BODY ELECTRICAL SYSTEM

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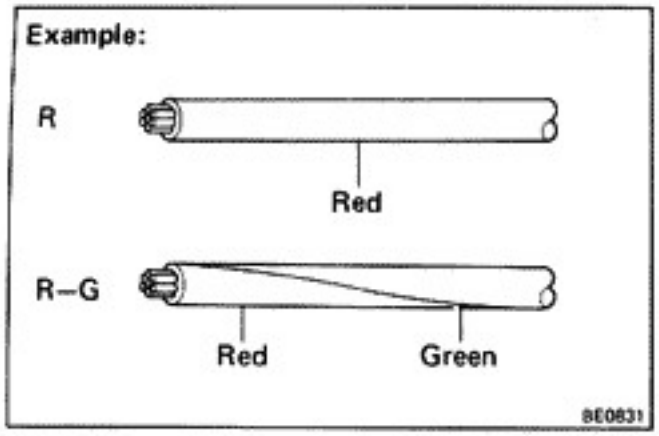


GENERAL INFORMATION

WIRING COLOR CODE

Wire colors are indicated by an alphabetical code.

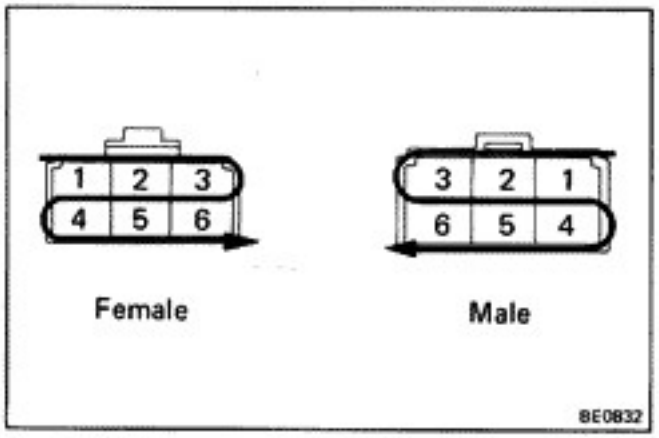
B = Black	L = Light Blue	R = Red
BR = Brown	LG = Light Green	V = Violet
G = Green	O = Orange	W = White
GR = Gray	P = Pink	Y = Yellow

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

CONNECTOR

1. PIN NUMBER OF FEMALE CONNECTOR

Numbered in order from upper left to lower right.



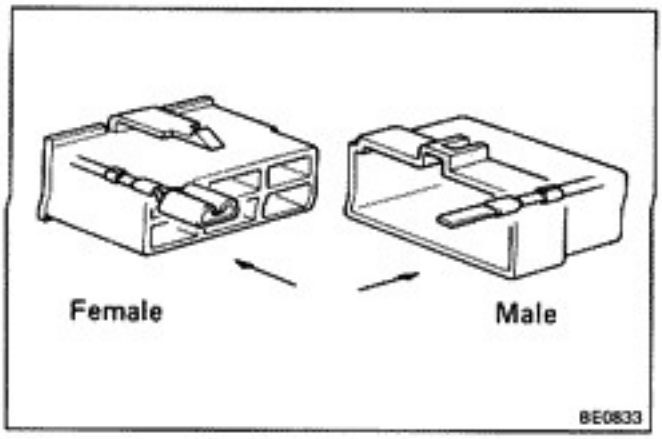
2. PIN NUMBER OF MALE CONNECTOR

Numbered in order from upper right to lower left.

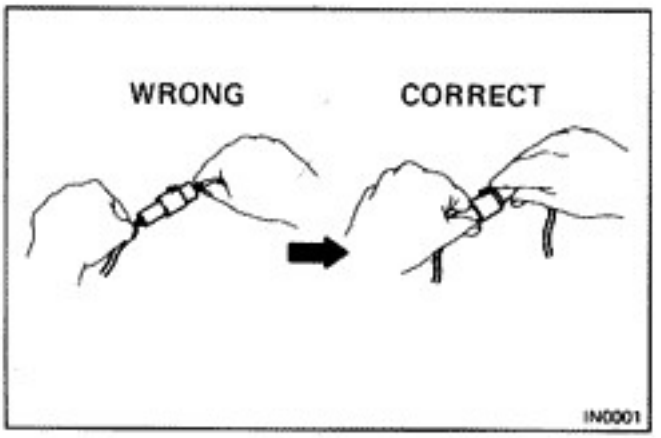
3. DISTINCTION OF MALE AND FEMALE CONNECT

Male and female connectors are distinguished by shap their internal pins.

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

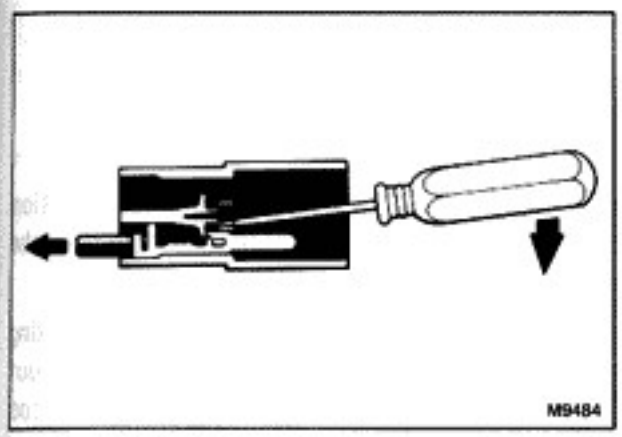


(b) To pull apart the connectors, pull on the conne itself, not the wires.

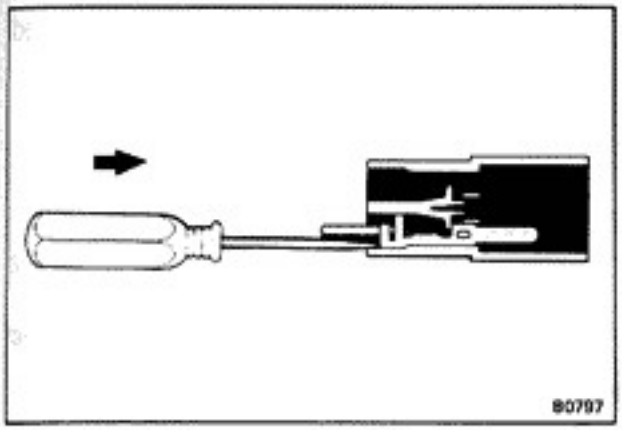


REPLACEMENT OF COMBINATION SWITCH

REMOVE TERMINALS FROM CONNECTOR



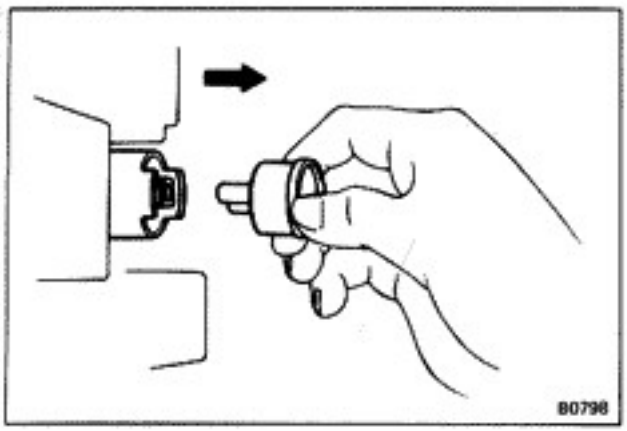
(b) Pry up the locking lugs with the screwdriver and pull the terminal out from the rear.



INSTALL TERMINALS TO CONNECTOR

(a) Push in the terminal until it is securely locked in the connector lug.

(b) Pull on the wire to confirm that it is securely locked.

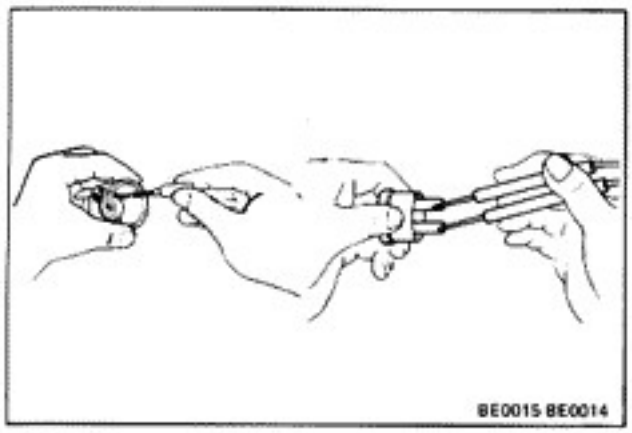


RESET CIRCUIT BREAKER

1. REMOVE CIRCUIT BREAKER

(a) Remove the kick panel.

(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 there is no continuity, replace the circuit breaker.

3. INSTALL CIRCUIT BREAKER

(a) Install the circuit breaker.

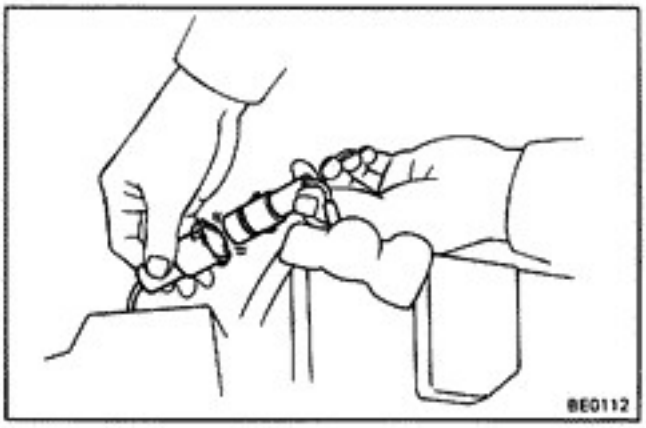
NOTE: If a circuit breaker continues to cut out, a short circuit is indicated. Have the system checked by a qual

REPLACEMENT OF FUSES

Install new fuses with correct amperage ratings.

CAUTION:

1. **Turn off all electrical components and the ignit switch before replacing a fuse. Do not exceed fuse amp rating.**
2. **Always use a fuse puller for removing and insert a fuse. Remove and insert straight in and out with twisting. Twisting could force open the terminals much, resulting in a bad connection.**

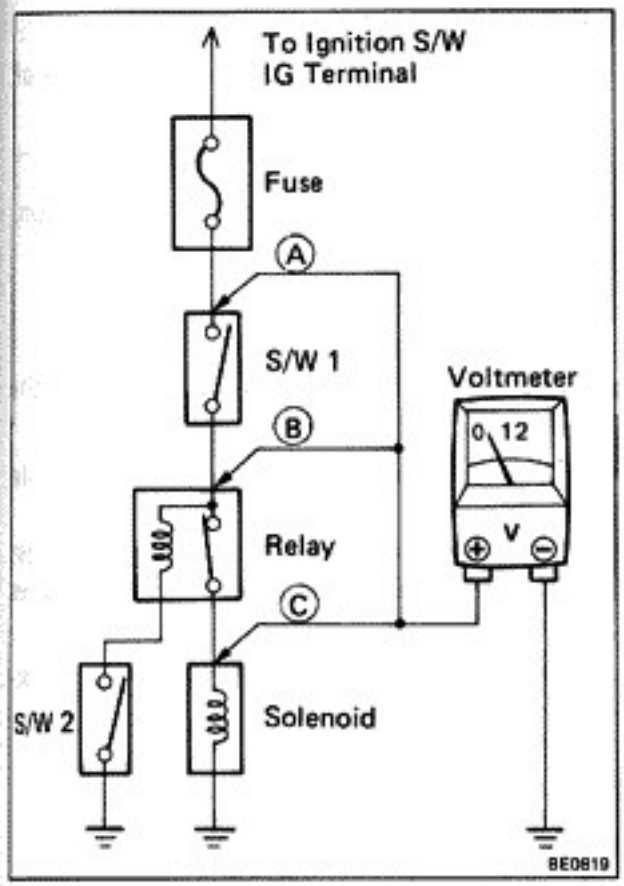


If a fuse continues to blow, the circuit is probably short Have the system checked by a qualified technician.

Precautions

TAKE CARE WHEN INSPECTING HEADLIGHT CIRCUIT

WARNING: With the headlight switch OFF, disconn the pink fusible link before beginning work.



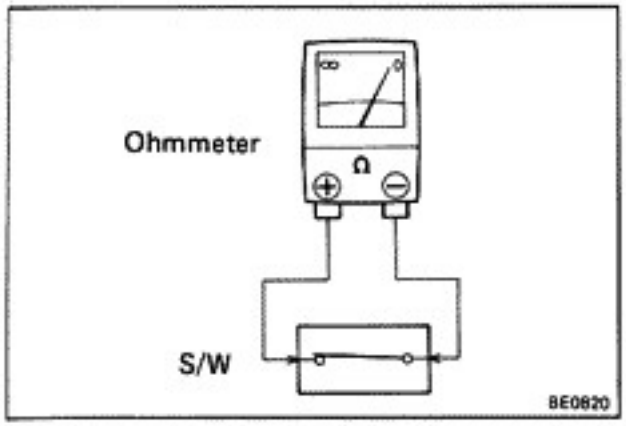
VOLTAGE CHECK

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

Example:

Ⓐ – Ignition S/W on
Ⓑ – Ignition S/W and S/W 1 on
Ⓒ – Ignition S/W, S/W 1 and Relay on (S/W 2 off)

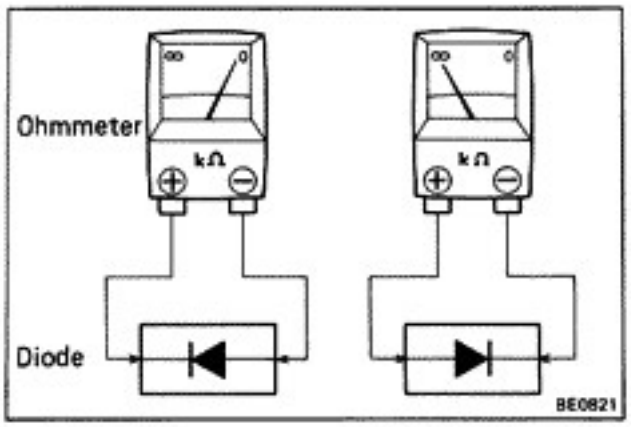
(b) Using a voltmeter, connect the negative lead to a good ground point or negative battery terminal, and the positive lead to the connector or component terminal. This check can be done with a test lamp instead of a voltmeter.



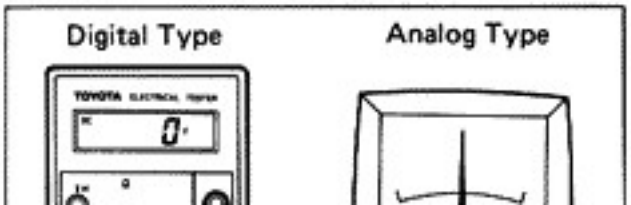
CONTINUITY AND RESISTANCE CHECK

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

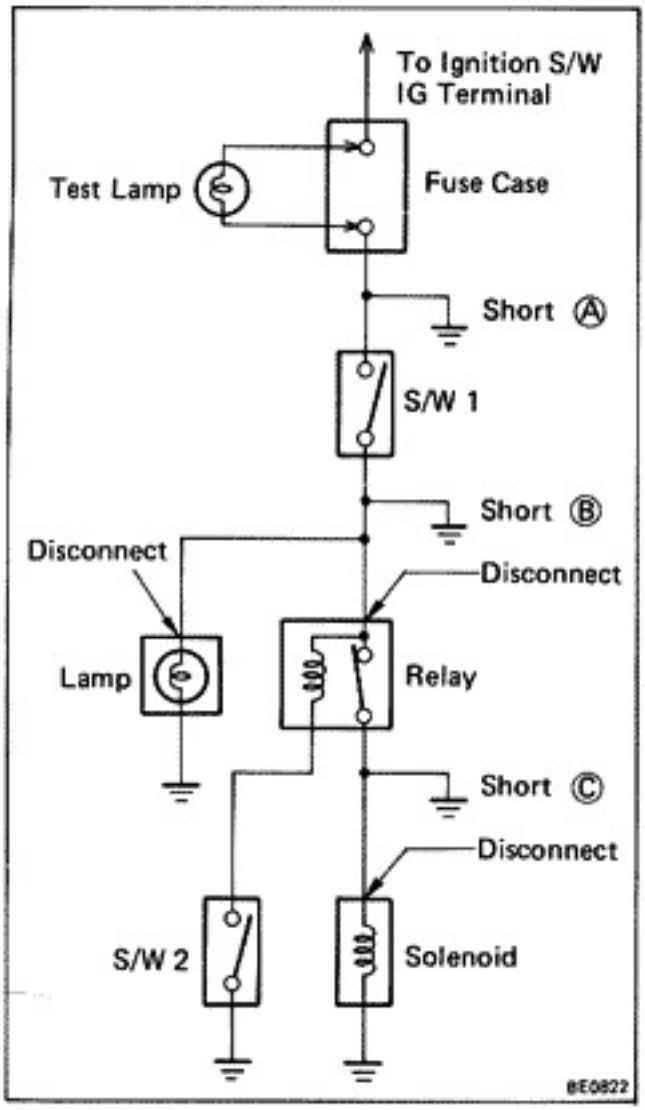
(b) Contact the two leads of an ohmmeter to each of the check points.



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.



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



FINDING A SHORT CIRCUIT

(a) Remove the blown fuse and disconnect all loads the fuse.

(b) Connect a test lamp in place of the fuse.

(c) Establish conditions in which the test lamp comes

Example:

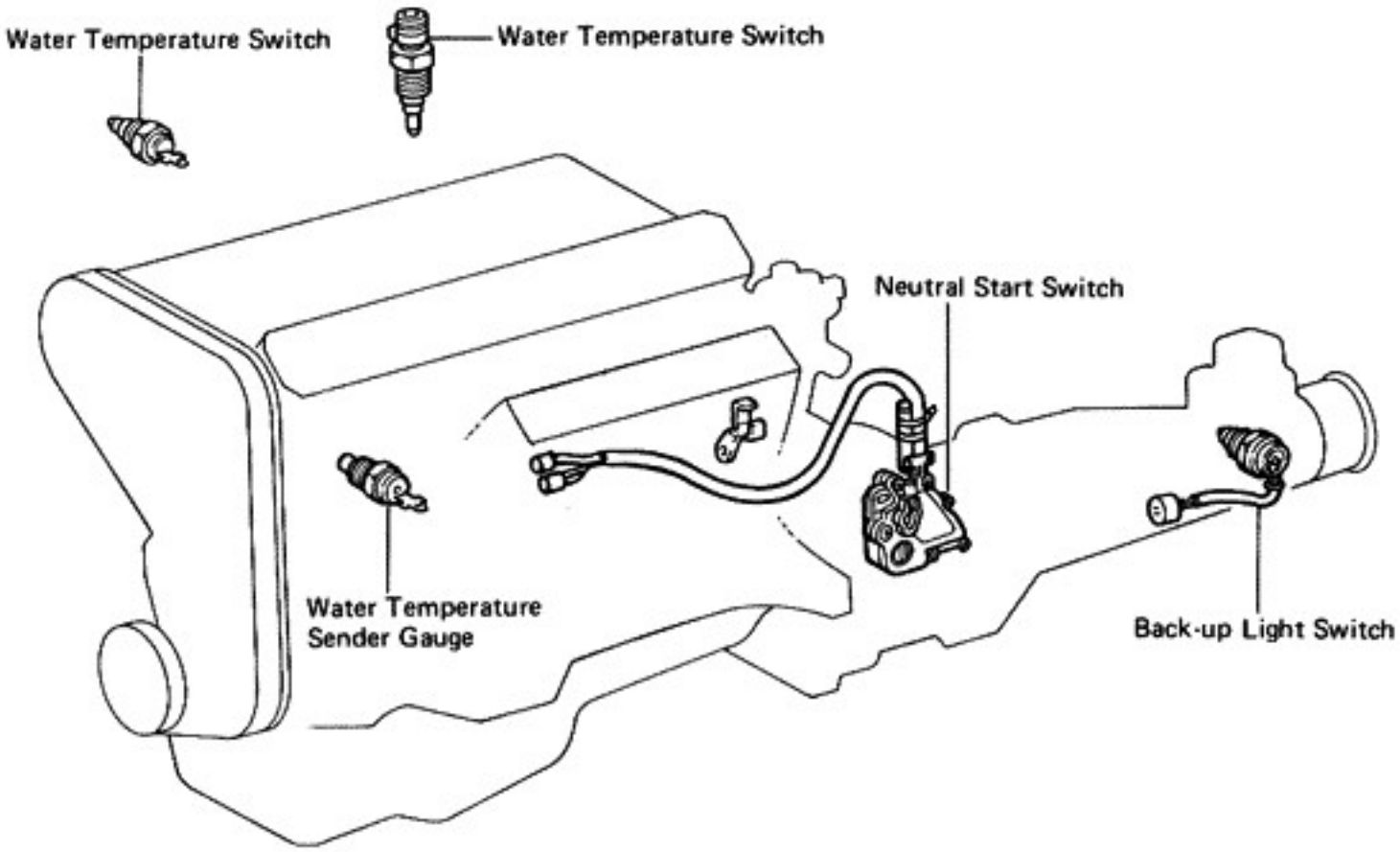
Ⓐ – Ignition S/W on
Ⓑ – Ignition S/W and S/W 1 on
Ⓒ – Ignition S/W, S/W 1 and Relay on (Connect Relay) and S/W 2 off (or Disconnect S/W 2)

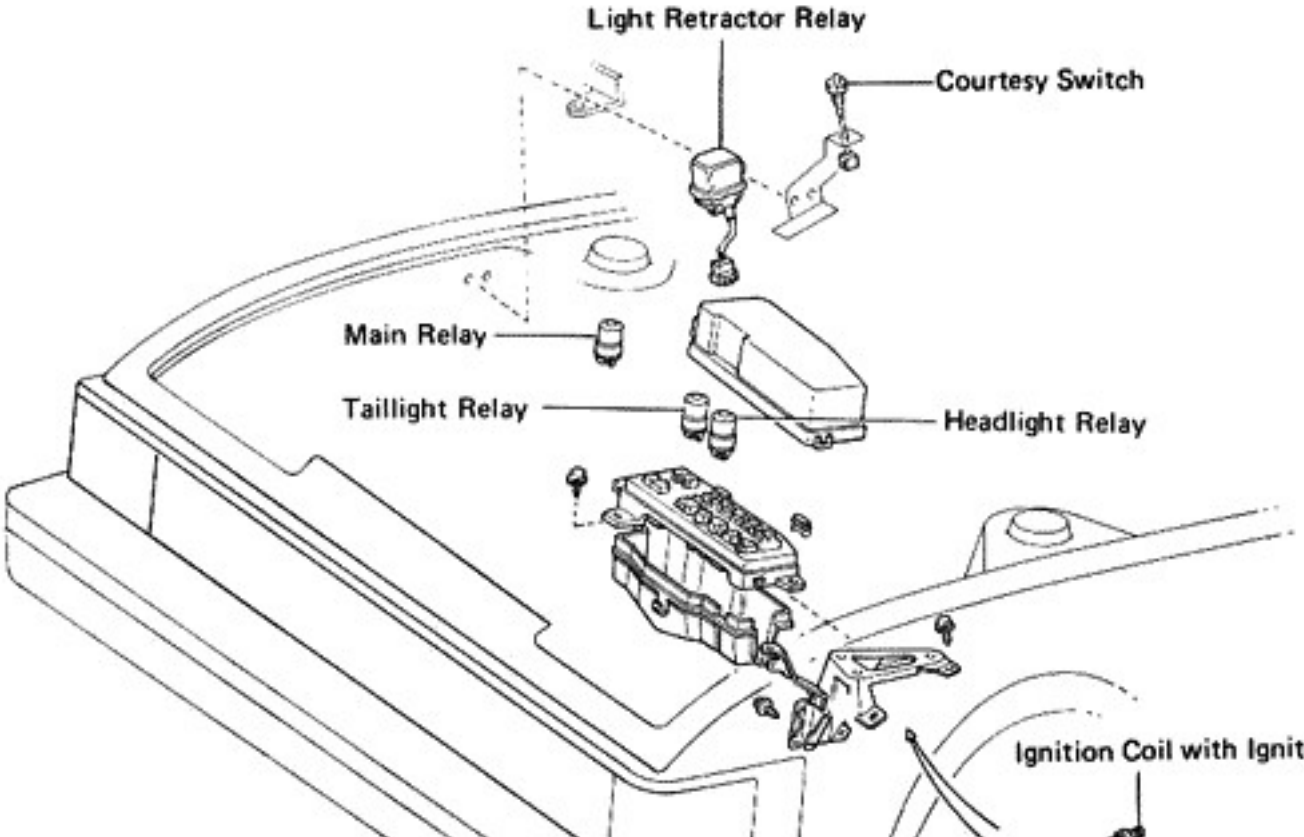
(d) Disconnect and reconnect the connectors w watching the test lamp.
The short lies between the connector where the lamp stays lit and the connector where the lamp g out.

(e) Find the exact location of the short by lightly sh ing the problem wire along the body.

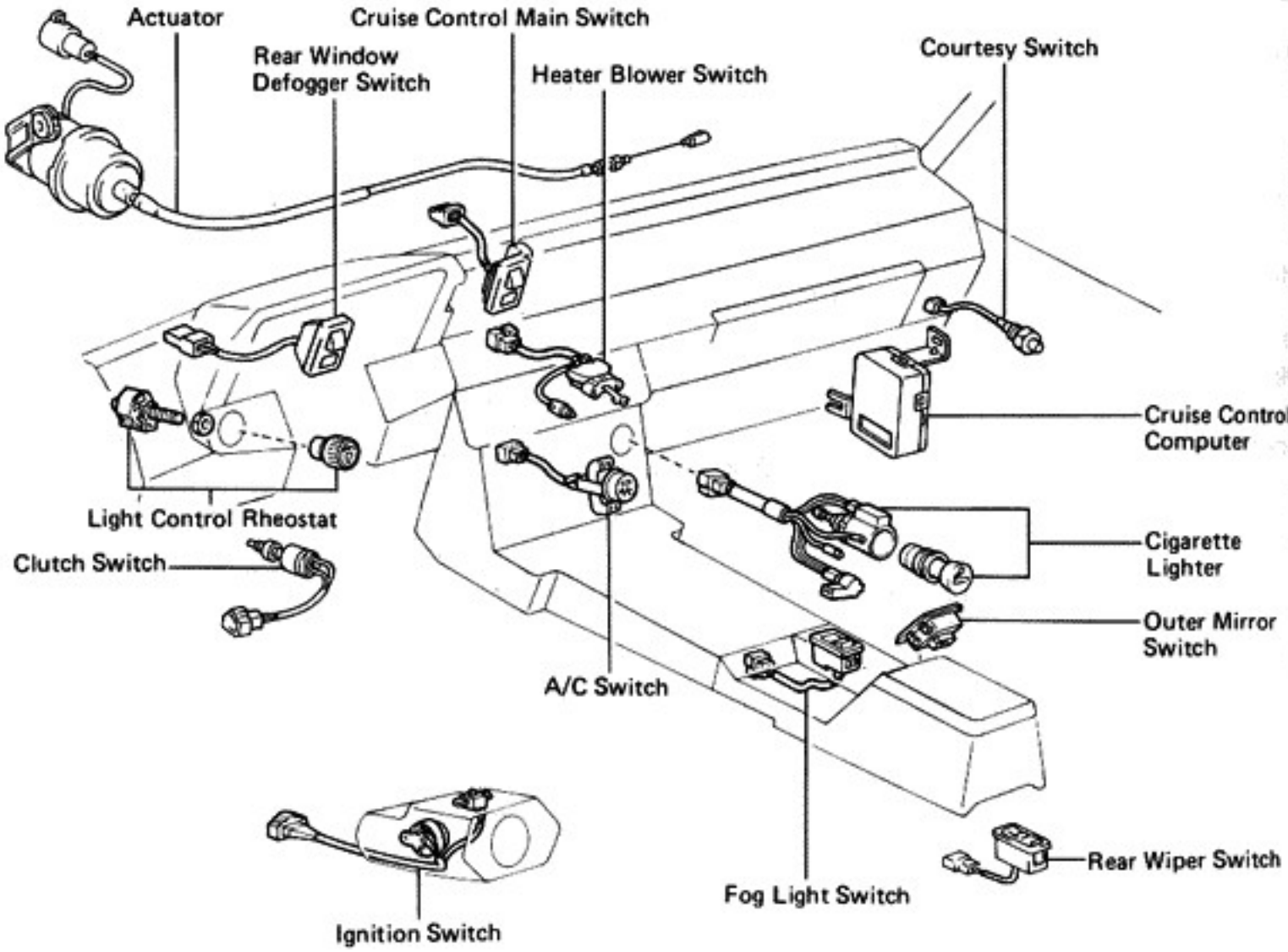
LOCATION OF SWITCHES AND RELAYS

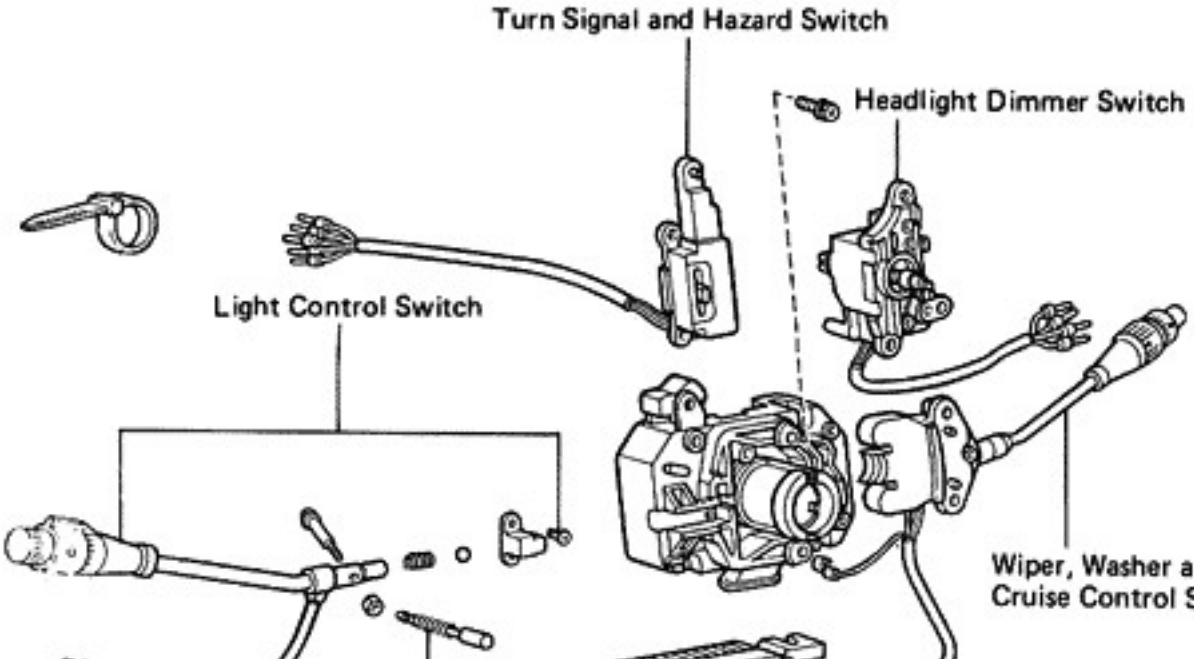
ENGINE COMPARTMENT SWITCHES AND RELAYS



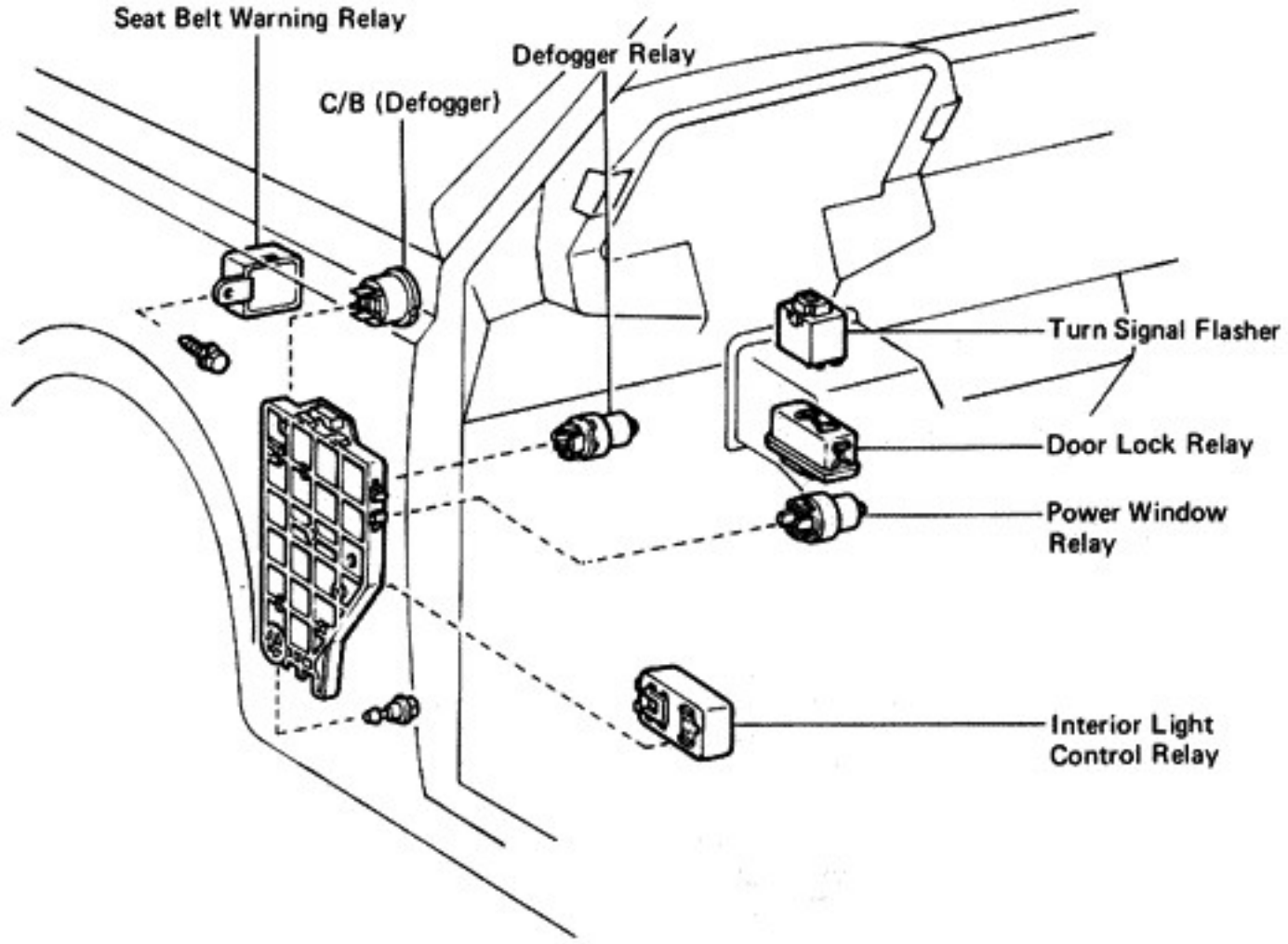


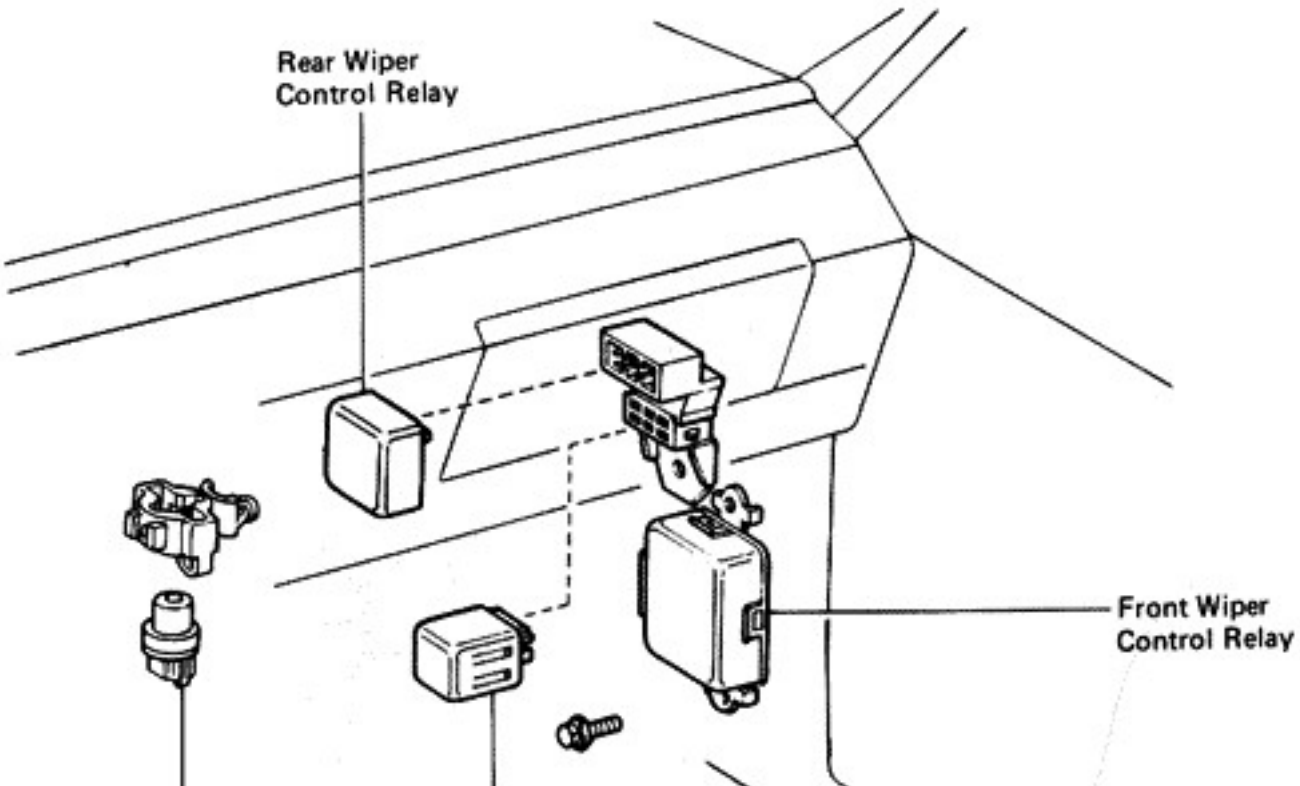
INSTRUMENT PANEL SWITCHES AND RELAY



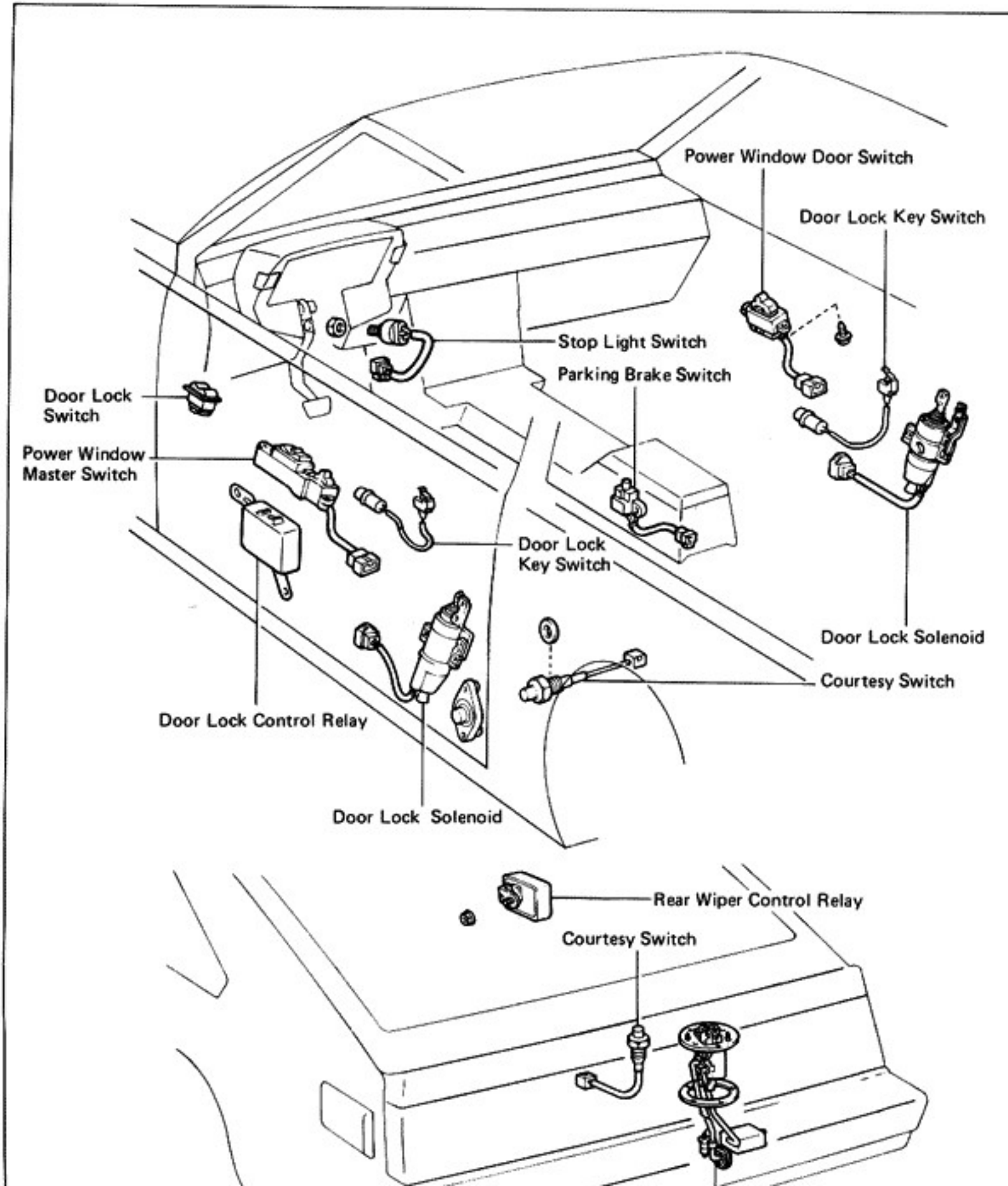


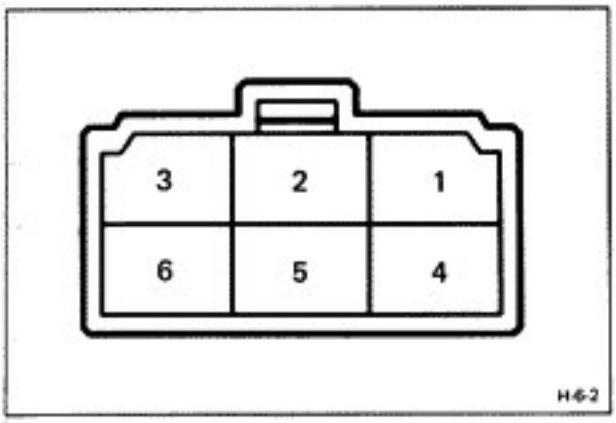
PASSENGER COMPARTMENT SWITCHES AND RELAYS





PASSENGER AND LUGGAGE COMPARTME
SWITCHES AND RELAYS





IGNITION SWITCH

INSPECTION OF IGNITION SWITCH

INSPECT SWITCH CONTINUITY

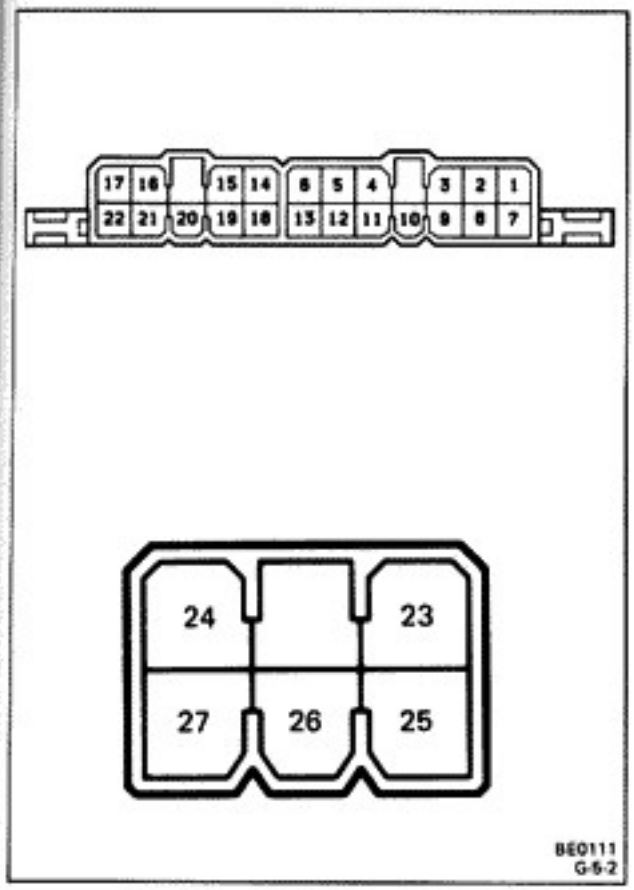
Inspect the switch continuity between terminals.

