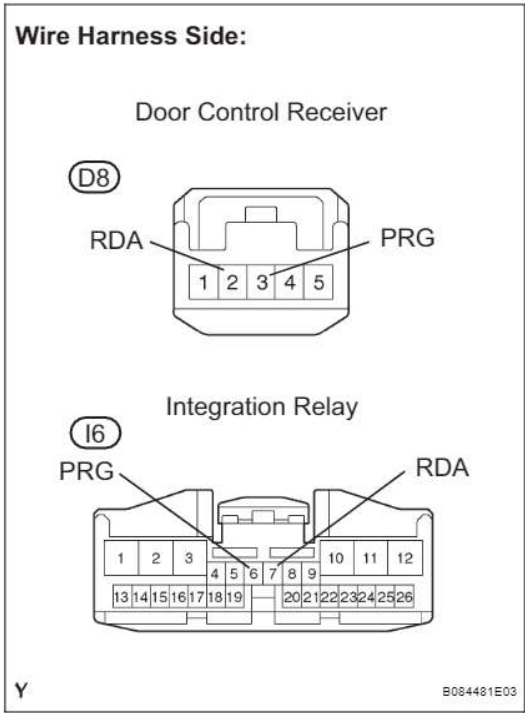
NG

Go to step 10

OK

16

CHECK WIRE HARNESS (DOOR CONTROL RECEIVER - INTEGRATION RELAY)



- (a) Disconnect the D8 receiver connector.
(b) Disconnect the I6 relay connector.
(c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
D8-2 (RDA) - I6-7 (RDA)	Below 1 Ω
D8-3 (PRG) - I6-6 (PRG)	Below 1 Ω
D8-2 (RDA) or I6-7 (RDA) - Body ground	10 kΩ or higher
D8-3 (PRG) or I6-6 (PRG) - Body ground	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

17

REPLACE INTEGRATION RELAY

- (a) After replacing the integration relay, check that the doors can be locked and unlocked by using the transmitter LOCK / UNLOCK switch.

OK:

The wireless door control system operates.

NG

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

DL-66

DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

OK

END

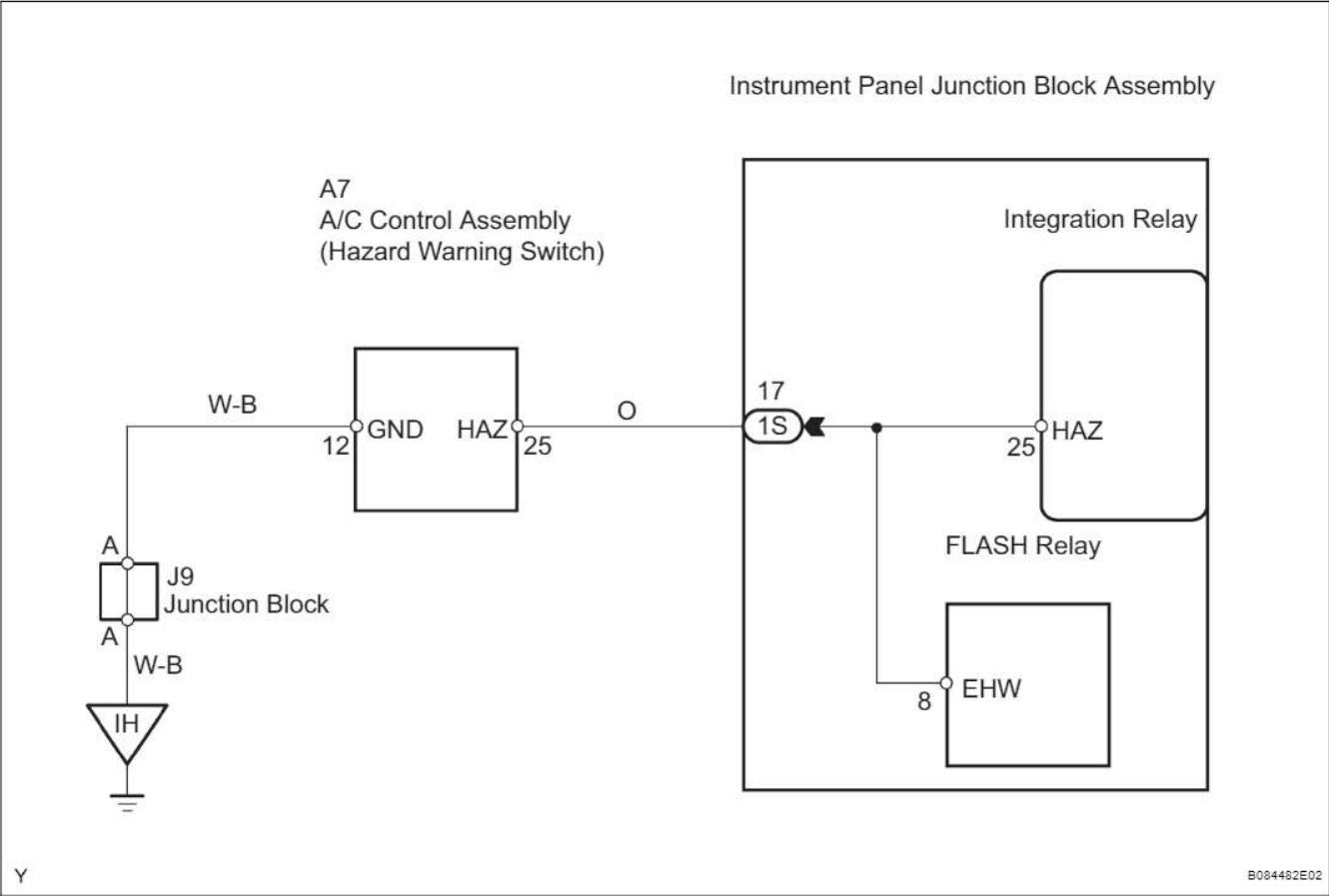
DL

No Answer-Back

SYSTEM DESCRIPTION

In some cases, wireless control functions are normal but the hazard warning light is not. A malfunction may be present in the integration relay hazard warning light signal outputs from the integration relay.

WIRING DIAGRAM



INSPECTION PROCEDURE

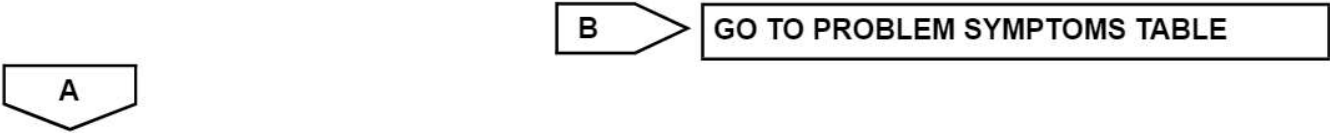
1

CHECK WIRELESS DOOR LOCK FUNCTIONS

- (a) Check the wireless door lock functions by operating the transmitter switch.

Result

Result	Proceed to
Wireless door lock functions operate normally but hazard warning light answer-back does not occur	A
Wireless door lock functions do not operate	B



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DOOR LOCK – WIRELESS DOOR LOCK CONTROL SYSTEM

2

CHECK HAZARD WARNING LIGHT

- (a) Check that the hazard warning lights flash continuously when the hazard warning light switch is pressed.
- OK:**
Hazard warning light flash continuously.

NG

GO TO LIGHTING SYSTEM

OK

3

REPLACE INTEGRATION RELAY

- (a) After replacing the integration relay, check that the answer-back occurs.
- OK:**
Answer-back occurs.

