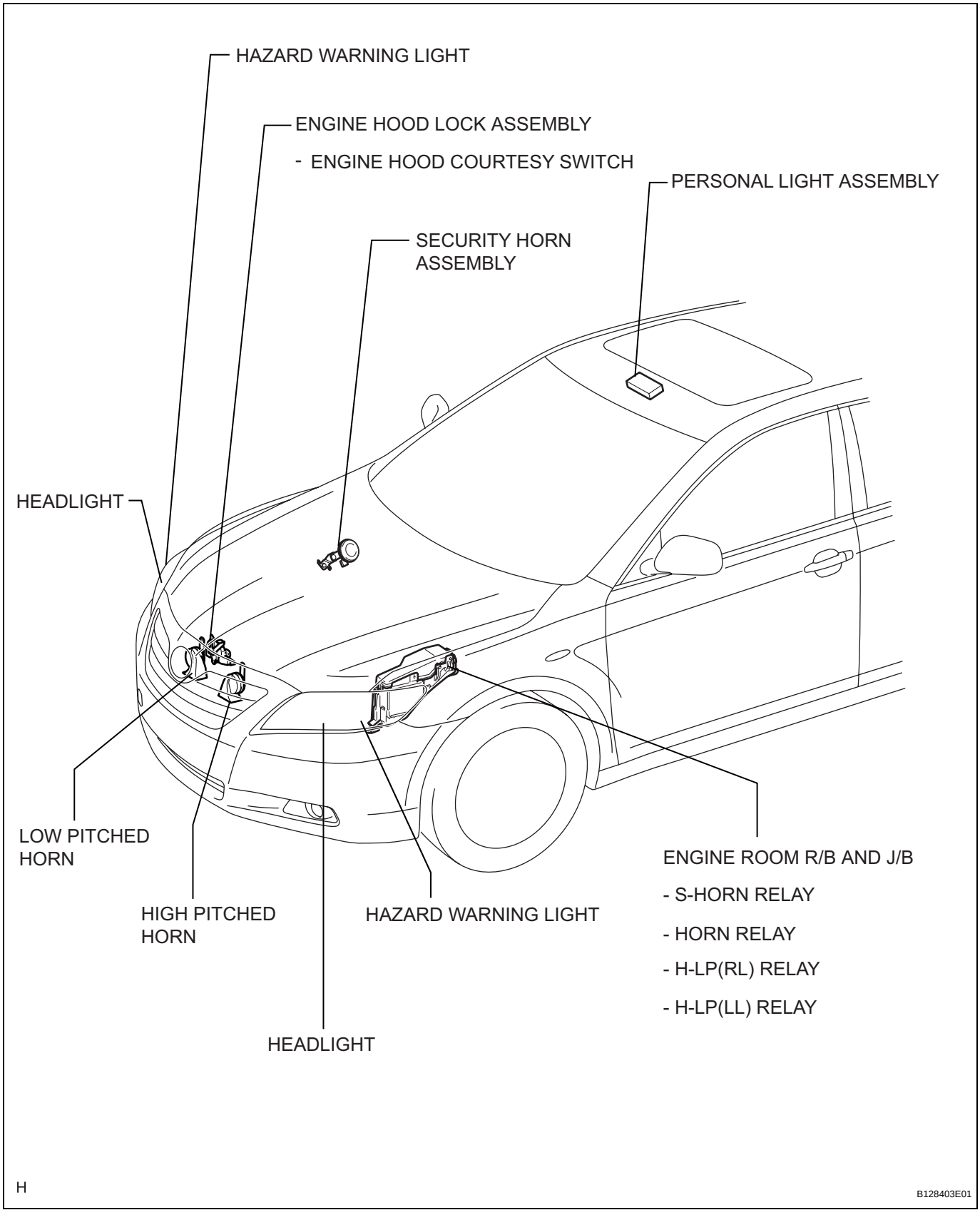
THEFT DETERRENT SYSTEM (w/ Smart Key System)

PARTS LOCATION



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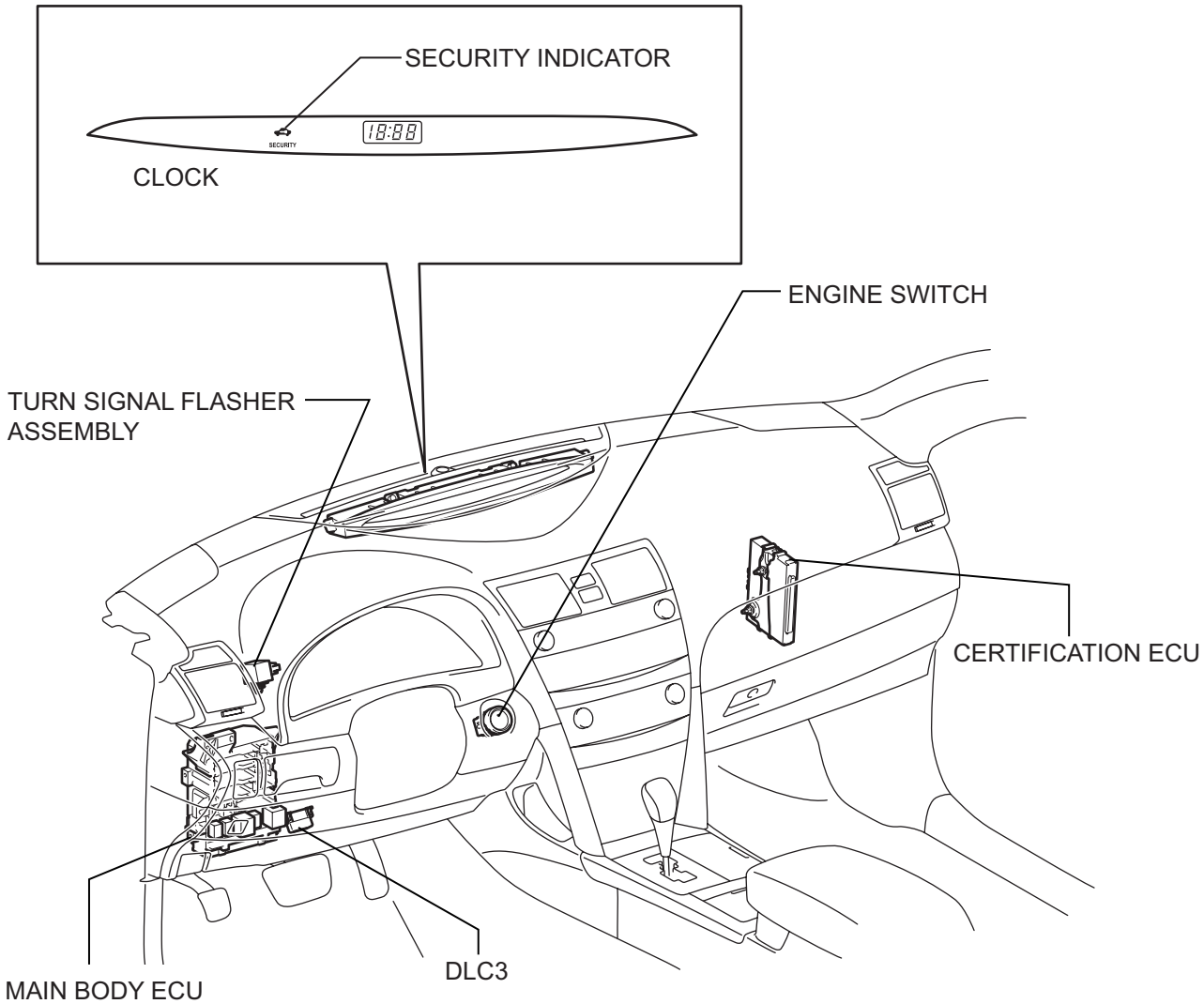
SECURITY INDICATOR
SECURITY
18:88
CLOCK
ENGINE SWITCH
TURN SIGNAL FLASHER ASSEMBLY
CERTIFICATION ECU
DLC3
MAIN BODY ECU (INSTRUMENT PANEL J/B)
- TAIL RELAY
H
B128406E01

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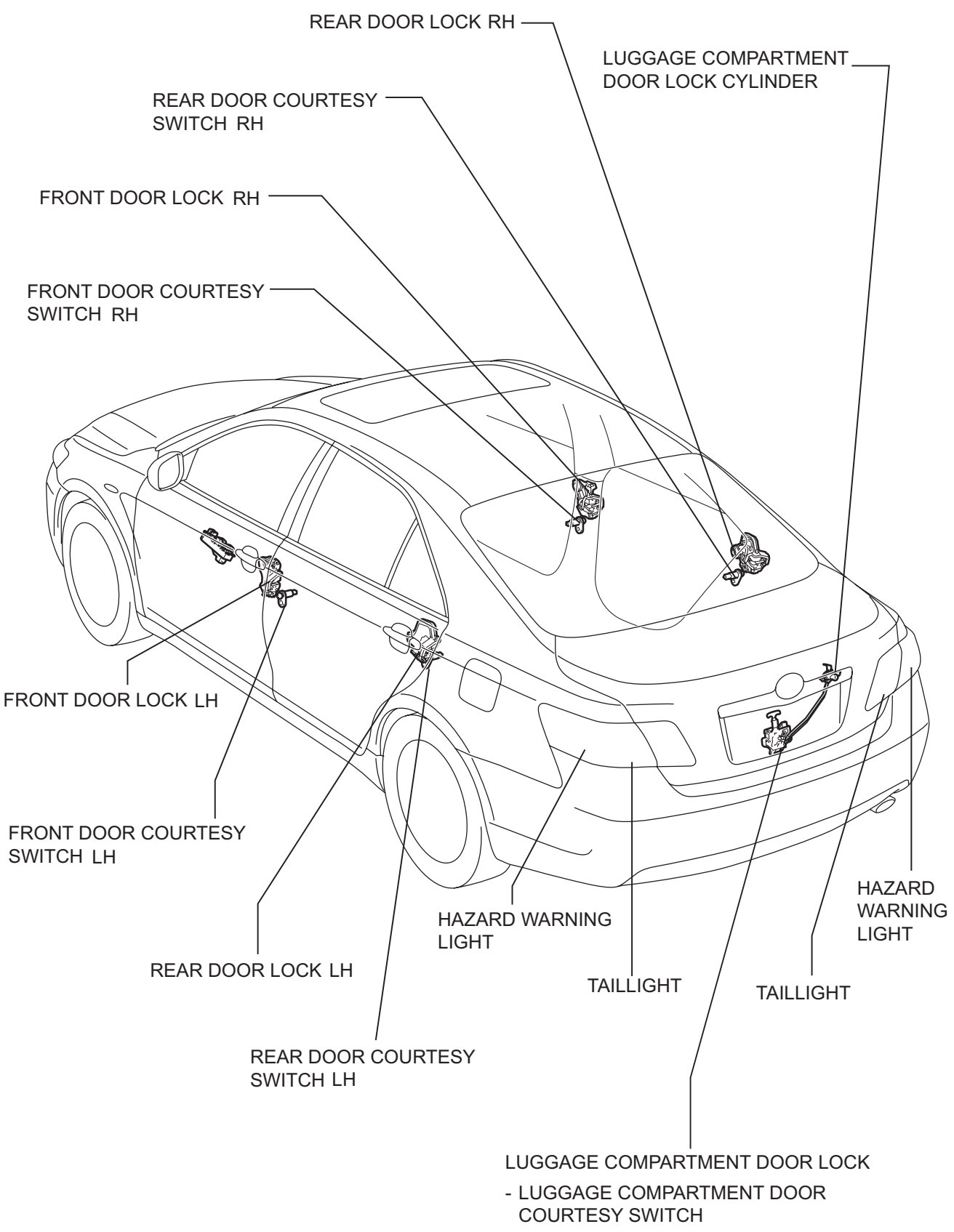
REAR DOOR LOCK RH
LUGGAGE COMPARTMENT DOOR LOCK CYLINDER
REAR DOOR COURTESY SWITCH RH
FRONT DOOR LOCK RH
FRONT DOOR COURTESY SWITCH RH
FRONT DOOR LOCK LH
FRONT DOOR COURTESY SWITCH LH
REAR DOOR LOCK LH
HAZARD WARNING LIGHT
TAILLIGHT
HAZARD WARNING LIGHT
TAILLIGHT
REAR DOOR COURTESY SWITCH LH
LUGGAGE COMPARTMENT DOOR LOCK
- LUGGAGE COMPARTMENT DOOR COURTESY SWITCH
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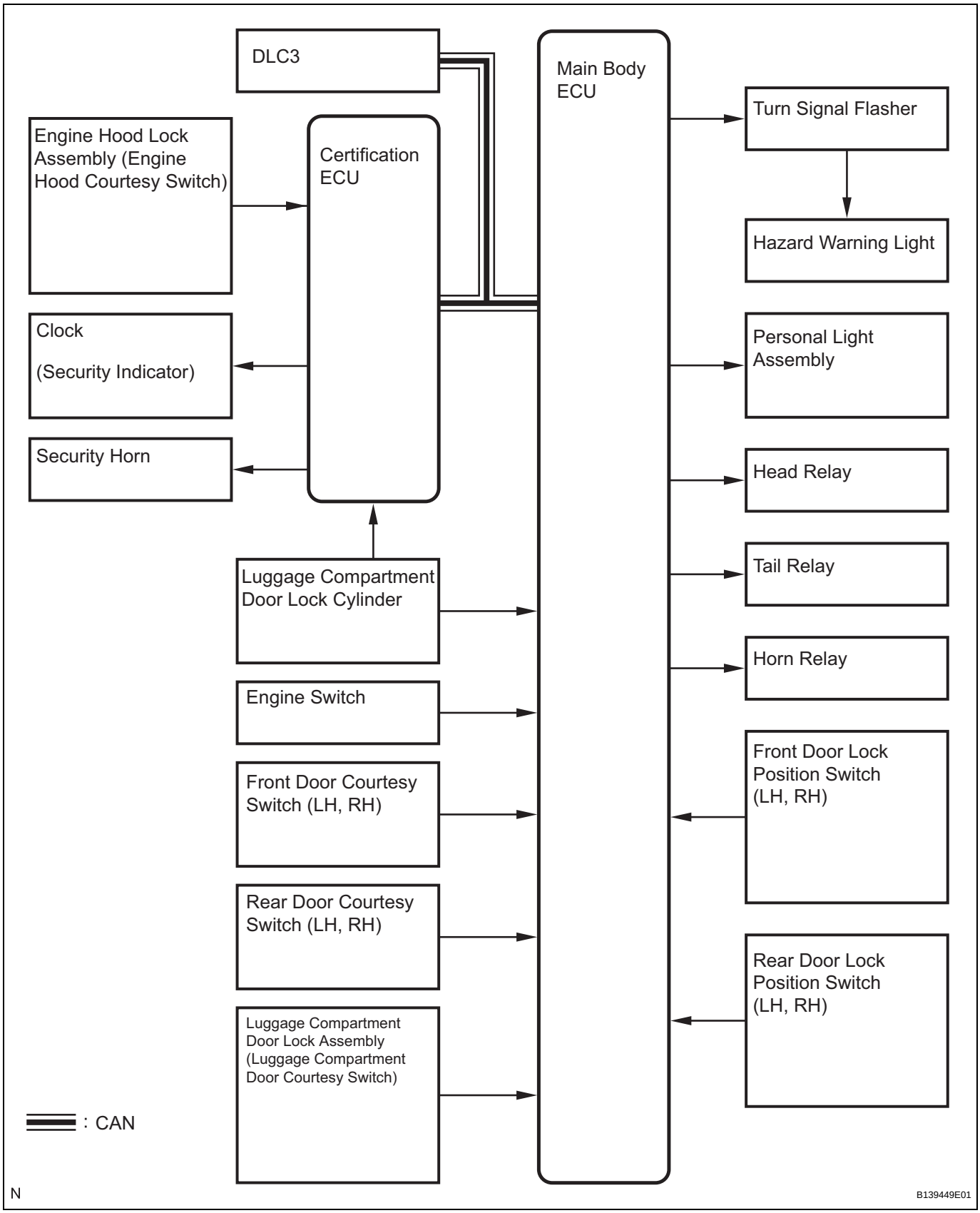
SYSTEM DIAGRAM



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SYSTEM DESCRIPTION

1. OUTLINE OF THEFT DETERRENT SYSTEM

- The theft deterrent system will operate when somebody attempts to forcibly enter the vehicle, unlock any door or luggage compartment door, or open the engine hood or the luggage compartment door without using the key.
  This system causes the lights to light up or blink and the horns to sound in order to deter break-in and theft.
- The theft deterrent system has 2 modes; one is the active arming mode (see ACTIVE ARMING MODE) and the other is passive arming mode (see PASSIVE ARMING MODE). The passive arming mode can be switched ON/OFF using the specified method.
- Each mode has 4 states; a disarmed state, an arming preparation state, an armed state and an alarm sounding state.

(a) Disarmed state:
- The alarm function is not operating.
- The theft deterrent system is not operating.

(b) Arming preparation state:
- The time until the system goes into the armed state.
- The theft deterrent system is not operating.

(c) Armed state:
- The theft deterrent system is operating.

(d) Alarm sounding state:
- Alarm function is operating.

Alarm time:
Approx. 60 sec.

Refer to table below for alarm method and time:

Alarm Method	Headlight	Blinking
	Taillight	Blinking
	Hazard Warning Light	Blinking
	Interior Light	Illuminating
	Vehicle Horn	Sounding (approx. 0.4 second cycles)
	Security Horn	Sounding (approx. 0.4 second cycles)
Alarm Time	Approx. 60 sec.	

HINT:
If any of the doors are unlocked when the key is not in the actuation area during the armed state, a forced door lock signal will be output (see FORCED DOOR LOCK CONTROL).

2. FUNCTION OF MAIN COMPONENT

Component	Function
Security indicator	Informs driver of theft deterrent system status.
Security horn	Sounds when attempted brake-in or theft is detected.
Headlights	Blink when attempted break-in or theft is detected.
Taillights	Blink when attempted break-in or theft is detected.
Hazard warning lights	Blinking when attempted break-in or theft is detected.

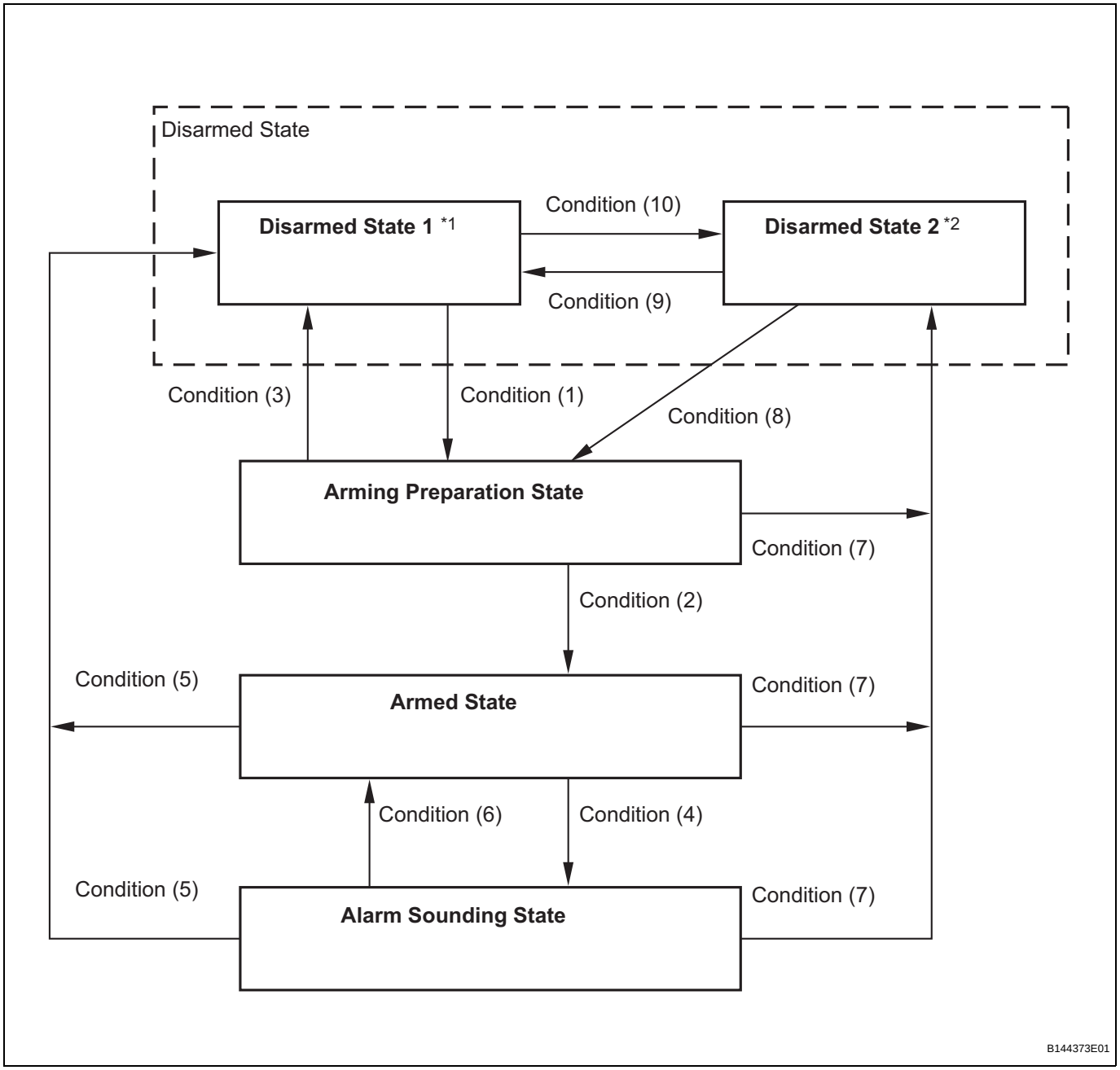
Component	Function
Interior light	Lights up when attempted break-in or theft is detected.
Vehicle horns	Sounds when attempted break-in or theft is detected.
Door courtesy light switch	Detects door status (open or closed).
Door lock position switch	Detects door status (locked or unlocked).
Engine hood courtesy switch	Detects engine hood status (open or closed).
Luggage compartment door courtesy switch	Detects luggage compartment door status (open or closed).
Luggage compartment door lock cylinder	Detects luggage compartment door status (locked or unlocked).
Certification ECU	• Receives engine hood courtesy switch status. • Sends operation signal to security indicator and security horn.

3. ACTIVE ARMING MODE

HINT:

Active arming mode starts the alarm control immediately after the doors are locked.

(a) Active arming mode:
This system activates as described in the diagram below when one of items for each condition is met.



HINT:
- *1: Disarmed state 1 is the normal disarmed state.
- *2: Disarmed state 2 is set from either the disarmed state 1 or the arming preparation state.

Condition	Item
Condition (1)	In the disarmed state 1, when the key is not in the actuation area, the system state is switched if one of the following conditions is met. 1. With all doors, engine hood and luggage compartment door closed, lock all doors by key operation. 2. With all doors, engine hood and luggage compartment door closed, lock all doors by wireless operation. 3. With engine hood and luggage compartment door closed and all doors locked with any door still opened, close the open door.

TD

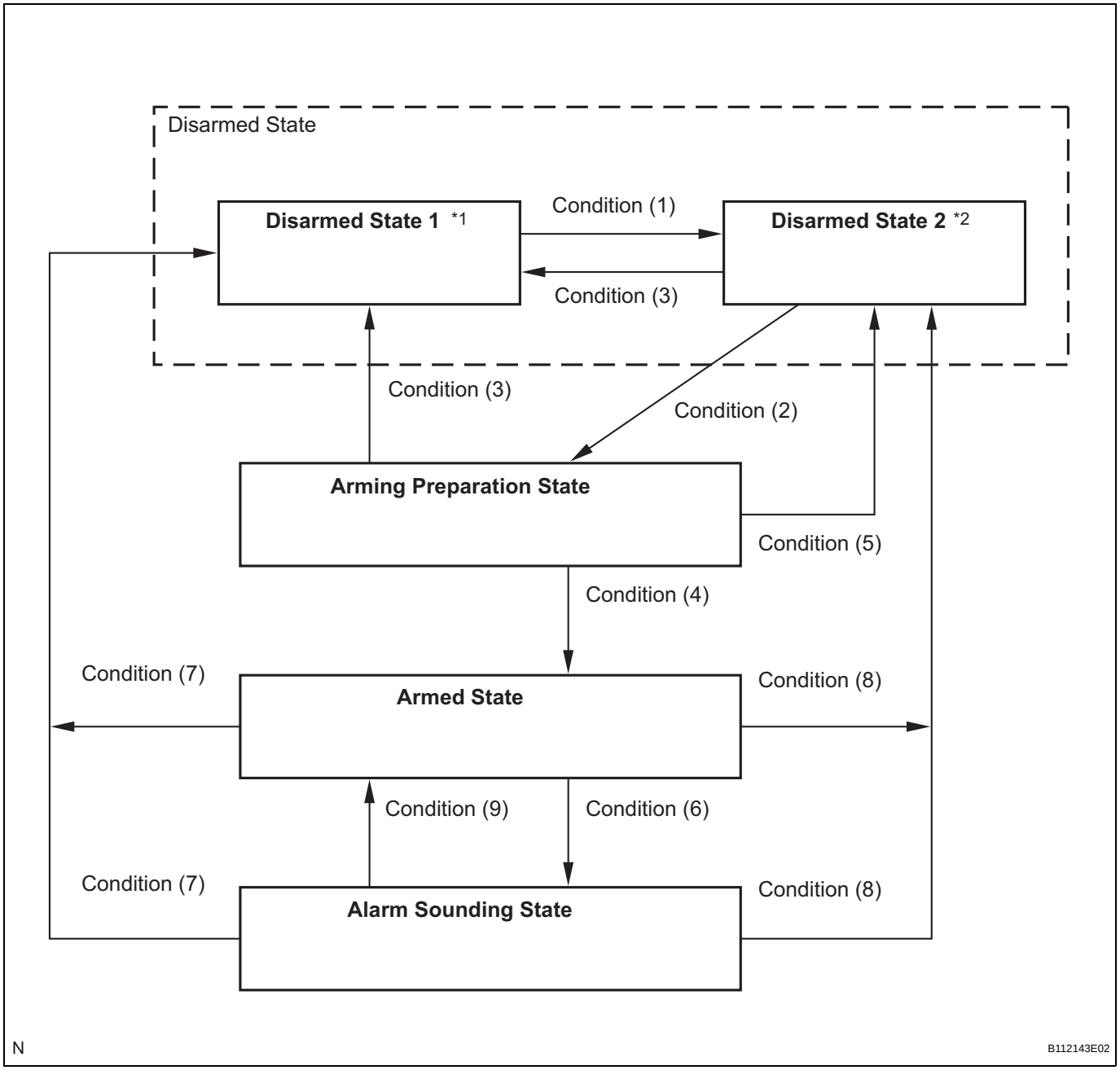
Condition	Item
Condition (2)	After condition (1) is met, allow approx. 30 seconds to elapse.
Condition (3)	1. Unlock any door. 2. Open any door, engine hood, or luggage compartment door. 3. Turn the engine switch on (IG or ACC). 4. Reconnect battery.
Condition (4)	1. Open engine hood. 2. Open luggage compartment door. 3. Reconnect battery. 4. Open any door. 5. Unlock any door when all doors are locked without wireless operation.
Condition (5)	1. Unlock only driver's door or all doors by wireless operation. 2. Unlock only driver's door or all doors by key operation. 3. Turn the engine switch on (IG) and run the engine more than 2 seconds.
Condition (6)	After approx. 60 seconds, alarm stops and system returns to armed state.
Condition (7)	1. Open the luggage compartment door by wireless operation. 2. Unlock the luggage compartment door by key operation.
Condition (8)	1. Close the engine hood when the luggage compartment door is closed. 2. Close the luggage compartment door when the engine hood is closed.
Condition (9)	1. Unlock any door. 2. Open any door. 3. Turn the engine switch from off to on (IG or ACC). 4. Reconnect the battery.
Condition (10)	In the disarmed state 1, when the key is not in the actuation area, the system state is switched if one of the following conditions is met. 1. With all doors closed, and the engine hood or luggage compartment door is opened, lock all doors by wireless operation. 2. With all doors closed, and the engine hood or luggage compartment door is opened, lock all doors by key operation. 3. With the engine hood or luggage compartment door is opened and all doors locked with any door still opened, close the open door.

