

BODY ELECTRICAL SYSTEM

	Page
GENERAL INFORMATION	BE-2
PRECAUTIONS	BE-8
LOCATION OF SWITCHES AND RELAYS	BE-9
IGNITION SWITCH	BE-15
LIGHTING SYSTEM	BE-16
HEADLIGHT CLEANER (CANADA Only)	BE-29
WIPERS AND WASHERS	BE-31
COMBINATION METER	BE-36
REAR WINDOW DEFOGGER	BE-47
POWER WINDOW	BE-49
DOOR LOCK CONTROL SYSTEM	BE-51
REMOTE CONTROL MIRROR	BE-53
MIRROR HEATER	BE-54
POWER SEAT	BE-55
CRUISE CONTROL SYSTEM	BE-58
THEFT DETERRENT SYSTEM (U.S.A. Only)	BE-85
AUDIO SYSTEM	BE-101
CLOCK	BE-115

GENERAL INFORMATION

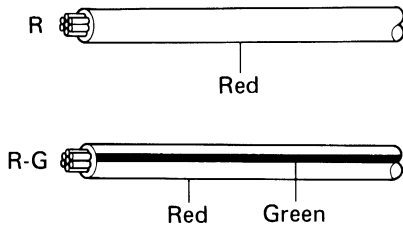
Wiring Color Code

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

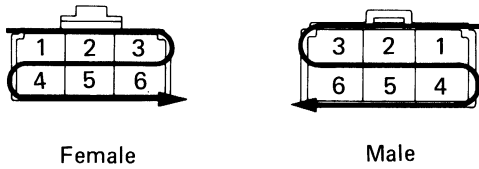
The first letter indicates the basic wire color and the second letter indicates the color of the stripe.

Example:



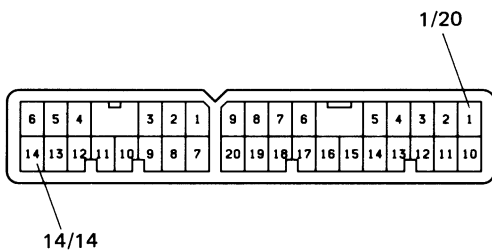
BE1359

Example:



BE0832

Example:



V-34-2

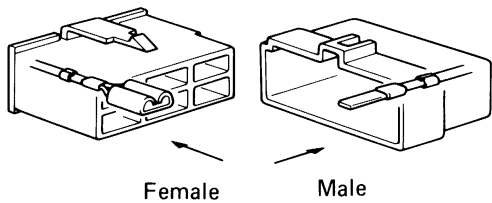
Connector

- PIN NUMBER OF FEMALE CONNECTOR**
Numbered in order from upper left to lower right.
- PIN NUMBER OF MALE CONNECTOR**
Numbered in order from upper right to lower left.

HINT: When connectors with different numbers of terminals are used with the same parts, the pin number and the number of terminals are specified.

e.g. 1/20 = No.1 pin/20 terminals connector
14/14 = No.14 pin/14 terminals connector

Example:



BE0833

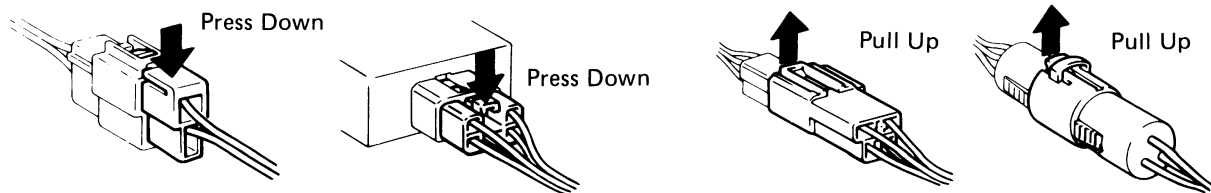
3. DISTINCTION OF MALE AND FEMALE CONNECTORS

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

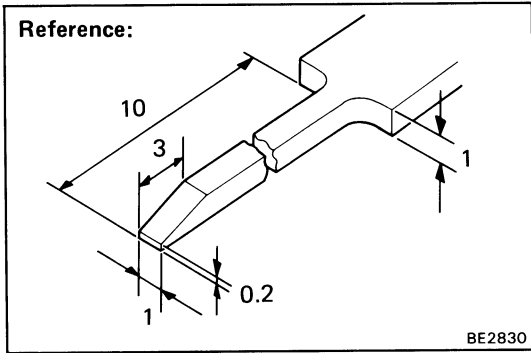
- All connectors are shown from the open end, and the lock is on top.
- To pull apart the connectors, pull on the connector itself, not the wires.

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

Example:



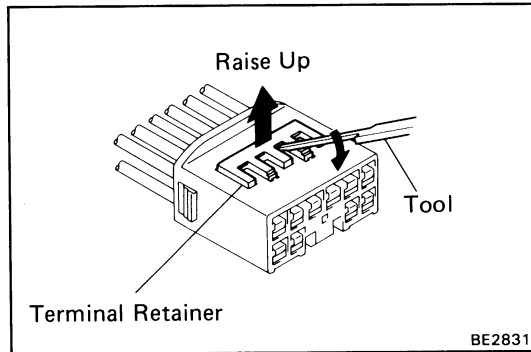
BE3782 BE3783



How to Replace Terminal

(with Terminal Retainer Type)

HINT: To remove the terminal for this type of connector, please construct and use the special tool or like object shown on the left.



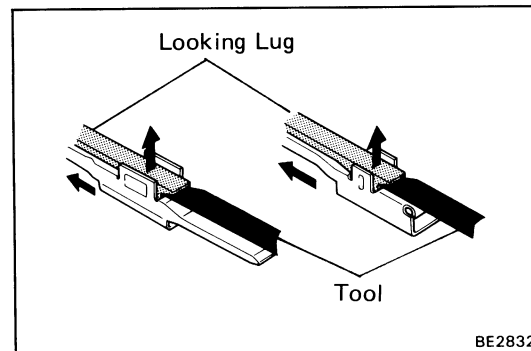
1. DISCONNECT CONNECTOR

Disconnect the connector according to the instructions on BE-2.

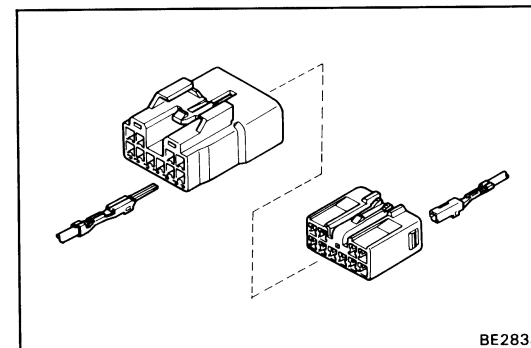
2. DISCONNECT TERMINAL FROM CONNECTOR

(a) Using the special tool, raise the retainer up to the temporary lock position.

HINT: The needle insertion position varies according to the connector's shape (number of terminals, etc.), so check the position before inserting it.



(b) Using the special tool, release the locking lug and pull the terminal out from rear.

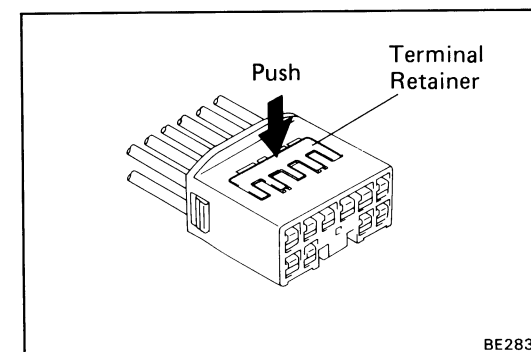


3. INSTALL TERMINAL TO CONNECTOR

(a) Insert the terminal.

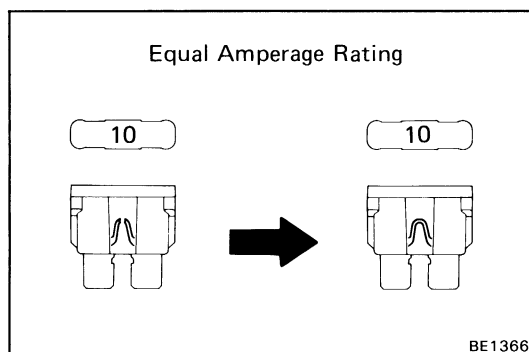
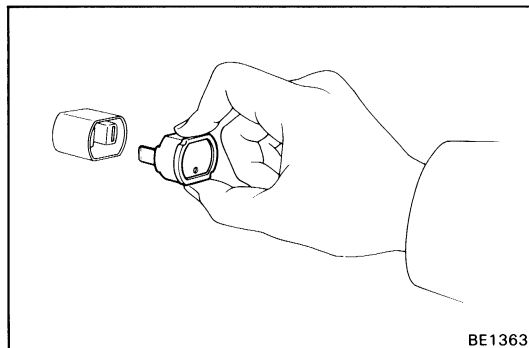
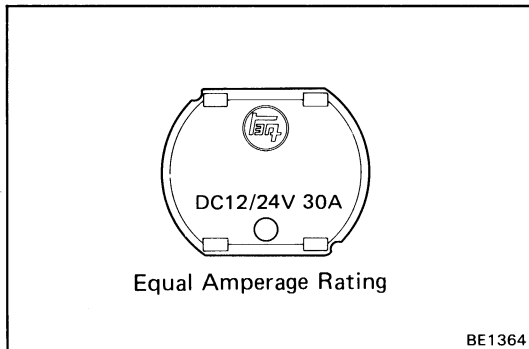
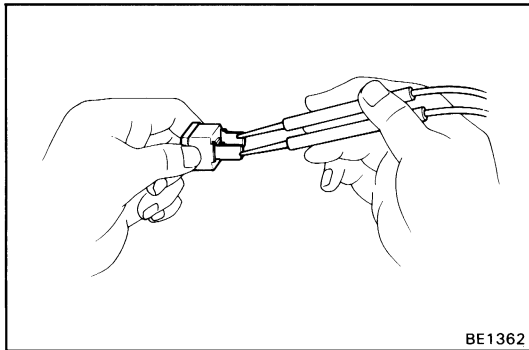
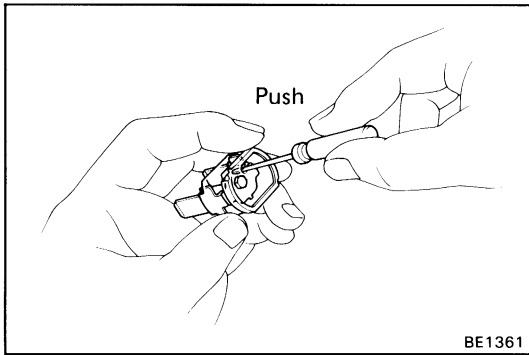
HINT:

1. Make sure the terminal is positioned correctly.
2. Insert the terminal until the locking lug locks firmly.
3. Insert the terminal with retainer in the temporary lock position.



(b) Push the retainer in to the full lock position.

4. CONNECT CONNECTOR



Reset Circuit Breaker

1. REMOVE CIRCUIT BREAKER

- (a) Disconnect the negative (—) cable from the battery.
- (b) Remove the circuit breaker.

2. RESET CIRCUIT BREAKER

- (a) Insert the needle into the reset hole and push it.
- (b) Using an ohmmeter, check that there is continuity between both terminals of the circuit breaker.

If continuity is not as specified, replace the circuit breaker.

HINT: If replacing the circuit breaker, be sure to replace it with a breaker with an equal amperage rating.

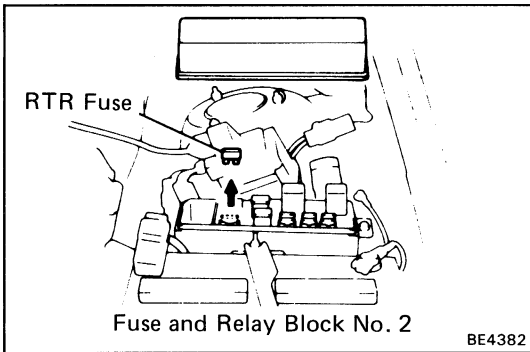
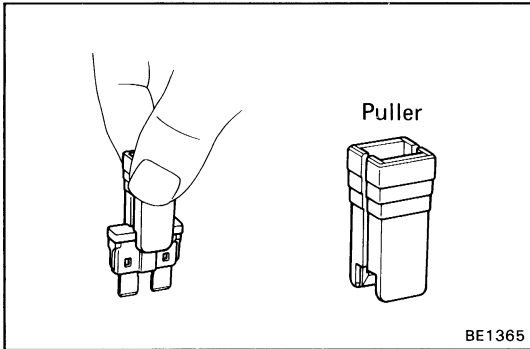
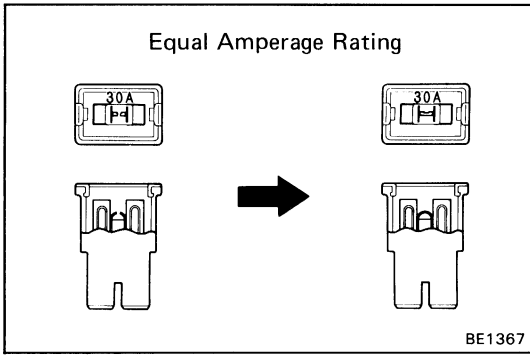
3. INSTALL CIRCUIT BREAKER

- (a) Install the circuit breaker.
- (b) Connect the negative (—) cable to the battery.

HINT: If a circuit breaker continues to cut out, a short circuit is indicated. Have the system checked by a qualified technician.

Replacement of Fuse and Fusible Link

HINT: If replacing the fuse or fusible link, be sure to replace it with a fuse or fusible link with an equal amperage rating.



NOTICE:

1. Turn off all electrical components and the ignition switch before replacing a fuse or fusible link. Do not exceed the fuse or fusible link 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 or fusible link continues to blow, a short circuit is indicated. The system must be checked by a qualified technician.

HINT: The puller is located at Junction block No.2.

Take Care When Inspecting Headlight Circuit

CAUTION: With the headlight switch OFF, disconnect the "RTR" (30A) fuse before beginning work.

How to Inspect for System Inspection

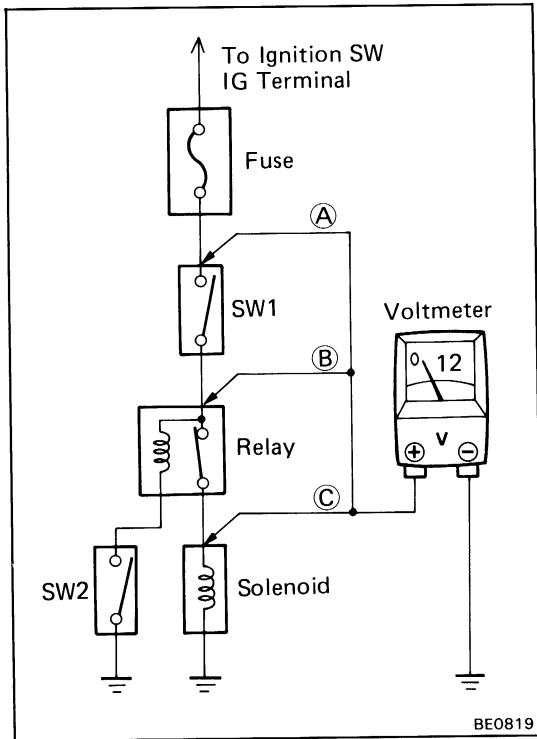
This inspection procedure is a simple troubleshooting which should be carried out on the vehicle during system operation and was prepared on the assumption of system component troubles (except for the wires and connectors, etc.).

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.



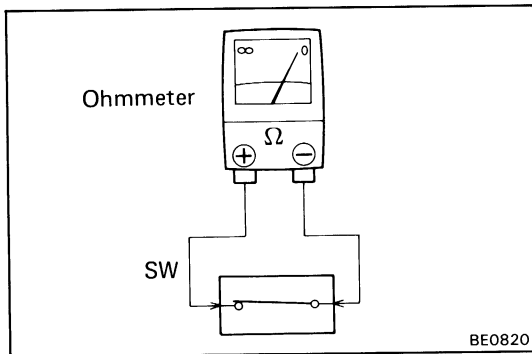
Check for Voltage

- (a) Establish conditions in which voltage is present at the check point.

Example:

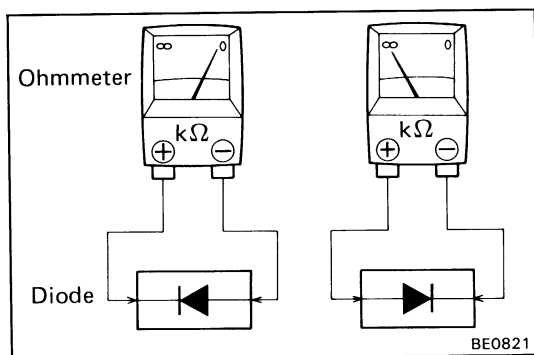
- Ⓐ — Ignition SW on
- Ⓑ — Ignition SW and SW 1 on
- Ⓒ — Ignition SW, SW 1 and Relay on (SW 2 off)

- (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

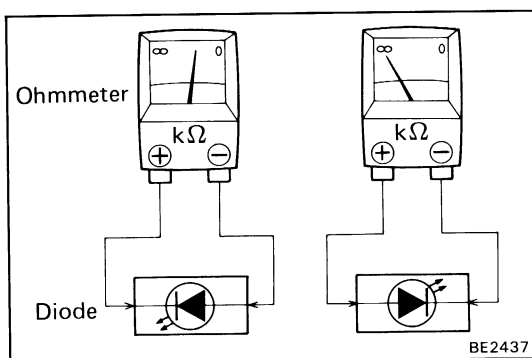
- (a) Disconnect the battery terminal or wire so there is no voltage between the check points.
- (b) Contact the two leads of an ohmmeter to each of the check points.



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.

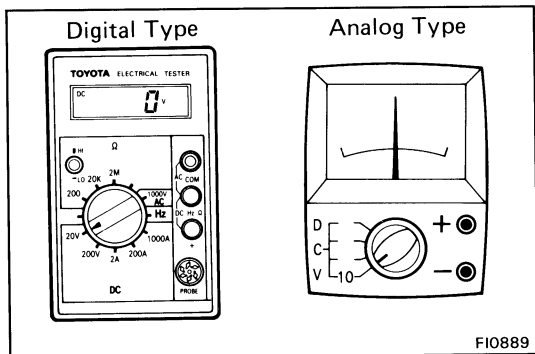
HINT: Specifications may vary depending on the type of tester, so refer to the tester's instruction manual before performing the inspection.



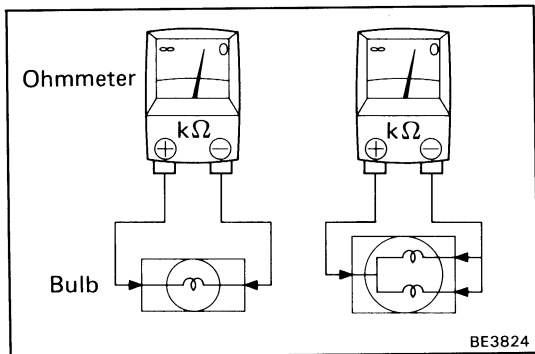
Check LED (Light Emitting Diode) in the same manner as that for diodes.

HINT:

- 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 lights up.

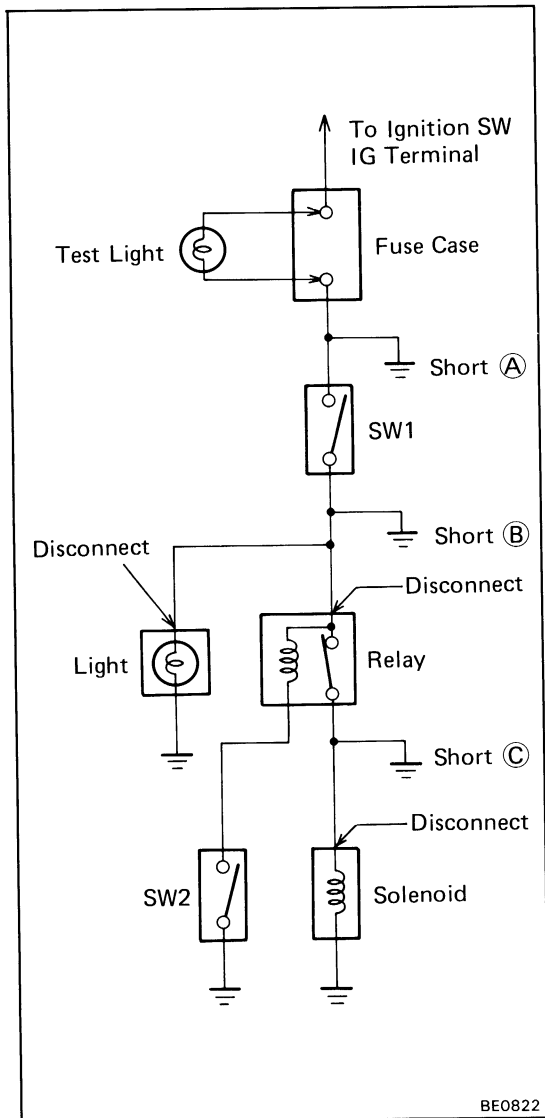


- (c) Use a volt/ohmmeter with high impedance (10 k/V minimum) for troubleshooting of the electrical circuit.



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:
- Ⓐ — Ignition SW on
 - Ⓑ — Ignition SW and SW 1 on
 - Ⓒ — Ignition SW, SW 1 and Relay on (Connect the Relay) and SW 2 off (or Disconnect SW 2)
- (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.

PRECAUTIONS

Take care to observe the following precautions when performing inspections or removal and replacement of body electrical related parts.

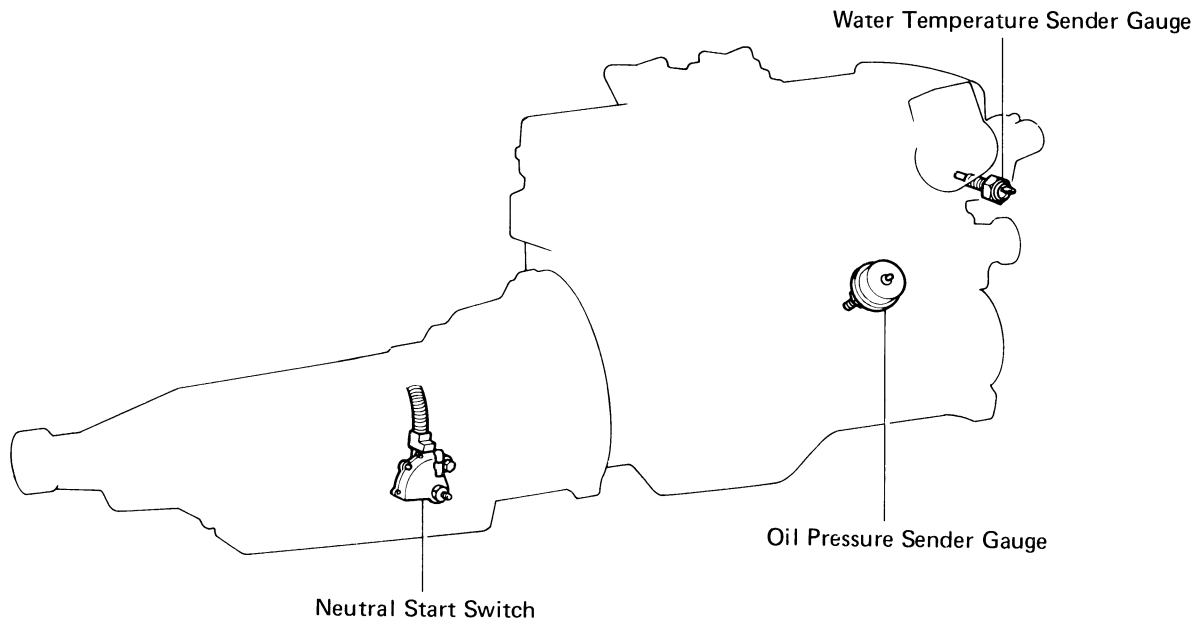
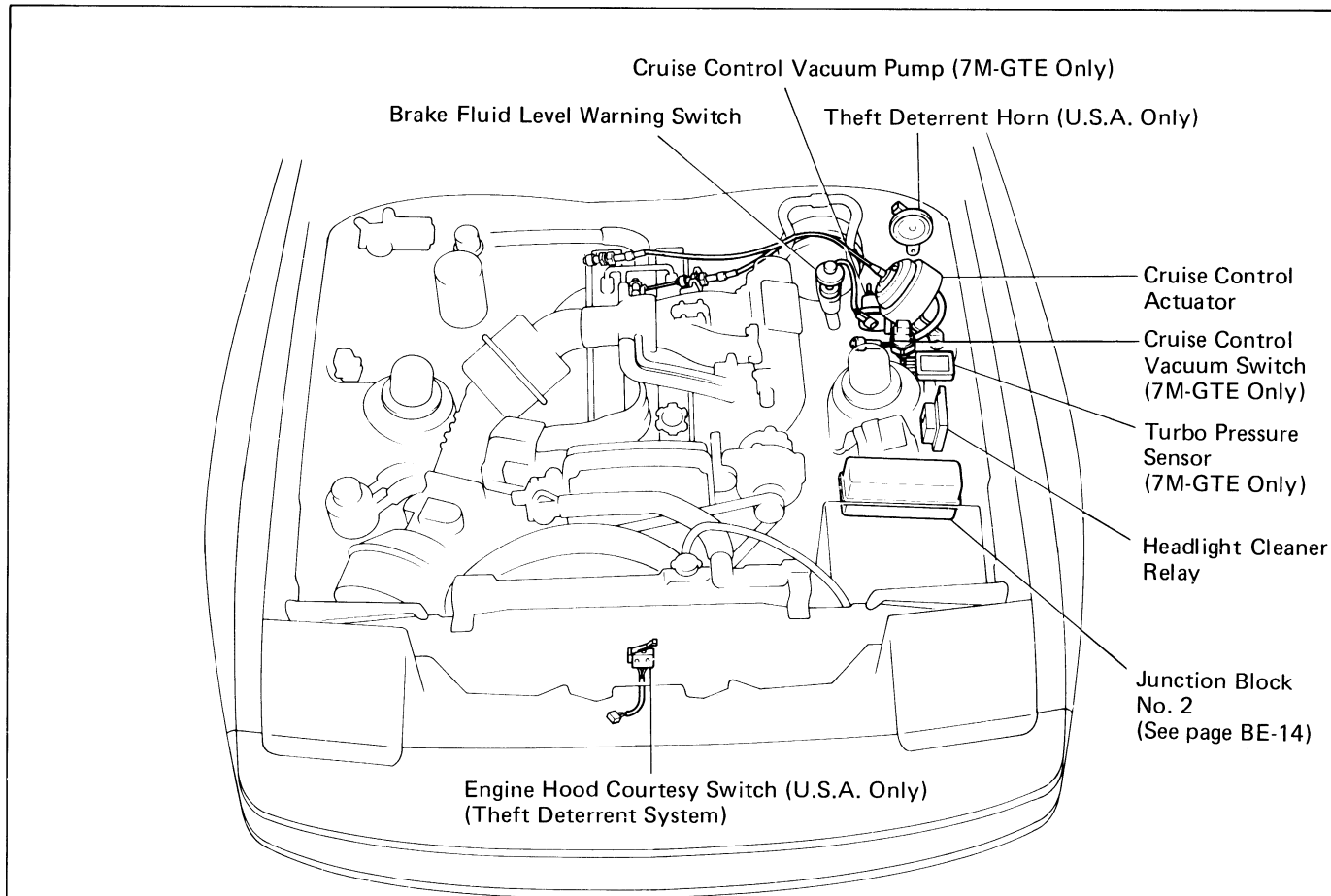
1. SRS AIR-BAG SYSTEM

- Work must be started approx. 20 seconds after the ignition is set to the Lock position and negative (—) terminal cable is disconnected from the battery.
- When disconnecting any of the connectors in the SRS AIR-BAG system, be sure to Lock the ignition switch and disconnect the battery negative (—) terminal first. Since the connectors are twin lock type connectors, disconnect the connectors only after releasing the first stage lock.
- When connecting SRS AIR-BAG system connectors, be sure to lock them securely. (If the connectors are not locked securely, the system may not operate when needed.)
- Always store the steering wheel pad with the pad surface facing upward. (Storing the pad with its metallic surface up may lead to serious accident if the air bag inflates for some reason.)
- When installing the spiral cable, be sure the vehicle is in the straight ahead condition and confirm that the spiral cable is in the neutral position when it is installed. (See page BE-44)
- INFORMATION LABELS (NOTICE) are attached to the periphery of the air bag components. Follow the NOTICE.

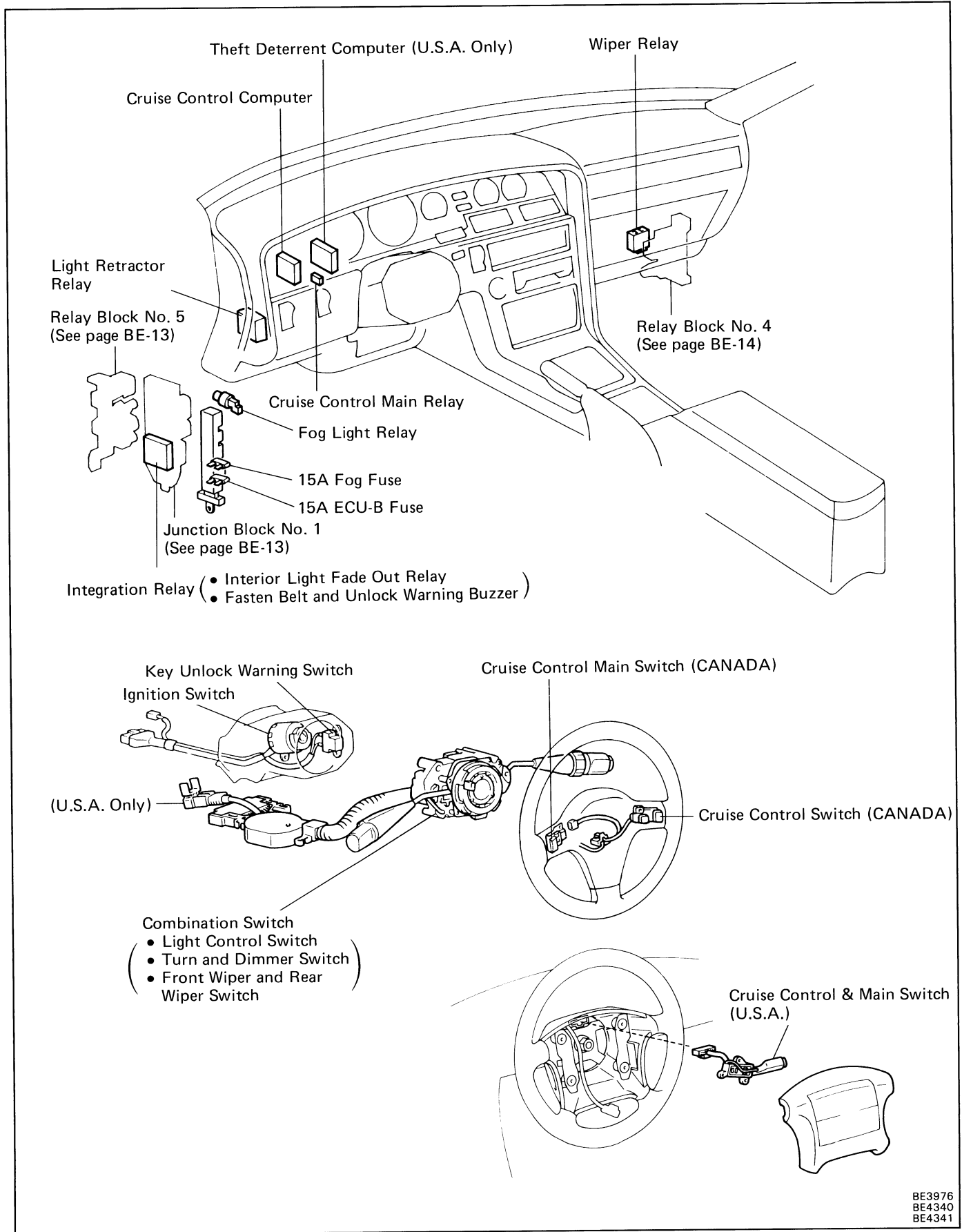
2. AUDIO SYSTEM

- If the battery negative (—) terminal is disconnected, the preset AM, FM 1 and FM 2 stations stored in memory are erased, so be sure to note the stations and reset them after the battery terminal is reconnected.
- If the battery negative (—) terminal is disconnected, the "ANTI-THEFT SYSTEM" will operate when the terminal is reconnected, but the radio, tape player and CD player will not operate. Be sure to input the correct ID number so that the radio, tape player and CD player can be operated again.

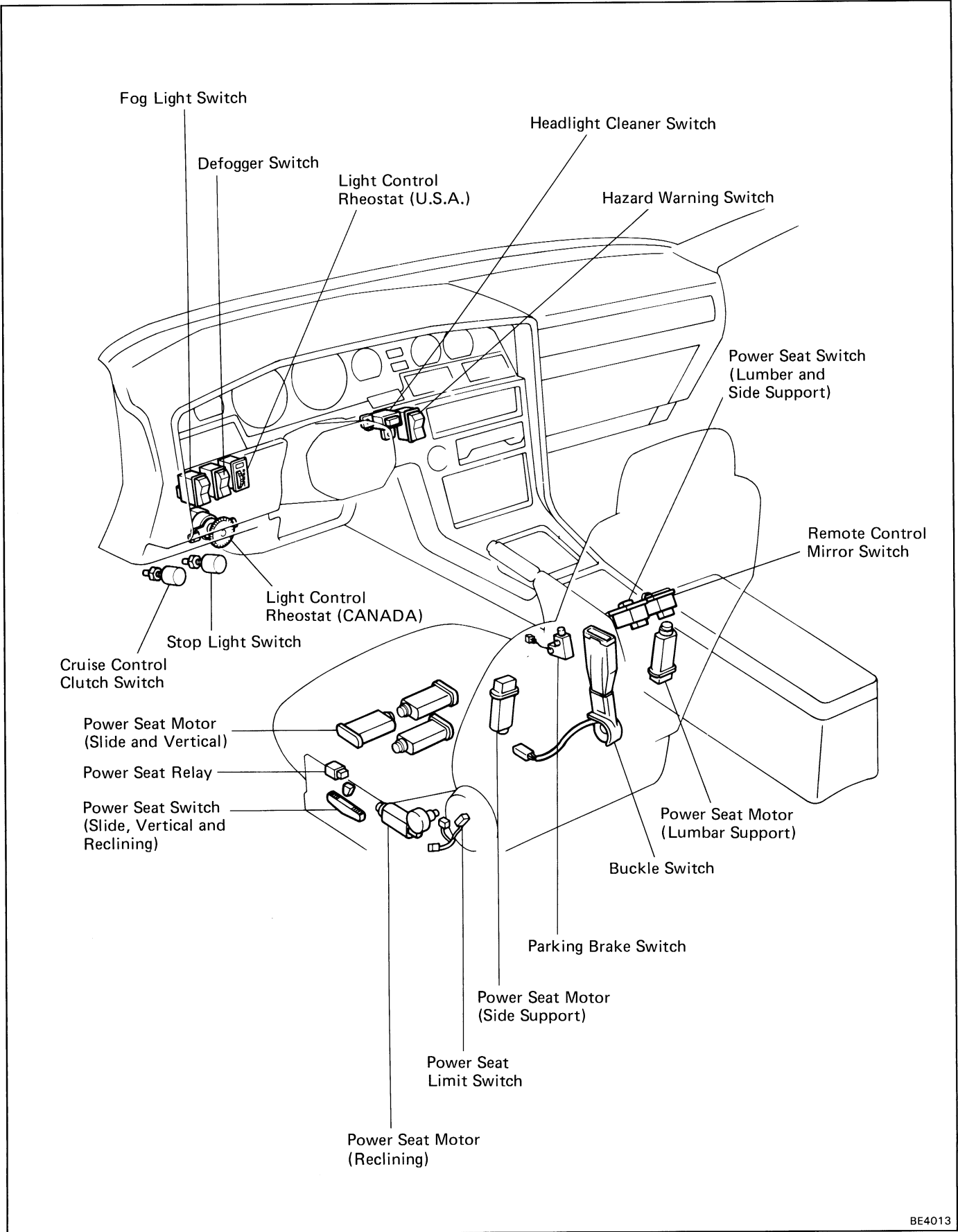
LOCATION OF SWITCHES AND RELAYS



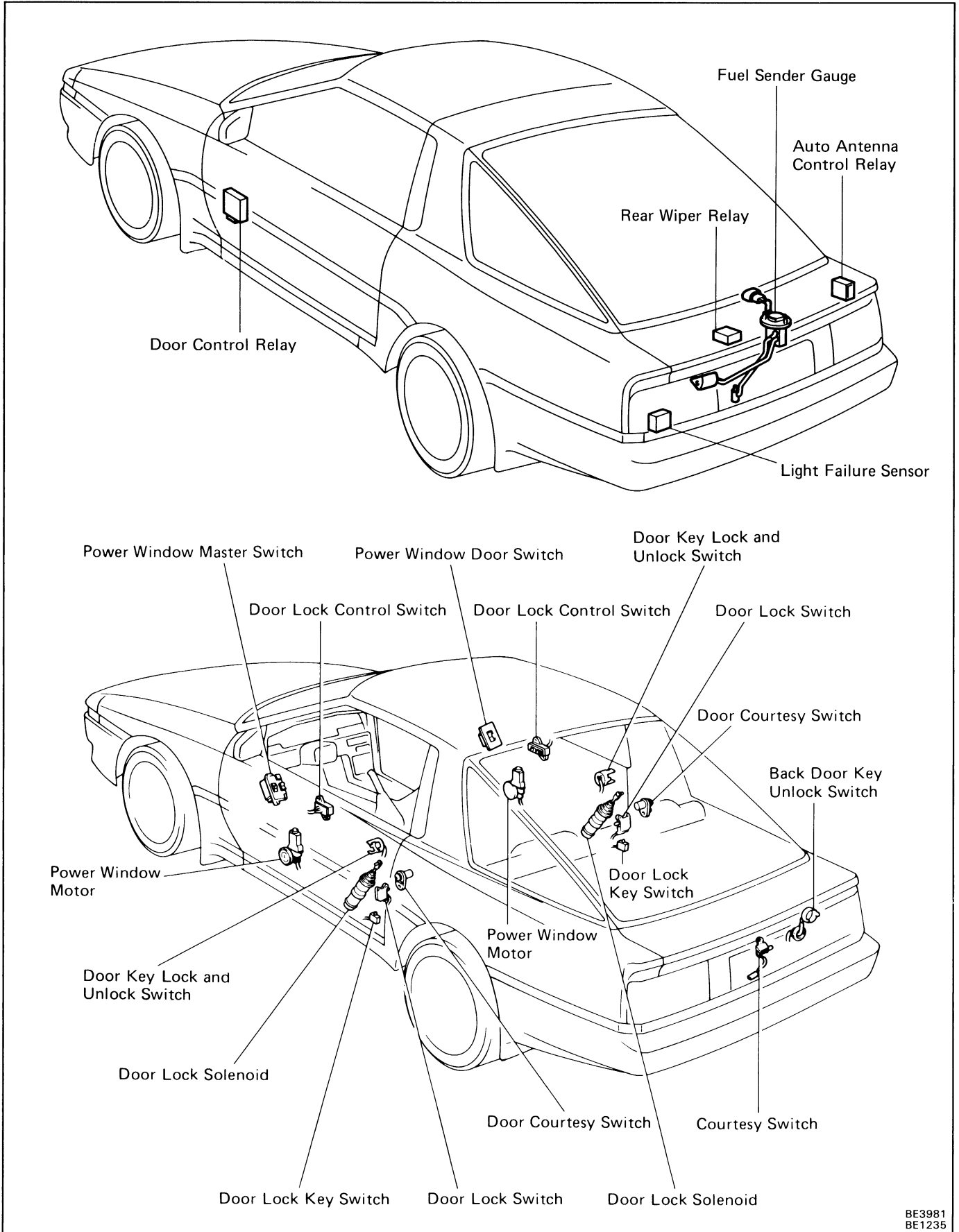
LOCATION OF SWITCHES AND RELAYS (Cont'd)



LOCATION OF SWITCHES AND RELAYS (Cont'd)

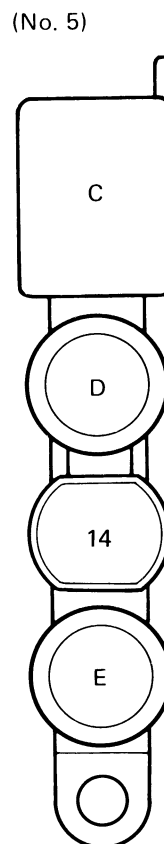
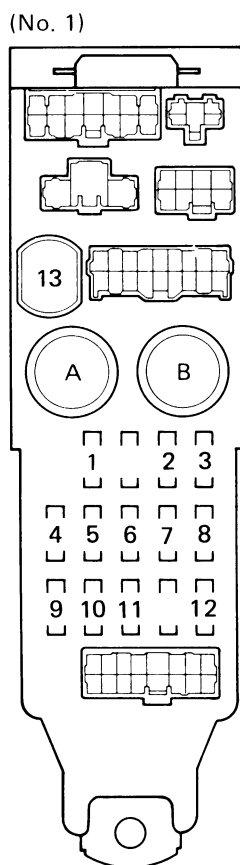


LOCATION OF SWITCHES AND RELAYS (Cont'd)



FUSE AND RELAY BLOCKS

JUNCTION BLOCK NO. 1 AND RELAY BLOCK NO. 5 (LOCATION: Driver's Side Kick Panel)



Fuses

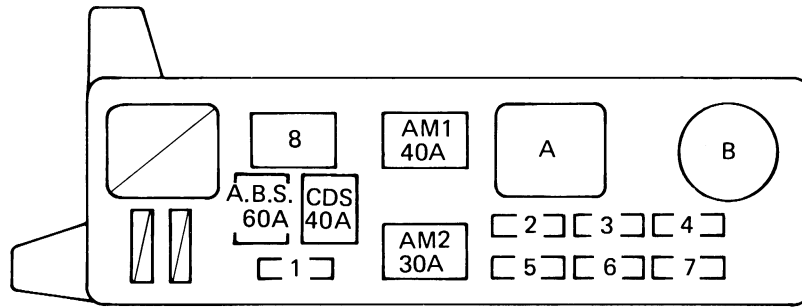
1.	GAUGE	7.5A	
2.	STOP	20A	
3.	TAIL	15A	
4.	CIG	15A	
5.	RADIO	7.5A	
6.	TURN	7.5A	
7.	MIR-HTR	10A	
8.	—		
9.	ENGINE	15A	
10.	WIPER	20A	
11.	ECU-IG	15A	
12.	IGN	7.5A	
13.	Circuit Breaker (Defogger)		30A
14.	Circuit Breaker (Power)		30A

Relays

- A. Defogger Relay
- B. Taillight Relay
- C. Turn Signal Control Relay
- D. Power Main Relay
- E. Horn Relay

FUSE AND RELAY BLOCKS (Cont'd)

JUNCTION BLOCK NO. 2 (LOCATION: Engine Compartment)



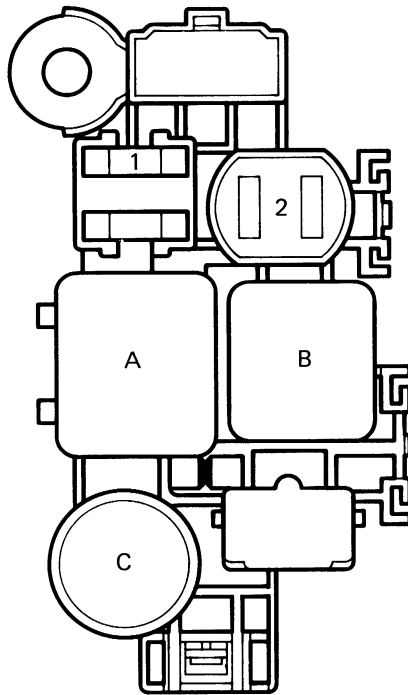
Fuses

- | | | |
|----|-----------|------|
| 1. | RTR | 30A |
| 2. | TEL | 15A |
| 3. | HEAD (LH) | 15A |
| 4. | HEAD (RH) | 15A |
| 5. | HAZ-HORN | 15A |
| 6. | DOME | 20A |
| 7. | EFI | 15A |
| 8. | ALT | 100A |

Relays

- A. Headlight Relay
- B. EFI Main Relay

RELAY BLOCK NO. 4 (LOCATION: Passenger's Side Kick Panel)

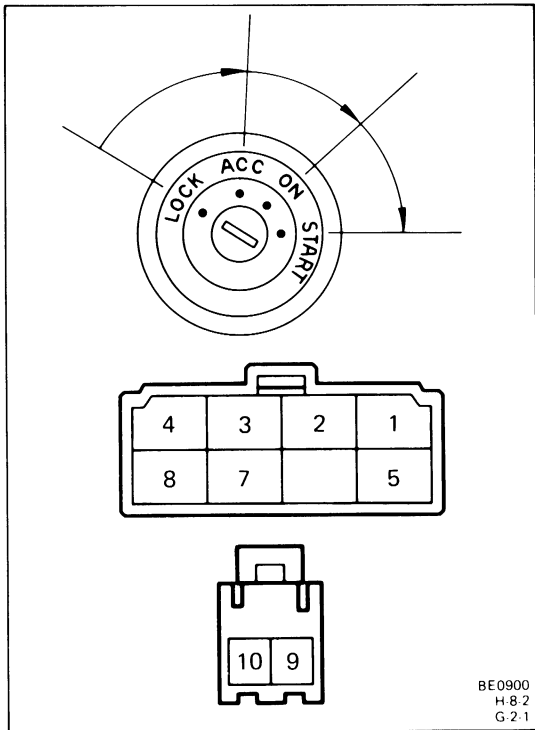


Fuses

- | | | |
|----|--------------------------|-----|
| 1. | A/C | 10A |
| 2. | Circuit Breaker (Heater) | 40A |

Relays

- A. Circuit Opening Relay
- B. Heater Relay
- C. Clutch Starter Relay



IGNITION SWITCH

INSPECTION OF SWITCH

INSPECT SWITCH CONTINUITY

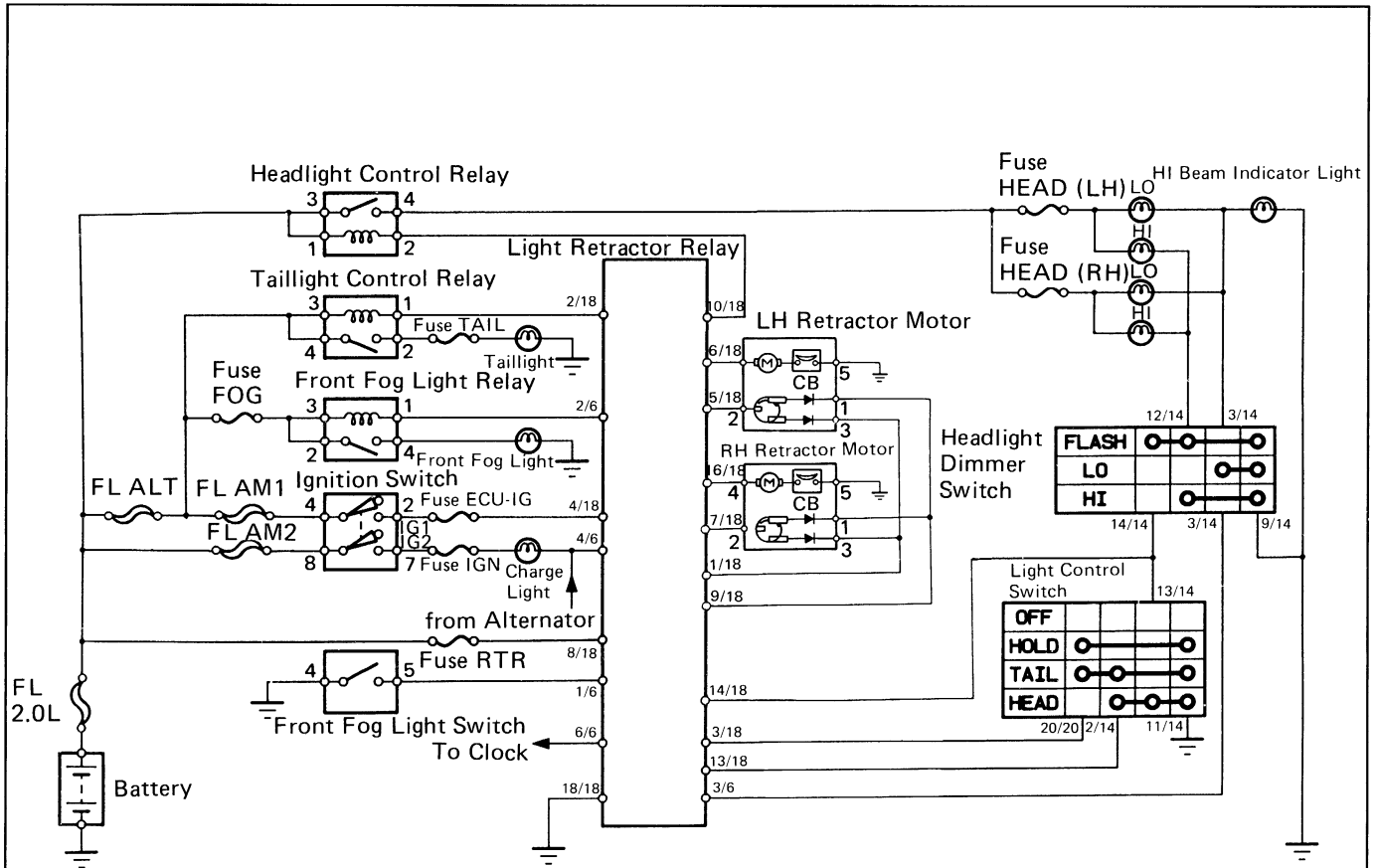
Inspect the switch continuity between terminals.