NG

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

OK

END

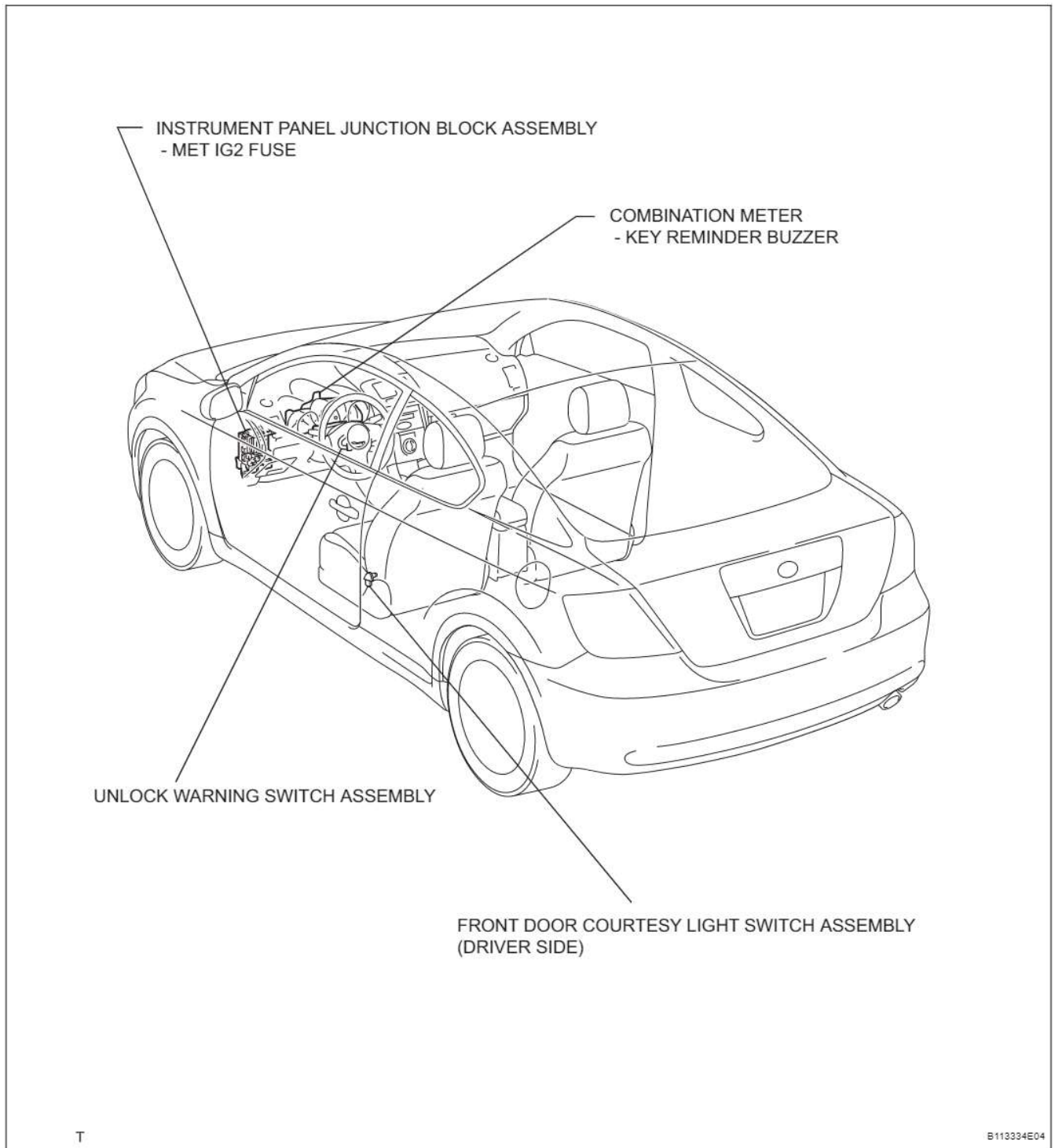
DL

KEY REMINDER WARNING
SYSTEM

PRECAUTION

NOTICE:
When disconnecting the cable from the negative (-) battery terminal, initialize the following system(s) after the cable is reconnected.

System Name	See Procedure
Power Window Control System (w/ Jam Protection Function)	IN-23
Sliding Roof System	

DOOR LOCK – KEY REMINDER WARNING SYSTEM**DL-67****PARTS LOCATION****DL**

SYSTEM DESCRIPTION

1. SYSTEM DESCRIPTION
- (a) The key reminder system is a precautionary function that reminds the driver that the key is still in the ignition key cylinder. The system activates a built-in buzzer when the ignition switch is OFF, the key is in the ignition key cylinder and the driver door is opened.
2. SYSTEM FUNCTION
- (a) The combination meter commands the driver circuit to sound a built-in buzzer when the following 3 conditions are met: 1) the ignition switch is turned OFF: 2) the combination meter receives an unlock warning switch signal from the ignition key cylinder indicating that the key is inserted, and: 3) the combination meter receives a driver side door open signal from the front door courtesy light switch.
3. FUNCTION OF MAIN COMPONENTS

Components	Function
Front door courtesy light switch assembly	Detects if driver side door is open or closed and outputs data to combination meter.
Unlock warning switch assembly	Detects if key is/is not in ignition key cylinder and outputs data to combination meter.
Combination meter assembly	Receives unlock warning switch signal from ignition key cylinder and driver side door open signal from front door courtesy light switch. Then combination meter actuates driver circuit to sound built-in buzzer intermittently.

DOOR LOCK – KEY REMINDER WARNING SYSTEM

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:
Use these procedure to troubleshoot the key reminder warning system.

1 VEHICLE BROUGHT TO WORKSHOP

NEXT

2 INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V
If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3 PROBLEM SYMPTOMS TABLE

Result:

Result	Proceed to
Fault is not listed on problem symptoms table	A
Fault is listed on problem symptoms table	B

B

Go to step 4

A

4 OVERALL ANALYSIS AND TROUBLESHOOTING

- (a) Terminals of ECU (see page [DL-70](#)).
- (b) On-vehicle inspection (see page [DL-70](#)).
- (c) Inspection
 - (1) Front door courtesy light switch (see page [DL-76](#)).
 - (2) Unlock warning switch (see page [DL-77](#)).

NEXT

5 REPAIR OR REPLACE

NEXT

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DOOR LOCK – KEY REMINDER WARNING SYSTEM

6	CONFIRMATION TEST
---	-------------------

NEXT

END

DL

PROBLEM SYMPTOMS TABLE

HINT:
Use the table below to help determine the cause of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

KEY REMINDER WARNING SYSTEM

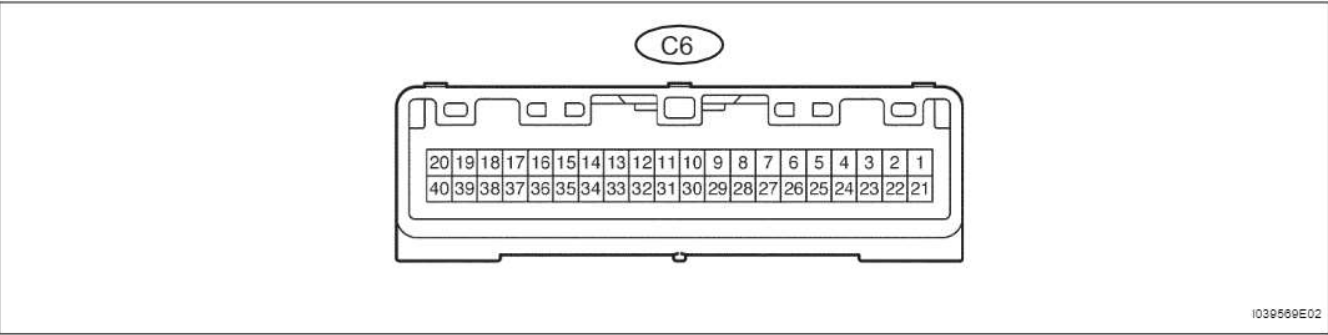
Symptom	Suspected Area	See page
Key reminder dose not sound	1. Front door courtesy light switch assembly (driver side)	DL-71
	2. Unlock warning switch assembly	DL-71
	3. Wire harness	DL-71
	4. Combination meter assembly	DL-71

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DOOR LOCK – KEY REMINDER WARNING SYSTEM

TERMINALS OF ECU

1. CHECK COMBINATION METER ASSEMBLY



- (a) Disconnect the C6 meter connector.
- (b) Measure the voltage and resistance of the wire harness side connector.

DL

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
C6-4 - Body ground	LG - Body ground	IG power supply	Ignition switch OFF	Below 1 V
C6-4 - Body ground	LG - Body ground	IG power supply	Ignition switch ON	10 to 14 V
C6-3 - Body ground	V - Body ground	+B power supply	Always	10 to 14 V
C6-1 - Body ground	BR - Body ground	Ground	Always	Below 1 Ω
C6-8 - Body ground	BR - Body ground	Driver side courtesy switch input	Driver side door closed	10 kΩor higher
C6-8 - Body ground	BR - Body ground	Driver side courtesy switch input	Driver side door open	Below 1 Ω
C6-7 - Body ground	Y - Body ground	Unlock warning switch input	No key in ignition key cylinder	10 kΩor higher
C6-7 - Body ground	Y - Body ground	Unlock warning switch input	Key in ignition key cylinder	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

ON-VEHICLE INSPECTION

1. CHECK KEY REMINDER WARNING SYSTEM

- (a) Check that the key reminder warning buzzer functions.

- (1) Close the driver side door and insert the key into the ignition key cylinder.

HINT:

The ignition switch must be OFF.

- (2) Open the driver side door.

- (3) Check that the key reminder warning buzzer sounds intermittently.

- (4) While the buzzer is sounding, perform one of the following operations:

- Close the driver side door (front door courtesy light switch is off).
- Turn the ignition switch ON.
- Pull out the key from the ignition key cylinder.

- (5) Check that the key reminder warning buzzer stops sounding.

