TOYOTA VEHICLE INTRUSION PROTECTION SYSTEM

HOW TO PROCEED WITH TROUBLESHOOTING

057RT–01

Troubleshoot in accordance with the procedure on the following pages.

1	VEHICLE BROUGHT TO WORKSHOP

2	CUSTOMER PROBLEM ANALYSIS CHECK AND SYMPTOM CHECK (See page 05–701)

(a) Without applicable symptoms, proceed to ”A”.
(b) With applicable symptoms, proceed to ”B”.

B → Go to step 4

A

3	SYMPTOM SIMULATION

4	PROBLEM SYMPTOMS TABLE (See page 05–707)

(a) Without applicable symptoms, proceed to ”A”.
(b) With applicable symptoms, proceed to ”B”.

B → Go to step 5

A

5	CIRCUIT INSPECTION AND PART INSPECTION (See page 05–707)

6	PERFORM TROUBLESHOOTING IN THE FOLLOWING METHOD, DEPENDING ON MALFUNCTION SYMPTOM

(a) Terminals of ECU (Seepage 05–703)
(b) On–vehicle inspection (Seepage 73–14)

7	ADJUSTMENT, REPAIR OR REPLACEMENT

8	CONFIRMATION TEST

END

057RU–01

CUSTOMER PROBLEM ANALYSIS CHECK

TVIP SYSTEM Check Sheet

Inspector's name: _____

Customer's Name		**Registration No.**	
		Registration Year	
		Frame No.	
Date Vehicle Brought in	/ /	**Odometer Reading**	**km Mile**

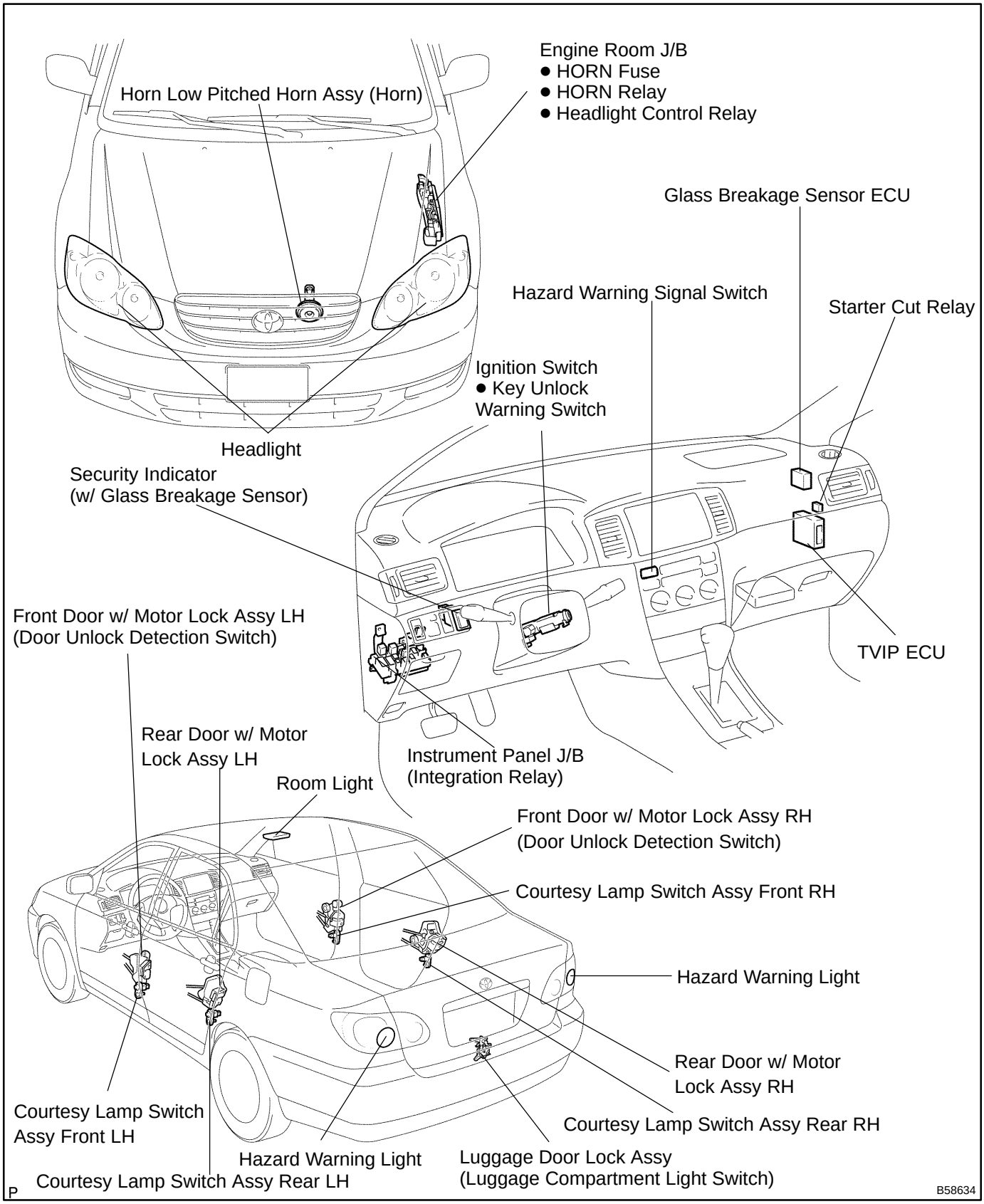
Date Problem First Occurred		/ /
Frequency Problem Occurs		☐ Constant ☐ Sometimes (Times per day, month) ☐ Once only
Weather Conditions When Problem Occurred	**Weather**	☐ Fine ☐ Cloudy ☐ Rainy ☐ Snowy ☐ Various/Others
	Outdoor temperature	☐ Hot ☐ Warm ☐ Cool ☐ Cold (Approx. °F (°C))

Problem Symptom

☐ TVIP system cannot be set.		
☐ Indicator light does not flash when the TVIP system is set. (It stays on or does not light at all.)		
☐ TVIP system does not operate.	☐ When unlocked using the front door lock knob. ☐ When the doors or luggage is opened.	Malfunction ☐ Horn only ☐ Headlights only ☐ Hazard lights only ☐ Room light only ☐ Forced door lock operation only
☐ System cannot be canceled, once set.	☐ When door is unlocked using key or wireless door lock control system. ☐ When the key is inserted in the ignition key cylinder and turned to ACC or ON position. (However, only when the system has never operated)	
☐ System cannot be canceled during warning operation.	☐ When door is unlocked using key or wireless door lock control system. ☐ When the key is inserted in the ignition key cylinder and turned to ON position.	
☐ Warning operation starts when the system is set and the door is opened with the key.		
☐ Others.		

057RV–01

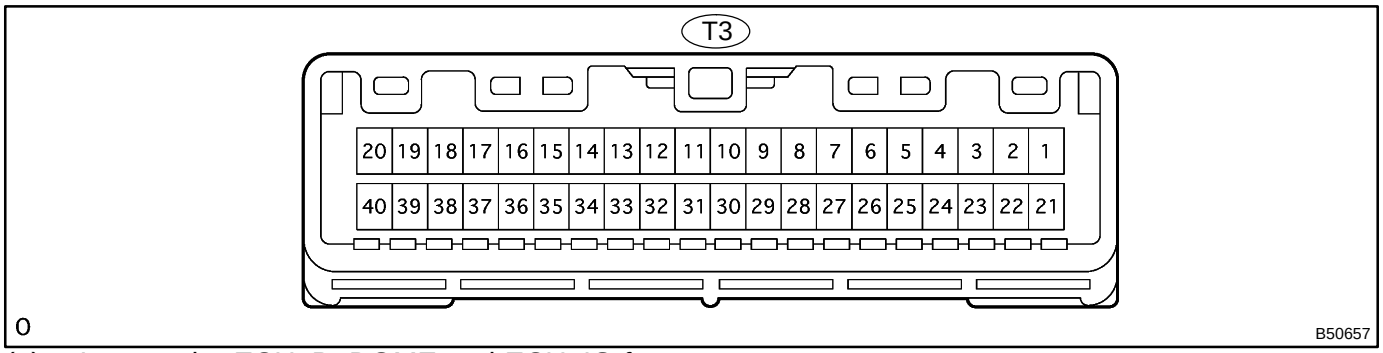
LOCATION



057RW–01

TERMINALS OF ECU

1. INSPECT TVIP ECU



(a) Inspect the ECU–B, DOME and ECU–IG fuses.

(b) Disconnect the TVIP ECU connector, and the continuity and voltage of check each terminal of the disconnected connector.

Standard:

Symbols (Terminal No.)	Wiring Color	Condition	Specified Condition
+B1 (T3–2) ⇔ E (T3–29)	R–B ⇔ W–B	Constant	10 – 14 V
CTY (T3–19) ⇔ E (T3–29)	R ⇔ W–B	• Passenger's door fully closed → Opened • Rear right door fully closed → Opened • Rear left door fully closed → Opened	No continuity → Continuity
DSWD (T3–40) ⇔ E (T3–29)	R–W ⇔ W–B	Driver's door fully closed → Opened	No continuity → Continuity
DSWL (T3–35) ⇔ E (T3–29)	R–W ⇔ W–B	Luggage's door fully closed → Opened	No continuity → Continuity
KSW (T3–12) ⇔ E (T3–29)	L–B ⇔ W–B	No key in ignition switch lock cylinder → Key inserted	0 V → 10 – 14 V
L2 (T3–16) ⇔ E (T3–29)	G ⇔ W–B	Driver's door lock UNLOCK → LOCK	0 V → 10 – 14 V → 1 V or less
UL3 (T3–17) ⇔ E (T3–29)	L–Y⇔ W–B	Driver's door lock LOCK → UNLOCK	0 V → 10 – 14 V → 1 V or less
UL2 (T3–18) ⇔ E (T3–29)	L–B⇔ W–B	Passenger's door lock LOCK → UNLOCK	0 V → 10 – 14 V → 1 V or less
IRSG (T3–28) ⇔ E (T3–29)	W ⇔ W–B	Driver's door lock LOCK → UNLOCK	Pulse generation
IG (T3–10) ⇔ E (T3–29)	B–W ⇔ W–B	Ignition switch OFF → ON	0 V → 10 – 14 V
SRLY (T3–21) ⇔ E (T3–29)	B–R ⇔ W–B	Ignition switch OFF → ON	0 V → 10 – 14 V
LSWD (T3–37) ⇔ E (T3–29)	W ⇔ W–B	Driver's door lock UNLOCK → LOCK	0 V → 10 – 14 V
LSWP (T3–38) ⇔ E (T3–29)	W–R ⇔ W–B	Passenger's door lock UNLOCK → LOCK	0 V → 10 – 14 V

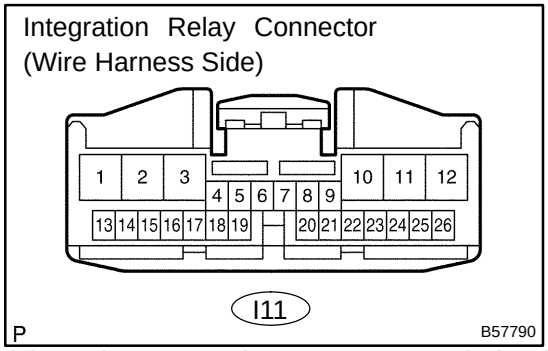
If the result is not as specified, the vehicle's side may malfunction.

(c) Reconnect the TVIP ECU connector, and the continuity and voltage of check each terminal of the disconnected connector.

Standard:

Symbols (Terminal No.)	Wiring Color	Condition	Specified Condition
DMLP (T3–9) ⇔ E (T3–29)	R–W ⇔ W–B	Armed state → Alarm sounding state	Pulse generation
HEAD (T3–6) ⇔ E (T3–29)	R ⇔ W–B	Light control switch position HEAD → OFF or TAIL	1 V or less → 10 – 14 V
HAZD (T3–8) ⇔ E (T3–29)	Y–B ⇔ W–B	Armed state → Alarm sounding state	Pulse generation
IND (T3–25) ⇔ E (T3–29)	R–W ⇔ W–B	Security indicator light lights up. (It lights up only for 30 sec.)	10 – 14 V
IOUT (T3–11) ⇔ E (T3–29)	L ⇔ W–B	Armed state → Alarm sounding state (on grass breakage detection)	Pulse generation
HORN (T3–5) ⇔ E (T3–29)	G–Y ⇔ W–B	Armed state → Alarm sounding state	Pulse generation
E (T3–29) ⇔ Body ground	W–B ⇔ Body ground	Constant	Continuity

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



2. INSPECT INTEGRATION RELAY

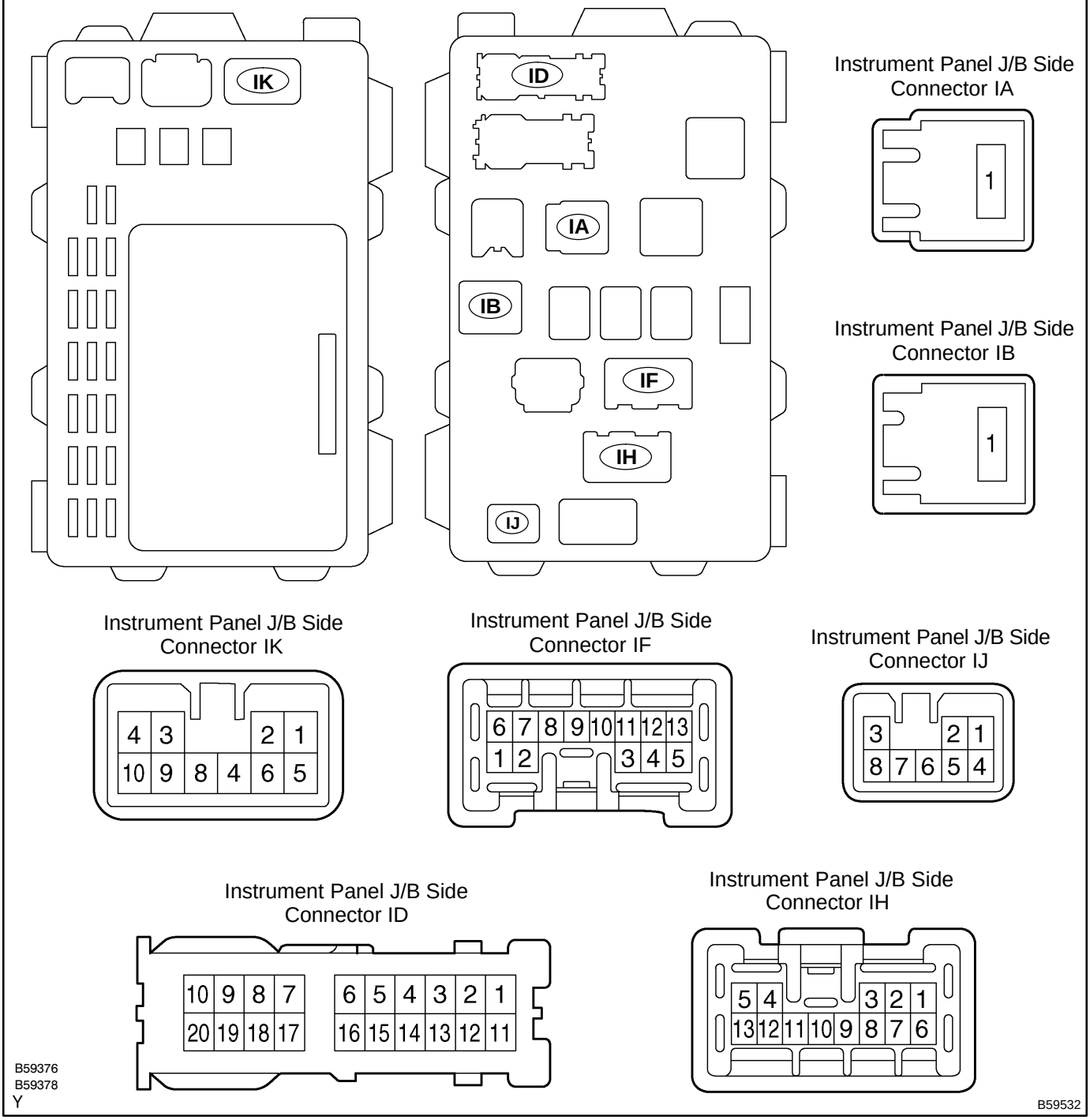
(a) Disconnect the connector and check the continuity of each terminal of the disconnected connector.