4. PASSIVE ARMING MODE

HINT:

- Passive arming mode starts the alarm control after the key is out of the actuation area and doors are closed.
- Passive arming mode can be switched ON/OFF by the specified method.
- The alarm is initially set (when shipped from factory) to active arming mode (not passive arming mode).
- During passive arming mode, the theft deterrent system goes into the armed state even if the doors are not locked.
- Detecting that the doors are unlocked does not set off the alarm during passive arming mode.
- A forced door lock signal is not output during passive arming mode (see FORCED DOOR LOCK CONTROL).
- Although the theft deterrent system detects that the doors are opened during passive arming mode, the alarm will not go off immediately because an entry delay time is set.
- If the condition (1) of active arming mode is met during passive arming mode, the theft deterrent system will switch to active arming mode.

(a) Passive arming mode:
This system activates as described in the diagram below when one of items for each condition is met.



HINT:

- *1: Disarmed state 1 is the normal disarmed state.
- *2: Disarmed state 2 is set from either the disarmed state 1 or the arming preparation state.

Condition	Item
Condition (1)	1. With any door open, turn the engine switch off. 2. With the engine switch off, open any door.
Condition (2)	All doors, engine hood and luggage compartment door are closed.
Condition (3)	1. Unlock only driver's door or all doors by wireless operation. 2. Unlock only driver's door or all doors by key operation. 3. Reconnect battery. 4. Turn the engine switch on (IG or ACC).

TD

Condition	Item
Condition (4)	After condition (1) is met, allow approx. 30 seconds to elapse.
Condition (5)	1. Open any door. 2. Open engine hood. 3. Open luggage compartment door. 4. Unlock luggage compartment door.
Condition (6)	1. Open any door and allow entry delay time*1 to elapse. 2. Open engine hood. 3. Open luggage compartment door. 4. Reconnect battery. 5. Turn the engine switch off. After 5 seconds or more elapsed, turn the engine switch on (IG).
Condition (7)	1. Unlock only driver's door or all doors by wireless operation. 2. Unlock only driver's door or all doors by key operation. 3. Turn the engine switch on (IG) and run the engine more than 2 seconds.
Condition (8)	1. Open luggage compartment door by wireless operation. 2. Unlock luggage compartment door by key operation.
Condition (9)	After approx. 60 sec., alarm stops and system returns to armed state.

HINT:

*1: When any door is opened while all the doors are closed during passive arming mode, the entry delay time starts. If the switch condition (armed state → disarmed state 1 or 2) is met during the entry delay time, the theft deterrent system will return to disarmed state 1 or 2. However, if the switch condition for disarmed state 1 or 2 is not met, the theft deterrent system will recognize it as a theft and set off the alarm. Entry delay time of 0, 14 or 30 sec. can be selected by the customizing function.

5. FORCED DOOR LOCK CONTROL

(a) The forced door lock control prevents the vehicle from being tampered with. Immediately after a door is unlocked (alarm starts), the door is forced to lock by a forced door lock signal.

(1) Conditions that force the doors to lock:
When the key is not in the actuation area and both of the following conditions are met.

- The theft deterrent system is in the alarm sounding state of active arming mode.
- Any door is unlocked.

TD

6. ALARM MEMORY FUNCTION

(a) If the alarm is set off (tampering is detected) while the theft deterrent system is armed, it will be recorded by the alarm memory function. Whenever the theft deterrent system is cancelled, the alarm memory function causes the taillights to light up for 2 seconds in order to inform you that the alarm has been set off.

(1) Conditions of the alarm memory function that cause the taillights to light up:
When the theft deterrent system has entered into the alarm sounding state (tampering has been detected) even once, the taillights will light up for 2 seconds if any of the following conditions is met.
- Switched to the disarmed state from the armed state during active arming mode.
- Switched to the disarmed state 1 from the armed state during passive arming mode.

HINT:
Active arming mode: See ACTIVE ARMING MODE.
Passive arming mode: See PASSIVE ARMING MODE.

7. PANIC ALARM CONTROL

(a) The panic alarm control makes it possible to voluntarily set off the panic alarm by pressing the PANIC switch on the wireless transmitter.

(1) Conditions that cause the panic alarm control to set off the panic alarm:
The panic alarm control sets off the panic alarm by pressing the PANIC switch on the wireless transmitter under the following conditions:
- The engine switch off.
- The theft deterrent system is not in the alarm sounding state. (This condition is common both to active arming mode and to passive arming mode.)

(2) Conditions that cause the panic alarm control to shut off the alarm:
The panic alarm control shuts off the panic alarm when any of the following conditions is met during panic alarm operation:
- The engine switch on (IG).
- The panic alarm switch is turned on again.
- Any of the switches on the wireless transmitter (LOCK/UNLOCK or LUGGAGE OPEN) is pressed.
- The panic alarm ends (approx. 60 sec. have passed).

- The theft deterrent system switches to the alarm sounding state. Under this condition, the theft deterrent system is controlling the alarm rather than the panic alarm control. In order to cancel this alarm, refer to the theft deterrent system alarm sounding state cancellation procedure. (This condition is common both to active arming mode to passive arming mode.)

HINT:
Active arming mode: See ACTIVE ARMING MODE.
Passive arming mode: See PASSIVE ARMING MODE.

8. SECURITY INDICATOR OUTPUT

(a) The certification ECU outputs a signal to light up the security indicator, according to the state of the theft deterrent system. However, some of the actual lighting conditions of the security indicator are different from the output signals of the certification ECU.

Output:

State of Theft Deterrent System*	Security Indicator	
	Output Signals from certification ECU	Actual Lighting Condition
Disarmed state 1, 2	OFF	OFF (Immobiliser system unset) BLINKING (Immobiliser system set)
Arming preparation state	ON	ON
Armed state	OFF	BLINKING
Alarm sounding state	ON	ON

Blinking cycle:

Time	Security Indicator
0.2 sec.	ON
1.8 sec.	OFF

HINT:

- *: The above condition is common both to active arming mode and to passive arming mode.
- When the immobiliser system is set, the security indicator blinks during both the disarmed state and the armed state, due to the output signals from the immobiliser system.

TD

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use this procedure to troubleshoot the theft deterrent system.
- The intelligent tester should be used in step 3.

1	VEHICLE BROUGHT TO WORKSHOP

NEXT

2	CUSTOMER PROBLEM ANALYSIS

(a) Interview the customer to confirm the trouble (See page IN-45).

NEXT

3	INSPECT COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM

(a) Use the intelligent tester to check for normal function of the multiplex communication system.
   (1) (ECU unconnected, communication line malfunctioning) If no code is output, proceed to A.
   (2) (ECU unconnected, communication line malfunctioning) If any code is output, proceed to B.

B → Go To CAN COMMUNICATION SECTION

A

4	SYMPTOM SIMULATION

NEXT

5	PROBLEM SYMPTOMS TABLE

(a) If the fault is not listed in the problem symptoms table, proceed to A.
(b) If the fault is listed in the problem symptoms table, proceed to B.

B → Go to step 7

A

6	PERFORM TROUBLESHOOTING ACCORDING TO MALFUNCTION SYMPTOM

(a) System description (See page TD-5)

(b) Terminals of ECU (See page TD-17)

7	ADJUST, REPAIR OR REPLACE

NEXT

8	CONFIRMATION TEST

NEXT

END

CUSTOMIZE PARAMETERS

HINT:
The following items can be customized.
NOTICE:

- **After confirming whether the items requested by the customer are applicable or not for customization, perform customizing operations.**
- **Be sure to record the current settings before customization.**
- **When troubleshooting, make sure that the item in question is not set to "OFF" as a result of customization (Example: For the system, "the wireless function does not operate", first check that the wireless function is not set to "OFF", then perform troubleshooting).**

THEFT DETERRENT SYSTEM

DISPLAY (ITEM)	DEFAULT	CONTENTS	SETTING
PASSIVE MODE (Passive Arming Mode)	OFF	PASSIVE MODE is a function that switches theft deterrent system from arming preparation state to armed state 30 seconds after key is not in the actuation area and all doors, engine hood and luggage compartment door are closed, even if doors are not locked by wireless or door key lock operation In PASSIVE MODE, if you do not perform following operations within 14 seconds after door is opened during armed state, theft deterrent system will judge that condition as a theft and switch to alarm sounding state – Unlock any door by key or wireless operation – Turn the engine switch on (IG) – Open luggage compartment door by key or wireless operation	ON/OFF
WARN BY HORN (Warning by horn)	ON	Function that makes vehicle horn and theft deterrent horn be able to be used as a warning device	ON/OFF
ENTRY DELAY (Entry delay time)	14 s	Function that changes entry delay time (time before warning starts) for PASSIVE MODE	0 s/14 s/30 s

PROBLEM SYMPTOMS TABLE

HINT:

- Troubleshooting of the theft deterrent system is based on the premise that the door lock control system and the wireless door lock control system are operating normally. Accordingly, before troubleshooting the theft deterrent system, first make certain that the door lock control system and the wireless door lock control system are operating normally.
- The following is the troubleshooting procedure for the theft deterrent system of a vehicle with the smart key system.
- Inspect the fuse and relay before investigating the suspected areas shown in the table below.

Theft deterrent system:

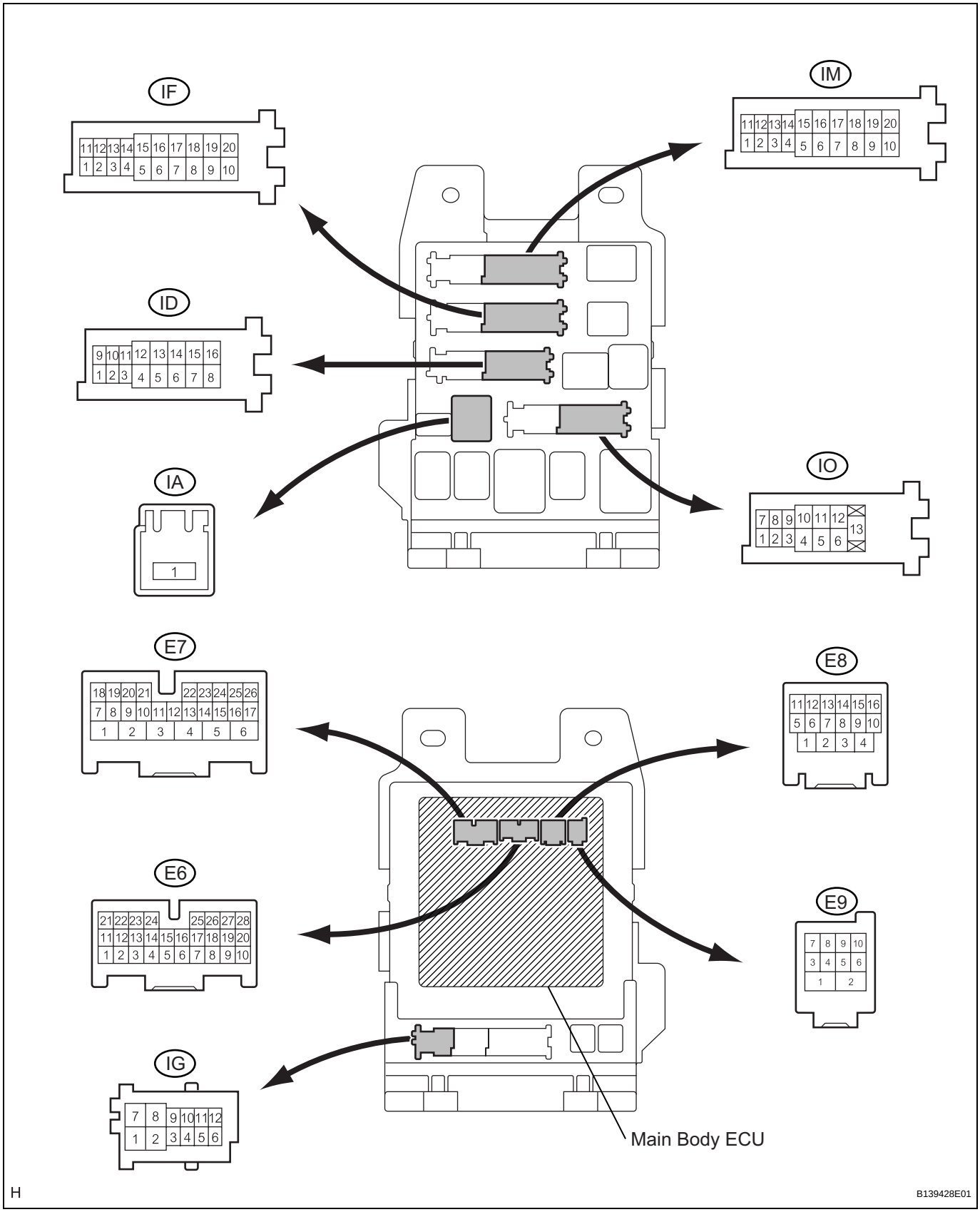
Symptom	Suspected area	See page
Theft deterrent system cannot be set	1. Security indicator light circuit	TD-34
	2. ECU power source circuit	TD-37
	3. Door key lock / unlock switch circuit	DL-53
	4. Door courtesy switch circuit	LI-52
	5. Luggage compartment door courtesy switch circuit	DL-44
	6. Engine hood courtesy switch circuit	TD-22
	7. Replace certification ECU	-
	8. If the symptom(s) still occur after the above areas are inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Security indicator does not blink when theft deterrent system is set	1. Security indicator light circuit	TD-34
	2. Replace certification ECU	-
	3. If the symptom(s) still occur after the above areas are inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Alarm sounding state cannot be canceled when engine switch turned on (IG)	1. Ignition switch circuit	TD-30
	2. If the symptom(s) still occur after the above areas are inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Theft deterrent system can be set even when a door is open	1. Door courtesy switch circuit	LI-52
	2. If the symptom(s) still occur after the above areas are inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Vehicle horns (low pitched, high pitched) do not sound while theft deterrent system is in warning operation	1. Horn circuit	TD-25
	2. If the symptom(s) still occur after the above areas are inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Hazard warning lights do not flash while theft deterrent system is in warning operation	1. Wire harness	-
	2. Turn signal flasher	LI-138
	3. If the symptom(s) still occur after the above areas are inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Interior light does not light up while theft deterrent system is in warning operation	1. Interior light circuit	LI-57
	2. If the symptom(s) still occur after the above areas are inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Security horn does not sound while theft deterrent system is in warning operation	1. Security horn circuit	TD-27
	2. If the symptom(s) still occur after the above areas are inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-

Symptom	Suspected area	See page
Hazard warning lights flash even when theft deterrent system is not set	1. Wire harness	-
	2. Turn signal flasher	LI-138
	3. If the symptom(s) still occur after the above areas are inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Interior light comes on even when theft deterrent system is not set	1. Interior light circuit	LI-57
	2. If the symptom(s) still occur after the above areas are inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-

TERMINALS OF ECU

1. CHECK MAIN BODY ECU (INSTRUMENT PANEL J/B)

(a) Disconnect the main body ECU (instrument panel J/B) connectors.



(b) Measure the resistance and voltage between each terminal of the wire harness side connectors and body ground.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
RCTY (E6-5) - Body ground	GR - Body ground	Rear courtesy light switch RH input	Rear door RH CLOSED (OFF) → OPEN (ON)	10 kΩ or higher → Below 1 Ω
PCTY (E6-21) - Body ground	Y - Body ground	Passenger side courtesy light switch input	Passenger side door CLOSED (OFF) → OPEN (ON)	10 kΩ or higher → Below 1 Ω
LGCY (E6-25) - Body ground	W - Body ground	Luggage compartment door courtesy light switch input	Luggage compartment door CLOSED (OFF) → OPEN (ON)	10 kΩ or higher → Below 1 Ω
DCTY (E7-24) - Body ground	L - Body ground	Driver side door courtesy light switch input	Driver side door CLOSED (OFF) → OPEN (ON)	10 kΩ or higher → Below 1 Ω
ACC (IA-1) - Body ground	B - Body ground	Ignition power supply (ACC signal)	Ignition switch on (ACC) → off	10 to 14 V → Below 1 V
IG (IA-1) - Body ground	B - Body ground	Ignition power supply (IG signal)	Ignition switch on (IG) → off	10 to 14 V → Below 1 V
BATB (IA-1) - Body ground	B - Body ground	+B (power battery system) power supply	Always	10 to 14 V
ALTB (ID-16) - Body ground	W - Body ground	+B (power system alternator system) power supply	Always	10 to 14 V
GND1 (IF-10) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
GND2 (IM-9) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
LCTY (IO-7) - Body ground	LG - Body ground	Rear courtesy light switch LH input	Rear door LH CLOSED (OFF) → OPEN (ON)	10 kΩ or higher → Below 1 Ω

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

(c) Reconnect the main body ECU (instrument panel J/B) connectors.

(d) Measure the voltage between each terminal of the wire harness side connectors and body ground.

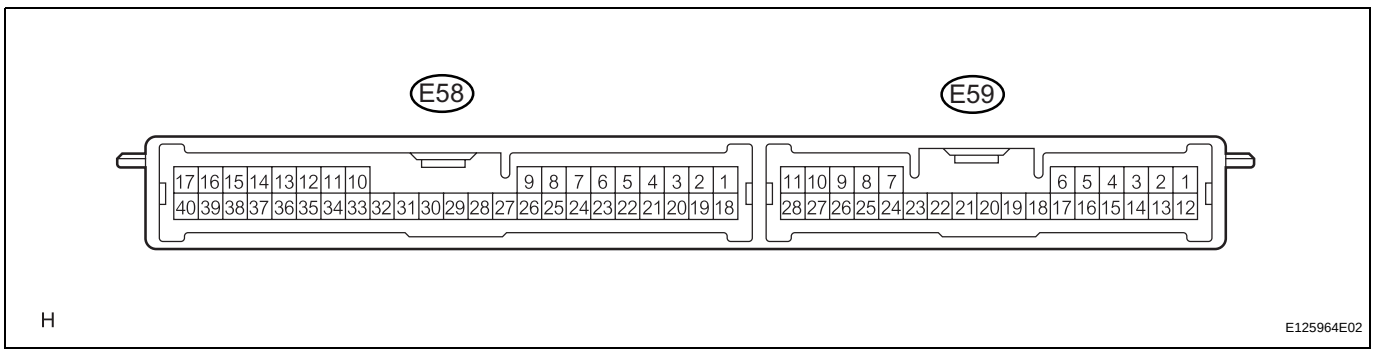
TD

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
HAZ (E8-4) - Body ground	W - Body ground	Turn signal flasher relay signal	System is in alarm sounding state	Below 1 V
HORN (ID-11) - Body ground	B - Body ground	Vehicle horn drive	Vehicle horn is sounding (Theft deterrent system is in alarm sounding state)	Pulse generation (0 V ← → 12 V)

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

2. CHECK CERTIFICATION ECU ASSEMBLY

(a) Disconnect the E58 and E59 ECU connectors.



(b) Measure the voltage and resistance of the wire harness side connector.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
+B (E58-1) - E (E58-17)	W - W-B	Battery power supply	Always	10 to 14 V
E (E58-17) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
HSW (E59-24) - Body ground	R - Body ground	Engine hood courtesy switch	Engine hood OPEN (OFF) → CLOSED (ON)	10 kΩ or higher → Below 1 Ω

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

(c) Reconnect the E58 and E59 ECU connectors.

(d) Measure the voltage of the connector.

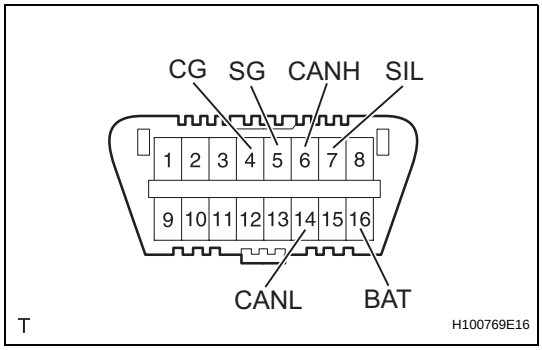
Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
IND (E58-2) - Body ground	Y - Body ground	Security indicator output	Security indicator light up (It lights up only in arming preparation state or alarm sounding state. It flashes when immobiliser is operating.)	3 to 6 V
SH (E59-20) - Body ground	P - Body ground	Security horn drive	Security horn is sounding (Theft deterrent system is in alarm sounding state)	Pulse generation (0 V ← → 12 V)

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

DIAGNOSIS SYSTEM

1. CHECK DLC3

(a) The main body ECU uses ISO 15765-4 for communication protocol. The terminal arrangement of the DLC3 complies with SAE J1962 and matches the ISO 15765-4 format.



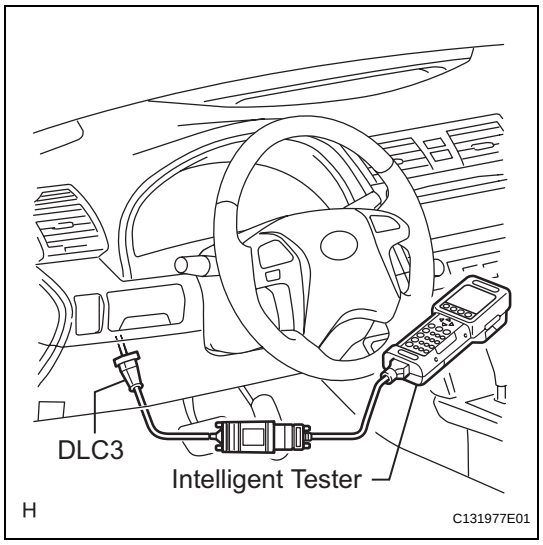
TD

Symbols (Terminal No.)	Terminal Description	Condition	Specified condition
SIL (7) - SG (5)	Bus "+" line	During transmission	Pulse generation
CG (4) - Body ground	Chassis ground	Always	Below 1 Ω
SG (5) - Body ground	Signal ground	Always	Below 1 Ω
BAT (16) - Body ground	Battery positive	Always	10 to 14 V
CANH (6) - CANL (14)	CAN bus line	Engine switch off*	54 to 67 Ω
CANH (6) - CG (4)	HIGH-level CAN bus line	Engine switch off*	200 Ω or higher
CANL (14) - CG (4)	LOW-level CAN bus line	Engine switch off*	200 Ω or higher
CANH (6) - BAT (16)	HIGH-level CAN bus line	Engine switch off*	6 kΩ or higher
CANL (14) - BAT (16)	LOW-level CAN bus line	Engine switch off*	6 kΩ or higher

NOTICE:

***: Before measuring the resistance, leave the vehicle as is for at least 1 minute and do not operate the engine switch, any other switches or the doors.**

If the result is not as specified, the DLC3 may have a malfunction. Repair or replace the harness and connector.



(b) Connect the cable of the intelligent tester (with CAN VIM) to the DLC3, turn the engine switch on (IG) and attempt to use the intelligent tester. If the screen displays a communication error message, a problem exists in the vehicle or in the tester.
- If communication is normal when the tool is connected to another vehicle, inspect the DLC3 on the original vehicle.
- If communication is still impossible when the tool is connected to another vehicle, the problem is probably in the tool itself. Consult the Service Department listed in the tool's instruction manual.

DATA LIST / ACTIVE TEST

1. DATA LIST

HINT:

Using the intelligent tester DATA LIST allows switch, sensor, actuator and other item values to be read without removing any parts. Reading the DATA LIST early in troubleshooting is one way to shorten labor time.

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.

(b) Turn the ignition switch on ON.

(c) Enter the following menus: DIAGNOSIS / OBD/ MOBD / MAIN BODY or SMART / DATA LIST.

(d) Read the DATA LIST according to the display on the tester.

MAIN BODY (Main body ECU):

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
ACC SW	Engine switch signal / ON or OFF	ON: Engine switch is on (ACC) OFF: Engine switch is off	-
IG SW	Engine switch signal / ON or OFF	ON: Engine switch is on (IG) OFF: Engine switch is off	-
D DOOR CTY SW	D door courtesy switch / ON or OFF	ON: Driver side door is OPEN OFF: Driver side door is CLOSED	-
P DOOR CTY SW	P door courtesy switch / ON or OFF	ON: Front passenger side door is OPEN OFF: Front passenger side door is CLOSED	-
RR DOR CTY SW	Rear right door courtesy switch / ON or OFF	ON: Rear right door is OPEN OFF: Rear right door is CLOSED	-
RL DOR CTY SW	Rear left door courtesy switch / ON or OFF	ON: Rear left door is OPEN OFF: Rear left door is CLOSED	-
LUGG COURTSY SW	Luggage compartment door courtesy switch / ON or OFF	ON: Luggage compartment door is OPEN OFF: Luggage compartment door is CLOSED	-
D LOCK POS SW	Driver's door lock position switch / ON or OFF	ON: Driver's door is UNLOCKED OFF: Driver's door is LOCKED	-
P LOCK POS SW	Passenger door lock position switch / ON or OFF	ON: Passenger door is UNLOCKED OFF: Passenger door is LOCKED	-
RR LOCK POS SW	Rear right door lock position switch / ON or OFF	ON: Rear right door is UNLOCKED OFF: Rear right door is LOCKED	-
RL LOCK POS SW	Rear left door lock position switch / ON or OFF	ON: Rear left door is UNLOCKED OFF: Rear left door is LOCKED	-

SMART (Certification ECU):

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
PASSIVE MODE	Passive mode/ON or OFF	ON: Passive mode ON OFF: Passive mode OFF	-
WARN BY HORN	Warning by horn/ON or OFF	ON: Vehicle horns sound during alarm sounding state OFF: Vehicle horns do not sound during alarm sounding state	-
ENTRY DELAY	Entry delay time during passive mode	0s: Entry delay time is 0 sec. 14s: Entry delay time is 14 sec. 30s: Entry delay time is 30 sec.	-

TD

2. ACTIVE TEST

HINT:

Performing the intelligent tester ACTIVE TEST allows relay, VSV, actuator and other items to be operated without removing any parts. Performing the ACTIVE TEST early in troubleshooting is one way to shorten the labor time. The DATA LIST can be displayed during the ACTIVE TEST.