Switch position \ Terminal		1	3	6	4	2	5
LOCK							
ACC		○——	——○				
ON		○——	——○——	——○			
START		○——	——	——○——	——○		
Warning	Normal						
	Push					○——	——○

If continuity is not as specified, replace the switch.

LIGHTING
Troubleshooting

Problem	Possible cause	Remedy	Pa
Only one light does not light (all exterior)	Light bulb burned out	Replace bulb	
	Socket, wire or ground faulty	Repair as necessary	
No headlights light	Fusible link blown	Replace fusible link	
	Headlight control relay faulty	Check relay	BE-
	Light control switch faulty	Check switch	BE-
	Wiring or ground faulty	Repair as necessary	
High beam headlights or headlight flasher do not operate	Light control switch faulty	Check switch	BE-
	Wiring faulty	Repair as necessary	
Tail, parking and license light do not light	TAIL fuse blown	Replace fuse and check for short	BE-
	Fusible link blown	Replace fusible link	
	Taillight control relay faulty	Check relay	BE-
	Light control switch faulty	Check switch	BE-
	Wiring or ground faulty	Repair as necessary	
Stop lights do not light	STOP fuse blown	Replace fuse and check for short	BE-
	Stop light switch faulty	Adjust or replace switch	
	Wiring or ground faulty	Repair as necessary	
Stop lights stay on	Stop light switch faulty	Adjust or replace switch	
Instrument lights do not light (taillights light)	Light control rheostat faulty	Check rheostat	BE-
	Wiring or ground faulty	Repair as necessary	
Turn signal does not flash on one side	Turn signal switch faulty	Check switch	BE-
	Wiring or ground faulty	Repair as necessary	
Turn signals do not operate	TURN fuse blown	Replace fuse and check for short	BE-
	Turn signal flasher faulty	Check flasher	BE-
	Turn signal/hazard switch faulty	Check switch	BE-
	Wiring or ground faulty	Repair as necessary	
Hazard warning lights do not operate	HAZ-HORN fuse blown	Replace fuse and check for short	BE-
	Turn signal flasher faulty	Check flasher	BE-
	Turn signal/hazard switch faulty	Check switch	BE-
	Wiring or ground faulty	Repair as necessary	



Light Control Switch and Headlight Dimmer Switch

INSPECTION OF LIGHT CONTROL SWITCH AND HEADLIGHT DIMMER SWITCH

INSPECT CONTINUITY OF LIGHT CONTROL SWITCH AND HEADLIGHT DIMMER SWITCH

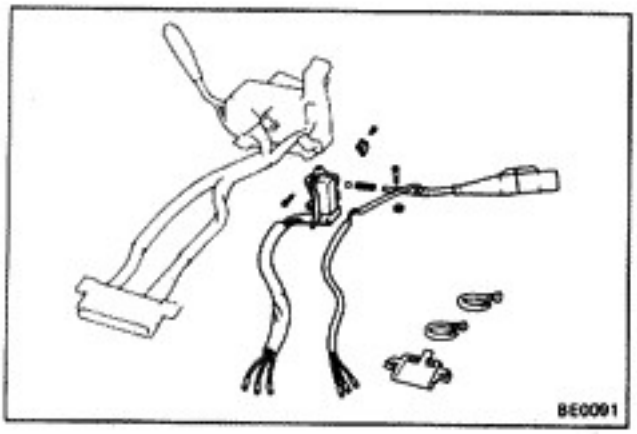
Light control switch

Switch position \ Terminal (Wire color)	10 E_L (W)	11 T (Y)	4 H (R)	26 U (LG-B)
OFF				
UP	○			○
TAIL	○	○		○
HEAD	○	○	○	

Headlight dimmer switch

Switch position \ Terminal (Wire color)	13 E_D (W-B)	6 H_L (R-G)	5 H_U (R-Y)	12 H_F (R-W)
Flash	○		○	○
Low Beam	○	○		
High Beam	○		○	

If continuity is not as specified, replace the switch.



REPLACEMENT OF LIGHT CONTROL SWITCH AND HEADLIGHT DIMMER SWITCH

REPLACE LIGHT CONTROL SWITCH AND HEADLIGHT DIMMER SWITCH

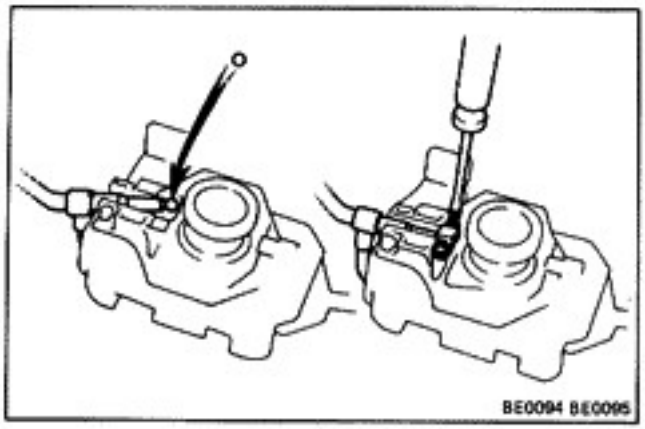
(a) Remove the terminals from the connector. (See page BE-2)

(b) Remove the light control switch.

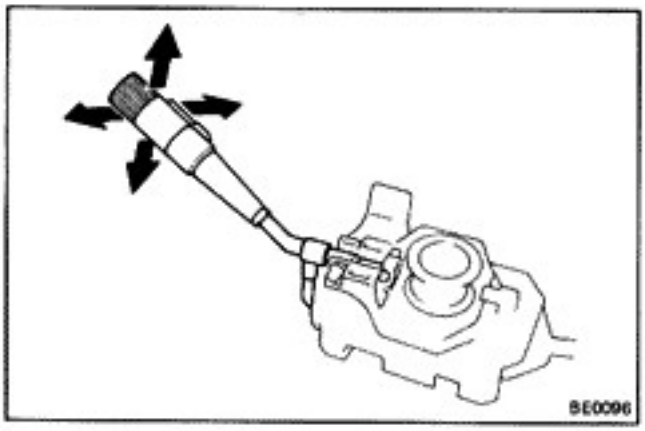
(c) Remove the headlight dimmer switch.

(d) Install the headlight dimmer switch.

(e) Insert the spring into the lever and install the lever with the pin and E-ring.

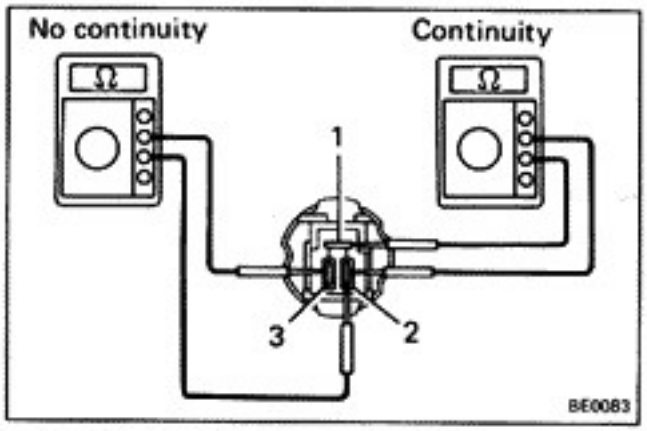


(f) Place the ball on the spring, position the lever at and install the plate.



(g) Insure that the switch operates smoothly.

(h) Connect the terminals to the connector. (See pages BE-3 and 13)



Light Control Relays (Headlight and Taillight)

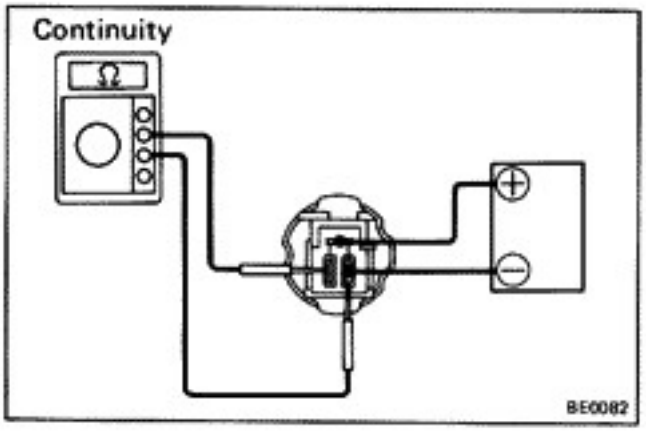
INSPECTION OF LIGHT CONTROL RELAY

1. INSPECT RELAY CONTINUITY

(a) Check that there is continuity between terminal and 2.

(b) Check that there is no continuity between termina and 3.

If continuity is not as specified, replace the relay.

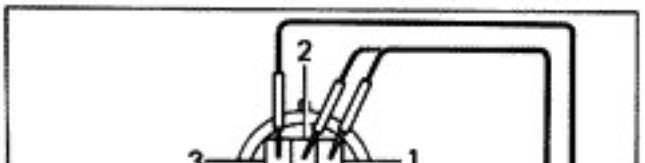


2. INSPECT RELAY OPERATION

(a) Apply battery voltage across terminals 1 and 2.

(b) Check that there is continuity between terminal and 3.

If operation is not as specified, replace the relay.

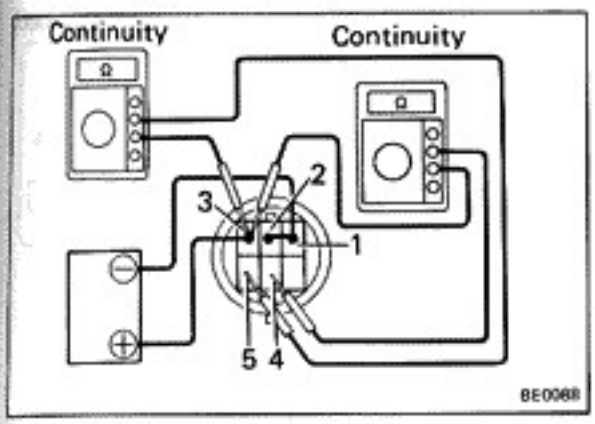


Light Retractor Relay

INSPECTION OF LIGHT RETRACTOR RELAY

1. INSPECT RELAY CONTINUITY

(a) Check that there is continuity between terminals

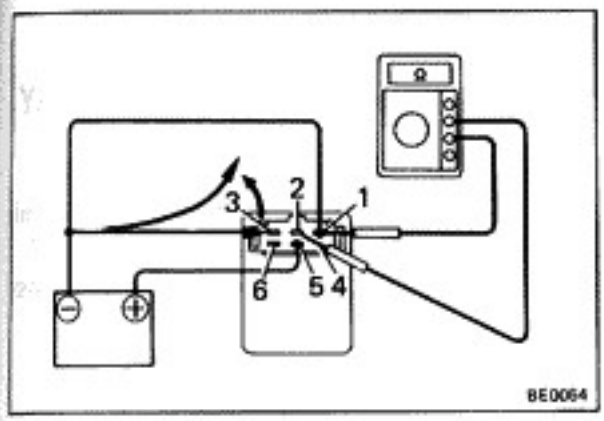


2. INSPECT RELAY OPERATION

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

(b) Check the continuity between terminals 3 and 5 and terminals 3 and 6.

If operation is not as specified, replace the relay.



Light Retractor Control Relay

INSPECTION OF LIGHT RETRACTOR CONTROL RELAY

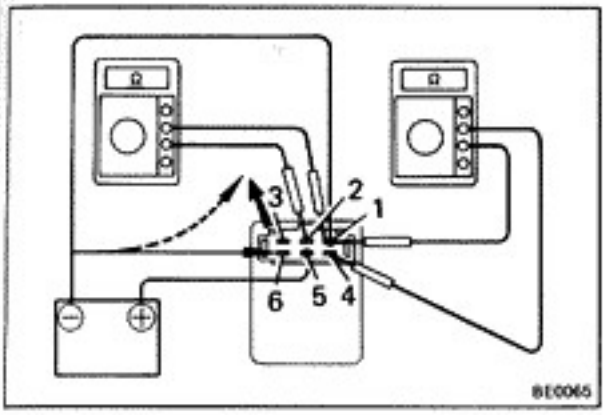
INSPECT RELAY OPERATION

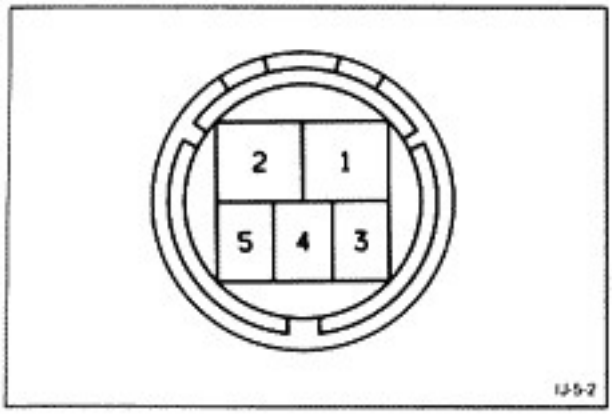
(a) Connect the positive (+) lead from the battery to terminal 5. Connect the negative (–) lead to terminal 1.

(b) Connect the negative (–) lead from the battery to terminal 3. After disconnecting the connection between terminal 3 and battery, check the continuity for 6 – 14 seconds between terminals 1 and 2.

(c) Check the continuity between terminals 1 and 4 after connecting the negative (–) lead from the battery to terminal 6. After disconnecting the connection between terminal 6 and the battery, check that there is continuity for 2 – 4 seconds between terminals 1 and 4, and continuity immediately for 6 – 14 seconds between terminals 1 and 2.

If operation is not as specified, replace the relay.





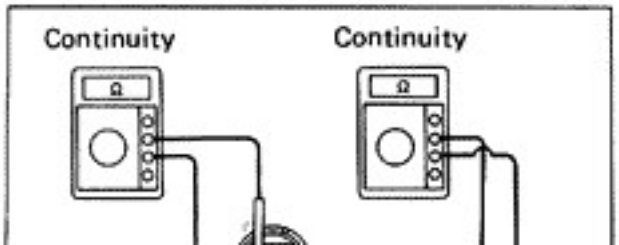
Light Retractor Motor

INSPECTION OF LIGHT RETRACTOR MOTOR

1. INSPECT MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 2 and connect the negative (–) lead to terminal 1. Check that the motor runs.

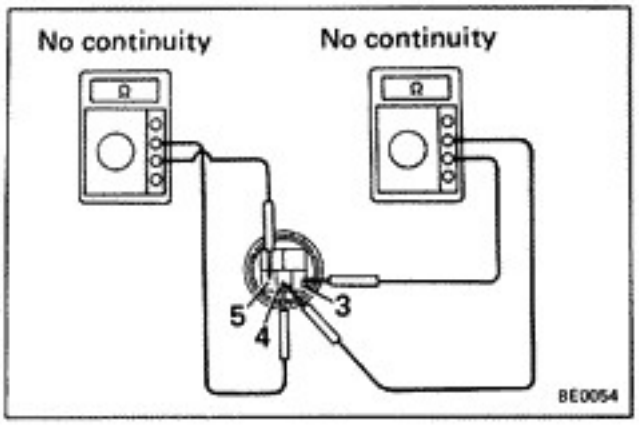
If there is no motor operation, replace the motor.



2. INSPECT DIODE CONTINUITY OF MOTOR

(a) Move the headlights to any position except the uppermost or lowermost position.

(b) Connect the ohmmeter positive (+) lead to terminal 4 and the negative (–) lead to terminal 5.



(d) Reverse the test leads of the ohmmeter and inspe continuity.

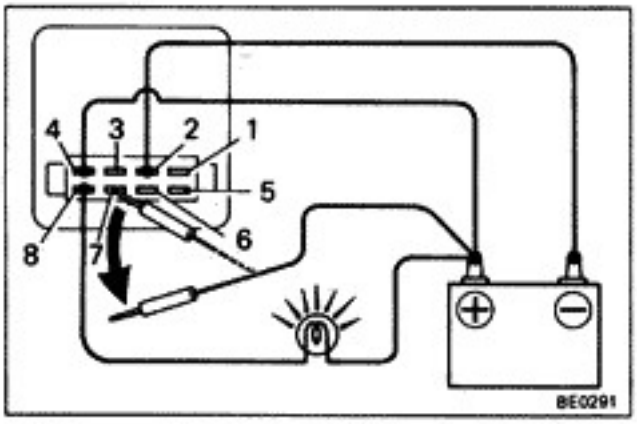
If there is continuity, replace the motor assembly.

Headlight Retainer Relay

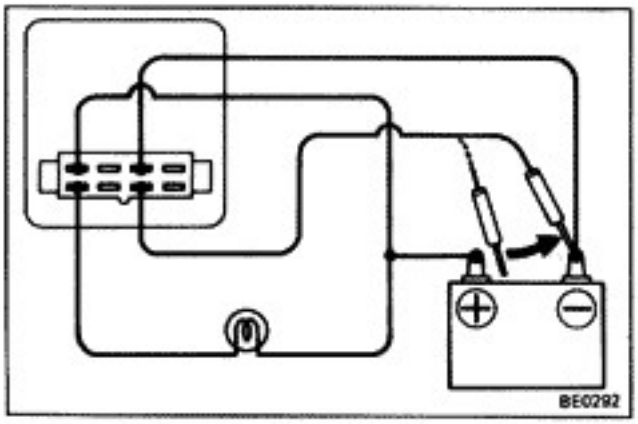
INSPECTION OF HEADLIGHT RETAINER RELA

1. INSPECT HEADLIGHT CIRCUIT OPERATION

Connect the positive (+) leads from the battery to ter nals 4 and 7. Connect the negative (–) lead to terminal 2 Connect the 3.4W test bulb between terminal 8 and po tive (+) lead from the battery.



(a) Disconnect the positive (+) lead from the terminal Check that the test bulb is lighting.

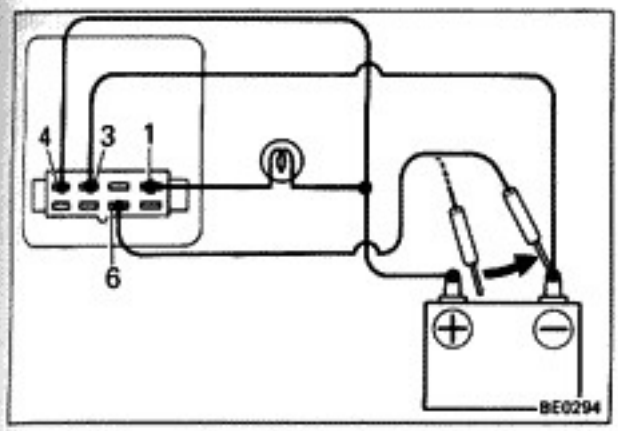


(b) Connect the negative (–) lead to the terminal 6. Check that the test bulb does not light.

If operation is not as specified, replace the relay.

2. INSPECT TAILLIGHT CIRCUIT OPERATION

Connect the positive (+) leads from the battery to ter nals 4 and 7. Connect the negative (–) lead to terminal Connect the 3.4W test bulb between terminal 1 and po tive (+) lead from the battery.



(b) Connect the negative (–) lead to the terminal 6. Check that the test bulb does not light.

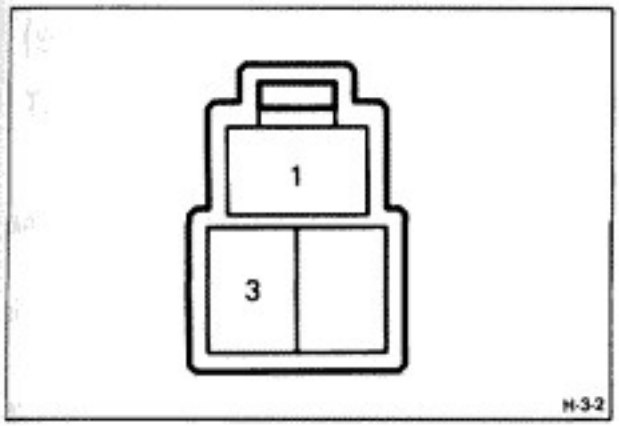
If operation is not as specified, replace the relay.

Fog Light Switch

INSPECTION OF FOG LIGHT SWITCH

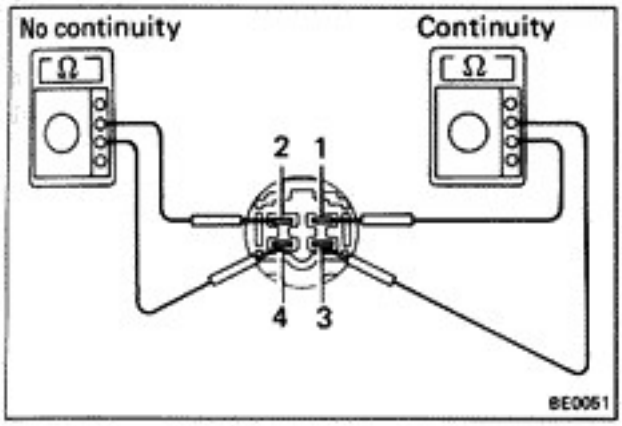
INSPECT SWITCH CONTINUITY

Inspect the switch continuity between terminals.



Switch position \ Terminal	1	3
ON	○	○
OFF		

If continuity is not as specified, replace the switch.



Fog Light Relay

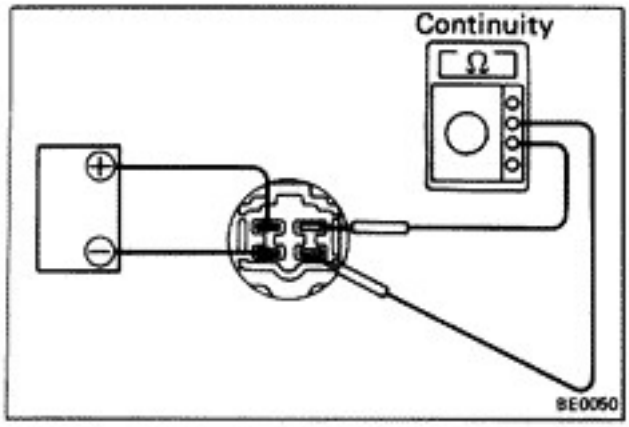
INSPECTION OF FOG LIGHT RELAY

1. INSPECT RELAY CONTINUITY

(a) Check that there is continuity between terminals 1 and 3.

(b) Check that there is no continuity between terminals 2 and 4.

If continuity is not as specified, replace the relay.



2. INSPECT RELAY OPERATION

(a) Apply battery voltage across terminals 2 and 4.

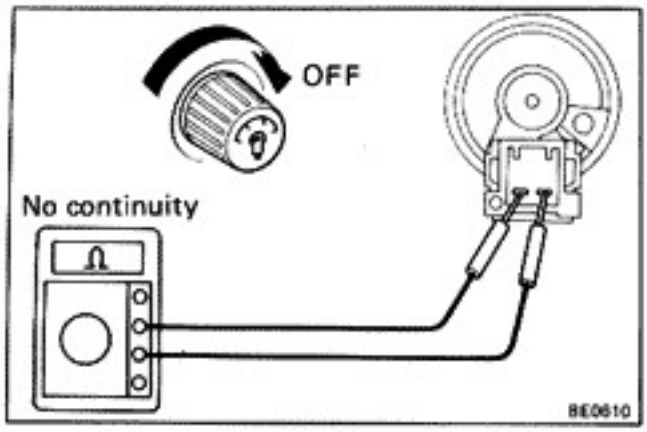
(b) Check that there is continuity between terminals 1 and 3.

If operation is not as specified, replace the relay.

Light Control Rheostat (Analog Type)

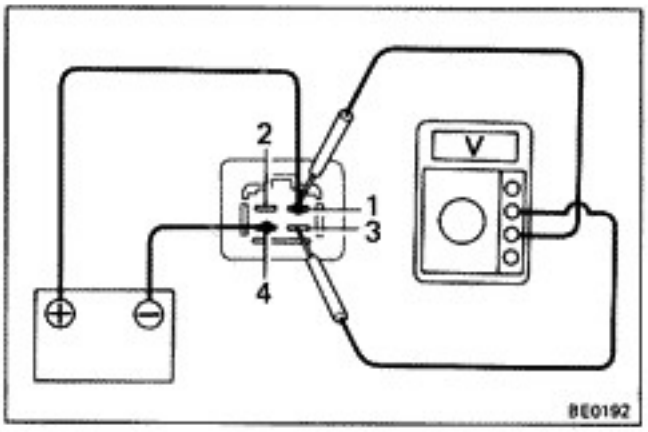
INSPECTION OF LIGHT CONTROL RHEOSTAT

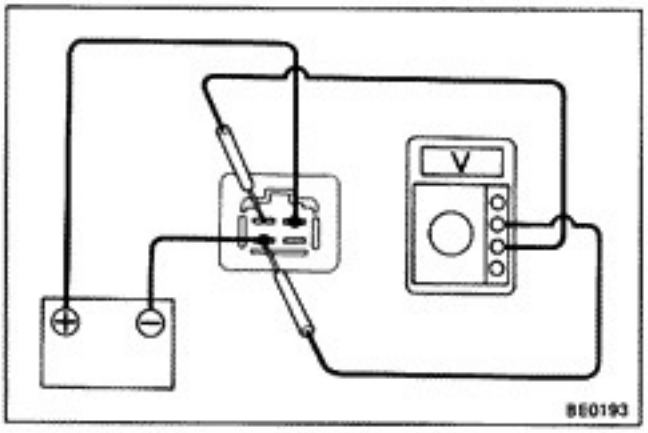
INSPECT RHEOSTAT OPERATION



(b) Check that there is no continuity between termi with the rheostat turned off.

If operation is not as specified, replace the rheostat.





Light Control Rheostat (Digital Typ

INSPECTION OF LIGHT CONTROL RHEOSTA

INSPECT RHEOSTAT OPERATION

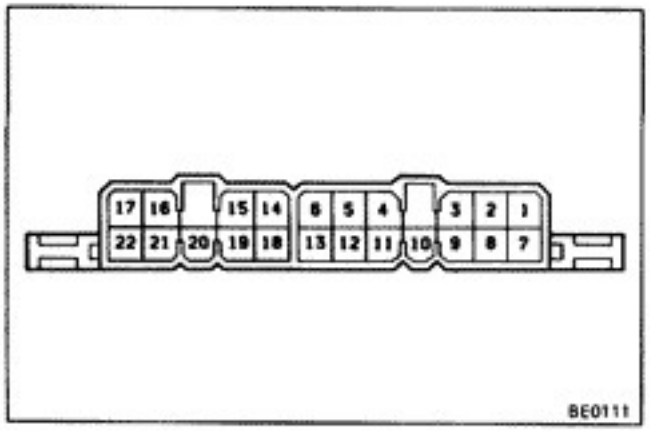
Connect the positive (+) lead from the battery to term 1. Connect the negative (–) lead to terminal 4.

(a) With the brightness at minimum, check that the 9V between terminals 1 and 3.

(b) Gradually turn the rheostat toward the brighter and check that the voltage between terminals 1 a decreases from 9V to 0V.

(c) With the brightness at minimum, check that the 0V between terminals 2 and 4 and 12V when bri ness is at any other level.

If operation is not as specified, replace the rheostat.

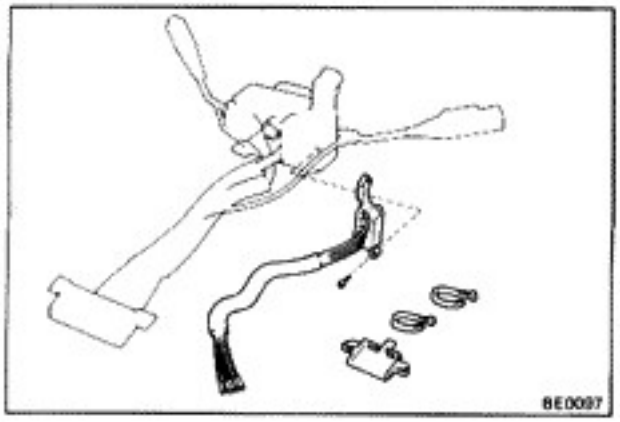


Turn Signal and Hazard Warning Switch

INSPECTION OF TURN SIGNAL AND HAZAR WARNING SWITCH

INSPECT TURN SIGNAL AND HAZARD WARNING SWITCH CONTINUITY

Switch position \ Terminal (Wire color)		9 T_L (G-B)	3 T_B (G-W)	8 T_R (G-Y)	2 B_1 (G-L)	7 F (G)	E (G
Turn Signal	L	○—○			○—○		
	N				○—○		
	R		○—○	○—○		○—○	



REPLACEMENT OF TURN SIGNAL AND HAZARD WARNING SWITCH

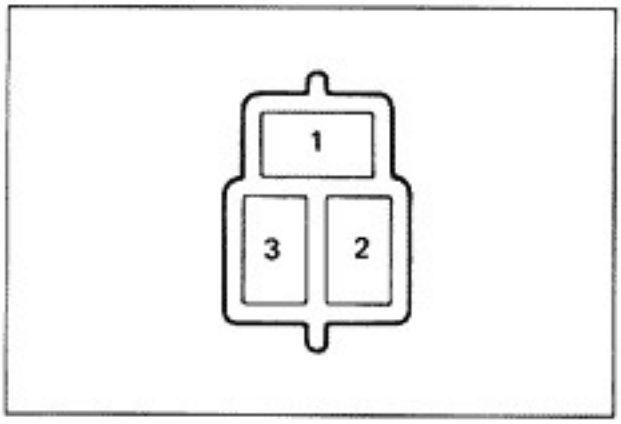
REPLACE TURN SIGNAL AND HAZARD WARNING SWITCH

(a) Remove the terminals from the connector. (See page BE-2)

(b) Remove the turn signal and hazard switch.

(c) Install the turn signal and hazard switch.

(d) Connect the terminals to the connector. (See pages BE-3 and 18)



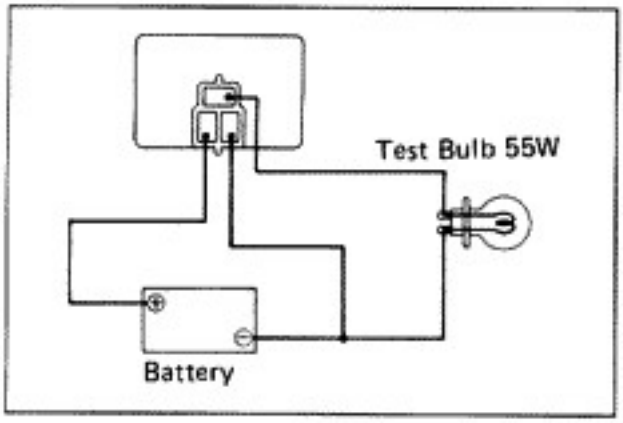
Turn Signal Flasher

INSPECTION OF TURN SIGNAL FLASHER

INSPECT FLASHER OPERATION

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

(b) Connect a 55W bulb between terminals 1 and 2, and check that the bulb goes on and off.

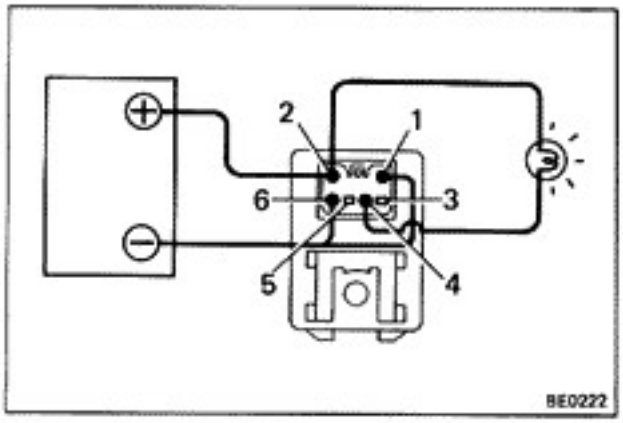


NOTE: The turn signal lights should flash 75 to 95 times per minute.

If one of the front or rear turn signal lights has an open circuit, the number of flashes will be more than 120 per minute.

If one of the side turn signal lights has an open circuit, the number of flashes will increase by about 10 per minute.

If operation is not as specified, replace the flasher.



Fade-Out Relay

INSPECTION OF FADE-OUT RELAY

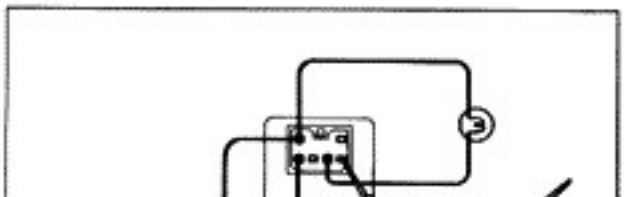
1. INSPECT COURTESY SWITCH CIRCUIT OPERATION

Connect the positive (+) lead from the battery to terminal 2. Connect the negative (–) lead to terminals 1 and 6. Connect a 3.4W test bulb between terminals 2 and 4.

(a) Check that the bulb lights.

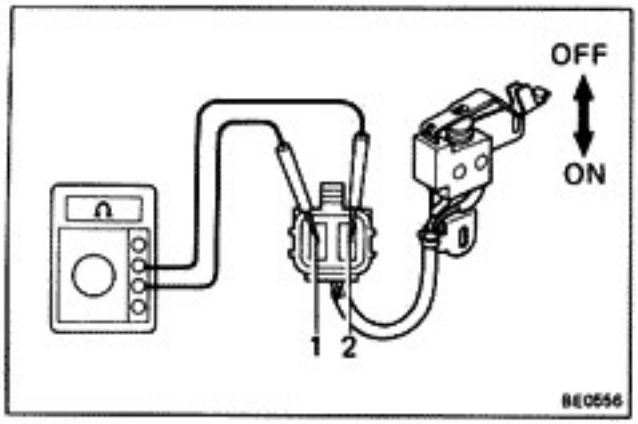
(b) Disconnect the negative (–) lead from terminal 1, and check that the bulb fades out about 8.5 seconds later.

If operation is not as specified, replace the relay.



2. INSPECT OUTSIDE HANDLE SWITCH CIRCUIT OPERATION

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



Outside Handle Switch

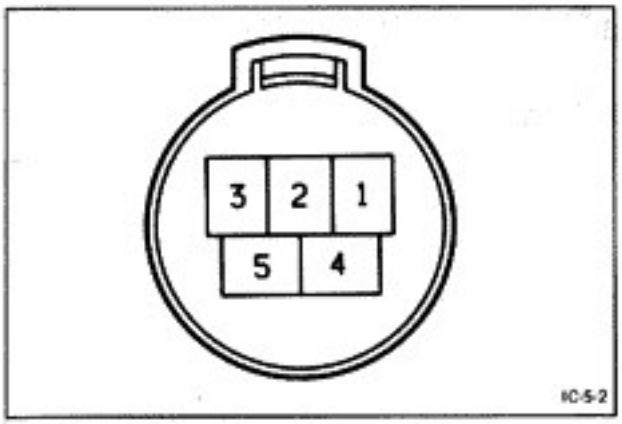
INSPECTION OF OUTSIDE HANDLE SWITCH

INSPECT SWITCH CONTINUITY

(a) Check that there is continuity between termina and 2 when the switch is on.

(b) Check that there is no continuity between termi 1 and 2 when the switch is off.

If continuity is not as specified, replace the switch.



HEADLIGHT CLEANER

Headlight Cleaner Control Relay

ON-VEHICLE INSPECTION OF HEADLIGHT CLEANER CONTROL RELAY

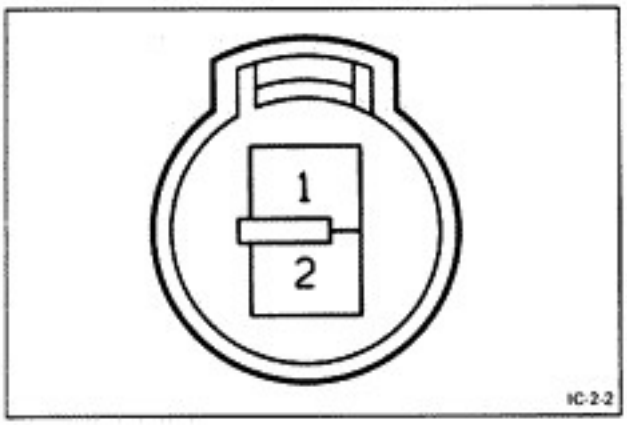
INSPECT RELAY OPERATION

(a) Check that there is continuity between terminal 2 and body ground with the washer switch "ON".