Symbols (Terminal No.)	Wiring color	Condition	Specified Condition
PCTY (I11–13) ⇔ Body ground	R–W ⇔ Body ground	Passenger's door fully closed → Opened	No continuity → Continuity

If the result is not as specified, the vehicle's side may malfunction.

3. INSPECT INSTRUMENT PANEL J/B (INTEGRATION RELAY)

Instrument Panel J/B (Integration Relay)



(a) Inspect the DOOR fuse.

(b) Disconnect the ID connector of the instrument panel J/B, and check the continuity of each terminal of the disconnected connectors.

Standard:

Symbols (Terminal No.)	Wiring color	Condition	Specified Condition
DCTY (ID–1) ⇔ Body ground	R–W ⇔ Body ground	Driver's door fully closed → Opened	No continuity → Continuity
PRCTY (ID–14) ⇔ Body ground	R–B ⇔ Body ground	Rear LH door fully closed → Opened	
PRCTY (ID–15) ⇔ Body ground	R–Y ⇔ Body ground	Rear RH door fully closed → Opened	

If the result is not as specified, the vehicle's side may malfunction.

057RX–01

PROBLEM SYMPTOMS TABLE

Proceed to the reference page shown in the table below for each malfunction symptom and troubleshoot each circuit.

HINT:

Troubleshooting of the TVIP system is based on the premise that the door lock control system and wireless door lock control system is operating normally. Accordingly, before troubleshooting the TVIP system, first make certain that the door lock control system and wireless door lock control system is operating normally.

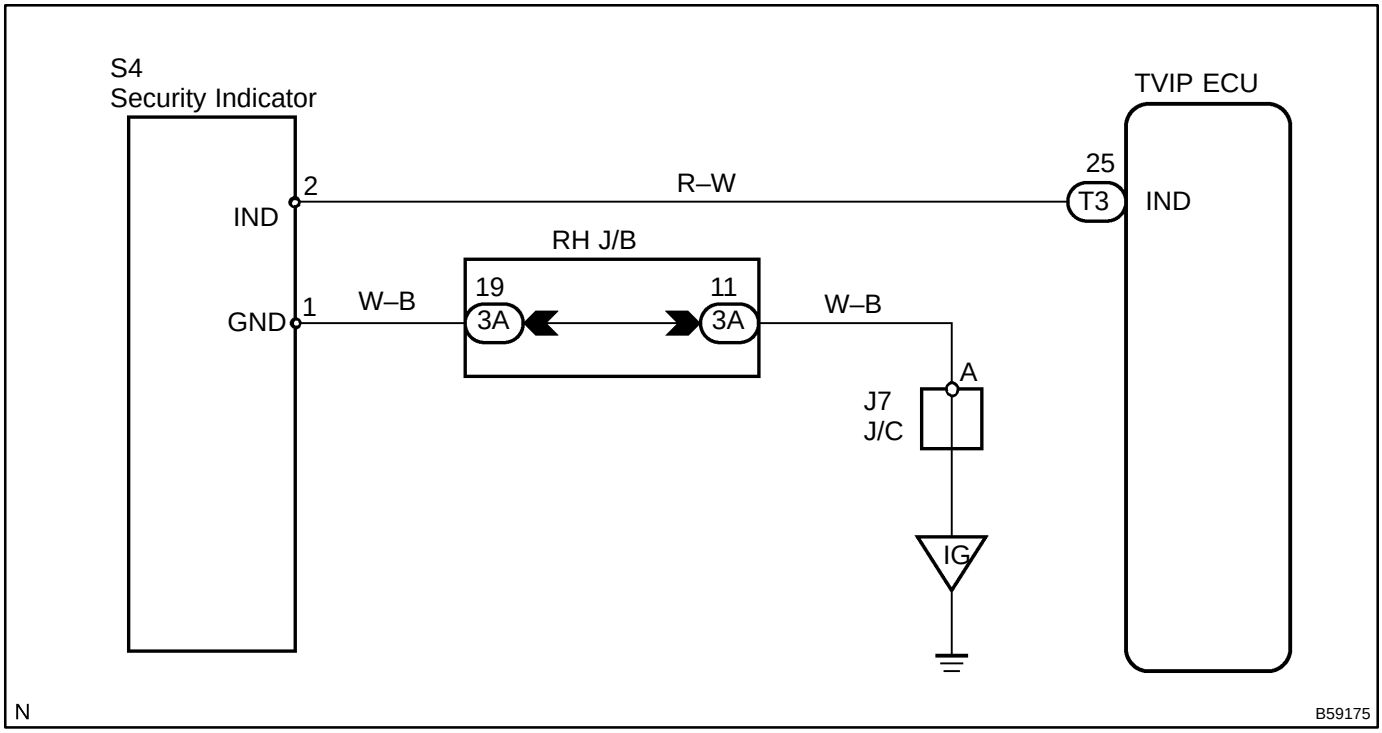
Symptom	Suspected Area	See page
TVIP system cannot be set	1. Indicator light circuit 2. ECU power source circuit 3. Key unlock warning switch circuit 4. Door key lock and unlock switch circuit 5. Door unlock detection switch circuit 6. Door courtesy switch circuit 7. TVIP ECU communication circuit	05–708 05–710 05–727 05–738 05–736 05–733 05–740
Indicator light does not blink when TVIP system is set.	1. Indicator light circuit	05–708
TVIP system does not operate when front door is unlocked (when TVIP system is set).	1. Door unlock detection switch circuit	05–736
TVIP system is not canceled when ignition key is turned to ON position (when TVIP system is set).	1. Ignition switch circuit 2. Key unlock warning switch circuit	05–713 05–727
TVIP system still operates when door is opened with key (when TVIP system is set).	1. Door key lock and unlock switch circuit 2. Door unlock detection switch circuit	05–738 05–736
Horns do not sound while TVIP system is in warning operation.	1. Horn relay circuit	05–716
Headlights do not flash while TVIP system is in warning operation.	1. Light control switch circuit	05–719
Hazard warning do not flash while TVIP system is in warning operation.	1. Hazard warning switch circuit	05–722
Door is not locked while TVIP system is in warning operation.	1. Door unlock detection switch circuit	05–736
TVIP system is still set even when rear door is open	1. Door courtesy switch circuit	05–733
Horns sound even when TVIP system is not set.	1. Horn relay circuit	05–716
Headlights stay on even when TVIP system is not set.	1. Light control switch circuit	05–719
Hazard warning stays on even when TVIP system is not set.	1. Hazard warning switch circuit	05–722

INDICATOR LIGHT CIRCUIT

CIRCUIT DESCRIPTION

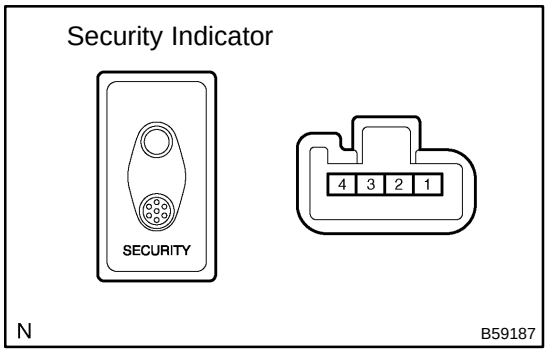
When the TVIP system is preparing to be set, this circuit lights up the indicator light. When the system has been set, it continually turns the indicator light on for 0.2 seconds and turns it off for 1.8 seconds, thus the indicator light blinks.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	CHECK SECURITY INDICATOR LIGHT



(a) Remove the security indicator.

(b) Check the indicator light, as shown in the illustration and table.

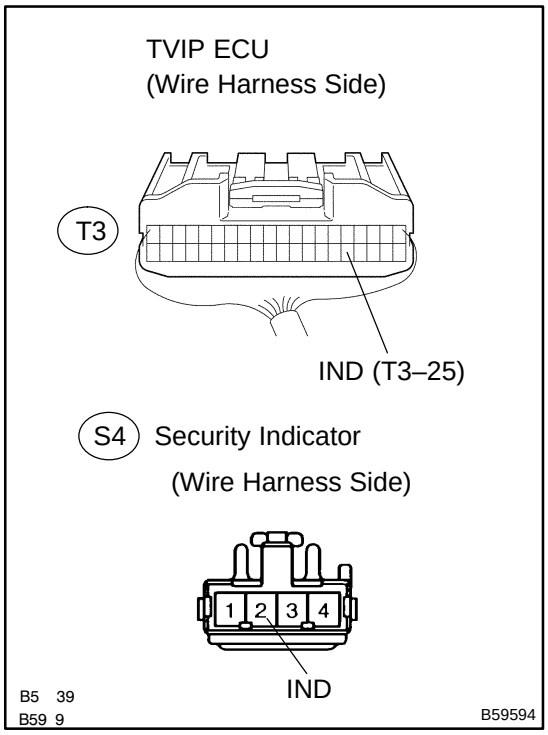
Standard:

Measuring condition	Operation
Battery positive (+) ⇔ Terminal 2 Battery negative (–) ⇔ Terminal 1	Indicator light comes on

NG → **REPLACE SECURITY INDICATOR LIGHT**

OK

2 CHECK WIRE HARNESS (TVIP ECU ⇔ SECURITY INDICATOR)



(a) Disconnect the TVIP ECU and security indicator connectors.

(b) Check the continuity between the terminals of the TVIP ECU connector and security indicator connector, as shown in the illustration and table.

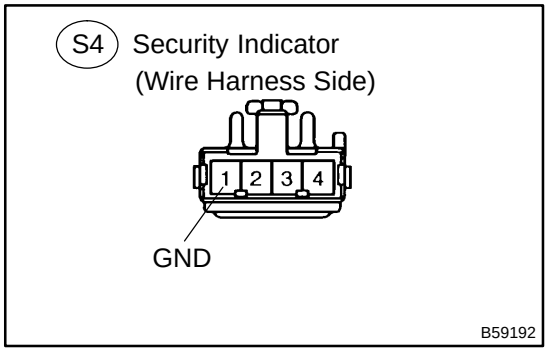
Standard:

Symbols (Terminal No.) (TVIP ECU ⇔ Security indicator)	Specified condition
IND (T3–25) ⇔ IND (S4–2)	Continuity

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

OK

3 CHECK WIRE HARNESS (SECURITY INDICATOR ⇔ BODY GROUND)



(a) Disconnect the security indicator connector.

(b) Check the continuity between the terminal of the security indicator connector and body ground, as shown in the illustration and table.

Standard:

Symbol (Terminal No.) (Security indicator ⇔ Body ground)	Specified condition
GND (S4–1) ⇔ Body ground	Continuity

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

OK

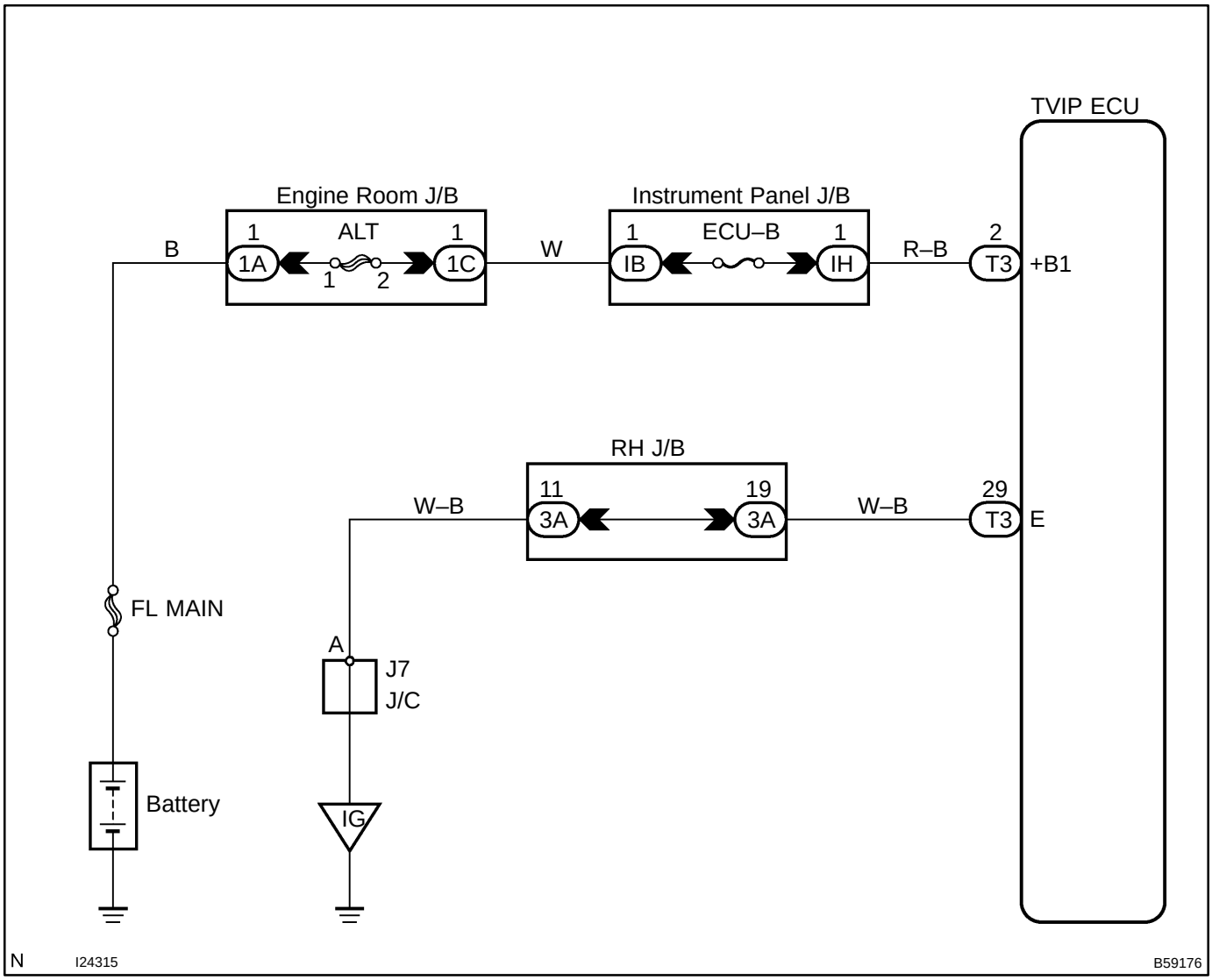
CHECK AND REPLACE TVIP ECU (See page 01–30)

ECU POWER SOURCE CIRCUIT

CIRCUIT DESCRIPTION

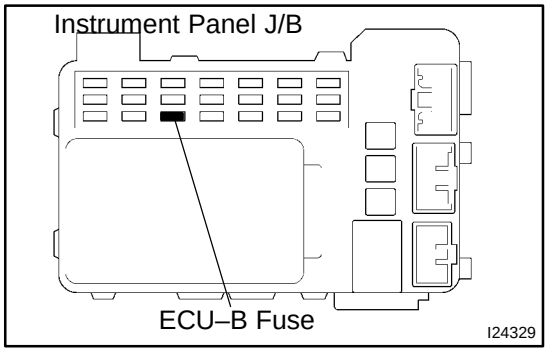
This circuit provides power to operate the TVIP ECU.