Terminal	1	2	3	4	5	7	8	9	10
Switch Position									
LOCK									
ACC			○—○						
ON		○—○	○—○			○—○			
START	○—○	○—○	○—○		○—○	○—○	○—○		
Warning	Normal								
	Push								○—○

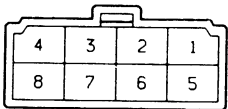
If continuity is not as specified, replace the switch.

Daytime Running Light System (CANADA only)

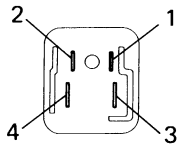
Wiring and Connectors Diagram



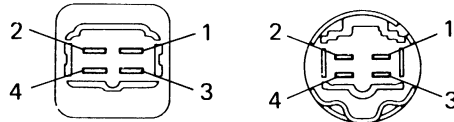
Ignition Switch



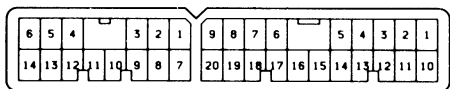
Headlight Control Relay



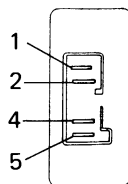
Taillight Control Relay & Front Fog Light Relay



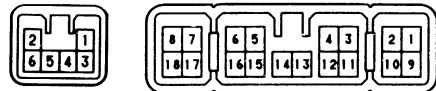
Light Control Switch and Headlight Dimmer Switch



Front Fog Light Switch



Light Retractor Relay



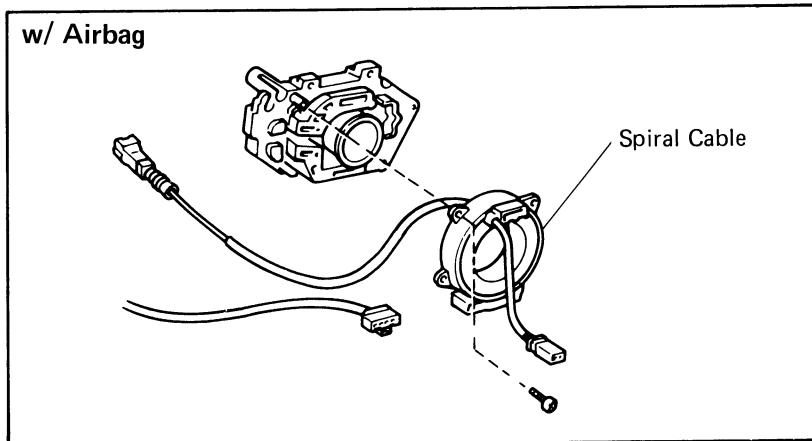
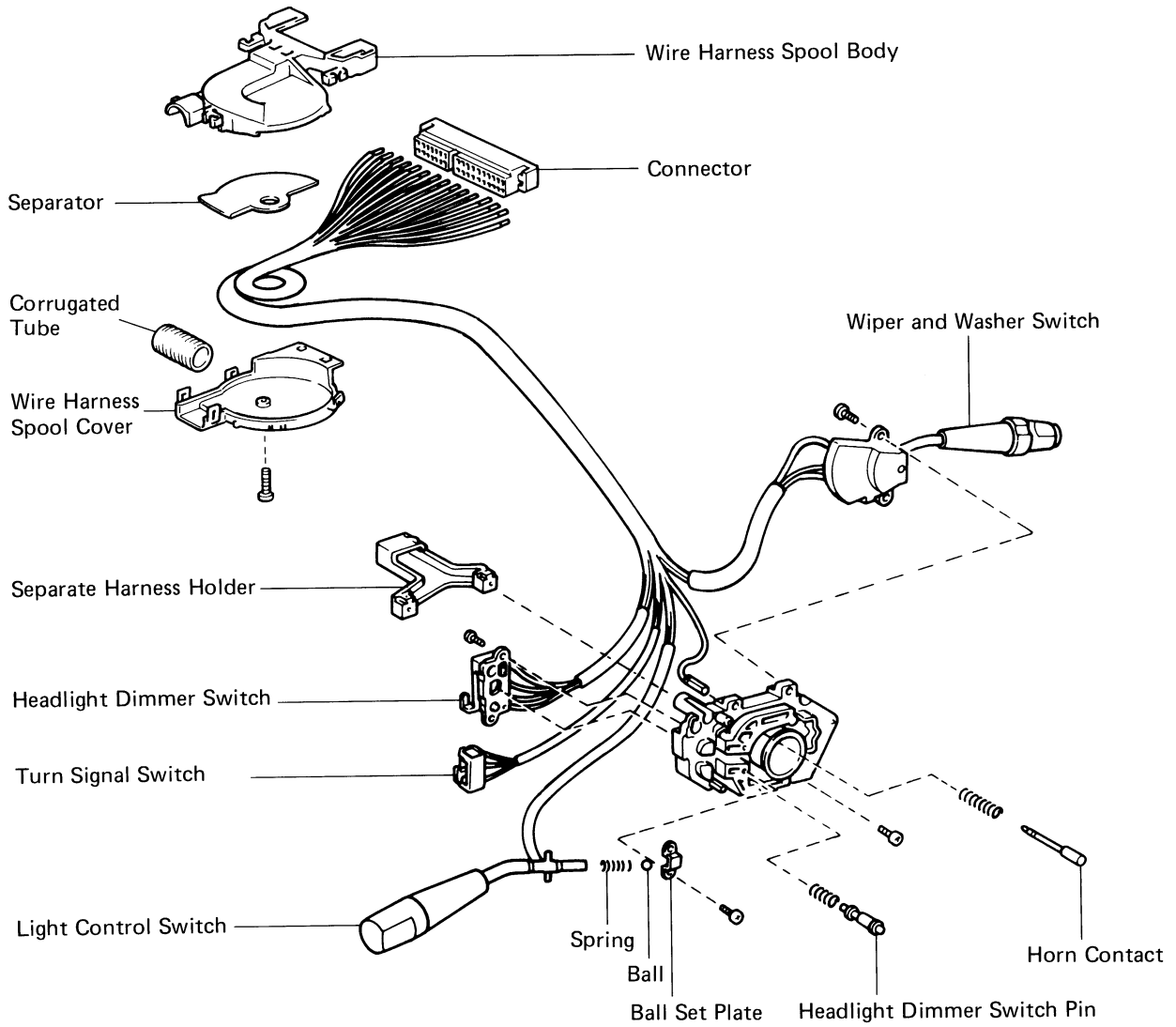
LIGHTING

Troubleshooting

Problem	Possible cause	Remedy	Page
Only one light does not light (all exterior)	Light bulb burned out Socket, wire or ground faulty	Replace bulb Repair as necessary	
Headlights do not flip up	Fusible link blown RTR fuse blown Light retractor control relay faulty Light retractor motor faulty Wiring or ground faulty	Replace fusible link Replace fuse and check for short Check relay Check motor Repair as necessary	BE-4 BE-23 BE-24
No headlights light	Fusible link blown Headlight control relay faulty Light control switch faulty Wiring or ground faulty	Replace fusible link Check relay Check switch Repair as necessary	BE-22 BE-22
High beam headlights or headlight flasher do not operate	Light control switch faulty Wiring faulty	Check switch Repair as necessary	BE-22
Tail and license lights do not light	TAIL fuse blown Fusible link blown Taillight control relay faulty Light control switch faulty Light retractor control relay faulty (CANADA) Wiring or ground faulty	Replace fuse and check for short Replace fusible link Check relay Check switch Check relay Repair as necessary	BE-4 BE-22 BE-22 BE-23
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 Repair as necessary	BE-4
Stop lights stay on	Stop light switch faulty	Adjust or replace switch	
Instrument lights do not light (taillights light)	Light control rheostat faulty Wiring or ground faulty	Check rheostat Repair as necessary	BE-28
Turn signal does not flash on one side	Turn signal switch faulty Wiring or ground faulty	Check switch Repair as necessary	BE-22
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-4 BE-26 BE-22
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-4 BE-26 BE-26

Parts Replacement Components

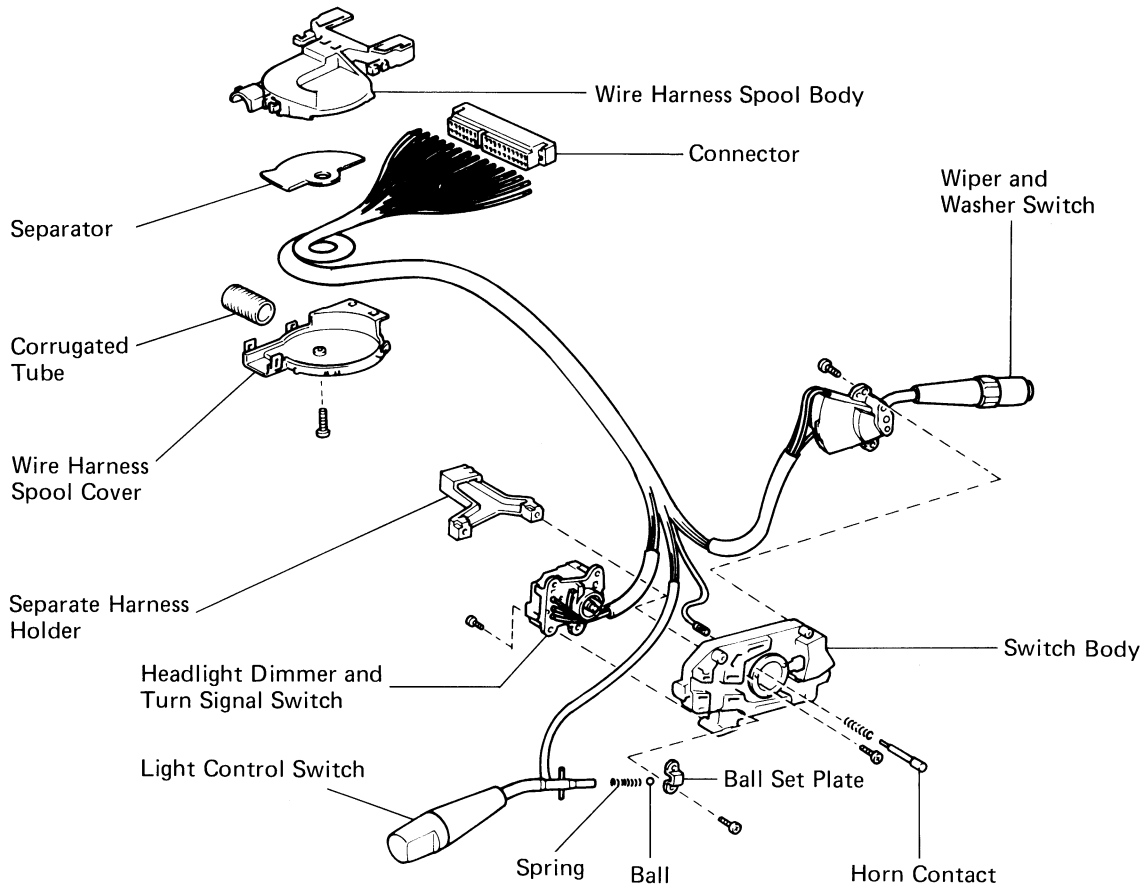
U.S.A. (w/ Airbag System)



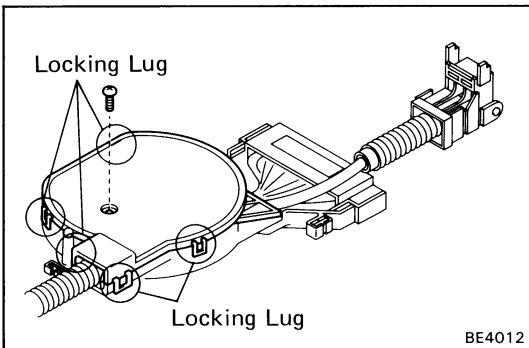
Parts Replacement (Cont'd)

Components

CANADA (w/o Airbag System)

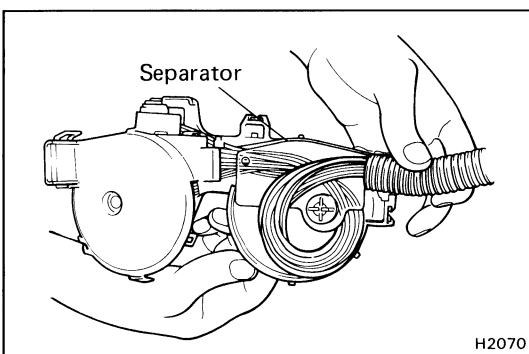


BE4351

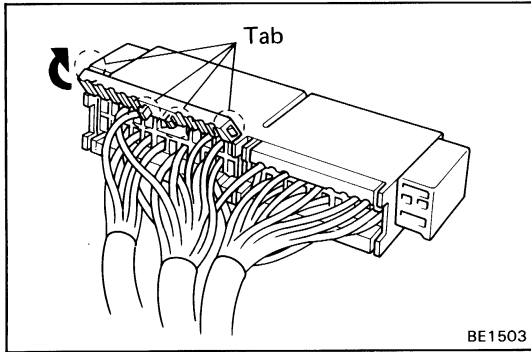


Disassembly of Combination Switch

- 1. REMOVE WIRE HARNESS SPOOL COVER**
Remove one screw and pry loose three locking lugs.



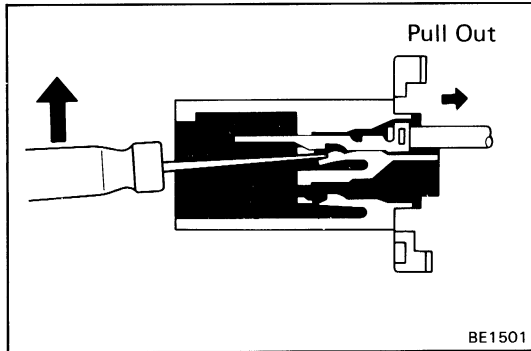
- 2. REMOVE SEPARATOR**
Remove the separator from the spool body.



BE1503

3. REMOVE TERMINALS FROM CONNECTOR

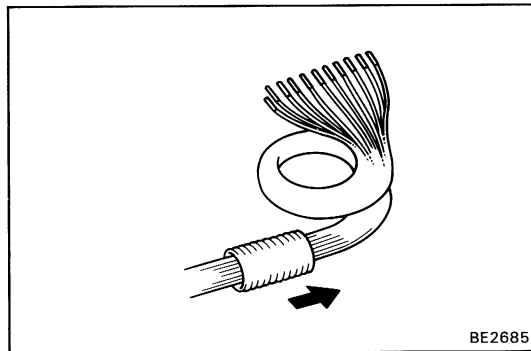
- (a) Release four tabs and open the terminal cover.



BE1501

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

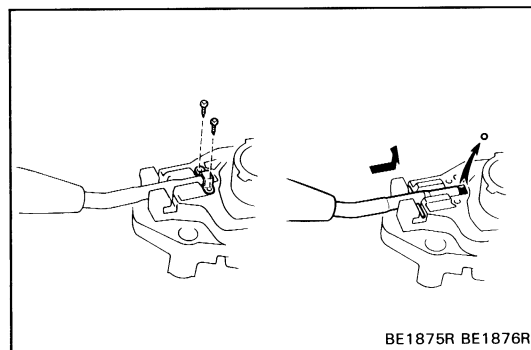
- (c) Pry down the locking lug with the screwdriver and pull the terminal out from the rear.



BE2685

4. REMOVE CORRUGATED TUBE

- Pull out the corrugated tube from the wire harness.



BE1875R BE1876R

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

(CANADA)

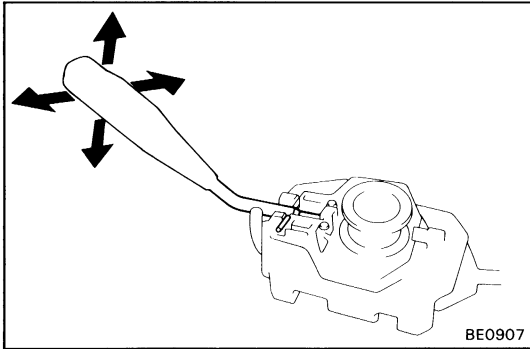
- Remove four screws and the switch from the switch body.

(U.S.A.)

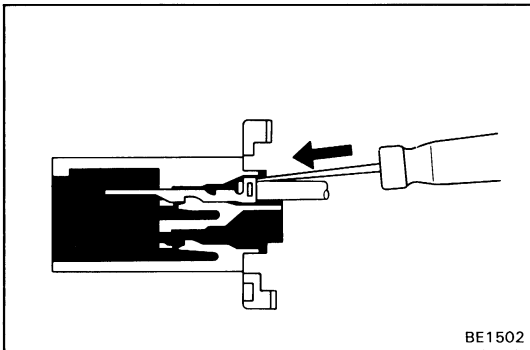
- (a) Pry loose two locking lugs and remove the turn signal switch from the switch body.
- (b) Remove two screws and the headlight dimmer switch from the switch body.
- (c) Remove the headlight dimmer switch pin from the switch body with the spring.

7. REMOVE WIPER AND WASHER SWITCH

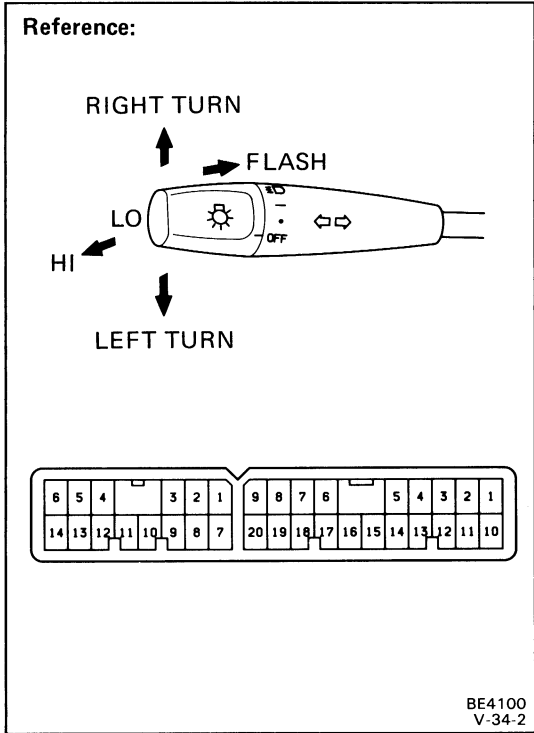
Remove two screws and the switch from the switch body.

**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 operates smoothly.



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



Parts Inspection

Headlight and Taillight System

1. INSPECT COMBINATION SWITCH (Light Control Switch/Continuity)

Terminal (Wire color) Switch position	20/20 (G)	2/14 (Clear)	11/14 (W)	13/14 (R)
OFF				
UP	○	○	○	
TAIL	○	○	○	
HEAD		○	○	○

(Headlight Dimmer and Turn Signal Switch/Continuity)

Headlight Dimmer Switch

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

Turn Signal Switch

Terminal (Color) Switch position	1/14 (G-W)	5/14 (G-B)	8/14 (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
Constant	○	○		
Apply battery voltage to terminals 1 and 2.			○	○

BE1838 BE1840

(Taillight Control Relay/Continuity)

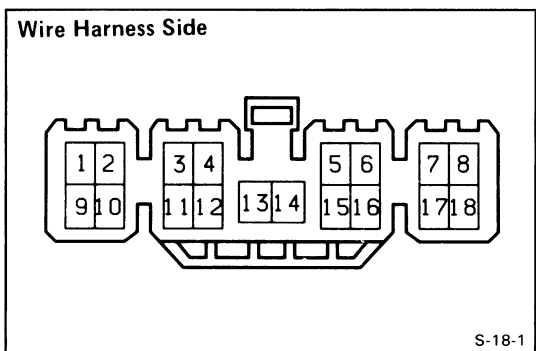
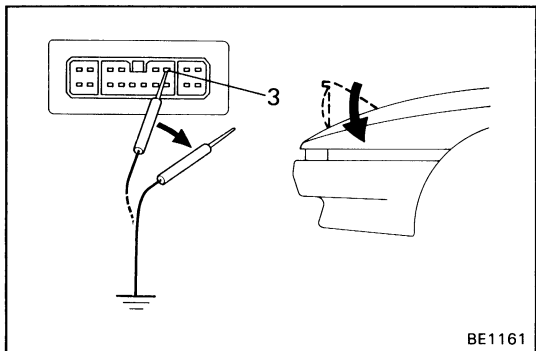
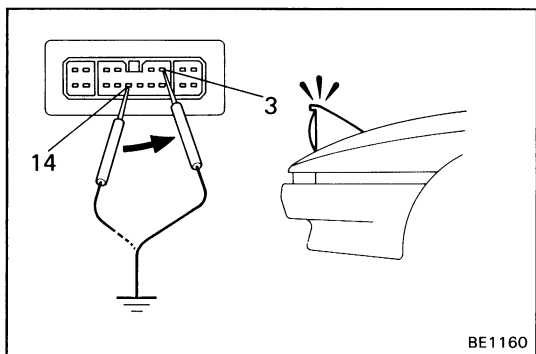
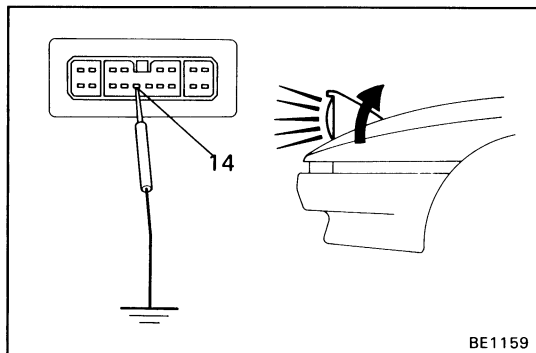
Terminal Condition	1	2	3	4
Constant	○	○		
Apply battery voltage to terminals 1 and 3.		○		○

BE1647 BE1575 BE1841

Light Retractor Control System

1. INSPECT LIGHT RETRACTOR CONTROL RELAY (Relay Operation)

- (a) Turn the light control switch off.
 - (b) With connector connected, ground the terminal 14.
 - (c) Check that the headlights rise with the light lit.
 - (d) Quickly ground terminal 3. The light will go out, but the headlight should remain up.
 - (e) When terminal 3 is taken off ground, the headlights should flip down.
- If operation is not as specified, replace the relay.



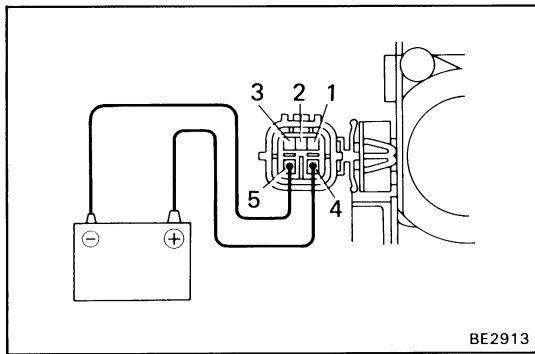
(Relay Circuit)

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

HINT: This circuit includes the diode, if the circuit shows no continuity change the positive and negative probes and recheck the circuit.

Check For	Tester Connection	Condition		Specified Value
Voltage	8 – Ground	—		Battery voltage
Continuity	18 – Ground	—		Continuity
Voltage	4 – Ground	Ignition switch position	LOCK or ACC	No voltage
			ON	Battery voltage
	2 – Ground	—		Battery voltage
	10 – Ground	—		Battery voltage
	15 – Ground	Door position	Closed (Courtesy switch OFF)	Battery voltage
Opened (Courtesy switch ON)			No voltage	

Voltage	17 – Ground (U.S.A. only)	Light switch HEAD, Dimmer switch Low and Front Fog switch ON		Battery voltage
		Any other position		No voltage
Continuity	3 – Ground	Light control switch position	OFF or HEAD	No continuity
			HOLD or TAIL	Continuity
	13 – Ground	Light control switch position	OFF or HOLD	No continuity
			TAIL or HEAD	Continuity
	6, 16 – Ground	–		Continuity
	14 – Ground	Light control switch position: OFF, HOLD or TAIL		
		Headlight dimmer switch position	Low beam or High beam	No continuity
			Flash	Continuity
			Light control switch position: HEAD	Continuity
	5 – 1	Headlight lowermost position		No continuity
	7 – 1	Headlight any position except lowermost position		Continuity
5 – 9	Headlight uppermost position		No continuity	
7 – 9	Headlight any position except uppermost position		Continuity	
11 – Ground (U.S.A. only)	Theft deterrent system does not operate		No continuity	
	Theft deterrent system is operating		Alternates continuity/no continuity	



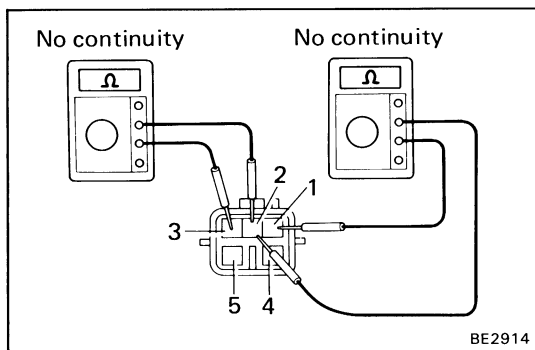
If circuit is as specified, replace the relay.

2. INSPECT LIGHT RETRACTOR MOTOR

(Motor Operation)

- (a) Connect the positive (+) lead from the battery to terminal 4 and the negative (–) lead to terminal 5.
- (b) Check that the motor operates.

If there is no motor operation, replace the motor.



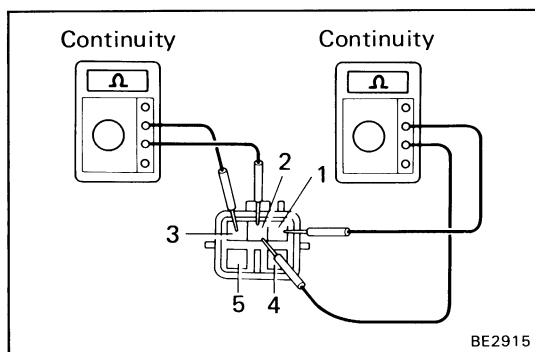
(Diode Continuity)

- (a) Move the headlights to any position except the uppermost or lowermost positions.
- (b) Connect the ohmmeter positive (+) lead to terminal 1 and the negative (–) lead to terminal 2.
- (c) Check that there is no continuity.
- (d) Connect the ohmmeter positive (+) lead to terminal 3 and the negative (–) lead to terminal 2.
- (e) Check that there is no continuity.

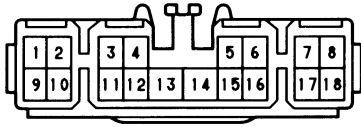
If there is continuity, replace the motor assembly.

- (f) Reverse the test leads of the ohmmeter.
- (g) Check that there is continuity.

If there is no continuity, replace the motor assembly.



Wire Harness Side



e-6-1
e-18-1

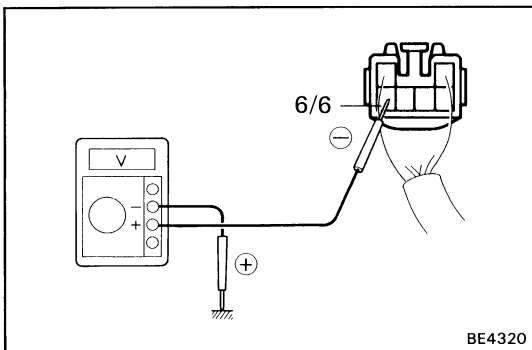
Daytime Running Light System

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	1/6 – Ground	Front fog light switch position	OFF	No continuity
			ON	Continuity
	13/18 – Ground	Light control switch position	OFF or HOLD	No continuity
			TAIL or HEAD	Continuity
3/18 – Ground	Light control switch position	OFF or HEAD	No continuity	
		HOLD or TAIL	Continuity	
18/18 – Ground	–		Continuity	
	14/18 – Ground	Light control switch position: OFF, HOLD or TAIL		
		Headlight dimmer switch position	Low beam or High beam	No continuity
			Flash	Continuity
		Light control switch position: HEAD		Continuity
Voltage	8/18 – Ground	–		Battery voltage
	4/18 – Ground	Ignition switch position	LOCK or ACC	No voltage
			ON	Battery voltage
	2/6 – Ground	–		Battery voltage
	4/6 – Ground	Engine	Stop	No voltage
			Running	Battery voltage
2/18 – Ground	–		Battery voltage	
3/6 – Ground	Light control switch HEAD and Dimmer switch Low		No voltage	
	Light control switch HEAD and Dimmer switch High		Battery voltage	



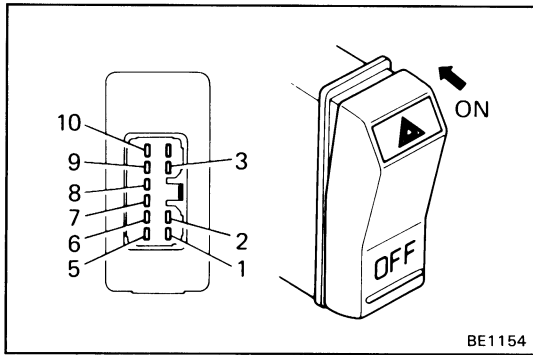
BE4320

If circuit is specified, inspect relay operation.

(Relay Operation)

- (a) Connect the positive (+) lead from the voltmeter to terminal 6/6 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.



Turn Signal and Hazard Warning System

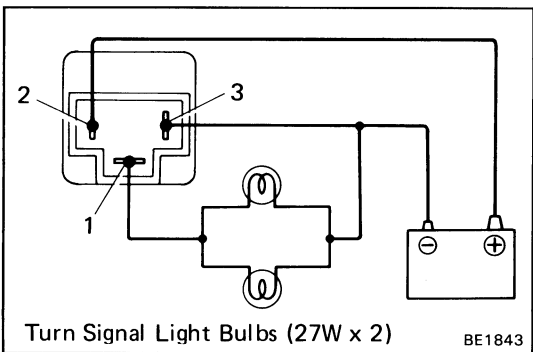
1. INSPECT SWITCHES (Turn Signal Switch/Continuity)

See Headlight Dimmer and Turn Signal Switch on page BE-22.

(Hazard Warning Switch/Continuity)

Terminal	1	2	3	5	6	7	8	9	10
Switch Position									
OFF			○		⊕	○		○	
ON	○	○		○		○	○		○
			○		⊕	○		○	

If continuity is not as specified, replace the switch or bulb.



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.

Fog Light System

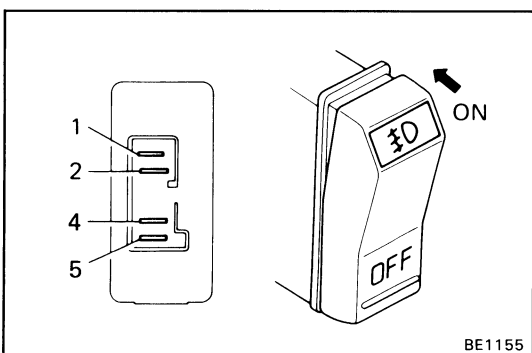
1. INSPECT SWITCH CONTINUITY

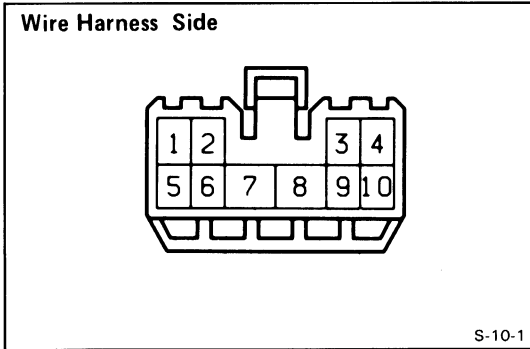
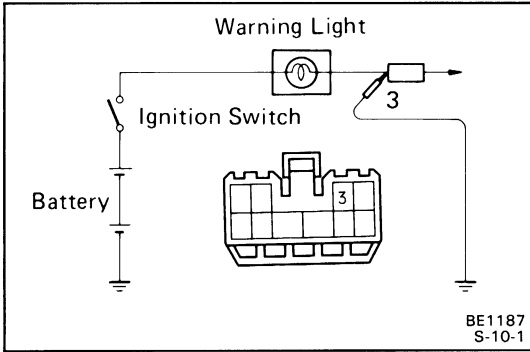
Terminal	1	2	4	5
Switch Position				
OFF	○	⊕		
ON	○	⊕	○	○

If continuity is not as specified, replace the switch or bulb.

2. INSPECT FOG LIGHT RELAY

See Taillight Control Relay on page BE-22.





Taillight Failure Sensor System

INSPECT FAILURE SENSOR

1. INSPECT WARNING LIGHT OPERATION

- (a) Disconnect the connector from the failure sensor. Ground the terminal 3 of wire harness side connector.
- (b) Turn the ignition switch on.
- (c) Check that the bulb lights.

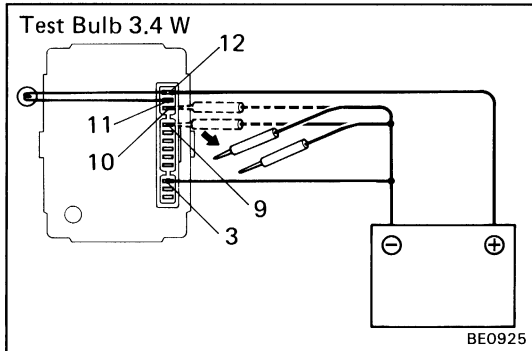
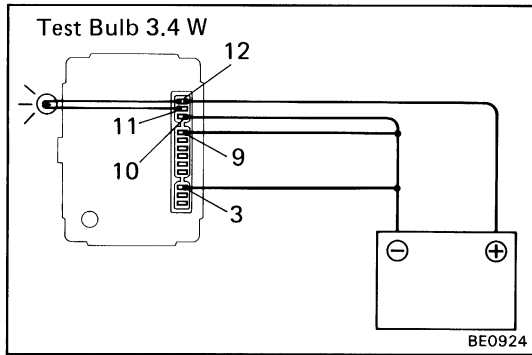
If operation is not as specified, remove and test the bulb.

2. INSPECT FAILURE SENSOR CIRCUIT

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

Terminal	Check Item	Tester Connection	Condition	Voltage or Continuity
1	Continuity	1 – Body Ground	–	Continuity
2	Voltage	2 – Body Ground	Turn ignition switch on	Battery voltage
			Turn ignition switch off	No voltage
3	Voltage	3 – Body Ground	Turn ignition switch on	Battery voltage
4	Continuity	4 – Body Ground	–	Continuity
7	Voltage	7 – Body Ground	Depress brake pedal	Battery voltage
			Return brake pedal	No voltage
9	Continuity	9 – Body Ground	–	Continuity
10	Voltage	10 – Body Ground	Turn taillight switch on	Battery voltage
			Turn taillight switch off	No voltage

If circuit is correct as specified above, replace the failure sensor.



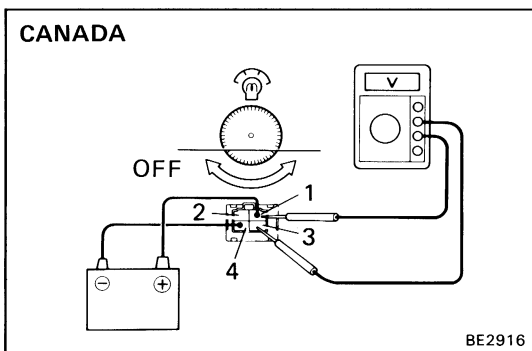
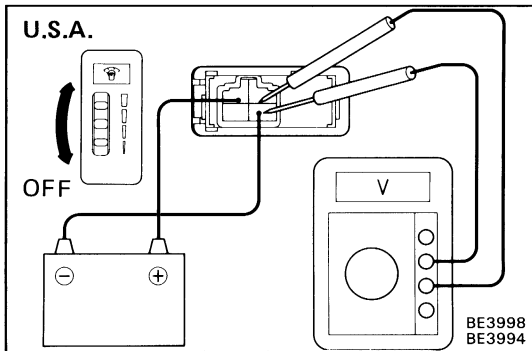
Integration Relay

INSPECT INTEGRATION RELAY

INSPECT RELAY OPERATION (KEY ILLUMINATION)

- Connect the positive (+) lead from the battery to terminal 12 and the negative (–) lead to terminals 3, 9 and 10.
- Connect a 3.4W test bulb between terminals 11 and 12.
- Check that the bulb lights.
- Disconnect the negative (–) lead from the battery to terminals 9 and 10, and check that the bulb goes out 5 seconds later.

If operation is not as specified, replace the relay.



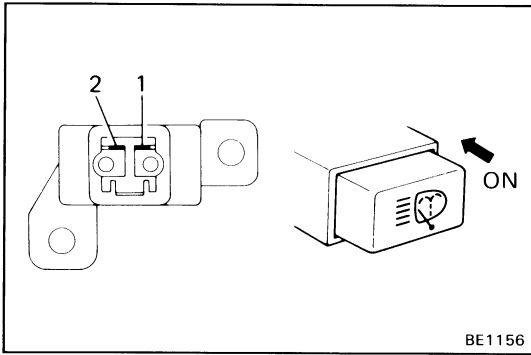
Light Control Rheostat

INSPECT RHEOSTAT

INSPECT RHEOSTAT OPERATION

- Connect the positive (+) lead from the battery to terminal 2 (U.S.A.) or 1 (CANADA) and the negative (–) lead to terminal 3 (U.S.A.) or 4 (CANADA).
- Gradually change the brightness of rheostat from minimum to maximum, check that the voltage between terminals 1 and 3 increases from 0 to 12 V.
- Check that there is no voltage between terminals with the rheostat turned off.

If operation is not as specified, replace the rheostat.



BE1156

HEADLIGHT CLEANER (CANADA Only)

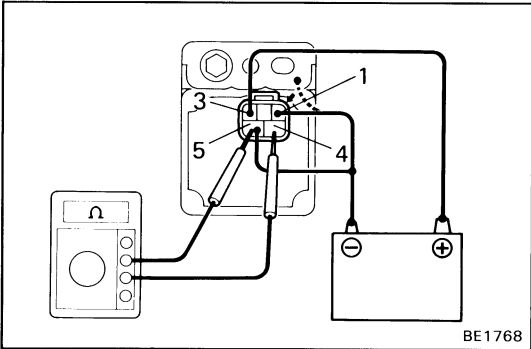
Part Inspection

1. INSPECT HEADLIGHT CLEANER SWITCH

Inspect switch continuity between terminals.

Terminal	1	2
Switch Position		
OFF		
ON	○ — ○	

If continuity is not as specified, replace the switch.



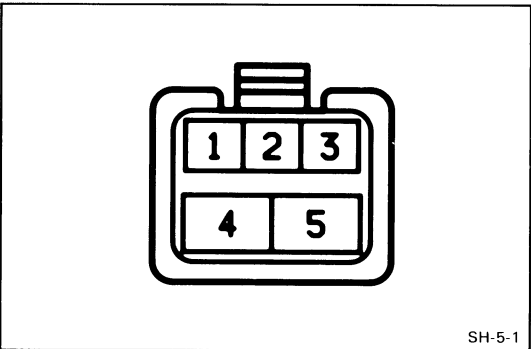
BE1768

2. INSPECT HEADLIGHT CLEANER CONTROL RELAY

- (a) Check that there is no continuity between terminals 4 and 5.
- (b) Connect the positive (+) lead from the battery to terminal 3 and the negative (–) leads to terminals 1 and 5.
- (c) Check that there is continuity between terminals 4 and 5 for 0.4 to 0.6 seconds, then there is no continuity.

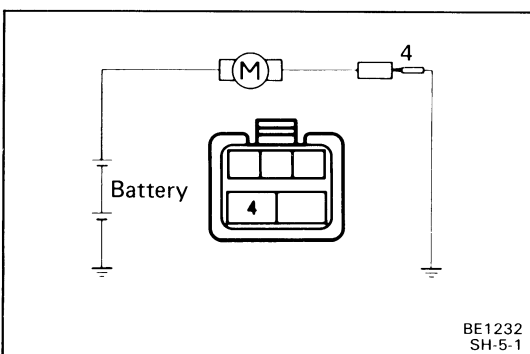
3. INSPECT RELAY CIRCUIT

- (a) Disconnect the control relay and inspect the connector on the wire harness side as shown in the chart below.



SH-5-1

Terminal	Check Item	Tester Connection	Condition	Voltage or Continuity
1	Continuity	1 – Body Ground	Turn light control switch to HEAD and turn headlight cleaner switch on	Continuity
			Turn light control switch to OFF or turn headlight cleaner switch off	No continuity
3	Voltage	3 – Body Ground	Turn ignition switch to ON	Battery voltage
			Turn ignition switch to LOCK or ACC	No voltage
5	Continuity	5 – Body Ground	–	Continuity

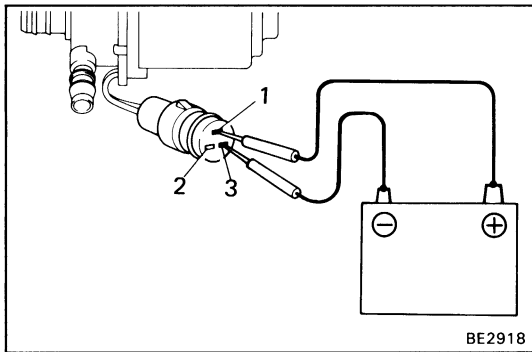


BE1232
SH-5-1

- (b) With the terminal 4 of the connector side grounded, check that the cleaner motor operates.

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

If circuit is as specified, replace the relay.



4. INSPECT MOTOR

- (a) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 3.
- (b) Check that the motor operates.

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

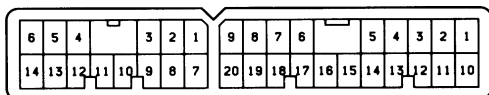
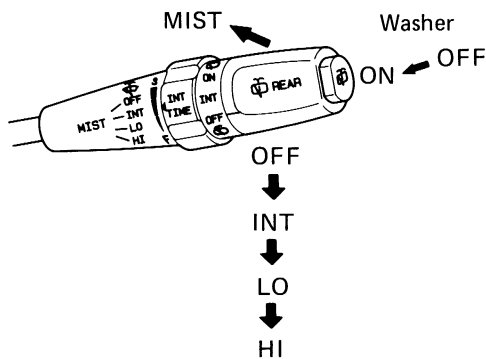
If operation is not as specified, replace the motor.

WIPERS AND WASHERS

Troubleshooting

Problem	Possible cause	Remedy	Page	
			Front	Rear
Wipers do not operate or return to off position	WIPER fuse blown	Replace fuse and check for short	BE-4	BE-4
	Wiper motor faulty	Check motor	BE-33	BE-34
	Wiper switch faulty	Check switch	BE-31	BE-34
	Wiring or ground faulty	Repair as necessary		
Wipers do not operate in INT position	Wiper relay faulty	Check relay	BE-31	BE-34
	Wiper switch faulty	Check switch	BE-31	BE-34
	Wiper motor faulty	Check motor	BE-33	BE-34
	Wiring or ground faulty	Repair as necessary		
Washers do not operate	Washer hose or nozzle clogged	Repair as necessary	BE-31	BE-34
	Washer motor faulty	Replace motor		
	Washer switch faulty	Check switch		
	Wiring faulty	Repair as necessary		

Reference:



BE4109
V-34-2

Front Wiper and Washer Switch

INSPECT SWITCH

INSPECT SWITCH CONTINUITY

Inspect the switch continuity between terminals.

Switch	Terminal (Wire color)	4/20 +S (L-R)	7/20 +1 (L-B)	8/20 W (L)	12/20 C ₁ (Y-B)	13/20 +2 (L-O)	16/20 Ew (B)	18/20 +B (L-W)	6/20 VR ₁ (Y)	14/20 VR ₂ (Y)
Wiper	OFF	○—○								
	INT	○—○			○—○					
	LO		○—○	○—○						
	HI					○—○				
Washer	OFF									
	ON			○—○			○—○			
INT Time Control	SLOW	Approx. 50 kΩ							○—○	○—○
	FAST								○—○	○—○

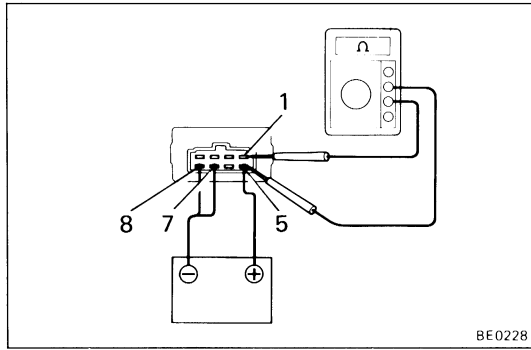
If continuity is not as specified, replace the switch.

Wiper Control Relay

INSPECT CONTROL RELAY

1. INSPECT INTERMITTENT OPERATION

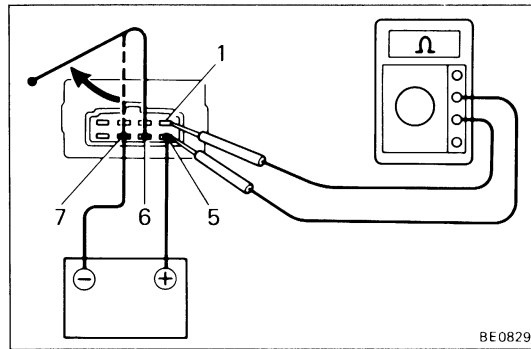
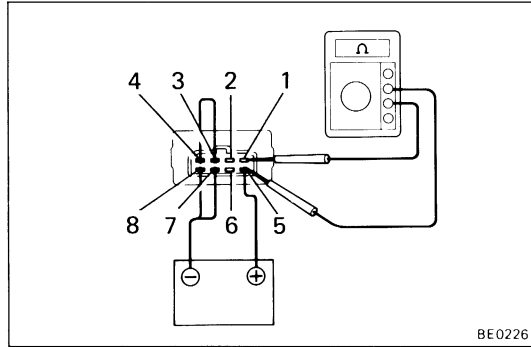
- (a) Connect the positive (+) lead from the battery to terminal 5 and the negative (−) lead to terminal 7.