DL

DL-74

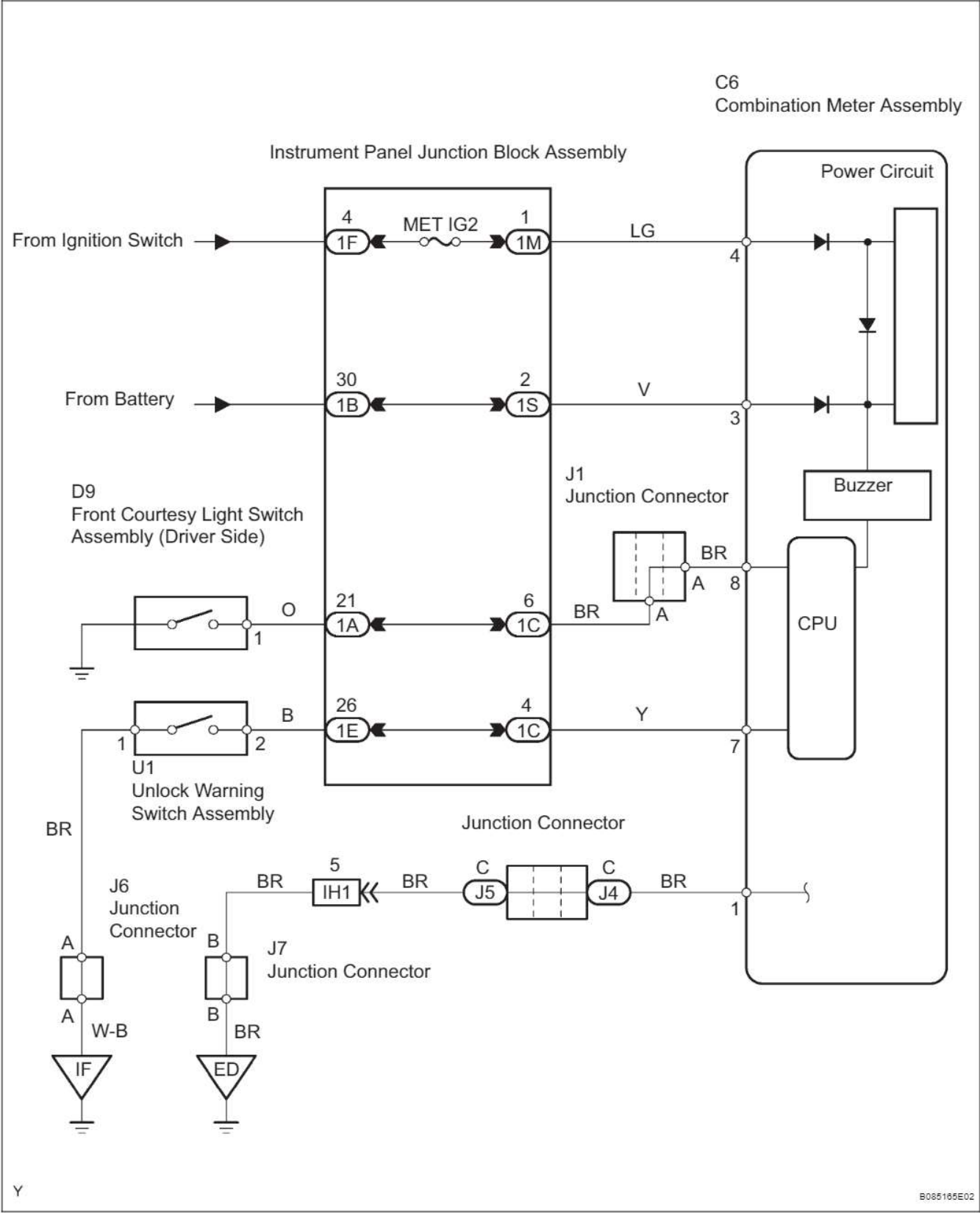
DOOR LOCK – KEY REMINDER WARNING SYSTEM

Key Reminder Buzzer does not Sound**DESCRIPTION**

The key reminder warning buzzer sounds when the following 3 conditions are met: 1) the ignition switch is turned OFF: 2) the combination meter receives an unlock warning switch signal from the ignition key cylinder, and: 3) the combination meter receives a driver side door open signal from the front door courtesy light switch.

DL

WIRING DIAGRAM



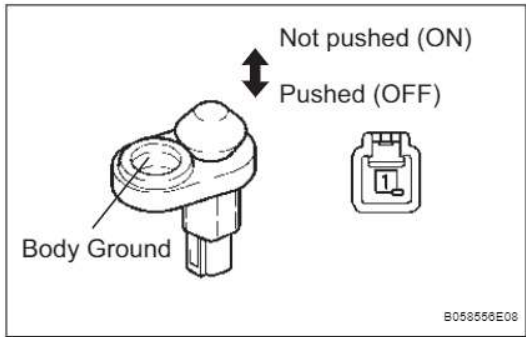
DL-76

DOOR LOCK – KEY REMINDER WARNING SYSTEM

INSPECTION PROCEDURE

1

INSPECT FRONT DOOR COURTESY LIGHT SWITCH (DRIVER SIDE)



- (a) Remove the courtesy light switch.
- (b) Measure the resistance of the switch.

Standard resistance

Tester Connection	Condition	Specified Condition
1 - Body ground	Nor pushed (ON)	Below 1 Ω
1 - Body ground	Pushed (OFF)	10 kΩor higher

NG

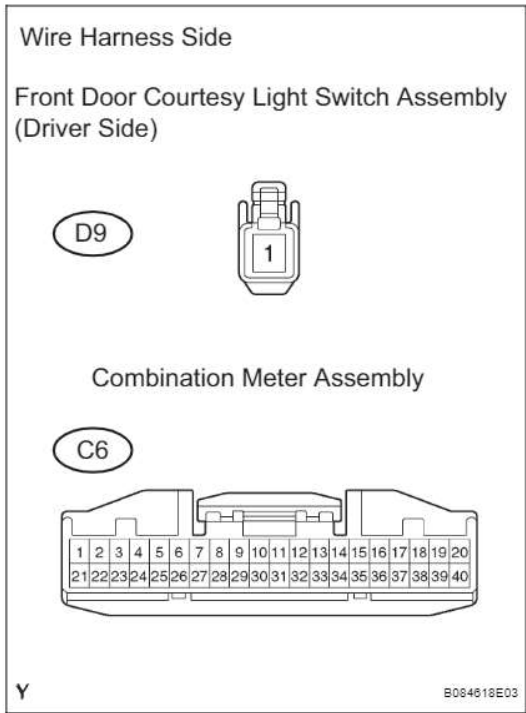
REPLACE FRONT DOOR COURTESY LIGHT SWITCH

DL

OK

2

CHECK WIRE HARNESS (FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY (DRIVER SIDE) - COMBINATION METER ASSEMBLY)



- (a) Disconnect the D9 switch connector.
- (b) Disconnect the C6 meter connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
D9-1 - C6-8	Below 1 Ω

NG

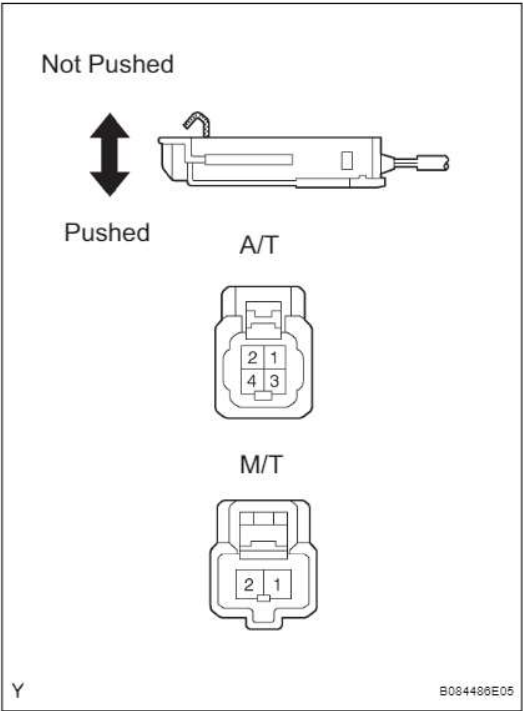
REPAIR OR REPLACE HARNESS AND CONNECTOR

Y

OK

DOOR LOCK – KEY REMINDER WARNING SYSTEM

3 INSPECT UNLOCK WARNING SWITCH ASSEMBLY



- (a) Remove the unlock warning switch.
- (b) Measure the resistance of the switch.

Standard resistance

Tester Connection	Condition	Specified Condition
1 - 2	Not pushed	10 kΩ or higher
1 - 2	Pushed	Below 1 Ω

NG

REPLACE UNLOCK WARNING SWITCH ASSEMBLY

OK

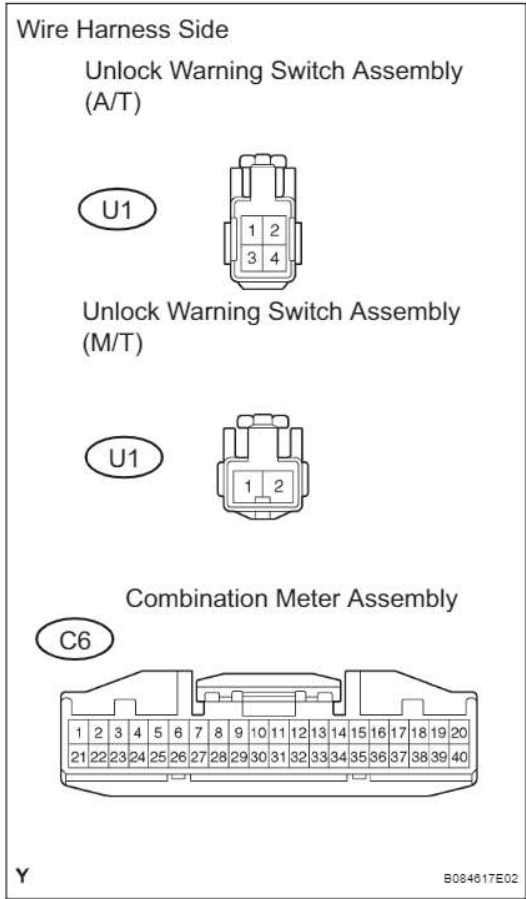
DL

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DOOR LOCK – KEY REMINDER WARNING SYSTEM

4

CHECK WIRE HARNESS (UNLOCK WARNING SWITCH ASSEMBLY - COMBINATION METER ASSEMBLY AND BODY GROUND)