(b) Check that there is battery voltage between terminal 3 and body ground with the light control switch at "TAIL" or "HEAD".

(c) Check that there is continuity between terminal 5 and body ground for about 0.5 seconds when the light control switch is at "TAIL" or "HEAD" and the washer switch is pushed twice in succession.

If operation is not as specified, replace the relay.



Cleaner Motor

INSPECTION OF CLEANER MOTOR

INSPECT MOTOR OPERATION

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

(b) Check that the motor operates.

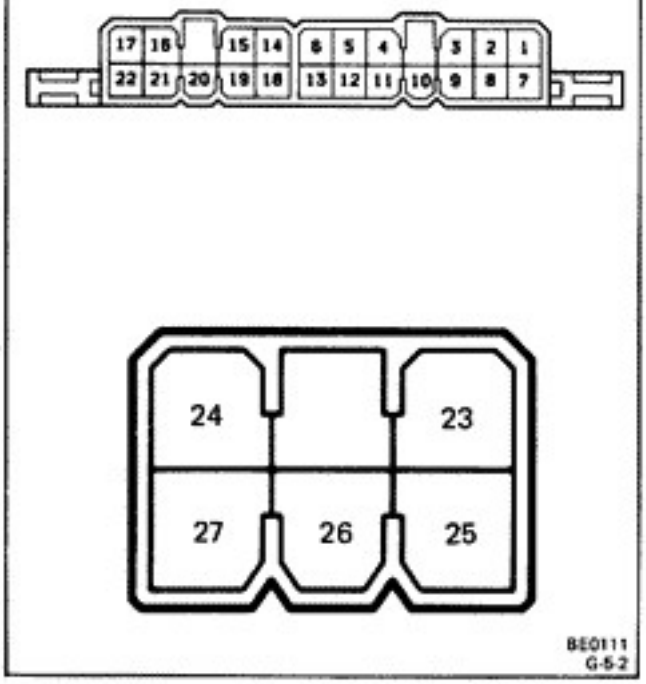
CAUTION: These tests must be performed quickly (within 3 – 5 seconds) to prevent the coil from burning out.

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-24	BE-25
	Wiper switch faulty	Check switch	BE-22	BE-25
	Wiring or ground faulty	Repair as necessary		
Wipers do not operate in INT position	Wiper relay faulty	Check relay	BE-23	BE-25
	Wiper switch faulty	Check switch	BE-22	BE-25
	Wiper motor faulty	Check motor	BE-24	BE-25
	Wiring or ground faulty	Repair as necessary		
Washers do not operate	Washer hose or nozzle clogged	Repair as necessary		
	Washer motor faulty	Replace motor		
	Wiper switch faulty	Check switch	BE-22	BE-2
	Wiring faulty	Repair as necessary		



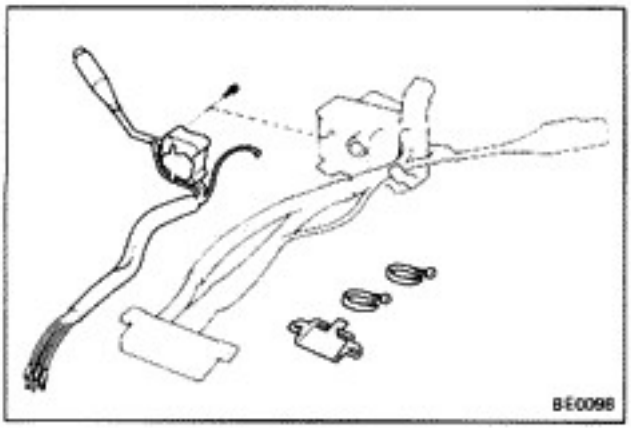
Front Wiper and Washer Switch

INSPECTION OF FRONT WIPER AND WASHER SWITCH

INSPECT FRONT WIPER AND WASHER SWITCH CONTINUITY

Switch	Terminal (Wire color) / Switch position	15 W (L)	19 C_1 (LG-R)	14 Ew (B)	16 -S (LG)	20 +S (L-R)	26 C_2 (LG-B)	21 +1 (L-B)	17 +B (L-W)	22 +2 (L-O)	25 VR_1 (Y)
Wiper	OFF			○—○		○—○					
	INT		○—○				○—○				
	LO							○—○			
	HI								○—○		
Washer	OFF										
	ON	○—○		○							
INT Time Control	SLOW	50 kΩ									○
	•	34.75 kΩ									○
	•	15.75 kΩ									○
	FAST	0 kΩ									○

If continuity is not as specified, replace the switch.



REPLACEMENT OF FRONT WIPER AND WASHER SWITCH

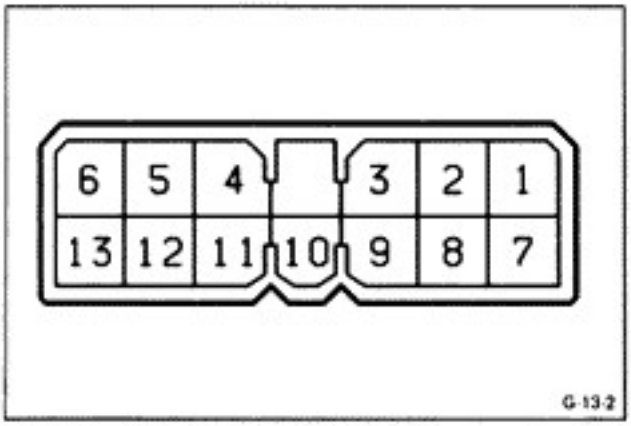
REPLACE WIPER AND WASHER SWITCH

(a) Remove the terminals from the connector. (See page BE-2)

(b) Remove the wiper control switch and washer switch.

(c) Install the wiper control switch and washer switch.

(d) Connect the terminals to the connector. (See pages BE-3 and 22)



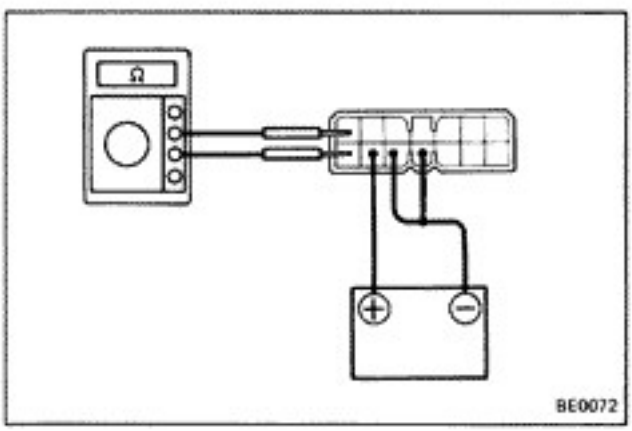
Front Wiper and Washer Relay

INSPECTION OF FRONT WIPER AND WASHER RELAY

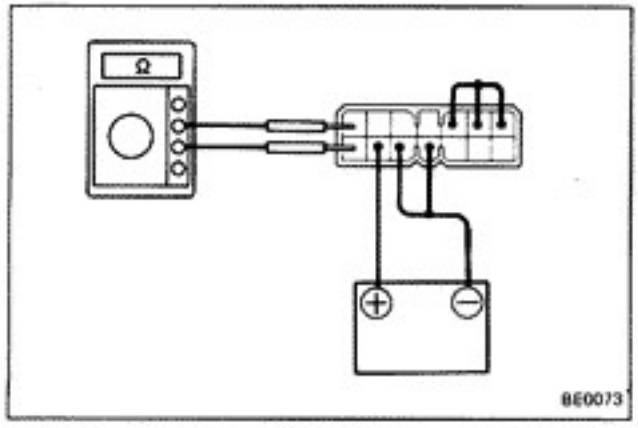
1. INSPECT INTERMITTENT OPERATION OF RELAY

(a) Connect the positive (+) lead from the battery t terminal 12. Connect the negative (–) lead to te minals 10 and 11.

(b) Inspect continuity between terminals 6 and 12 a follows.



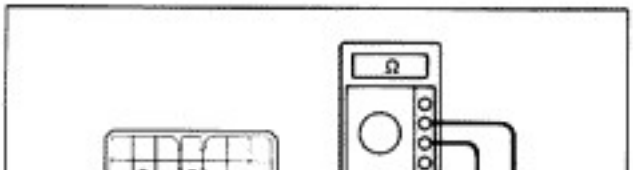
Disconnect terminals 1, 2 and 3		Connect terminals 1, 2 and 3	
Time (seconds)	Between terminals 6 and 12	Time (seconds)	Between termina 6 and 12
Connect terminals 10 and 11		Connect terminals 10 and 11	
$1.2^{+0.3}_{-0.2}$	Continuity	$1.2^{+0.3}_{-0.2}$	Continuity
	Continuity		Continuity
4.3 ± 1	Continuity	2 ± 0.6	Continuity
$0.7^{+0.4}_{-0.5}$	Continuity	$0.7^{+0.4}_{-0.5}$	Continuity
4.3 ± 1	Continuity	2 ± 0.6	Continuity



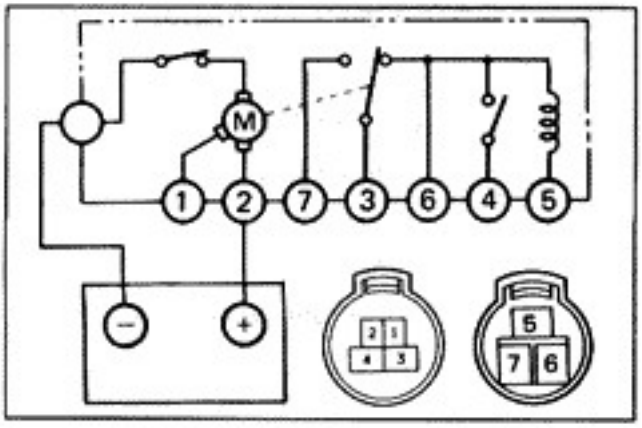
2. INSPECT WASHER CIRCUIT OF RELAY

(a) Connect the positive (+) lead from the battery to terminal 12. Connect the negative (–) lead to terminal 10.

(b) Inspect continuity between terminals 7 and 9 as follows.



Time (seconds)	Between terminals 7 and 9	Time (seconds)	Between terminals 7 and 9



Front Wiper Motor

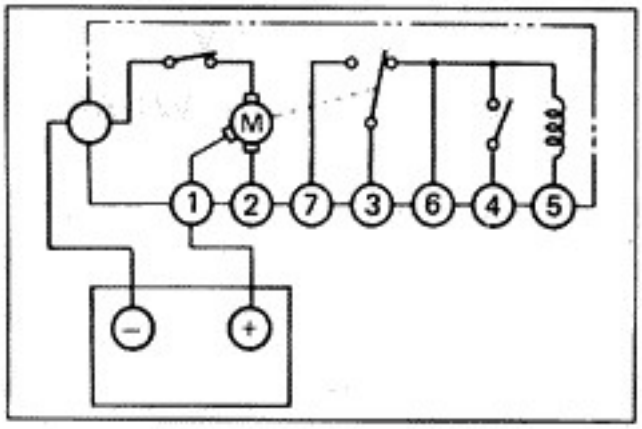
INSPECTION OF FRONT WIPER MOTOR

1. INSPECT THAT MOTOR OPERATES AT LOW SP

(a) Disconnect the connector from the wiper motor.

(b) Connect the positive (+) lead from the batter terminal 2. Connect the negative (–) lead to motor body.

(c) Check that the motor operates at low speed.

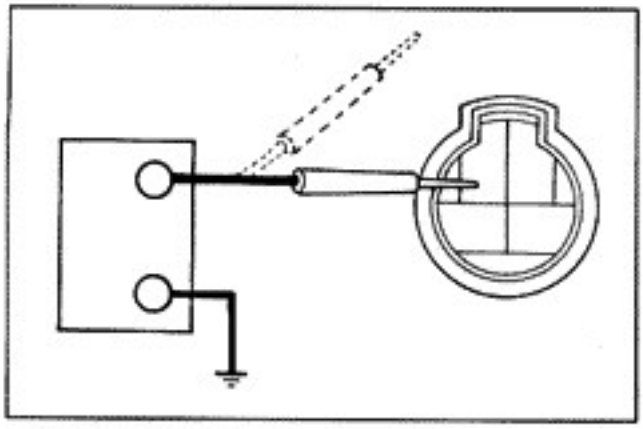


2. INSPECT THAT MOTOR OPERATES AT HIGH SP

(a) Disconnect the connector from the wiper motor.

(b) Connect the positive (+) lead from the batter terminal 1. Connect the negative (–) lead to motor body.

(c) Check that the motor operates at high speed.

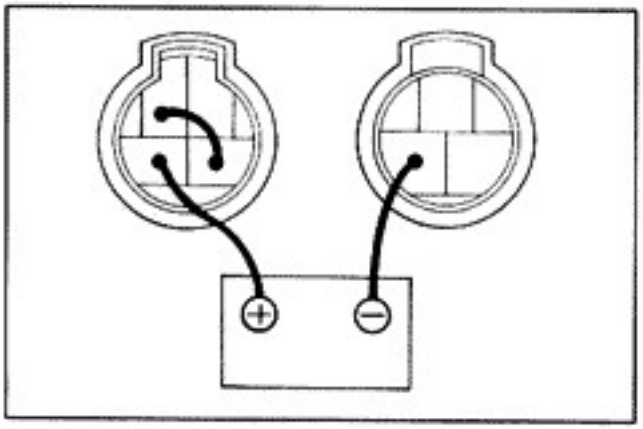


3. INSPECT THAT MOTOR OPERATES, STOPPING RAISED POSITION

(a) Connect the positive (+) lead from the batter terminal 2. Connect the negative (–) lead to motor body.

(b) Operates the motor at low speed.

(c) Stop the motor operation to disconnect the bat terminals except at the raised position.

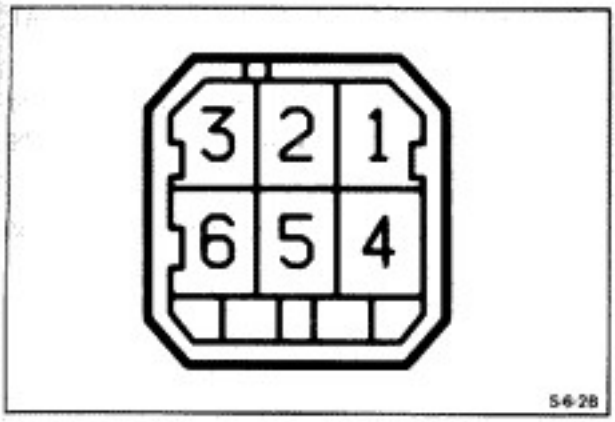


(d) Connect terminals 2 and 3.

(e) Connect the positive (+) lead from the batter terminal 4. Connect the negative (–) lead to term 7.

(f) Inspect that the motor stops running at raised p tion after the motor operate again.

If operation is not as specified, replace the motor.



Rear Wiper and Washer Switch

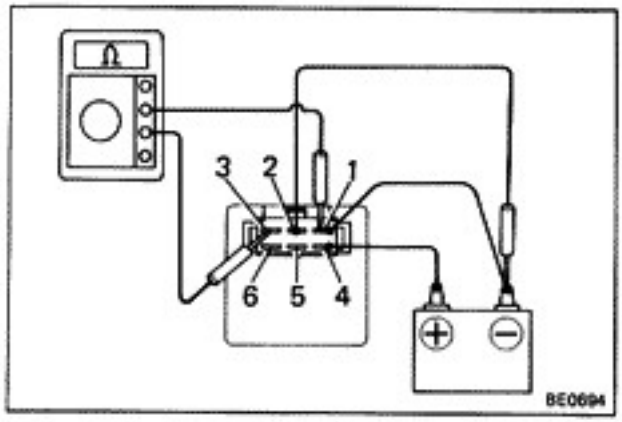
INSPECTION OF REAR WIPER AND WASHER SWITCH

INSPECT SWITCH CONTINUITY

Inspect the continuity between terminals for each switch position shown in the table below.

Switch position \ Terminal	5	4	3	2	6	1
Washer (INT side)	○—○		○—○		○—○	
INT	○—○		○—○			
OFF	○—○					
ON		○—	—	—	—○	
Washer (ON side)		○—	—	—	—○	—○

If continuity is not as specified, replace the switch.



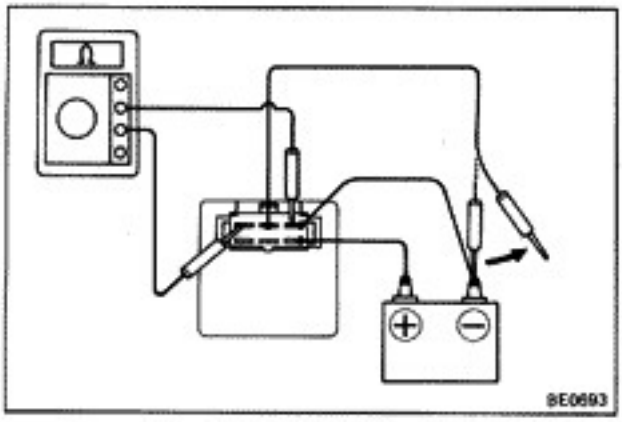
Rear Wiper Relay

INSPECTION OF REAR WIPER RELAY

INSPECT RELAY OPERATION

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

(a) With connect the positive (+) lead from the battery to terminal 2, check that there is no continuity between terminals 1 and 3.



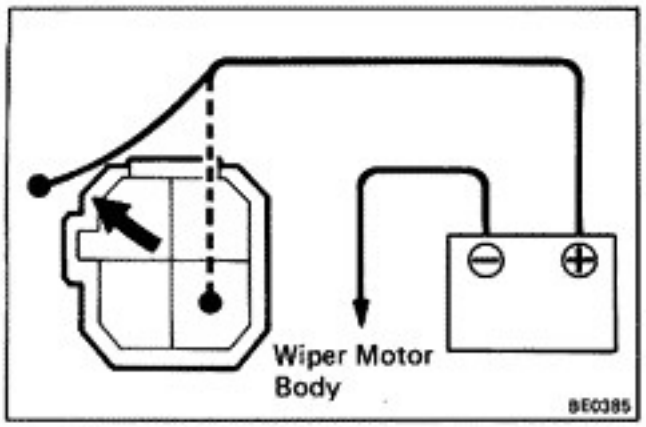
(b) With disconnect terminal 2, check that there is no continuity between terminals 1 and 3 for 9 – 15 seconds.

If operation is not as specified, replace the relay.

Rear Wiper Motor

INSPECTION OF REAR WIPER MOTOR

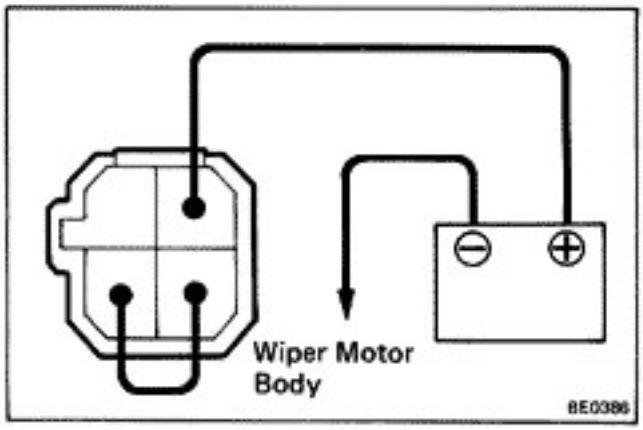
1. INSPECT THAT MOTOR OPERATES



2. **INSPECT THAT MOTOR OPERATES, STOPPING STOP POSITION**

(a) Connect the positive (+) lead from the battery terminal 3. Connect the negative (–) lead to motor body. Operates the motor.

(b) Stop motor operation anywhere except stop posit by disconnecting terminal 3.



(c) Connect terminals 3 and 4.

(d) Connect the positive (+) lead from the battery terminal 1.

(e) Check that the motor stops running at stop posit after the motor operates again.

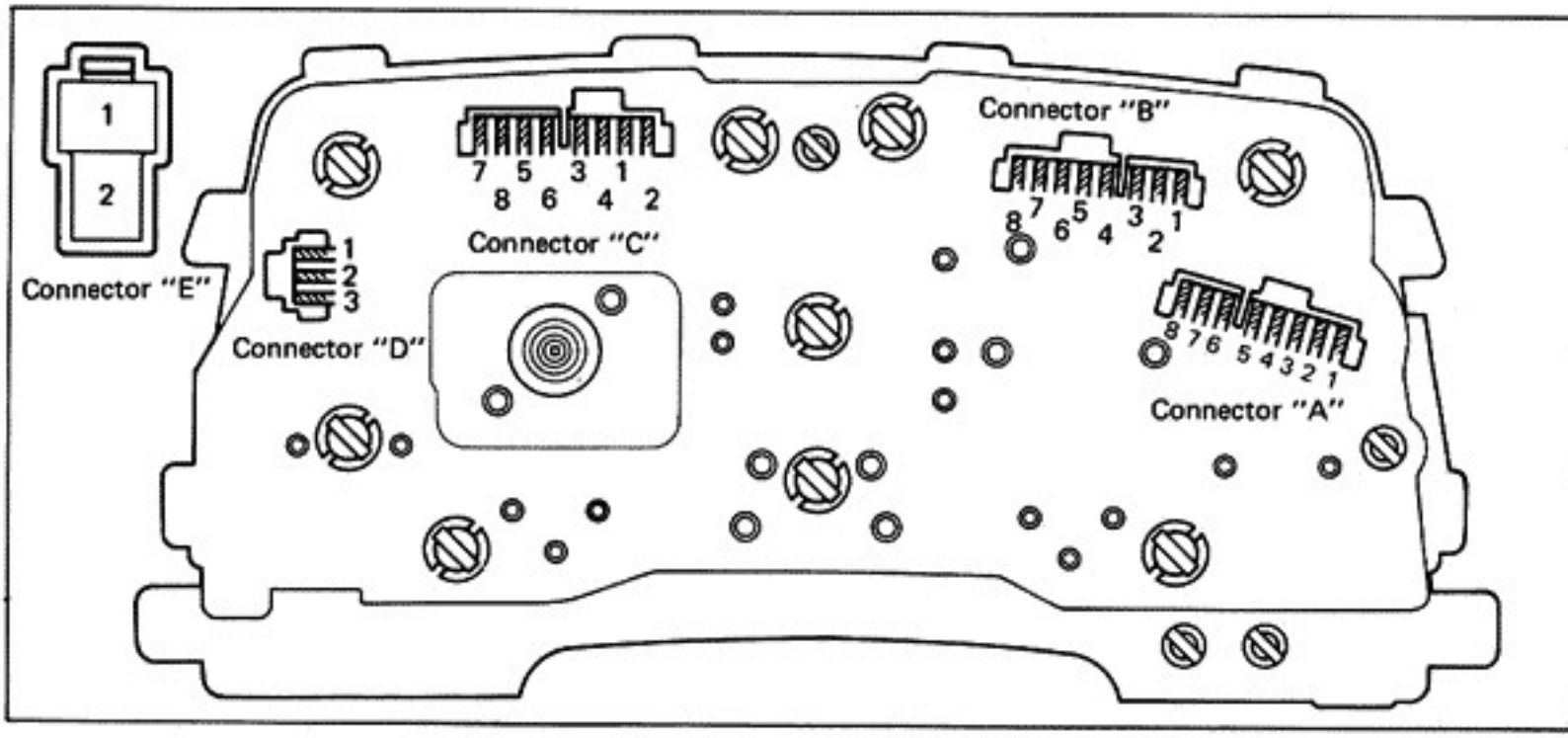
If operation is not as specified, replace the motor.

INSTRUMENTS AND SENDER GAUGES

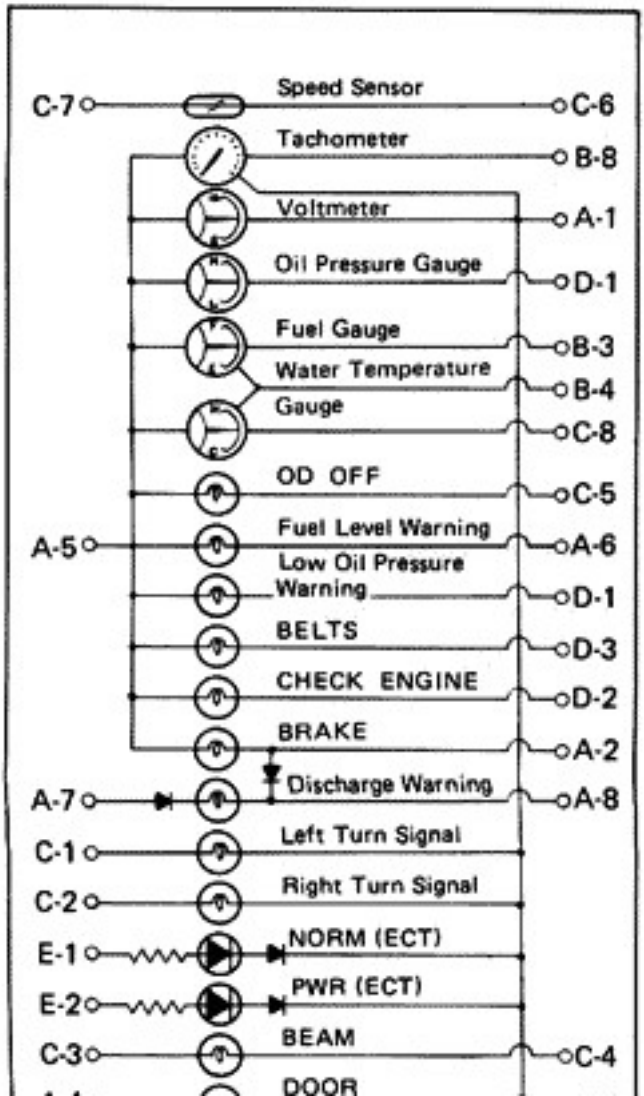
Troubleshooting

Problem	Possible cause	Remedy	Page
Voltmeter does not work	Fuses blown	Replace in-line fuses and check for short	BE-4
	Faulty	Check voltmeter	BE-29
	Wiring faulty	Repair as necessary	
Tachometer does not work	GAUGE fuse blown	Replace fuse and check for short	BE-4
	Tachometer faulty	Check tachometer	BE-29
	Wiring faulty	Repair as necessary	
Fuel receiver gauge does not work	GAUGE fuse blown	Replace fuse and check for short	BE-4
	Fuel receiver gauge faulty	Check receiver gauge	BE-30
	Sender gauge faulty	Check sender gauge	BE-30
	Wiring or ground faulty	Repair as necessary	
Water temperature receiver gauge does not work	GAUGE fuse blown	Replace fuse and check for short	BE-4
	Water temperature receiver gauge faulty	Check receiver gauge	BE-31
	Water temperature sender gauge faulty	Check sender gauge	BE-31
	Wiring or ground faulty	Repair as necessary	
Oil pressure receiver gauge does not work	GAUGE fuse blown	Replace fuse and check for short	BE-4
	Oil pressure receiver gauge faulty	Check receiver gauge	BE-32
	Oil pressure sender gauge faulty	Check sender gauge	BE-32
	Wiring or ground faulty	Repair as necessary	
Brake warning light does not light	GAUGE fuse blown	Replace fuse and check for short	BE-4
	Bulb burned out	Replace bulb	
	Brake fluid level warning switch faulty	Check switch	BE-32
	Parking brake switch faulty	Check switch	BE-32
	Wiring or ground faulty	Repair as necessary	
Discharge warning light does not light	IGN fuse blown	Replace fuse and check for short	BE-4
	Bulb burned out	Replace bulb	
	Wiring faulty	Repair as necessary	

Combination Meter and Gauge (Analog Type)



COMBINATION METER CIRCUIT



No.		Wiring Connector Sides
A	1	Ground
	2	Parking Brake Switch Terminal 1 and Fluid Level Warning Switch Terminal 1
	3	Door Courtesy Switch
	4	DOME Fuse
	5	GAUGE Fuse
	6	Fuel Level Warning Switch Terminal 1
	7	IGN Fuse
	8	CHARGE Fuse
B	2	TAIL Fuse
	3	Fuel Sender Gauge Terminal 2
	4	Ground
	5	DOME Fuse
	6	CIG Fuse
	7	Light Control Rheostat Terminal 2
	8	Ignition Coil
C	1	Turn Signal Switch Terminal 9
	2	Turn Signal Switch Terminal 8
	3	Dimmer Switch Terminal 5
	4	Ground
	5	OD Relay
	6	Ground
	7	ECU and Cruise Control Computer Terminal 6

Speedometer

ON-VEHICLE INSPECTION OF SPEEDOMETER

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

NOTE: Tire wear and tire over or under inflation will increase the indicating error.

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

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

Standard indication (km/h)	Allowable range (km/h)
20	18 – 23
40	20 – 44
60	60 – 64.5
80	80 – 85
100	100 – 105
120	120 – 125.5
140	140 – 146
160	160 – 167

Standard indication (mph)	Allowable range (mph)
20	20 – 23
40	40 – 43.5
60	60 – 64
80	80 – 84.5
100	100 – 105
120	120 – 125.5

Tachometer

ON-VEHICLE INSPECTION OF TACHOMETER

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

(b) Compare the tester and tachometer indications.

If the error is excessive, replace the tachometer.

CAUTION:

- **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 severe shock.**

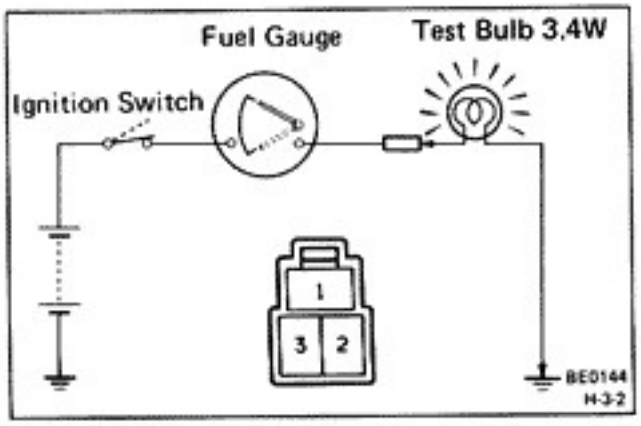
rpm / Temp.	1000	3000	5000	7000
25°C DC13V	±100	±200	±200	±300

Fuel Gauge

INSPECTION OF FUEL GAUGE

1. INSPECT RECEIVER GAUGE OPERATION

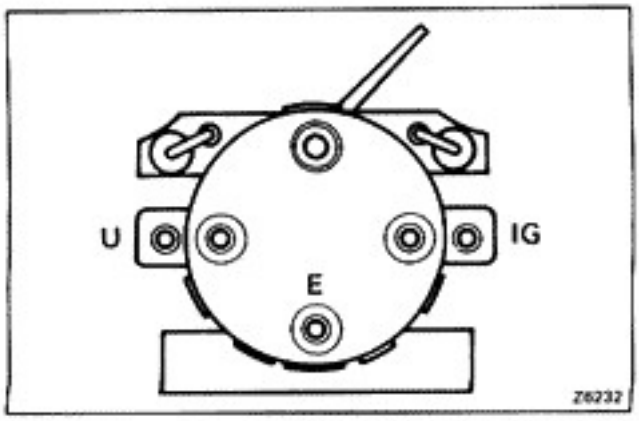
(a) Disconnect the connector from the fuel sender gaug
Turn the ignition switch on and check that t
receiver gauge needle moves to the empty position.



(b) Connect the 3.4W test bulb between terminal 2 a
body ground. Check that the bulb lights and t
receiver gauge needle operates.

NOTE: Because of the silicon oil in the gauge, it w
take about 90 seconds for the needle to stabilize.

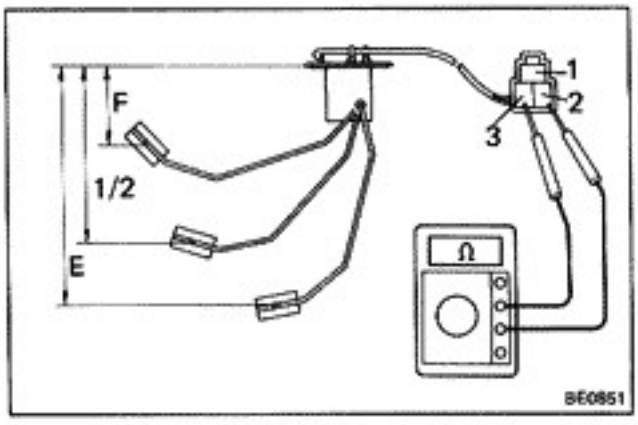
If indications are not as specified, remove and test t
receiver gauge.



2. MEASURE RECEIVER GAUGE RESISTANCE BETWEEN TERMINALS

Between terminals	Resistance (Ω)
IG – U	Approx. 101.9
U – E	Approx. 101.3
IG – E	Approx. 203.2

If each resistance value is not as shown in the table abo
replace the receiver gauge.



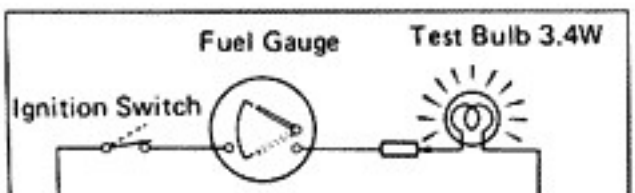
3. MEASURE RESISTANCE OF SENDER GAUGE

(a) Check that the resistance changes as the float is mov
from the top to bottom position.

(b) Measure the resistance between terminals 2 and 3
each float position.

	Float position mm (in.)	Resistance (Ω
F	43.7 – 49.7 (1.720 – 1.957)	3 ± 2.1
½	135.1 (5.319)	32.5 ± 4.8
E	200.2 – 206.2 (7.882 – 8.118)	110 ± 7.7

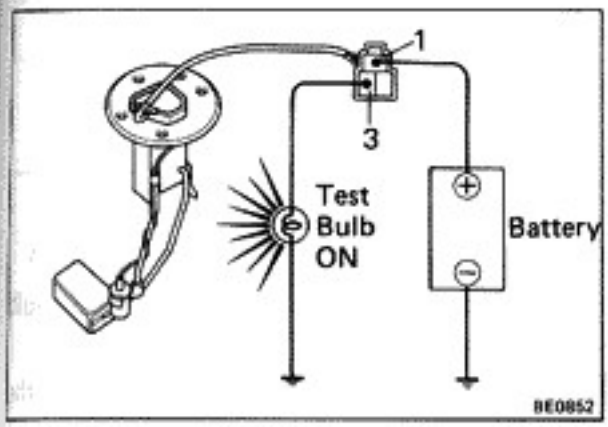
If each resistance value is not as shown in the table abo
replace the sender gauge.



Fuel Level Warning

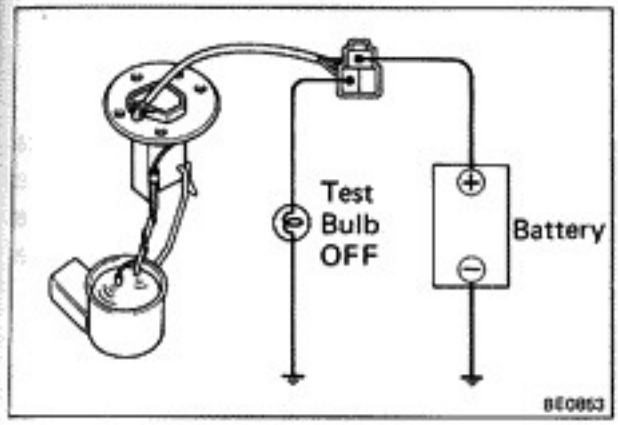
INSPECTION OF FUEL LEVEL WARNING

1. INSPECT WARNING LIGHT OPERATION



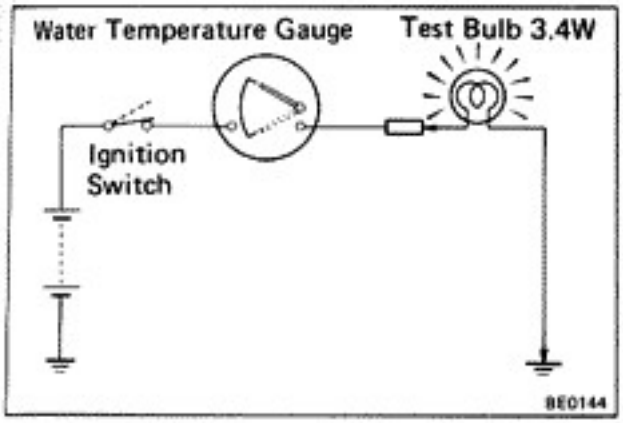
2. INSPECT LEVEL WARNING SWITCH OPERATION

(a) Apply battery voltage between terminals 1 and 3 through a 3.4W bulb. Check that the bulb lights.



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

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



Water Temperature Gauge

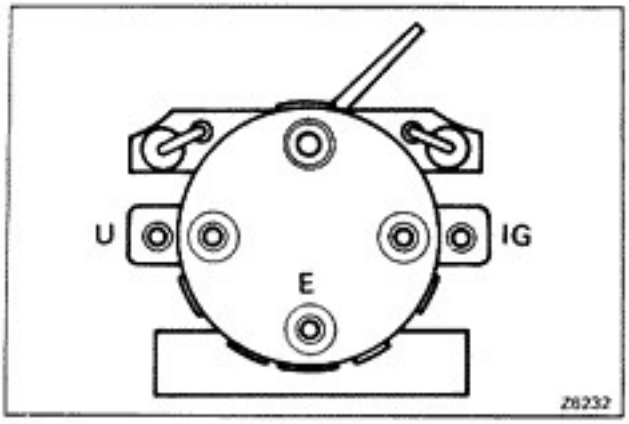
INSPECTION OF WATER TEMPERATURE GAUG

1. INSPECT RECEIVER GAUGE OPERATION

(a) Disconnect the connector from the sender gauge. Ground the terminal through a 3.4W bulb as shown.

(b) Turn the ignition switch on. Check that the bulb lights up and that the receiver gauge needle rises to the upper position.

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

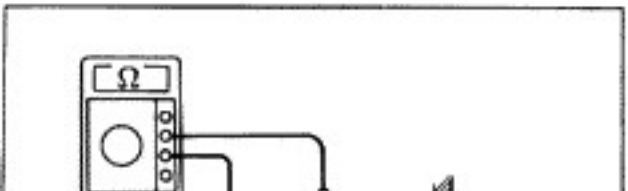


2. MEASURE RESISTANCE OF RECEIVER GAUGE

Using an ohmmeter, measure the resistance between terminals.

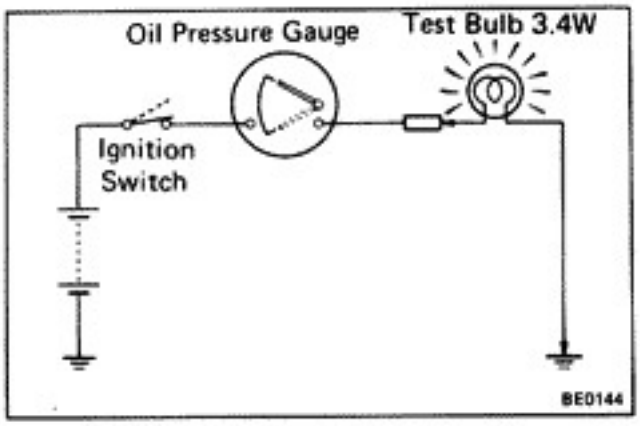
If each resistance value is not as shown in the table below, replace the receiver gauge.

Between terminals	Resistance (Ω)
IG – U	Approx. 56
U – E	Approx. 201.8
IG – E	Approx. 145.8



3. MEASURE RESISTANCE OF SENDER GAUGE

Using an ohmmeter, measure the resistance between the terminal and ground.



Oil Pressure Gauge

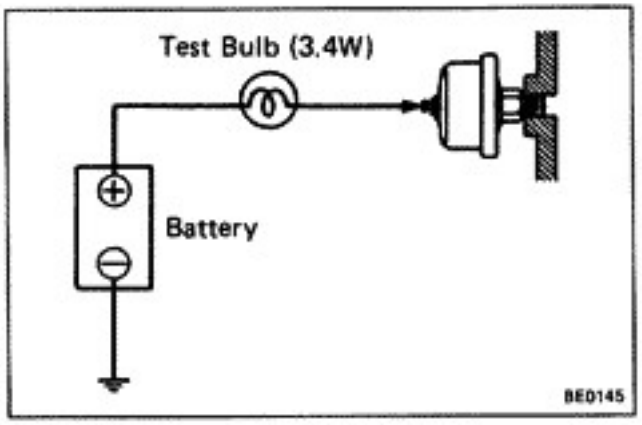
INSPECTION OF OIL PRESSURE GAUGE

1. INSPECT RECEIVER GAUGE OPERATION

(a) Disconnect the connector from the sender gauge. Ground the terminal through a 3.4W bulb as shown.