(b) With terminals 7 and 8 connected, check that continuity between terminals 1 and 5 are as shown in the following diagram.

Condition	Disconnect terminals 3 and 4	Connect terminals 3 and 4
Time (secs.)		
Duration of continuity	0.8 ± 0.2	0.8 ± 0.2
Duration of non-continuity	10 ± 2.0	2.0 ± 0.4

If operation is not as specified, replace the relay.



2. INSPECT WASHER CIRCUIT OF RELAY

- (a) Connect the positive (+) lead from the battery to terminal 5 and the negative (-) lead to terminal 7.
- (b) Inspect continuity between terminals 1 and 5 as follows.

Time (seconds)	Between terminals 1 and 5	Time (seconds)	Between terminals 1 and 5
Connect terminals 6 and 7	0.5 ± 0.1	Disconnect terminals 6 and 7	2.5 ± 0.5
	No Continuity		Continuity
	Continuity		No Continuity

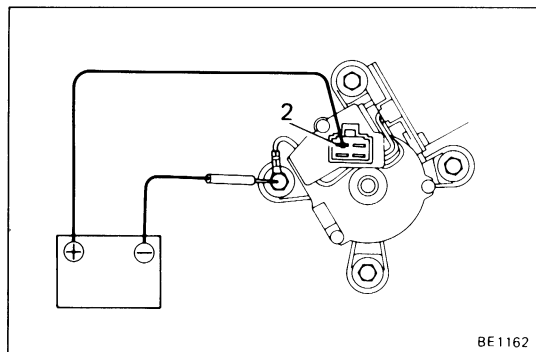
If continuity is not as specified, replace the relay.

REPLACEMENT OF SWITCHES

(See page BE-18, 19)

REPLACE SWITCHES

- (a) Remove the terminals from the connector. (See pages BE-2, 3)
- (b) Remove the wiper and washer switch.
- (c) Install the wiper and washer switch.
- (d) Install the terminals to the connector. (See pages BE-3, 31)

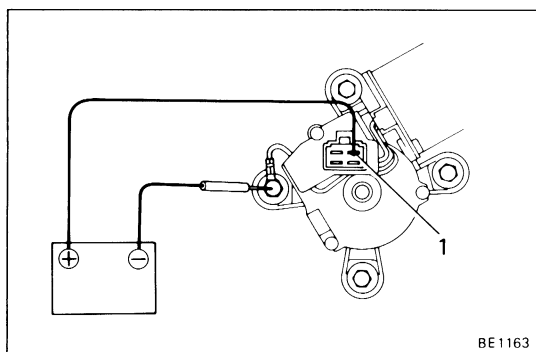


Front Wiper Motor

INSPECT MOTOR

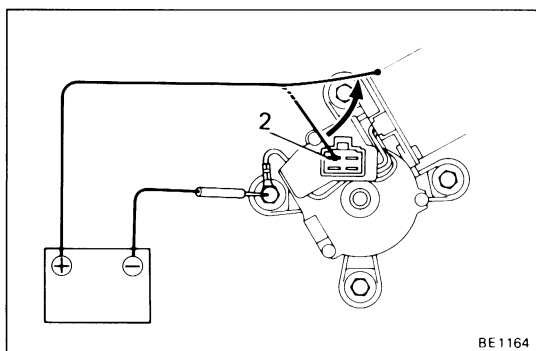
1. INSPECT MOTOR OPERATES AT LOW SPEED

- (a) Disconnect the connector from the wiper motor.
- (b) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to the motor body.
- (c) Check that the motor operates at low speed.



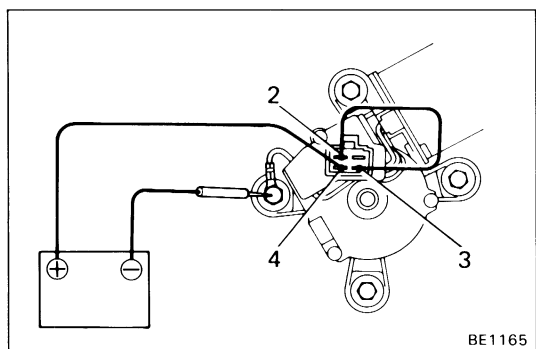
2. INSPECT MOTOR OPERATES AT HIGH SPEED

- (a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to the motor body.
- (b) Check that the motor operates at high speed.



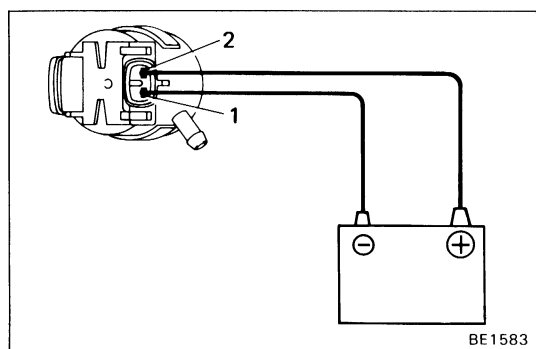
3. INSPECT MOTOR OPERATES, STOPPING AT STOP POSITION

- (a) Operate the motor at low speed.
- (b) Stop motor operation anywhere except at the off position by disconnecting terminal 2.



- (c) Connect terminals 2 and 3.
- (d) Connect the positive (+) lead from the battery to terminal 4.
- (e) Check that the motor stops running at the stop position after the motor operates again.

If operation is not as specified, replace the motor.



Front Washer Motor

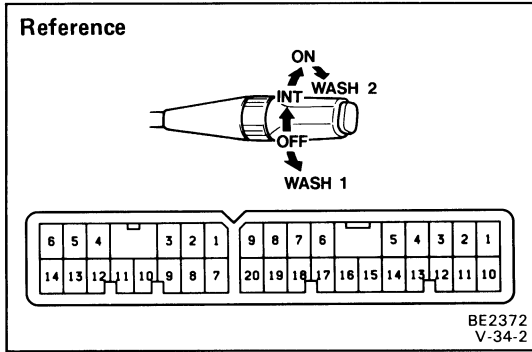
INSPECT MOTOR

INSPECT WASHER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 2 and 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.



Rear Wiper and Washer Switch

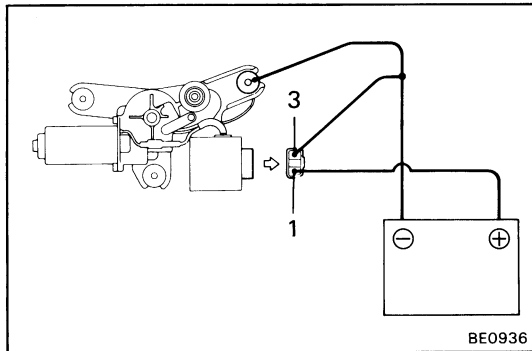
INSPECT SWITCH

INSPECT SWITCH CONTINUITY

Inspect the switch continuity between terminals.

Terminal (Wire color)	1/20 (GR)	2/20 (V)	10/20 (O)	16/20 (B)
Switch Position				
Washer I		○		○
OFF				
INT			○	○
ON	○			○
Washer II	○	○		○

If continuity is not as specified, replace the switch.

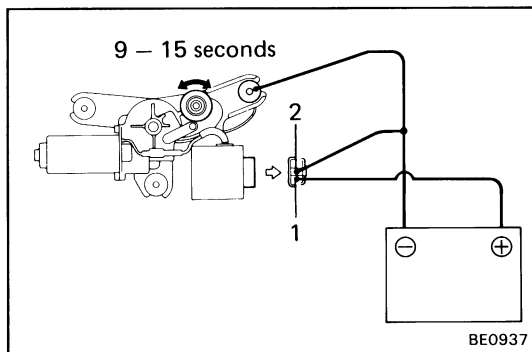


Rear Wiper Motor and Relay

INSPECT MOTOR AND RELAY

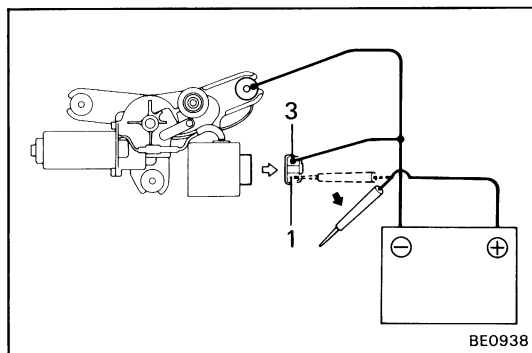
1. INSPECT RELAY AND MOTOR OPERATES

- Connect the positive (+) lead from the battery to terminal 1 and negative (-) leads to both terminal 3 and motor body.
- Check that the motor operates.



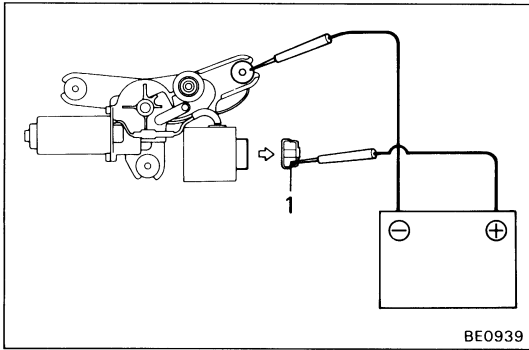
2. INSPECT INTERMITTENT OPERATION OF RELAY

- Connect the positive (+) lead from the battery to terminal 1 and negative (-) leads to both terminal 2 and motor body.
- Check that the motor does not operate intermittently for 9 - 15 seconds.



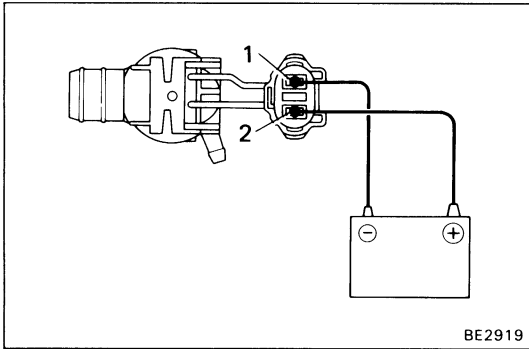
3. INSPECT MOTOR OPERATES, STOPPING AT STOP POSITION

- Start motor operation by connecting the positive (+) lead from the battery to terminal 1 and the negative (-) lead to both terminal 3 and motor body.
- Stop motor operation anywhere except stop position by disconnecting terminal 1.



- (c) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to the motor body.
- (d) 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 Washer Motor

INSPECT MOTOR

INSPECT WASHER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 2 and 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.

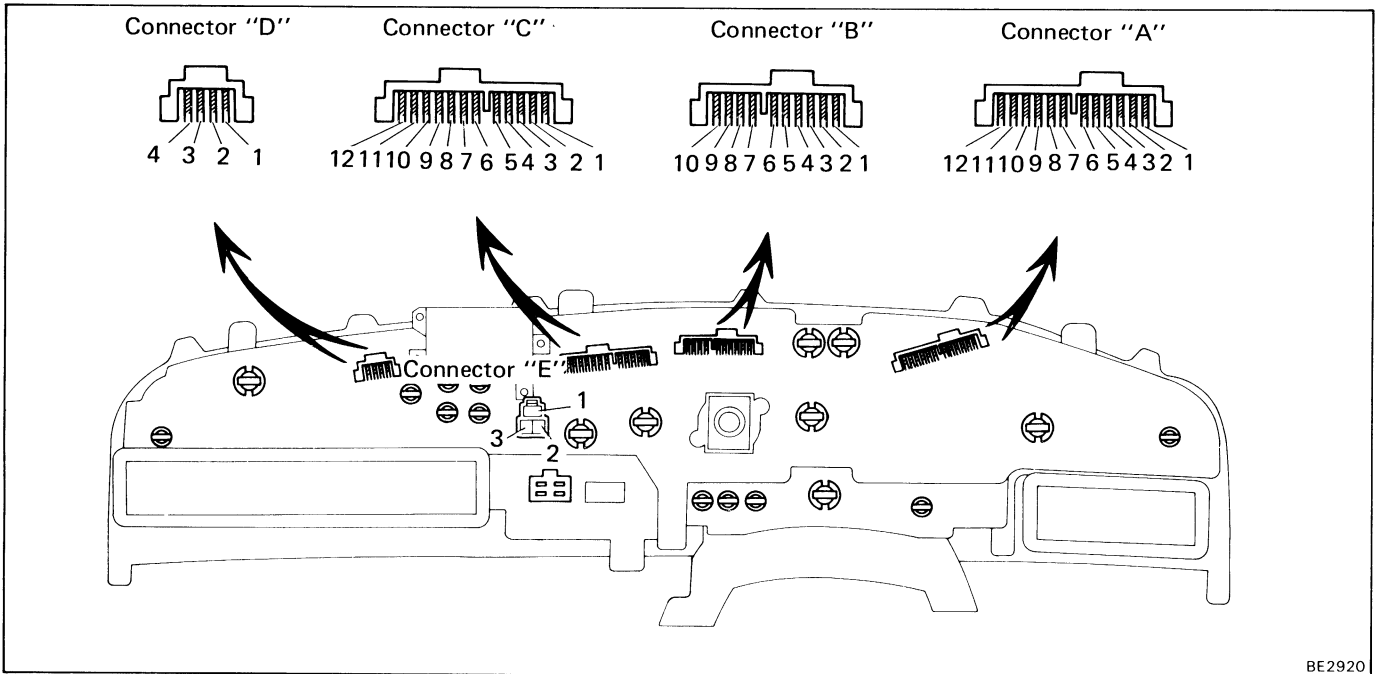
If operation is not as specified, replace the motor.

COMBINATION METER

Troubleshooting

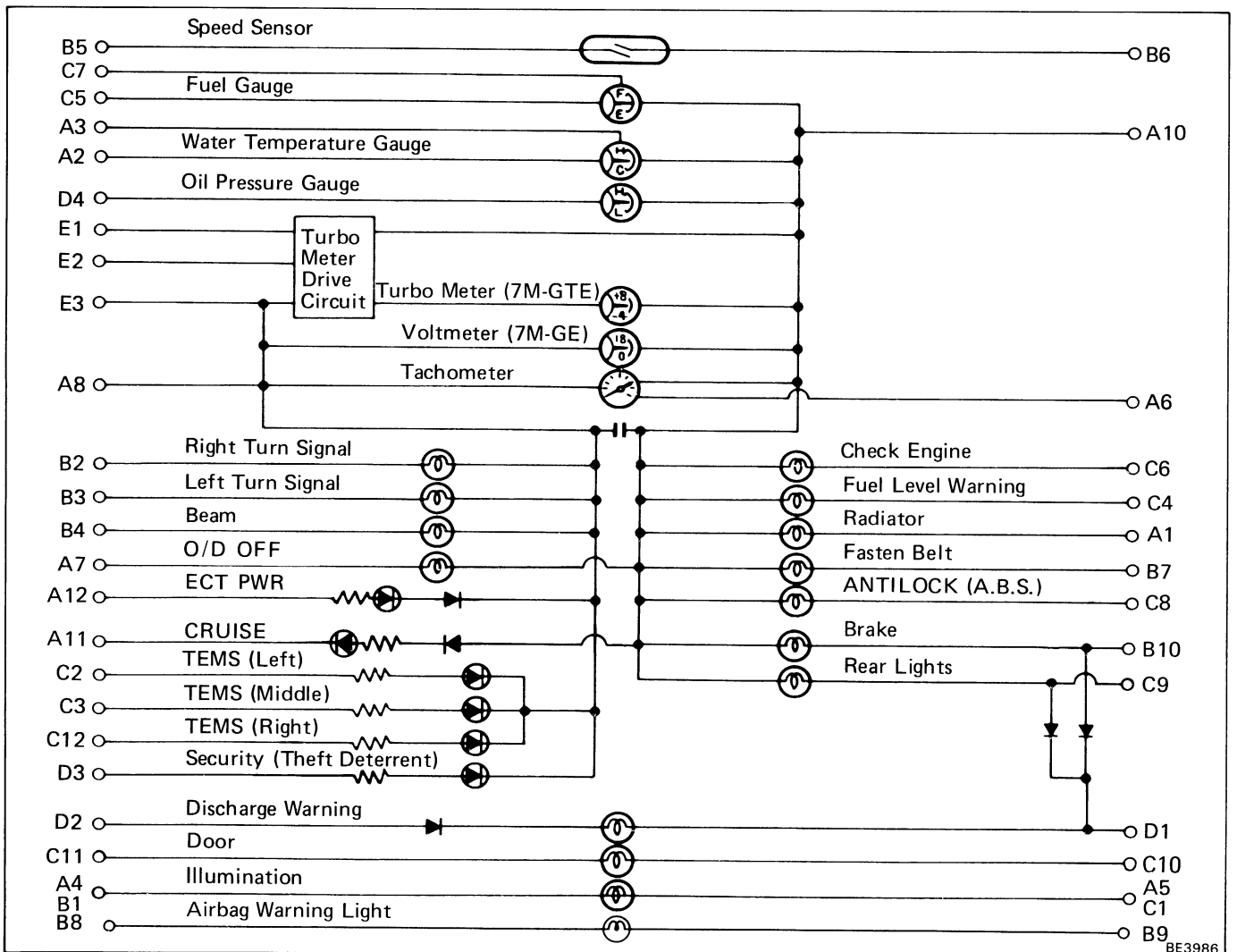
Problem	Possible cause	Remedy	Page
Voltmeter does not operate	Fuses blown Faulty Wiring faulty	Replace in-line fuses and check for short Check voltmeter Repair as necessary	BE-40
Turbo meter does not operate	“GAUGE” fuse blown Turbo meter faulty Pressure sensor faulty Wiring faulty	Replace fuse and check for short Check gauge Check sensor Repair as necessary	BE-45 BE-46
Tachometer does not operate	“GAUGE” fuse blown Tachometer faulty Wiring faulty	Replace fuse and check for short Check tachometer Repair as necessary	BE-39
Fuel gauge does not operate	“GAUGE” fuse blown Fuel gauge faulty Sender gauge faulty Wiring or ground faulty	Replace fuse and check for short Check gauge Check sender gauge Repair as necessary	BE-40 BE-40
Fuel level warning light does not operate	“GAUGE” fuse blown Bulb burned out Fuel level warning switch faulty Wiring or ground faulty	Replace fuse and check for short Replace bulb Check switch Repair as necessary	BE-41
Water temperature gauge does not operate	“GAUGE” fuse blown Water temperature gauge faulty Water temperature sender gauge faulty Wiring or ground faulty	Replace fuse and check for short Check gauge Check sender gauge Repair as necessary	BE-41 BE-42
Oil pressure receiver gauge does not operate	“GAUGE” fuse blown Oil pressure receiver gauge faulty Oil pressure sender gauge faulty Wiring or ground faulty	Replace fuse and check for short Check receiver gauge Check sender gauge Repair as necessary	BE-42 BE-43
Brake warning light does not light	“GAUGE” fuse blown Bulb burned out Brake fluid level warning switch faulty Parking brake switch faulty Wiring or ground faulty	Replace fuse and check for short Replace bulb Check switch Check switch Repair as necessary	BE-43 BE-43
Fasten belt warning does not operate	IGN fuse blown Bulb burned out Seat belt buckle switch faulty No. 1 integration relay faulty Wiring faulty	Replace fuse and check for short Replace bulb Replace switch Replace relay Repair as necessary	BE-44 BE-44
Airbag warning light does not operate	“ECU-B” fuse blown Bulb burned out Wiring faulty	Replace fuse and check for short Replace bulb Repair as necessary	

Combination Meter and Gauge



BE2920

COMBINATION METER CIRCUIT



BE3986

No.		Wiring connector side
A	1	Radiator Coolant Level Warning Switch
	2	Water Temperature Sender Gauge
	3	Ground
	4	TAIL Fuse
	5	Light Control Rheostat
	6	Igniter
	7	O/D Main Switch
	8	Ground
	9	—
	10	GAUGE Fuse
	11	Cruise Control Main Switch
	12	ECT Select Switch (PWR)
B	1	TAIL Fuse
	2	Turn Signal Switch (Right)
	3	Turn Signal Switch (Left)
	4	Headlight Dimmer Switch
	5	Ground
	6	TCCS ECU, ECT CPU, TEMS CPU and Cruise Control CPU
	7	Integration Relay
	8	Airbag Warning Light
	9	Airbag Warning Light
	10	Parking Brake Switch and Brake Fluid Level Warning Switch
C	1	Light Control Rheostat
	2	TEMS CPU
	3	TEMS CPU
	4	Fuel Sender Gauge (Level Warning Switch)
	5	Fuel Sender Gauge
	6	TCCS CPU
	7	Ground
	8	A.B.S. Actuator and A.B.S. CPU
	9	Taillight Failure Sensor
	10	Door Courtesy Switch
	11	DOME Fuse
	12	TEMS CPU
D	1	Alternator
	2	IGN Fuse
	3	Security (Theft Deterrent) CPU
	4	Oil Pressure Sender Gauge
E	1	Turbo Pressure Sensor
	2	5V
	3	Ground

Speedometer

ON-VEHICLE INSPECTION OF SPEEDOMETER

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

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

Standard indication (mph)	Allowable range (mph)
20	20 – 23
40	40 – 43.5
60	60 – 64
80	80 – 84.5
100	100 – 105

Standard indication (km/h)	Allowable range (km/h)
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

If error is excessive, replace the speedometer.

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

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

Tachometer

ON-VEHICLE INSPECTION OF TACHOMETER

- (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.

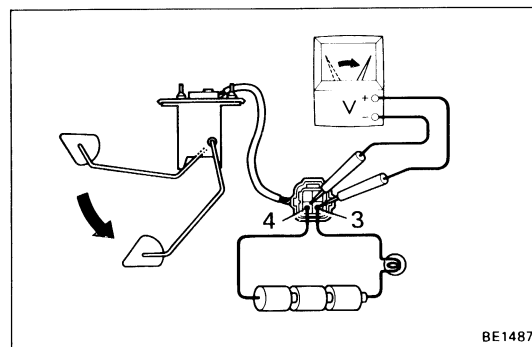
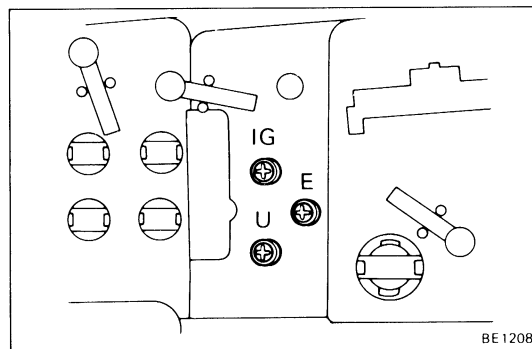
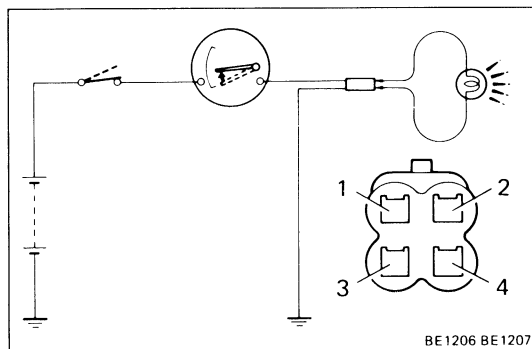
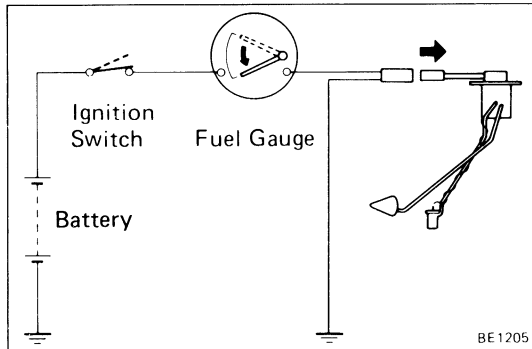
DC 13.5V, 25°C	
Standard indication (rpm)	Allowable range (rpm)
700	610 – 750
3,000	2,800 – 3,200
5,000	4,800 – 5,200
7,000	6,700 – 7,300

If error is excessive, replace the tachometer.

Voltmeter

INSPECTION OF VOLTMETER

Compare the tester and voltmeter indications.
If error is excessive, replace the voltmeter.



Fuel Gauge

INSPECTION OF GAUGE

1. INSPECT RECEIVER GAUGE OPERATION

- Disconnect the connector from the fuel sender gauge.
- Turn the ignition switch on. Check that the receiver gauge needle moves to the empty position.
- Connect the terminals 3 and 4 on the wire harness side connector through a 3.4 W test bulb.
- Turn the ignition switch on. Check that the bulb lights and receiver gauge needle moves towards the full position.

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

If operations are not as specified, remove and test the receiver gauge.

2. MEASURE RECEIVER GAUGE RESISTANCE

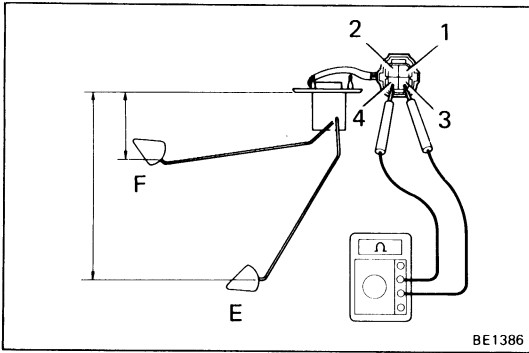
Measure the resistance between terminals.

Between terminals	Resistance (Ω)
IG - U	Approx. 102.7
IG - E	Approx. 167.2
U - E	Approx. 64.5

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

3. INSPECT SENDER GAUGE OPERATION

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



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

	Float position	mm (in.)	Resistance (Ω)
F	71.7 \pm 3	(2.823 \pm 0.12)	4.0 \pm 1.0
E	237.2 \pm 3	(9.339 \pm 0.12)	110.0 \pm 7.7

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

Fuel Level Warning

INSPECTION OF LEVEL WARNING

1. INSPECT WARNING LIGHT OPERATION

(a) Disconnect the connector from the fuel sender gauge. Connect the terminals 1 and 2 on the wire harness side connector.

(b) Turn the ignition switch on. Check that the bulb lights. If the bulb does not light, remove and test the bulb.

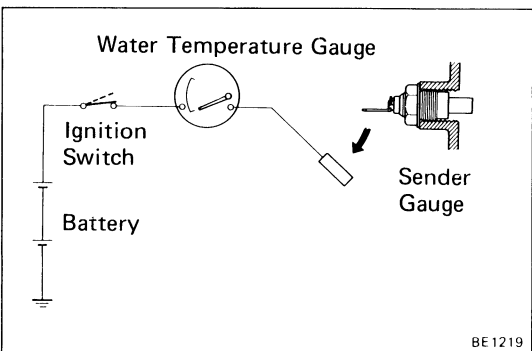
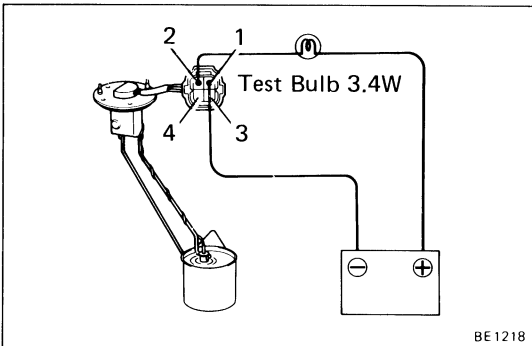
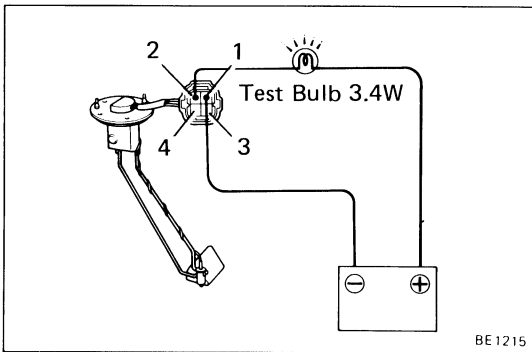
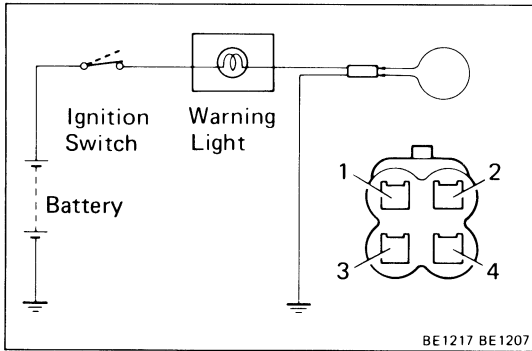
2. INSPECT WARNING SWITCH OPERATION

(a) Apply battery voltage between terminals 1 and 2 through a 3.4 W test bulb. Check that the bulb lights.

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

(b) Submerge the switch in gasoline. Check that the bulb goes out.

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



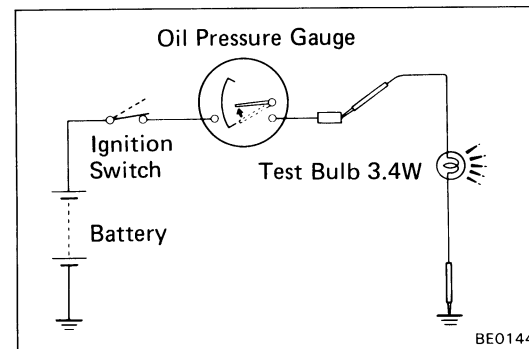
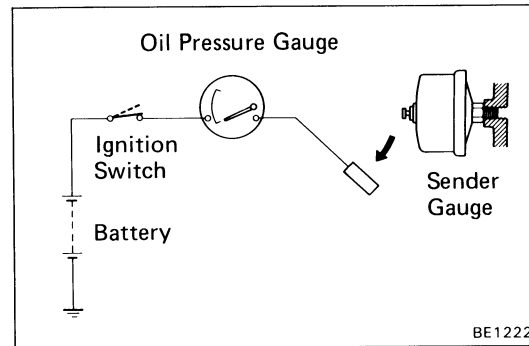
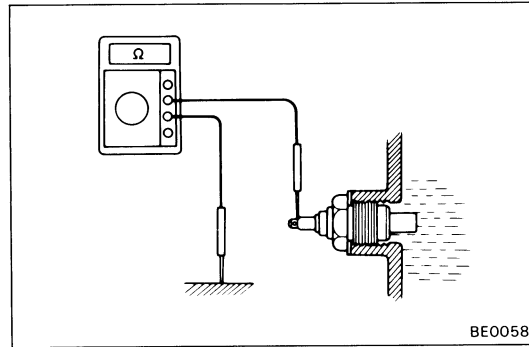
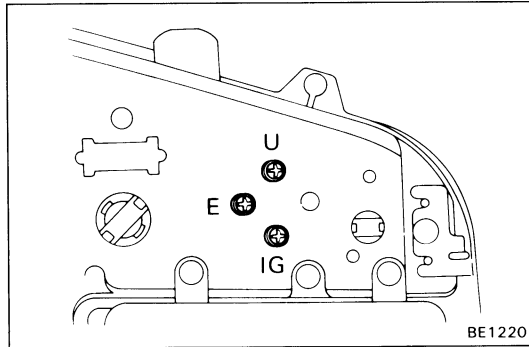
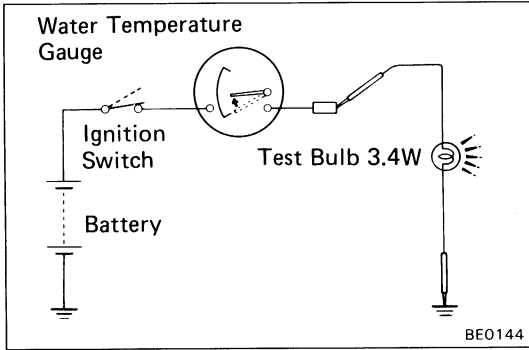
Water Temperature Gauge

INSPECTION OF GAUGE

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 moves to the cold position.



- (c) Ground the 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 and receiver gauge needle moves to the hot side.
- If operations are not as specified, remove and test the receiver gauge.

2. MEASURE RECEIVER GAUGE RESISTANCE

Measure the resistance between terminals.

Between terminals		Resistance (Ω)
Negative lead (-) from ohmmeter	Positive lead (+) from ohmmeter	
IG	U	Approx. 54.0
IG	E	Approx. 146.2
U	E	Approx. 200.2

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

3. MEASURE SENDER GAUGE RESISTANCE

Measure the resistance between terminal and ground.

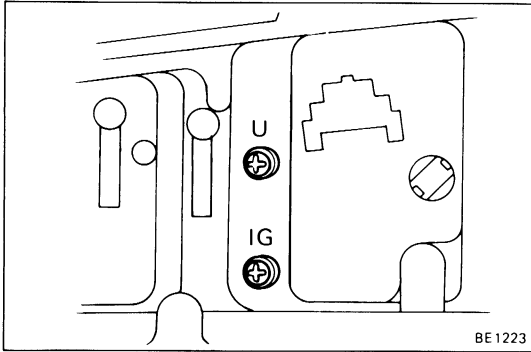
Water temperature °C (°F)	Resistance (Ω)	
	Yazaki	Nippondenso
50 (122)	—	198.5 ^{+33.6} -36.6
60 (140)	152.7	—
115 (239)	26.4 ^{+2.2} -2.6	—
120 (248)	—	19.6 ^{+1.71} -2.21

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

**Oil pressure Gauge
INSPECTION OF GAUGE**

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 moves to the low position.
- (c) Ground the terminal on the wire harness side connector through a 3.4 W test bulb. Check that the receiver gauge needle moves to the high side.

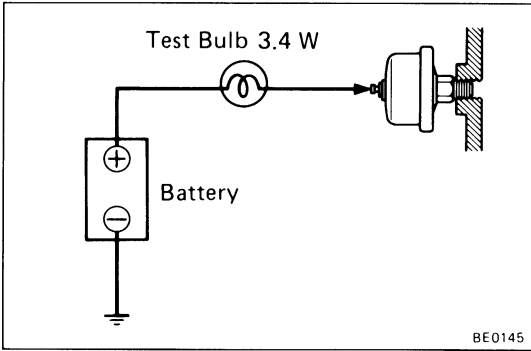


2. MEASURE RECEIVER GAUGE RESISTANCE

Measure the resistance between terminals.

Resistance: Approx. 42 Ω

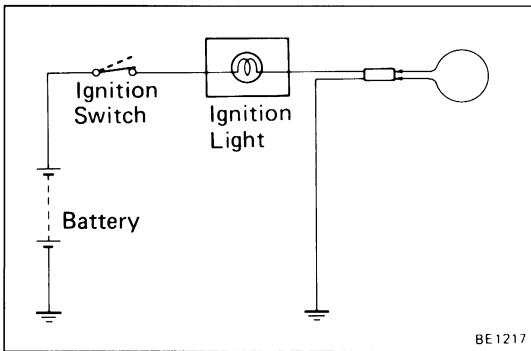
If resistance value is not as specified, replace the receiver gauge.



3. INSPECT SENDER GAUGE OPERATION

- (a) Disconnect the connector from the sender gauge.
- (b) Apply battery voltage to sender gauge terminal through a 3.4 W test bulb.
- (c) Check that the bulb does not light when the engine is stopped.
- (d) Check that the bulb flashes when the engine is running.
The number of flashes should vary with engine speed.

If operations are not as specified, replace the sender gauge.



Brake Warning

INSPECTION OF BRAKE WARNING

1. INSPECT WARNING LIGHT OPERATION

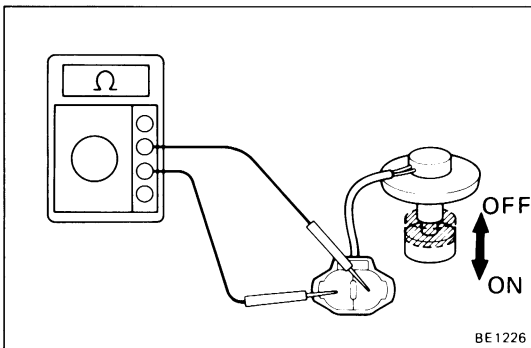
- (a) Disconnect the connectors from the level warning switch and parking brake switch.
- (b) Connect the terminals on the wire harness side of the level warning switch connector.
- (c) Disconnect the connector from the alternator and turn the ignition switch ON.
Check that the warning light lights.

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

2. INSPECT LEVEL WARNING SWITCH OPERATION

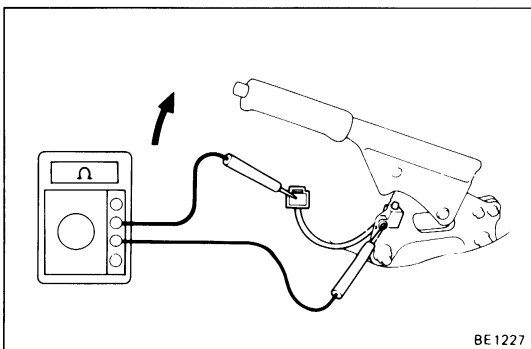
- (a) Check that there is no continuity between terminals with the switch OFF (float up).
- (b) Check that there is continuity between terminals with the switch ON (float down).

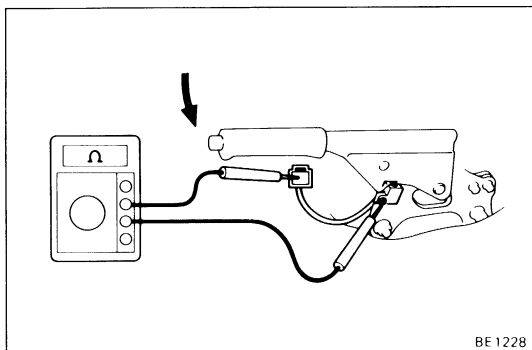
If operations are not as specified, replace the switch.



3. INSPECT PARKING BRAKE SWITCH OPERATION

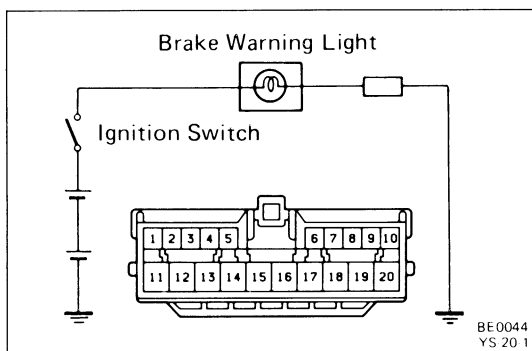
- (a) Check that there is continuity between the terminal and switch set screw with the parking brake lever pulled up.





- (b) Check that there is no continuity between the terminal and switch set screw with the parking brake lever returned.

If operation is not as specified, replace the switch.

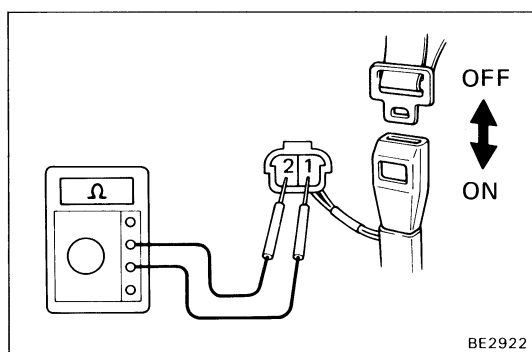


Fasten Belt Warning

INSPECTION OF BELT WARNING

1. INSPECT WARNING LIGHT OPERATION

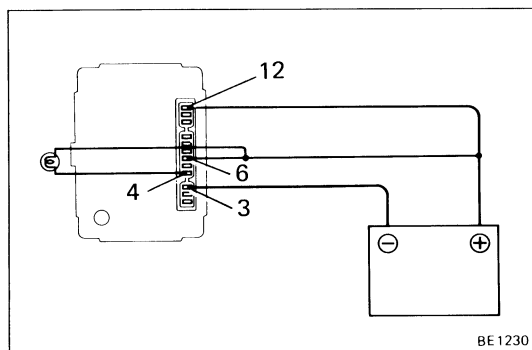
- (a) Disconnect the connector from the fuse and relay block No.1(1G). Ground the terminal 6 on the wire harness side connector.
- (b) Turn the ignition switch on. Check that the bulb lights. If the bulb does not light, remove and test the bulb.



2. INSPECT BUCKLE SWITCH OPERATION

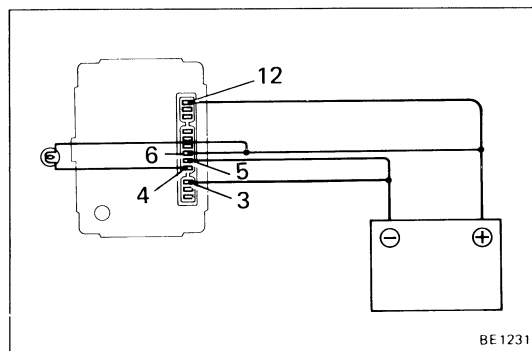
- (a) Disconnect the connector from the switch.
- (b) Check that there is no continuity between terminals of the switch with the belt unfastened.
- (c) Check that there is continuity between terminals of the switch with the belt fastened.

If operation is not as specified, replace the switch.



3. INSPECT INTEGRATION RELAY OPERATION

- (a) Connect the positive lead (+) from the battery to terminals 6 and 12.
- (b) Connect the positive lead (+) from the battery to terminal 4 through a 3.4W test bulb.
- (c) Ground terminal 3, check that the bulb lights and the buzzer sounds for 4 – 8 seconds.



- (d) Connect the positive lead (+) from the battery to terminals 6 and 12.
- (e) Connect the positive lead (+) from the battery to terminal 4 through a 3.4W test bulb.
- (f) Ground terminals 3 and 5, check that only the bulb lights for 4 – 8 seconds.

If operation is not as specified, replace the relay.

Turbo Meter

INSPECTION OF METER

1. INSPECT METER OPERATION

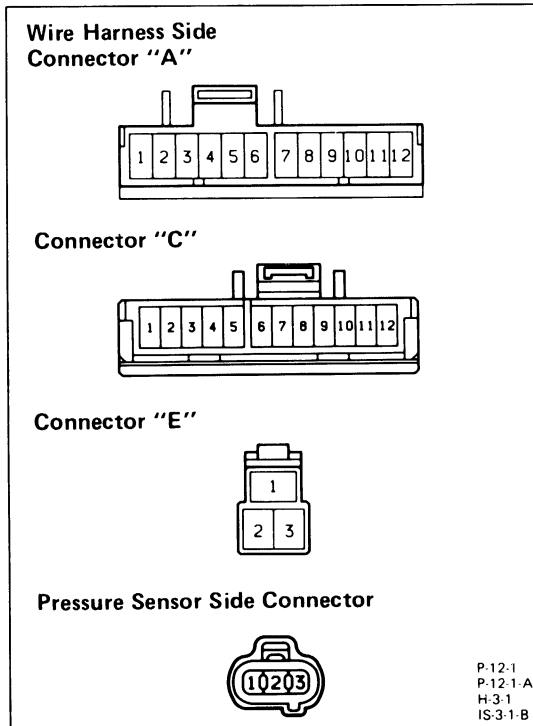
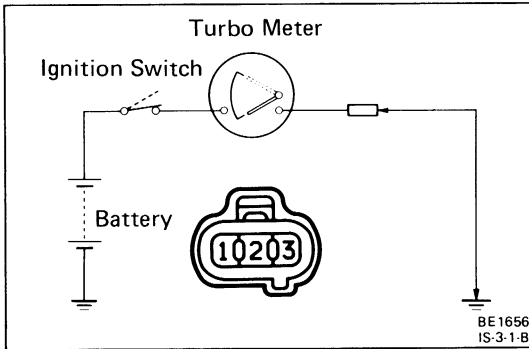
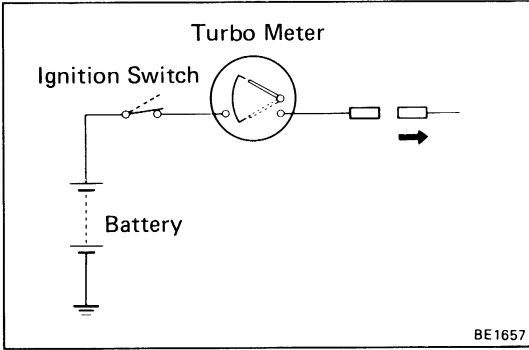
- (a) Disconnect the connector from the pressure sensor.
- (b) Turn the ignition switch ON. Check that the meter needle moves to upper position.

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

If operations are not as specified, inspect the meter drive circuit.

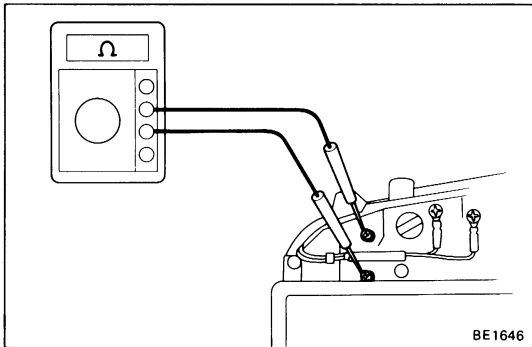
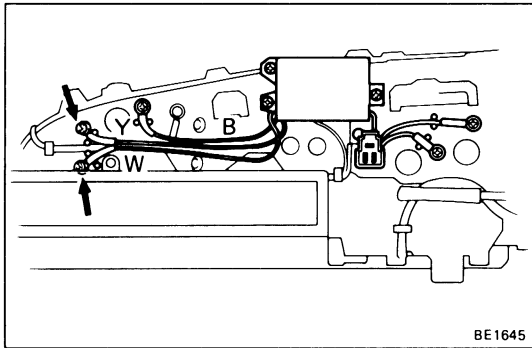
2. INSPECT METER DRIVE CIRCUIT

Disconnect the connectors from the combination meter and inspect the connector on the wire harness side as shown in the chart below.



Check For	Tester Connection	Condition	Specified Value
Continuity	On the connector "A" 8 – Ground	Always	Continuity
Voltage	On the connector "C" 8 – Ground	Turn ignition switch to LOCK or ACC	No voltage
		Turn ignition switch ON	Battery voltage
Continuity	On the connector "E" 1 – Ground 2 – Ground 3 – Ground	Disconnect the connector from the pressure sensor	No continuity
		Disconnect the connector from the pressure sensor and ground the three terminals on the wire harness side	Continuity

If circuit is as specified, measure the turbo meter resistance.



3. MEASURE TURBO METER RESISTANCE

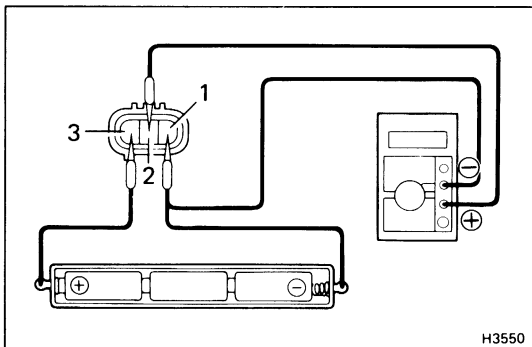
- (a) Disconnect the two drive circuit wire harnesses from the turbo meter terminals.

- (b) Measure the resistance between terminals.