- (a) Disconnect the U1 switch connector.
- (b) Disconnect the C6 meter connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
U1-2 - C6-7	Below 1 Ω
U1-1 - Body ground	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

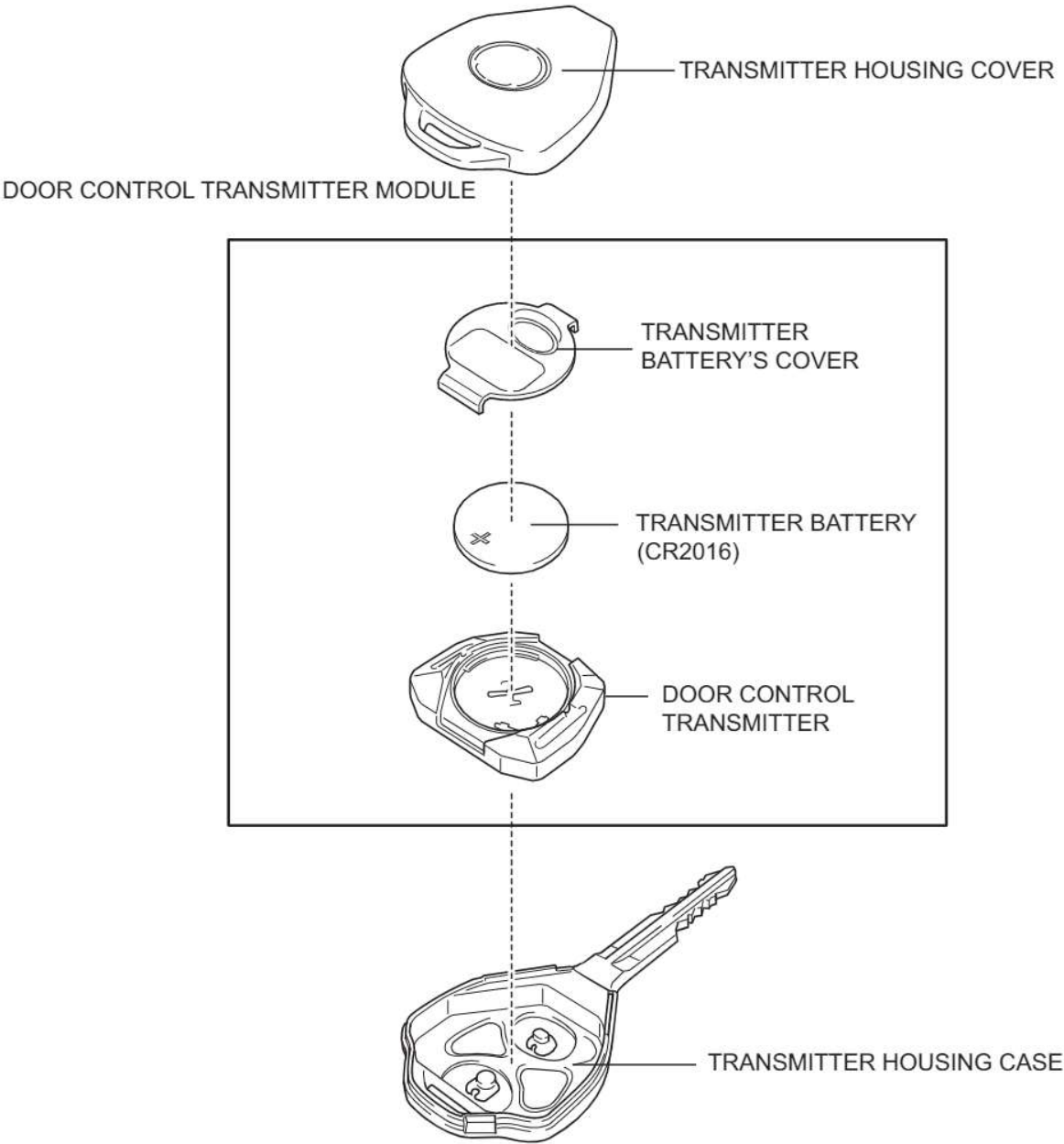
OK

REPLACE COMBINATION METER ASSEMBLY

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DOOR LOCK – TRANSMITTER BATTERY

TRANSMITTER BATTERY
COMPONENTS



E113557E01

DOOR LOCK – TRANSMITTER BATTERY

DL-77

REMOVAL

1. REMOVE TRANSMITTER HOUSING COVER

NOTICE:

Take extra care when handling these precision electronic components.

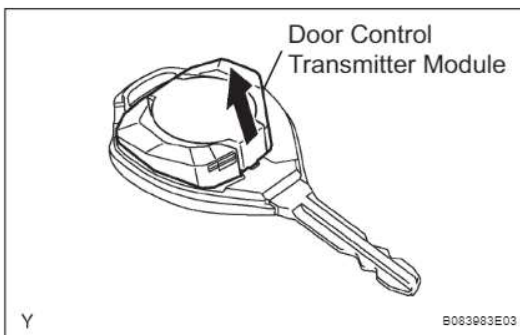
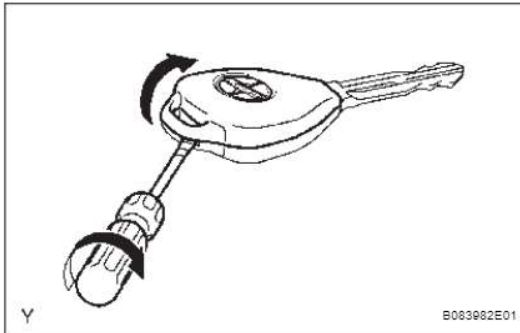
- (a) Using a screwdriver, pry apart the transmitter cover.

NOTICE:

Do not forcibly pry apart the cover.

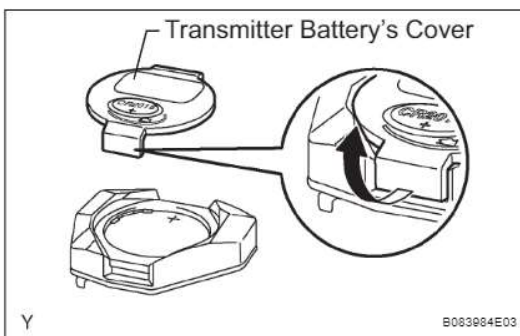
HINT:

Tape the screwdriver tip before use.

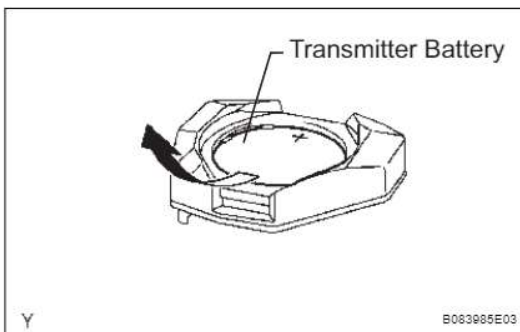


2. REMOVE DOOR CONTROL TRANSMITTER MODULE

- (a) Remove the door control transmitter module from the case.



- (b) Disengage the hook of the transmitter battery's cover and remove the cover.



3. REMOVE BATTERY

- (a) Remove the battery (lithium battery).

NOTICE:

- Do not push the terminals with your finger.
- Do not forcibly pry up the battery (lithium battery). The terminals may become damaged.
- Do not touch the battery with wet hands. Water may cause rust.
- Do not touch or move any components inside the transmitter, as it may cease to work.

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DOOR LOCK – TRANSMITTER BATTERY

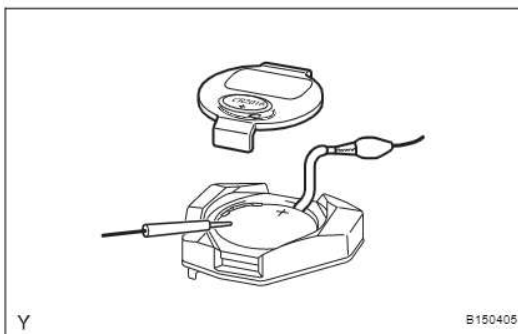
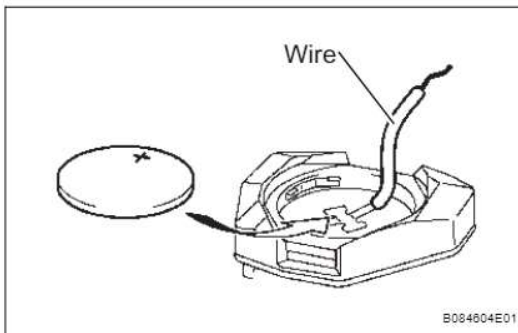
INSPECTION

1. INSPECT BATTERY CAPACITY

HINT:

- When checking the amount of energy left in the battery (lithium battery), the battery must be checked while it is installed in the transmitter (1.2 kW is applied to the battery). When the battery is checked while it is uninstalled, the voltage reading will be more than 2.5 V until the energy is depleted.
- If the transmitter is malfunctioning, the voltage reading of the energy left in the battery may be inaccurate.

- (a) Connect a wire to the negative (-) terminal of the transmitter and install the battery.



- (b) Connect the tester's positive (+) lead to the positive (+) side of the battery (lithium battery) and the negative (-) lead to the wire.
- (c) Press one of the transmitter switches for approximately 1 second.
- (d) Press the transmitter switch again to check the voltage.

