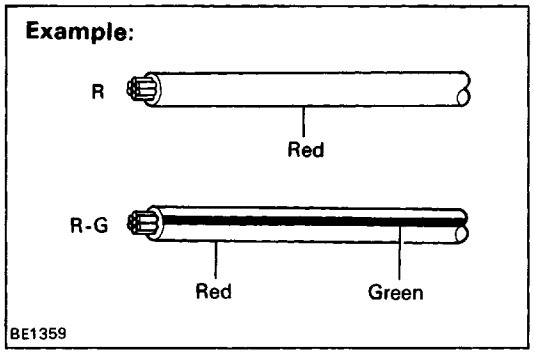
BODY ELECTRICAL SYSTEM



GENERAL INFORMATION

Wiring color code

Wire colors are indicated by an alphabetical code.

B = Black	L = Blue	R = Red
BR = Brown	LG = Light Green	V = Violet
G = Green	O = Orange	W = White
GR = Gray	P = Pink	Y= Yellow

The first letter indicates the basic wire color and the second letter indicates the color of the stripe.

Connector

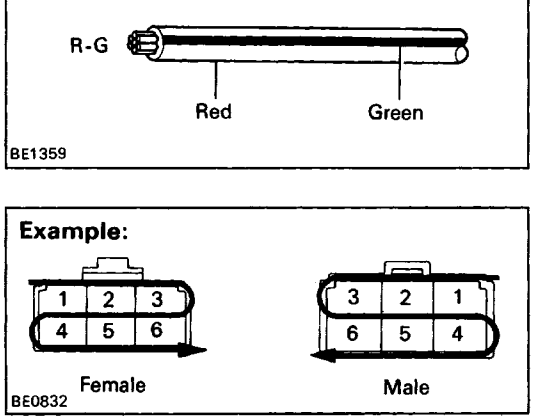
1. PIN NUMBER OF FEMALE CONNECTOR

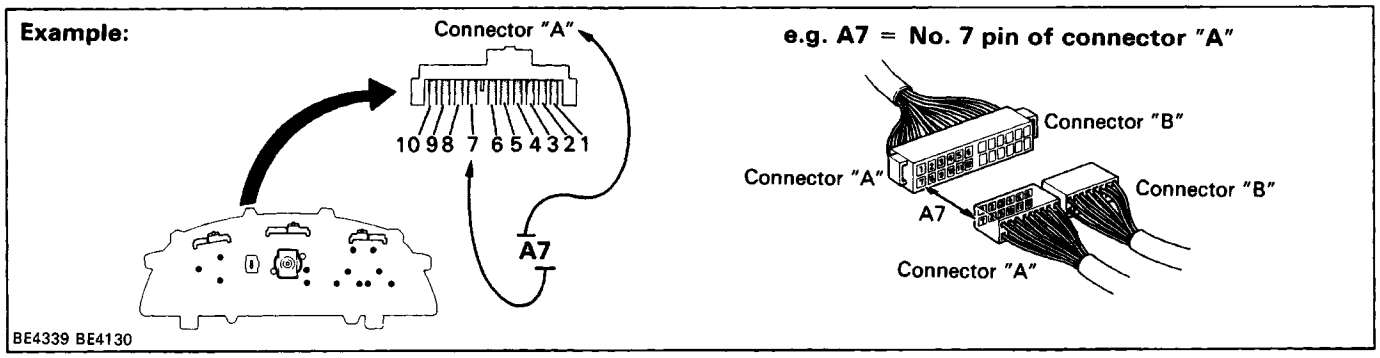
Numbered in order from upper left to lower right.

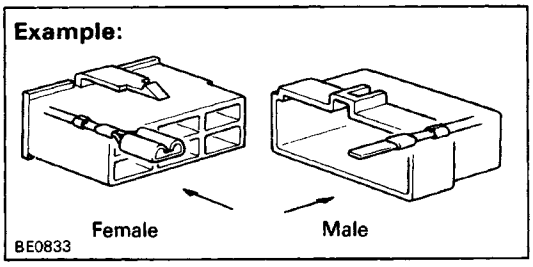
2. PIN NUMBER OF MALE CONNECTOR

Numbered in order from upper right to lower left.

HINT: When connectors with different or the same number of terminals are used with the same parts, each connector name (letter of the alphabet) and pin number is specified.







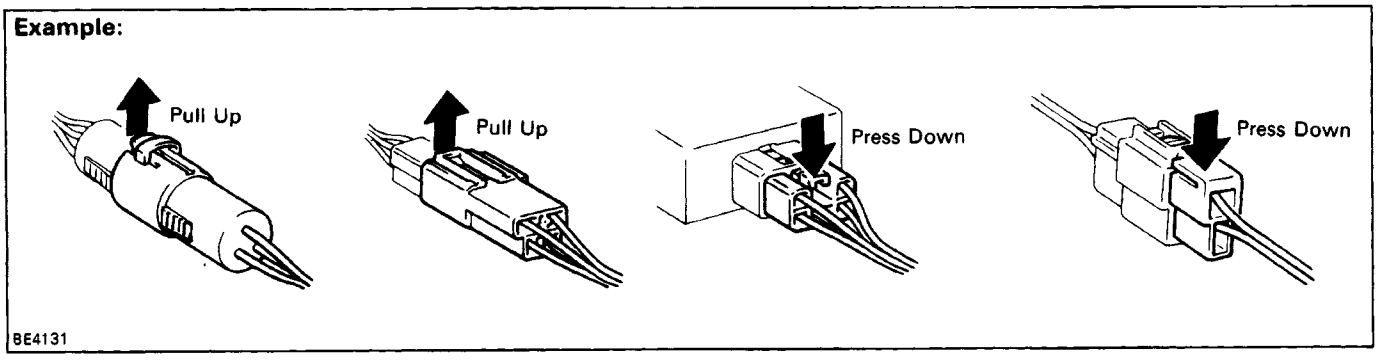
3. DISTINCTION OF MALE AND FEMALE CONNECTORS

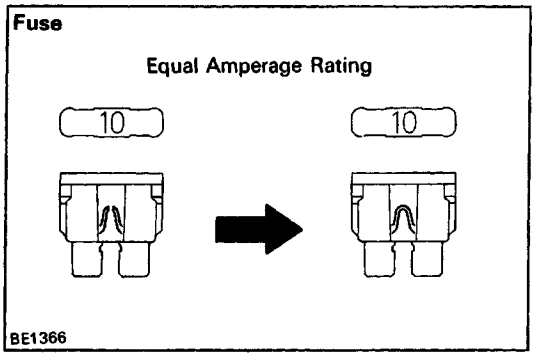
Male and female connectors are distinguished by shape of their internal pins.

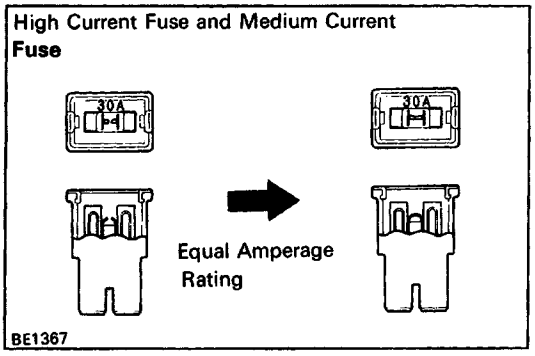
(a) All connectors are shown from the open end, and the lock is on top.

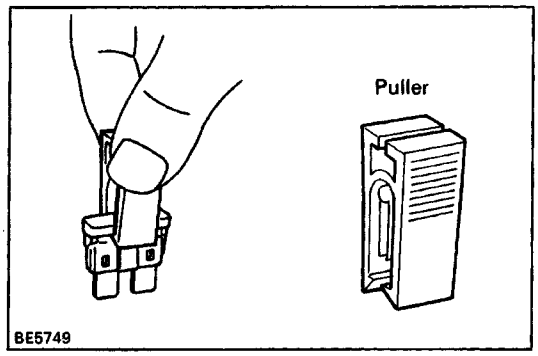
(b) To pull apart the connectors, pull on the connector itself, not the wires.

HINT: Check to see what kind of connector you are disconnecting before pulling apart.









Replacement of Fuse and Fusible Link

HINT: If replacing the fuse be sure to replace it with a fuse with and equal amperage rating.

NOTICE:

1. **Turn off all electrical components and the ignition switch before replacing a fuse. Do not exceed the fuse amperage rating.**
2. **Always use a fuse puller for removing and inserting a fuse. Remove and insert straight in and out without twisting. Twisting could force open the terminals too much, resulting in a bad connection.**

If a fuse continues to blow, a short circuit is indicated. The system must be checked by a qualified technician.

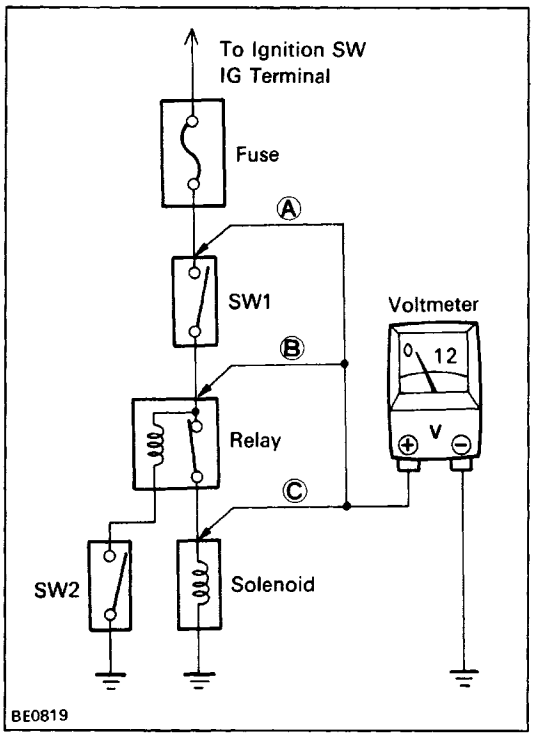
How to Inspect for System Inspection

This inspection procedure is a simple troubleshooting which should be carried out on the vehicle during system operation and was prepared on the assumption of system component troubles (except for the wires and connectors, etc.).
Always inspect the trouble taking the following items into consideration.

- Ground point fault
- Open or short circuit of the wire harness
- Connector or terminal connection fault
- Fuse or fusible link fault

NOTICE:

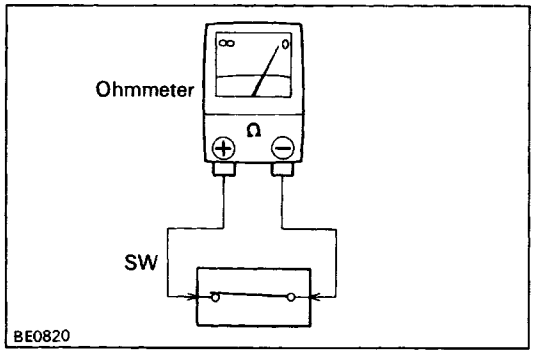
1. **This is an on–vehicle inspection during system operations. Therefore, inspect the trouble with due regard for security.**
2. **In case of connecting the battery directly, be careful not to short circuit, and select the applicable voltage.**



Check for Voltage

(a) Establish conditions in which voltage is present at the check point.
Example:
(A) Ignition switch on.
(B) Ignition switch and switch 1 (SW1) on.
(C) Ignition switch, switch 1 (SW1) and relay on (switch 2 (SW2) off).

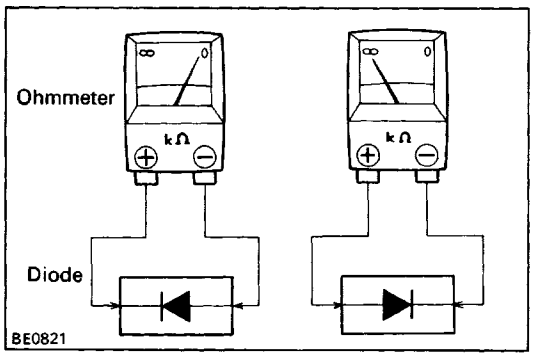
(b) Using a voltmeter, connect the negative (–) lead to a good ground point or negative (–) battery terminal and the positive (+) lead to the connector or component terminal. This check can be done with a test bulb instead of a voltmeter.



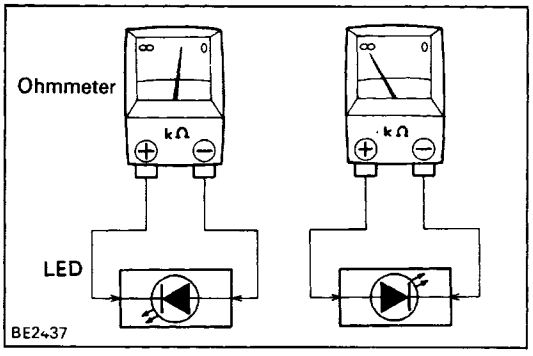
Check for Continuity and Resistance

(a) Disconnect the battery terminal or wire so there is no voltage between the check points.

(b) Contact the two leads of an ohmmeter to each of the check points.

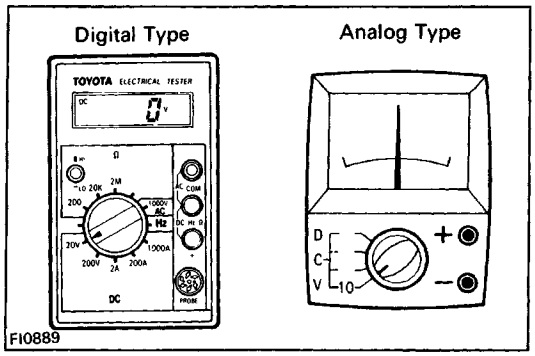


If the circuit has diodes, reverse the two leads and check again.
When contacting the negative (–) lead to the diode positive (+) side and the positive (+) lead to the negative (–) side, there should be continuity. When contacting the two leads in reverse, there should be no continuity.
HINT: Specifications may vary depending on the type of tester, so refer to the tester's instruction manual before performing the inspection.

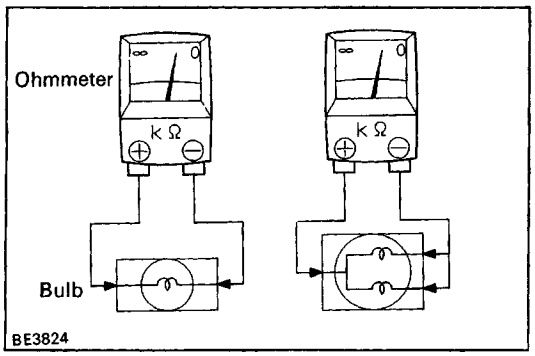


Check LED (Light Emitting Diode) in the same manner as that for diodes.

- Use a tester with a power source of 3V or greater to overcome the circuit resistance.
- If a suitable tester is not available, apply battery voltage and check that the LED that the LED lights up.

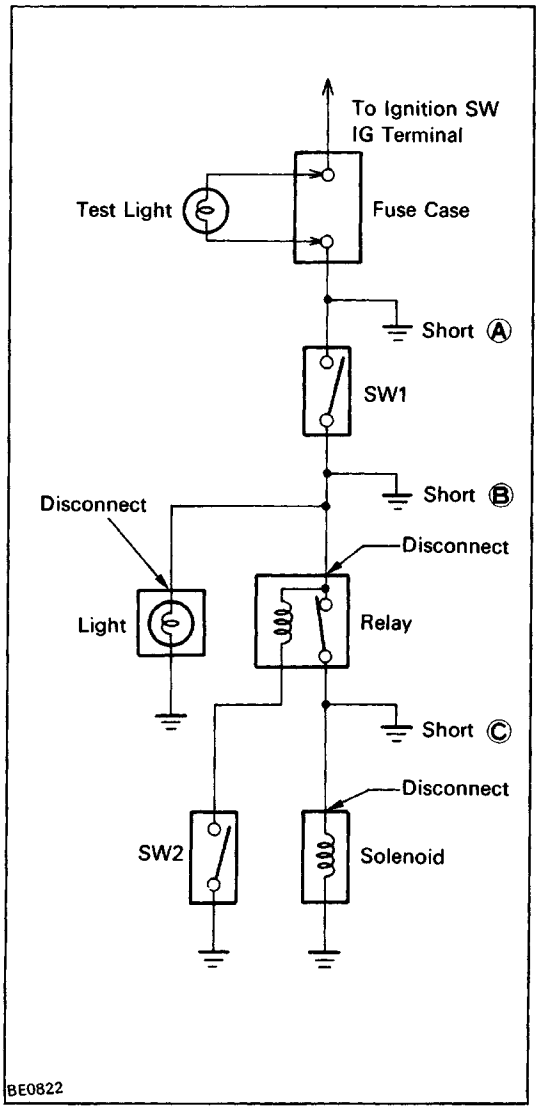


(c) Use a volt/ohmmeter with high impedance (10 k/V minimum) for troubleshooting of the electrical circuit.



Check the Bulb

(a) Remove the bulb.
(b) There should be continuity between the respective terminals of the bulb together with a certain amount of resistance.
(c) Apply the two leads of the ohmmeter to each of the terminals.
(d) Apply battery voltage and check that the bulb light up.



Check for Short Circuit

(a) Remove the blown fuse and eliminate all loads from the fuse.
(b) Connect a test bulb in place of the fuse.
(c) Establish conditions in which the test bulb comes on.
Example:
(A) Ignition switch on.
(B) Ignition switch and switch 1 (SW1) on.
(C) Ignition switch, switch 1 (SW1) and relay on (connect the relay) and switch 2 (SW2) off (or disconnect switch 2 (SW2)).
(d) Disconnect and reconnect the connectors while watching the test bulb.
The short lies between the connector where the test bulb stays lit and the connector where the bulb goes out.
(e) Find the exact location of the short by lightly shaking the problem wire along the body.

Electrical Parts

Before removing and inspecting the electrical parts, set the ignition switch to the LOCK position and disconnect the negative (–) terminal cable from the battery.

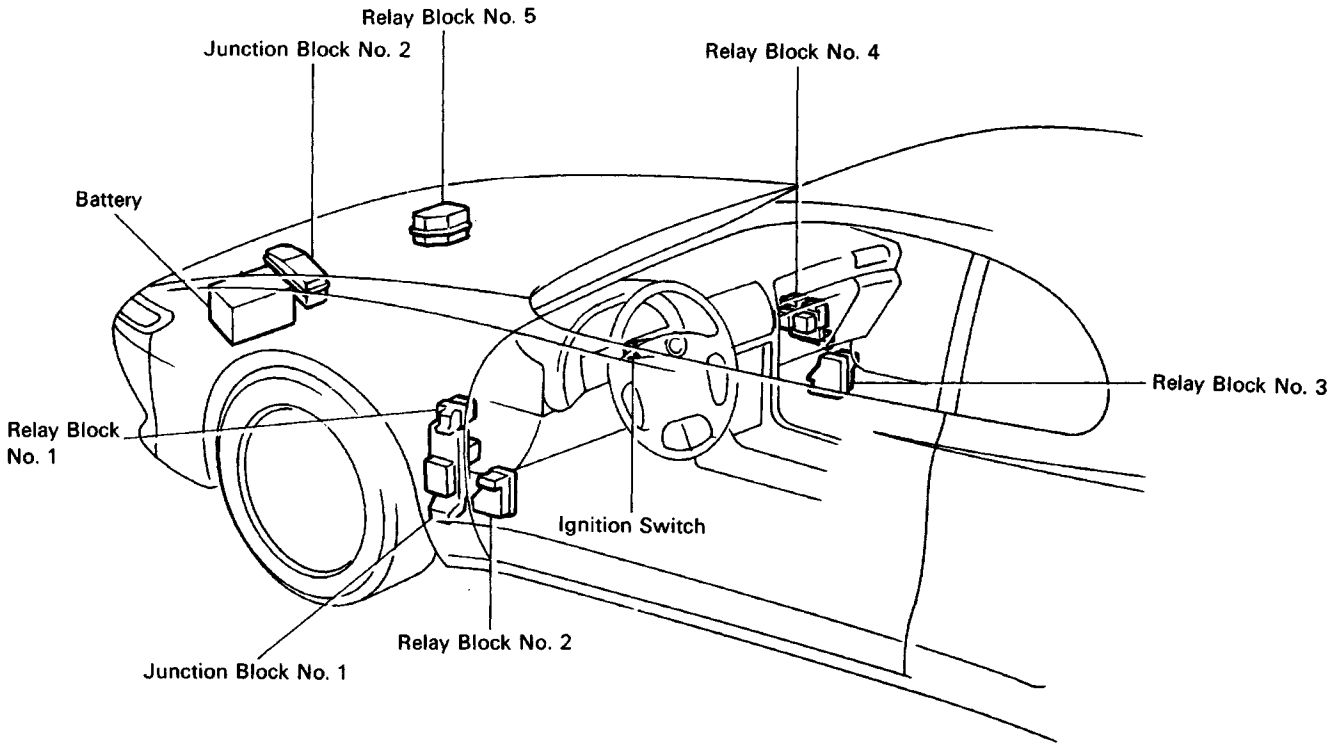
CAUTION: Work must not be started until after at least 20 seconds or longer from the time the negative (–) terminal cable is disconnected.

SRS Airbag System

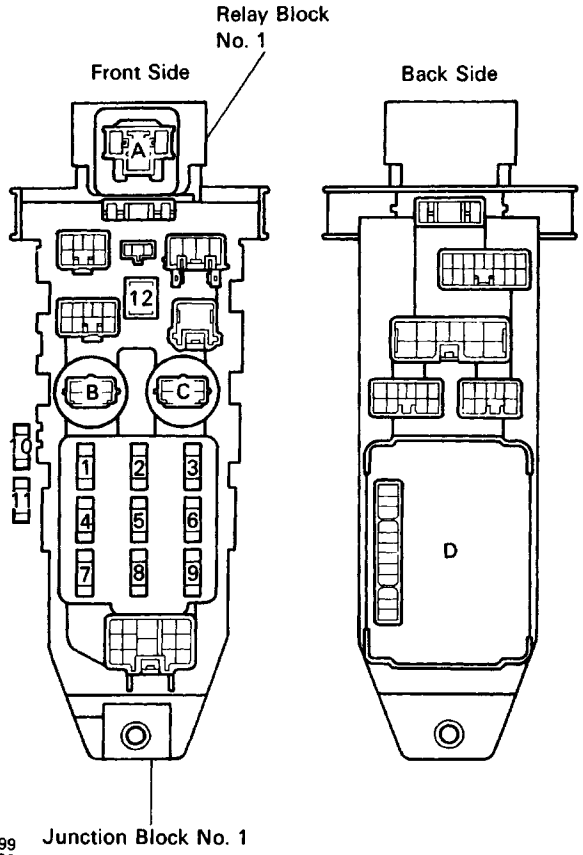
Failure to carry out service operations in the correct sequence could cause the airbag system to deploy, possibly leading to a serious accident.

When removal or installation of the parts and the yellow wire harness and connector for the airbag is necessary, refer to the precautionary notices in the AB section before performing the operation.

POWER SOURCE
Parts Location



JUNCTION BLOCK NO. 1 AND RELAY BLOCK NO. 1



Fuses and Fusible Link

1.	IGN	7.5A
2.	CIG & RAD	15A
3.	STOP	15A
4.	GAUGE	15A
5.	TURN	10A
6.	ECU-IG	15A
7.	WIPER	20A
8.	ECU-B	15A
9.	TAIL	15A
10.	–	
11.	MIR-HTR	10A
12.	DEFOGGER	30A (M-Fuse)

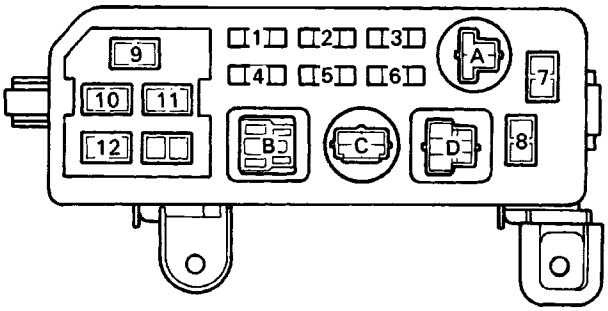
Relays

A TURN SIGNAL FLASHER
B DEFOGGER
C. TAIL (Taillight Control)
D. INTEGRATION

3E4299
3E4300

Parts Location (Cont'd)

JUNCTION BLOCK No. 2



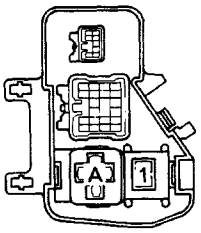
Fuses and Fusible Links

1. HEAD (LH)	15A	7. FAN	30A FL (H-Fuse)	
2. RTR	30A	8. CDS	30A FL (H-Fuse)	
3. HEAD (RH)	15A	9. ALT	100A FL (H-Fuse)	
4. EFI	15A	10. AM2	30A FL (H-Fuse)	
5. DOME	20A	11. AM1	40A FL (H-Fuse)	
6. HAZ-HORN	15A	12. ABS	60A FL (H-Fuse)	

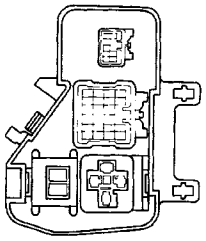
Relays
A. FAN No. 1
B. HEAD (Headlight Control)
C. EFI
D. ENGINE MAIN

RELAY BLOCK NO. 2 and NO. 3

Relay Block No. 2



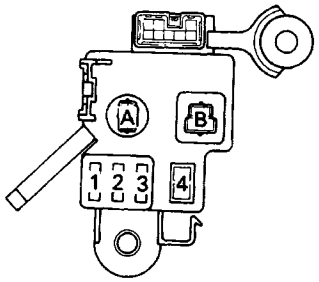
Relay Block No. 3



Fuse
1. Power 30A (M-Fuse)

Relays
A. Power Main
B. Front Fog Light Control

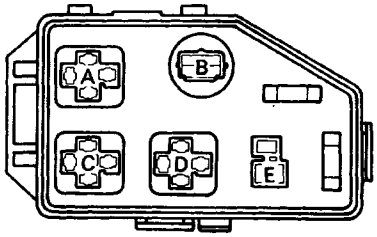
RELAY BLOCK NO.4



Fuses
1. –
2. FOG 20A
3. A/C 10A
4. HEATER 40A (M-Fuse)

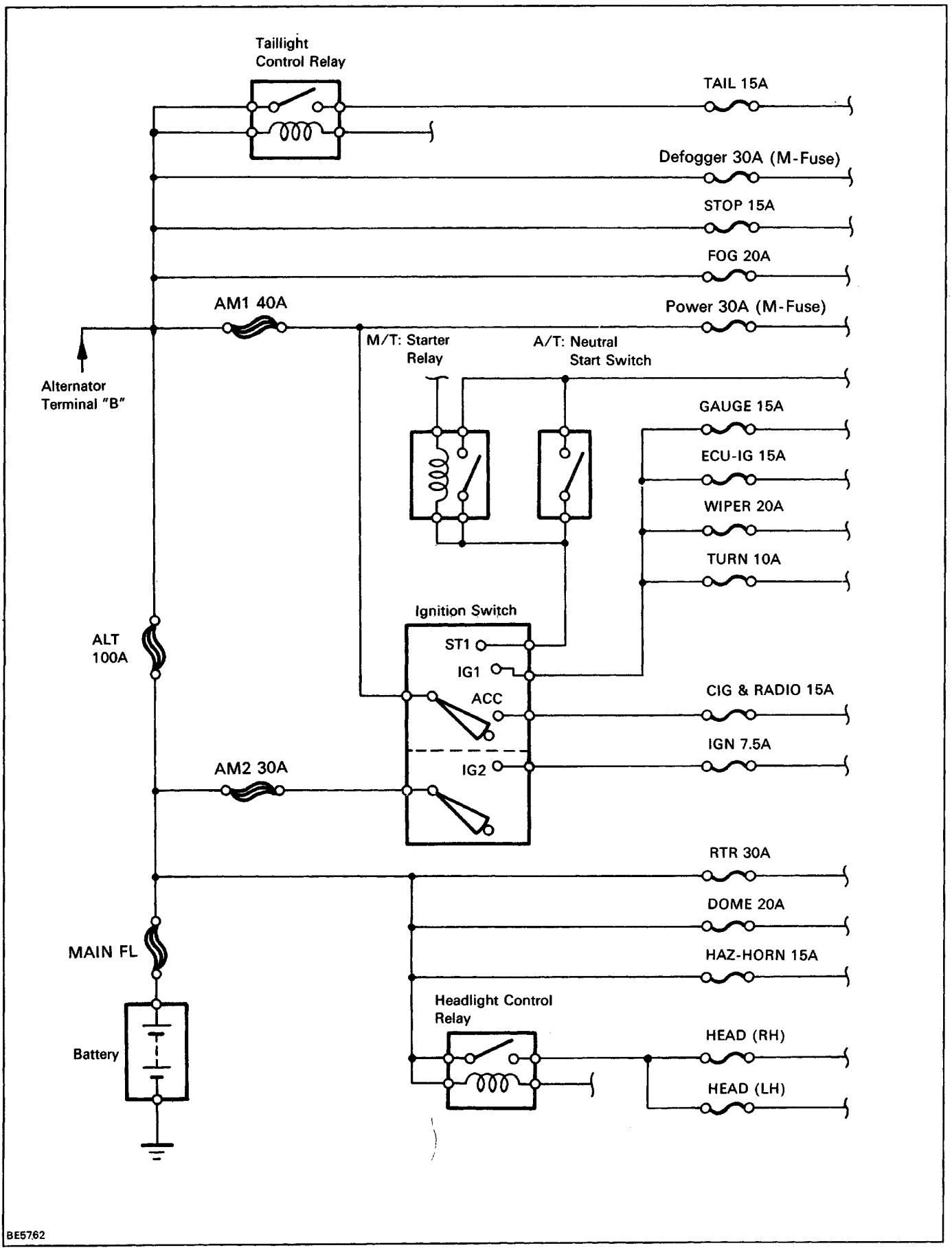
Relays
A. STARTER
B. HEATER MAIN

RELAY BLOCK NO. 5



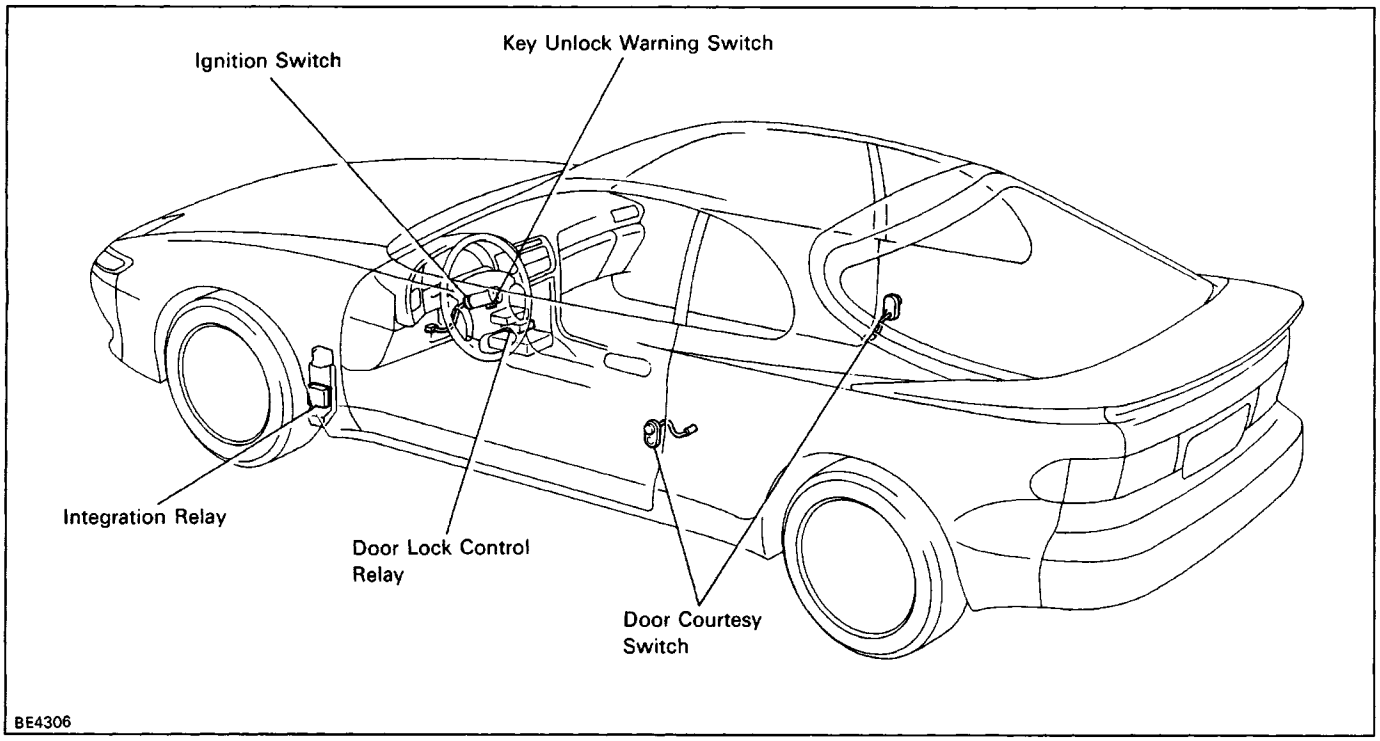
Relays
A. A/C FAN No. 2
B. SUB FAN
C. A/C FAN No. 3
D. A/C MG
E. HORN

Wiring Diagram



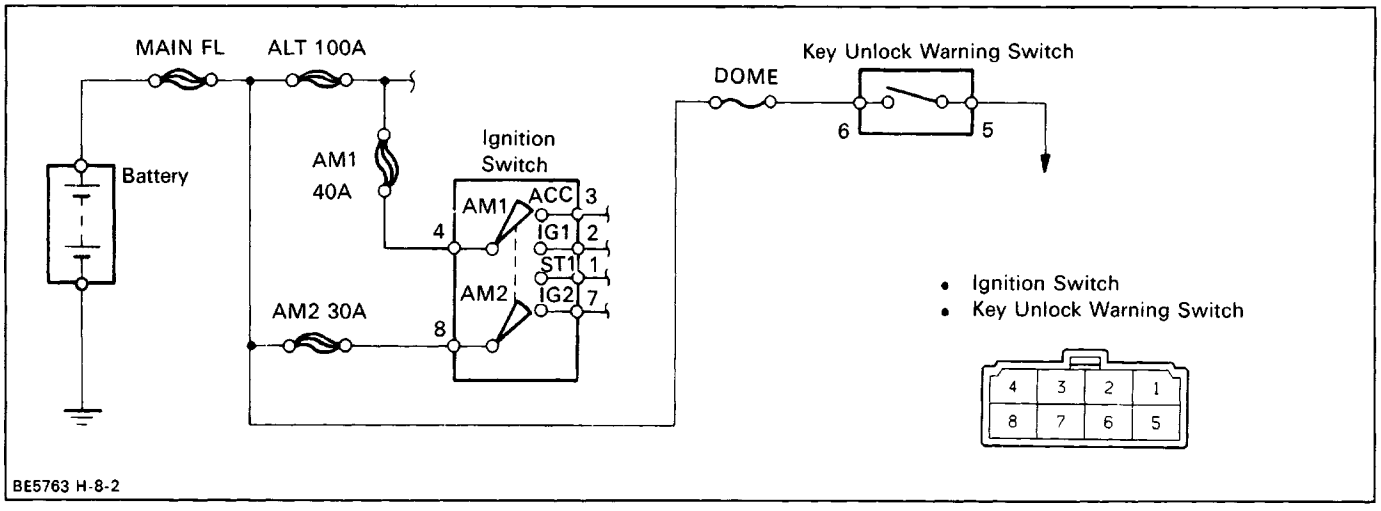
IGNITION SWITCH

Parts Location



Wiring and Connector Diagrams

IGNITION SWITCH



KEY CONFINE PREVENTION SYSTEM

See Power Door Lock Control System on page BE–73.

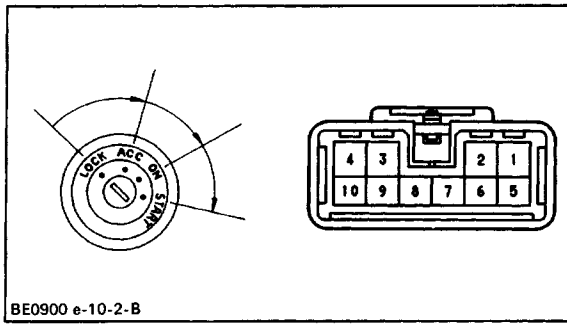
Troubleshooting

Problem	Possible cause	Remedy	Page
Ignition switch is not set to each position	Ignition switch faulty Power source circuit faulty	Check switch Repair as necessary	BE–11 BE–9
Key confine prevention system does not operate	Key unlock warning switch faulty Door courtesy switch faulty Door lock control relay faulty Wiring faulty	Check switch Check switch Check relay Repair as necessary	BE–11 BE–60 BE–75
Key unlock warning system does not operate	Key unlock warning switch faulty Door courtesy switch faulty Integration relay faulty Wiring faulty	Check switch Check switch Check relay Repair as necessary	BE–11 BE–60 BE–12

Parts Inspection

Ignition System

INSPECT SWITCH
(Ignition Switch/Continuity)

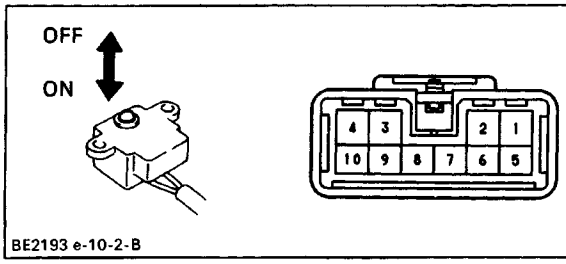


Terminal / Switch position	2 IG1	3 ACC	4 AM1	6 ST2	7 ST1	9 IG2	10 AM2
LOCK							
ACC		○—○					
ON	○	○—○	○			○—○	
START	○		○	○	○	○—○	

If continuity is not as specified, replace the switch.

Key Confine Prevention System
(See page BE–74)

1. INSPECT SWITCHES
(Key Unlock Warning Switch/Continuity)



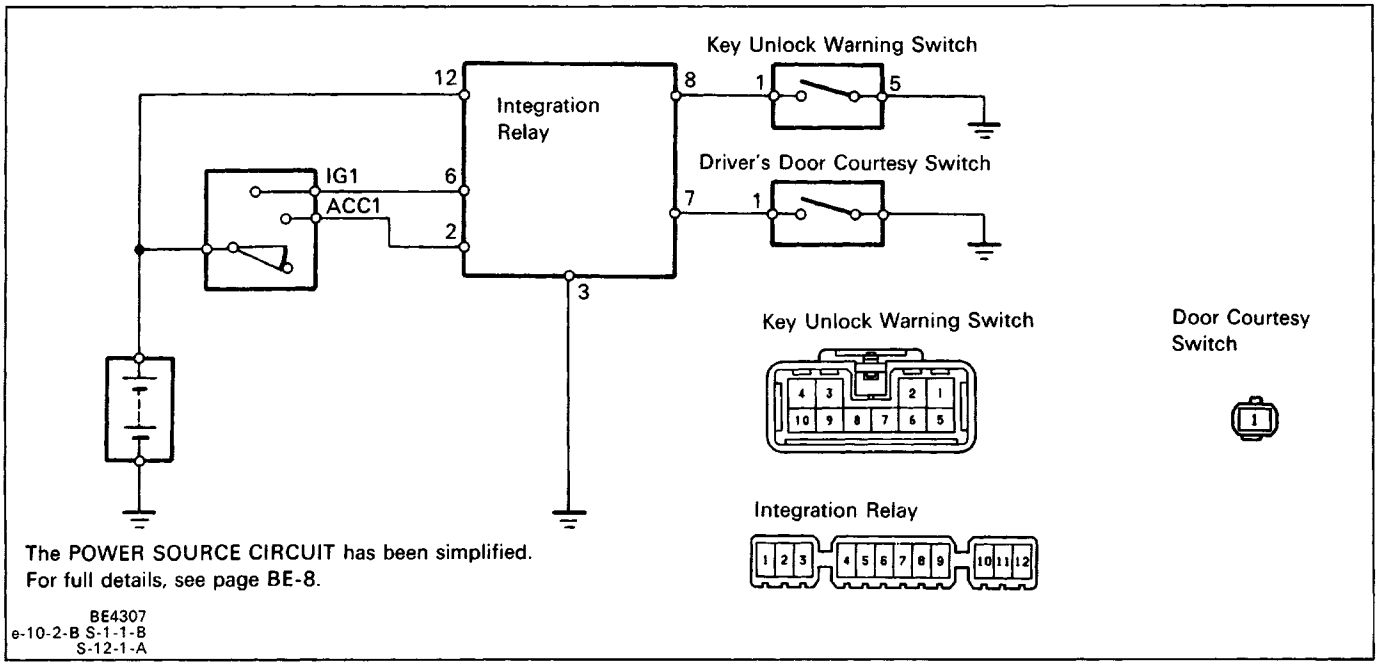
Terminal / Switch position	1	5
OFF (Ignition Key removed)		
ON (Ignition Key set)	○	○

If continuity is not as specified, replace the switch.

(Door– Courtesy Switch)
See Step 2 on page BE–62.

2. INSPECT DOOR LOCK CONTROL RELAY
See Step 3 on page BE–77.

KEY UNLOCK WARNING SYSTEM



1. INSPECT SWITCHES

(Key Unlock Warning Switch)

See Step 1 on page BE–10.

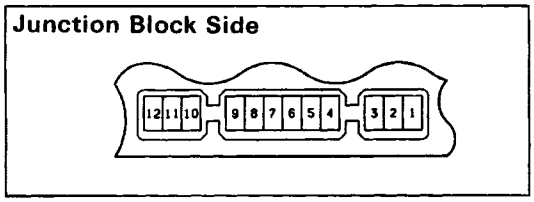
(Door Courtesy Switch)

See Step 2 on page BE–62.

2. INSPECT INTEGRATION RELAY

(Relay Circuit)

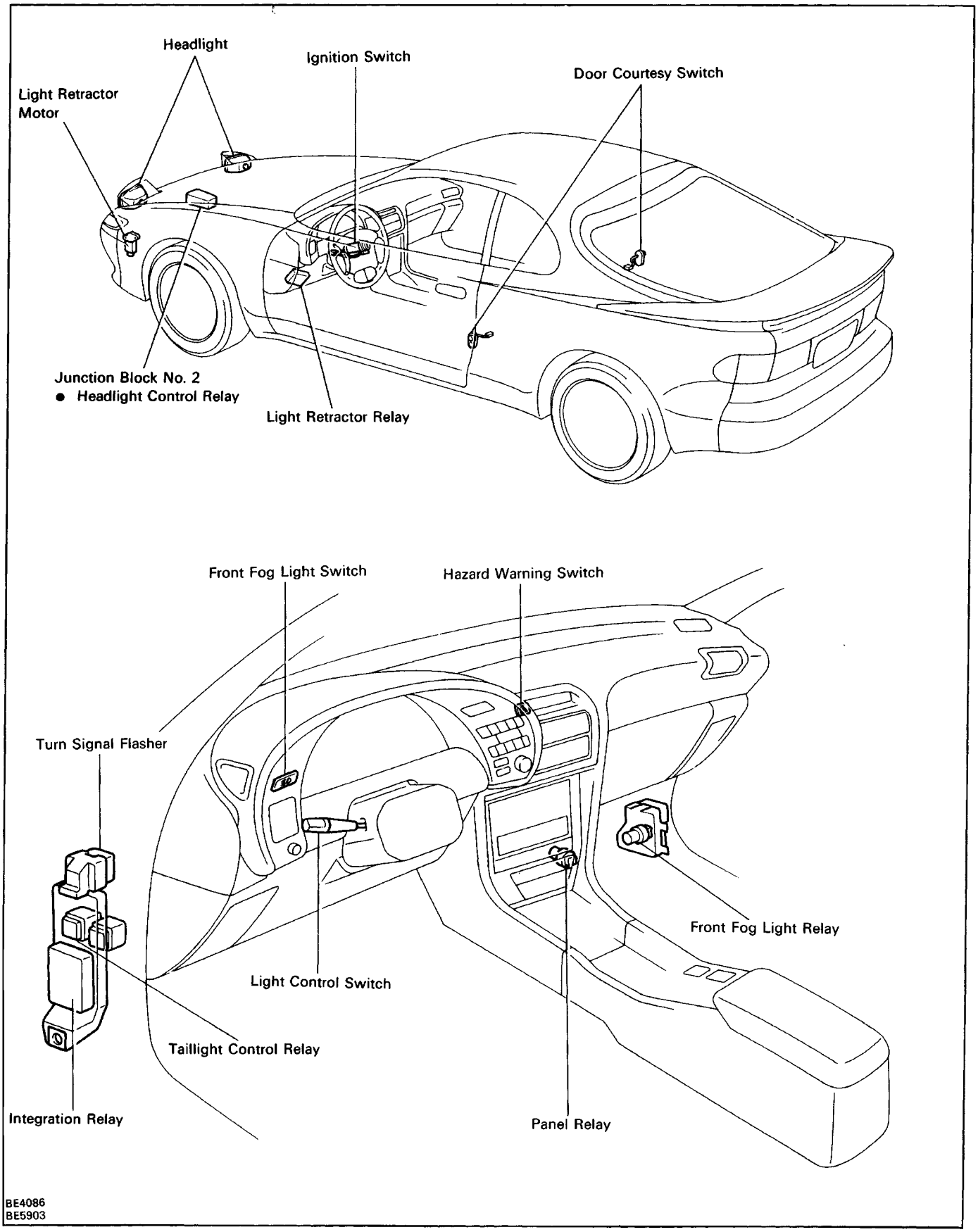
Remove the integration relay from the junction block and inspect the connector on the junction block side as shown in the chart.



Check for	Tester connection	Condition		Specified value
Continuity	3 – Ground	Constant		Continuity
	7 – Ground	Driver's door courtesy switch position	OFF (Door Closed)	No continuity
			ON (Door opened)	Continuity
	8 – Ground	Key unlock warning switch position	OFF (Key installed)	No continuity
			O N (Key removed)	Continuity
Voltage	2 – Ground	Ignition switch position	LOCK	No voltage
			ACC or ON	Battery voltage
	6 – Ground	Ignition switch position	LOCK or ACC	No voltage
			ON	Battery voltage
	12 – Ground	Constant		Battery voltage

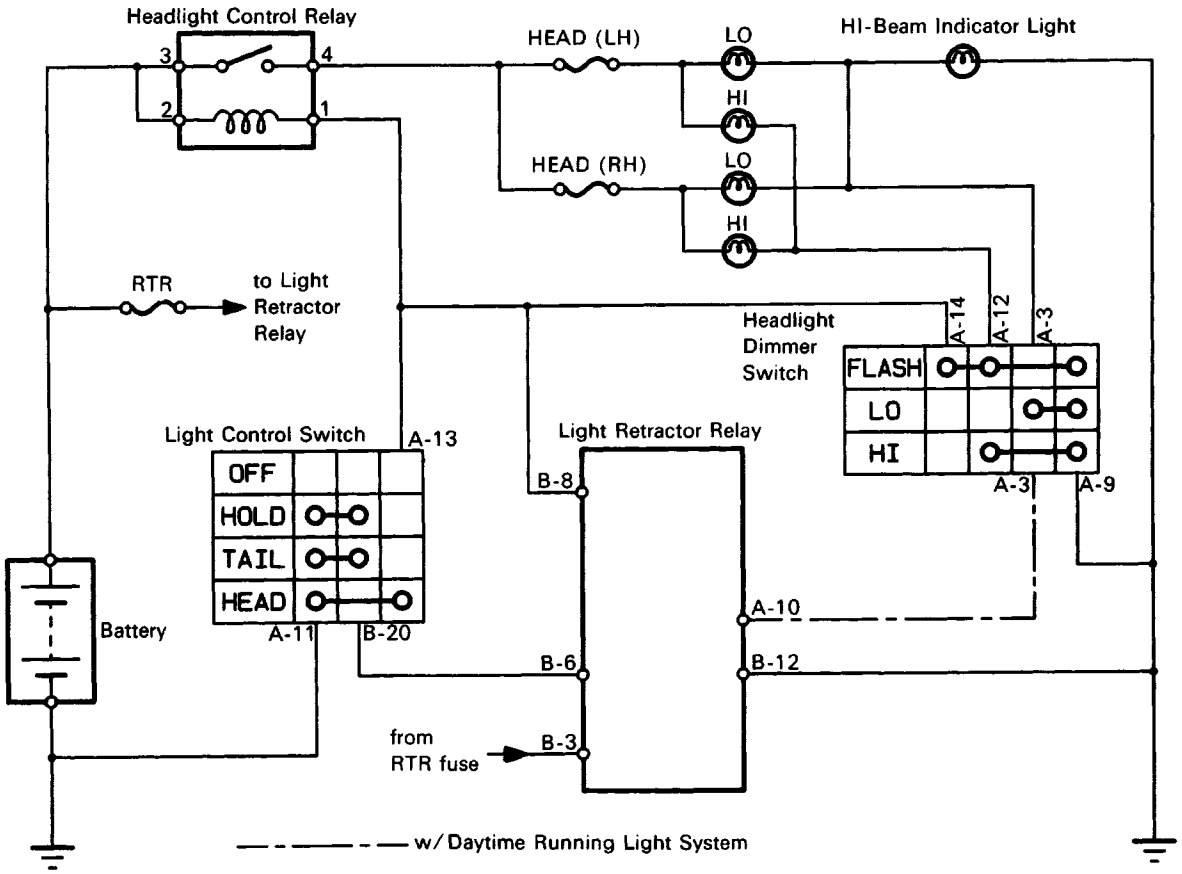
If circuit is as specified, replace the relay.

LIGHTING SYSTEM
Parts Location



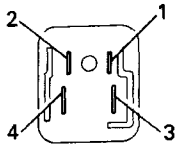
Wiring and Connector Diagrams

Headlight System

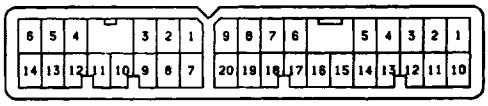


The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

Headlight Control Relay

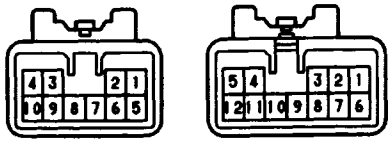


Light Control Switch and Headlight Dimmer Switch



Connector "A" Connector "B"

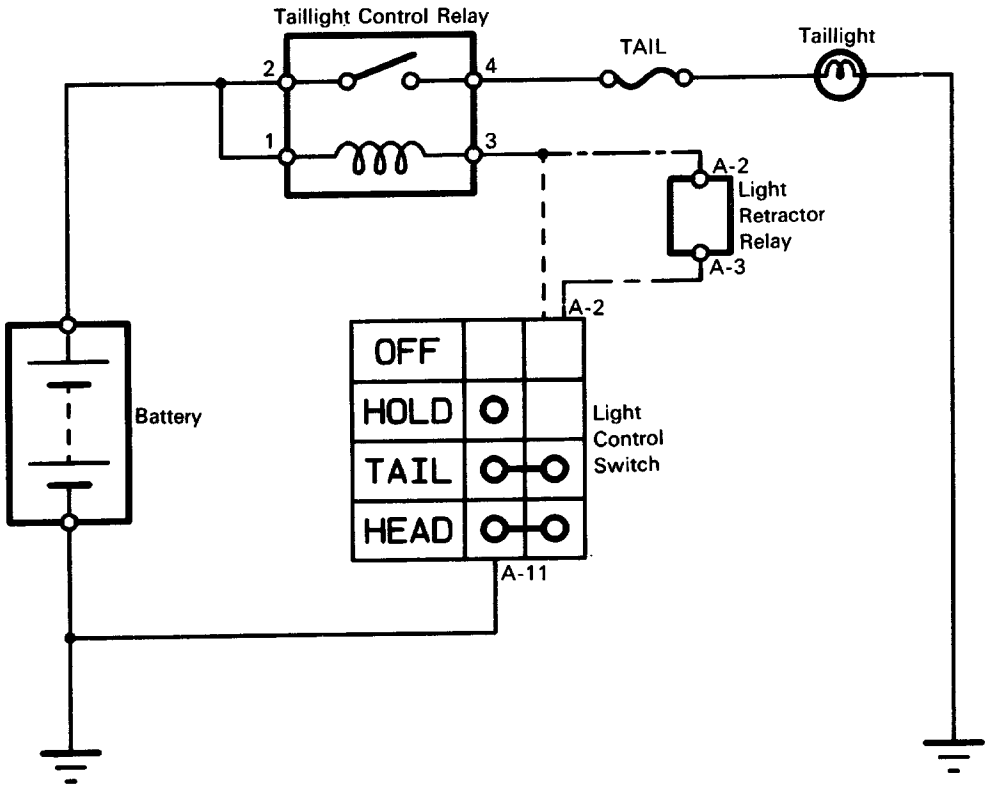
Light Retractor Relay



Connector "A" (w/ Daytime Running Light System) Connector "B"

BE4088
BE1838 V-34-2
e-10-2 e-12-2

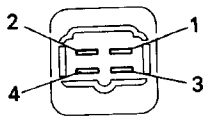
Taillight System



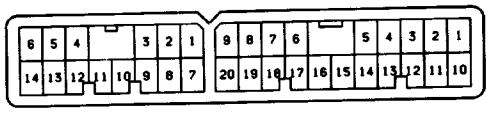
w/o Daytime Running Light System

w/ Daytime Running Light System

Taillight Control Relay

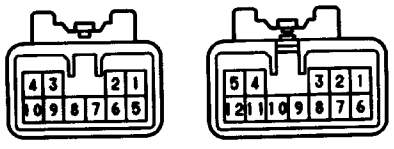


Light Control Switch



Connector "A" Connector "B"

Light Retractor Relay

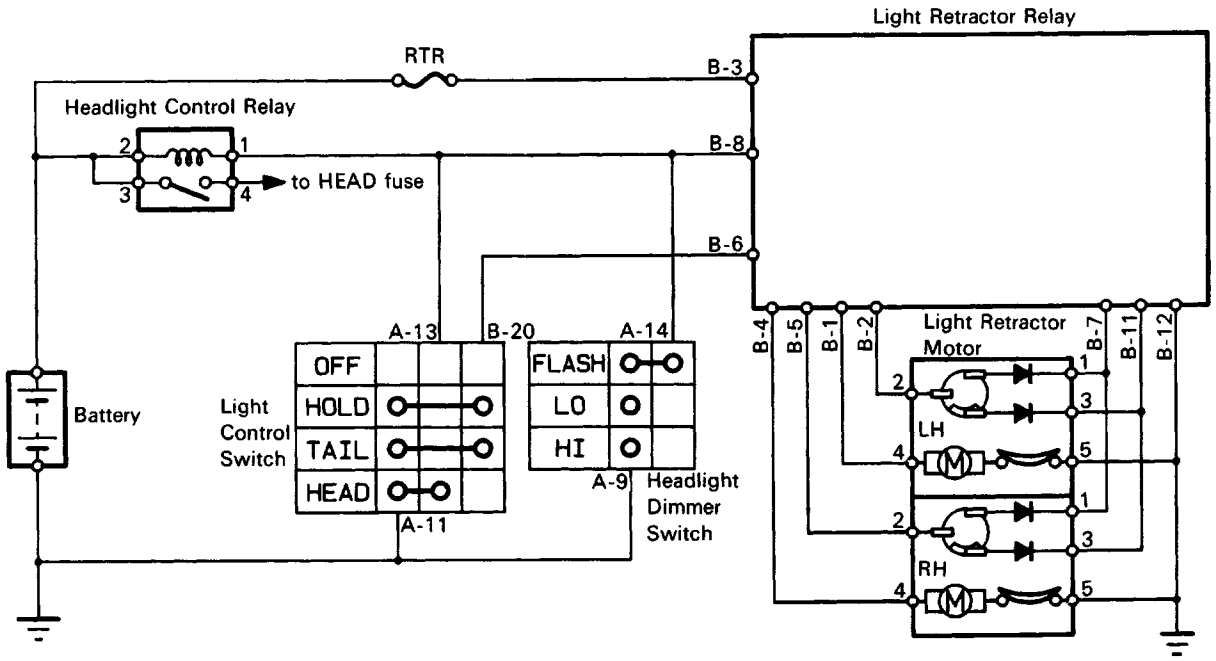


Connector "A" (w/ Daytime Running Light System)

Connector "B"

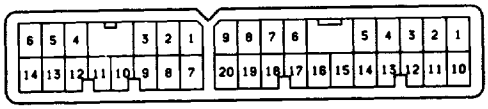
The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

Light Retractable System



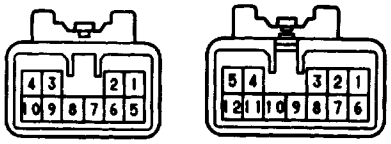
The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

Light Control Switch and Headlight Dimmer Switch



Connector "A" Connector "B"

Light Retractor Relay



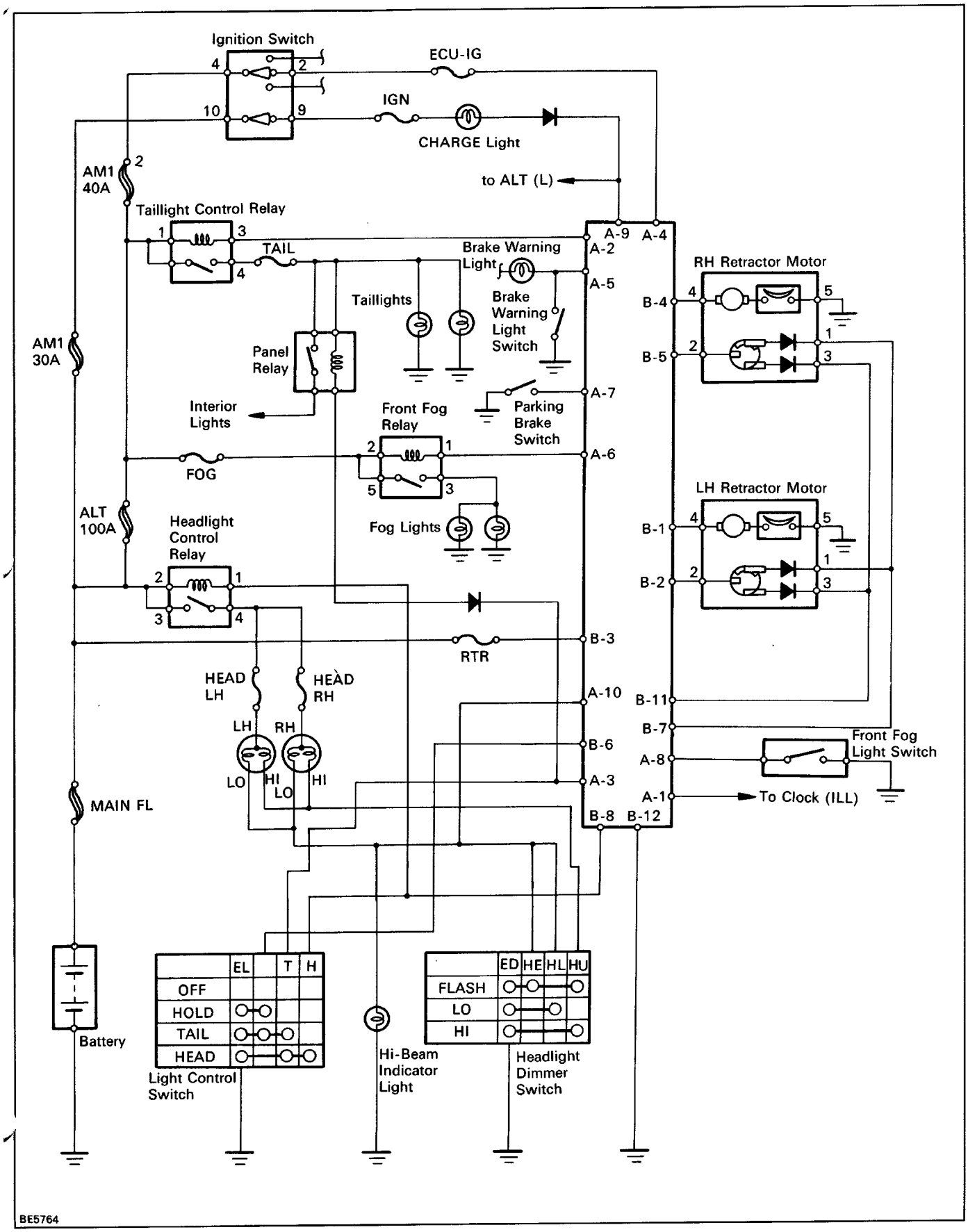
Connector "A" (w/Daytime Running Light System)

Connector "B"

Light Retractor Motor

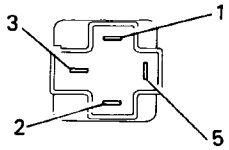


Daytime Running Light System Wiring Diagram



Daytime Running Light System Connector Diagram

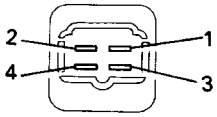
Front
Fog Light Relay



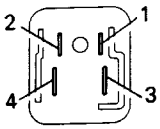
Light Retractor Motor



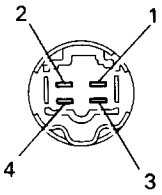
Taillight Control Relay



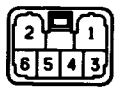
Headlight Control Relay



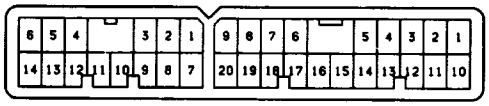
Panel Relay



Front Fog Light Switch

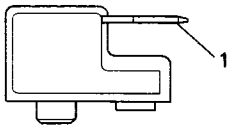


Light Control Switch and
Headlight Dimmer Switch

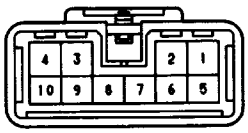


Connector "A" Connector "B"

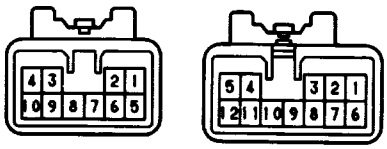
Parking Brake Switch



Ignition Switch



Light Retractor Relay



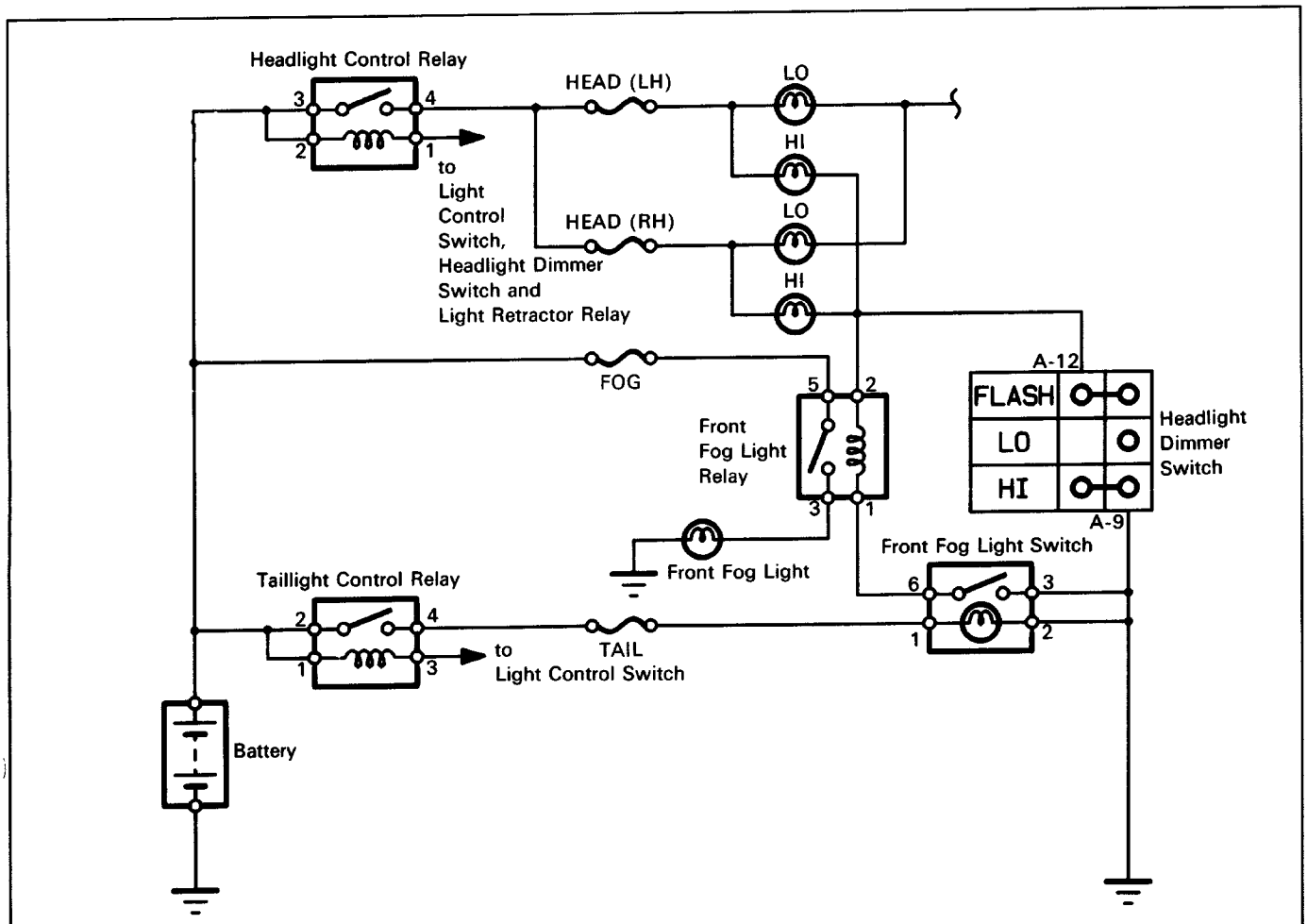
Connector "A" Connector "B"

Brake Fluid Level
Warning Switch

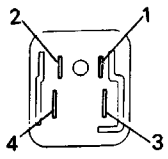


BE4049 IJ-5-2-A BE4038
BE1838 BE1647 S-6-2
v-34-2 BE1412 e-10-2-B
e-10-2 e-12-2 IS-2-2-A

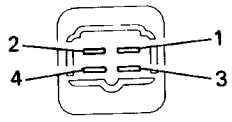
Front Fog Light System (w/o Daytime Running Light System)



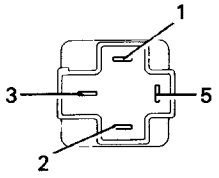
Headlight Control Relay



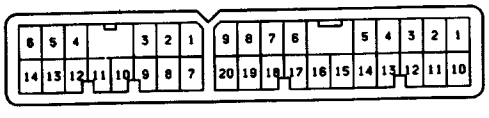
Taillight Control Relay



Front Fog Light Relay

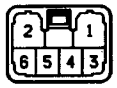


Headlight Dimmer Switch



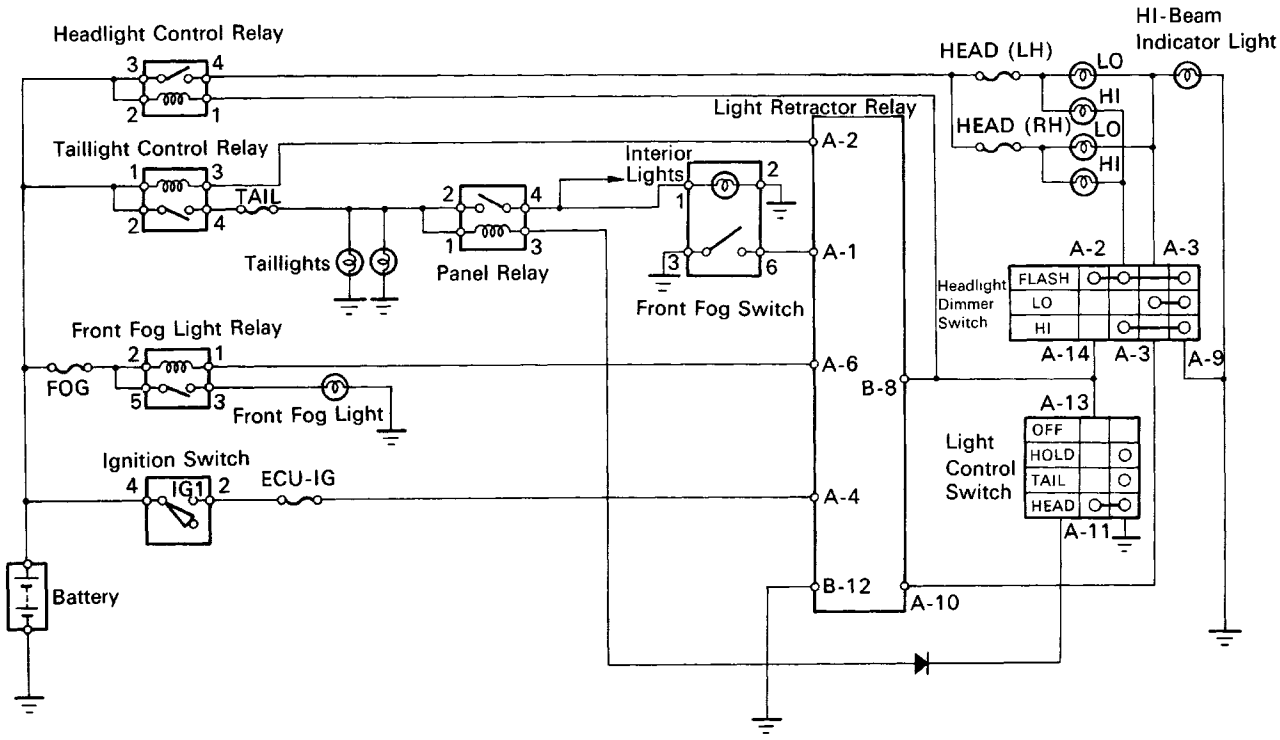
Connector "A" Connector "B"