Resistance: Approx. 72 Ω

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

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

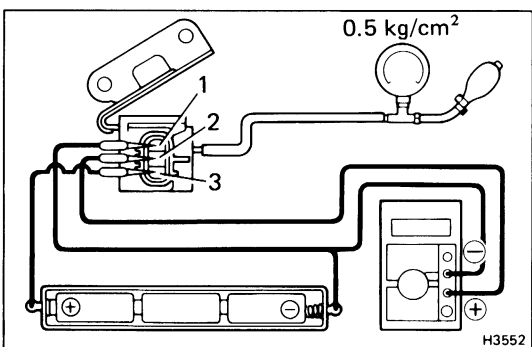
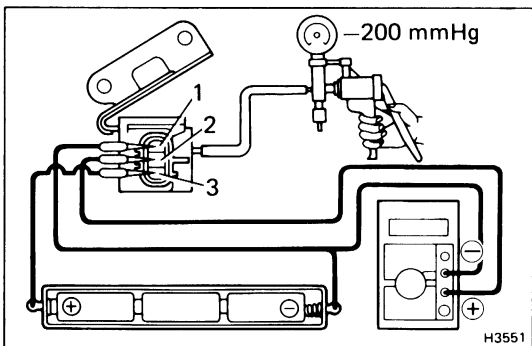


4. INSPECT PRESSURE SENSOR

- (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. 1.5 V

- (e) Apply 200 mmHg (7.87 in.Hg, 26.7 kPa) of vacuum. Check that the voltage drops below 1.5 V.



- (f) Using SST, apply 0.5 kg/cm² (7.1 psi, 49 kPa) of pressure.

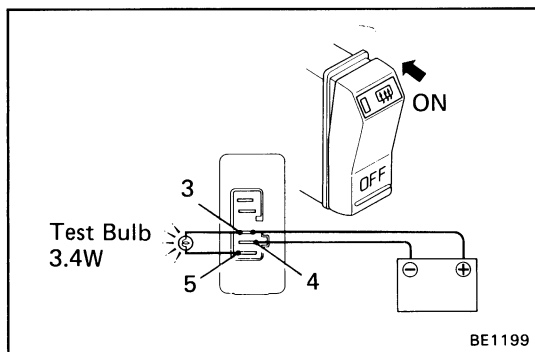
Check that the voltage rises above 1.5 V.

SST 09992-00241

If operations are not as specified, replace the sensor.

REAR WINDOW DEFOGGER Troubleshooting

Problem	Possible cause	Remedy	Page
Rear window defogger does not work	Circuit breaker OFF	Reset breaker and check for short	BE-4
	GAUGE fuse blown	Replace fuse and check for short	BE-4
	Defogger switch faulty	Check switch	BE-47
	Defogger relay faulty	Check relay	BE-47
	Defogger wire broken	Check wires	BE-48
	Wiring and ground faulty	Repair as necessary	



Rear Window Defogger Switch

INSPECTION OF DEFOGGER SWITCH

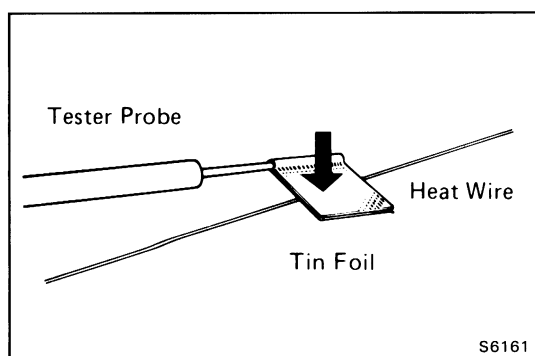
INSPECT SWITCH OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 4. Connect terminals 3 and 5 through a 3.4W test bulb.
- (b) Push the defogger switch on. Check that the bulb lights for 12 to 18 minutes, then the bulb goes out.

If operation is not as specified, replace the switch.

Rear Window Defogger Relay

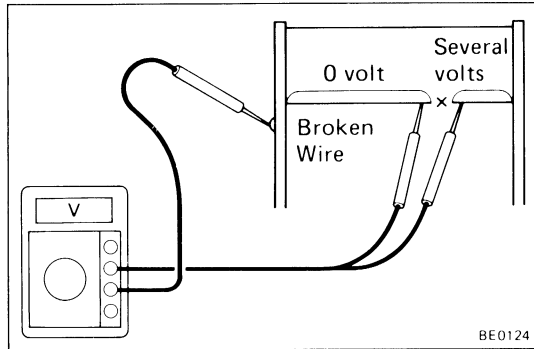
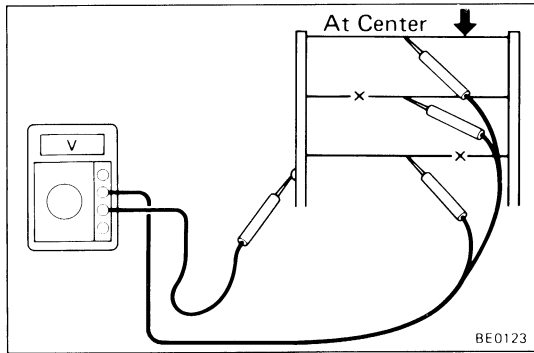
(See Taillight Control Relay on page BE-22)



Rear Window 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 tip of the negative probe and press the foil against the wire with your finger as shown.



INSPECTION OF REAR WINDOW DEFOGGER WIRES

1. INSPECT FOR WIRE BREAKAGE

- Turn the ignition switch to ON.
- Turn the defogger switch to ON.
- Inspect the voltage at the center of each heat wire as shown.

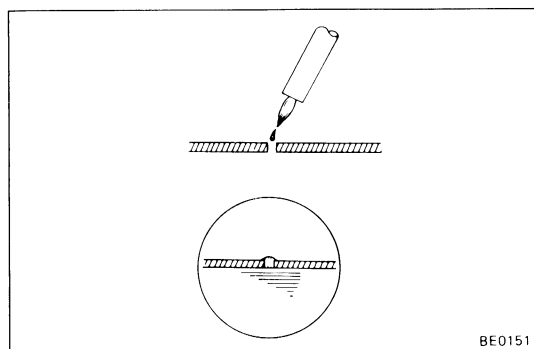
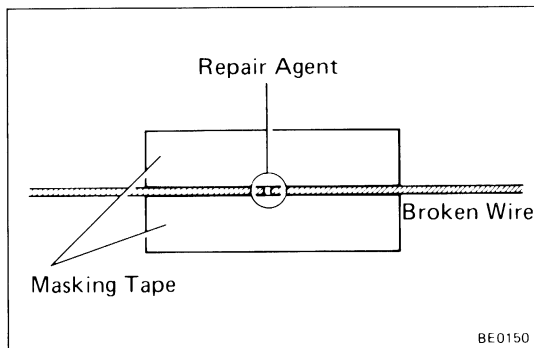
Voltage	Criteria
Approx. 5V	Okay (No break in wire)
Approx. 10V or 0V	Broken wire

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

2. INSPECT FOR WIRE BREAKAGE POINT

- Place the voltmeter positive (+) lead against the defogger positive (+) terminal.
- 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.
- 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 will indicate 0 V at the positive (+) end of the heat wire but gradually increase to about 12 V as the meter probe is moved to the other end.



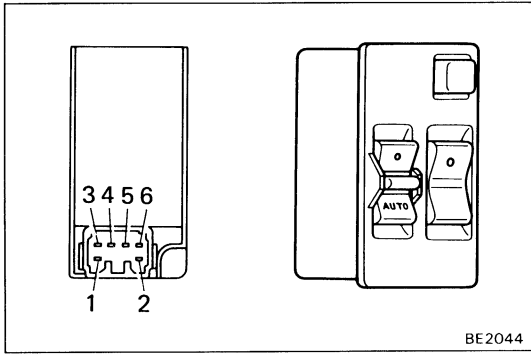
REPAIR OF REAR WINDOW DEFOGGER WIRES

1. CLEAN BROKEN WIRE TIPS WITH CLEANER

2. PLACE MASKING TAPE ALONG BOTH SIDES OF WIRE TO BE REPAIRED

3. REPAIR DEFOGGER WIRES

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



BE2044

POWER WINDOW

Power Window Master Switch

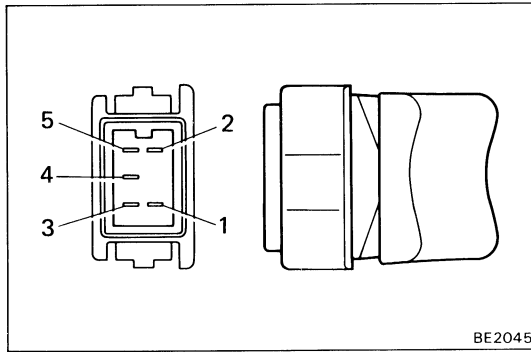
INSPECTION OF SWITCH

INSPECT SWITCH CONTINUITY

Inspect the switch continuity between terminals.

Operation window		Driver's side				Passenger's side			
Terminal		1	2	6	5	1	3	4	5
Switch Position									
Window Unlock	UP	○—○		○—○		○—○		○—○	
	OFF		○—○	○—○	○—○		○—○	○—○	○—○
	DOWN	○—○		○—○		○—○		○—○	
Window Lock	UP	○—○		○—○		○—○			
	OFF		○—○	○—○	○—○		○—○		
	DOWN	○—○		○—○		○—○		○—○	

If continuity is not as specified, replace the switch.



BE2045

Power Window Door Switch

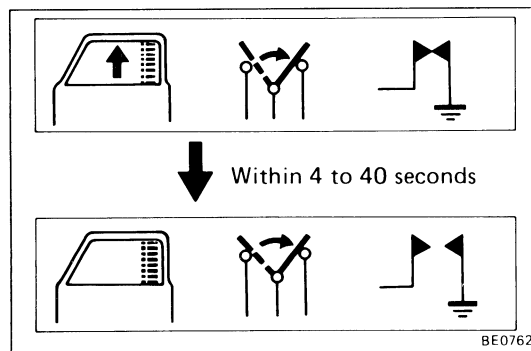
INSPECTION OF SWITCH

INSPECT SWITCH CONTINUITY

Inspect the switch continuity between terminals.

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

If continuity is not as specified, replace the switch.



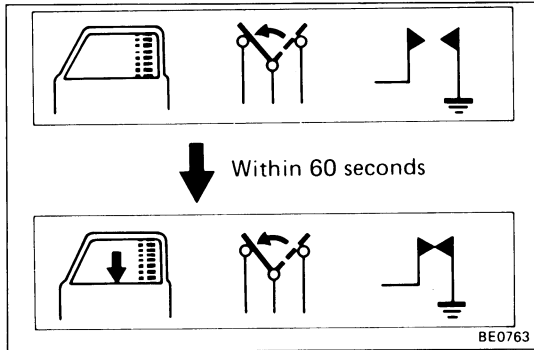
BE0762

Power Window Motor

INSPECTION OF MOTOR

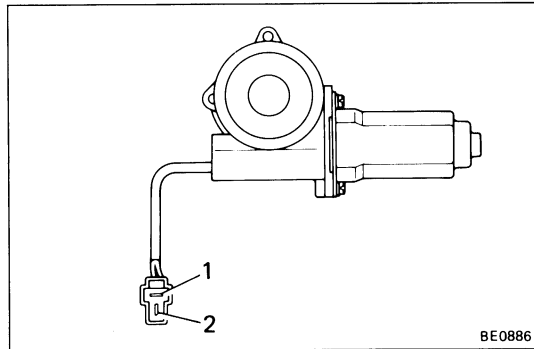
1. INSPECT CIRCUIT BREAKER OPERATION

- (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 with 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.

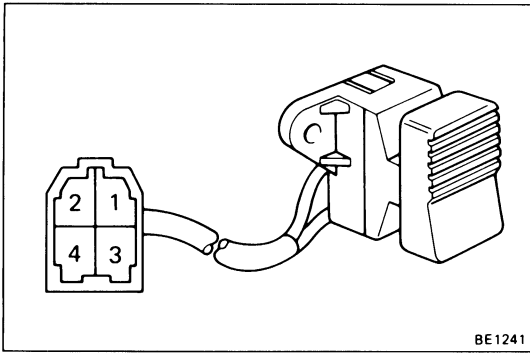
If operation is not as specified, replace the motor.



2. INSPECT MOTOR OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 1 and negative (-) lead to terminal 2, and check that the motor turns.
- (b) Connect the positive (+) lead from the battery to terminal 2 and negative (-) lead to terminal 1, and check that the motor turns the opposite way.

If operation is not as specified, replace the motor.



BE1241

DOOR LOCK CONTROL SYSTEM

Door Lock Control Switch

INSPECTION OF SWITCH

INSPECT LEFT AND RIGHT SWITCH CONTINUITY

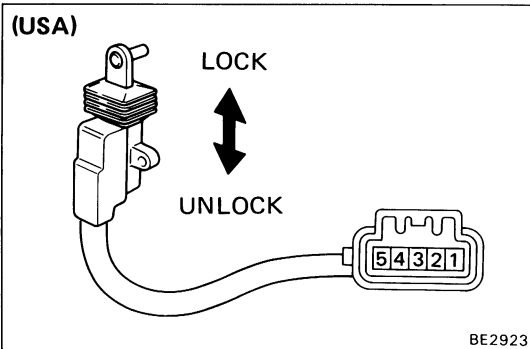
Inspect the switch continuity between terminals.

Terminal Switch Position	4	1	3
LOCK		○ — ○	
OFF			
UNLOCK	○ — ○		

If continuity is not as specified, replace the switch.

Unlock Warning Switch

(See page BE-15)



BE2923

Door Lock Key Switch

INSPECTION OF SWITCH

INSPECT SWITCH CONTINUITY

Inspect the switch continuity between terminals.

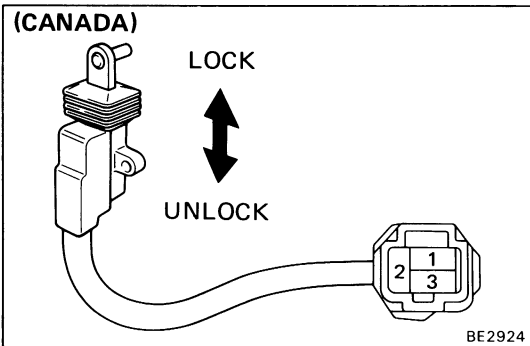
(USA)

Terminal Switch Position	5	3	4
LOCK	○ — ○	○ — ○	
UNLOCK		○ — ○	○ — ○

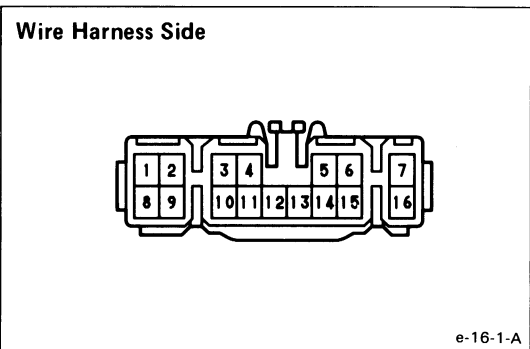
(CANADA)

Terminal Switch Position	1	2	3
LOCK	○ — ○	○ — ○	
UNLOCK		○ — ○	○ — ○

If continuity is not as specified, replace the switch.



BE2924



e-16-1-A

Door Lock Control Relay

INSPECTION OF RELAY

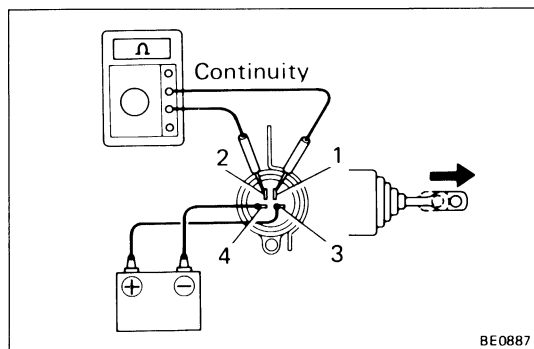
INSPECT DOOR LOCK CONTROL RELAY

- (a) Disconnect the relay connector and inspect the connector on the wire harness side as shown in the chart.

Check For	Tester Connection	Condition	Specified Value
Continuity	2 – Body ground	LH door opened	Continuity
		LH door closed	No continuity
Voltage	8 – Body ground	—	Battery voltage
Continuity	10 – Body ground	Turn the following switches, one by one to lock <ul style="list-style-type: none"> ● Control switch ● LH door key switch ● RH door key switch 	Continuity
		Turn the following switches, one by one to except lock <ul style="list-style-type: none"> ● Control switch ● LH door key switch ● RH door key switch 	No continuity
	14 – Body ground	RH door opened	Continuity
		RH door closed	No continuity
	6 – Body ground	LH door lock switch to unlock	Continuity
		LH door lock switch to lock	No continuity
	16 – Body ground	—	Continuity
		5 – Body ground	RH door lock switch to unlock
	RH door lock switch to lock		No continuity
	7 – Body ground	Set the ignition key switch	Continuity
		Remove the ignition key switch	No continuity
	11 – Body ground	Turn the following switches, one by one to unlock <ul style="list-style-type: none"> ● Control switch ● LH door key switch ● RH door key switch 	Continuity
		Turn the following switches, one by one to except unlock <ul style="list-style-type: none"> ● Control switch ● LH door key switch ● RH door key switch 	No continuity

- (b) Connect the positive (+) lead from the battery to terminal 4 and the negative (–) lead to terminal 3. Check that the solenoids operate lock direction. Then, reverse the polarity, check that the solenoids operate unlock direction. If any of the solenoids does not operate, remove and test the solenoid.

If circuit operation is correct, replace the relay.

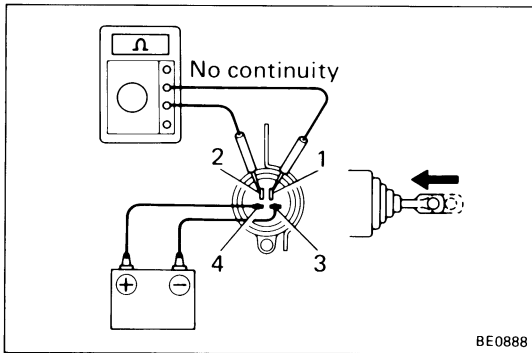


Door Lock Solenoid

INSPECTION OF DOOR LOCK SOLENOID

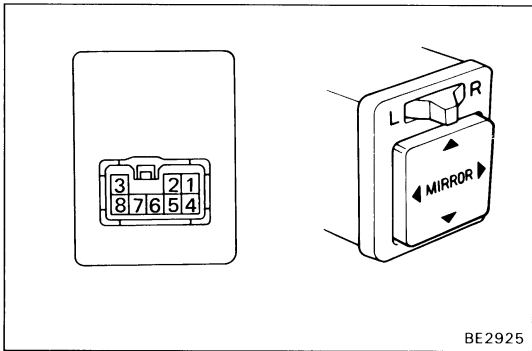
INSPECT SOLENOID OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 4. Check that the solenoid operates in the unlock direction.
- (b) Check that there is continuity between terminals 1 and 2.



- (c) Connect the positive (+) lead from the battery to terminal 4 and the negative (-) lead to terminal 3. Check that the solenoid operates in the lock direction.
- (d) Check that there is no continuity between terminals 1 and 2.

If operation is not as specified, replace the solenoid.



REMOTE CONTROL MIRROR

Mirror Switch

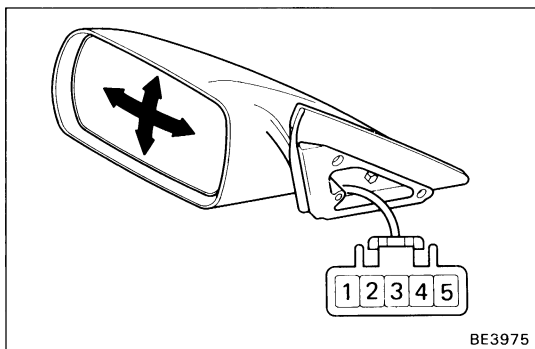
INSPECTION OF SWITCH

INSPECT SWITCH CONTINUITY

Inspect the switch continuity between terminals.

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

If continuity is not as specified, replace the switch.



Remote Control Mirror

INSPECTION OF MIRROR

INSPECT MIRROR OPERATION

- (a) Apply battery voltage to terminals 2 and 3, check that the mirror operates. Then, reverse the polarity, and check that mirror operation is reversed.
- (b) Apply battery voltage to terminals 3 and 4, check that the mirror operates. Then, reverse the polarity, and check that the mirror operation is reversed.

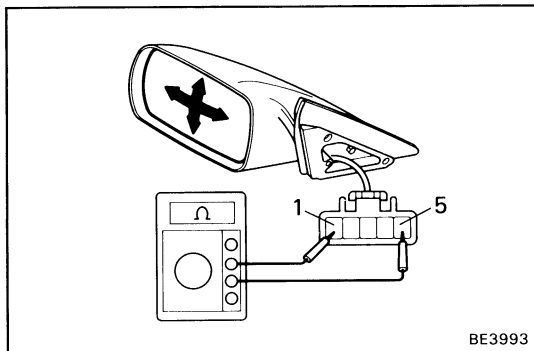
If there is no mirror operation, replace the mirror.

MIRROR HEATER

Rear Window Defogger and Mirror Heater Switch

INSPECTION OF SWITCH

(See page BE-47)



Mirror Heater

INSPECTION OF MIRROR HEATER

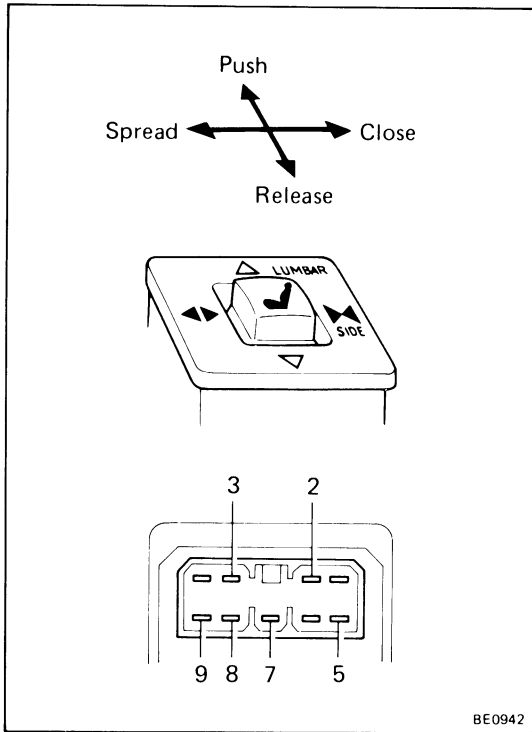
MEASURE HEATER RESISTANCE

Measure the resistance between terminals 1 and 5.

Resistance: 7.6 — 10.2 Ω at 20 °C (68°F)

If resistance value is not specified, replace the mirror.

HINT: The resistance value increases as the temperature rises.



POWER SEAT

Power Seat Switch (Lumbar and Side Support)

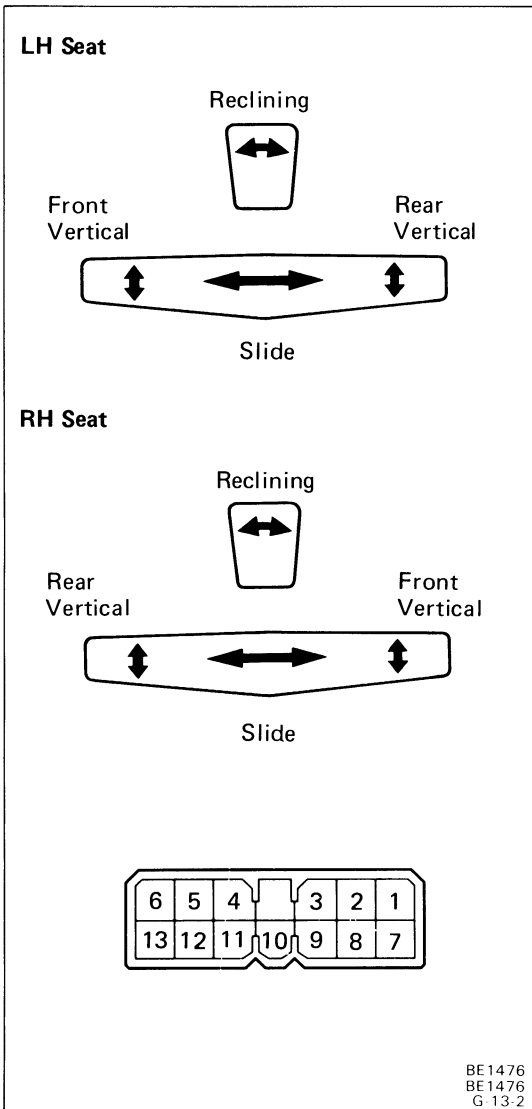
INSPECTION OF SWITCH

INSPECT SWITCH CONTINUITY

Inspect the switch continuity between terminals.

Switch Position		Terminal					
		3	5	7	8	2	9
LUMBAR	Push		○—○				
	Off	○—○	○—○		○—○		
	Release	○—○		○—○			
SIDE	Spread			○—○		○—○	○—○
	Off				○—○	○—○	○—○
	Close			○—○		○—○	○—○

If continuity is not as specified, replace the switch.



Power Seat Switch (Slide, Vertical and Reclining)

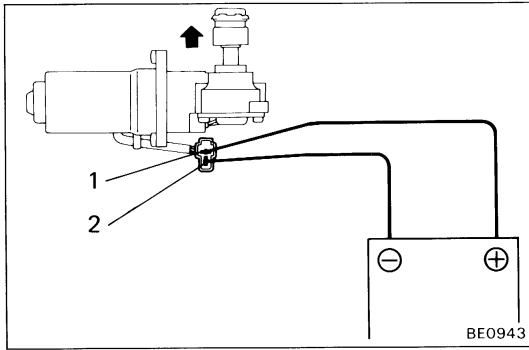
INSPECTION OF SWITCH

INSPECT SWITCH CONTINUITY

Inspect the switch continuity between terminals.

Switch Position		Terminal										
		LH	5	9	12	4	13	6	2	10	11	3
		RH	2	11	8	3	7	1	5	10	9	4
Slide	FRONT		○—○								○—○	○—○
	OFF		○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○
	REAR		○—○								○—○	○—○
Front Vertical	UP				○—○	○—○					○—○	○—○
	OFF				○—○	○—○	○—○	○—○	○—○	○—○	○—○	○—○
	DOWN				○—○	○—○					○—○	○—○
Rear Vertical	UP						○—○	○—○	○—○		○—○	○—○
	OFF						○—○	○—○	○—○	○—○	○—○	○—○
	DOWN						○—○	○—○	○—○		○—○	○—○
Reclining	FRONT									○—○	○—○	○—○
	OFF									○—○	○—○	○—○
	REAR									○—○	○—○	○—○

If continuity is not as specified, replace the switch.



Power Seat Motor (Lumbar and Side Support)

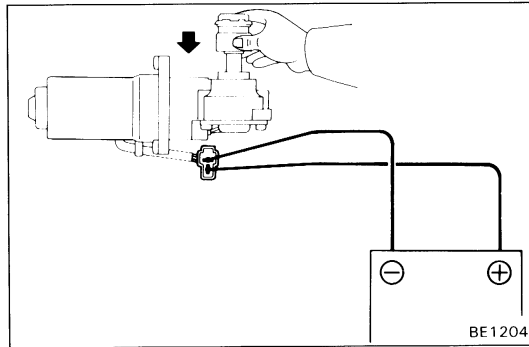
INSPECTION OF MOTOR

INSPECT MOTOR OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2. Check that the motor operates in the push direction.

- (b) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1. Check that the motor operates in the release direction.

If operation is not as specified, replace the motor.



Power Seat Motor (Slide and Vertical)

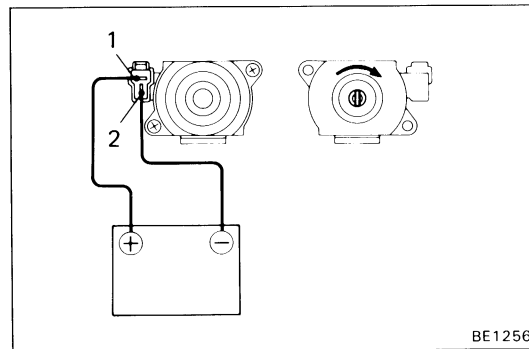
INSPECTION OF MOTOR

INSPECT 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 clockwise.

- (b) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1. Check that the motor turns counterclockwise.

If operation is not as specified, replace the motor.



Power Seat Motor (Reclining)

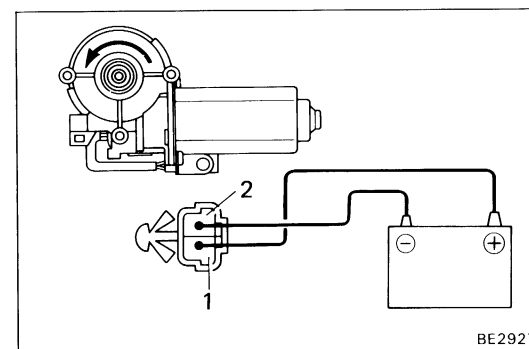
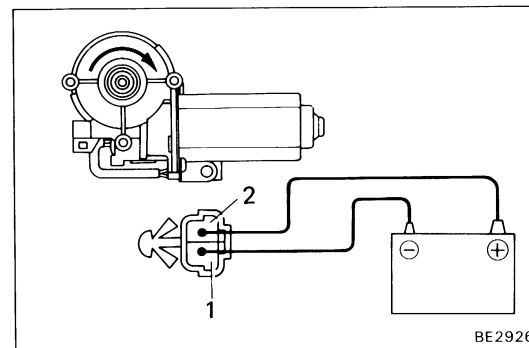
INSPECTION OF MOTOR

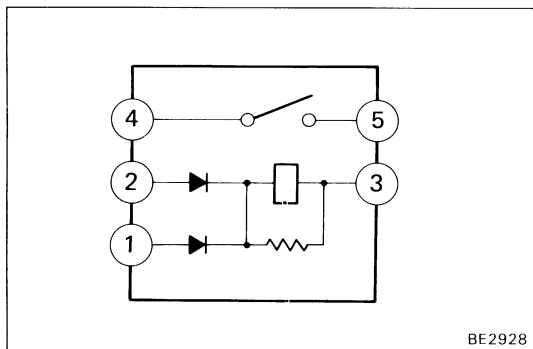
INSPECT MOTOR OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1. Check that the motor turns clockwise.

- (b) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2. Check that the motor turns counterclockwise.

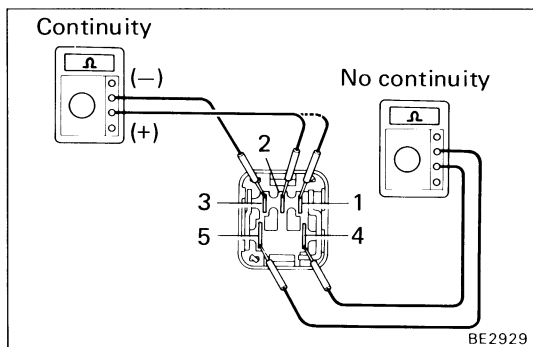
If operation is not as specified, replace the motor.





Power Seat Relay (Reclining)

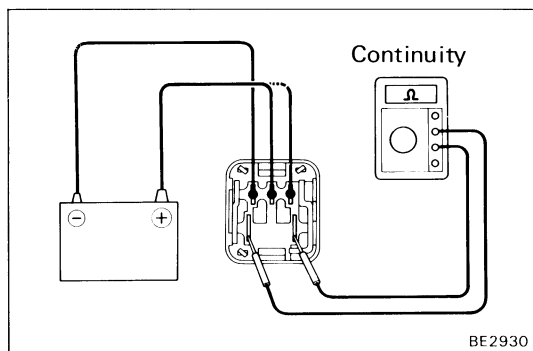
INSPECTION OF RELAY



1. INSPECT RELAY CONTINUITY

- (a) Connect the positive (+) lead from ohmmeter to terminal 1 or 2 and the negative (–) lead to terminal 3. Check that there is continuity between terminals.
- (b) Connect the tester leads in reverse and check that there is no continuity between terminals.
- (c) Check that there is no continuity between terminals 4 and 5.

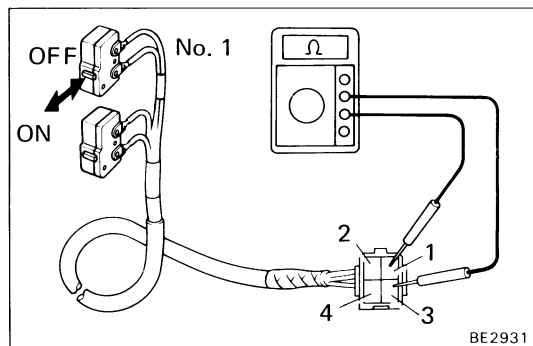
If continuity is not as specified, replace the relay.



2. INSPECT RELAY OPERATION

- (a) Connect the positive (+) lead from battery to terminal 1 or 2 and the negative (–) lead to terminal 3.
- (b) Check that there is continuity between terminals 4 and 5.

If operation is not as specified, replace the relay.



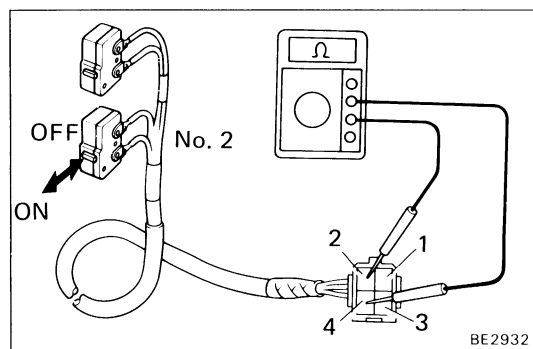
Power Seat Limit Switch (Reclining)

INSPECTION OF LIMIT SWITCH

1. INSPECT NO.1 SWITCH CONTINUITY

- (a) Check that there is continuity between terminals 1 and 3 when the No.1 switch is ON (free).
- (b) Check that there is no continuity between terminals 1 and 3 when the No.1 switch is OFF (pushed).

If continuity is not as specified, replace the switch.

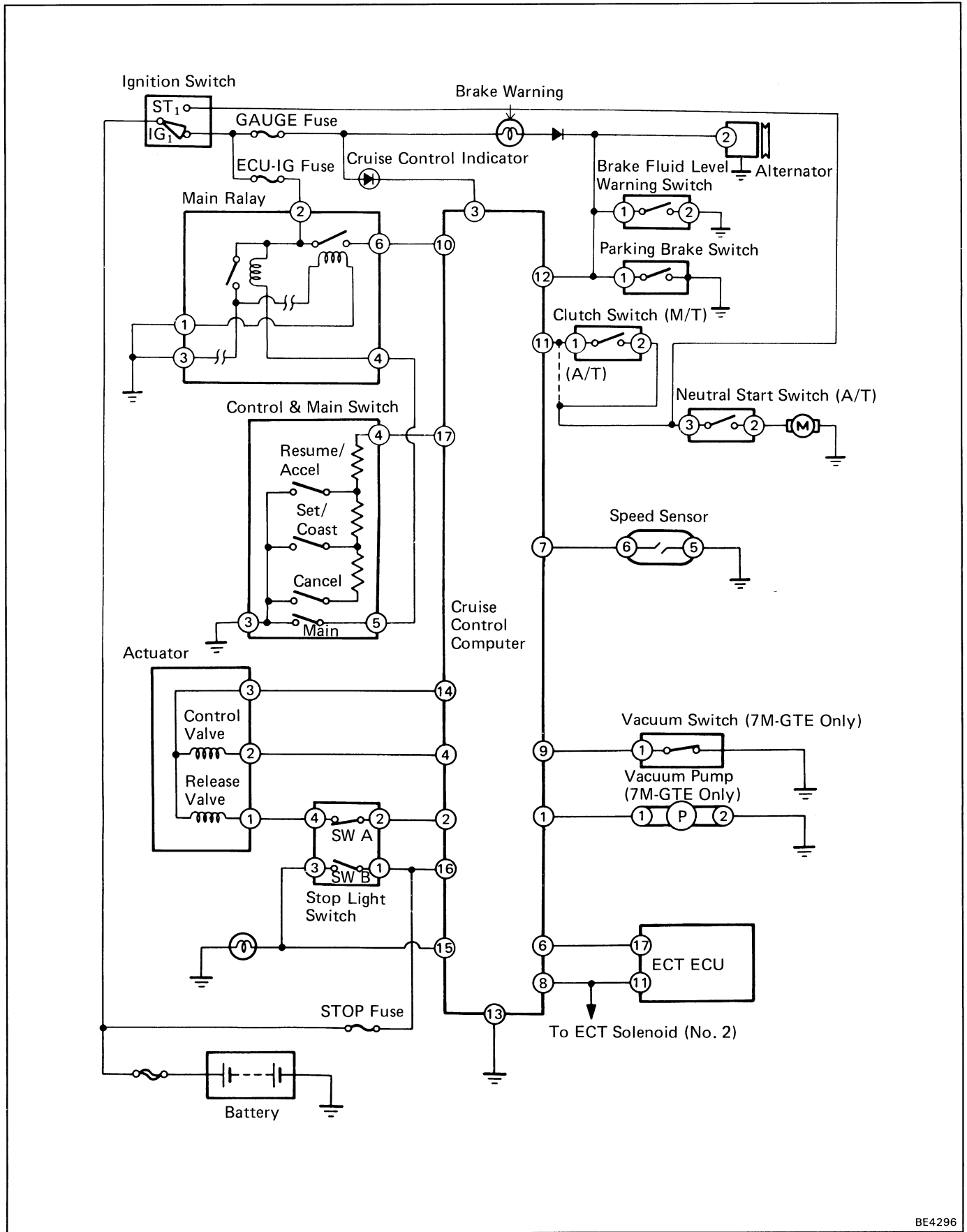


2. INSPECT NO.2 SWITCH CONTINUITY

- (a) Check that there is continuity between terminals 2 and 4 when the No.2 switch is ON (free).
- (b) Check that there is no continuity between terminals 2 and 4 when the No.2 switch is OFF (pushed).

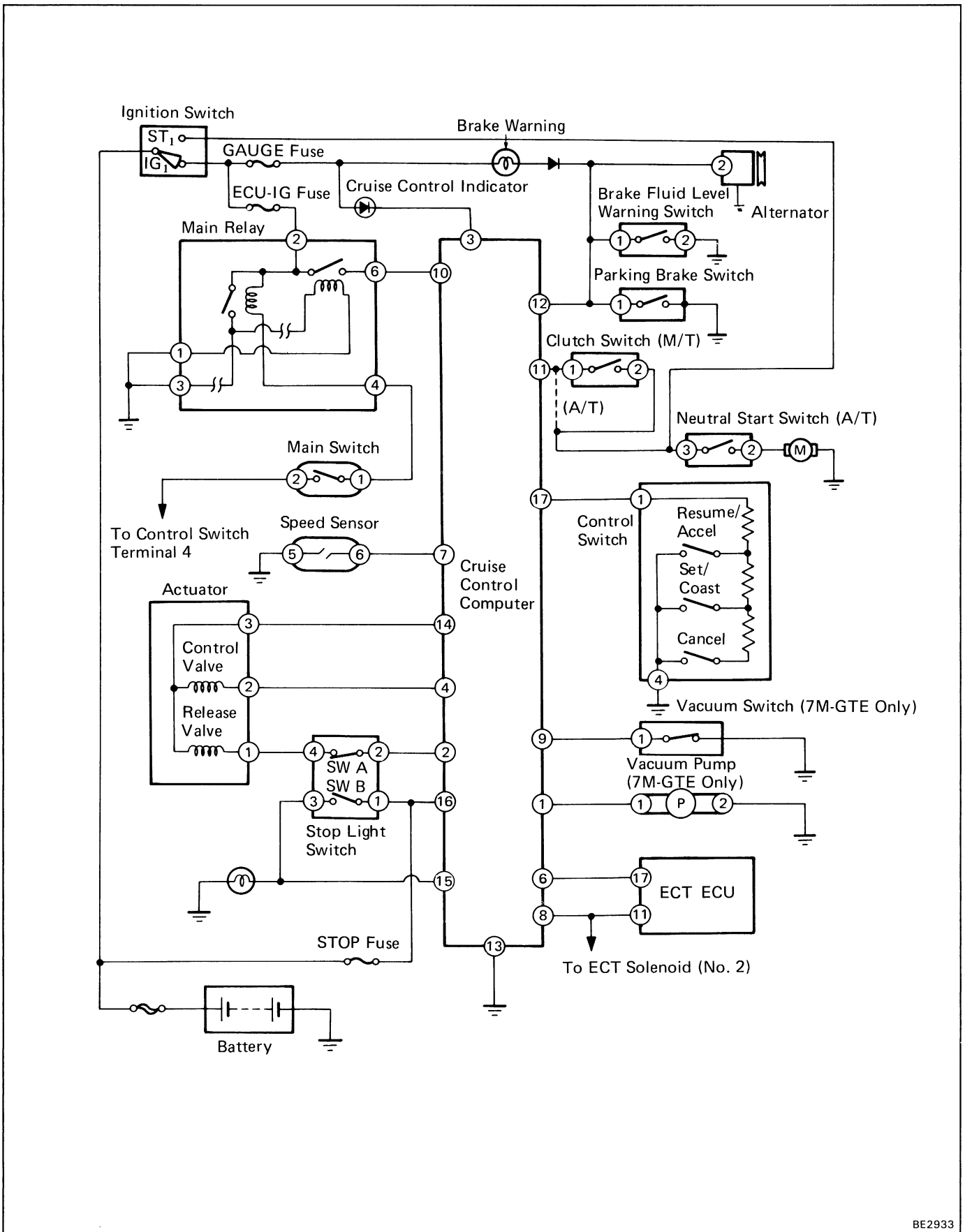
If continuity is not as specified, replace the switch.

CRUISE CONTROL SYSTEM Wiring Diagram (U.S.A)



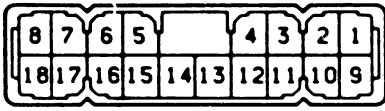
CRUISE CONTROL SYSTEM (Cont'd)

Wiring Diagram (CANADA)

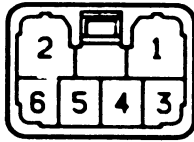


Connectors

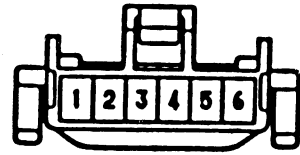
Cruise Control Switch



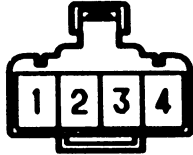
Main Relay



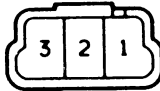
Control & Main Switch
(U.S.A. Only)



Control Switch
(CANADA Only)



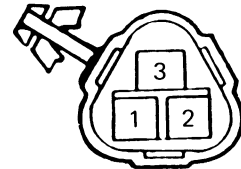
Main Switch
(CANADA Only)



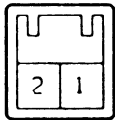
Neutral Start Switch



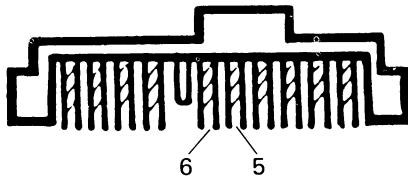
Actuator



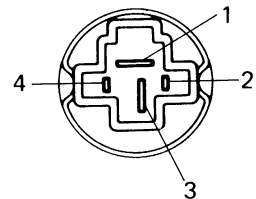
Clutch Switch



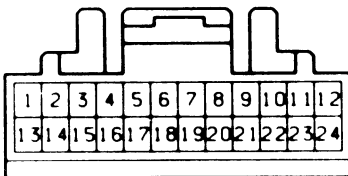
Speed Sensor



Stop Light Switch



ECT Computer
(Wire Harness Side)



Vacuum Pump
(7M-GTE Only)



Vacuum Switch
(7M-GTE Only)



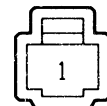
Alternator
Wire Harness Side



Brake Fluid Level
Warning Switch



Parking Brake Switch



System Description

The current flows from the GAUGE fuse to terminal 3 and terminal 12 of the CCS computer.

When the ignition switch is on, the current flows from the battery to Terminal 2 of the main relay.

1. MAIN SWITCH OPERATION

When the CCS main switch is turned on, the current flows through Terminal 2 — Terminal 4 of the CCS main relay — main switch — body ground.

And then, turn on (closes) the relay contacts in the main relay. As a result, current flows from terminal 2 — terminal 6 of the main relay — So it is supplied to terminal 10 of the CCS computer.

Therefore, the main relay remains on and continues to supply current to the CCS computer.

2. CONTROL SWITCH OPERATION

When the control switch is set each position → sends a signal to terminal *4 or **1 of control switch → terminal 17 of CCS computer.

3. SPEED CONTROL OPERATION

When the vehicle speed is set by the control switch, the CCS computer sends a signal to terminal 2 of CCS computer — terminal 2 — terminal 4 of stop light switch — terminal 1 of actuator (release valve side).

At the same time, the CCS computer sends a signal from terminal 4 of the CCS computer to terminal 2 of actuator (control valve side).

Then, the actuator increases or decreases the throttle valve opening angle in accordance with the signal from the CCS computer.

4. CANCEL SWITCH OPERATION

The CCS is provided with several types of cancel switch, such as the Cancel switch of Control switch, the Stop Light switch, the Parking Brake switch, and the Neutral Start switch (A/T model) or Clutch switch (M/T model).

(a) Cancel Switch of Control Switch

When the Cancel switch is pushed on — Sends a cancellation signal to Terminal *4 or **1 of control switch — Terminal 17 of CCS computer.

(b) Parking Brake Switch

When the parking brake lever is pulled, the Parking Brake switch turned on — Sends a cancellation signal (earth voltage) to Terminal 12 of the CCS computer.

(c) Neutral Start Switch (A/T models)

When the shift lever is set to the P or N range, the Neutral Start switch goes on — Sending a cancellation signal (earth voltage) to Terminal 11 of CCS computer.

(d) Clutch Switch (M/T model)

When the clutch pedal is depressed on, the Clutch Switch goes on — Sending a cancellation signal (earth voltage) to Terminal 11 of CCS computer.

(e) Stop Light Switch

When the brake pedal is depressed, switch A of the stop light switch is turned off — the release valve of actuator is opened.

At the same time, switch B of the stop light switch is turned on — the current flows through terminal 1 — terminal 3 of the stop light switch — stop light — body ground — the battery voltage is applied to terminal 15 of CCS computer via this switch. Thereby, the actuator is shut off.

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

*: U.S.A (w/ Airbag system)

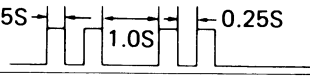





** : CANADA (w/o Airbag system)

Diagnosis System

OUTPUT OF DIAGNOSTIC CODES

1. READ TYPE A CODE

- (a) Turn the ignition switch on.
- (b) Push the set/coast switch on, and keep it on.
- (c) Push the main switch on.
- (d) Push the set/coast switch off.
- (e) Meet the conditions listed below.
- (f) Read the diagnostic code on the indicator.

No.	Conditions	Indication Code	Diagnosis
1	Set/coast switch on	ON OFF 	Set/coast switch circuit is normal.
2	Resume/accel switch on	ON OFF 	Resume/accel switch circuit is normal.
3	Vacuum switch on (7M-GTE only)	ON OFF 	Vacuum switch circuit is normal.
4	Each cancel switch on (Stop light switch, Parking brake switch, Clutch switch, Neutral start switch, Cancel switch)	ON OFF 	Each cancel switch circuit is normal.
5	Drive 35 km/h (21 mph) or over	ON OFF 	Speed sensor circuit is normal.
6	Drive 35 km/h (21 mph) or below	ON OFF 	Speed sensor circuit is normal.

BE0558

HINT:

- To save time performing the next test, do not turn off the ignition switch when steps (a) — (f) are completed.
- Checking of No. 4 code is done with the vehicle jacked up and the engine idling.
- If there is no indication code, perform diagnosis and inspection. (See page BE-64)

2. READ TYPE B CODE

- (a) If while driving with the cruise control on, the system is cancelled by a malfunction in either the actuator, speed sensor, or control switch circuit, the indicator will blink 5 times.
- (b) While driving at a speed of 16 km/h (10 mph) or less, press the set/coast switch three times in two seconds.

HINT: In order to retain the diagnostic code when a malfunction has occurred, always inspect with the ignition and main switches on.

Should the power be cut, the diagnostic code will be erased from the computer memory.

- (c) Read the diagnostic code on the indicator.