(b) Turn the ignition switch on. Check that the bul starts flashing and the gauge pointer deflects.

If indications are not as specified, remove and test th receiver gauge.

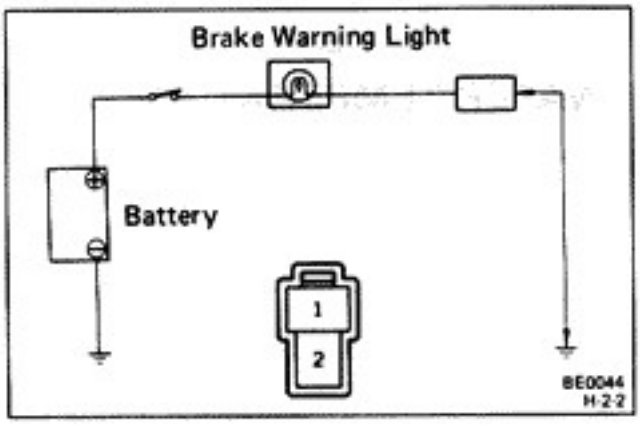


2. INSPECT SENDER GAUGE OPERATION

(a) Disconnect the connector from the sender gauge.

(b) Connect a 12V battery to the sender gauge termin in series with a 3.4W bulb. Check that the bulb do not light when the engine is stopped, and flash when the engine is running. The number of flash should vary with engine speed.

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



Brake Warning

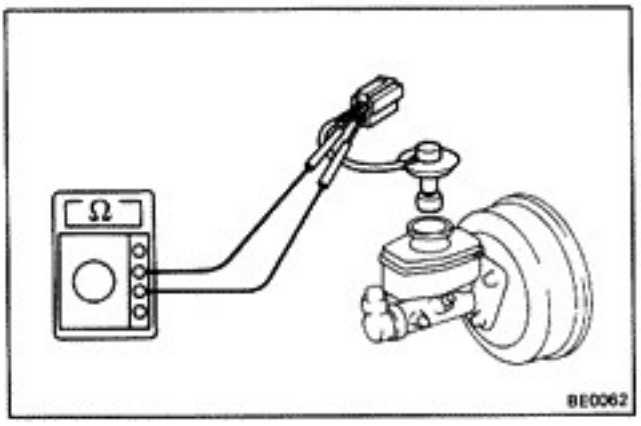
INSPECTION OF BRAKE WARNING

1. INSPECT WARNING LIGHT OPERATION

(a) Disconnect the connector from the brake fluid lev warning switch. Connect the switch terminal 1 a body ground.

(b) Turn the ignition switch on. Check that the bu lights.

If operation is not correct, remove and test the bulb.



2. INSPECT OPERATION OF BRAKE FLUID LEVEL WARNING SWITCH

Inspect the switch operation when the switch is OFF (flo up) and when the switch is ON (float down).

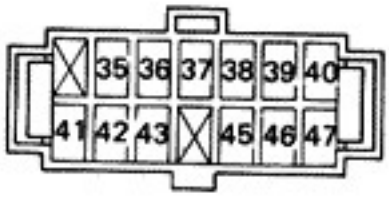
If operation is not as specified, replace the switch.

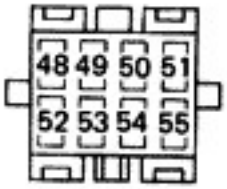
3. INSPECT OPERATION OF PARKING BRAKE SWIT

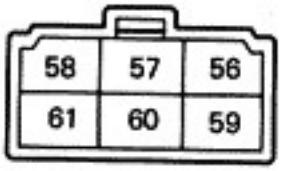
Using an ohmmeter, inspect the continuity between terminals 1 and 2.

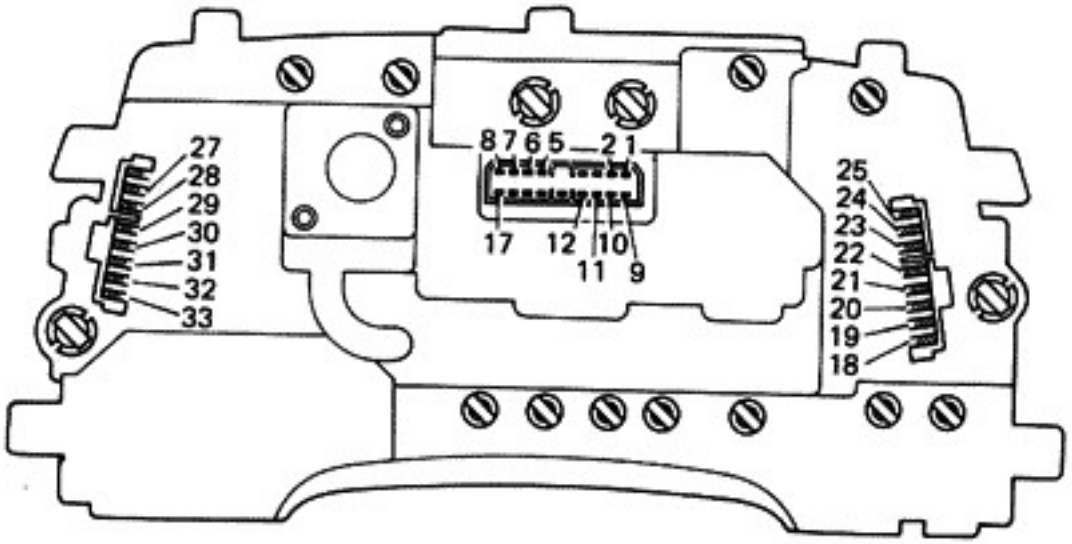
(a) Check that there is continuity when the switch is f

Combination Meter and Gauge (Digital Type)

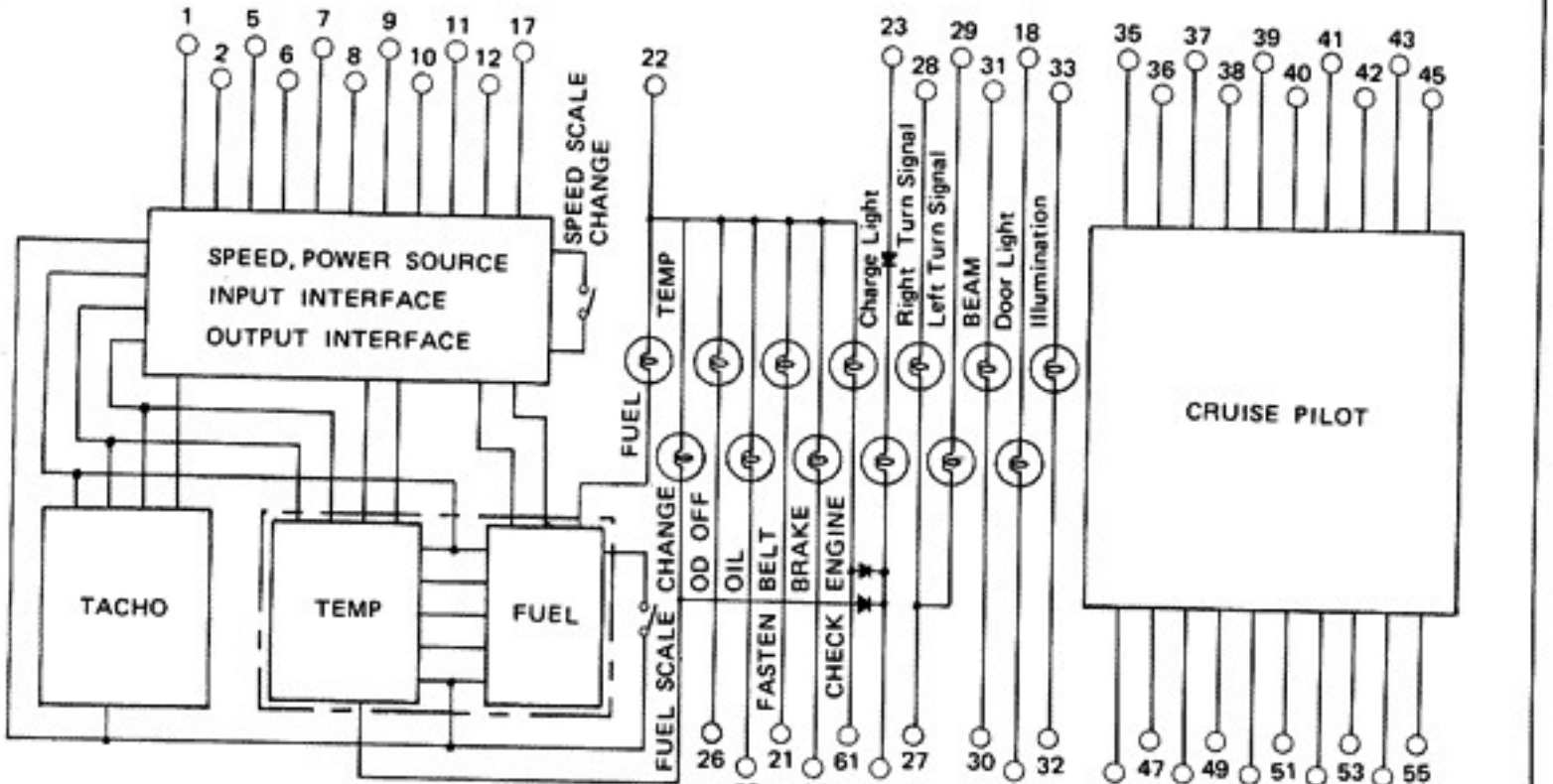








COMBINATION METER CIRCUIT



No.	Wiring connector sides	No.	Wiring connector sides
1	Ignition Switch (+)	33	Light Control Relay (Tail)
2	Body Ground of Power Source	35	Trip Computer Terminal GND
5	Remaining Fuel Quantity Signal	36	Trip Computer Terminal F
6	Starting Signal	37	Trip Computer Terminal RST
7	TEMP Signal	38	Trip Computer Terminal TAU
8	Dim Signal	39	Trip Computer Terminal ACC
9	RPM Signal	40	Trip Computer Terminal IG
10	Signal Ground	41	Trip Computer Terminal DIM
11	Power Source of Fuel Sender Gauge	42	Trip Computer Terminal 12V
12	4-pulse Signal	43	Trip Computer Terminal 5V
17	Dim Restriction Signal	45	Trip Computer Terminal DIM (12V)
18	Door (+)	46	Trip Computer Terminal VF (12V)
19	Door (–)	47	Trip Computer Terminal CK
20	Oil Pressure Sender Gauge	48	Trip Computer Terminal SET
21	Fasten Belts Relay	49	Trip Computer Terminal FUL
22	Ignition Switch (+)	50	Trip Computer Terminal CLK
23	Battery Terminal (+)	51	Trip Computer Terminal KML
24	Changing Regulator Terminal L	52	Trip Computer Terminal ARR
25	Parking Brake Switch	53	Trip Computer Terminal JST
26	OD Switch	54	Trip Computer Terminal DIM (12V)
27	Ground	55	Trip Computer Terminal GND
28	Turn Signal Switch Terminal TR	57	Pattern Select Switch 4
29	Turn Signal Switch Terminal TL	58	Pattern Select Switch 3
30	Ground	59	Ground
31	Dimmer Switch Terminal HU	61	EFI Computer Terminal W
32	Rheostat		

Combination Meter (Digital Type)

PRECAUTIONS

1. When checking voltage, resistance, etc., use a hig impedance type tester (It is impossible with a simp tester).

2. Do not attempt to disassemble or repair individual cor ponents.

3. Do not attempt to make checks with an external pow (battery etc.) applied directly to the component.

4. When the ignition switch is turned ON, indications othe than the speedometer will be slightly delayed but this normal.

5. When the ignition switch is placed at ST, all meters will g out but this is normal.

6. Do not touch circuit components as there is danger o circuit damage due to static electricity. Never revers battery connections as it could result in instant damage t the interior of the components.

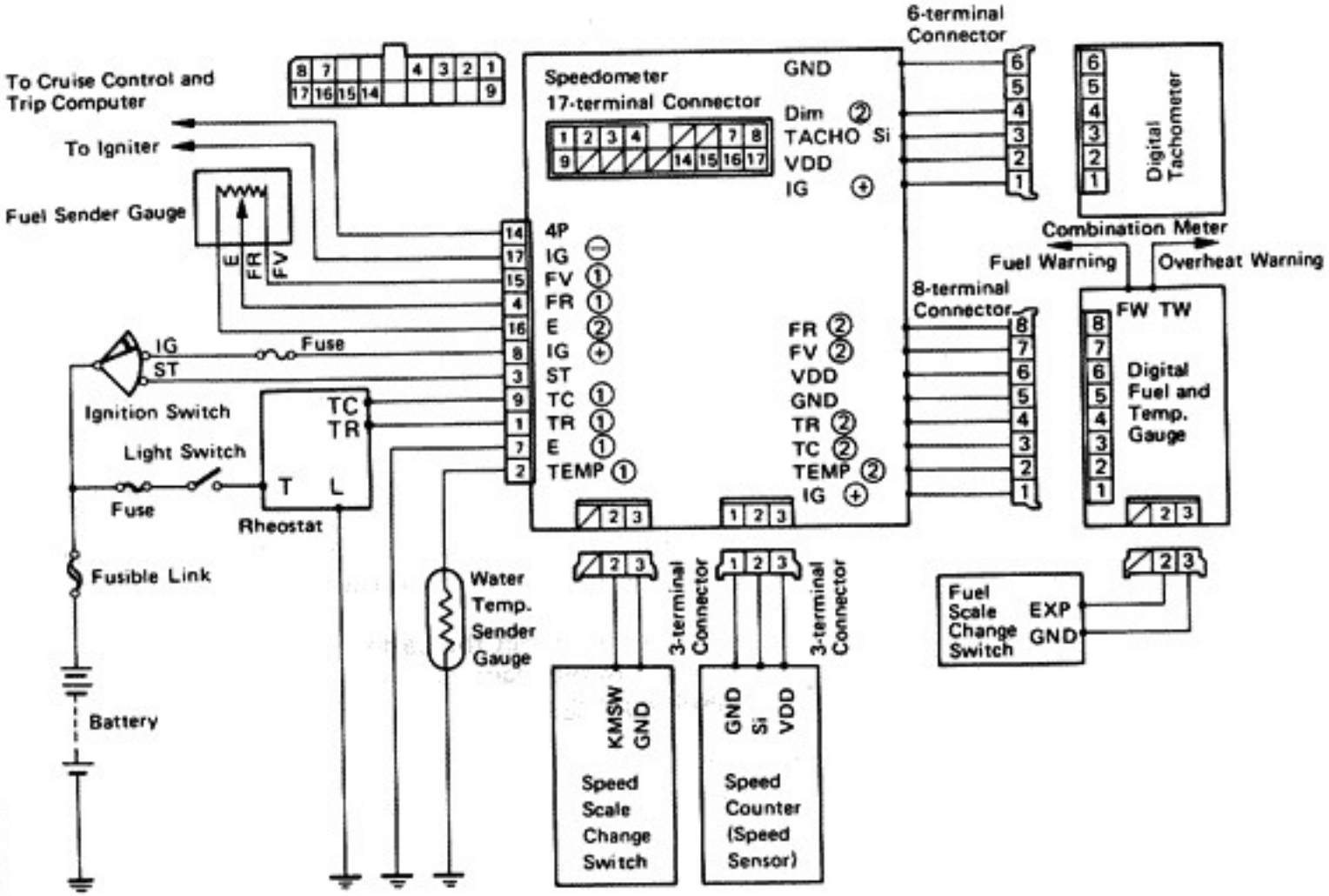
7. Do not disconnect the battery while the engine is runnin as this would cause an instant reverse charge (100V) resulting in damage to the interior of the components.

8. Always disconnect the battery terminals before pullin apart connectors or terminals.

9. To prevent damage, handle meters with care.

Troubleshooting

WIRING DIAGRAM

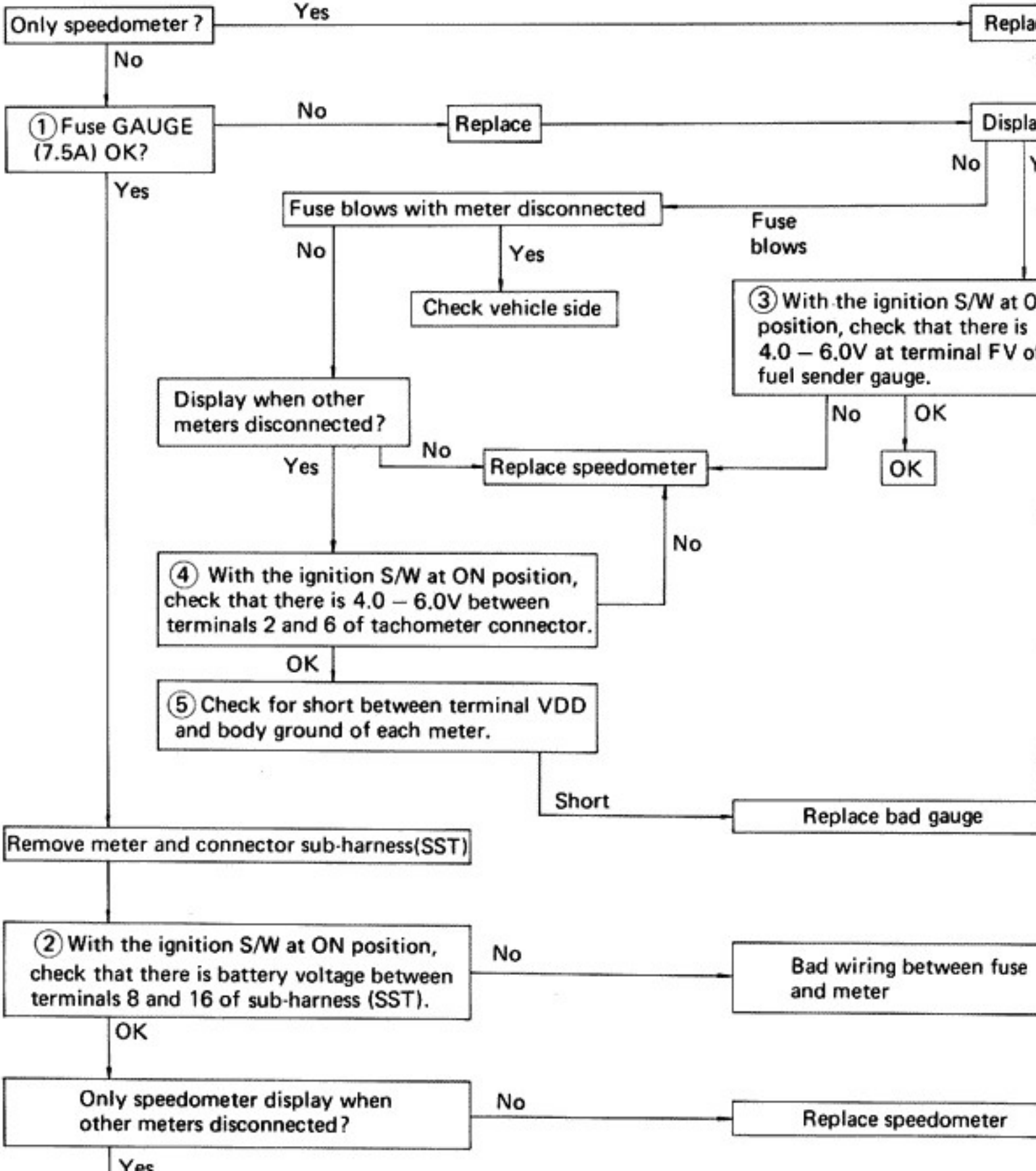


Dim	:	Dim signal
E ①	:	Body ground of power source
E ②	:	Signal ground
EXP	:	Magnifier signal
4P	:	4-pulse signal
FR	:	Remaining fuel quantity signal
FV	:	Power source of fuel sender gauge
GND	:	Circuit ground
IG ⊕	:	Power source
IG ⊖	:	RPM signal
KMSW	:	Conversion signal
Si	:	Speed sensor signal (20-pulse)
ST	:	Starting signal
TACHO Si	:	Wave form rectification signal of IG ⊖
TEMP	:	TEMP signal

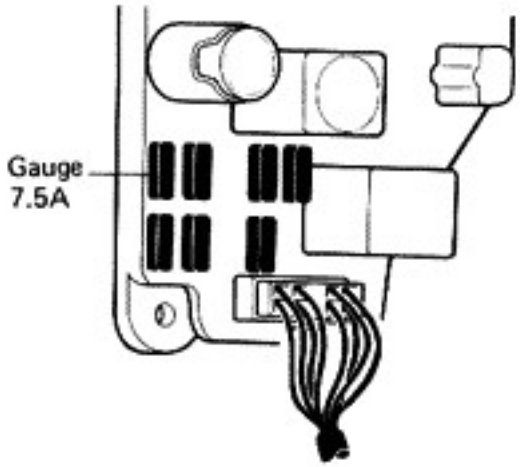
Trouble			Refer to
Speedometer	No display at all		A
	Speedometer displays [0] while driving.		B
	Flickers or fluctuates		Check cable
	Abnormal display	Difficult to comprehend	Replace speedometer
	Lights do not dim when light and rheostat S/W turned ON.		C
	Display disappears when rheostat is turned with light S/W ON.		D
	Brightness does not change even when rheostat is turned.		E
	Abnormal speedometer signal		F
	No speed unit conversion		G
Tachometer	No display at all		H
	Zero indication even with engine running.		I
	Abnormal display	Wrong display, no display change or constant display change from correct to "0" or no display at all.	Replace tachometer
	Lights do not dim when light and rheostat S/W turned ON.		J
Fuel Gauge	No display at all		K
	Fuel scale change display (magnifier) does not illuminate.		L
	Fuel warning light does not light.		M
	Fuel warning light always lit.		N
	Abnormal display	No display segment or intermediate segment illumination. No figure or symbol indication.	Replace fuel and temp. gauges
	Defective display		O
	Lights do not dim when light and rheostat S/W turned ON.		P
Water Temp. Gauge	No display at all		K
	Top segment does not flash.		M
	Abnormal display	Both indicator segments lit. No figure or symbol indication, etc.	Replace fuel and temp. gauges
	Wrong display	Display segment does not rise. Top segment flashes always. Unstable display, etc.	Q
	Lights do not dim when light and rheostat S/W turned ON.		P

NOTE: The "sub-harness (SST)" appearing in the following pages of the Troubleshooting Section refer to SST 09082-00100, Digital Meter Check Sub-Harness.

SECTION	TROUBLE	
A	Speedometer	No display at all

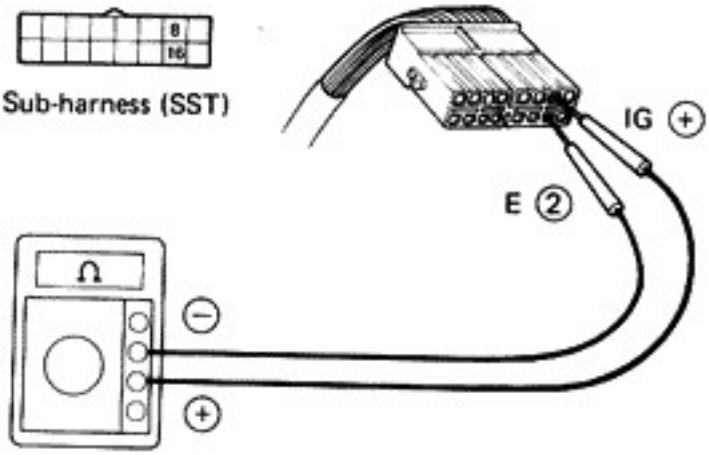


1



In LH cowl side

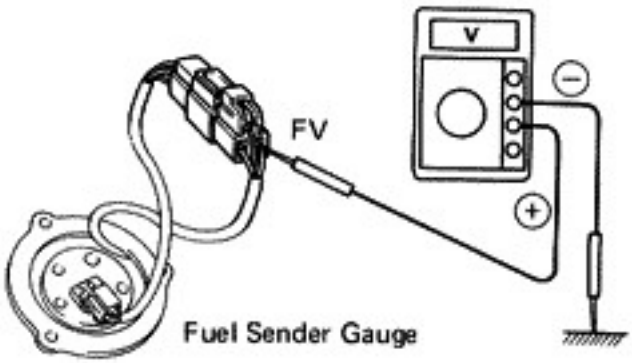
2



BE0419

3

Wiring Connector of Fuel Sender Gauge

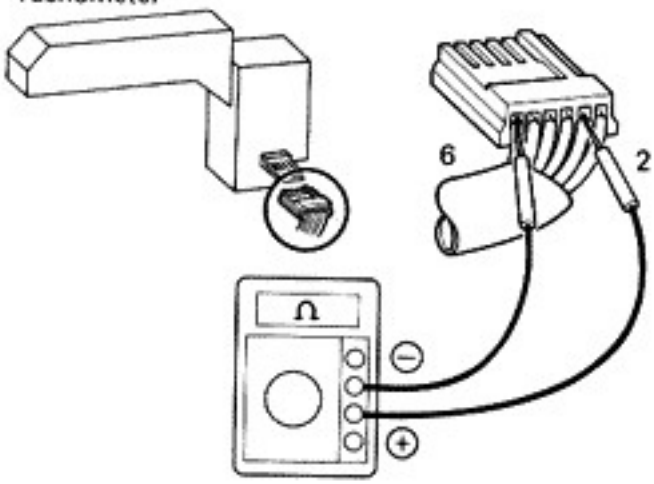


CAUTION: Never short circuit terminal FV.

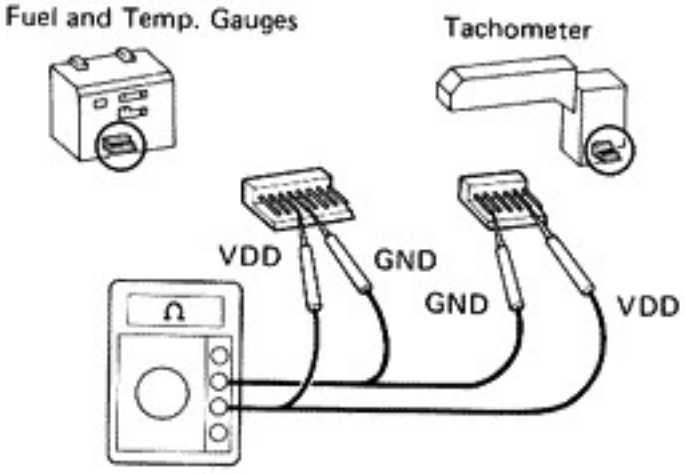
BE0056

4

Tachometer



5



SECTION	TROUBLE	
B	Speedometer	Speedometer displays [0] while driving

Does trip meter operate?

No

Does trip meter operate with met
disconnected and cable turned?

Yes

No

Check total counter

Yes

- Check cable
- Check drive and driven gears

Remove meter and connect sub-harness (SST)

① With the ignition S/W at ON position, check that there is 4.0 – 6.0V between terminals 1 and 3 of connector for speed sensor (total counter).

No

④ With the ignition S/W at ON po
tion, check that there is 4.0 – 6.0V
between terminals 1 and 3 of speed
ometer with connector removed.

OK

No

OK

Replace speed senso

② With the ignition S/W at ON position, does voltage between terminals 1 and 2 of speed sensor connector fluctuate between 0 – 5.0V when meter cable is turned?

..... 4.0 – 6.0V

..... 0 – 1V

Yes

Replace speedomete

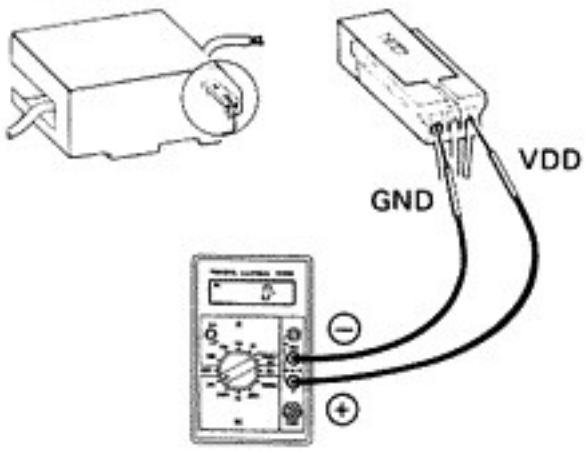
No

③ With the ignition S/W at ON position, and speed sensor disconnected, does display appear when terminals 1 and 2 of speedometer are connected and disconnected?

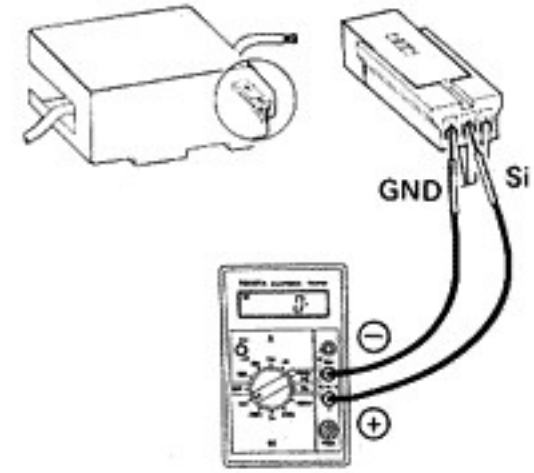
No

Yes

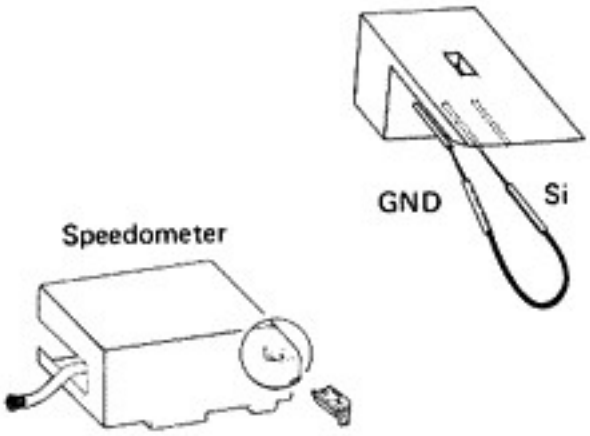
1


Speedometer
VDD
GND
⊖
⊕

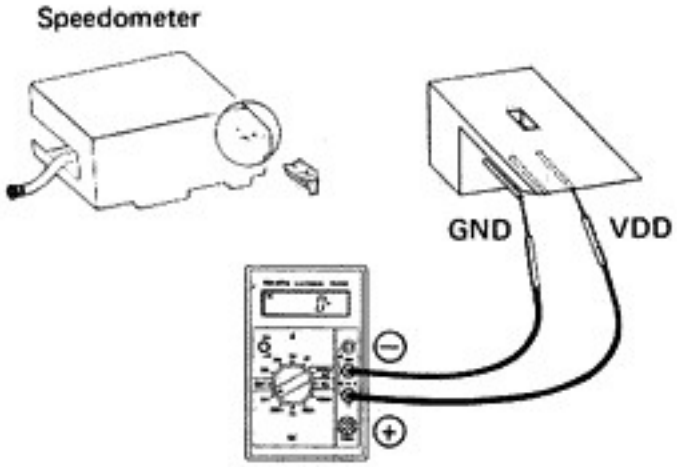
2


Speedometer
GND
Si
⊖
⊕

3


GND
Si
Speedometer

4


Speedometer
GND
VDD
⊖
⊕

SECTION	TROUBLE	
C	Speedometer	Lights do not dim when light and rheostat S/W turned ON

Only speedometer? — Yes → Replace speedome

No

Remove meter and connect sub-harness (SST)

① With the ignition S/W at ON position, check that there is battery voltage between terminals 7 and 9 of sub-harness (SST) when rheostat turned ON.

No → ② With the light S/W and rheostat turned ON, is there battery voltage on TC termi of rheostat?

OK

No → Bad wiring betwe rheostat and met

Ye

Does speedometer dim when other meters are disconnected?

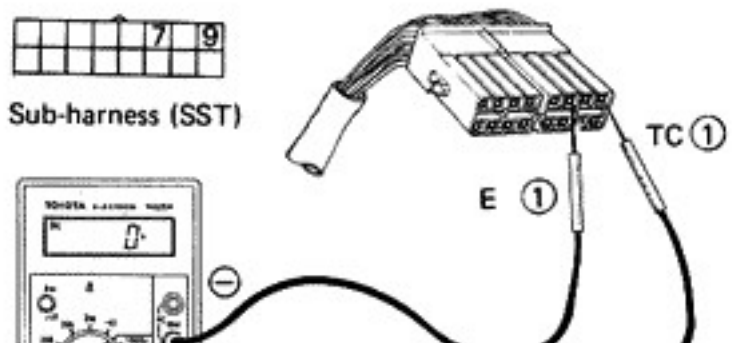
Yes

No → Replace speedometer

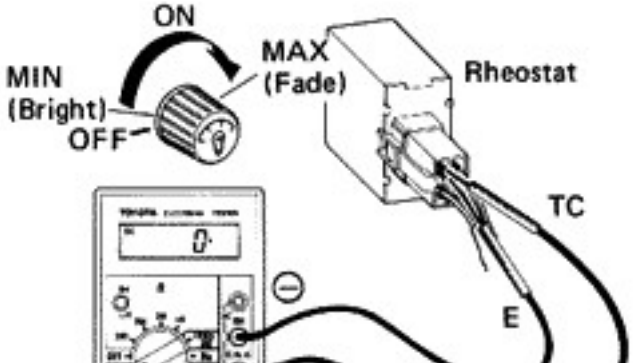
Check rheostat (See page BE-18)

Connect other meters one by one to find bad meter. → Replace bad met

1



2



SECTION	TROUBLE	
D	Speedometer	Display disappears when rheostat is turned with light S/W ON

Only speedometer? — Yes → Replace speedometer

No →

Remove meter and connect sub-harness (SST)

① With the ignition S/W at ON position, does voltage between terminals 1 and 16 of sub-harness vary from 0 to 9V when rheostat is turned?

No → ② With the light S/W turned ON, does voltage between terminals TR and E of rheostat vary when rheostat is operated?

② No → Check rheostat (See page BE-18)

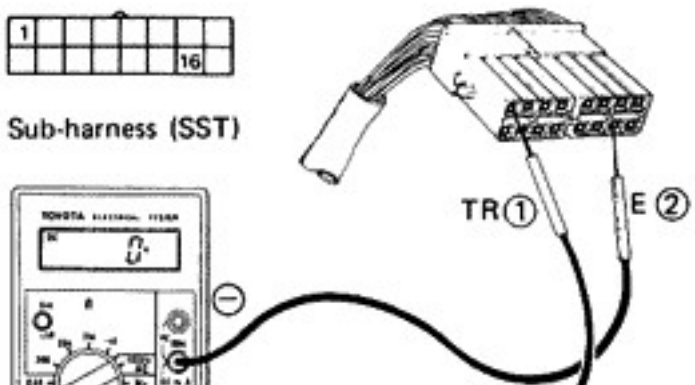
② Yes → Bad wiring between rheostat and meter

① Yes → Is speedometer normal with other meters disconnected?

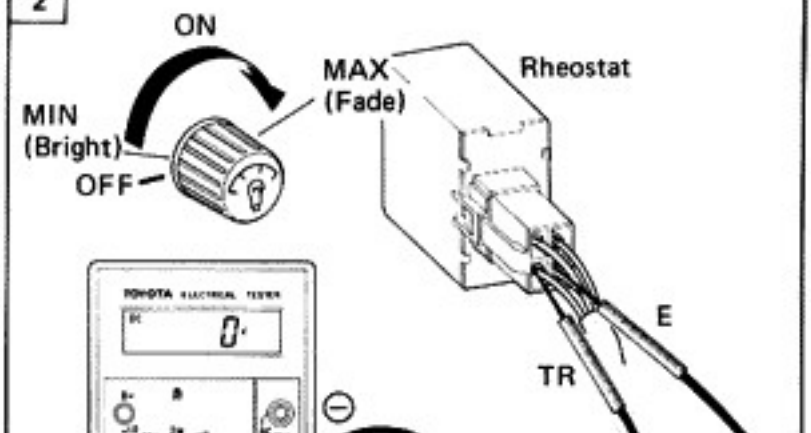
Yes → Connect other meters one by one to find faulty one. → Replace bad meter

No → Replace speedometer

1



2



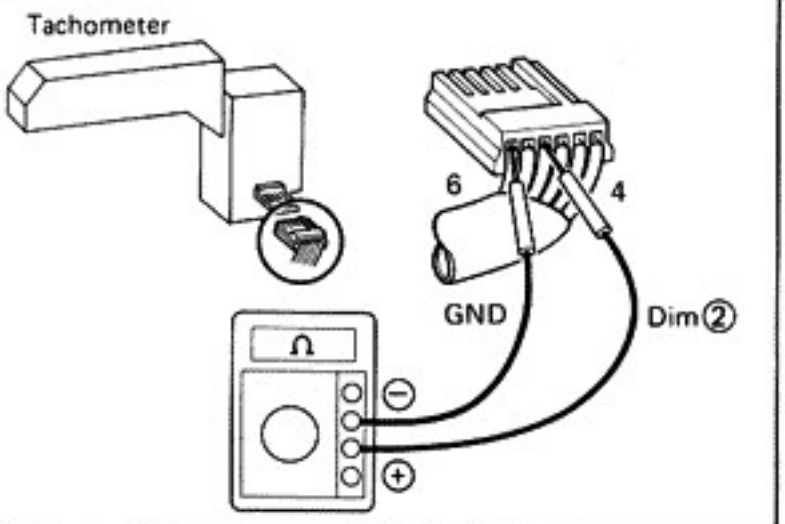
SECTION	TROUBLE	
E	Speedometer	Brightness does not change when rheostat is turned

Only speedometer and tachometer?
- Yes → Replace speedometer
- No → Only tachometer?
  - Yes → Remove tachometer and connect sub-harness (SST)
  - No → Remove meter and connect sub-harness (SST).

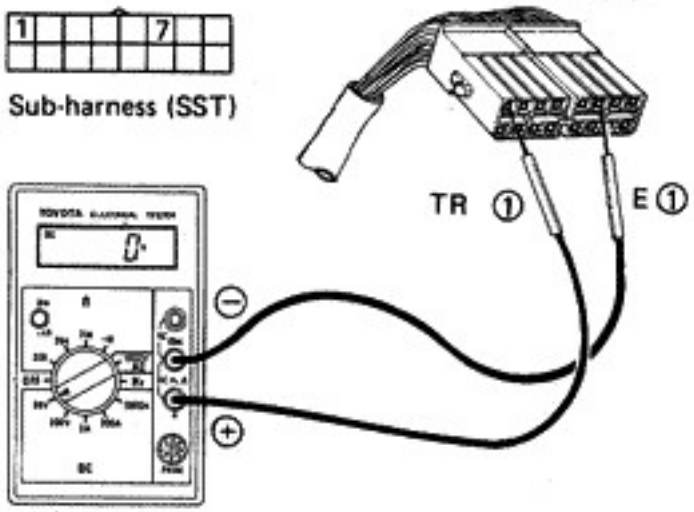
① With the ignition S/W at ON position, check that voltage between terminals 4 and 6 of tachometer connector is more than 3V with rheostat at MAX.
- OK → Replace tachometer
- No → Replace speedometer

② With the light S/W turned ON, does voltage between terminals 1 and 7 of sub-harness vary from 0 to 9V when rheostat is turned?
- No → ③ With the light S/W turned ON, does voltage between terminals TR and E of rheostat vary when rheostat is operated?
  - No → Check rheostat (See page BE-18)
  - Yes → Bad wiring between rheostat and meter
- Yes → Remove other meters and check for brightness change of speedometer.
  - No → Replace speedometer
  - Yes → Connect other meters one by one to find bad meter.