Front Fog Light Switch



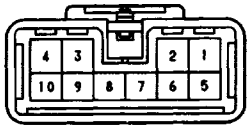
The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

(w/ Daytime Running Light System)

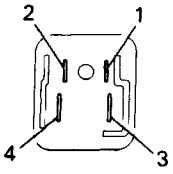


The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

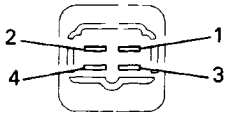
Ignition Switch



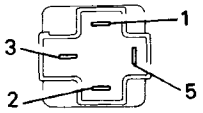
Headlight Control Relay



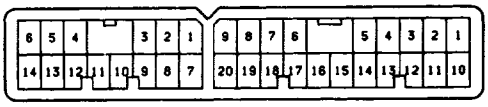
Taillight Control Relay



Front Fog Light Relay

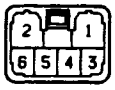


Light Control Switch and Headlight Dimmer Switch

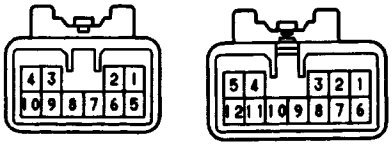


Connector "A" Connector "B"

Front Fog Light Switch

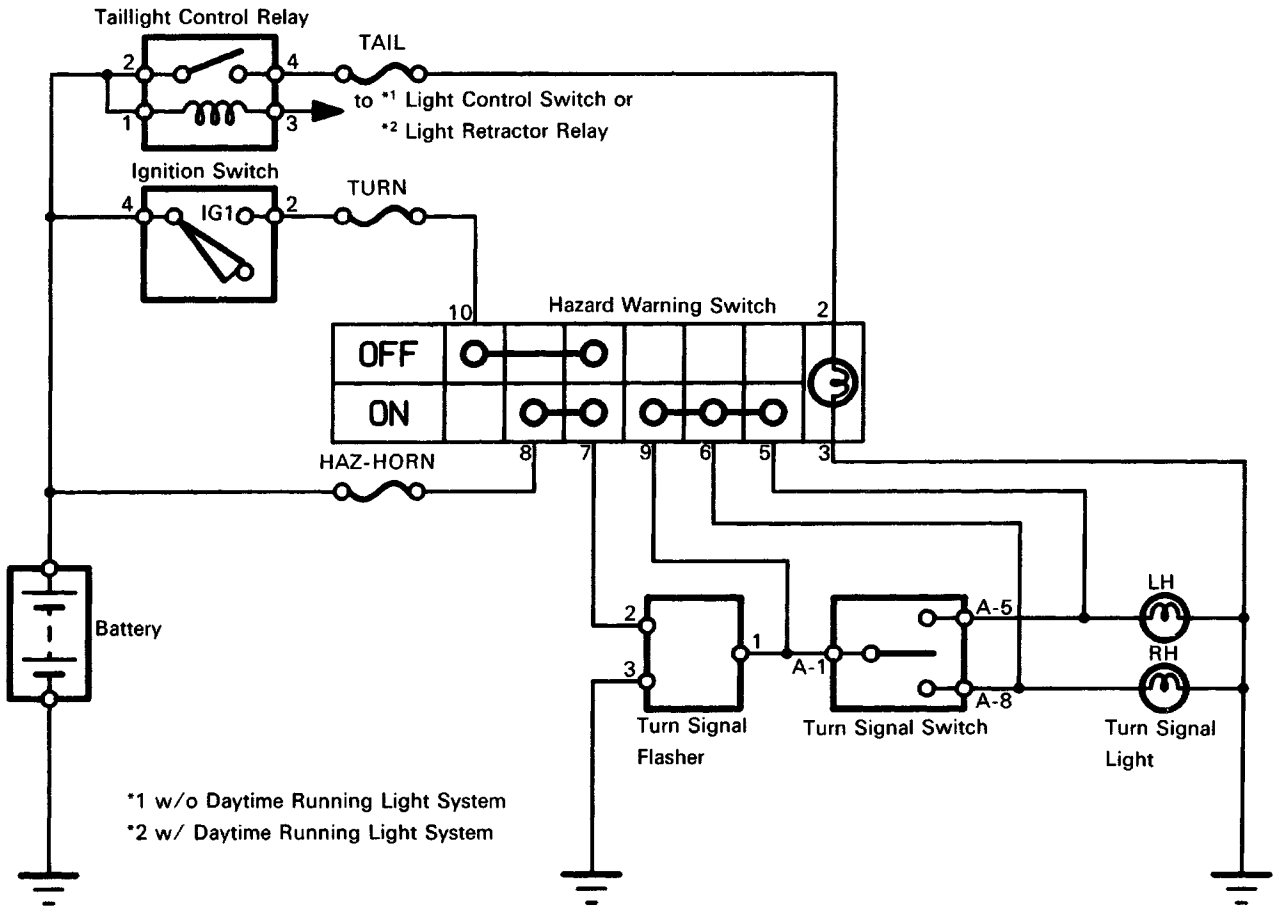


Light Retractor Relay



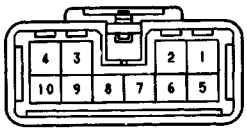
Connector "A" Connector "B"

Turn Signal and Hazard Warning System

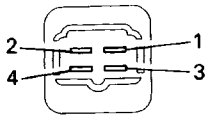


The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

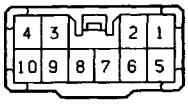
Ignition Switch



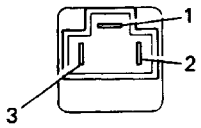
Taillight Control Relay



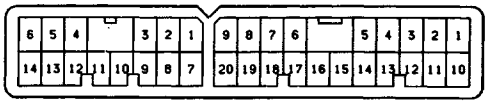
Hazard Warning Switch



Turn Signal Flasher

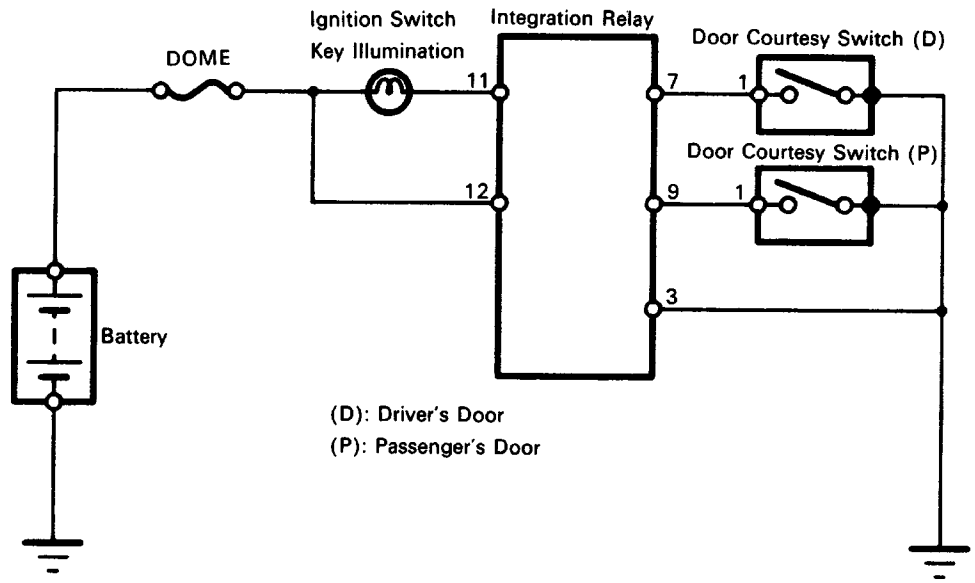


Turn Signal Switch



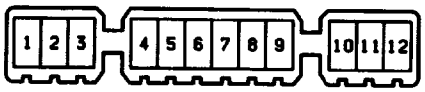
Connector "A" Connector "B"

Illuminated Entry System



The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

Integration Relay



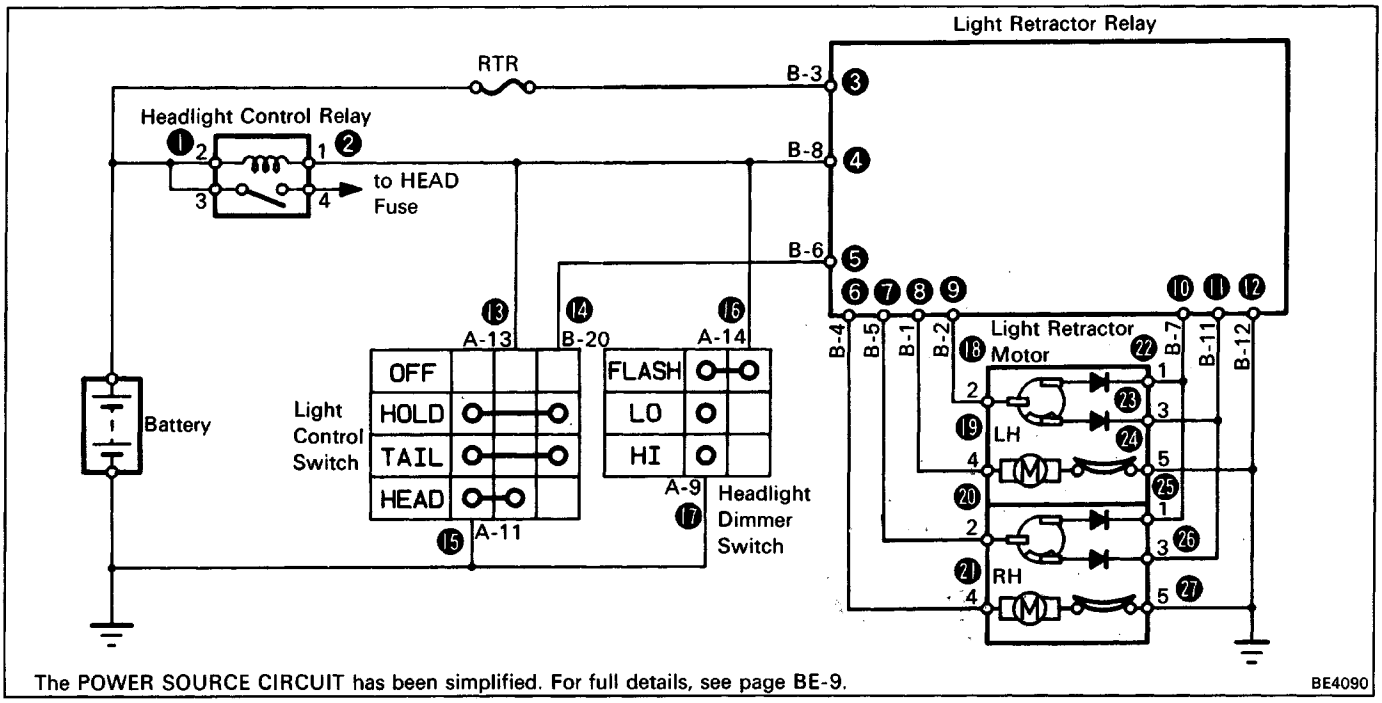
Door Courtesy Switch



BE4095
S-12-1-A e-1-1

System Description

Light Retractable System



Operation Example (Current Flaw Table)

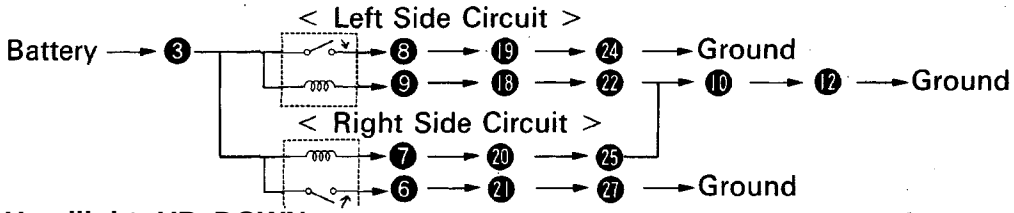
1. Headlight: Down Up

Switch	Position
Light, Control Switch	HEAD

or

Switch	Position
Headlight Dimmer Switch	Pull (Flash)

Condition: Continuity ❶ → ❷ → ⓭ → ⓯ → Ground (Light Control Switch: HEAD Position)
❶ → ❷ → ⓰ → ⓱ → Ground (Headlight Dimmer Switch: Flash Position)



2. Headlight: UP–DOWN

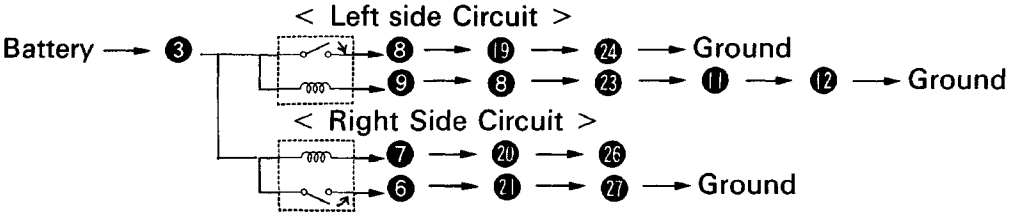
Switch	Position
Light Control Switch	*1 OFF

or

Switch	Position
Headlight Dimmer Switch	*2 Release

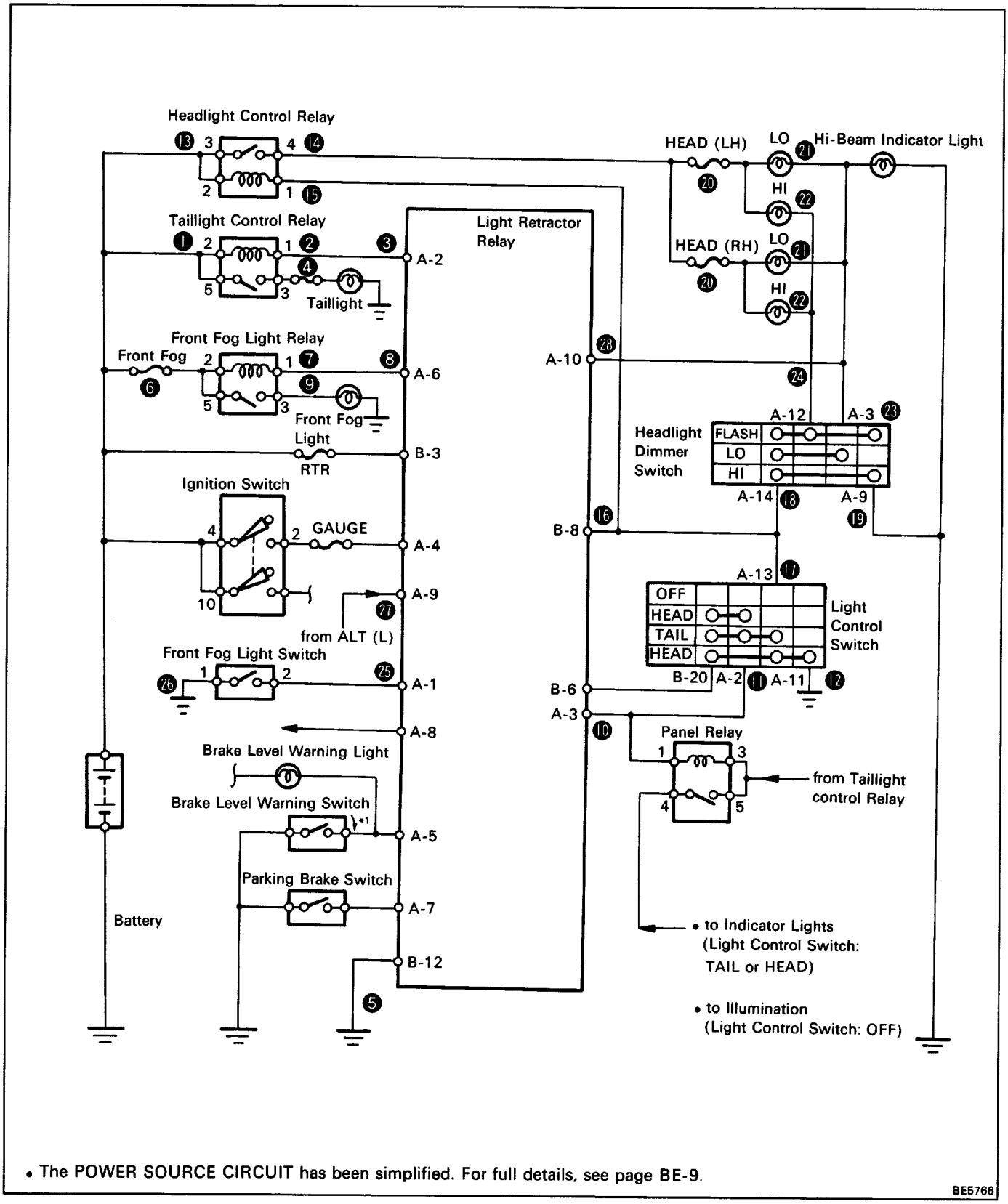
*1: from TAIL, HOLD, HEAD
*2: from Pull

Condition: No Continuity ❺ → ⓮



Daytime Running Light System

The Daytime Running Light (DRL) system is activated when the engine is started (However, if the parking brake lever is engaged when the engine is started, the DRL will not light up after the engine has started. Once the parking brake is released, the DRL will then light up and will remain on regardless of operation of the parking brake lever).
The DRL remain on until the ignition switch is turned off.



• The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

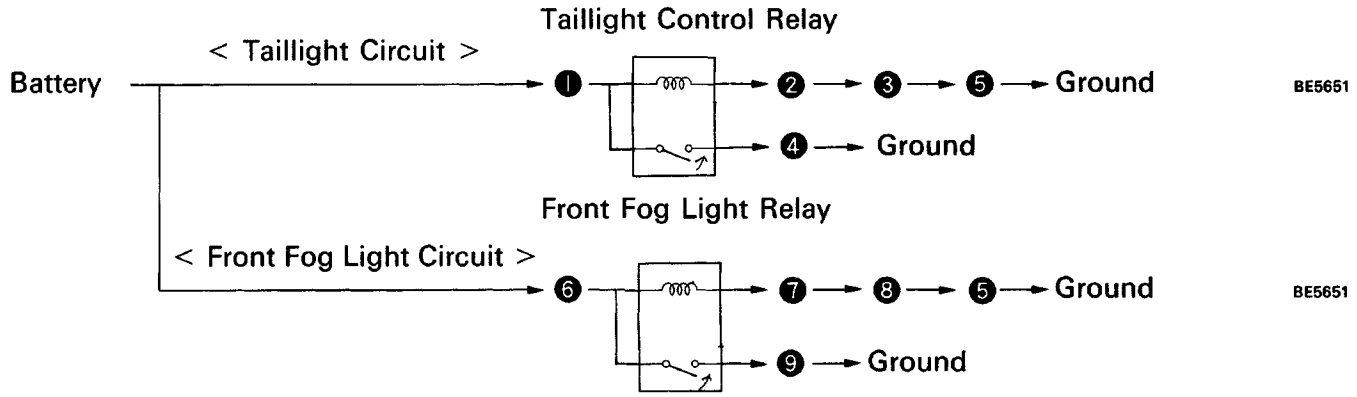
BE5766

Operation example (Current flow table)

1. Daytime Running Light Lights Up

Switch	Position
Ignition Switch	ON (engine running)
Light Control Switch	OFF or HOLD or TAIL
Headlight Dimmer Switch	LO or HI or FLASH

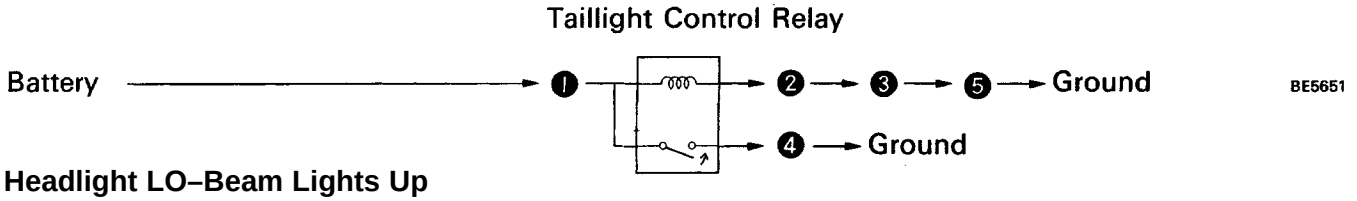
Condition: Battery Voltage → ㉗ , ㉙ , ㉚



2. Taillight Lights Up

Switch	Position
Ignition Switch	OFF or ON
Light Control Switch	TAIL
Headlight Dimmer Switch	LO or HI or FLASH

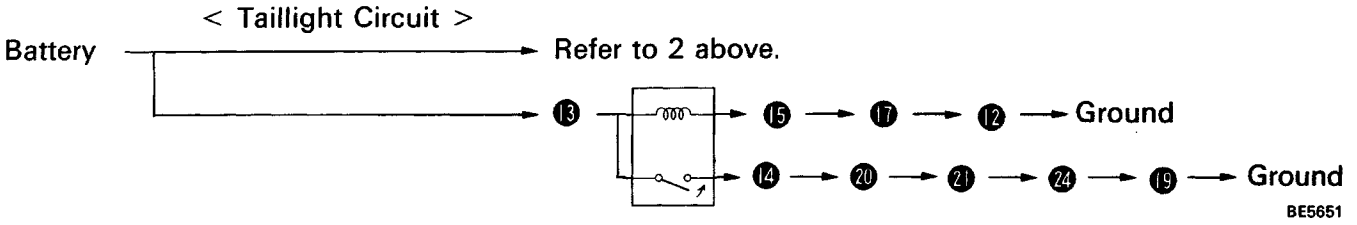
Condition: Battery Voltage → ㉙
Continuity : ⑩ → ⑪ → ⑫ → Ground



3. Headlight LO–Beam Lights Up

Switch	Position
Ignition Switch	OFF or ON
Light Control Switch	HEAD
Headlight Dimmer Switch	LO

Condition: Battery Voltage → ㉙
Continuity : ⑩ → ⑪ → ⑫ → Ground < Taillight Circuit >
⑯ → ⑰ → ⑫ → Ground



4. Headlight HI–Beam Lights Up

Switch	Position
Ignition Switch	OFF or ON
Light Control Switch	HEAD
Headlight Dimmer Switch	HI

Condition : Battery Voltage → ㉙
Continuity : ⑩ → ⑪ → ⑫ → Ground < Taillight Circuit >
⑯ → ⑰ → ⑫ → Ground

< Taillight Circuit >
Battery → Refer No. 2, above.

< Headlight Circuit > Headlight Control Relay
⑬ → ⑮ → ⑰ → ⑫
⑭ → ⑳ → ㉒ → ㉔ → ⑲ → Ground

BE5651

5. Headlight Flash

Switch	Position
Ignition Switch	OFF or ON
Light Control Switch	OFF or HOLD or TAIL or HEAD or HOLD
Headlight Dimmer Switch	Flash

Condition : Battery Voltage → ㉙
Continuity : ⑯ → ⑱ → ⑲ → Ground

< Headlight Circuit >
Battery → ⑬ → ⑮ → ⑱ → ⑳ → Ground
⑭ → ⑳ → ㉒ → ㉔ → ⑲ → Ground

BE5651

6. Front Fog Light Lights Up

Switch	Position
Ignition Switch	OFF or ON
Light Control Switch	HEAD
Headlight Dimmer Switch	LO
Front Fog Light Switch	ON

Condition : Battery Voltage → ㉙
Continuity : ㉘ → ㉔ → ⑲ → Ground
⑯ → ⑰ → ⑫ → Ground
㉕ → ㉖ → Ground

Battery → ⑥ → ⑦ → ⑧ → ⑤ → Ground
⑨ → Ground

BE5651

System Inspection

(See page BE–3 for How to Inspect)

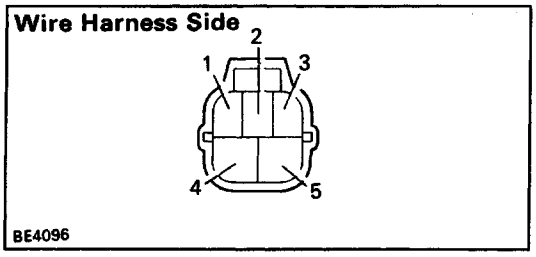
(1) First, select the applicable item in the TROUBLE column of the trouble chart, then look at the applicable codes in the CHECK ORDER column.
(2) Using the inspection chart, inspect the first item shown in the CHECK ORDER column.
(3)–1 If the inspection result is good, check the next item. If there are no further codes, advance to step (4).
(3)–2 If the inspection result is no good, inspect the item in the POSSIBLE CAUSE column in the inspection chart. After inspecting, check the system operation again. If the result is still no good, inspect the next item.
(4) If all inspection items are good, inspect the applicable item in the POSSIBLE CAUSE column in the trouble chart.

Light Retractable System

[Trouble Chart]

TROUBLE	CHECK ORDER	POSSIBLE CAUSE
Headlights do not rise with light control switch in HEAD position	A – B – C – D –	Terminal 4 circuit of light retractor motor faulty
Headlights retract when light control switch changed from HEAD to TAIL or HOLD	–	Terminal 3 circuit of light retractor motor faulty
Headlight do not retract with light control switch OFF	A – B – E – D –	Terminal 4 circuit of light retractor motor faulty

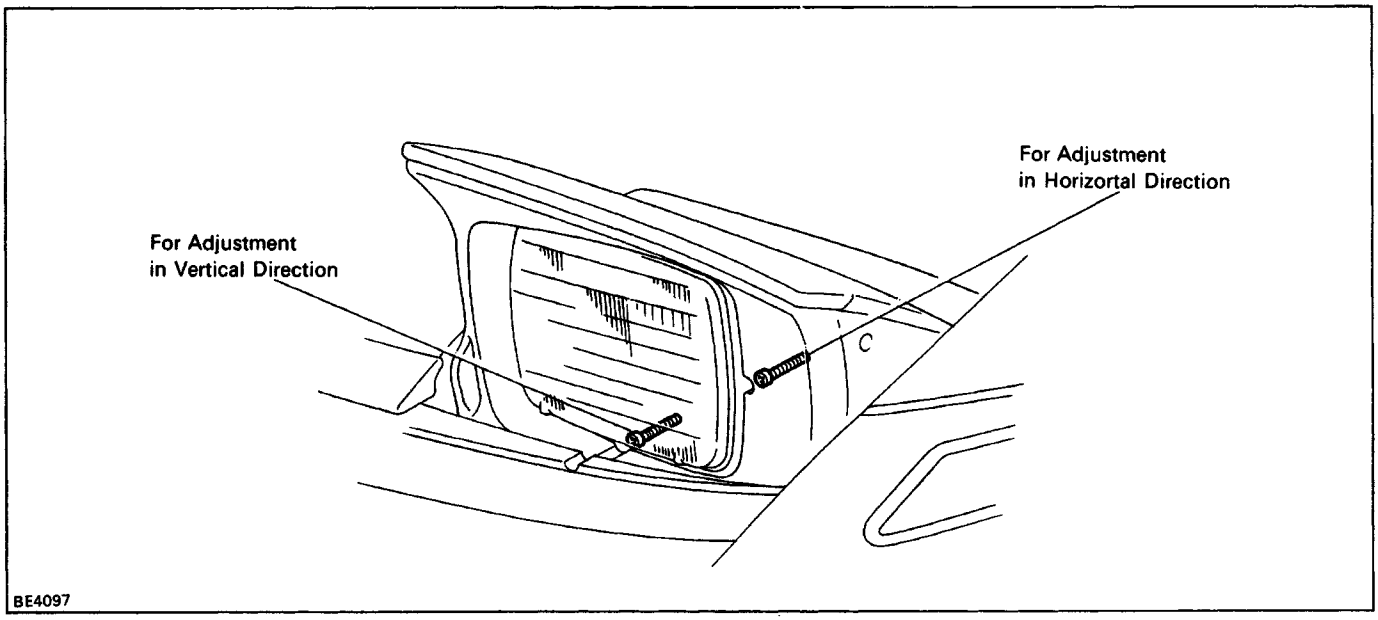
[Inspection Chart]



Disconnect the connector from the retractor motor and inspect the connector on wire harness side.

CODE	CONNECTION	CHECK CONDITION	SPECIFIED VALUE	POSSIBLE CAUSE
A	–	Inspect light retractor motor (See page BE–36)	Good	Light retractor motor faulty
B	5 – Ground	–	Continuity	Terminal 5 circuit faulty
C	1 – Ground	Light control switch turned to HEAD	Continuity	Terminal 1 circuit faulty
D	2 – Ground	–	Battery voltage	Terminal 2 circuit faulty
E	3 – Ground	Light control switch changed from HEAD to OFF	Continuity	Terminal 3 circuit faulty

Part Adjustment
Adjustment of Light Aiming



Troubleshooting

Problem	Possible cause	Remedy	Page
Only one light comes 0 N	Light bulb burned out Socket, wire or ground faulty	Replace bulb Repair as necessary	
Headlights do not light	Fusible link blown HEAD fuse blown Headlight control relay faulty Light control/dimmer switch faulty Wiring or ground faulty .	Replace fusible link Replace fuse and check for short Check relay Check switch Repair as necessary	 BE–3 BE–35 BE–35
High beam headlights or headlight flashers do not operate	Light control/dimmer switch faulty Wiring faulty	Check switch Repair as necessary	BE–35
Tail, parking and license light do not light	Fusible link blown TAIL fuse blown Taillight control relay faulty Light control switch faulty Wiring or ground faulty	Replace fusible link Replace fuse and check for short Check relay Check switch Repair as necessary	 BE–3 BE–35 BE–35
Stop lights do not light	STOP fuse blown Stop light switch faulty Wiring or ground faulty	Replace fuse and check for short Adjust or replace switch Replace as necessary	BE–3
Stop lights stay on	Stop light switch faulty	Adjust or replace switch	

Troubleshooting (Cont'd)

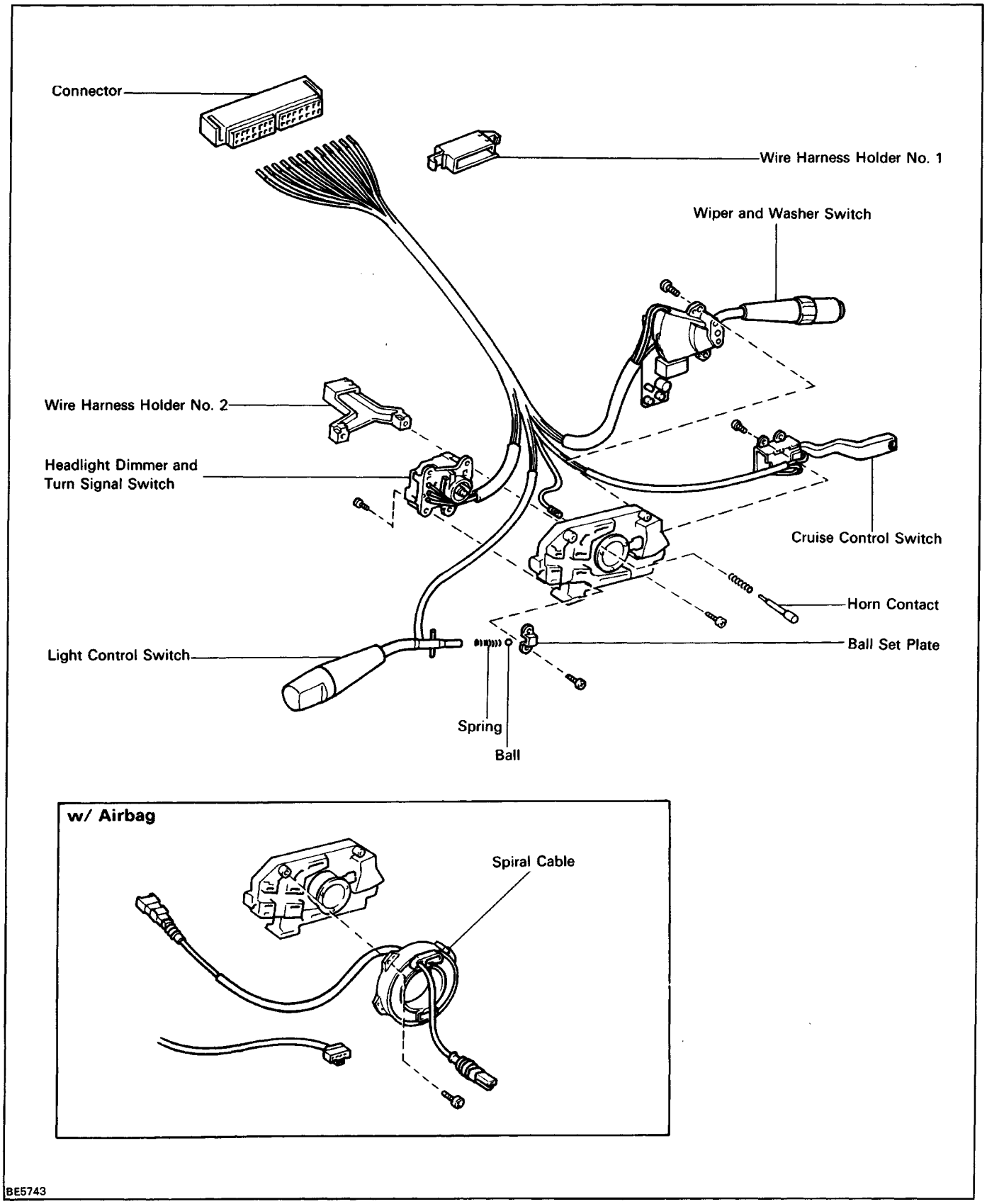
Problem	Possible cause	Remedy	Page
Turn signal does not flash on one side	Turn signal switch faulty Wiring or ground faulty	Check switch Repair as necessary	BE–35
Turn signals do not operate	TURN fuse blown Turn signal flasher faulty Turn signal switch faulty Wiring or ground faulty	Replace fuse and check for short Check flasher Check switch Repair as necessary	BE–3 BE–38 BE–35
Hazard warning lights do not operate	HAZ–HORN fuse blown Turn signal flasher faulty Hazard warning switch faulty Wiring or ground faulty	Replace fuse and check for short Check flasher Check switch Repair as necessary	BE–3 BE–38 BE–38
Light retractable system does not operate	RTR fuse blown Light retractor relay faulty Light retractor motor faulty Light control/dimmer switch faulty wiring or ground faulty	Replace fuse and check for short Check relay Check motor Check switch Repair as necessary	BE–3 BE–36 BE–36 BE–35
Daytime running light system does not operate	ECU–IG fuse blown IGN fuse blown RTR fuse blown FOG fuse blown TAIL fuse blown HEAD fuse blown Front fog light relay faulty Taillight control relay faulty Headlight control relay faulty Light retractor relay faulty Ignition switch faulty Front fog light switch faulty Light control/dimmer switch faulty Wiring or ground faulty	Replace blown fuse and check for short Check relay Check relay Check relay Check relay Check switch Check switch Check switch Repair as necessary	BE–3 BE–38 BE–35 BE–35 BE–36 BE–11 BE–38 SE–35
Front fog light system does not operate (w/o Daytime running light system)	FOG fuse blown TAIL fuse blown HEAD fuse blown Front fog light relay faulty Taillight control relay faulty Headlight control relay faulty Front fog light switch faulty Headlight dimmer switch faulty Wiring or ground faulty	Replace blown fuse and check for short Check relay Check relay Check relay Check switch Check switch Repair as necessary	BE–3 BE–38 BE–35 BE–35 BE–38 BE–35

Troubleshooting (Cont'd)

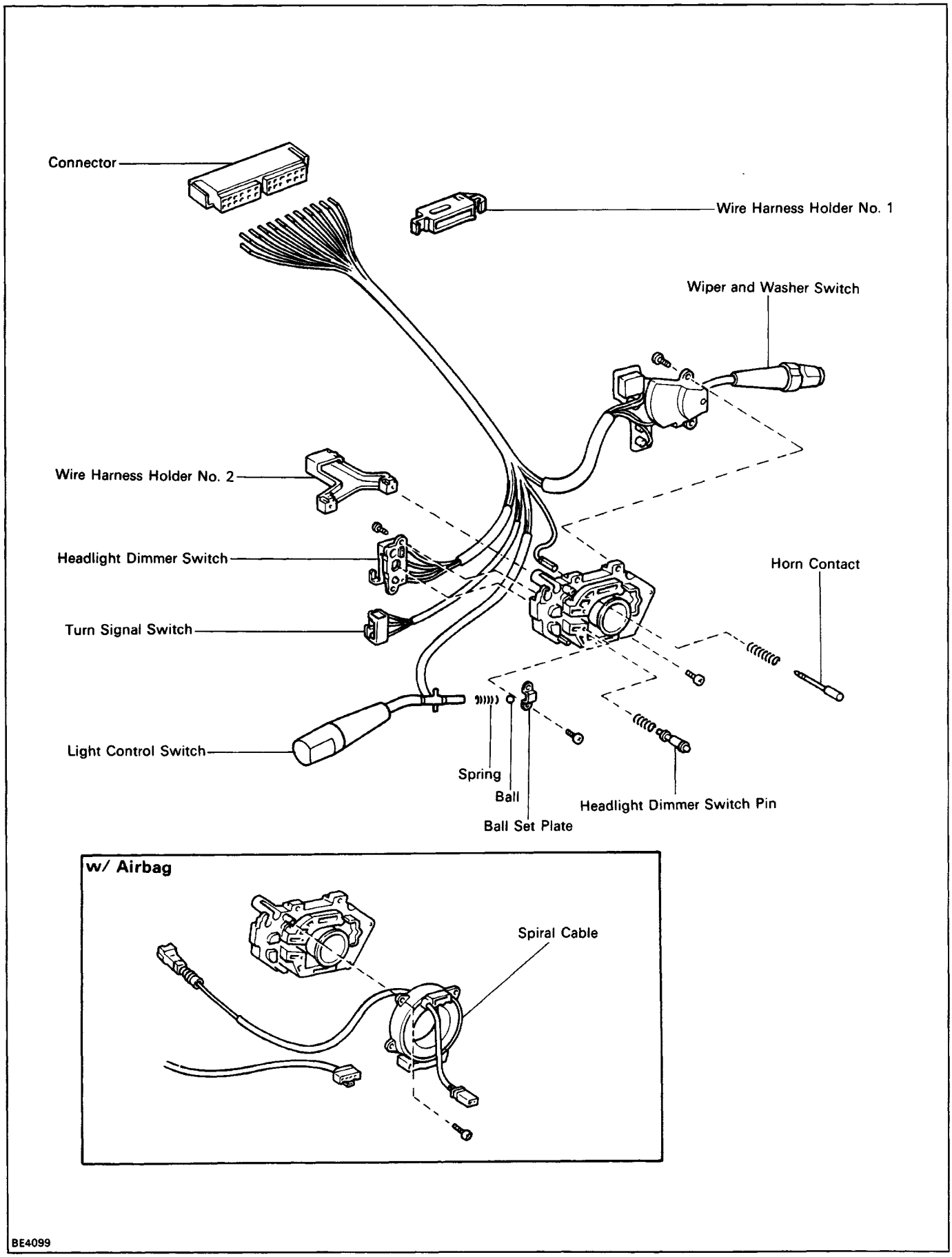
Problem	Possible cause	Remedy	Page
Front fog light system does not operate (w/ Daytime running light system)	ECU–IG fuse blown FOG fuse blown TAIL fuse blown HEAD fuse blown Front fog light relay faulty Taillight control relay faulty Headlight control relay faulty Light retractor relay faulty Ignition switch faulty Front fog light switch faulty Light control/dimmer switch faulty Wiring or ground faulty	Replace blown fuse and check for short Check relay Check relay Check relay Check relay Check switch Check switch Check switch Repair as necessary	BE–3 BE–38 BE–35 BE–35 BE–36 BE–11 BE–38 BE–35
Illuminated entry system does not operate	DOME fuse blown Integration relay faulty Door courtesy switch faulty Wiring or ground faulty	Replace fuse and check for short Check relay Check switch Repair as necessary	BE–3 BE–39 BE–62

Parts Replacement

Components
(A Type)



(B Type)


Connector
Wire Harness Holder No. 1
Wiper and Washer Switch
Wire Harness Holder No. 2
Headlight Dimmer Switch
Horn Contact
Turn Signal Switch
Light Control Switch
Spring
Ball
Ball Set Plate
Headlight Dimmer Switch Pin
w/ Airbag
Spiral Cable
BE4099

Disassembly of Combination Switch

1. REMOVE WIRE HARNESS HOLDER NO. 1

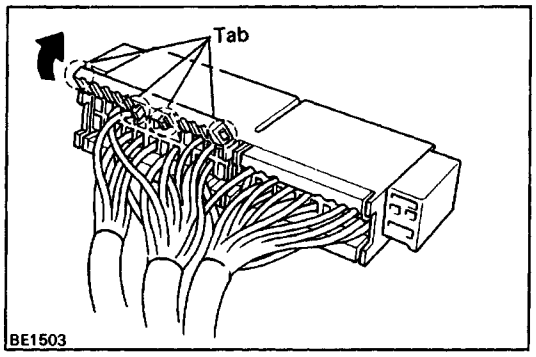
2. REMOVE WIRE HARNESS HOLDER NO. 2

3. (w/ Airbag)

REMOVE SPIRAL CABLE SUBASSEMBLY

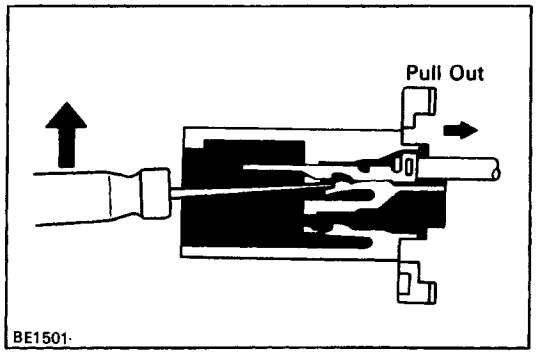
(a) Remove the four screws.

(b) Disconnect the connector and remove the spiral cable subassembly.



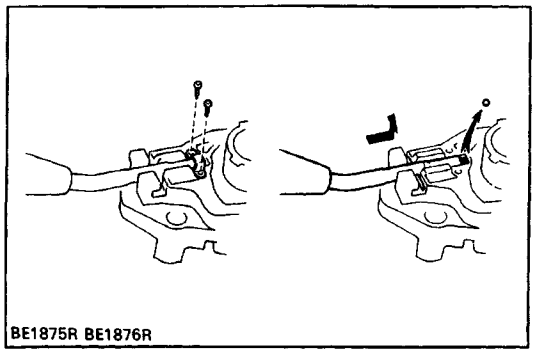
4. REMOVE TERMINALS FROM CONNECTOR

(a) Release four tabs and open the terminal cover.



(b) From the open end, insert a miniature screwdriver between the locking lug and terminal.

(c) Pry down the locking lug with the screwdriver and pull the terminal out from the rear.



5. REMOVE LIGHT CONTROL SWITCH

(a) Remove two screws and the ball set plate from the switch body.

(b) Remove the ball and slide out the switch from the switch body with the spring.

6. REMOVE HEADLIGHT DIMMER AND TURN SIGNAL SWITCH

(A Type)

Remove four screws and the switch from the switch body.

(B Type)

(a) Pry loose two locking lugs and remove the turn signal switch from the switch body.

(b) Remove two screws and the headlight dimmer switch from the switch body.

(c) Remove the headlight dimmer switch pin from the switch body with the spring.

7. REMOVE WIPER AND WASHER SWITCH

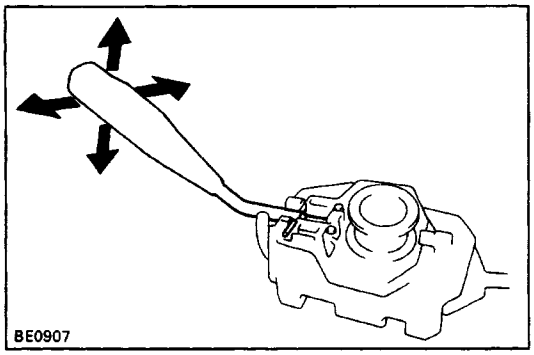
Remove two screws and the switch from the switch body.

8. (A Type)

REMOVE CRUISE CONTROL SWITCH

Remove two screws and the switch from the body.

9. REMOVE HORN CONTACT

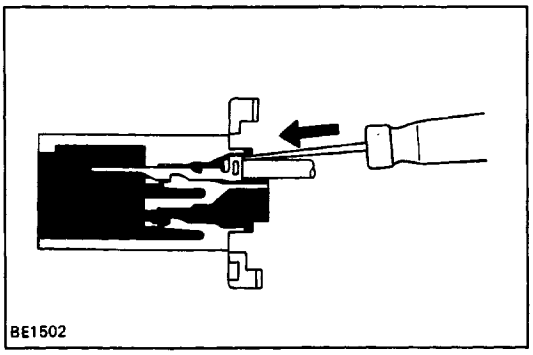


Assembly of Combination Switch

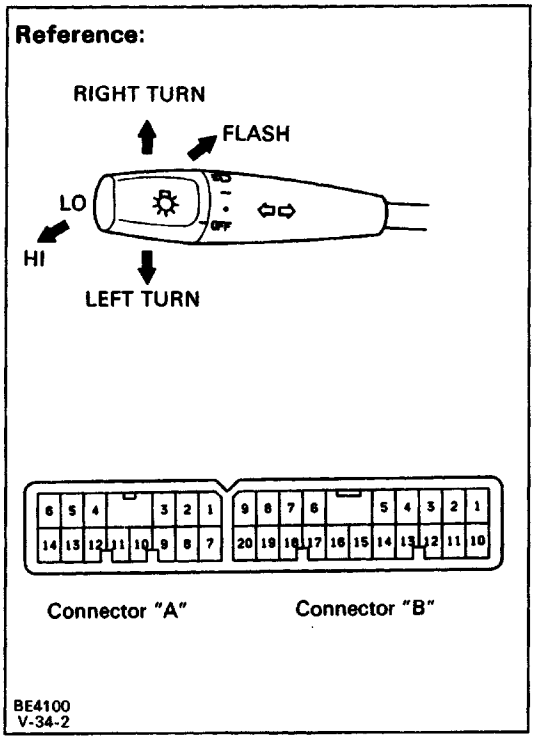
INSTALL PARTS OF COMBINATION SWITCH IN REVERSE SEQUENCE OF DISASSEMBLY

HINT:

- After installing the light control switch to the switch body, insure that the switch operation is smoothly.



- Push in the terminal until it is securely locked in the connector lug.



Parts Inspection

Headlight and Taillight System

1. INSPECT COMBINATION SWITCH

(Light Control Switch/Continuity)

Terminal (Color) / Switch position	A-2 (Clear)	A-11 (W)	A-13 (R)	B-20 (G)
OFF				
HOLD (•)		○		○
TAIL (–)	○	○		○
HEAD ( )	○	○	○	

(Headlight Dimmer and Turn Signal Switch/ Continuity)

Headlight Dimmer Switch

Terminal (Color) / Switch position	A-3 (R-G)	A-9 (W-B)	A-12 (R-Y)	A-14 (R-W)
Flash		○	○	○
Low beam	○	○		
High beam		○	○	

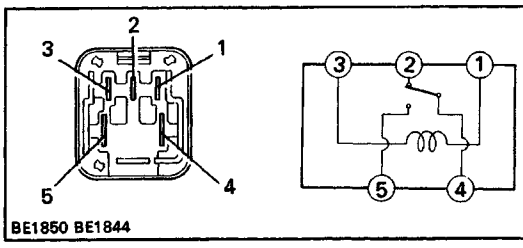
Turn Signal Switch

Terminal (Color) / Switch position	A-1 (G-W)	A-5 (G-B)	A-8 (G-Y)
Left turn	○	○	
Neutral			
Right turn	○		○

If continuity is not as specified, replace the switch.

2. INSPECT RELAY

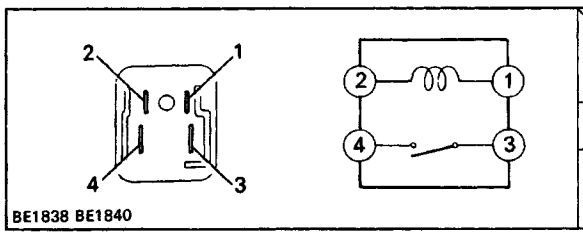
(Headlight Control Relay/Continuity)



Terminal / Condition	1	2	3	4	5
Constant	○	○	○		
				○	
Apply battery voltage to terminal 1 and 3.				○	○

If continuity is not as specified, replace the relay.

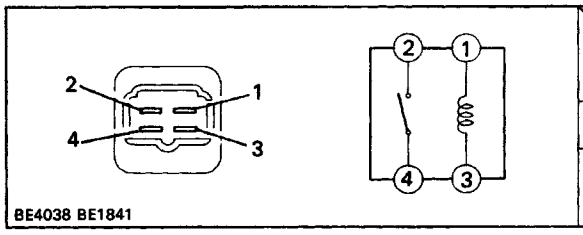
(Headlight Control Relay/Continuity)



BE1838 BE1840

Terminal / Condition	1	2	3	4
Constant	○—⏦—○			
Apply battery voltage to terminals 1 and 2.			○—○	

(Taillight Control Relay/Continuity)



BE4038 BE1841

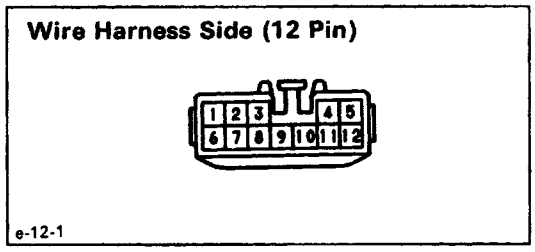
Terminal / Condition	1	2	3	4
Constant	○—⏦—○	⏦—○		
Apply battery voltage to terminals 1 and 3.		○—————○		

If continuity is not as specified, replace the relay.

Light Retractable System

1. INSPECT LIGHT RETRACTOR RELAY

Disconnect the 12 pin connector from the relay and inspect the connector on wire harness side as shown in the chart.

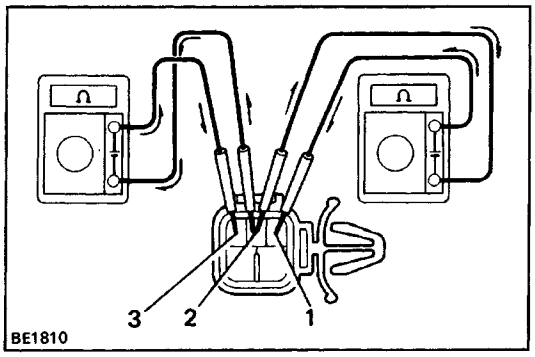


e-12-1

Check for	Tester connection	Condition		Specified value
Continuity	1 – Ground 4 – Ground	Constant		*1 Continuity
	*2 2 – 7	Headlight position	Any position ex. uppermost	Continuity
	*2 5 – 7		Uppermost	No continuity
	*2 2 – 11	Headlight position	Any position ex. lowermost	Continuity
	*2 5 – 11		Lowermost	No continuity
	6 – Ground	Light control switch position	OFF or HEAD	No continuity
			HOLD or TAIL	Continuity
	12 – Ground	Constant		Continuity
Voltage	3 – Ground	Constant		Battery voltage
	8 – Ground	Light control switch position: OFF, HOLD or TAIL		
		Headlight dimmer switch position	Low beam or High beam	Battery voltage
			Flash	No voltage
		Light control switch position: HEAD		No voltage

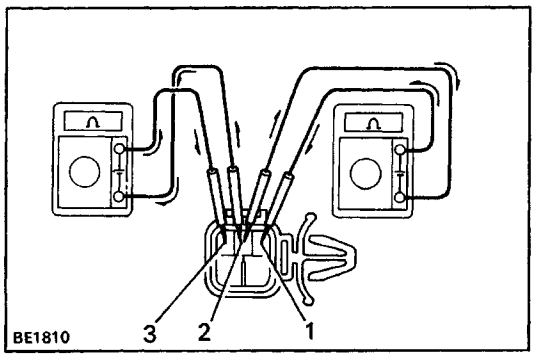
*1: There is resistance because this circuit is grounded through the motor.
*2: Connect the test leads so that the current from the ohmmeter can flow according to the above orders.

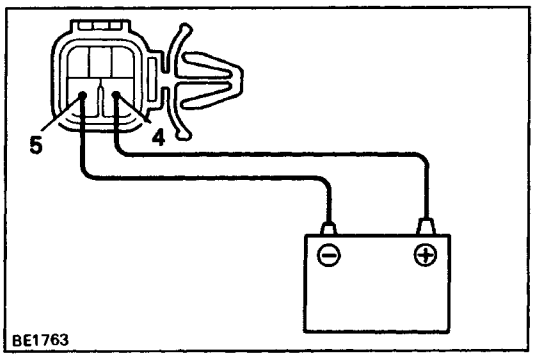
If circuit is as specified, replace the relay.



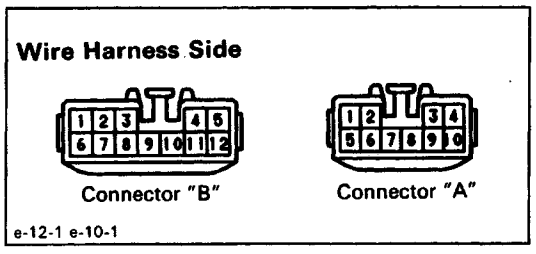
2. INSPECT LIGHT RETRACTOR MOTOR
(Diode/Continuity)

(a) Set the motor to any position except the uppermost or lowermost position.
(b) Connect the ohmmeter test lead so that the current from the meter can flow from terminal 1 to 2, check that there is no continuity.
(c) Connect the ohmmeter test lead so that the current from the meter can flow from terminal ”3 to 2, check that there is no continuity.
(d) Reverse the test leads of ohmmeter, check that there is continuity.
If continuity is not as specified, replace the motor.





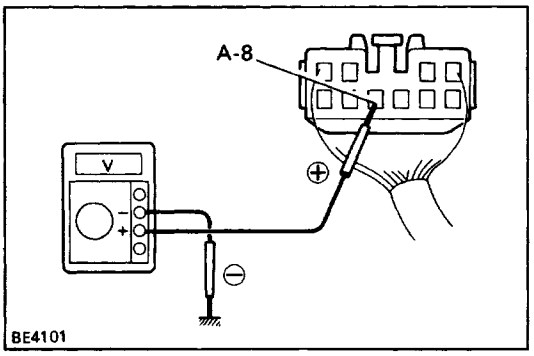
(Operation)
Connect the positive (+) lead from the battery to terminal 4 and the negative (–) lead to terminal 5, check that the motor operates.
If operation is not as specified, replace the motor.



Daytime Running Light System

INSPECT LIGHT RETRACTOR RELAY
(Relay Circuit)
Disconnect the connector from the relay and inspect the connector on the wire harness side as shown in the chart.

Check for	Tester connection	Condition		Specified value
Continuity	A-1 – Ground	Front fog light switch position	OFF	No continuity
			ON	Continuity
	A-3 – Ground	Light control switch position	OFF or HOLD	No continuity
			TAIL or HEAD	Continuity
	A-5– Ground	Brake level warning switch position	OFF	No continuity
			ON	Continuity
	A-7– Ground	Parking brake switch position	OFF	No continuity
			ON	Continuity
	A-10 – Ground	Constant	TAIL or HEAD	Continuity
	B-6 – Ground	Light control switch position	OFF or HEAD	No continuity
			HOLD or TAIL	Continuity
	B-12 – Ground	Constant		Continuity
Voltage	A-2 – Ground	Constant		Battery voltage
	A-4 – Ground	Ignition switch position	LOCK or ACC	No voltage
			ON	Battery voltage
	A-6 – Ground	Constant		Battery voltage
	A-9 – Ground	Engine	Stop	No voltage
			Running	Battery voltage
	B-3 – Ground	Constant		Battery voltage
	B-8 – Ground	Light control switch position: OFF, HOLD or TAIL		
		Headlight dimmer switch position	Low beam or High beam	Battery voltage
			Flash	No voltage
		Light control switch position: HEAD		No voltage



If circuit is as specified, inspect relay operation.

(Relay Operation)

(a) Connect the positive (+) lead from the voltmeter to terminal A–8 and negative (–) lead to the ground.

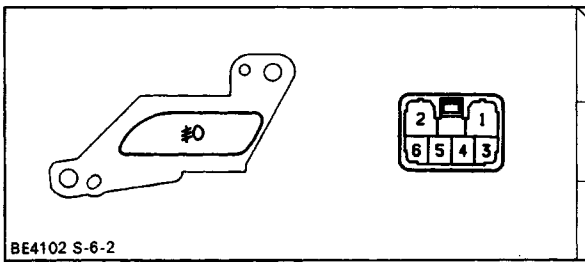
(b) Check that there is battery voltage with light control switch is turned on.

If operation is not as specified, replace the relay.

Front Fog Light System

1. INSPECT FRONT FOG LIGHT SWITCH

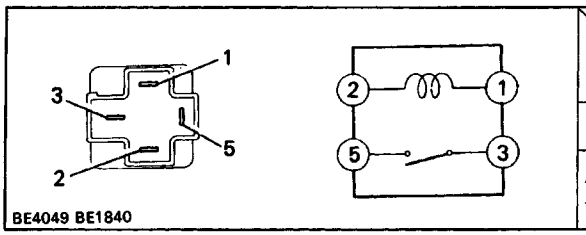
(Continuity)



Terminal / Switch position	3	6	Illumination 1	Illumination 2
OFF				
ON	○——○			

If continuity is not as specified, replace the switch.

2. INSPECT FRONT FOG LIGHT RELAY
(Continuity)



Terminal / Condition	1	2	3	5
Constant	○—∿∿∿—○			
Apply battery voltage to terminals 1 and 2.			○—○	

If continuity is not as specified, replace the relay.

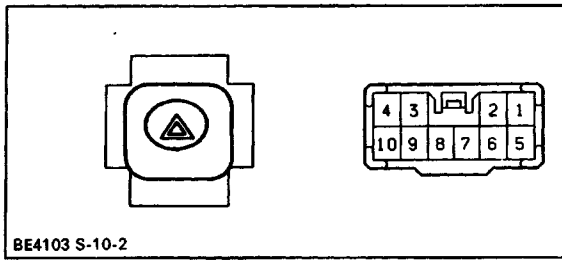
Turn Signal and Hazard Warning System

1. INSPECT SWITCHES

(Turn Signal Switch/Continuity)

See Headlight Dimmer and Turn Signal Switch on page BE–35.

(Hazard Warning Switch/Continuity)



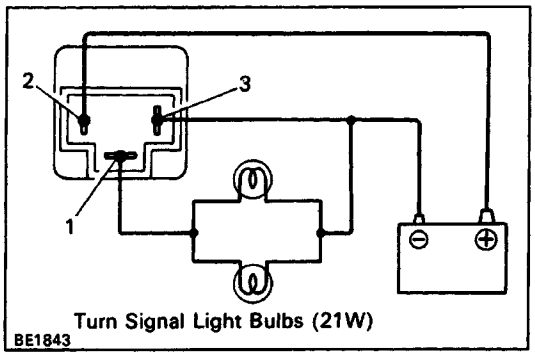
Terminal / Switch position	4	5	6	7	8	9	10	Illumination 2	Illumination 3
OFF				○			○	○—(•)—○	
ON	○	○	○	○	○	○			

If continuity is not as specified, replace the switch.

2. INSPECT TURN SIGNAL FLASHER
(Operation)

(a) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 3.

(b) Connect the two turn signal light bulbs parallel to each other to terminals 1 and 3, check that the bulbs flash.



HINT: The turn signal lights should flash 60 to 120 times per minute.

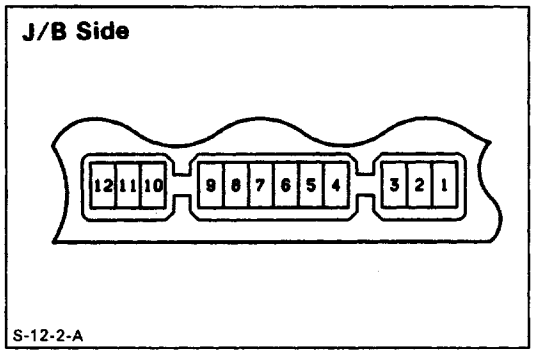
If one of the front or rear turn signal lights has an open circuit, the number of flashers will be more than 140 per minute.

If operation is not as specified, replace the flasher.

Illuminated Entry System

1. INSPECT DOOR COURTESY SWITCH

See Step 2 on page BE–62.



2. INSPECT INTEGRATION RELAY
(Relay Circuit)

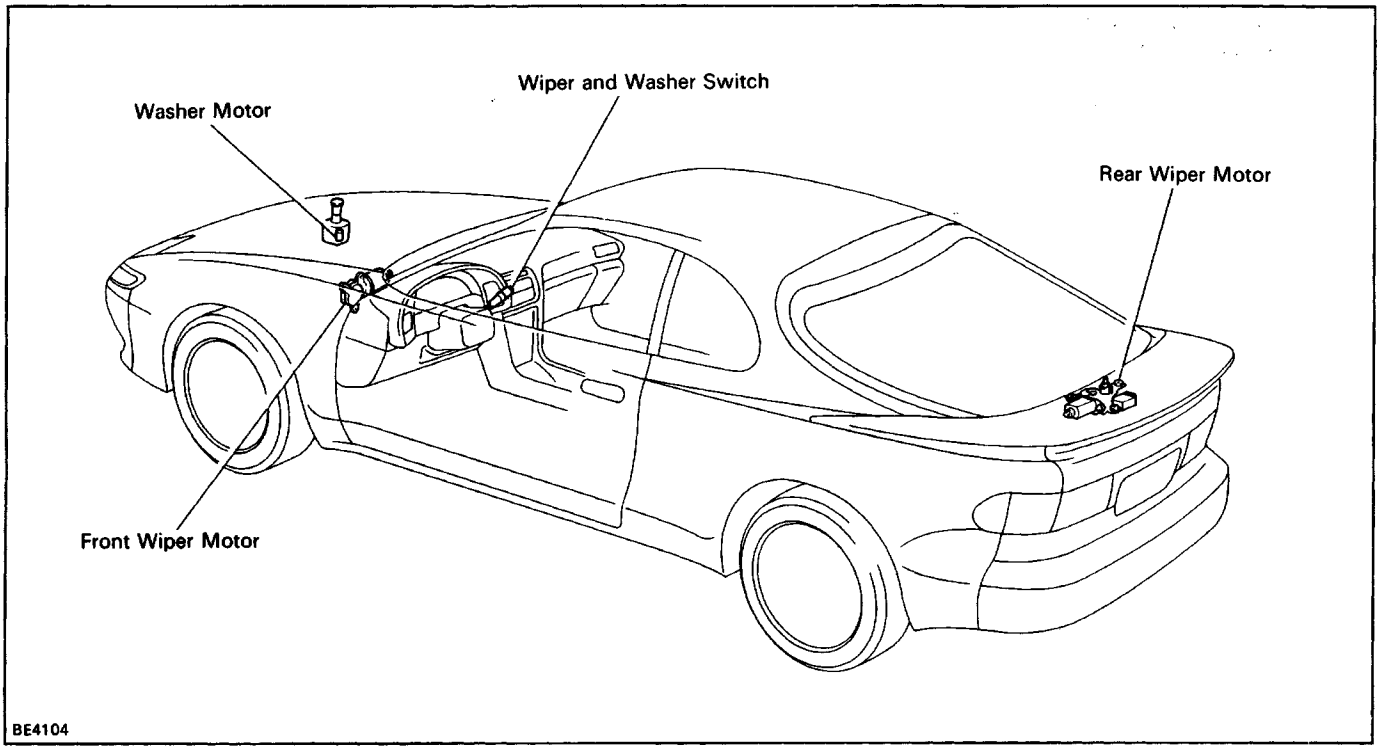
Remove the relay and inspect the connector on the J/B side as shown in the chart.

Check for	Tester connection	Condition		Specified value
Continuity	3 – Ground	Constant		Continuity
	7 – Ground	Drive's door courtesy switch	OFF (Door closed)	No continuity
			ON (Door opened)	Continuity
Voltage	9 – Ground	Passenger's door courtesy switch	OFF (Door closed)	Battery voltage
			0 N (Door opened)	No voltage
	11 – Ground	Constant		Battery voltage
	12 – Ground	Constant		Battery voltage

If circuit is as specified, replace the relay.