Indication Code		Diagnosis
	<p>ON OFF 0.25S 0.25S</p>	Normal.
11	<p>ON OFF 0.5S 1.5S 4S</p>	Actuator circuit is abnormal.
21	<p>ON OFF 0.5S 1.5S</p>	Speed sensor signal circuit is abnormal.
23	<p>ON OFF</p>	* Vehicle speed decreases to 16 km/h (10 mph) or more below set speed.
31	<p>ON OFF</p>	Resume/accel switch circuit is abnormal

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

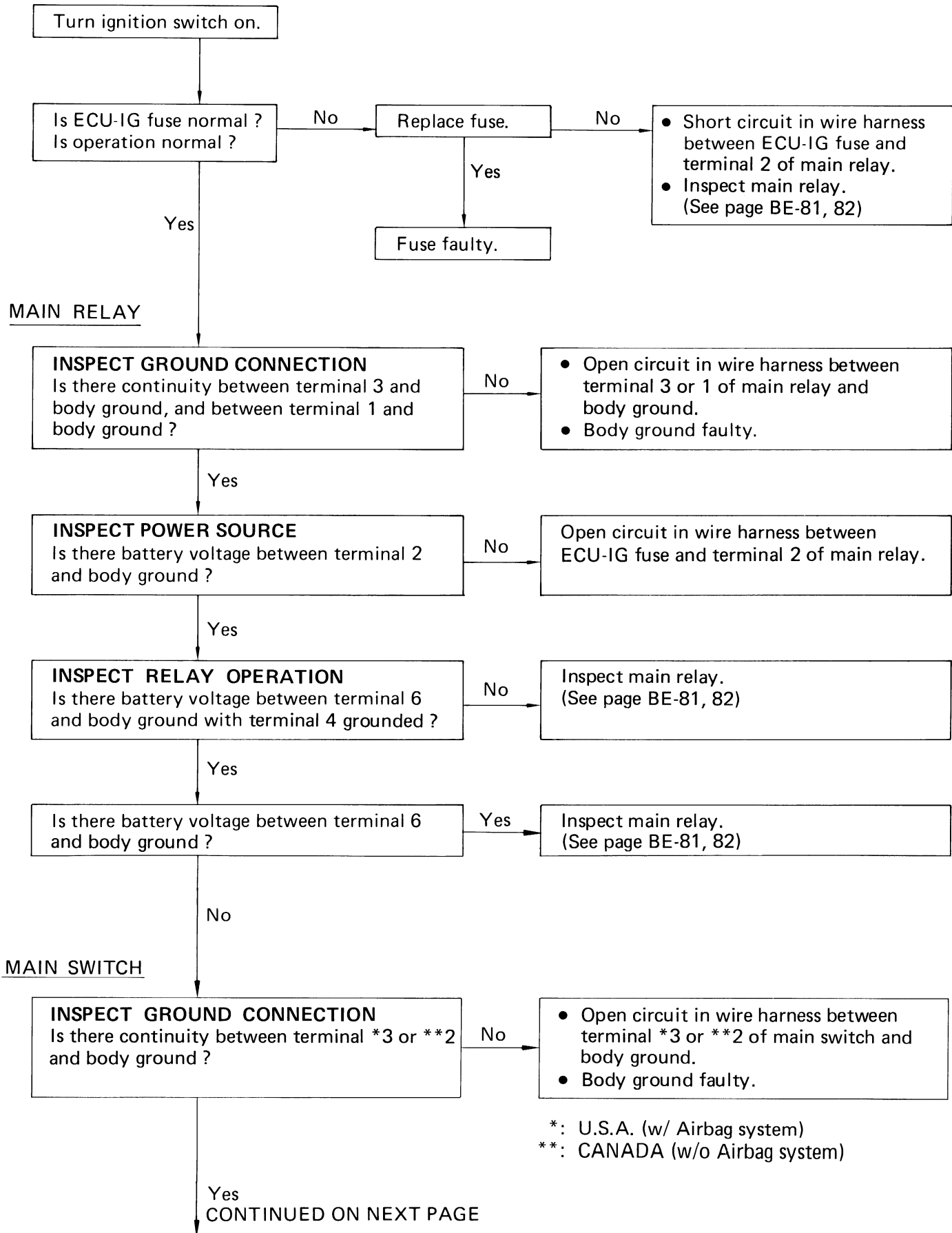
HINT:

- Indication codes appear in order from No.11.
- Indication is stopped when vehicle speed is over 16 km/h (10 mph) or main switch is turned off.
- If there is no indication code, perform diagnosis and inspection. (See page BE-64)

Troubleshooting

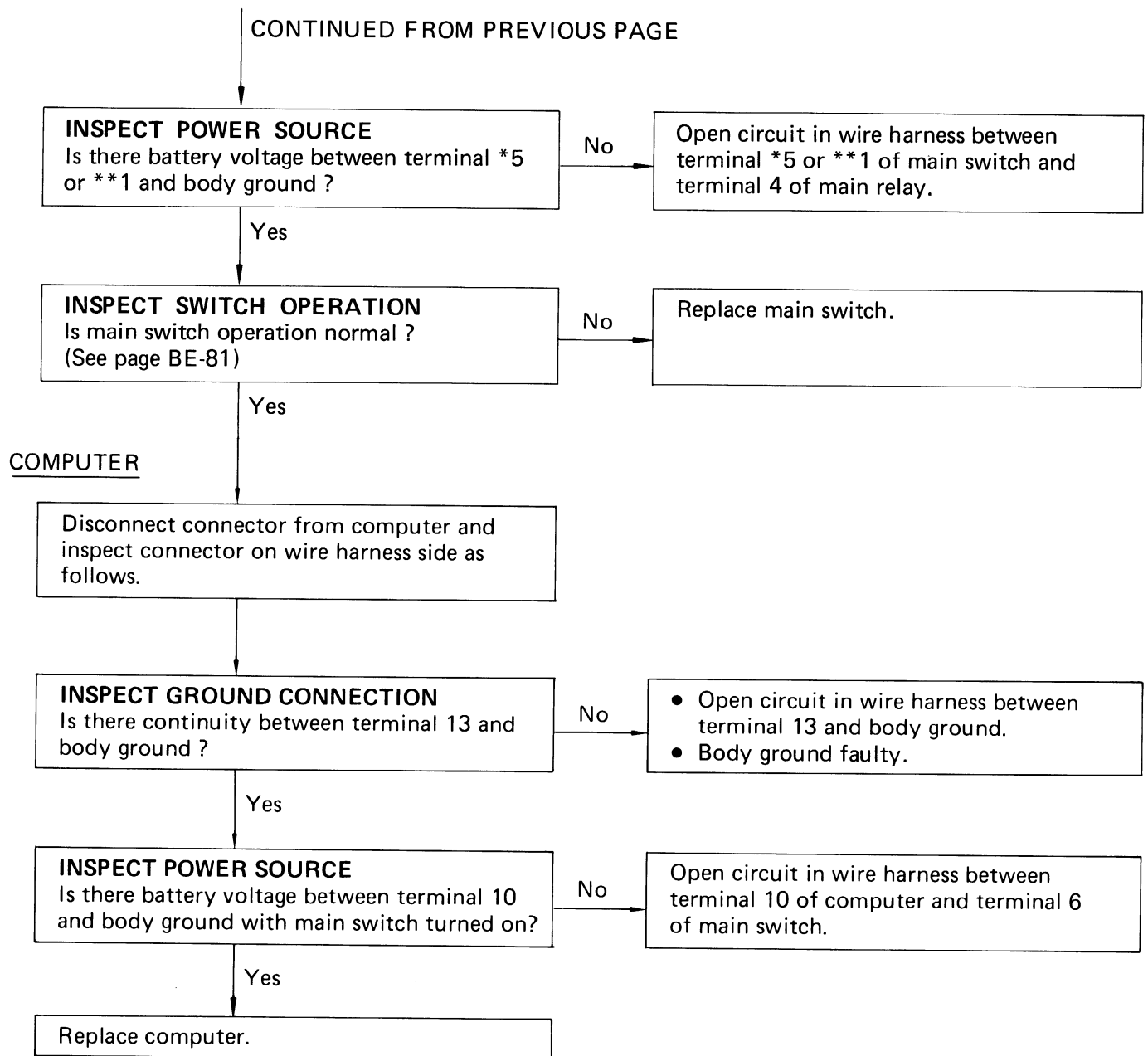
Problem	Inspection Item		No.
Cruise control does not operate.	(a) Inspect type A codes.	No. 1 NO No. 2 NO No. 3 NO No. 4 NO No. 5 NO No. 6 NO	B C K F to J E E
	(b) Inspect type B codes.	11 21 23 31	D E D, E C
	(c) All codes are normal.		A, D, E
Vehicle speed fluctuates when set switch pushed on.	Inspect No. 1 of type A code.	OK NO	D B
Vehicle speed does not decrease when coast switch pushed on.			
Vehicle speed does not accelerate when accel switch pushed on.	Inspect No. 2 of type A code.	OK NO	D C
Vehicle speed does not return to memorized speed when resume switch pushed on.			
Setting speed deviates on high side.	_____	_____	D, E
Setting speed deviates on low side.			
Return and acceleration response is sluggish.	Inspect No. 3 of type A code.	OK NO	D K
Setting speed does not fluctuate when set switch pushed on.	Inspect No. 4 of type A code.	OK NO	D F
Setting speed does not cancel when brake pedal depressed.	Inspect No. 4 of type A code.	OK NO	D G
Setting speed does not cancel when parking brake pulled.	Inspect No. 4 of type A code.	OK NO	D H
Setting speed does not cancel when clutch pedal depressed (M/T only).	Inspect No. 4 of type A code.	OK NO	D I
Setting speed does not cancel when shifted to "N" range (A/T only).	Inspect No. 4 of type A code.	OK NO	D J
Speed can be set below about 40 km/h (25 mph).	Inspect No. 5 of type A code. Inspect No. 6 of type A code.	OK NO	D E
Cruise control will not disengage even about 40 km/h (25 mph).			
A short period after the O/D cut, (Approx. within 14 seconds) the O/D will resume.	_____	_____	L

A Inspection of power source circuit.



*: U.S.A. (w/ Airbag system)
**: CANADA (w/o Airbag system)

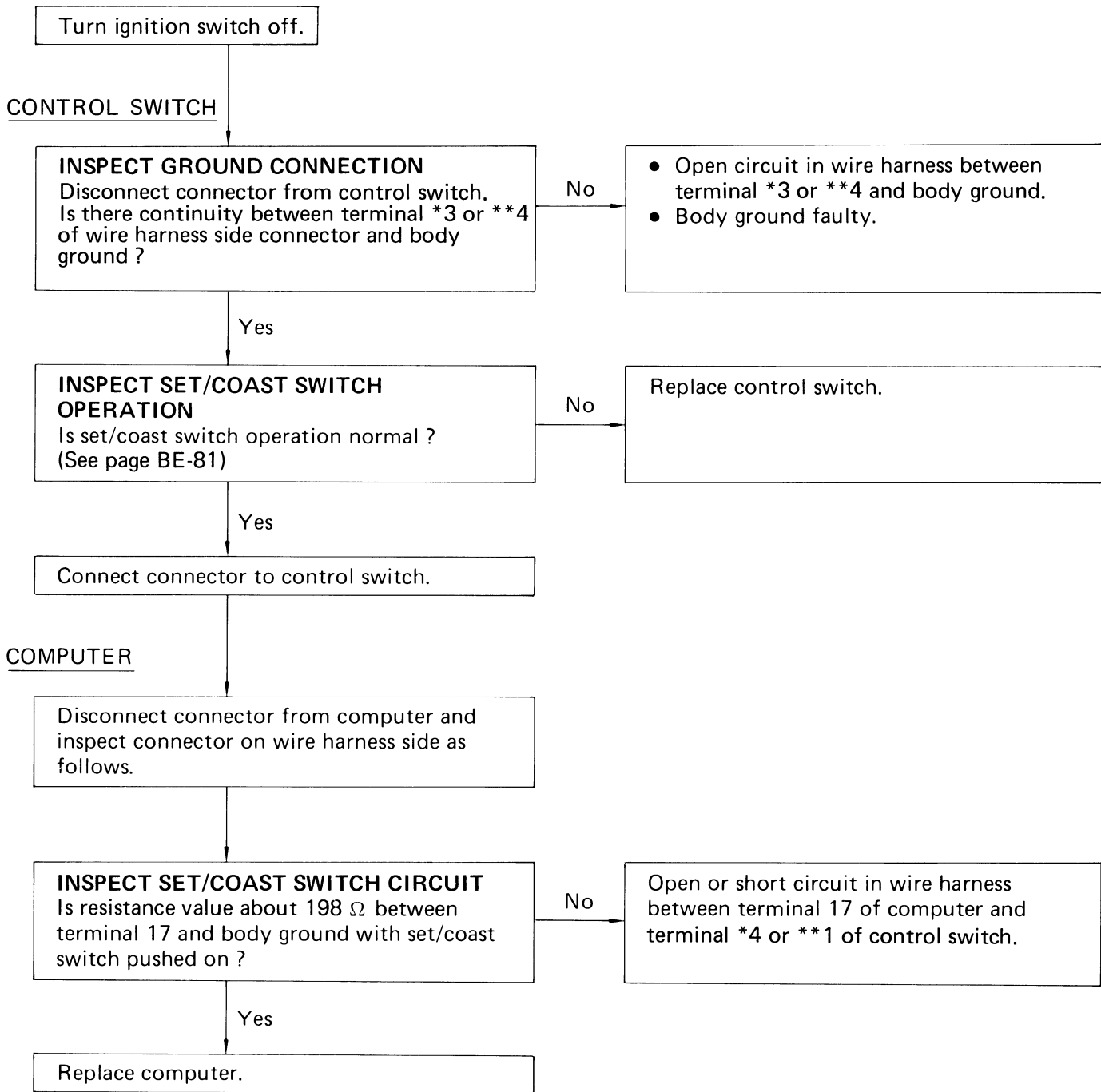
CONTINUED FROM PREVIOUS PAGE



*: U.S.A. (w/ Airbag system)

**: CANADA (w/o Airbag system)

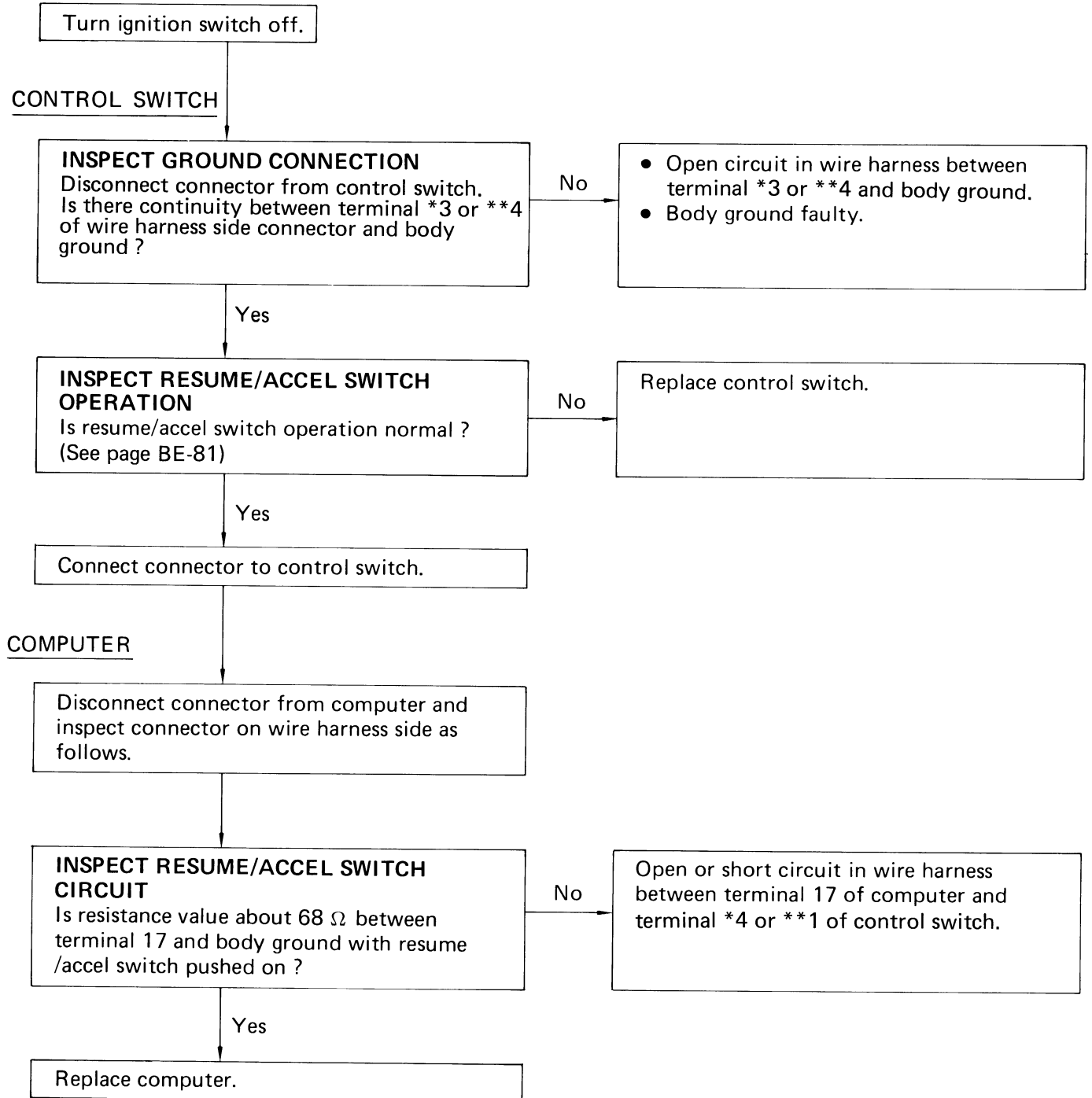
B Inspection of set/coast switch circuit.



*: U.S.A. (w/ Airbag system)

** : CANADA (w/o Airbag system)

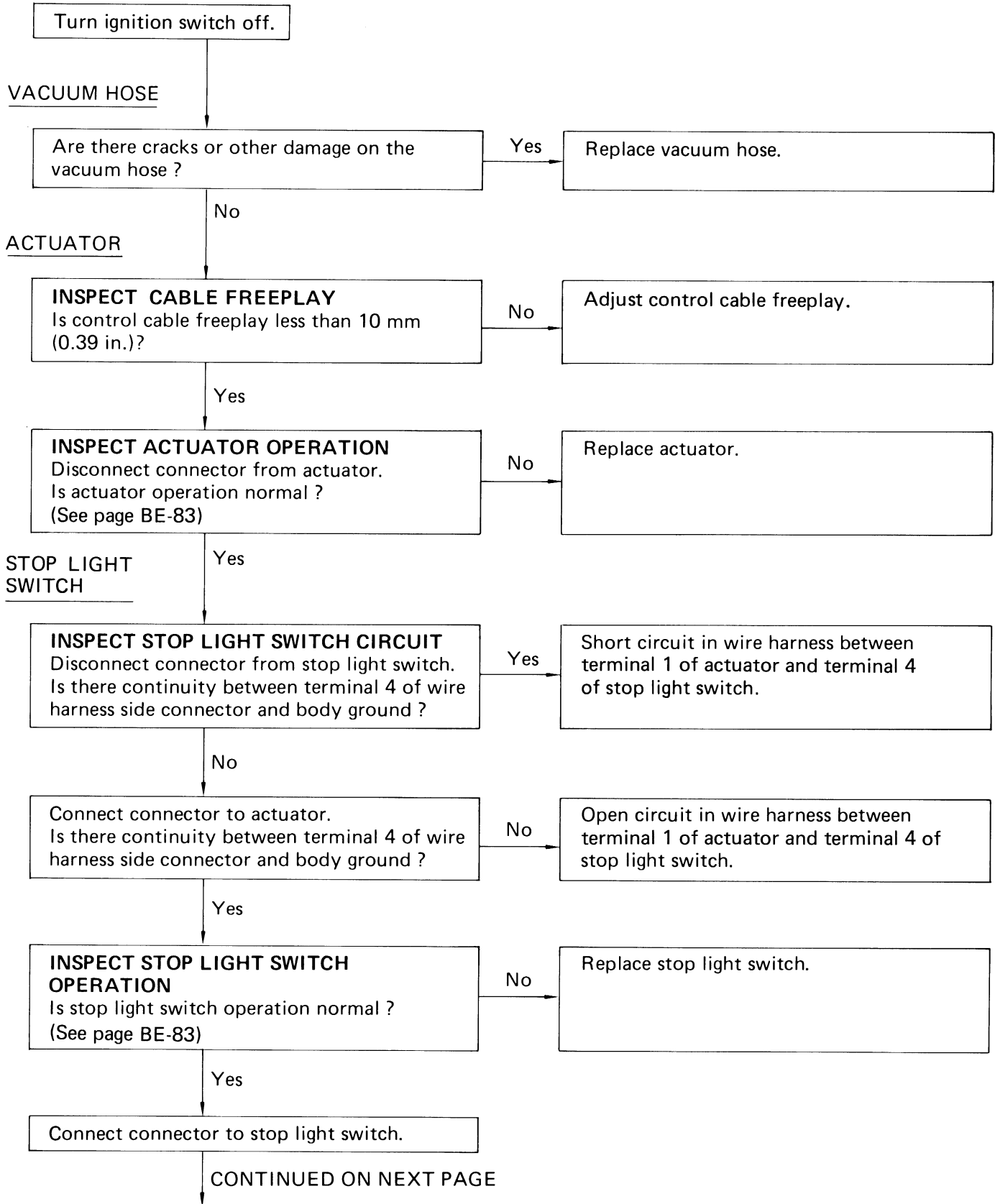
C Inspection of resume/accel switch circuit.

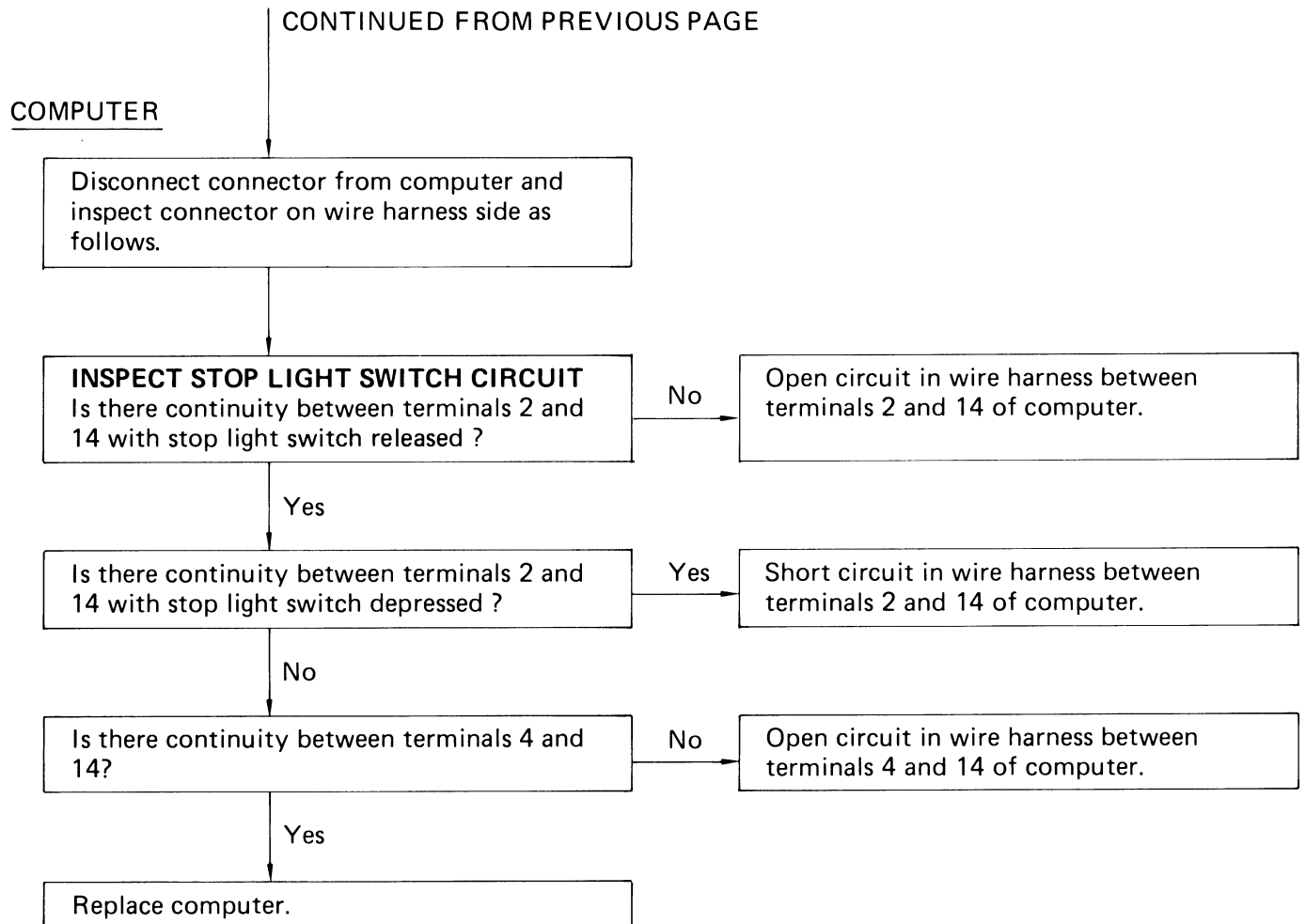


*: U.S.A. (w/ Airbag system)

** : CANADA (w/o Airbag system)

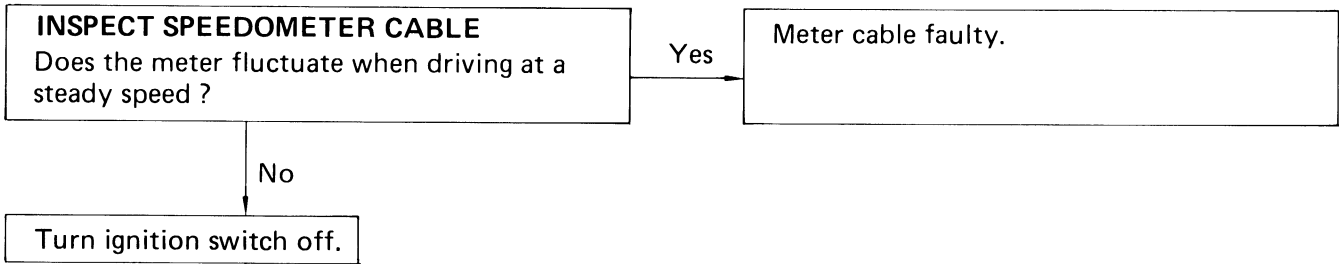
D Inspection of actuator circuit.



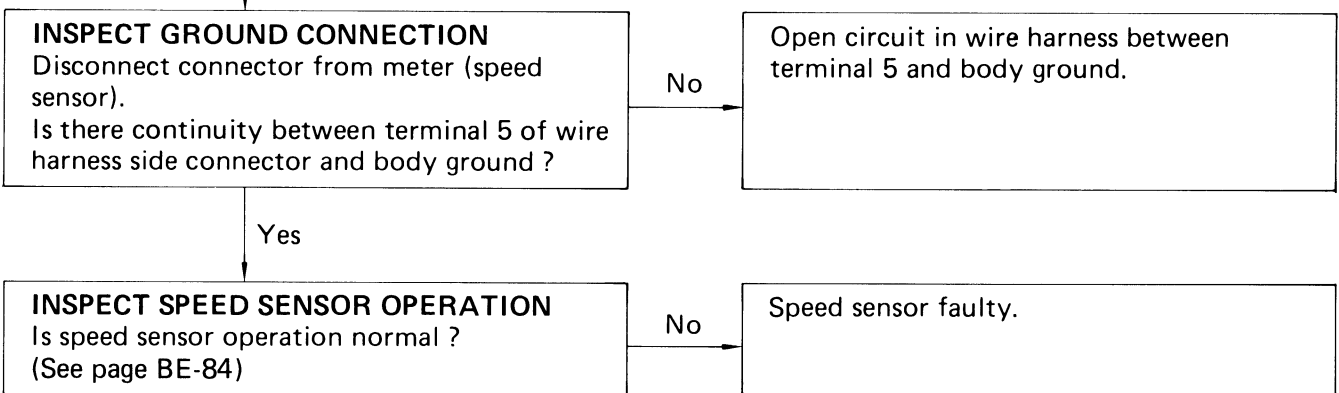


E Inspection of speed sensor circuit.

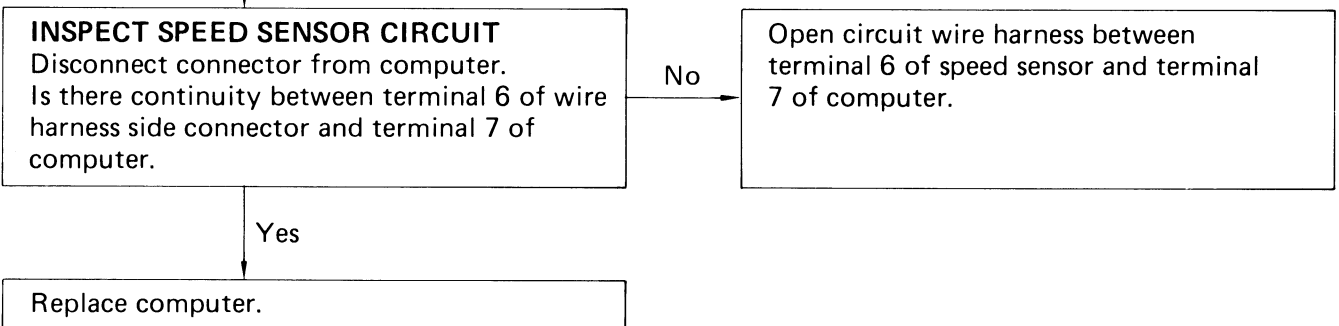
SPEEDOMETER CABLE



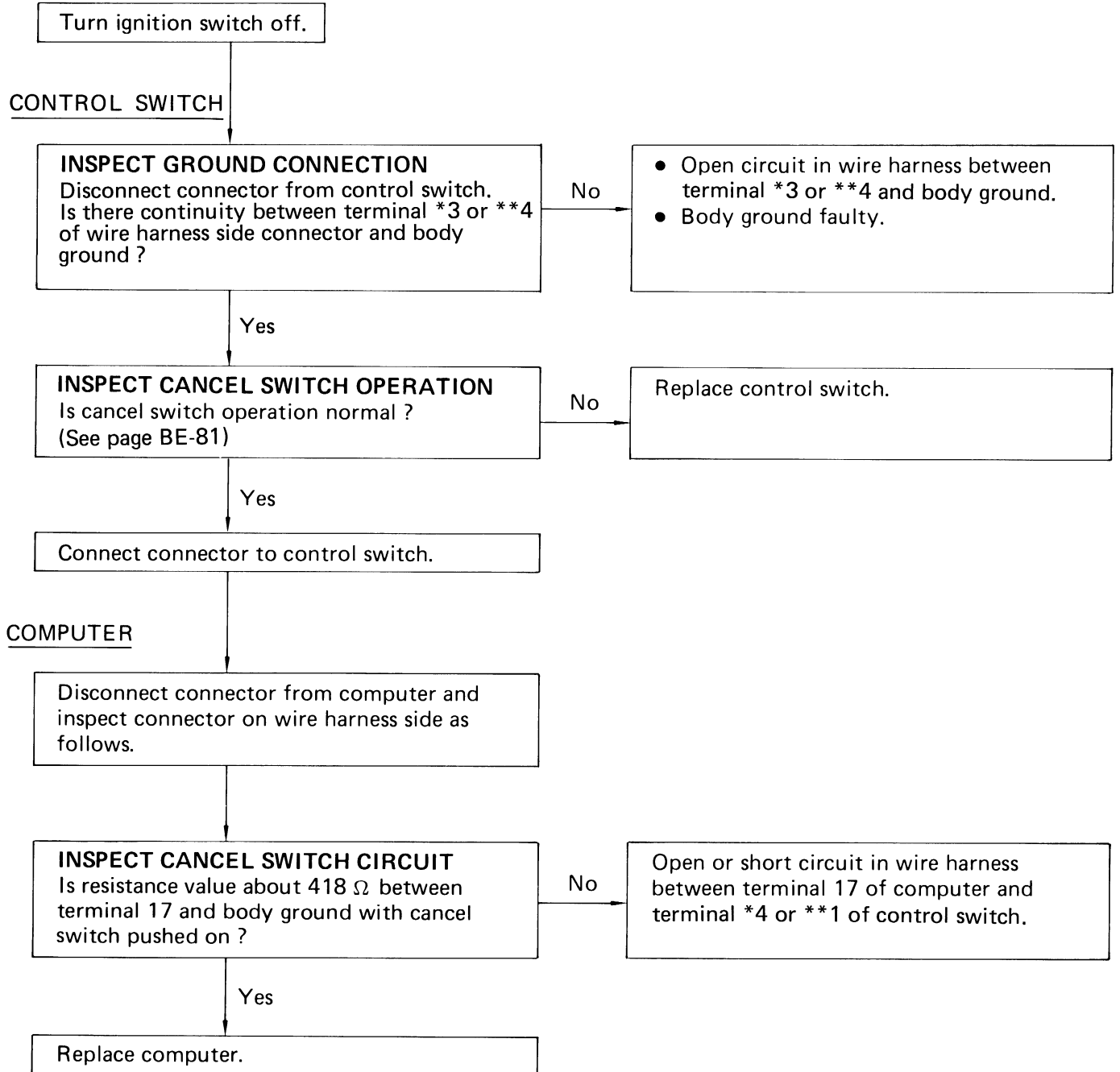
SPEED SENSOR



COMPUTER



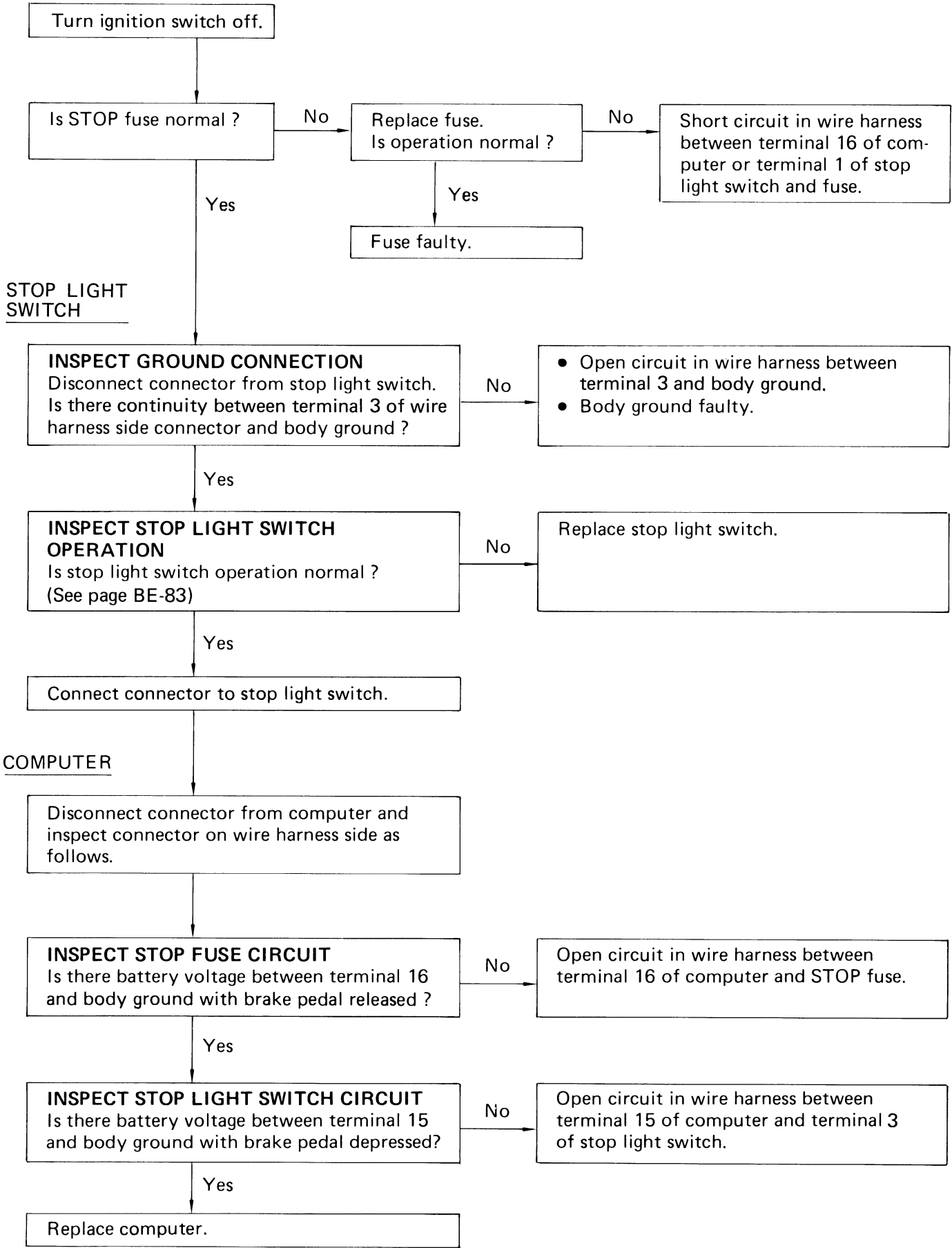
F Inspection of cancel switch circuit.



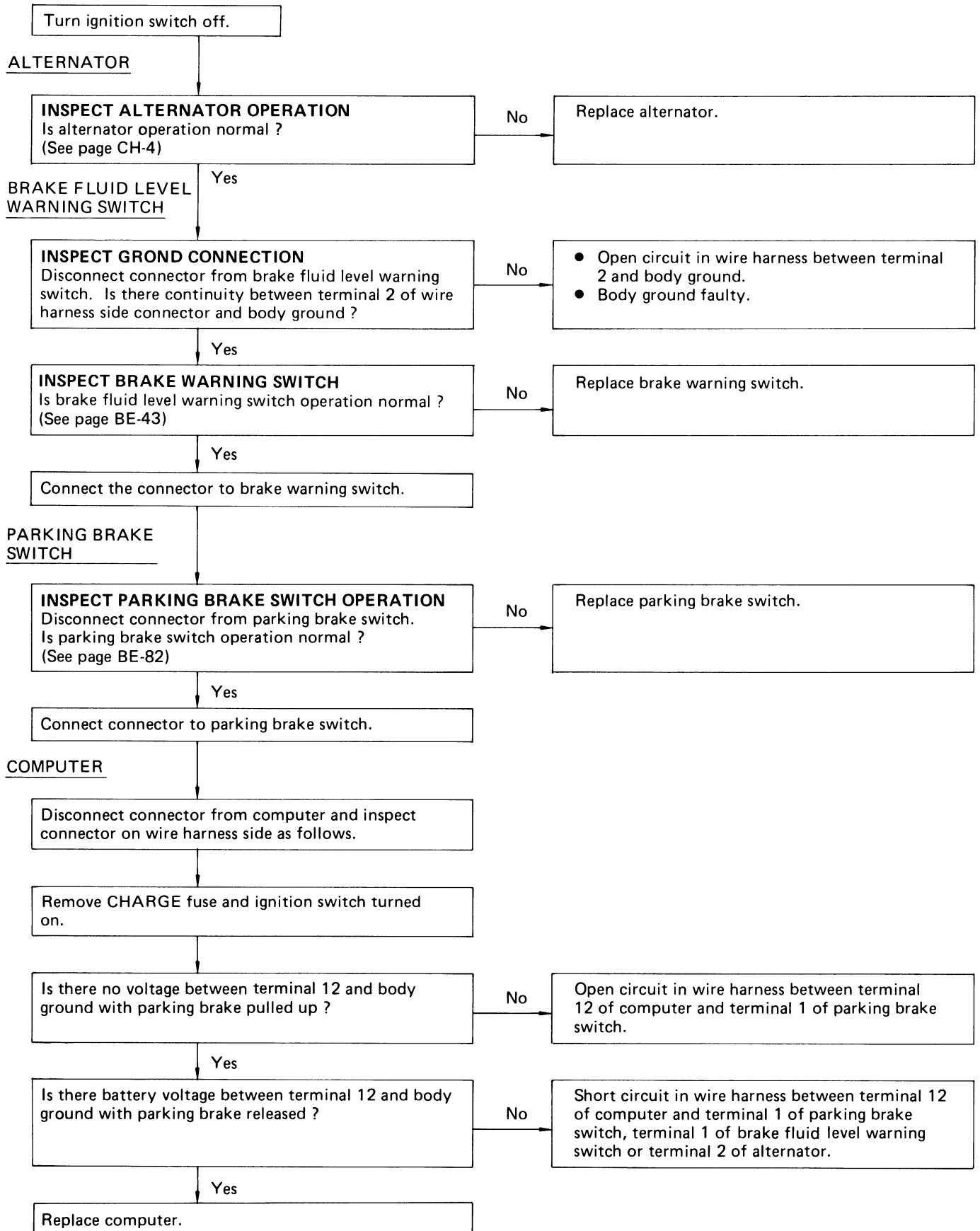
*: U.S.A. (w/ Airbag system)

** : CANADA (w/o Airbag system)

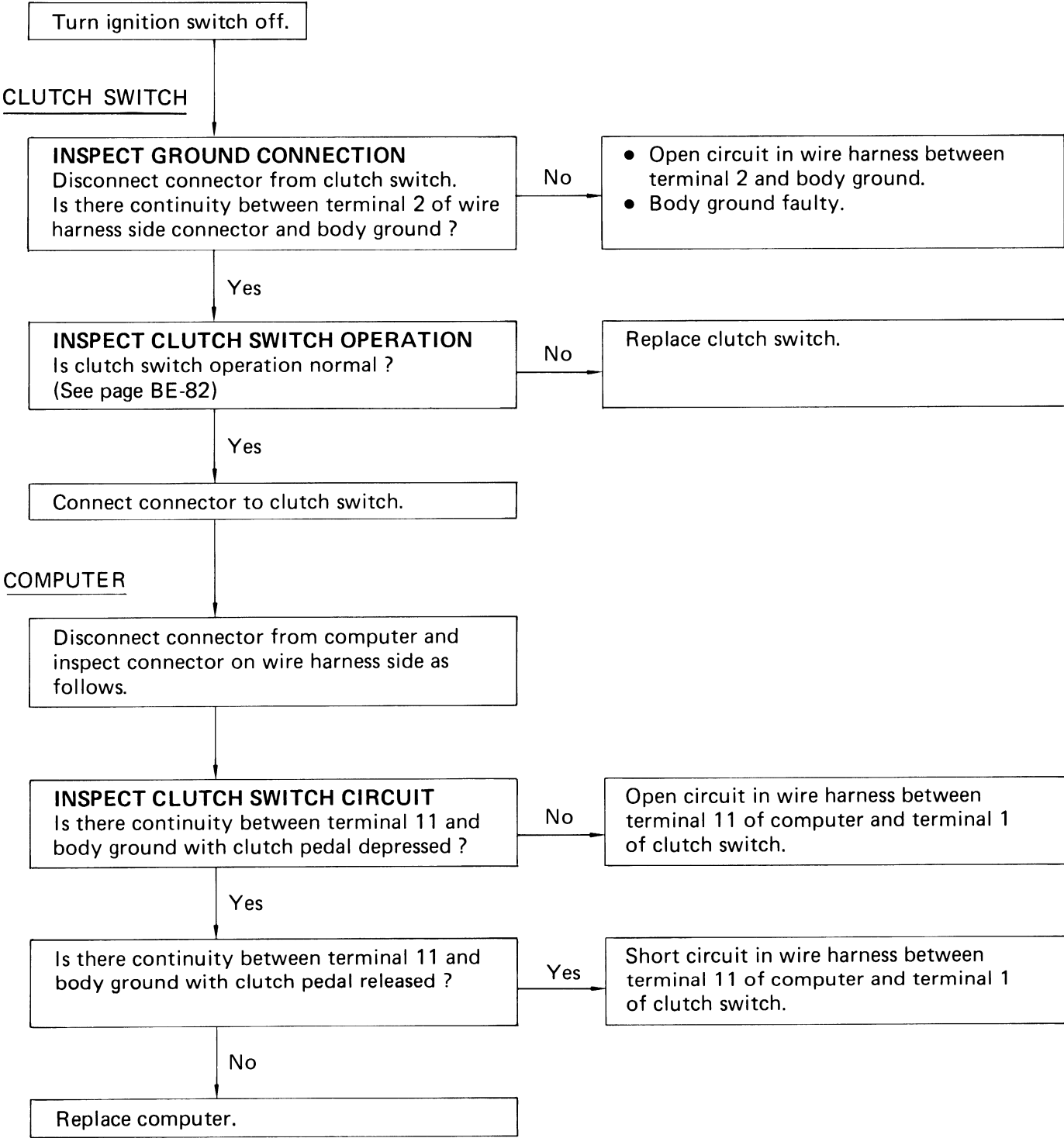
G Inspection of stop light switch circuit.

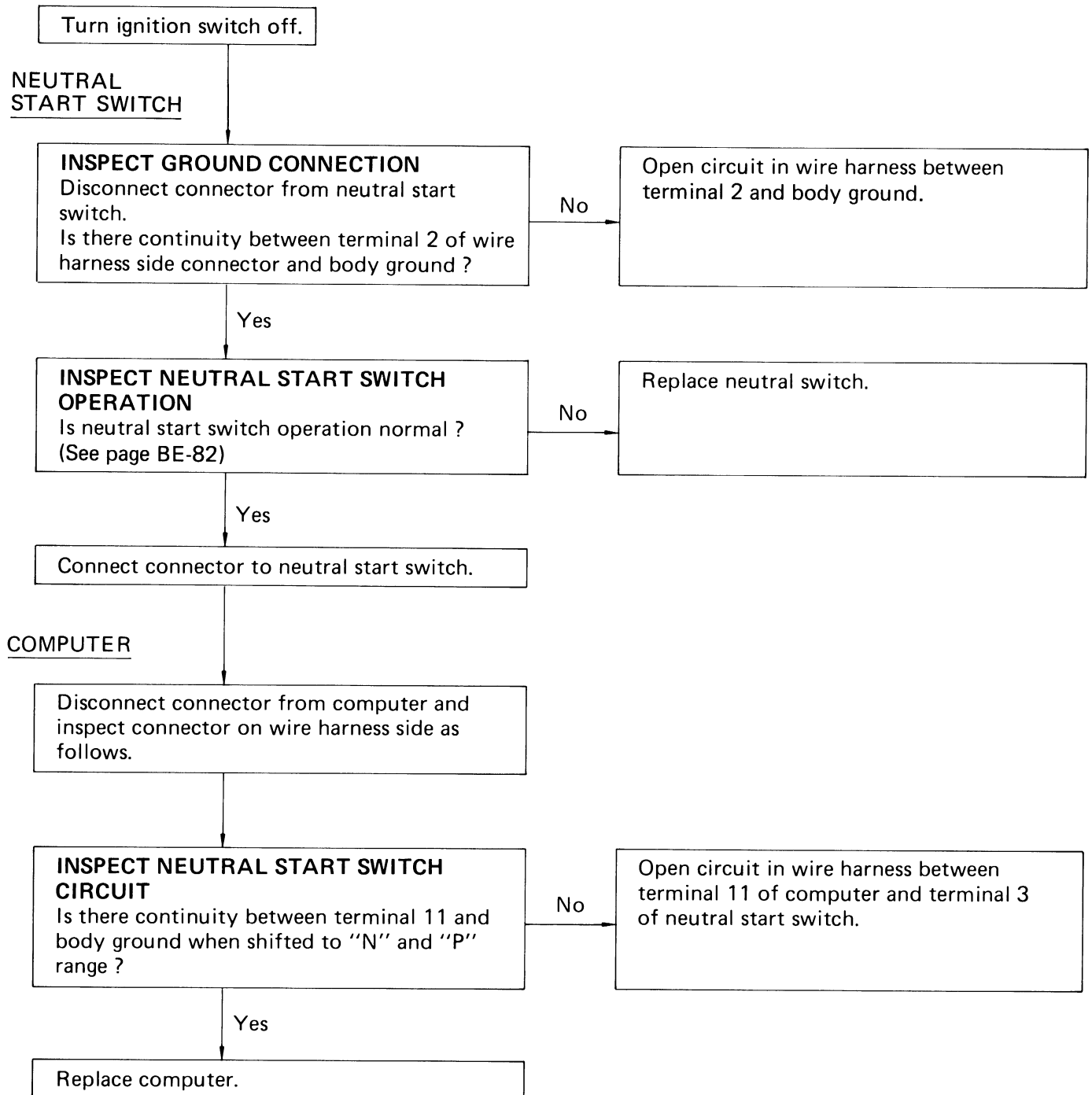


H Inspection of parking brake switch circuit.