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.
(b) Turn the ignition switch on ON.
(c) Enter the following menus: DIAGNOSIS / OBD/ MOBD / MAIN BODY or SMART / ACTIVE TEST.
(d) Perform the ACTIVE TEST according to the display on the tester.

MAIN BODY (Main body ECU):

Item	Tester Detail	Diagnostic Note
HAZARD	Hazard warning light ON/OFF	-
VEHICLE HORN	Vehicle horn ON/OFF	-

SMART (Certification ECU):

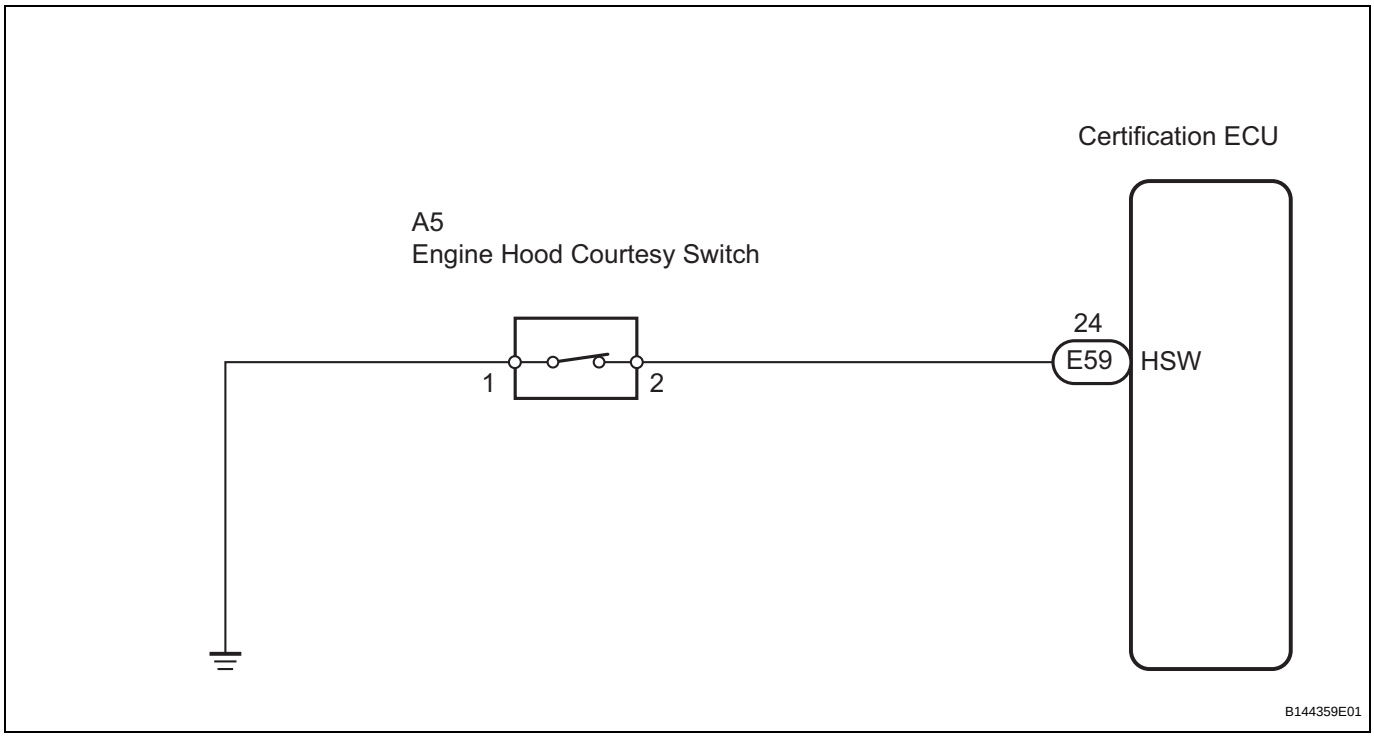
Item	Tester Detail	Diagnostic Note
SECURITY INDIC	Security indicator ON/OFF	-
SECURITY HORN	Security horn ON/OFF	-

Engine Hood Courtesy Switch Circuit

DESCRIPTION

The engine hood courtesy switch is installed together with the hood lock. This switch turns off when the engine hood is opened and turns on when the engine hood is closed.

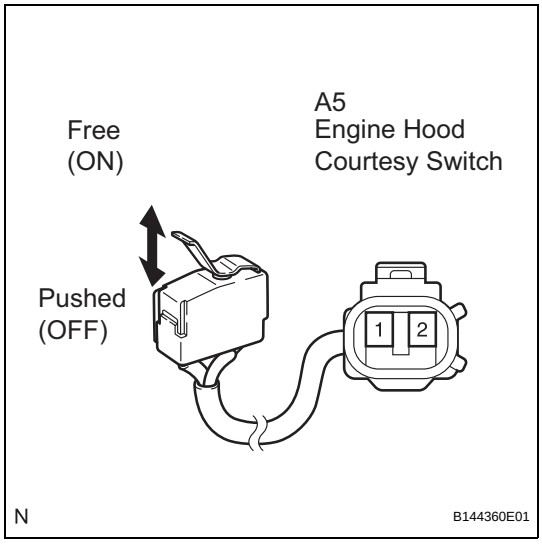
WIRING DIAGRAM



INSPECTION PROCEDURE

TD

1	INSPECT ENGINE HOOD COURTESY SWITCH



(a) Remove the courtesy switch from the hood lock.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Switch Position	Specified Condition
1 - 2	Free (ON)	Below 1 Ω
	Pushed (OFF)	10 kΩ or higher

Result

Result	Proceed to
NG (TMC made)	A
NG (TMMK made)	B
OK	C

A → **REPLACE HOOD LOCK ASSEMBLY**

B → **REPLACE ENGINE HOOD COURTESY SWITCH**

C

2 CHECK HARNESS AND CONNECTOR (ENGINE HOOD COURTESY SWITCH - BODY GROUND)

Wire Harness Side Connector Front View:

N B144361E01

(a) Disconnect the A5 switch connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition
A5-1 - Body ground	Below 1 Ω

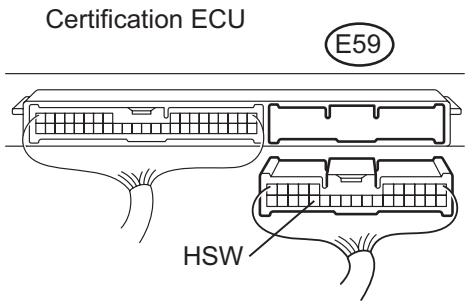
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

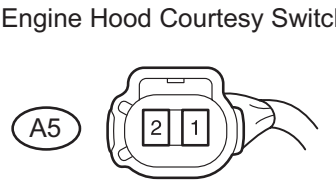
TD

3	CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU - ENGINE HOOD COURTESY SWITCH)

Connector Wire Harness View:



Wire Harness Side Connector Front View:



N

B144362E01

(a) Disconnect the E59 ECU connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

(Symbol) Tester Connection	Specified Condition
HSW (E59-24) - (A5-2)	Below 1 Ω
HSW (E59-24) - Body ground	10 kΩ or higher

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

TD

OK

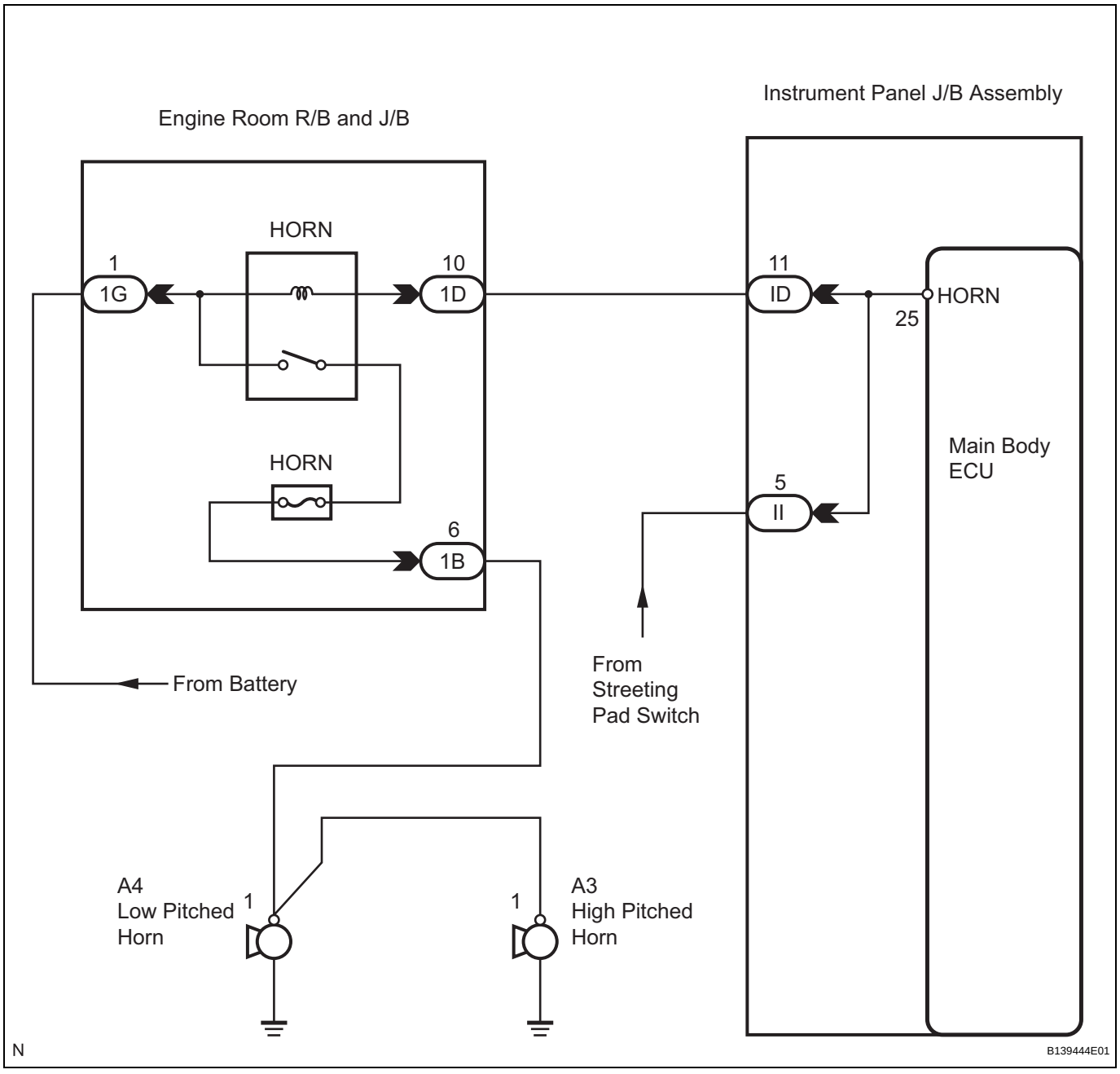
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Horn Circuit

DESCRIPTION

When the theft deterrent system is switched from the armed state to the alarm sounding state, the main body ECU transmits a signal to cause the horn to sound at intervals of 0.4 seconds.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	**INSPECT HORNS**

(a) Press the horn switch and check if the horns sound.

Result

Result	Go to
Horns sound	A
Horns do not sound	B

B → **GO TO HORN SYSTEM**

A

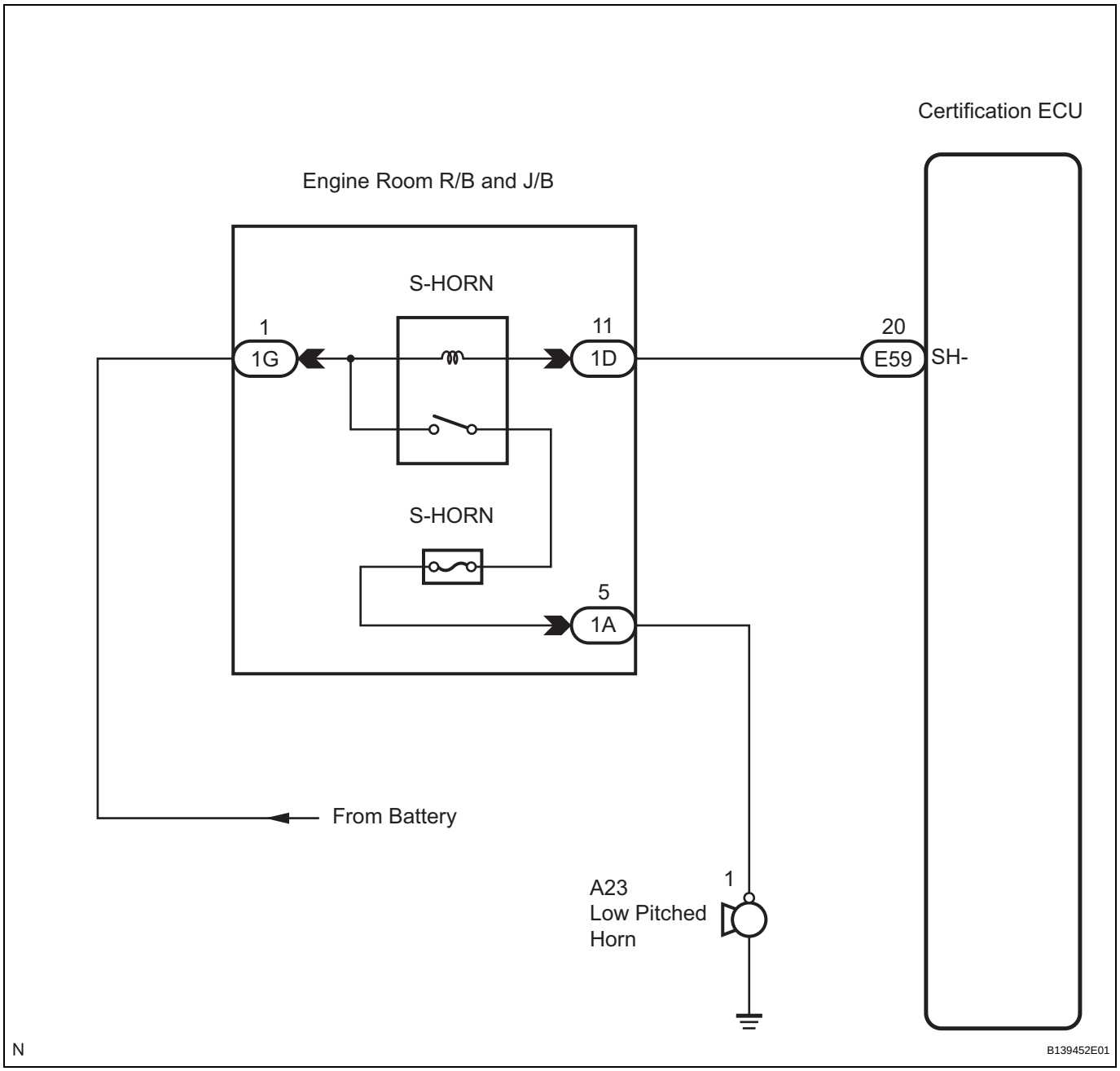
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Security Horn Circuit

DESCRIPTION

When the theft deterrent system is changed from the armed state to the alarm sounding state, the certification ECU can control the security horn.

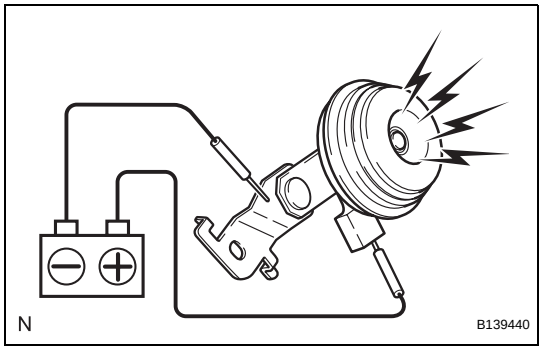
WIRING DIAGRAM



TD

INSPECTION PROCEDURE

1 **INSPECT SECURITY HORN ASSEMBLY**



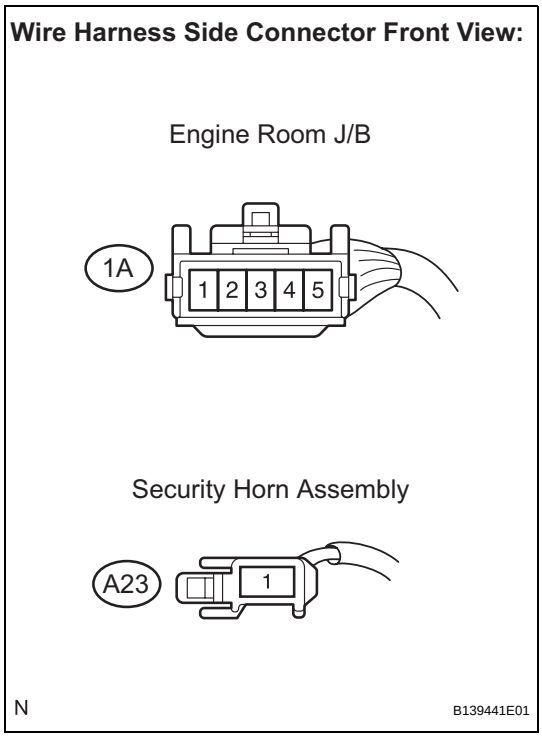
(a) Remove the security horn assembly.
(b) Check operation of the horn.
Standard

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1	Horn sounds
Battery negative (-) → Horn body	

NG → **REPAIR OR REPLACE SECURITY HORN ASSEMBLY**

OK

2 **CHECK HARNESS AND CONNECTOR (ENGINE ROOM J/B - SECURITY HORN ASSEMBLY)**



(a) Disconnect the 1A J/B connector and the A23 horn connector.
(b) Measure the resistance according to the value(s) in the table below.
Standard resistance

Terminal Connection	Specified Condition
1A-5 - A23-1	Below 1 Ω
1A-5 - Body ground	10 kΩ or higher

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

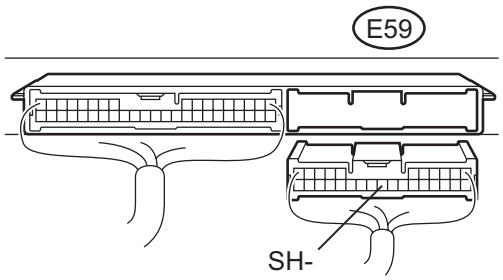
OK

TD

3 CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU - ENGINE ROOM J/B)

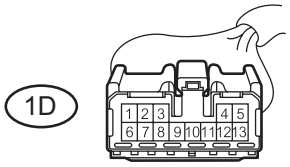
Connector Wire Harness View:

Certification ECU



Wire Harness Side Connector Front View:

Engine Room J/B



H B139453E01

(a) Disconnect the E59 ECU connector and 1D J/B connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

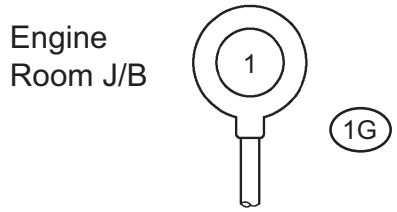
Symbol (Terminal Connection)	Specified Condition
SH- (E59-20) - (1D-11)	Below 1 Ω
SH- (E59-20) - Body ground	10 kΩ or higher

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

OK

4 CHECK HARNESS AND CONNECTOR (ENGINE ROOM J/B - BATTERY)

Wire Harness Side:



Y B074501E16

(a) Disconnect the 1G J/B connector.
(b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Terminal Connection	Specified Condition
1G-1 - Body ground	10 to 14 V

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

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

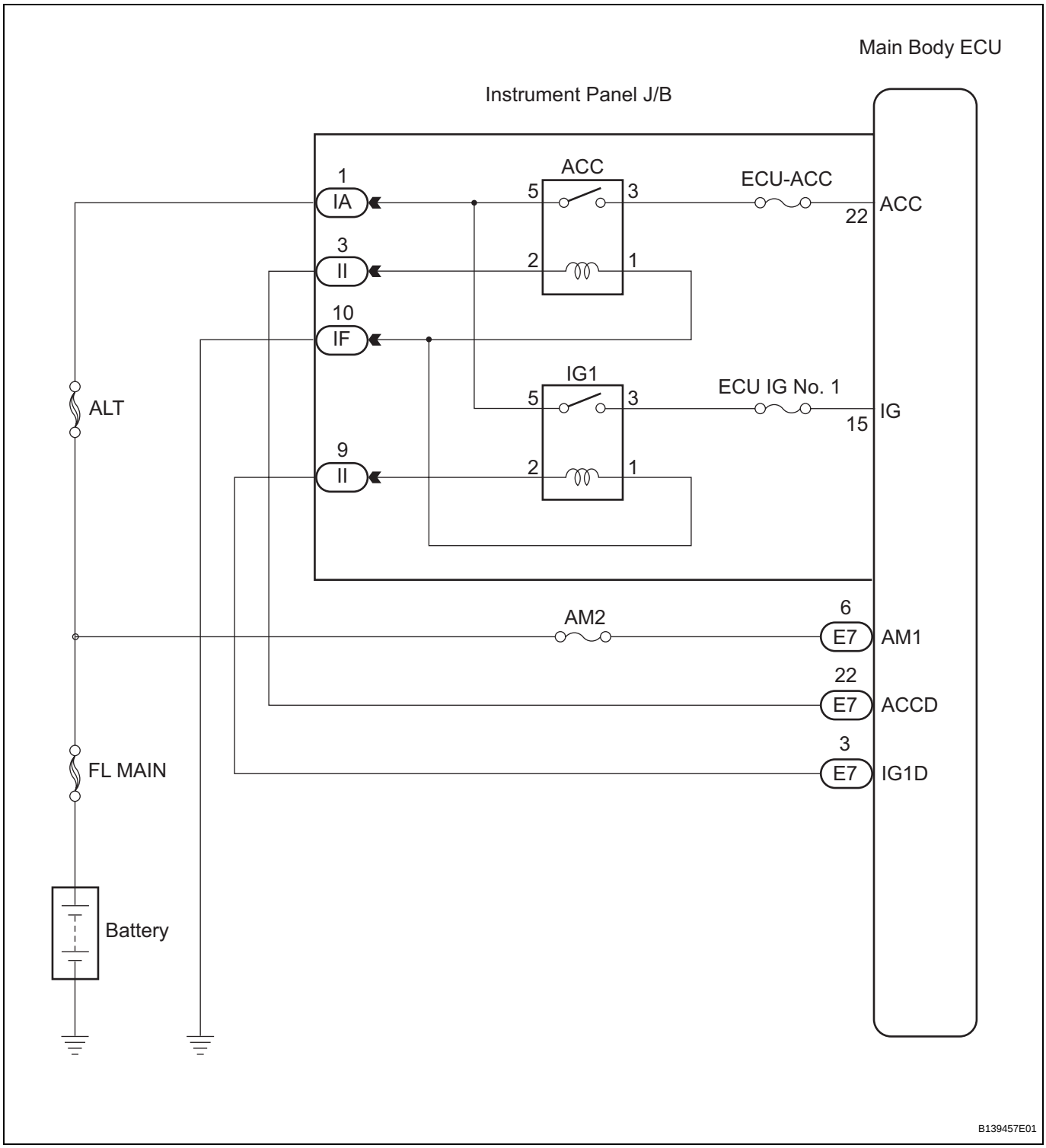
TD

Ignition Switch Circuit

DESCRIPTION

The main body ECU determines the ignition position (OFF, ACC, ON) based on signals from the IG or ACC circuit.

WIRING DIAGRAM



TD

INSPECTION PROCEDURE

1	READ VALUE OF INTELLIGENT TESTER

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

MAIN BODY (Main Body ECU):

Item	Test Details	Diagnostic Note
IG SW	ignition switch ON signal ON/OFF	-
ACC SW	ignition switch ACC signal ON/OFF	-

OK:
When the ignition switch is operated, the display changes as shown in the table.

NG → **Go to step 2**

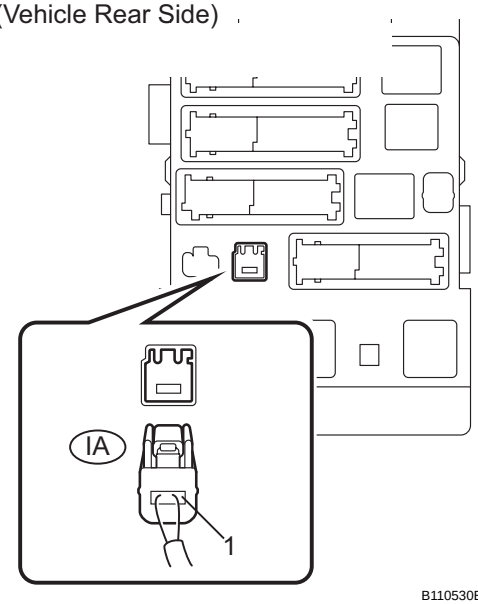
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2	CHECK HARNESS AND CONNECTOR (BATTERY - INSTRUMENT PANEL J/B)

Connector Wire Harness View:

Instrument Panel J/B Assembly
(Vehicle Rear Side)



(a) Disconnect the IA J/B connector.
(b) Measure the voltage according to the value(s) in the table below.
Standard voltage

Tester Connection	Condition	Specified Condition
IA-1 - Body ground	Ignition switch ON	10 to 14 V

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

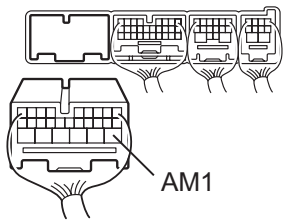
OK

TD

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

Connector Wire Harness View:

E7
Main Body ECU



B139448E01

(a) Disconnect the E7 ECU connector.
(b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Symbol (Tester Connection)	Specified Condition
AM1 (E7-6) - Body ground	10 to 14 V

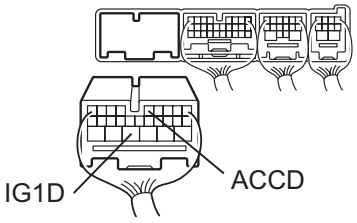
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

4	CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL J/B - MAIN BODY ECU)

Connector Wire Harness View:

E7
Main Body ECU



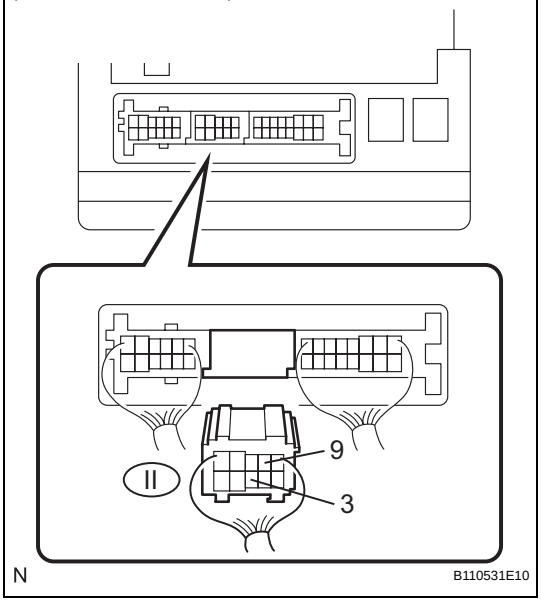
B139448E02

(a) Remain the E7 ECU connector still disconnected.