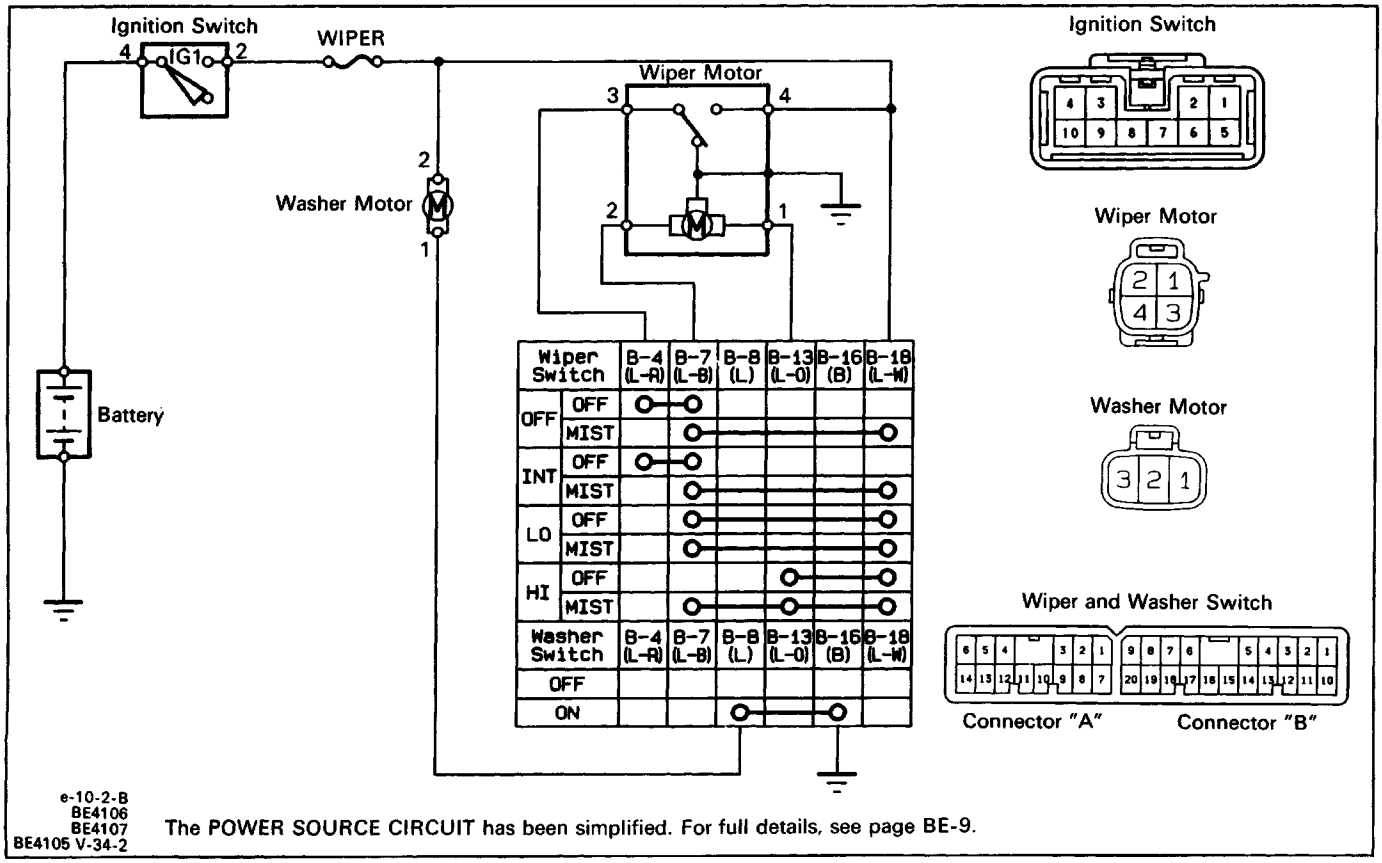
WIPER AND WASHER SYSTEM

Parts Location



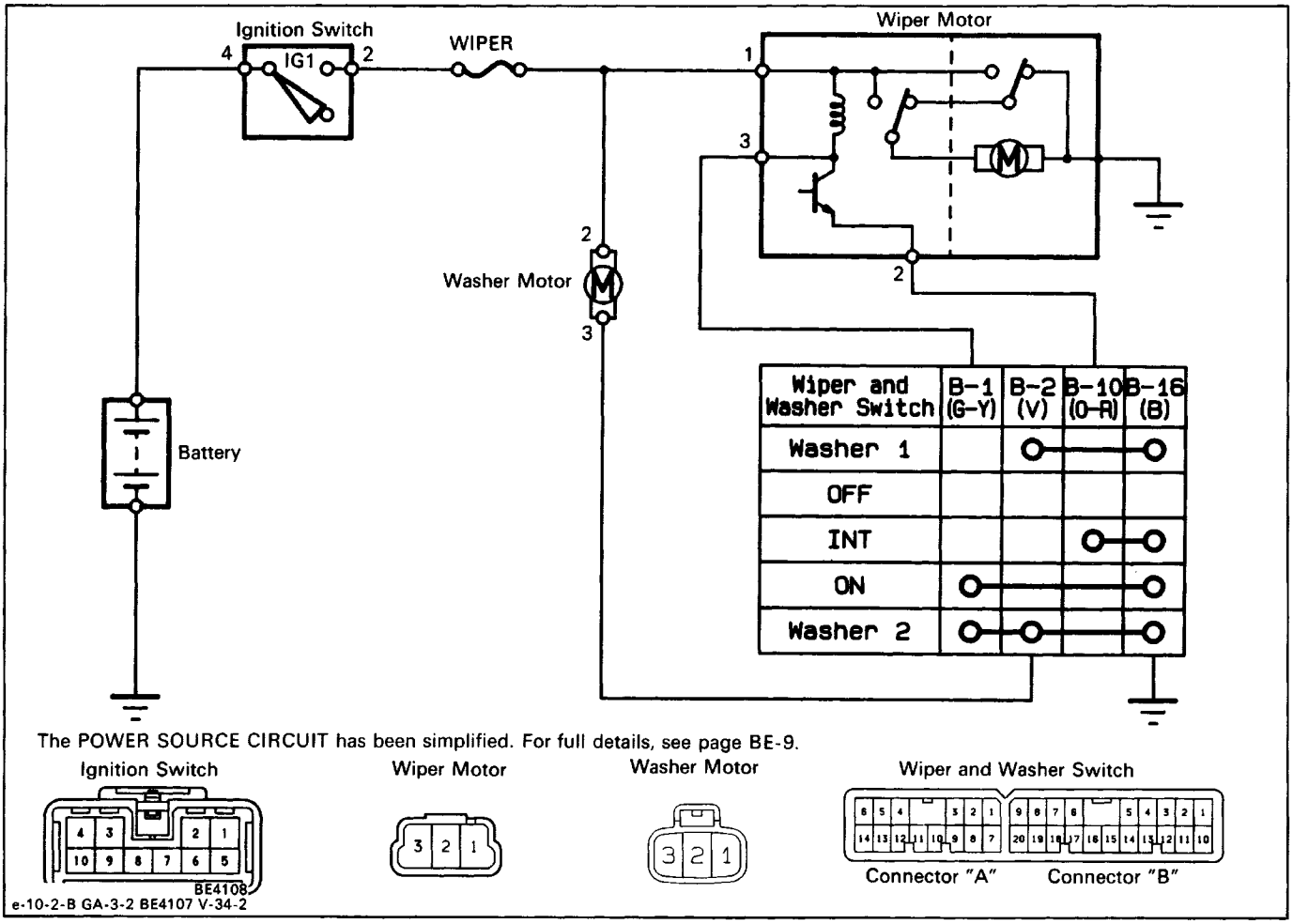
Wiring and Connector Diagrams

(Front Wiper and Washer)



The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

(Rear Wiper and Washer)

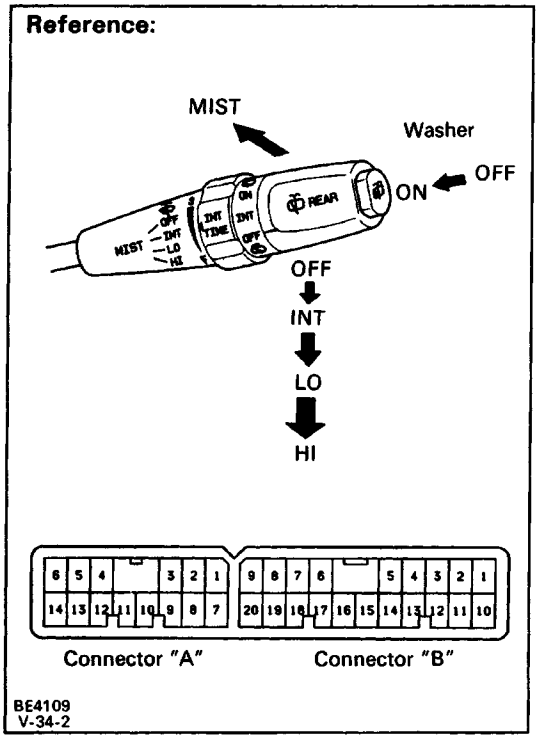


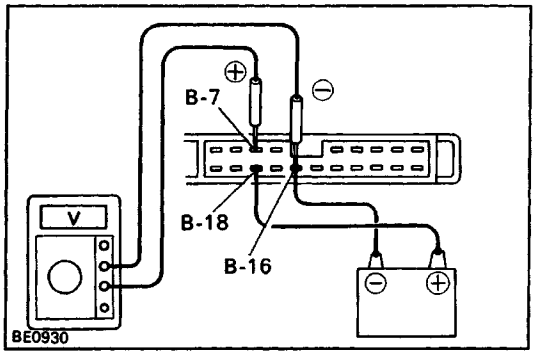
Troubleshooting

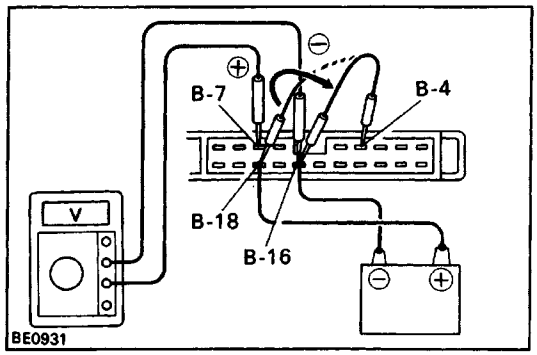
Problem	Possible cause	Remedy	Page	
			Front	Rear
Wipers do not operate or return to off position	WIP fuse blown Wiper motor faulty Wiper switch faulty Wiper or ground faulty	Replace fuse and check for short Check motor Check switch Repair as necessary	BE–3 BE–44 BE–43	BE–3 BE–45 BE–44
Wipers do not operate in INT position	Wiper switch faulty Wiper motor faulty Wiring or ground faulty	Check switch Check motor Repair as necessary	BE–43 BE–44	BE–44 BE–45
Washers do not operate	Washer hose or nozzle clogged Washer motor faulty Wiper switch faulty Wiring faulty	Repair as necessary Replace motor Check switch Repair as necessary	BE–46 BE–43	BE–46 BE–44

Parts Replacement

See Parts Replacement of Combination Switch on page BE–31.







Parts Inspection
Wiper System

1. INSPECT SWITCHES
(Front Wiper and Washer Switch/Continuity)

Terminal (Color) / Switch position			B-4 (L-R)	B-7 (L-B)	B-8 (L)	B-13 (L-O)	B-16 (B)	B-18 (L-W)
Wiper	OFF	OFF	○	○				
		MIST		○				○
	INT	OFF	○	○				
		MIST		○				○
	LO	OFF		○				○
		MIST		○				○
	HI	OFF				○		○
		MIST		○		○		○
Washer	OFF							
	ON				○		○	

If continuity is not as specified, replace the switch.

(Front Wiper and Washer Switch/Intermittent Wiper Operation)

(a) Turn the wiper switch to INT position.

(b) (Variable Type)
Turn the intermittent time control switch to FAST position.

(c) Connect the positive (+) lead from the battery to terminal 13–18 and the negative (–) lead to terminal B–16.

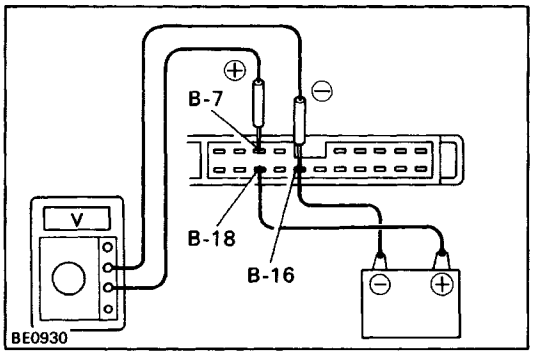
(d) Connect the positive (+) lead from the voltmeter to terminal B–7 and the negative (–) lead to terminal B–16, check that the meter needle indicates battery voltage.

(e) After connecting terminal B–4 to terminal B–18, connect to terminal B–16.

Then, check that the voltage rises from 0 volts to battery voltage within the times as shown in the table.

I NT time control switch position	Voltage
FAST	1.6 ± 1 sec. — Battery voltage 0 volts
SLOW	10.7 ± 5 sec. — Battery voltage 0 volts
Non variable type	3.3 ± 1 sec. — Battery voltage 0 volts

If operation is not as specified, replace the switch.

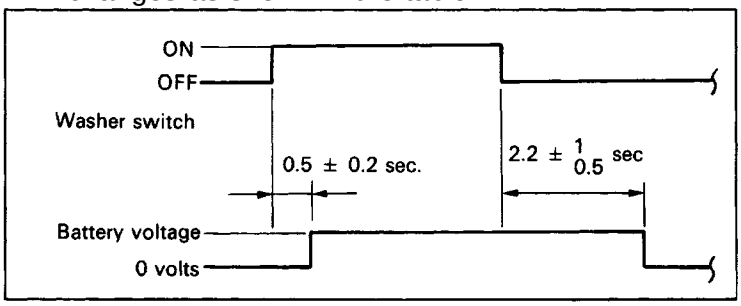


(Front Wiper and Washer Switch/Washer Linked Wiper Operation)

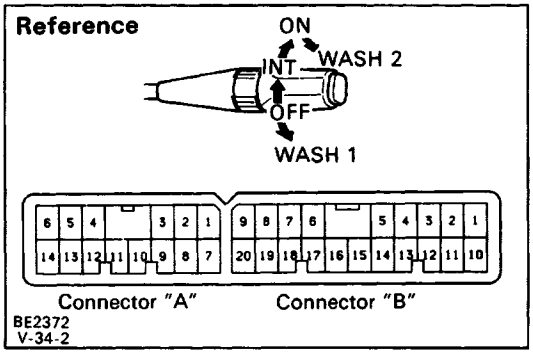
(a) Connect the positive (+) lead from the battery to terminal B–18 and the negative (–) lead to terminal B–16.

(b) Connect the positive (+) lead from the voltmeter to terminal B–7 and the negative (–) lead to terminal B–16.

(c) Push in the washer switch. Check that the voltage changes as shown in the table.



If operation is not as specified, replace the switch.



(Rear Wiper and Washer Switch/Continuity)

Terminal (Color) / Switch position	B-1 (G-Y)	B-2 (V)	B-10 (O-R)	B-16 (B)
Washer 1		○		○
OFF				
I NT			○	○
ON	○			○
Washer 2	○	○		○

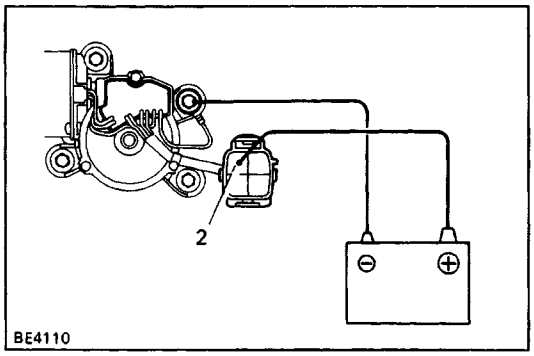
If continuity is not as specified, replace the switch.

2. INSPECT MOTORS

(Front Motor/Operation at Low Speed)

Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to the motor body, check that the motor operates at low speed.

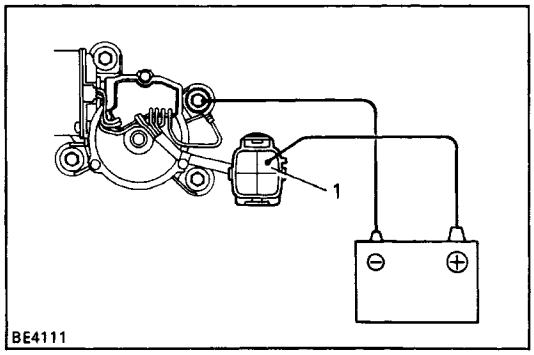
If operation is not as specified, replace the motor.

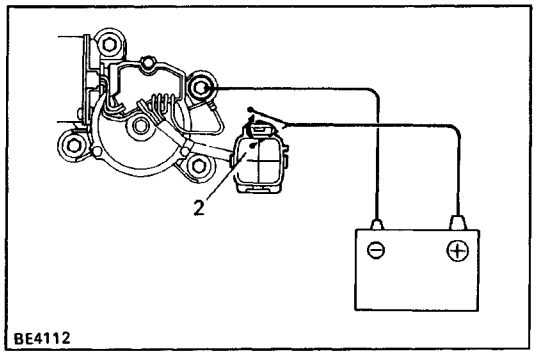


(Front Motor/Operation at High Speed)

Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to the motor body, check that the motor operates at high speed.

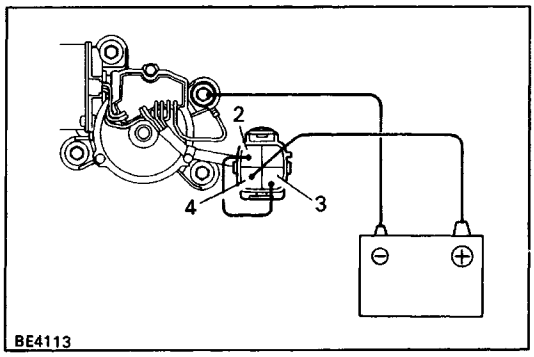
If operation is not as specified, replace the motor.





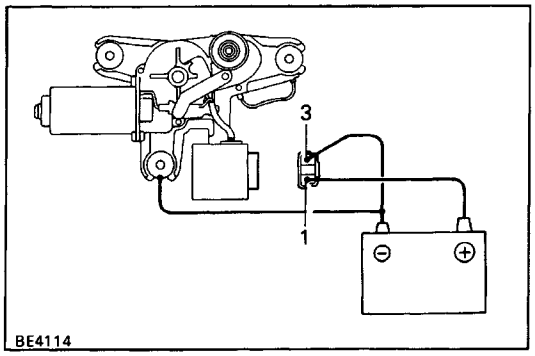
(Front Motor/Operation, Stopping at Stop Position)

(a) Operate the motor at low speed and stop the motor operation anywhere except at the stop position by disconnecting positive (+) lead from terminal 2.



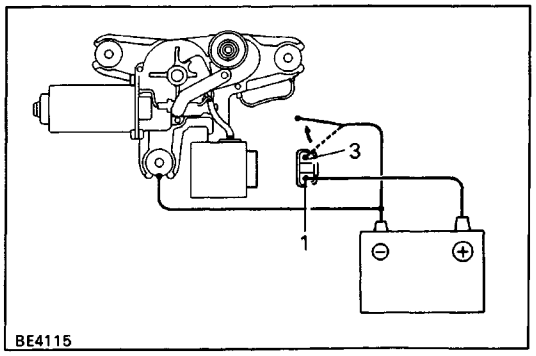
(b) Connect terminals 2 and 3.

(c) Connect the positive (+) lead from the battery to terminal 4 and the negative (–) lead to the motor body, check that the motor stops running at the stop position after the motor operates again.
If operation is not as specified, replace the motor.

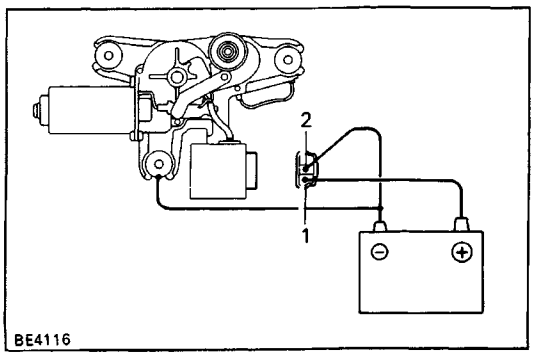


(Rear Motor/Operation)

(a) Connect the positive (+) lead from the battery to terminal 1, and the negative (–) leads to terminal 3 and the motor body, check that the motor operates.



(b) Disconnect the negative (–) lead from terminal 3, check that the motor stops running at the stop position.
If operation is not as specified, replace the motor with the relay.



(Rear Motor/Intermittent Operation)

Connect the positive (+) lead from the battery to terminal 1, and the negative (–) leads to terminal 2 and the motor body, check that the motor operates intermittently for 9 – 15 seconds.
If operation is not as specified, replace the motor with the relay.

Washer System

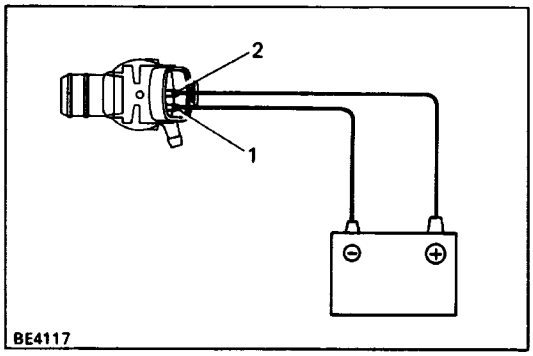
1. INSPECT WASHER SWITCH

(Front Windshield Washer Switch)

See (Front Wiper and Washer Switch/Continuity) on page BE–43.

(Rear Window Washer Switch)

See (Rear Wiper and Washer Switch/Continuity) on page BE–44.



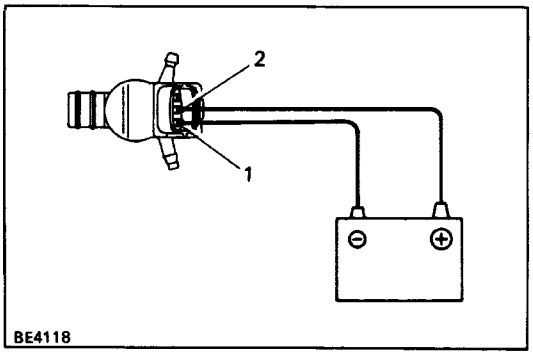
2. INSPECT WASHER MOTOR

(w/o Rear Wiper)

Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1, check that the motor operates.

NOTICE: These tests must be performed quickly (within 20 seconds) to prevent the coil from burning out.

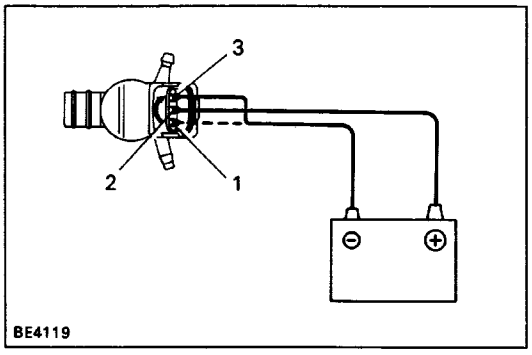
If operation is not as specified, replace the motor.



(w/ Rear Wiper)

(a) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1, check that the motor operates.

NOTICE: These tests must be performed quickly (within 20 seconds) to prevent the coil from burning out.

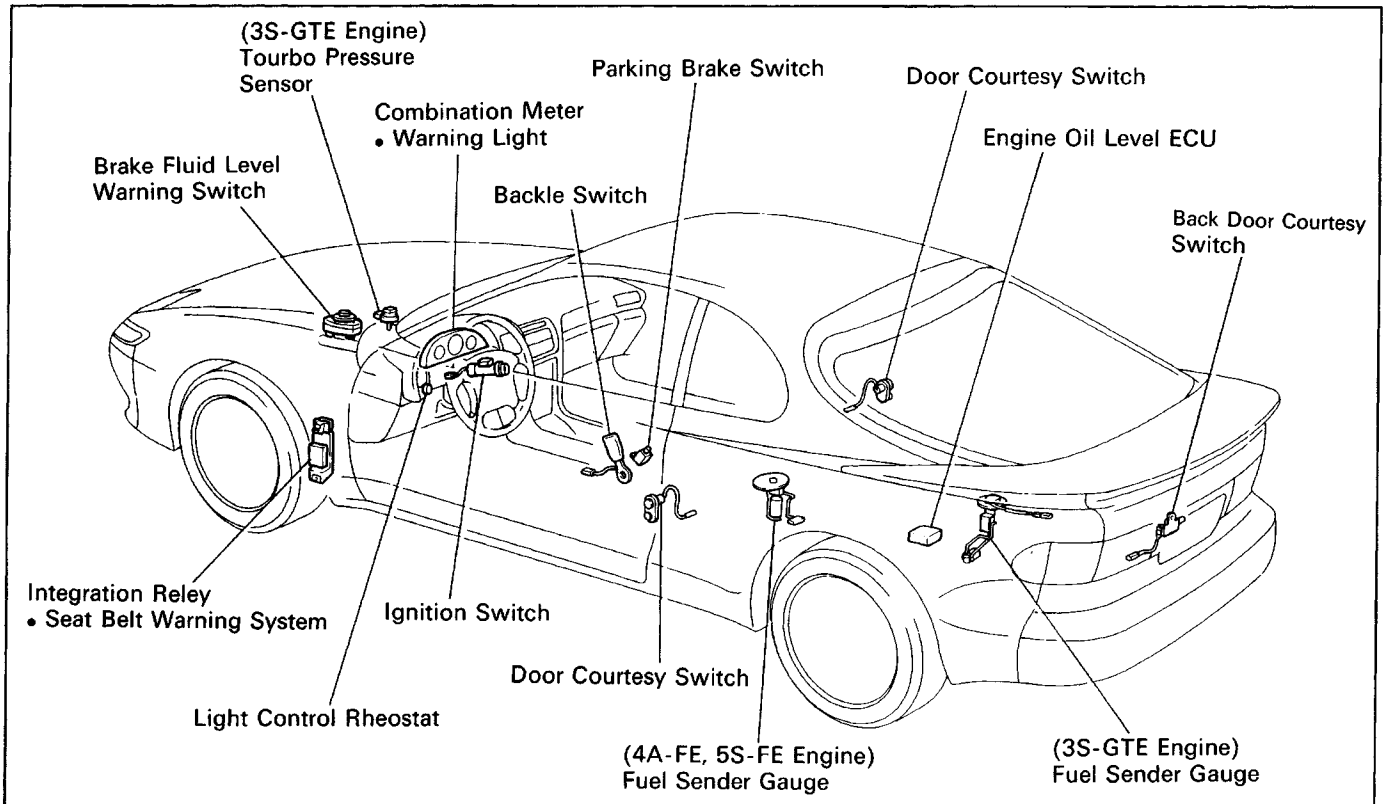


(b) Disconnect the negative (–) lead from terminal 1, and connect the negative (–) lead from the battery to terminal 3, check that the motor operates.

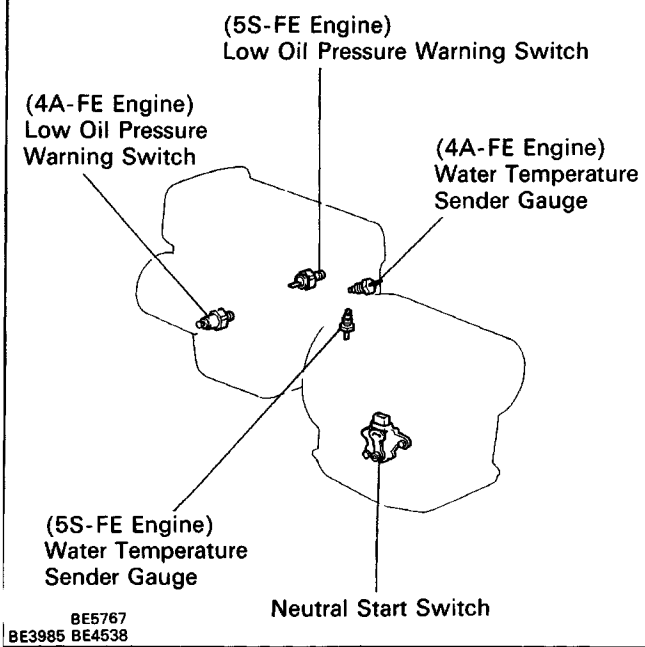
NOTICE: These tests must be performed quickly (within 20 seconds) to prevent the coil from burning out.

If operation is not as specified, replace the motor.

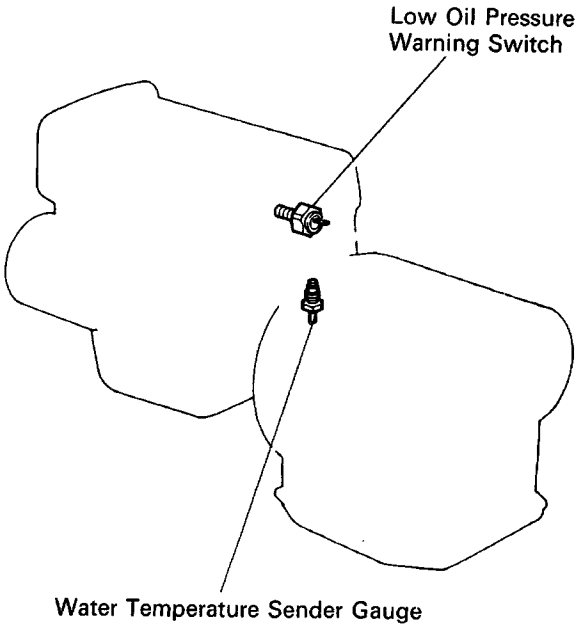
COMBINATION METER
Parts Location



4A-FE, 5S-FE Engine

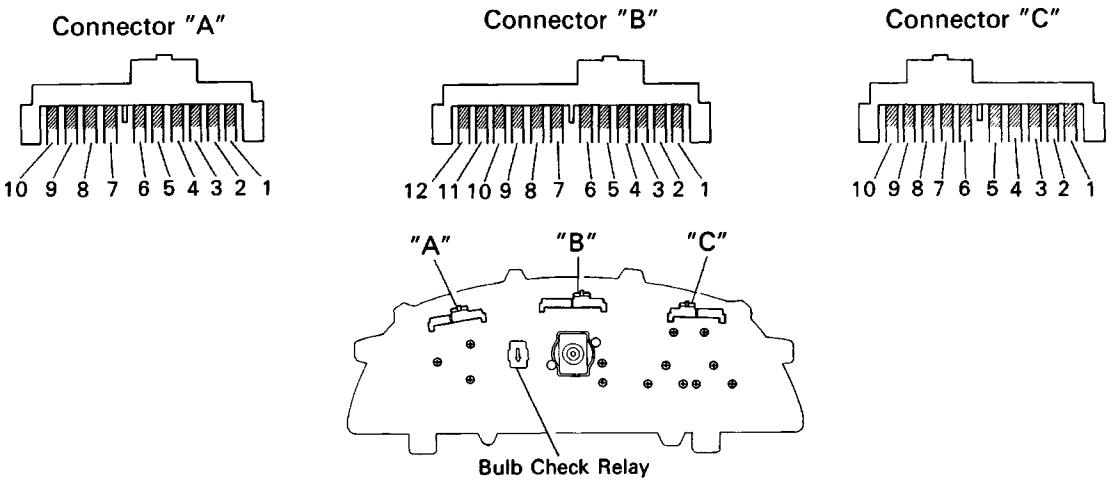


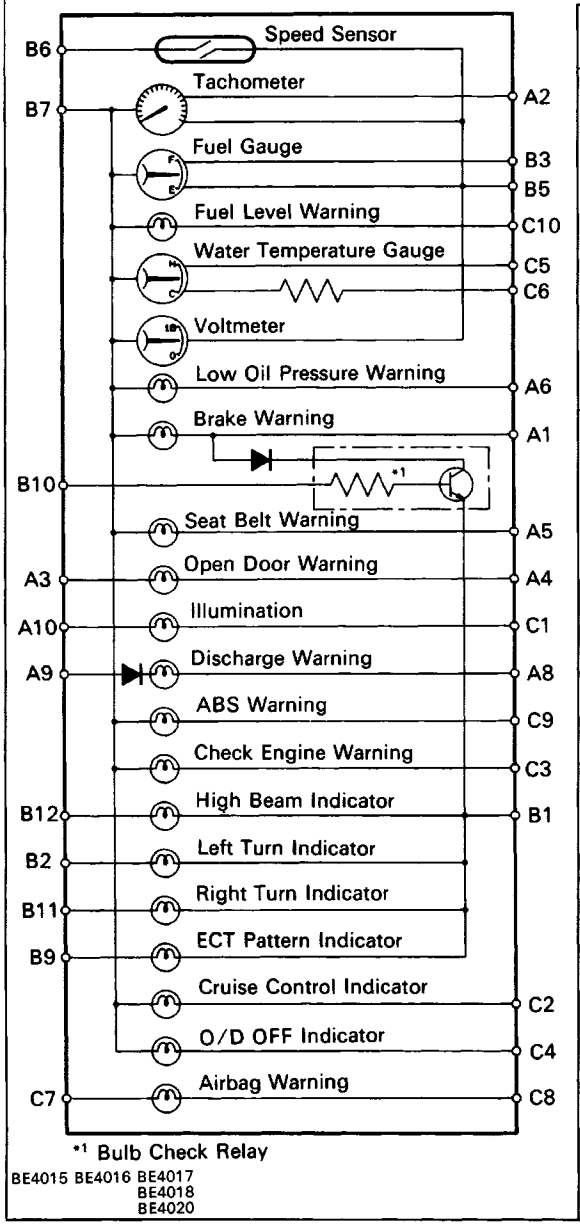
3S-GTE Engine



BE5767
BE3985 BE4538

Meter Circuit
(w/ Voltmeter: 5S–FE Engine)

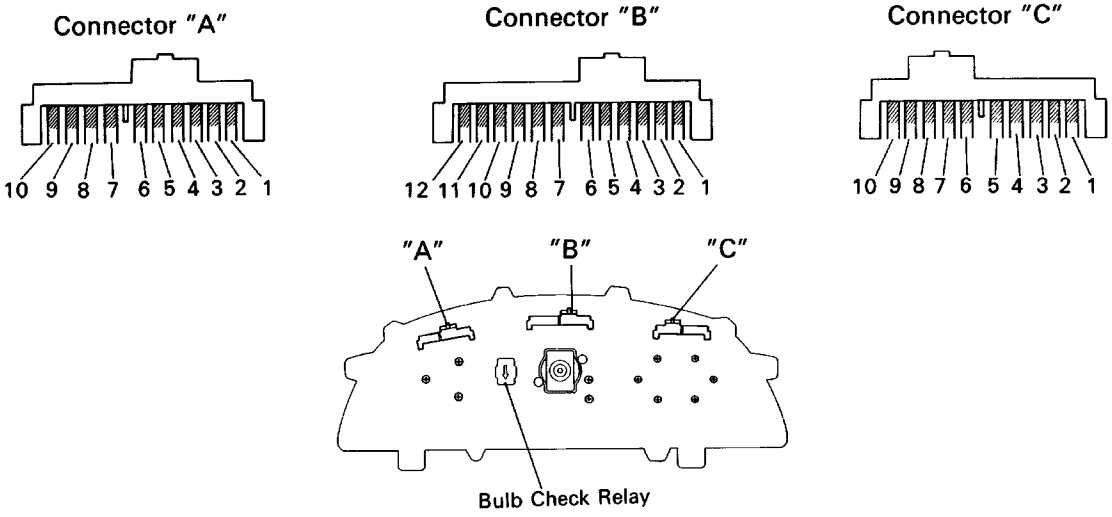


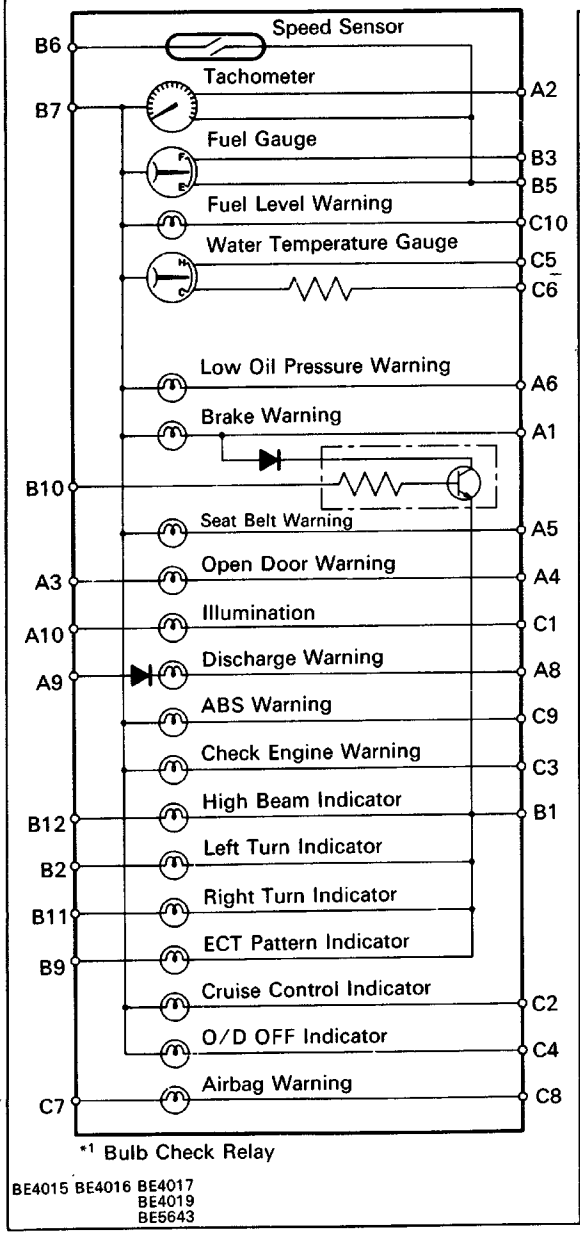


BE4015 BE4016 BE4017 BE4018 BE4020

No.		Wiring connector side
A	1	Brake Fluid Level Warning Switch–terminal 1, and Parking Brake Switch
	2	Igniter
	3	DOME Fuse
	4	Door Courtesy Switch
	5	Integration Relay–terminal 4
	6	Low Oil Pressure Warning Switch
	8	Alternator–terminal "L"
	9	IGN Fuse
	10	TAIL Fuse
B	1	Ground
	2	Headlight Dimmer and Turn Signal Switch, and Hazard Warning Switch
	3	Fuel Sender Gauge–terminal 3
	5	Ground
	6	Engine ECU or Engine & ECT ECU
	7	GAUGE Fuse
	9	ECT Pattern Select Switch
	10	(A/T) Neutral Start Switch (M /T) Starter Relay
	11	Headlight Dimmer and Turn Signal Switch, and Hazard Warning Switch
	12	Headlight Dimmer and Turn Signal Switch, and Headlight LO (L H)
C	1	Light Control Rheostat–terminal 3
	2	Cruise Control ECU
	3	Engine ECU or Engine & ECT ECU
	4	O/D OFF Switch
	5	Ground
	6	Water Temperature Sender Gauge
	7	ECU–B Fuse
	8	Airbag ECU
	9	ABS ECU
	10	Fuel Sender Gauge–terminal 1

(w/o Voltmeter: 4A–FE, 5S–FE Engine)

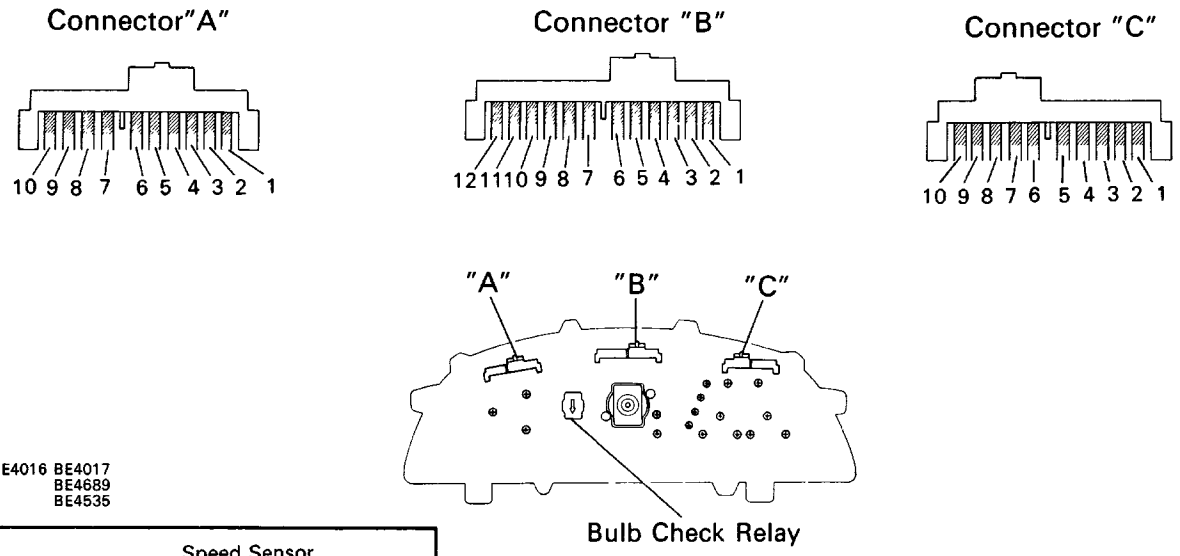




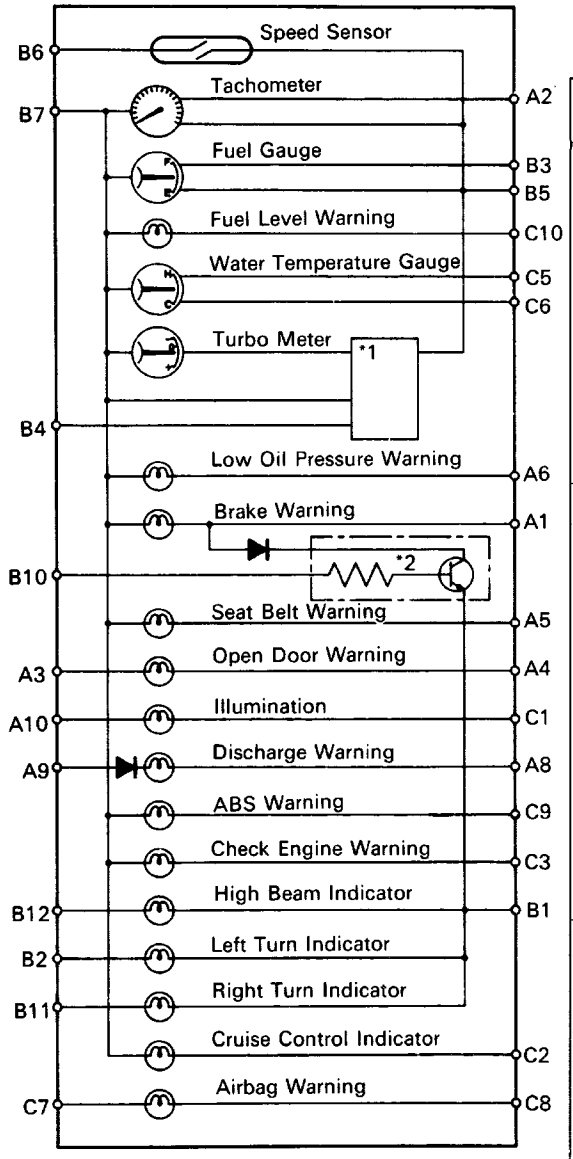
BE4015 BE4016 BE4017 BE4019 BE5643

No.		Wiring connector side
A	1	Brake Fluid Level Warning Switch–terminal 1, and Parking Brake Switch
	2	Igniter
	3	DOME Fuse
	4	Door Courtesy Switch
	5	Integration Relay–terminal 4
	6	Low Oil Pressure Warning Switch
	8	Alternator–terminal "L"
	9	IGN Fuse
	10	TAI L Fuse
B	1	Ground
	2	Headlight Dimmer and Turn Signal Switch, and Hazard Warning Switch
	3	Fuel Sender Gauge–terminal 3
	5	Ground
	6	Engine ECU or Engine & ECT ECU
	7	GAUGE Fuse
	9	ECT Pattern Select Switch
	10	(A/T) Neutral Start Switch (M /T) Starter Relay
	11	Headlight Dimmer and Turn Signal Switch, and Hazard Warning Switch
	12	Headlight Dimmer and Turn Signal Switch, and Headlight LO (LH)
C	1	Light Control Rheostat–terminal 3
	2	Cruise Control ECU
	3	Engine ECU or Engine & ECT ECU
	4	0/D OFF Switch
	5	Ground
	6	Water Temperature Sender Gauge
	7	ECU–B Fuse
	8	Airbag ECU
	9	ABS ECU
	10	Fuel Sender Gauge–terminal 1

(w/ Voltmeter: 5S–FE Engine)



BE4015 BE4016 BE4017
BE4689
BE4535



*1 Turbo Meter Drive Circuit
*2 Bulb Check Relay

No.		Wiring connector side
A	1	Brake Fluid Level Warning Switch–terminal 1, and Parking Brake Switch
	2	Igniter
	3	DOME Fuse
	4	Door Courtesy Switch
	5	Integration Relay–terminal 4
	6	Low Oil Pressure Warning Switch
	8	Alternator–terminal "L"
	9	IGN Fuse
	10	TAIL Fuse
B	1	Ground
	2	Headlight Dimmer and Turn Signal Switch, and Hazard Warning Switch
	3	Fuel Sender Gauge–terminal 3
	4	Turbo Pressure sensor–terminal 2
	5	Ground
	6	Engine ECU or Engine & ECT ECU
	7	GAUGE Fuse
	10	Starter Switch
	11	Headlight Dimmer and Turn Signal Switch, and Hazard Warning Switch
	12	Headlight Dimmer and Turn Signal Switch, and Headlight LO (LH)
C	1	Light Control Rheostat–terminal 3
	2	Cruise Control ECU
	3	Engine ECU or Engine & ECT ECU
	5	Ground
	6	Water Temperature Sender Gauge
	7	ECU–B Fuse
	8	Airbag ECU
	9	ABS ECU
	10	Fuel Sender Gauge–terminal 2

Troubleshooting

Problem	Possible cause	Remedy	Page
* Gauges and indicator lights do not operate	GAUGE fuse faulty Wiring or ground faulty	Replace fuse and check for short Repair as necessary	BE–3
Speedometer does not operate	Speedometer cable faulty Speedometer faulty	Check cable Check speedometer	BE–52
Tachometer does not operate	Tachometer faulty Wiring or ground faulty	Check tachometer Repair as necessary	BE–52
Fuel gauge does not operate	Receiver gauge faulty Sender gauge faulty Wiring or ground faulty	Check gauge Check gauge Repair as necessary	BE–53 BE–55
Fuel level warning light does not light up	Bulb burned out Warning switch faulty Wiring or ground faulty	Replace bulb Check gauge Repair as necessary	BE–55
Water temperature gauge does not operate	Receiver gauge faulty Sender gauge faulty Wiring or ground faulty	Check gauge Check gauge Repair as necessary	BE–56 BE–56
Voltmeter does not operate	Voltmeter faulty Wiring or ground faulty	Check voltmeter Repair as necessary	BE–58
Low oil pressure warning light does not light up	Bulb burned out Low oil pressure warning switch faulty Wiring or ground faulty	Replace bulb Check switch Repair as necessary	BE–58
Brake warning light does not light up	Bulb burned out Brake fluid level warning switch faulty Parking brake switch faulty Wiring or ground faulty	Replace bulb Check switch Check switch Repair as necessary	BE–58 BE–59
Seat belt warning light does not light up	Bulb burned out Buckle switch faulty Integration relay faulty Wiring or ground faulty	Replace bulb Check switch Check relay Repair as necessary	BE–59 BE–59
Open door warning light does not light up	DOME fuse faulty Bulb burned out Door courtesy switch faulty Wiring or ground faulty	Replace fuse and check for short Replace bulb Check switch Repair as necessary	BE–3 BE–62
Meter illumination lights do not light up	Bulb burned out Light control rheostat faulty Wiring or ground faulty	Replace bulbs Check rheostat Repair as necessary	BE–62

* Tachometer, Fuel Gauge, Fuel Level Warning Light, Water Temperature Gauge, Voltmeter, Low Oil Pressure Warning Light, Brake Warning Light, Seat Belt Warning Light, ABS Warning Light, Check Engine Warning Light, Cruise Control Indicator Light, 0/D OFF Indicator Light and Turbo Meter

Troubleshooting (Cont'd)

Problem	Possible cause	Remedy	Page
Turbo meter does not operate	Turbo meter faulty Turbo pressure sensor faulty Turbo meter drive circuit faulty Wiring or ground faulty	Check turbo meter Check sensor Check drive circuit Repair as necessary	BE–60 BE–60, 61 BE–61

Parts Inspection

Speedometer System

1. INSPECT SPEEDOMETER (ON–VEHICLE)

(a) Using a speedometer tester, inspect the speedometer for allowable indication error and check the operation of the odometer.

HINT: Tire wear and tire over or under inflation will increase the indication error.

If error is excessive, replace the speedometer.

(b) Check the speedometer for pointer vibration and abnormal noise.

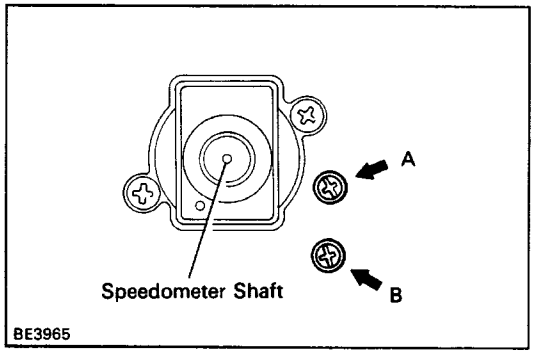
HINT: Pointer vibration can be caused by a loose speedometer cable.

(mph)

Standard indication	Allowable range
20	19 – 22
40	39 – 42.5
60	59.5 – 63.5
80	79.5 – 84
100	100 – 105
120	120 – 125.5
140	140 – 146

(km/h)

Standard indication	Allowable range
20	18 – 23
40	40 – 44
60	60 – 64.5
80	80 – 85
100	100 – 105
120	120 – 125.5
140	140 – 146
160	160 – 167
180	180 – 188
200	200 – 209
220	220 – 230
240	240 – 251



2. INSPECT SPEED SENSOR

Check that there is continuity between terminals A and B four times per each revolution of the speedometer shaft.

If operation is not as specified, replace the speedometer.

Tachometer System

INSPECT TACHOMETER (ON–VEHICLE)

(a) Connect a tune–up test tachometer, and start the engine.

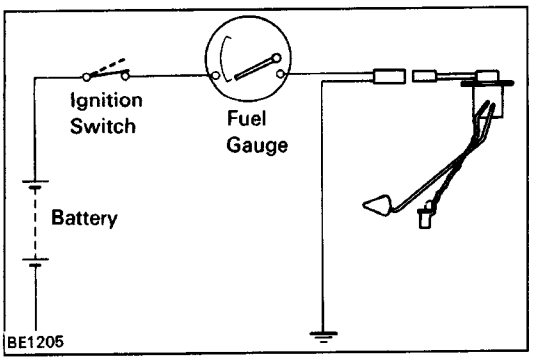
NOTICE:

- **Reversing the connection of the tachometer will damage the transistors and diodes inside.**
- **When removing or installing the tachometer, be careful not to drop or subject it to heavy shocks.**

(b) Compare the tester and tachometer indications.

If error is excessive, replace the tachometer.

DC 13.5V, 25°C (77°F) rpm	
Standard indication	Allowable range
700	610 – 750
3,000	2,800 – 3,200
5,000	4,800 – 5,200
7,000	6,700 – 7,300



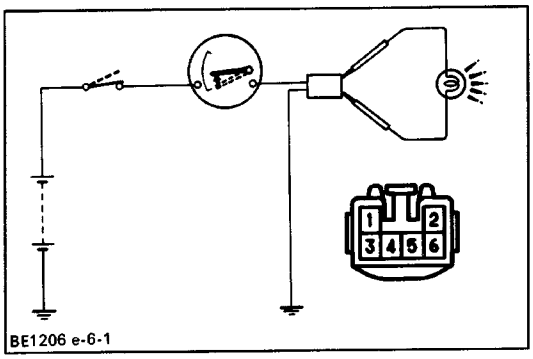
Fuel Gauge System

1. INSPECT RECEIVER GAUGE

(Operation)

(a) Disconnect the connector from the sender gauge.

(b) Turn the ignition switch ON, check that the receiver gauge needle indicates EMPTY.



(c) Connect terminal 3 and 4 on the wire harness side connector through a 3.4 W test bulb.

(d) Turn the ignition switch ON, check that the bulb lights up and receiver gauge needle moves toward the full side.

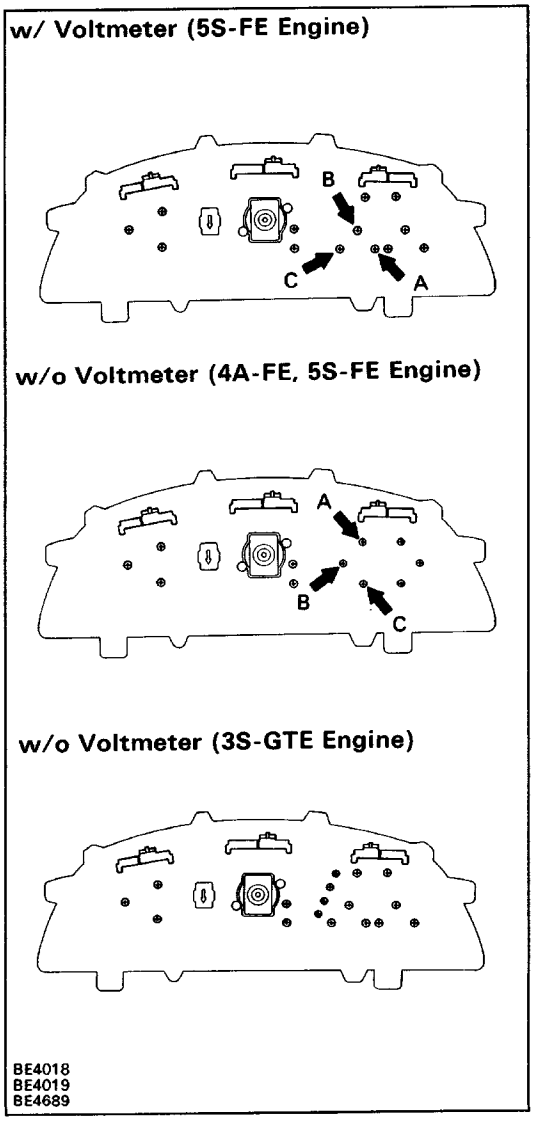
HINT: Because of the silicon oil in the gauge, it will take a short time for the needle to stabilize.

If operation is as specified, replace the sender gauge. Then, recheck the system.

If operation is not as specified, inspect the receiver gauge resistance.

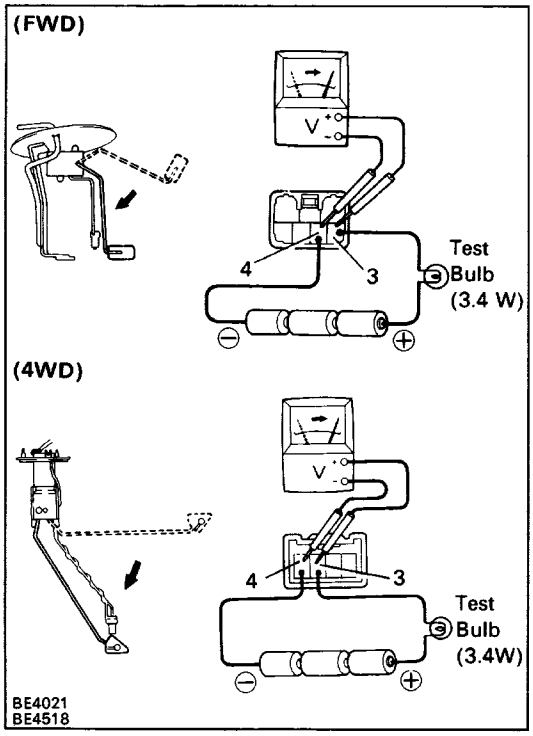
(Resistance)

Measure the resistance between terminals.



Between terminals	Resistance (Ω)		
	w/ Voltmeter	w/o Voltmeter	
	5S–FE Engine	4A–FE, 5S–FE Engine	3S–GTE Engine
A – B	Approx. 83	Approx. 86	Approx. 83
A – C	Approx. 234	Approx. 274	Approx. 234
B – C	Approx. 151	Approx. 188	Approx. 151

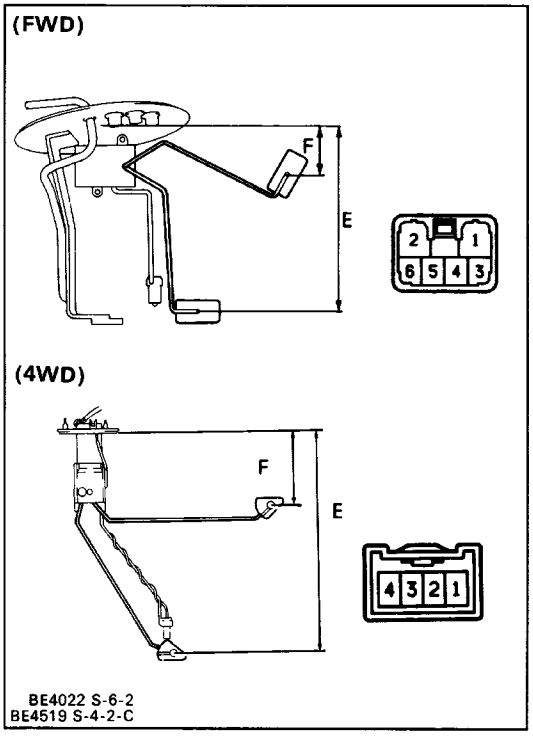
If resistance value is not as specified, replace the receiver gauge.



2. INSPECT SENDER GAUGE

(Operation)

(a) Connect a series of three 1.5 V dry cell batteries.
(b) Connect the positive (+) lead from the dry cell bat–teries to terminal 3 through a 3.4 W test bulb and the negative (–) lead to terminal 4.
(c) Check that the voltage rises between terminal 3 and 4 as the float is moved from the top to bottom posi-tion.

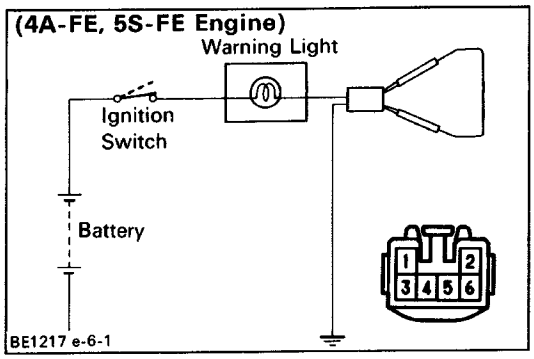


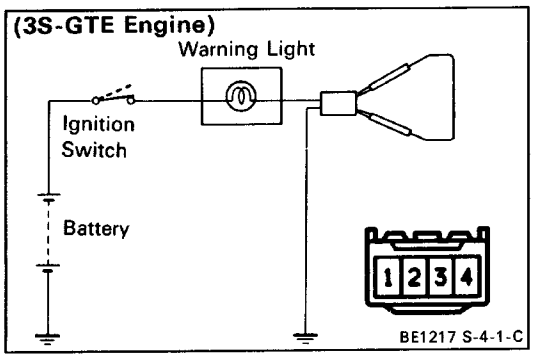
(Resistance)

Measure the resistance between terminals 3 and 4 for each float position.

Float position mm (in.)			Resistance (Ω)
	FWD	4WD	FWD–4WD
F	Approx. 45.0 (1.772)	Approx. 97.1 (1.772)	Approx. 3
E	Approx. 158.5 (6.240)	Approx. 272.4 (10.724)	Approx. 110

If resistance value is not as specified, replace the sender gauge.





Fuel Level Warning System

1. INSPECT WARNING LIGHT

(4A–FE, 5S–FE Engine)

(a) Disconnect the connector from the sender gauge.

(b) Connect terminals 1 and 4 on the wire harness side connector.

(c) Turn the ignition switch ON, check that the warning light lights up.

If the warning light does not light up, test the bulb.

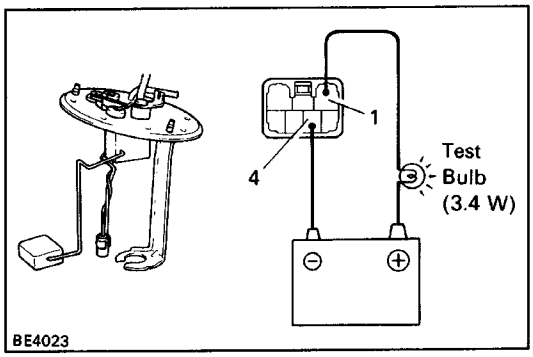
(3S–GTE Engine)

(d) Disconnect the connector from the sender gauge.

(e) Connect terminals 2 and 4 on the wire harness side connector.

(f) Turn the ignition switch ON, check that the warning light lights up.

If the warning light does not light up, test the bulb.

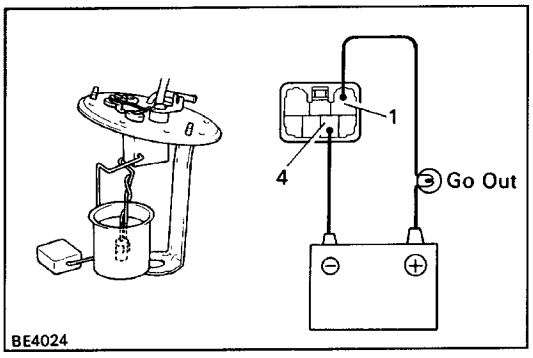


2. INSPECT WARNING SWITCH

(4A–FE, 5S–FE Engine)

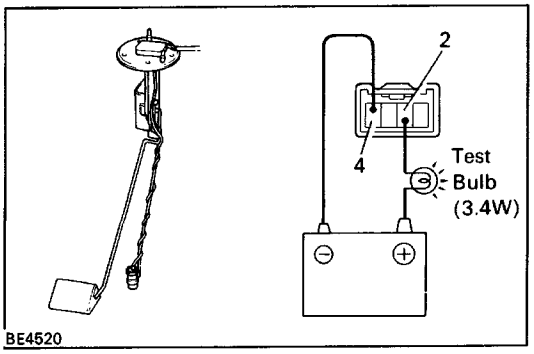
(a) Apply battery voltage between terminals 1 and 4 through a 3.4 W test bulb, check that the bulb lights up.

HINT: It will take a short time for the bulb to light up.



(b) Submerge the switch in fuel, check that the bulb goes out.

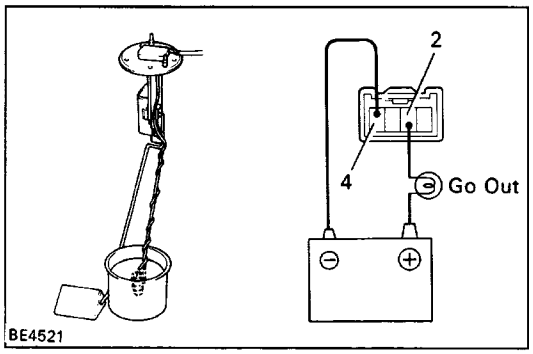
If operation is not as specified, replace the sender gauge.



(3S–GTE Engine)

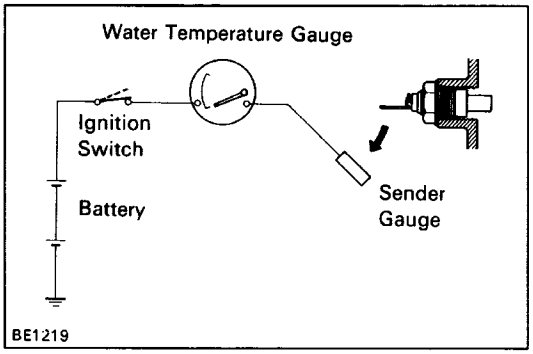
(a) Apply battery voltage between terminals 2 and 4 through a 3.4 W test bulb, check that the bulb lights up.

HINT: It will take a short time for the bulb to light up.



(b) Submerge the switch in fuel, check that the bulb goes out.

If operation is not as specified, replace the sender gauge.



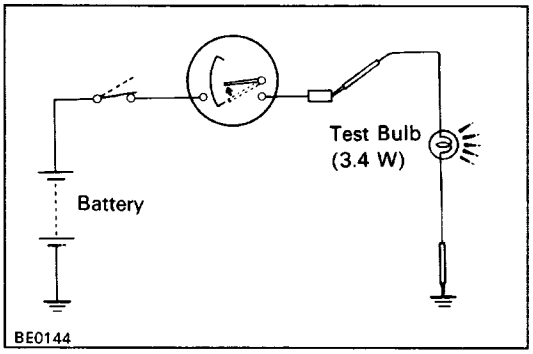
Water Temperature Gauge System

1. INSPECT RECEIVER GAUGE

(Operation)

(a) Disconnect the connector from the sender gauge.

(b) Turn the ignition switch ON, check that the receiver gauge needle indicates COOL.

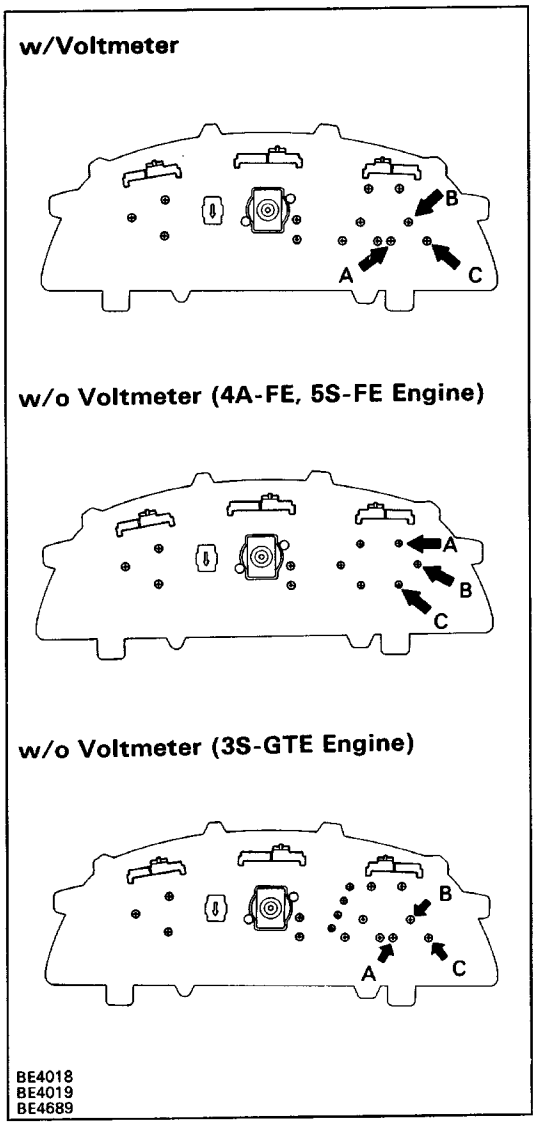


(c) Ground terminal on the wire harness side connector through a 3.4 W test bulb.

(d) Turn the ignition switch ON, check that the bulb lights up and receiver gauge needle moves toward the hot side.

If operation is not as specified, replace the sender gauge. Then, recheck the system.

If operation is not as specified, measure the receiver gauge resistance.



(Resistance)

Measure the resistance between terminals.

HINT: Connect the test leads so that the current from the ohmmeter can flow according to the chart order.

(w/ Voltmeter)

Between terminals	Resistance (Ω)
A → B	Approx. 198
A → C	Approx. 147
B → C	Approx. 51

(w/o Voltmeter)

Between terminals	Resistance (Ω)	
	4A–FE, 5S–FE Engine	3S–GTE Engine
A → B	Approx.182	Approx.198
A → C	Approx.131	Approx.147
B → C	Approx. 51	Approx. 51

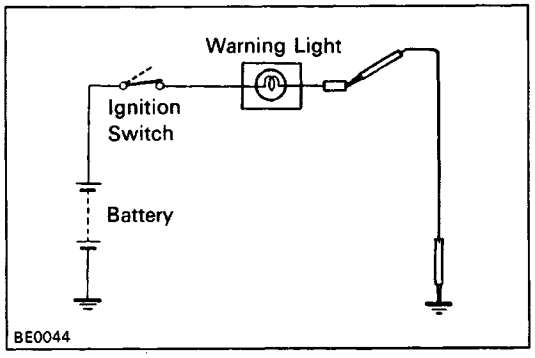
If resistance value is not as specified, replace the sender gauge.

Voltmeter System

INSPECT VOLTMETER (ON–VEHICLE)

Compare the tester and voltmeter indications.

If error is excessive, replace the voltmeter.



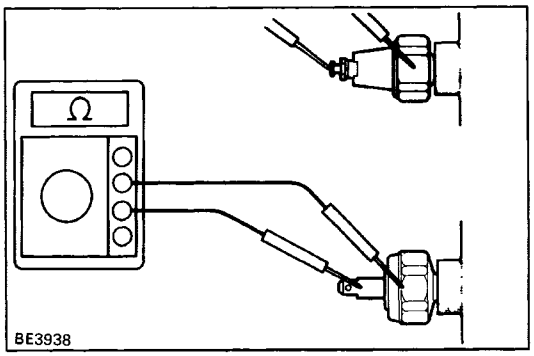
Low Oil Pressure Warning System

1. INSPECT WARNING LIGHT

(a) Disconnect the connector from the warning switch and ground terminal on the wire harness side connector.

(b) Turn the ignition switch ON, check that the warning light lights up.

If the warning light does not light up, test the bulb.



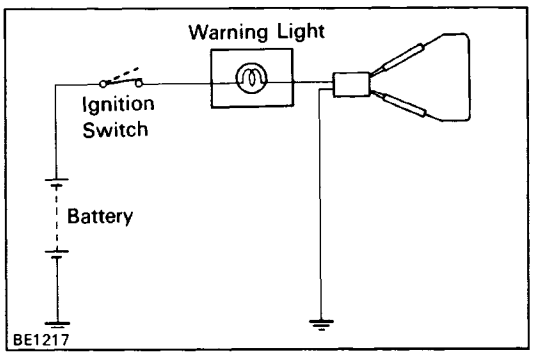
2. INSPECT LOW OIL PRESSURE WARNING SWITCH

(a) Check that there is continuity between terminal and ground with the engine stopped.

(b) Check that there is no continuity between terminal and ground with the engine running.

HINT: Oil pressure should be over 29 kPa (0.3 kgf/cm^2, 4.3 psi).

If operation is not as specified, replace the switch.