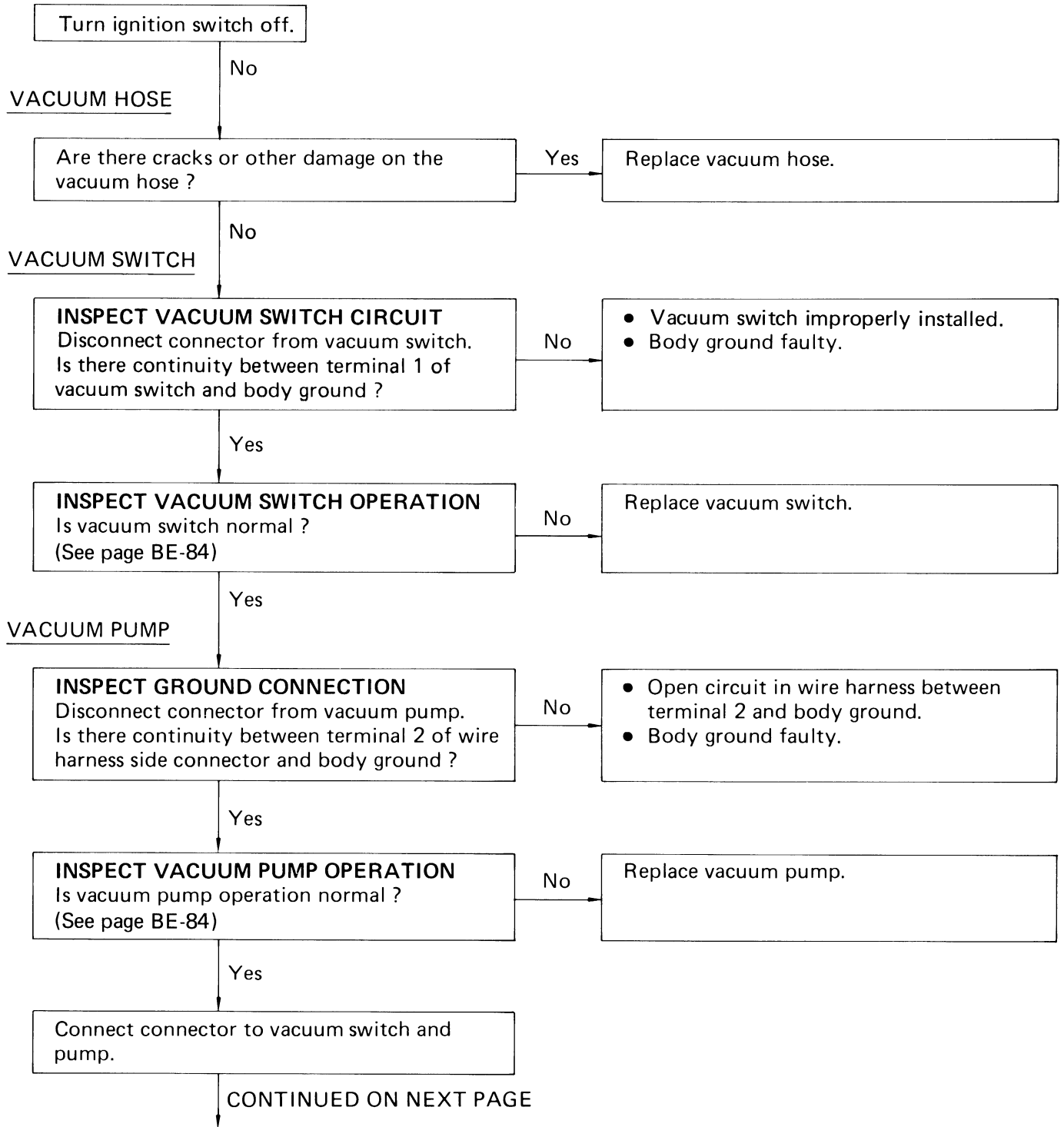


I Inspection of clutch switch circuit.



J Inspection of neutral start switch circuit.


K Inspection of vacuum circuit (7M-GTE only).



CONTINUED FROM PREVIOUS PAGE

COMPUTER

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

INSPECT VACUUM SWITCH CIRCUIT
Is there continuity between terminal 9 and body ground ?

No

Open circuit in wire harness between terminal 9 of computer and terminal 1 of vacuum switch.

Yes

Start engine (idling).

Is there continuity between terminal 9 and body ground ?

Yes

Short circuit in wire harness between terminal 9 of computer and terminal 1 of vacuum switch.

No

Stop the engine.

INSPECT VACUUM PUMP CIRCUIT
Is there continuity between terminal 1 and body ground ?

No

Open circuit in wire harness between terminal 1 of computer and terminal 1 of vacuum pump.

Yes

Is there continuity between terminal 1 and body ground when disconnect connector from vacuum pump ?

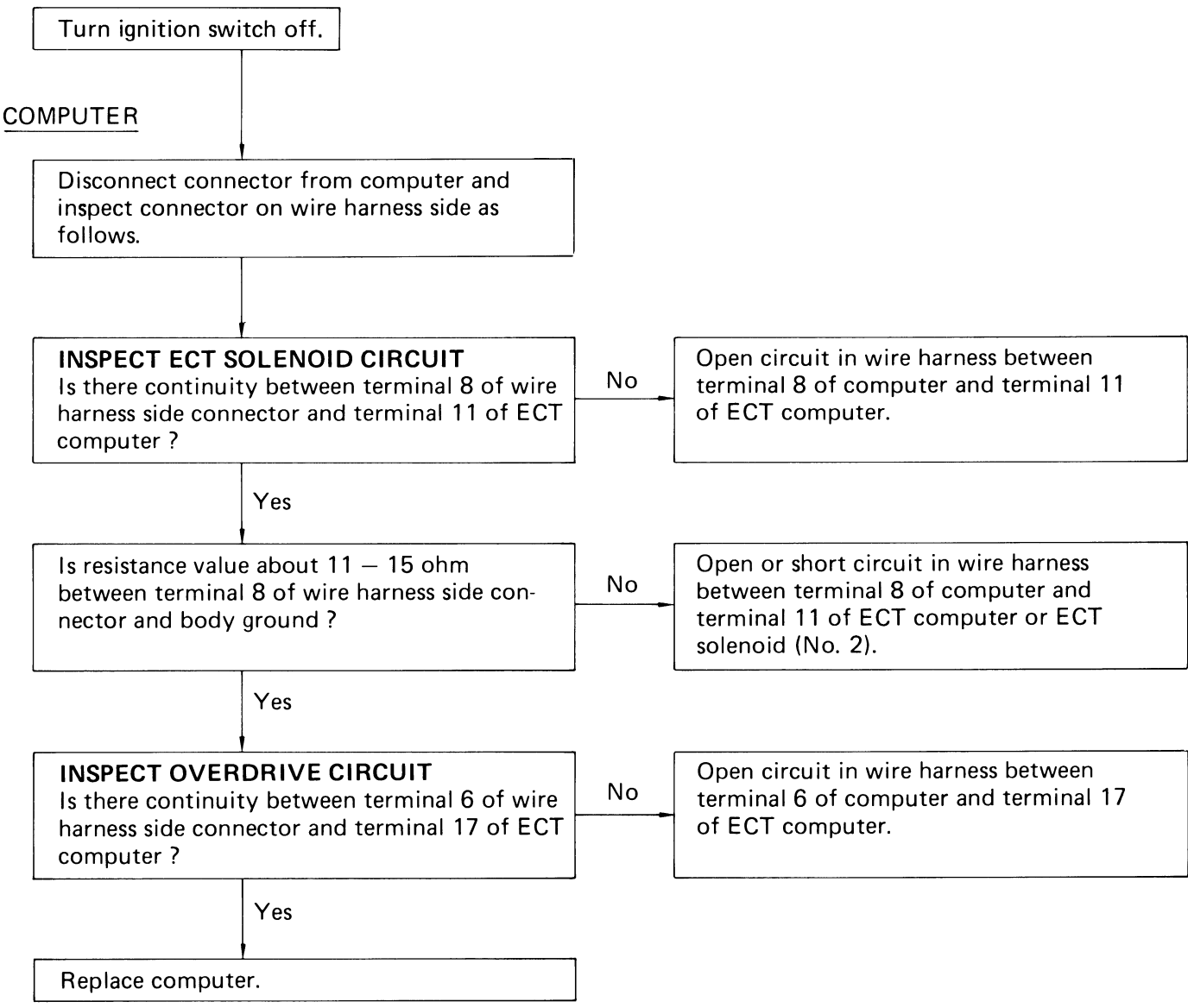
Yes

Short circuit in wire harness between terminal 1 of computer and terminal 1 of vacuum pump.

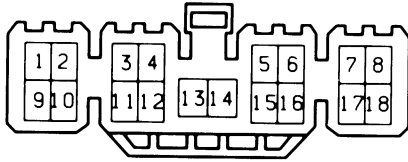
No

Replace computer.

L Inspection of ECT solenoid circuit.



Wire Harness Side



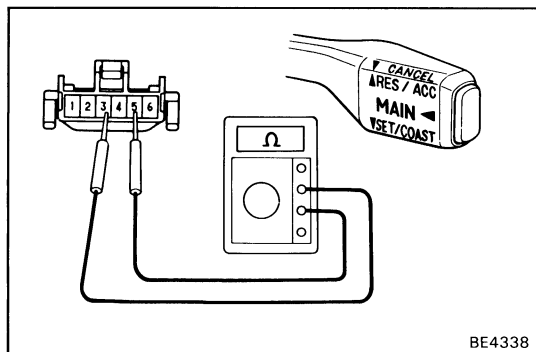
S-18-1

Cruise Control Computer Circuit

INSPECTION OF COMPUTER CIRCUIT

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

Connection or Measure Item	Check For	Tester Connection	Condition	Specified Value
Stop Fuse	Voltage	16 – Body ground	—————	Battery voltage
Stop Light Switch	Voltage	15 – Body ground	Brake pedal depressed	Battery voltage
			Brake pedal released	No voltage
Stop Light Switch and Release Valve	Resistance	2 – 14	Brake pedal released	Approx. 68 Ω
Control Valve	Resistance	4 – 14	—————	Approx. 30 Ω
Main Relay	Voltage	10 – Body ground	Turn ignition switch and main switch on	Battery voltage
			Turn ignition switch or main switch off	No voltage
Cruise Control Indicator	Voltage	3 – Body ground	Turn ignition switch on	Battery voltage
			Turn ignition switch off	No voltage
Control Switch (set/coast)	Resistance	17 – Body ground	Push set/coast switch on	Approx. 198 Ω
Control Switch (resume/accel)	Resistance	17 – Body ground	Push resume/accel switch on	Approx. 68 Ω
Control Switch (cancel)	Resistance	17 – Body ground	Push cancel switch on	Approx. 418 Ω
Speed Sensor	Continuity	7 – Body ground	Vehicle moving slowly	1 pulse each 40 cm (15.75 in.)
Clutch Switch (M/T) or Neutral Start Switch (A/T)	Continuity	11 – Body ground	Clutch pedal depressed or shifted into "N" range	Continuity
			Clutch pedal released or shifted into only range except "N" and "P" range	No continuity
Parking Brake Switch	Voltage	12 – Body ground	Disconnect alternator connector and ignition switch turned on with parking brake lever pulled up.	No voltage
			Disconnect alternator connector and ignition switch turned on with parking brake lever released.	Battery voltage
Vacuum Switch (7M-GTE only)	Continuity	9 – Body ground	Apply vacuum about 170 mmHg (6.69 in.Hg, 22.7 kPa)	No continuity
			No vacuum	Continuity
Vacuum Pump (7M-GTE only)	Continuity	1 – Body ground	—————	Continuity
Body Ground	Continuity	13 – Body ground	—————	Continuity



BE4338

Main & Control Switch (U.S.A.)

INSPECTION OF MAIN & CONTROL SWITCH

INSPECT SWITCH OPERATION

- (a) Push the main switch ON, and check that there is continuity between terminals 3 and 5.
- (b) Push the main switch OFF, and check that there is no continuity between terminals 3 and 5.

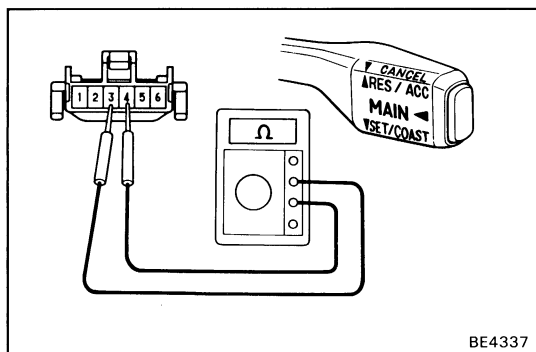
If operation is not as specified, replace the switch.

INSPECT SWITCH RESISTANCE

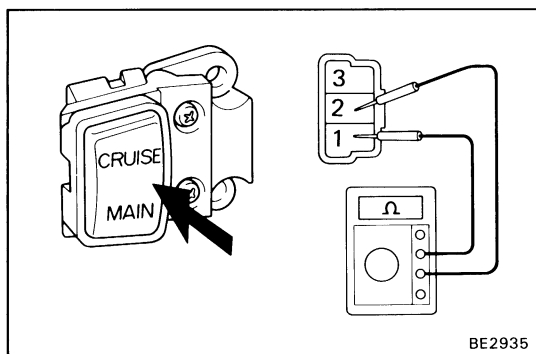
Inspect the switch resistance value between terminals 3 and 4 at each switch position.

Switch position	Resistance value (Ω)
RESUME/ACCEL	68
SET/COAST	198
CANCEL	418

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



BE4337



BE2935

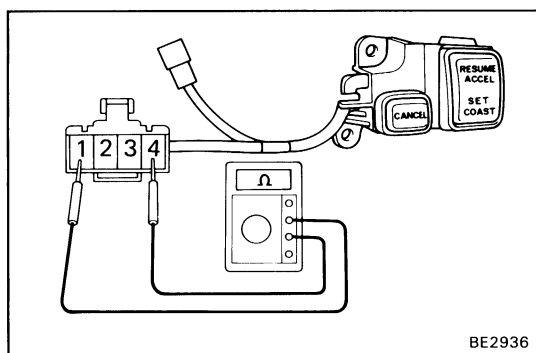
Main Switch (CANADA)

INSPECTION OF MAIN SWITCH

INSPECT SWITCH OPERATION

- (a) Turn the main switch ON, and check that there is continuity between terminals 1 and 2.
- (b) Turn the main switch OFF, and check that there is no continuity between terminals 1 and 2.

If operation is not as specified, replace the switch.



BE2936

Control Switch (CANADA)

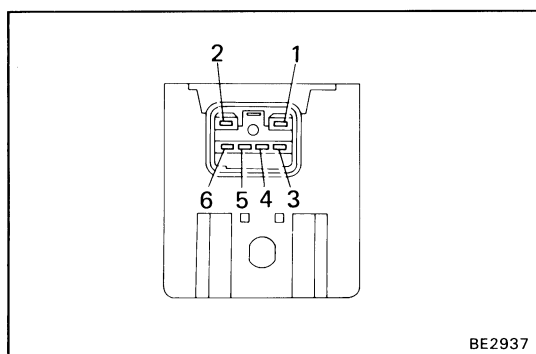
INSPECTION OF CONTROL SWITCH

INSPECT SWITCH RESISTANCE

Inspect the switch resistance value between terminals 1 and 4 at each switch position.

Switch position	Resistance value (Ω)
RESUME/ACCEL	68
SET/COAST	198
CANCEL	418

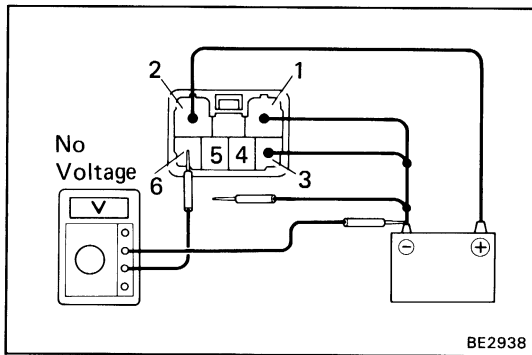
If resistance value is not as specified, replace the switch.



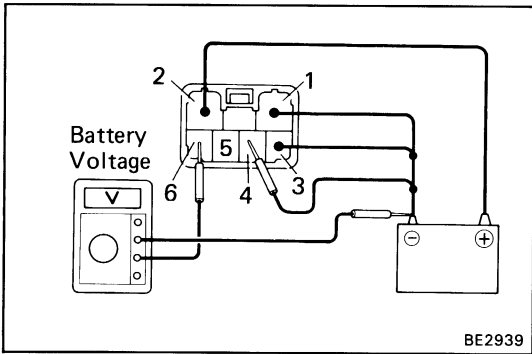
BE2937

Main Relay

INSPECTION OF MAIN RELAY

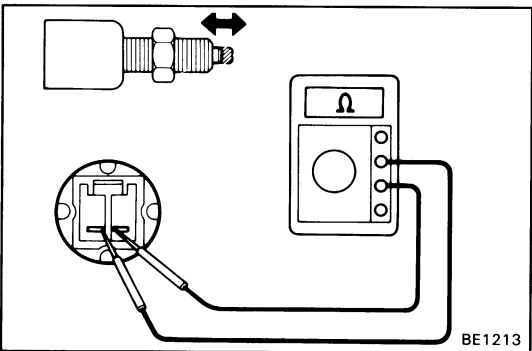
**INSPECT RELAY OPERATION**

- (a) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) leads to terminals 1 and 3.
- (b) Ground terminal 6 through the voltmeter.
- (c) Check that the voltmeter indicates no voltage.



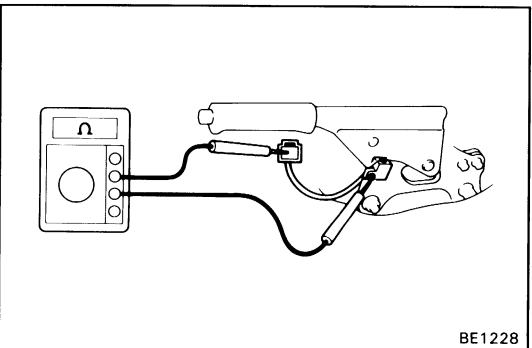
- (d) Ground terminal 4 and check that the voltmeter indicates battery voltage.

If operation is not as specified, replace the relay.

**Clutch Switch****INSPECTION OF SWITCH****INSPECT SWITCH CONTINUITY**

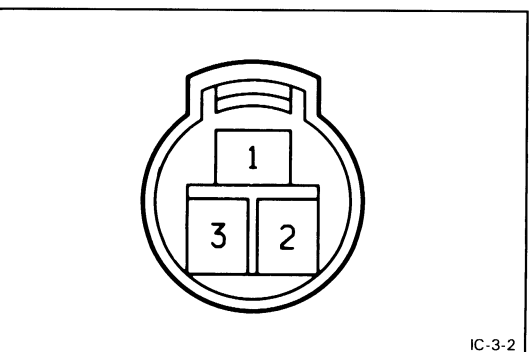
- (a) Check that there is continuity between terminals with the switch free.
(Clutch pedal depressed)
- (b) Check that there is no continuity between terminals with the switch pin pushed.
(Clutch pedal released)

If continuity is not as specified, replace the switch.

**Parking Brake Switch****INSPECTION OF SWITCH****INSPECT SWITCH CONTINUITY**

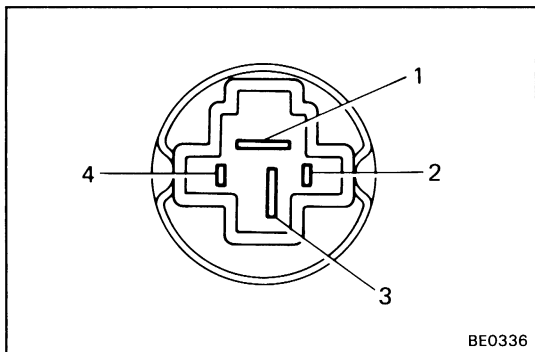
- (a) Check that there is continuity between terminal and the switch set screw with the parking brake lever pulled up. (Switch free)
- (b) Check that there is no continuity between terminal and the switch set screw with the parking brake lever released. (Switch pin pushed)

If continuity is not as specified, replace the switch.

**Neutral Start Switch****INSPECTION OF SWITCH****INSPECT SWITCH CONTINUITY**

Check that there is continuity between terminals 2 and 3 with switch position "P" and "N" ranges.

If continuity is not as specified, replace the switch.



Stop Light Switch

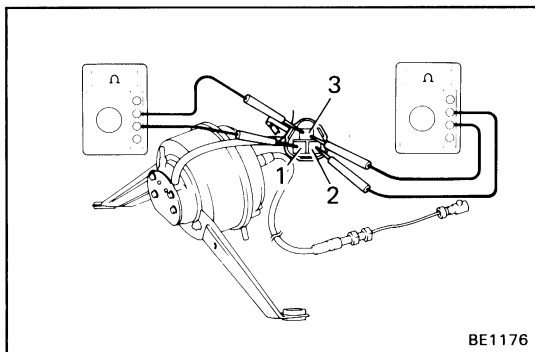
INSPECTION OF SWITCH

INSPECT SWITCH CONTINUITY

Inspect the switch continuity between terminals.

Terminal	1	2	3	4
Switch position				
Switch free	○	—	○	
Switch pin pushed		○	—	○

If continuity is not as specified, replace the switch.



Actuator

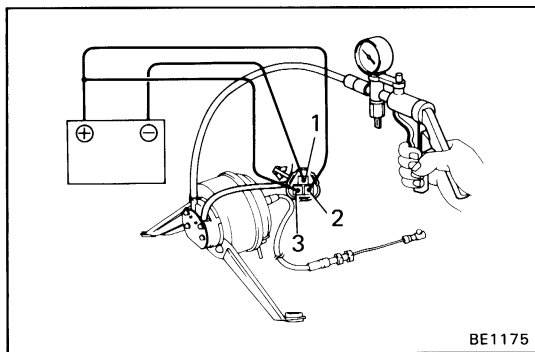
INSPECTION OF SENSOR

1. INSPECT ACTUATOR RESISTANCE

Measure the resistance value between terminals as follows.

Resistance: 3 — 2 approx. 30 Ω
1 — 3 approx. 68 Ω

If the resistance value is not as specified, replace the actuator.

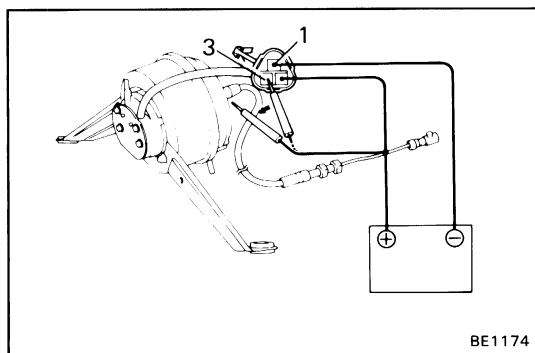


2. INSPECT ACTUATOR OPERATION

- Connect the positive (+) lead from battery to terminals 2 and 1, and the negative (–) lead to terminal 3.
- Slowly apply vacuum from 0 — 300 mmHg (0 — 11.81 in.Hg, 0 — 40.0 kPa), and check that the control cable can be pulled smoothly.

- Disconnect terminal 2 or 1 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.

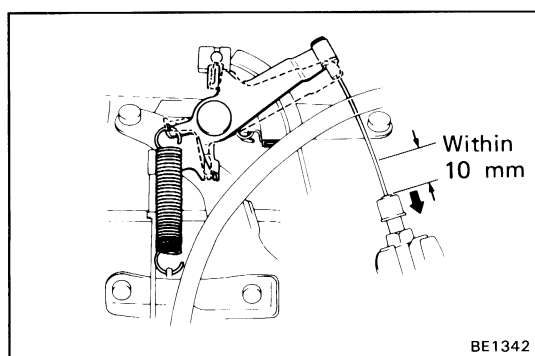


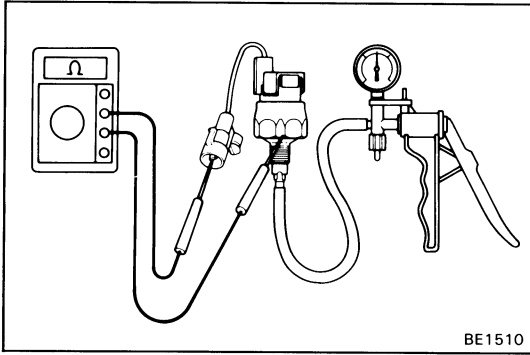
3. INSPECT CONTROL CABLE FREEPLAY

- Connect the positive (+) lead from battery to terminals 2 and 3, and the negative (–) lead to terminal 1.
- Slowly apply vacuum from 0 — 300 mmHg (0 — 11.81 in.Hg, 0 — 40.0 kPa), and measure the cable stroke to where the throttle valve begins to open.

Standard: Approx. within 10 mm (0.39 in.) with a slight amount of freeplay.

If freeplay is not as specified, adjust the control cable freeplay.





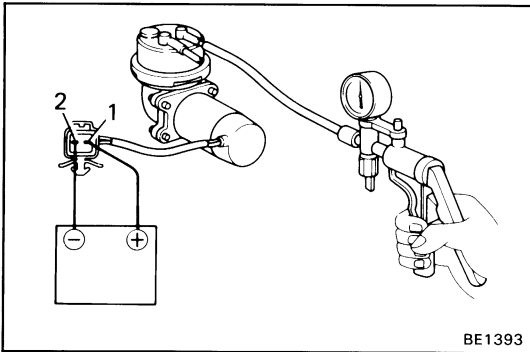
Vacuum Switch (7M-GTE only)

INSPECTION OF SWITCH

INSPECT SWITCH OPERATION

- Check that there is no continuity between terminal and body with a vacuum of 170 ± 10 mmHg (6.69 ± 0.39 in.Hg, 22.7 ± 1.3 kPa) or above.
- Check that there is continuity between terminal and body with no vacuum.

If operation is not as specified, replace the switch.



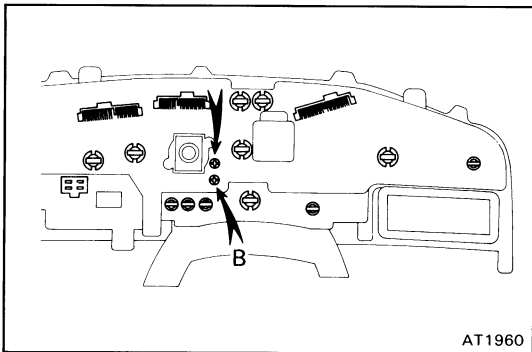
Vacuum Pump (7M-GTE only)

INSPECTION OF PUMP

INSPECT VACUUM PUMP OPERATION

- Connect a vacuum gauge to the ACT side of the pump.
- Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2.
- Check that there is the vacuum of 200 mmHg (7.87 in.Hg, 26.7 kPa) or above.

If operation is not as specified, replace the pump.



Speed Sensor

INSPECTION OF SWITCH

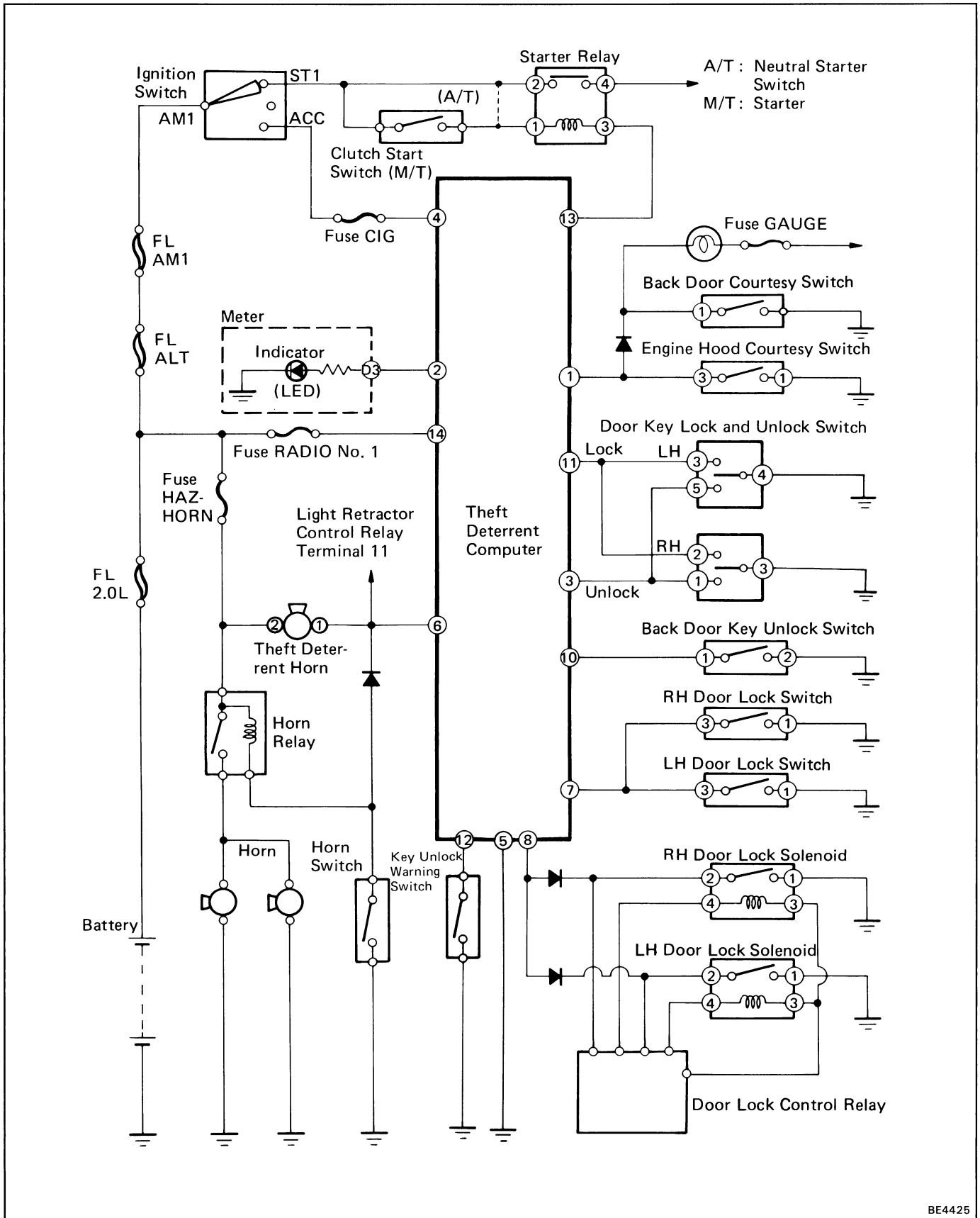
INSPECT SENSOR CONTINUITY

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

If continuity is not as specified, replace the sensor.

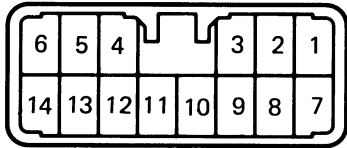
THEFT DETERRENT SYSTEM (USA Only)

Wiring Diagram

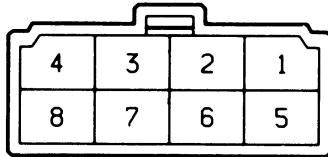


Connector

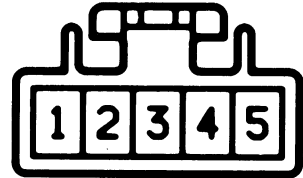
Theft Deterrent Computer



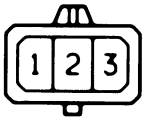
Ignition Switch



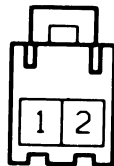
LH Front Door Key Lock and Unlock Switch



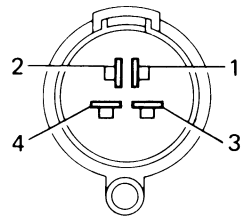
RH Front Door Key Lock and Unlock Switch



Back Door Key Unlock Switch



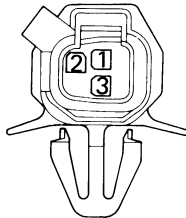
Door Lock Solenoid



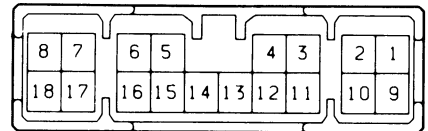
Back Door Courtesy Switch



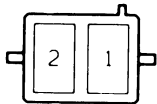
Engine Hood Courtesy Switch



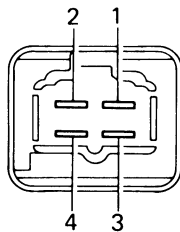
Light Retractor Control Relay



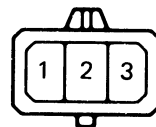
Theft Deterrent Horn



Starter Relay



Door Lock Switch



Troubleshooting

- Check that the operation of other systems (Door lock control system etc.) are normal.
- When the system is not operating, lower the door glass and confirm under what conditions it does not operate, or malfunctions.

Problem	Inspection Item	Section
Theft deterrent system can not be set.	Inspection of power source circuit	A
Indicator light does not light even if theft deterrent system operated.	Inspection of indicator light circuit	H
Theft deterrent system does not operate when front door opened.	Inspection of front door lock solenoid circuit Inspection of door lock switch circuit	E F
Theft deterrent system does not operate when back door opened.	Inspection of back door and/or engine hood courtesy switch circuit	G
Theft deterrent system does not operate when engine hood opened.	Inspection of back door and/or engine hood courtesy switch circuit	G
Theft deterrent system does not cancel when front door unlocked with key.	Inspection of front door key lock and unlock switch circuit	C
Theft deterrent system does not cancel when back door unlocked with key.	Inspection of back door key unlock switch circuit	D
Theft deterrent system does not cancel when ignition switch turned to ON or ACC position.	Inspection of ignition switch circuit	B
Starter cut system does not operate even if theft deterrent system operated.	Inspection of starter cut system circuit	I
Starter cut system does not cancel even if theft deterrent system canceled.	Inspection of starter cut system circuit	I
Horn does not blow even if theft deterrent system operated.	Inspection of theft deterrent horn circuit	L
Headlights and taillights do not flash even if theft deterrent system operated.	Inspection of light retractor control relay circuit	K
Theft deterrent horn blows and/or headlight and taillight flash even if system is not set.	Inspection of theft deterrent horn and light retractor control relay circuit	J

A INSPECTION OF POWER SOURCE CIRCUIT.

Turn ignition switch off.

Is DOME fuse normal?

No

Replace fuse.
Is operation normal?

No

Short circuit in wire harness between fuse and terminal 14 of computer.

Yes

Fuse faulty.

Yes

COMPUTER

Disconnect computer connector and inspect connector on wire harness side as follows.

INSPECT POWER SOURCE
Is there battery voltage between terminal 14 and ground.

No

Open circuit in wire harness between fuse and terminal 14 of computer.

Yes

INSPECT GROUND CONNECTION
Is there continuity between terminal 5 and ground.

No

• Open circuit in wire harness between terminal 5 of computer and ground.
• Ground faulty.

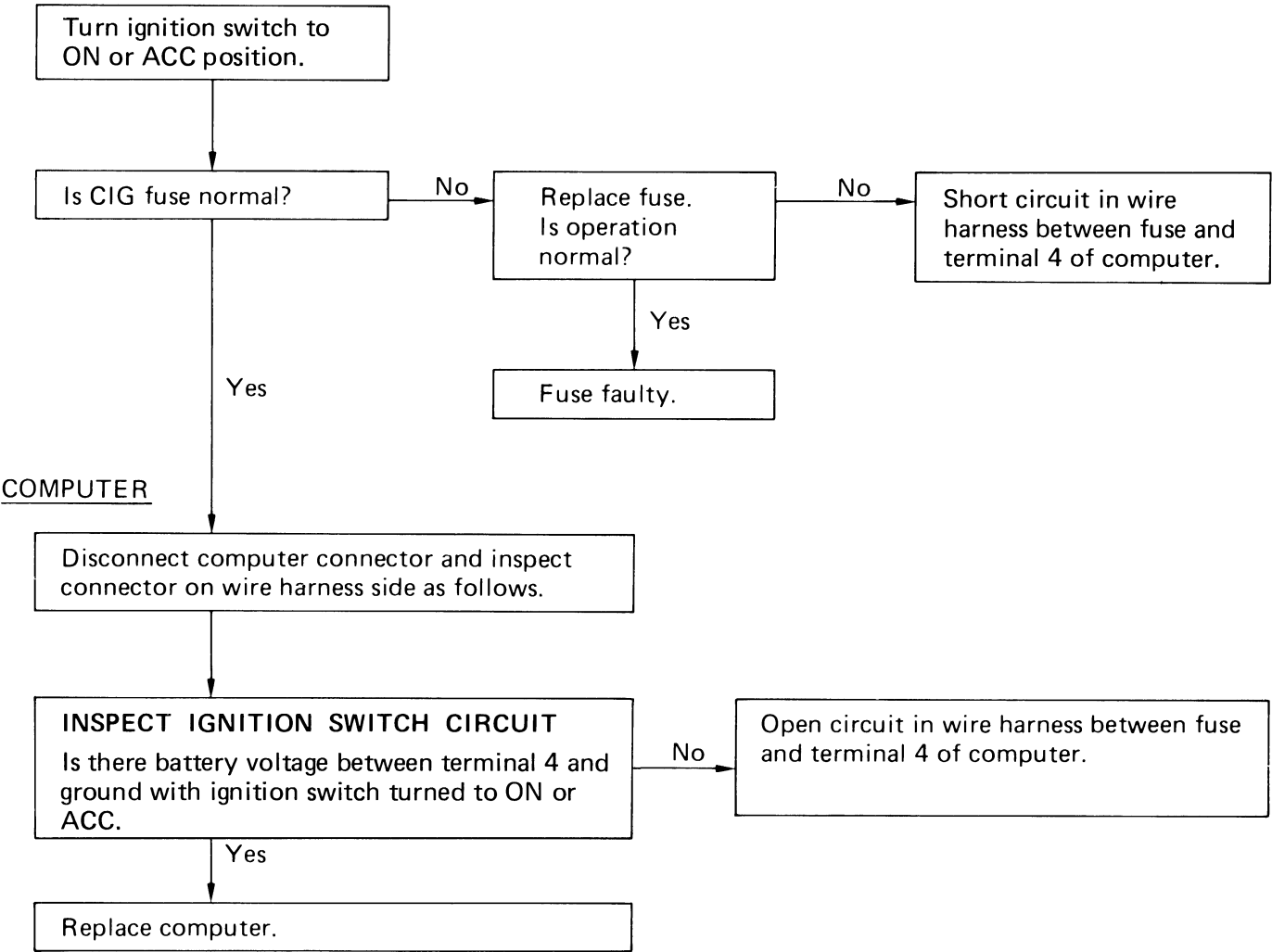
Yes

INSPECT FOLLOWING SECTIONS:
Ignition switch circuitSection B
Front door lock solenoid circuitSection E
Front door key lock and unlock switch circuitSection C
Door lock switch circuit.....Section F
Back door key unlock switch circuitSection D
Back door courtesy switch circuitSection G
Engine hood switch circuit.....Section G

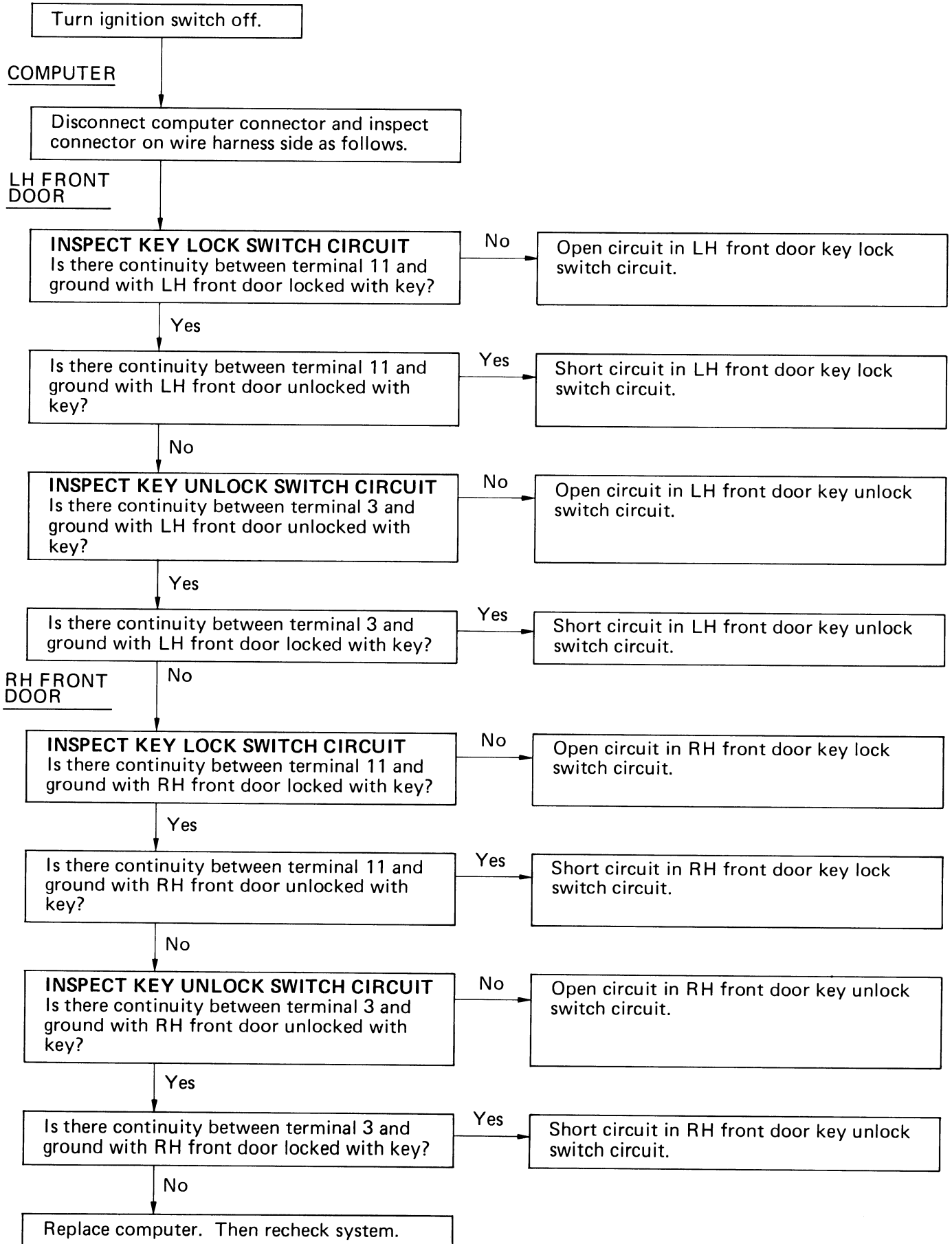
Yes

Replace computer.

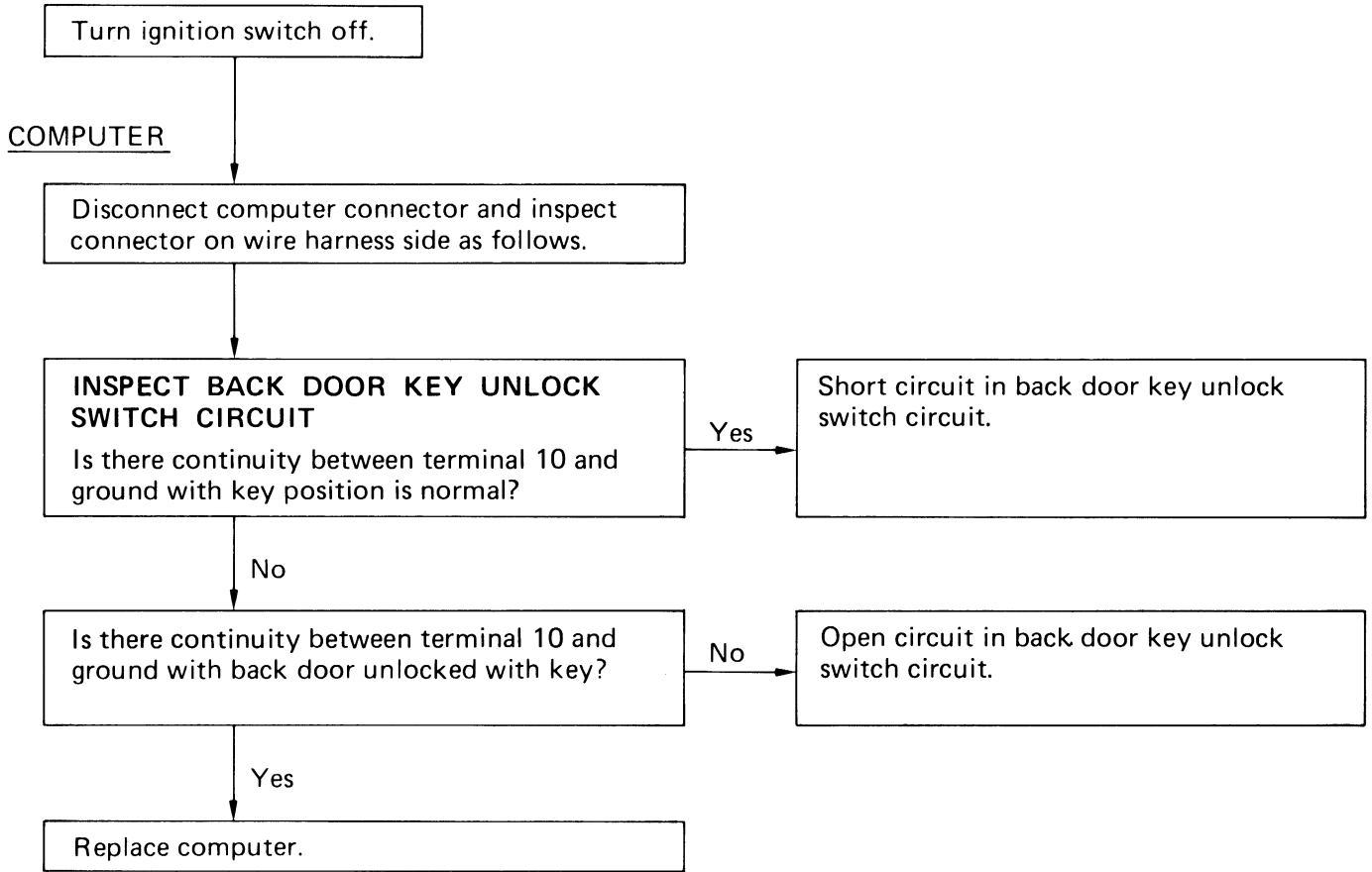
B INSPECTION OF IGNITION SWITCH CIRCUIT.