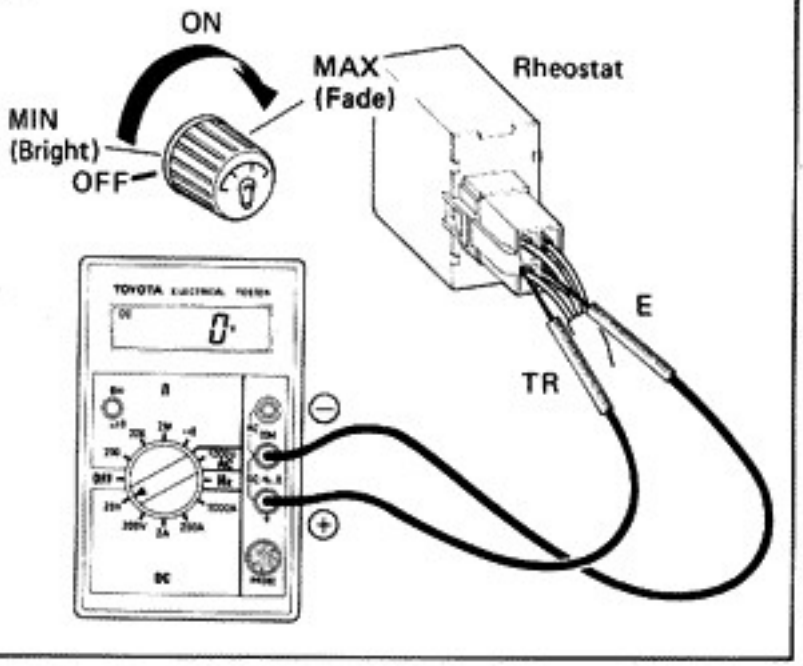
1


Tachometer
6
4
GND
Dim ②

2


1
7
Sub-harness (SST)
TR ①
E ①

3


ON
MAX
(Fade)
Rheostat
MIN
(Bright)
OFF
E
TR

SECTION	TROUBLE	
F	Speedometer	Abnormal speedometer signal

IG S/W ON, CRUISE CONTROL MAIN S/W ON

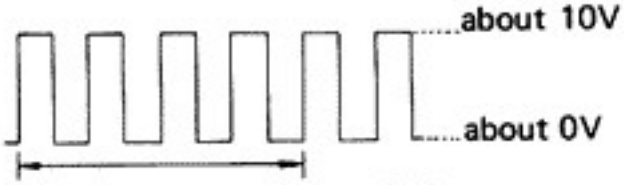
① With the ignition S/W at ON position, is there battery voltage on terminal 14 of connector with wiring meter connector disconnected?

No → Defective control parts for CRUISE CONTROL

Yes

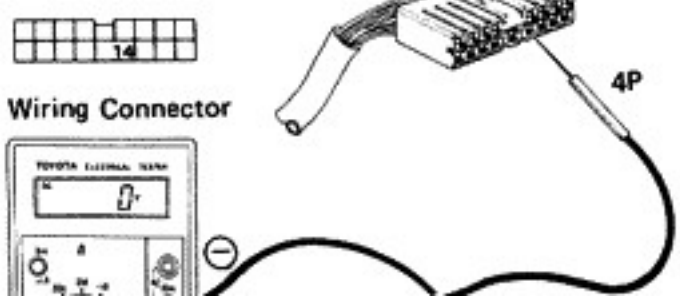
Connect sub-harness (SST)

② With the ignition S/W at ON position, does voltage between terminals 14 and 16 of sub-harness (SST) change from 10 to 0V when the magnet shaft is turned?

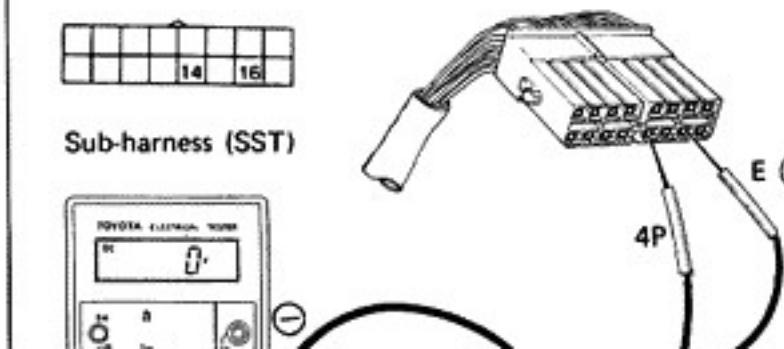


No → Replace speedometer

1



2



SECTION	TROUBLE	
G	Speedometer	No speed unit conversion

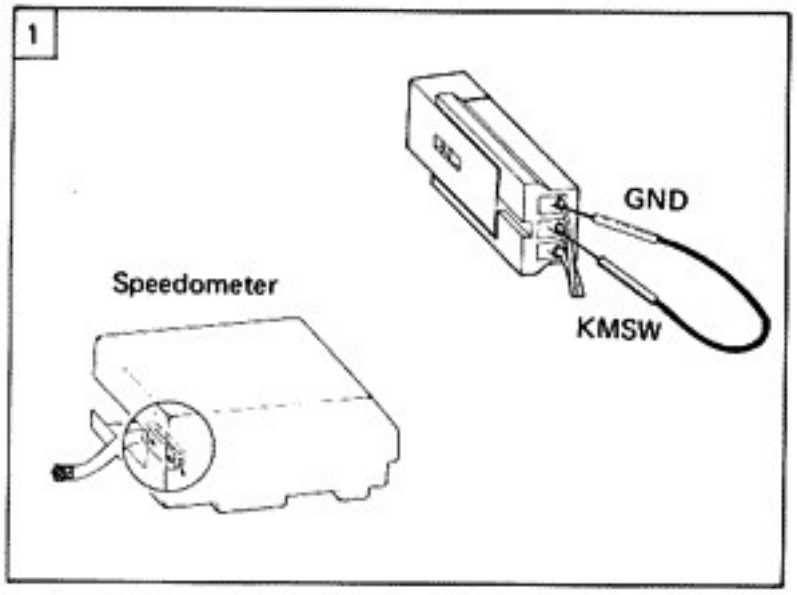
Remove meter and connect sub-harness (SST)

↓

① With the ignition S/W at ON position, is there speed unit conversion when rear terminals are short-circuited?

No → Replace speedometer

Yes → Replace speed scale change S/W



SECTION	TROUBLE	
H	Tachometer	No display at all

Only tachometer?

No → Refer to section A

Yes

Remove meter and connect sub-harness (SST)

① With the ignition S/W at ON position, check that voltage between terminals of tachometer connector is as follows:

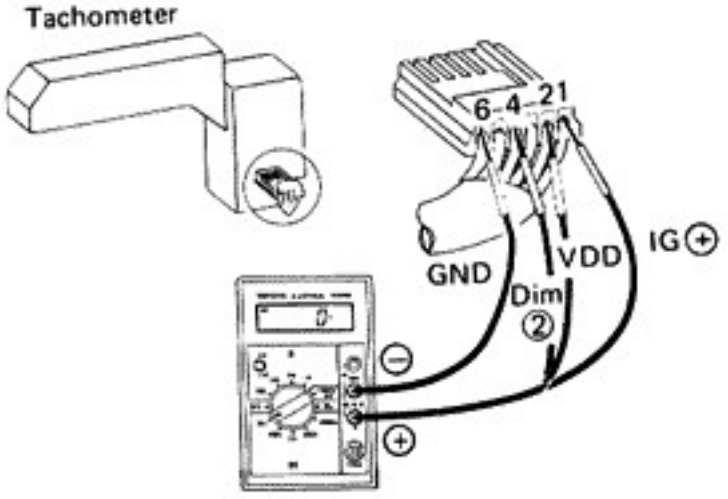
Terminals 1 – 6	Battery voltage
Terminals 2 – 6	4.0 – 6.0V
Terminals 4 – 6	0 – 1.5V

No → Replace speedomet

OK

Replace tachometer

1



SECTION	TROUBLE	
I	Tachometer	Zero indication even with engine running

Remove meter and connect sub-harness (SST)

↓

① With the ignition S/W at ON position, does voltage between terminals 16 and 17 of sub-harness fluctuate with variations in engine rpm?

No → Bad wiring between igniter and meter

Yes ↓

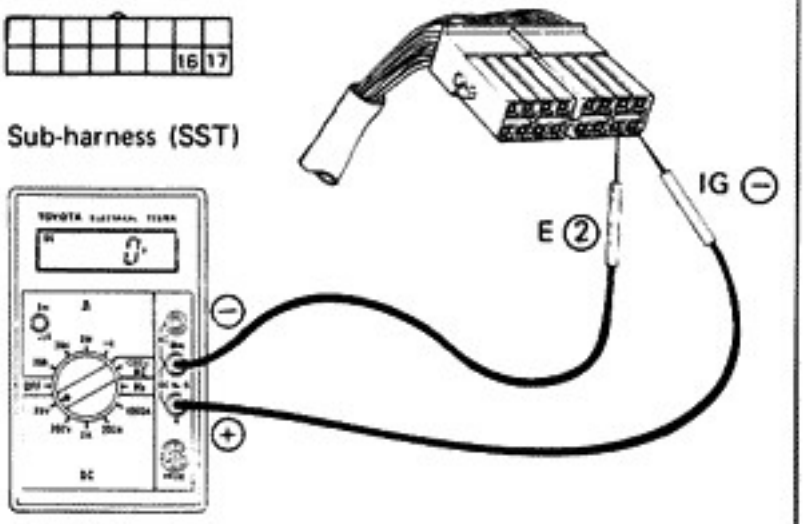
② With the ignition S/W at ON position, does voltage between terminals 3 and 6 of tachometer connector fluctuate between 0 and 1.5V when engine speed increases from 2,000 to 3,000 rpm?

No → Replace speedometer

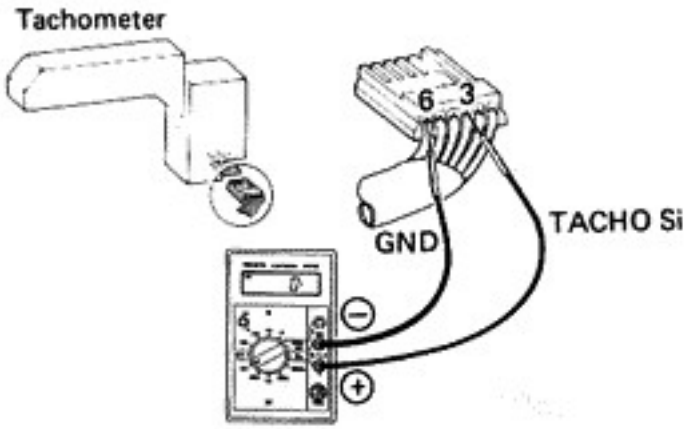
Yes ↓

Replace tachometer

1



2



SECTION	TROUBLE	
J	Tachometer	Lights do not dim when light and rheostat S/W turned ON

Only tachometer? — No → Refer to section C

Yes ↓

Remove meter and connect sub-harness (SST)

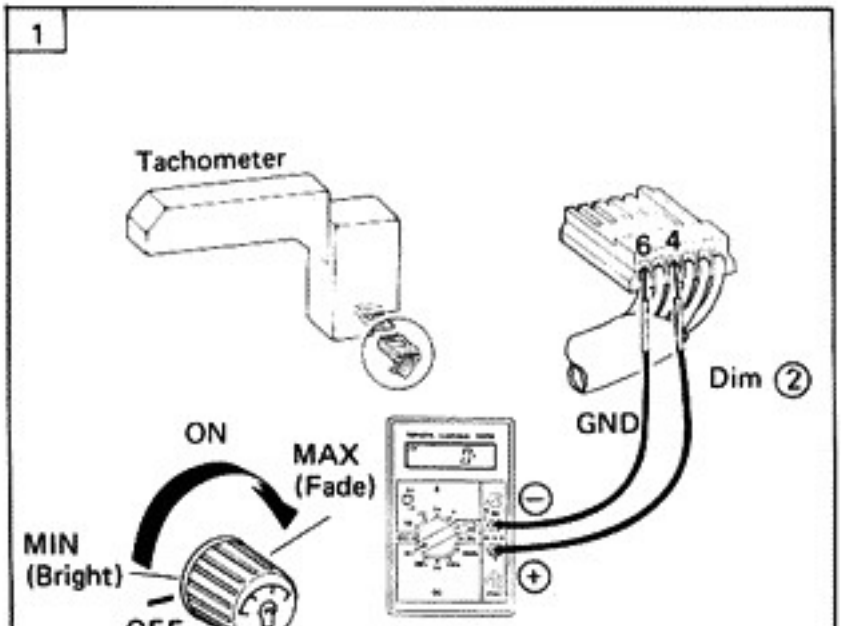
↓

① With the ignition S/W at ON position, light S/W turned ON and rheostat turned to MAX, is there 3 to 5V between terminals 4 and 6 of tachometer connector? — No → Replace speedometer

Yes ↓

Replace tachometer

NOTE:
Connector dimming is performed by the dim signal (Dim②) of the speedometer.



SECTION	TROUBLE	
K	Fuel gauge Temp. gauge	No display at all

For Fuel Gauge

For Temp. Gauge

Only fuel gauge? (Temp. gauge OK?) — Yes → Replace fuel and temp. gauges ← Yes — Only temp. gauge? (Fuel gauge OK?)

No ↓ (Only fuel gauge?)

No ↓ (Only temp. gauge?)

Only fuel and temp. gauges? (Speedometer and Tachometer OK?)

Yes ↓

No → Refer to section A

Remove meter and connect sub-harness (SST)

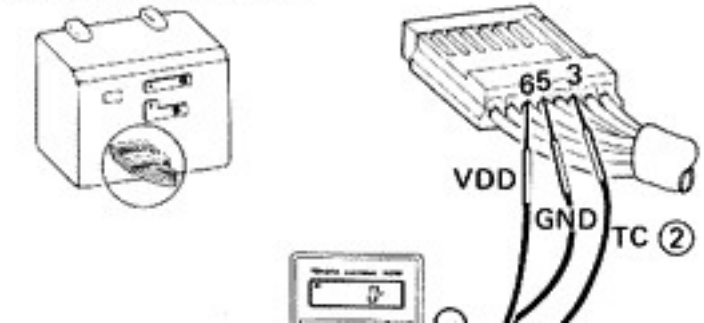
With the ignition S/W at ON position, check the voltage between terminals of fuel and temp. gauges connector is as follows:

①– 6 – 5		4.0 – 6.0V
①– 3 – 5	Light S/W turned OFF	0 – 2.0V
	Light S/W turned ON	4.0 – 6.0V
②– 4 – 5	Light S/W turned ON Rheostat turned OFF	3.0 – 6.0V
	Rheostat operate (MIN — MAX)	0 – 3.8V

No → Replace speedometer

OK → Replace fuel and temp. gauges

1



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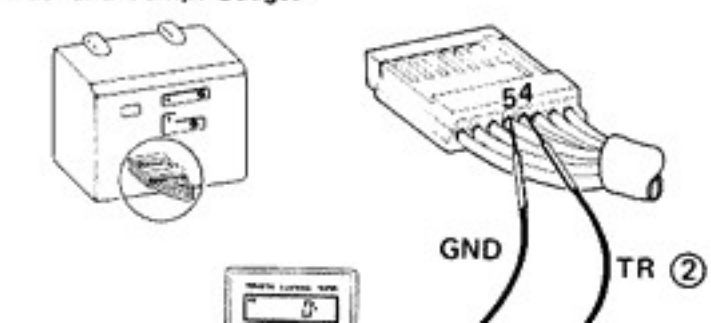


SECTION	TROUBLE	
L	Fuel gauge	Fuel scale change display (magnifier) does not illuminate

Remove meter and connect sub-harness (SST)

↓

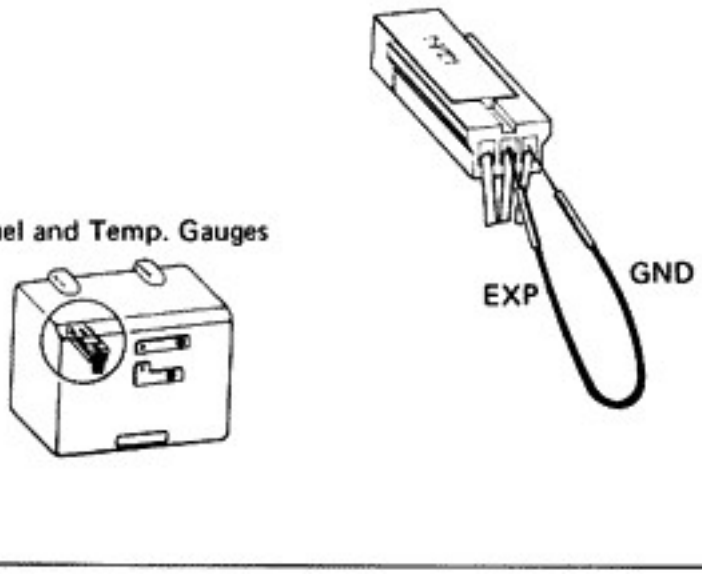
① With the ignition S/W at ON position, does magnifier illuminate when rear terminals are short-circuited?

Yes → Replace FUEL SCALE CHANGE S/W

No ↓

Replace fuel and temp. gauges

1



SECTION	TROUBLE	
M	Fuel gauge	Warning light does not light

Is bulb OK? — No → Replace bulb

Yes ↓

① Is circuit plate open-circuited? — Yes → Replace circuit plate

No ↓

Is terminal set nut loose? — Yes → Retighten

No ↓

Replace fuel and temp. gauges

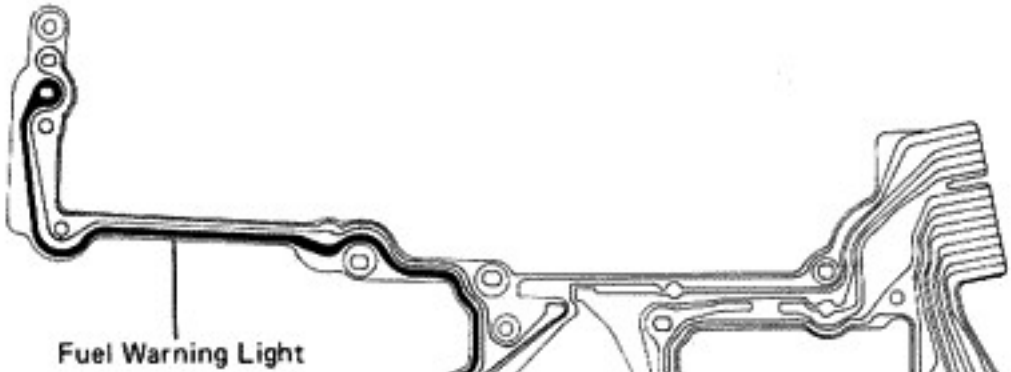
SECTION	TROUBLE	
N	Fuel gauge	Warning light always lit

① Is circuit plate short-circuited? — Yes → Replace circuit plate

No ↓

Replace fuel and temp. gauges

M-① N-①



SECTION	TROUBLE	
O	Fuel gauge	Defective display

Is fuel sender gauge OK? (See page BE-59)

No → Replace fuel sender gauge

Yes

Remove meter and connect sub-harness (SST)

① With the ignition S/W at ON position and fuel and temp. gauges removed, is there voltage between terminals 5 and 8 of speedometer?

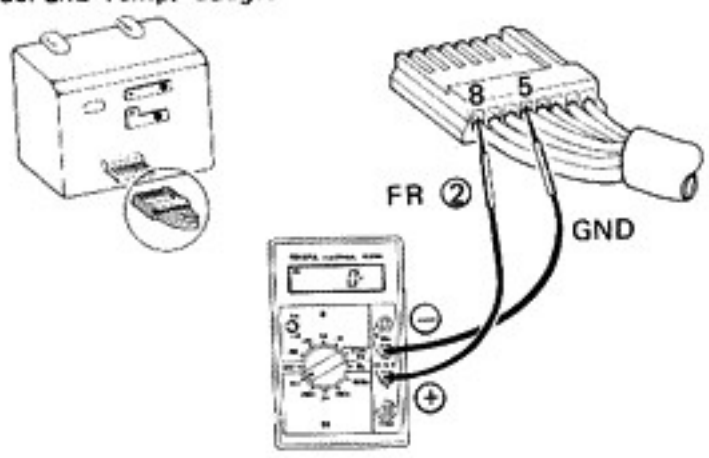
Yes → Replace speedometer

No

Replace fuel and temp. gauges

1

Fuel and Temp. Gauges



SECTION	TROUBLE	
P	Fuel gauge Water temp. gauge	Lights do not dim when light and rheostat S/W turned ON.

For Fuel Gauge

For Temp. Gauge

Only fuel gauge? (Does temp. gauge dim?) — Yes → Replace fuel and temp. gauges ← Yes — Only temp. gauge? (Does temp. gauge dim?)

No

No

Only fuel and temp. gauges do not dim? (Speedometer OK?)

Yes

No

Remove meter and connect sub-harness (SST)

Refer to Section C

① With the ignition S/W at ON position and connector of fuel and temp. gauges disconnected, check that there is voltage between terminals of the connector as follows:

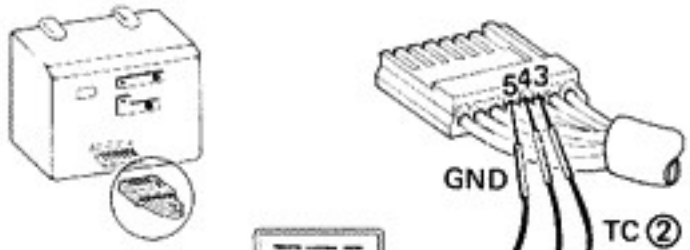
3 – 5	Light S/W ON	4.0 – 6.0V
	Light S/W OFF	0 – 1.0V
4 – 5	Light S/W turned ON	
	Rheostat turned OFF	3.0 – 6.0V
	Rheostat operate (MIN — MAX)	0 – 3.8V

No → Replace speedometer

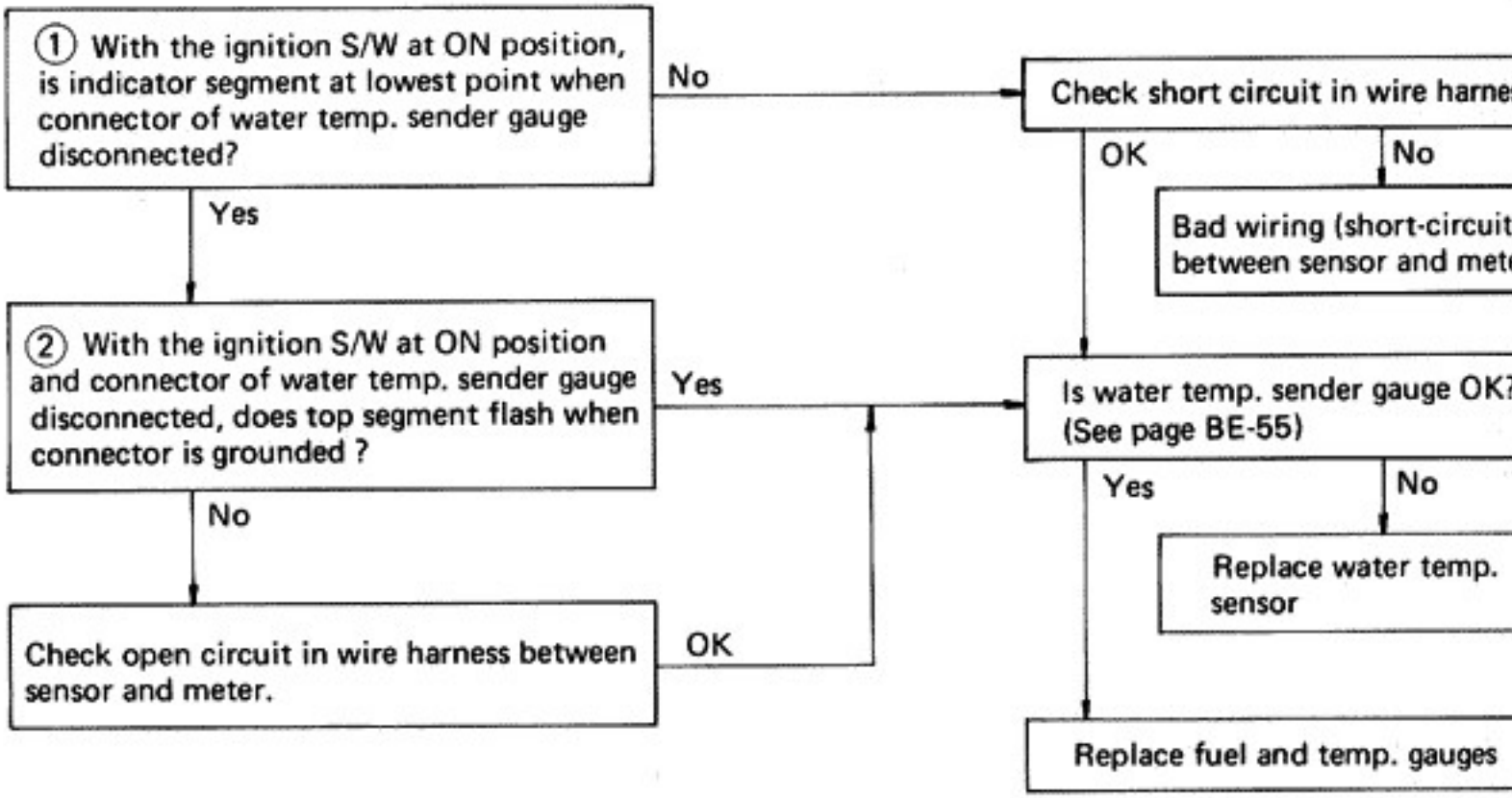
OK → Replace fuel and temp. gauges

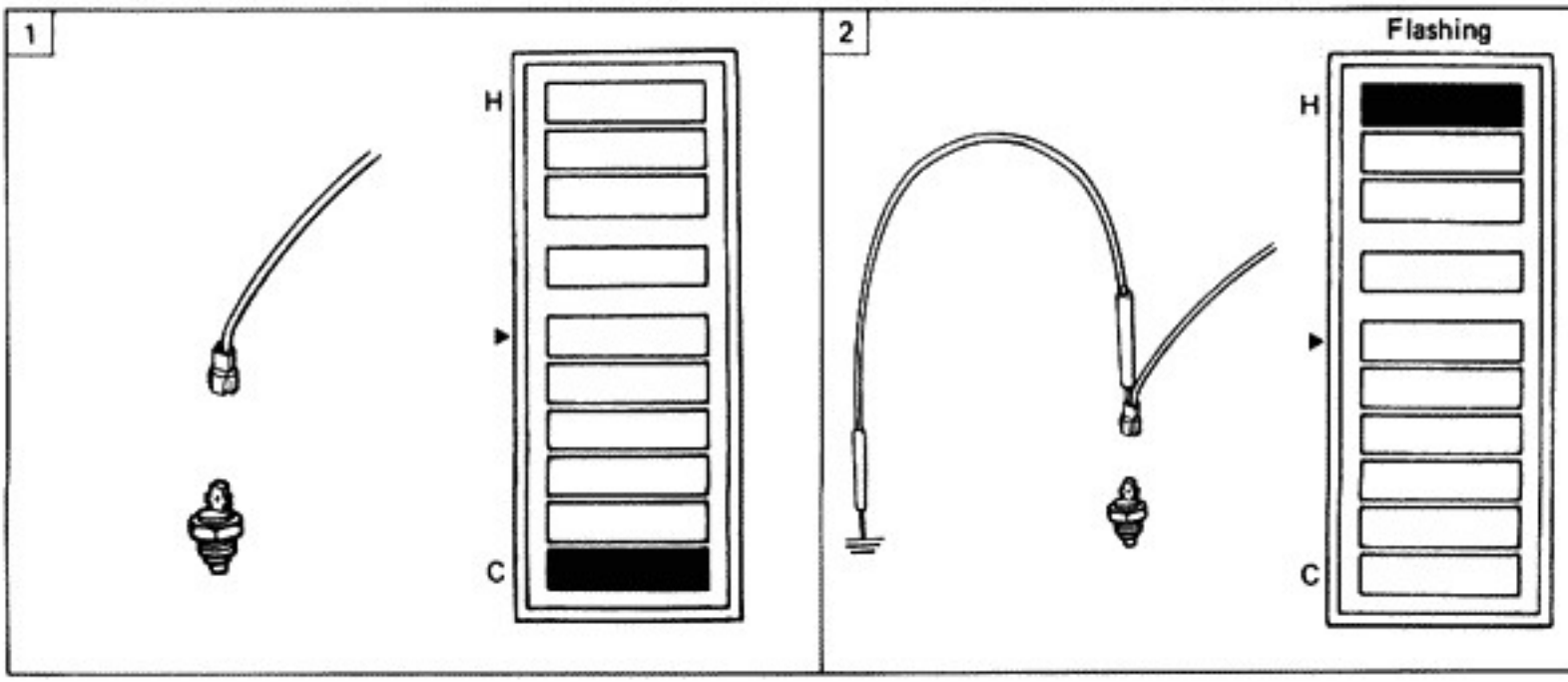
1

Fuel and Temp. Gauges



SECTION	TROUBLE	
Q	Water temp. gauge	Defective indication



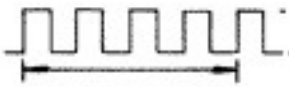


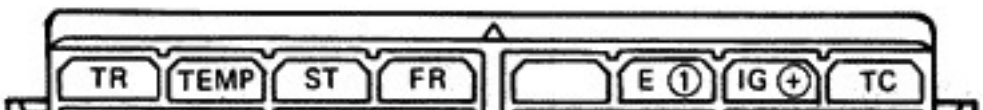
ON-VEHICLE INSPECTION OF COMBINATION METER (Digital Type)

1. REMOVE COMBINATION METER AND CONNECT SUB-HARNESS (SST)

   SST 09082-00100

2. INSPECT CIRCUIT AND PARTS OPERATION

Terminals of sub-harness	Specification
E① – Body ground E② – Body ground	Continuity Zero Ω
IG⊕ – E①	Battery voltage (Ignition switch ON)
ST – E①	8 – 11V (Cranking)
TC – E①	Battery voltage (Light switch and rheostat turned ON.) 0 V (Light switch turned ON and rheostat turned OFF.)
TR – E①	0 – 1.0V (Light switch turned OFF.) 0 – 1.0V (Light switch turned ON and rheostat MIN) 6 – 9V (Light switch turned ON and rheostat MAX)
4P – E①	 about 10V about 0V 4 times/revolution of magnet shaft (Ignition switch ON)
FV – E②	4.0 – 6.0V (Ignition switch ON)
FR – E②	4.4 – 4.8V (F level) (Ignition switch ON) 3.27V (1/2 level) (Ignition switch ON) 2.3 – 2.7V (1/4 level) (Ignition switch ON) 0.3 – 0.5V (E level) (Ignition switch ON)
IG⊖ – E①	11 – 13V (Idling) 10 – 12V (3,000 rpm)
TEMP – E②	1.7V (No. 6 segment is lighted) (Ignition switch ON)



Speedometer

ON-VEHICLE INSPECTION OF SPEEDOMETER

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

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

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

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

(km/h)

Standard indication	Allowable range
20	18 – 22
40	38 – 42
60	58 – 62
80	78 – 82
100	97 – 103
120	117 – 123

(mph)

Standard indication	Allowable range
20	19 – 21
40	39 – 41
60	59 – 61
80	78 – 82

Tachometer

ON-VEHICLE INSPECTION OF TACHOMETER

(a) Connect a tune-up test tachometer and start th engine.

(b) Compare the tester and tachometer indications.

If the error is excessive, replace the tachometer.

CAUTION:

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

(rpm

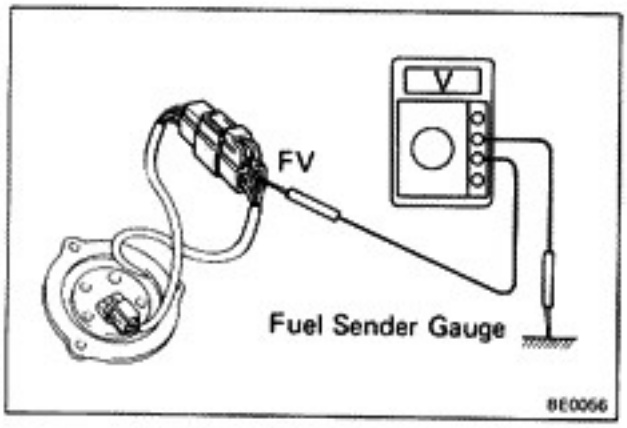
Standard indication	Allowable range	Standard indication	Allowable range

Fuel Gauge

INSPECTION OF FUEL GAUGE

1. INSPECT RECEIVER GAUGE OPERATION

Disconnect the connector from the fuel sender gauge.

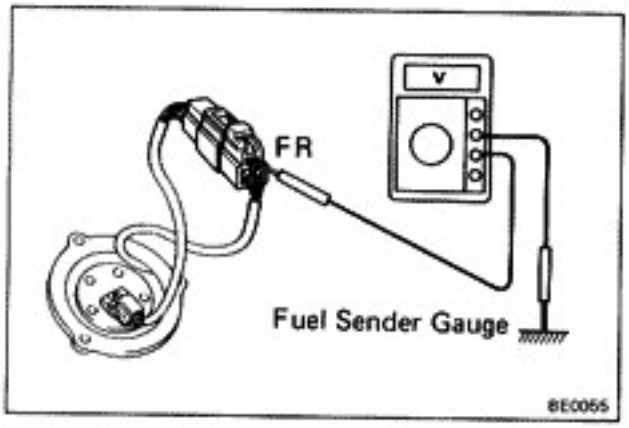


2. INSPECT POWER SOURCE LINE TO CONNECTOR

Inspect the power source line between terminal FV and body ground of the sender gauge connector.

Voltage: 4.0 – 6.0V

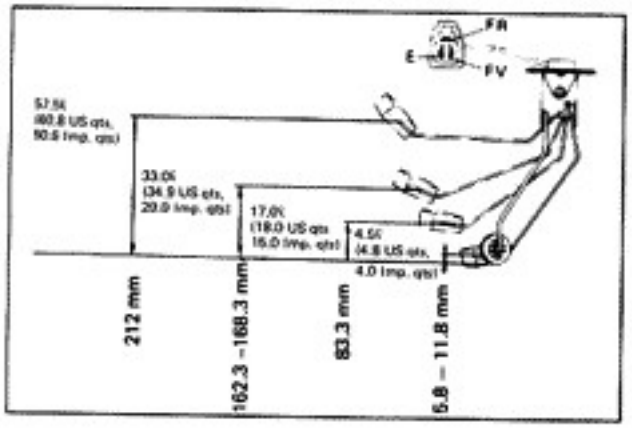
CAUTION: Never short circuit terminal FV.



3. INSPECT OUTPUT SIGNAL VOLTAGE

Inspect the output signal voltage between terminal FR and body ground of the sender gauge connector.

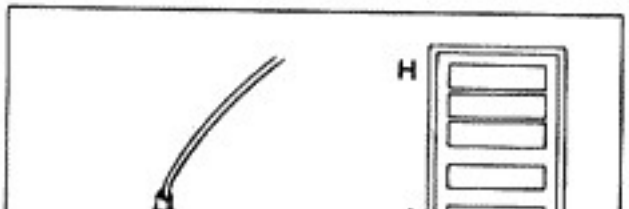
Voltage:	**4.4 – 4.8V**	**at F level**
	3.27V	**at 1/2 level**
	2.3 – 2.7V	**at 1/4 level**
	0.3 – 0.5V	**at E level**



4. INSPECT SENDER GAUGE OPERATION

Inspect the resistance between terminals FR and E.

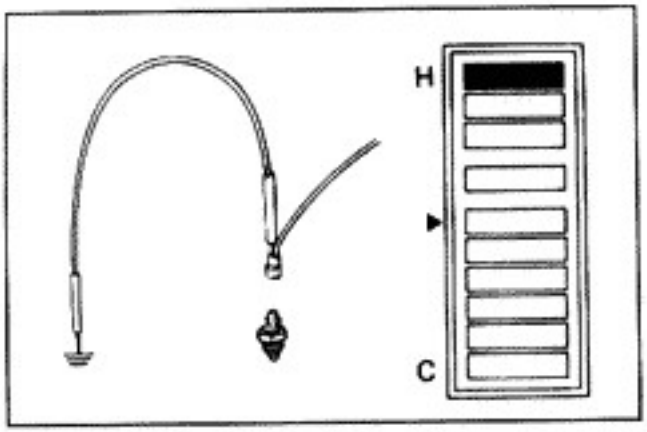
Resistance:	**270 – 310 Ω**	**212 mm (8.35 in.)**
	186 – 226 Ω	**162.3 – 168.3 mm (6.390 – 6.626 in.)**
	140 – 180 Ω	**83.3 mm (3.280 in.)**
	17 – 33 Ω	**5.8 – 11.8 mm (0.228 – 0.465 in.)**



Water Temperature Gauge

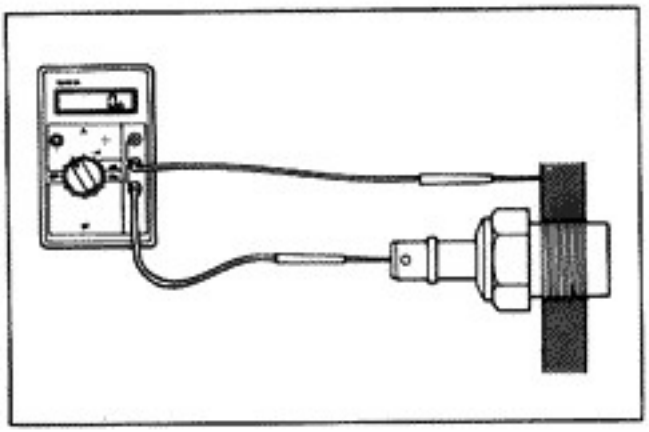
INSPECTION OF WATER TEMPERATURE GAUGE

1. INSPECT RECEIVER GAUGE OPERATION



(d) Ground the connector of the sender gauge with t connector disconnected.

(e) Check that the top segmeter flashes with the ignit switch at ON position.



2. **INSPECT SENDER GAUGE OPERATION**

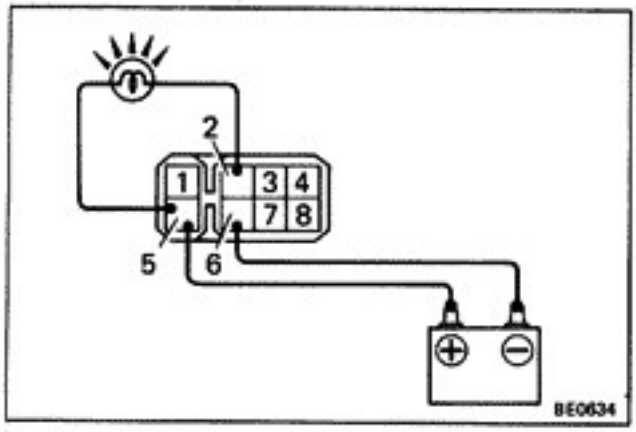
Inspect the resistance between the terminals of the sen gauge and body ground.

Resistance: **192 – 260 Ω 50°C (122°F)**
65 – 89 Ω 80°C (176°F)

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
	Defogger relay faulty	Check relay	BE-61
	Defogger switch faulty	Check switch	BE-61
	Defogger wire broken	Check wires	BE-62
	Wiring and ground faulty	Repair as necessary	



Rear Window Defogger Switch

INSPECTION OF REAR WINDOW DEFOGGER SWITCH

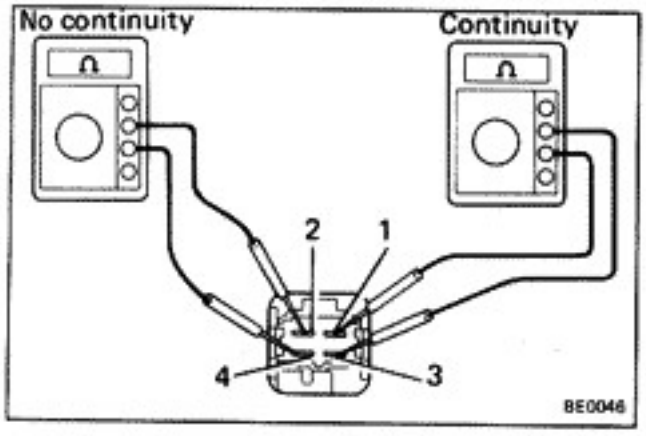
INSPECT SWITCH OPERATION

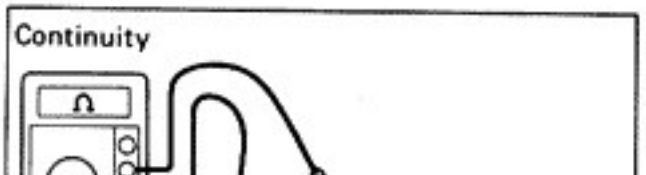
(a) Connect the positive (+) lead from the battery t terminal 5. Connect the negative (–) lead to termin 6.

(b) Connect an ohmmeter between terminals 2 and 6.

(c) Check that there is continuity between terminals fo 10 – 20 minutes with the switch turned on.

If operation is not as specified, replace the switch.