Standard voltage:**2.2 V or higher**

HINT:

- When the temperature of the battery is low, the inspection results may be inaccurate. When the outcome of the test is less than 2.2 V, conduct the test again after leaving the battery in a place where the temperature is 18°C (64°F) for more than 30 minutes.
 - Read the voltage immediately after the switch is pressed. 0.8 seconds after the switch has been pressed, the automatic power-off function starts and resistance applied to the battery will cease. The voltage of the battery will be 2.5 V or more.
 - Press the switch at least 3 times before reading the voltage. If the battery has just been returned to 18°C (64°F), the voltage may be unusually high for the first or second voltage reading.
- (e) Disconnect the lead.

DOOR LOCK – TRANSMITTER BATTERY

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INSTALLATION

1. INSTALL TRANSMITTER BATTERY

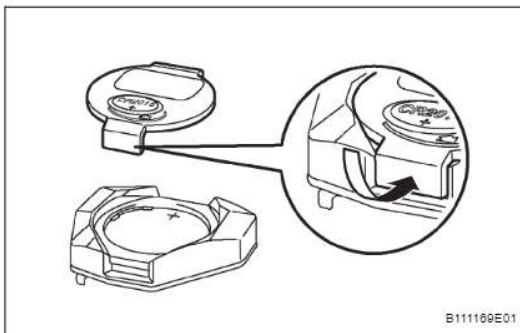
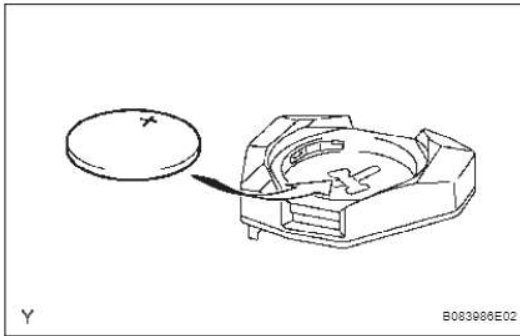
- (a) Install a new battery (lithium battery) with the positive (+) side up, as shown in the illustration.

NOTICE:

- Be sure that the positive (+) side and the negative (-) side of the transmitter battery are matched up correctly.
- Be careful not to bend the transmitter battery electrode during insertion.
- Keep the transmitter cover interior free of dust and oil.

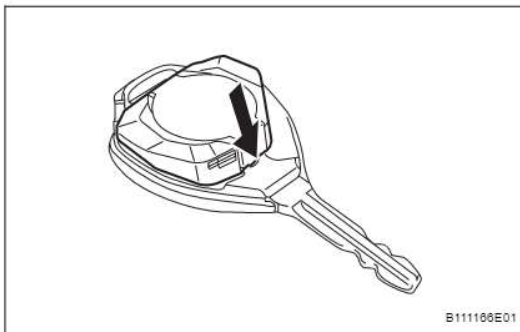
- (b) Attach the hook of the transmitter battery's cover and install the cover.

DL



2. INSTALL DOOR CONTROL TRANSMITTER MODULE

- (a) Install the door control transmitter module to the case.

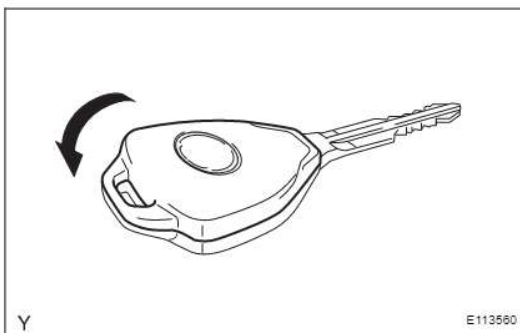


3. INSTALL TRANSMITTER HOUSING COVER

- (a) Install the transmitter housing cover.
 (b) Check that the transmitter's LED illuminates 3 times when the switch is pressed 3 times.

OK:

Transmitter's LED illuminates 3 times when switch is pressed 3 times.

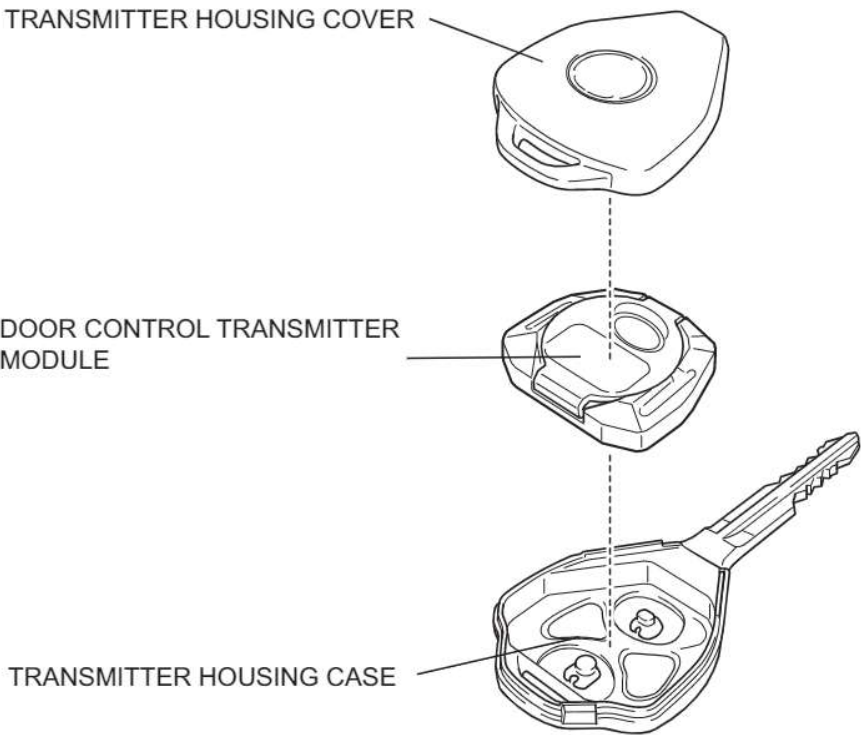


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DOOR LOCK – DOOR CONTROL TRANSMITTER MODULE

DOOR CONTROL TRANSMITTER MODULE

COMPONENTS



E113558E01

REMOVAL

1. REMOVE TRANSMITTER HOUSING COVER (See page [DL-77](#))
2. REMOVE DOOR CONTROL TRANSMITTER MODULE (See page [DL-77](#))

DL

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DOOR LOCK – DOOR CONTROL TRANSMITTER MODULE

INSPECTION

1. INSPECT DOOR CONTROL TRANSMITTER

(a) Inspect operation of the transmitter.

(1) Remove the battery (lithium battery) from the transmitter.

(2) Install a new or non-depleted battery (lithium battery).

HINT:

When a new or non-depleted transmitter battery is not available, connect 2 new 1.5 V batteries in series. Then connect leads to the batteries and use the leads to apply 3 V to the transmitter, as shown in the illustration.

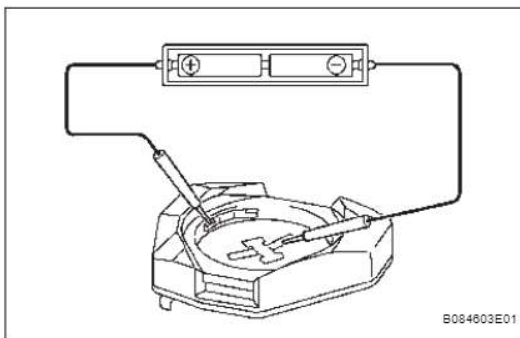
(3) From outside the vehicle, approximately 1 m (3.28 ft.) from the driver side door outside handle, test the transmitter by pointing its key plate at the vehicle and pressing a transmitter switch.

OK:

Door lock can be operated via the transmitter.

HINT:

- The operating range differs depending on the user, the way the transmitter is held and the location.
- The transmitter's faint electric waves may be affected if the area has strong electric waves or noise. The transmitter operational area may be shortened or the transmitter may not function.



INSTALLATION

1. INSTALL DOOR CONTROL TRANSMITTER MODULE
(See page [DL-79](#))
2. INSTALL TRANSMITTER HOUSING COVER (See
page [DL-79](#))

DL

DOOR CONTROL SWITCH

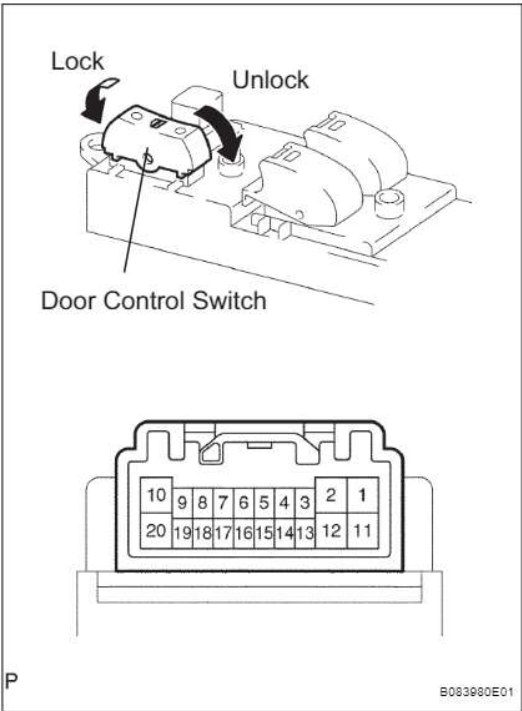
INSPECTION

1. INSPECT POWER WINDOW REGULATOR MASTER SWITCH (w/ Jam Protection Function)

- (a) Inspect door control switch.
- (1) Measure the resistance of the door control switch.