WIRING DIAGRAM



INSPECTION PROCEDURE

1 CHECK FUSE (ECU–B)

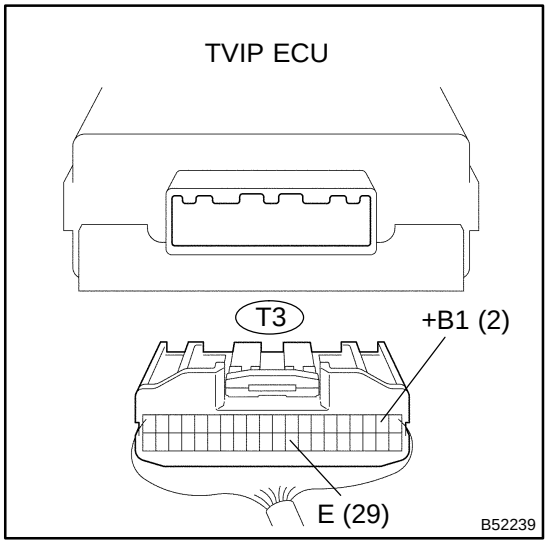


(a) Remove the fuse from the instrument panel J/B.
(b) Check the continuity of the fuse.
Standard: Continuity

NG → **REPLACE FUSE**

OK

2 CHECK TVIP ECU



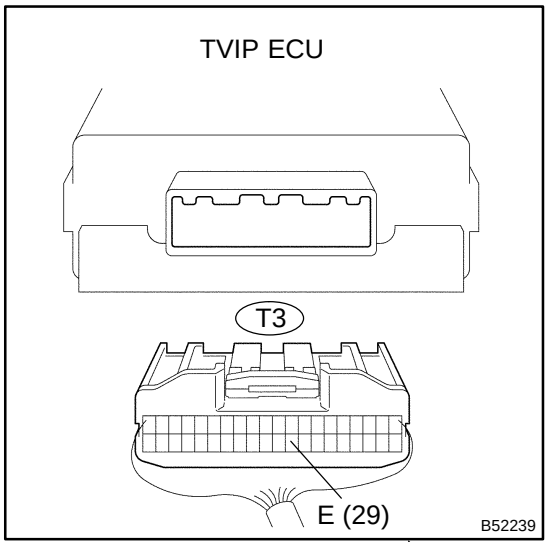
(a) Disconnect the TVIP ECU connector.
(b) Measure the voltage between the terminals of the ECU connector, as shown in the illustration and table.
Standard:

Symbols (Terminal No.)	Specified condition
+B1 (T3–2) ⇔ E (T3–29)	10 – 14 V
E (T3–29) ⇔ Body ground	0 V

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE (See page 05–707)**

OK

3	CHECK WIRE HARNESS (TVIP ECU ⇔ BODY GROUND)



(a) Disconnect the TVIP ECU connector.

(b) Check the connector on the harness side, as shown in the illustration and table.

Standard:

Symbols (Terminal No.)	Specified condition
E (T3–29) ⇔ Body ground	Continuity

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

OK

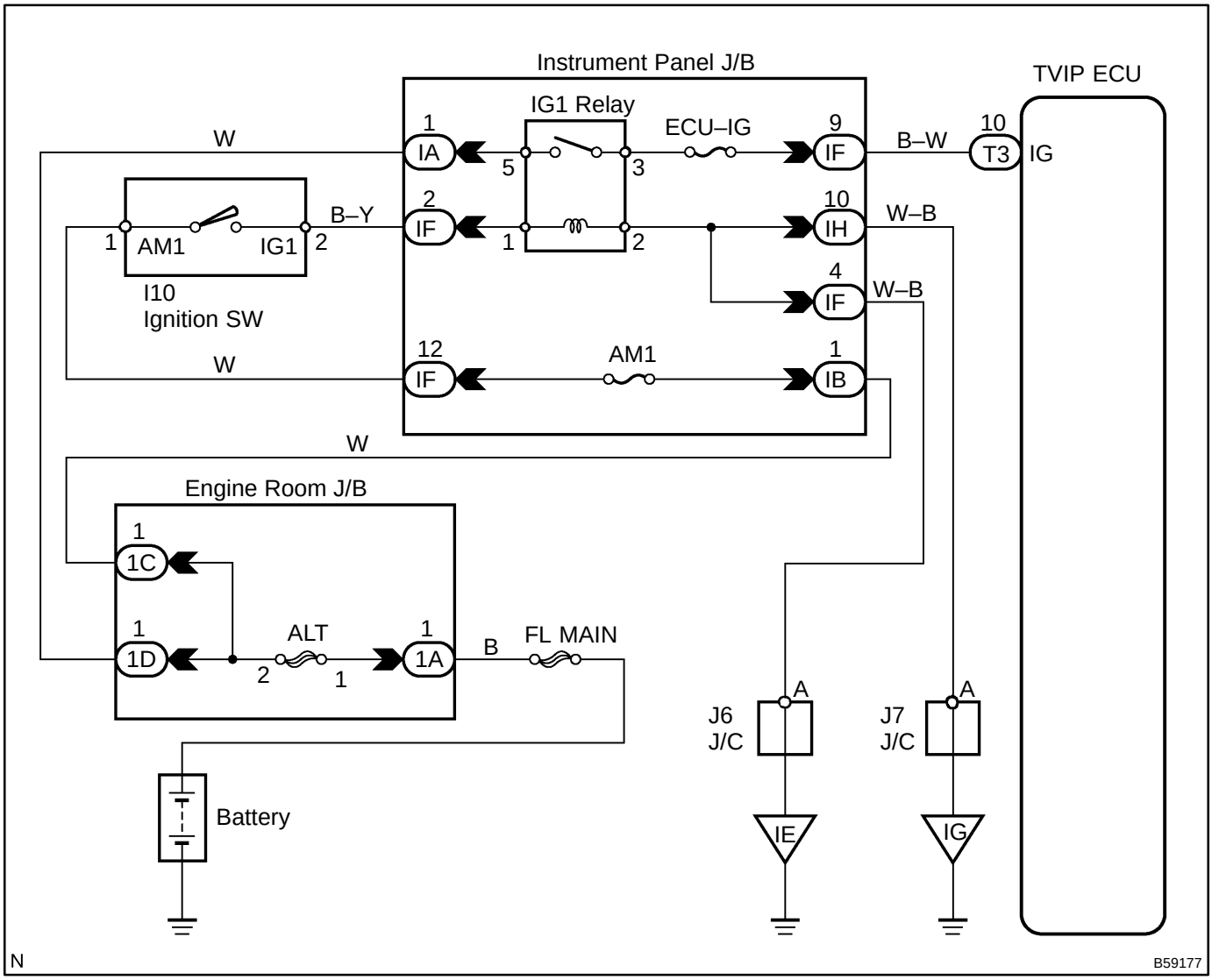
CHECK AND REPLACE TVIP ECU (See page 01–30)

IGNITION SWITCH CIRCUIT

CIRCUIT DESCRIPTION

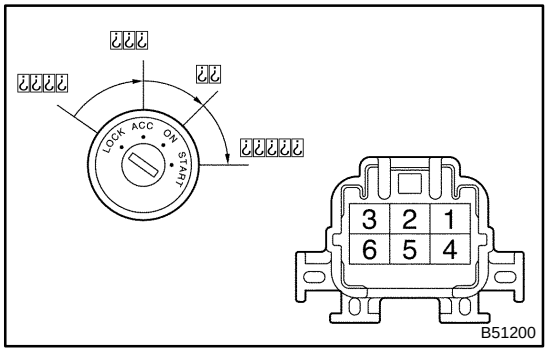
If the ignition switch is turned to the ON position, battery positive voltage is applied to the switches, such as terminal IG of the ECU.

WIRING DIAGRAM



INSPECTION PROCEDURE

1 CHECK IGNITION OR STARTER SWITCH ASSY



(a) Check the ignition switch, as shown in the illustration and table.

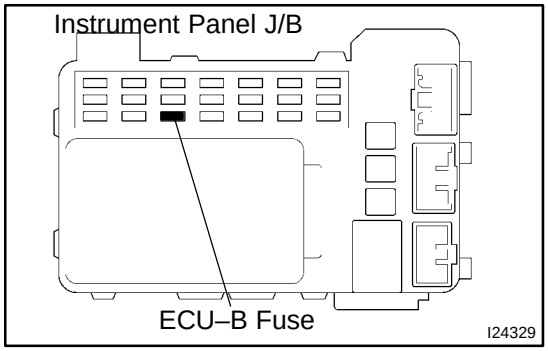
Standard:

Terminal No.	Switch position	Specified condition
–	LOCK	–
1 ⇔ 3	ACC	Continuity
1 ⇔ 2 ⇔ 3 5 ⇔ 6	ON	Continuity
1 ⇔ 2 4 ⇔ 5 ⇔ 6	START	Continuity

NG → **REPAIR OR REPLACE IGNITION OR STARTER SWITCH ASSY**

OK

2 CHECK FUSE (ECU–B)



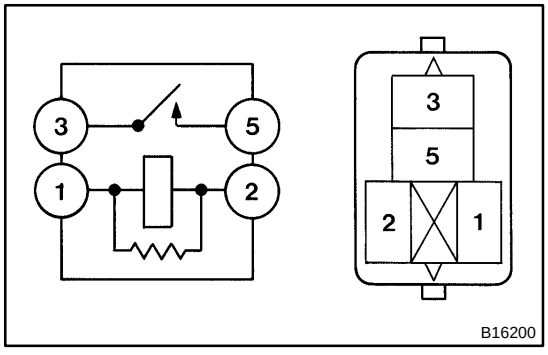
(a) Remove the fuse from the instrument panel J/B.
(b) Check the continuity of the fuse.

Standard: Continuity

NG → **REPLACE FUSE**

OK

3 CHECK RELAY (Marking: IG1)



(a) Remove the relay from the instrument J/B.
(b) Inspect the relay continuity, as shown in the illustration and table.

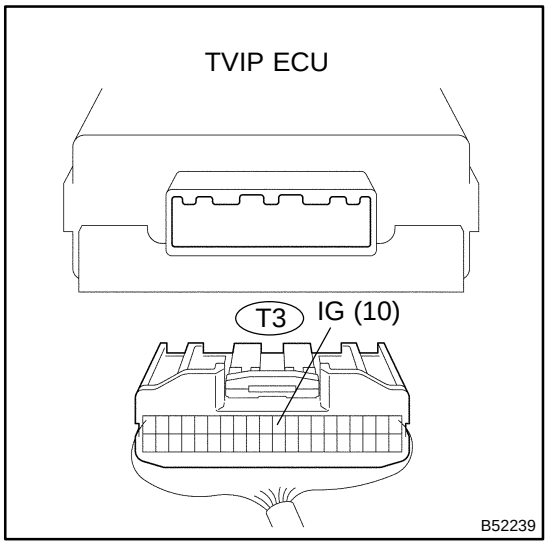
Standard:

Terminal No.	Condition	Specified condition
1 ⇔ 2	Constant	Continuity
3 ⇔ 5	Apply B+ between terminals 1 and 2	Continuity

NG → **REPLACE RELAY**

OK

4 CHECK TVIP ECU



(a) Disconnect the TVIP ECU connector.
(b) Turn the ignition switch ON.
(c) Measure the voltage between the terminal of the ECU connector and the body ground, as shown in the illustration and table.