Rear Window Defogger Relay

INSPECTION OF REAR WINDOW DEFOGGER RELAY

1. INSPECT RELAY CONTINUITY

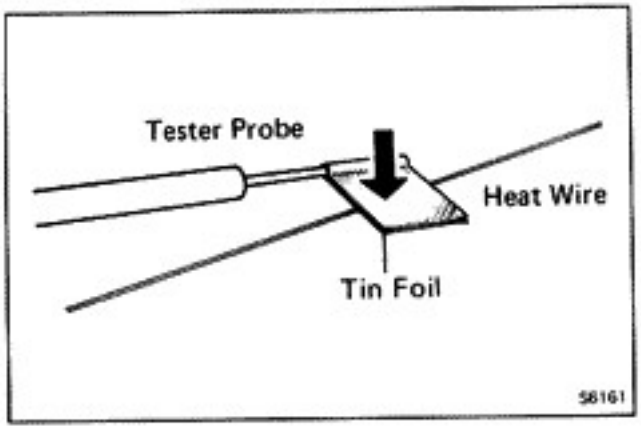
(a) Check that the there is continuity between terminal 1 and 3.

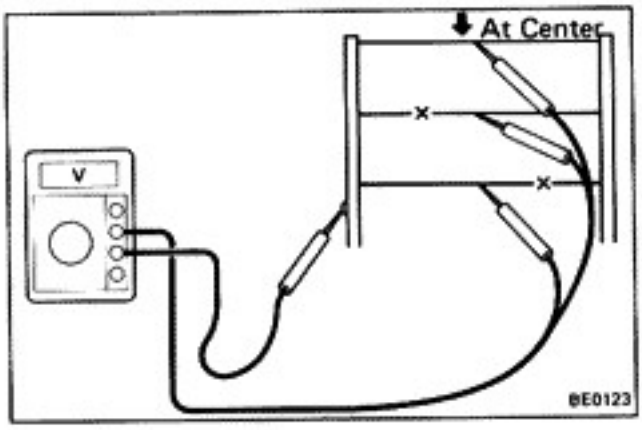
(b) Check that there is no continuity between terminal 2 and 4.

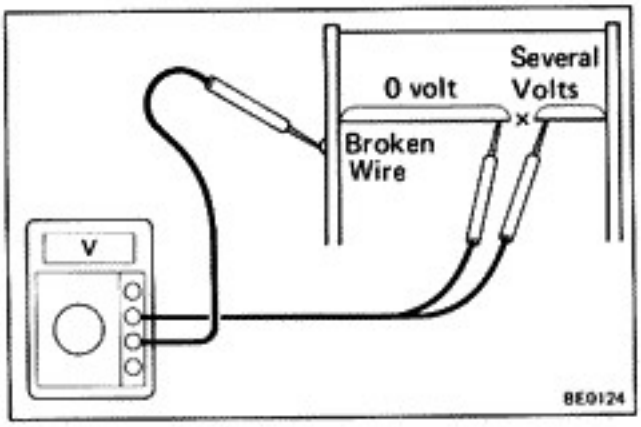
If continuity is not as specified, replace the relay.

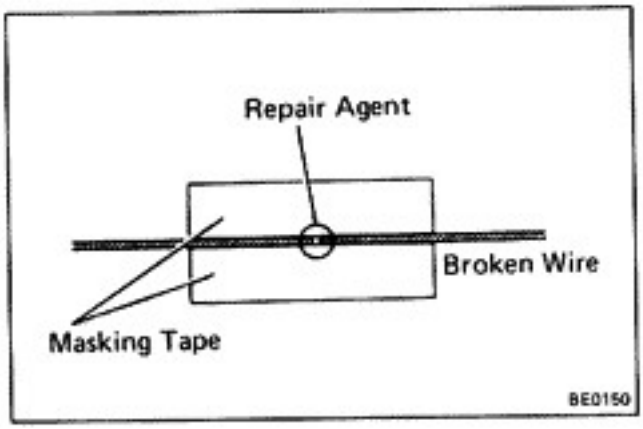
2. INSPECT RELAY OPERATION

Connect the positive (+) lead from the battery to termina 1 and connect the negative (–) lead from the battery to









Rear Window Defogger Wires

CAUTION:

- **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

(a) Turn the defogger switch to ON.

(b) Inspect the voltage at the center of each heat wire.

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

NOTE: If there is 10V, the wire is broken between th center of the wire and positive (+) end. If there is n voltage, the wire is broken between the center of the wi and ground.

2. INSPECT FOR WIRE BREAKAGE POINT

(a) Place the voltmeter positive (+) lead against th defogger positive (+) terminal.

(b) Place the voltmeter negative (–) lead with the fo strip against the heat wire at the positive (+) termin end and shift it toward the negative (–) terminal en

(c) The point where the voltmeter deflects from zero several volts is the place where the heat wire is broke

NOTE: If the heat wire is not broken, the voltmeter w indicate 0V at the positive (+) end of the heat wire b gradually increase to about 12V as the meter probe moved to the other end.

REPAIR OF REAR WINDOW DEFOGGER WIRES

1. CLEAN BROKEN WIRE TIPS WITH WHITE GASOLINE

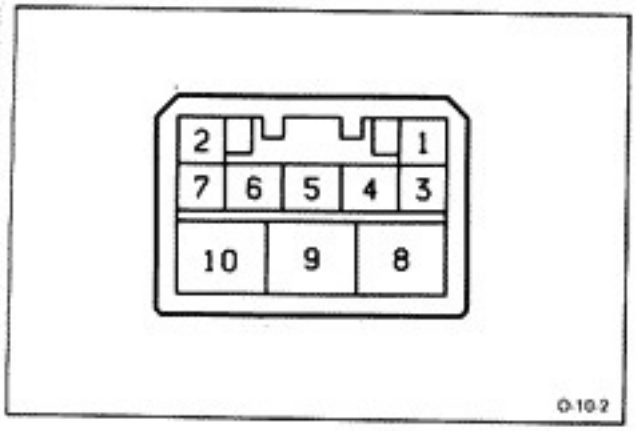
2. PLACE MASKING TAPE ALONG BOTH SIDES OF WIRE TO BE REPAIRED

(a) Thoroughly mix the repair agent (Dupont paste N

HEATER

Troubleshooting

Problem	Possible cause	Remedy	Page
Blower does not work when fan switch is on	Circuit breaker OFF	Reset breaker and check for short	BE-4
	Heater main relay faulty	Check relay	BE-63
	Heater blower switch faulty	Check switch	BE-63
	Heater blower resistor faulty	Check resistor	BE-64
	Heater blower motor faulty	Replace motor	
	Wiring or ground faulty	Repair as necessary	
Incorrect temperature output	Control cables broken or binding	Check cables	BE-64
	Heater hoses leaking or clogged	Replace hose	
	Water valve faulty	Replace valve	
	Air dampers broken	Repair dampers	
	Air ducts clogged	Repair ducts	
	Heater radiator leaking or clogged	Replace radiator	
	Heater control unit faulty	Repair control unit	



Heater Blower Switch

INSPECTION OF HEATER BLOWER SWITCH

INSPECT SWITCH CONTINUITY

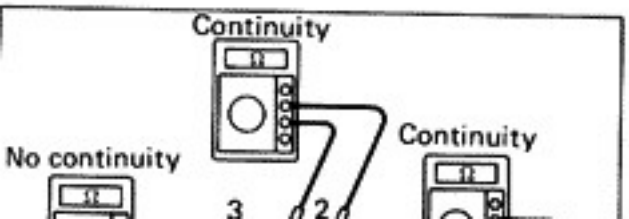
Inspect heater blower switch continuity.

Switch position \ Terminal	10	4	9	5	8	6 *	7 *
OFF						○—○	
I	○—○					○—○	
II	○—○	○—○				○—○	
III	○—○	○—○	○			○—○	
IV	○—○	○—○	○	○		○—○	

* For illumination light

If continuity is not as specified, replace the switch.

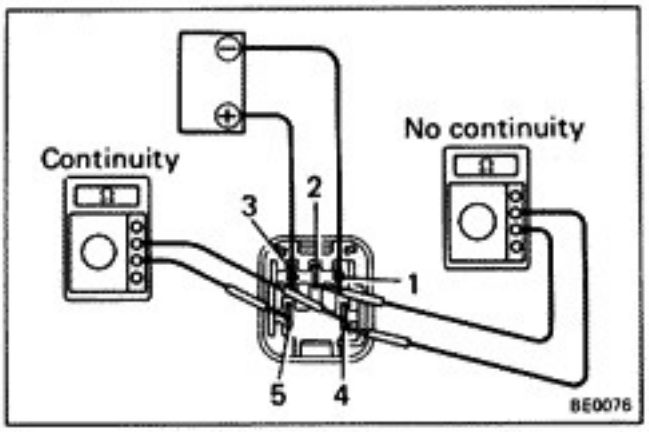
Heater Relay



INSPECTION OF HEATER MAIN RELAY

1. INSPECT RELAY CONTINUITY

(a) Check that there is continuity between terminals 1 and 3.



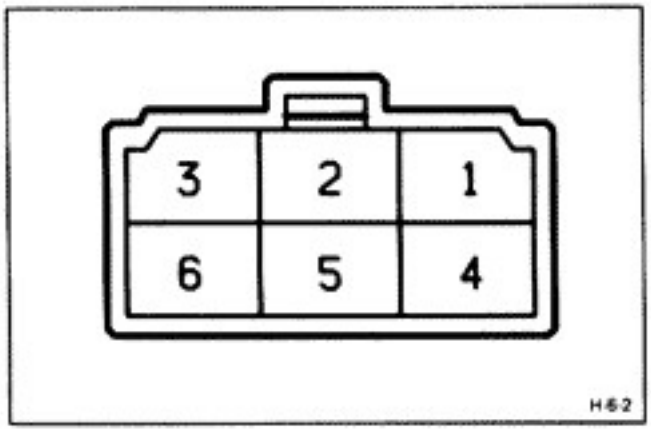
2. INSPECT RELAY OPERATION

(a) Apply battery voltage across terminals 1 and 3.

(b) Check that there is continuity between termina and 5.

(c) Check that there is no continuity between termi 2 and 4.

If operation is not as specified, replace the relay.



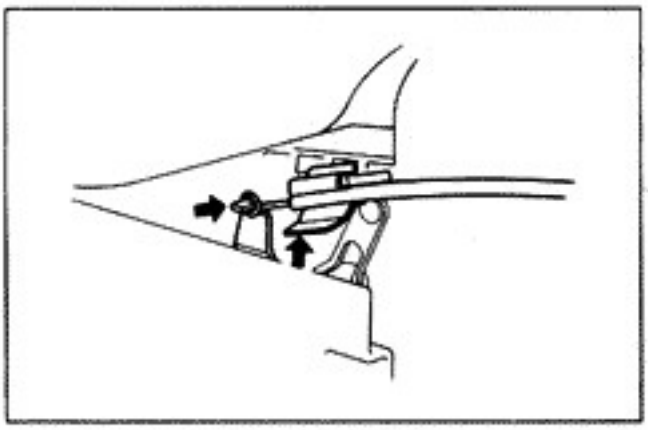
Heater Blower Resistor

INSPECTION OF HEATER BLOWER RESIST

INSPECT RESISTOR CONTINUITY

Check that there is continuity between terminals 1 and

If there is no continuity, replace the resistor.

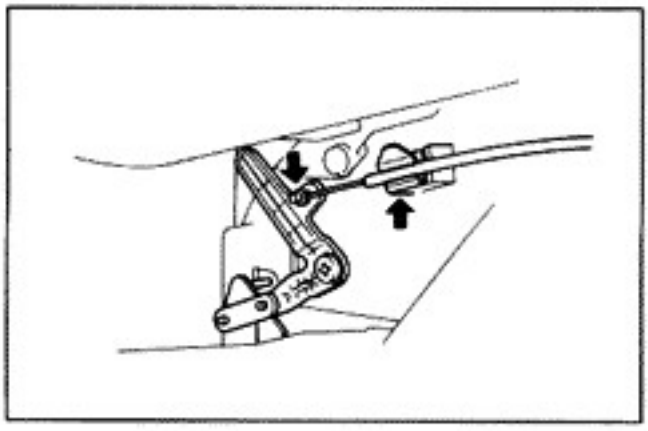


Heater Control

ADJUSTMENT OF HEATER CONTROL

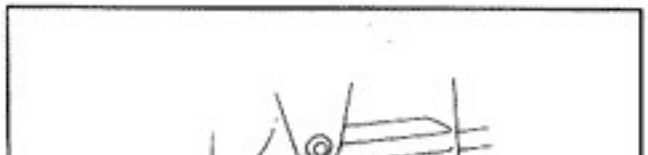
SET AIR INLET DAMPER

Set the air inlet damper and control lever to "FRESH"



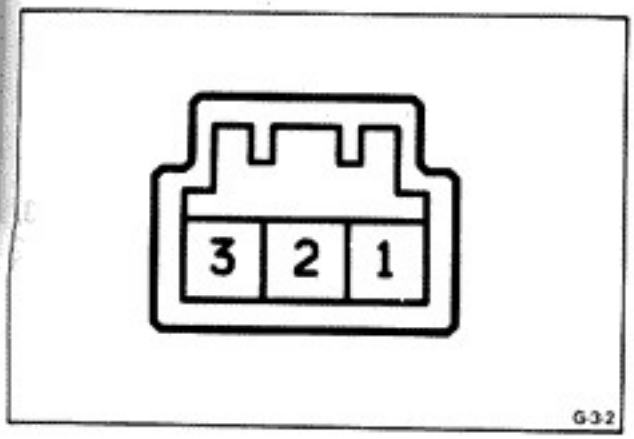
SET MODE SELECTOR DAMPER

Set the mode selector damper and control lever to "VE



SET BALANCE DAMPER

Set the balance damper and control lever to the ce position.



POWER WINDOW

Power Window Lock Switch

INSPECTION OF POWER WINDOW LOCK SWITCH

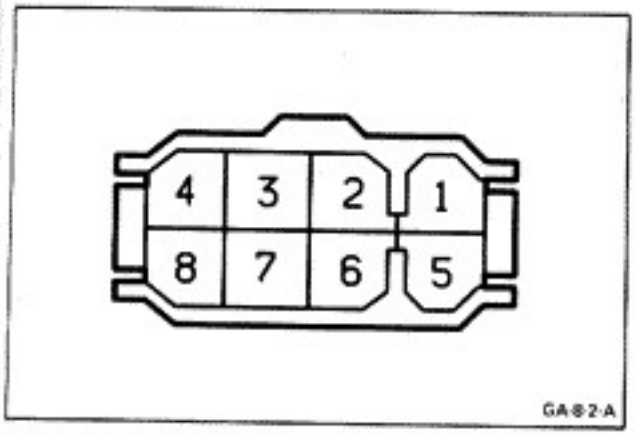
INSPECT SWITCH CONTINUITY

Inspect the switch continuity between terminals.

Switch position \ Terminal	1	2	3
LOCK	○——	——○	
OFF			
UNLOCK		○——	——○

If continuity is not as specified, replace the switch.

Power Window Master Switch



INSPECTION OF POWER WINDOW MASTER SWITCH

INSPECT SWITCH CONTINUITY

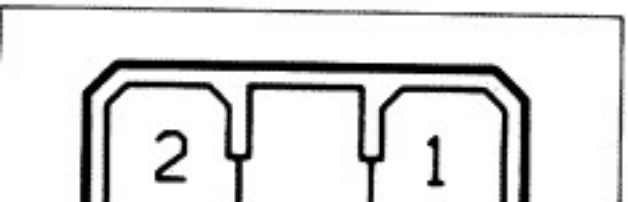
Switch	Left			Right			
Switch position \ Terminal	2	3	7	6	2	1	5
UP	○——		——○	○——	——○		——○
OFF		○——	——○	○——	——○	——○	
DOWN	○——	——○		○——	——○		

If continuity is not as specified, replace the switch.

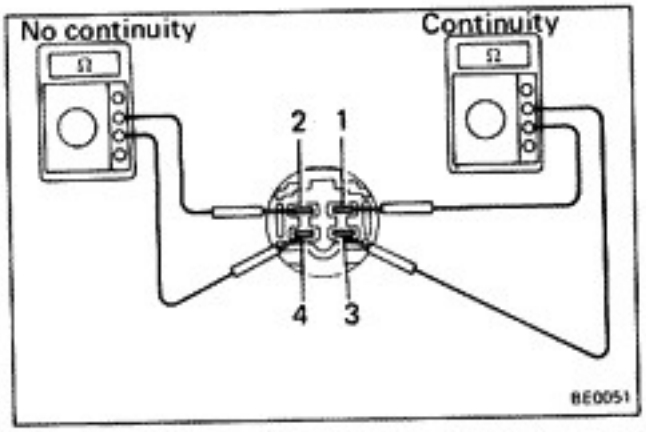
Power Window Door Switch

INSPECTION OF POWER WINDOW DOOR SWITCH

INSPECT SWITCH CONTINUITY



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

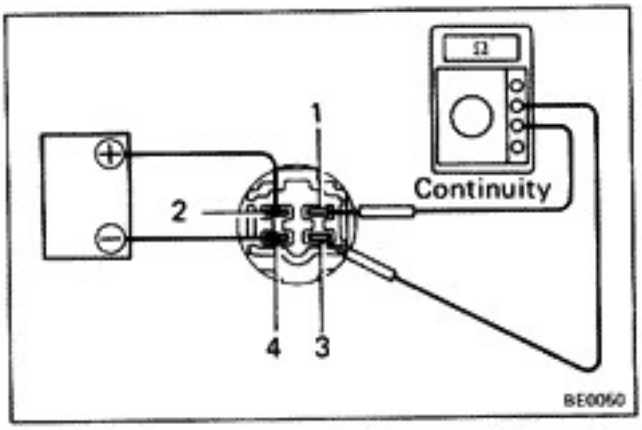


Power Main Relay

INSPECTION OF POWER MAIN RELAY

1. INSPECT RELAY CONTINUITY

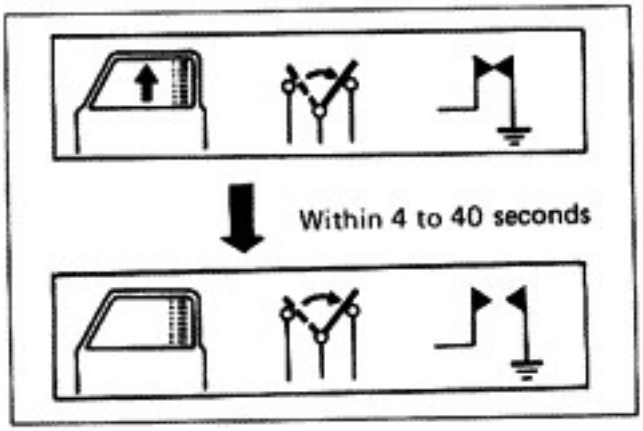
Inspect that there is continuity between terminals 1 and 3.
Inspect that there is no continuity between terminals 2 and 4.



2. INSPECT RELAY OPERATION

Inspect the continuity between terminals 2 and 4 with battery voltage applied between terminals 1 and 3.

If continuity is not as specified, replace the relay.

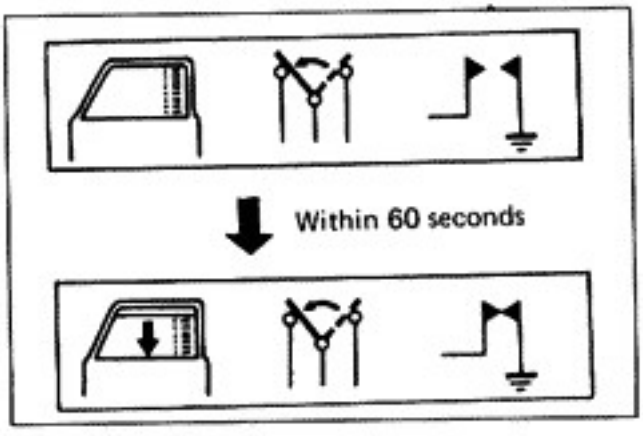


Power Window Motor

INSPECTION OF POWER WINDOW MOTOR

1. INSPECT CIRCUIT BREAKER OPERATION

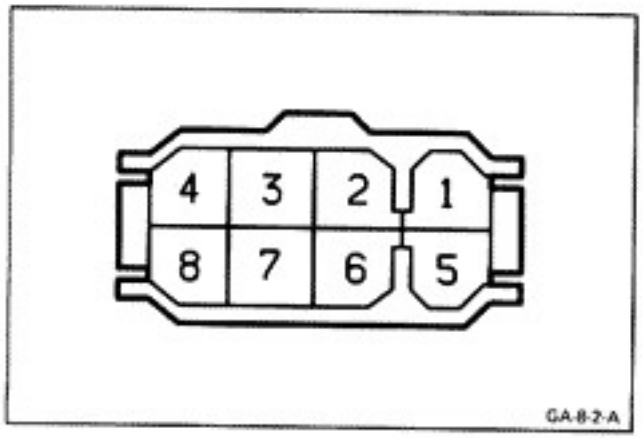
(a) With the window in the full closed position, hold th power window switch at "UP" and check that there a circuit breaker operation noise within 4 to 4 seconds.



(b) With the window in the fully closed position, hol the switch at "DOWN" and check that the windo begins to descend within 60 seconds.

2. INSPECT MOTOR OPERATION

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



DOOR LOCK CONTROL SYSTEM

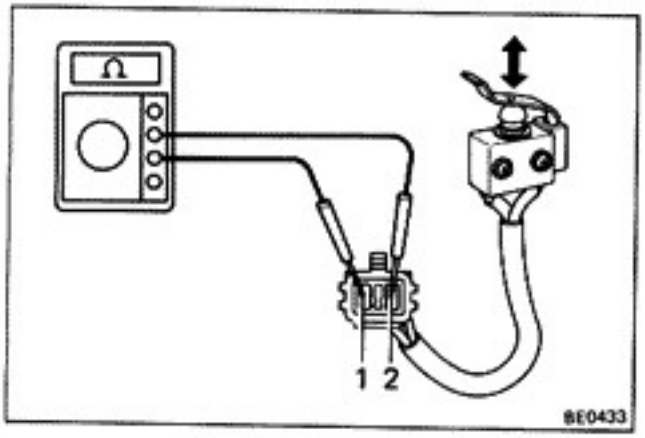
Door Lock Control Switch

INSPECTION OF DOOR LOCK CONTROL SWITCH

INSPECT SWITCH CONTINUITY

Switch position \ Terminal	8	6	4
LOCK	○——	——○	
OFF			
UNLOCK		○——	——○

If continuity is not as specified, replace the switch.



Key Unlock Switch

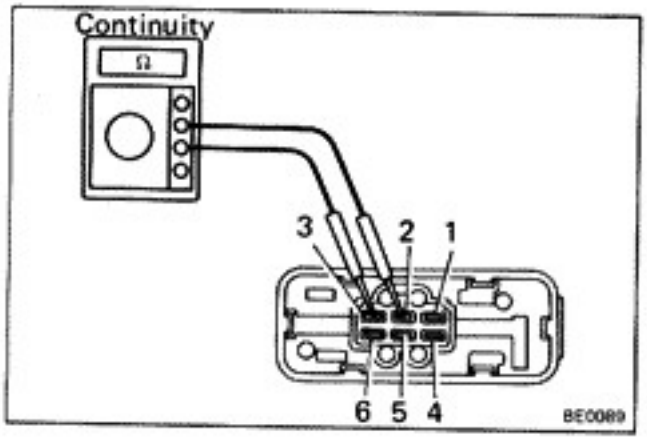
INSPECTION OF KEY UNLOCK SWITCH

INSPECT SWITCH OPERATION

(a) Check that there is continuity between terminals whe the switch pin is pushed.

(b) Check that there is no continuity between termina when the switch is free.

If operation is not as specified, replace the switch.



Door Lock Relay

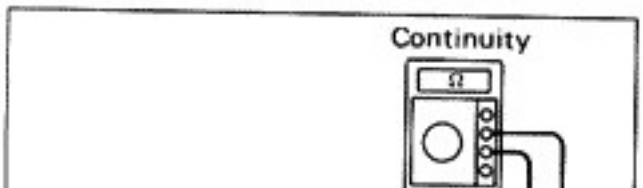
INSPECTION OF DOOR LOCK RELAY

1. INSPECT RELAY CONTINUITY

(a) Check that there is continuity between terminals 2, and 4.

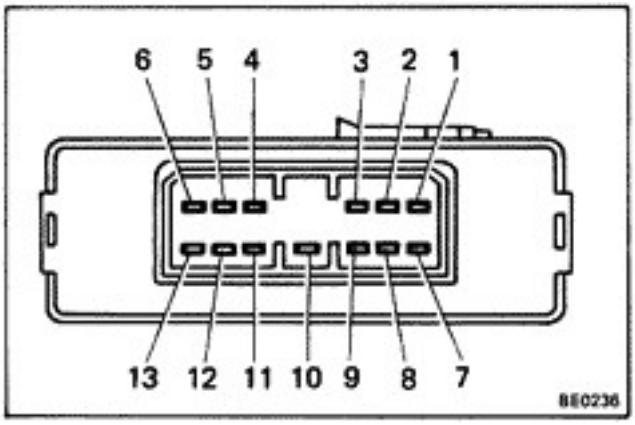
(b) Check that there is no continuity between termina 1, 2 and 6.

If continuity is not as specified, replace the relay.



2. INSPECT RELAY OPERATION

(a) Connect the positive (+) lead from the battery t terminal 2. Connect the negative (−) lead to termina 3 and 4.



Door Lock Control Relay

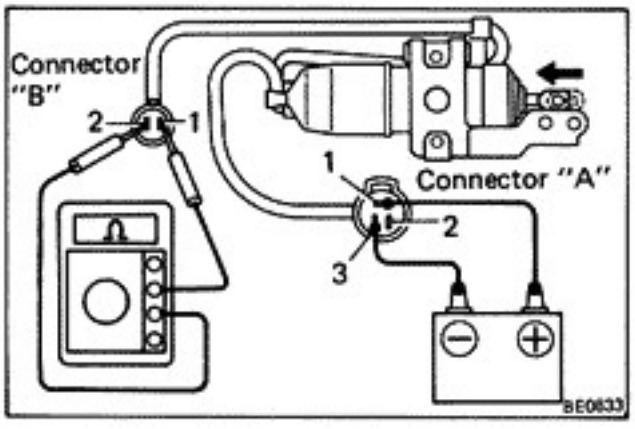
INSPECTION OF DOOR LOCK CONTROL RELA

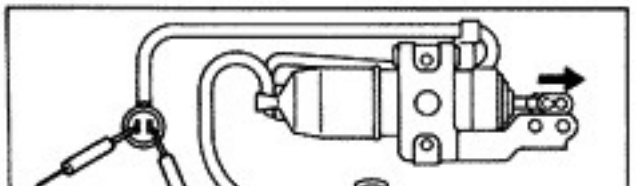
INSPECT DOOR LOCK CONTROL RELAY CIRCUIT

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

Terminal	Check Item	Tester Connection	Condition	Voltage or Continuit
2	Voltage	2-Body ground	–	Battery voltage
3	Continuity	3-4	–	Continuity
6	Continuity	6-Body ground	Turn door lock control switch to LOCK.	Continuity
			Turn door lock control switch to UNLOCK or OFF.	No continuity
7	Continuity	7-Body ground	Turn LH key unlock switch on.	Continuity
			Turn LH key unlock switch off.	No continuity
9	Continuity	9-Body ground	LH door lock knob pushed.	No continuity
			LH door lock knob pulled.	Continuity
10	Continuity	10-Body ground	–	Continuity
11	Continuity	11-Body ground	RH door lock knob pushed.	No continuity
			RH door lock knob pulled.	Continuity
12	Continuity	12-Body ground	Turn unlock warning switch and LH door courtesy switch off.	Continuity
			Turn unlock warning switch and/or door LH door courtesy switch off.	No continuity
13	Continuity	13-Body ground	Turn RH key unlock switch on and/or door lock control switch to UNLOCK.	Continuity
			Turn RH key unlock switch off and/or door lock control switch to LOCK or OFF.	No continuity

If circuit is correct as specified, replace the relay.





Door Lock Solenoid

INSPECTION OF DOOR LOCK SOLENOID

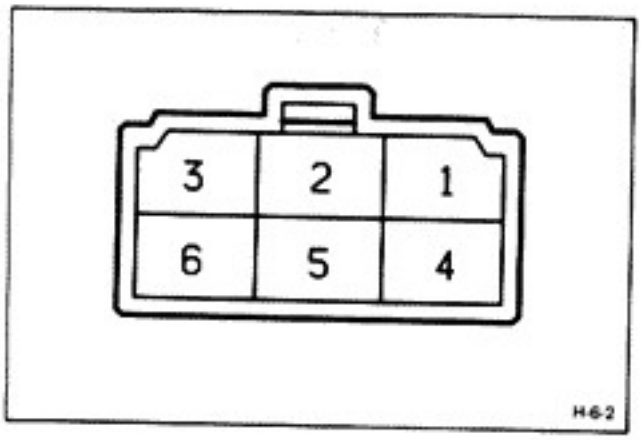
INSPECT SOLENOID OPERATION

(a) Connect the positive (+) lead from the battery terminal A-1. Connect the negative (–) lead terminal A-3. Check that the solenoid operates lo direction.

(b) Check that there is no continuity between termin B-1 and B-2.

(c) Connect the positive (+) lead from the battery terminal 2. Connect the negative (–) lead to termi A-3. Check that the solenoid operates locks directi

(d) Check that there is continuity between terminals and B-2.



SUN ROOF

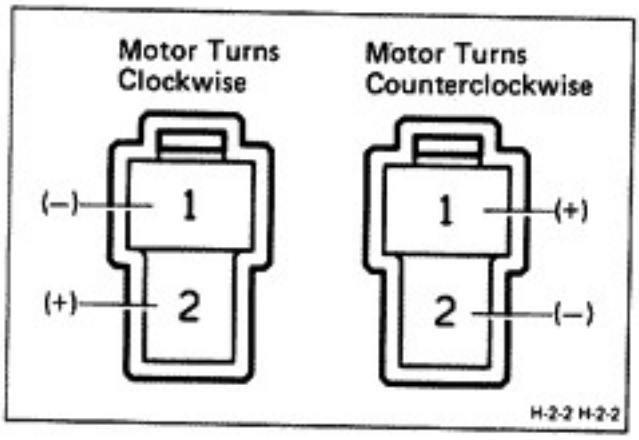
Sun Roof Switch

INSPECTION OF SUN ROOF SWITCH

INSPECT SWITCH CONTINUITY

Switch position \ Terminal	3	1	4	5
OPEN	○—○		○—○	
OFF		○—○	○—○	
CLOSE	○	○	○	○

If continuity is not as specified, replace the switch.



Sun Roof Motor

INSPECTION OF SUN ROOF MOTOR

INSPECT MOTOR OPERATION

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

(b) Connect the positive (+) lead from the battery to terminal 1 (green wire) and the negative (–) lead to terminal 2 (red wire), and check that the motor turns counterclockwise.

If operation is not as specified, replace the motor.

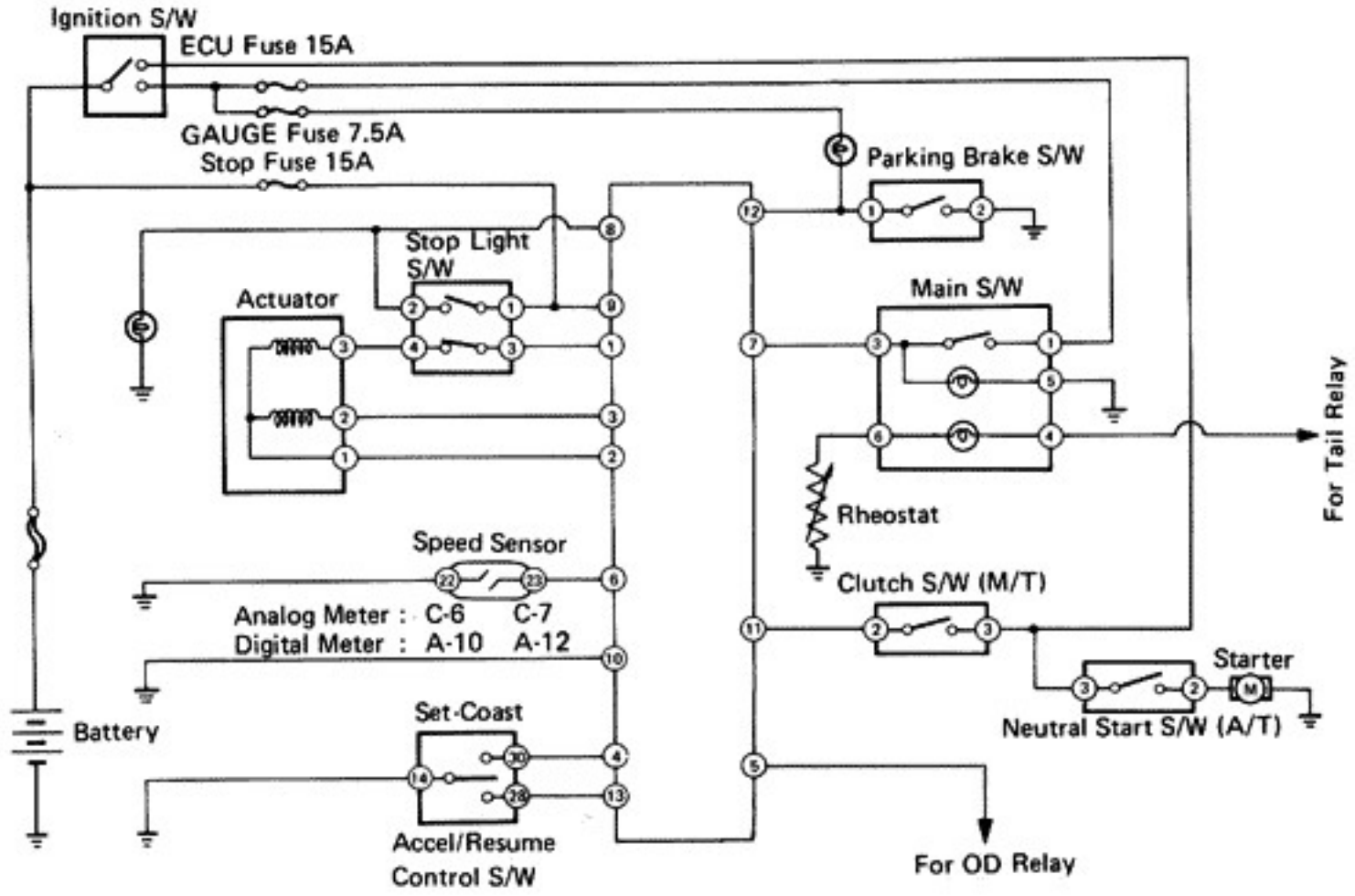
Power Main Relay

INSPECTION OF POWER MAIN RELAY

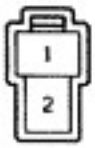
INSPECT RELAY CONTINUITY AND OPERATION

(See Power Main Relay on page BE-66)

CRUISE CONTROL SYSTEM
Wiring Diagram

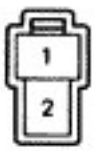


Parking Brake Switch

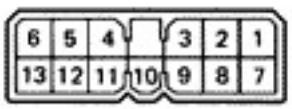


Clutch Switch

Stop Light Switch

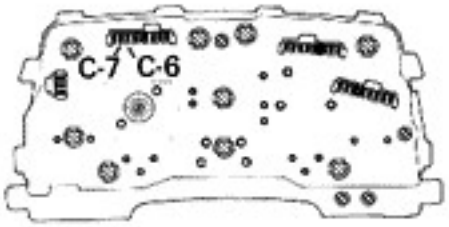


Cruise Control Computer

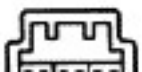


Main Switch

Speed Sensor (Analog Meter)



Control Switch



Actuator

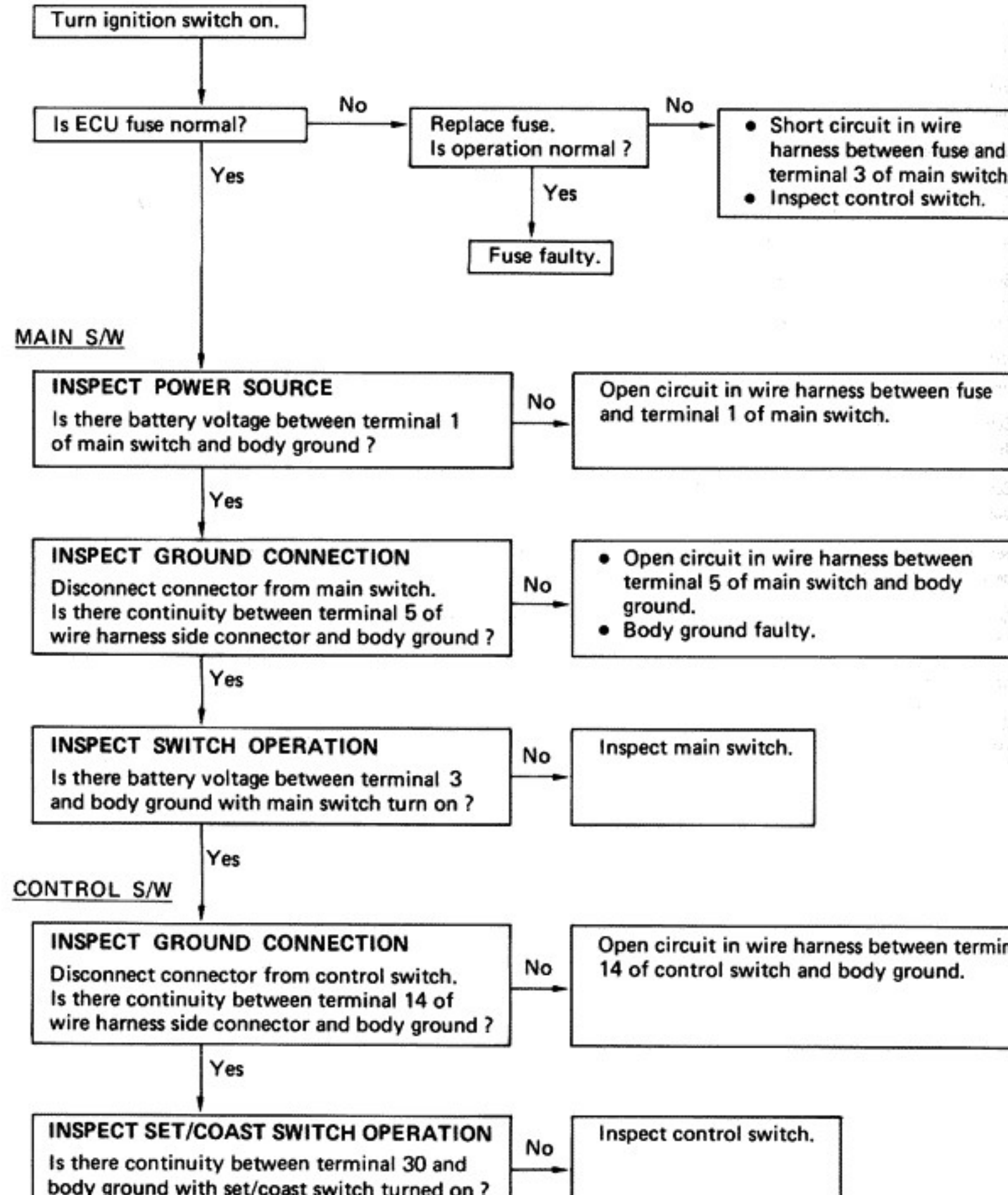
Neutral Start Switch

Speed Sensor (Digital Meter)

Troubleshooting

Problem	Inspection Item	No.
Cruise control does not operate.	Inspection of power source circuit	A
Vehicle speed does not reduce when coast switch turned on.	Inspection of control switch and circuit.	B
Vehicle does not accelerate when accel switch turned on.		
Vehicle speed does not return to memorized speed when resume switch turned on.		
Set speed deviates on high side.	Inspection of actuator and circuit	C
Set speed deviates on low side.		
Vehicle speed does not fluctuate when set switch turned on.	Inspection of actuator and circuit Inspection of speed sensor and circuit	C H
Setting speed does not cancel when brake pedal depressed.	Inspection of stop light switch and circuit	D
Setting speed does not cancel when parking brake pulled.	Inspection of parking brake switch and circuit	E
Setting speed does not cancel when clutch pedal depressed (M/T only).	Inspection of clutch switch and circuit	F
Setting speed does not cancel when shifted to "N" range (A/T only).	Inspection of neutral start switch and circuit	G
Speed can be set below 20 km/h (12 mph).	Inspection of speed sensor and circuit	H
Cruise control will not disengage even below 20 km/h (12 mph).		