Brake Warning System

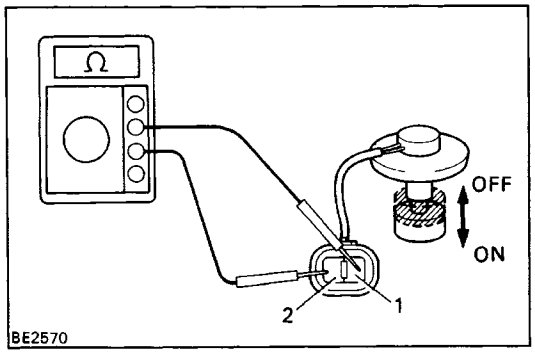
1. INSPECT WARNING LIGHT

(a) Disconnect the connectors from the brake fluid level warning switch and parking brake switch.

(b) Connect terminals on the wire harness side of the level warning switch connector.

(c) Turn the ignition switch ON, check that the warning light lights up.

If the warning light does not light up, test the bulb.



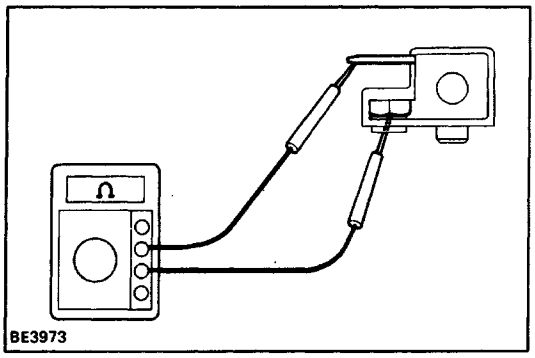
2. INSPECT SWITCHES

(Brake fluid Level Warning Switch)

(a) Check that there is no continuity between terminals with the switch OFF (float up).

(b) Check that there is continuity between terminals with the switch ON (float down).

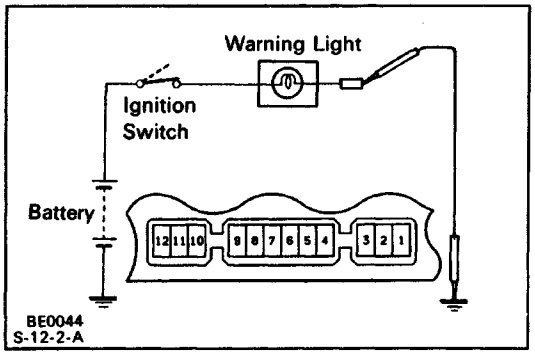
If operation is not as specified, replace the switch.



(Parking Brake Switch)

(a) Check that there is continuity between terminals with the switch ON (switch pin released).

(b) Check that there is no continuity between terminals with the switch OFF (switch pin pushed in).



Seat Belt Warning System

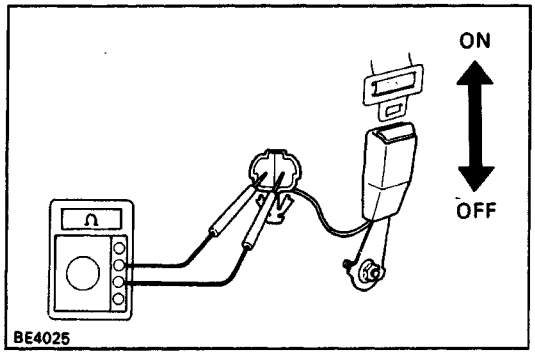
1. INSPECT WARNING LIGHT

(a) Remove the integration relay from the junction block.

(b) Ground terminal 4 on the junction block side connector.

(c) Turn the ignition switch ON, check that the warning light lights up.'

If the warning lights does not light up, test the bulb.

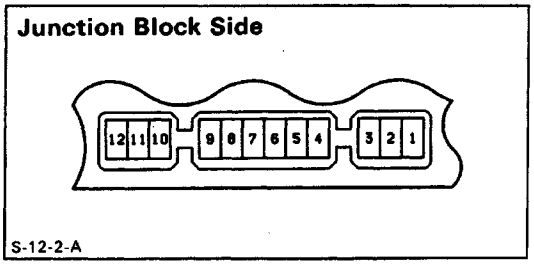


2. INSPECT BUCKLE SWITCH

(a) Check that there is continuity between terminals on the switch side connector with the switch ON (belt fastened).

(b) Check that there is no continuity between terminals on the switch side connector with the switch OFF (belt unfastened).

If operation is not as specified, replace the seat belt inner.



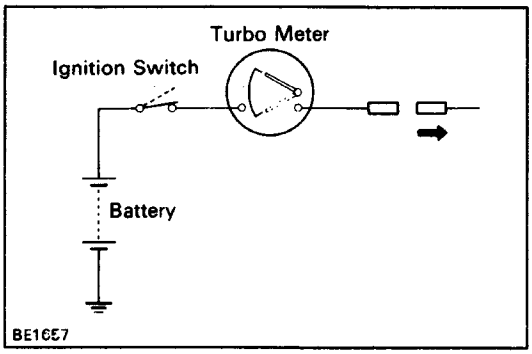
3. INSPECT INTEGRATION RELAY

(Relay Circuit)

Remove the integration relay from the junction block and inspect the connector on the junction side as shown in the chart.

Check for	Tester connection	Condition		Specified value
Continuity	3 – Ground	Constant		Continuity
	5 – Ground	Buckle switch position	OFF (belt unfastened)	No continuity
			ON (belt fastened) '	Continuity
Voltage	4 – Ground	Ignition switch position	LOCK or ACC	No voltage
			ON	Battery voltage
	6 – Ground	Ignition switch position	LOCK or ACC	No voltage
			ON	Battery voltage
	12 – Ground	Constant		Battery voltage

If circuit is as specified, replace the relay.



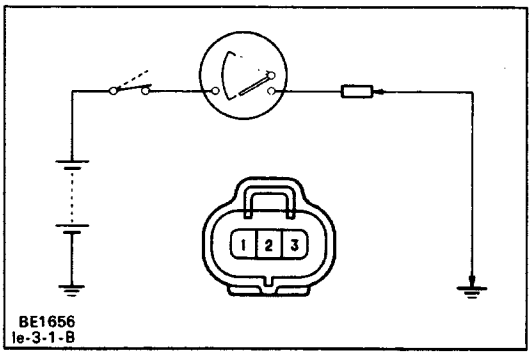
Turbo Meter System

1. INSPECT TURBO METER

(Operation)

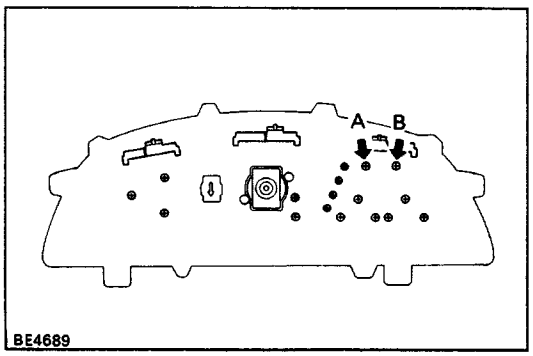
(a) Disconnect the connector from the pressure sensor.

(b) Turn the ignition switch ON. Check that the meter needle moves to upper position.



(c) Ground terminal 2 on the wire harness side. Check that the meter needle moves to lower position.

If operation is not as specified, inspect the turbo meter drive circuit and resistance.

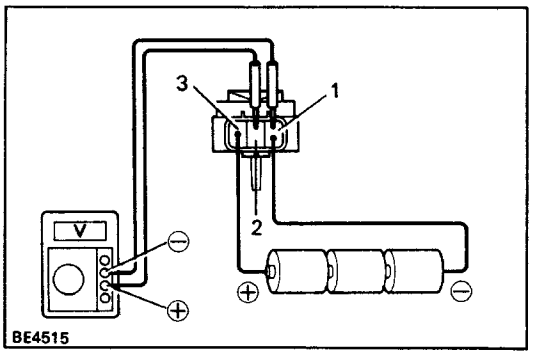


(Resistance)

Measure the resistance between terminals A and B.

Resistance: Approx. 72Ω

If resistance value is not as specified, replace the turbo meter.



2. INSPECT TURBO PRESSURE SENSOR

(a) Connect a series of three 1.5 V dry cell batteries.

(b) Connect the positive (+) lead from the dry cell batteries to terminal 3 and the negative (–) lead to terminal 1.

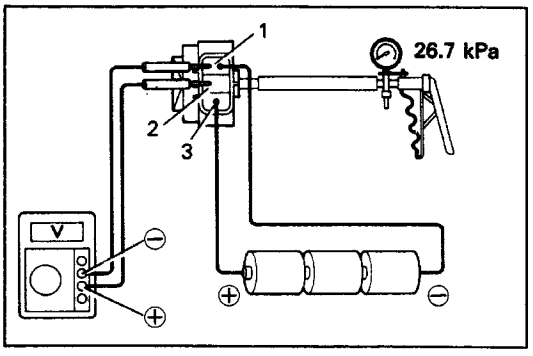
(c) Connect the positive (+) lead from the voltmeter to terminal 2 and the negative (–) lead to terminal 1.

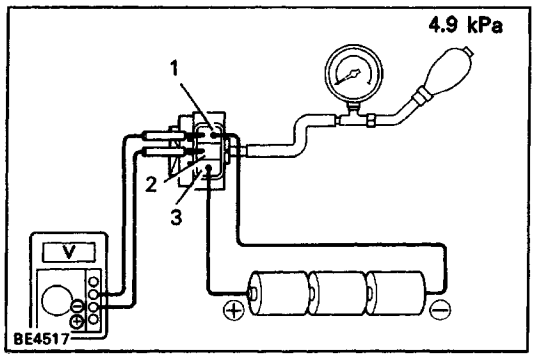
(d) Check that the voltage between terminals 2 and 1.

Voltage: Approx. 2.4 V

(e) Apply 26.7 kPa (200 mmHg, 7.87 in.Hg) of vacuum.

Check that the voltage drops below approximately 2.4 V.

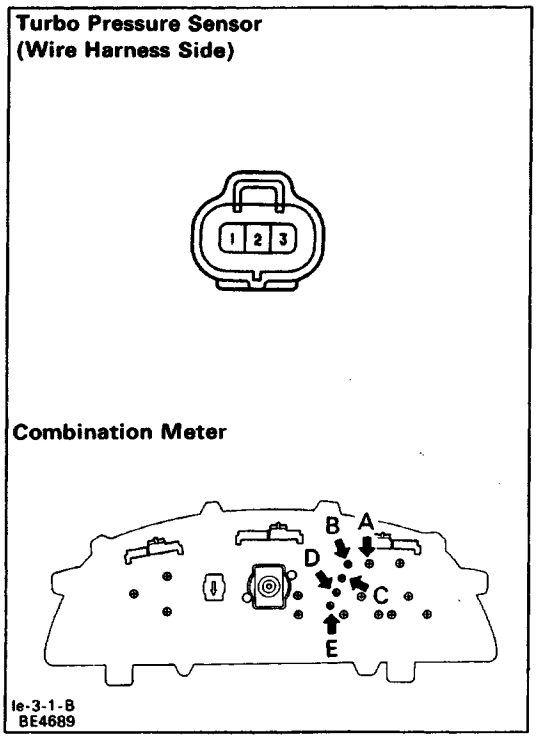




(f) Using SST, apply 4.9 kPa (0.5 kgf/cm^2 , 7.1 psi) of pressure.
Check that the voltage rises approximately 2.4 V.
SST 09992–00241
If operations are not as specified, replace the sensor.

3. INSPECT TURBO METER DRIVE CIRCUIT

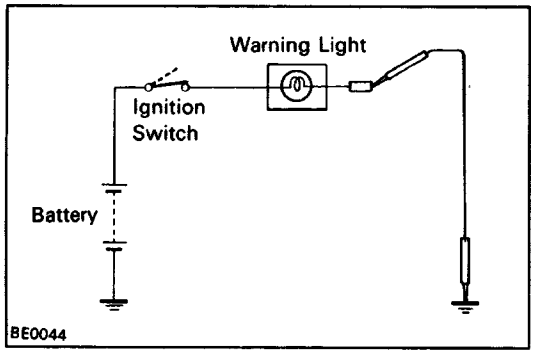
(a) Disconnect the connector from the turbo preSsure sensor.
(b) Remove the combination meter with connected three connectors.



(c) Inspect the connector on the wire harness side and terminals of the turbo meter drive circuit as shown in the chart.

Check for	Tester connection	Condition		Specified value
Continuity	A – B	Constant		Continuity
	C – 2	Constant		Continuity
	D – Ground	Constant		Continuity
	I – Ground	Constant		Continuity
Voltage	E – Ground	Ignition Switch position	LOCK or ACC	No voltage
			ON	Battery voltage
	3 – Ground	Ignition switch position	LOCK or ACC	No voltage
			ON	Battery voltage

If circuit is as specified, replace the drive circuit.



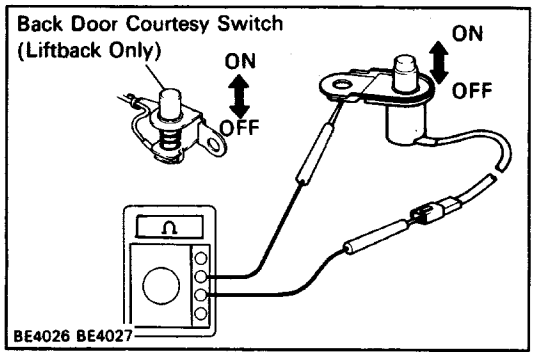
Open Door Warning System

1. INSPECT WARNING LIGHT

(a) Disconnect the connector from the door courtesy switch and ground terminal on the wire harness side connector.

(b) Turn the ignition switch ON, check that the warning light lights up.

If the warning does not light up, test the bulb.

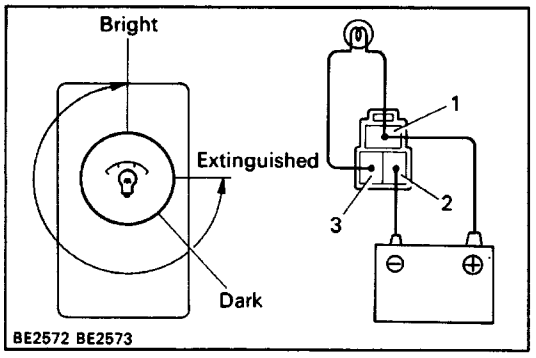


2. INSPECT COURTESY SWITCH

(a) Check that there is continuity between terminal and the switch body with the switch ON (switch pin released).

(b) Check that there is no continuity between terminal and the switch body with the switch OFF (switch pin pushed in).

If operation is not as specified, replace the switch.



Meter Illumination Control System

INSPECT LIGHT CONTROL RHEOSTAT

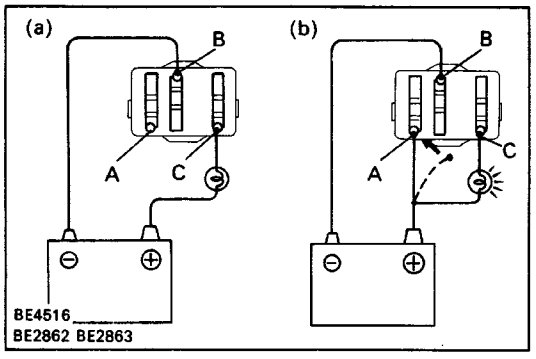
(a) Connect terminals 1 and 3 through a 3.4 watts test bulb.

(b) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2.

(c) Turn the rheostat knob to fully counterclockwise, check that the test bulb goes out.

(d) Gradually turn the rheostat knob to clockwise, check that the test bulb brightness changes from dark to bright.

If operation is not as specified, replace the rheostat.



Bulb Check System

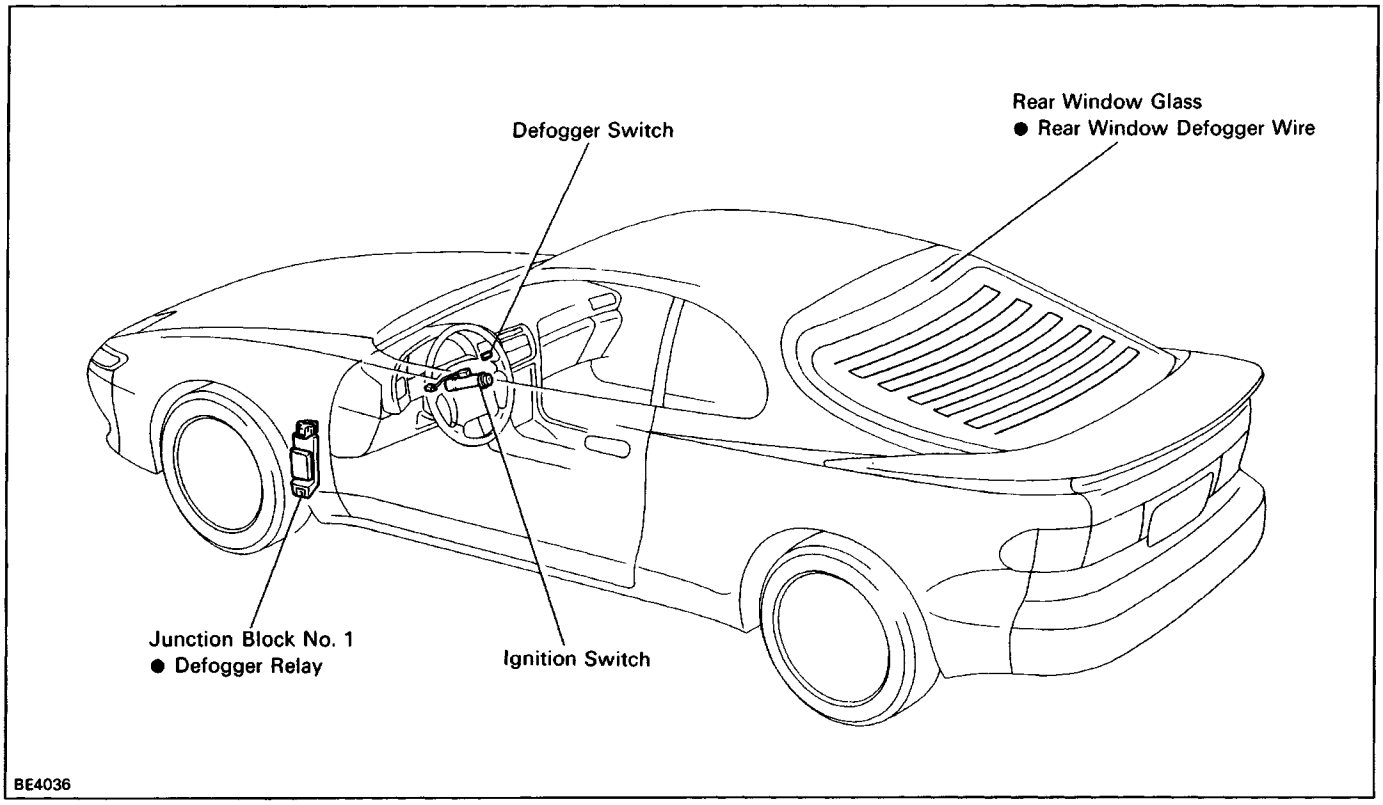
INSPECT BULB CHECK RELAY

(a) Connect the positive (+) lead from the battery to terminal C through a 1.4 watts test bulb and the negative (–) lead to terminal B, check that the test bulb does not light up.

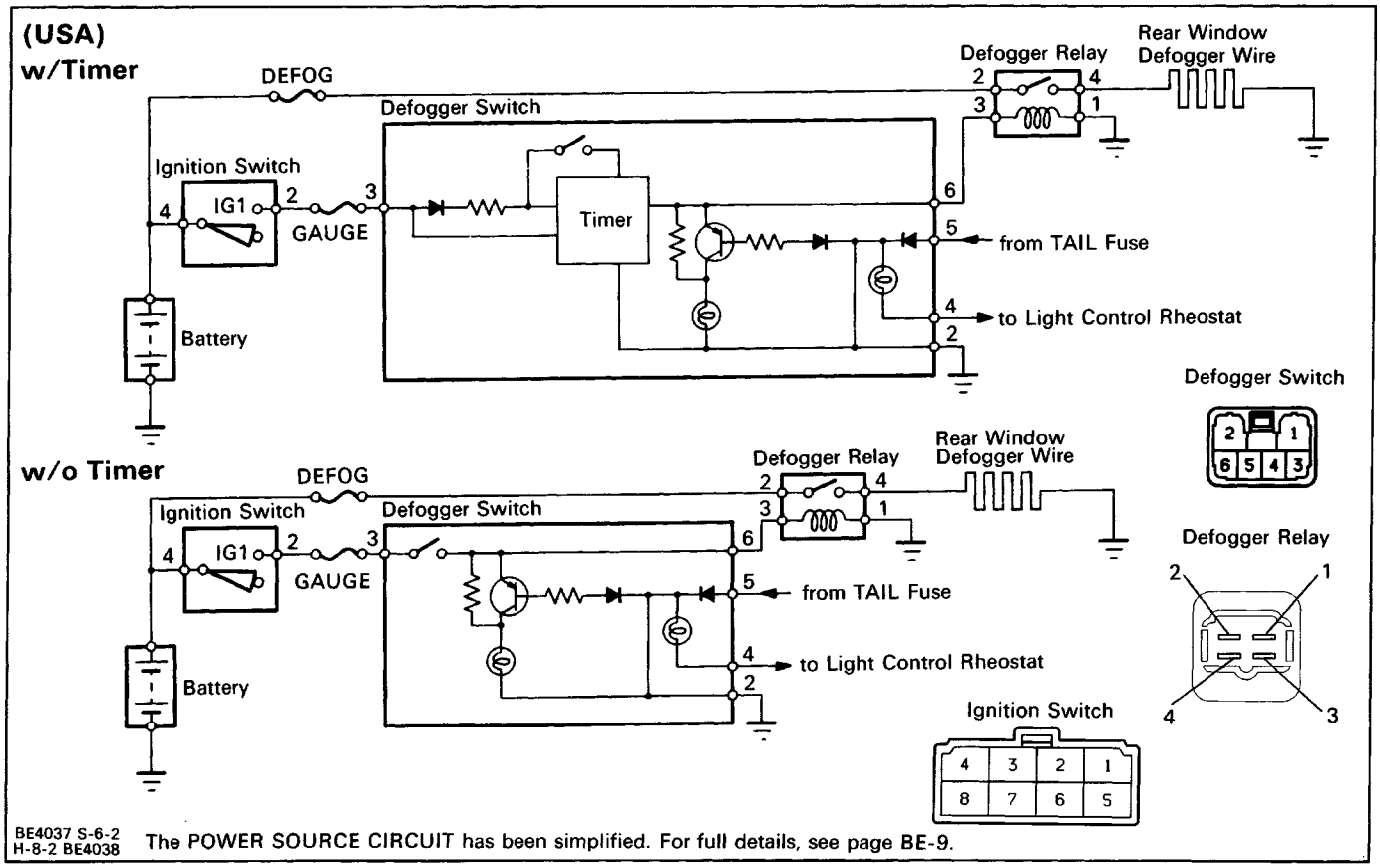
(b) Connect the positive (+) lead from the battery to terminal A, check that the test bulb lights up.

If operation is not as specified, replace the relay.

DEFOGGER SYSTEM
Parts Location

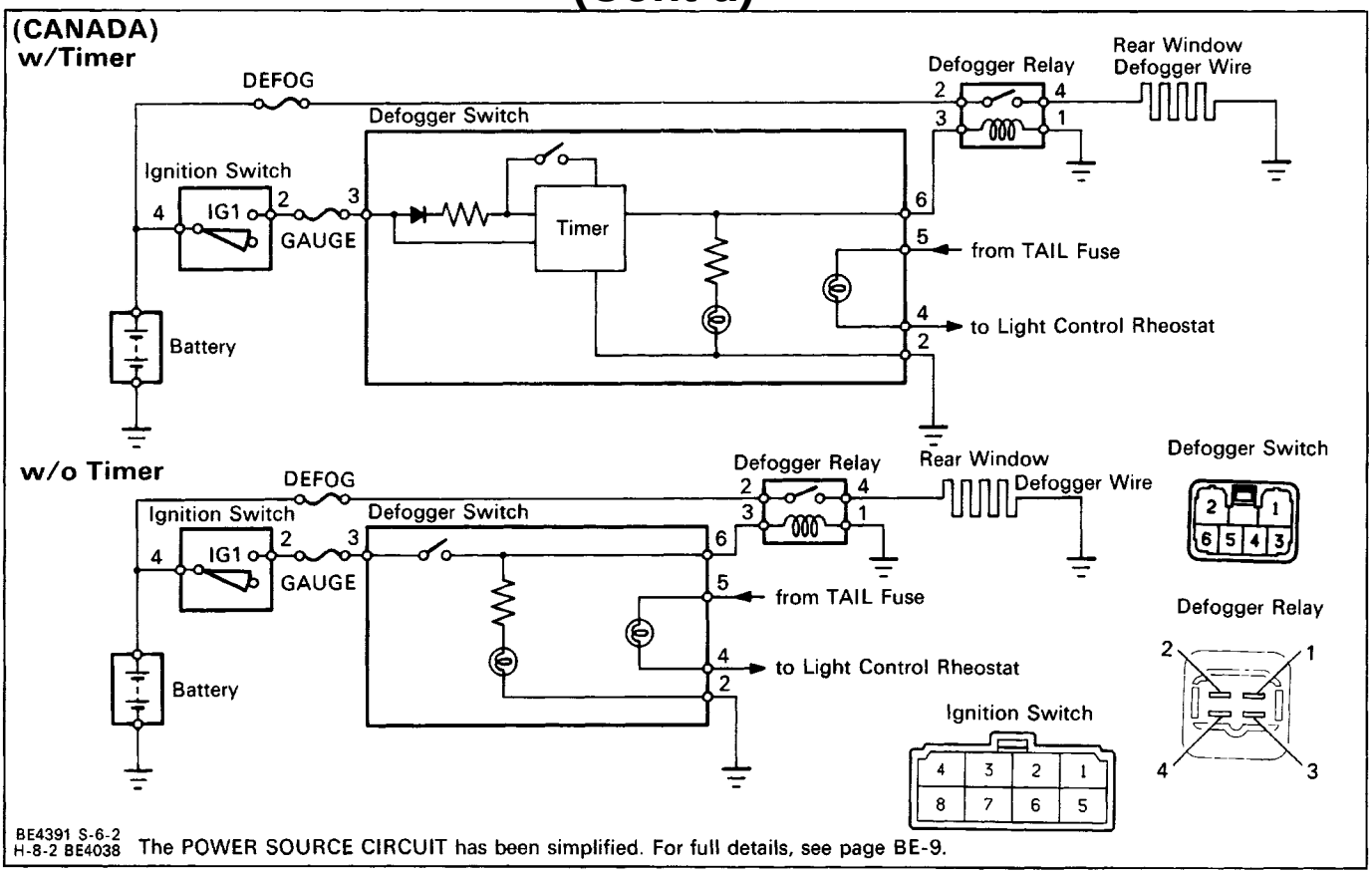


Wiring and Connector Diagrams



The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

Wiring and Connector– Diagrams (Cont'd)



Troubleshooting

Problem	Possible cause	Remedy	Page
Defogger system does not operate	DEFOG fuse faulty GAUGE fuse faulty Defogger switch faulty Defogger relay faulty Defogger wires broken Wiring or ground faulty	Replace fuse and check for short Replace fuse and check for short Check switch Check relay Check wires Repair as necessary	BE–3 BE–3 BE–65 BE–66 BE–66
Indicator light does not light up	Bulb burned out Wiring or ground faulty	Check switch Repair as necessary	BE–65
Illumination light does not light up	TAIL fuse faulty Bulb burned out Wiring or ground faulty	Replace fuse and check for short Check switch Repair as necessary	BE–3 BE–65

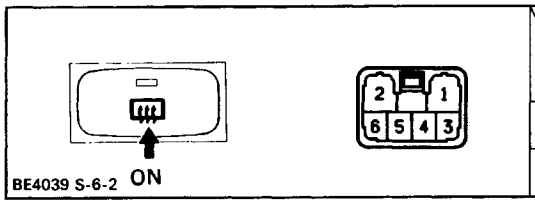
On–Vehicle Inspection

Defogger Idle–up System

Set the defogger switch ON, check that the engine revolutions increase.

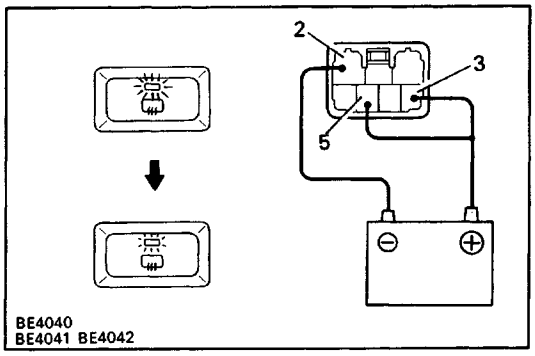
Parts Inspection

1–1 (w/o Timer)
INSPECT DEFOGGER SWITCH
(Continuity)



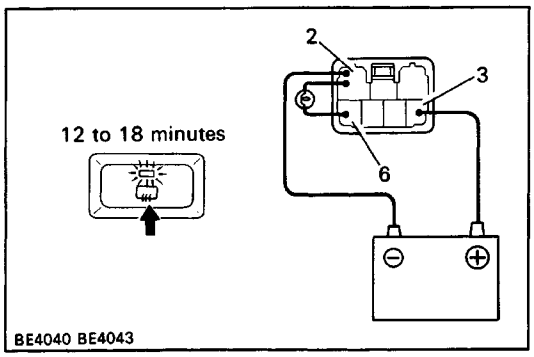
Terminal / Switch position	2	3	6	Illumination 4	Illumination 5
OFF					
ON	○	○	○	○	○

If continuity is not as specified, replace the switch.



(Indicator Light Dimming– USA)

(a) Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminals 2.
(b) Push the defogger switch ON.
(c) Connect the positive (+) lead from the battery to terminal 5, check that the indicator light dims.
If the indicator light does not dim, replace the switch.



1–2 (w/Timer)
INSPECT DEFOGGER SWITCH
(Operation)

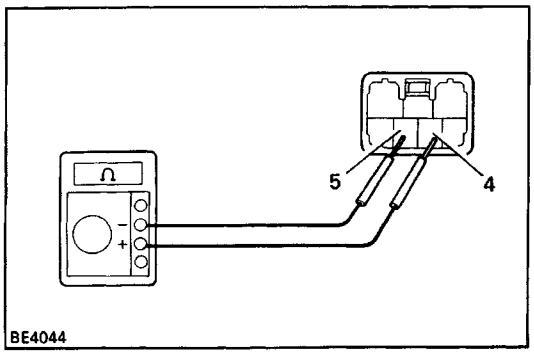
(a) Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 2.
(b) Connect between terminals 2 and 6 through a 3.4 W test bulb.
(c) Push the defogger switch ON, check that the test bulb and the indicator light light up for 12 to 18 minutes, then the bulb and indicator light go out.
If operation is not as specified, replace the switch.

(Illumination)

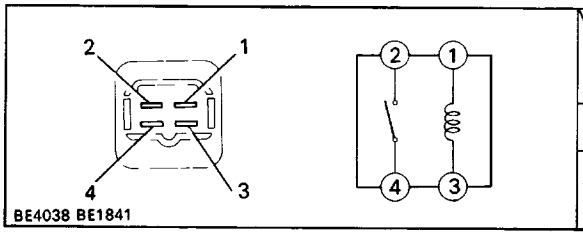
Check that there is continuity between terminal 4 and 5.
If there is not continuity, replace the switch.

(Indicator Light Dimming–USA)

See w/o Timer on page BE–65.



2. INSPECT DEFOGGER RELAY (Continuity)



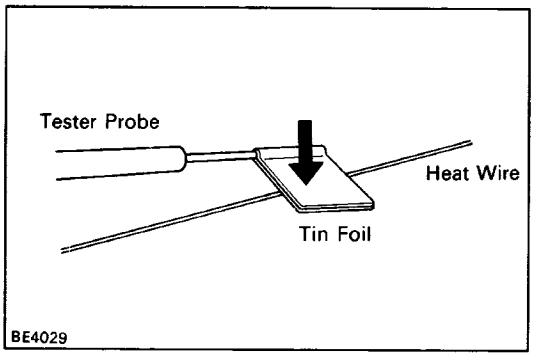
Terminal / Condition	1	2	3	4
Constant	○	∿	○	
Apply battery voltage to terminals 1 and 3.		○		○

If continuity is not as specified, replace the relay.

3. INSPECT DEFOGGER WIRES

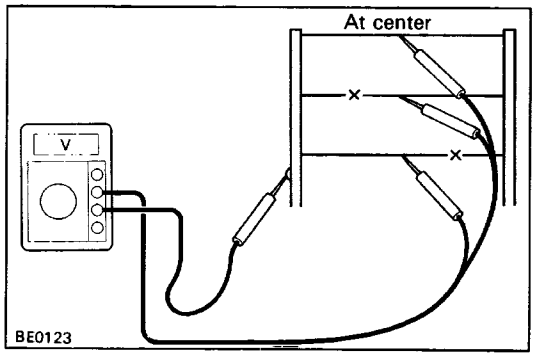
NOTICE:

- When cleaning the glass, use a soft, dry cloth, and wipe the glass in the direction of the wire. Take care not to damage the wires.
- Do not use detergents or glass cleaners with abrasive ingredients.
- When measuring voltage, wind a piece of tin foil around the top of the negative probe and press the foil against the wire with your finger as shown.



(Wire Breakage)

(a) Turn the ignition switch ON.
(b) Push in the defogger switch.
(c) Inspect the voltage at the center of each heat wire as shown.

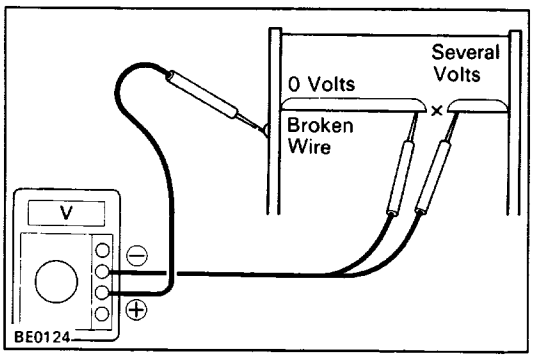


Voltage	Criteria
Approx. 5V	Okay (No. break in wire)
Approx. 10V or 0V	Broken wire

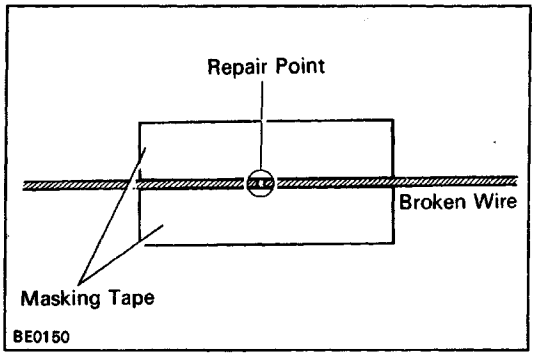
HINT: If there is approximately 10 V, the wire is broken between the center of the wire and the positive (+) end. If there is no voltage, the wire is broken between the center of the wire and ground.

(Wire Breakage Point)

(a) Place the voltmeter positive (+) lead against the defogger positive (+) terminal.
(b) Place the voltmeter negative (–) lead with the foil strip against the heat wire at the positive (+) terminal end and slide it toward the negative (–) terminal end.
(c) The point where the voltmeter deflects from zero to several volts is the place where the heat wire is broken.

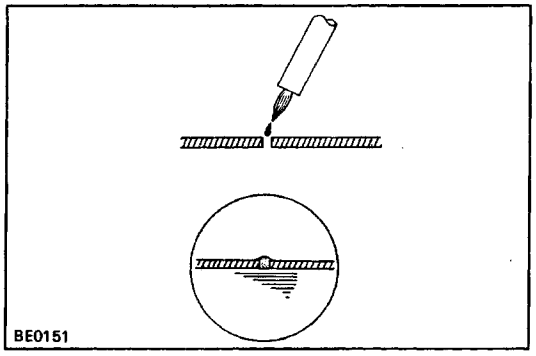


HINT: If the heat wire is not broken, the voltmeter indicates 0 V at the positive (+) end of the heat wire but gradually increases to about 12 V as the meter probe is moved to the other end.



4. REPAIR DEFOGGER WIRES

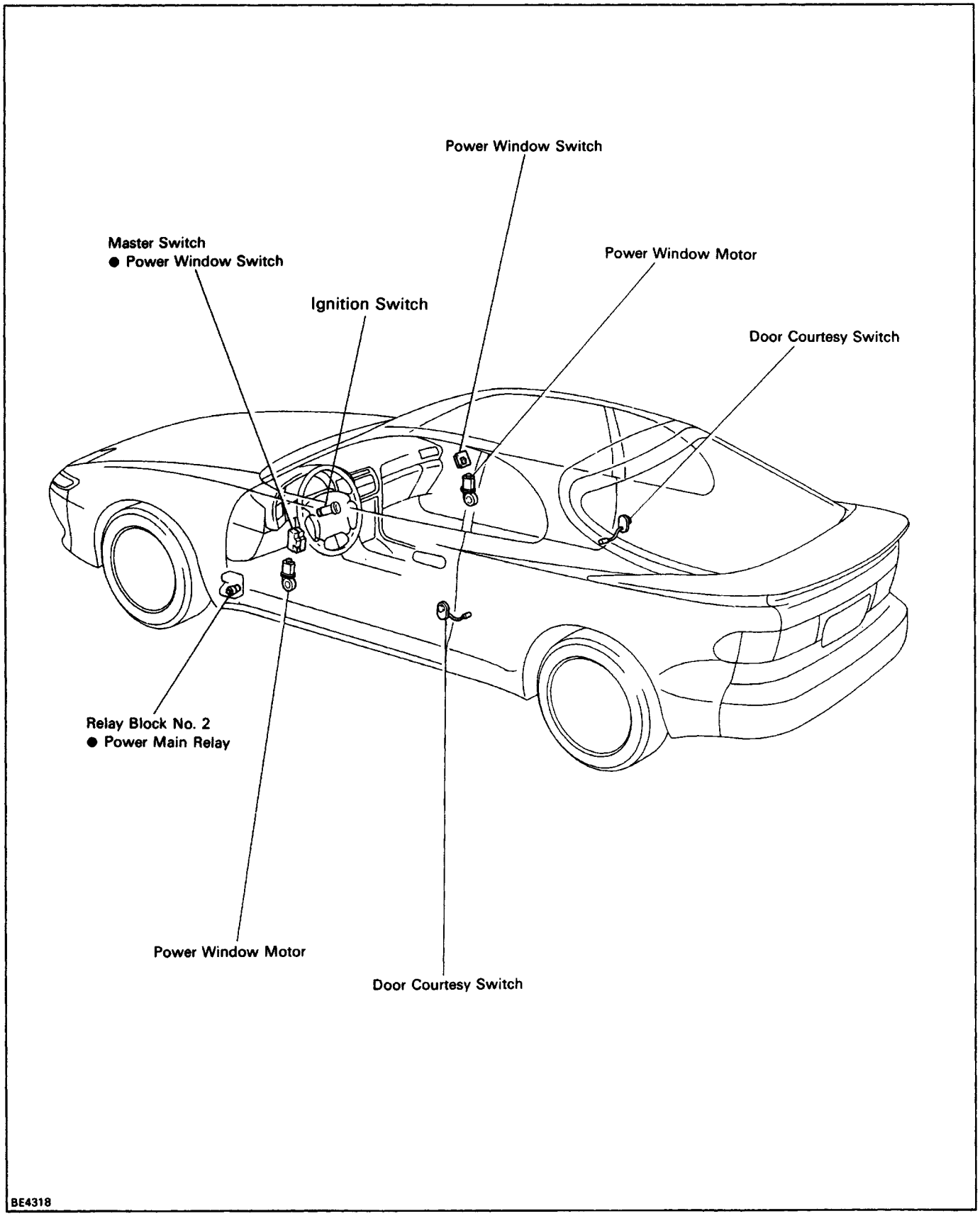
(a) Clean the broken wire tips with a grease, wax and silicone remover.
(b) Place the masking tape along both sides of the wire to be repaired.



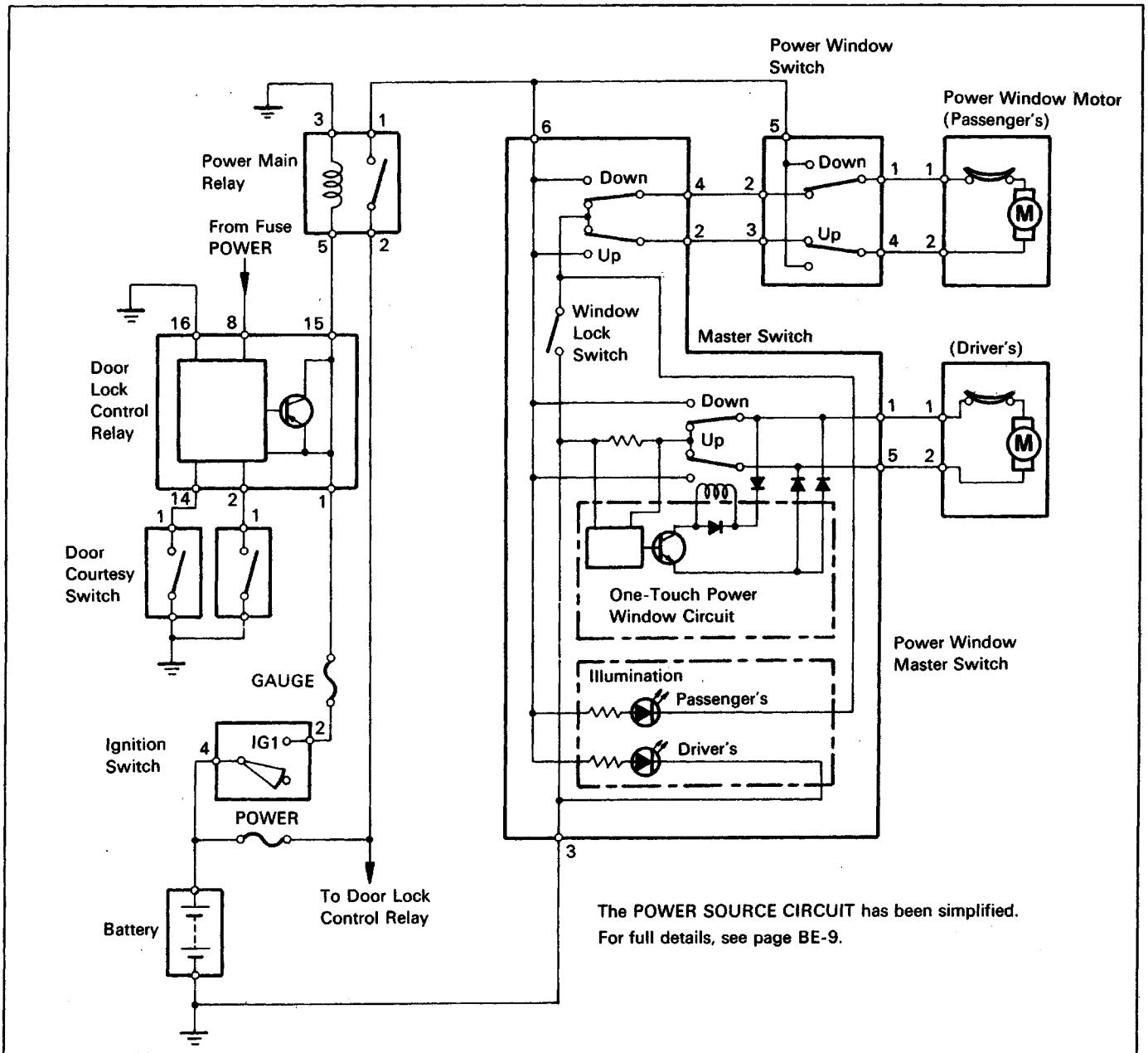
(c) Thoroughly mix the repair agent (Dupont paste No. 4817).
(d) Using a fine tip brush, apply a small amount to the wire.
(e) After a few minutes, remove the masking tape.
(f) Allow the repair to stand at least 24 hours.

POWER WINDOW CONTROL SYSTEM

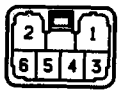
Parts Location



Wiring and Connector Diagrams



Power Window Master Switch



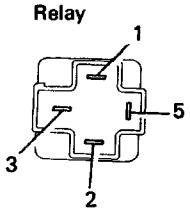
Power Window Switch



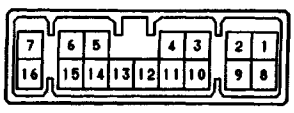
Power Window Motor



Power Main Relay



Door Lock Control Relay

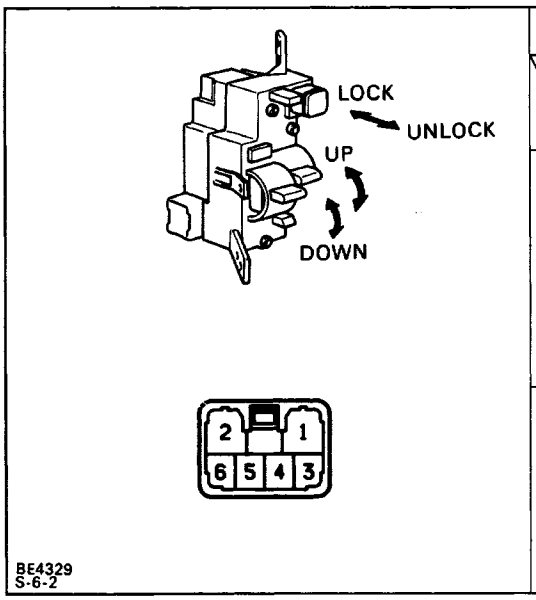


Troubleshooting

Problem	Possible cause	Remedy	Page
Power window does not operate at all	GAUGE fuse blown POWER fuse blown POWER main relay faulty Wiring or ground faulty	Replace fuse and check for short Replace fuse and check for short Check relay Repair as necessary	BE–3 BE–3 BE–72
One–touch power window does not operate	Power window master switch faulty	Check Switch	BE–70
Key–off power window does not operate	Door lock control relay faulty Wiring faulty	Check relay Repair as necessary	BE–77

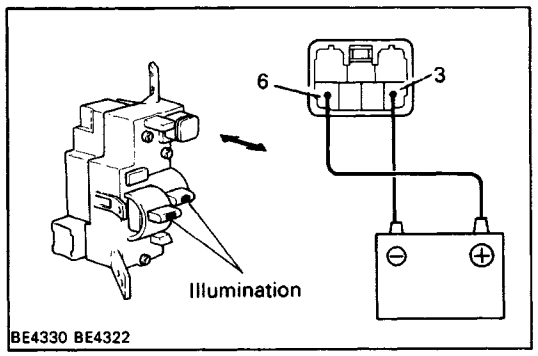
Parts Inspection

1. INSPECT SWITCHES
(Master Switch/Continuity)



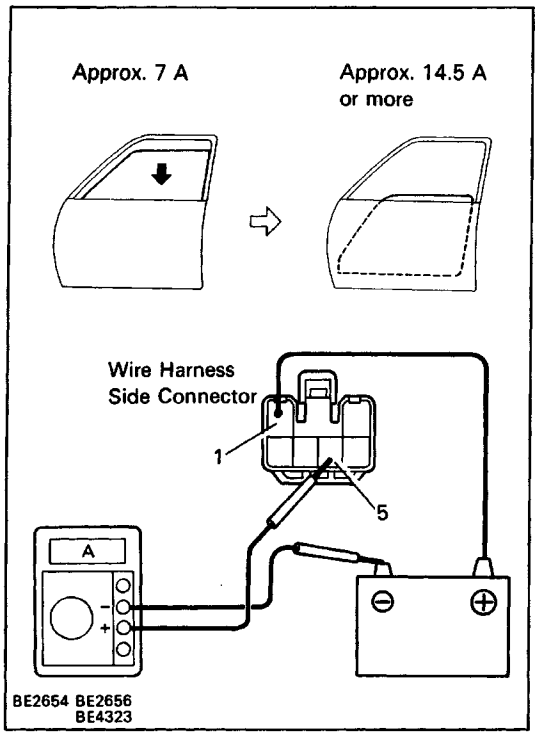
Window operation		Driver's				Passenger's			
Terminal / Switch position		1	3	5	6	2	3	4	6
Window unlock	UP	○—○		○—○		○———○			
	OFF	○—○	○—○			○—○	○—○		
	DOWN	○———	○—○		○	○—○		○—○	
Window lock	UP	○—○		○—○		○———○			
	OFF	○—○	○—○			○———			
	DOWN	○———	○—○		○			○—○	

If continuity is not as specified, replace the switch.



(Master Switch: Illumination)

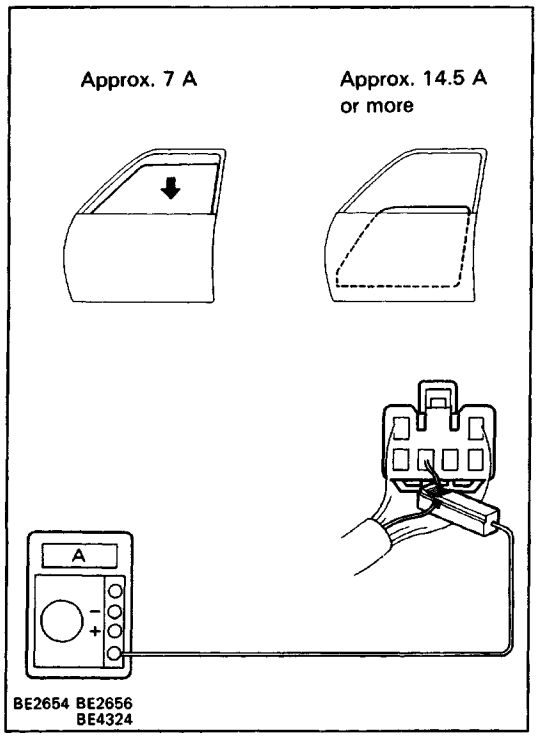
(a) Connect the positive (+) lead from the battery to terminal 6 and the negative (–) lead to terminal 3.
(b) Check that the illuminations light up.
(c) When the window lock switch pushed in, check that the passenger's illumination goes off.
If operation is not as specified, replace the master switch.



(Master Switch: One Touch Power Window System)
Inspection using an ammeter:

(a) Disconnect the connector from the master switch.
(b) Connect the positive (+) lead from the ammeter to terminal 5 on the wire harness side connector and the negative (–) lead to negative terminal of the battery.
(c) Connect the positive (+) lead from the battery to terminal 1 on the wire harness side connector.
(d) As the window goes down, check that the current flows approximately 7 A.
(e) Check that the current increases approximately 14.5 A or more when the window stops going down.

HINT: The circuit breaker opens some 4 – 40 seconds after the window stops going down, so the check must be made before the circuit breaker operates.
If operation is as specified, replace the master switch.

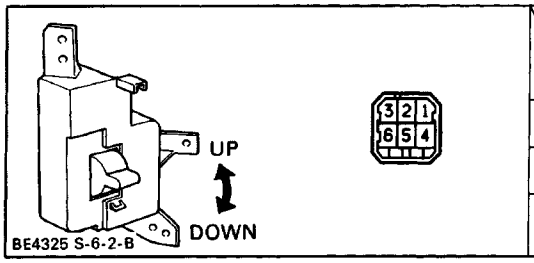


Inspection using an ammeter with a current–measuring probe:

(a) Remove the master switch with connector connected.
(b) Attach a current–measuring probe to terminal 5 of the wire harness.
(c) Turn the ignition switch ON and set the power window switch in the down position.
(d) As the window goes down, check that the current flows approximately 7 A.
(e) Check that the current increases approximately 14.5 A or more when the window stops going down.

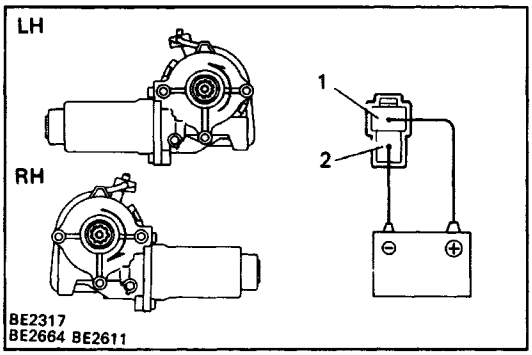
HINT: The circuit breaker opens some 4 – 40 seconds after the window stops going down, so that check must be made before circuit breaker operates.
If operation is as specified, replace the master switch.

(Power Window Switch/Continuity)



Terminal / Switch position	1	2	3	4	5
UP	○——	——○		○——	——○
OFF	○——	——○	○——	——○	
DOWN	○——		——○	○——	——○

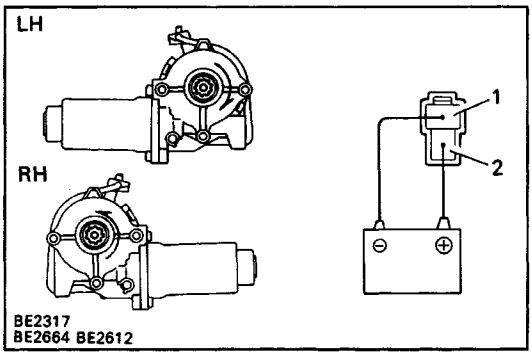
If continuity is not as specified, replace the switch.



2. INSPECT POWER WINDOW MOTOR

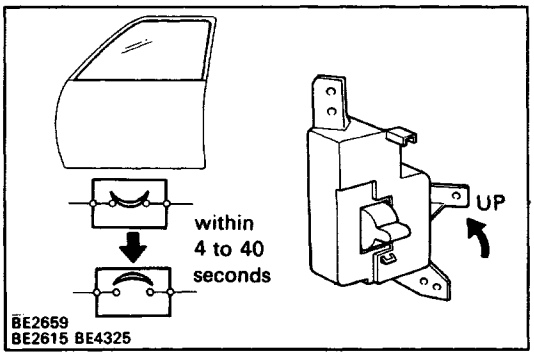
(Motor Operation)

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2, check that the motor turns downward.



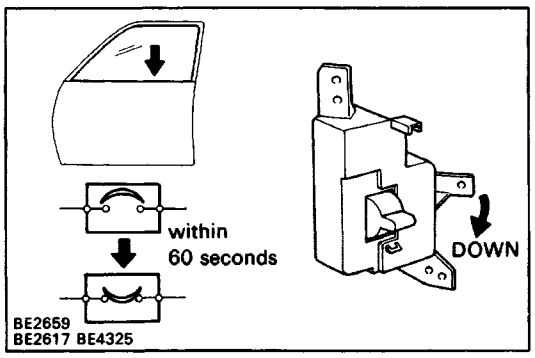
(b) Reverse the polarity, check that the motor turns upward.

If operation is not as specified, replace the motor.



(Circuit Breaker/Operation)

(a) With the window in the full closed position, hold the power window switch in ”UP” position and check that there is a circuit breaker operation noise within 4 to 40 seconds.



(b) With the window in the full closed position, hold the switch in ”DOWN” and check that the window begins to descend within 60 seconds.

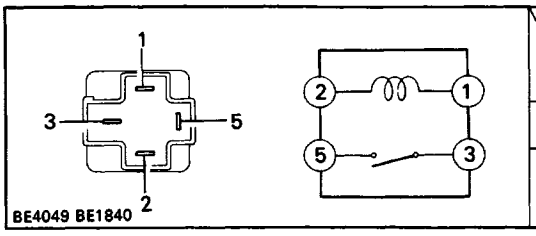
If operation is not as specified, replace the motor.

3. INSPECT RELAYS

(Door Lock Control Relay)

See Step on page BE–77.

(Power Main Relay/Continuity)

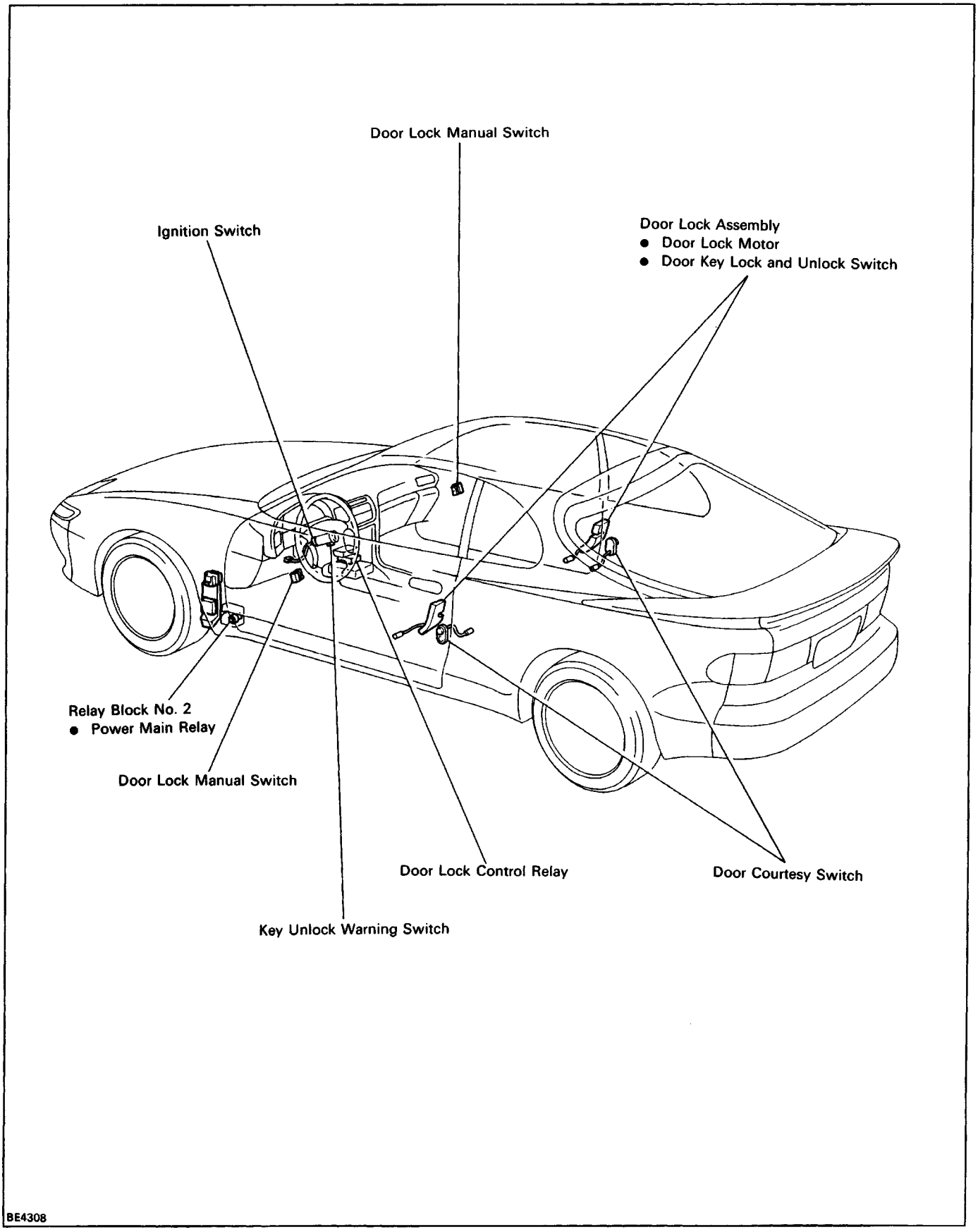


Terminal / Condition	1	2	3	5
Constant	○—⌇⌇⌇—○			
Apply battery voltage to terminals 1 and 2.			○—○	

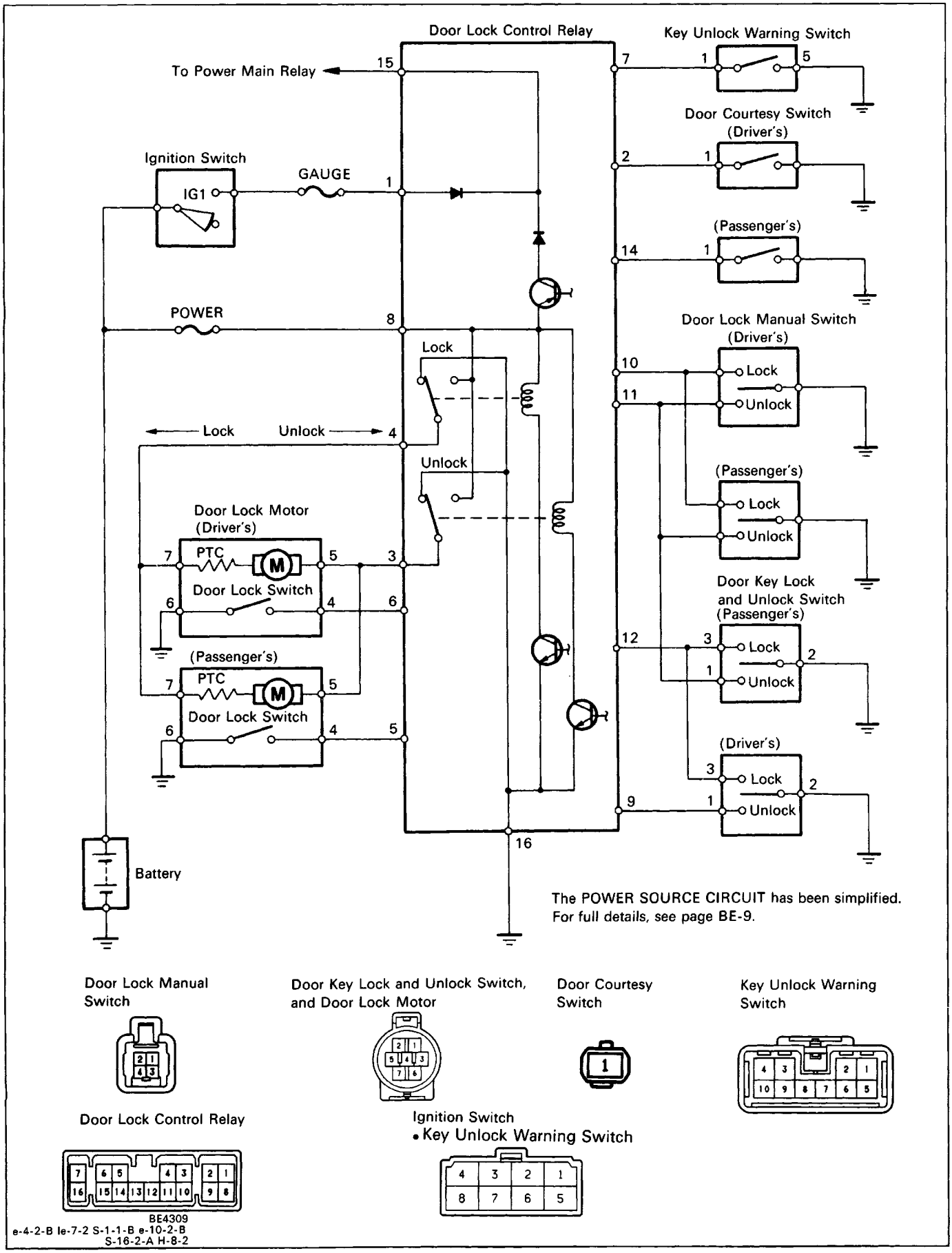
If continuity is not as specified, replace the relay.

POWER DOOR LOCK CONTROL SYSTEM

Parts Location



Wiring and Connector Diagrams



Door Lock Manual Switch

Door Key Lock and Unlock Switch, and Door Lock Motor

Door Courtesy Switch

Key Unlock Warning Switch

Door Lock Control Relay

Ignition Switch
• Key Unlock Warning Switch

BE4309
e-4-2-B Ie-7-2 S-1-1-B e-10-2-B
S-16-2-A H-8-2

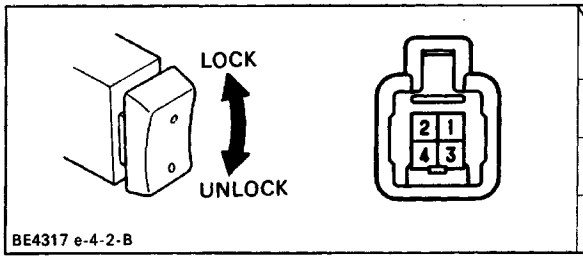
Troubleshooting

Problem	Possible cause	Remedy	Page
Door lock system does not operate at all	POWER fuse blown Door lock motor faulty Door lock control relay faulty Wiring or ground faulty	Replace fuse and check for short Check motor Check relay Repair as necessary	BE–3 BE–77 BE–78
Door lock system does not operate by manual switch	Door lock manual switch faulty Door lock control relay faulty Wiring faulty	Check switch Check relay Repair as necessary	BE–76 BE–78
Door lock system does not operate by door key	Door key lock and unlock switch faulty Door lock control relay faulty Wiring faulty Door lock link disconnected	Check switch Check relay Repair as necessary Connect link	BE–76 BE–78

Parts Inspection

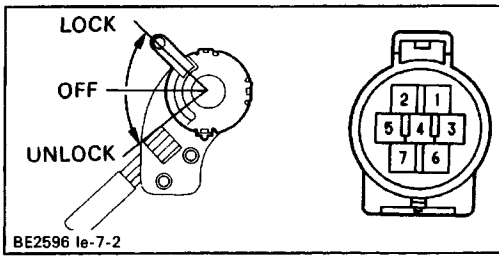
1. INSPECT SWITCHES

(Door Lock Manual Switch/Continuity)



Terminal / Switch position	2	3	4
LOCK	○		○
OFF			
UNLOCK	○	○	

(Door Key Lock and Unlock Switch/Continuity)



Terminal / Switch position	1	2	3
LOCK		○	○
OFF			
UNLOCK	○	○	

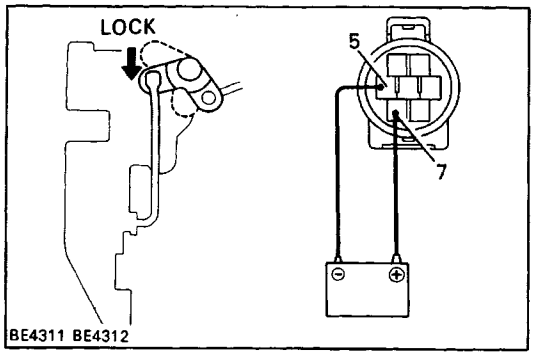
If continuity is not as specified, replace the switch.

(Key Unlock Warning Switch/Continuity)

See Step 1 of Key Confine Prevention System on Page BE–11.

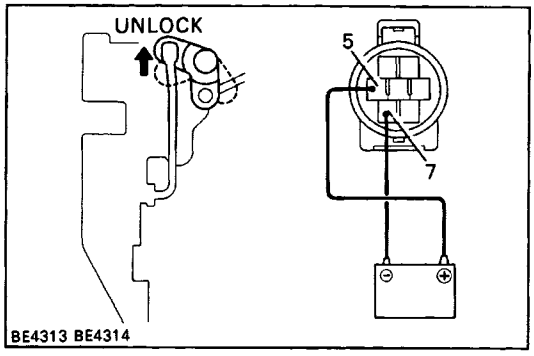
(Door Courtesy Switch/Continuity)

See Step 2 of Seat Belt Warning System on page BE–62.

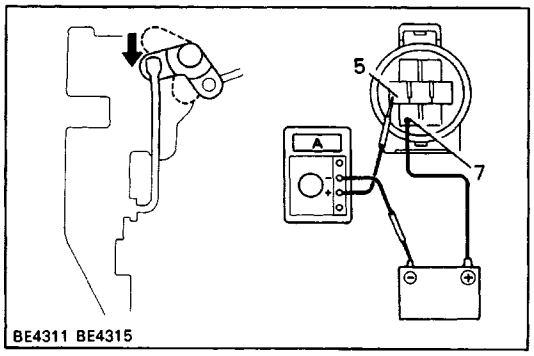


2. INSPECT DOOR LOCK MOTOR
(Motor Operation)

(a) Connect the positive (+) lead from the battery to terminal 7 and the negative (–) lead to terminal 5, check that the door lock link moves to ”LOCK” position.

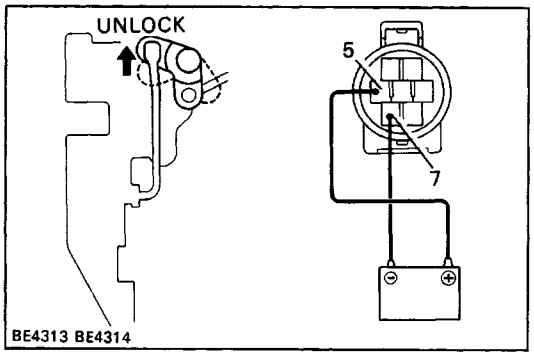


(b) Reverse the polarity, check that the door lock link moves to ”UNLOCK” position.
If operation is not as specified, replace the door lock assembly.