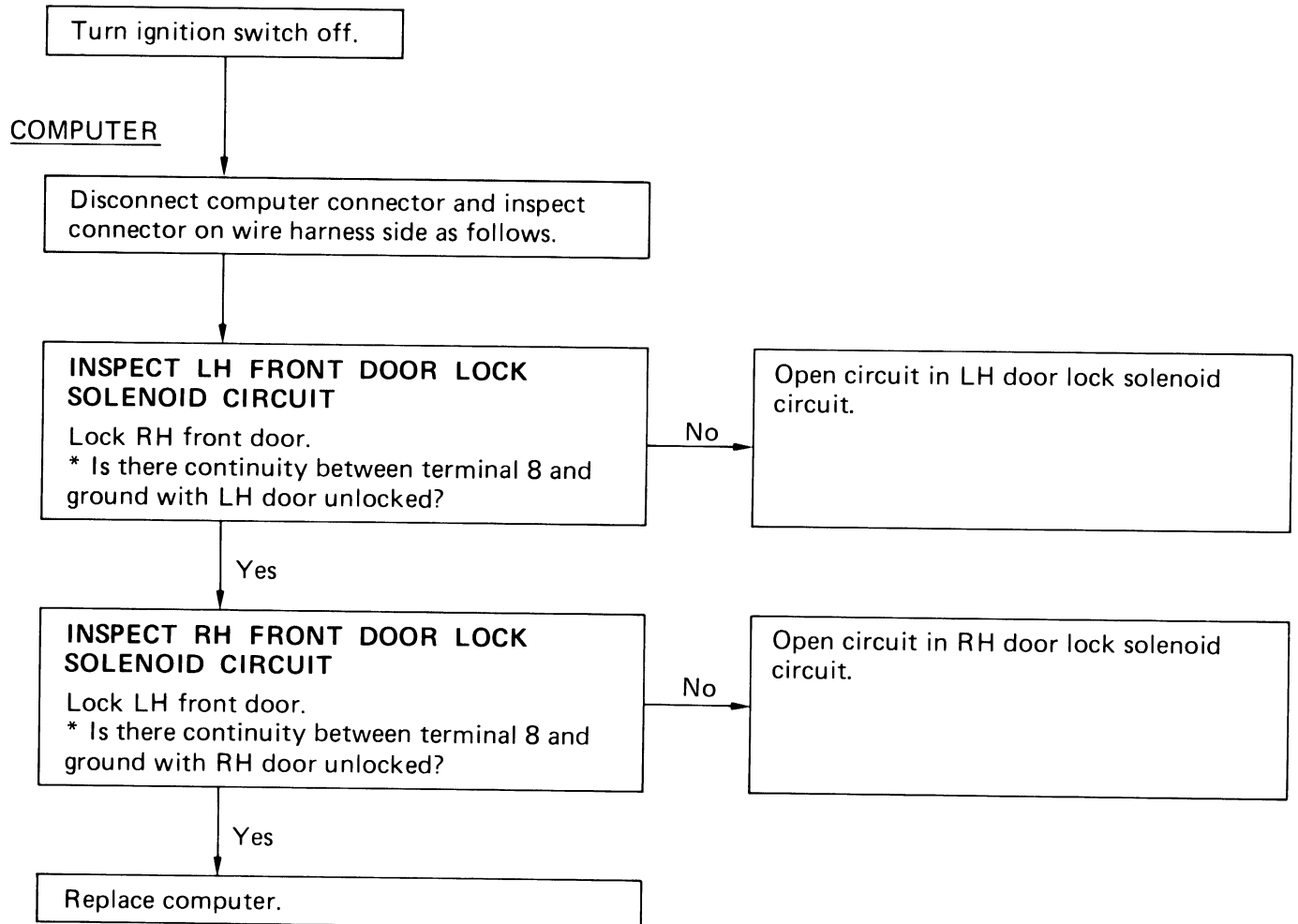


C INSPECTION OF FRONT DOOR KEY LOCK AND UNLOCK SWITCH CIRCUIT.



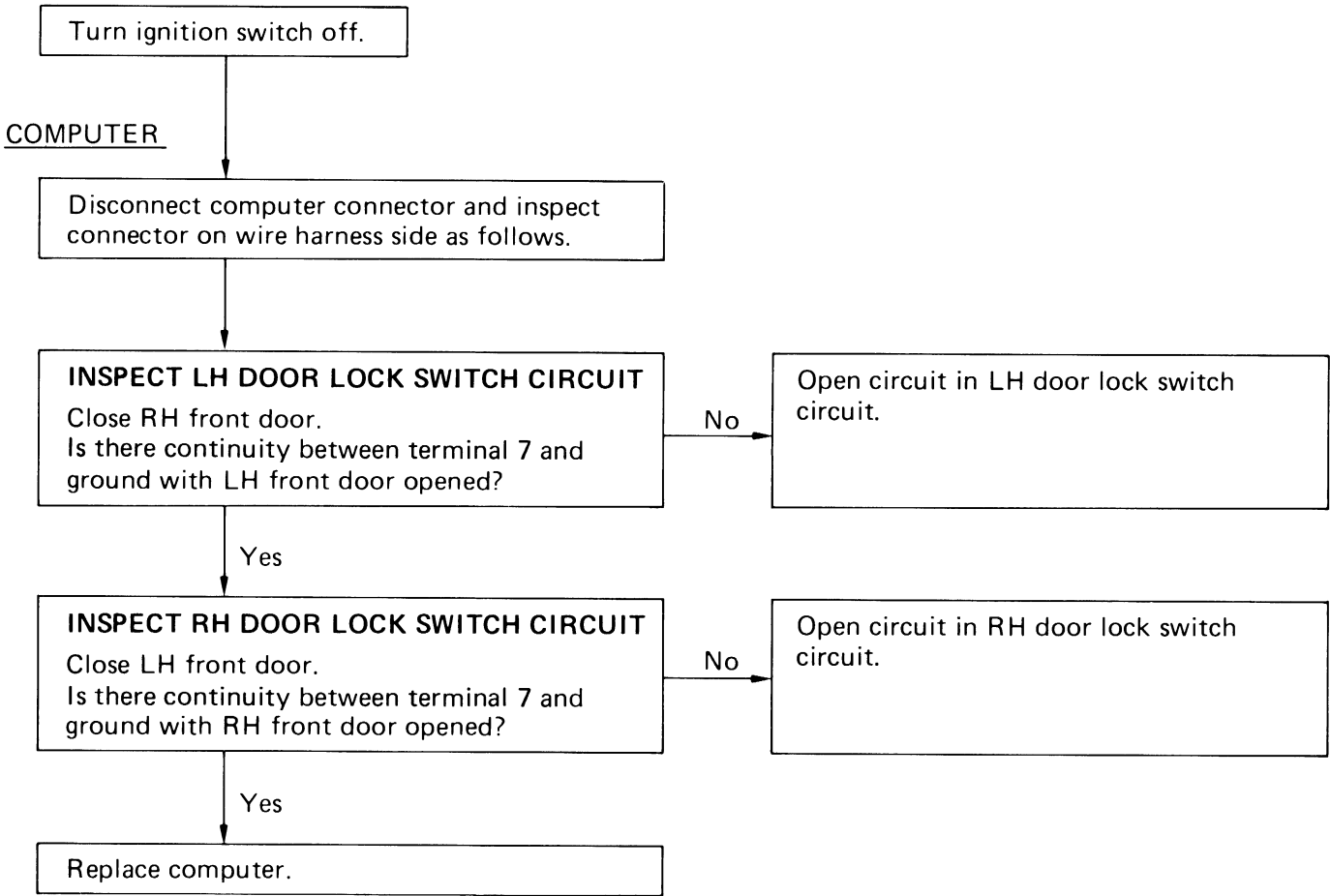
D INSPECTION OF BACK DOOR KEY UNLOCK SWITCH CIRCUIT.



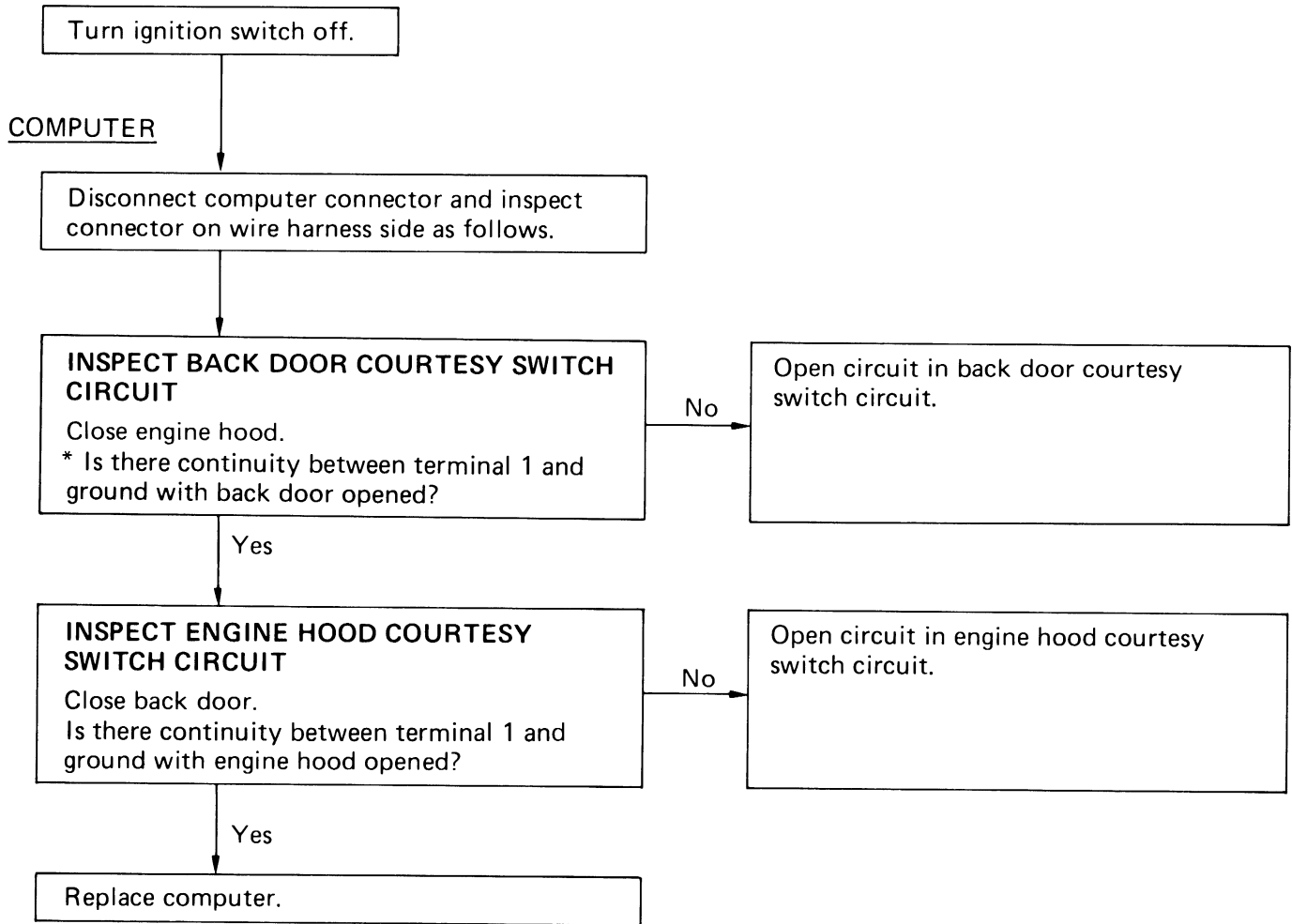
E INSPECTION OF FRONT DOOR LOCK SOLENOID CIRCUIT.

*: This circuit includes the diode. If the circuit shows no continuity, change the positive and negative probes and recheck the circuit.

F INSPECTION OF DOOR LOCK SWITCH CIRCUIT.

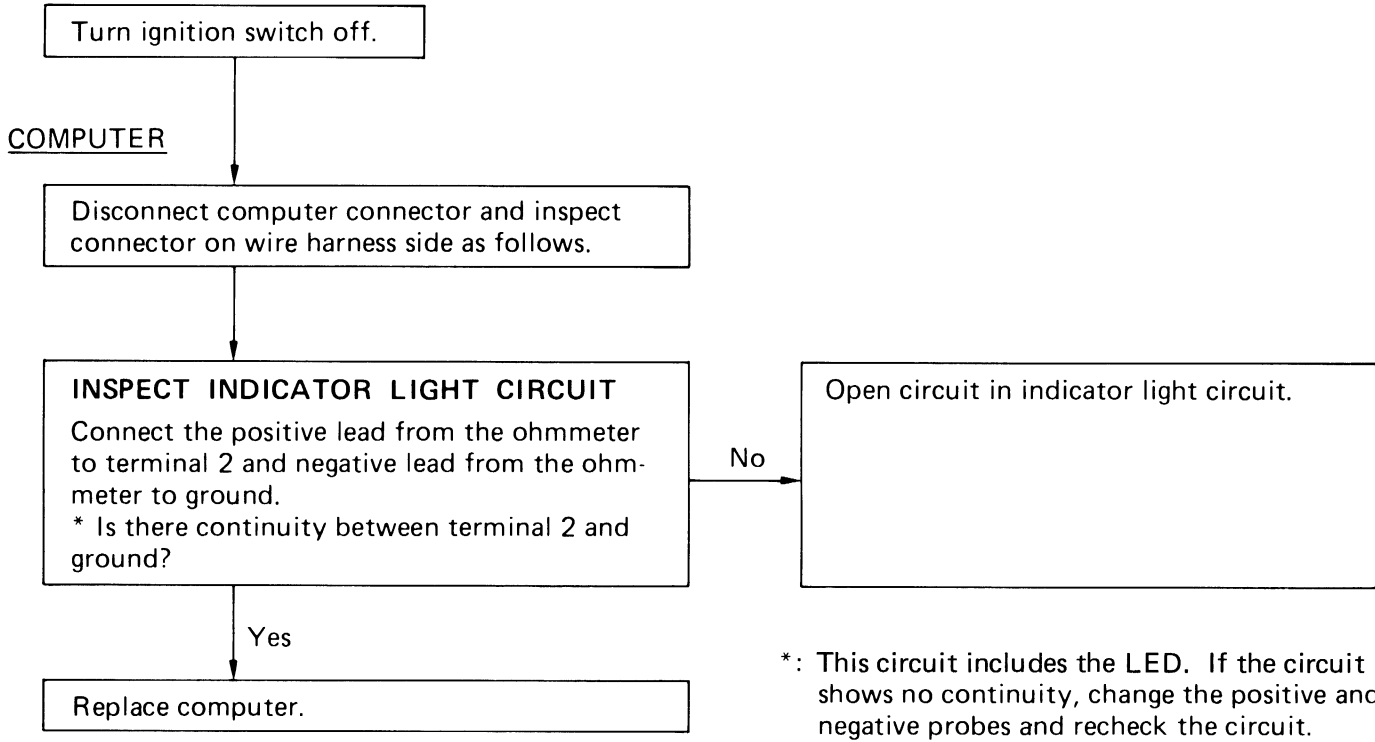


G INSPECTION OF BACK DOOR AND/OR ENGINE HOOD COURTESY SWITCH CIRCUIT.

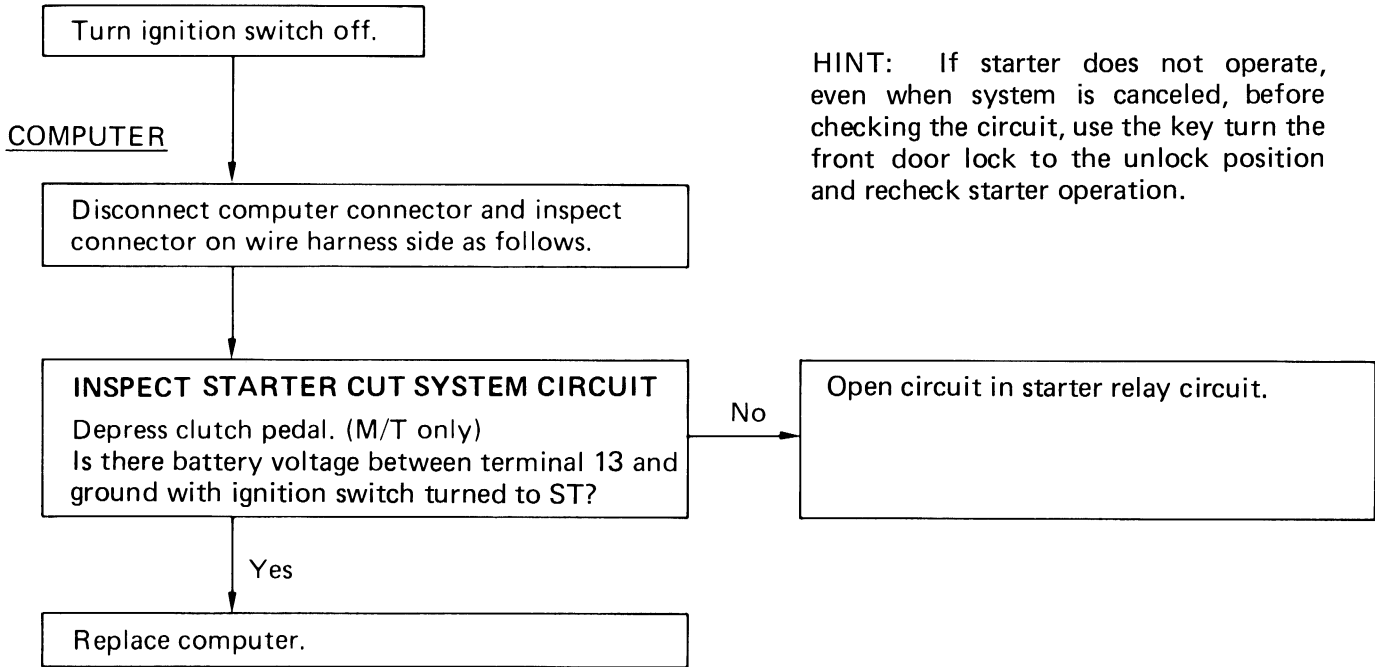


*: This circuit includes the diode. If the circuit shows no continuity, change the positive and negative probes and recheck the circuit.

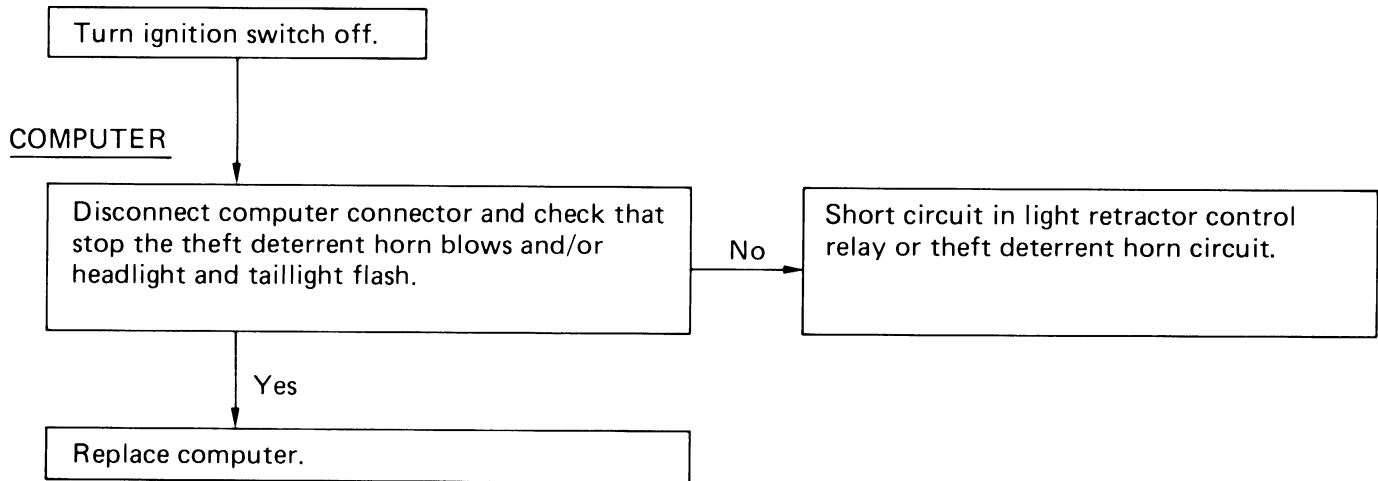
H INSPECTION OF INDICATOR LIGHT CIRCUIT.



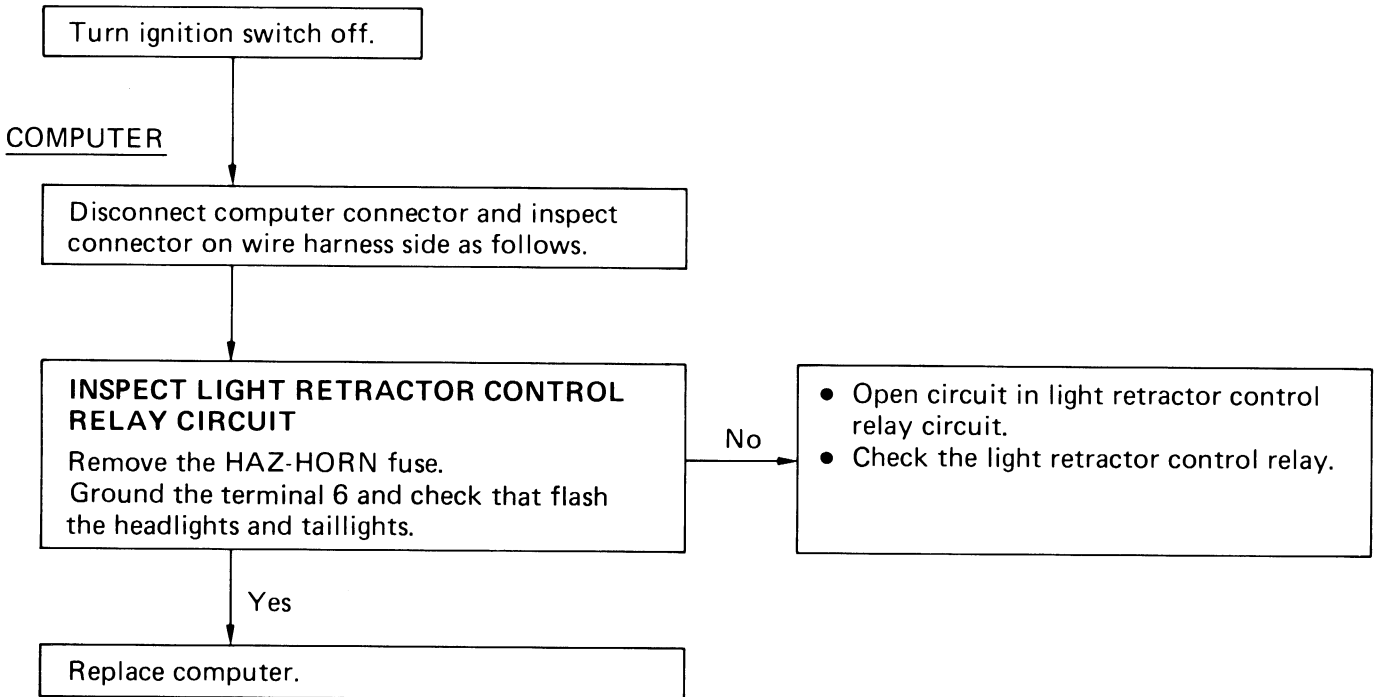
I INSPECTION OF STARTER CUT SYSTEM CIRCUIT.



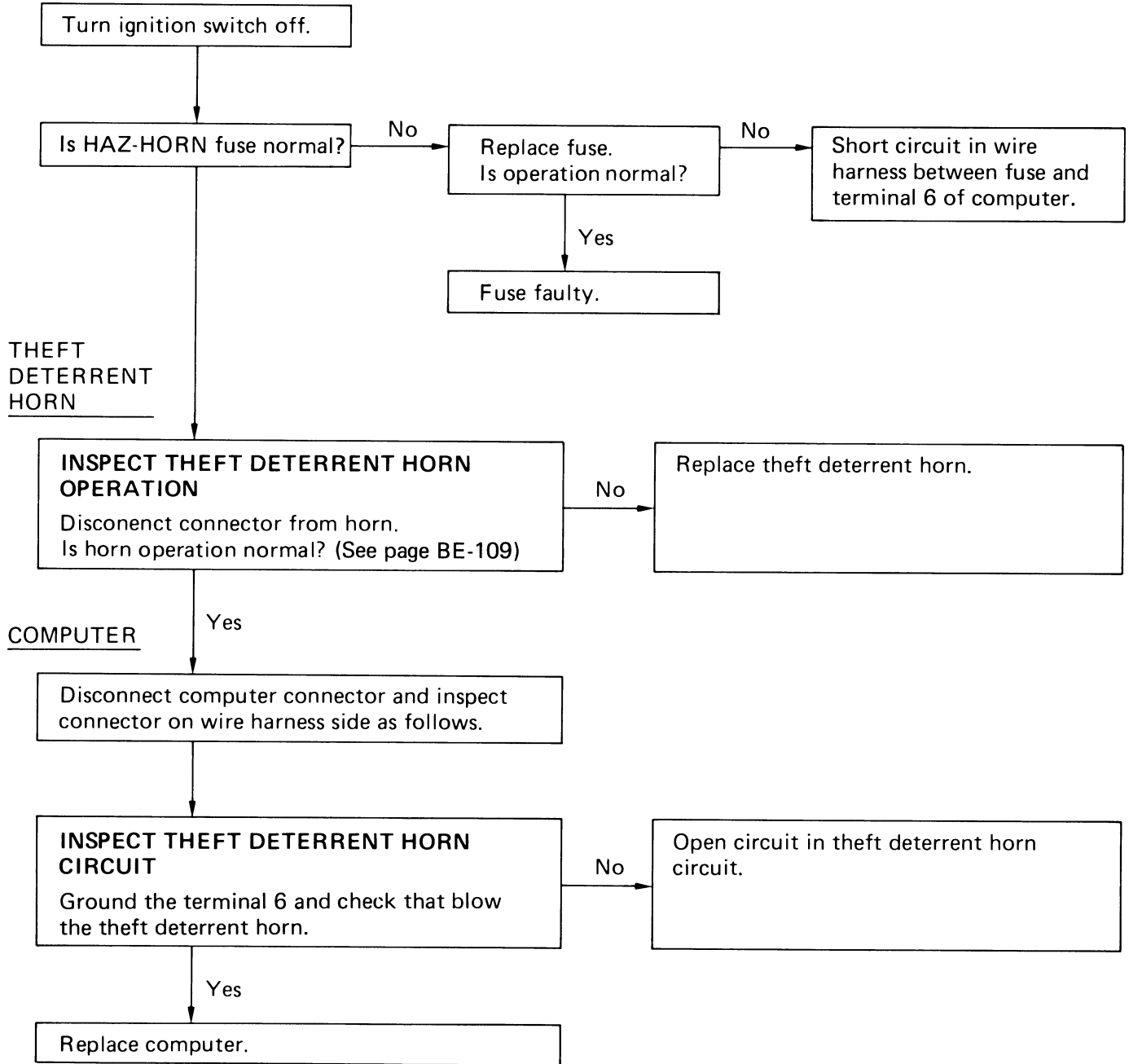
J INSPECTION OF THEFT DETERRENT HORN AND LIGHT RETRACTOR CONTROL RELAY CIRCUIT.

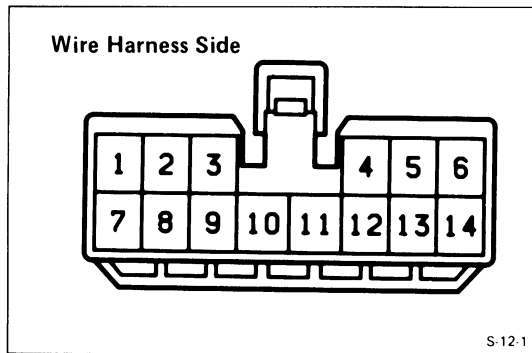


K INSPECTION OF LIGHT RETRACTOR CONTROL RELAY CIRCUIT.



L INSPECTION OF THEFT DETERRENT HORN CIRCUIT.





Theft Deterrent Computer

INSPECTION OF THEFT DETERRENT COMPUTER

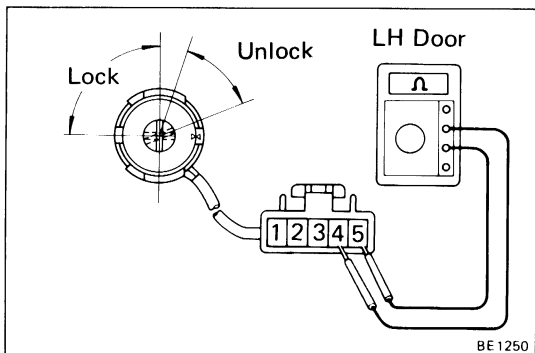
INSPECT THEFT DETERRENT COMPUTER CIRCUIT

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

Tester Connection	Check Item	Condition	Voltage or Continuity
8 – Ground	Continuity *	RH or LH front door lock knob unlocked	Continuity
		RH and LH front door lock knob locked	No continuity
2 – Ground	Continuity *	Always	Continuity
13 – Ground	Voltage	M/T only Turn ignition switch ST Depress clutch pedal	Battery voltage
		M/T only Turn ignition switch ST Release clutch pedal	No voltage
		A/T only Turn ignition switch ST	Battery voltage
		A/T only Turn ignition switch except ST	No voltage
4 – Ground	Voltage	Turn ignition switch to ON or ACC	Battery voltage
		Turn ignition switch to LOCK	No voltage
14 – Ground	Voltage	Always	Battery voltage
7 – Ground	Continuity	RH or LH front door opened	Continuity
		RH and LH front door closed	No continuity
1 – Ground	Continuity *	Back door or engine hood opened	Continuity
		Back door and engine hood closed	No continuity
3 – Ground	Continuity	RH or LH front door unlocked with key	Continuity
		Except above condition	No continuity
5 – Ground	Continuity	Always	Continuity
10 – Ground	Continuity	Back door unlocked with key	Continuity
		Except the above condition	No continuity
6 – Ground	Voltage	—	Battery voltage
11 – Ground	Continuity	RH or LH front door locked with key	Continuity
		Except above condition	No continuity
12 – Ground	Continuity	Key unlock warning switch ON	Continuity
		Key unlock warning switch OFF	No continuity

*: This circuit includes the LED or diode, if the circuit shows no continuity, change the positive and negative probes and recheck the circuit.

If circuit is correct, replace the theft deterrent computer.



Front Door Key Lock and Unlock Switch

INSPECTION OF SWITCH

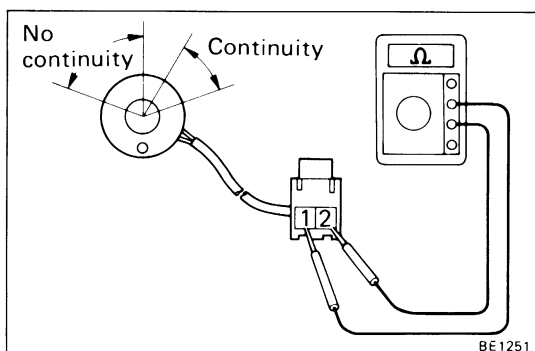
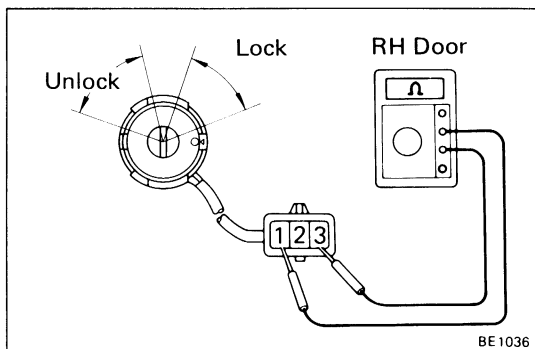
INSPECT SWITCH OPERATION

(LH Door)

Terminal Switch Position	1	2	3	4	5
LOCK			○—○		
NEUTRAL					
UNLOCK				○—○	

(RH Door)

Terminal Switch Position	1	2	3
LOCK		○—○	
NEUTRAL			
UNLOCK	○—○		○—○



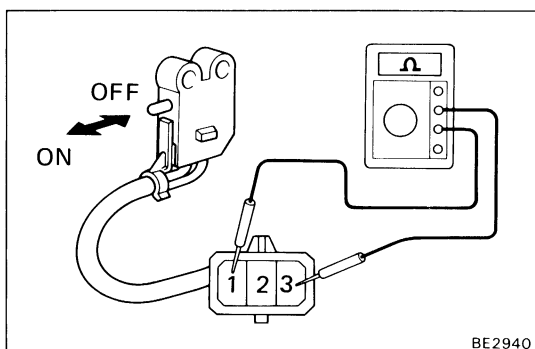
Back Door Key Unlock Switch

INSPECTION OF SWITCH

INSPECT SWITCH OPERATION

- Check that there is continuity between terminals 1 and 2 when the switch is turned to the right.
- Check that there is no continuity between terminals 1 and 2 when the switch is turned to the left or neutral position.

If operation is not as specified, replace the switch.



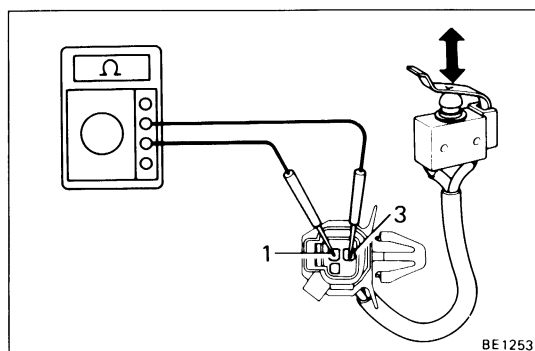
Door Lock Switch

INSPECTION OF SWITCH

INSPECT SWITCH OPERATION

- Check that there is continuity between terminals 1 and 3 when the switch is free.
- Check that there is no continuity between terminals 1 and 3 when the switch pin is pushed.

If operation is not as specified, replace the switch.



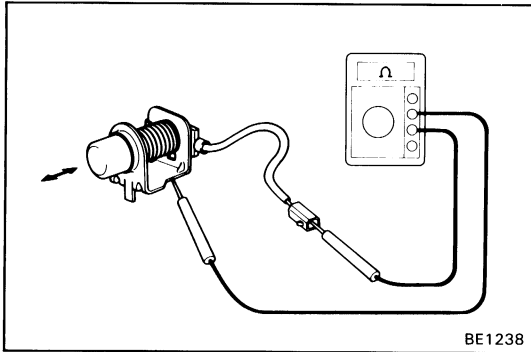
Engine Hood Courtesy Switch

INSPECTION OF SWITCH

INSPECT SWITCH OPERATION

- Check that there is continuity between terminals 1 and 3 when the switch is free.
- Check that there is no continuity between terminals 1 and 3 when the switch pin is pushed.

If operation is not as specified, replace the switch.



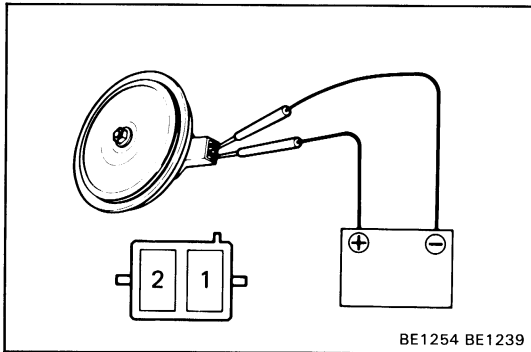
Back Door Courtesy Switch

INSPECTION OF SWITCH

INSPECT SWITCH OPERATION

- (a) Check that there is continuity between terminal 1 and ground when the switch is free.
- (b) Check that there is no continuity between terminal 1 and ground when the switch pin is pushed.

If operation is not as specified, replace the switch.



Theft Deterrent Horn

INSPECTION OF HORN

INSPECT HORN OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2.
- (b) Check that the horn blows.

If operation is not as specified, replace the horn.

Door Lock Solenoid

(See page BE-52)

Ignition Switch

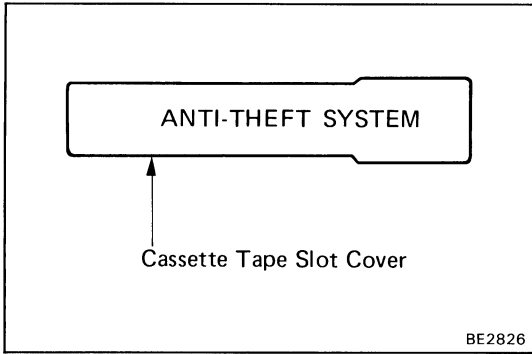
(See page BE-15)

Light Retractor Control Relay

(See page BE-23)

Starter Relay

(See page ST-14)



AUDIO SYSTEM

System Description

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 (hereafter called O/M).

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 O/M section, "Setting the anti-theft system")

HINT:

- When the audio system is shipped the ID number has not been input, so the anti-theft system is not in operation.
- If the ID 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 ID number chosen by the customer is input to cancel the anti-theft system.

(Refer to the O/M section, "If the system is activated")

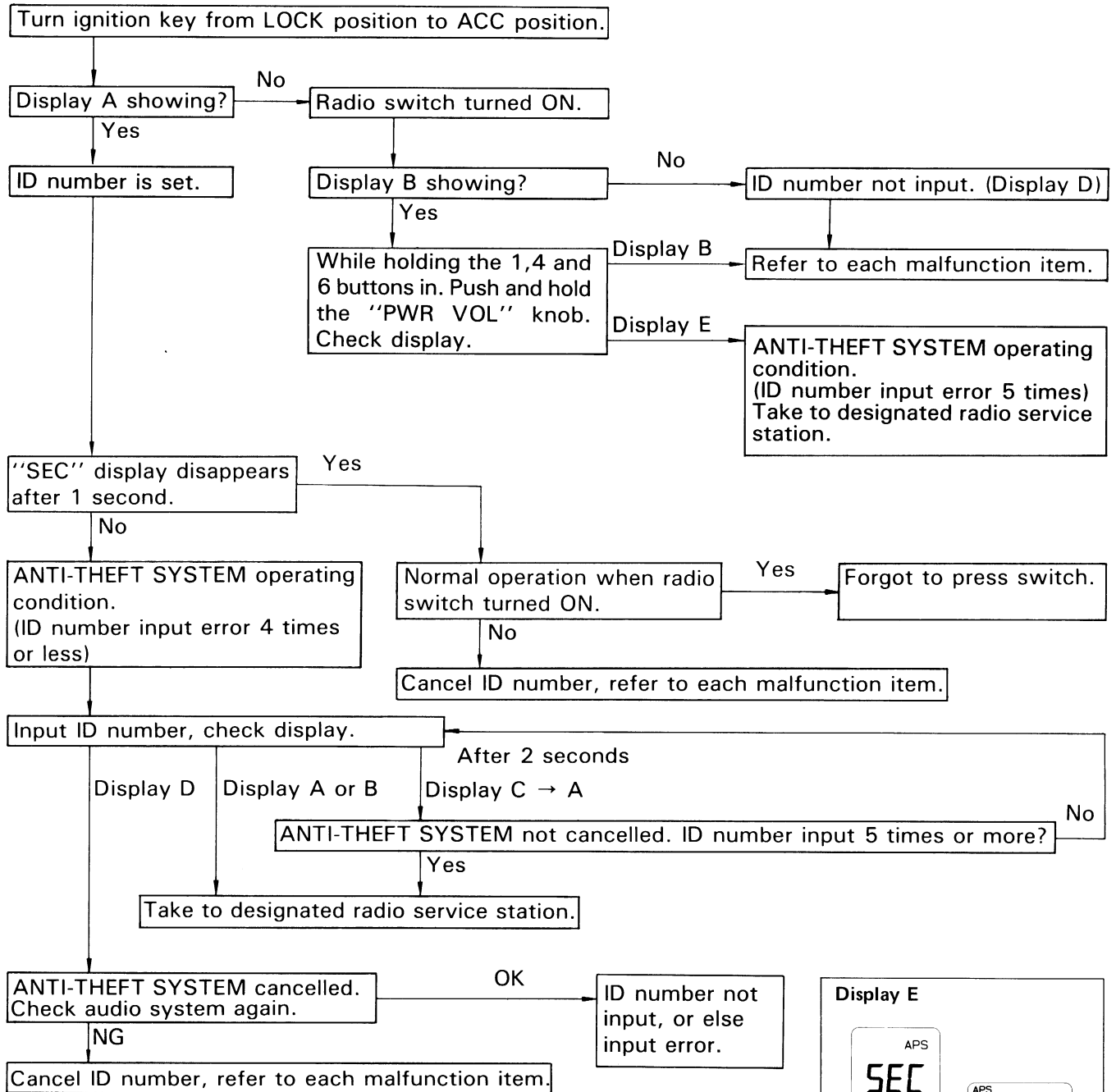
HINT: To change or cancel the ID number, please refer to the O/M section, "Cancelling the system".

Troubleshooting

HINT: For audio systems with anti-theft system, troubleshooting items marked (*) indicate that "Troubleshooting for ANTI-THEFT SYSTEM" should be carried out first.

No.	Problem	
1.	DEAD RADIO AND TAPE PLAYER	*(a) No power to radio or tape player, or power but no sound.
		(b) Tape player okay but no sound from AM and FM or either one.
		(c) No sound from one speaker.
2.	FAINT RECEPTION	—
3.	BAD SOUND QUALITY	(a) Sound quality bad when radio played.
		(b) Sound quality bad when tape player played.
4.	DEFECTIVE AUTO-SEARCH MACHANISM	—
Troubleshooting for CD player		See page BE-104

Troubleshooting for ANTI-THEFT SYSTEM



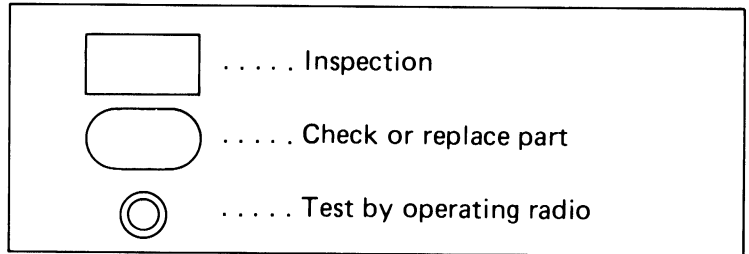
(Liquid Crystal Display (LCD) for Audio System)

<p>Display A</p> <p>2 DIN Type 1 DIN Type BE2810 BE2814</p>	<p>Display B</p> <p>Blank No Illumination</p> <p>2 DIN Type 1 DIN Type BE2811 BE2815</p>	<p>Display C</p> <p>Error Times</p> <p>2 DIN Type 1 DIN Type BE2812 BE2816</p>	<p>Display D Example:</p> <p>Radio Display</p> <p>2 DIN Type 1 DIN Type BE2813 BE2817</p>
--	---	---	--

HINT:

- Refer to O/M 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.

DESCRIPTION OF SYMBOLS



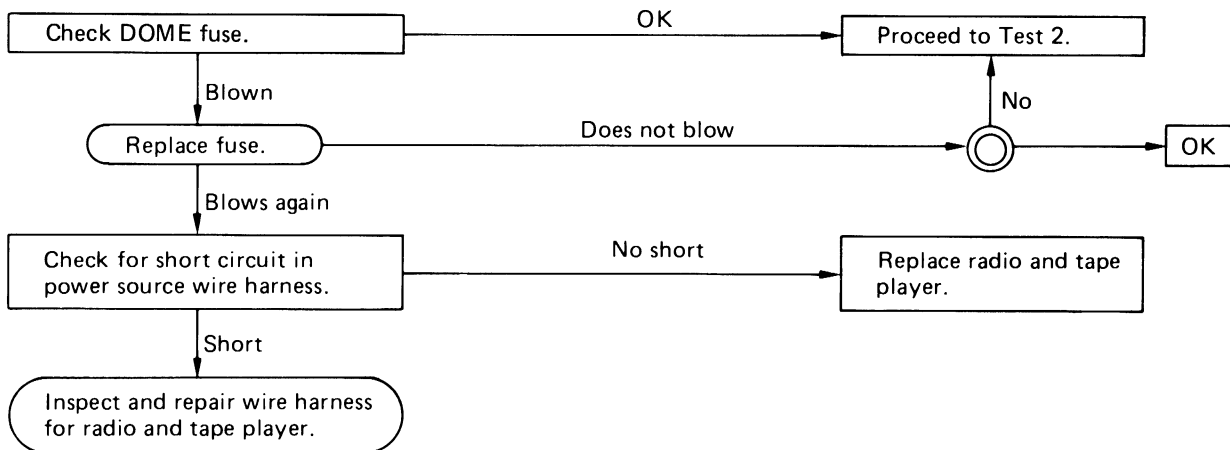
1. DEAD RADIO AND TAPE PLAYER

(a) No power to radio or tape player, or power but no sound.

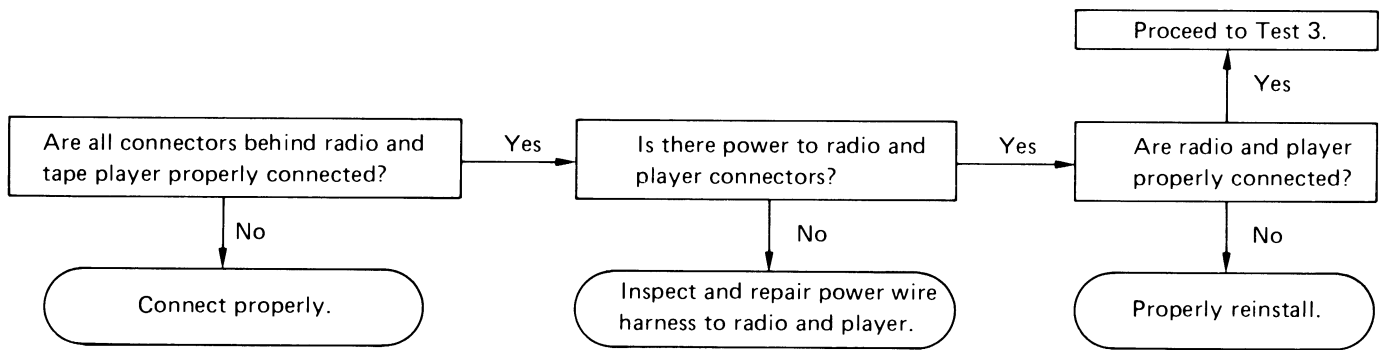
Possible causes:

- Blown DOME fuse
- Short circuit or broken wire in power source wire harness
- Loose connectors behind radio and tape player
- Loose speaker connector
- Defective speaker
- Broken wire in speaker wire harness
- Improperly installed radio or tape player
- Defective radio or tape player

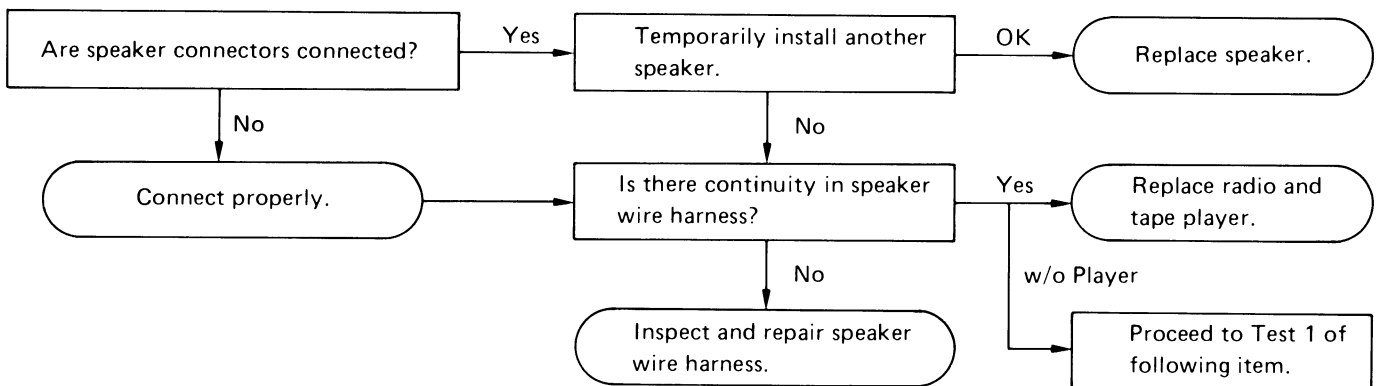
TEST 1



TEST 2



TEST 3

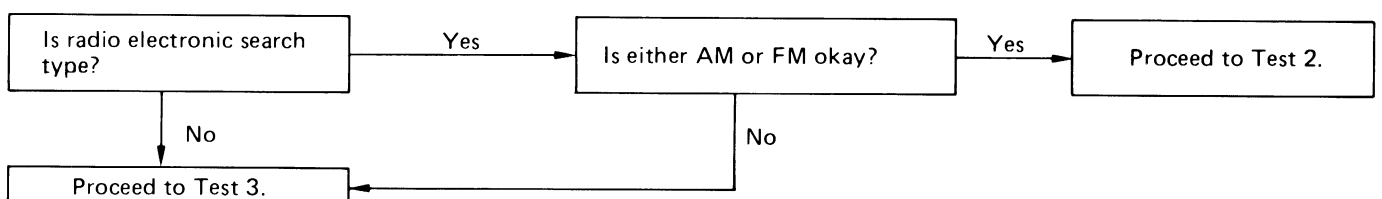


(b) Tape player okay but no sound from either the AM or FM band.