A INSPECTION OF SOURCE CIRCUIT



CONTINUED FROM PREVIOUS PAGE

Yes

Is there continuity between terminal 30 and body ground with set/coast switch turned off ?

Yes → Inspect control switch.

No

INSPECT ACCEL/RESUME SWITCH OPERATION

Is there continuity between terminal 28 and body ground when accel/resume switch turned on ?

No → Inspect the control switch.

Yes

STOP LIGHT S/W

INSPECT RELEASE VALVE CIRCUIT

Disconnect connector from computer.
Is resistance value about 68 Ω between terminal 1 and terminal 2 of computer with brake pedal returned ?

No →
- Open or short circuit in wire harness between terminal 4 of stop light switch and terminal 3 of actuator.
- Open circuit in wire harness between terminal 1 of actuator and terminal 2 of computer.
- Inspect stop light switch.
- Inspect actuator.

Yes

INSPECT STOP LIGHT SWITCH OPERATION

Is there continuity between terminals 1 and 2 with brake pedal depressed ?

No → Inspect stop light switch.

Yes

COMPUTER

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

INSPECT POWER SOURCE

Is there battery voltage between terminal 7 and body ground with main switch turned on ?

No → Open or short circuit in wire harness between terminal 7 of computer and terminal 3 of main switch.

Yes

INSPECT GROUND CONNECTION

No →
- Open circuit in wire harness between terminal 10 and body ground

CONTINUED FROM PREVIOUS PAGE

Yes

INSPECT SET/COAST SWITCH CIRCUIT

Is there continuity between terminal 4 and body ground with set/coast switch turned on ?

No →
- Open circuit in wire harness between terminal 4 of computer and terminal 30 of control switch.
- Inspect control switch.

Yes

Is there continuity between terminal 4 and body ground with set/coast switch turned off ?

Yes →
- Short circuit in wire harness between terminal 4 of computer and terminal 30 of control switch.
- Inspect control switch.

No

INSPECT ACCEL/RESUME SWITCH CIRCUIT

Is there continuity between terminal 13 and body ground with accel/resume switch turned on ?

No →
- Open circuit in wire harness between terminal 13 of computer and terminal 28 of control switch.
- Inspect control switch.

Yes

Is there continuity between terminal 13 and body ground with accel/resume switch turned off ?

Yes →
- Short circuit in wire harness between terminal 13 of computer and terminal 28 of control switch.
- Inspect control switch.

No

INSPECT CONTROL VALVE CIRCUIT

Is resistance value about 30 Ω between terminals 2 and 3 ?

No →
- Open or short circuit in wire harness between terminal 3 of computer and terminal 2 of actuator.
- Open circuit in wire harness between terminal 1 of actuator and terminal 2 of computer.
- Inspect actuator.

Yes

INSPECT RELEASE VALVE CIRCUIT

Is resistance value about 68 Ω between terminals 1 and 2 with brake pedal returned ?

No →
- Open or short circuit in wire harness between terminal 1 of computer and terminal 3 of actuator.
- Open circuit in wire harness between terminal 1 of actuator and terminal 2 of computer.
- Inspect stop light switch.

CONTINUED FROM PREVIOUS PAGE

Yes

INSPECT CLUTCH SWITCH CIRCUIT (M/T)

Is there continuity between terminal 11 and body ground with clutch pedal returned ?

Yes → • Short circuit in wire harness between terminal 11 of computer and terminal 3 of clutch switch.
• Inspect clutch switch.

No

INSPECT NEUTRAL START SWITCH CIRCUIT (A/T)

Is there battery voltage between terminal 11 and body ground when shifting except to "N" range ?

Yes → • Short circuit in wire harness between terminal 11 of computer and terminal 3 of neutral start switch.
• Inspect neutral start switch.

No

INSPECT PARKING BRAKE SWITCH CIRCUIT

Is there battery voltage between terminal 12 and body ground with parking brake lever returned ?

No → • Short circuit in wire harness between terminal 12 of computer and terminal 1 parking brake switch.
• Inspect parking brake switch.

Yes

INSPECT SPEED SENSOR CIRCUIT

Disconnect connector from combination meter. Is there continuity between terminal C-7 (analog meter) or A-12 (digital meter) of wire harness side connector and terminal 6 of computer ?

No → Open circuit in wire harness between terminal C-7 (analog meter) or A-12 (digital meter) of combination meter and terminal 6 of computer.

Yes

Disconnect connector from combination meter. Is there continuity between terminal 6 and body ground ?

Yes → Short circuit in wire harness between terminal 6 of computer and terminal 20 of combination meter.

No

SPEED SENSOR

INSPECT GROUND CONNECTION

Disconnect connector from combination meter. Is there continuity between terminal C-6 (analog meter) or A-10 (digital meter) of wire harness side connector and body ground ?

No → • Open circuit in wire harness between terminal C-6 (analog meter) or A-10 (digital meter) and body ground.
• Body ground faulty.

Yes

CONTINUED FROM PREVIOUS PAGE

ACTUATOR

Yes

INSPECT ACTUATOR OPERATION
Is actuator operation normal ?
(See page BE-84)

No → Replace actuator.

Yes

Replace computer.

B INSPECTION OF CONTROL SWITCH CIRCUIT

Turn ignition switch off.

CONTROL S/W

INSPECT SWITCH OPERATION
Is there continuity between terminal 28 and body ground with accel/resume switch turned on ?

No → Inspect control switch.

Yes

Is there continuity between terminal 28 and body ground with accel/resume switch turned off ?

Yes → Inspect control switch.

COMPUTER

No

INSPECT ACCEL/RESUME SWITCH CIRCUIT
Is there continuity between terminal 13 and body ground with accel/resume switch turned on ?

No → Open circuit in wire harness between terminal 13 of computer and terminal 28 of control switch.

ACTUATOR

Yes

INSPECT ACTUATOR OPERATION
Is actuator operation normal ?
(See page BE-84)

No → Replace actuator.

C INSPECTION OF ACTUATOR CIRCUIT

Turn ignition switch off.

ACTUATOR

INSPECT CABLE FREEPLAY
Is control cable freeplay less than 10 mm (0.39 in.) ?

No → Adjust control cable freeplay.

Yes

INSPECT ACUTATOR OPERATION
Disconnect connector from actuator.
Inspect actuator operation. (See page BE-84)
Is actuator operation normal ?

No → Replace actuator.

Yes

COMPUTER

INSPECT ACTUATOR CIRCUIT
Is resistance value between computer terminals correct ?
Between terminals 1 and 2 about 68 Ω
Between terminals 2 and 3 about 30 Ω

No → Open or short circuit in wire harness between actuator and computer.

Yes

Replace computer.

D INSPECTION OF STOP LIGHT SWITCH CIRCUIT

Turn ignition switch on.

↓

Is stop fuse normal ?

No → • Short circuit in wire harness between terminal 8 of computer and fuse.
• Short circuit in wire harness between terminal 9 of computer and fuse.

Yes

COMPUTER

↓

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

↓

INSPECT RELEASE VALVE CIRCUIT
Is there continuity between terminal 1 and 2 with brake pedal depressed ?

Yes → Inspect stop light switch.

No

↓

INSPECT STOP FUSE CIRCUIT
Is there battery voltage between terminal 9 and body ground ?

No → Open circuit in wire harness between terminal 9 of computer and STOP fuse.

Yes

↓

INSPECT STOP LIGHT SWITCH CIRCUIT
Is there battery voltage between terminal 8 and body ground with brake pedal depressed ?

No → Open or short circuit in wire harness between terminal 8 of computer and terminal 2 of stop light switch.

Yes

↓

Replace computer.

E INSPECTION OF PARKING BRAKE SWITCH

Turn ignition switch on.

COMPUTER

INSPECT PARKING BRAKE SWITCH CIRCUIT
Disconnect connector from computer.
Is there battery voltage between terminal 12 of wire harness side connector and body ground ?

No →
- Open circuit in wire harness between terminal 12 of computer and terminal 1 parking brake switch.
- Inspect parking brake switch.

Yes ↓

Replace computer.

F INSPECTION OF CLUTCH SWITCH CIRCUIT

Turn ignition switch on.

CLUTCH S/W

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

No → Open circuit in wire harness between terminal 3 and body ground.

Yes ↓

COMPUTER

INSPECT CLUTCH SWITCH CIRCUIT
Disconnect connector from computer.
Is there continuity between terminal 11 of wire harness side connector and body ground with clutch pedal depressed ?

No →
- Open circuit in wire harness between terminal 11 of computer and terminal 2 of clutch switch.
- Inspect clutch switch.

Yes ↓

Replace computer.

G INSPECTION OF NEUTRAL START SWITCH CIRCUIT

Turn ignition switch on.

NEUTRAL START S/W

INSPECT GROUND CONNECTION
Is there continuity between terminal 2 and body ground ?

No → Open circuit in wire harness between terminal 2 and body ground.

Yes

COMPUTER

INSPECT NEUTRAL START SWITCH CIRCUIT
Disconnect connector from computer.
Is there continuity between terminal 11 of wire harness side connector and body ground when shifted to "N" range ?

No →
- Open circuit in wire harness between terminal 11 of computer and terminal 3 of neutral start switch.
- Inspect neutral start switch.

Yes

Replace computer.

H INSPECTION OF SPEED SENSOR CIRCUIT

Turn ignition switch on.

SPEED SENSOR

INSPECT GROUND CONNECTION
Disconnect connector from combination meter.
Is there continuity between terminal C-6 (analog meter) or A-10 (digital meter) of wire harness side connector and body ground ?

Yes → Short circuit in wire harness between terminal C-6 (analog meter) or A-10 (digital meter) and body ground.

No

COMPUTER

INSPECT SPEED SENSOR CIRCUIT
Disconnect connector from combination meter.
Is there continuity between terminal C-7 (analog meter) or A-12 (digital meter) of wire harness side connector and terminal 6 of computer ?

No → Open circuit in wire harness between terminal C-7 (analog meter) or A-12 (digital meter) of combination meter and terminal 6 of computer.

Yes

INSPECT SPEED SENSOR OPERATION
Is speed sensor operation normal?
(See page BE-83)

No → Speed sensor faulty.

Yes

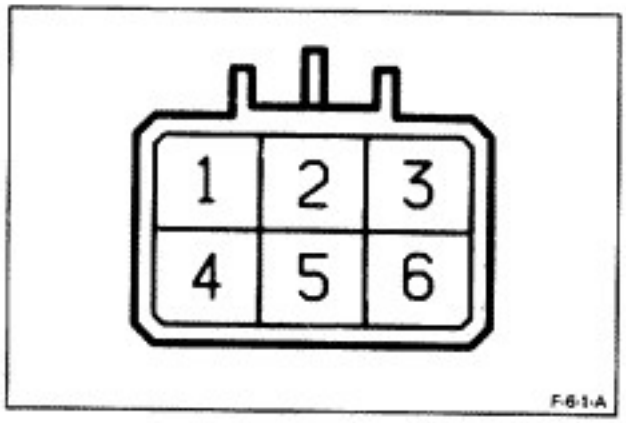
Replace computer.

Cruise Control Computer Circuit

INSPECTION OF COMPUTER CIRCUIT

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

Terminal	Connection or Measure Item	Check Item	Tester Connection	Condition	Voltage or Resistance Value
1	Stop Light Switch and Release Valve	Resistance	1 – 2	Brake pedal returned	About 68 Ω
2	Release Valve and Control Valve	–	–	–	–
3	Control Valve	Resistance	3 – 2	–	About 30 Ω
4	Control Switch (Set/Coast)	Continuity	4 – Body Ground	Turn set/coast switch on Turn set/coast switch off	Continuity No continuity
5	OD Relay	–	–	–	–
6	Speed Sensor	–	–	–	–
7	Main Switch	Voltage	7 – Body Ground	Turn ignition switch and main switch on Turn ignition switch and main switch off	Battery voltage No voltage
8	Stop Light Switch	Voltage	8 – Body Ground	Brake pedal depressed Brake pedal returned	Battery voltage No voltage
9	STOP Fuse	Voltage	9 – Body Ground	–	Battery voltage
10	Body Ground	Continuity	10 – Body Ground	–	Continuity
11	Clutch Switch Neutral Switch	Continuity	11 – Body Ground	Clutch pedal depressed or shift into "N" range Clutch pedal returned or shift into except "N" range	Continuity No continuity
12	Parking Brake Switch	Voltage	12 – Body Ground	Parking brake pulled Parking brake returned	No voltage Battery voltage
13	Control Switch (Accel/Resume)	Continuity	13 – Body Ground	Turn accel/resume switch on Turn accel/resume switch off	Continuity No continuity



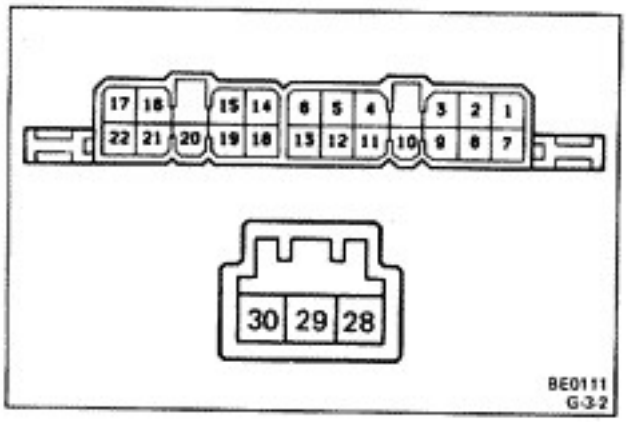
Main Switch

INSPECTION OF MAIN SWITCH

INSPECT SWITCH CONTINUITY

Switch position \ Terminal	1	2	3	4	5
OFF			○		○
ON	○	○	○		○

If continuity is not as specified, replace the switch.



Control Switch

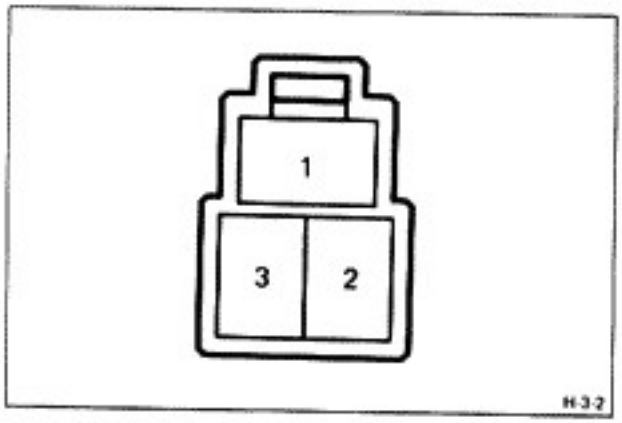
INSPECTION OF CONTROL SWITCH

INSPECT SWITCH CONTINUITY

Inspect the switch continuity between terminals.

Switch position \ Terminal	28 SR	30 SS	14 EW
SET/COAST		○	○
OFF			
ACCEL/RESUME	○		○

If continuity is not as specified, replace the switch.



Clutch Switch

INSPECTION OF CLUTCH SWITCH

INSPECT SWITCH CONTINUITY

(a) Check that there is continuity between terminals 2 and 3 with the clutch pedal depressed.

(b) Check that there is no continuity between terminals 2 and 3 with the clutch pedal returned.

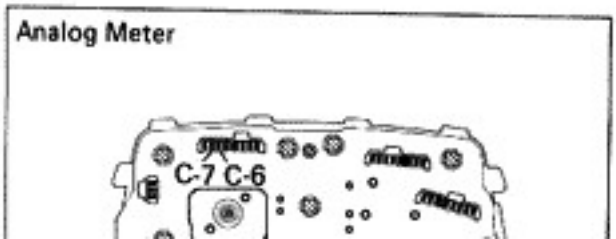
If continuity is not as specified, replace the switch.

Neutral Start Switch

(See page AT-104)

Parking Brake Switch

(See step 3 on page BE-30)

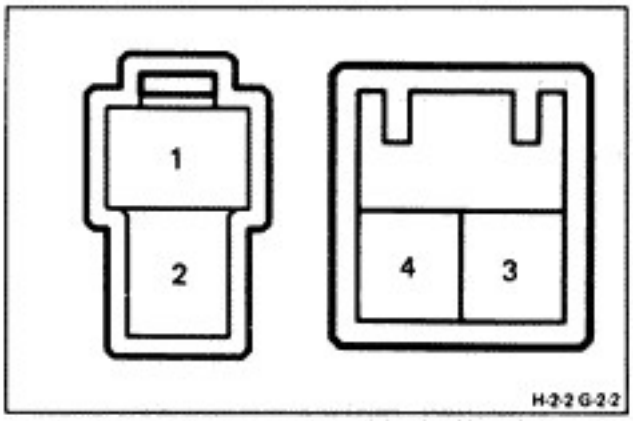


Speed Sensor

INSPECTION OF SPEED SENSOR

1. INSPECT SENSOR CONTINUITY (ANALOG METER)

Check that there is continuity between terminals C-6 and



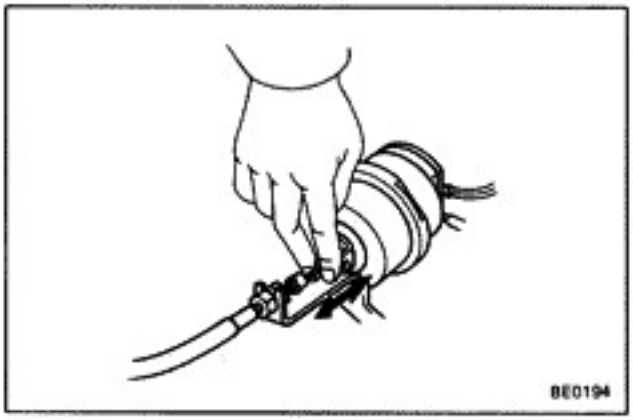
Stop Light Switch

INSPECTION OF STOP LIGHT SWITCH

INSPECT SWITCH CONTINUITY

Terminal / Brake pedal position	1	2	3	4
Brake pedal depressed	○——	——○		
Brake pedal returned			○——	——○

If continuity is not as specified, replace the switch.



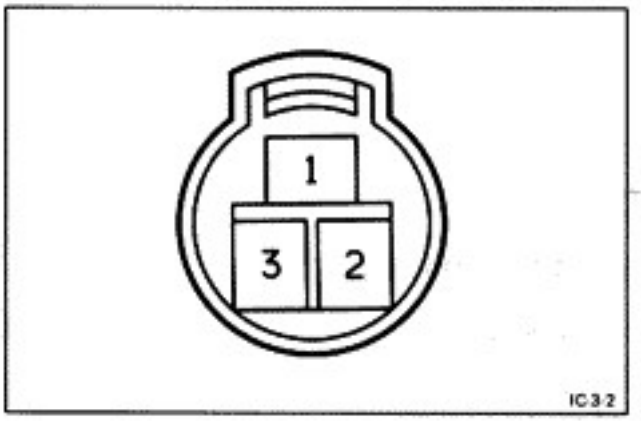
Actuator

INSPECTION OF ACTUATOR

1. **INSPECT CONTROL CABLE FREEPLAY**

Inspect that the control cable freeplay is less than 10 m (0.39 in.).

If necessary, adjust the control cable freeplay.

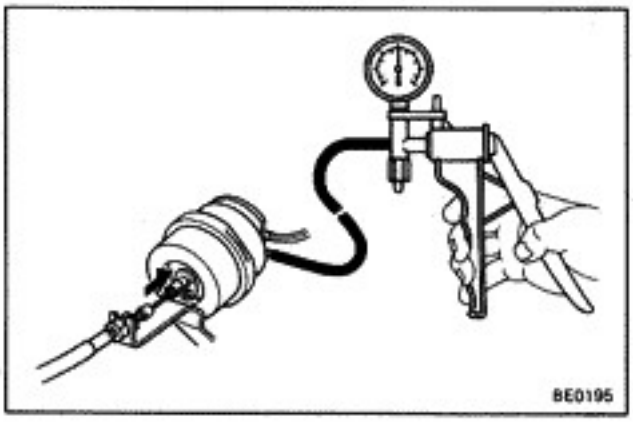


2. **INSPECT ACTUATOR RESISTANCE**

Using an ohmmeter, measure the resistance value betwe terminals as follows.

Resistance: 1 – 2 about 30 Ω
1 – 3 about 68 Ω

If the resistance value is not as specified, replace the act ator.

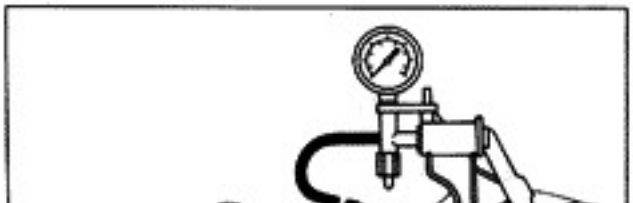


3. **INSPECT ACTUATOR OPERATION**

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

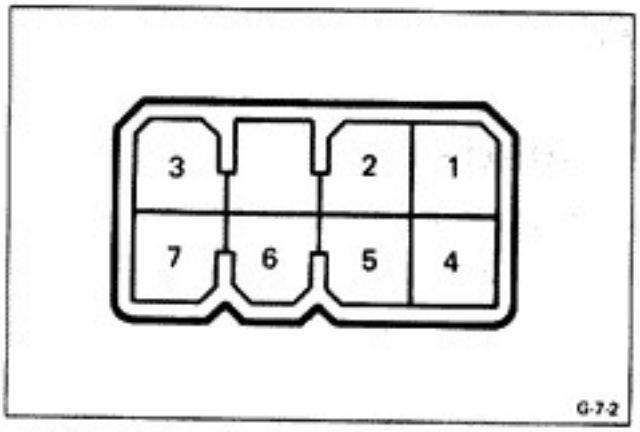
(a) Slowly apply vacuum from 0 – 300 mmHg (0 – 11. in.Hg, 0 – 40.0 kPa), and check that the contr cable can be pulled smoothly.

(b) With the vacuum stabilized, check that the contr cable does not return.



(c) Disconnect terminal 2 or 3 and check that the contr cable returns to its original position and the vacuu returns to 0 mmHg (0 in.Hg, 0 kPa).

If operation is not as specified, replace the actuator.



REMOTE CONTROL MIRROR

Outer Mirror Switch

INSPECTION OF OUTER MIRROR SWITCH

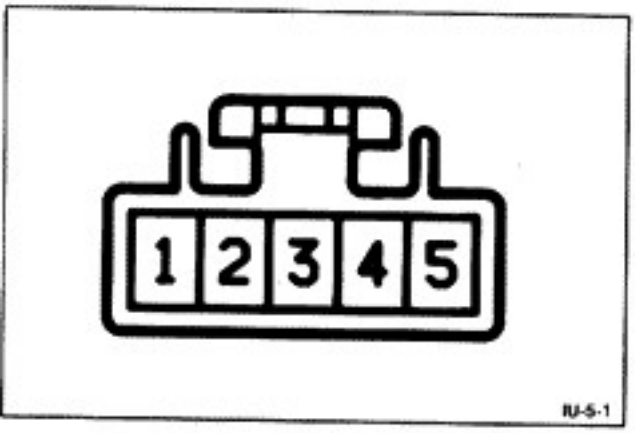
INSPECT SWITCH CONTINUITY

Mirror	Left Mirror				Right Mirror				
Terminal / Switch position	7	6	2	1	3	1	2	5	4
Up	○		○	○		○	○		○
Down	○		○	○		○		○	○
Left		○	○	○		○		○	
Right		○	○	○		○	○	○	

If continuity is not as specified, replace the switch.

Remote Control Mirror

INSPECTION OF REMOTE CONTROL MIRROR

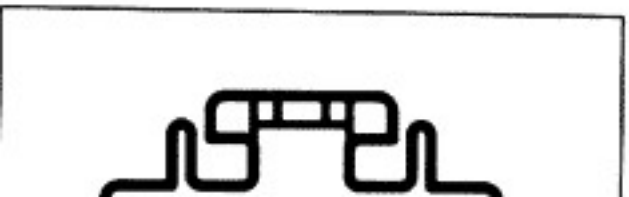


1. INSPECT LEFT MIRROR OPERATION

   (a) Apply 12V to terminals 2 and 3 and check that the mirror operates.
   Then, reverse the polarity, and check that the mirror revolution is reversed.

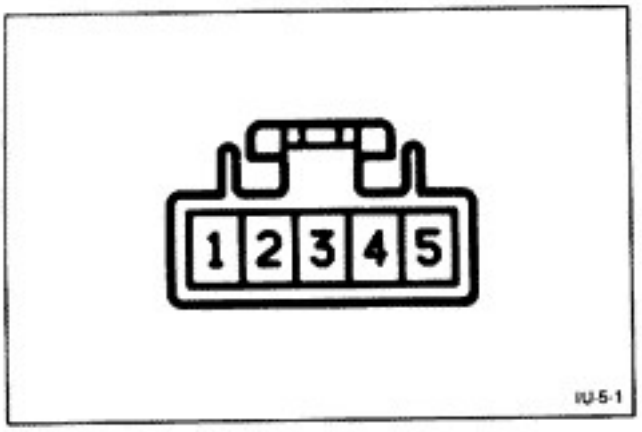
   (b) Apply 12V to terminals 3 and 4 and check that the mirror operates.
   Then, reverse the polarity, and check that the mirror revolution is reversed.

   If there is no mirror operation, replace the left mirror.



2. INSPECT RIGHT MIRROR OPERATION

   (a) Apply 12V to terminals 2 and 3 and check that the mirror operates.
   Then, reverse the polarity, and check that the mirror



MIRROR HEATER

Mirror Heater

INSPECTION OF MIRROR HEATER

MEASURE MIRROR HEATER RESISTANCE

Measure the resistance between terminals 1 and 5.

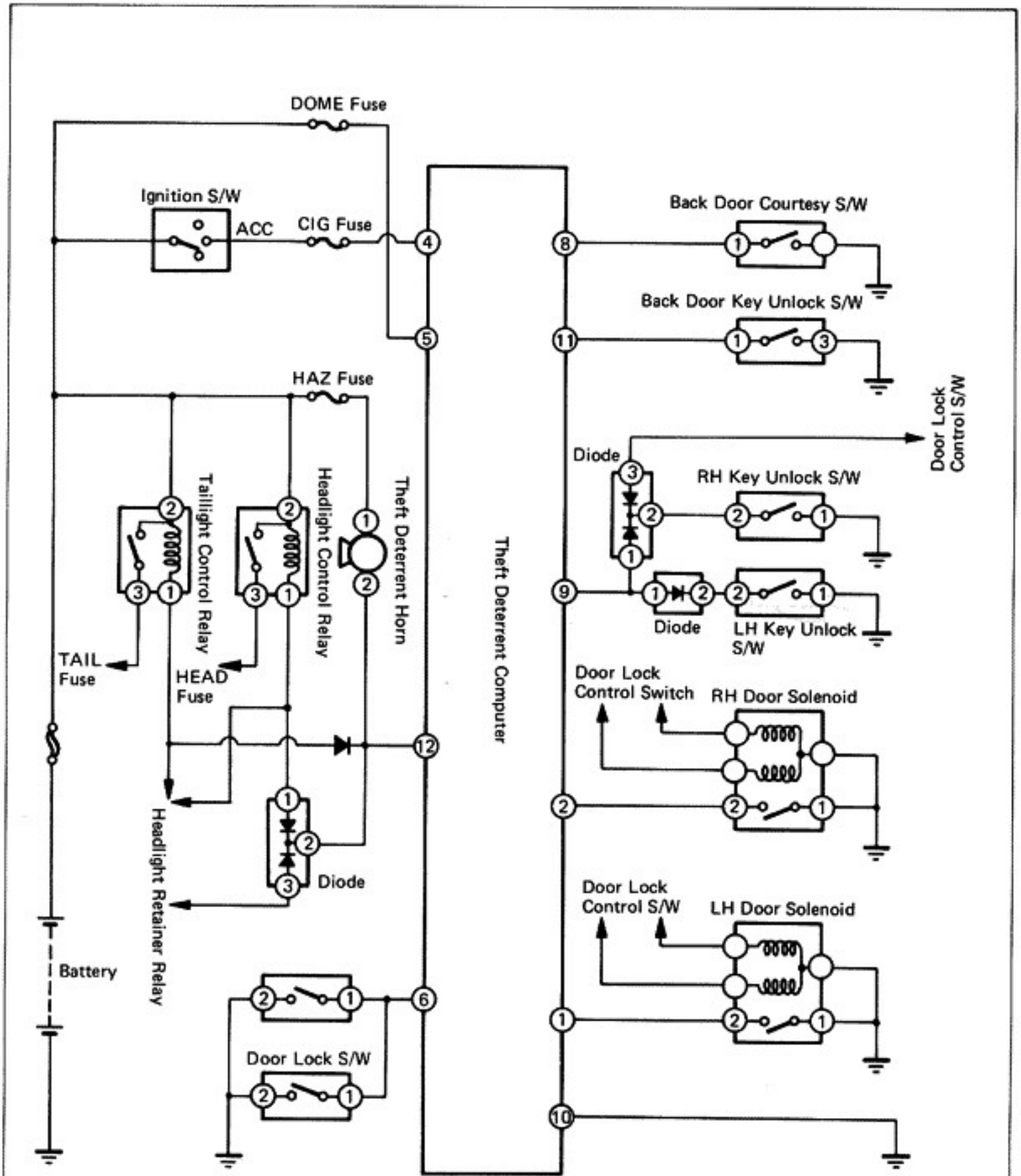
Resistance: 5 – 30 Ω

If resistance value is not correct, replace the mirror.

NOTE: The resistance value is increased according to the rise of temperature.

THEFT DETERRENT SYSTEM

WIRING DIAGRAM



Connectors

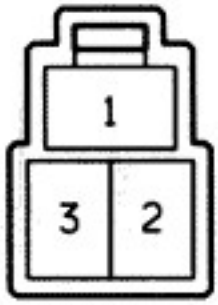
Key Unlock Switch

Door Lock Solenoid

Door Lock Switch

Theft Deterrent Horn

Headlight Control Relay
Taillight Control Relay

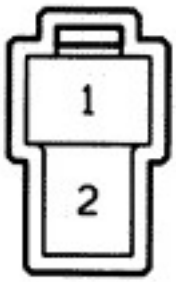


Back Door Courtesy Switch

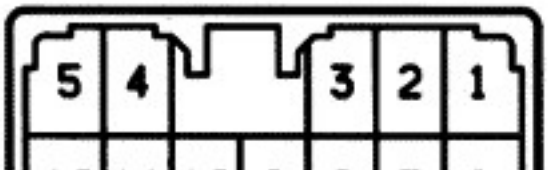
Back Door Key Unlock Switch

Diode (For RH Key Unlock Switch and Horn)

Diode (For LH Key Unlock Switch and Taillight Control Relay)



Theft Deterrent Computer

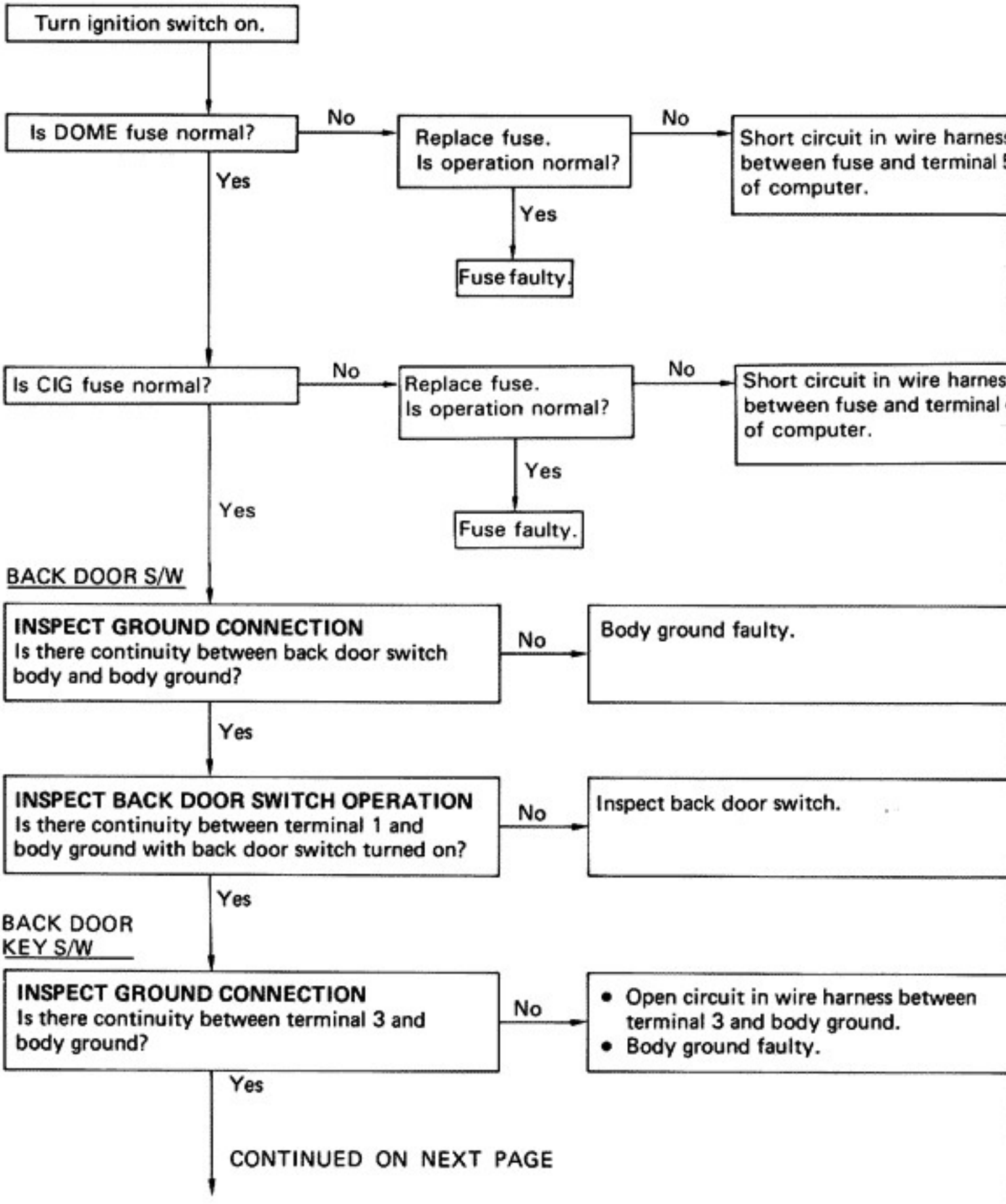


Troubleshooting

- Check that the operation of other systems (Door Lock Control, Open Door Warning ... 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	Section
Theft deterrent system can not be set.	A
Theft deterrent system does not operate when LH door opened.	B
Theft deterrent system does not operate when RH door opened.	C
Theft deterrent system does not cancel when ignition switch turned on or ACC position.	D
Theft deterrent system does not cancel when LH door unlocked with key.	E
Theft deterrent system does not cancel when RH door unlocked with key.	F
Horn does not blow even if theft deterrent system operated.	G
Headlights and taillights do not flash even if theft deterrent system operated.	H

A INSPECTION OF SOURCE CIRCUIT



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INSPECT BACK DOOR KEY UNLOCK SWITCH OPERATION
Is there continuity between terminal 1 and body ground with back door key unlock switch turned on?

No → Inspect back door key unlock switch.

Yes

COMPUTER

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

INSPECT POWER SOURCE
Is there battery voltage between terminal 5 and body ground?

No → Open circuit in wire harness between fuse and terminal 5 of computer.

Yes

INSPECT GROUND CONNECTION
Is there continuity between terminal 10 and body ground?

No →
- Open circuit in wire harness between terminal 10 of computer and body ground.
- Body ground faulty.

Yes

INSPECT LH KEY UNLOCK SWITCH CIRCUIT
Is there continuity between terminal 9 and body ground with LH door locked with key?

Yes → Short circuit in wire harness between terminal 9 of computer and terminal 2 of LH key unlock switch.

No

INSPECT RH KEY UNLOCK SWITCH CIRCUIT
Is there continuity between terminal 9 and body ground with RH door locked with key?

Yes → Short circuit in wire harness between terminal 9 of computer and terminal 2 of RH key unlock switch.

No

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INSPECT LH DOOR LOCK SOLENOID CIRCUIT
Disconnect connector from computer.
Is there continuity between terminal 1 of wire harness side connector and body ground with LH door unlocked?

No → Open circuit in wire harness between terminal 1 of computer and terminal 2 of door lock solenoid.

Yes

INSPECT RH DOOR LOCK SOLENOID CIRCUIT
Disconnect connector from computer.
Is there continuity between terminal 2 of wire harness side connector and body ground with RH door unlocked?

No → Open circuit in wire harness between terminal 2 of computer and terminal 2 of door lock solenoid.

Yes

INSPECT LH DOOR LOCK SWITCH CIRCUIT
Close LH Door.
Is there continuity between terminal 6 and body ground with LH door closed?

Yes → Short circuit in wire harness between terminal 6 of computer and terminal 2 of LH door lock switch.

No

INSPECT RH DOOR LOCK SWITCH CIRCUIT
Close RH door.
Is there continuity between terminal 6 and body ground with RH door closed?

Yes → Short circuit in wire harness between terminal 6 of computer and terminal 2 of RH door lock switch.

No

INSPECT HORN, TAILLIGHT AND HEADLIGHT CIRCUIT
Is there battery voltage between terminal 12 and body ground.

No → Open circuit in wire harness between terminal 12 of computer and horn or taillight control relay or headlight control relay.

Yes

Replace computer.

B INSPECTION OF LH DOOR UNLOCK CIRCUIT

LH DOOR LOCK S/W

INSPECT DOOR LOCK SWITCH OPERATION
Is LH door lock switch normal ?
(See page BE-99)

No → Replace LH door lock switch.

Yes ↓

COMPUTER

INSPECT DOOR LOCK SWITCH CIRCUIT
Disconnect connector from computer.
Is there continuity between terminal 6 of connector side and body ground with LH door closed ?

Yes → Short circuit in wire harness between terminal 6 of computer and terminal 1 of LH door lock switch.

No ↓

Replace computer.

C INSPECTION OF RH DOOR UNLOCK CIRCUIT

RH DOOR LOCK S/W

INSPECT DOOR LOCK SWITCH OPERATION
Is RH door lock switch normal ?
(See page BE-99)

No → Replace RH door switch.

Yes ↓

COMPUTER

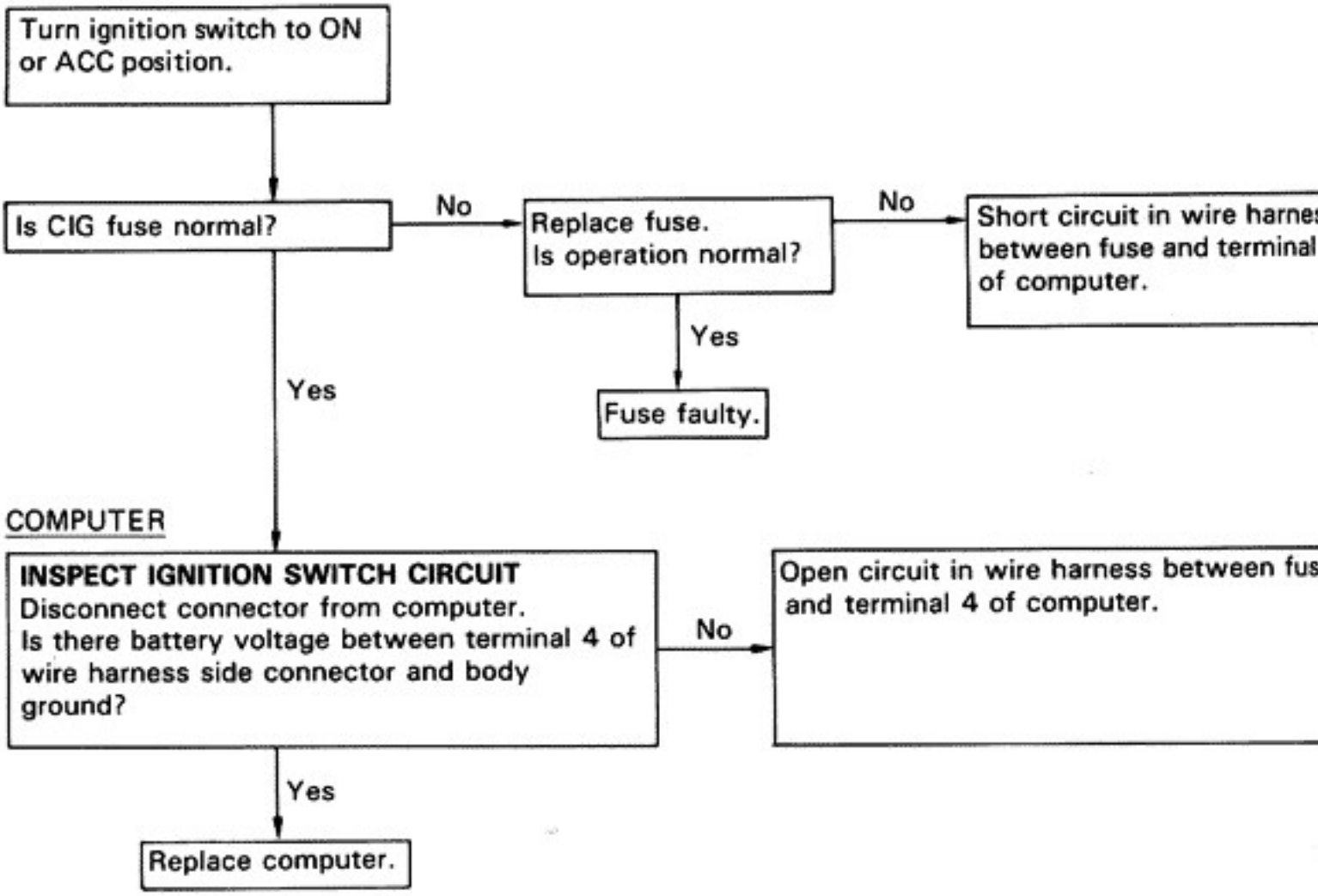
INSPECT DOOR LOCK SWITCH CIRCUIT
Disconnect connector from computer.
Is there continuity between terminal 6 of connector side and body ground with RH door closed ?