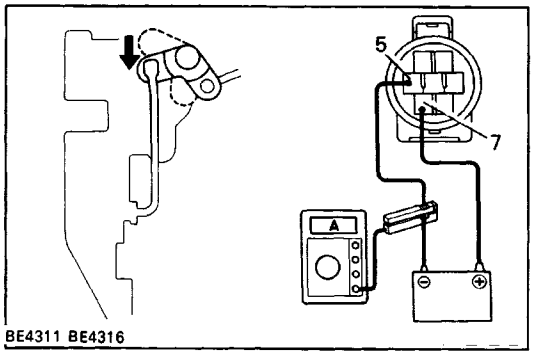


(PTC Thermistor Operation)
Inspection using an ammeter.

(a) Connect the positive (+) lead from the battery to terminal 7.
(b) Connect the positive (+) lead from the ammeter to terminal 5 and the negative (–) lead to battery negative (–) terminal, check that the current changes from approximately 3.2 A to less than 0.5 A within 20 to 70 seconds.

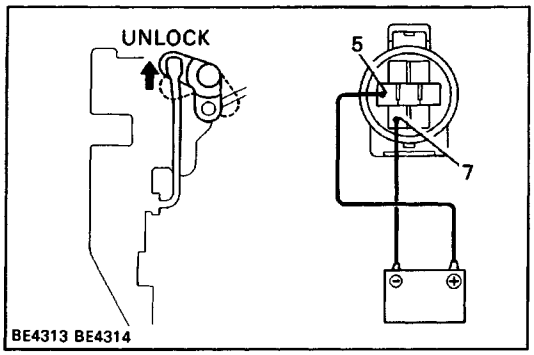


(c) Disconnect the leads from terminals.
(d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 5 and the negative (–) lead to terminal 7, check that the door lock moves to ”UNLOCK” position.
If operation is not as specified, replace the door lock assembly.



Inspection using an ammeter with a current–measuring probe.

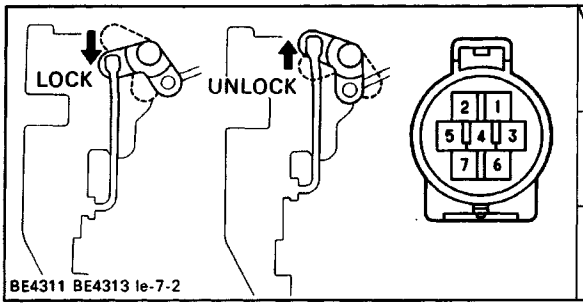
(a) Connect the positive (+) lead from the battery to terminal 7 and the negative (–) lead to terminal 5.
(b) Attach a current–measuring probe to either the positive (+) lead or the negative (–) lead, check that the current changes from approximately 3.2 A to less than 0.5 A within 20 to 70 seconds.



(c) Disconnect the leads from terminals.
(d) Approximately 60 seconds later, reverse the polarity, check that the door lock moves to "UNLOCK" position.

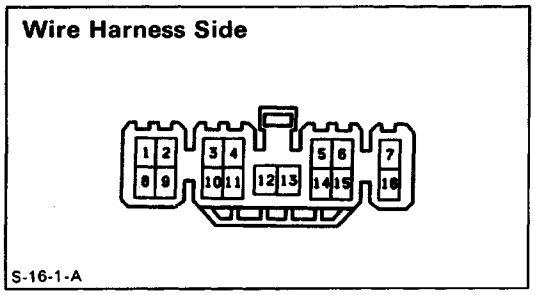
If operation is not as specified, replace the door lock assembly.

(Door Lock Switch/Continuity)



Terminal / Switch position	4	6
OFF (Door lock set to LOCK)		
ON (Door lock set to UNLOCK)	○	○

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



3. INSPECT DOOR LOCK CONTROL RELAY (Relay Circuit)

Disconnect the connector from the relay and inspect the connector on the wire harness side as shown in the chart.

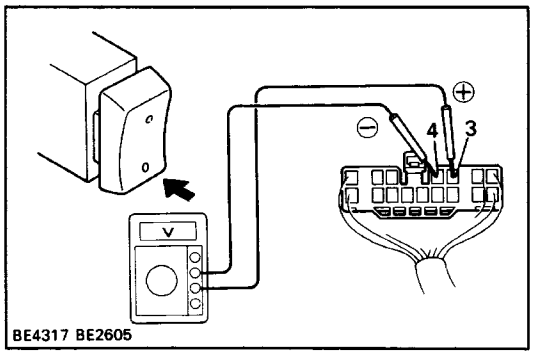
Check for	Tester connection	Condition		Specified value
Continuity	2 – Ground	Driver's door courtesy switch position	OFF (Door closed)	No continuity
			ON (Door opened)	Continuity
	5 – Ground	Passenger's door lock switch position	OFF (Door locked)	No continuity
			ON (Door unlocked)	Continuity
	6 – Ground	Driver's door lock switch position	OFF (Door locked)	No Continuity
			ON (Door unlocked)	Continuity
	7 – Ground	Key unlock warning switch position	OFF (Ignition key removed)	No continuity
			ON (Ignition key set)	Continuity
	9 – Ground	Driver's door key lock and unlock switch position	OFF or LOCK (Door key free or turned to LOCK)	No continuity
			UNLOCK (Door key turned to unlock)	Continuity
	10 – Ground	Door lock manual switch position	OFF or UNLOCK	No Continuity
			LOCK	Continuity

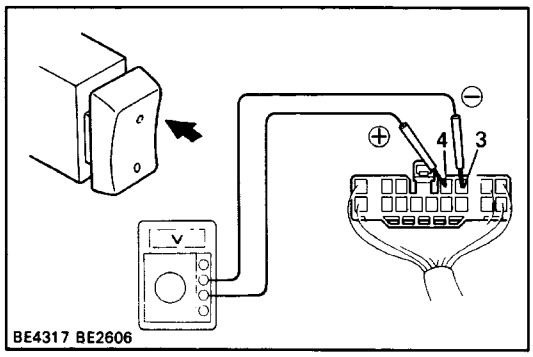
Continued to next page.

Continued from previous page

Check for	Tester connection	Condition		Specified value
Continuity	11 – Ground	Door lock manual switch OFF or turned to LOCK		No continuity
		Passenger's door key lock and unlock switch OFF or turned to LOCK (Door key free or turned to LOCK)		
		Door lock manual switch turned to UNLOCK		Continuity
		Passenger's door key lock and unlock switch turned to UNLOCK (Door key turned to UNLOCK)		
	12 – Ground	Door key lock and unlock switch position	OFF or UNLOCK	No continuity
			LOCK	Continuity
	14 – Ground	Passenger's door courtesy switch position	OFF (Door closed)	No continuity
			ON (Door opened)	Continuity
	15 – Ground	Constant		approx. 70 0
	16 – Ground	Constant		Continuity

If circuit is as specified, inspect the door lock signal.





(Door Lock Signal)

HINT: When the relay circuit is as specified, inspect the door lock signal.

(a) Connect the connector to the relay.

(b) Connect the positive (+) lead from the voltmeter to terminal 3 and the negative (–) lead to terminal 4.

(c) Set the door lock manual switch to "UNLOCK", check that the voltage rises from 0 V to battery voltage for approximately 0.2 seconds.

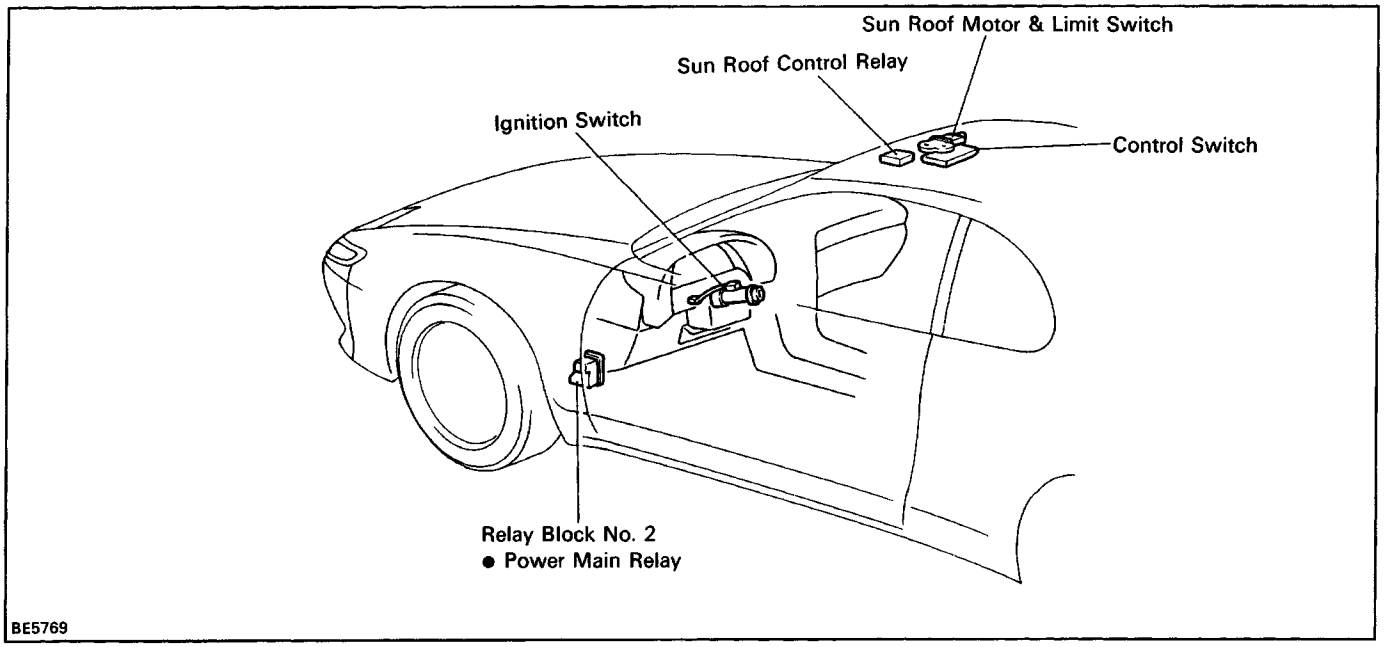
(d) Reverse the polarity of the voltmeter leads.

(e) Set the door lock manual switch to "LOCK", check that the voltage rises from 0 V to battery voltage for approximately 0.2 seconds.

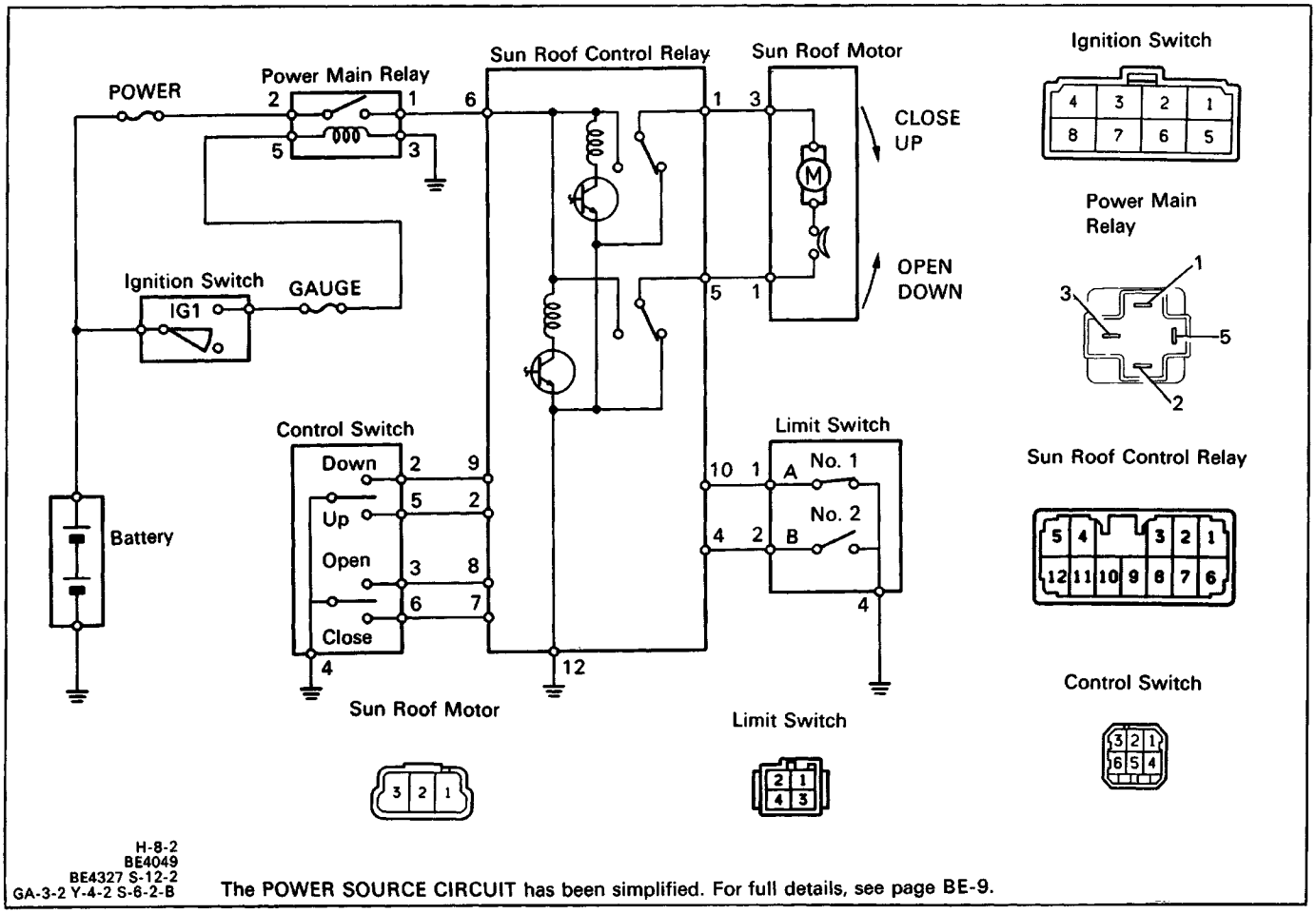
If operation is not as specified, replace the relay.

SUN ROOF SYSTEM

Parts Location



Wiring and Connector Diagrams



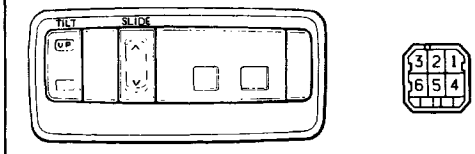
The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

Troubleshooting

Problem	Possible cause	Remedy	Page
Sun roof does not operate.	GAUGE fuse blown	Replace fuse and check for short	BE–3
	POWER fuse blown	Replace fuse and check for short	BE–3
	Power main relay faulty	Check relay	BE–72
	Control switch faulty	Check switch	BE–80
	Limit switch faulty	Check switch	BE–80
	Sun roof motor faulty	Check motor	BE–80
	Sun roof control relay faulty	Check relay	BE–81
	Wiring faulty	Repair as necessary	

Parts Inspection

1. INSPECT SWITCHES
(Control Switch/Continuity)

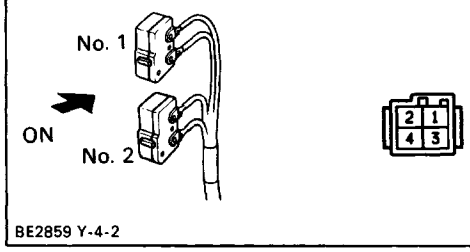


BE2857 S-6-2-B

Switch position		Terminal 2	3	4	5	6
SLIDE	OPEN		○	○		
	OFF					
	CLOSE			○		○
TILT	DOWN	○		○		
	OFF					
	UP			○	○	

If continuity is not as specified, replace the switch.

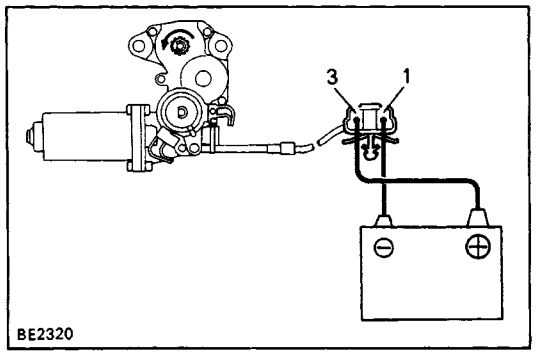
(Limit Switch/Continuity)



BE2859 Y-4-2

Switch position		Terminal 1	2	3	4
Limit switch No. 1	OFF (SW pin released)				
	ON (SW pin pushed in)	○			○
Limit switch No. 2	OFF (SW pin released)				
	ON (SW pin pushed in)		○		○

If continuity is not as specified, replace the switch.



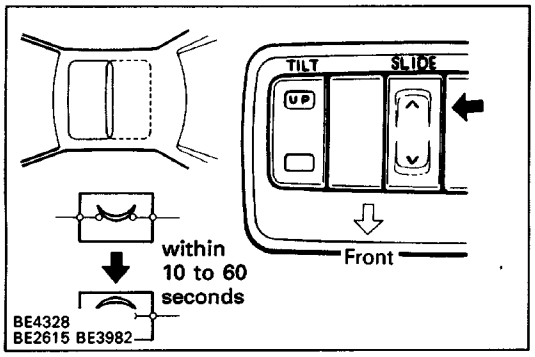
BE2320

2. INSPECT SUN ROOF MOTOR
(Motor Operation)

(a) Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 1, check that the motor turns to counterclockwise (moves to the close side).

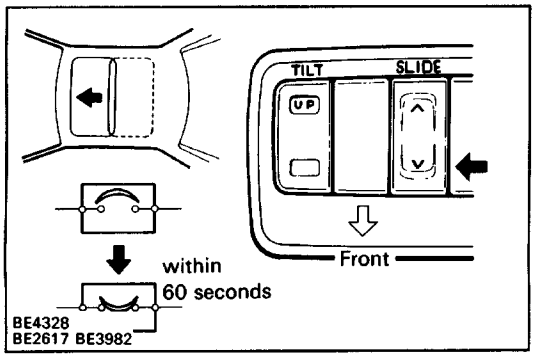
(b) Reverse the polarity, check that the motor turns to clockwise (moves to the open side).

If operation is not as specified, replace the motor.



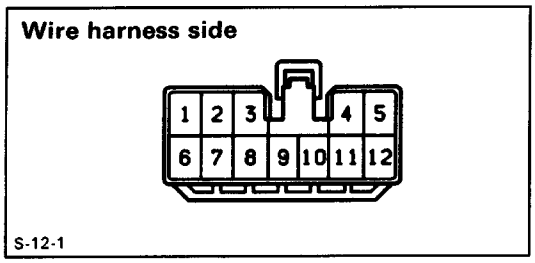
(Circuit Breaker Operation)

(a) With the sun roof in the fully opened position, hold the sun roof switch in "OPEN" position and check that there is a circuit breaker operation noise within 10 to 60 seconds.



(b) With the sun roof in fully opened position, hold the sun roof switch in "CLOSE" position and check that the sun roof begins to close within 60 seconds.

If operation is not as specified, replace the motor.



3. INSPECT MOON ROOF CONTROL RELAY
(Relay Circuit)

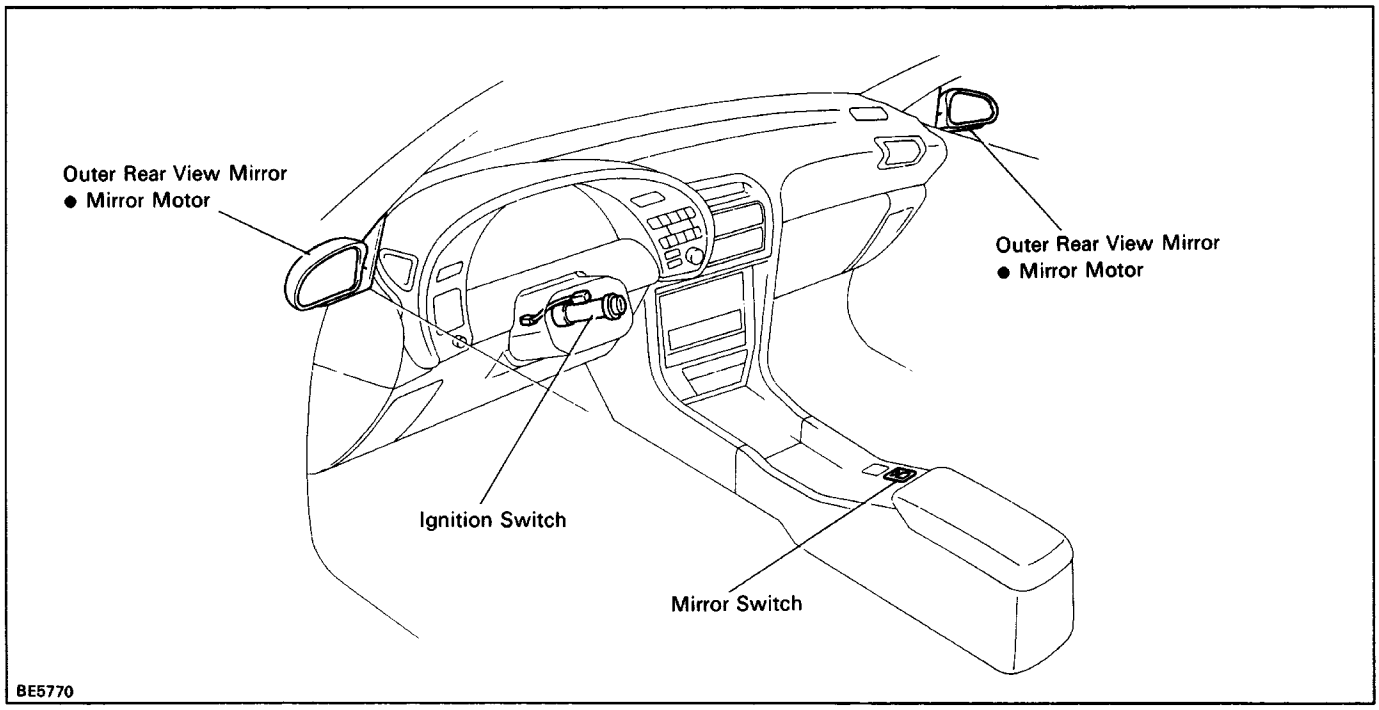
Disconnect the connector from the relay and inspect the connector on the wire harness side as shown in the chart.

Check for	Tester connection	Condition		Specified value
Continuity	1 – 5	Constant		Continuity
	2 – Ground	Control switch position	DOWN, OPEN or CLOSE	No continuity
			UP	Continuity
	4 – Ground	Limit switch No. 2 position	OFF [Roof opened]	No continuity
			ON [Roof closed]	Continuity
	7 – Ground	Control switch position	UP, DOWN or OPEN	No continuity
			CLOSE	Continuity
	8 – Ground	Control switch position	UP, DOWN or CLOSE	No continuity
			OPEN	Continuity
	9 – Ground	Control switch position	UP, OPEN or CLOSE	No continuity
			DOWN	Continuity
	10 – Ground	Limit switch No. 1 position	OFF [Roof tilt up or approx. 100 mm (3.94 in.) opened]	No continuity
			0N [Except for conditions mentioned above]	Continuity
	12 – Ground	Constant		Continuity
Voltage	6 – Ground	Ignition switch position	LOCK or ACC	No voltage
			ON	Battery voltage

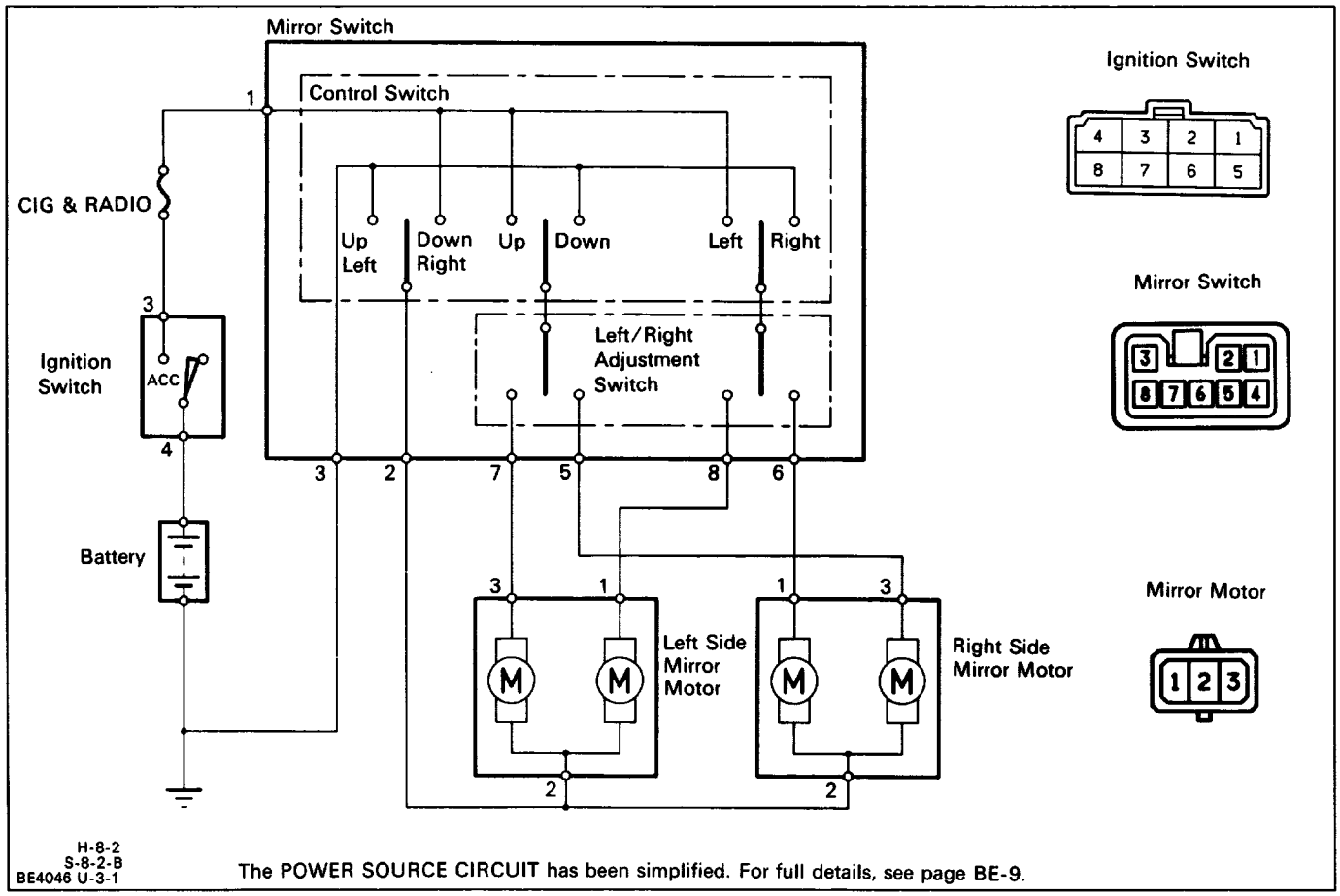
If circuit is as specified, replace the relay.

POWER MIRROR CONTROL SYSTEM

Parts Location



Wiring and Connector Diagrams



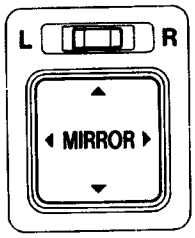
The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

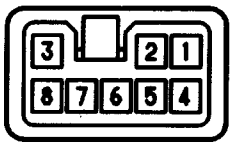
Troubleshooting

Problem	Possible cause	Remedy	Page
Remote control mirror system does not operate	”CIG & RADIO” fuse faulty Mirror switch faulty Mirror motor faulty Wiring or ground faulty	Replace fuse and check for short Check switch Check motor Repair as necessary	BE–3 BE–83 BE–83

Parts Inspection

1. INSPECT MIRROR SWITCH (Continuity)





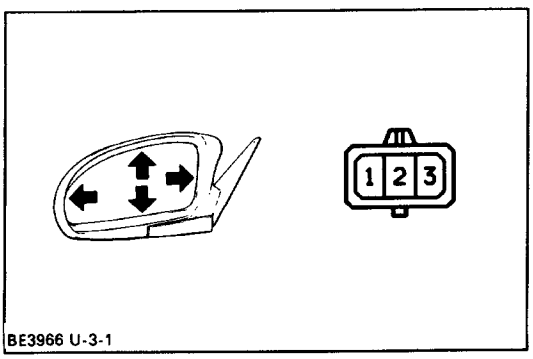
BE2357 S-8-2-B

Left/Right adjustment switch position	LEFT SIDE					OFF			RIGHT SIDE				
Terminal / Control switch position	1	2	3	7	8	1	2	3	1	2	3	5	6
OFF													
UP	○			○			○	○	○			○	
		○	○							○	○		
DOWN	○	○	○	○		○	○		○	○	○	○	
LEFT	○				○		○	○	○				○
		○	○							○	○		
RIGHT	○	○	○		○	○	○		○	○	○		○

If continuity is not as specified, replace the switch.

2. INSPECT MIRROR MOTOR .

Connect the positive (+) lead from the battery to terminal in column ”A” and the negative (–) lead to terminal in column ”B”, check that the mirror operates in column ”C”.



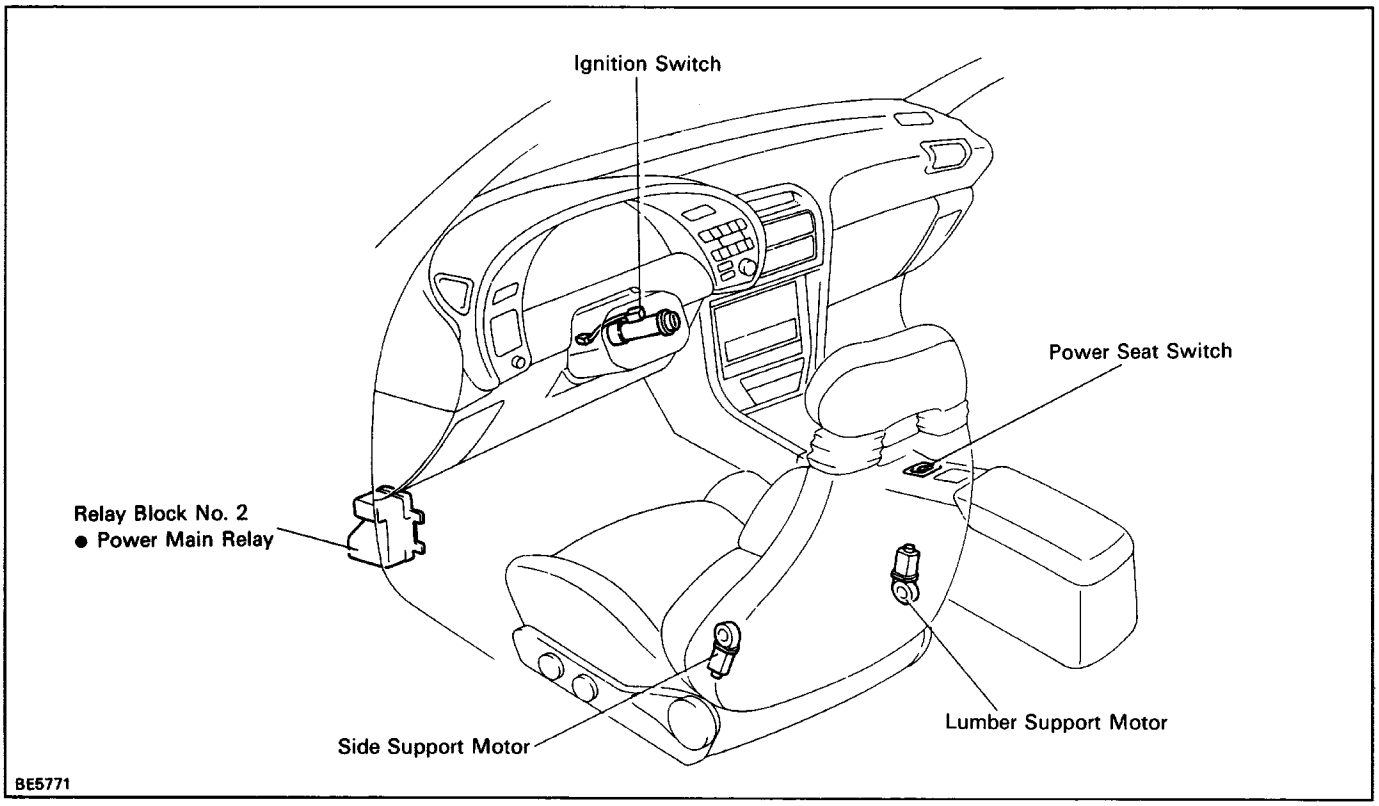
BE3966 U-3-1

A (+)	B (–)	C (Operation)
3	2	Mirror turns upward
2	3	Mirror turns downward
1	2	Mirror turns to left side
2	1	Mirror turns to right side

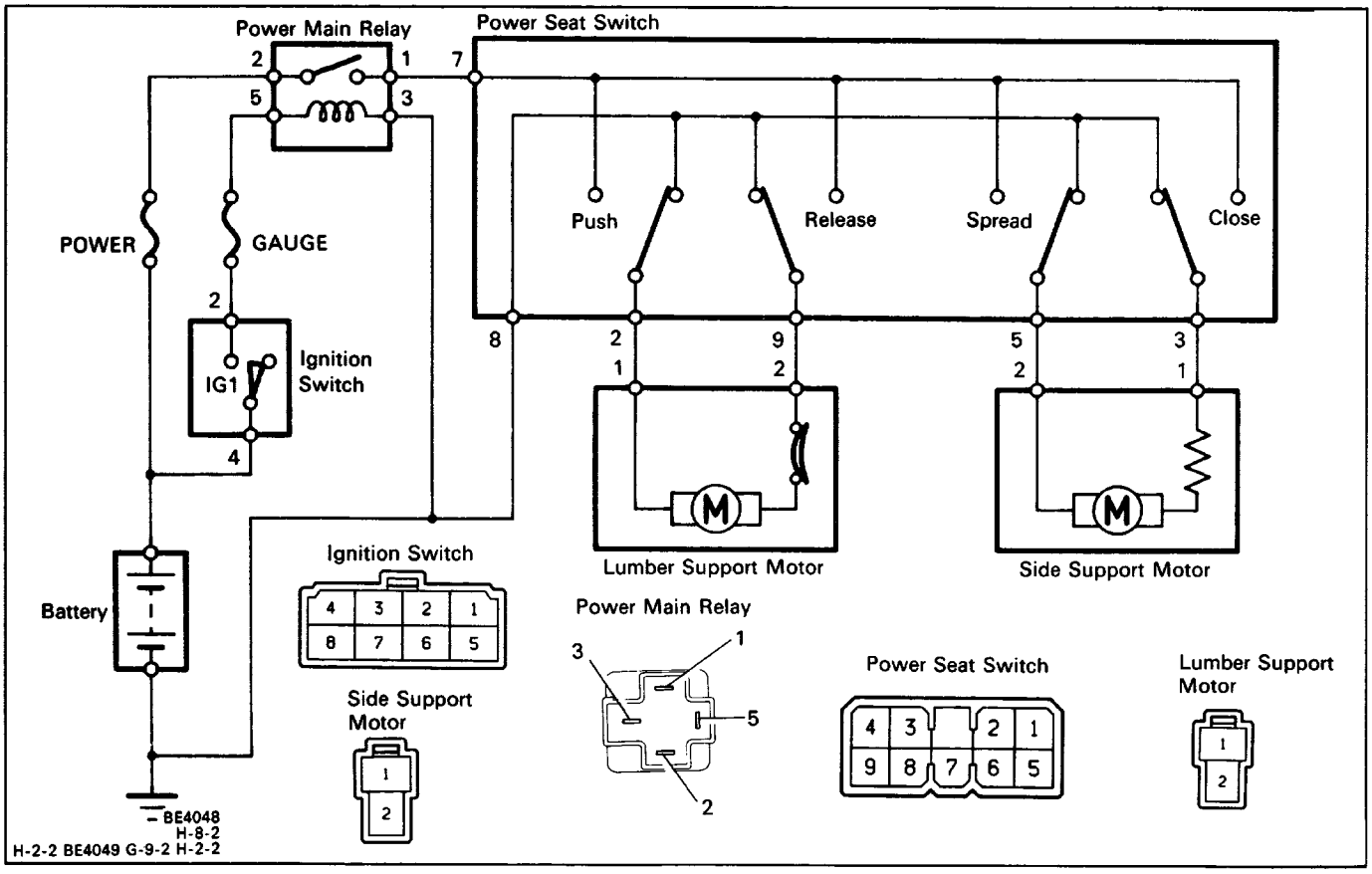
If operation is not as specified, replace the mirror assembly.

POWER SEAT CONTROL SYSTEM

Parts Location



Wiring and Connector Diagrams



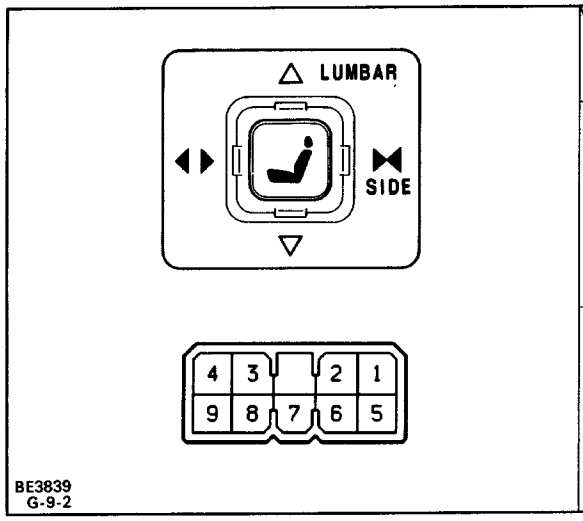
Troubleshooting

Problem	Possible cause	Remedy	Page
Power seat control system does not operate	"GAUGE" fuse faulty	Replace fuse and check for short	BE–3
	"POWER" fuse faulty	Replace fuse and check for short	BE–3
	Power main relay faulty	Check relay	BE–72
	Power seat switch faulty	Check switch	BE–85
	Seat motor faulty	Check motor	BE–85, 86
	Wiring or ground faulty	Repair as necessary	

Parts Inspection

1. INSPECT POWER SEAT SWITCH

(Continuity)



Switch Position \ Terminal		2	3	5	7	8	9
Lumber Support Switch	PUSH	○			○		○
	OFF	○				○	○
	RELEASE	○			○	○	
Side Support Switch	SPREAD		○	○	○	○	
	OFF		○	○		○	
	CLOSE		○		○		
				○		○	

If continuity is not as specified, replace the switch.

2. INSPECT POWER MAIN RELAY

See Power Main Relay on page BE–72.

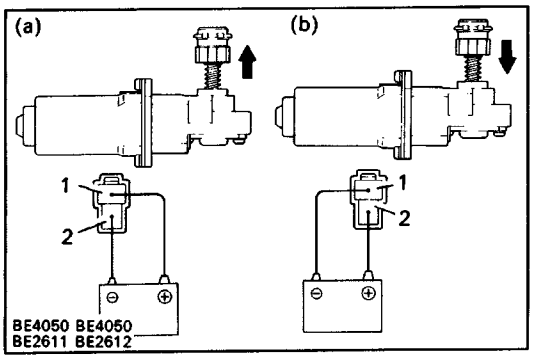
3. INSPECT MOTORS

(Lumber Support Motor/Motor Operation)

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2, check that the motor moves upward.

(b) Reverse the polarity, check that the motor moves downward.

If operation is not as specified, replace the motor.



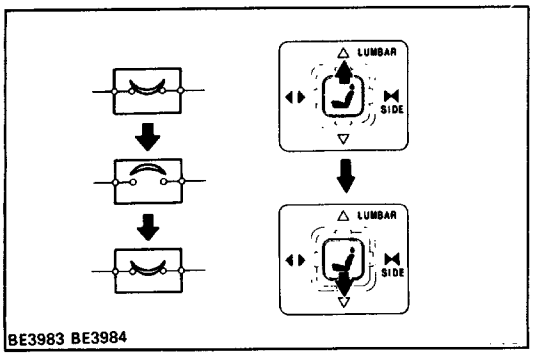
(Lumber Support Motor/Circuit Breaker Operation)

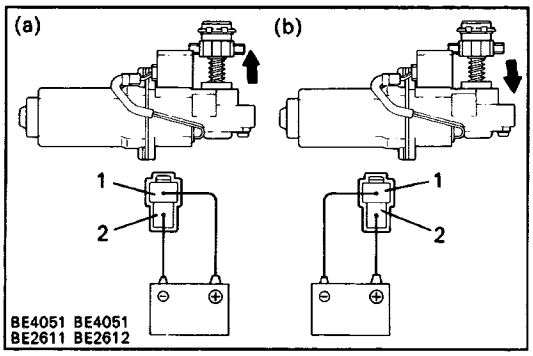
(a) Set the power seat switch to push operation and move the lumber support to the most forward position.

(b) Continue push operation and check that there is a circuit breaker operation noise within 4 to 60 seconds.

(c) Reverse the polarity, check that the lumber support starts to move rearward within approximately 60 seconds.

If operation is not as specified, replace the motor.



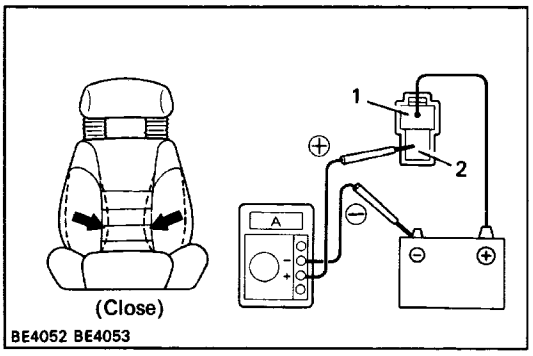


(Side Support Motor/Motor Operation)

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2, check that the motor moves upward.

(b) Reverse the polarity, check that motor moves downward.

If operation is not as specified, replace the motor.



(Side Support Motor/PTC Thermistor Operation)
Inspection using an ammeter

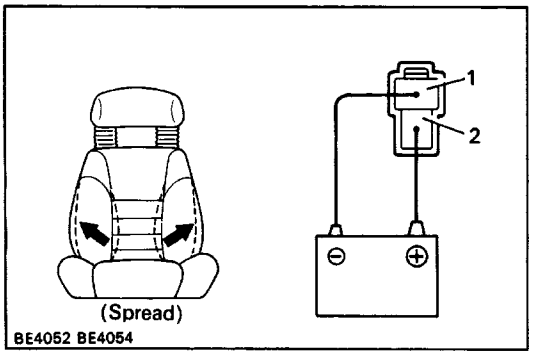
(a) Connect the positive (+) lead from the battery to terminal 1, the positive (+) lead from the ammeter to terminal 2 and the negative (–) lead to battery negative (–) terminal, and move the side support to the most close position.

(b) Continue to apply voltage, check the current changes from approximately 4 A to less than 0.3 A within 4 to 60 seconds.

(c) Disconnect the leads from terminals.

(d) Approximately 60 seconds later, connect the positive (+) lead from battery to terminal 2 and the negative (–) lead to terminal 1, check that the side support starts to spread.

If operation is not as specified, replace the motor.



Inspection using an ammeter with a current–measuring probe

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2.

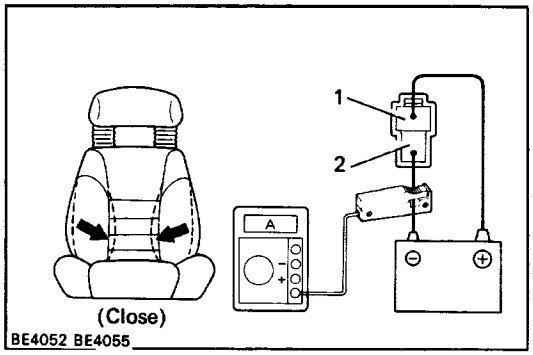
(b) Attach a current– measuring probe to either the positive (+) lead or the negative (–) lead and move the side support to most closed position.

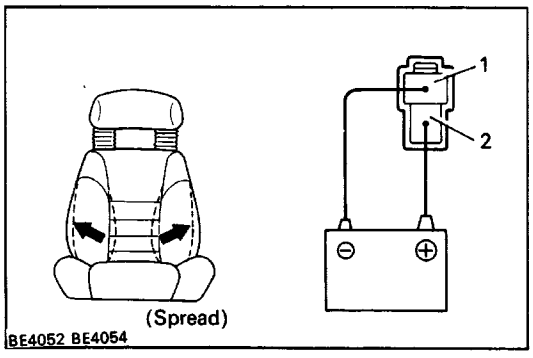
(c) Continue to apply voltage, check the current changes from approximately 4 A to less than 0.3 A within 4 to 60 seconds.

(d) Disconnect the leads from terminals.

(e) Approximately 60 seconds later, connect the positive (+) lead from battery to terminal 2 and the negative (–) lead to terminal 1, check that the side support starts to spread.

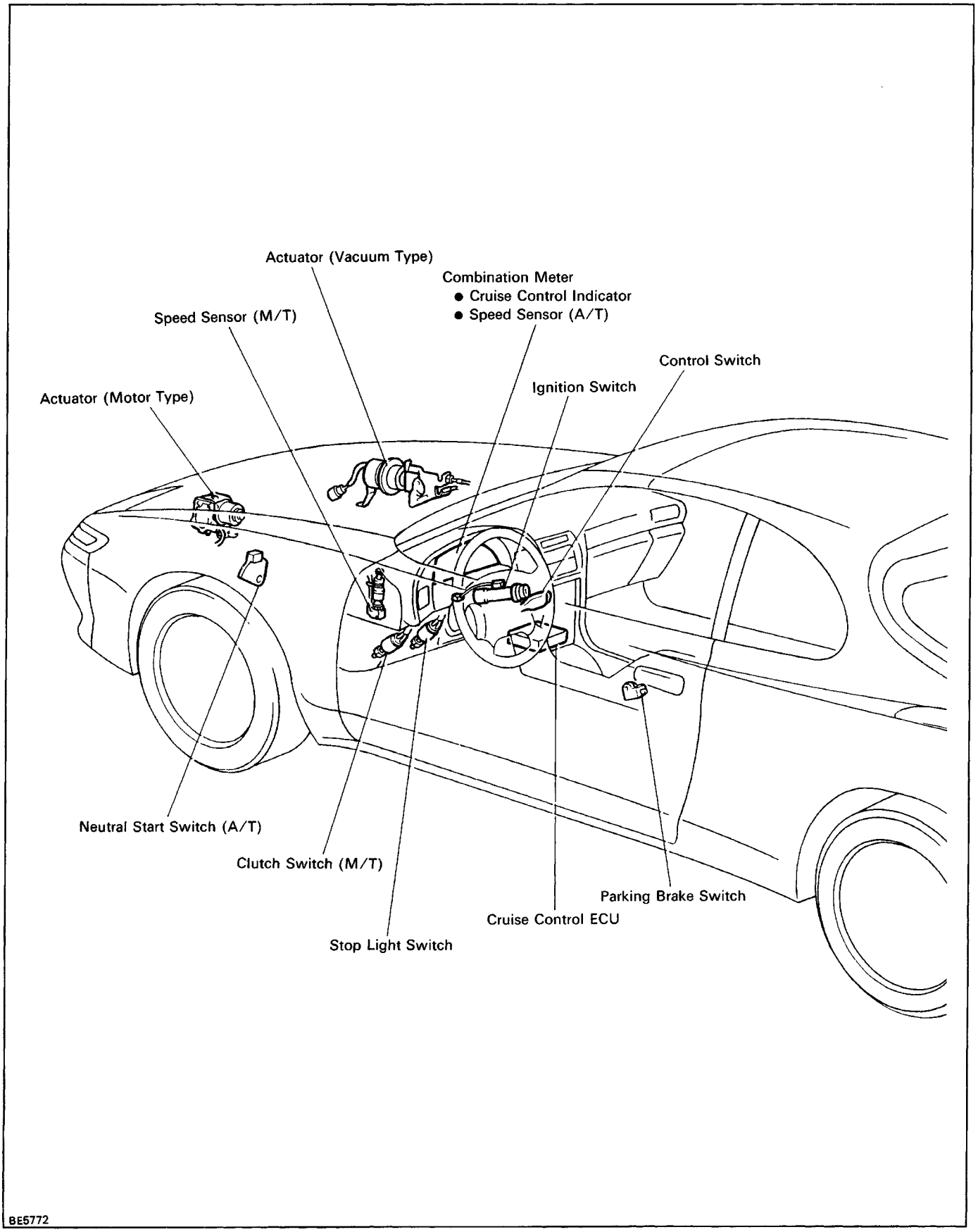
If operation is not as specified, replace the motor.





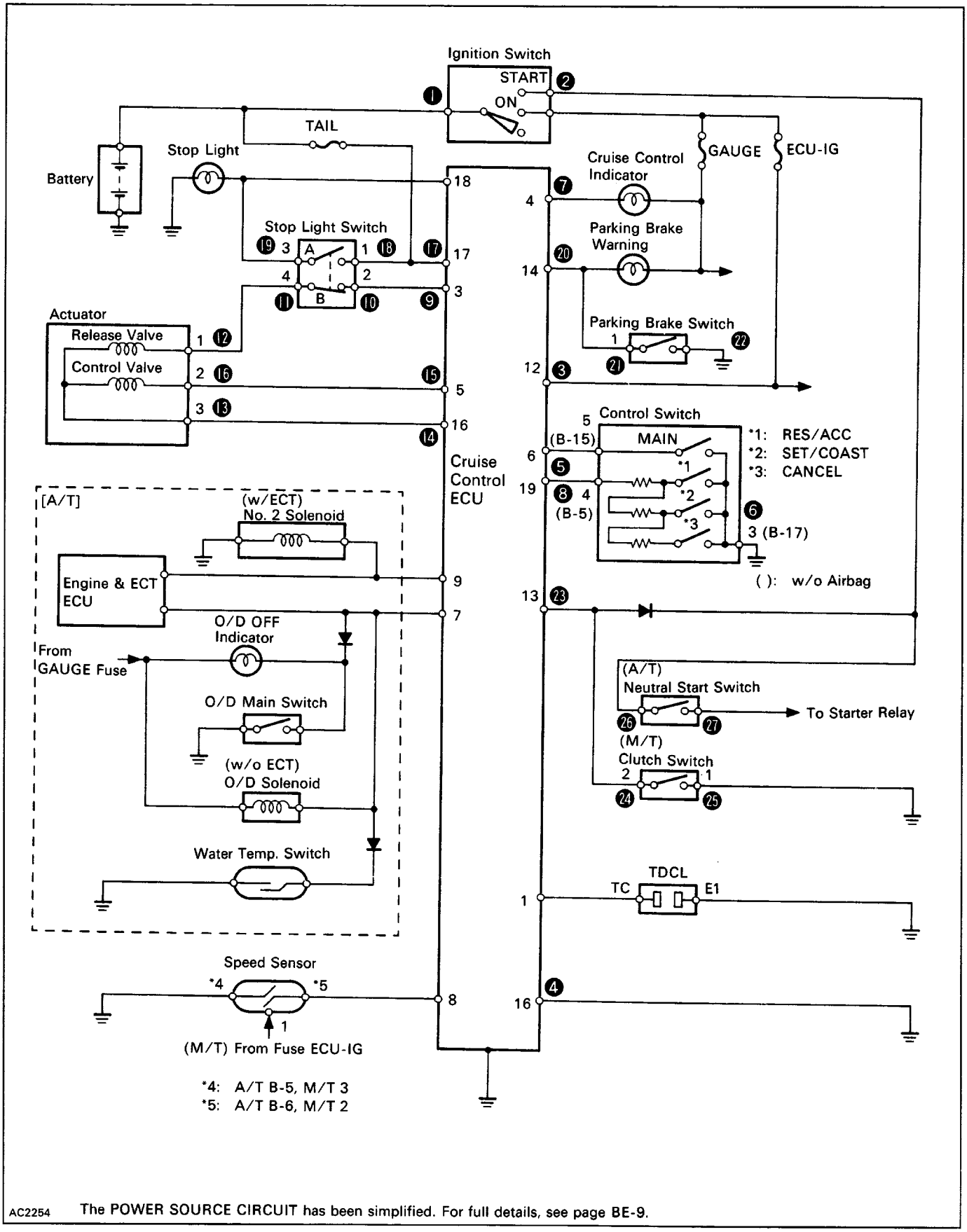
CRUISE CONTROL SYSTEM

Parts Location



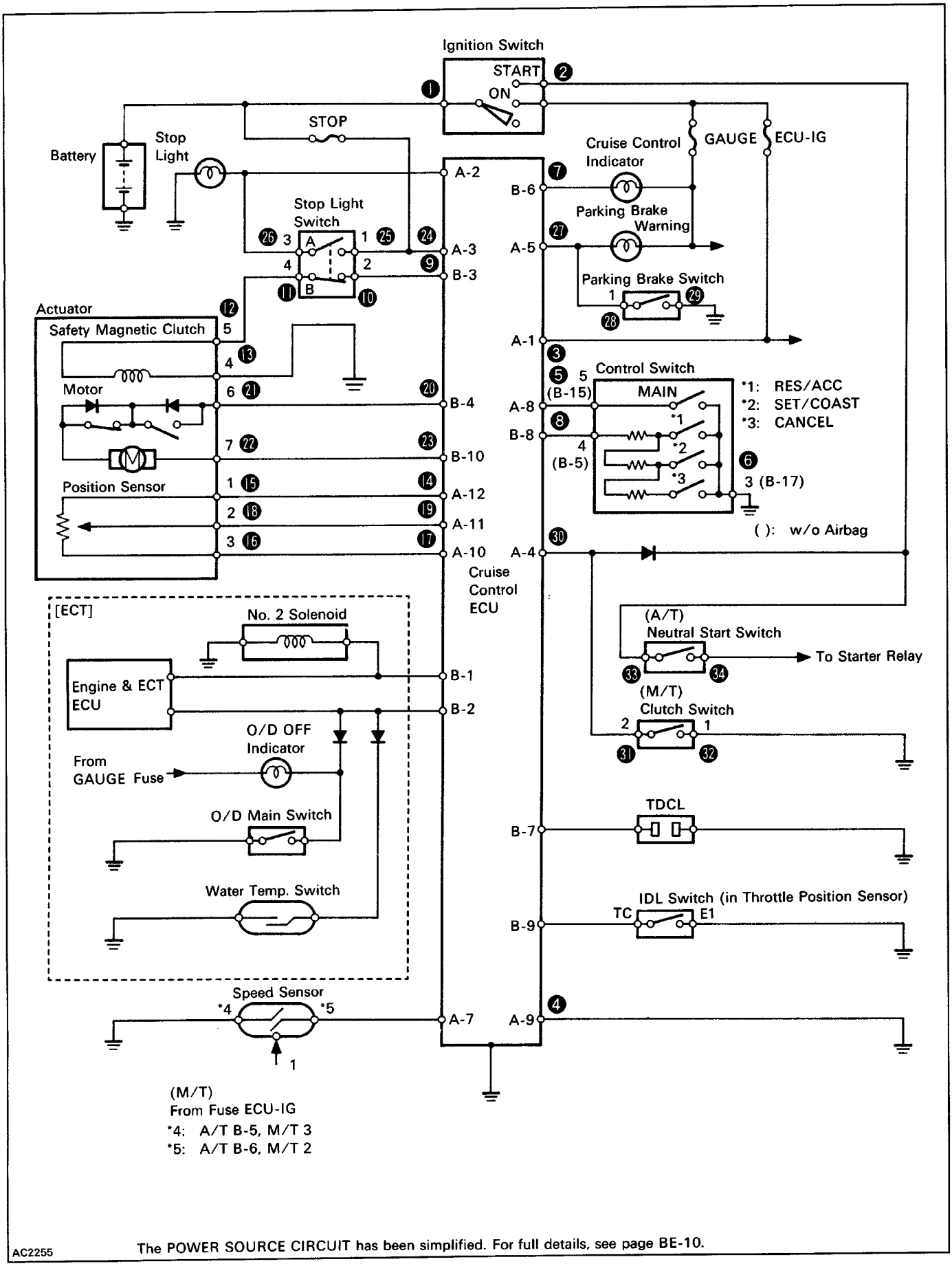
Wiring Diagram

w/Vacuum Type Actuator



AC2254 The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

w/Motor Type Actuator

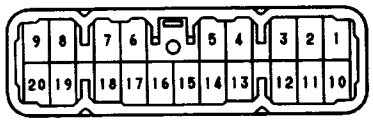


AC2255

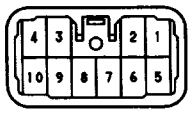
The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-10.

Connector Diagrams

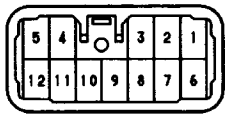
Cruise Control Switch
(w/Vacuum Type Actuator)



(w/Motor Type Actuator)
Connector "B"



Connector "A"

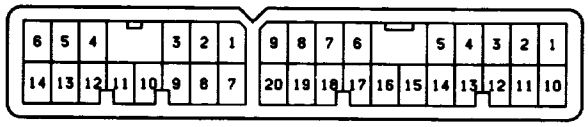


Control Switch
(w/ Airbag)

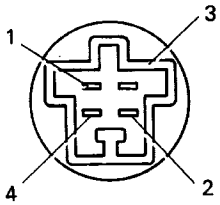


(w/o Airbag)
Connector "A"

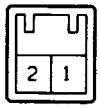
Connector "B"



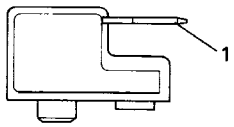
Stop Light Switch



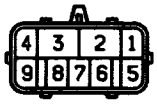
Clutch Switch (M/T)



Parking Brake Switch



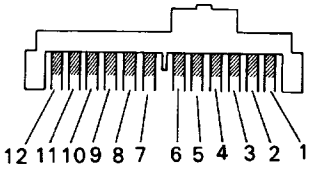
Neutral Start Switch
(ECT)



(w/o ECT)



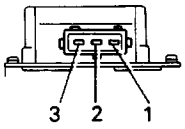
Speed Sensor
(A/T: in Combination Meter)
Connector "B"



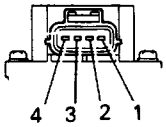
(M/T)



Throttle Position Sensor
(3-Pin Type)



(4-Pin Type)



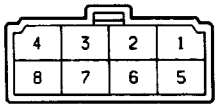
Actuator
(Vacuum Type)



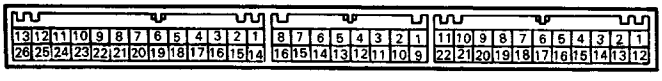
(Motor Type)



Ignition Switch



Engine & ECT ECU



e-20-2-C e-10-2-C e-12-2-B
e-6-1-C V-34-2
BE5756 G-2-2 BE1412
SH-9-2-A SH-4-2-A BE4016 IS-3-2-A
AC2241 IS-3-2-A Ie-7-2
H-8-2 BE5905

System Description w/Vacuum Type Actuator

CONTROL SWITCH operation

Switch	Position
Ignition Switch	ON

Current Circuit
Battery → ❶ → ❷ → ❸ → ❹ → Ground

The cruise control switch controls MAIN switch, SET/COAST, RESUME/ACCEL and CANCEL function.

1. MAIN SWITCH operation

Switch	Position
Ignition Switch	ON
CC Main Switch	ON

Current Circuit
Battery → ❶ → ❷ → ❸ → ❺ → ❻ → Ground
❼ → ❹ → Ground.
(Indicator Light ON)

2. SET/COAST SWITCH operation

Switch	Position
Ignition Switch	ON
CC Main Switch	ON
SET/COAST Switch	ON

Current Circuit
Battery → ❶ → ❷ → ❸ → ❺ → ❻ → Ground
❼ → ❹ → Ground
(Indicator Light ON)

Condition: Continuity ❽ → ❻ → Ground (SET/COAST switch ON)

< Actuator Operation > (Current Circuit)
❾ → ❿ → ⓫ → ⓬ → ⓭ → ⓮ → ❹ → Ground

If the SET/COAST switch is released at the moment, the vehicle speed is registered in memory.

3. RESUME/ACCELE SWITCH operation

Switch	Position
Ignition Switch	ON
CC Main Switch	ON
RESUME/ACCEL Switch	ON

Current Circuit
Battery → ❶ → ❷ → ❸ → ❺ → ❻ → Ground.
❼ → ❹ → Ground
(Indicator Light ON)

Condition: Continuity ❽ → ❻ → Ground (RESUME/ACCEL switch ON)

< Actuator Operation > (Current Circuit)
⓯ → ⓰ → ⓭ → ⓮ → ❹ → Ground

If the RESUME/ACCEL switch is released at the moment, the vehicle speed is registered in memory.

4. CANCEL operation

The Cruise Control is provided with several types of the cancel switch, such as the cruise control switch (CANCEL), the stop light switch, the parking brake switch and the neutral start switch.

(a) Cruise Control Switch (CANCEL)

Switch	Position
CANCEL Switch	ON

Condition: Continuity ❽ → ❻ → Ground

Then, cancellation signal is send to CC ECU.

(b) Stop Light Switch

Switch	Position
Stop light switch (Brake pedal depressed)	ON

Condition: Continuity ⓱ → ⓲ → ⓳ → Ground
❾ → ❿
⓫ → ⓬

Condition: No Continuity ❿ → ⓫

Then, cancellation signal is send to CC ECU.

(c) Parking Brake Switch

Switch	Position
Parking brake switch (Parking brake lever pulled)	ON

Condition: Continuity ⓴ → ㉑ → ㉒ → Ground

Then, cancellation signal is send to CC ECU.

(d) Clutch Start Switch

Switch	Position
Clutch switch	ON

Condition: Continuity ㉓ → ㉔ → ㉕ → Ground

Then, cancellation signal is sent to CC ECU.

(e) Neutral Start Switch

Switch	Position
Neutral start switch	ON

Condition: Continuity ㉓ → ㉖ → ㉗ → Ground

H I NT: When contacting the negative (–) lead to the diode positive (+) side and the positive (+) lead to the negative (–) side, there should be continuity.
When contacting the two leads in reverse; there should be no continuity.

Therefore, the operation of the CCS is canceled and actuator is shut off due to the operation of these switches.

w/Motor Type Actuator

CONTROL SWITCH operation

Switch	Position
Ignition Switch	ON

Current Circuit
Battery → ❶ → ❷ → ❸ → ❹ → Ground

The cruise control switch controls MAIN switch, SET/COAST, RESUME/ACCEL and CANCEL function.

1. MAIN SWITCH operation

Switch	Position
Ignition Switch	ON
CC MAIN Switch	ON

Current Circuit
Battery → ❶ → ❷ → ❸ → ❺ → ❻ → Ground
❸ → ❼ → ❹ → Ground
(Indicator Light ON)

2. SET/COAST SWITCH operation

Switch	Position
Ignition Switch	ON
CC MAIN Switch	ON
SET/COAST Switch	ON

Current Circuit
Battery → ❶ → ❷ → ❸ → ❺ → ❻ → Ground
❸ → ❼ → ❹ → Ground
(Indicator Light ON)

Condition: Continuity ❽ → ❻ → Ground (SET/COAST switch operation)

< Actuator Operation > (Current Circuit)

❾ → ❿ → ⓫ → ⓬ → ⓭ → Ground

If the SET/COAST switch is released at the moment, the vehicle speed is registered in memory.

3. RESUME/ACCELE SWITCH operation

Switch	Position
Ignition Switch	ON
CC MAIN Switch	ON
RESUME/ACCEL Switch	ON

Current Circuit
Battery → ❶ → ❷ → ❸ → ❺ → ❻ → Ground
❸ → ❼ → ❹ → Ground
(Indicator Light ON)

Condition: Continuity ❽ → ❻ → Ground (RESUME/ACCEL Switch ON)

< Actuator Operation > (Current Circuit)

❿ → ⓯ → ⓰ → ⓱ → ❹ → Ground
⓲ → ⓳ → ⓴ → ㉑ → ㉒ → ㉓ → ❹ → Ground

If the RESUME/ACCEL switch released at the moment, the vehicle speed is registered in memory.

CANCEL operation

The Cruise Control is provided with several type switch, such as the cruise control switch (CANCEL), the stop light switch, the parking brake switch and the neutral start switch.

(a) Cruise Control Switch (CANCEL)

Switch	Position
CANCEL Switch	ON

Condition: Continuity ⑧ → ⑥ → Ground (Indicator Light ON)

Then, cancellation signal is send to CC ECU.

(b) Stop Light Switch

Switch	Position
Stop light switch (Brake pedal depressed)	ON

Condition: Continuity ㉔ → ㉕ → ㉖ → Ground
⑨ → ⑩
⑪ → ⑫
Condition: No Continuity ⑩ → ⑪

Then, cancellation signal is send to CC ECU.

(c) Parking Brake Switch

Switch	Position
Parking brake switch (Parking brake lever pulled)	ON

Condition: Continuity ㉗ → ㉘ → ㉙ → Ground

Then, cancellation signal is send to CC ECU.

(d) Clutch Switch

Switch	Position
Clutch switch	ON

Condition: Continuity ㉚ → ㉛ → ㉜ → Ground

Then, cancellation signal is send to CC ECU.

(e) Neutral Start Switch

Switch	Position
Neutral start switch	ON

Condition: Continuity ㉚ → ㉝ → ㉞ → Ground

HINT: When contacting the negative (–) lead to the diode positive (+) side and the positive (+) lead to the negative (–) side, there should be continuity. When contacting the two leads in reverse, there should to be no continuity.

Therefore, the operation of the CCS is canceled and the actuator is shut off due to the operation of these switches.

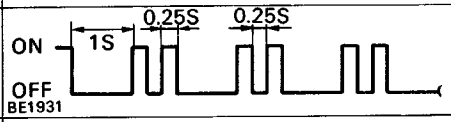
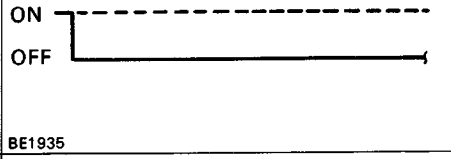
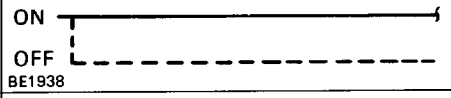
Diagnosis System

Output of Diagnostic Code

READ DIAGNOSTIC CODE

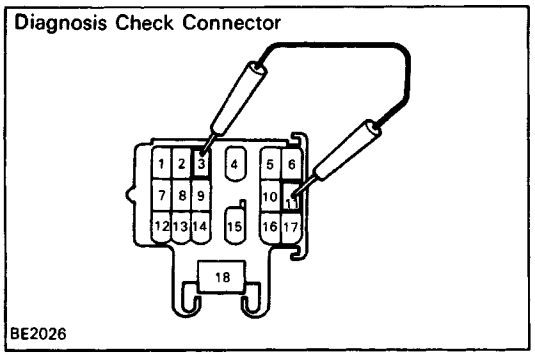
(Type A)

(a) Turn the ignition switch on.
(b) Turn the control switch to SET/COAST or RES/ACC position, and keep it there.
(c) Push the main switch ON.
(d) Check that the indicator light ”CRUISE” lights–up in the combination meter.
(e) Turn the SET/COAST or RES/ACC switch oft.
(f) Meet the conditions listed in the table below.
(g) Read the diagnosis code on the cruise control indicator light.

No.	Conditions	Indication code	Diagnosis
1	Turn the control switch to SET/COAST position.		SET/COAST circuit is normal.
2	Turn the control switch to R ES/ACC position.		RES/ACC circuit is normal.
3	Each cancel switch is turned ON. • Control switch (to CANCEL) • Stop light switch • Parking brake switch • Neutral start switch (to N or P range)		Each cancel switch is normal.
4	Drive at approx. 40 km/h (25 mph) or below.		Speed sensor circuit is normal.
	Drive at approx. 40 km/h (25 mph) or over (w/o ECT)		Speed sensor circuit is normal.

HINT:

- Indication codes appear in order from No. 1.
- If there is no indication code, perform troubleshooting and inspection. (See page BE–98 or 112)
- Indication is stopped when the MAIN switch is re-pushed.