TD

Connector Wire Harness View:

Instrument Panel J/B Assembly
(Vehicle Rear Side)



(b) Disconnect the II J/B connector.
(c) Measure the resistance according to the value(s) in the table below.

Standard resistance

Symbol (Tester Connection)	Specified Condition
(II-3) - ACCD (E7-22)	Below 1 Ω
(II-9) - IG1D (E7-3)	Below 1 Ω

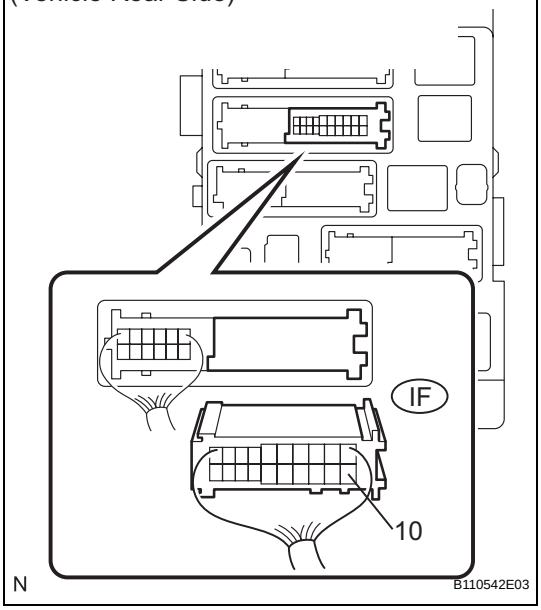
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

5 CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL J/B - BODY GROUND)

Connector Wire Harness Side View:

Instrument Panel J/B Assembly
(Vehicle Rear Side)



(a) Disconnect the IF J/B connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition
IF-10 - Body ground	Below 1 Ω

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

OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

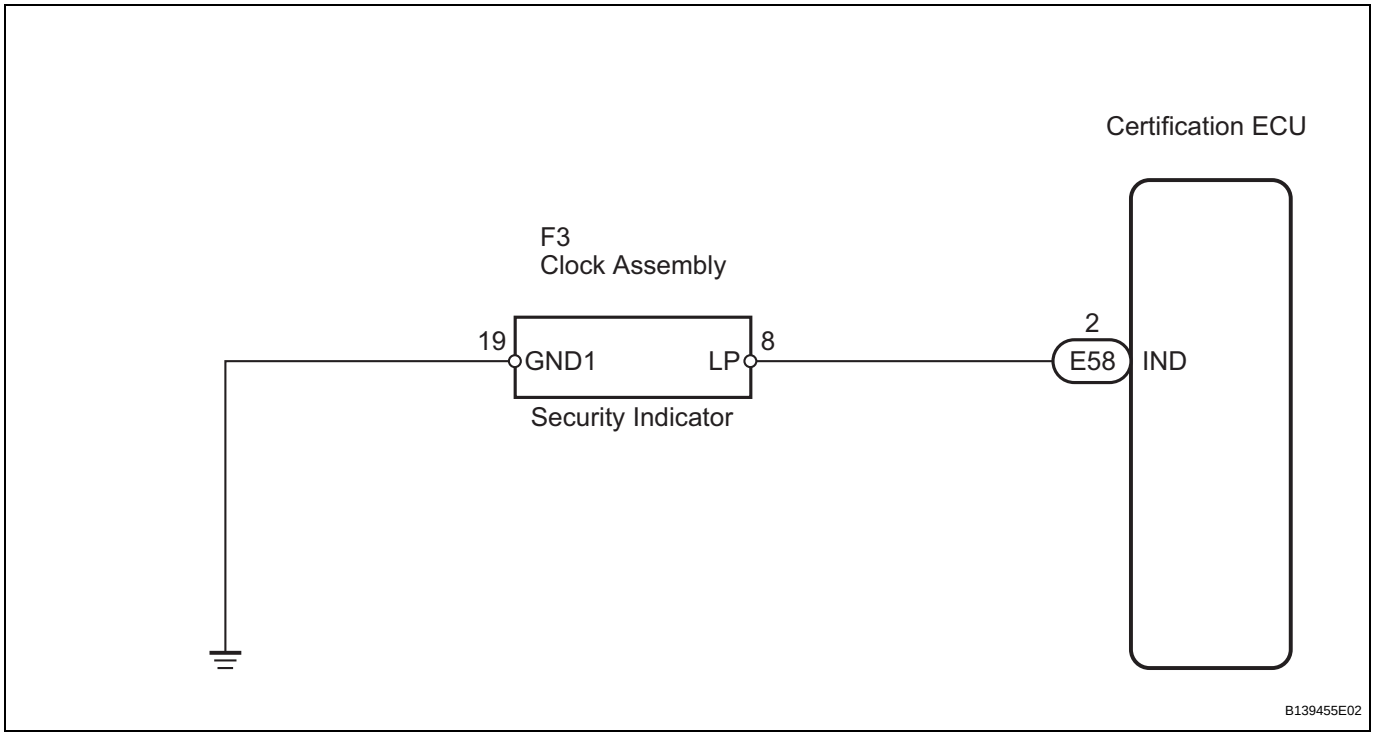
TD

Security Indicator Light Circuit

DESCRIPTION

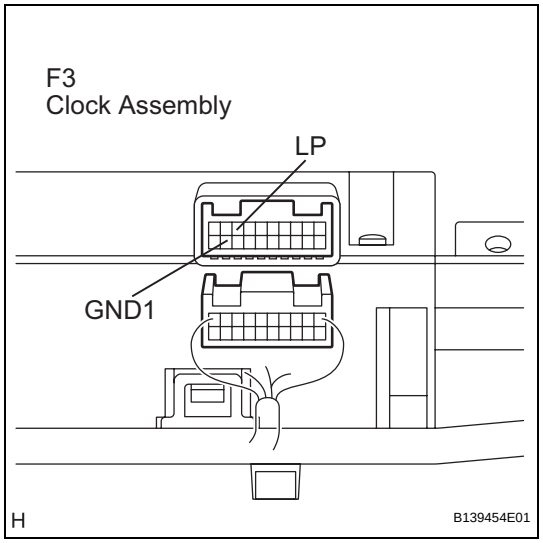
Even when the theft deterrent system is in the disarmed state, the security indicator blinks due to a signal output from the immobiliser system. The security indicator blinks continuously due to a continuous signal received from the immobiliser system while in the armed state.
The certification ECU causes the security indicator to light up or blink only during the arming preparation state and alarm sounding states.

WIRING DIAGRAM



INSPECTION PROCEDURE

1 INSPECT CLOCK ASSEMBLY



(a) Disconnect the F3 clock connector.
(b) Apply battery voltage between the terminals of the indicator, and check the lighting condition of the security indicator.

Standard

Measurement Condition	Specified Condition
Battery positive (+) → Terminal F3-8 (LP) Battery negative (-) → Terminal F3-19 (GND1)	Lights up

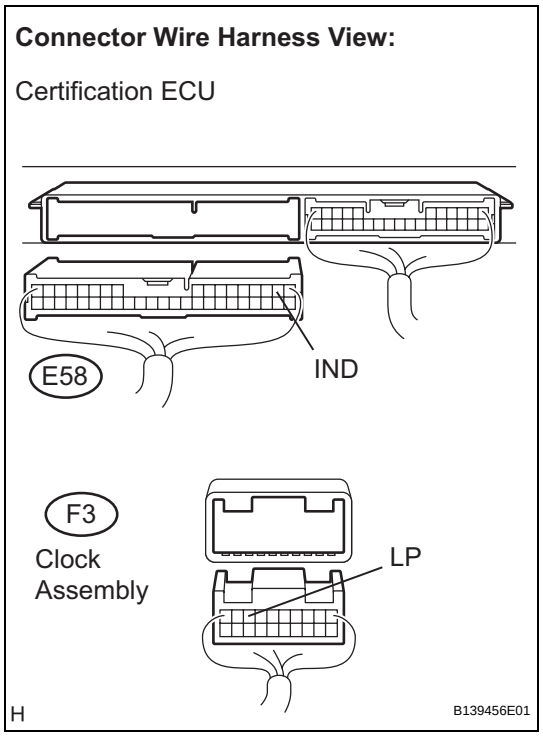
NOTICE:

- **If the positive (+) lead and the negative (-) lead are incorrectly connected, the security indicator will not light up.**
- **Voltage of more than 12 V will damage the security indicator.**
- **If the voltage is too low, the security indicator will not light up.**

NG → **REPLACE CLOCK ASSEMBLY**

OK

2 CHECK HARNESS AND CONNECTOR (CLOCK ASSEMBLY - CERTIFICATION ECU)



(a) Disconnect the E58 ECU connector.
(b) Disconnect the F3 clock connector.
(c) Measure the resistance according to the value(s) table below.

Standard resistance

Symbol (Tester Connection)	Specified Condition
IND (E58-2) - LP (F3-8)	Below 1 Ω
IND (E58-2) - Body ground	10 kΩ or higher

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

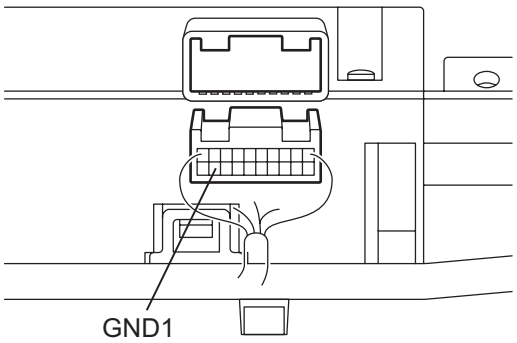
OK

TD

3	CHECK HARNESS AND CONNECTOR (CLOCK ASSEMBLY - BODY GROUND)

Connector Wire Harness View:

F3
Clock Assembly



(a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Symbol (Tester Connection)	Specified Condition
GND1 (F3-19) - Body ground	Below 1 Ω

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

OK

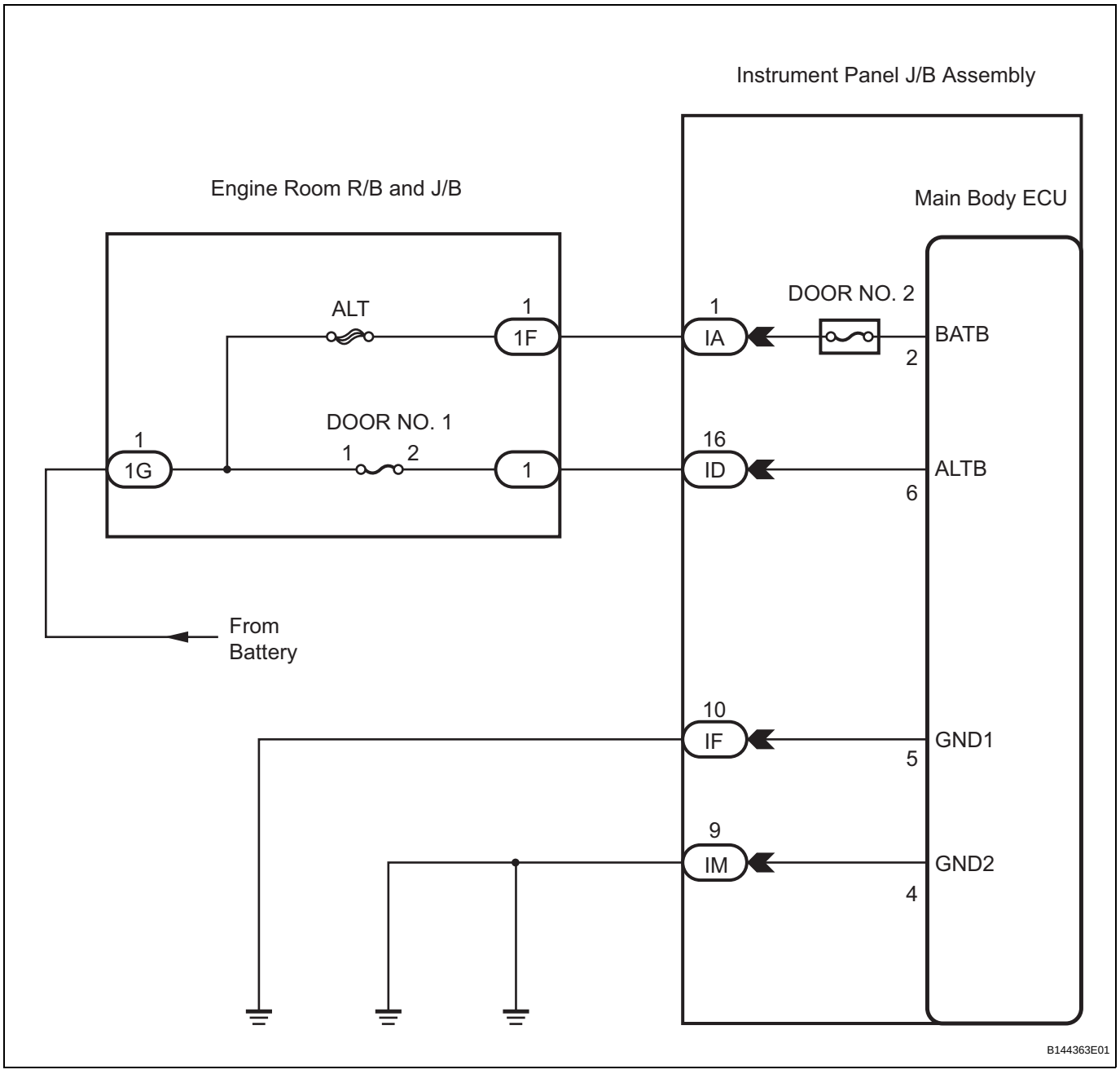
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

ECU Power Source Circuit

DESCRIPTION

This circuit provides power for main body ECU operation.

WIRING DIAGRAM



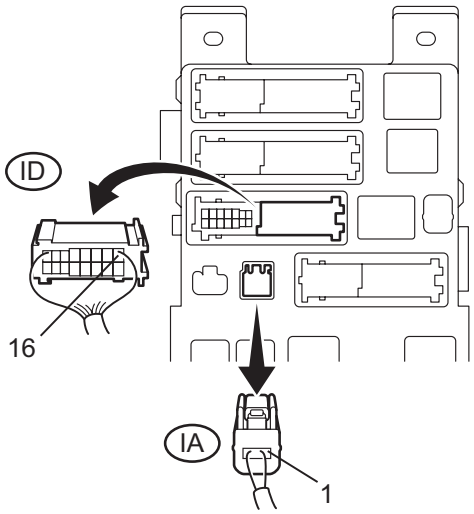
TD

INSPECTION PROCEDURE

1	CHECK INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (MAIN BODY ECU) (POWER SOURCE)

Connector Wire Harness Side:

Instrument Panel J/B Assembly
(Vehicle Rear Side)



(a) Disconnect the ID and IA J/B connectors.
(b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Specified Condition
ID-16 - Body ground	10 to 14 V
IA-1 - Body ground	10 to 14 V

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

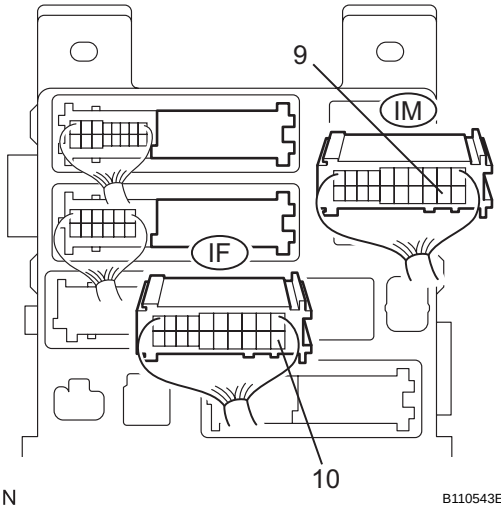
OK

TD

2	CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL J/B - BODY GROUND)

Connector Wire Harness View:

Instrument Panel J/B Assembly
(Vehicle Rear Side)



(a) Disconnect the IF and IM J/B connectors.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Symbol (Tester Connection)	Specified Condition
IF-10 - Body ground	Below 1 Ω
IM-9 - Body ground	

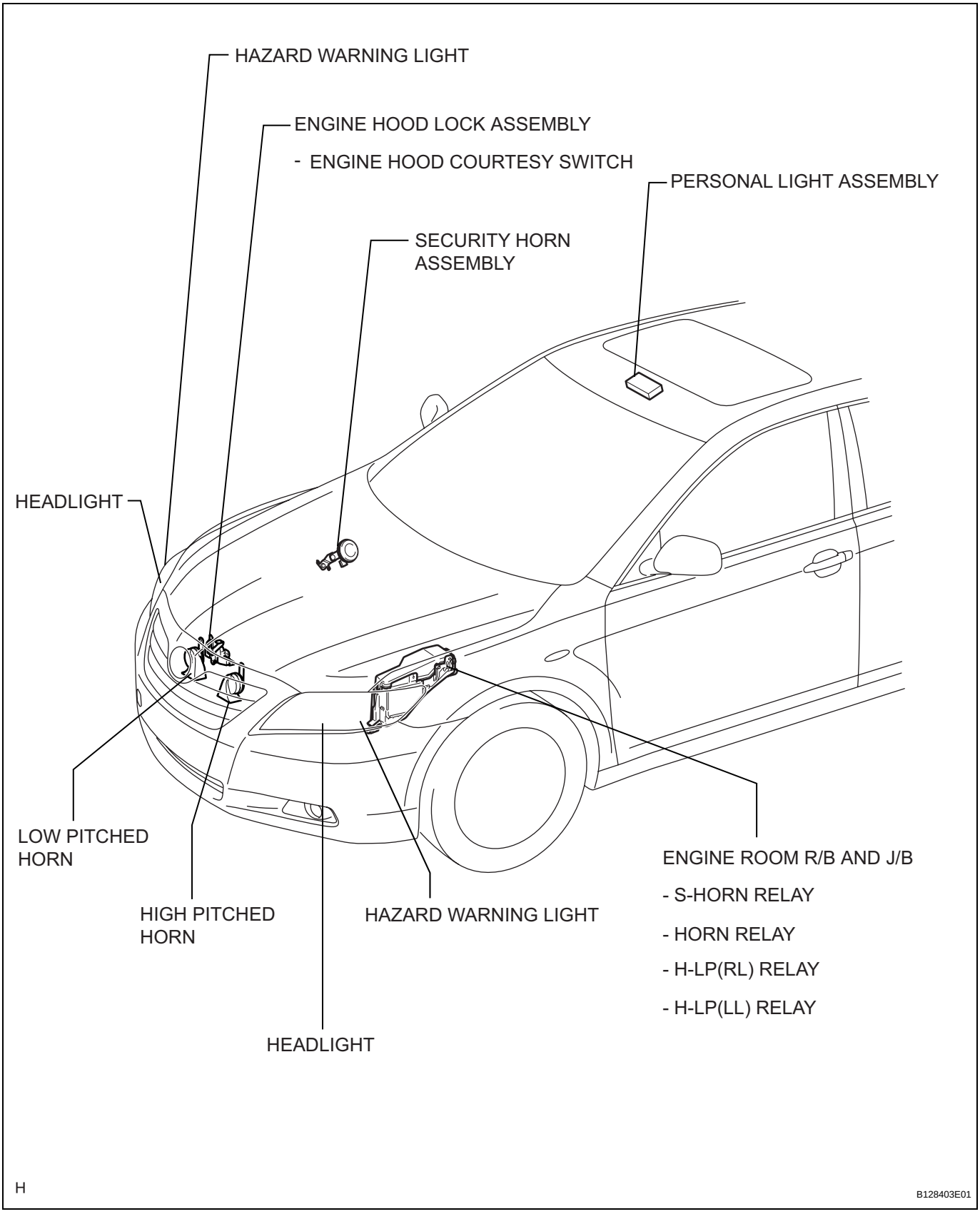
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

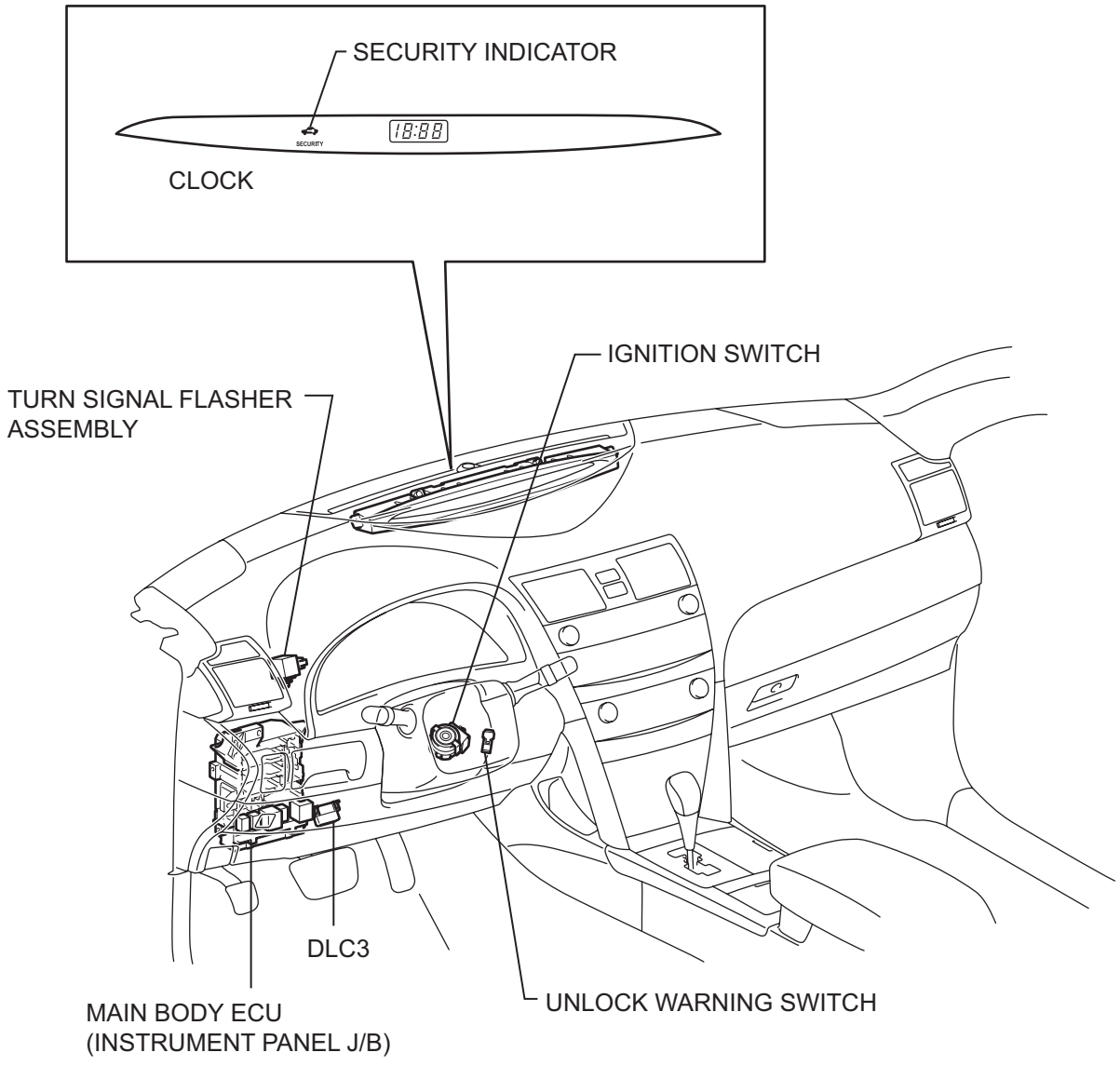
REPLACE PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

THEFT DETERRENT SYSTEM (w/o Smart Key System)

PARTS LOCATION



TD


SECURITY INDICATOR
SECURITY
18:88
CLOCK
IGNITION SWITCH
TURN SIGNAL FLASHER ASSEMBLY
DLC3
MAIN BODY ECU (INSTRUMENT PANEL J/B)
UNLOCK WARNING SWITCH
- TAIL RELAY
H
B128404E01

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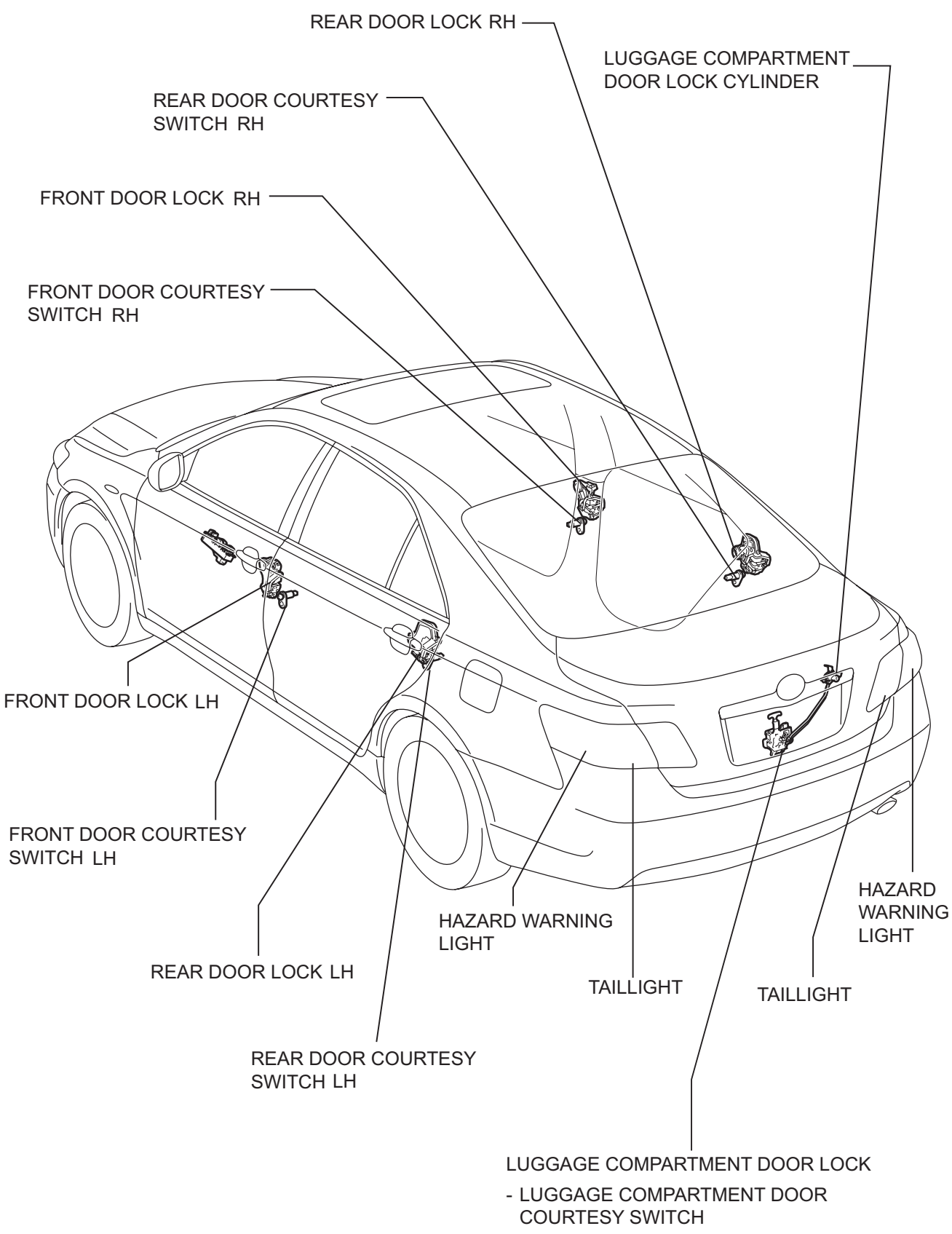