Standard resistance

Tester Connection	Switch Condition	Specified Condition
2 - 4	Lock	Below 1 Ω
2 - 4	OFF (Free)	10 kΩ or higher
2 - 14	Unlock	Below 1 Ω
2 - 14	OFF (Free)	10 kΩ or higher

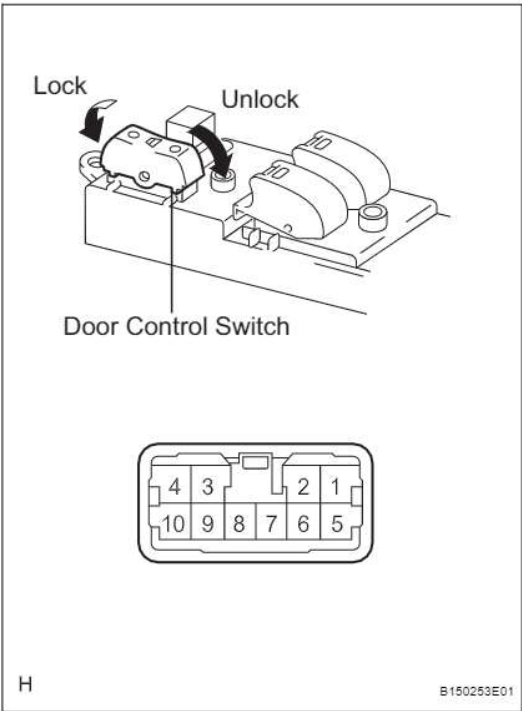


2. INSPECT POWER WINDOW REGULATOR MASTER SWITCH (w/o Jam Protection Function)

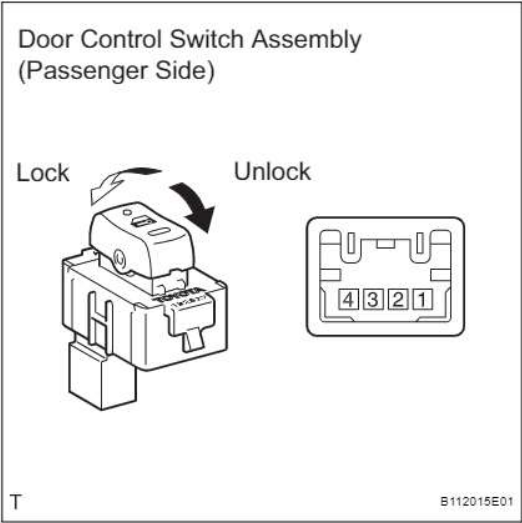
- (a) Inspect door control switch.
- (1) Measure the resistance of the door control switch.

Standard resistance

Tester Connection	Switch Condition	Specified Condition
1 - 2	Lock	Below 1 Ω
1 - 2	OFF (Free)	10 kΩ or higher
1 - 7	Unlock	Below 1 Ω
1 - 7	OFF (Free)	10 kΩ or higher



DOOR LOCK – DOOR CONTROL SWITCH

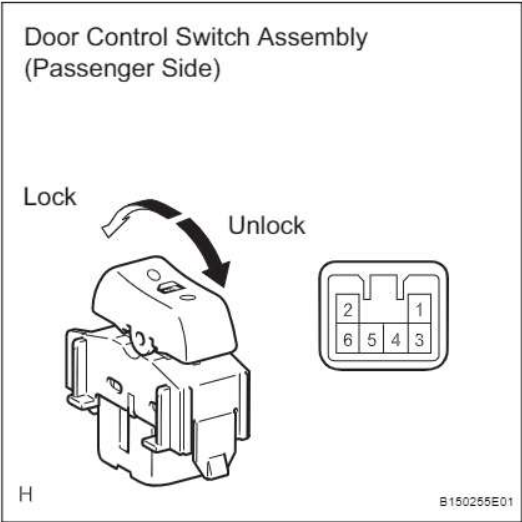


3. INSPECT DOOR CONTROL SWITCH (w/ Jam Protection Function)

- (a) Inspect door control switch.
- (1) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Switch Condition	Specified Condition
2 - 3	Lock	Below 1 Ω
1 - 2	Unlock	Below 1 Ω



4. INSPECT DOOR CONTROL SWITCH (w/o Jam Protection Function)

- (a) Inspect door control switch.
- (1) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Switch Condition	Specified Condition
3 - 6	Lock	Below 1 Ω
3 - 5	Unlock	Below 1 Ω

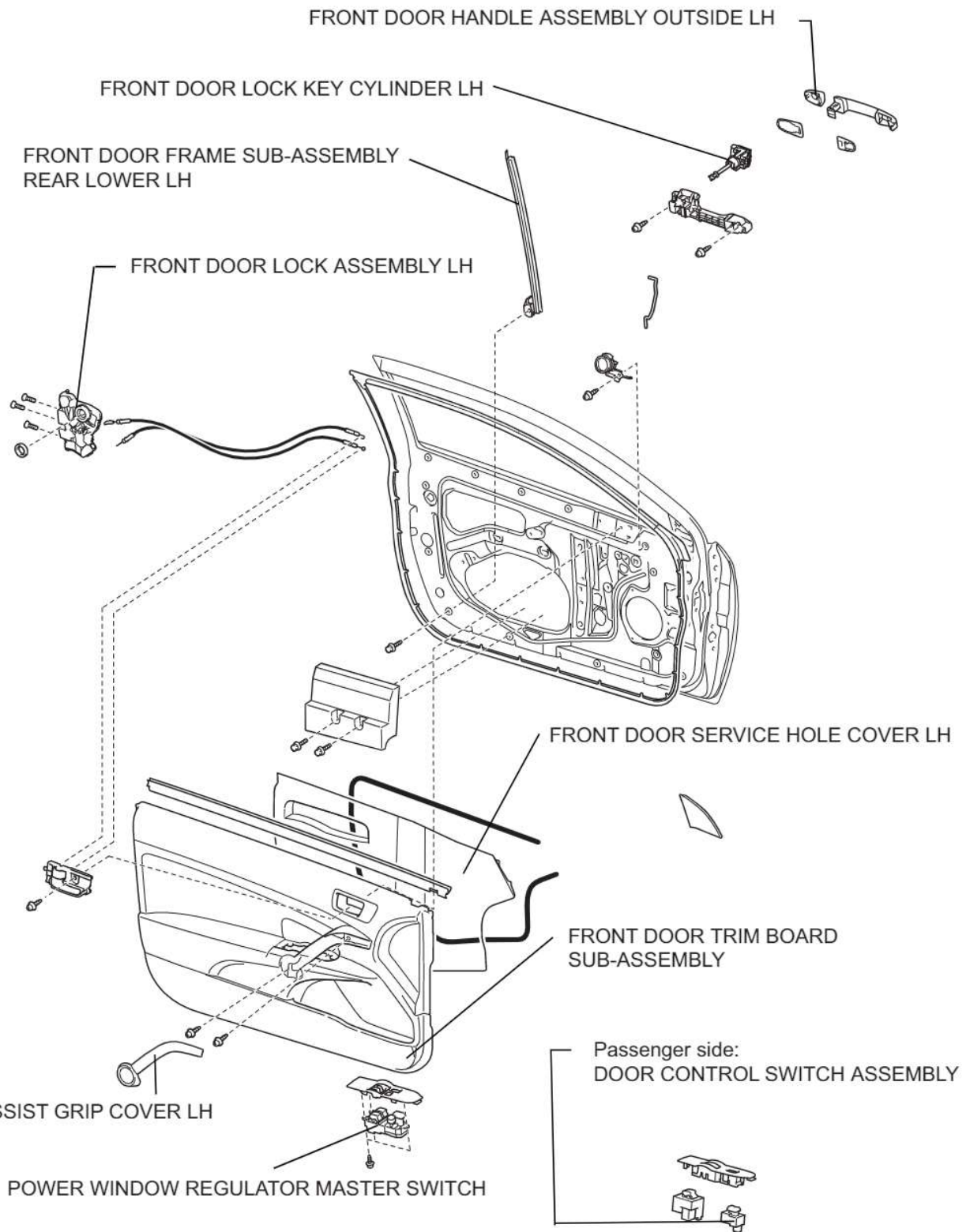
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DOOR LOCK – FRONT DOOR LOCK

FRONT DOOR LOCK

COMPONENTS



B117232E01

REMOVAL

HINT:

- Before adjusting the door position for vehicles equipped with side airbag and curtain shield airbag, be sure to disconnect the cable from the negative (-) battery terminal. After the adjustment, inspect the SRS warning light, the side airbag system and curtain shield airbag system for normal operation (see page [RS-11](#)).
- The installation procedures are the removal procedures in reverse order. However, only installation procedures requiring additional information are included.
- Use the same procedures for the LH side and RH side.
- The procedures listed below are for the RH side.
- A bolt without a torque specification is shown in the standard bolt chart (see page [SS-2](#)).

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

2. REMOVE ASSIST GRIP COVER LH

- (a) Remove the assist grip cover LH (see page [ED-7](#)).

3. REMOVE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

- (a) Driver side:
Remove the power window regulator master switch assembly (see page [ED-7](#)).