Standard:

Symbols (Terminal No.)	Specified condition
IG (T3–10) ⇔ Body ground	10 – 14 V

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

OK

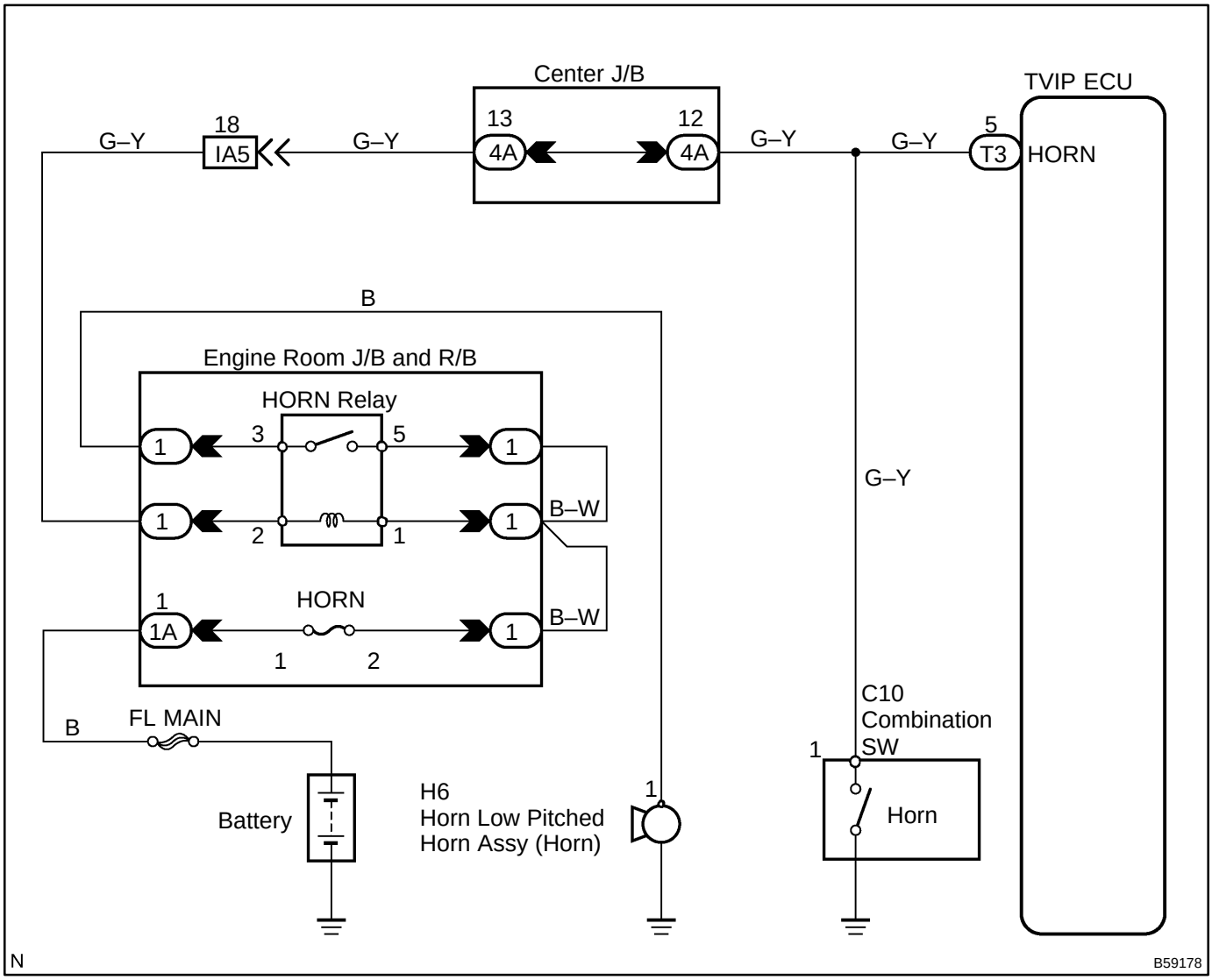
CHECK AND REPLACE TVIP ECU (See page 01–30)

HORN RELAY CIRCUIT

CIRCUIT DESCRIPTION

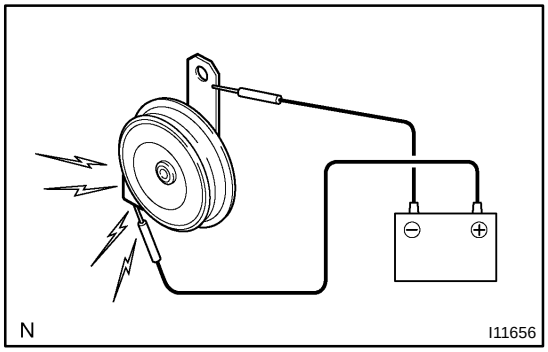
When the TVIP system is transferred from the armed state to the alarm sounding state, the TVIP ECU switches on the HORN relay so that it can sound the horns. The horn sounds in 0.4 seconds interval.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	CHECK LOW PITCHED HORN ASSY

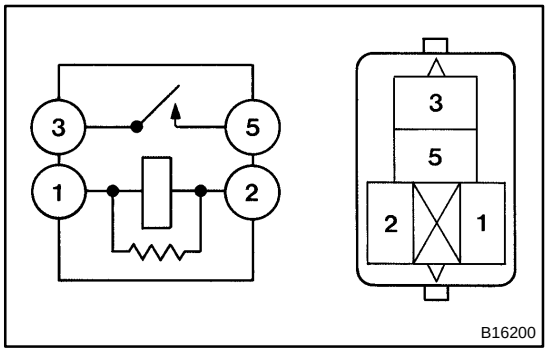


(a) Connect the positive (+) lead from the battery to the terminal and negative (–) lead to the horn body, and check that the horn blows.

NG → **REPAIR OR REPLACE LOW PITCHED HORN ASSY**

OK

2	CHECK RELAY (Marking: HORN)



(a) Remove the relay from the engine room J/B.
(b) Check the horn relay continuity, as shown in the illustration and table.

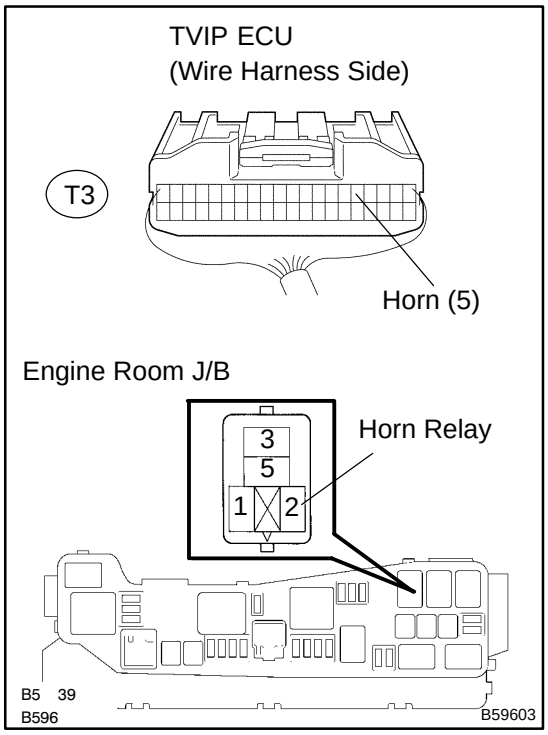
Standard:

Terminal No.	Condition	Specified condition
1 ⇔ 2	Constant	Continuity
3 ⇔ 5	Apply B+ between terminals 1 and 2	Continuity

NG → **REPLACE RELAY**

OK

3 CHECK WIRE HARNESS (TVIP ECU ⇔ ENGINE ROOM J/B)



(a) Remove the horn relay from the engine room J/B.

(b) Check the continuity between the terminals of the TVIP ECU and engine room J/B connectors, as shown in the illustration and table.

Standard:

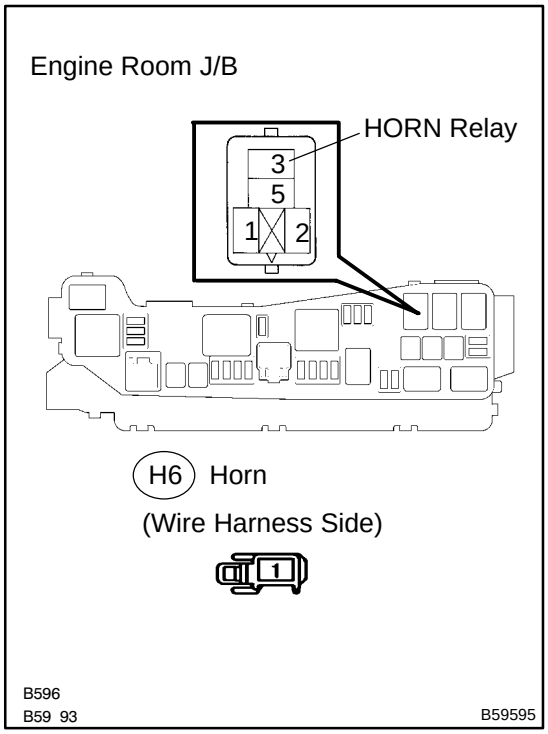
Symbols (Terminal No.) (TVIP ECU ⇔ Engine room J/B)	Specified condition
HORN (T3–5) ⇔ 2*	Continuity

*: Horn relay terminal.

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

OK

4 CHECK WIRE HARNESS (ENGINE ROOM J/B ⇔ HORN)



(a) Check the continuity between the terminals of the engine room J/B and horn connectors, as shown in the illustration and table.

Standard:

Symbols (Terminal No.) (Engine room J/B ⇔ Horn)	Specified condition
3* ⇔ Horn (H6–1)	Continuity

*: Horn relay terminal.

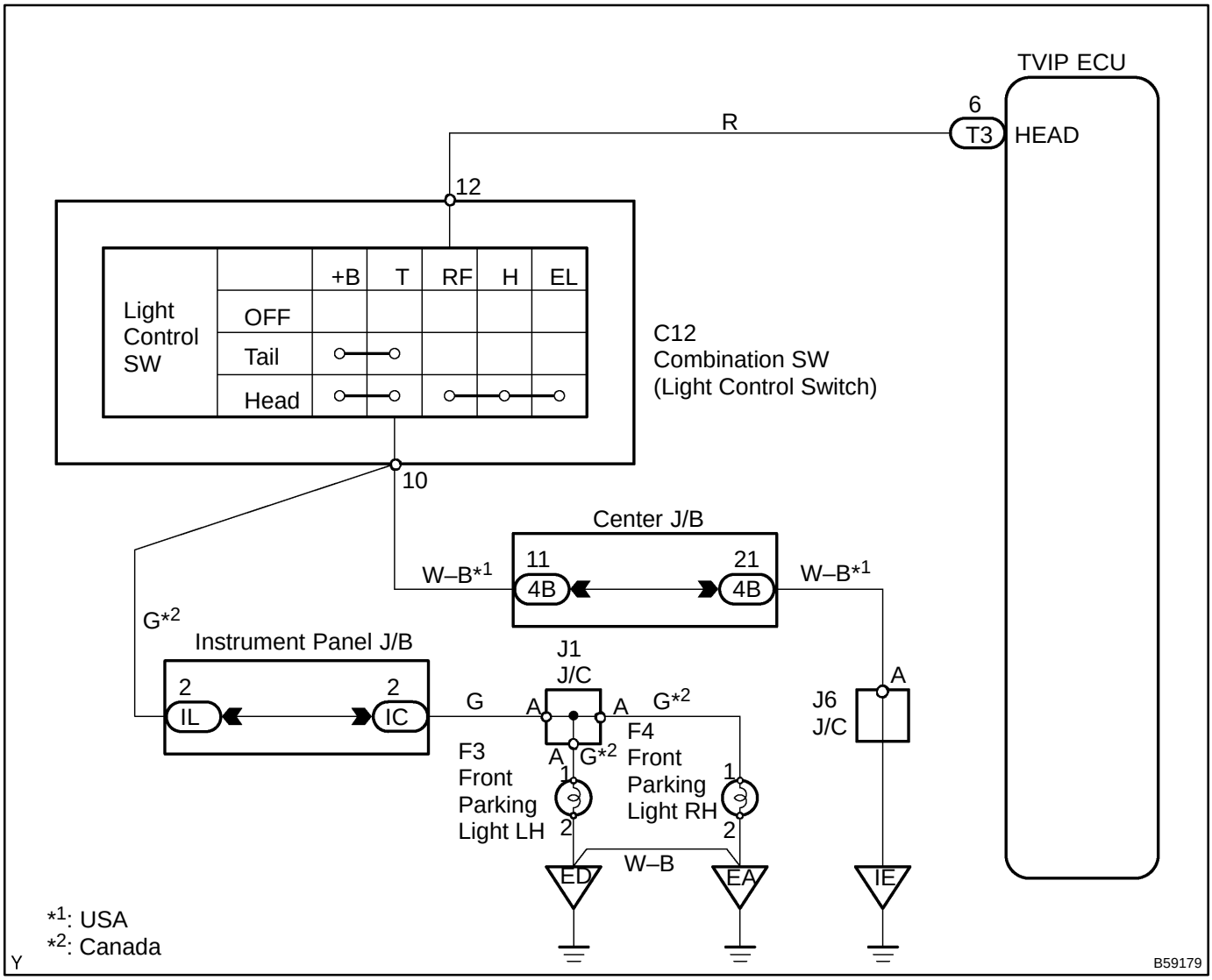
NG → **REPAIR OR REPLACE WIRE HARNESS AND CONNECTOR**

OK

CHECK AND REPLACE TVIP ECU (See page 01–30)

LIGHT CONTROL SWITCH CIRCUIT

WIRING DIAGRAM



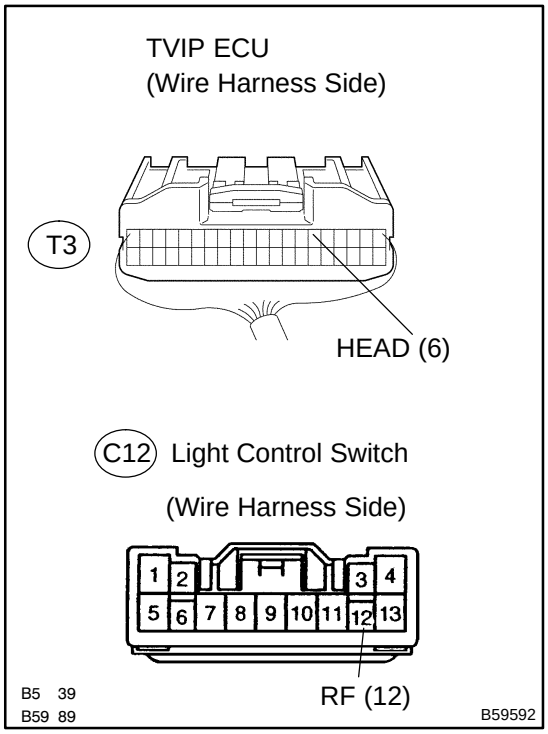
INSPECTION PROCEDURE

1	**CHECK HEADLAMP DIMMER SWITCH ASSY (LIGHT CONTROL SWITCH) (See page 65–7)**

NG → **REPLACE HEADLAMP DIMMER SWITCH ASSY (LIGHT CONTROL SWITCH)**

OK

2	**CHECK WIRE HARNESS (TVIP ECU ⇔ LIGHT CONTROL SWITCH)**



(a) Disconnect the TVIP ECU and light control switch connectors.

(b) Check the continuity between the terminals of the TVIP ECU and light control switch connectors, as shown in the illustration and table.

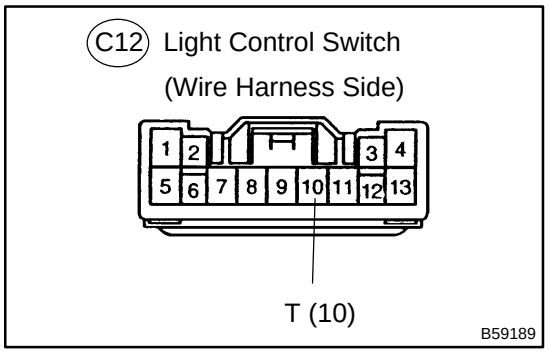
Standard:

Symbols (Terminal No.) (TVIP ECU ⇔ Light control switch)	Specified condition
HEAD (T3–6) ⇔ RF (C12–12)	Continuity

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

OK

3	CHECK WIRE HARNESS (LIGHT CONTROL SWITCH ⇔ BODY GROUND)



(a) Disconnect the light control switch connector.

(b) Check the continuity between the terminal of the light control switch connector and the body ground, as shown in the illustration and table.