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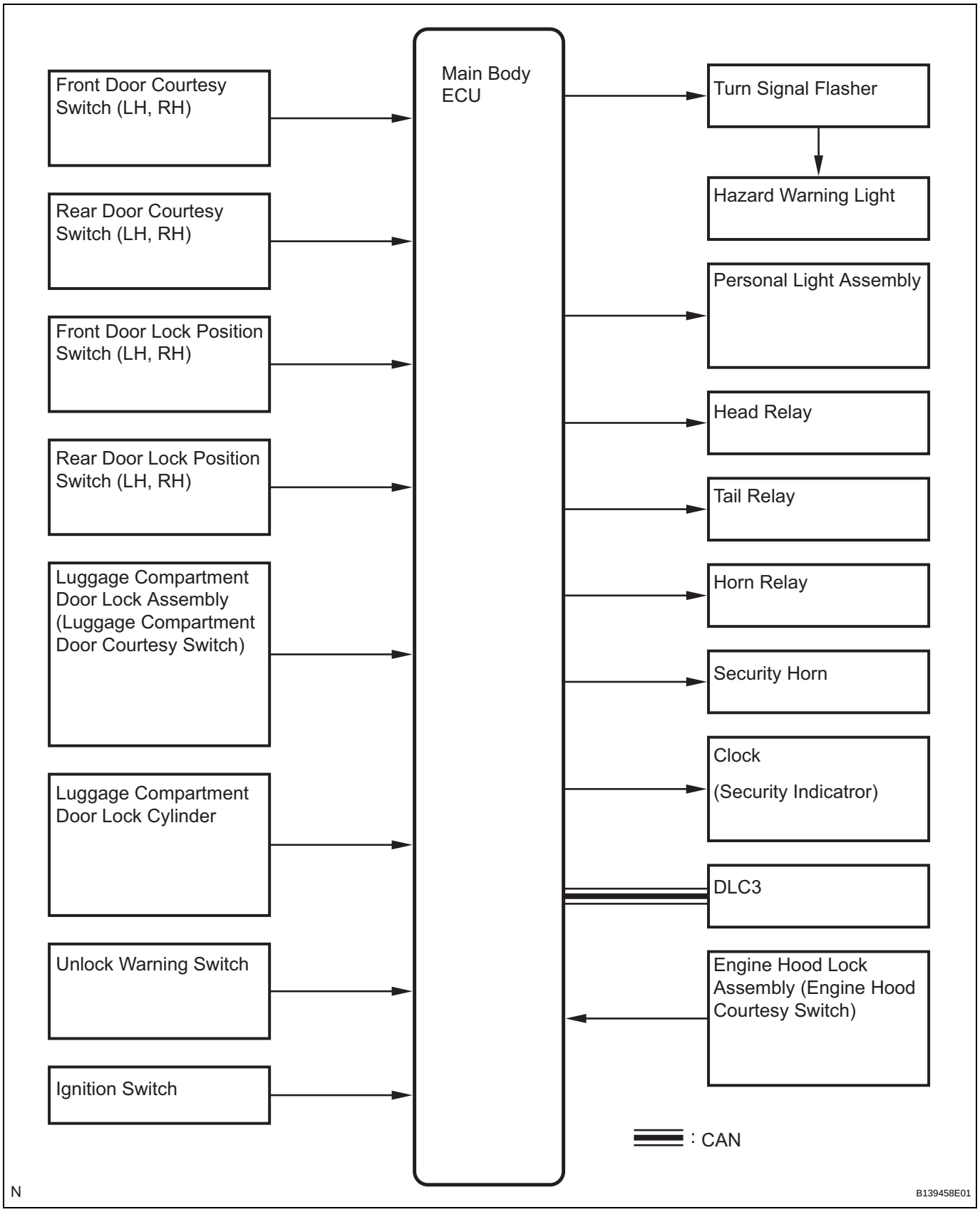
B128405E01

SYSTEM DIAGRAM



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SYSTEM DESCRIPTION

1. OUTLINE OF THEFT DETERRENT SYSTEM

- The theft deterrent system will operate when somebody attempts to forcibly enter the vehicle, unlock any door or luggage compartment door or open the engine hood or the luggage compartment door without using the key.
  This system causes the lights to light up or blink and the horns to sound in order to deter break-in and theft.
- The theft deterrent system has 2 modes; one is the active arming mode (see ACTIVE ARMING MODE) and the other is passive arming mode (see PASSIVE ARMING MODE). The passive arming mode can be switched ON/OFF using the specified method.
- Each mode has 4 states; a disarmed state, an arming preparation state, an armed state and an alarm sounding state.

(a) Disarmed state:
- The alarm function is not operating.
- The theft deterrent system is not operating.

(b) Arming preparation state:
- The time until the system goes into the armed state.
- The theft deterrent system is not operating.

(c) Armed state:
- The theft deterrent system is operating.

(d) Alarm sounding state:
- Alarm function is operating.

Alarm time:
Approx. 60 sec.

Refer to table below for alarm method and time:

TD

Alarm Method	Headlight	Blinking
	Taillight	Blinking
	Hazard Warning Light	Blinking
	Interior Light	Illuminating
	Vehicle Horn	Sounding (approx. 0.4 second cycles)
	Security Horn	Sounding (approx. 0.4 second cycles)
Alarm Time	Approx. 60 sec.	

HINT:
If any of the doors are unlocked when the key is not in the key cylinder during the armed state, a forced door lock signal will be output (see FORCED DOOR LOCK CONTROL).

2. FUNCTION OF MAIN COMPONENT

Component	Function
Security indicator	Informs driver of theft deterrent system status.
Security horn	Sounds when attempted brake-in or theft is detected.
Headlights	Blink when attempted break-in or theft is detected.
Taillights	Blink when attempted break-in or theft is detected.
Hazard warning lights	Blinking when attempted break-in or theft is detected.

Component	Function
Interior light	Lights up when attempted break-in or theft is detected.
Vehicle horns	Sounds when attempted break-in or theft is detected.
Door courtesy light switch	Detects door status (open or closed).
Door lock position switch	Detects door status (locked or unlocked).
Engine hood courtesy switch	Detects engine hood status (open or closed).
Luggage compartment door courtesy switch	Detects luggage compartment door status (open or closed).
Luggage compartment door lock cylinder	Detects luggage compartment door status (locked or unlocked).

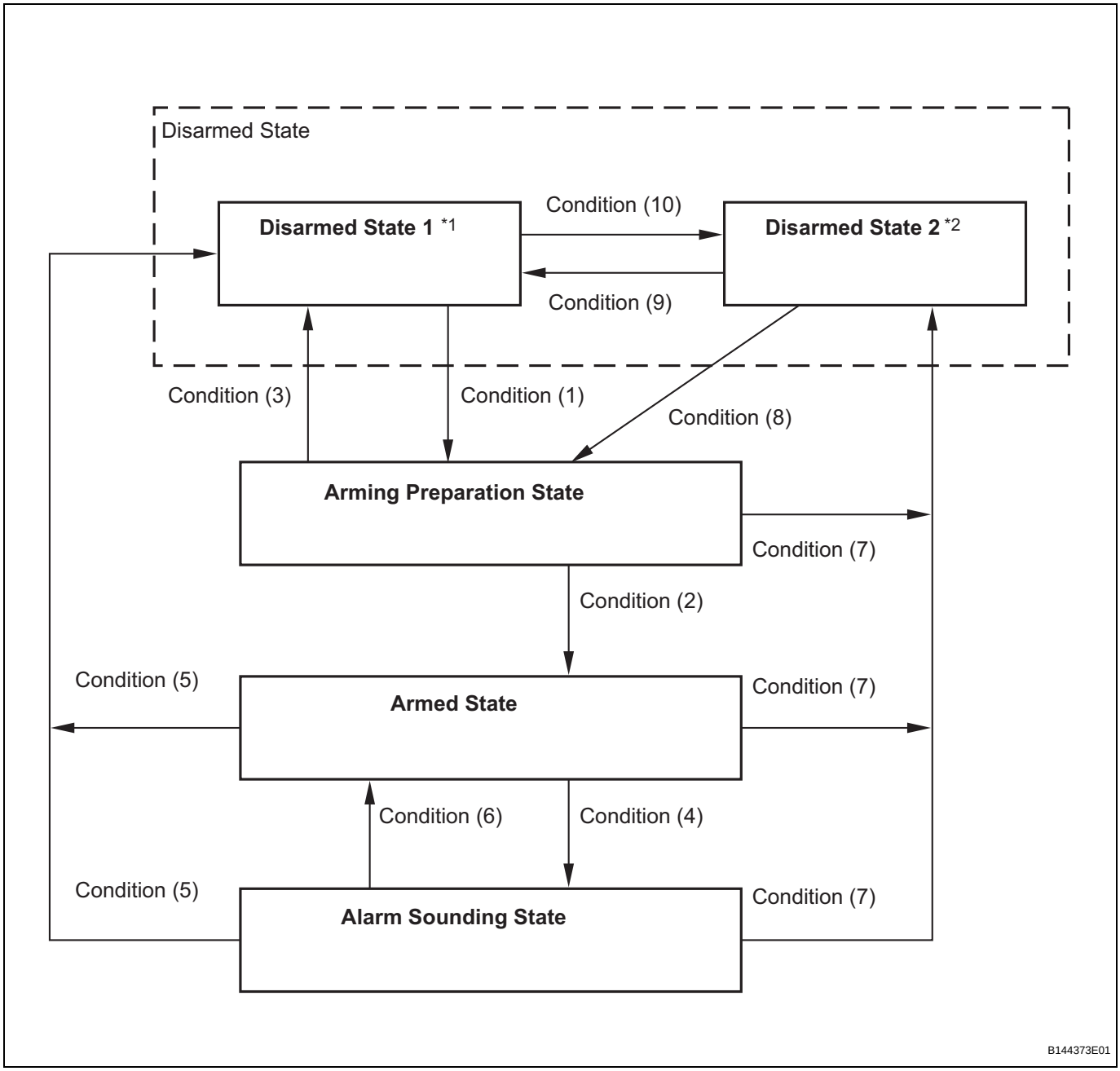
3. ACTIVE ARMING MODE

HINT:

Active arming mode starts the alarm control immediately after the doors are locked.

(a) Active arming mode:

This system activates as described in the diagram below when one of items for each condition is met.



TD

HINT:

- *1: Disarmed state 1 is the normal disarmed state.
- *2: Disarmed state 2 is set from either the disarmed state 1 or the arming preparation state.

Condition	Item
Condition (1)	In the disarmed state 1, when the key is not in the key cylinder, the system state is switched if one of the following conditions is met. 1. With all doors, engine hood and luggage compartment door closed, lock all doors by key operation. 2. With all doors, engine hood and luggage compartment door closed, lock all doors by wireless operation. 3. With engine hood and luggage compartment door closed, close and lock the open door without using key.
Condition (2)	After condition (1) is met, allow approx. 30 seconds to elapse.
Condition (3)	1. Unlock any door. 2. Open any door, engine hood, and luggage compartment door. 3. Insert key into ignition key cylinder. 4. Turn the ignition switch ON or ACC. 5. Reconnect battery.
Condition (4)	1. Open engine hood. 2. Open luggage compartment door. 3. Reconnect battery. 4. Open any door. 5. Unlock any door when all doors are locked. 6. Turn the ignition switch ON without using key.
Condition (5)	1. Unlock only driver's door or all doors by wireless operation. 2. Unlock only driver's door or all doors by key operation. 3. Turn the ignition switch ON and run the engine for more than 2 seconds.
Condition (6)	After approx. 60 seconds, alarm stops and system returns to armed state.
Condition (7)	1. Open the luggage compartment door by wireless operation. 2. Unlock the luggage compartment door by key operation.
Condition (8)	1. Close the engine hood when the luggage compartment door is closed. 2. Close the luggage compartment door when the engine hood is closed.
Condition (9)	1. Unlock any door. 2. Open any door. 3. Insert key into ignition key cylinder. 4. Turn the ignition switch ON or ACC. 5. Reconnect the battery.
Condition (10)	In the disarmed state 1, when the key is not in the key cylinder, the system state is switched if one of the following conditions is met. 1. With all doors closed, and the engine hood or luggage compartment door is opened, lock all doors by wireless operation. 2. With all doors closed, and the engine hood or luggage compartment door is opened, lock all doors by key operation. 3. With the engine hood or luggage compartment door is opened and all doors locked with any door still opened, close the open door.

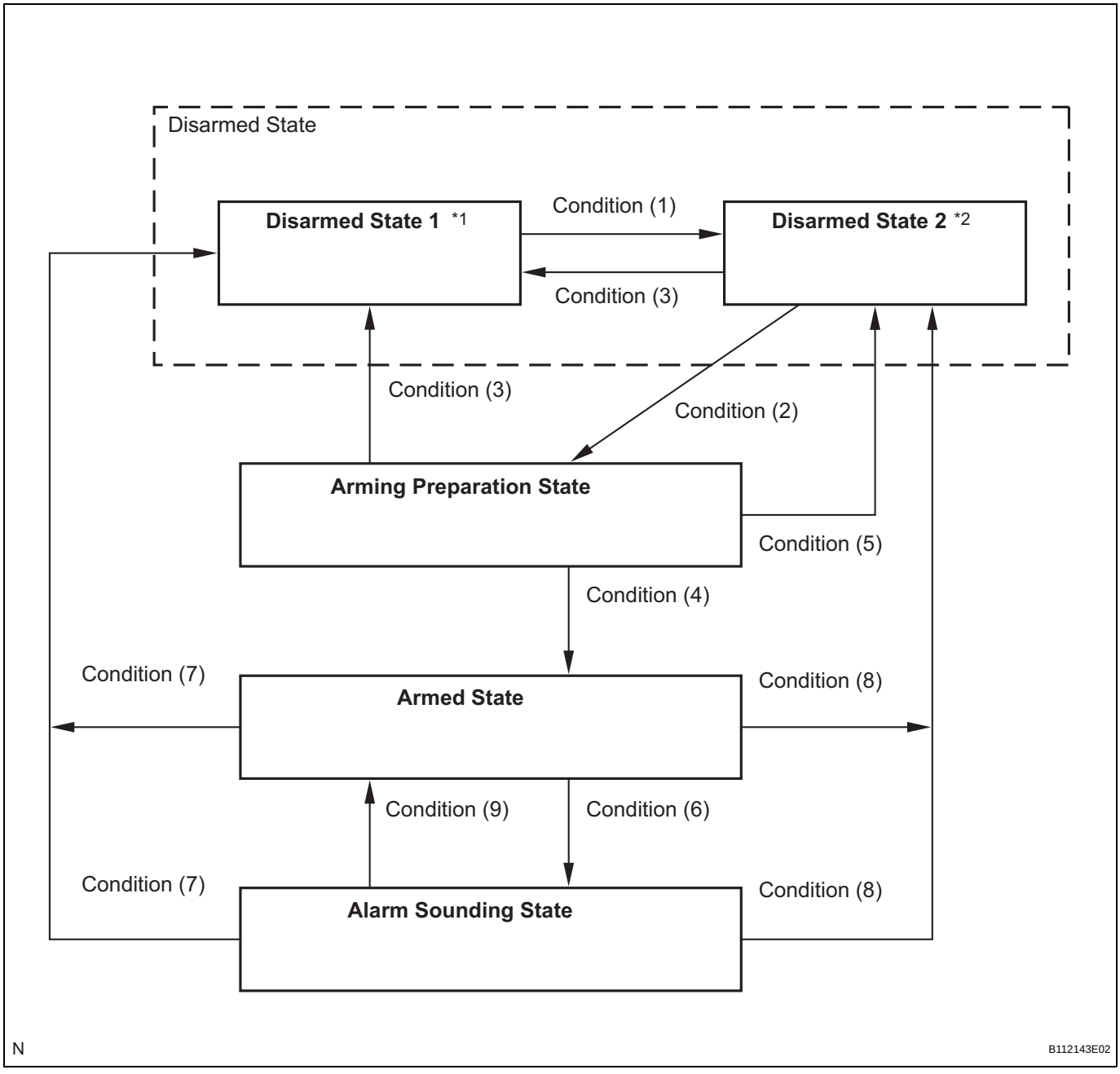
4. PASSIVE ARMING MODE

HINT:

- Passive arming mode starts the alarm control after the key is out of the actuation area and doors are closed.
- Passive arming mode can be switched ON/OFF by the specified method.
- The alarm is initially set (when shipped from factory) to active arming mode (not passive arming mode).
- During passive arming mode, the theft deterrent system goes into the armed state even if the doors are not locked.

- Detecting that the doors are unlocked does not set off the alarm during passive arming mode.
- A forced door lock signal is not output during passive arming mode (see FORCED DOOR LOCK CONTROL).
- Although the theft deterrent system detects that the doors are opened during passive arming mode, the alarm will not go off immediately because an entry delay time is set.
- If the condition (1) of active arming mode is met during passive arming mode, the theft deterrent system will switch to active arming mode.

(a) Passive arming mode:
This system activates as described in the diagram below when one of items for each condition is met.



TD

HINT:
- *1: Disarmed state 1 is the normal disarmed state.
- *2: Disarmed state 2 is set from either the disarmed state 1 or the arming preparation state.

Condition	Item
Condition (1)	1. With ignition switch OFF, open any door and pull the key out of the ignition key cylinder. 2. With ignition switch OFF, pull the key out of the ignition key cylinder and open any door.
Condition (2)	All doors, engine hood and luggage compartment door are closed.
Condition (3)	1. Unlock only driver's door or all doors by wireless operation. 2. Unlock only driver's door or all doors by key operation. 3. Reconnect battery. 4. Insert key into ignition key cylinder. 5. Turn the ignition switch ON or ACC.
Condition (4)	After condition (1) is met, allow approx. 30 seconds to elapse.
Condition (5)	1. Open any door. 2. Open engine hood. 3. Open luggage compartment door. 4. Unlock luggage compartment door.
Condition (6)	1. Open any door and allow entry delay time*1 to elapse. 2. Open engine hood. 3. Open luggage compartment door. 4. Reconnect battery. 5. Turn the ignition switch ON without using key.
Condition (7)	1. Unlock only driver's door or all doors by wireless operation. 2. Unlock only driver's door or all doors by key operation. 3. Turn the ignition switch ON and run the engine more than 2 seconds. 4. Turn the ignition switch ON with key operation.
Condition (8)	1. Open luggage compartment door by wireless operation. 2. Unlock luggage compartment door by key operation.
Condition (9)	After approx. 60 sec., alarm stops and system returns to armed state.

HINT:
*1: When any door is opened while all the doors are closed during passive arming mode, the entry delay time starts. If the switch condition (armed state → disarmed state 1 or 2) is met during the entry delay time, the theft deterrent system will return to disarmed state 1 or 2. However, if the switch condition for disarmed state 1 or 2 is not met, the theft deterrent system will recognize it as a theft and set off the alarm. Entry delay time of 0, 14 or 30 sec. can be selected by the customizing function.

5. FORCED DOOR LOCK CONTROL

(a) The forced door lock control prevents the vehicle from being tampered with. Immediately after a door is unlocked (alarm starts), the door is forced to lock by a forced door lock signal.

(1) Conditions that force the doors to lock:
When the key is not in the key cylinder and both of the following conditions are met.
- The theft deterrent system is in the alarm sounding state of active arming mode.
- Any door is unlocked.

6. ALARM MEMORY FUNCTION

(a) If the alarm is set off (tampering is detected) while the theft deterrent system is armed, it will be recorded by the alarm memory function. Whenever the theft deterrent system is cancelled, the alarm memory function causes the taillights to light up for 2 seconds in order to inform you that the alarm has been set off.

(1) Conditions of the alarm memory function that cause the taillights to light up:
When the theft deterrent system has entered into the alarm sounding state (tampering has been detected) even once, the taillights will light up for 2 seconds if any of the following conditions is met.
- Switched to the disarmed state from the armed state during active arming mode.
- Switched to the disarmed state 1 from the armed state during passive arming mode.

HINT:
Active arming mode: See ACTIVE ARMING MODE.
Passive arming mode: See PASSIVE ARMING MODE.

7. PANIC ALARM CONTROL

(a) The panic alarm control makes it possible to voluntarily set off the panic alarm by pressing the PANIC switch on the wireless transmitter.

(1) Conditions that cause the panic alarm control to set off the panic alarm:
The panic alarm control sets off the panic alarm by pressing the PANIC switch on the wireless transmitter under the following conditions:
- The ignition switch is OFF.
- The theft deterrent system is not in the alarm sounding state. (This condition is common both to active arming mode and to passive arming mode.)

(2) Conditions that cause the panic alarm control to shut off the alarm:
The panic alarm control shuts off the panic alarm when any of the following conditions is met during panic alarm operation:
- The ignition switch is ON.
- The panic alarm switch is turned on again.
- Any of the switches on the wireless transmitter (LOCK/UNLOCK or LUGGAGE OPEN) is pressed.
- The panic alarm ends (approx. 60 sec. have passed).

- The theft deterrent system switches to the alarm sounding state. Under this condition, the theft deterrent system is controlling the alarm rather than the panic alarm control. In order to cancel this alarm, refer to the theft deterrent system alarm sounding state cancellation procedure. (This condition is common both to active arming mode to passive arming mode.)

HINT:
Active arming mode: See ACTIVE ARMING MODE.
Passive arming mode: See PASSIVE ARMING MODE.

8. SECURITY INDICATOR OUTPUT

(a) The main body ECU outputs a signal to light up the security indicator, according to the state of the theft deterrent system. However, some of the actual lighting conditions of the security indicator are different from the output signals of the main body ECU.

Output:

State of Theft Deterrent System*	Security Indicator	
	Output Signals from Main Body ECU	Actual Lighting Condition
Disarmed state 1, 2	OFF	OFF (Immobiliser system unset) BLINKING (Immobiliser system set)
Arming preparation state	ON	ON
Armed state	OFF	BLINKING
Alarm sounding state	ON	ON

Blinking cycle:

Time	Security Indicator
0.2 sec.	ON
1.8 sec.	OFF

HINT:

- *: The above condition is common both to active arming mode and to passive arming mode.
- When the immobiliser system is set, the security indicator blinks during both the disarmed state and the armed state, due to the output signals from the immobiliser system.

TD

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use this procedure to troubleshoot the theft deterrent system.
- The intelligent tester should be used in step 3.

1	VEHICLE BROUGHT TO WORKSHOP

NEXT

2	CUSTOMER PROBLEM ANALYSIS

(a) Interview the customer to confirm the trouble (See page IN-45).

NEXT

3	INSPECT COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM

(a) Use the intelligent tester to check for normal function of the multiplex communication system.
  (1) (ECU unconnected, communication line malfunctioning) If no code is output, proceed to A.
  (2) (ECU unconnected, communication line malfunctioning) If any code is output, proceed to B.

B → Go To CAN COMMUNICATION SECTION

A

4	SYMPTOM SIMULATION

NEXT

5	PROBLEM SYMPTOMS TABLE

(a) If the fault is not listed in the problem symptoms table, proceed to A.
(b) If the fault is listed in the problem symptoms table, proceed to B.

B → Go to step 7

A

6	PERFORM TROUBLESHOOTING ACCORDING TO MALFUNCTION SYMPTOM

(a) System description (See page TD-44)

(b) Terminals of ECU (See page TD-55)

7	ADJUST, REPAIR OR REPLACE

NEXT

8	CONFIRMATION TEST

NEXT

END

CUSTOMIZE PARAMETERS

HINT:
The following items can be customized.
NOTICE:

- **After confirming whether the items requested by the customer are applicable or not for customization, perform customizing operations.**
- **Be sure to record the current settings before customization.**
- **When troubleshooting, make sure that the item in question is not set to "OFF" as a result of customization (Example: For the system, "the wireless function does not operate", first check that the wireless function is not set to "OFF", then perform troubleshooting).**

THEFT DETERRENT SYSTEM

DISPLAY (ITEM)	DEFAULT	CONTENTS	SETTING
PASSIVE MODE (Passive Arming Mode)	OFF	PASSIVE MODE is a function that switches theft deterrent system from arming preparation state to armed state 30 seconds after key is not in the key cylinder and all doors, engine hood and luggage compartment door are closed, even if doors are not locked by wireless or door key lock operation In PASSIVE MODE, if you do not perform following operations within 14 seconds after door is opened during armed state, theft deterrent system will judge that condition as a theft and switch to alarm sounding state – Unlock any door by key or wireless operation – Turn the ignition switch ON – Open luggage compartment door by key or wireless operation	ON/OFF
WARN BY HORN (Warning by horn)	ON	Function that makes vehicle horn and theft deterrent horn be able to be used as a warning device	ON/OFF
ENTRY DELAY (Entry delay time)	14 s	Function that changes entry delay time (time before warning starts) for PASSIVE MODE	0 s/14 s/30 s

PROBLEM SYMPTOMS TABLE

HINT:

- Troubleshooting of the theft deterrent system is based on the premise that the door lock control system and the wireless door lock control system are operating normally. Accordingly, before troubleshooting the theft deterrent system, first make certain that the door lock control system and the wireless door lock control system are operating normally.
- The following is the troubleshooting procedure for the theft deterrent system of a vehicle without the smart key system.
- Inspect the fuse and relay before investigating the suspected areas shown in the table below.