(Type B)

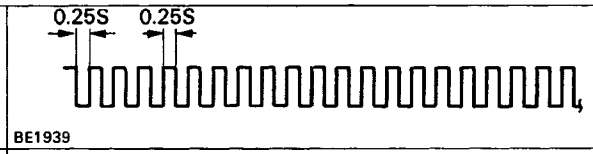
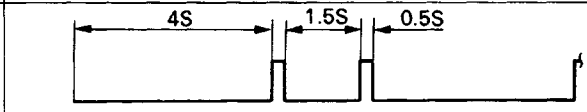
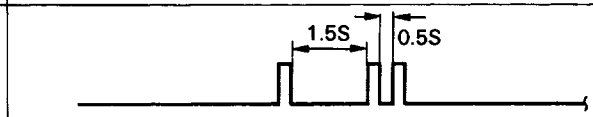
(a) If while driving with the cruise control on, the system is canceled by a malfunction in either the actuator, speed sensor or speed control switch circuit, the cruise control indicator light "CRUISE" will blink 5 times.

(b) While stopped, connect terminals 3 and 11 of the check connector.

HINT: If the ignition switch is turned off, the diagnostic code will be erased from the computer memory.

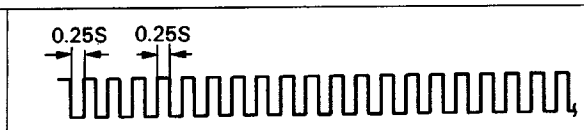
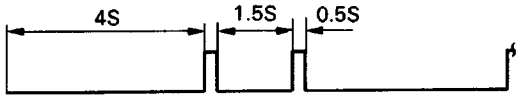
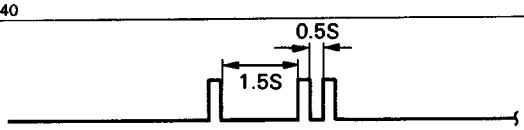
(c) Read the diagnostic code on the indicator light "CRUISE".

(w/Vacuum Type Actuator)

Indication code		Diagnosis
	 BE1939	Normal.
11	 BE1940	• Duty ratio of 100% output to motor acceleration side. • Overcurrent (short) in motor circuit.
12	 BE2711	• Overcurrent (short) in magnet clutch circuit. • Open in magnet clutch circuit.
21	 BE1941	Vehicle speed signal not sent for 140 m sec. or longer
23	 BE1943	• Vehicle speed has decreased by 16 km/h (10 mph) or more from the set speed during cruising.
32	 BE1945	Short circuit in control switch circuit.
34	 BE4342	Control switch does not turn off before switching.
41	 BE4343	ECU malfunction.

* If the set speed can be maintained when the speed control switch is again set at SET/COAST, there is no malfunction.

(w/Motor Type Actuator)

Indication code		Diagnosis
	 BE1939	Normal.
11	 BE1940	Excessive current flowed to motor or safety magnetic clutch drive circuit.
12	 BE2711	Open circuit in safety magnetic clutch circuit.
13	 BE4344	• Position sensor circuit abnormal. • Open circuit in motor.
21	 BE1941	Vehicle speed signal not sent for 140 msec. or longer
23	 BE1943	* Vehicle speed has decreased’ by 16 km/h (10 mph) or more from the set speed during cruising.
31	 BE1944	RESUME/ACCEL switch is ON always when MAIN switch is pushed ON.
32	 BE1945	Short circuit in control switch circuit.
34	 BE4342	Control switch does not turn off before switching.
41	 BE4345	ECU malfunction.
* If the set speed can be maintained when the speed control switch is again set at SET/COAST, there is no malfunction.		

HINT:

- Indication codes appear in order from No. 11.
- If there is no indication code, perform troubleshooting and inspection. (See page BE–98 or 112)

Troubleshooting

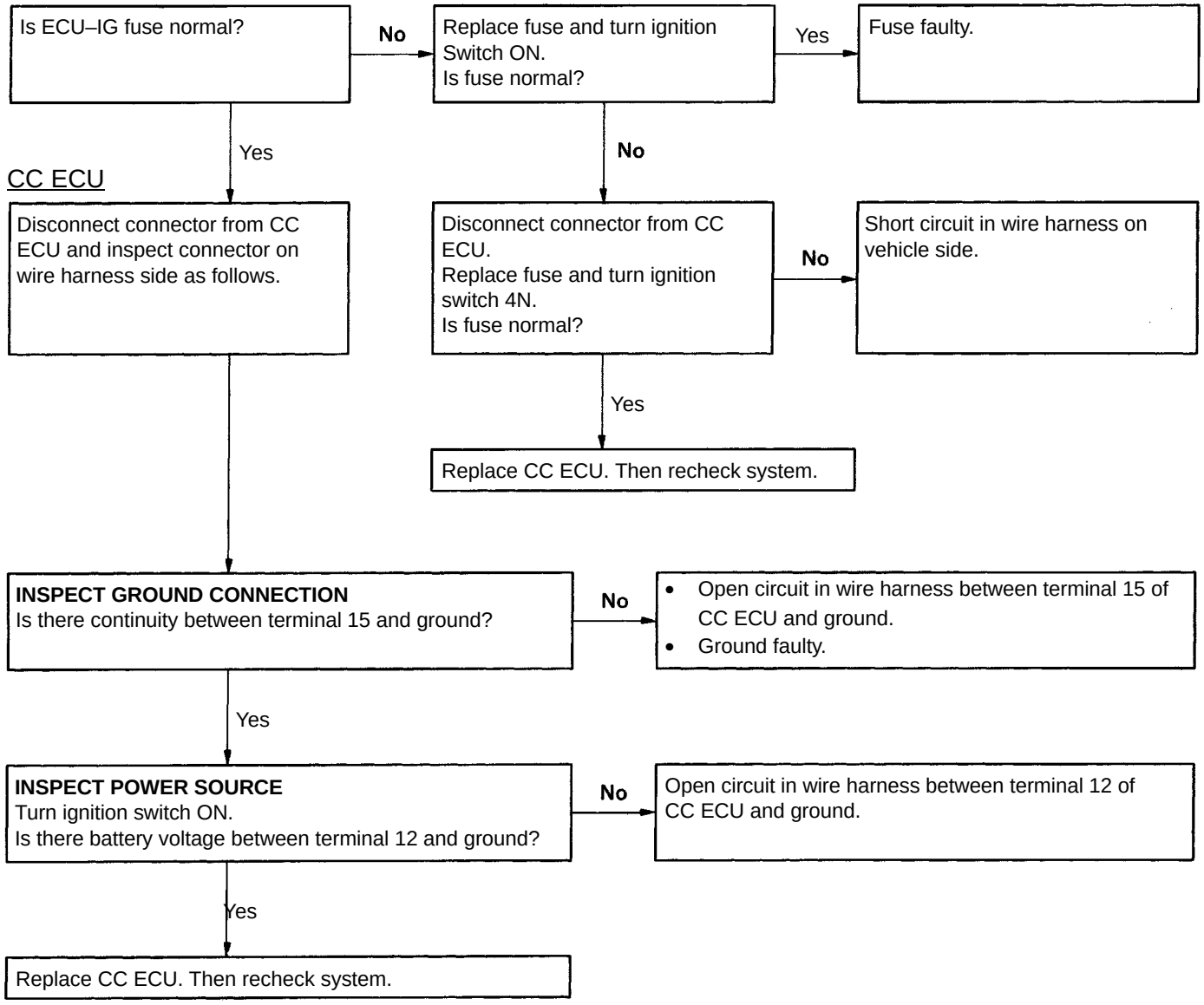
w/Vacuum Type Actuator

You will find the source of the trouble more easily by properly using the table shown below. In this table, the numbers indicate the order of priority of the causes of trouble. Check each part in the order shown.

Chart No.					D	C	C	F	H,I	G	E	K	J		
Inspection Item / Diagnosis Code / Problem	Type B	Type A		CC ECU	Actuator	Main Switch (in Control Switch)	Control Switch	Stop Light Switch	Clutch Switch or Neutral Start Switch	Parking Brake Switch	Speed Sensor, or Speedometer Cable	0/D OFF Circuit	ECT Solenoid No. 2 Circuit		
• "CRUISE" indicator light blinks 5 times. • Cruise control system does not set. • Cruise control system does not operate.	11			2	1										
	12			3	1			2							
	21			2							1				
	23			3	2						1				
	31			2			1								
	32			2			1								
	33			2			1								
	41			1											
	Normal	4	OK	7	6	1	2	3	4	5					
			NG	2							1				
Set speed deviates on high or low side.		5	OK	2	1										
			NG								1				
Vehicle speed fluctuates when speed control switch turned to SET.				3	2						1				
Set speed does not cancel when brake pedal depressed.		3	OK	3	1			2							
			NG	2				1							
Set speed does not cancel when parking brake lever pulled.		3	OK	2	1										
			NG	2						1					
Set speed does not cancel when shifted to "N" range. (A/T)		3	OK	2	1										
			NG	2					1						
Set speed does not cancel when clutch pedal depressed. (M/T)		3	OK	2	1										
			NG	2					1						
Vehicle speed does not decrease when speed control switch turned to COAST.		1	OK	3	1						2				
			NG	2			1								
Vehicle speed does not accelerate when speed control switch turned to ACCEL.		2	OK		1						2	3	4		
			NG	2			1								
Vehicle speed does not return to memorized speed when control switch turned on RESUME		2	OK	3	1						2				
			NG	2			1								
Set speed does not cancel when speed control switch turned to CANCEL.		3	OK	2	1										
			NG	2			1								
Speed can be set below about 40 km/h (25 mph.)		4	OK	2	1										
			NG	2							1				
Cruise control will not disengage even at about 40 km/h (25 mph).		4	OK	2	1										
			NG	2							1				
Acceleration response is sluggish when speed control switch turned to "ACCEL" or "RESUME".				5	2		1					3	4		

A POWER SOURCE CIRCUIT

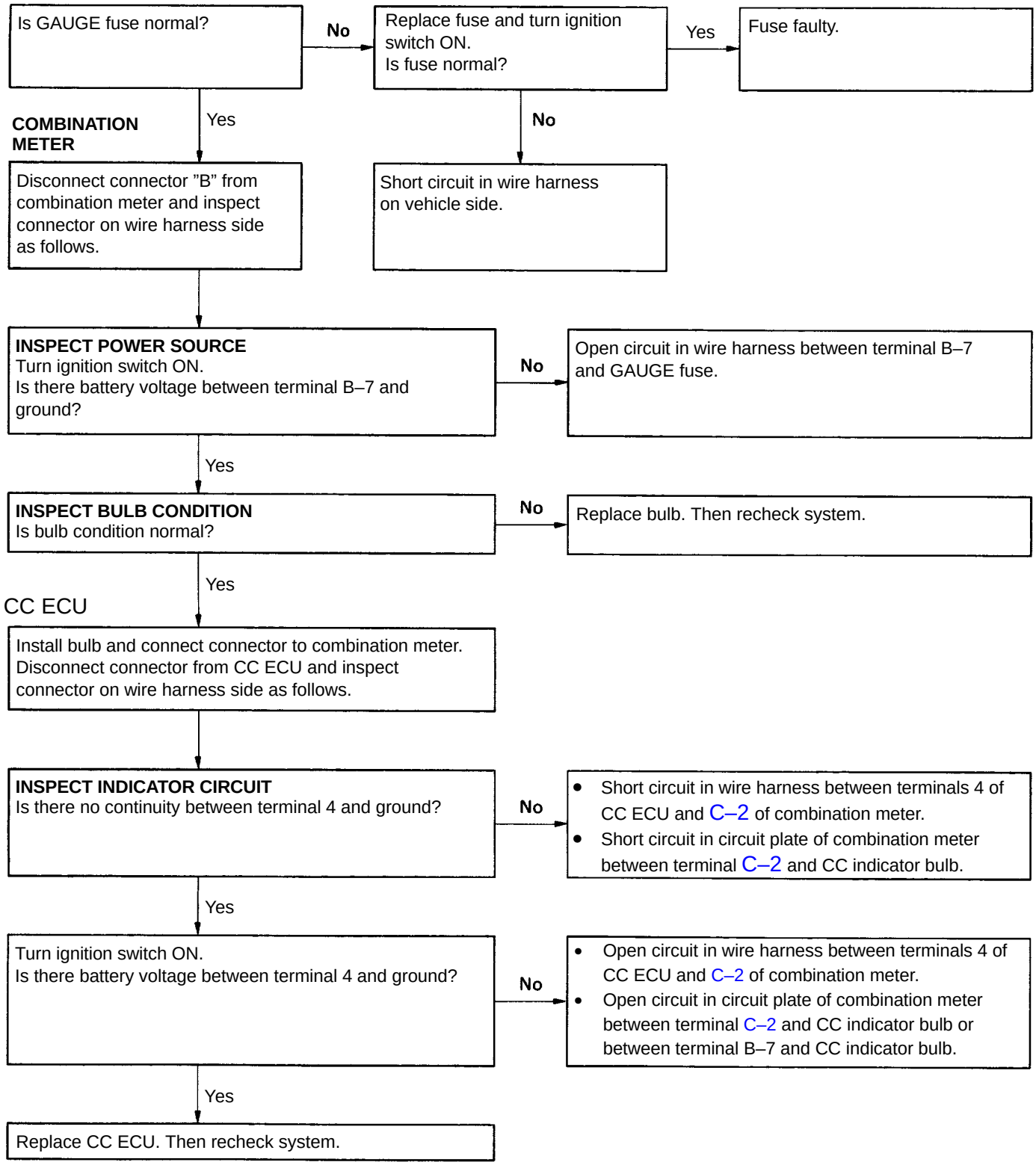
HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



CC: Cruise Control

B CRUISE CONTROL INDICATOR CIRCUIT

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



CC: Cruise Control

C CONTROL SWITCH CIRCUIT

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.

CONTROL SWITCH

Disconnect connector from control switch and inspect connector on wire harness side as follows.

INSPECT GROUND CONNECTION
Is there continuity between terminal 3 (B–1 7) and ground?

No → • Open circuit in wire harness between terminal 3 (B–17) of control switch and ground.
• Ground faulty.

Yes

INSPECT CONTROL SWITCH (See page BE–129)
Is control switch operation normal?

No → Replace control switch. Then recheck system.

Yes

CC ECU

Connect connector to control switch.
Disconnect connector from CC ECU and inspect connectors on wire harness side as follows.

INSPECT MAIN SWITCH CIRCUIT
Is there no continuity between terminal 6 and ground with main switch OFF?

No → Short circuit in wire harness between terminals 6 of CC ECU and (B–15) of control switch.

Yes

Is there continuity between terminal 6 and ground with main switch ON?

No → Open circuit in wire harness between terminals 6 of CC ECU and 5 (B–15) of control switch.

Yes

INSPECT CONTROL SWITCH CIRCUIT
Is there no continuity between terminal 19 and ground with control switch OFF?

No → Short circuit in wire harness between terminals 19 of CC ECU and 4 (6–5) of control switch.

Yes

Is there resistance as shown in table below between terminal 19 and ground when control switch is turned to each position?

Position	Resistance (Ω)
RES/ACC	Approx. 68
SET/COAST	Approx. 198
CANCEL	Approx. 418

No → Open circuit in wire harness between terminals 19 of CC ECU and 4 (B–5) of control switch.

Yes

Replace CC ECU. Then recheck system.

( ): without Airbag System
CC: Cruise Control

D ACTUATOR CIRCUIT

HINT: while carrying out the following inspection, make certain that the connectors and terminals are properly connected.

VACUUM HOSE

Are there cranks or other damage on vacuum hose?
Yes → Replace hose. Then recheck system.
No ↓

ACTUATOR

Disconnect connector from actuator and inspect connector on wire harness side as follows.

CC ECU

INSPECT GROUND CONNECTION
Is there continuity between terminal 3 and ground?
No → Disconnect connector from CC ECU and inspect connector on wire harness side as follows.
Yes ↓

Is there continuity between terminal 15 and ground?
No → • Open circuit in wire harness between terminal 15 of CC ECU and ground.
• Ground faulty.
Yes ↓

INSPECT CC ECU
Is there continuity between terminals 15 and 16 on ECU side connector?
No → Replace CC ECU. Then recheck system.
Yes ↓

Open circuit in wire harness between terminals 16 of CC ECU and 3 of actuator.

INSPECT ACTUATOR (See page BE–130)
Is actuator operation normal?
No → Replace actuator. Then recheck system.
Yes ↓

CONTINUED ON NEXT PAGE

CC: Cruise Control

CONTINUED FROM PREVIOUS PAGE

STOP LIGHT SWITCH

INSPECT STOP LIGHT SWITCH INSTALLATION
Is stop light switch installed properly?

No → Reinstall stop light switch properly. Then recheck system.

Yes

Connect connector to actuator.
Disconnect connector from stop light switch and inspect connector on wire harness side as follows.

INSPECT RELEASE VALVE CIRCUIT
Is there approx. 68Ω between terminal 4 and ground?

No → Open or short circuit in wire harness between terminals 4 of stop light switch and 1 of actuator.

Yes

INSPECT STOP LIGHT SWITCH (See page BE–129)
Is stop light switch operation normal?

No → Replace stop light switch. Then recheck system.

Yes

CC ECU

Connect connector to stop light switch.
Disconnect connector from CC ECU and inspect connector on wire harness side as follows.

Yes

INSPECT CONTROL VALVE CIRCUIT
Is there approx. 30Ω between terminal 5 and ground?

No → Open or short circuit in wire harness between terminals 5 of CC ECU and 2 of actuator.

Yes

INSPECT RELEASE VALVE CIRCUIT
Is there approx. 68Ω between terminal 3 and ground when brake pedal is released?

No → Open or short circuit in wire harness between terminals 5 of CC ECU and 2 of stop light switch.

Yes

Replace CC ECU. Then recheck system.

CC: Cruise Control

E–1 SPEED SENSOR CIRCUIT (with A/T)

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected,

SPEED METER
CABLE

Does meter fluctuate when driving at steady speed?

Yes → Replace meter cable. Then recheck system.

No

COMBINATION METER

Disconnect connector "B" from combination meter and inspect connector on wire harness side as follows.

INSPECT GROUND CONNECTION
Is there continuity between terminal B–5 and ground?

No →
- Open circuit in wire harness between terminal B–5 of combination meter and ground.
- Ground faulty.

Yes

INSPECT SPEED SENSOR (See page BE–130)
Is speed sensor operation normal?

No → Replace speedometer. Then recheck system.

Yes

CC ECU

Connect connector "B" to combination meter.
Disconnect connector from CC ECU and inspect connector on wire harness side as follows.

INSPECT SPEED SENSOR CIRCUIT
Is there continuity repeatedly between terminal 8 and ground?

No →
- Open or short circuit in wire harness between terminals 8 of CC ECU and B–6 of combination meter.
- Open or short circuit in circuit plate of combination meter between terminal B–6 and speed sensor.
- Open circuit in circuit plate of combination meter between terminal B–5 and speed sensor.

Yes

Replace CC ECU. Then recheck system.

CC: Cruise Control

E–2 SPEED SENSOR CIRCUIT (with M/T)

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected,

SPEED SENSOR

Disconnect connector from speed sensor and inspect connector on wire harness side as follows.

INSPECT GROUND CONNECTION
Is there continuity between terminal 3 and ground?

No →
- Open circuit in wire harness between terminal 3 of speed sensor and ground.
- Ground faulty.

Yes

INSPECT SPEED SENSOR (See page BE–130)
If speed sensor operation normal?

No → Replace speed sensor. Then recheck system.

Yes

CC ECU

Connect connector "B" to speed sensor.
Disconnect connector from CC ECU and inspect connector on wire harness side as follow.

INSPECT SPEED SENSOR CIRCUIT
Is there continuity repeatedly between terminal 8 and ground?

No →
- Open or short circuit in wire harness between terminals 8 of CC ECU and 2 of speed sensor.

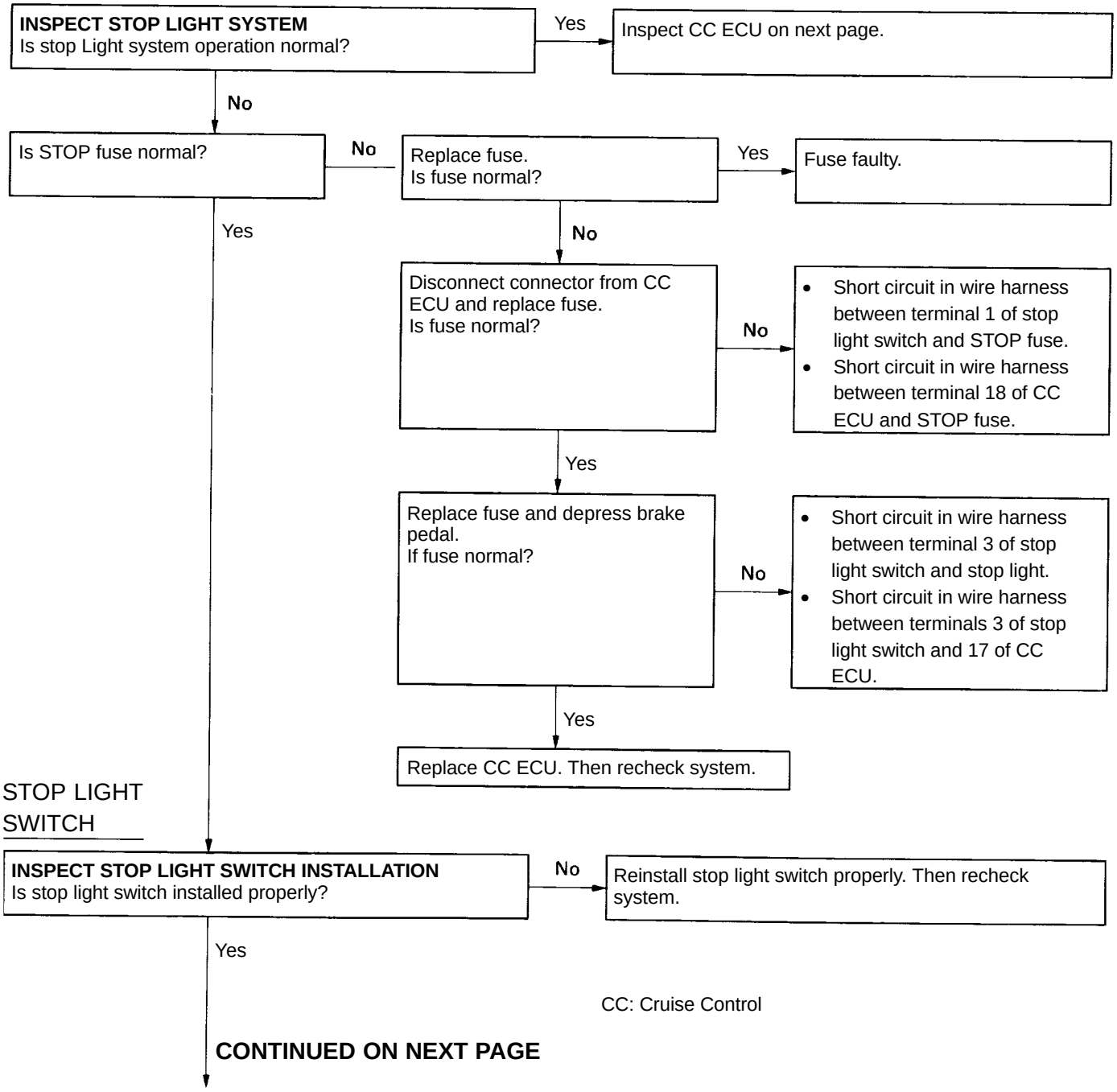
Yes

Replace CC ECU. Then recheck system.

CC: Cruise Control

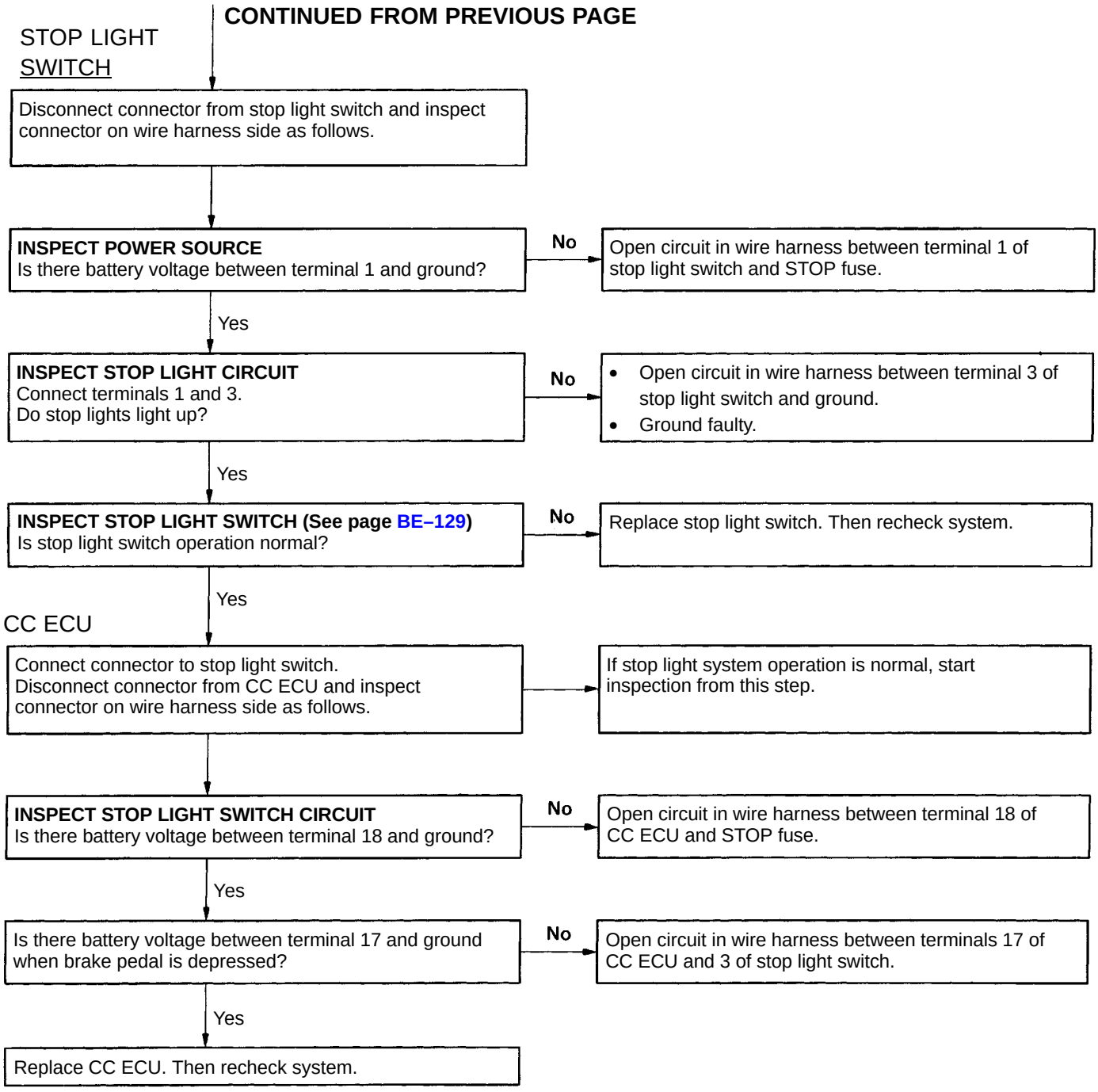
F STOP LIGHT SWITCH CIRCUIT

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



CC: Cruise Control

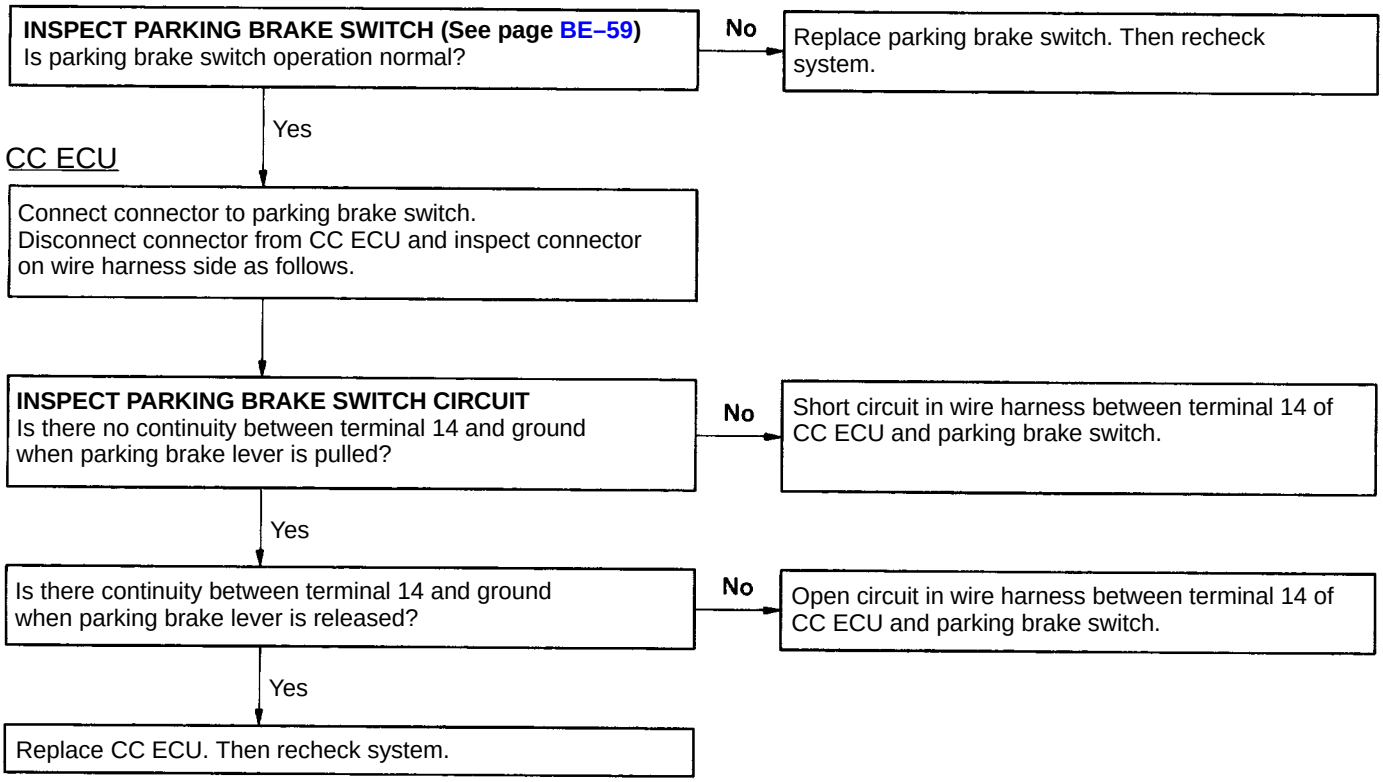
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CC: Cruise Control

G PARKING BRAKE SWITCH CIRCUIT

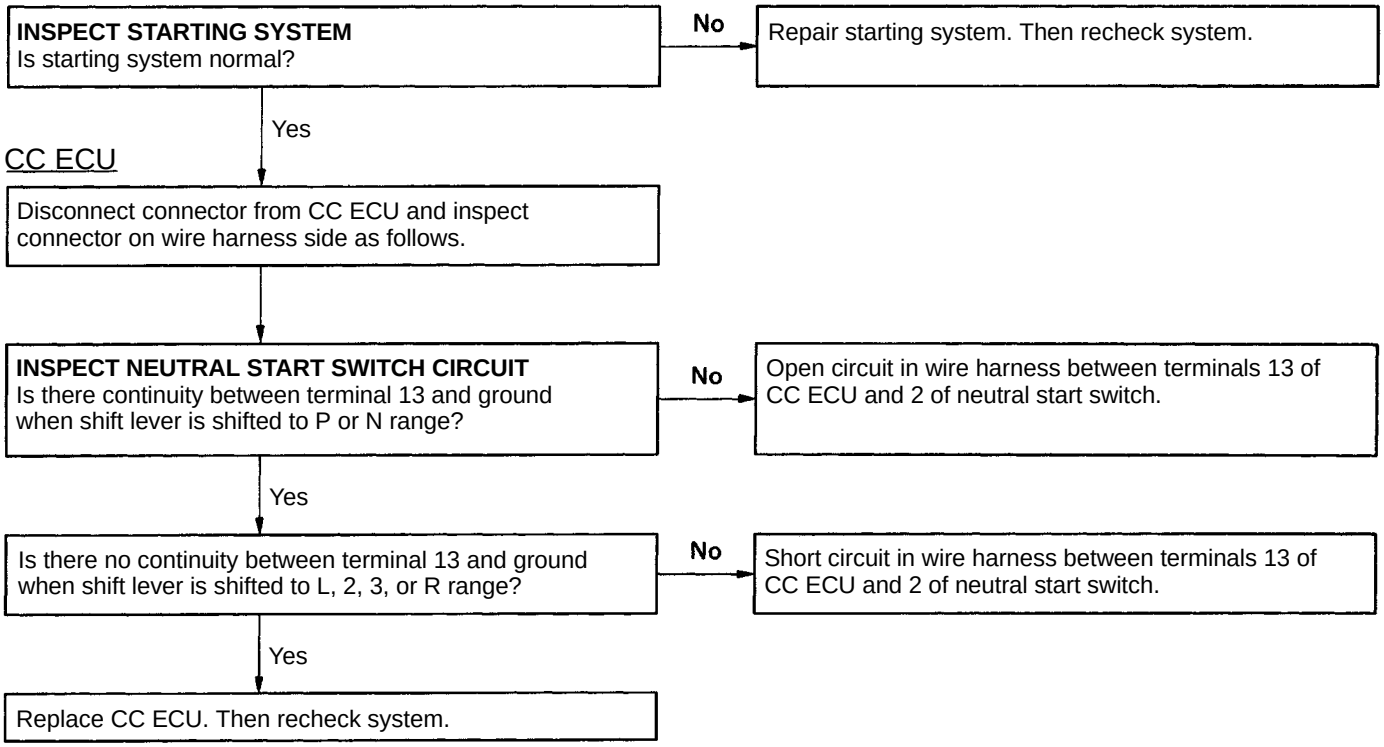
HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



CC: Cruise Control

H NEUTRAL START SWITCH (with A/T)

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



CC: Cruise Control

I CLUTCH SWITCH CIRCUIT (with M/T)

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected,

CLUTCH SWITCH

INSPECT CLUTCH SWITCH INSTALLATION
Is clutch switch installed properly?

No → Reinstall clutch switch properly. Then recheck system.

Yes

Disconnect connector from clutch switch and inspect connector on wire harness side as follows.

INSPECT GROUND CONNECTION
Is there continuity between terminal 1 and ground?

No →
- Open circuit in wire harness between terminal 1 of clutch switch and ground.
- Ground faulty.

Yes

INSPECT CLUTCH SWITCH (See page BE–129)
Is clutch switch operation normal?

No → Replace clutch switch. Then recheck system.

Yes

CC ECU

Connect connector to clutch switch.
Disconnect connector from CC ECU and inspect connector on wire harness side as follows.

INSPECT CLUTCH SWITCH CIRCUIT
Is there no continuity between terminal 13 and ground when clutch pedal released?

No → Short circuit in wire harness between terminals 13 of CC ECU and 2 of clutch switch.

Yes

Is there continuity between terminal 13 and ground when clutch pedal depressed?

No → Open circuit in wire harness between terminal 13 of CC ECU and 2 of clutch switch.

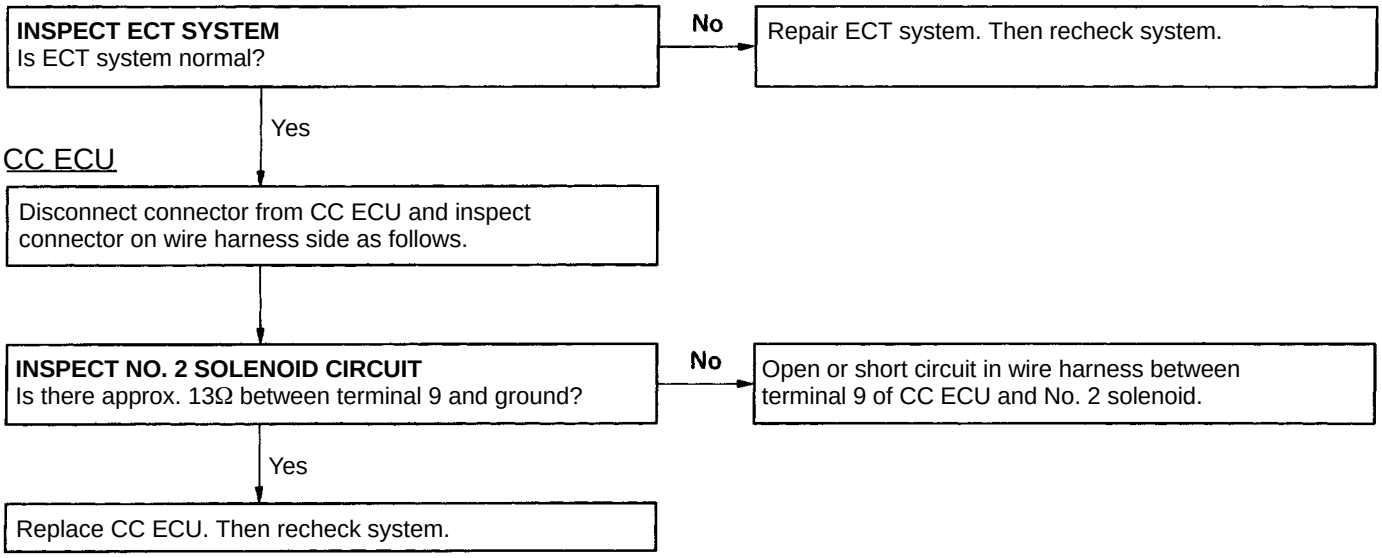
Yes

Replace CC ECU. Then recheck system.

CC: Cruise Control

J ECT SOLENOID NO. 2 CIRCUIT (with ECT)

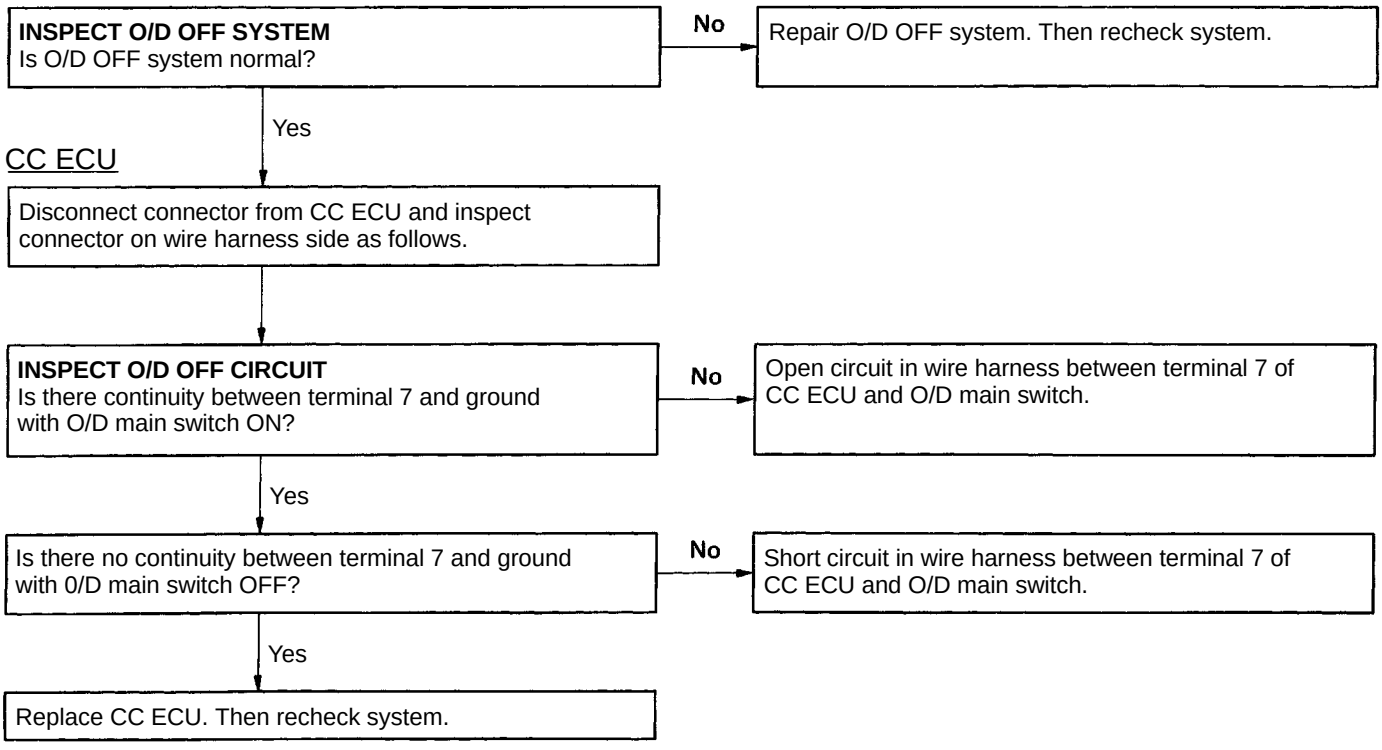
HINT: while carrying out the following inspection, make certain that the connectors and terminals are properly connected.



CC: Cruise Control

K O/D OFF CIRCUIT (with A/T)

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



CC: Cruise Control

Troubleshooting

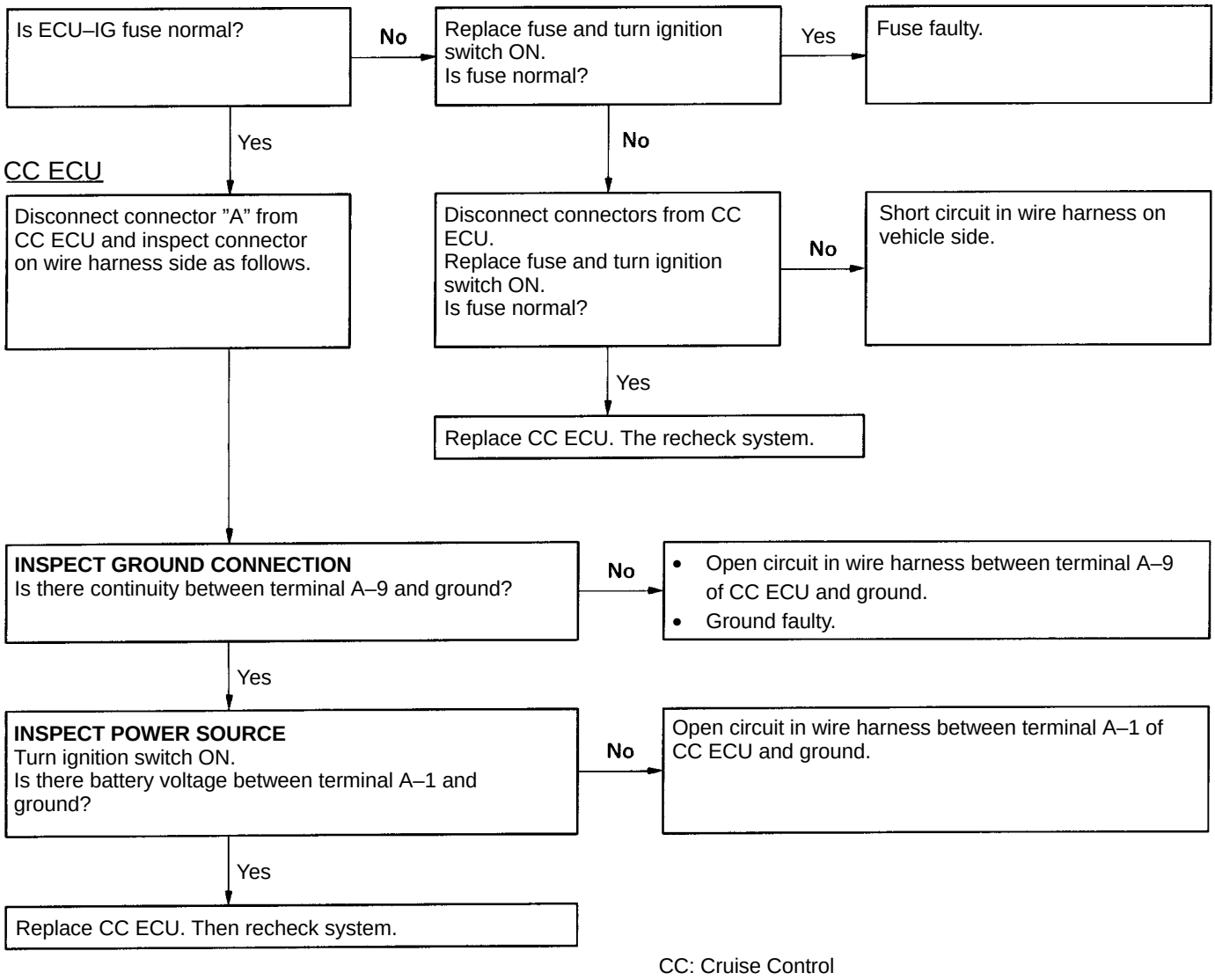
w/Motor Type Actuator

You will find the source of the trouble more easily by properly using the table shown below. In this table, the numbers indicate the order of priority of the causes of trouble. Check each part in the order shown.

Chart No.					D	C	C	F	H,I	G	E	K	J	L	
Inspection Item / Diagnosis Code / Problem	Type B	Type A		CC ECU	Actuator	Main Switch (in Control Switch)	Control Switch	Stop Light Switch	Clutch Switch or Neutral Start Switch	Parking Brake Switch	Speed Sensor, or Speedometer Cable	0/D OFF Circuit	ECT Solenoid No. 2 Circuit	Throttle Position Sensor (I D L)	
• "CRUISE" indicator light blinks 5 times. • Cruise control system does not set. • Cruise control system does not operate.	11			2	1										
	12			3	1			2							
	21			2							1				
	23				2						1			3	
	31			2			1								
	32			2			1								
	33			2			1								
	41			1											
	Normal	4	OK	7	6	1	2	3	4	5					
			NG	2							1				
Set speed deviates on high or low side.		5	OK	3	1									2	
			NG								1				
Vehicle speed fluctuates when speed contro switch turned to SET.				3	2						1				
Set speed does not cancel when brake pedal depressed.		3	OK	3	1			2							
			NG	2				1							
Set speed does not cancel when parking brake lever pulled.		3	OK	2	1										
			NG	2						1					
Set speed does not cancel when shifted to "N" range. (A/T)		3	OK	2	1										
			NG	2					1						
Set speed does not cancel when clutch pedal depressed. (M/T)		3	OK	2	1										
			NG	2					1						
Vehicle speed does not decrease when speed control switch turned to COAST.		1	OK	3	1						2				
			NG	2			1								
Vehicle speed does not accelerate when speed control switch turned to ACCEL.		2	OK		1						2	3	4		
			NG	2			1								
Vehicle speed does not return to memo–rized speed when control switch turned on RESUME		2	OK	3	1						2				
			NG	2			1								
Set speed does not cancel when speed control switch turned to CANCEL.		3	OK	2	1										
			NG	2			1								
Speed can be set below about 40 km/h (25 mph.)		4	OK	2	1										
			NG	2							1				
Cruise control will not disengage even at about 40 km/h (25 mph).		4	OK	2	1										
			NG	2							1				
Acceleration response is sluggish when speed control switch turned to "ACCEL" or "RESUME".				6	2		1					3	4	5	

A POWER SOURCE CIRCUIT

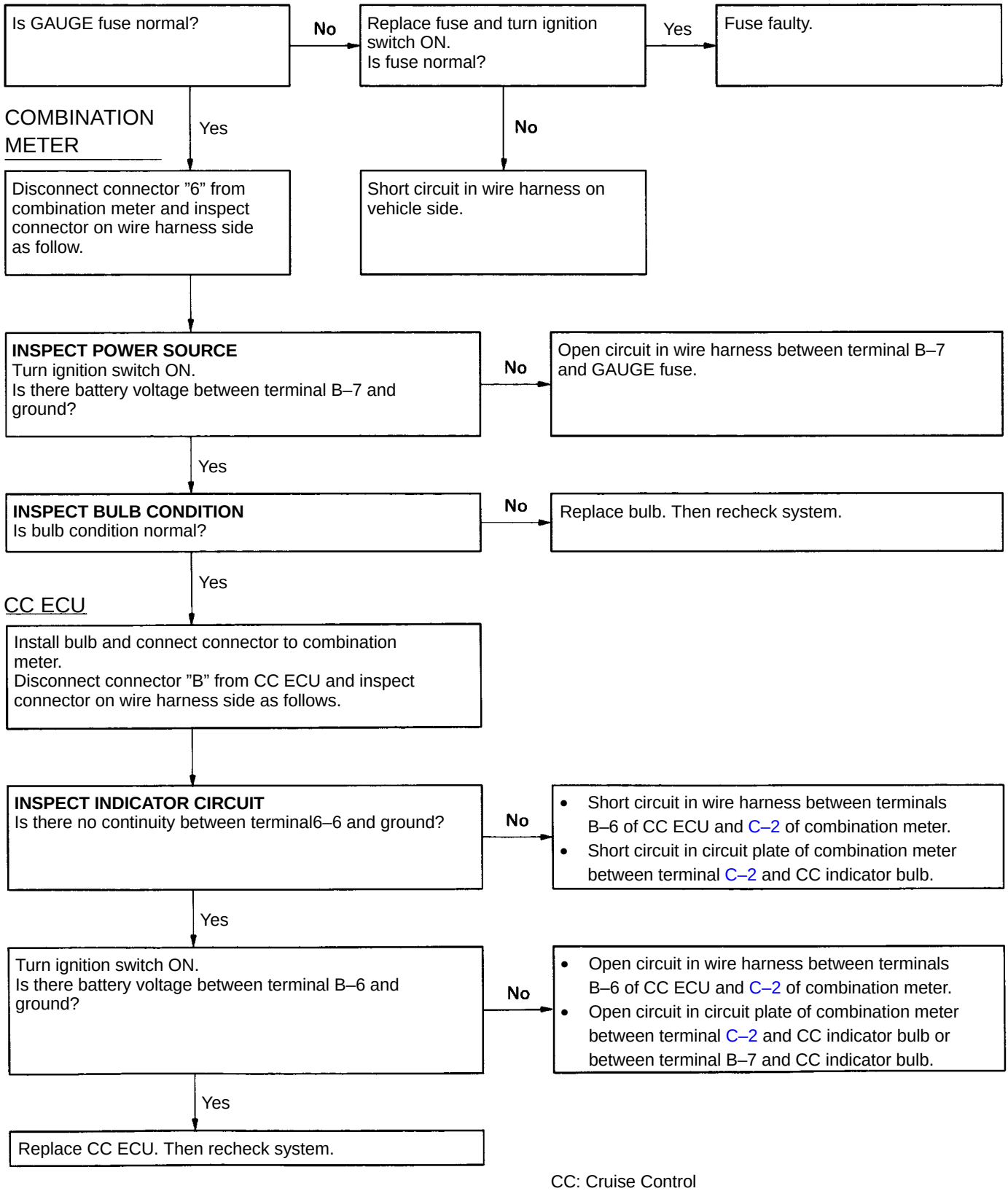
HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



CC: Cruise Control

B CRUISE CONTROL INDICATOR CIRCUIT

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



CC: Cruise Control

C CONTROL SWITCH CIRCUIT

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.

CONTROL SWITCH

Disconnect connector from control switch and inspect connector on wire harness side as follows.

INSPECT GROUND CONNECTION
Is there continuity between terminal 3 (B–17) and ground?

No → • . Open circuit in wire harness between terminal 3 (B–17) of control switch and ground.
• Ground faulty.

Yes

INSPECT CONTROL SWITCH (See page BE–129)
Is control switch operation normal?

No → Replace control switch. Then recheck system.

Yes

CC ECU

Connect connector to control switch.
Disconnect connectors from CC ECU and inspect connectors on wire harness side as follows.

INSPECT MAIN SWITCH CIRCUIT
Is there no continuity between terminal A–8 and ground with main switch OFF?

No → Short circuit in wire harness between terminals A–8 of CC ECU and 5 (B–15) of control switch.

Yes

Is there continuity between terminal A–8 and ground with main switch ON?

No → Open circuit in wire harness between terminals A–8 of CC ECU and 5 (13– 15) of control switch.

Yes

INSPECT CONTROL SWITCH CIRCUIT
Is there no continuity between terminal B–8 and ground with control switch OFF?

No → Short circuit in wire harness between terminals B–8 of CC ECU and 4 (B–5) of control switch.

Yes

Is there resistance as shown in table below between terminal B–8 and ground when control switch is turned to each position?

Position	Resistance (Ω)
RES/ACC	Approx. 68
SET/COAST	Approx. 198
CANCEL	Approx. 418

No → Open circuit in wire harness between terminals B–8 of CC ECU and 4 (B–5) of control switch.

Yes

Replace CC ECU. Then recheck system.

( ): without Airbag System
CC: Cruise Control

D ACTUATOR CIRCUIT

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.

ACTUATOR

Disconnect connector from actuator and inspect connector on wire harness side as follows.

INSPECT GROUND CONNECTION
Is there continuity between terminal 4 and ground?

No →
- Open circuit in wire harness between terminal 4 of actuator and ground.
- Ground faulty.

Yes

INSPECT ACTUATOR (See page BE–131)
Is actuator operation normal?

No → Replace actuator. Then recheck system.

Yes

STOP LIGHT SWITCH

INSPECT STOP LIGHT SWITCH INSTALLATION
Is stop light switch installed properly?

No → Reinstall stop light switch properly. Then recheck system.

Yes

Connect connector to actuator.
Disconnect connector from stop light switch and inspect connector on wire harness side as follows.

INSPECT SAFETY MAGNETIC CLUTCH CIRCUIT
Is there approx. 38.5Ω between terminal 4 and ground?

No → Open or short circuit in . wire harness between terminals 4 of stop light and 5 of actuator.

Yes

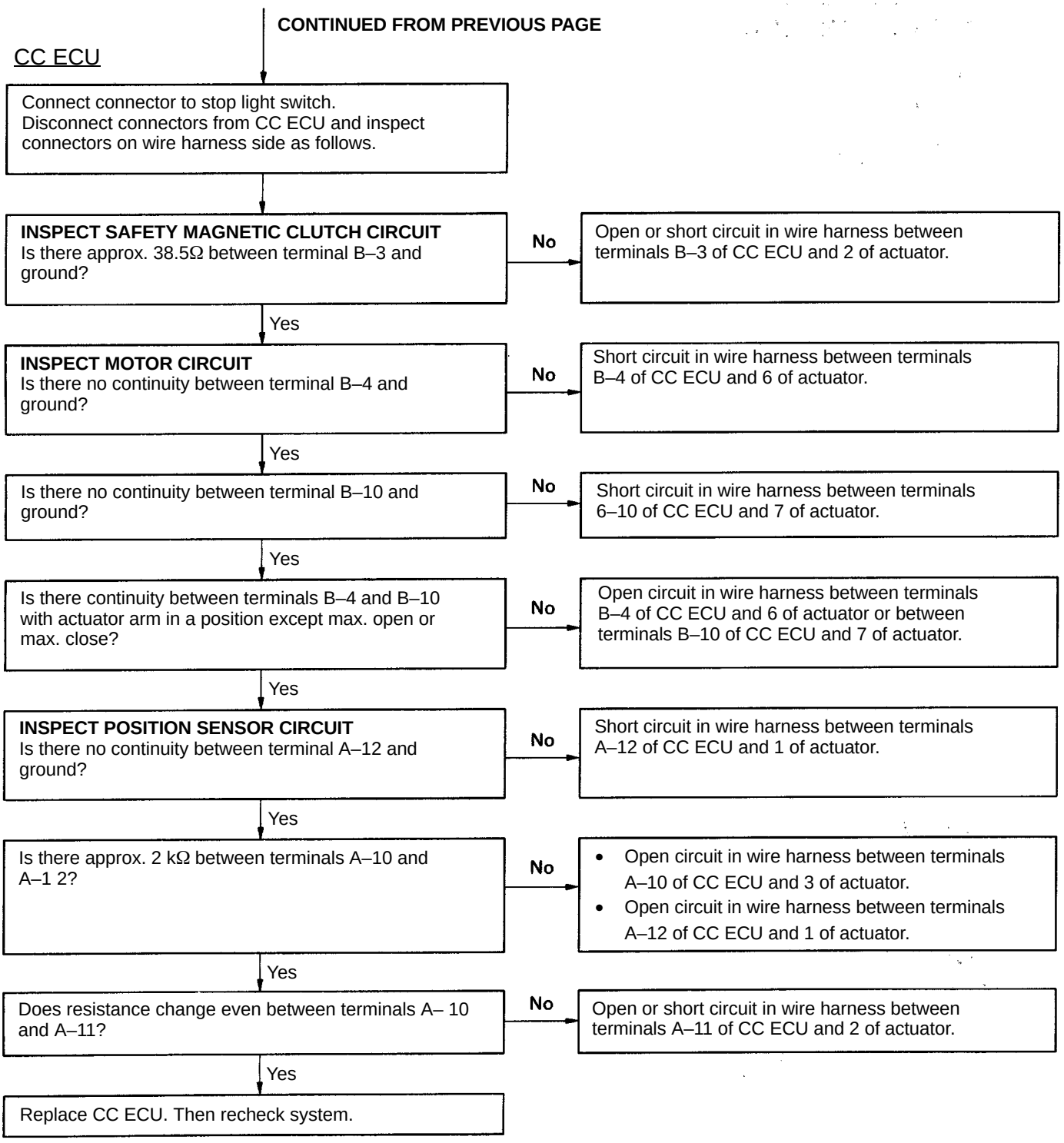
INSPECT STOP LIGHT SWITCH (See page BE–129)
Is stop light switch operation normal?

No → Replace stop light switch. Then recheck system.

Yes

CONTINUED 0N NEXT PAGE

CC: Cruise Control



CC: Cruise Control

E–1 SPEED SENSOR CIRCUIT (with A/T)

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.

SPEED METER CABLE

Does meter fluctuate when driving at steady speed?

Yes → Replace meter cable. Then recheck system.

No

COMBINATION METER

Disconnect connector "B" from combination meter and inspect connector on wire harness side as follows.

INSPECT GROUND CONNECTION
Is there continuity between terminal6–5 and ground?

No →
- Open circuit in wire harness between terminal B–5 of combination meter and ground.
- Ground faulty.

Yes

INSPECT SPEED SENSOR (See page BE–130)
Is speed sensor operation normal?

No → Replace speedometer. Then recheck system.

Yes

CC ECU

Connect connector "B" to combination meter.
Disconnect connector "A" from CC ECU and inspect connector on wire harness side as follows.

INSPECT SPEED SENSOR CIRCUIT
Is there continuity repeatedly between terminal A–7 and ground?

No →
- Open or short circuit in wire harness between terminals A–7 of CC ECU and B–6 of combination meter.
- Open or short circuit in circuit plate of combination meter between terminal B–6 and speed sensor.
- Open circuit in circuit plate of combination meter between terminal B–5 and speed sensor.

Yes

Replace CC ECU. Then recheck system.

CC: Cruise Control

E–2 SPEED SENSOR CIRCUIT (with M/T)

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected,

SPEED SENSOR

Disconnect connector from speed sensor and inspect connector on wire harness side as follows.

INSPECT GROUND CONNECTION
Is there continuity between terminal 3 and ground?

No →
- Open circuit in wire harness between terminal 3 of speed sensor and ground.
- Ground faulty.

Yes

INSPECT SPEED SENSOR (See page BE–130)
Is speed sensor operation normal?

No → Replace speed sensor. Then recheck system.

Yes

CC ECU

Connect connector "B" to speed sensor.
Disconnect connector "A" from CC ECU and inspect connector on wire harness side as follows.

INSPECT SPEED SENSOR CIRCUIT
Is there continuity repeatedly between terminal A–7 and ground?

No →
- Open or short circuit in wire harness between terminals A–7 of CC ECU and 2 of speed sensor.

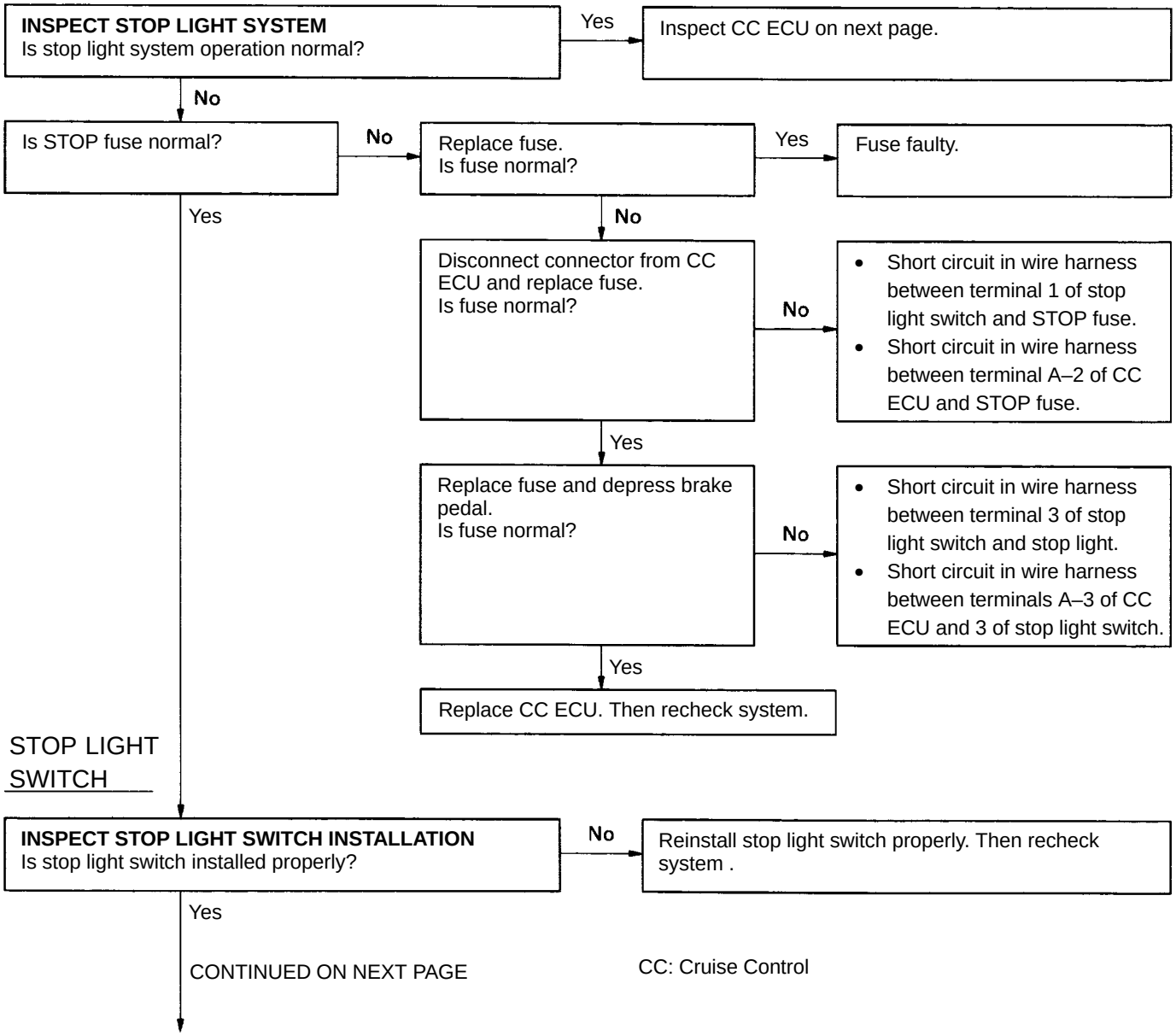
Yes

Replace CC ECU. Then recheck system.

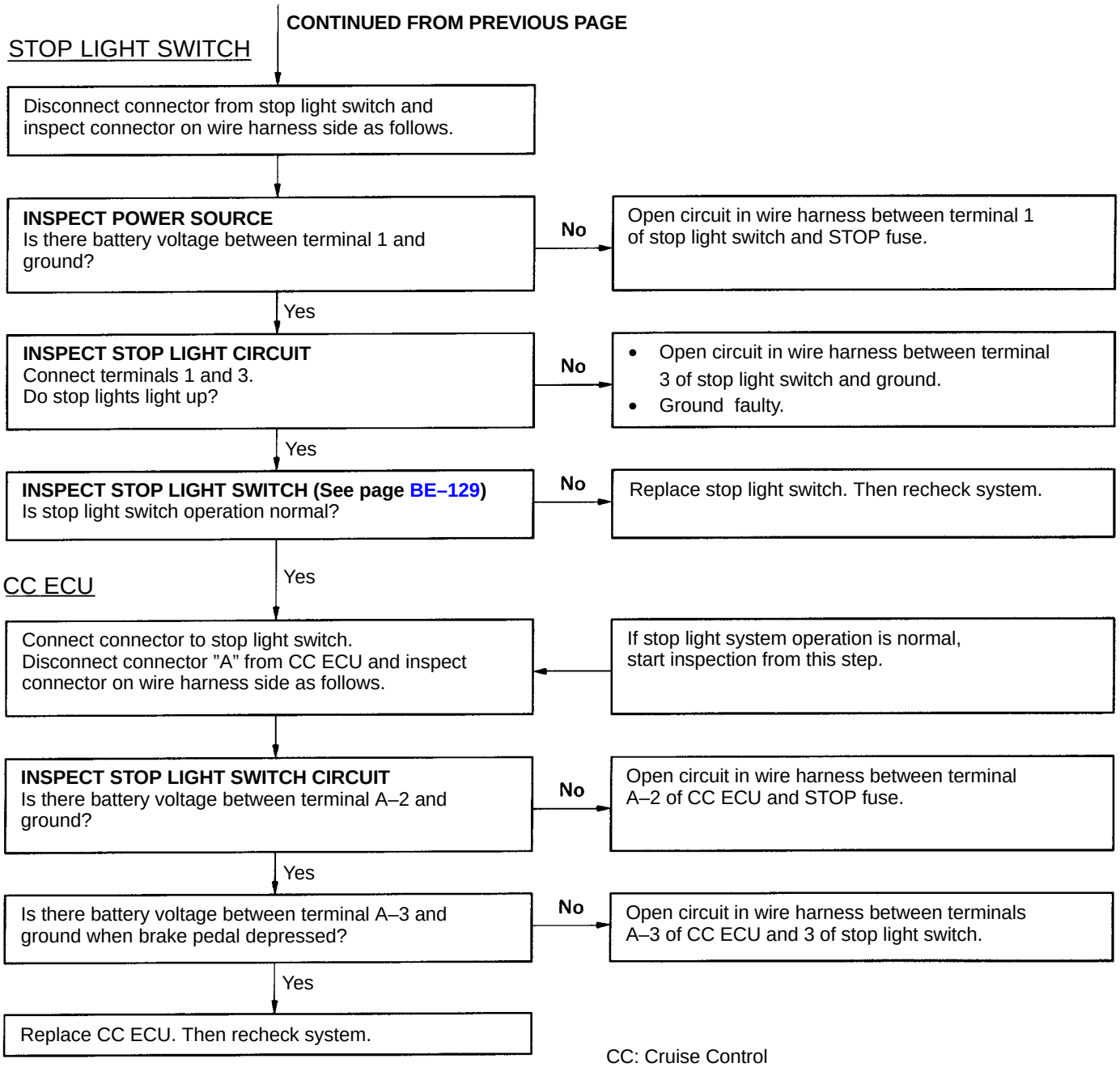
CC: Cruise Control

F STOP LIGHT SWITCH CIRCUIT

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



CC: Cruise Control



CC: Cruise Control

G PARKING BRAKE SWITCH CIRCUIT

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.

INSPECT PARKING BRAKE SWITCH
(See page BE–49**)**
Is parking brake switch operation normal?

No → Replace parking brake switch. Then recheck system.

Yes

CC ECU

Connect connector to parking brake switch.
Disconnect connector "A" from CC ECU and inspect connector on wire harness side as follows.

INSPECT PARKING BRAKE SWITCH CIRCUIT
Is there no continuity between terminal A–5 and ground when parking brake lever is pulled?

No → Short circuit in wire harness between terminal A–5 of CC ECLJ and parking brake switch.

Yes

Is there continuity between terminal A–5 and ground when parking brake lever is released?

No → Open circuit in wire harness between terminal A–5 of CC ECU and parking brake switch.