Standard:

Symbols (Terminal No.) (Light control switch ⇔ Body ground)	Specified condition
T (C12–10) ⇔ Body ground	Continuity

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

OK

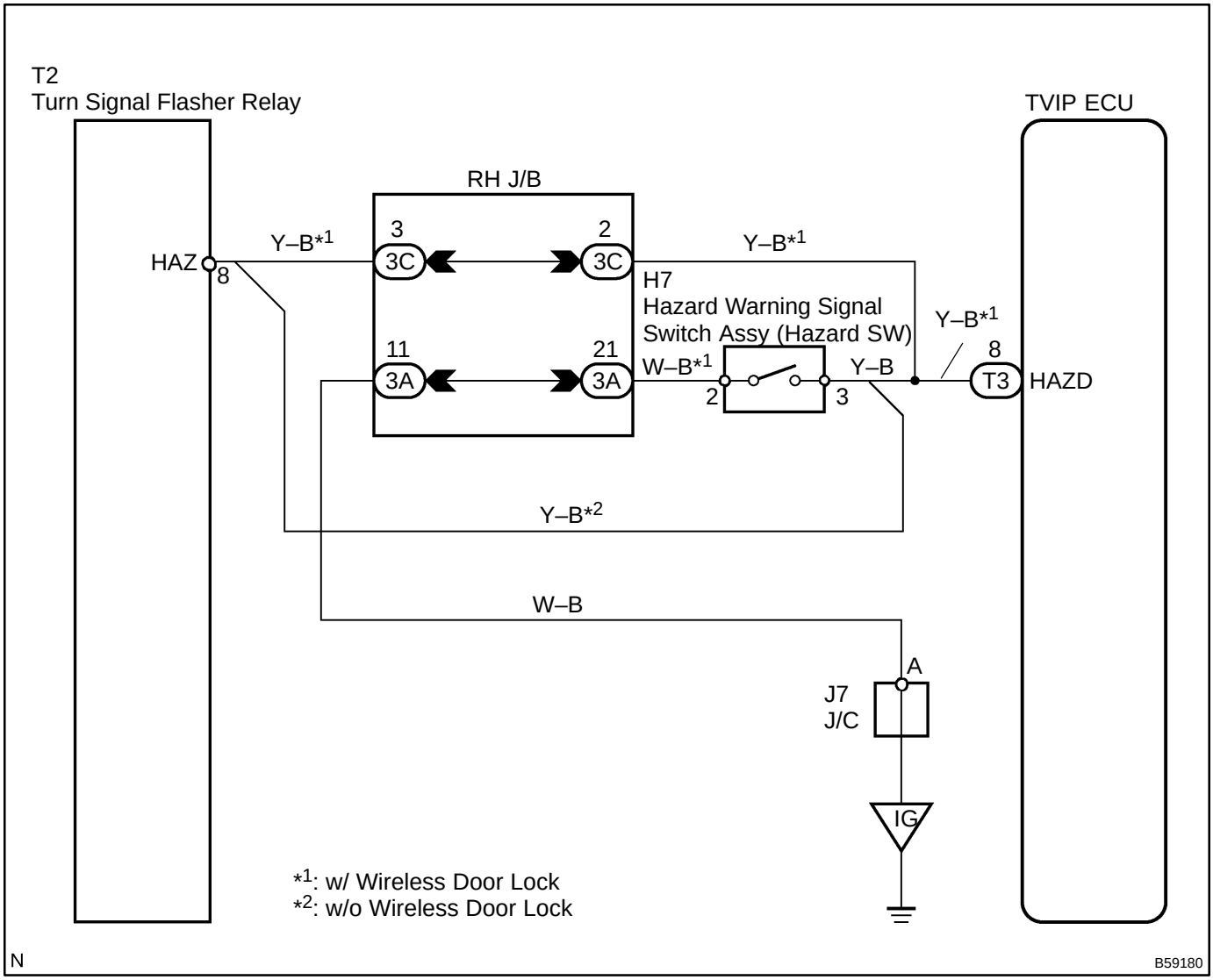
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE
(See page 05–707)

HAZARD WARNING SWITCH CIRCUIT

CIRCUIT DESCRIPTION

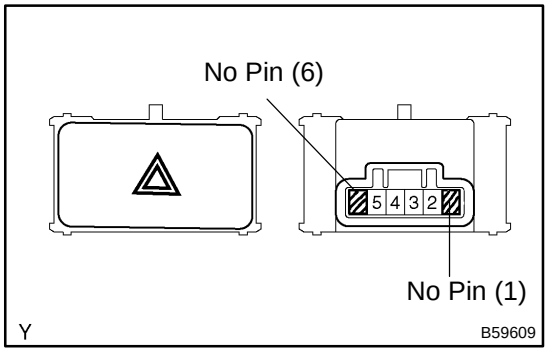
When the TVIP system is transferred to the alarm sounding state from the armed state, the signal flasher assembly (relay for hazard warning lights) will be switched ON and the hazard warning lights will start blinking.

WIRING DIAGRAM



INSPECTION PROCEDURE

1 CHECK HAZARD WARNING SIGNAL SWITCH ASSY



(a) Check the hazard warning switch continuity, as shown in the illustration and table.

Standard:

Terminal No.	Switch position	Specified condition
–	Switch OFF	Continuity
2 ⇔ 3	Switch ON	Continuity
4 ⇔ 5	Illumination circuit	Continuity

NG → **REPLACE HAZARD WARNING SIGNAL SWITCH ASSY**

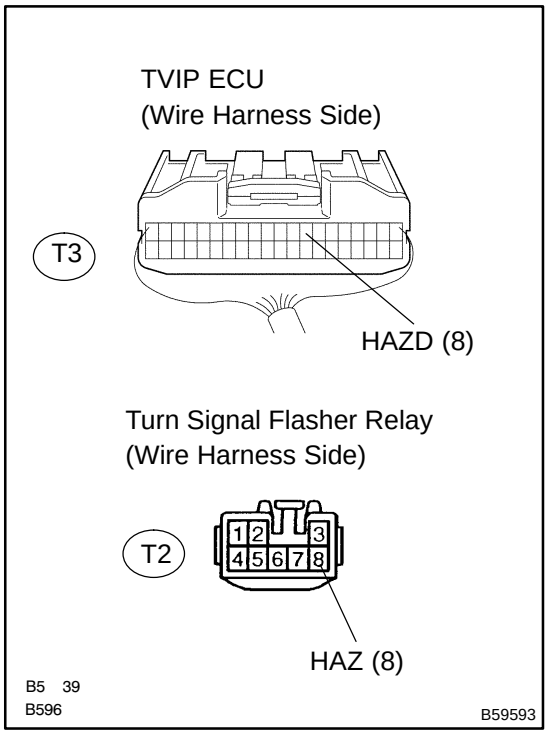
OK

2 CHECK TURN SIGNAL FLASHER ASSY (See page 65–4)

NG → **REPLACE TURN SIGNAL FLASHER ASSY**

OK

3 CHECK WIRE HARNESS (TVIP ECU ⇔ TURN SIGNAL FLASHER)



(a) Disconnect the TVIP ECU and turn signal flasher connectors.

(b) Check the continuity between the terminals of the TVIP ECU and turn signal flasher connectors, as shown in the illustration and table.

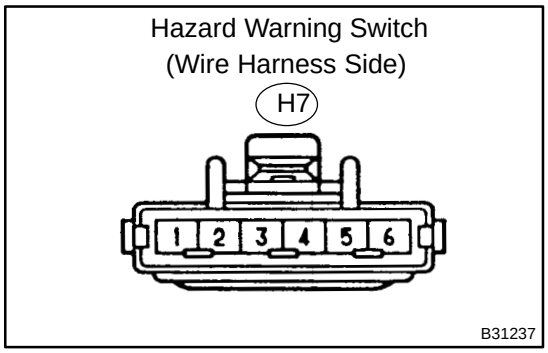
Standard:

Symbols (Terminal No.) (TVIP ECU ⇔ Turn Signal Flasher)	Specified condition
HAZD (T3–8) ⇔ HAZ (T2–8)	Continuity

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

OK

4	CHECK WIRE HARNESS (HAZARD WARNING SWITCH ⇔ BODY GROUND)



(a) Disconnect the hazard warning switch connector.
(b) Check the continuity between the terminal of the hazard warning switch connector and the body ground, as shown in the illustration and table.

Standard:

Symbols (Terminal No.) (Hazard warning SW ⇔ Body ground)	Specified condition
H7–2 ⇔ Body ground	Continuity

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

OK

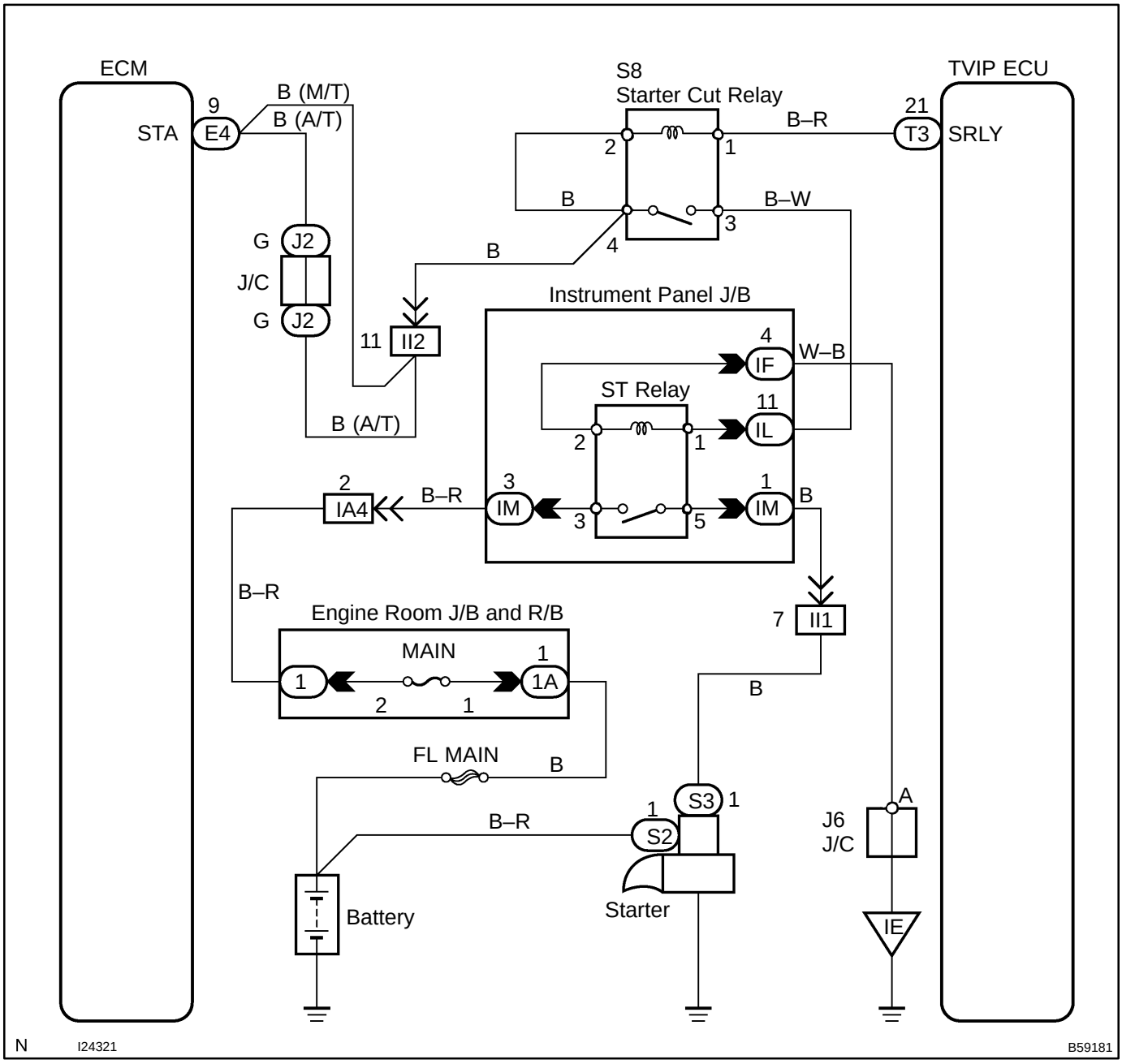
CHECK AND REPLACE TVIP ECU (See page 01–30)

STARTER CUT RELAY CIRCUIT

CIRCUIT DESCRIPTION

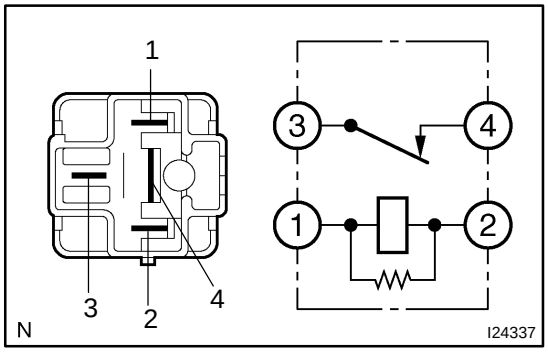
When the TVIP system operates, the TVIP ECU controls the starter cut relay so that the relay should not be turned on and consequently the starter can not crank the engine.

WIRING DIAGRAM



INSPECTION PROCEDURE

1 CHECK RELAY (Marking: STARTER CUT)



(a) Inspect the relay continuity, as shown in the illustration and table.

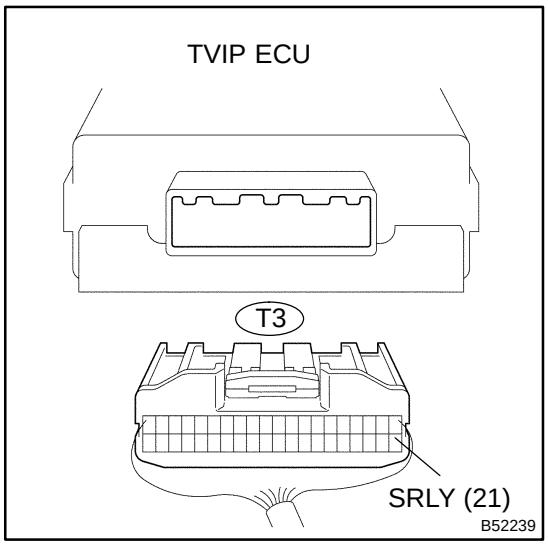
Standard:

Terminal No.	Condition	Specified condition
1 ⇔ 2	Constant	Continuity
3 ⇔ 4	Apply B+ between terminals 1 and 2	Continuity

NG → **REPLACE RELAY**

OK

2 CHECK TVIP ECU



(a) Disconnect the TVIP ECU connector.
(b) Turn the ignition switch position to the START.
(c) Measure the voltage between the terminal of the ECU connector and the body ground, as shown in the illustration and table.