4. REMOVE DOOR CONTROL SWITCH ASSEMBLY

- (a) Passenger side:
Remove the door control switch assembly (see page [ED-7](#)).

5. REMOVE FRONT DOOR TRIM BOARD SUB-ASSEMBLY

- (a) Remove the front door trim board sub-assembly (see page [ED-7](#)).

6. REMOVE FRONT DOOR INSIDE HANDLE SUB-ASSEMBLY

- (a) Remove the front door inside handle sub-assembly (see page [ED-7](#)).

7. REMOVE FRONT DOOR SERVICE HOLE COVER

- (a) Remove the front door service hole cover (see page [ED-7](#)).

8. REMOVE FRONT DOOR FRAME SUB-ASSEMBLY REAR LOWER

- (a) Remove the front door frame sub-assembly rear lower (see page [ED-7](#)).

9. REMOVE FRONT DOOR OUTSIDE HANDLE COVER

- (a) Remove the front door outside handle cover (see page [ED-7](#)).

DL

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DOOR LOCK – FRONT DOOR LOCK

10. REMOVE FRONT DOOR LOCK ASSEMBLY

- (a) Remove the front door lock assembly (see page ED-7).

INSPECTION

1. INSPECT FRONT DOOR LOCK ASSEMBLY LH

- (a) Apply battery voltage to the door lock and check operation of the door lock motor.

OK

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 4 Battery positive (-) → Terminal 1	Lock
Battery positive (+) → Terminal 1 Battery positive (-) → Terminal 4	Unlock

If the result is not as specified, replace the door lock assembly.

- (b) Measure the resistance of the lock detection switch.

Standard resistance

Tester Connection	Door Lock Condition	Specified Condition
7 - 8	Lock	10 kΩ or higher
7 - 8	Unlock	Below 1 Ω

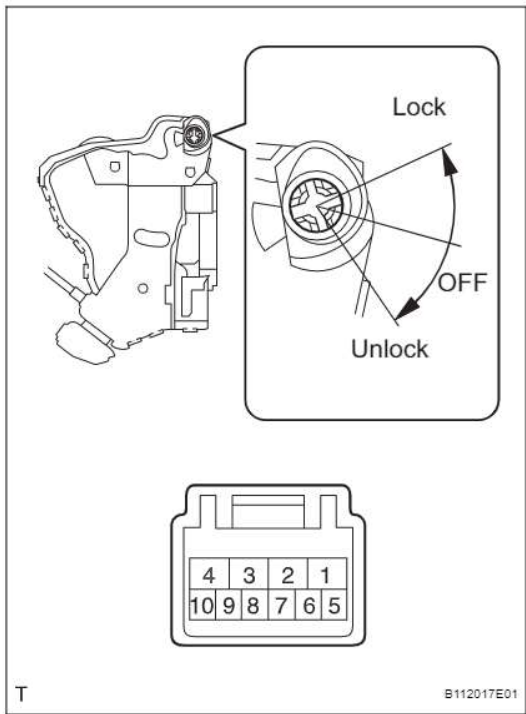
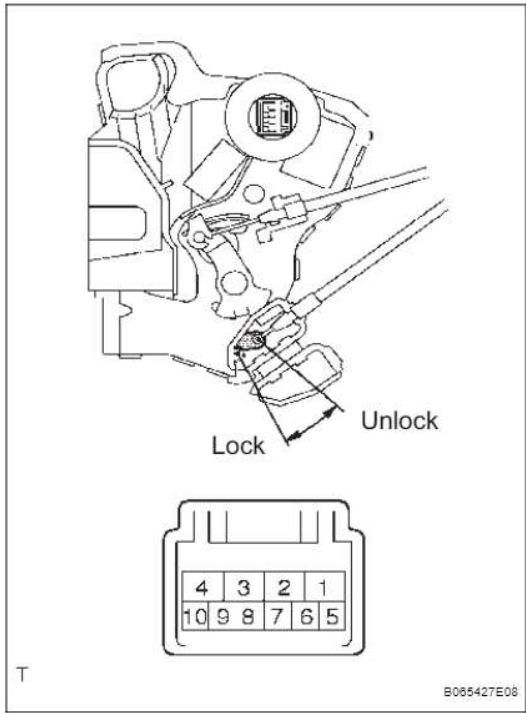
If the result is not as specified, replace the door lock assembly.

- (c) Measure the resistance of the door lock and unlock switch.

Standard resistance

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

If the result is not as specified, replace the door lock assembly.



DOOR LOCK – FRONT DOOR LOCK

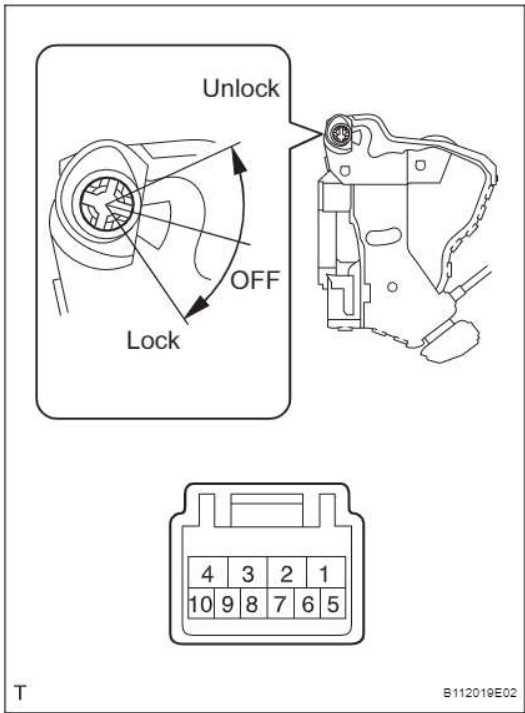
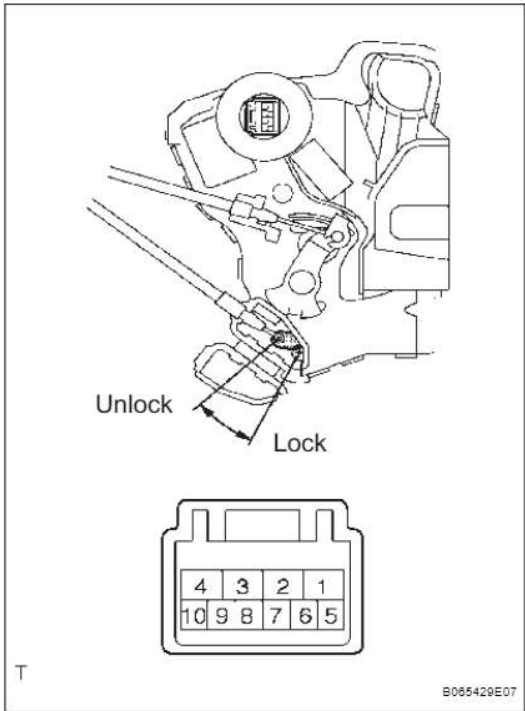
2. INSPECT FRONT DOOR LOCK ASSEMBLY RH

- (a) Apply battery voltage to the door lock and check operation of the door lock motor.

OK

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 4 Battery positive (-) → Terminal 1	Lock
Battery positive (+) → Terminal 1 Battery positive (-) → Terminal 4	Unlock

If the result is not as specified, replace the door lock assembly.



- (b) Measure the resistance of the door lock and unlock switch.

Standard resistance

Tester Connection	Door Lock Condition	Specified Condition
8 - 6	Lock	Below 1 Ω
8 - 6	OFF	10 k Ω or higher
8 - 5	OFF	10 k Ω or higher
8 - 5	Unlock	Below 1 Ω

If the result is not as specified, replace the door lock assembly.

INSTALLATION

HINT:

The installation procedures are the removal procedures in reverse order. However, only installation procedures requiring additional information are included.

1. INSTALL FRONT DOOR LOCK ASSEMBLY

- (a) Install the front door lock assembly (see page [ED-15](#)).

2. INSTALL FRONT DOOR OUTSIDE HANDLE COVER

- (a) Install the front door outside handle cover (see page [ED-15](#)).

3. INSTALL FRONT DOOR FRAME SUB-ASSEMBLY REAR LOWER

- (a) Install the front door frame sub-assembly rear lower (see page [ED-15](#)).

4. INSTALL FRONT DOOR SERVICE HOLE COVER

- (a) Install the front door service hole cover (see page [ED-15](#)).

5. INSTALL FRONT DOOR INSIDE HANDLE SUB-ASSEMBLY

- (a) Install the front door inside handle sub-assembly (see page [ED-15](#)).

6. INSTALL FRONT DOOR TRIM BOARD SUB-ASSEMBLY

- (a) Install the front door trim board sub-assembly (see page [ED-15](#)).

7. INSTALL DOOR CONTROL SWITCH ASSEMBLY

- (a) Passenger side:
Install the door control switch assembly (see page [ED-15](#)).