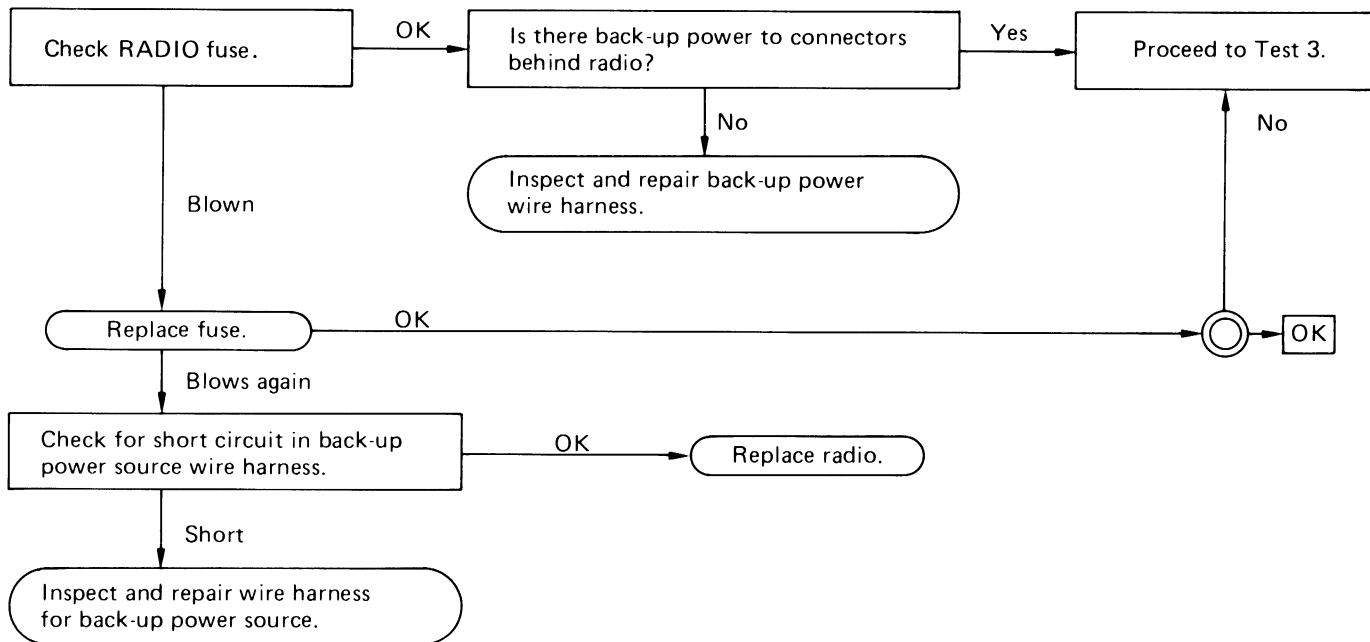
Possible causes:

- Antenna disconnected
- Antenna plug not properly connected
- Defective antenna
- Defective antenna cable
- Defective radio or tape player
- Blown RADIO fuse
- Short circuit or broken wire in wire harness for back-up power source

TEST 1

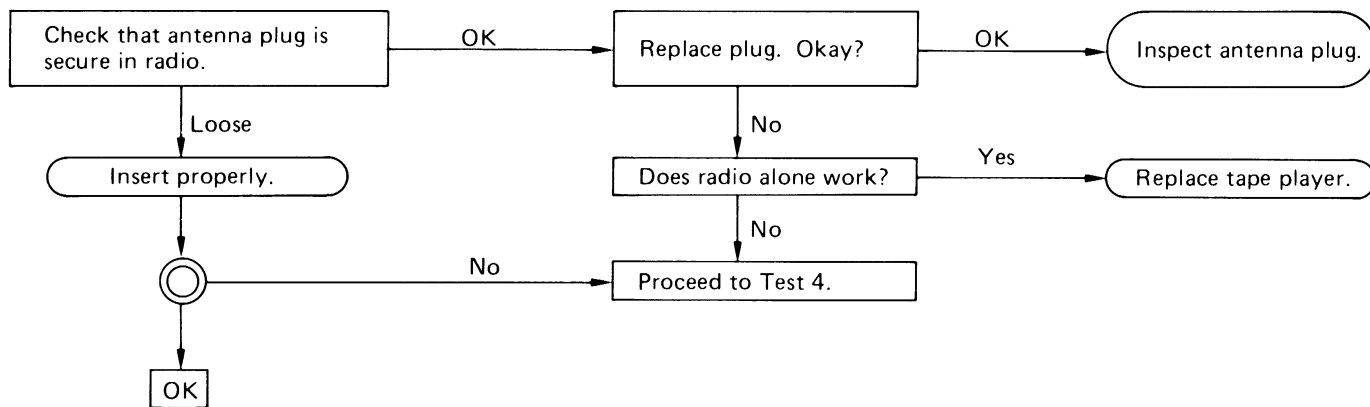


TEST 2

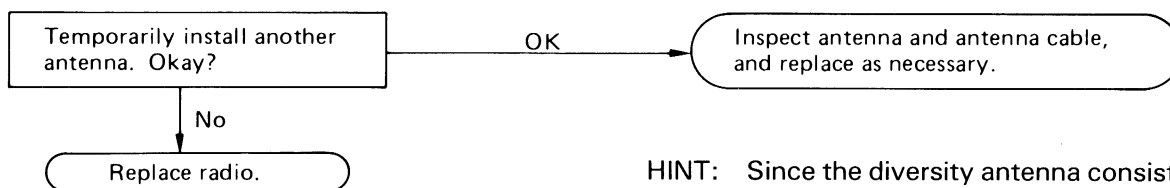


HINT: Back-up power refers to the storage voltage for preset tuning. This is applied even when the ignition switch is OFF.

TEST 3



TEST 4



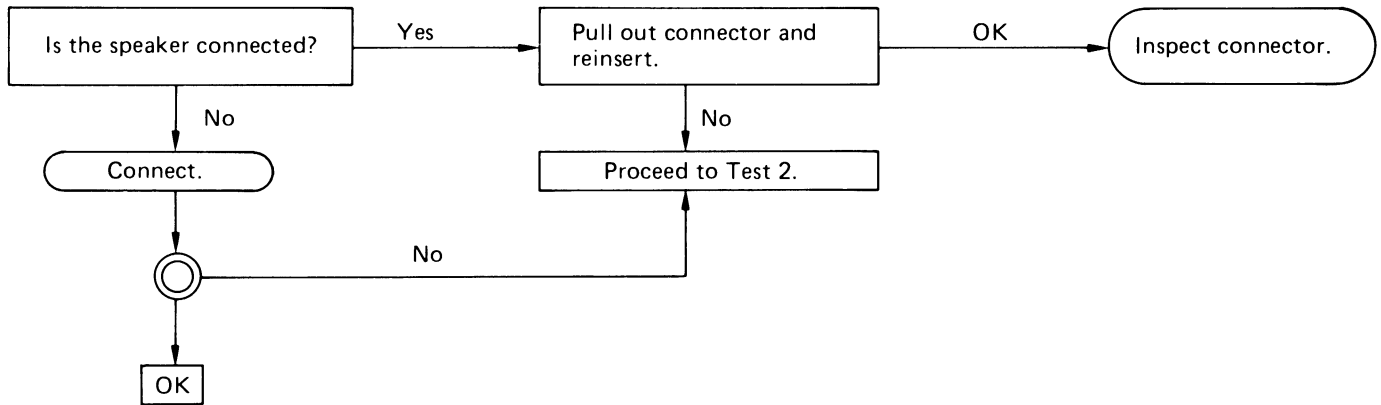
HINT: Since the diversity antenna consists of the pale and window antenna, be certain to check both.

(c) No sound from one speaker.

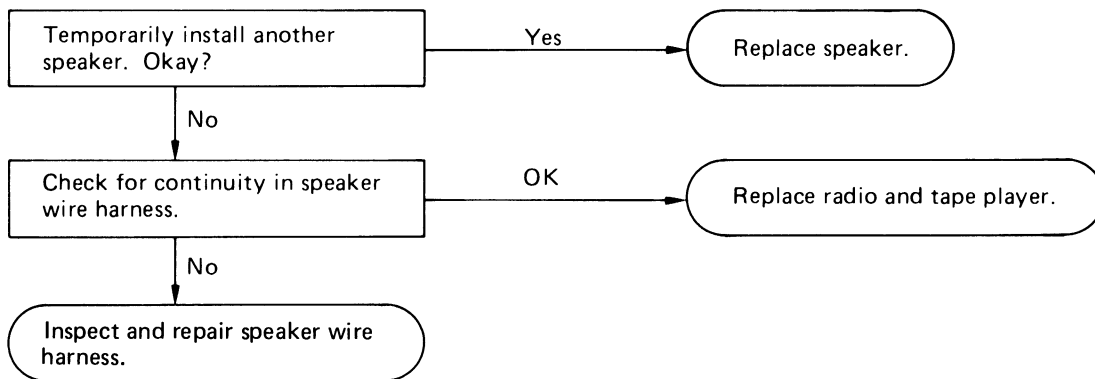
Possible causes:

- Loose speaker connector
- Broken wire in speaker wire harness
- Defective speaker
- Defective radio and tape player

TEST 1



TEST 2

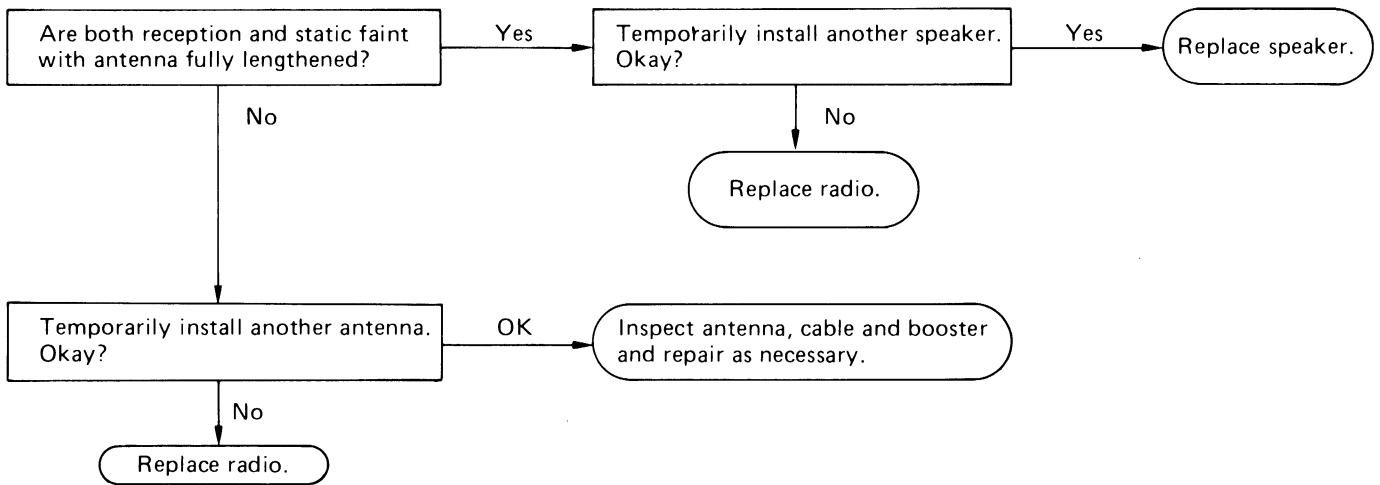


2. FAINT RECEPTION

Possible causes:

- Defective antenna or antenna cable
- Defective speaker
- Defective radio

TEST



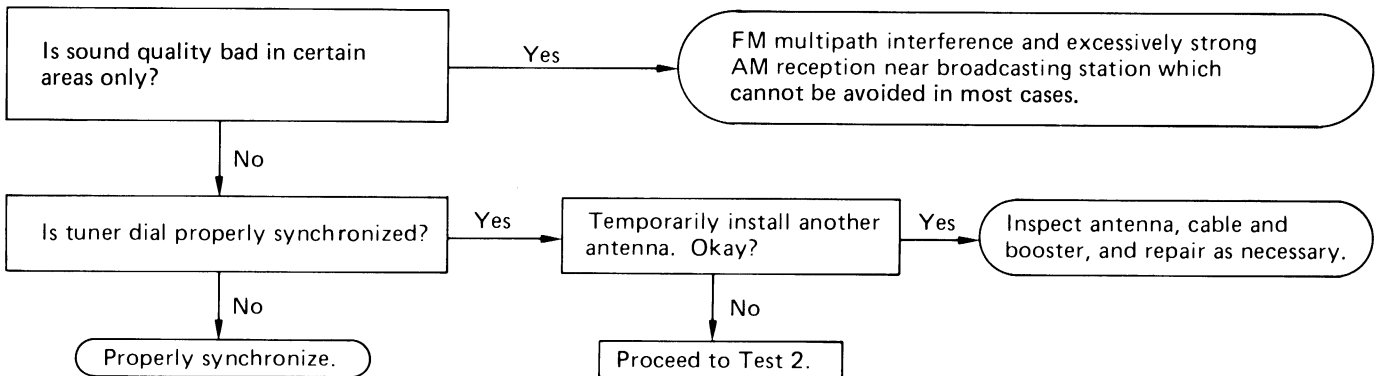
3. BAD SOUND QUALITY

(a) Sound quality bad when radio played.

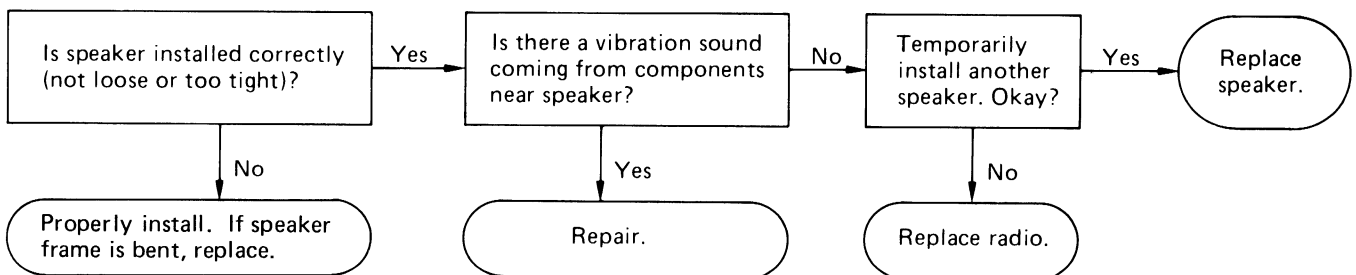
Possible causes:

- Multipath interference of excessive interception
- Tuner dial not synchronized with station
- Defective antenna or antenna cable
- Speaker improperly installed
- Vibration sound from components near speaker
- Defective speaker
- Defective radio

TEST 1



TEST 2



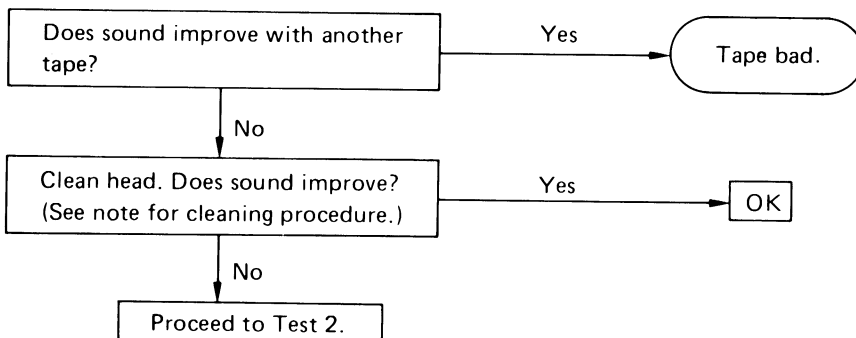
HINT: FM distortion tends to increase sharply if the tuner is not synchronized.

(b) Sound quality bad when tape player played.

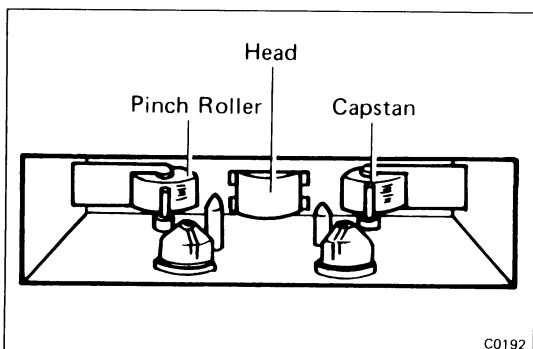
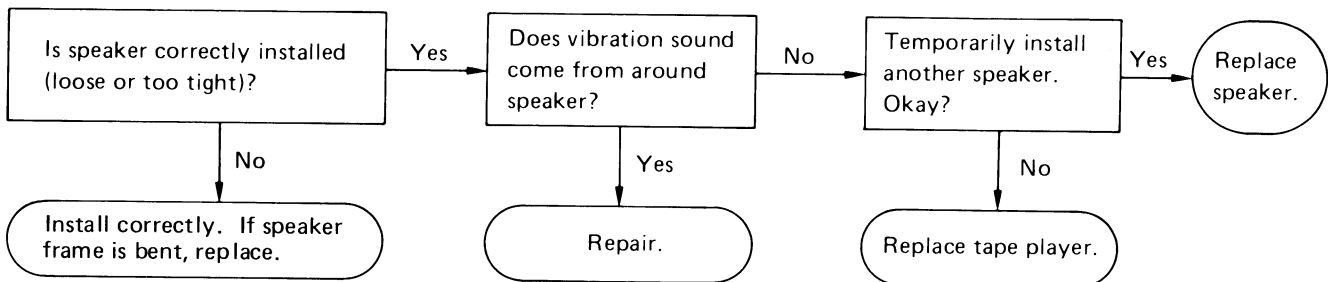
Possible causes:

- Bad tape
- Dirty head
- Incorrectly installed speaker
- Vibration noise from around speaker
- Defective speaker
- Defective tape player

TEST 1



TEST 2



HINT: Head cleaning procedure.

- (1) Raise the cassette door with your finger. Next, using a pencil or like object, push in the guide as shown.
- (2) Using a cleaning pen or cotton applicator soaked in alcohol, clean the head surface, pinch rollers and capstans.
- (3) Push in the "eject" button.

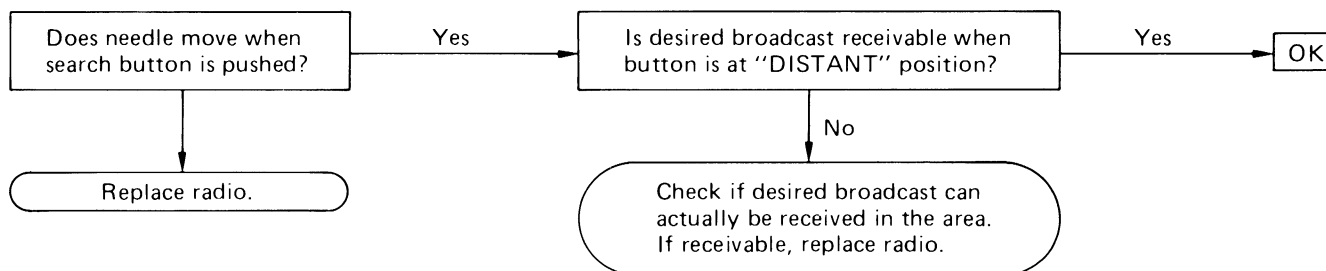
4. DEFECTIVE AUTO SEARCH MECHANISM

Manual search possible but automatic search mechanism does not function or does not stop at all receivable stations.

Possible causes:

- Poor search sensitivity (SENS button)
- Defective radio

TEST



Antenna Motor Control Relay

INSPECTION OF RELAY

1. INSPECT RELAY OPERATION (ANTENNA UP)

- (a) Connect the voltmeter positive (+) lead to terminal 1 and the negative (-) lead to terminal 4.
- (b) Connect the positive (+) lead from the battery to terminals 6, 7 and 8 and the negative (-) lead to terminal 3.
- (c) Check that there is battery voltage.

HINT: Measure the voltage within 7 seconds after connecting the positive (+) lead from the battery to terminal 8.

2. INSPECT RELAY OPERATION (ANTENNA DOWN)

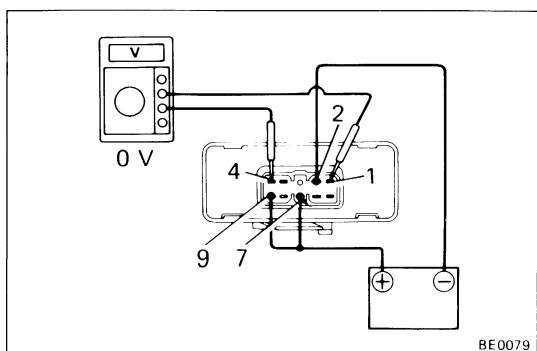
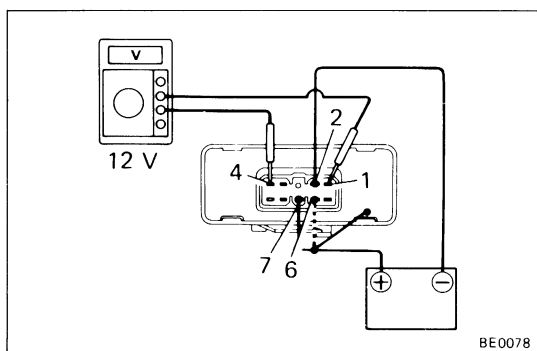
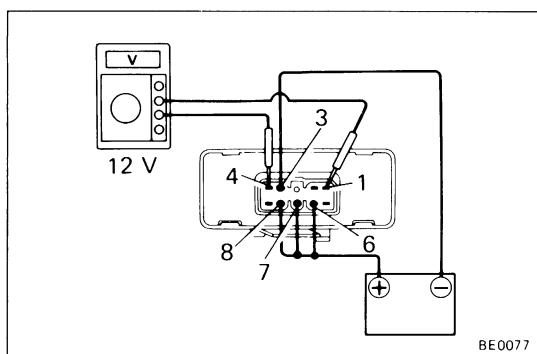
- (a) Connect the voltmeter positive (+) lead to terminal 4 and the negative (-) lead to terminal 1.
- (b) Connect the positive (+) lead from the battery to terminals 6 and 7 and the negative (-) lead to terminal 2.
- (c) Disconnect the positive (+) lead from the battery to terminal 6.
- (d) Check that there is battery voltage.

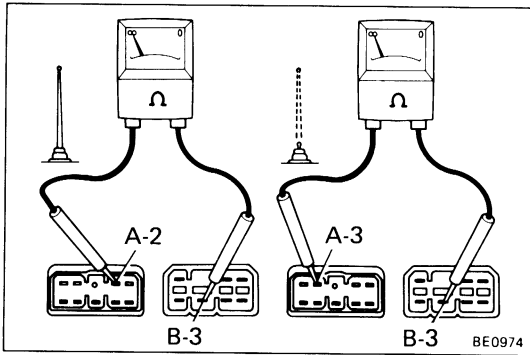
HINT: Measure the voltage within 7 seconds after disconnecting the positive (+) lead from the battery to terminal 6.

3. INSPECT RELAY OPERATION (ANTENNA STOP)

- (a) Connect the voltmeter positive (+) lead to terminal 1 and the negative (-) lead to terminal 4.
- (b) Connect the positive (+) lead from the battery to terminals 7, 9 and the negative (-) lead to terminal 2.
- (c) Check that there is no battery voltage.

If operation is not as specified, replace the relay.





Antenna Motor

INSPECTION OF ANTENNA MOTOR

INSPECT LIMIT SWITCH OPERATION

- (a) If the motor stops with the antenna up, check that there is no continuity between terminals A-2 and B-3.
- (b) If the motor stops with the antenna down, check that there is no continuity between terminals A-3 and B-3.

(CD Player)

Troubleshooting

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.

Remember there are no user-serviceable parts inside.

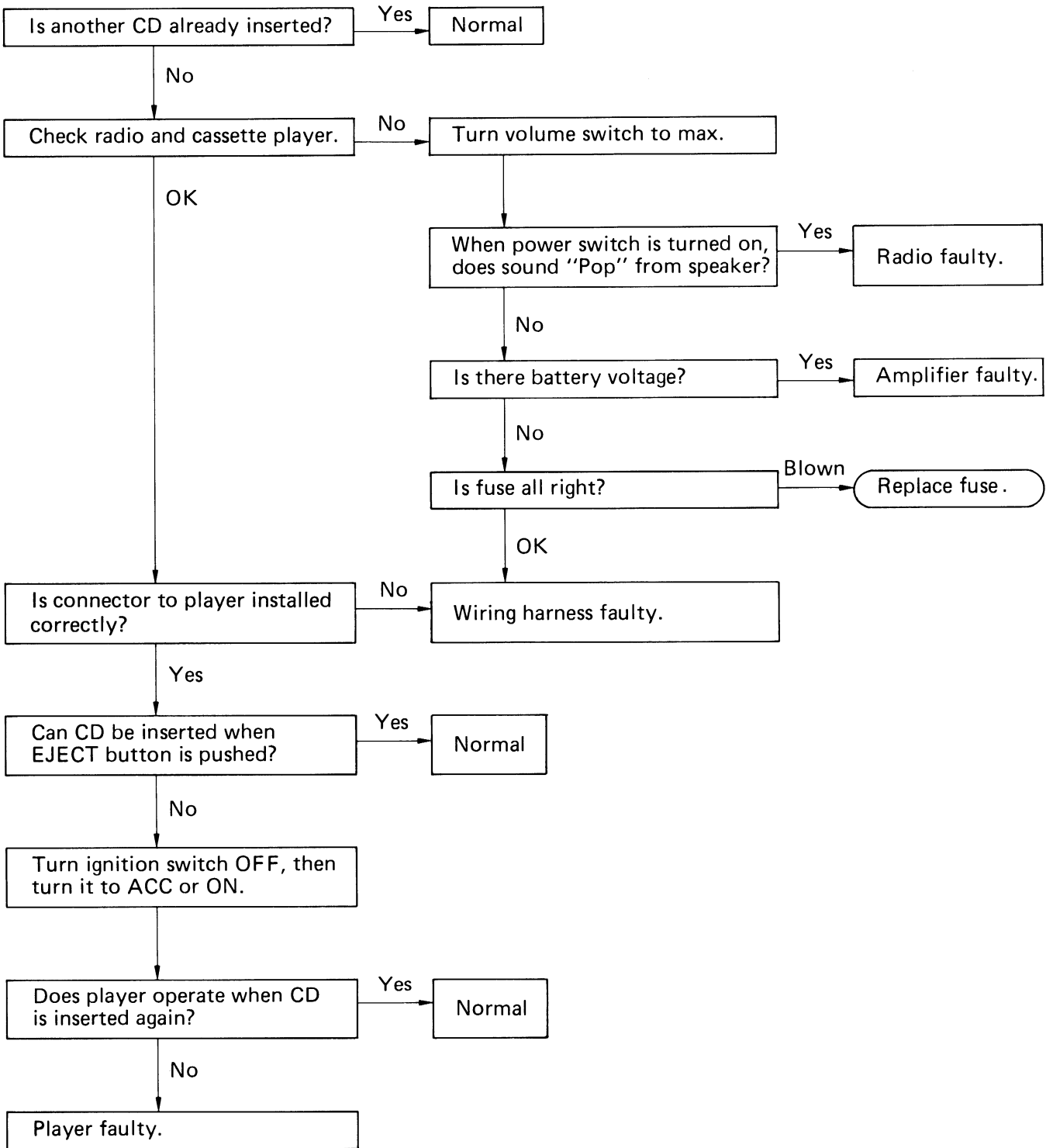
NOTICE: Compact Disc players use invisible laser beam which could cause hazardous radiation exposure if directed. Be sure to operate the player correctly as instructed.

Check that the operation of other audio system (Radio, Cassette etc.) are normal.

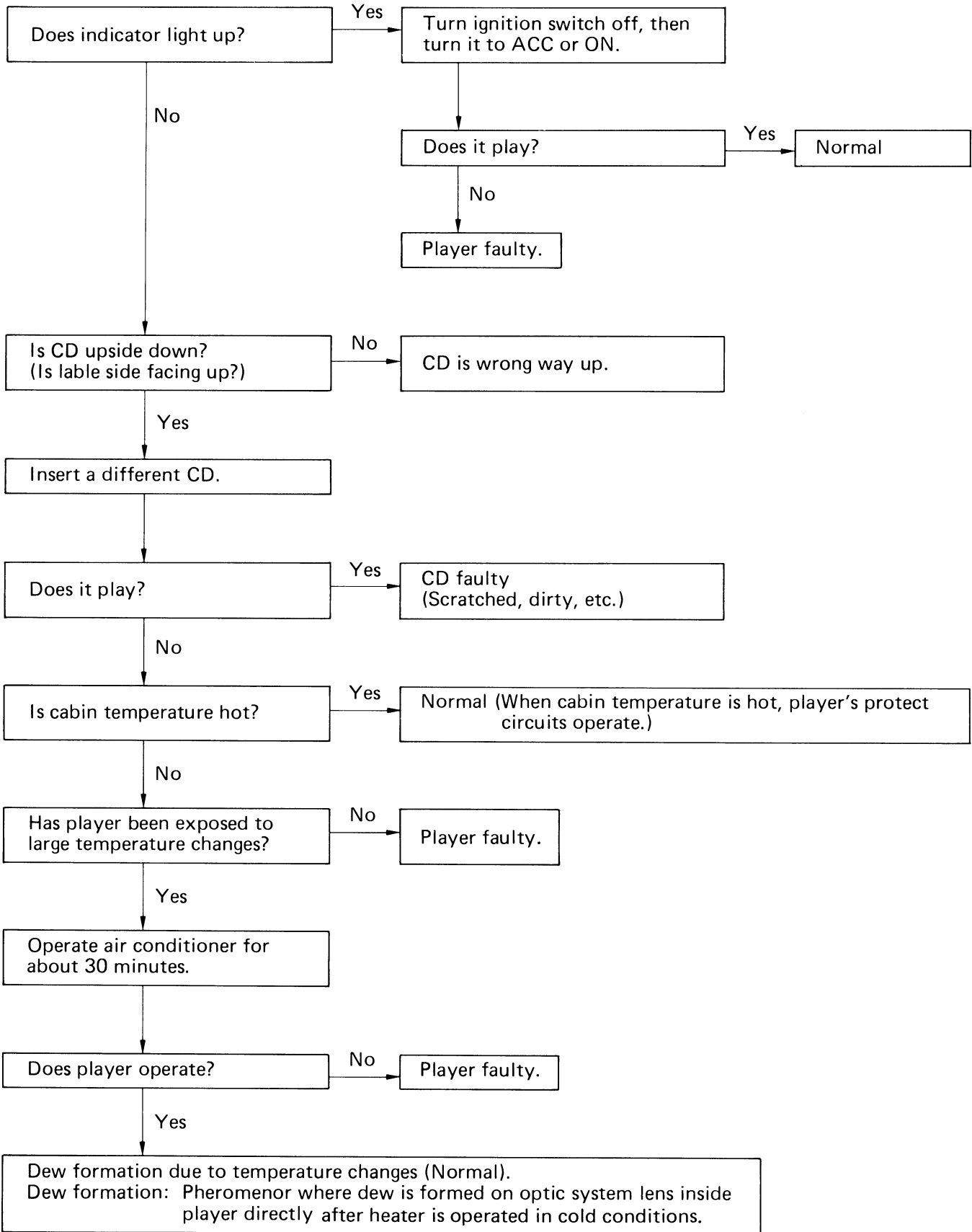
Problem	Section
*CD can not be inserted	A
*Does not play	B
Sound jumps	C
Bad sound quality	D
CD will not eject	E

HINT: For audio systems with anti-theft system, troubleshooting items marked (*) indicate that "Troubleshooting for ANTI-THEFT SYSTEM" should be carried out first.

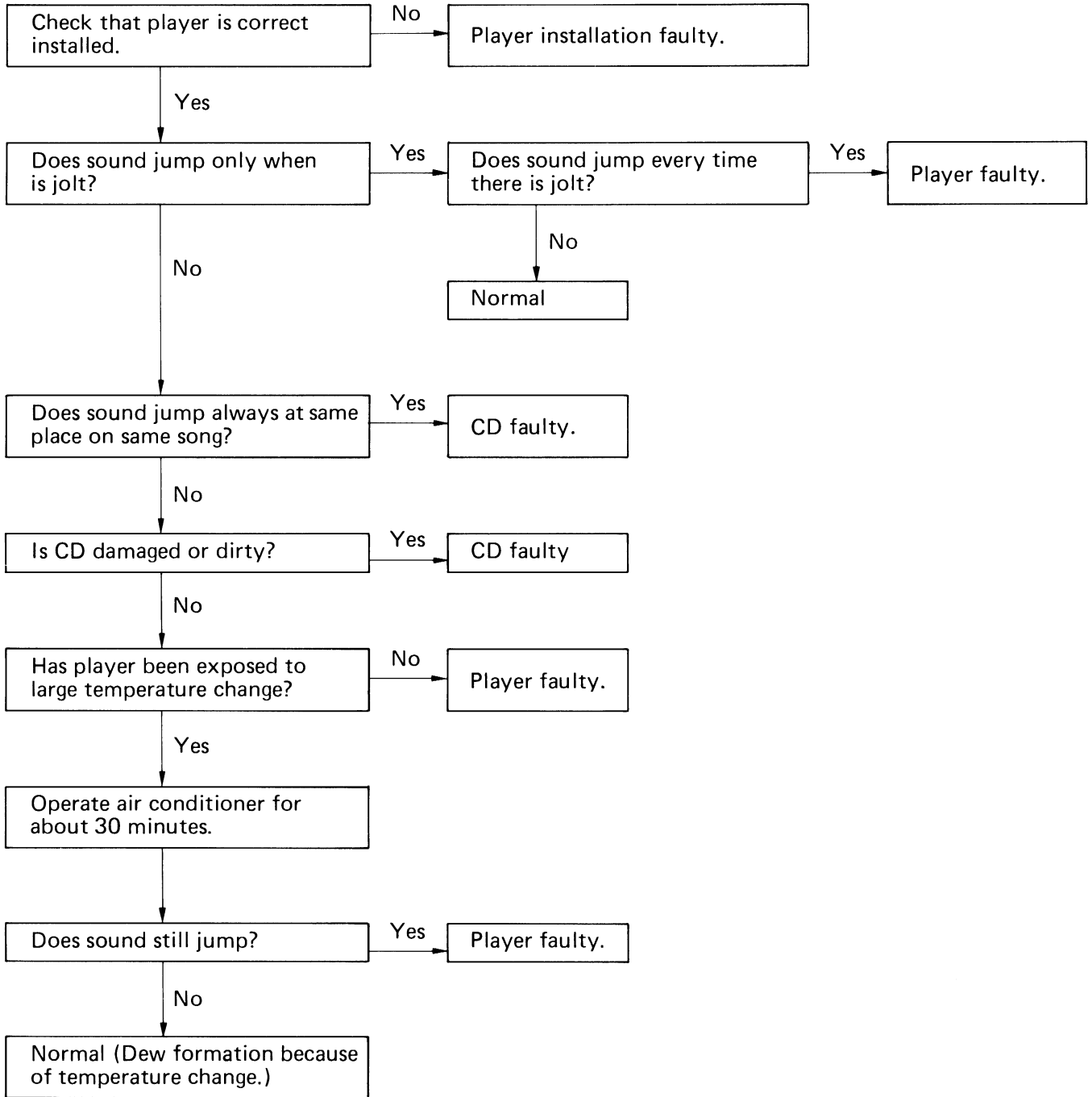
A CD can not be inserted



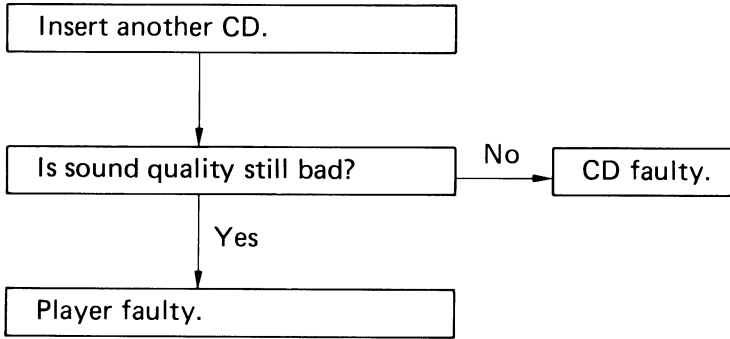
B Does not play



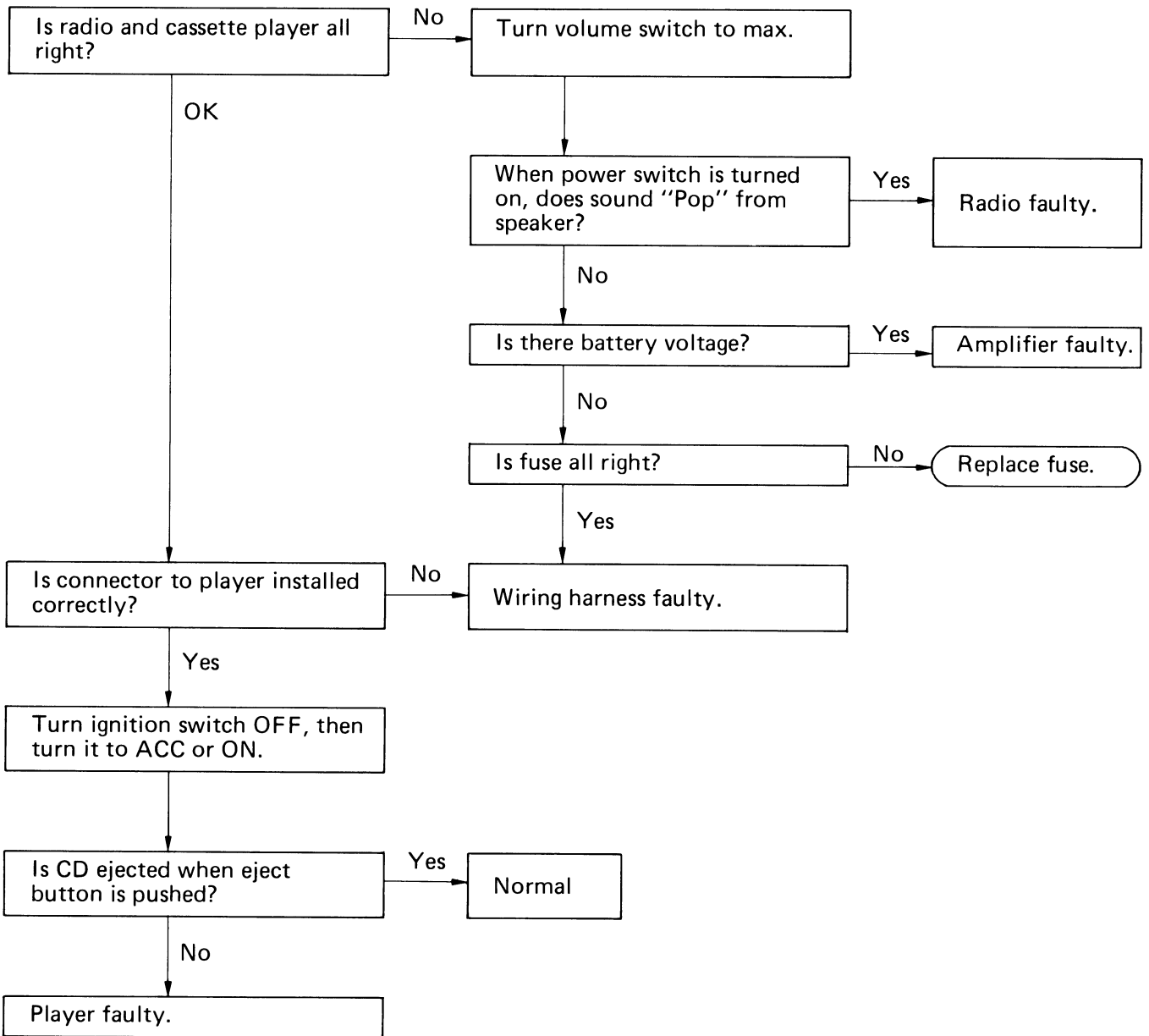
C Sound jumps



D Bad Sound Quality



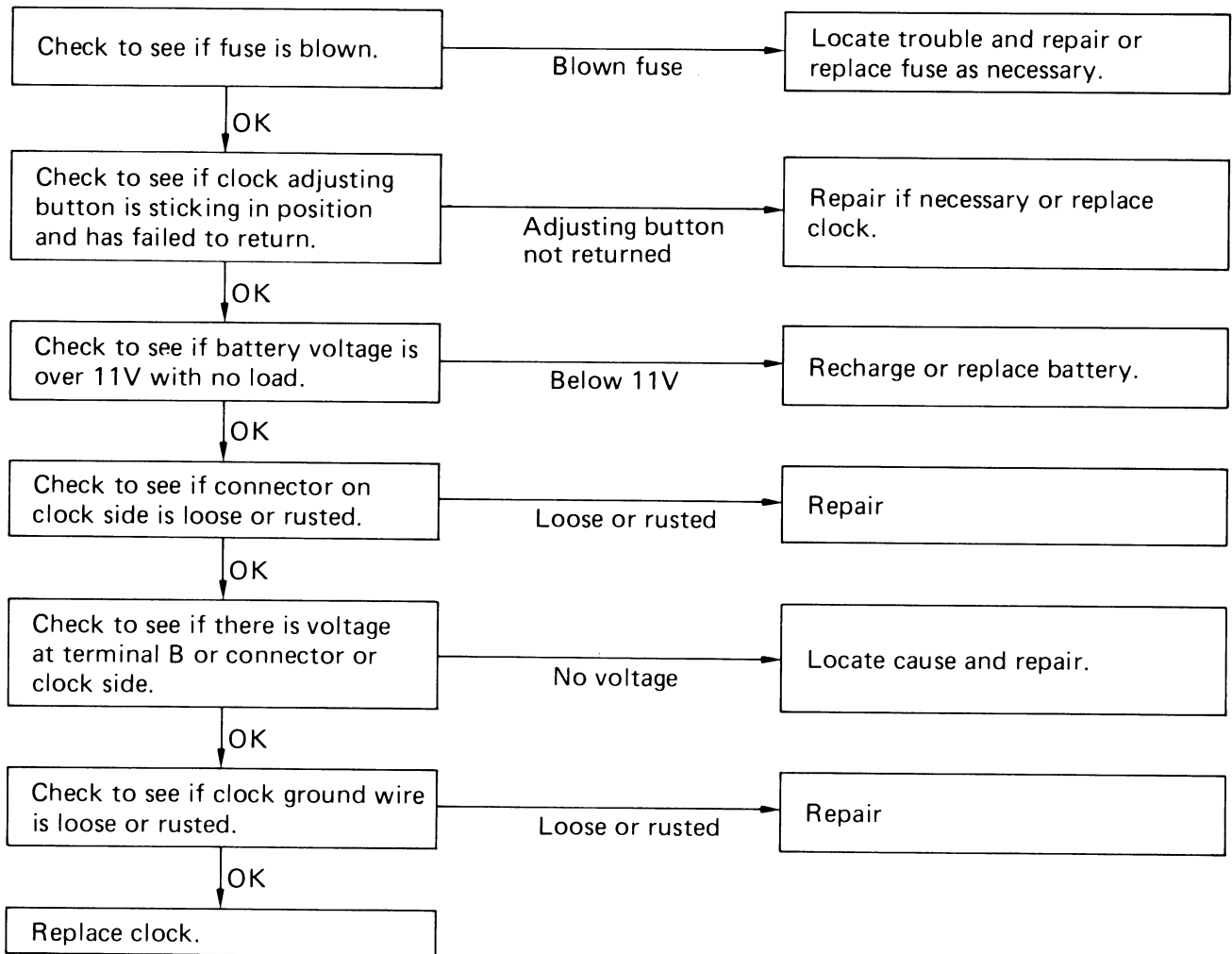
E CD will not eject



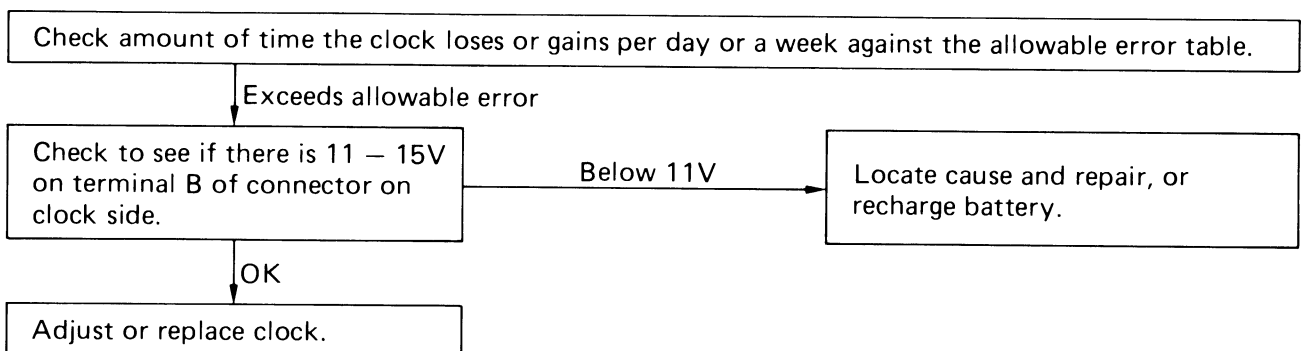
CLOCK

Troubleshooting

CLOCK WILL NOT OPERATE



CLOCK LOSES OR GAINS TIME



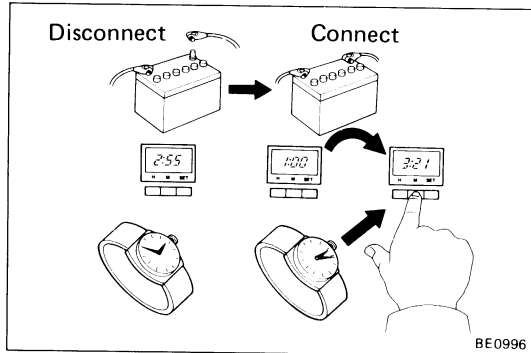
1. INSPECT ALLOWABLE ERROR OF CLOCK

Check the allowable error of the clock

Allowable error (per day): ± 1.5 seconds

2. ADJUSTMENT OF CLOCK

Adjustment of the quartz clock requires a precise digital counter. Adjustment must be made in shop specified by the manufacturer.

**3. STARTING OF CLOCK**

(a) Connect the battery terminal.

(b) Check the clock to see that it is running, and then set it to the correct time.

HINT: Whenever the battery terminal is disconnected, make sure to set the clock to the correct time after reconnecting the battery.