Standard:

Symbols (Terminal No.)	Specified condition
SRLY (T3–21) ⇔ Body ground	10 – 14 V

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

OK

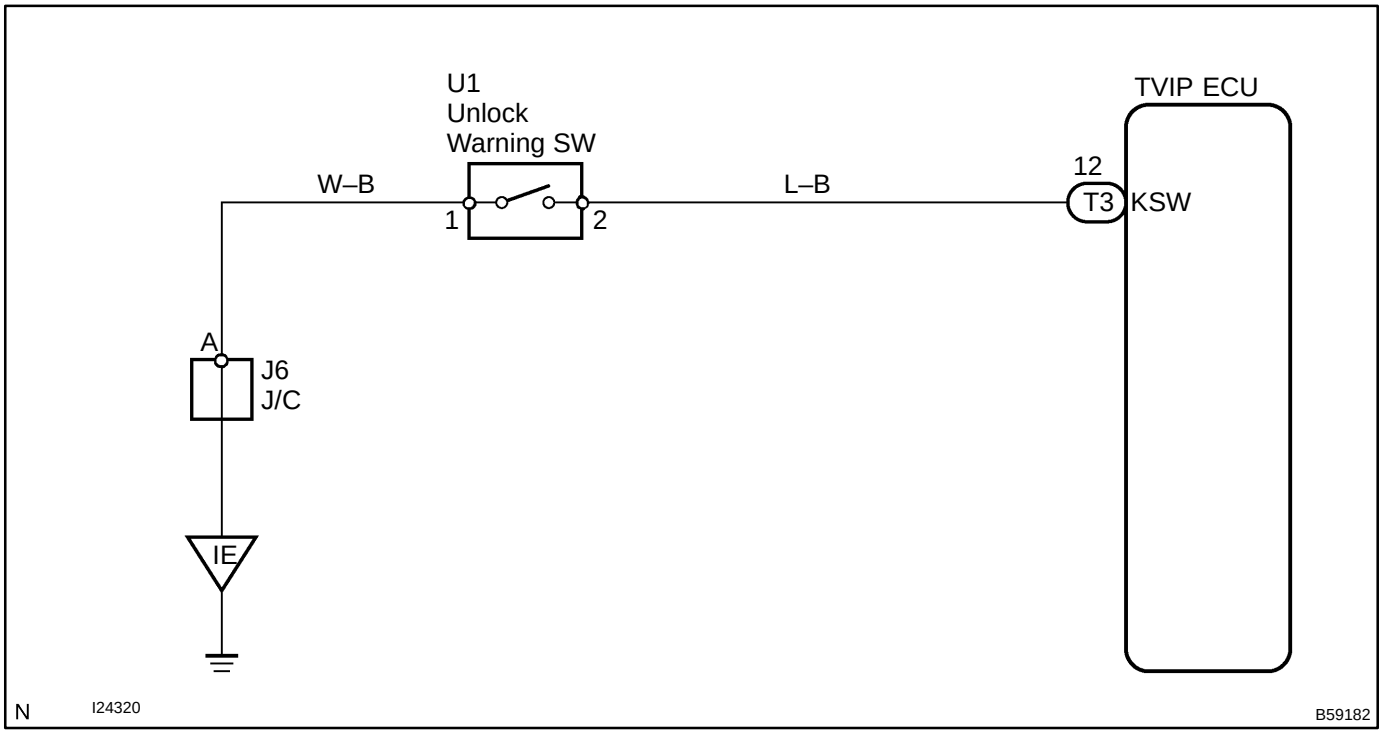
CHECK AND REPLACE TVIP ECU (See page 01–30)

KEY UNLOCK WARNING SWITCH CIRCUIT

CIRCUIT DESCRIPTION

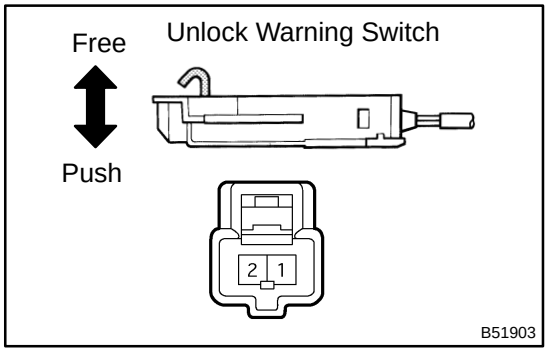
The key unlock warning switch comes on when the ignition key is inserted in the key cylinder and goes off when the ignition key is removed.

WIRING DIAGRAM



INSPECTION PROCEDURE

1 CHECK UN–LOCK WARNING SWITCH ASSY



(a) Disconnect the key unlock warning switch connector.
(b) Check the continuity between the terminals of the key unlock warning switch connector, as shown in the illustration and table.

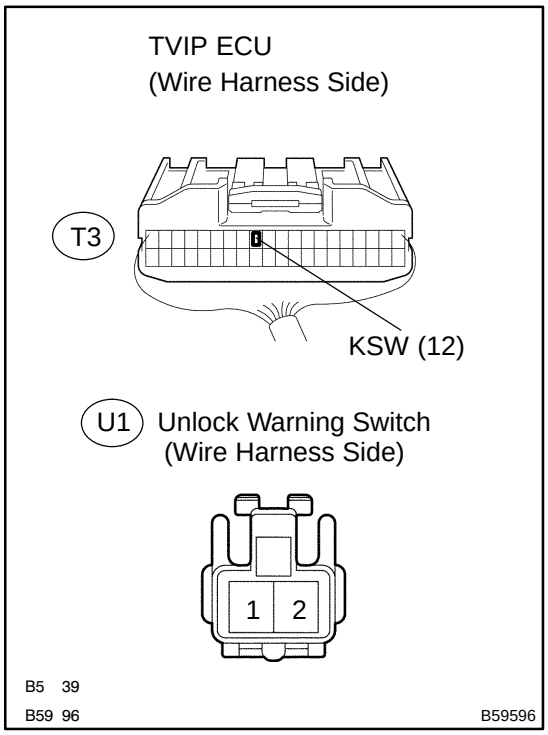
Standard:

Terminal No.	Switch position	Specified condition
1 ⇔ 2	Push (Key inserted)	Continuity
	Free (Key removed)	No continuity

NG → **REPLACE UN–LOCK WARNING SWITCH ASSY**

OK

2 CHECK WIRE HARNESS (TVIP ECU ⇔ UNLOCK WARNING SWITCH)



(a) Disconnect the TVIP ECU and key unlock warning switch connectors.
(b) Check the continuity between the terminals of the TVIP ECU connectors and unlock warning switch connector, as shown in the illustration and table.

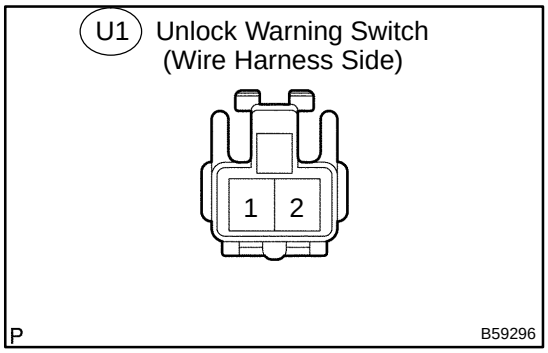
Standard:

Symbols (Terminal No.) (TVIP ECU ⇔ Unlock warning switch)	Specified condition
KSW (T3–12) ⇔ U1–2	Continuity

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

OK

3 CHECK WIRE HARNESS (KEY UNLOCK WARNING SWITCH ⇔ BODY GROUND)



(a) Disconnect the key unlock warning switch connector.
(b) Check the continuity between the terminal of the key unlock warning switch connector and the body ground, as shown in the illustration and table.

Standard:

Terminal No. (Key unlock warning SW ⇔ Body ground)	Specified condition
U1–1 ⇔ Body ground	Continuity

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

OK

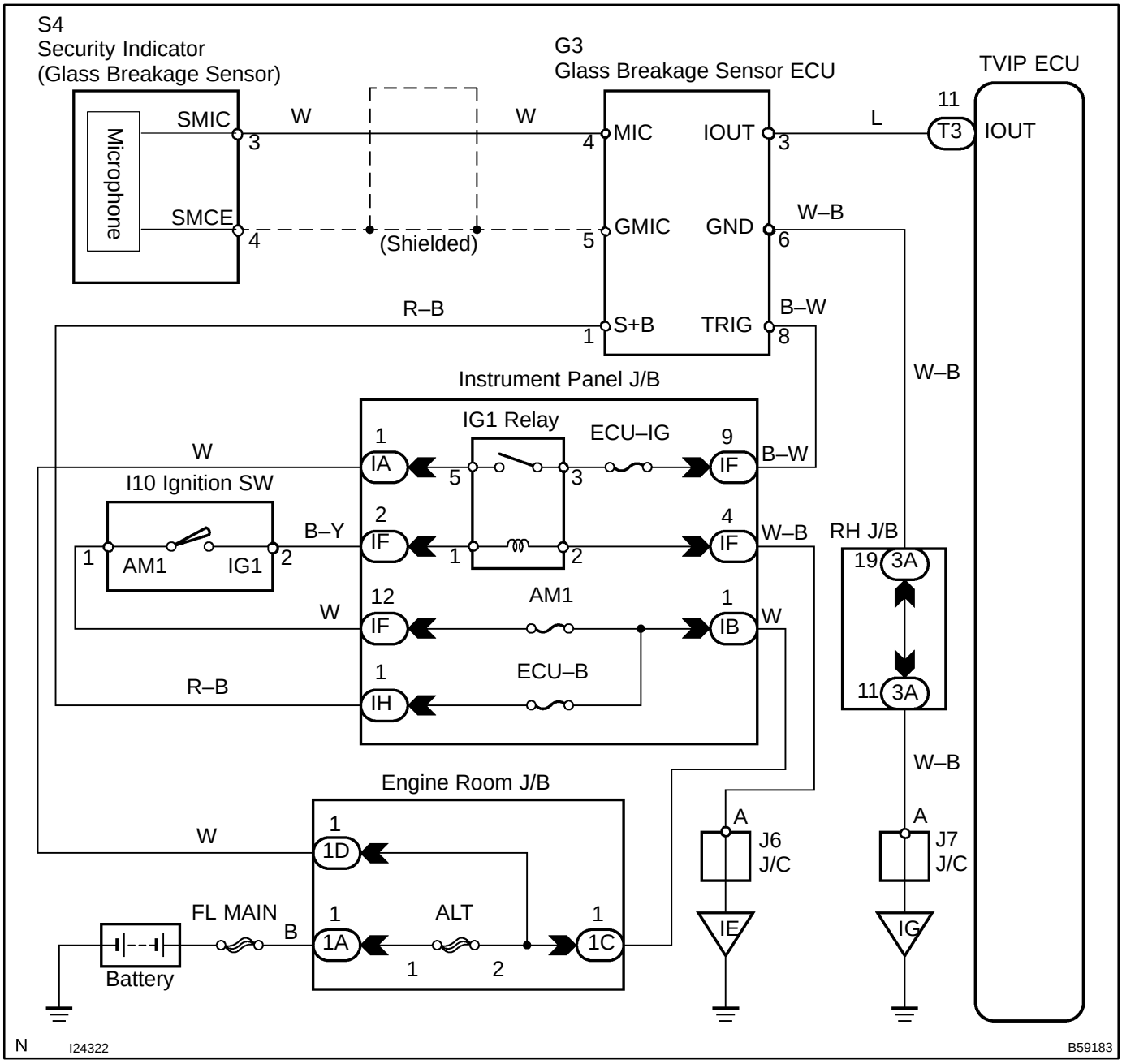
CHECK AND REPLACE TVIP ECU (See page 01–30)

GLASS BREAKAGE SENSOR CIRCUIT

CIRCUIT DESCRIPTION

The microphone of the grass breakage sensor is built in the security indicator. When this microphone senses breakage of grass, the grass breakage sensor ECU sends the signal of this breakage to the TVIP ECU.

WIRING DIAGRAM



INSPECTION PROCEDURE

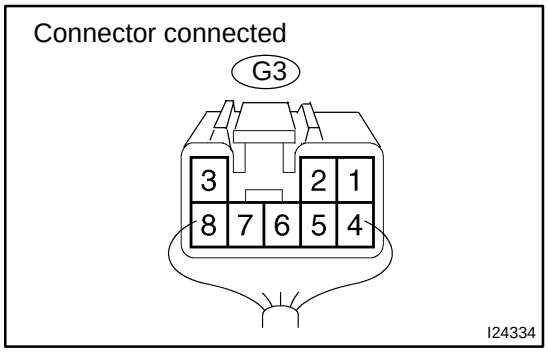
1	CHECK SECURITY INDICATOR LIGHT

(a) Set the system in 30 seconds after filliping the security indicator to check if the alarm is triggered.

OK → **NO PROBLEM**

NG

2	CHECK GLASS BREAKAGE SENSOR ECU (GLASS BREAKAGE SENSOR)



(a) Check the continuity and voltage of the glass breakage sensor ECU, as shown in the illustration and table.

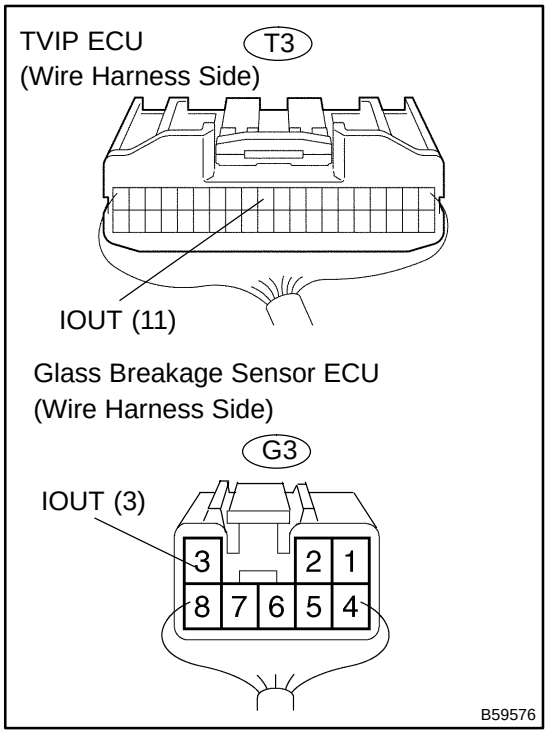
Standard:

Terminal No.	Condition	Specified condition
G3–1 ⇔ Body ground	Constant	Battery voltage
G3–3 ⇔ Body ground	Constant	Pulse generation
G3–5 ⇔ Body ground	Constant	Continuity
G3–8 ⇔ Body ground	Ignition switch ON	Battery voltage

NG → **CHECK AND REPLACE GLASS BREAKAGE SENSOR ECU (See page 01–30)**

OK

3	CHECK WIRE HARNESS (TVIP ECU ⇔ GLASS BREAKAGE SENSOR ECU)



(a) Disconnect the TVIP ECU and glass breakage sensor ECU connectors.

(b) Check the continuity and between the connectors on the harness side, as shown in the illustration and table.

Standard:

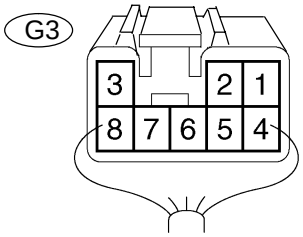
Symbols (Terminal No.) (TVIP ECU ⇔ Sensor ECU)	Specified condition
IOUT (T3–11) ⇔ IOUT (G3–3)	Continuity

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

OK

4 CHECK WIRE HARNESS (GLASS BREAKAGE SENSOR ECU ⇔ BODY GROUND)

Glass Breakage Sensor ECU
(Wire Harness Side)



(a) Disconnect the glass breakage sensor ECU connector.
(b) Check the continuity between the terminal of the glass breakage sensor ECU connector and the body ground, as shown in the illustration and table.