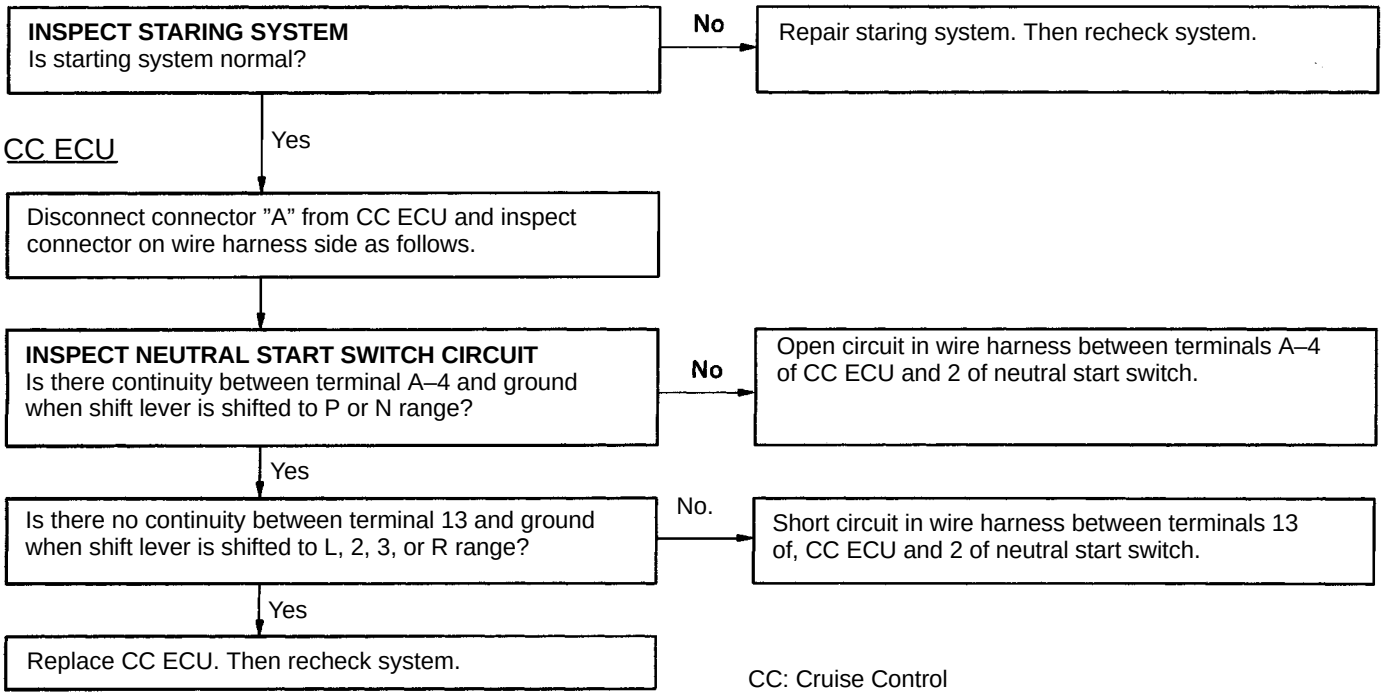
Yes

Replace CC ECU. Then recheck system.

CC: Cruise Control

H NEUTRAL START SWITCH CIRCUIT, (with A/T)

HINT: While carrying out .the following inspection, make certain that the connectors and terminals are properly connected.



CC: Cruise Control

I CLUTCH SWITCH CIRCUIT (with M/T).

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.

CLUTCH SWITCH

INSPECT CLUTCH SWITCH INSTALLATION
Is clutch switch installed properly?
- No → Reinstall clutch switch properly. Then recheck system.
- Yes → Disconnect connector from clutch switch and inspect connector on wire harness side as follows.

INSPECT GROUND CONNECTION
Is there continuity between terminal 1 and ground?
- No → • Open circuit in wire harness between terminal 1 of clutch switch and ground.
  • Ground faulty.
- Yes →

INSPECT CLUTCH SWITCH (See page BE–129)
Is clutch switch operation normal?
- No → Replace clutch switch. Then recheck system.
- Yes →

CC ECU

Connect connector to clutch switch.
Disconnect connector "A" from CC ECU and inspect connector on wire harness side as follows.

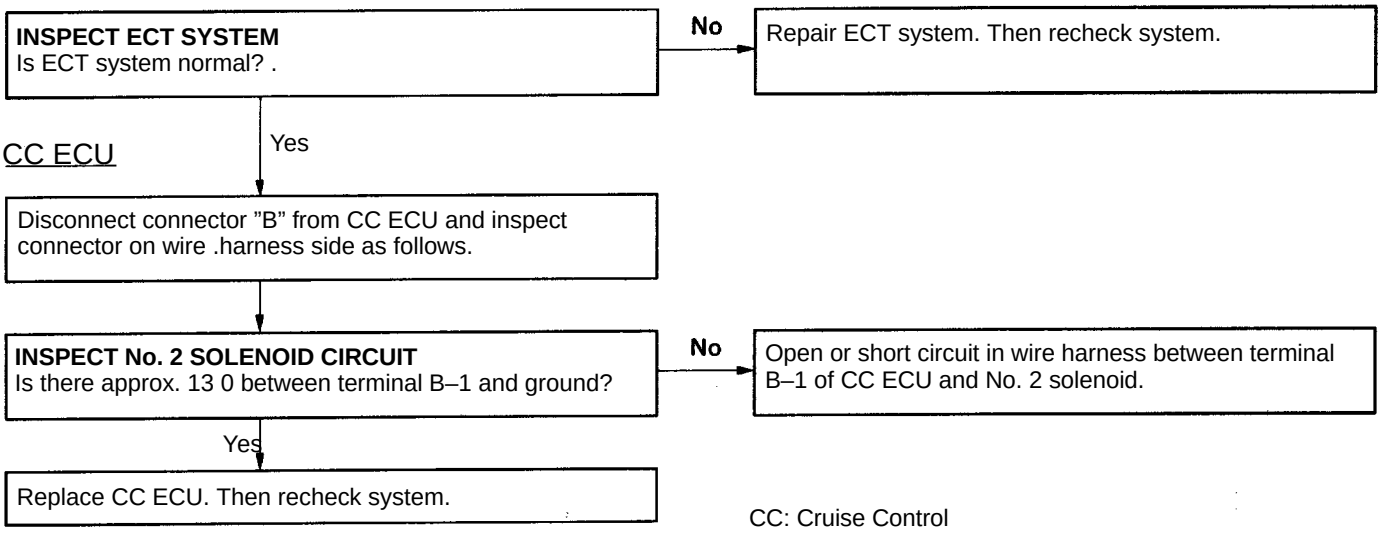
INSPECT CLUTCH SWITCH CIRCUIT
Is there no continuity between terminal A–4 and ground when clutch pedal released?
- No → Short circuit in wire harness between terminals A–4 of CC ECU and 2 of clutch switch.
- Yes →

Is there continuity between terminal A–4 and ground when clutch pedal depressed?
- No → Open circuit in wire harness between terminal A–4 of CC ECU and 2 of clutch switch.
- Yes → Replace CC ECU. Then recheck system.

CC: Cruise Control

J ECT SOLENOID No. 2 CIRCUIT (with ECT)

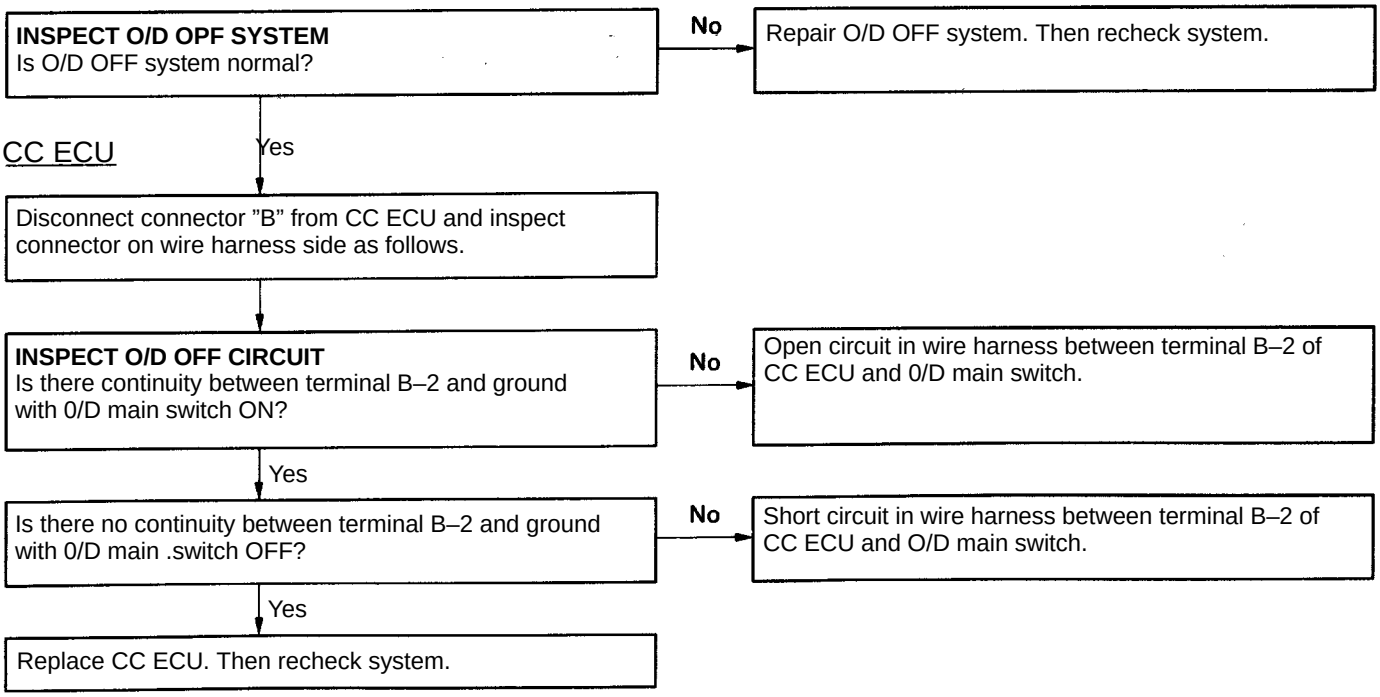
HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



CC: Cruise Control

K O/D OFF CIRCUIT (with A/T)

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



CC: Cruise Control

L IDL SIGNAL CIRCUIT

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.

THROTTLE POSITION SENSOR

INSPECT THROTTLE POSITION SENSOR ADJUSTMENT (See page FI–116, 121 or 124)
Is throttle position sensor adjustment normal?

No → Adjust position sensor position. Then recheck system.

Yes

INSPECT THROTTLE POSITION SENSOR (See page FI–113, 118 or 123)
Is throttle position sensor operation normal?

No → Replace throttle position sensor. Then recheck system.

Yes

CC ECU

Connect connector to throttle position sensor.
Disconnect connector "B" from CC ECU and inspect connector on wire harness side as follows.

INSPECT IDL SIGNAL CIRCUIT
Is there continuity between terminal B–9 and ground when acceleration pedal is released?

No → Open circuit in wire harness between terminals B–9 of CC ECU and 2 (1) of throttle position sensor.

Yes

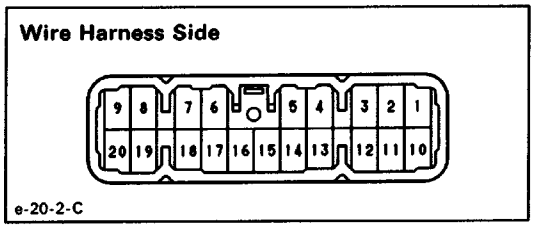
Is there no continuity between terminal B–9 and ground when acceleration pedal is depressed?

No → Short circuit in wire harness between terminals B–9 of CC ECU and 2 (1) of throttle position sensor.

Yes

Replace CC ECU. Then recheck system.

( ): 3–Pin Type Throttle Position Sensor Connector
CC: Cruise Control



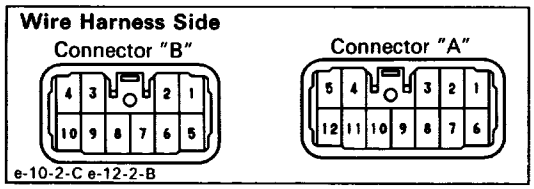
Cruise Control ECU Circuit

INSPECT ECU CIRCUIT

Disconnect connector and inspect connector on wire harness side as shown in the chart.

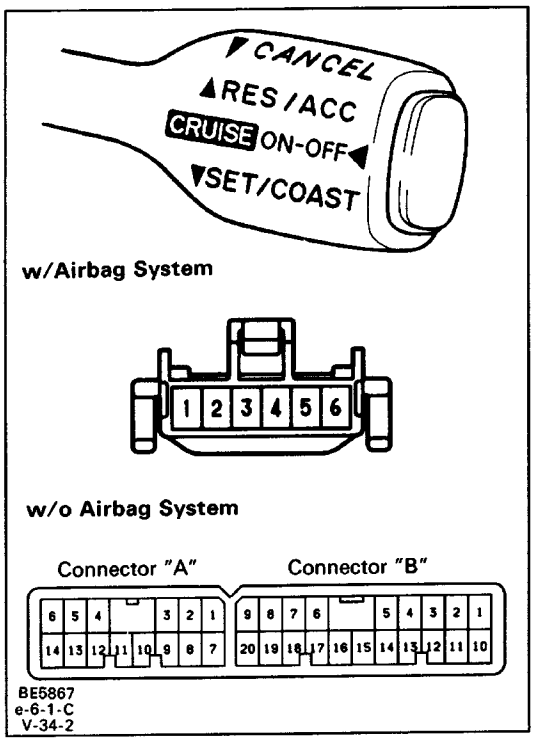
(with Vacuum Type Actuator)

Check for	Measured item	Tester connection	Condition		Specified value
Continuity	TDCL circuit	1 – ground	Constant		No continuity
			Terminal Tc and E1 connected		Continuity
	Control switch (main switch)	6 – ground	Main switch position	OFF	No continuity
				ON	Continuity
	Water temp. switch and O/D main switch	7 – ground	Engine coolant is Cold		Continuity
			Engine coolant is Hot		
			O/D main switch position	OFF	No continuity
				ON	Continuity
	Neutral start switch (A/T)	13 – ground	Shift lever position	N or P	Continuity
				L, 2, D or R	No continuity
	Clutch switch (M/T)	13 – ground	Clutch pedal position	released	No continuity
				depressed	Continuity
	Parking brake switch	14 – ground	Parking brake lever position	released	No continuity
				pulled	Continuity
	Ground connection	15 – ground	Constant		Continuity
Resistance	Actuator (release valve)	3 – 16	Brake pedal position	released	Approx. 68 Ω
				depressed	No continuity
	Actuator (control valve)	5 – 16	Constant		Approx. 30 Ω
	ECT No. 2 solenoid valve	9 – ground	Constant		Approx. 13 Ω
	Control switch	19 – ground	Control switch position	OFF	No continuity
				R ES/ACC	Approx. 68 Ω
				SET/COAST	Approx. 198 Ω
				CANCEL	Approx. 418 Ω
Voltage	CC indicator	4 – ground	Ignition switch position	LOCK or ACC	No voltage
				ON	Battery voltage
	Speed sensor	8 – ground	With ignition switch on, speedometer shaft or speed sensor shaft turned.		Voltage changes repeatedly
	Power source	12 – ground	Ignition switch position	LOCK or ACC	No voltage
				ON	Battery voltage
	Stop light	17 – ground	Brake pedal position	released	No voltage
				depressed	Battery voltage
	STOP fuse	18 – ground	Constant		Battery voltage



(with Motor Type Actuator)

Check for	Measured item	Tester connection	Condition		Specified value
Continuity	Neutral start switch (A/T)	A-4 – ground	Shift lever position	N or P	Continuity
				L, 2, D or R	No continuity
	¿ Clutch switch (M/T)	A-4 – ground	Clutch pedal position	released	No continuity
				depressed	Continuity
	Parking brake switch	A-5 – ground	Parking brake lever position	released	No continuity
				pulled	Continuity
	Control switch	A-8 – ground	Main switch position	OFF	No continuity
				ON	Continuity
	Ground connection	A-9 – ground	Constant		Continuity
	Water temp. switch and O/D main switch	B-2 – ground	Engine coolant temp. is Cold		Continuity
			Engine coolant temp. is Hot		
			O/D main switch position	OFF	No continuity
				ON	Continuity
	Actuator (motor)	B-4 – B-10	Actuator arm position	max. OPEN	(B-4 → B-10) Continuity
				max. CLOSE	(B-10 → B-4) Continuity
				any position except above position	(B-4 ↔ B-10) Continuity
	TDCL circuit	B-7 – ground	Constant		Continuity
			Terminals Tc and E1 connected		Continuity
	Throttle position sensor (IDL)	B-9 – ground	Acceleration pedal position	released	Continuity
				depressed	No continuity
Resistance	Actuator (position sensor)	A-10 – A-12	Constant		Approx. 2 kΩ
		A-10 – A-11	Actuator arm turned		Resistance change even
	ECT No. 2 solenoid valve	B-1 – ground	Constant		Approx. 13 Ω
	Actuator (Safety magnetic clutch)	B-3 – ground	Brake pedal position	released	Approx. 38.5 Ω
				depressed	No continuity
	Control switch	B-8 – ground	Control switch position	OFF	No continuity
				R ES/ACC	Approx. 68 Ω
				SET/COAST	Approx. 198 Ω
				CANCEL	Approx. 418 Ω
Voltage	Power source	A-1 – ground	Ignition switch position	LOCK or ACC	No voltage
				ON	Battery voltage
	STOP fuse	A-2 – ground	Constant		Battery voltage
	Stop light	A-3 – ground	Brake pedal position	released	No voltage
				depressed	Battery voltage
	Speed sensor	A-7 – ground	With ignition switch ON, speedometer shaft or speed sensor shaft turned.		Voltage changes repeatedly



Parts Inspection

1. INSPECT SWITCHES

(Control Switch)

(a) Check continuity between terminals 3 (B–17) and 5 (B–15)

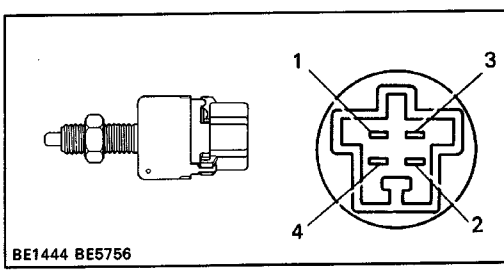
Main switch position	Condition
OFF	No continuity
ON	Continuity

(b) Measure resistance between terminals 3 (B–17) and 4 (B–5)

Control switch position	Resistance (Ω)
OFF	∞ (No continuity)
RES/ACC	Approx. 68
SET/COAST	Approx. 198
CANCEL	Approx. 418

If resistance value is not as specified, replace the control switch.

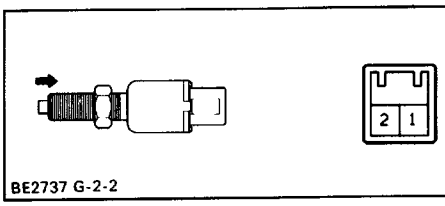
(Stop Light Switch/Continuity)



Terminal / Switch position	1	2	3	4
Switch pin free (Brake pedal depressed)	○		○	
Switch pin pushed in (Brake pedal released)		○		○

If continuity is not as specified, replace the stop light switch.

(Clutch Switch: M/T/Continuity)



Terminal / Condition	1	2
Switch pin free (Clutch pedal depressed)	○	○
Switch pin pushed in (Clutch pedal released)		

If continuity is not as specified, replace the switch.

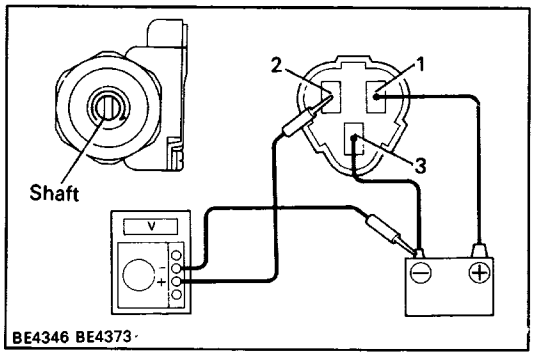
(Neutral Start Switch: A/T)

ECT: **See page** AT–29

w/o ECT: **See page** AT–33

(Parking Brake Switch)

See page BE–59**.**



2. INSPECT SPEED SENSOR

(M/T)

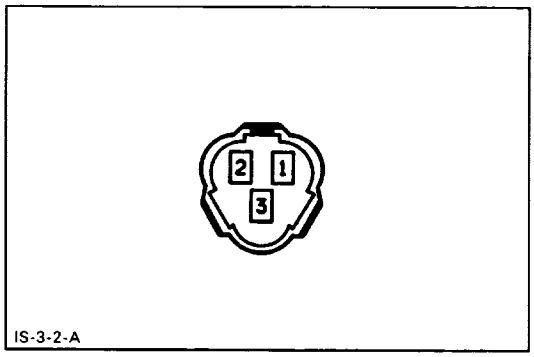
(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 3.

(b) Connect the positive (+) lead from the voltmeter to terminal 2 and the negative (–) lead to the battery negative (–) terminal.

(c) Check that the voltmeter indicates approx. 5 volts four times per each revolution of the shaft.
If operation is not as specified, replace the speed sensor.

(A/T)

See page BE–52**.**

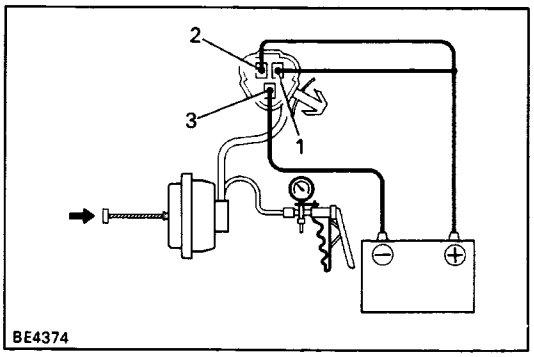


3. INSPECT ACTUATOR

(Vacuum Type)

(a) Measure the resistance between terminals as follows.

Resistance: 1 – 3 Approx. 68Ω
2 – 3 Approx. 30Ω



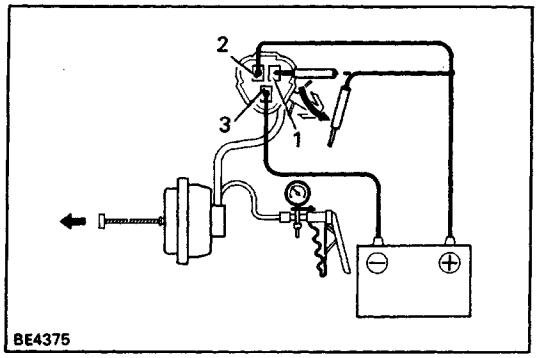
(b) Connect the positive (+) lead from the battery to terminals 1 and 2, and the negative (–) lead to terminal 3.

(c) Slowly apply vacuum from 0 to 300 mmHg (0 to 11.81 in.Hg, 0 to 40.0 kPa), check that the control cable can be pulled smoothly.

Cable stroke: Approx. 40 mm (1.57 in.)

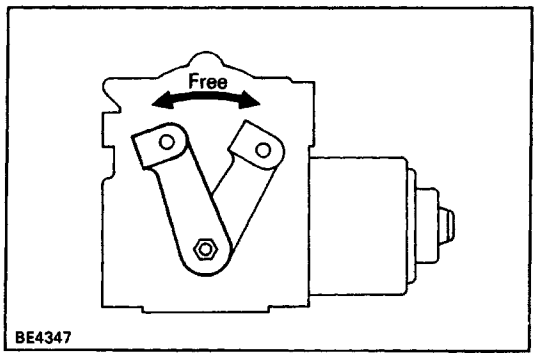
(d) With the vacuum stabilized, check that the control cable does not return.

HINT: As you apply and hold the vacuum with the vacuum pump, the drawn–in diaphragm will in some cases return. This does not indicate a malfunction. Actuator leakage is allowable.



(e) Disconnect terminal 1 or 2 and check that the control cable returns to its original position and the vacuum returns to 0 mmHg (0 in.Hg, 0 kPa).

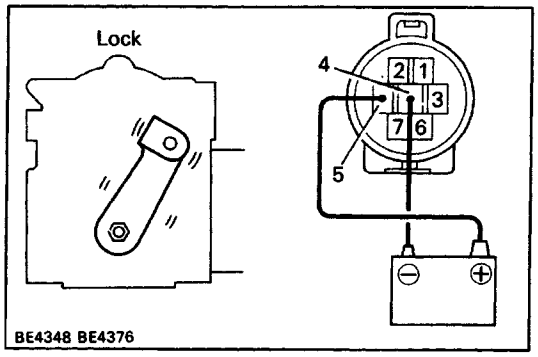
If operation is not as specified, replace the actuator.



(Motor Type)

Safety Magnet Clutch

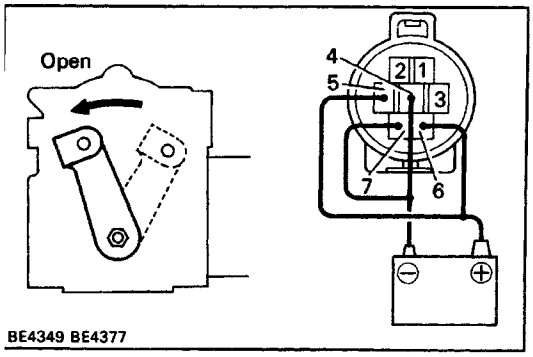
(a) Check that the arm moves smoothly by hand.



(b) Connect the positive (+) lead from the battery to terminal 5 and the negative (–) lead to terminal 4. (Safety magnet clutch turned ON)

(c) Check that the arm does not move by hand.

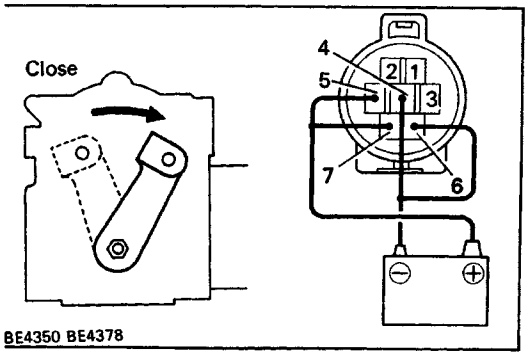
If operation is not as specified, replace the motor.



Motor

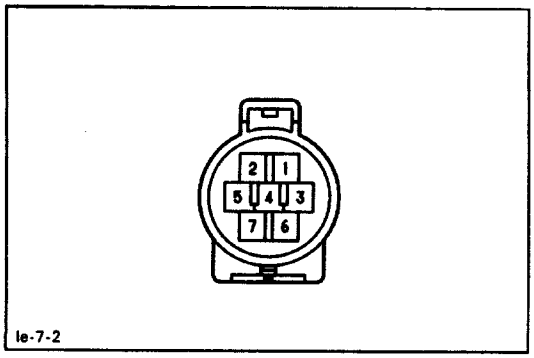
(a) With the safety magnetic clutch ON, connect the positive (+) lead from the battery to terminal 6 and the negative (–) lead to terminal 7, check that the arm moves to the open side.

(b) When the arm reached to the open position, check that the motor operation stops.



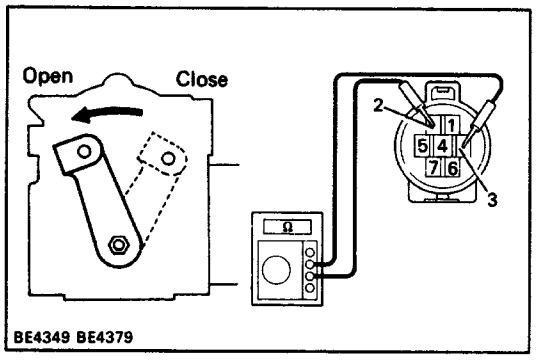
(c) With the safety magnetic clutch ON, connect the positive (+) lead from the battery to terminal 7 and the negative (–) lead to terminal 6, check that the arm moves to the close side.

(d) When the arm reaches to the closed position, check that the motor operation stops.



Position Sensor

(a) Measure the resistance between terminals 1 and 3.
Resistance: Approx. 2 kΩ

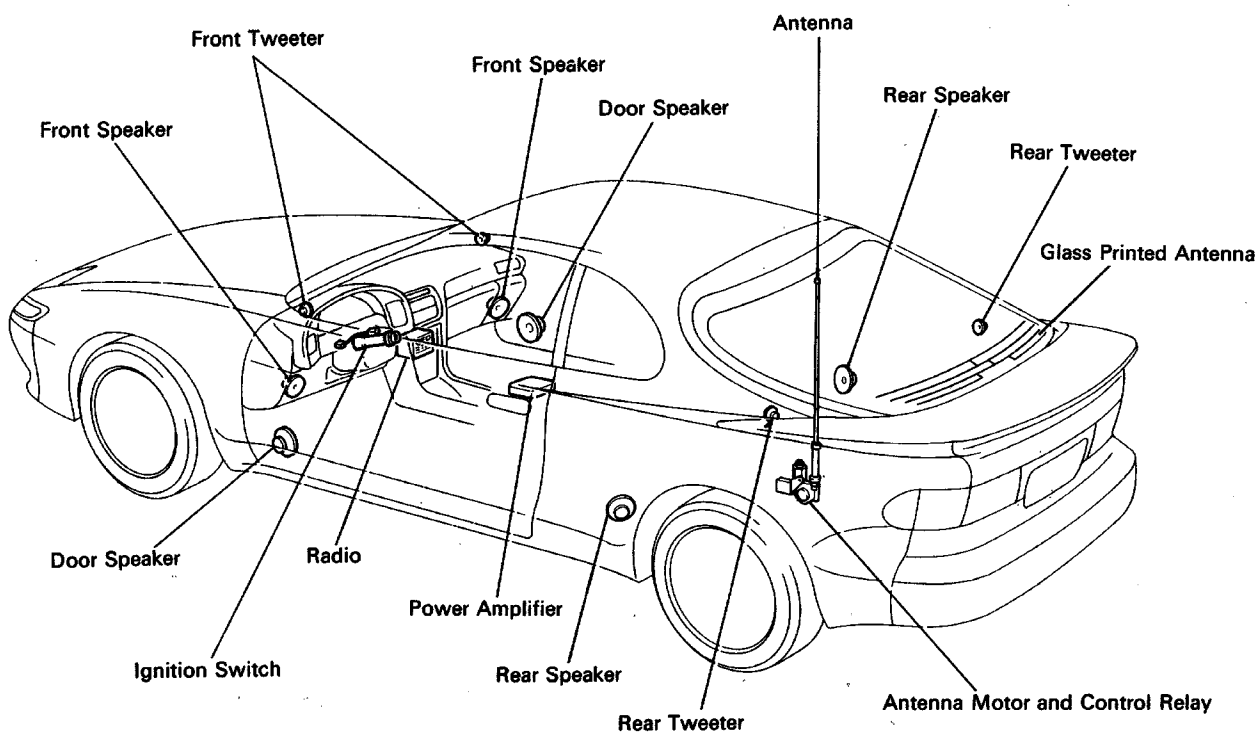


(b) When the arm is moving from the closed to open position, check that resistance between terminals 2 and 3 increases from approx. 0.5 to 1.7 kΩ.

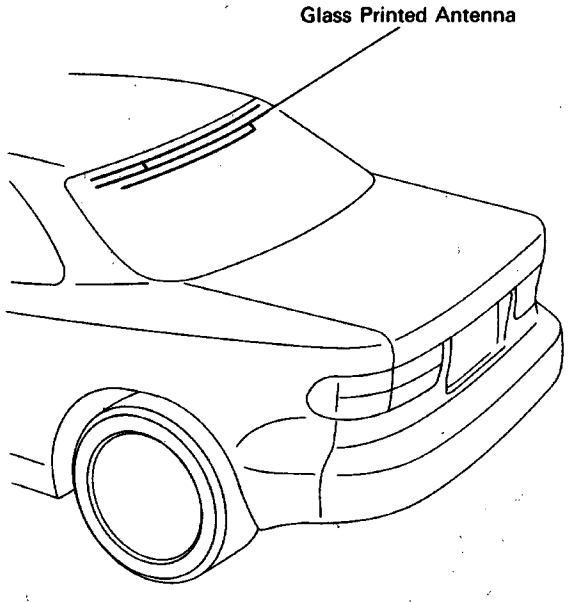
If operation is not as specified, replace the motor.

AUDIO SYSTEM
Parts Location

Liftback

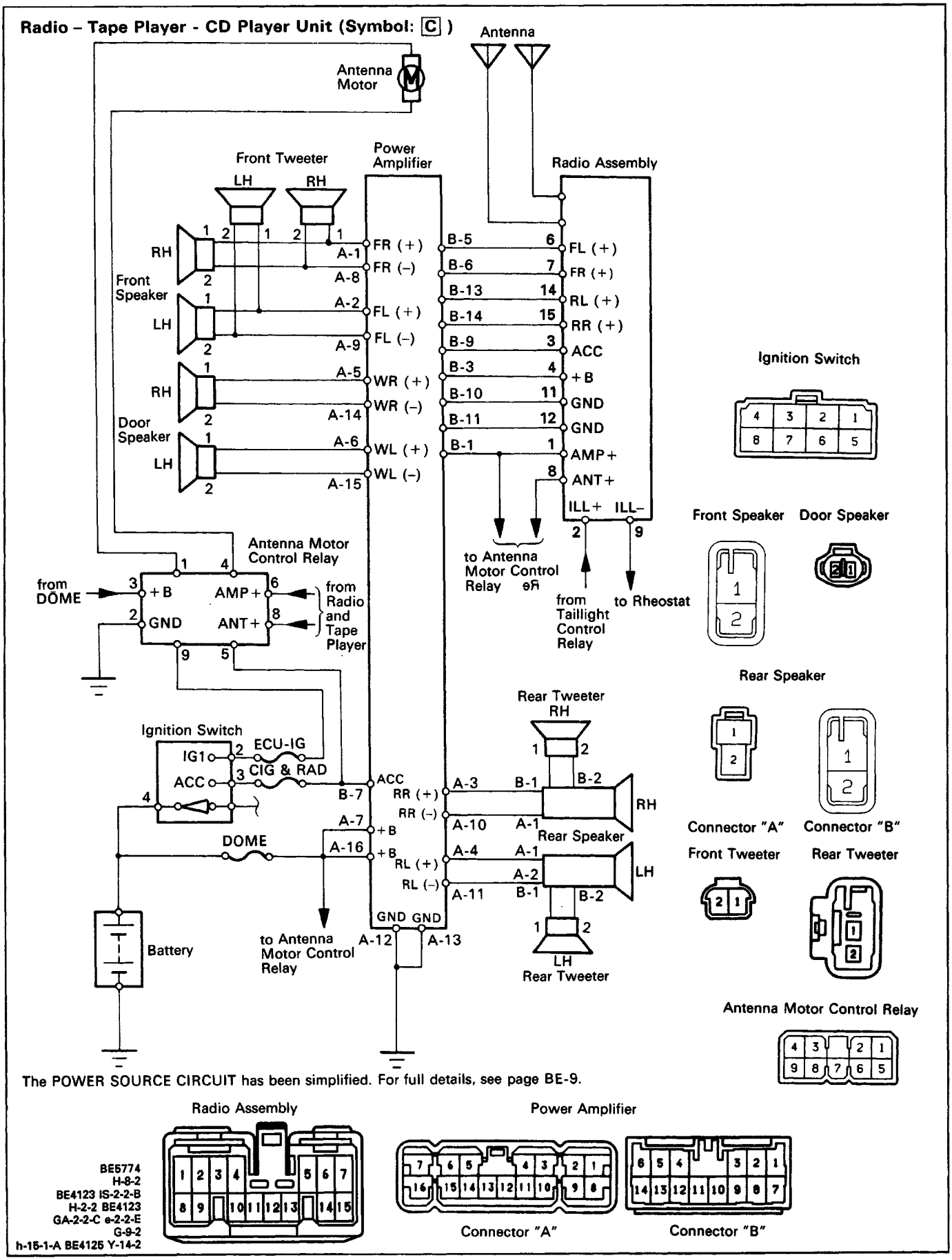


Coupe



BE5773
BE4121

Radio – Tape Player – CD Player Unit



The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

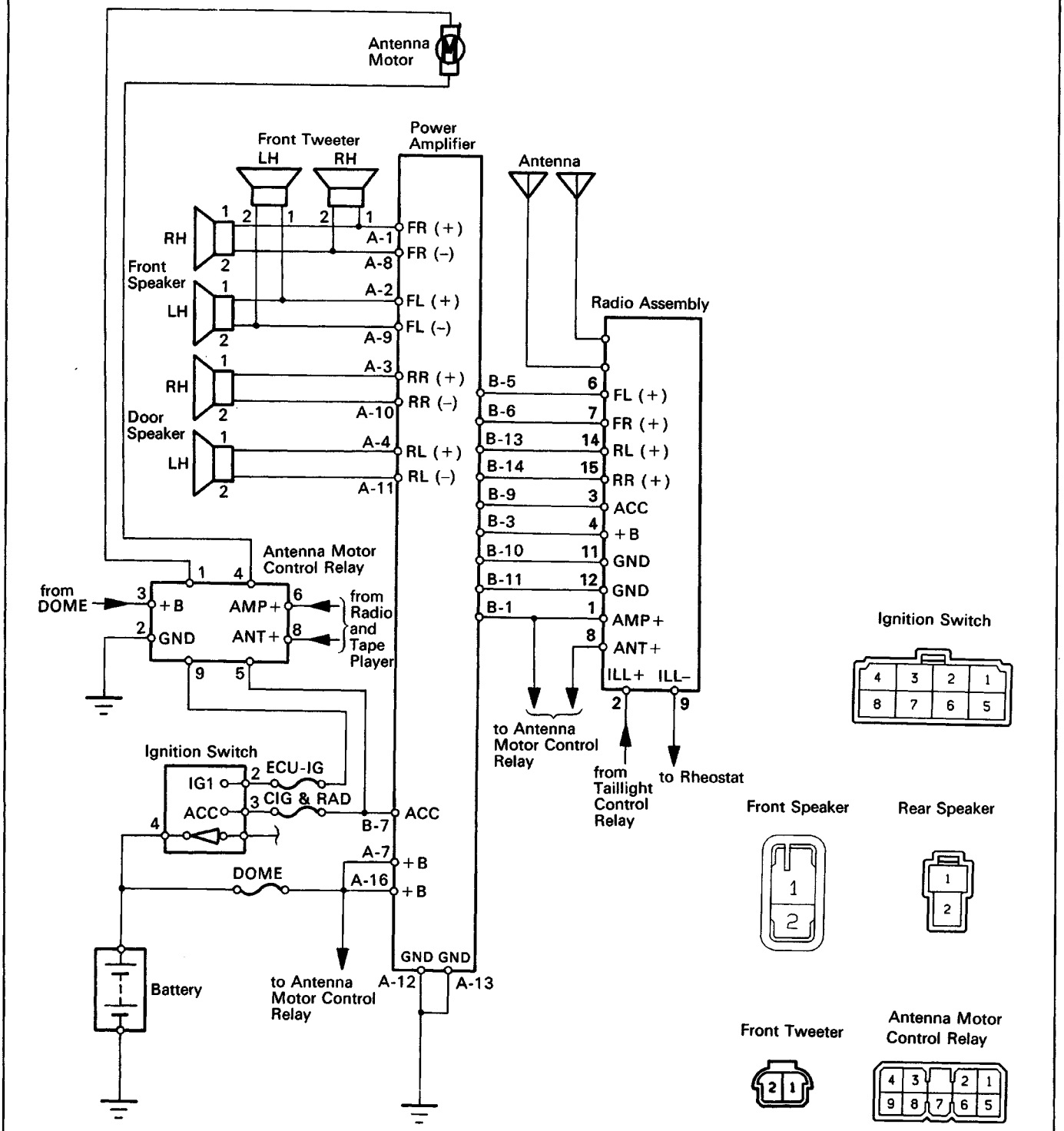
Radio Assembly

Power Amplifier

BE5774
H-8-2
BE4123 IS-2-2-B
H-2-2 BE4123
GA-2-2-C e-2-2-E
G-9-2
h-15-1-A BE4125 Y-14-2

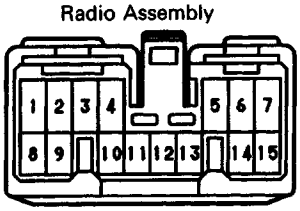
Radio – Tape Player Unit

Radio – Tape Player Unit (Symbol: U and S)

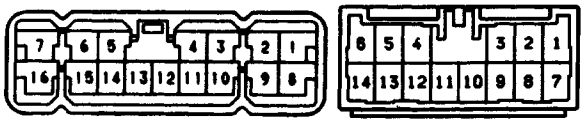


The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

Radio Assembly



Power



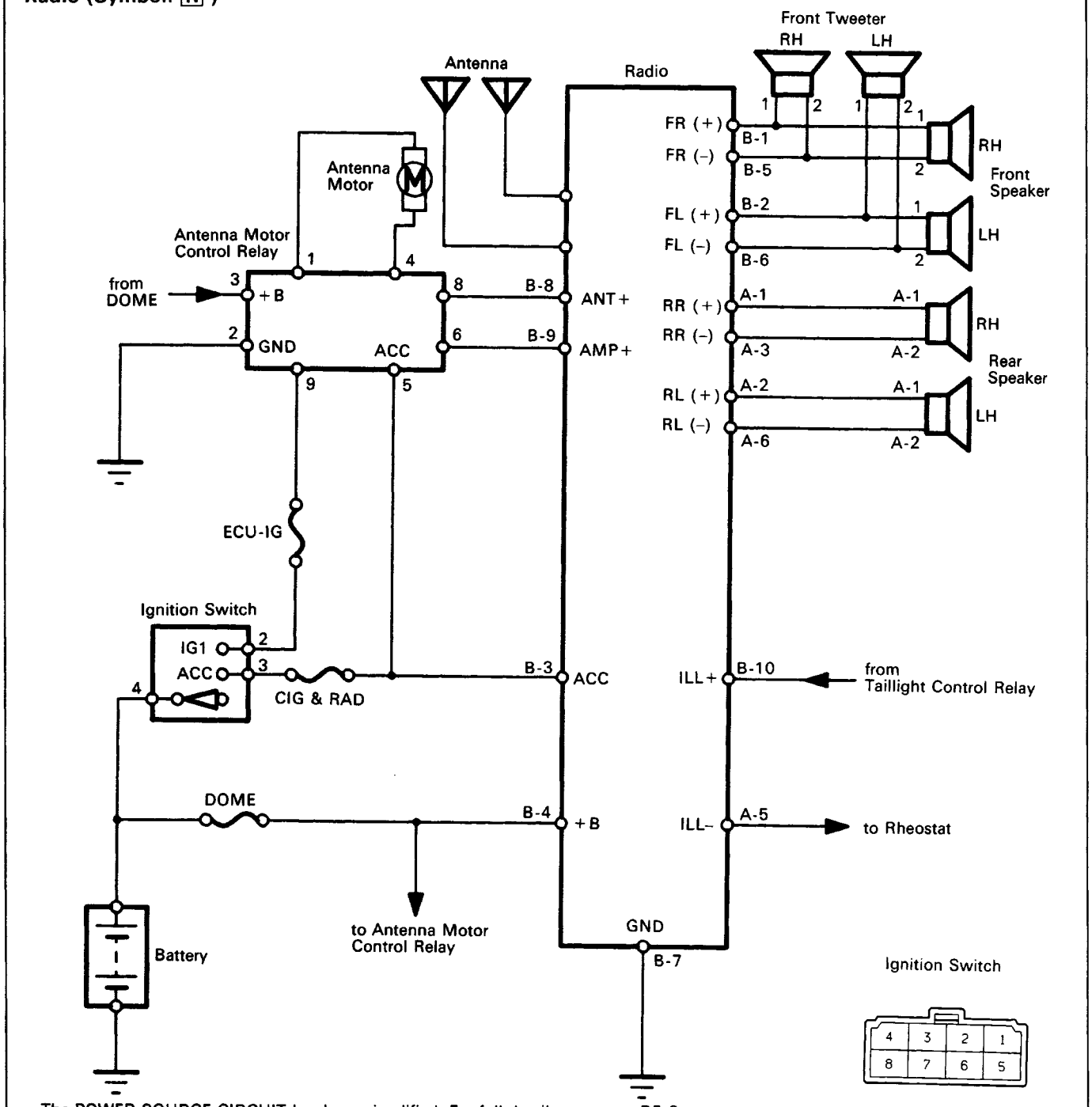
Connector "A" Connector "B"

BE5775
H-8-2
BE4123 H-2-2
GA-2-2-C G-9-2
h-15-1-A BE4125 Y-14-2

Wiring and Connector Diagrams

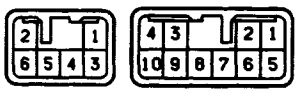
Radio

Radio (Symbol: R)



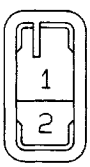
The POWER SOURCE CIRCUIT has been simplified. For full details, see page BE-9.

Radio or Radio Assembly

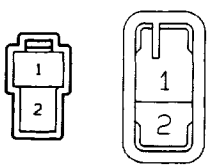


Connector "A" Connector "B"

Front Speaker



Rear Speaker

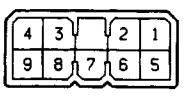


Connector "A" Connector "B"

Front Tweeter



Antenna Motor Control Relay



BE4122
H-8-2

S-6-2-E S-10-2-A BE4123 H-2-2 BE4123 GA-2-2-C G-9-2

System Description

RADIO WAVE BAND

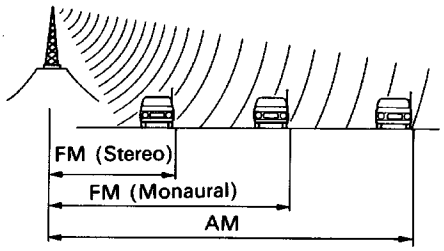
The radio wave bands used in radio broadcasting are as follows:

Frequency	30 kHz	300 kHz	3 MHz	30 MHz	300 MHz
Designation	LF	MF	HF	VHF	
Radio wave		AM ⟷		FM ⟷	
Modulation method	Amplitude modulation			Frequency modulation	

LF: Low Frequency MF: Medium Frequency HF: High Frequency VHF: Very High Frequency

SERVICE AREA

There is great difference in the size of the service area for AM, FM monaural, and FM stereo broadcasting. Thus it may happen that FM broadcast cannot be received even though AM comes in very clearly.
Not only does FM stereo have the smallest service area, but it also picks up static and other types of interference (”noise”) the most easily.



BE2818

RECEPTION PROBLEMS

Besides the problem of static, there are also the problems called ”fading”, ”multipath”, and ”fade out”. These problems are caused not by electrical noise but by the nature of the radio waves themselves.

Fading

Besides electrical interference, AM broadcasts are also susceptible to other types of interference, especially at night. This is because AM radio waves bounce off the ionosphere at night. These radio waves then interfere with the signals from the same transmitter that reach the vehicle’s antenna directly. This type of interference is called ”fading”.

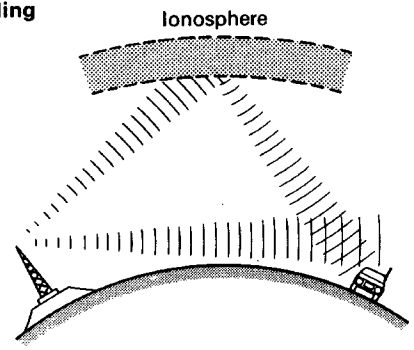
Multipath

One type of interference caused by the bouncing of radio waves off of obstructions is called ”multipath”. Multipath occurs when a signal from the broadcast transmitter antenna bounces off of buildings and mountains and interferes with the signal that is received directly.

Fade Out

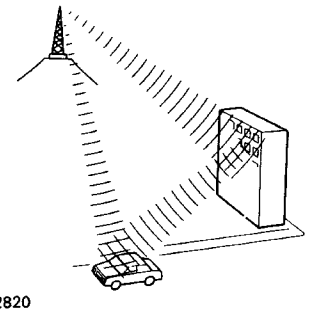
Because FM radio waves are of higher frequencies than AM radio waves, they bounce off of buildings, mountains, and other obstructions. For this reason, FM signals often seem to gradually disappear or fade away as the vehicle goes behind a building or other obstruction. This is called ”fade out”.

Fading

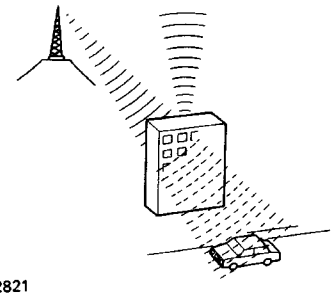


BE2819

Multipath


BE2820

Fade Out


BE2821

COMPACT DISC PLAYER

Compact Disc (hereafter called ”CD”) players use a laser beam pick–up to read the digital signals recorded on the CD and reproduce analog signals of the music, etc. There are 4.7 in. (12 cm) and 3.2 in. (8 cm) CD available.

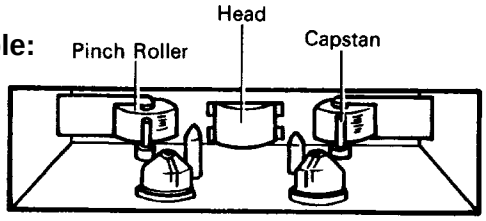
HINT: Never attempt to disassemble or oil any part of the player unit. Do not insert any object other than a disc into the slot.

NOTICE: CD players use invisible laser beam which could cause hazardous radiation exposure if directed. Be sure to operate the player correctly as instructed.

MAINTENANCE

(Tape Player)

Example:



C0192

Head Cleaning

(a) Raise the cassette door with your finger.
Next using a pencil or like object, push in the guide.

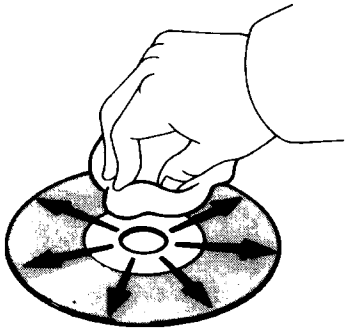
(b) Using a cleaning pen or cotton applicator soaked in cleaner, clean the head surface, pinch rollers and capstans.

(CD Player)

Disc Cleaning

If the Disc gets dirty, clean the Disc by wiping the surfaces from the center to outside in the radial directions with a soft cloth.

NOTICE: Do not use a conventional record cleaner or anti–static record preservative.

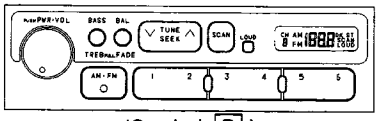


BE4331

AUDIO TYPES

Example:

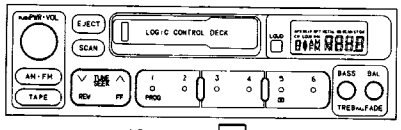
Radio w/o Tape Player



(Symbol: R)

N02887

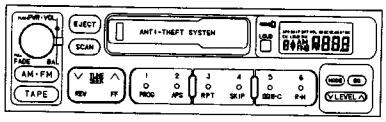
Radio – Type Player Unit



(Symbol: U)

N02888

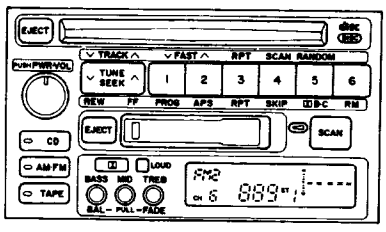
Radio – Tape Player (Separate)



(Symbol: S)

N02889

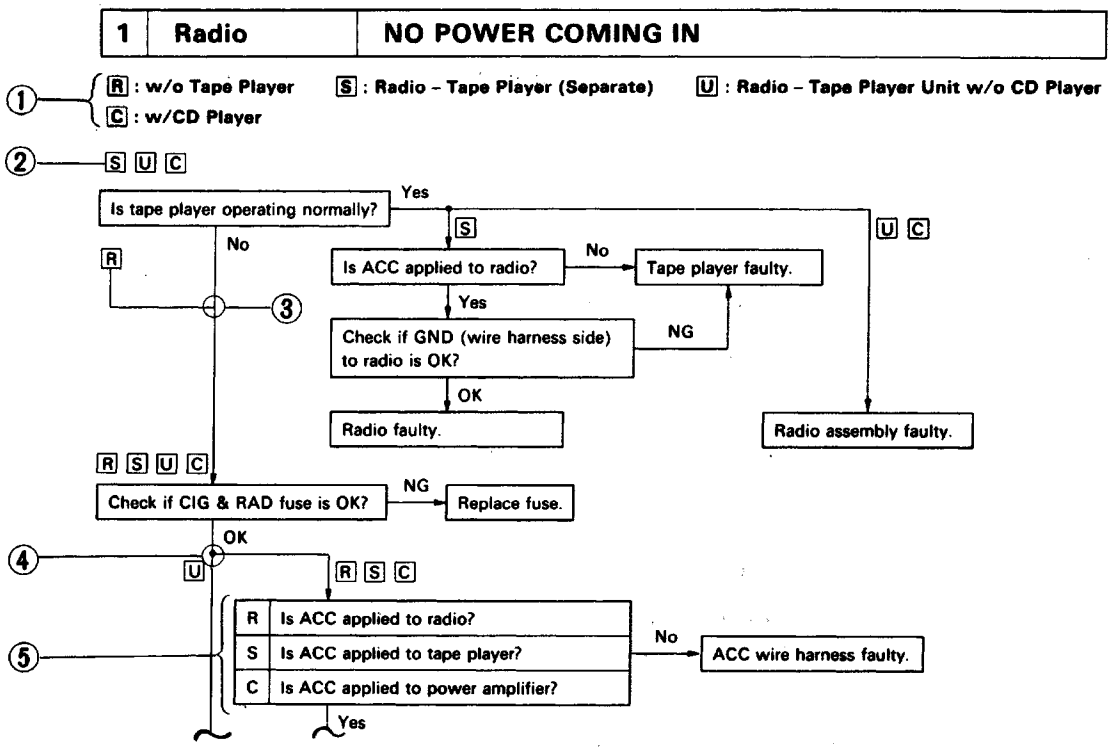
Radio – Tape Player – CD Player Unit



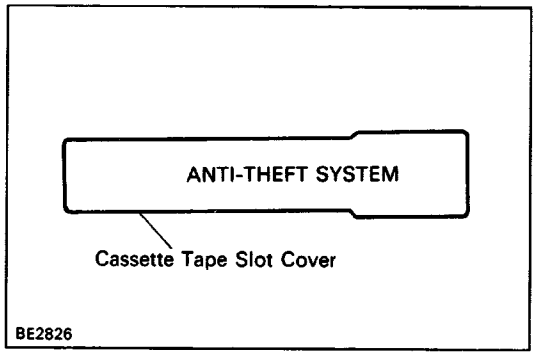
(Symbol: C)

BE5779

HOW TO USE DIAGNOSTIC CHART



(1) Audio system type and symbol used.
HINT: Confirm the applicable type of audio system. (See page BE–138).
(2) Symbol for type of audio system the question applies to.
HINT: If the audio system type is not applicable, proceed to next question below.
(3) Junction without black circle.
HINT: Proceed to next question below.
(4) Junction with black circle.
HINT: Proceed to question for applicable audio system type.
(5) HINT: Select question for applicable audio system type.



Anti–Theft System

The anti–theft system is only provided for audio systems equipped with an Acoustic Flavor function.
HINT: The words ”ANTI–THEFT SYSTEM” are displayed on the cassette tape slot cover.
For operation instructions for the anti–theft system, please consult the audio system section in the owner’s Manual.

1. SETTING SYSTEM

The system is in operation once the customer has pushed the required buttons and entered the customer–selected 3–digit ID number.
(Refer to the Owner’s Manual section, ”SETTING THE ANTI–THEFT SYSTEM”).
H I NT:

- When the audio system is shipped the ID number has not been input, so the anti–theft system is not in operation.
- If the I D number has not been input, the audio system remains the same as a normal audio system.

2. ANTI–THEFT SYSTEM OPERATION

If the normal electrical power source (connector or battery terminal) is cut off, the audio system becomes inoperable, even if the power supply resumes.

3. CANCELLING SYSTEM

The I D number chosen by the customer is input to cancel the anti–theft system.
(Refer to the Owner’s Manual, ”IF THE SYSTEM IS ACTIVATED”)
HINT: To change or cancel the ID number, please refer to the Owner’s Manual, ”CANCELLING THE SYSTEM”.

Troubleshooting

NOTICE: When replacing the internal mechanism (computer party of the audio system, be careful that no part of your body or clothing comes in contact with the terminals of the leads from the IC, etc. of the replacement part (spare part).

HINTS: This inspection procedure is a simple troubleshooting which should be carried out on the vehicle during system operation and was prepared on the assumption of system component troubles (except for the wires and connectors, etc.).

Always inspect the trouble taking the following items into consideration.

- Open or short circuit of the wire harness
- Connector or terminal connection fault
- For audio systems with anti–theft system, troubleshooting items marked (*) indicate that ”Troubleshooting for ANTI–THEFT SYSTEM” should be carried out first.

Problem		No.
Radio	No power coming in.	*1
	Power coming in, but radio not operating.	*2
	Noise present, but AM – FM not operating.	3
	Either speaker does not work.	4
	Either AM or FM does not work.	5
	Reception poor (Volume faint).	5
	Few preset tuning bands.	5
	Sound quality poor.	6
	Cannot set station select button.	7
	Preset memory disappears.	7
Tape Player	Cassette tape cannot be inserted.	8
	Cassette tape inserts, but no power.	*9
	Power coming in, but tape player not operating.	10
	Either speaker does not work.	11
	Sound quality poor (Volume faint).	12
	Tape jammed, malfunction with tape speed or auto–reverse..	13
	APS, SKIP, RPT buttons not operating.	14
	Cassette tape will not eject.	*15
CD Player	CD cannot be inserted.	16
	CD inserts, but no power.	17
	Power coming in, but CD player not operating.	18
	Sound jumps. ,	19
	Sound quality poor (Volume faint).	20
	Either speaker does not work.	21
	CD will not eject.	22
Antenna	Antenna – related.	23
Noise	Noise produced by vibration or shock while driving.	24
	Noise produced when engine starts.	25

Troubleshooting for ANTI–THEFT SYSTEM

Turn ignition key from LOCK position to ACC position.

Display A:
ID Number is set.

"SEC" display disappears after 1 seconds.

No

Yes

Radio switch ON.

OK

Normal operation.

NG

Cancel ID number, refer to each malfunction item.

Display E:
ANTI–THEFT SYSTEM operation condition (ID number input error 10 times or more.)

Take to designated radio service station.

Display B

Radio switch ON.

Display B

Refer to each malfunction item.

Display D

Normal operation.

ANTI–THEFT SYSTEM operation condition.
(ID number input error 9 times or less.)
Input ID number to cancel ANTI–THEFT SYSTEM, and check display.

Display A ± B

Radio switch ON.

Display D

ANTI–THEFT SYSTEM cancelled check audio system again.

OK

Normal operation.

NG

Cancel ID number, refer to each malfunction item.

Display B

Refer to each malfunction item.

Display E

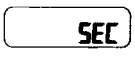
Take to designated radio service station.

Display C –i A

ANTI–THEFT SYSTEM not cancelled. (ID number input error 9 times or less.)

(Liquid Crystal Display (LCD) for Audio System)

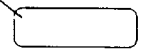
Display "A"



BE2814

Display "B"

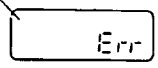
Blank, No Illumination



BE2815

Display "C"

Error Times



BE5776

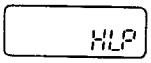
Display "D" Example:

Radio Display



BE2817

Display "E"



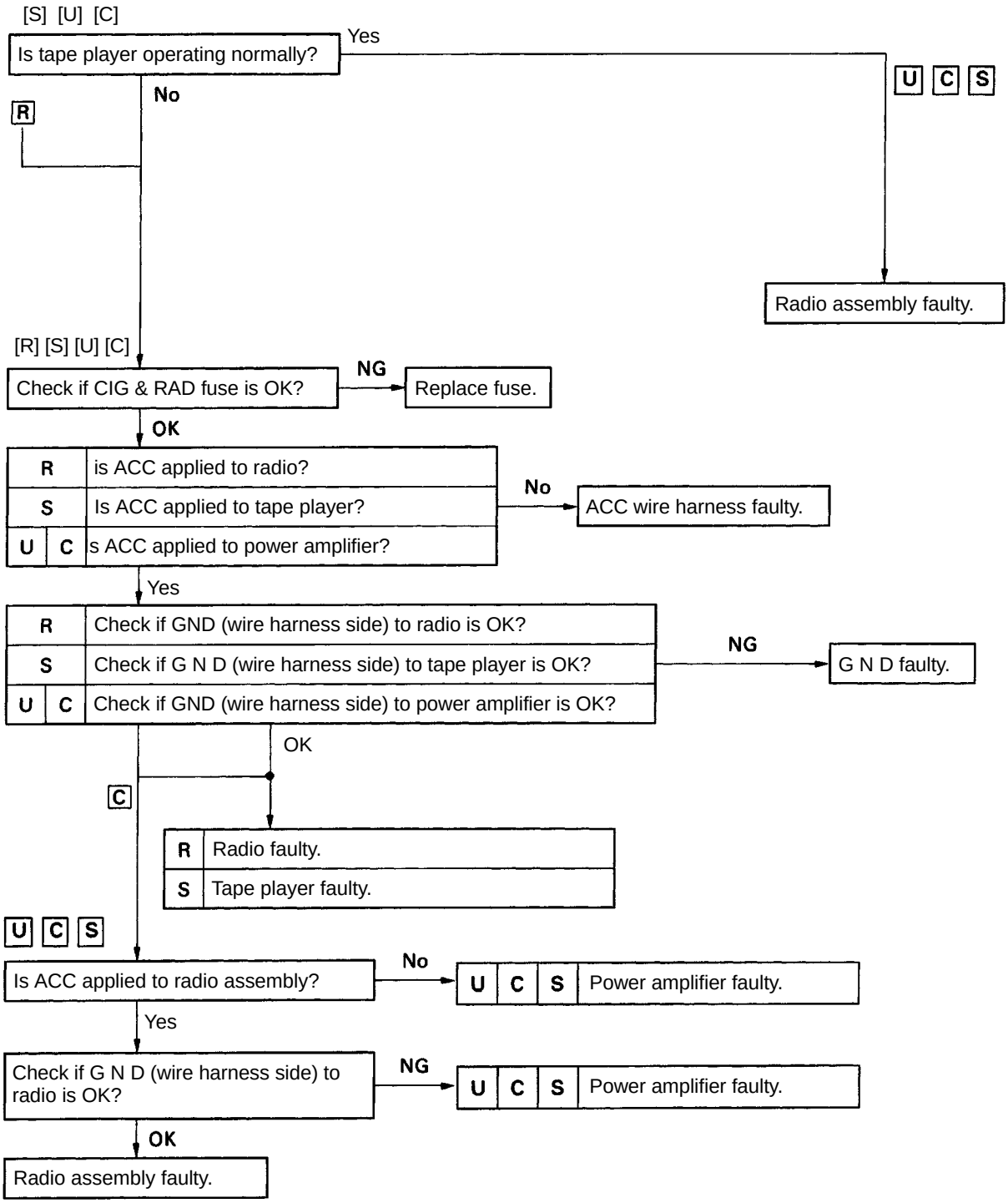
BE5777

HINT;

- Refer to Owner's Manual for operation details of ANTI–THEFT SYSTEM.
- When the ID number has been cancelled, reset the same number after completing the operation, or inform the customer that it has been cancelled.

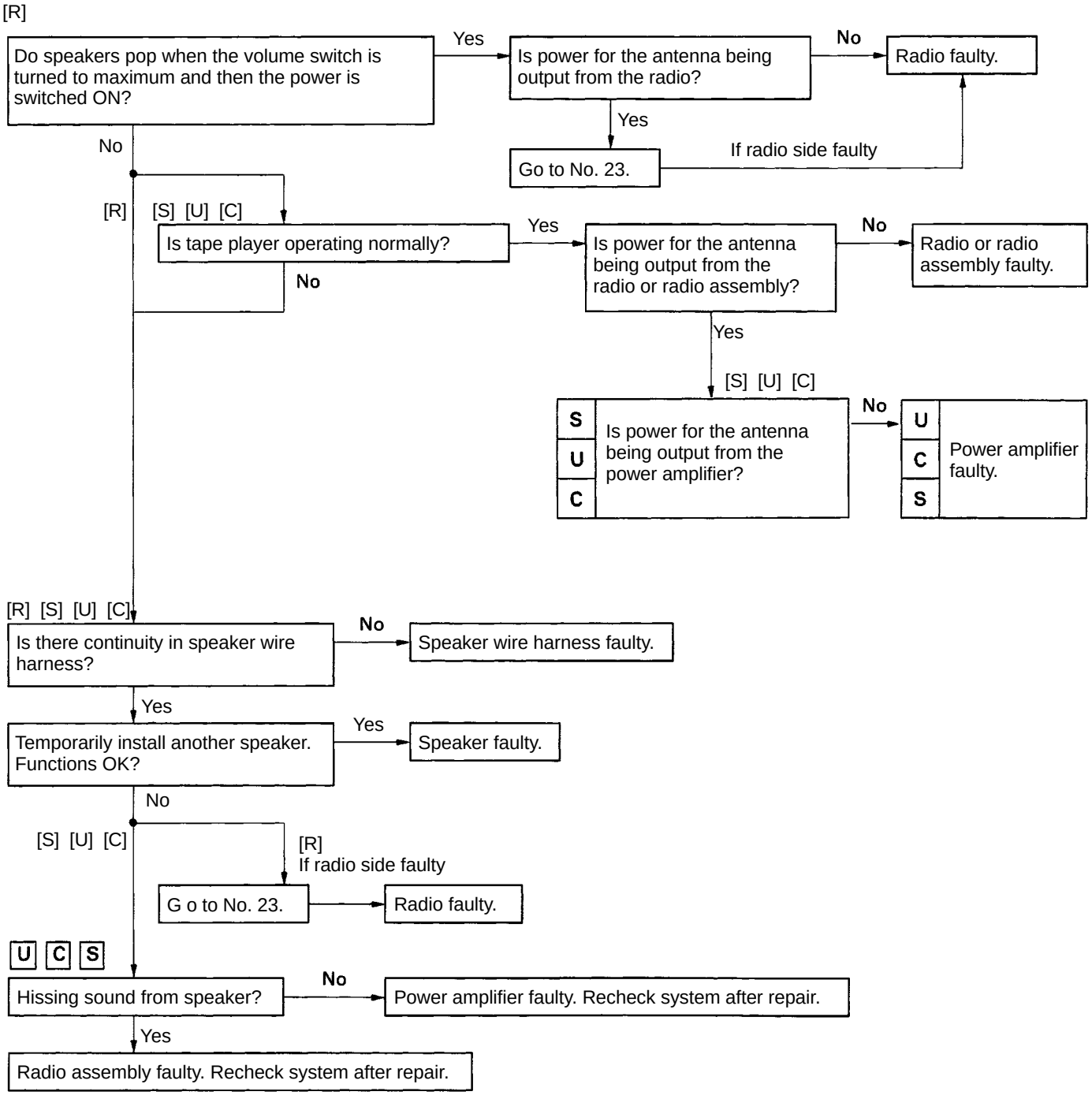
1 Radio — NO POWER COMING IN

[R] : **w/o Tape Player** [S] : **Radio – Tape Player (Separate)** [U] : **Radio – Tape Player Unit**
[C] : **Radio – Tape Player – CD Player Unit**



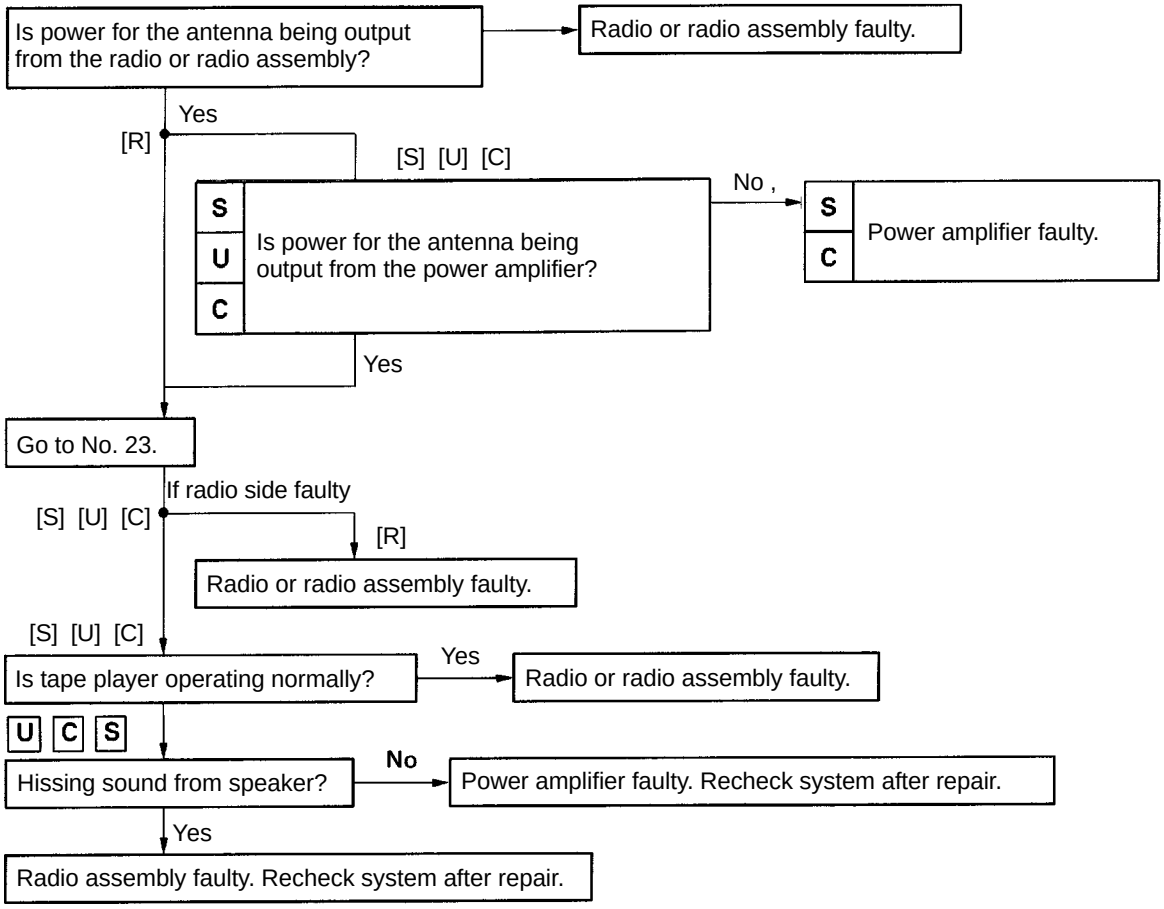
2 Radio — POWER COMING IN, BUT RADIO NOT OPERATING

[R] : **w/o Tape Player** [S] : **Radio – Tape Player** [U] : **Radio – Tape Player Unit**
[C] : **Radio – Tape Player – CD Player Unit**



3	Radio	NOISE PRESENT, BUT AM–FM NOT OPERATING

[R] : **w/o Tape Player** [S] : **Radio –Tape Player**
[C] : **Radio – Tape Player – CD Player Unit**
[U] : **Radio – Tape Player Unit**



4 Radio — EITHER SPEAKER DOES NOT WORK

[R] : **w/o Tape Player** [S] : **Radio – Tape Player** [U] : **Radio – Tape Player Unit**
[C] : **Radio – Tape Player – CD Player Unit**

[S] [U] [C]

Is tape player operating normally?
- Yes → Radio or radio assembly faulty.
- NO

[R] [S] [U] [C]

Is hiss produced by non–functioning speaker?
- Yes →
  - R: Radio faulty.
  - S, U: Radio assembly faulty.
  - C: Radio assembly faulty. Recheck system after repair.
- No

Is there continuity in speaker wire harness?
- No → Speaker wire harness faulty.
- Yes

Temporarily install another speaker. Functions OK?
- Yes → Speaker faulty.
- No →
  - R: Radio faulty.
  - S, U: Radio assembly faulty.
  - C: Radio amplifier faulty. Recheck system after repair.