Theft deterrent system:

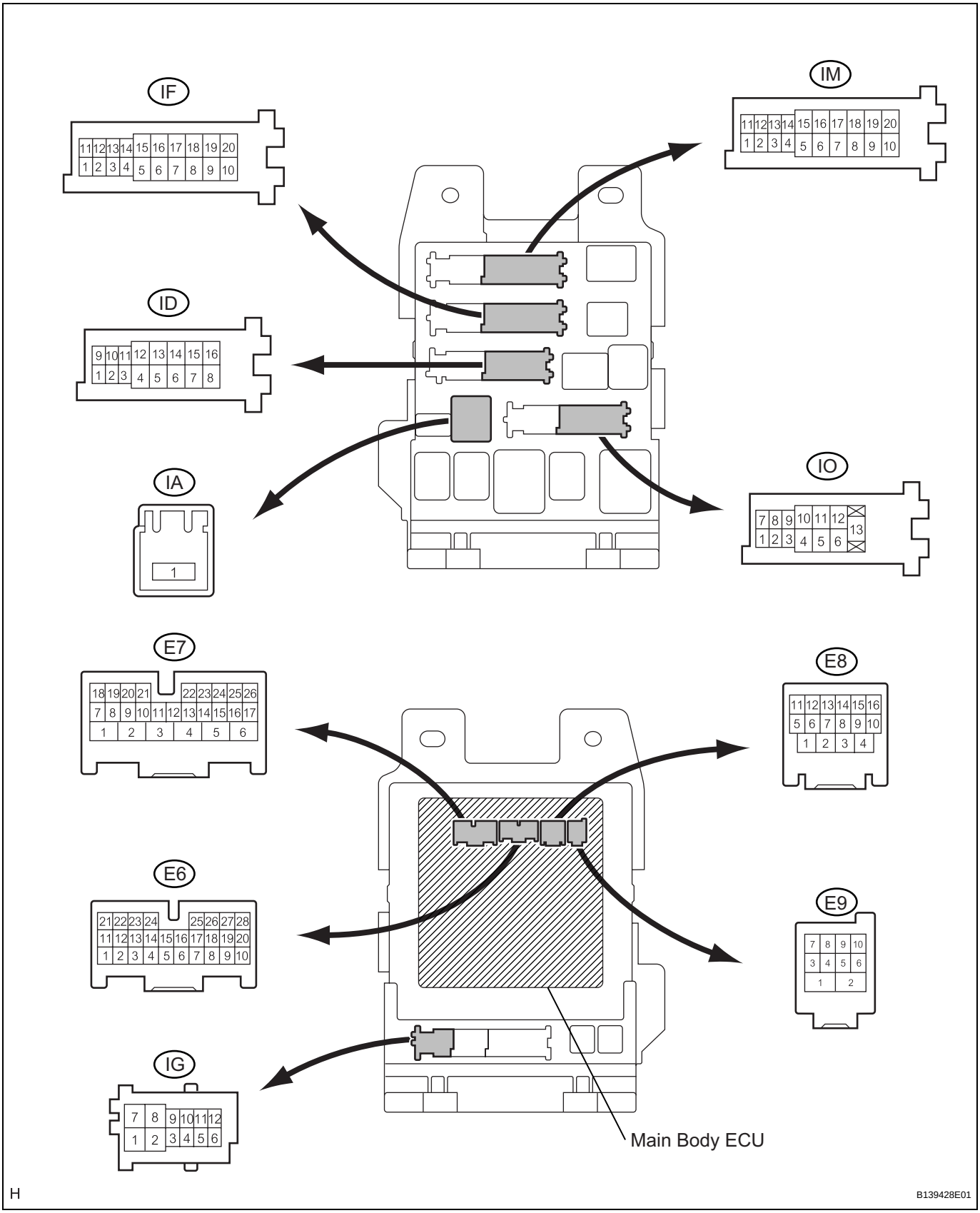
Symptom	Suspected area	See page
Theft deterrent system cannot be set	1. Security indicator light circuit	TD-72
	2. ECU power source circuit	TD-75
	3. Unlock warning switch circuit	DL-205
	4. Door key lock / unlock switch	DL-53
	5. Door courtesy switch circuit	LI-52
	6. Luggage compartment door courtesy switch circuit	DL-44
	7. Engine hood courtesy switch circuit	TD-60
	8. If the symptom(s) still occur after the above areas are inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Security indicator does not blink when theft deterrent system is set	1. Security indicator light circuit	TD-72
	2. If the symptom(s) still occur after the above area is inspected and proved to be normal, replace the main body ECU RH (Instrument Panel J/B)	-
Alarm sounding state cannot be canceled when ignition switch turned ON	1. Ignition switch circuit	TD-68
	2. Unlock warning switch circuit	DL-205
	3. If the symptom(s) still occur after the above areas are inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Theft deterrent system can be set even when a door is open	1. Door courtesy switch circuit	LI-52
	2. If the symptom(s) still occur after the above area is inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Vehicle horns (low pitched, high pitched) do not sound while theft deterrent system is in warning operation	1. Horn circuit	TD-62
	2. If the symptom(s) still occur after the above area is inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Hazard warning lights do not flash while theft deterrent system is in warning operation	1. Wire harness	-
	2. Turn signal flasher	LI-138
	3. If the symptom(s) still occur after the above area is inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Interior light does not light up while theft deterrent system is in warning operation	1. Interior light circuit	LI-57
	2. If the symptom(s) still occur after the above area is inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Security horn does not sound while theft deterrent system is in warning operation	1. Security horn circuit	TD-64
	2. If the symptom(s) still occur after the above area is inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-

Symptom	Suspected area	See page
Hazard warning lights flash even when theft deterrent system is not set	1. Wire harness	-
	2. Turn signal flasher	LI-138
	3. If the symptom(s) still occur after the above area is inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-
Interior light comes on even when theft deterrent system is not set	1. Interior light circuit	LI-57
	2. If the symptom(s) still occur after the above area is inspected and proved to be normal, replace the main body ECU (Instrument panel J/B)	-

TERMINALS OF ECU

1. CHECK MAIN BODY ECU (INSTRUMENT PANEL J/B)

(a) Disconnect the main body ECU (instrument panel J/B) connectors.



TD

(b) Measure the resistance and voltage between each terminal of the wire harness side connectors and body ground.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
RCTY (E6-5) - Body ground	GR - Body ground	Rear courtesy light switch RH input	Rear door RH CLOSED (OFF) → OPEN (ON)	10 kΩ or higher → Below 1 Ω
PCTY (E6-21) - Body ground	Y - Body ground	Passenger side courtesy light switch input	Passenger side door CLOSED (OFF) → OPEN (ON)	10 kΩ or higher → Below 1 Ω
LGCY (E6-25) - Body ground	W - Body ground	Luggage compartment door courtesy light switch input	Luggage compartment door CLOSED (OFF) → OPEN (ON)	10 kΩ or higher → Below 1 Ω
HCTY (E7-16) - Body ground	R - Body ground	Engine hood courtesy switch	Engine hood CLOSED (OFF) → OPEN (ON)	10 kΩ or higher → Below 1 Ω
DCTY (E7-24) - Body ground	L - Body ground	Driver side door courtesy light switch input	Driver side door CLOSED (OFF) → OPEN (ON)	10 kΩ or higher → Below 1 Ω
KSW (E9-5) - Body ground	L - Body ground	Unlock warning switch input	No key in ignition key cylinder (OFF) → Key inserted (ON)	10 kΩ or higher → Below 1 Ω
ACC (IA-1) - Body ground	B - Body ground	Ignition power supply (ACC signal)	Ignition switch on (ACC) → off	10 to 14 V → Below 1 V
IG (IA-1) - Body ground	B - Body ground	Ignition power supply (IG signal)	Ignition switch on (IG) → off	10 to 14 V → Below 1 V
ALTB (ID-16) - Body ground	W - Body ground	+B (power system alternator system) power supply	Always	10 to 14 V
GND1 (IF-10) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
BECU (ID-10) - Body ground	O - Body ground	+B power supply	Always	10 to 14 V
GND2 (IM-9) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
LCTY (IO-7) - Body ground	LG - Body ground	Rear courtesy light switch LH input	Rear door LH CLOSED (OFF) → OPEN (ON)	10 kΩ or higher → Below 1 Ω

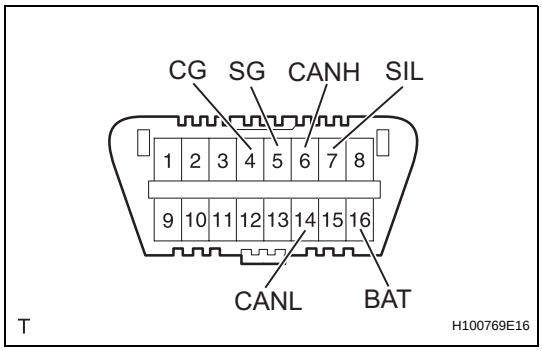
If the result is not as specified, there may be a malfunction on the wire harness side.

(c) Reconnect the main body ECU (instrument panel J/B) connectors.

(d) Measure the voltage between each terminal of the wire harness side connectors and body ground.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
HAZ (E8-4) - Body ground	W - Body ground	Turn signal flasher relay signal	System is in alarm sounding state	Below 1 V
IND (E9-4) - Body ground	Y - Body ground	Security indicator output	Security indicator light up (It lights up only in arming preparation state or alarm sounding state. It flashes when immobiliser is operating.)	3 to 6 V
SH (E9-6) - Body ground	P - Body ground	Security horn drive	Security horn is sounding (Theft deterrent system is in alarm sounding state)	Pulse generation (0 V ← → 12 V)
HORN (ID-11) - Body ground	B - Body ground	Vehicle horn drive	Vehicle horn is sounding (Theft deterrent system is in alarm sounding state)	Pulse generation (0 V ← → 12 V)

If the result is not as specified, the main body ECU (instrument panel J/B) may have a malfunction.



DIAGNOSIS SYSTEM

1. CHECK DLC3

(a) The main body ECU uses ISO 15765-4 for communication protocol. The terminal arrangement of the DLC3 complies with SAE J1962 and matches the ISO 15765-4 format.

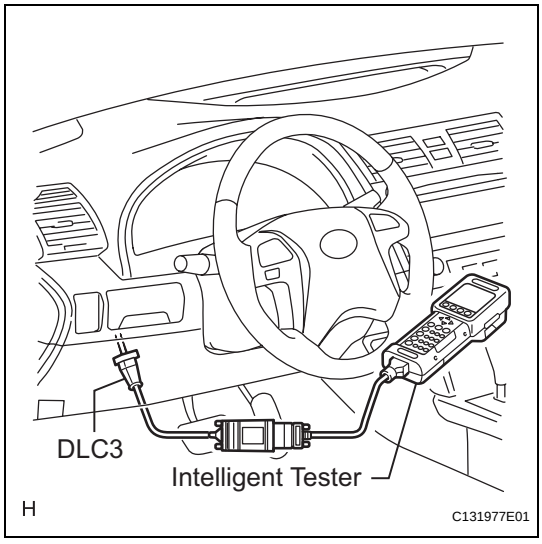
Symbols (Terminal No.)	Terminal Description	Condition	Specified condition
SIL (7) - SG (5)	Bus "+" line	During transmission	Pulse generation
CG (4) - Body ground	Chassis ground	Always	Below 1 Ω
SG (5) - Body ground	Signal ground	Always	Below 1 Ω
BAT (16) - Body ground	Battery positive	Always	10 to 14 V
CANH (6) - CANL (14)	CAN bus line	Ignition switch OFF*	54 to 67 Ω
CANH (6) - CG (4)	HIGH-level CAN bus line	Ignition switch OFF*	200 Ω or higher
CANL (14) - CG (4)	LOW-level CAN bus line	Ignition switch OFF*	200 Ω or higher
CANH (6) - BAT (16)	HIGH-level CAN bus line	Ignition switch OFF*	6 kΩ or higher
CANL (14) - BAT (16)	LOW-level CAN bus line	Ignition switch OFF*	6 kΩ or higher

NOTICE:

***: Before measuring the resistance, leave the vehicle as is for at least 1 minute and do not operate the ignition switch, any other switches or the doors.**

If the result is not as specified, the DLC3 may have a malfunction. Repair or replace the harness and connector.

TD



(b) Connect the cable of the intelligent tester (with CAN VIM) to the DLC3, turn the ignition switch ON and attempt to use the intelligent tester. If the screen displays a communication error message, a problem exists in the vehicle or in the tester.

- If communication is normal when the tool is connected to another vehicle, inspect the DLC3 on the original vehicle.
- If communication is still impossible when the tool is connected to another vehicle, the problem is probably in the tool itself. Consult the Service Department listed in the tool's instruction manual.

DATA LIST / ACTIVE TEST

1. DATA LIST

HINT:

Using the intelligent tester DATA LIST allows switch, sensor, actuator and other item values to be read without removing any parts. Reading the DATA LIST early in troubleshooting is one way to shorten labor time.

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.

(b) Turn the ignition switch on ON.

(c) Enter the following menus: DIAGNOSIS / OBD/ MOBD / MAIN BODY / DATA LIST.

(d) Read the DATA LIST according to the display on the tester.

MAIN BODY (Main body ECU):

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
KEY UNLK WRN SW	Unlock warning switch signal / ON or OFF	ON: Key is inserted in the ignition key cylinder OFF: Key is removed from the ignition key cylinder	-
ACC SW	Ignition switch signal / ON or OFF	ON: Ignition switch is ACC OFF: Ignition switch is OFF	-
IG SW	Ignition switch signal / ON or OFF	ON: Ignition switch is ON OFF: Ignition switch is OFF	-
D DOOR CTY SW	D door courtesy switch / ON or OFF	ON: Driver side door is OPEN OFF: Driver side door is CLOSED	-
P DOOR CTY SW	P door courtesy switch / ON or OFF	ON: Front passenger side door is OPEN OFF: Front passenger side door is CLOSED	-
RR DOR CTY SW	Rear right door courtesy switch / ON or OFF	ON: Rear right door is OPEN OFF: Rear right door is CLOSED	-
RL DOR CTY SW	Rear left door courtesy switch / ON or OFF	ON: Rear left door is OPEN OFF: Rear left door is CLOSED	-
LUGG COURTSY SW	Luggage compartment door courtesy switch / ON or OFF	ON: Luggage compartment door is OPEN OFF: Luggage compartment door is CLOSED	-
D LOCK POS SW	Driver's door lock position switch / ON or OFF	ON: Driver's door is UNLOCKED OFF: Driver's door is LOCKED	-
P LOCK POS SW	Passenger door lock position switch / ON or OFF	ON: Passenger door is UNLOCKED OFF: Passenger door is LOCKED	-
HOOD COURTESY SW	Engine hood courtesy switch signal / ON or OFF	ON: Engine hood is OPEN OFF: Engine hood is CLOSED	-
PASSIVE MODE	Passive mode/ON or OFF	ON: Passive mode ON OFF: Passive mode OFF	-
WARN BY HORN	Warning by horn/ON or OFF	ON: Vehicle horns sound during alarm sounding state OFF: Vehicle horns do not sound during alarm sounding state	-
ENTRY DELAY	Entry delay time during passive mode	0s: Entry delay time is 0 sec. 14s: Entry delay time is 14 sec. 30s: Entry delay time is 30 sec.	-

2. ACTIVE TEST

HINT:

Performing the intelligent tester ACTIVE TEST allows relay, VSV, actuator and other items to be operated without removing any parts. Performing the ACTIVE TEST early in troubleshooting is one way to shorten the labor time. The DATA LIST can be displayed during the ACTIVE TEST.

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.

(b) Turn the ignition switch on ON.
(c) Enter the following menus: DIAGNOSIS / OBD/ MOBD / MAIN BODY / ACTIVE TEST.
(d) Perform the ACTIVE TEST according to the display on the tester.

MAIN BODY (Main body ECU):

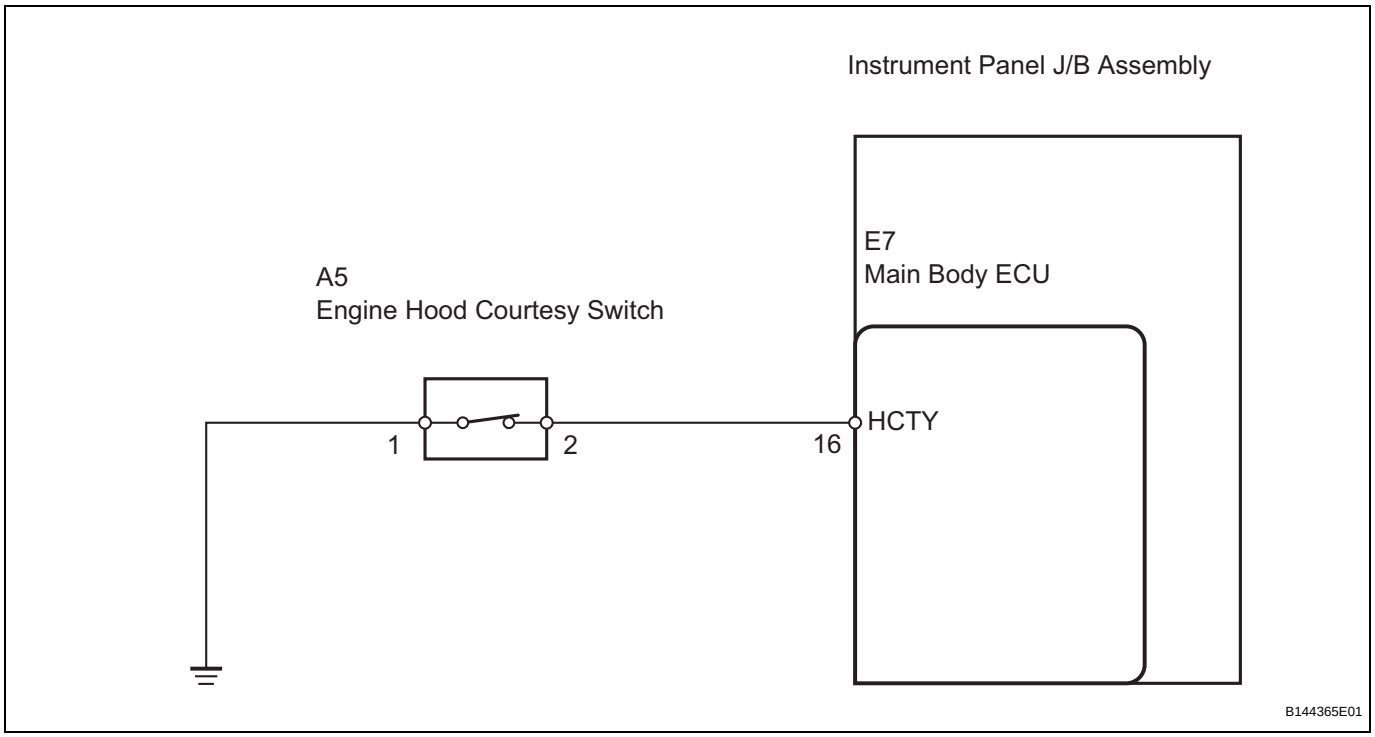
Item	Tester Detail	Diagnostic Note
SECURITY INDIC	Security indicator ON/OFF	-
SECURITY HORN	Security horn ON/OFF	-
HAZARD	Hazard warning light ON/OFF	-
VEHICLE HORN	Vehicle horn ON/OFF	-

Engine Hood Courtesy Switch Circuit

DESCRIPTION

The engine hood courtesy switch is installed together with the hood lock. This switch turns off when the engine hood is opened and turns on when the engine hood is closed.

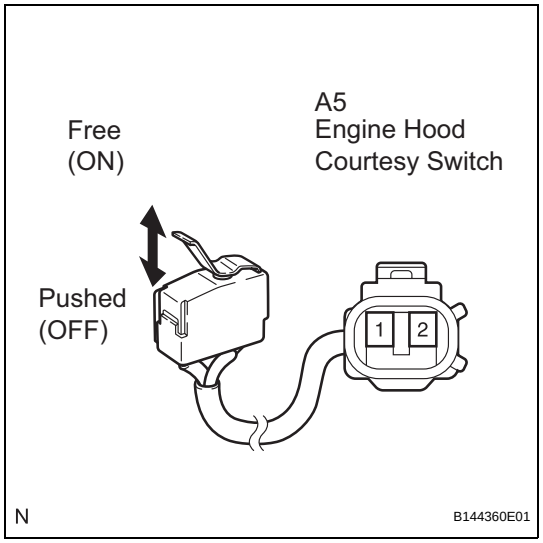
WIRING DIAGRAM



INSPECTION PROCEDURE

TD

1	INSPECT ENGINE HOOD COURTESY SWITCH



(a) Remove the courtesy switch from the hood lock.
(b) Measure the resistance according to the value(s) in the table below.

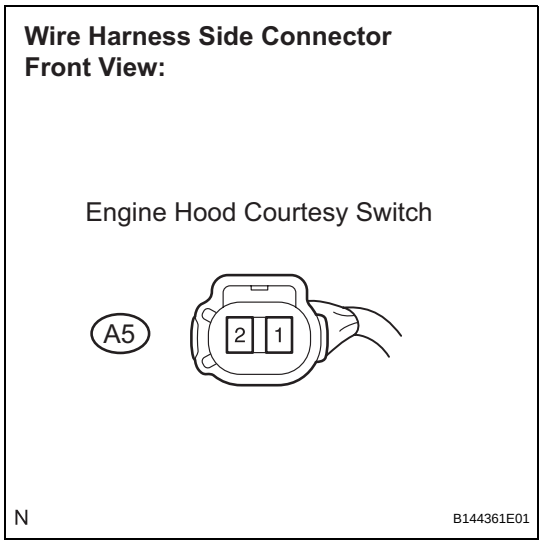
Standard resistance

Tester Connection	Switch Position	Specified Condition
1 - 2	Free (ON)	Below 1 Ω
	Pushed (OFF)	10 kΩ or higher

NG → **REPLACE HOOD LOCK ASSEMBLY**

OK

2	CHECK HARNESS AND CONNECTOR (ENGINE HOOD COURTESY SWITCH - BODY GROUND)



(a) Disconnect the A5 switch connector.
(b) Measure the resistance according to the value(s) in the table below.

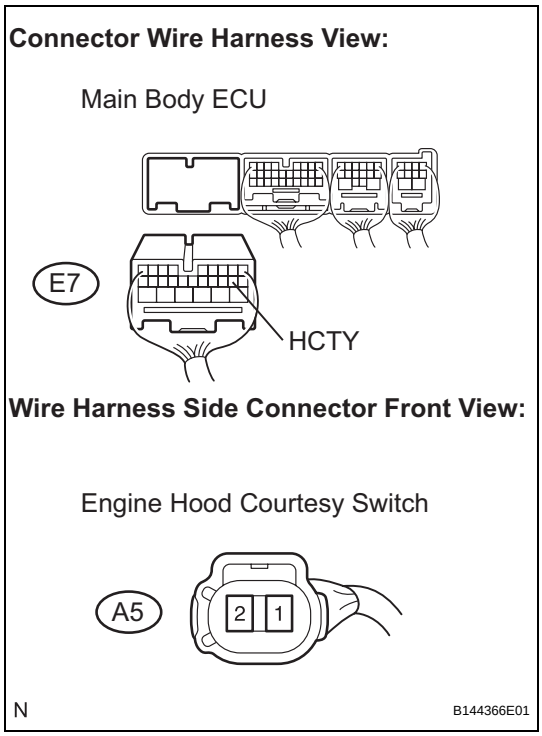
Standard resistance

Tester Connection	Specified Condition
A5-1 - Body ground	Below 1 Ω

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

OK

3	CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - ENGINE HOOD COURTESY SWITCH)



(a) Disconnect the E7 ECU connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

(Symbol) Tester Connection	Specified Condition
HCTY (E7-16) - (A5-2)	Below 1 Ω
HCTY (E7-16) - Body ground	10 kΩ or higher

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

OK

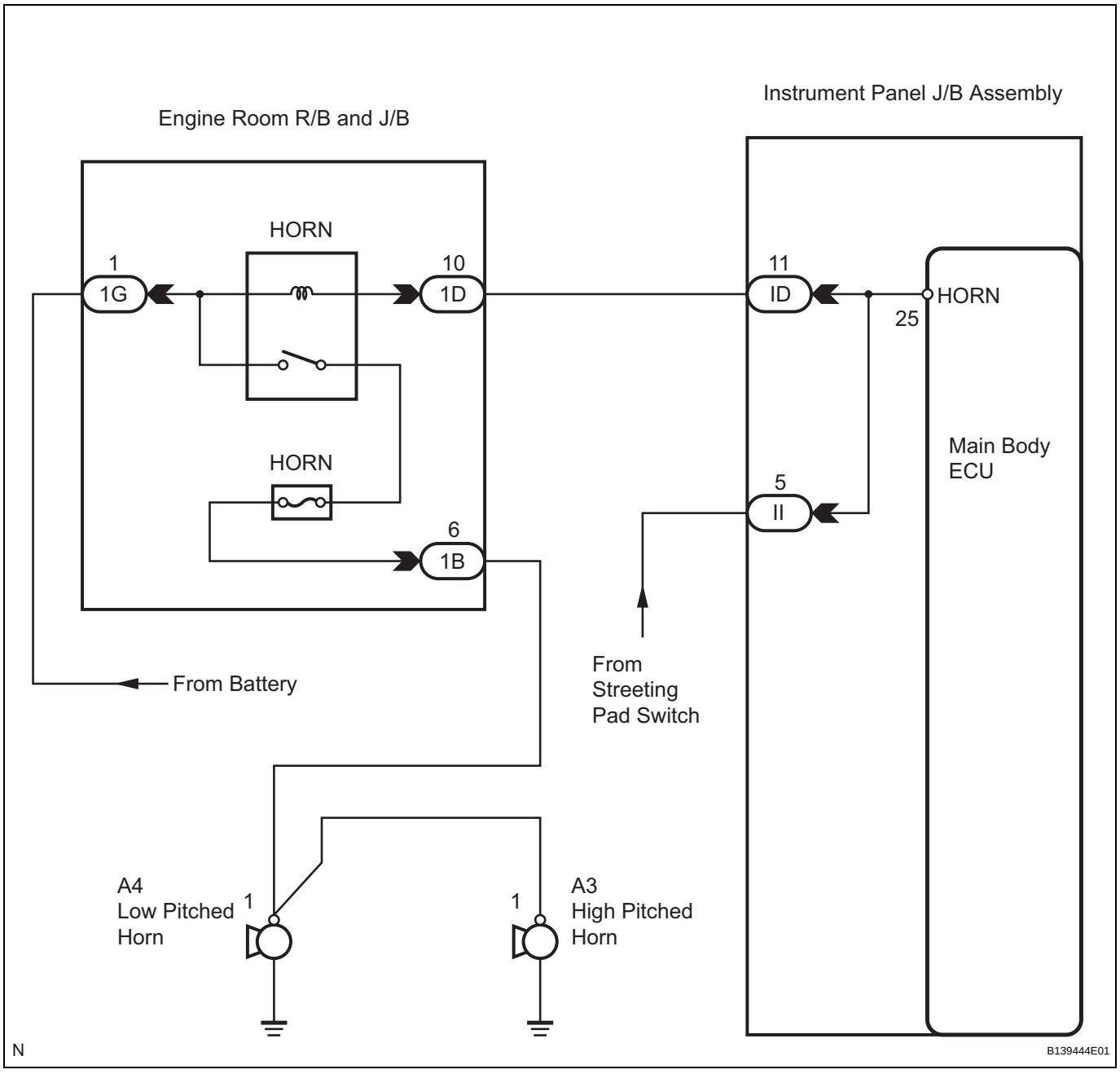
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Horn Circuit

DESCRIPTION

When the theft deterrent system is switched from the armed state to the alarm sounding state, the main body ECU transmits a signal to cause the horn to sound at intervals of 0.4 seconds.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	**INSPECT HORNS**

(a) Press the horn switch and check if the horns sound.