Standard:

Symbols (Terminal No.) (Glass breakage sensor ⇔ Body ground)	Specified condition
GND (G3–6) ⇔ Body ground	Continuity

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

OK

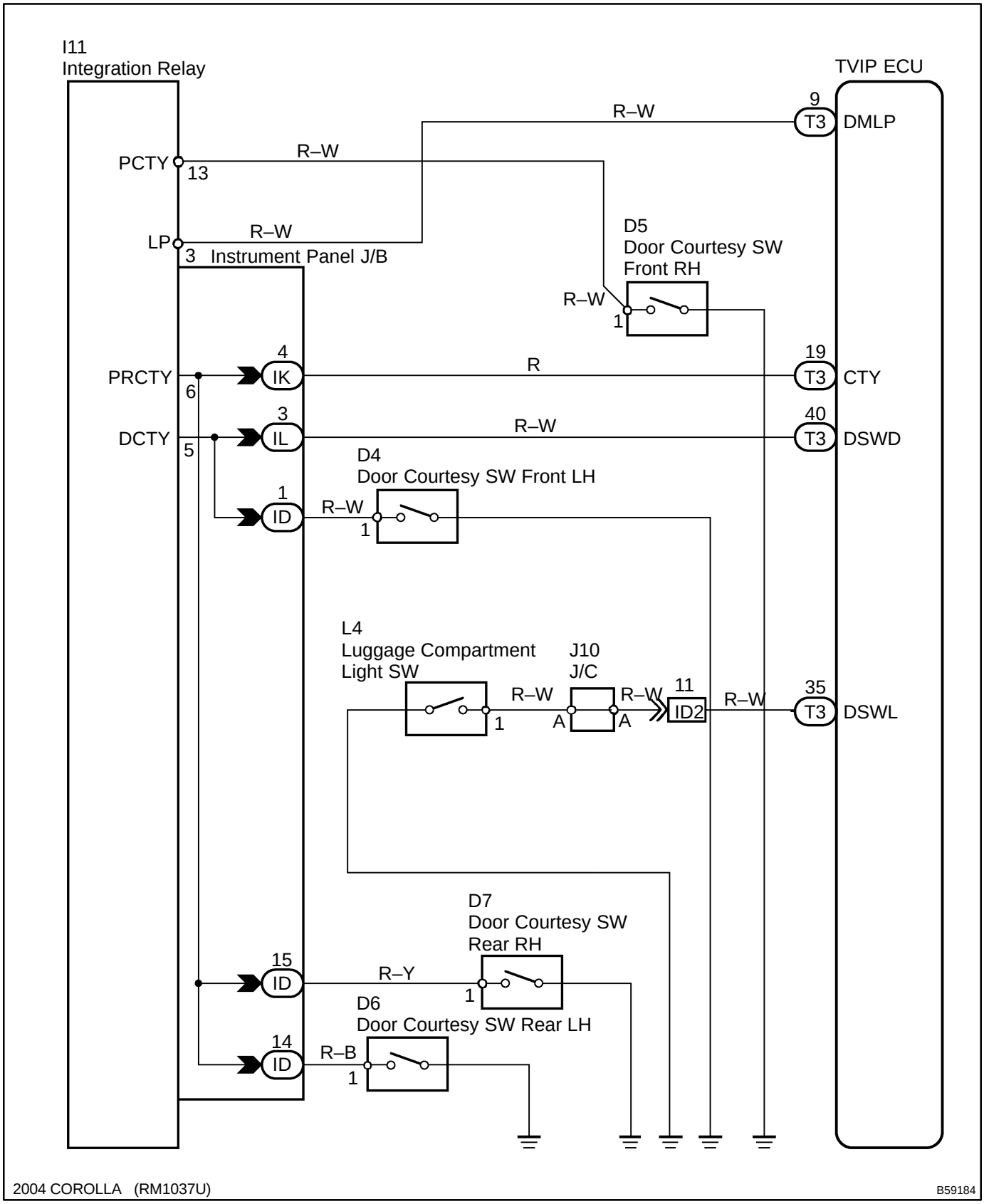
CHECK AND REPLACE TVIP ECU (See page 01–30)

DOOR COURTESY SWITCH CIRCUIT

CIRCUIT DESCRIPTION

The door courtesy switch turns ON when the door is opened and OFF when the door is closed.

WIRING DIAGRAM



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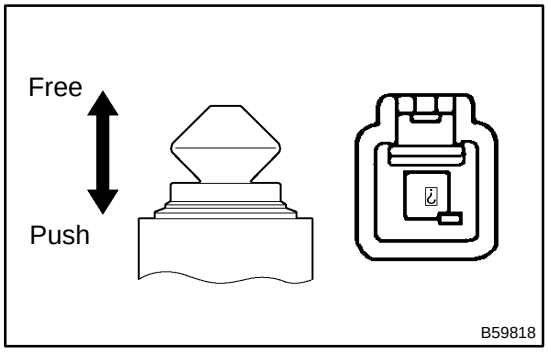
INSPECTION PROCEDURE

1 CHECK COURTESY LAMP SWITCH



(a) Check the courtesy switch, as shown in the illustration and table.

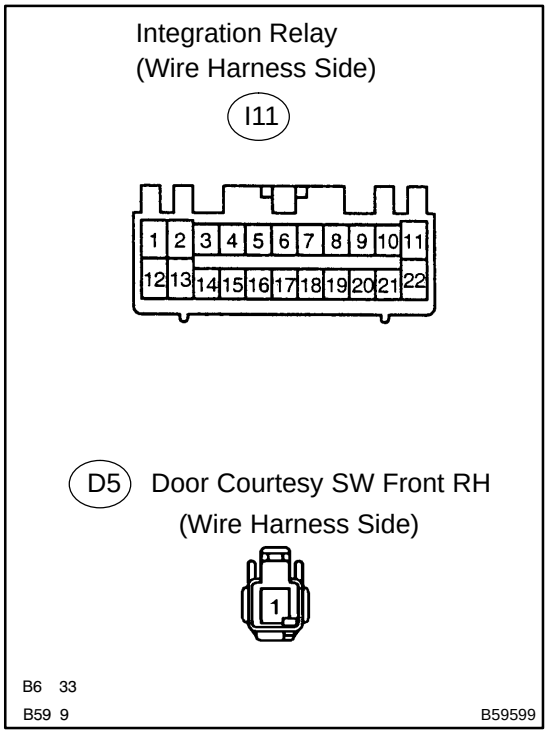
Standard:

Terminal No.	Switch position	Specified condition
1 ⇔ Body ground	Push	Continuity
	Free	No continuity

NG → **REPLACE COURTESY LAMP SWITCH**

OK

2 CHECK WIRE HARNESS (INTEGRATION RELAY ⇔ DOOR COURTESY SW)



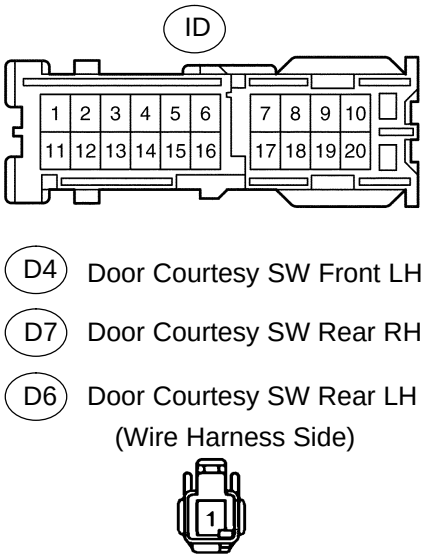
(a) Disconnect the integration relay and door courtesy connectors.

(b) Check the continuity between the terminals of the integration relay and door courtesy switch connectors, as shown in the illustration and table.

Standard:

Terminal No. (Integration relay ⇔ Door courtesy SW)	Specified condition
I11–13 ⇔ D5–1	Continuity

Integration Relay (Instrument Panel J/B)
(Wire Harness Side)



(c) Disconnect the each door courtesy switch connectors.
(d) Check the continuity between the terminals of the integration relay and door courtesy switch connectors, as shown in the illustration and table.

Standard:

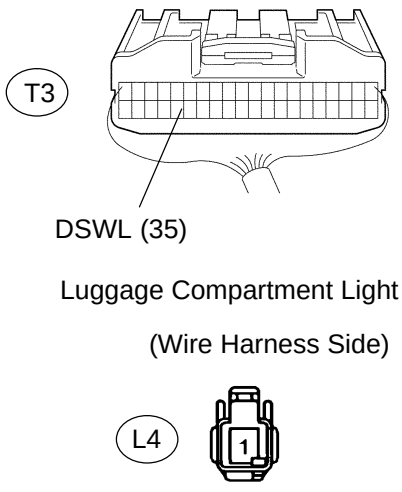
Terminal No. (Integration relay ⇔ Door courtesy SW)	Specified condition
ID–1 ⇔ D4–1	Continuity
ID–15 ⇔ D7–1	
ID–14 ⇔ D6–1	

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

OK

3 CHECK WIRE HARNESS (TVIP ECU ⇔ LUGGAGE COMPARTMENT LIGHT SW)

TVIP ECU
(Wire Harness Side)



(a) Disconnect the TVIP ECU and luggage comportment light switch connectors.
(b) Check the continuity between the terminals of the TVIP ECU and luggage compartment light switch connectors, as shown in the illustration and table.

Standard:

Symbols (Terminal No.) (TVIP ECU ⇔ Luggage compartment light SW)	Specified condition
DSWL (T3–35) ⇔ L4–1	Continuity

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

OK

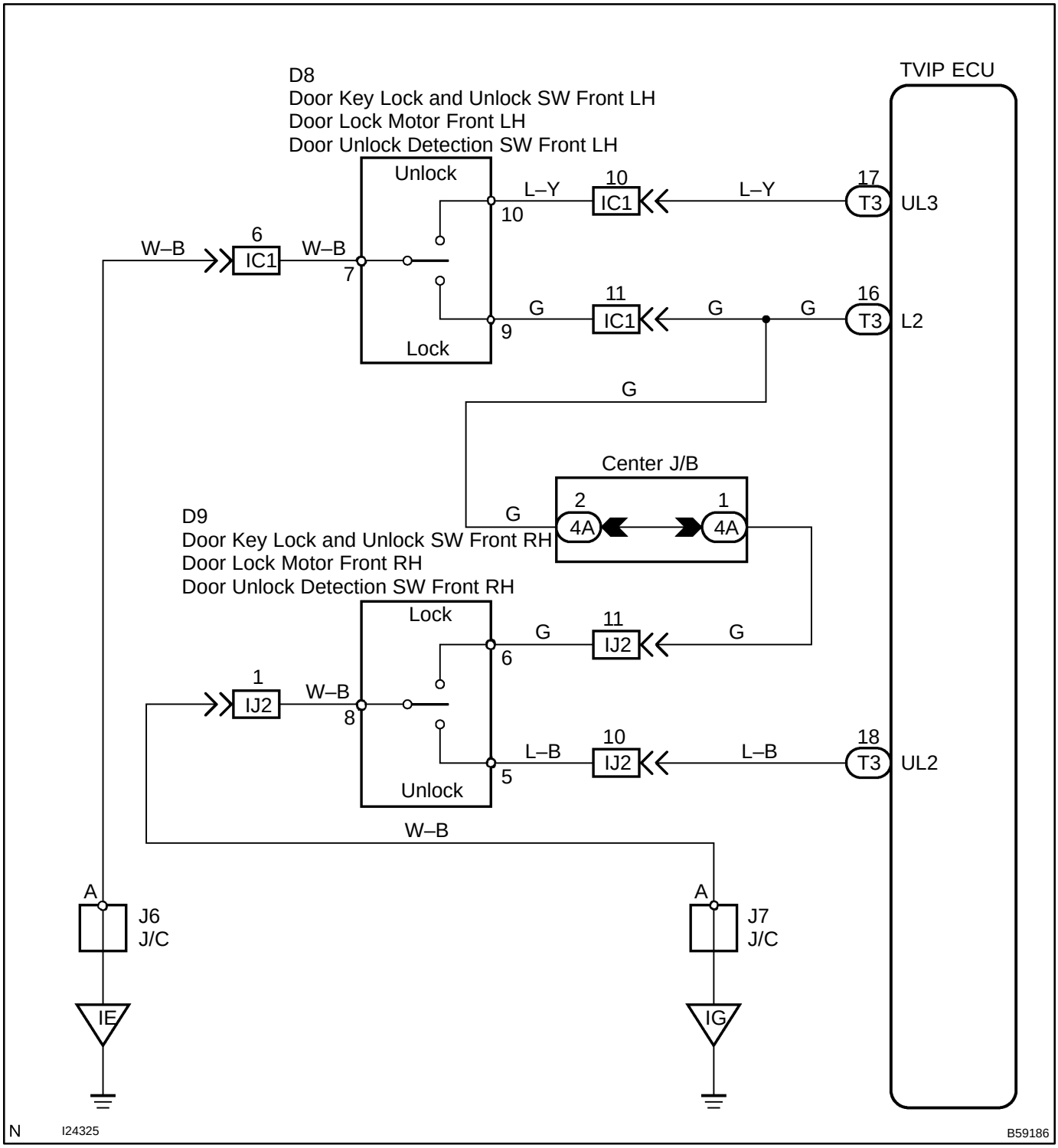
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE
(See page 01–30)

DOOR KEY LOCK AND UNLOCK SWITCH CIRCUIT

CIRCUIT DESCRIPTION

The door key lock and unlock switch is built in the door lock motor.

WIRING DIAGRAM



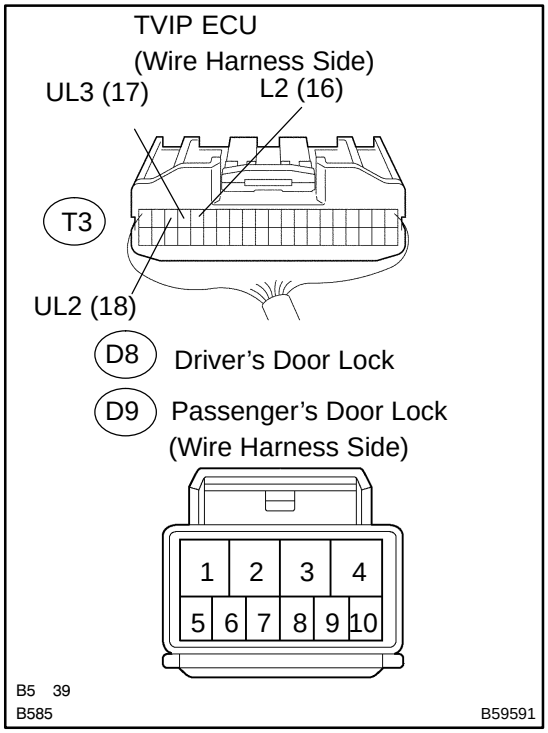
INSPECTION PROCEDURE

1	CHECK DOOR LOCK (See page 73–3)

NG → REPLACE DOOR LOCK

OK

2	CHECK WIRE HARNESS (TVIP ECU ⇔ DOOR LOCK)



(a) Disconnect the TVIP ECU and door lock connectors.
(b) Check the continuity between the terminals of the TVIP ECU and door lock connectors, as shown in the illustration and table.