8. INSTALL POWER WINDOW REGULATOR MASTER SWITCH

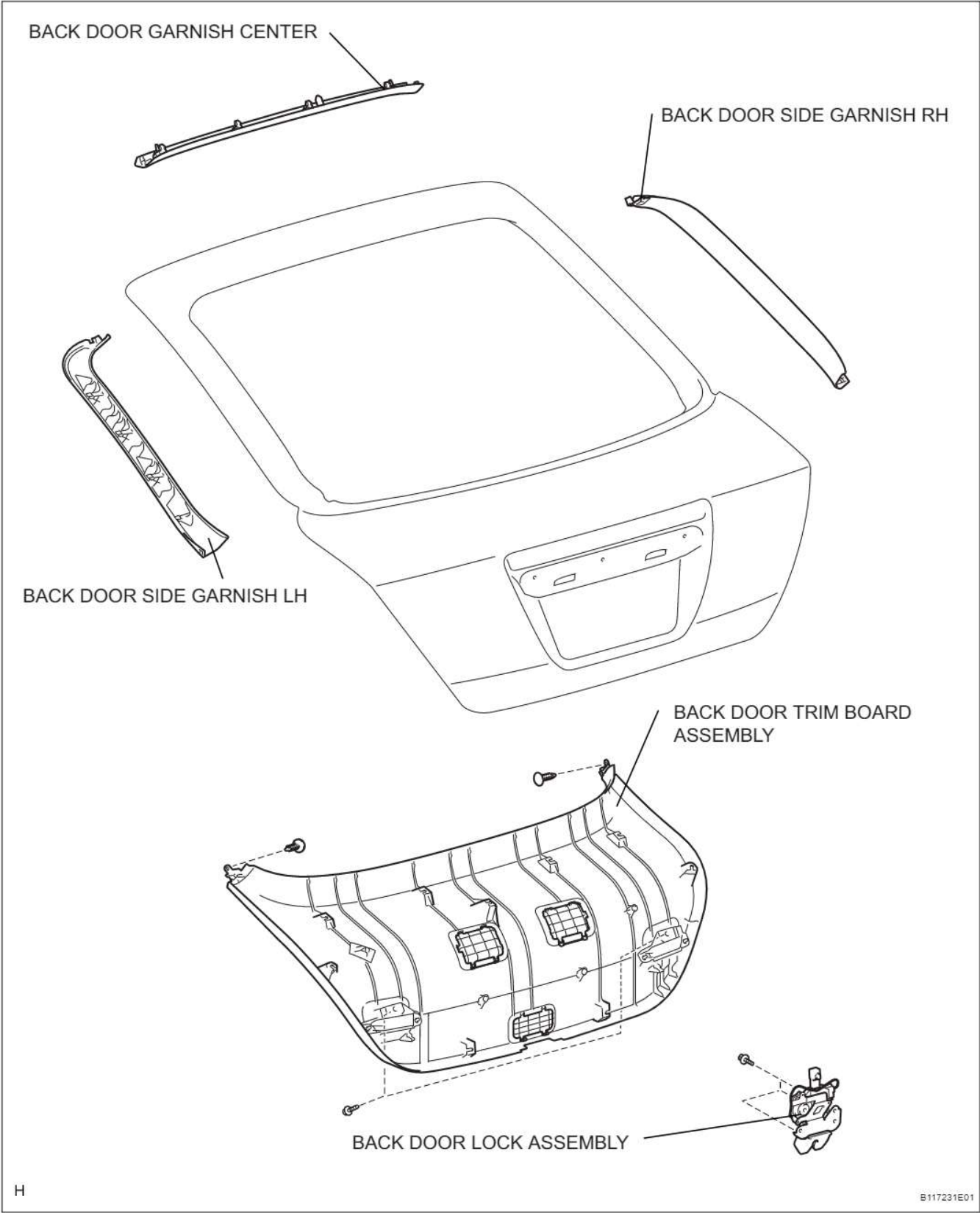
- (a) Driver side:
Install the power window regulator master switch (see page [ED-15](#)).

9. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

10. PERFORM INITIALIZATION

- (a) Perform initialization (see page [IN-23](#)).

BACK DOOR LOCK COMPONENTS



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DOOR LOCK – BACK DOOR LOCK

REMOVAL

- HINT:
- The installation procedures are the removal procedures in reverse order. However, only installation procedures requiring additional information are included.
 - A bolt without a torque specification is shown in the standard bolt chart (see page SS-2).
1. REMOVE BACK DOOR GARNISH CENTER
 - (a) Remove the back door garnish center (see page ED-24).
 2. REMOVE BACK DOOR SIDE GARNISH LH
 - (a) Remove the back door side garnish LH (see page ED-24).
 3. REMOVE BACK DOOR SIDE GARNISH RH
 - (a) Remove the back door side garnish RH (see page ED-24).
 4. REMOVE BACK DOOR TRIM BOARD ASSEMBLY
 - (a) Remove the back door trim board assembly (see page ED-24).
 5. REMOVE BACK DOOR LOCK ASSEMBLY
 - (a) Remove the back door lock assembly (see page ED-24).

INSPECTION

1. INSPECT BACK DOOR LOCK ASSEMBLY
 - (a) Check the operation of the door lock.
 - (1) Using a screwdriver, move the latch to the full-latch position.
 - (2) Apply battery voltage to the door lock and check the operation of the latch.

OK

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 4	Latch turns to open-latch position
Battery positive (+) → Terminal 3	

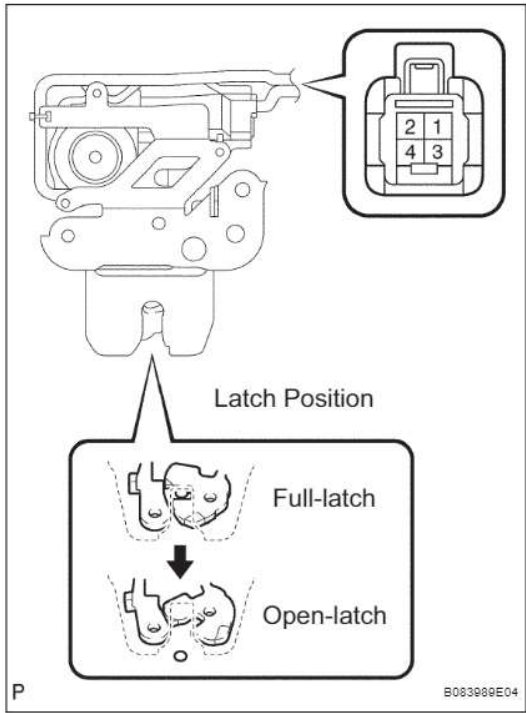
If the result is not as specified, replace the back door lock assembly.

- (b) Measure the resistance of the back door lock connector.

Standard resistance

Tester Connection	Door Lock Latch Condition	Specified Condition
2 - 1	Open (ON)	Below 1 Ω
2 - 1	Full (OFF)	10 kΩ or higher

If the result is not as specified, replace the back door lock assembly.



INSTALLATION

HINT:

The installation procedures are the removal procedures in reverse order. However, only installation procedures requiring additional information are included.

1. INSTALL BACK DOOR LOCK ASSEMBLY

- (a) Install the back door lock assembly (see page [ED-26](#)).

2. INSTALL BACK DOOR TRIM BOARD ASSEMBLY

- (a) Install the back door trim board assembly (see page [ED-26](#)).

3. INSTALL BACK DOOR SIDE GARNISH RH

- (a) Install the back door side garnish RH (see page [ED-26](#)).

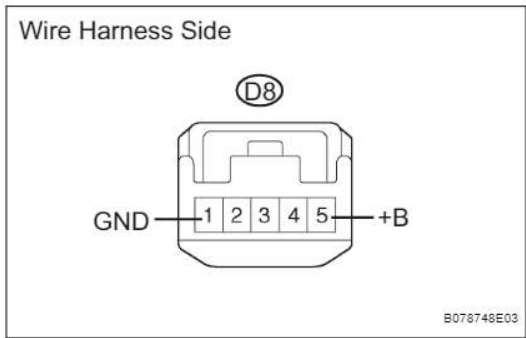
4. INSTALL BACK DOOR SIDE GARNISH LH

- (a) Install the back door side garnish LH (see page [ED-26](#)).

5. INSTALL BACK DOOR GARNISH CENTER

- (a) Install the back door garnish center (see page [ED-26](#)).

DL



DOOR CONTROL RECEIVER

ON-VEHICLE INSPECTION

1. CHECK DOOR CONTROL RECEIVER
- (a) Disconnect the D8 receiver connector.
 - (b) Measure the voltage and resistance of the wire harness side connector.

Standard resistance

Tester Connection	Specified Condition
D8-1 (GND) - Body ground	Below 1 Ω

Standard voltage

Tester Connection	Specified Condition
D8-5 (+B) - Body ground	10 to 14 V

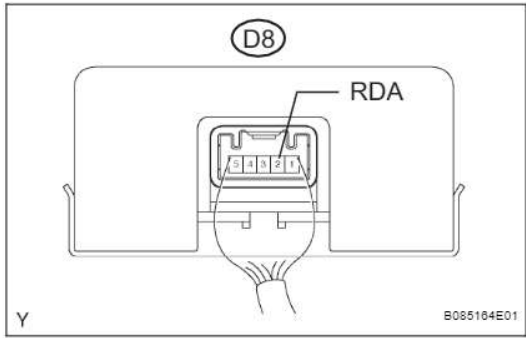
If the result is not as specified, the receiver may have a malfunction.

- (c) Reconnect the D8 receiver connector.
- (d) Measure the voltage of the connector.

Standard voltage

Tester Connection	Condition	Specified Condition
D8-2 (RDA) - Body ground	No key in ignition key cylinder, all doors closed and each transmitter switch OFF to ON	Below 12 V → Approx. 6 to 7 V → Below 12 V

If the result is not as specified, the receiver may have a malfunction.



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