Result

Result	Go to
Horns sound	A
Horns do not sound	B

B → **GO TO HORN SYSTEM**

A

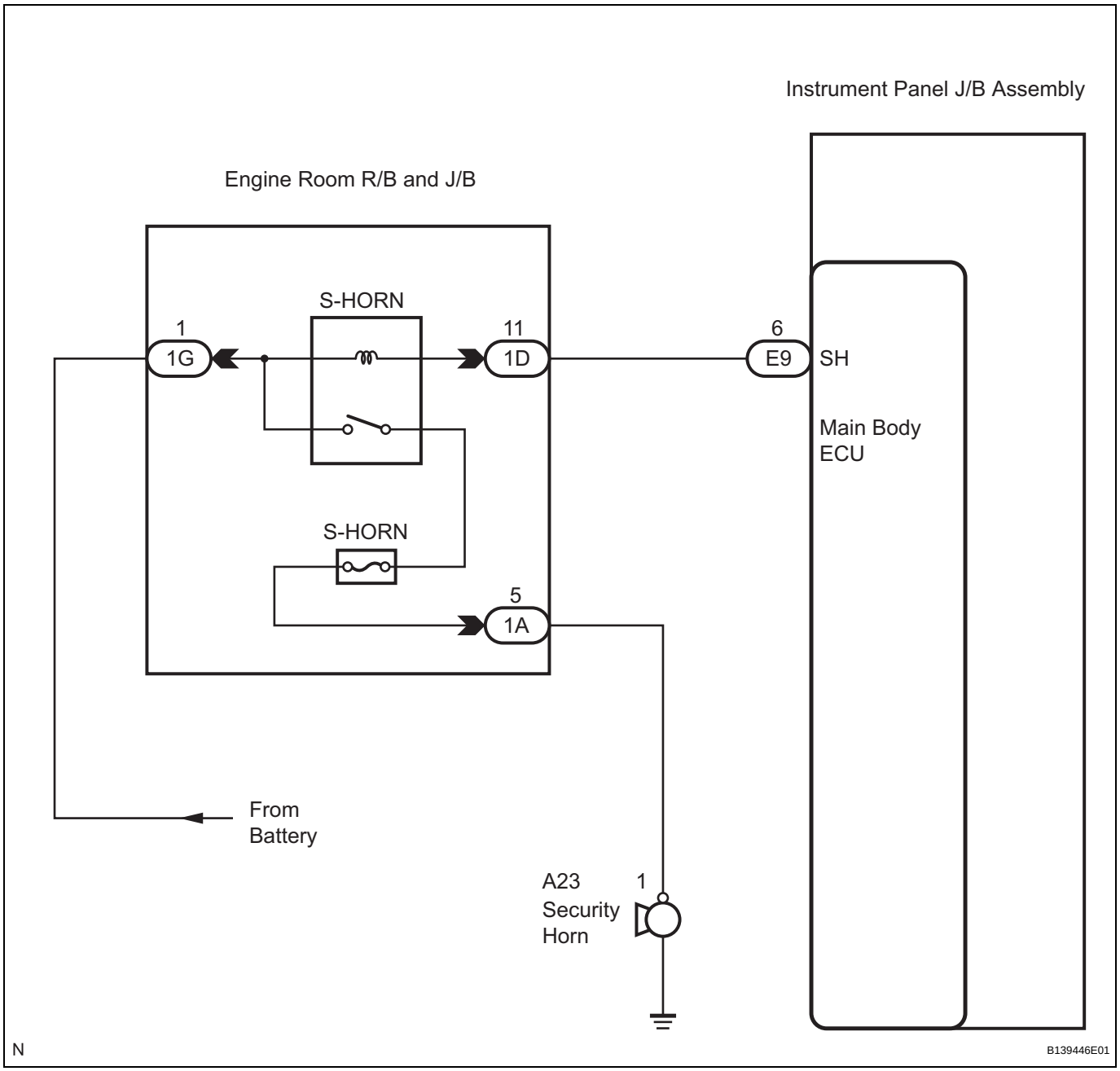
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Security Horn Circuit

DESCRIPTION

When the theft deterrent system is changed from the armed state to the alarm sounding state, the main body ECU can control the security horn.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.

TD

(b) Turn the ignition switch ON.
(c) Turn the intelligent tester main switch on.
(d) Select the item below in the ACTIVE TEST and then check that the horn sounds.

MAIN BODY (Main Body ECU):

Item	Test Details	Diagnostic Note
SECURITY HORN	Security horn ON/OFF	-

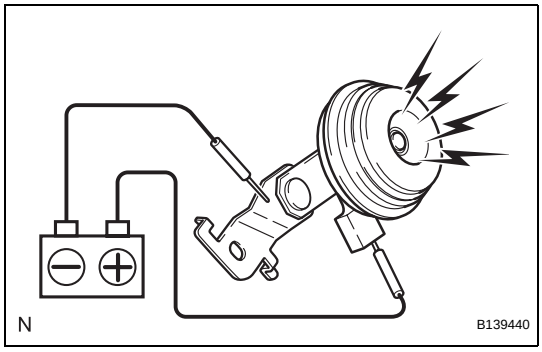
OK:
The security horn sounds or stops correctly when operating it through the intelligent tester.

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2 INSPECT SECURITY HORN ASSEMBLY



(a) Remove the security horn assembly.
(b) Check operation of the horn.
Standard

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1	Horn sounds
Battery negative (-) → Horn body	

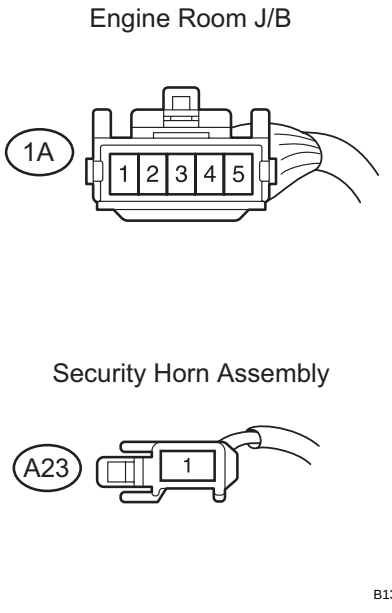
NG → **REPAIR OR REPLACE SECURITY HORN ASSEMBLY**

OK

TD

3 CHECK HARNESS AND CONNECTOR (ENGINE ROOM J/B - SECURITY HORN ASSEMBLY)

Wire Harness Side Connector Front View:



(a) Disconnect the 1A J/B connector and the A23 horn connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

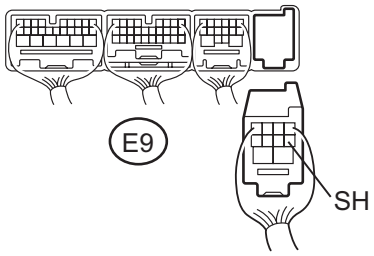
Terminal Connection	Specified Condition
1A-5 - A23-1	Below 1 Ω
1A-5 - Body ground	10 kΩ or higher

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

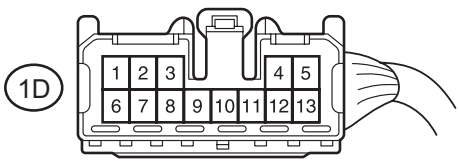
OK

4 CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - ENGINE ROOM J/B)

Connector Wire Harness View:



Wire Harness Side Connector Front View:



(a) Disconnect the E9 ECU connector and 1D J/B connector connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

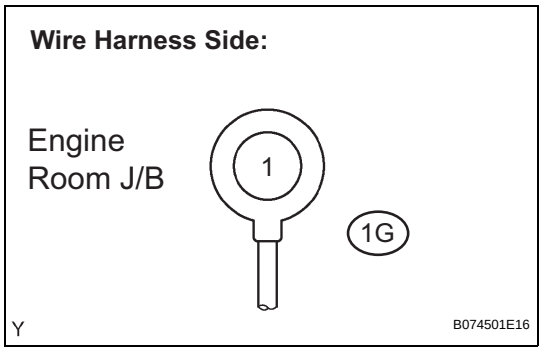
Symbol (Terminal Connection)	Specified Condition
SH (E9-6) - (1D-11)	Below 1 Ω
SH (E9-6) - Body ground	10 kΩ or higher

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

TD

OK

5	CHECK HARNESS AND CONNECTOR (ENGINE ROOM J/B - BATTERY)



(a) Disconnect the 1G J/B connector.
(b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Terminal Connection	Specified Condition
1G-1 - Body ground	10 to 14 V

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

OK

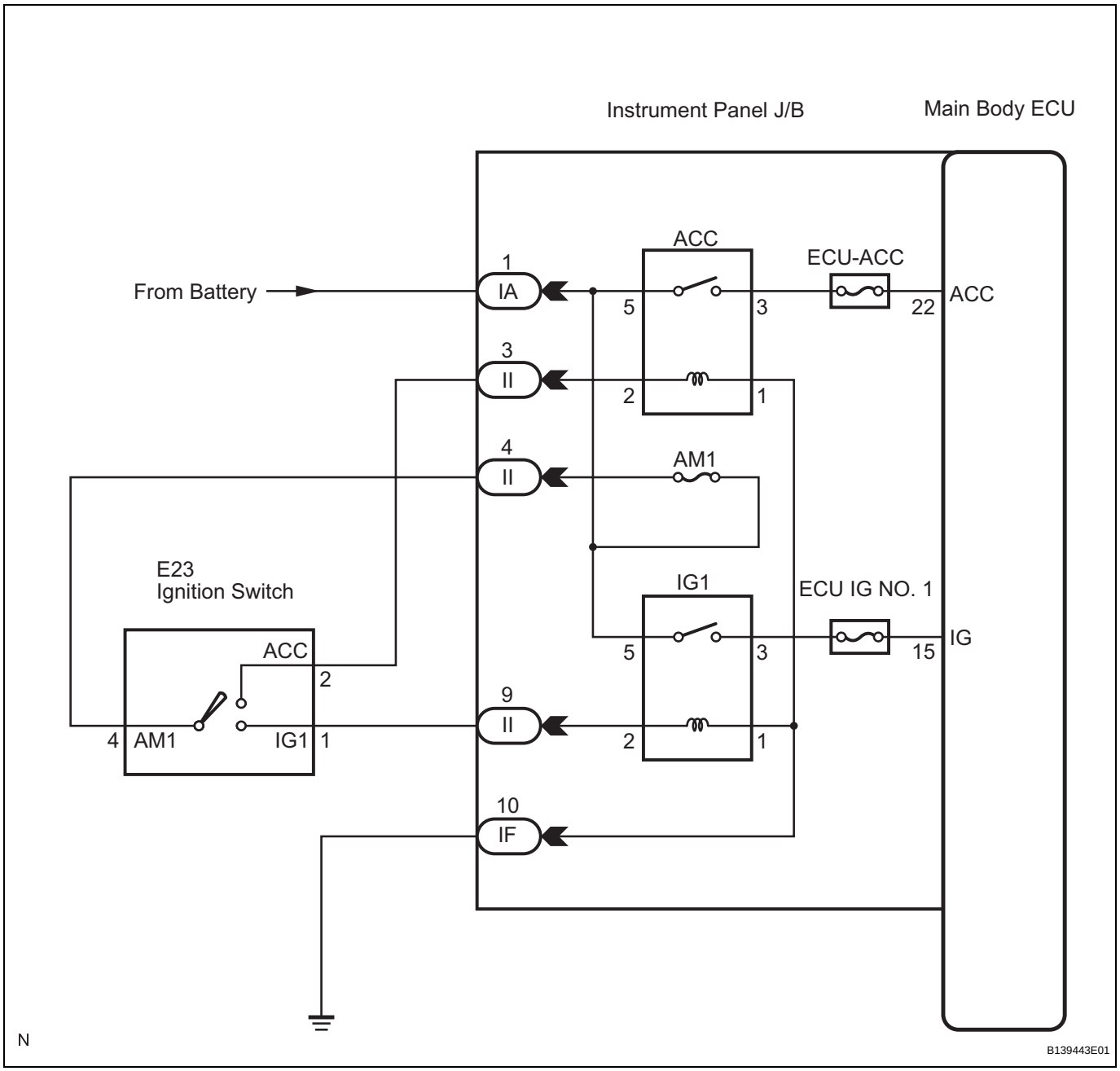
REPLACE ENGINE ROOM JUNCTION BLOCK ASSEMBLY

Ignition Switch Circuit

DESCRIPTION

The main body ECU determines the ignition position (OFF, ACC, ON) based on signals from the IG or ACC circuit.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	READ VALUE OF INTELLIGENT TESTER

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.

TD

(b) Turn the ignition switch ON.
(c) Turn the intelligent tester main switch on.
(d) Select the item below in the DATA LIST and read the display on the intelligent tester.

MAIN BODY (Main Body ECU):

Item	Test Details	Diagnostic Note
IG SW	ignition switch ON signal ON/OFF	-
ACC SW	ignition switch ACC signal ON/OFF	-

OK:
When the ignition switch is operated, the display changes as shown in the table.

NG → **Go to step 2**

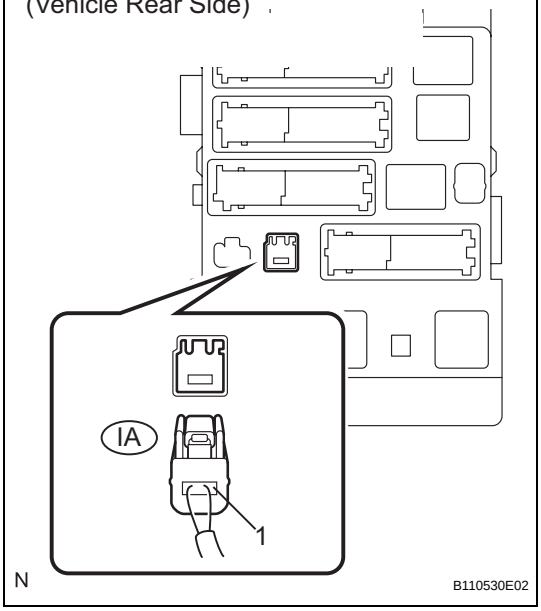
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2 CHECK HARNESS AND CONNECTOR (BATTERY - INSTRUMENT PANEL J/B)

Connector Wire Harness View:

Instrument Panel J/B Assembly
(Vehicle Rear Side)



(a) Disconnect the IA J/B connector.
(b) Measure the voltage according to the value(s) in the table below.
Standard voltage

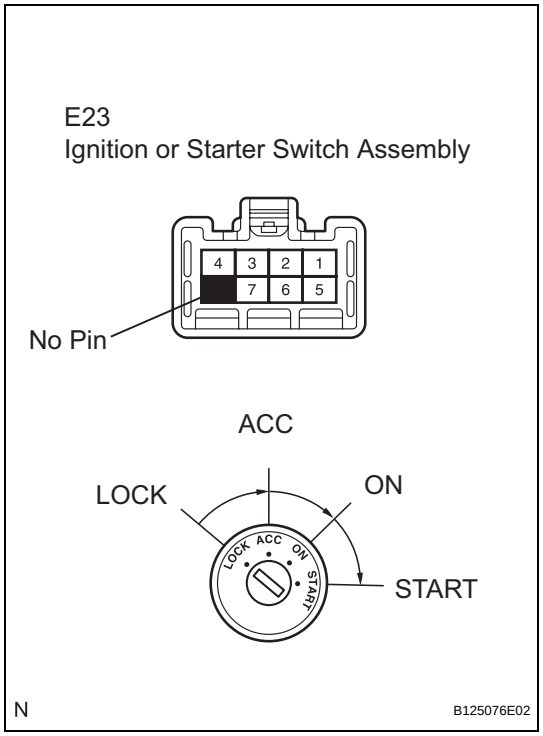
Tester Connection	Condition	Specified Condition
IA-1 - Body ground	Ignition switch ON	10 to 14 V

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

OK

TD

3 INSPECT IGNITION OR STARTER SWITCH ASSEMBLY



(a) Disconnect the E23 switch connector from the ignition switch.
(b) Measure the resistance according to the value(s) in the table below.

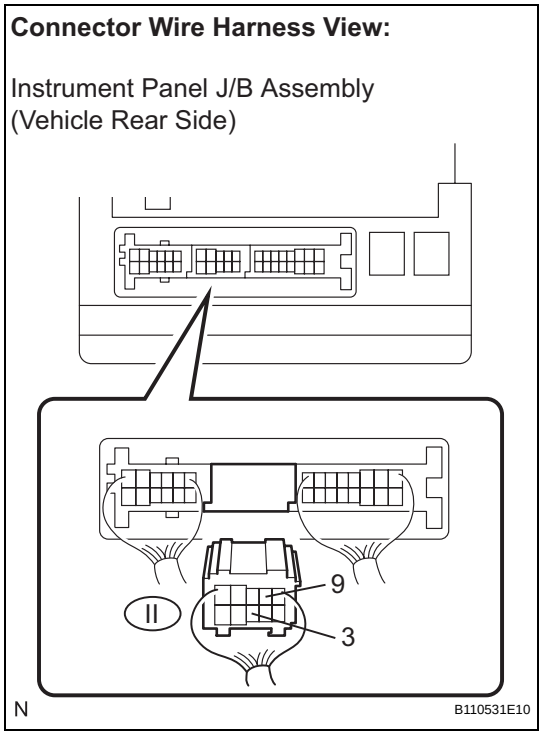
Standard resistance

Tester Connection	Condition	Specified Condition
1 - 4	Ignition switch ON	Below 1 Ω
2 - 4	Ignition switch ACC	Below 1 Ω

NG → **REPLACE IGNITION OR STARTER SWITCH ASSEMBLY**

OK

4 CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL J/B - INSTRUMENT PANEL J/B)



(a) Disconnect the II J/B connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
II-4 - II-9	Ignition switch ON	Below 1 Ω
II-4 - II-3	Ignition switch ACC	Below 1 Ω

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

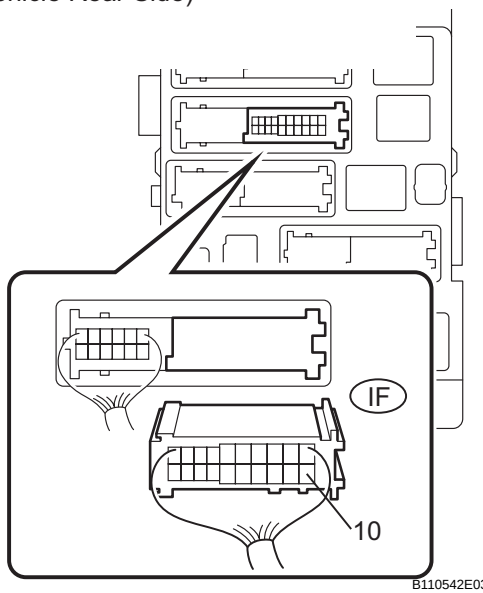
TD

OK

5	CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL J/B - BODY GROUND)

Connector Wire Harness Side View:

Instrument Panel J/B Assembly
(Vehicle Rear Side)



(a) Disconnect the IF J/B connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition
IF-10 - Body ground	Below 1 Ω

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

OK

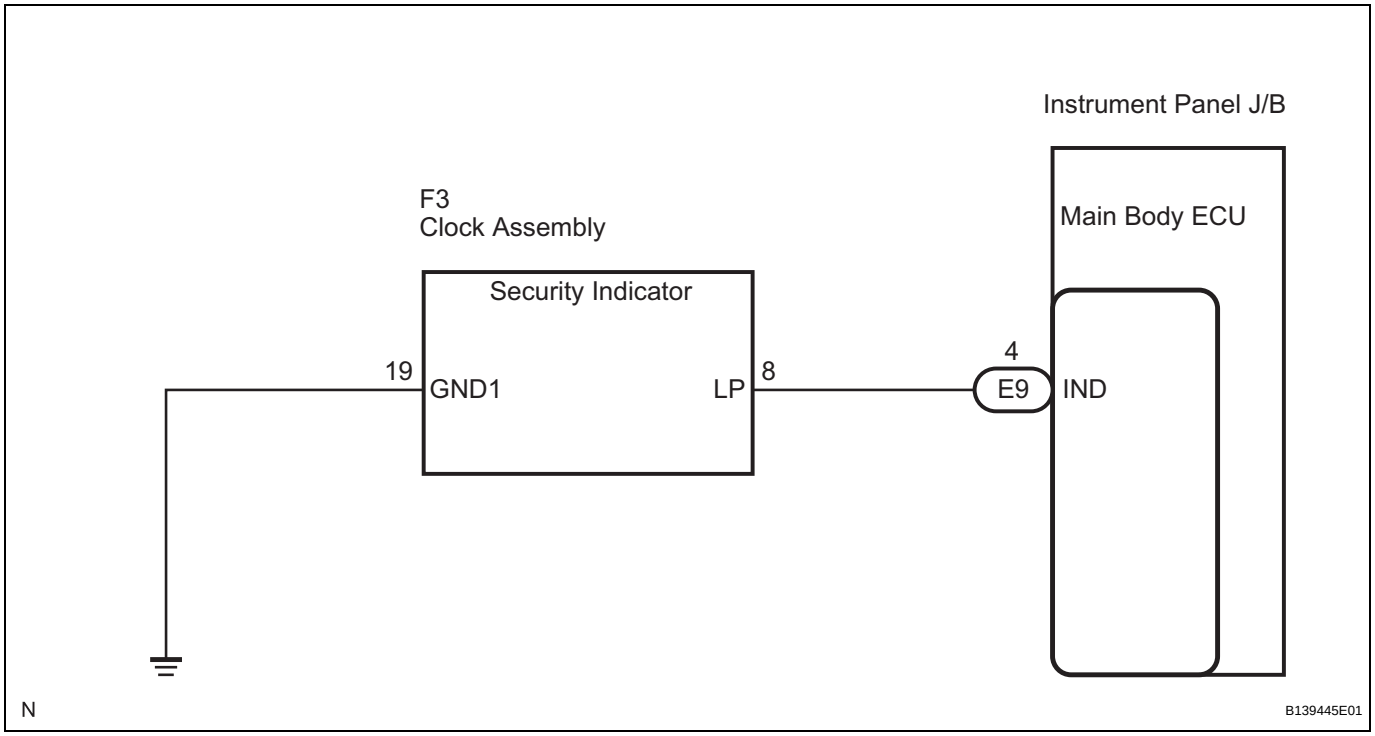
REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

Security Indicator Light Circuit

DESCRIPTION

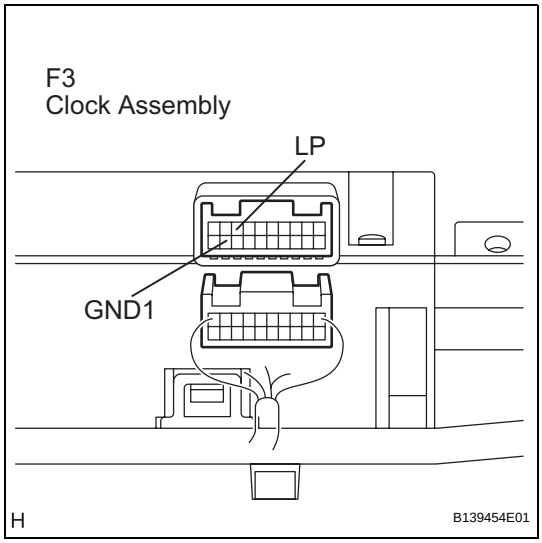
Even when the theft deterrent system is in the disarmed state, the security indicator blinks due to a signal output from the immobiliser system. The security indicator blinks continuously due to a continuous signal received from the immobiliser system while in the armed state.
The main body ECU causes the security indicator to light up or blink only during the arming preparation state and alarm sounding states.

WIRING DIAGRAM



INSPECTION PROCEDURE

1 INSPECT CLOCK ASSEMBLY



(a) Disconnect the F3 clock connector.
(b) Apply battery voltage between the terminals of the indicator, and check the lighting condition of the security indicator.

Standard

Measurement Condition	Specified Condition
Battery positive (+) → Terminal F3-8 (LP) Battery negative (-) → Terminal F3-19 (GND1)	Lights up

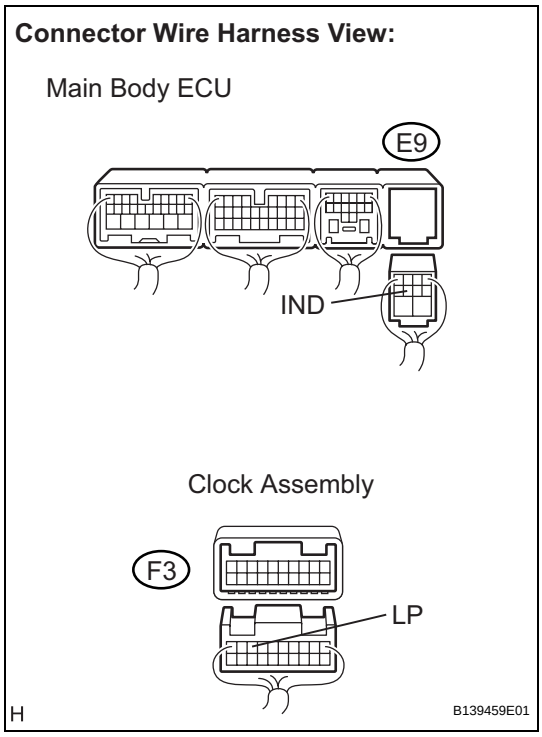
NOTICE:

- **If the positive (+) lead and the negative (-) lead are incorrectly connected, the security indicator will not light up.**
- **Voltage of more than 12 V will damage the security indicator.**
- **If the voltage is too low, the security indicator will not light up.**

NG → **REPLACE CLOCK ASSEMBLY**

OK

2 CHECK HARNESS AND CONNECTOR (CLOCK ASSEMBLY - MAIN BODY ECU)



(a) Disconnect the E9 ECU connector.
(b) Disconnect the F3 clock connector.
(c) Measure the resistance according to the value(s) table below.