5 Radio — EITHER AM OR FM DOES NOT WORK, RECEPTION POOR (VOLUME FAINT), FEW PRESET TUNING BANDS

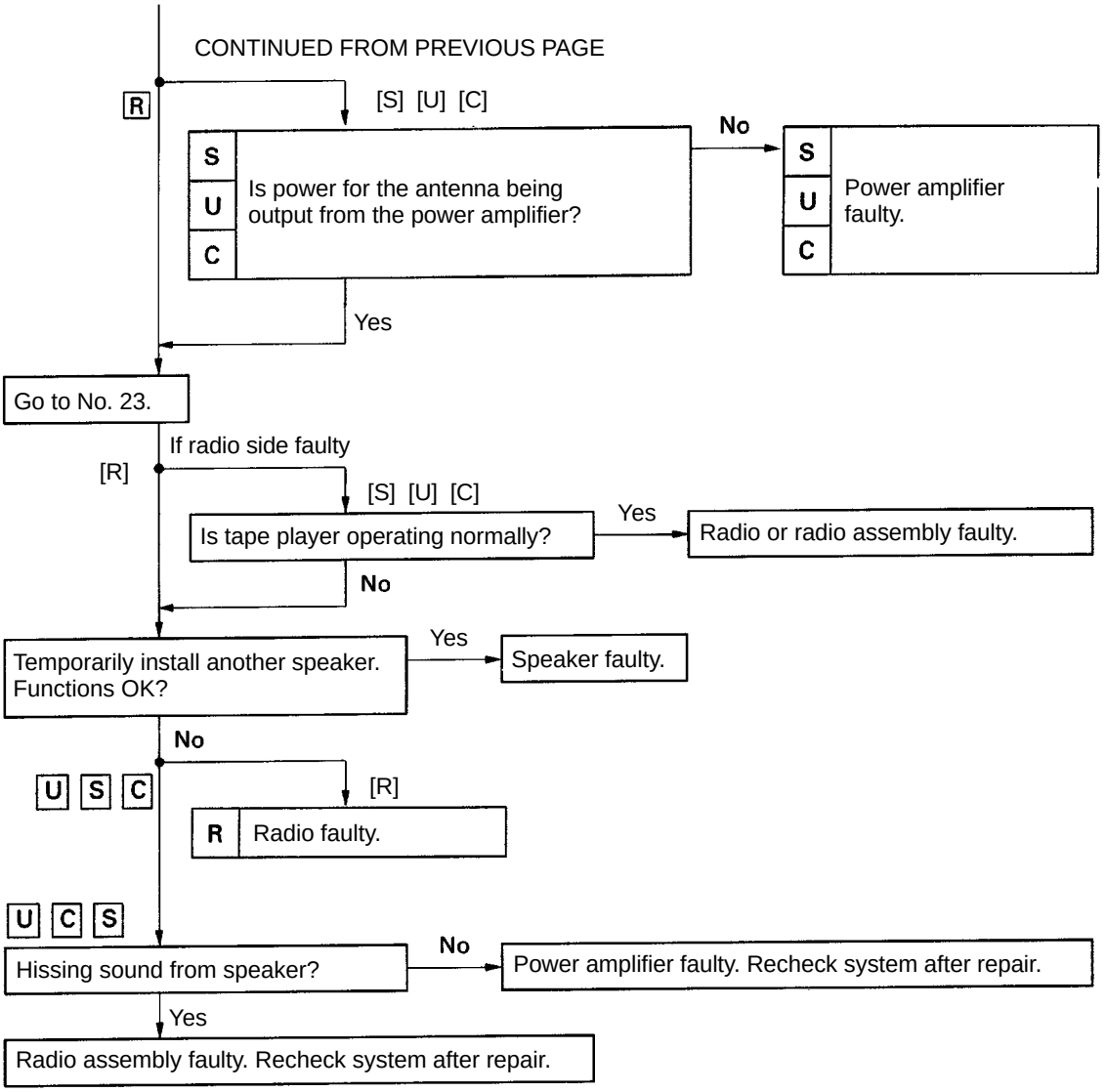
[R] : **w/o Tape Player** [S] : **Radio – Tape Player** [U] : **Radio – Tape Player Unit**
[C] : **Radio – Tape Player – CD Player Unit**

Problem with radio wave signals or location? (See page BE–123)
- Yes → Poor signals, poor location.
- No

Are both AM and FM defective?
- No → Radio or radio assembly faulty.
- Yes

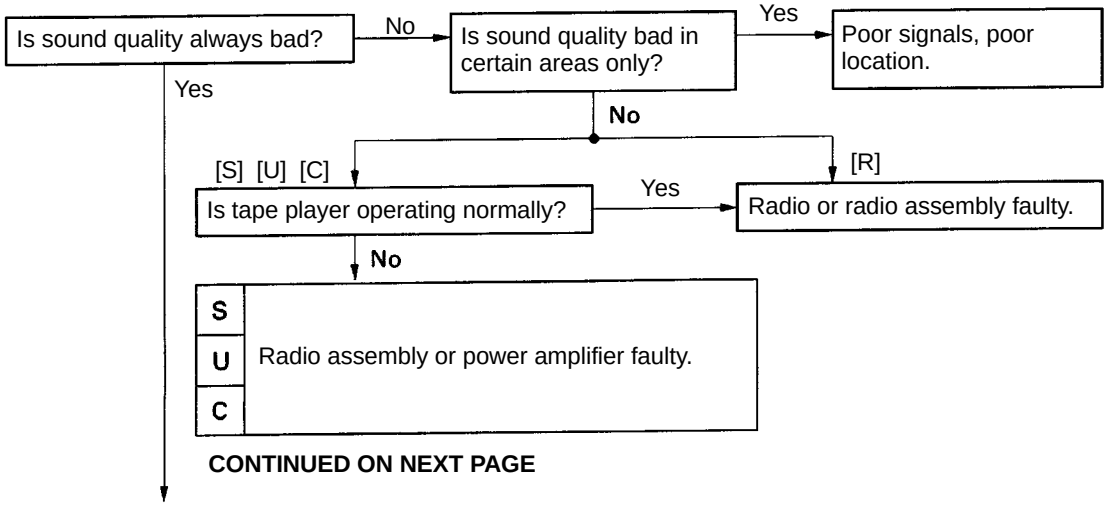
Is power for the antenna being output from the radio or radio assembly?
- No → Radio or radio assembly faulty.
- Yes

CONTINUED ON NEXT PAGE

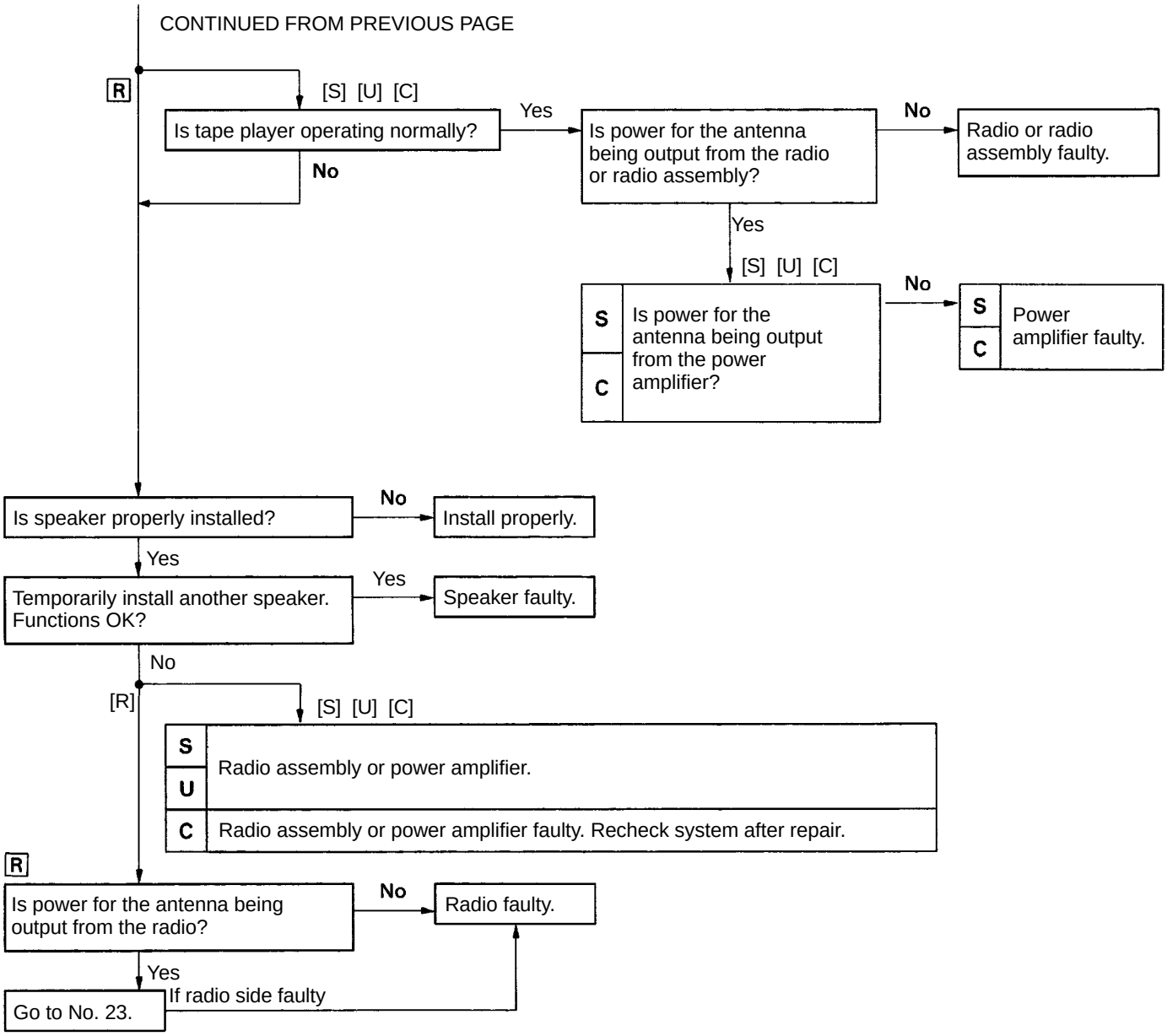


6 Radio SOUND QUALITY POOR

[R] : **w/o Tape Player** [S] : **Radio – Tape Player**
[U] : **Radio – Tape Player Unit**
[C] : **Radio – Tape Player – CD Player Unit**

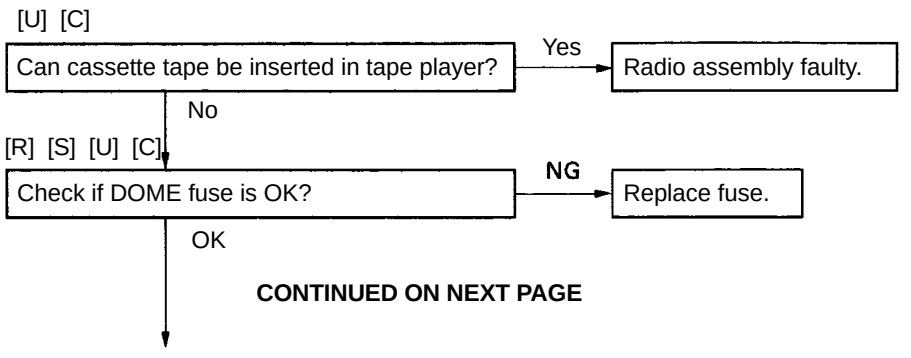


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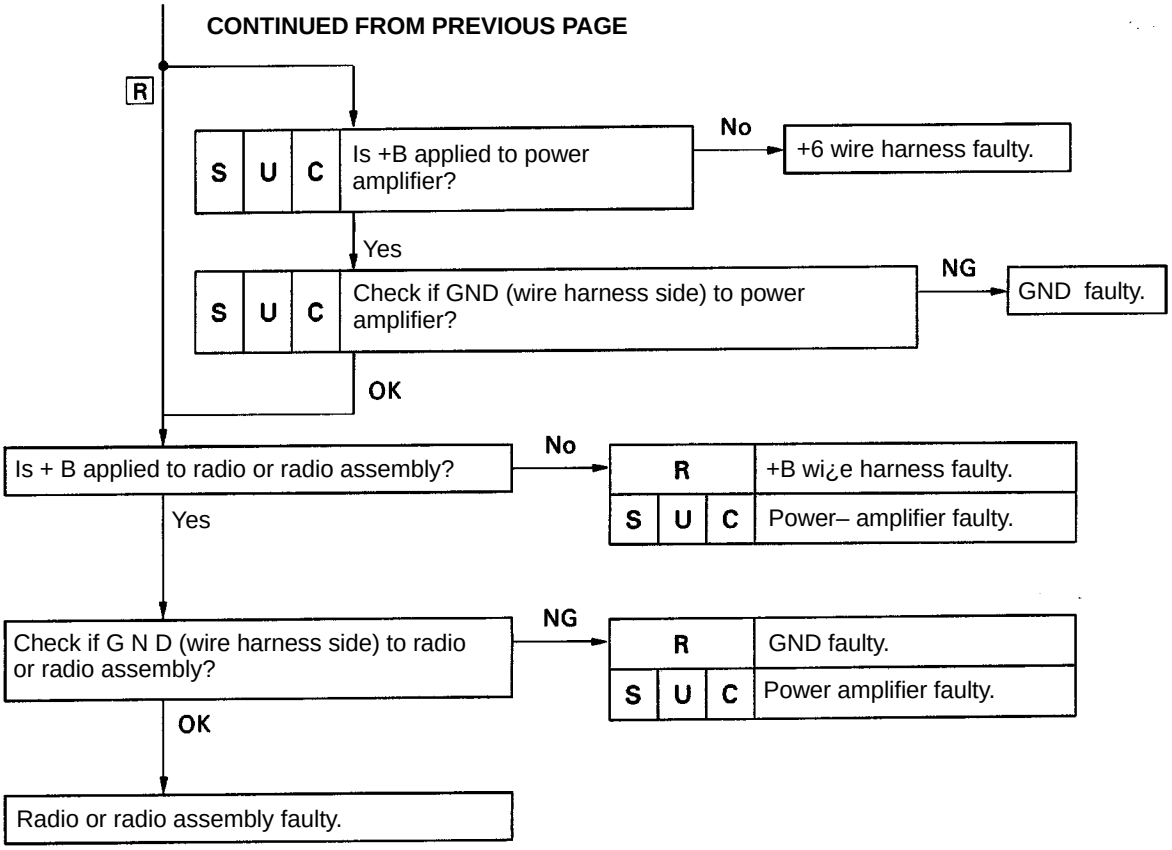


7 Radio — CANNOT SET STATION SELECT BUTTON, PRESET MEMORY DISAPPEARS

[R] : **w/o Tape Player** [S]: **Radio – Tape Player** [U] : **Radio – Tape Player Unit**
[C] : **Radio – Tape Player – CD Player**

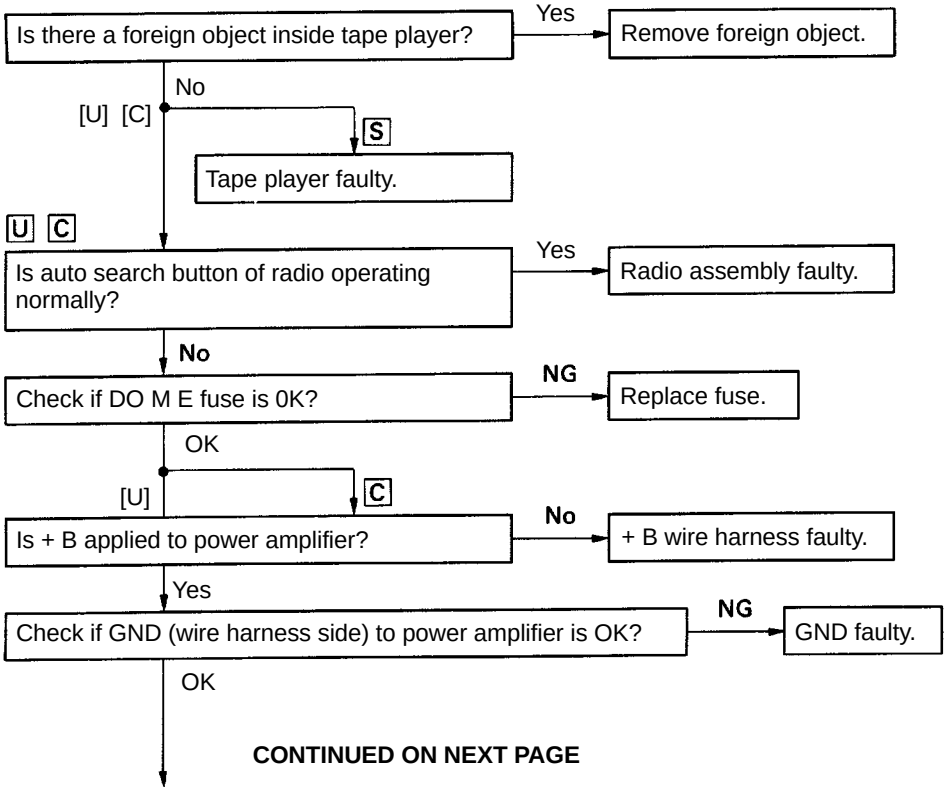


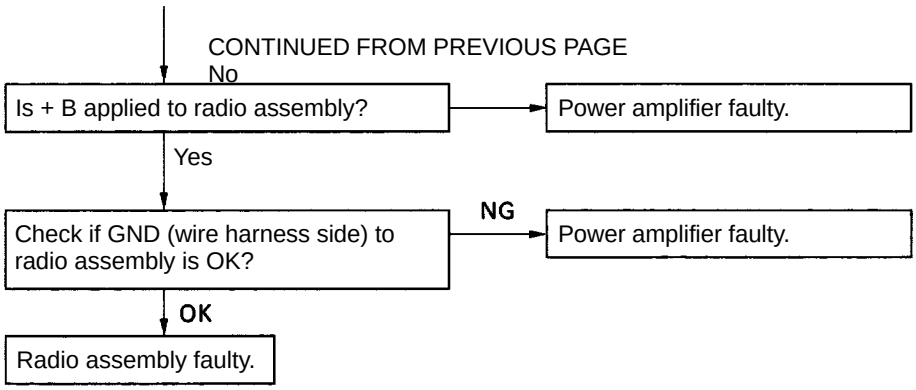
CONTINUED ON NEXT PAGE



8 Tape Player CASSETTE TAPE CANNOT BE INSERTED

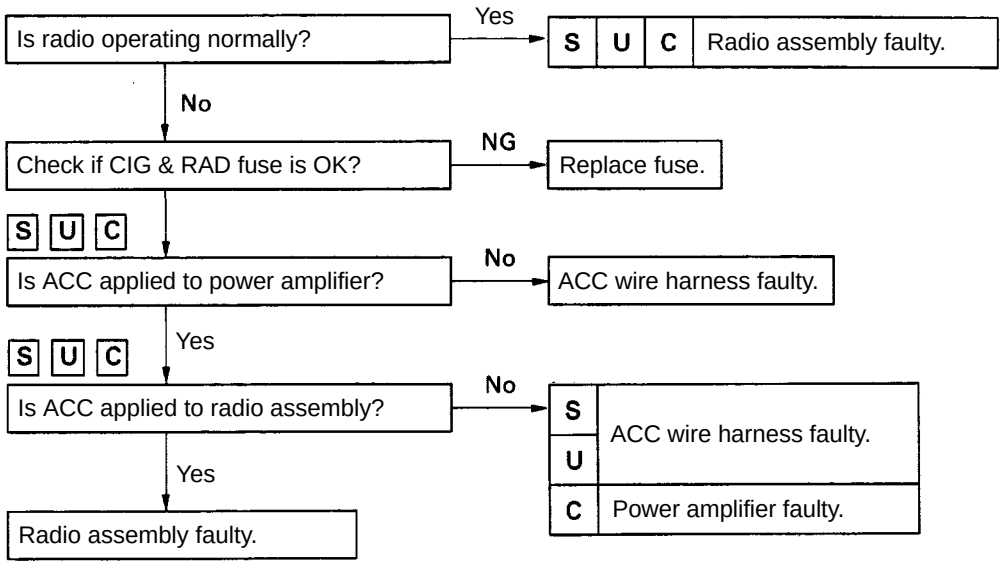
[S] : **Radio – Tape Player** [U] : **Radio – Tape Player Unit**
[C] : **Radio – Tape Player – CD Player**





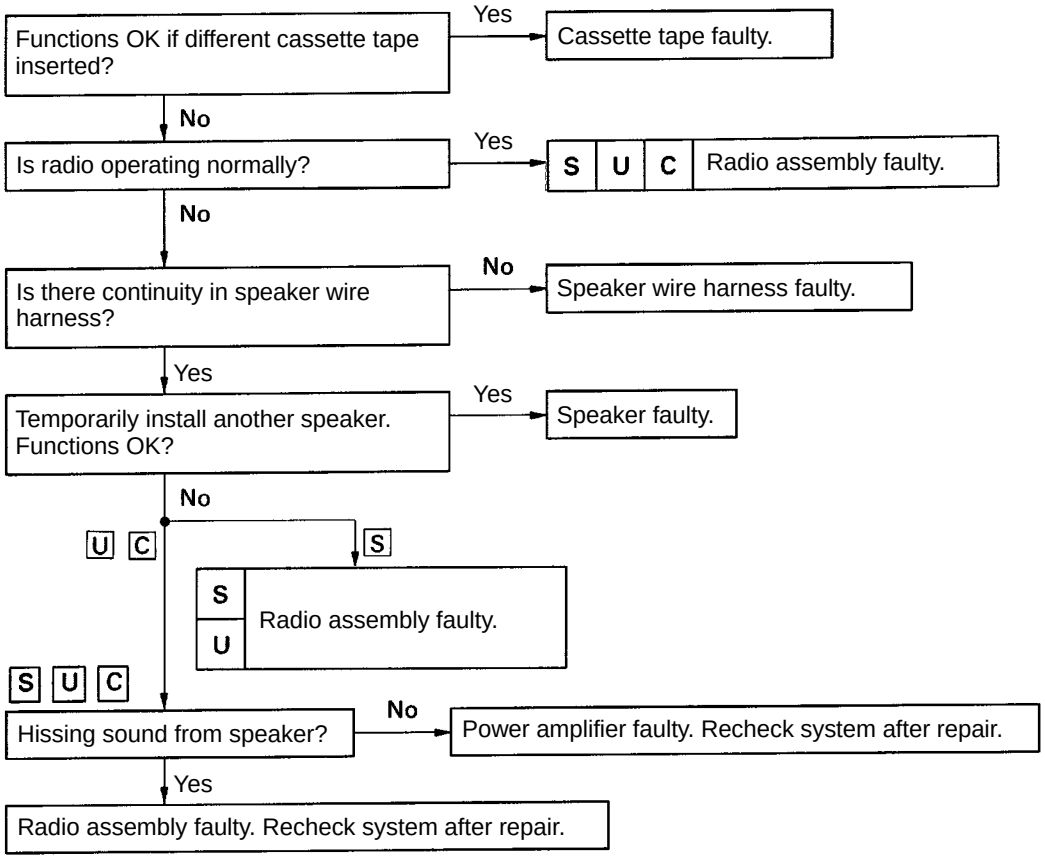
9 Tape Player CASSETTE TAPE INSERTS, BUT NO POWER

[S] : **Radio –Tape Player** [U] : **Radio – Tape Player Unit**
[C] : **Radio – Tape Player – CD Player Unit**



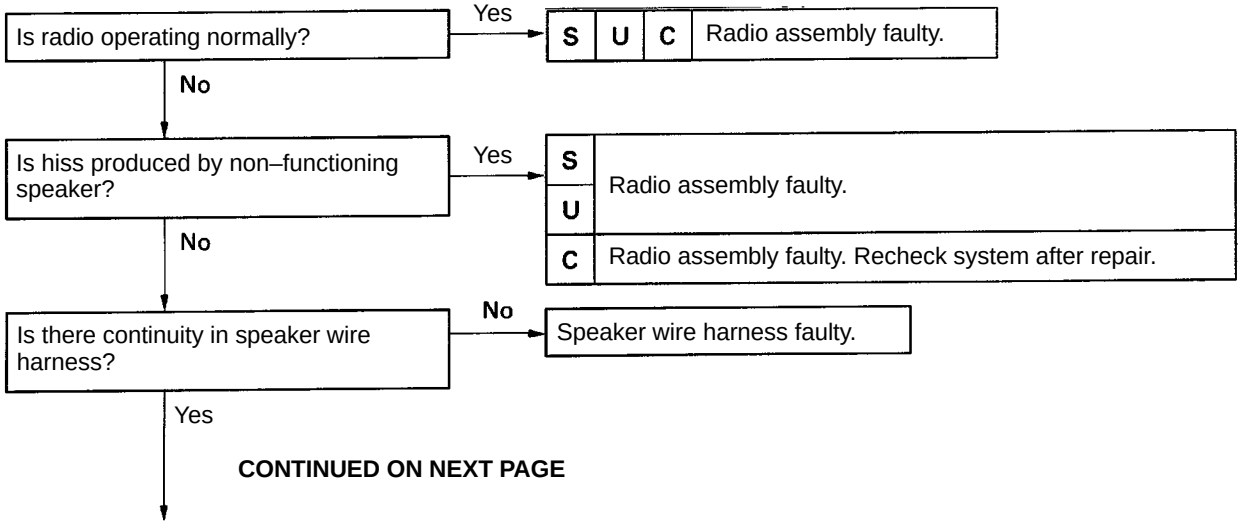
10 Tape Player — POWER COMING IN, BUT TAPE PLAYER NOT OPERATING

[S] : **Radio – Tape Player** [U] : **Radio – Tape Player Unit**
[C] : **Radio – Tape Player – CD Player Unit**



11 Tape Player — EITHER SPEAKER DOES NOT WORK

[S] : **Radio – Tape Player** [U] : **Radio – Tape Player Unit**
[C] : **Radio – Tape Player – CD Player Unit**



CONTINUED ON NEXT PAGE

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Temporarily install another speaker. Functions OK?
- Yes → Speaker faulty.
- No →

S	Tape player faulty.
U	Radio assembly faulty.
C	Power amplifier faulty. Recheck system after repair.

12 Tape Player SOUND QUALITY POOR (VOLUME PAINT)

[S] : **Radio –Tape Player** [U] : **Radio – Tape Player Unit**
[C] : **Radio – Tape Player – CD Player Unit**

Function 0K if different cassette tape inserted?
- Yes → Cassette tape faulty.
- No →

Operates normally after cleaning the heads? (See page BE–139)
- Yes → Head dirty.
- No →

Is radio operating normally?
- Yes → S U C Radio assembly faulty.
- No →

Is speaker properly installed?
- No → Install properly.
- Yes →

Temporarily install another speaker. Functions OK?
- Yes → Speaker faulty.
- No →

S U	Radio assembly faulty.
C	Radio assembly or power amplifier faulty.

13 Tape Player — TAPE JAMMED, MALFUNCTION WITH TAPE SPEED OR AUTO–REVERSE

[S] : **Radio – Tape Player** [U] : **Radio – Tape Player Unit**
[C] : **Radio – Tape Player – CD Player Unit**

Functions OK if different tape (less than 120 mins.) is inserted?
- Yes → Cassette tape faulty.
- No ↓

Is there a foreign object inside tape player?
- Yes → Remove foreign object.
- No ↓

Operates normally after cleaning the heads? (See page BE–139)
- Yes → Head dirty.
- No ↓

S U C Radio assembly faulty.

14 Tape Player — APS, SKIP, RPT BUTTONS NOT OPERATING

Functions 0 K if different cassette tape inserted?
- No → Radio assembly faulty.
- Yes ↓

Cassette tape faulty. (Less than 3 secs. of silence between songs (APS, RPT). Less than 15 secs. of silence (SKIP).)

15 Tape Player — CASSETTE TAPE WILL NOT EJECT

[S] : **Radio – Tape Player** [U] : **Radio – Tape Player Unit**
[C] : **Radio – Tape Player – CD Player Unit**

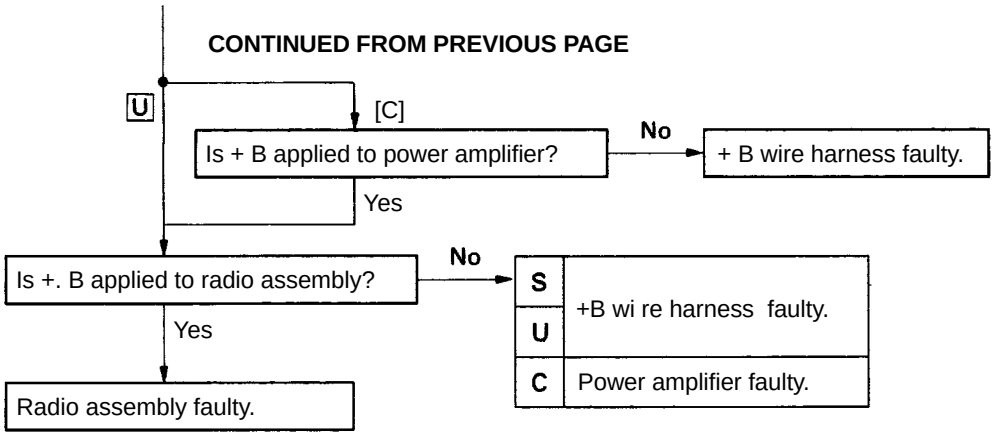
Is tape player operating normally?
- No → Cassette tape jammed.

S U C

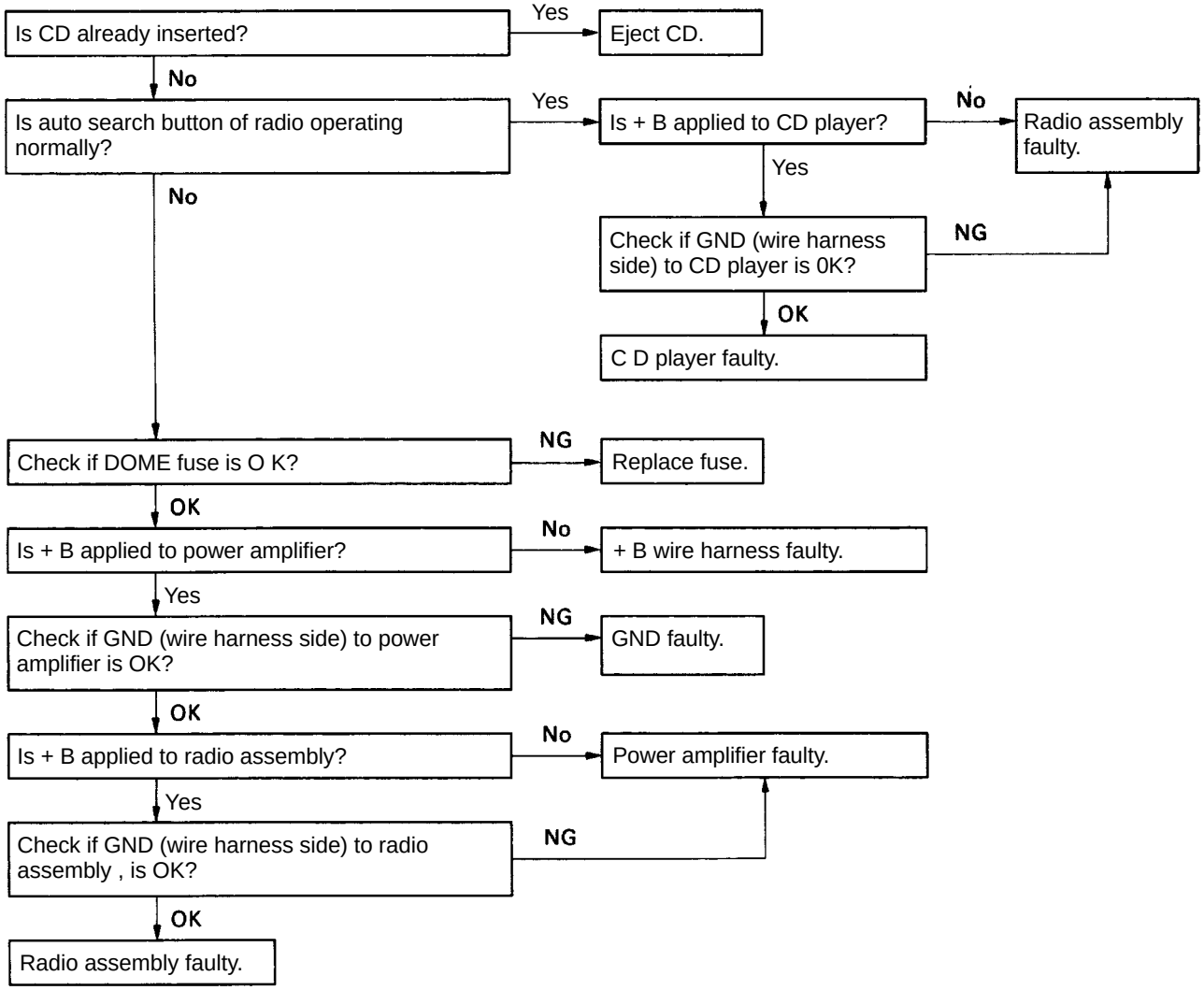
Is auto search button of radio operating normally?
- Yes → Radio assembly faulty.
- No ↓

Check if DOME fuse is OK?
- NG → Replace fuse.
- OK ↓

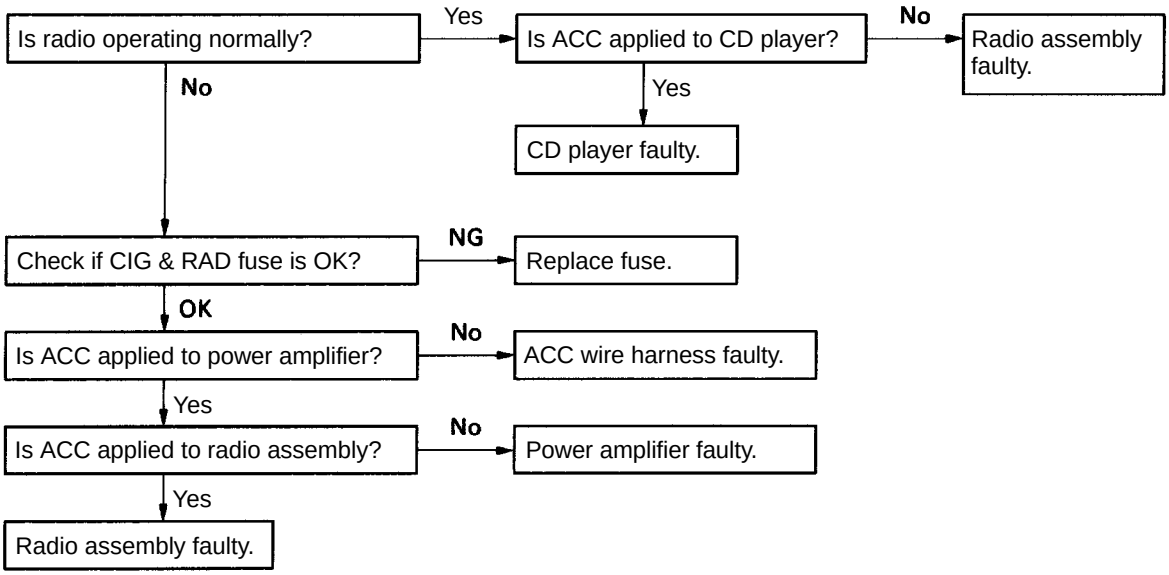
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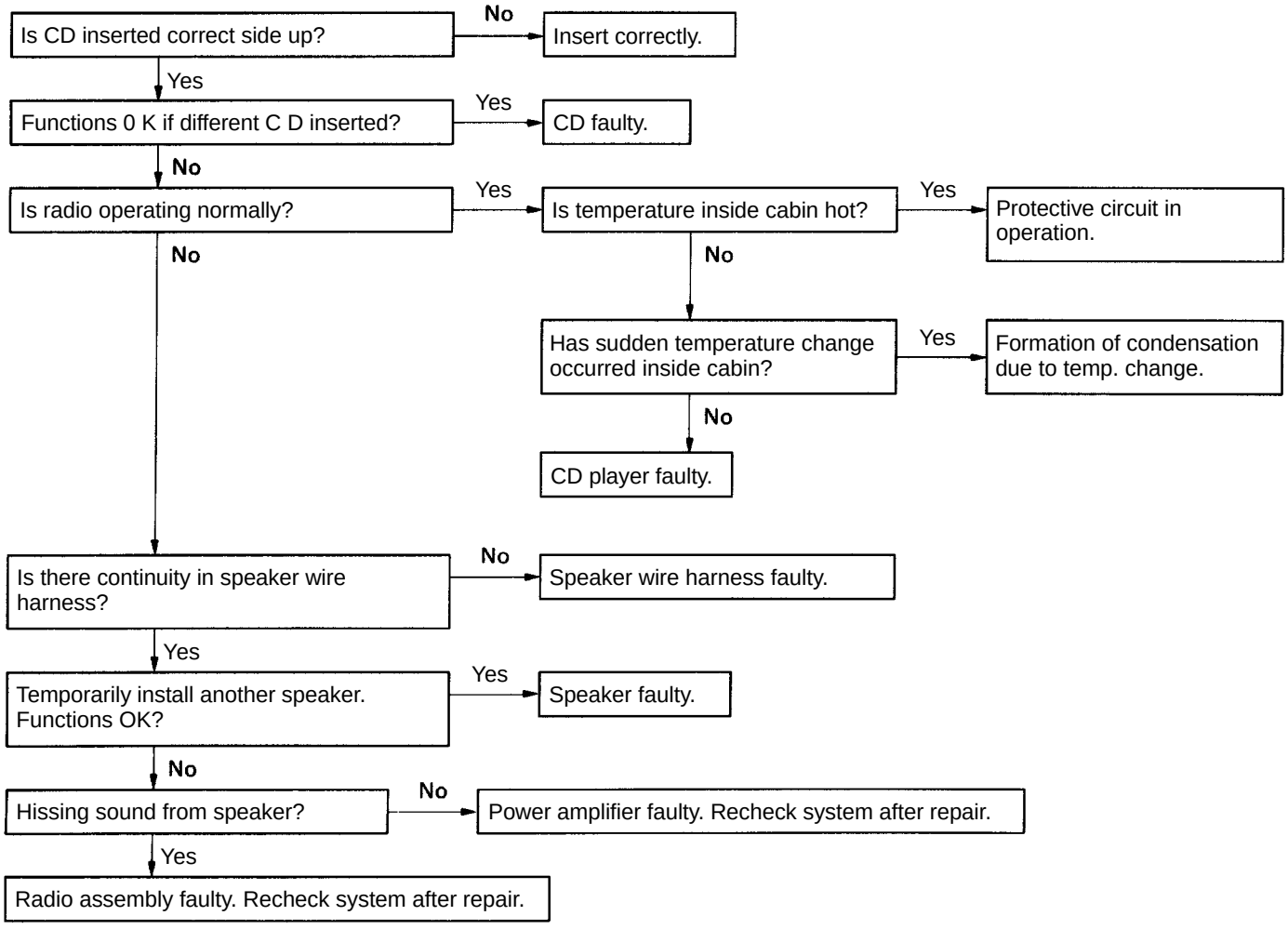
16 CD Player CD CANNOT BE INSERTED



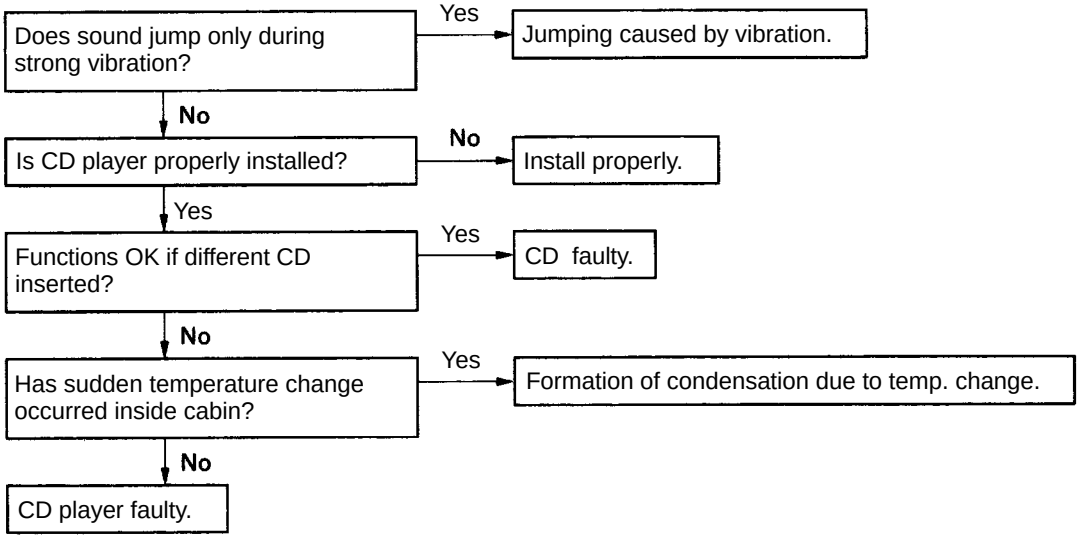
17 CD Player CD INSERTS, BUT NO POWER



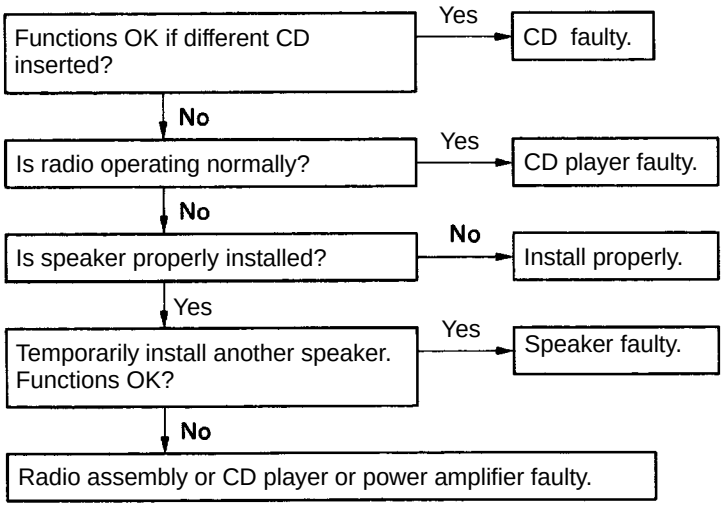
18 CD Player POWER COMING IN, BUT CD PLAYER NOT OPERATING



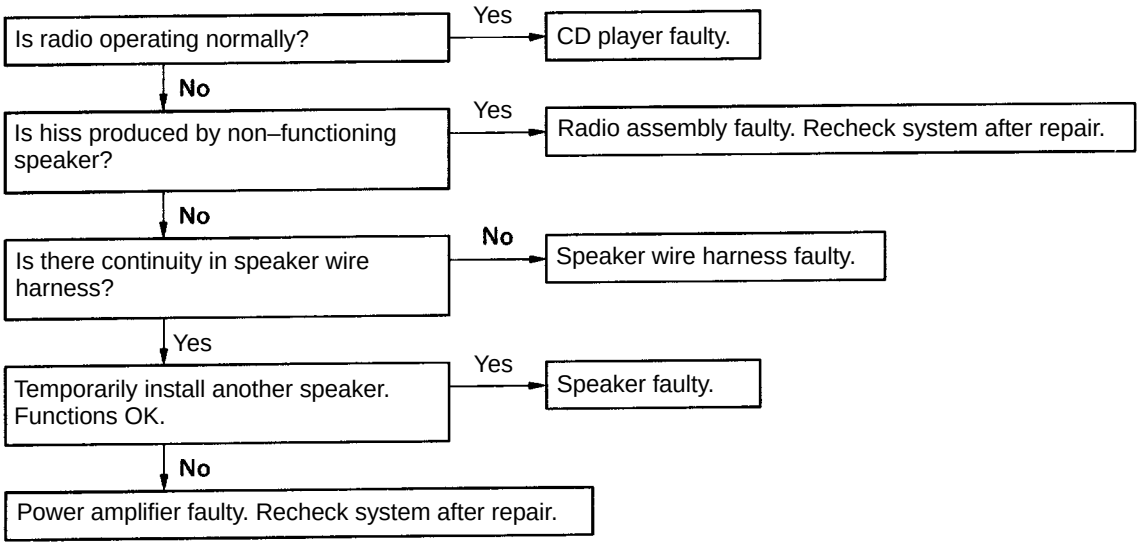
19 CD Player — SOUND JUMPS



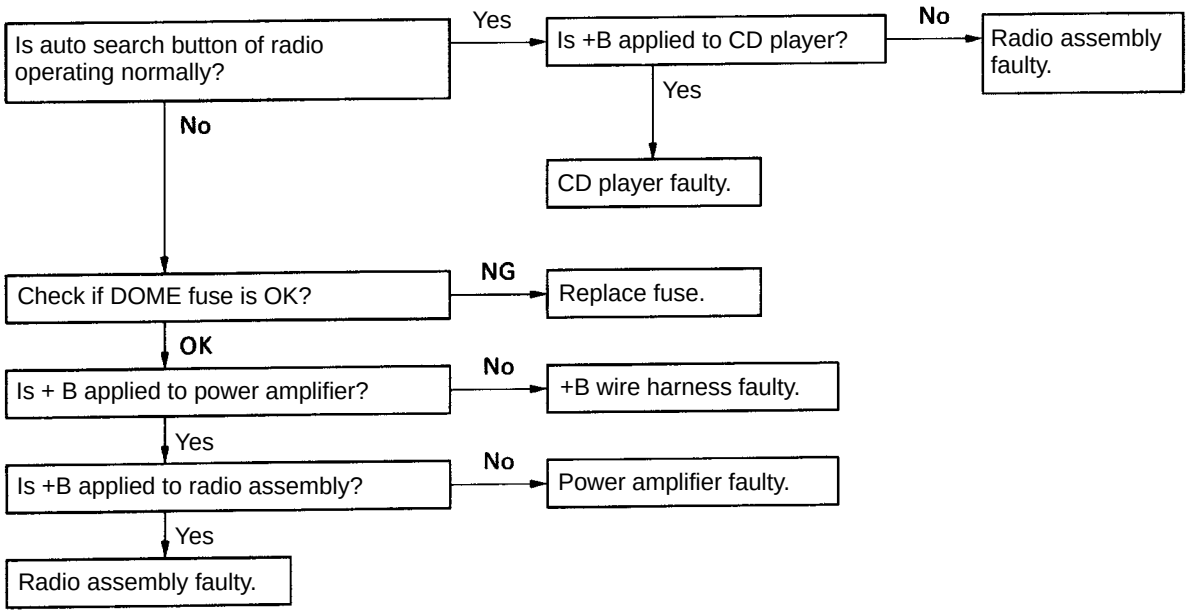
20 CD Player — SOUND QUALITY POOR (VOLUME FAINT)



21 CD Player — EITHER SPEAKER DOES NOT WORK

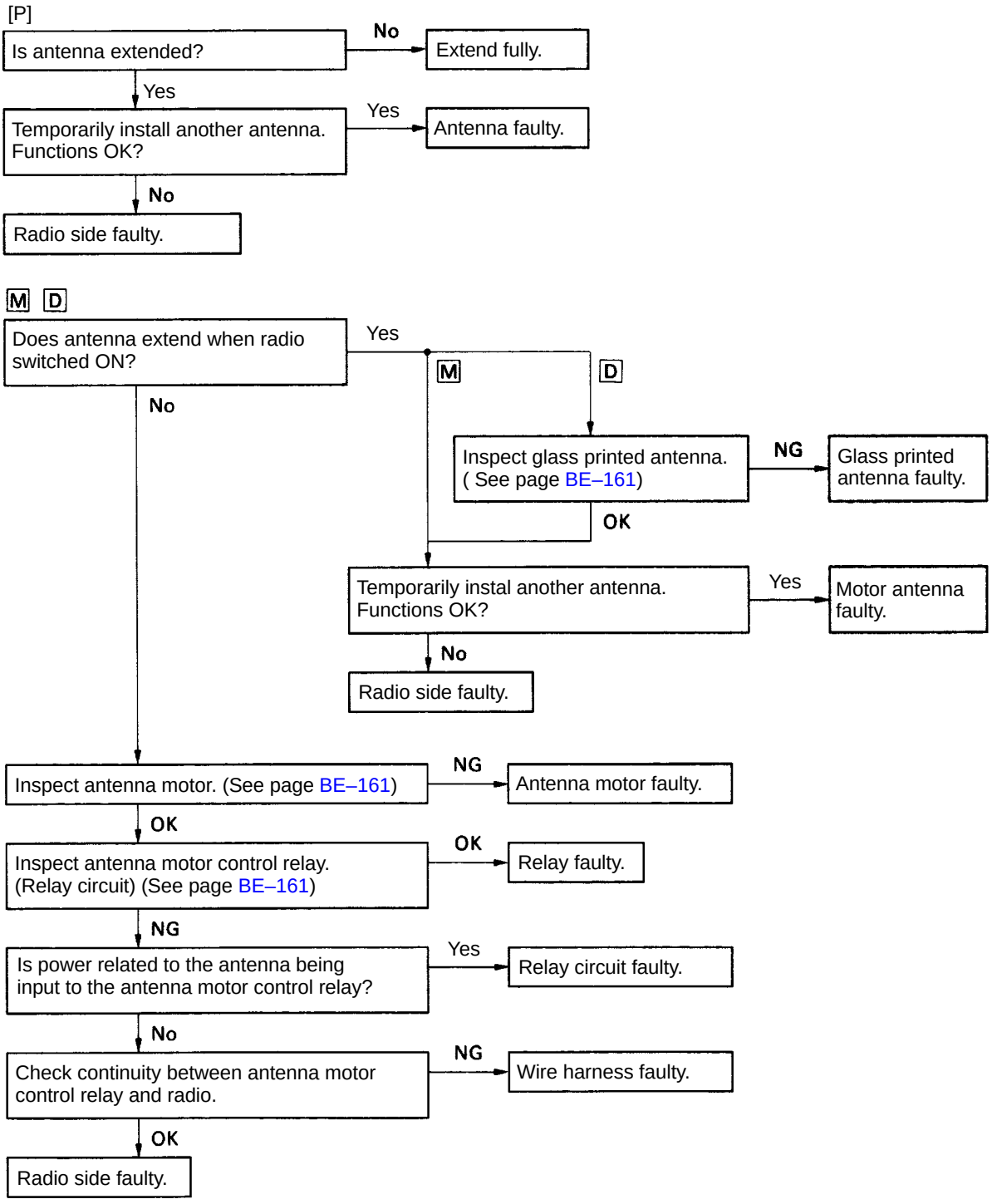


22 CD Player — CD WILL NOT EJECT

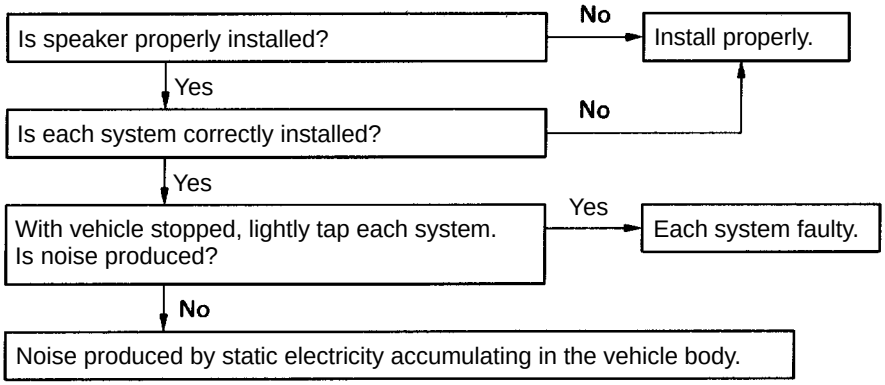


23 Antenna — ANTENNA RELATED

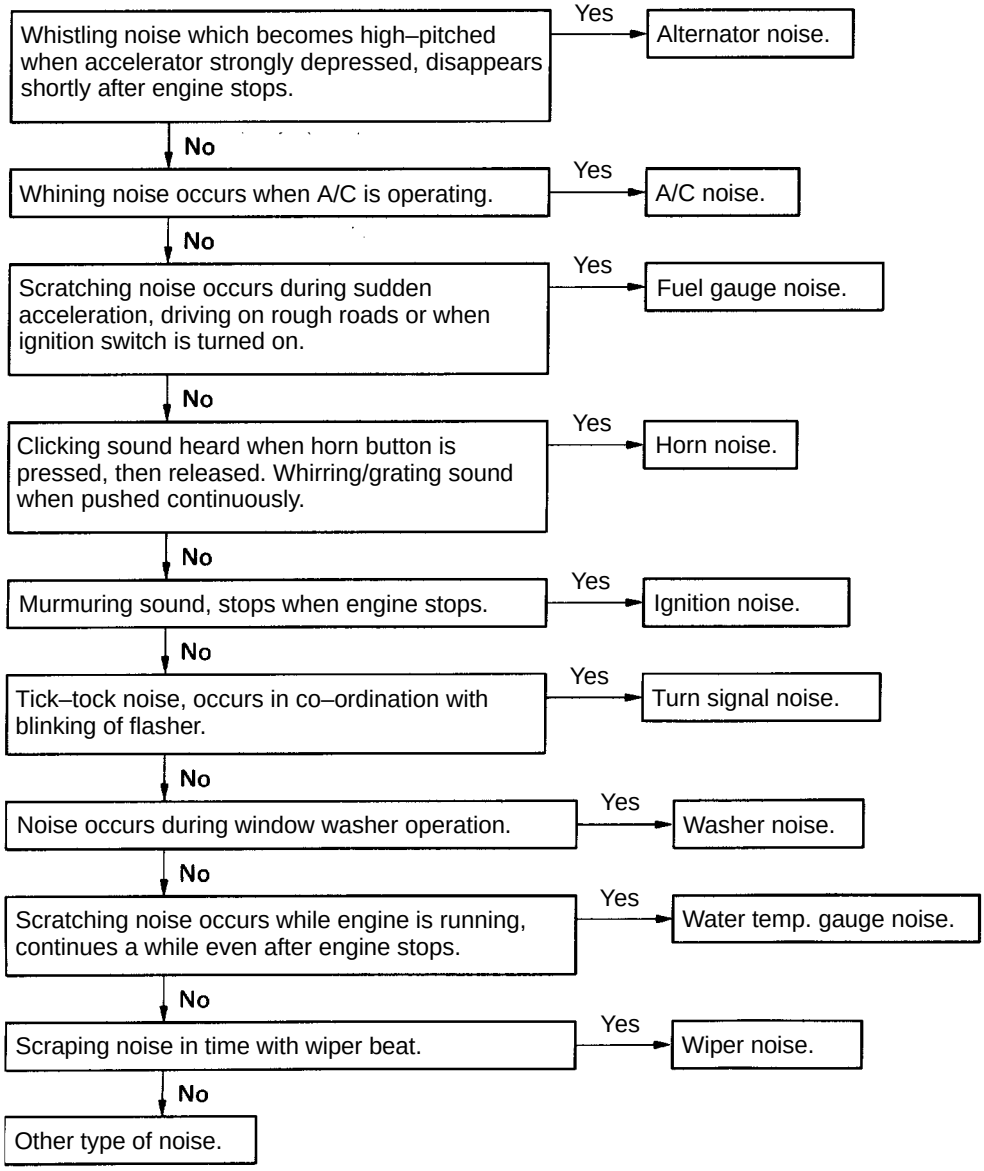
[P] : Antenna w/o Motor [M] : Motor Antenna [D] : Motor Antenna and Glass Printed Antenna

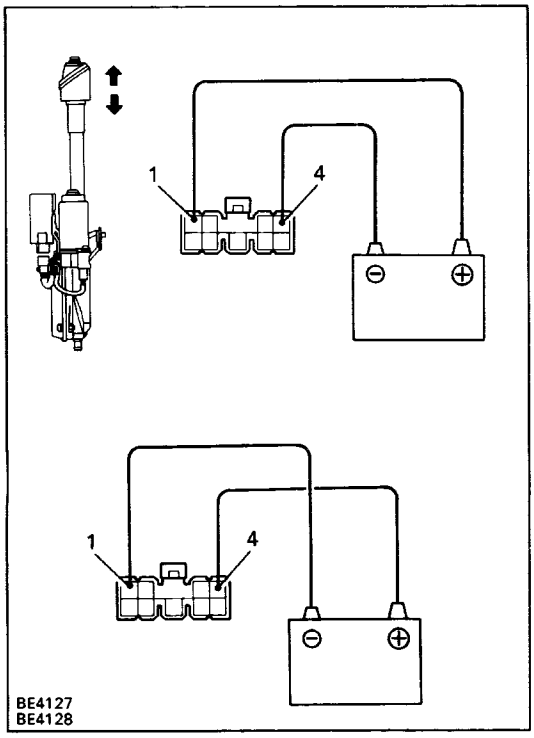


24 Noise — NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING



25 Noise — NOISE PRODUCED WHEN ENGINE STARTS





Parts Inspection

1. INSPECT ANTENNA MOTOR

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 4.

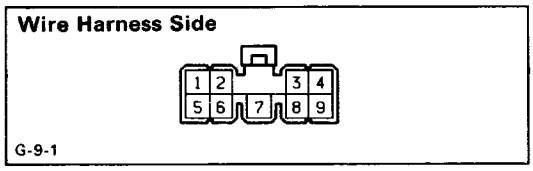
(b) Check that the motor turns (moves upward).

NOTICE: These tests must be performed quickly (within 3–5 seconds) to prevent the coil from burning out.

(c) Then, reverse the polarity, check that the motor turns the opposite way (moves downward).

NOTICE: These tests must be performed quickly (within 3–5 seconds) to prevent the coil from burning out.

If operation is not as specified, replace the motor.



2. INSPECT ANTENNA MOTOR CONTROL RELAY (Relay Circuit)

Disconnect the connector from the relay and inspect the connector on wire harness side as shown in the chart.

Check for	Tester connection	Condition			Specified value
Continuity	1 – 4	Constant			Continuity
	2 – Ground	Constant			Continuity
Voltage	3 – Ground	Constant			Battery voltage
	5 – Ground	Ignition switch position	LOCK		No voltage
			ACC or 0 N		Battery voltage
	6 – Ground	Ignition switch position	LOCK		No voltage
			ACC or ON	Radio switch and cassette OFF	No voltage
				Radio switch or cassette 0 N	Battery voltage
	8 – Ground	Ignition switch position	LOCK		No voltage
			ACC or ON	Radio switch OFF or cassette 0 N	No voltage
				Radio switch ON and cassette OFF	Battery voltage
	9 – Ground	Ignition switch position	LOCK or ACC		No voltage
			ON		Battery voltage

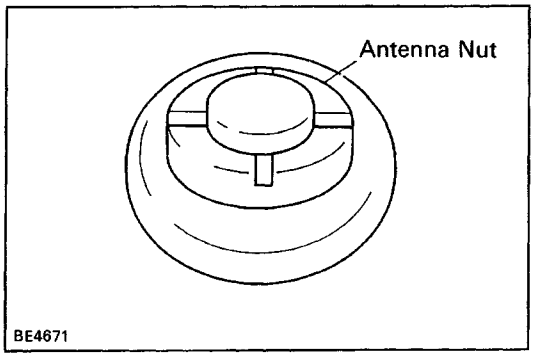
If circuit is as specified, replace the relay.

3. INSPECT GLASS PRINTED ANTENNA

(Use same procedure as for ”INSPECT DEFOGGER WIRES” on page BE–66.)

4. REPAIR GLASS PRINTED ANTENNA

(Use same procedure as for ”REPAIR DEFOGGER WIRES” on page BE–67.)



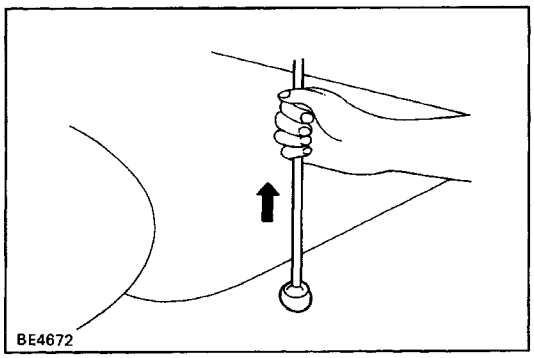
REMOVAL AND INSTALLATION OF ANTENNA ROD

1. REMOVE ANTENNA ROD

HINT: Perform this operation with the battery negative (–) cable connected to the battery terminal.

(a) Turn the ignition switch to ”LOCK” position.

(b) Remove the antenna nut.



(C–1) With C D player

Press the ”AM, FM” buttons on the radio receiver, and simultaneously turn the ignition switch to ”ACC” position.

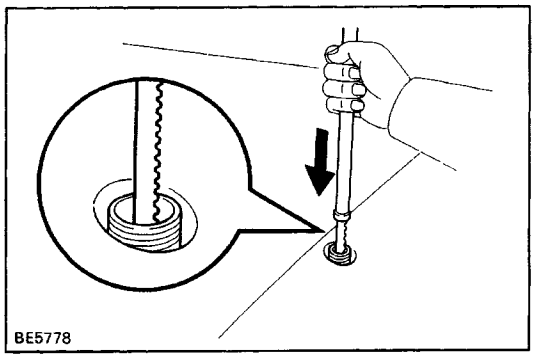
(C–2) Without CD player

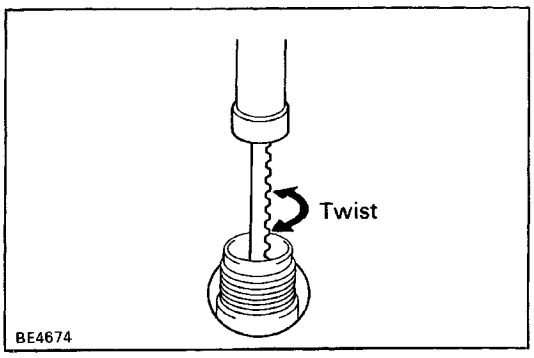
Press the ”AM” button on the radio receiver, and simultaneously turn the ignition switch to ”ACC” position.

HINT:

- The rod will extend fully and be released from the motor antenna.
- After removing the antenna rod, leave the ignition switch at ”ACC”.

NOTICE: To prevent body damage when the antenna rod is released, hold the rod while it comes out.





2. INSTALL ANTENNA ROD

(a) Insert the cable of the rod until it reaches the bottom.

HINT:

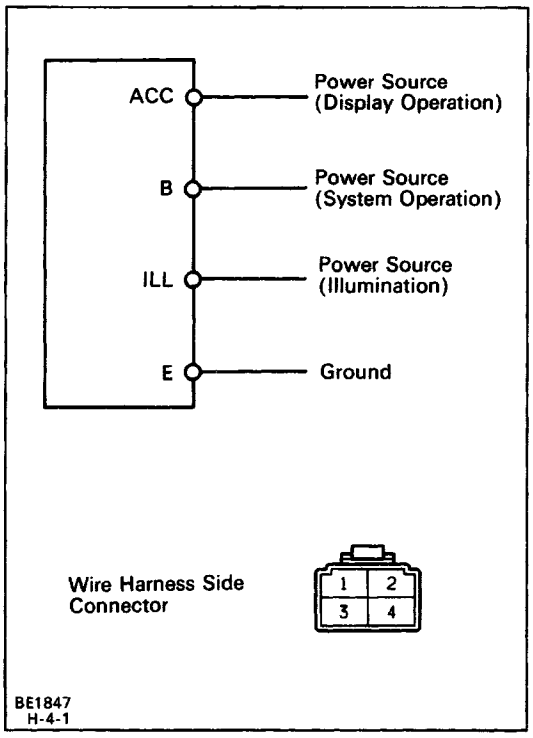
- When inserting the cable, the teeth on the cable must face toward the rear of the vehicle.
- Insert the antenna approx. 300 mm (1.18 in.).

(b) wind the cable to retract the rod by turning the ignition switch to ”LOCK” position.

HINT:

- If the ignition switch is already in ”LOCK” position, perform step 1 (c) first, then turn the ignition switch to ”ACC” position.
- In case the cable is not wound, twist it as shown in the illustration.
- Even if the rod has not retracted fully, install the antenna nut and inspect the antenna rod operation. It will finally retract fully.

(c) Inspect the antenna rod operation by pushing the radio wave band select buttons.



CLOCK

Troubleshooting

As shown in the illustration, those are clock circuit and connector diagrams. Inspect each terminal for applicable trouble.

Terminal		Condition	Specified value
1	E	Constant	Continuity
2	ILL	Turn light control switch ON	Battery Voltage
3	B	Constant	
4	ACC	Turn ignition switch ON	

Allowable error: ± 1.5 seconds/day