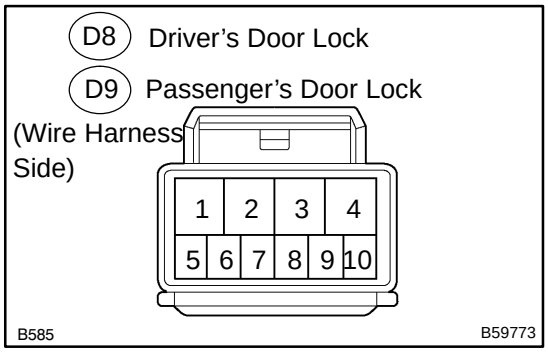
Standard:

Symbols (Terminal No.) (TVIP ECU ⇔ Door lock)	Specified condition
UL3 (T3–17) ⇔ D8–10	Continuity
L2 (T3–16) ⇔ D8–9	
L2 (T3–16) ⇔ D9–6	
UL2 (T3–18) ⇔ D9–5	

NG → REPAIR OR REPLACE WIRE HARNESS AND CONNECTOR

OK

3	CHECK WIRE HARNESS (DOOR LOCK ⇔ BODY GROUND)



(a) Disconnect the door lock connector.
(b) Check the continuity between the terminal of the door lock connector and the body ground, as shown in the illustration and table.

Standard:

Symbols (Terminal No.) (Door lock ⇔ Body ground)	Specified condition
D9–8 ⇔ Body ground	Continuity
D8–7 ⇔ Body ground	

NG → REPAIR OR REPLACE WIRE HARNESS AND CONNECTOR

OK

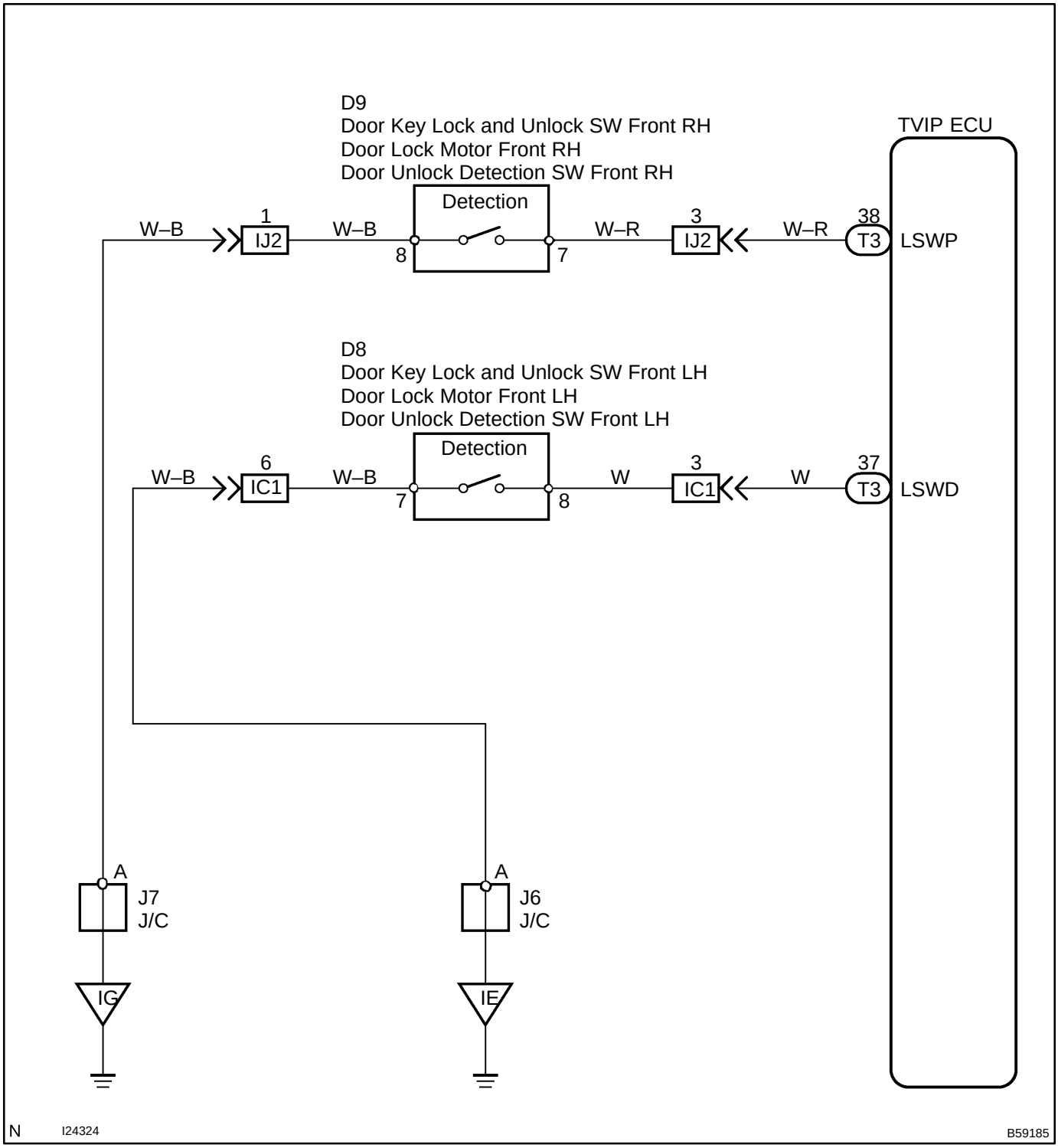
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE (See page 05–707)

DOOR UNLOCK DETECTION SWITCH CIRCUIT

CIRCUIT DESCRIPTION

The door unlock detection switch is built in the door lock motor assembly. This switch is ON when the door lock knob is in the unlock position and OFF when the knob is in the lock position. The ECU detects the door lock knob conditions in this circuit.

WIRING DIAGRAM



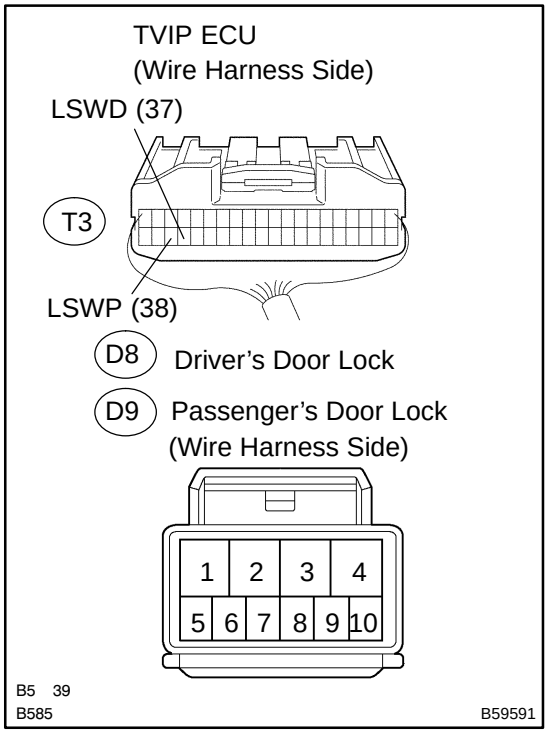
INSPECTION PROCEDURE

1	CHECK DOOR LOCK (See page 73–3)

NG → REPLACE DOOR LOCK

OK

2	CHECK WIRE HARNESS (TVIP ECU ⇔ DOOR LOCK)



(a) Disconnect the TVIP ECU and door lock connectors.
(b) Check the continuity between the terminals of the TVIP ECU and door lock connectors, as shown in the illustration and table.

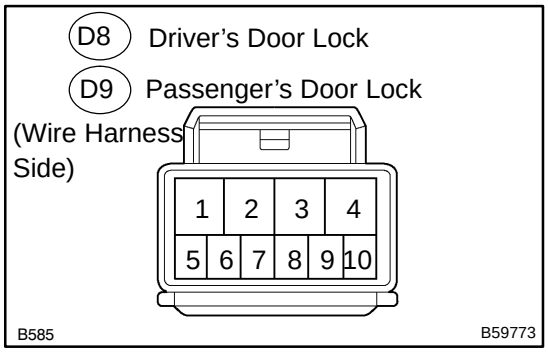
Standard:

Symbols (Terminal No.) (TVIP ECU ⇔ Door lock)	Specified condition
LSWD (T3–37) ⇔ D8–8	Continuity
LSWP (T3–38) ⇔ D9–7	Continuity

NG → REPAIR OR REPLACE WIRE HARNESS AND CONNECTOR

OK

3	CHECK WIRE HARNESS (DOOR LOCK ⇔ BODY GROUND)



(a) Disconnect the door lock connector.
(b) Check the continuity between the terminal of the door lock connector and the body ground, as shown in the illustration and table.

Standard:

Terminal No. (Door lock ⇔ Body ground)	Specified condition
D9–8 ⇔ Body ground	Continuity
D8–7 ⇔ Body ground	

NG → REPAIR OR REPLACE WIRE HARNESS AND CONNECTOR

OK

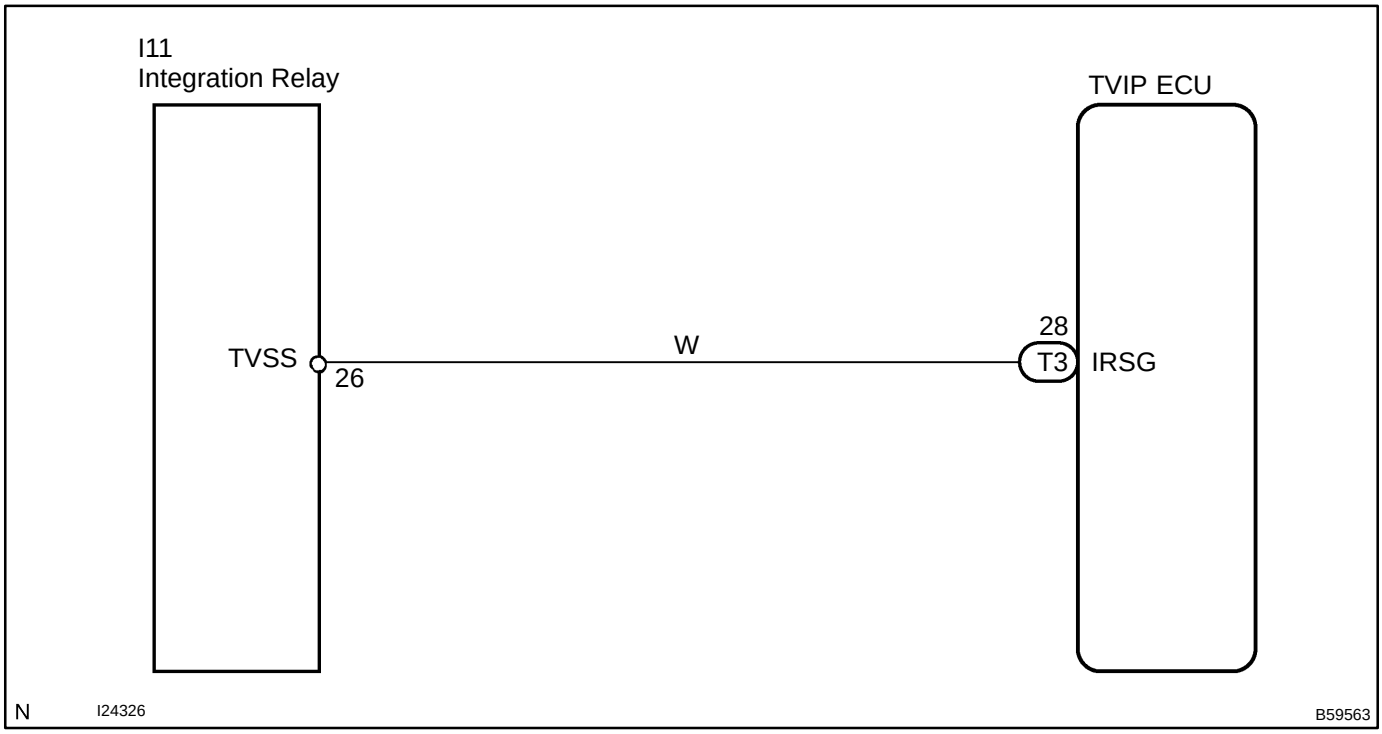
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE (See page 05–707)

TVIP ECU COMMUNICATION CIRCUIT

CIRCUIT DESCRIPTION

The wireless receiver receives a SET/UNSET signal for the TVIP system and sends the signal to the TVIP ECU via the integration relay.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	CHECK TVIP ECU

(a) Check that the operation of the TVIP function is normal.

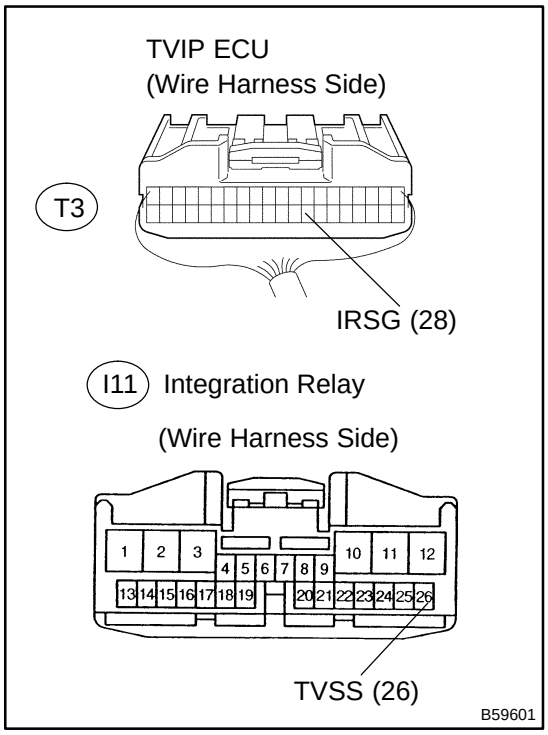
HINT:

With this inspection, the TVIP ECU CPU can be diagnosed if it works normally or not.

NG → **CHECK AND REPLACE TVIP ECU (See page 01–30)**

OK

2 CHECK WIRE HARNESS (TVIP ECU ⇔ INTEGRATION RELAY)



(a) Disconnect the TVIP ECU and integration relay connectors.

(b) Check the continuity between the terminal of the TVIP ECU connector and integration relay connectors, as shown in the illustration and table.

Standard:

Symbols (Terminal No.) (TVIP ECU ⇔ Integration relay)	Specified condition
IRSG (T3–28) ⇔ TVSS (I11–26)	Continuity

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

OK

CHECK AND REPLACE TVIP ECU (See page 01–30)