Standard resistance

Symbol (Tester Connection)	Specified Condition
IND (E9-4) - LP (F3-8)	Below 1 Ω
IND (E9-4) - Body ground	10 kΩ or higher

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

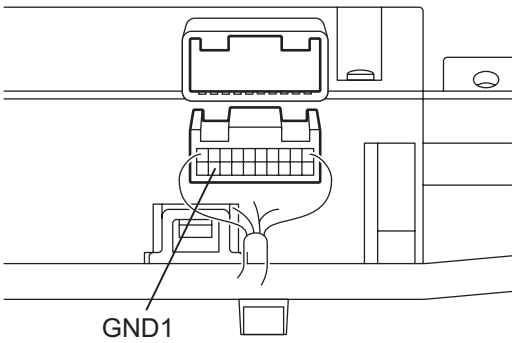
OK

TD

3	CHECK HARNESS AND CONNECTOR (CLOCK ASSEMBLY - BODY GROUND)

Connector Wire Harness View:

F3
Clock Assembly



(a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Symbol (Tester Connection)	Specified Condition
GND1 (F3-19) - Body ground	Below 1 Ω

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

OK

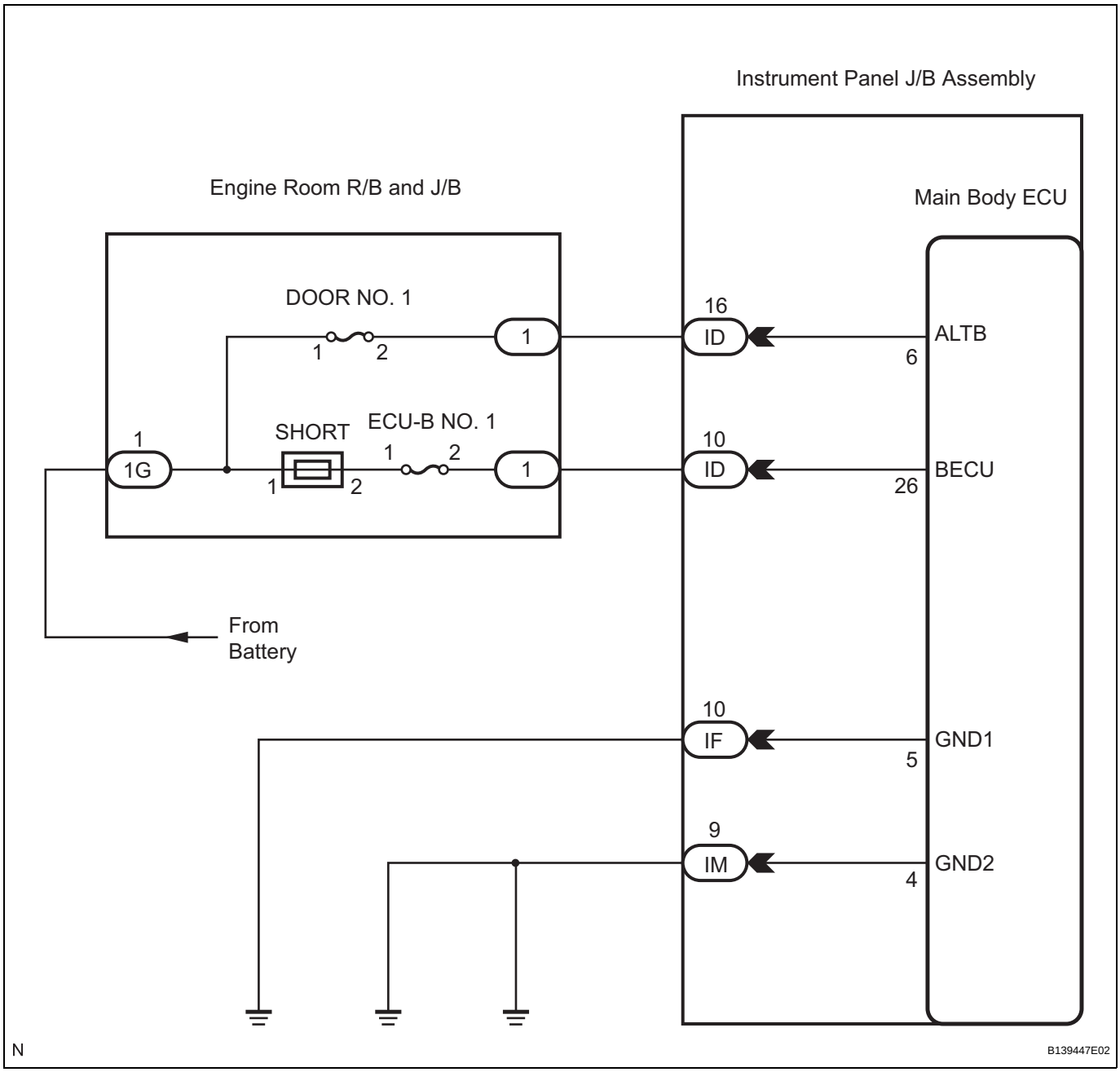
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

ECU Power Source Circuit

DESCRIPTION

This circuit provides power for main body ECU operation.

WIRING DIAGRAM



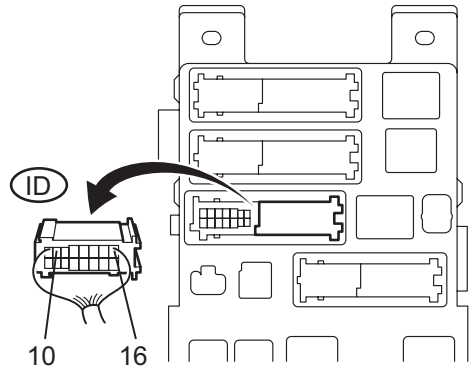
TD

INSPECTION PROCEDURE

1	CHECK INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (MAIN BODY ECU) (POWER SOURCE)

Connector Wire Harness View:

Instrument Panel J/B Assembly
(Vehicle Rear Side)



N B110545E04

(a) Disconnect the ID J/B connector.
(b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Specified Condition
ID-10 - Body ground	10 to 14 V
ID-16 - Body ground	10 to 14 V

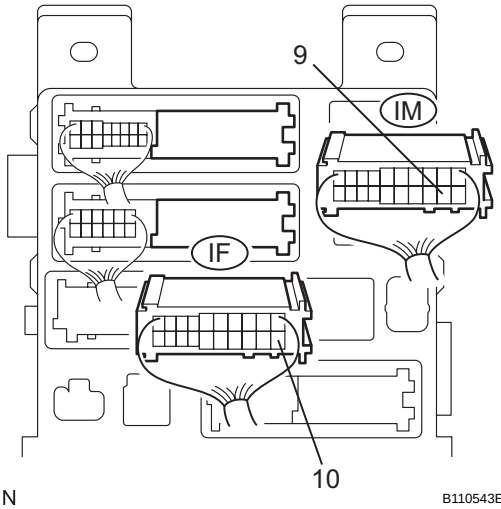
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

2	CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL J/B - BODY GROUND)

Connector Wire Harness View:

Instrument Panel J/B Assembly
(Vehicle Rear Side)



N B110543E02

(a) Disconnect the IF and IM J/B connectors.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Symbol (Tester Connection)	Specified Condition
IF-10 - Body ground	Below 1 Ω
IM-9 - Body ground	

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

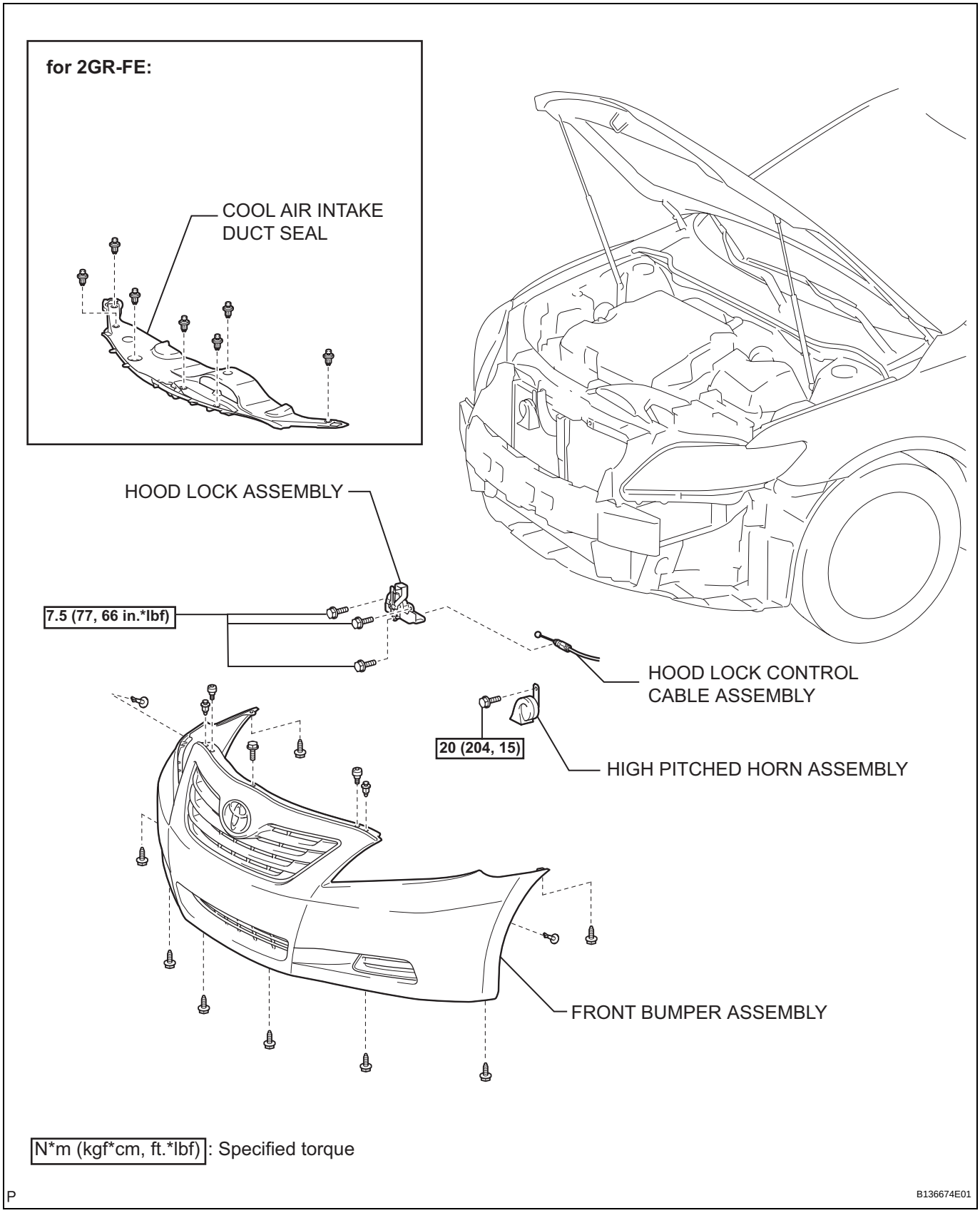
TD

OK

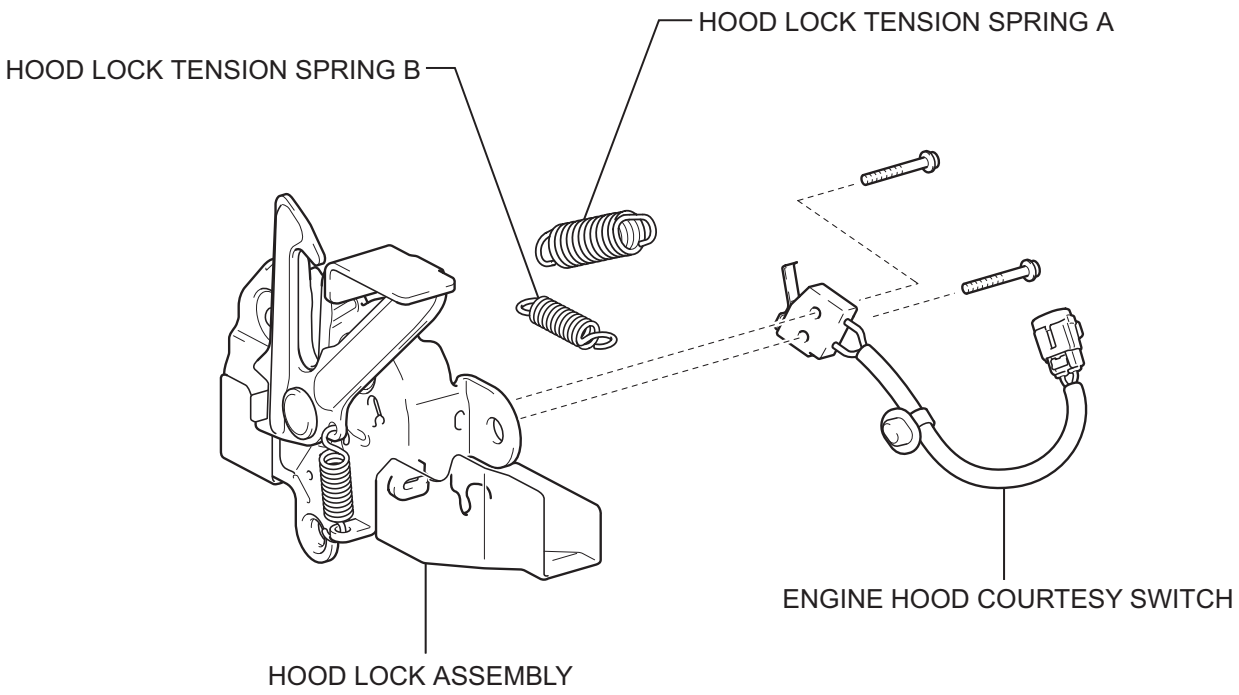
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

ENGINE HOOD COURTESY SWITCH

COMPONENTS



TMMK Made:

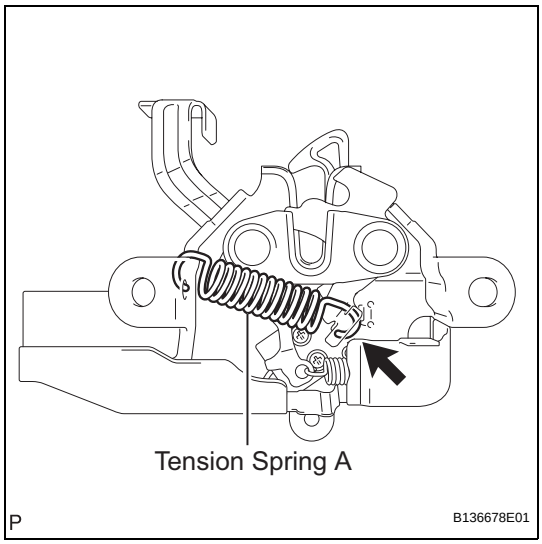


P B136692E01

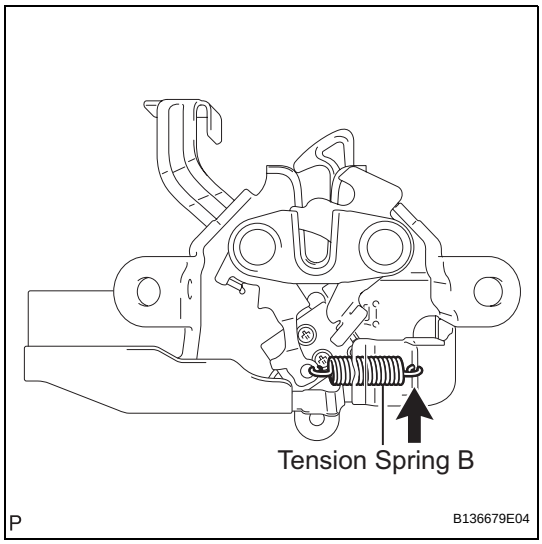
TD

REMOVAL

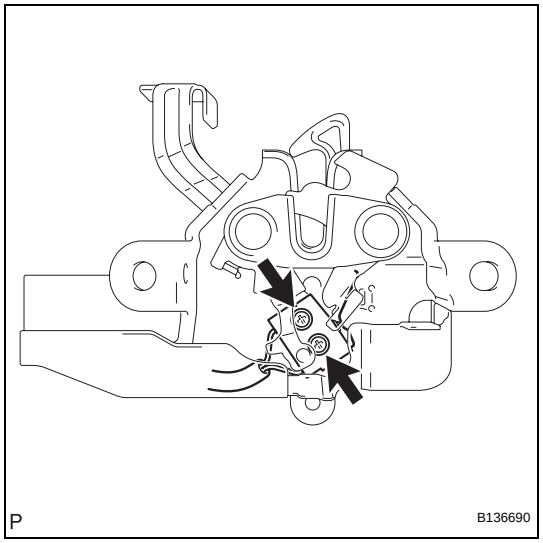
1. **REMOVE COOL AIR INTAKE DUCT SEAL (for 2GR-FE) (See page ET-4)**
2. **REMOVE FRONT BUMPER ASSEMBLY (w/o Fog Light) (See page ET-5)**
3. **REMOVE FRONT BUMPER ASSEMBLY (w/ Fog Light) (See page ET-6)**
4. **REMOVE HIGH PITCHED HORN ASSEMBLY (See page HO-7)**
5. **REMOVE HOOD LOCK ASSEMBLY (See page ED-7)**
6. **REMOVE HOOD LOCK TENSION SPRING A (for TMMK Made)**
   (a) Remove tension spring A.



7. **REMOVE HOOD LOCK TENSION SPRING B (for TMMK Made)**
   (a) Remove tension spring B.

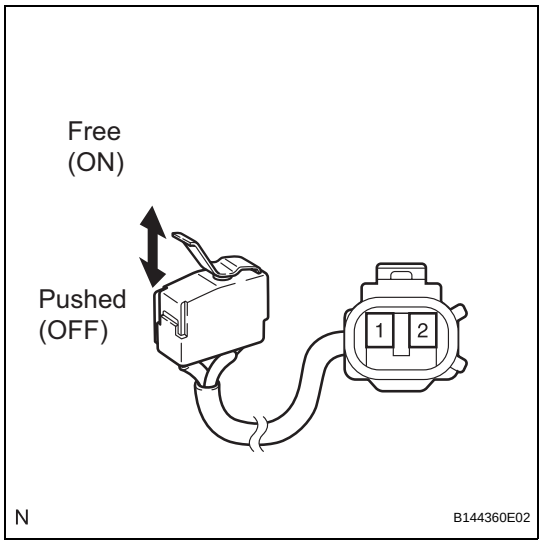


TD



8. REMOVE ENGINE HOOD COURTESY SWITCH (for TMMK Made)

(a) Remove the 2 screws and the engine hood courtesy switch.



INSPECTION

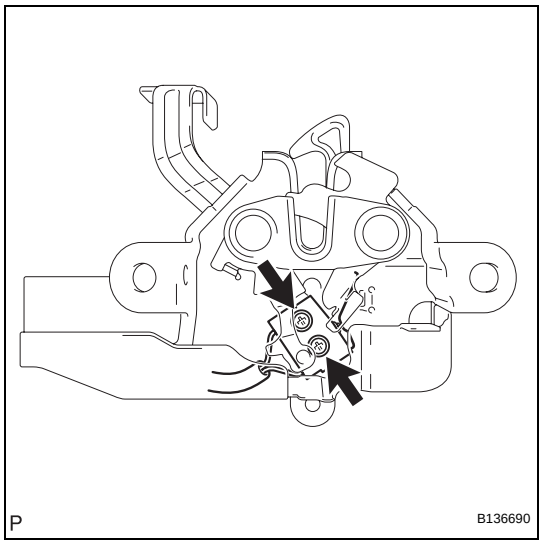
1. INSPECT ENGINE HOOD COURTESY SWITCH

(a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Switch Position	Specified Condition
1 - 2	Free (ON)	Below 1 Ω
	Pushed (OFF)	10 kΩ or higher

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

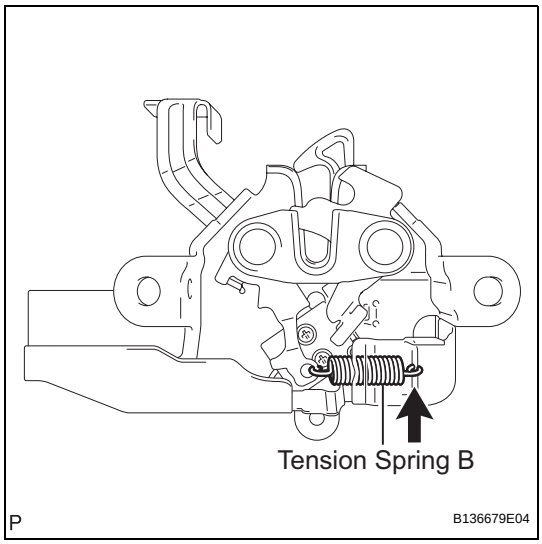


INSTALLATION

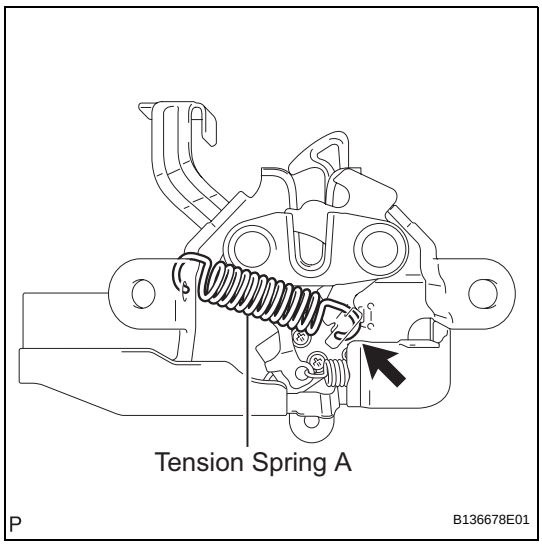
1. INSTALL ENGINE HOOD COURTESY SWITCH (for TMMK Made)

(a) Install the engine hood courtesy switch with the 2 screws.

TD



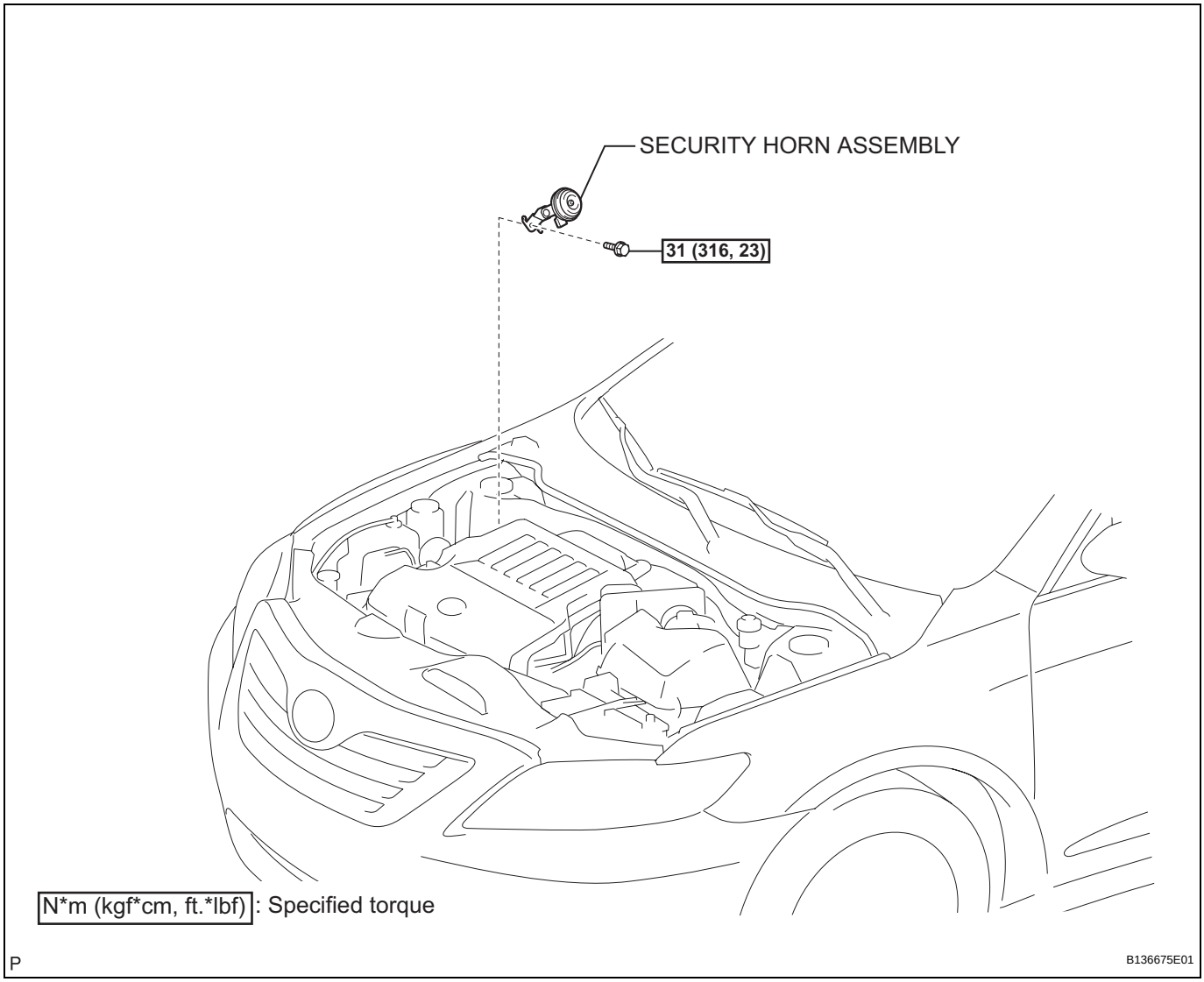
2. **INSTALL HOOD LOCK TENSION SPRING B (for TMMK Made)**
   (a) Install tension spring B.

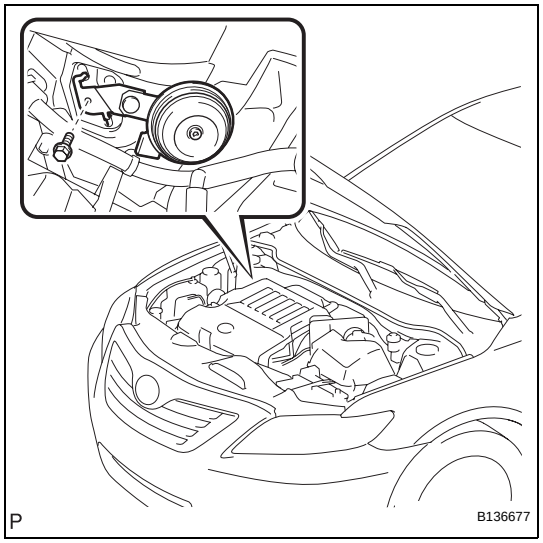


3. **INSTALL HOOD LOCK TENSION SPRING A (for TMMK Made)**
   (a) Install tension spring A.
4. **INSTALL HOOD LOCK ASSEMBLY (See page ED-9)**
5. **INSTALL HIGH PITCHED HORN ASSEMBLY (See page HO-7)**
6. **INSTALL FRONT BUMPER ASSEMBLY (w/o Fog Light) (See page ET-13)**
7. **INSTALL FRONT BUMPER ASSEMBLY (w/ Fog Light) (See page ET-14)**
8. **INSTALL COOL AIR INTAKE DUCT SEAL (for 2GR-FE) (See page ET-14)**

SECURITY HORN ASSEMBLY

COMPONENTS

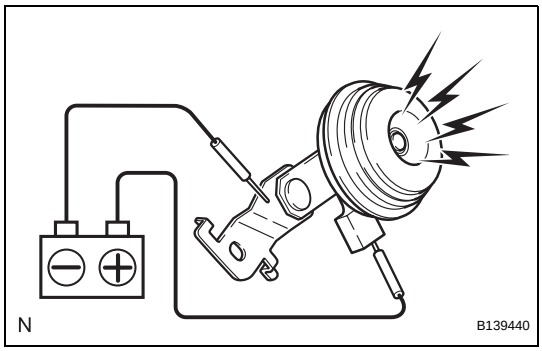




REMOVAL

1. **REMOVE SECURITY HORN ASSEMBLY**
   (a) Remove the bolt.
   (b) Disconnect the connector and remove the security horn assembly.

TD



INSPECTION

1. INSPECT SECURITY HORN ASSEMBLY

(a) Check operation of the horn.

Standard

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1	Horn sounds
Battery negative (-) → Horn body	

If the result is not as specified, replace the security horn assembly.

INSTALLATION

1. INSTALL SECURITY HORN ASSEMBLY

(a) Connect the connector.

(b) Install the security horn assembly with the bolt.
Torque: 31 N*m (316 kgf*cm, 23 ft.*lbf)