Yes → Short circuit in wire harness between terminal 6 of computer and terminal 1 of RH door lock switch.

No ↓

Replace computer.

D INSPECTION OF IGNITION SWITCH CIRCUIT



E INSPECTION OF LH KEY UNLOCK SWITCH CIRCUIT

Turn ignition switch off.

DIODE

INSPECT DIODE CONTINUITY
Is diode of key unlock switch normal ?
(See page BE-67)

No → Replace diode.

Yes

COMPUTER

INSPECT KEY UNLOCK SWITCH CIRCUIT
Is there continuity between terminal 9 and body ground with LH door opened with key ?

No → Open circuit in wire harness between terminal 9 of computer and terminal 1 of LH key unlock switch side diode.

Yes

Replace computer.

F INSPECTION OF RH KEY UNLOCK SWITCH CIRCUIT

Turn ignition switch off.

DIODE

INSPECT DIODE CONTINUITY
Is diode of key unlock switch normal ?
(See page BE-67)

No → Replace diode.

Yes

COMPUTER

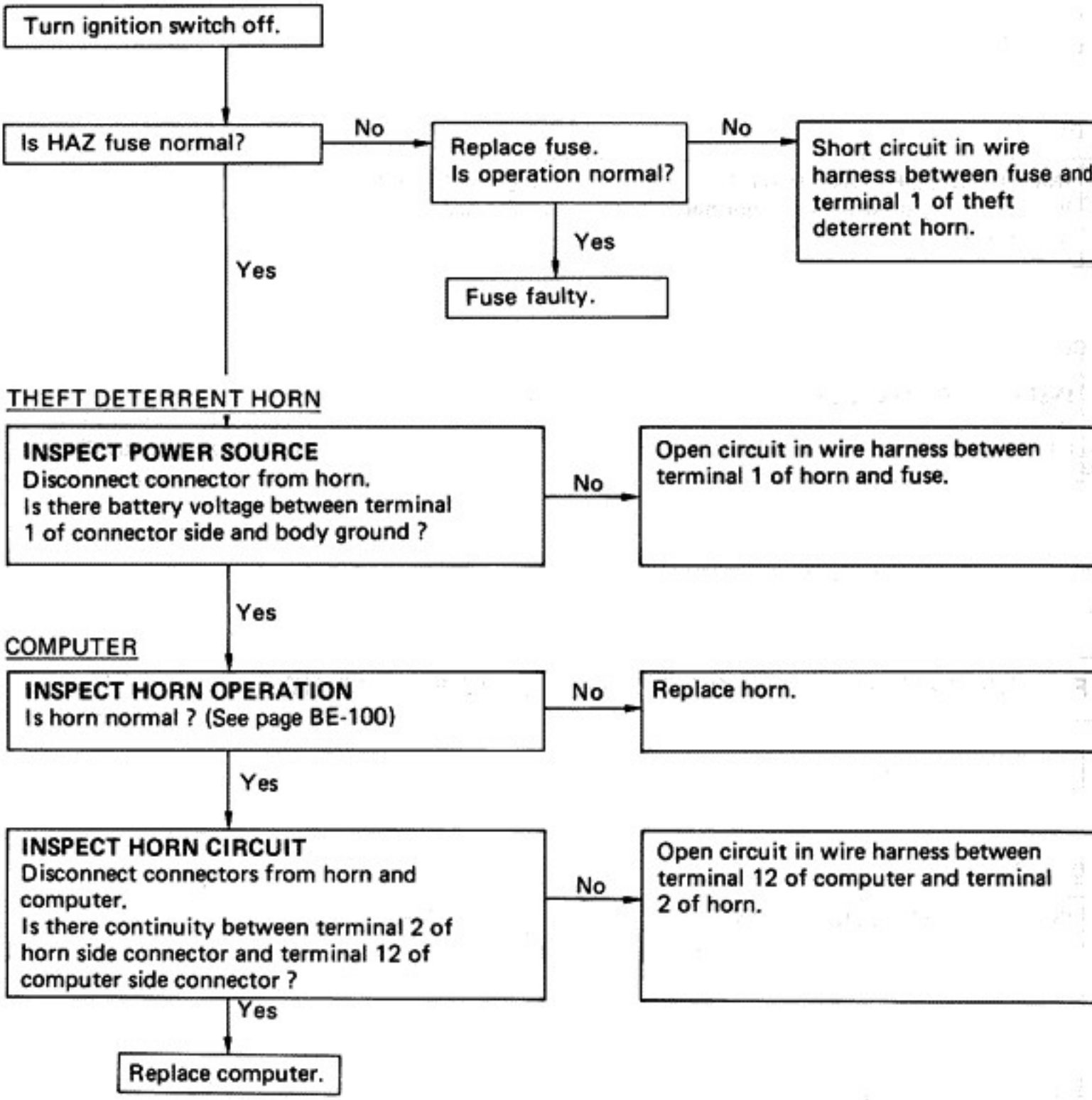
INSPECT KEY UNLOCK SWITCH CIRCUIT
Is there continuity between terminal 9 and body ground with RH door opened with key ?

No → Open circuit in wire harness between terminal 9 of computer and terminal 1 of RH key unlock switch side diode.

Yes

Replace computer.

G INSPECTION OF THEFT DETERRENT HORN CIRCUIT



H INSPECTION OF LIGHT CONTROL RELAY CIRCUIT

Turn ignition switch off.

DIODE

INSPECT DIODE CONTINUITY
Is diode of headlight control relay side and/or taillight control relay side normal ? (See page BE-14)

No → Replace diode.

Yes

COMPUTER

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

INSPECT HEADLIGHT CONTROL RELAY CIRCUIT
Disconnect taillight control relay and theft deterrent horn.
Is there battery voltage between terminal 12 and body ground?

No → Open or short circuit in wire harness between terminal 12 of computer and terminal 1 of headlight control relay.

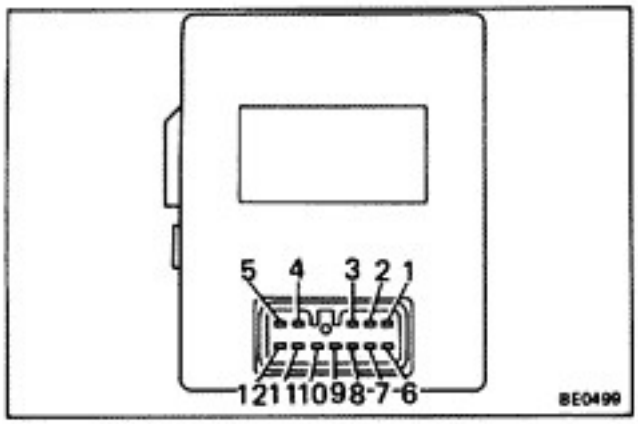
Yes

INSPECT TAILLIGHT CONTROL RELAY CIRCUIT
Disconnect headlight control relay and theft deterrent horn.
Is there battery voltage between terminal 12 and body ground?

No → Open or short circuit in wire harness between terminal 12 of computer and terminal 1 of taillight control relay.

Yes

Replace computer.



Theft Deterrent Computer

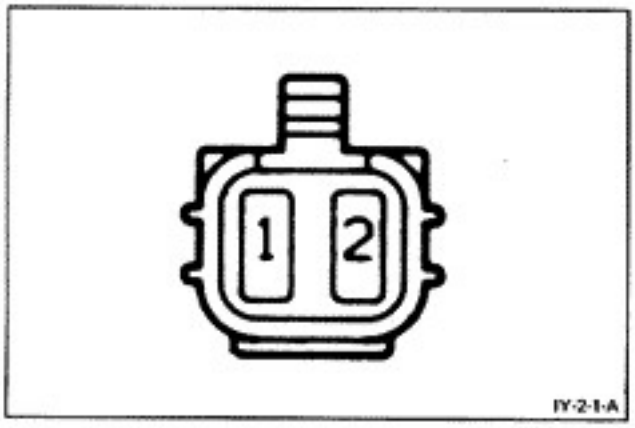
INSPECTION OF THEFT DETERRENT COMPUTER

INSPECT THEFT DETERRENT COMPUTER CIRCUIT

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

Terminal	Check Item	Tester Connection	Condition	Voltage or Continuity
1	Continuity	1–Body Ground	F_L door lock knob unlocked	Continuity
			F_L door lock knob locked	No continuity
2	Continuity	2–Body Ground	F_R door lock knob unlocked	Continuity
			F_R door lock knob locked	No continuity
4	Voltage	4–Body Ground	Turn ignition switch to ON or ACC	Battery voltage
			Turn ignition switch off	No voltage
5	Voltage	5–Body Ground	–	Battery voltage
6	Continuity	6–Body Ground	F_L or F_R door opened	Continuity
			F_L and F_R door closed	No continuity
8	Continuity	8–Body Ground	Back door opened	Continuity
			Back door closed	No continuity
9	Continuity	9–Body Ground	F_L or F_R door unlocked with key	Continuity
			F_L and F_R door locked with key	No continuity
10	Continuity	10–Body Ground	–	Continuity
11	Continuity	11–Body Ground	Back door unlocked with key	Continuity
			Back door locked	No continuity
12	Voltage	12–Body Ground	–	Battery voltage

If circuit is correct, replace the theft deterrent computer.



Door Lock Switch

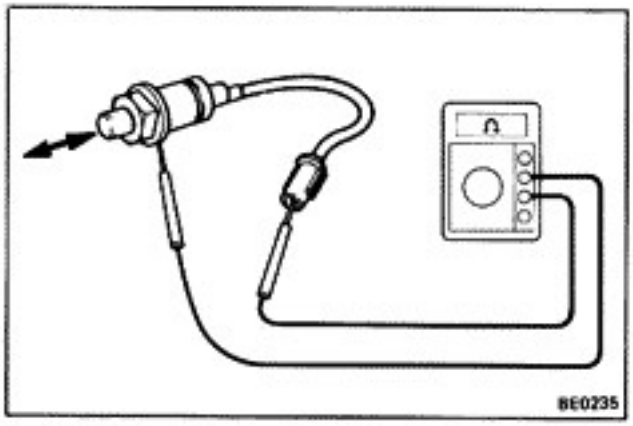
INSPECTION OF DOOR LOCK SWITCH

INSPECT SWITCH OPERATION

(a) Check that there is continuity between terminals with the door closed.

(b) Check that there is no continuity between terminals with the door opened.

If operation is not as specified, replace the switch.



Back Door Courtesy Switch

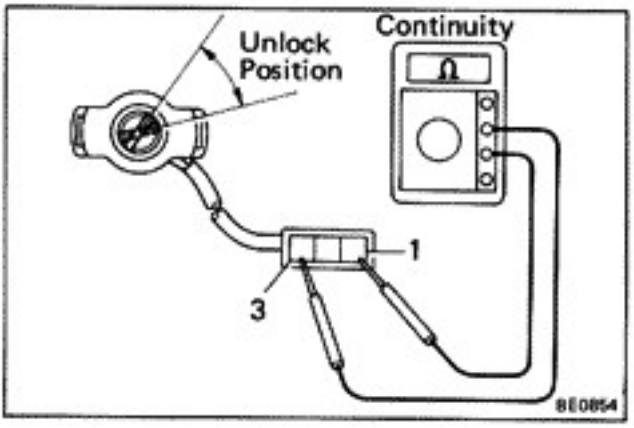
INSPECTION OF BACK DOOR COURTESY SWITCH

INSPECT SWITCH OPERATION

(a) Check that there is continuity between terminal and body ground when the switch is free.

(b) Check that there is no continuity between terminal and body ground when the switch pin is pushed.

If operation is not as specified, replace the switch.



Back Door Key Unlock Switch

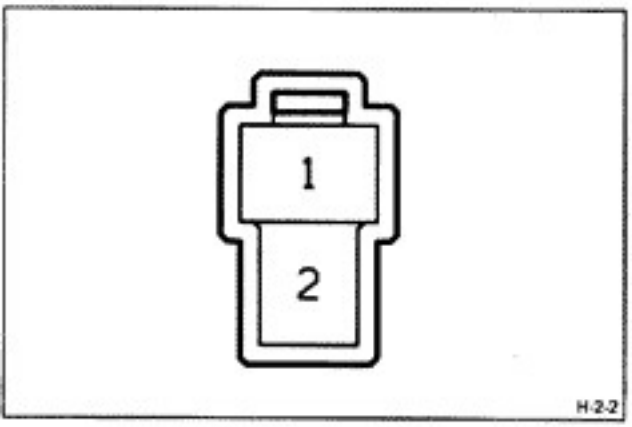
INSPECTION OF BACK DOOR KEY UNLOCK SWITCH

INSPECT SWITCH CONTINUITY

(a) Check that there is continuity between terminals 1 and 3 with the switch is unlock position.

(b) Check that there is no continuity between terminals 1 and 3 with the switch is except unlock position.

If continuity is not as specified, replace the switch.



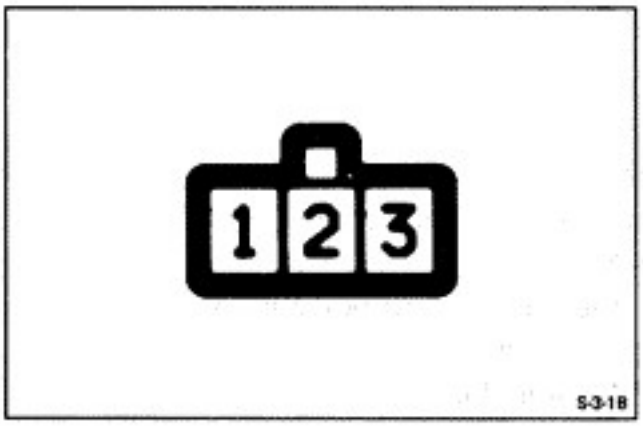
Diode (For LH Key Unlock Switch and Taillight Control Relay)

INSPECTION OF DIODE

INSPECT DIODE CONTINUITY

Connect the test leads of the ohmmeter to terminals 1 and 2, and check for continuity. Next reverse the test leads and check, again, for continuity.

If both of the test results are same condition, replace the diode.



Diode (For RH Key Unlock Switch and Horn)

INSPECTION OF DIODE

INSPECT DIODE CONTINUITY

(a) Connect the test leads of the ohmmeter to termin 1 and 2, and check for continuity. Next, reverse t test leads and check, again, for continuity.

If both of the test results are same condition, replace t diode.

(b) Connect the test leads of the ohmmeter to termin 2 and 3, and check for continuity. Next, reverse t the test leads and check, again, for continuity.

If both of the test results are same condition, replace t diode.

Headlight Control Relay

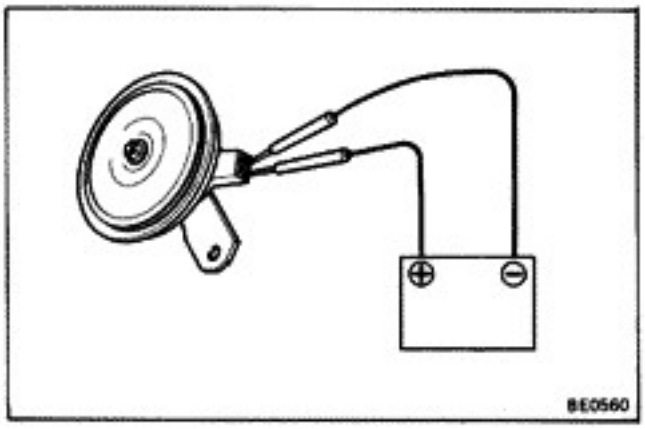
(See page BE-14)

Taillight Control Relay

(See page BE-14)

Key Unlock Switch

(See page BE-67)



Theft Deterrent Horn

INSPECTION OF THEFT DETERRENT HORN

INSPECT HORN OPERATION

Connect the positive (+) lead from the battery to termi 1. Connect the negative (–) lead to terminal 2.
Check that the horn blows.

If operation is not as specified, replace the horn.

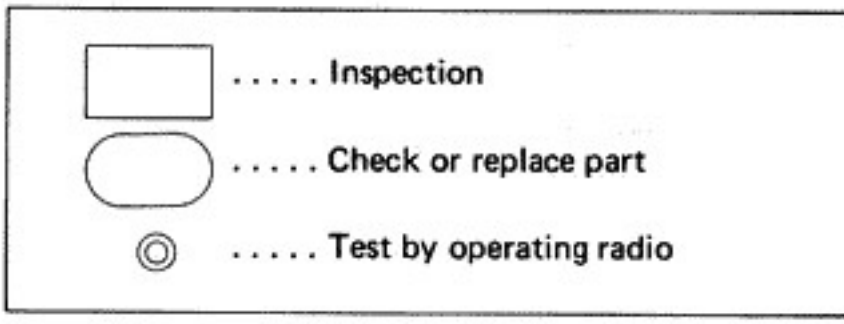
Door Lock Solenoid

(See page BE-68)

RADIO, STEREO TAPE PLAYER AND ANTENNA

Troubleshooting

DESCRIPTION SYMBOLS



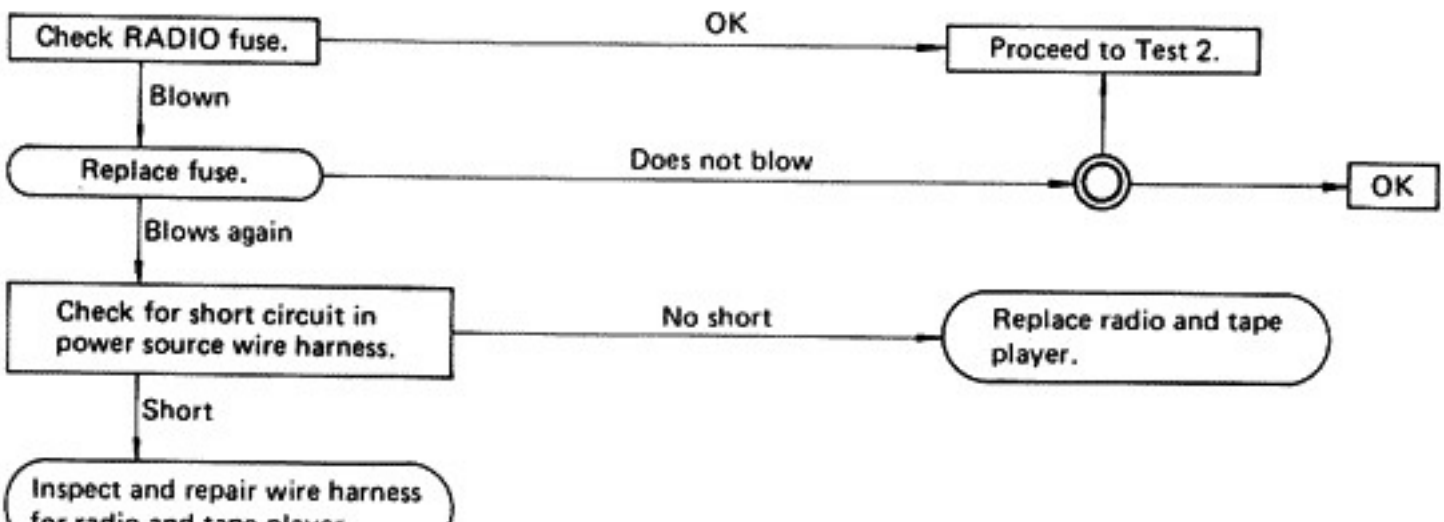
1. DEAD RADIO AND TAPE PLAYER

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

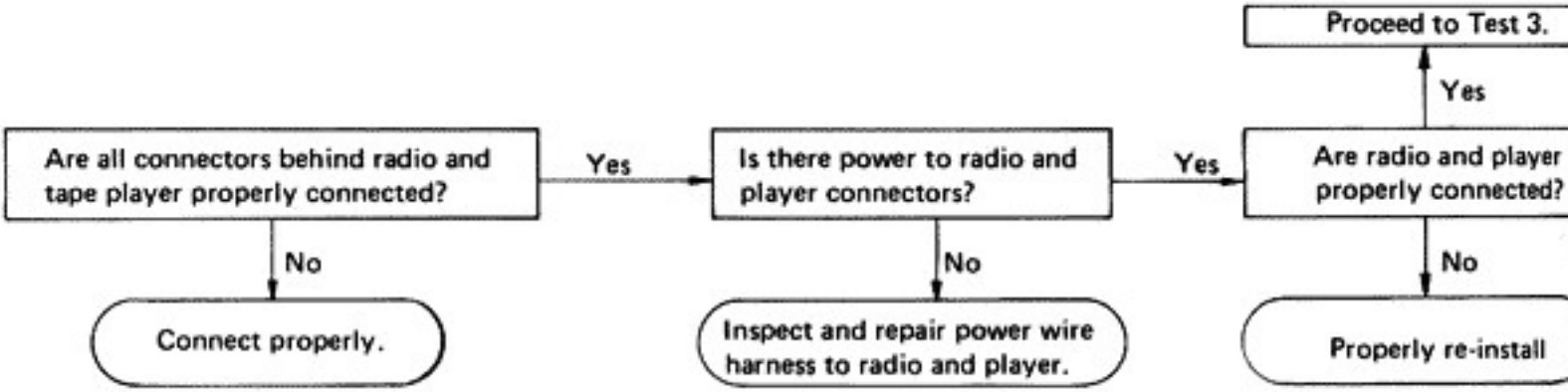
Possible causes:

- Blown RADIO fuse
- Short circuit or broken wire in power source wir 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

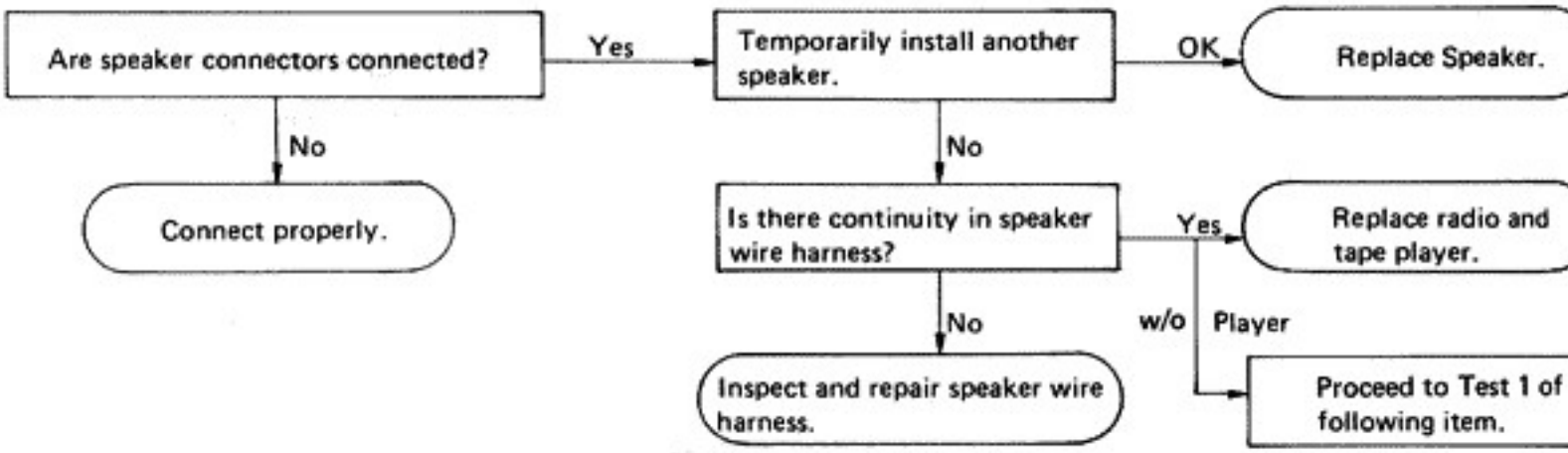
TEST 1



TEST 2


Are all connectors behind radio and tape player properly connected?
Yes
Is there power to radio and player connectors?
Yes
Are radio and player properly connected?
Yes
Proceed to Test 3.
No
Connect properly.
No
Inspect and repair power wire harness to radio and player.
No
Properly re-install

TEST 3

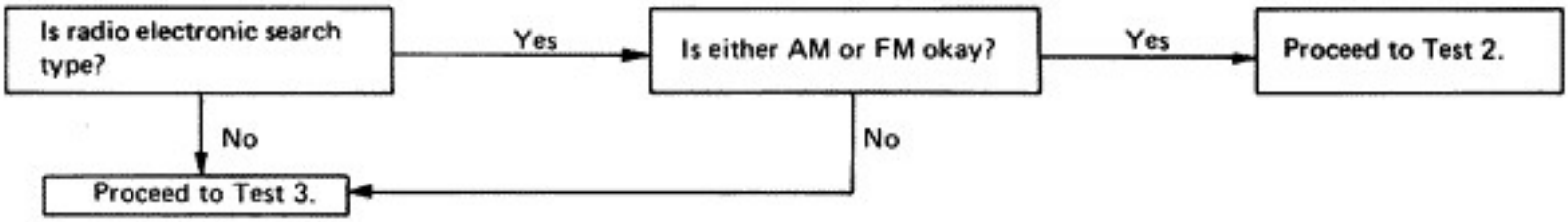

Are speaker connectors connected?
Yes
Temporarily install another speaker.
OK
Replace Speaker.
No
Connect properly.
No
Is there continuity in speaker wire harness?
Yes
Replace radio and tape player.
No
w/o Player
Inspect and repair speaker wire harness.
Proceed to Test 1 of following item.

(b) Tape player okay but no sound from AM and FM or either one.

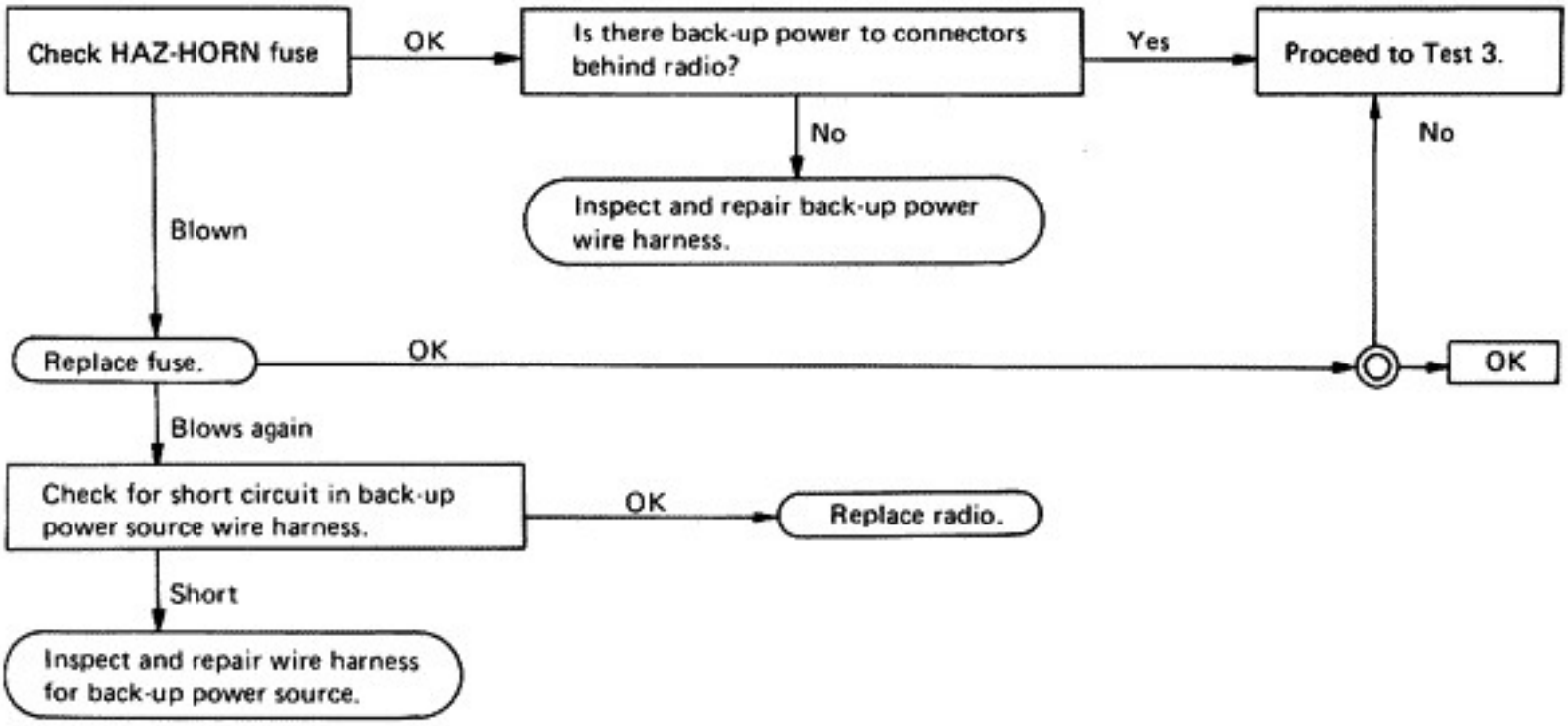
Possible causes:

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

TEST 1

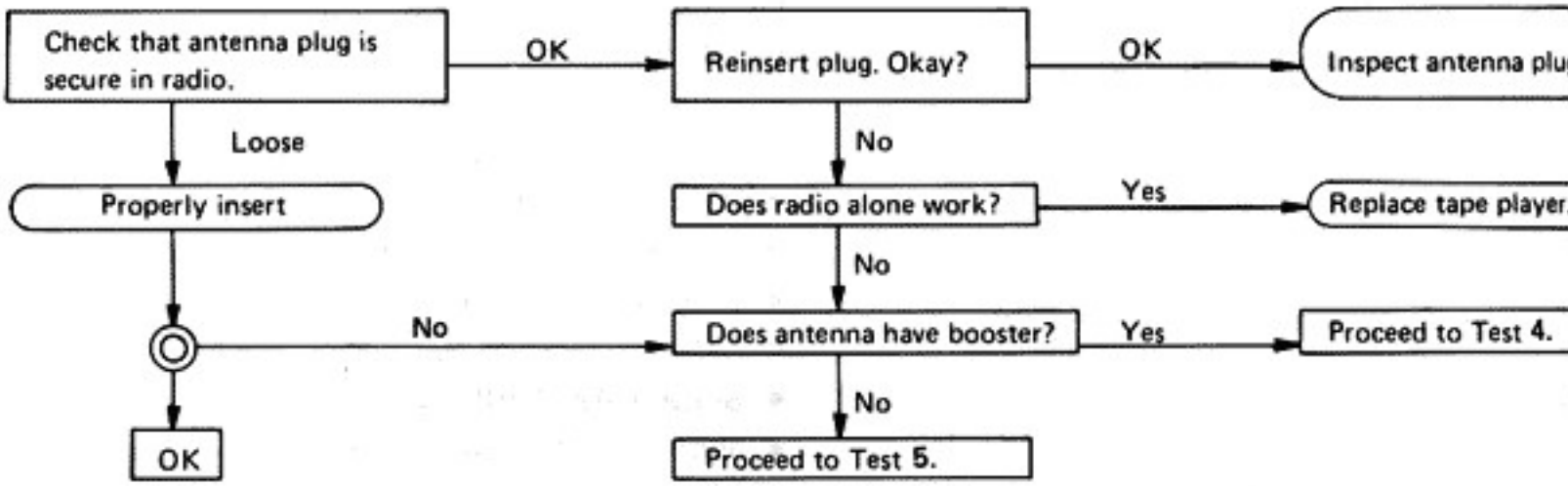


TEST 2

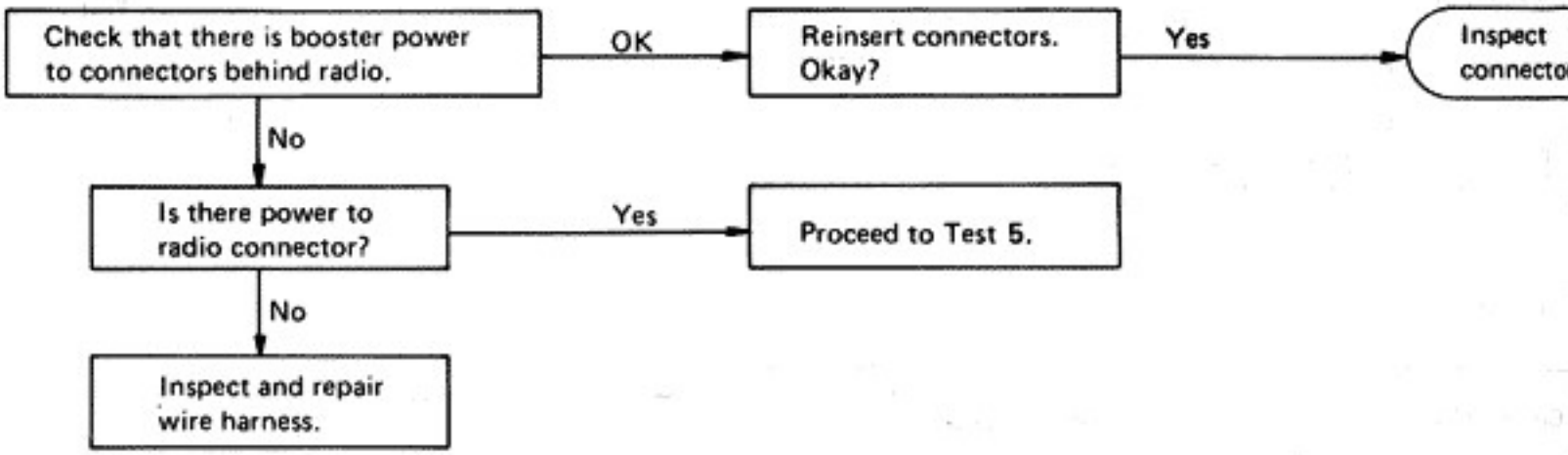


NOTE: Back-up power refers to the storage voltage for preset tuning. This is applied even when the ignition switch is OFF.

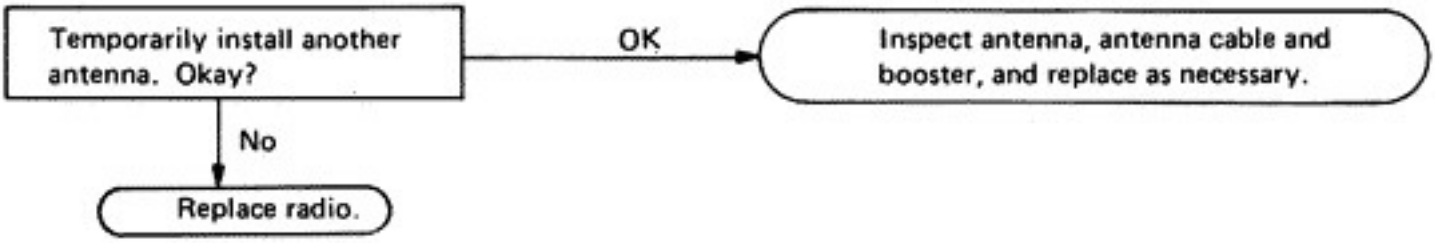
TEST 3



TEST 4



TEST 5

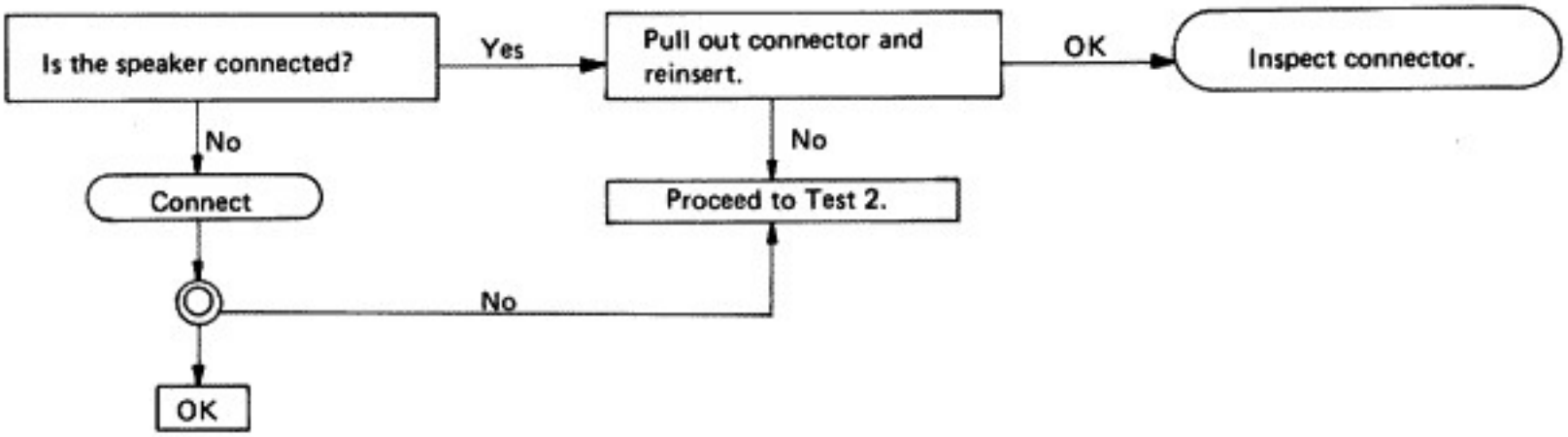


(c) No sound from one speaker.

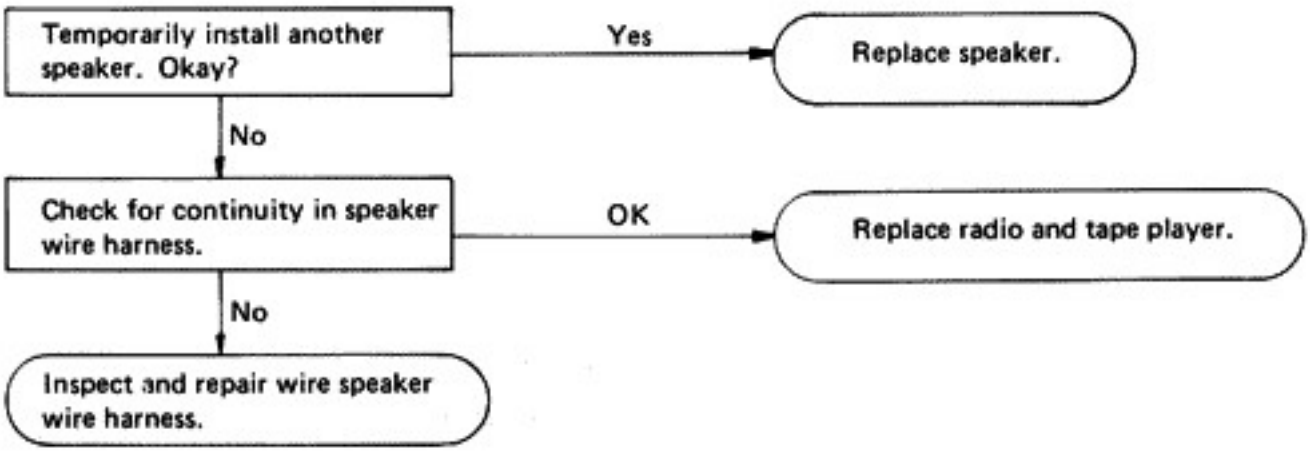
Possible causes:

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

TEST 1



TEST 2

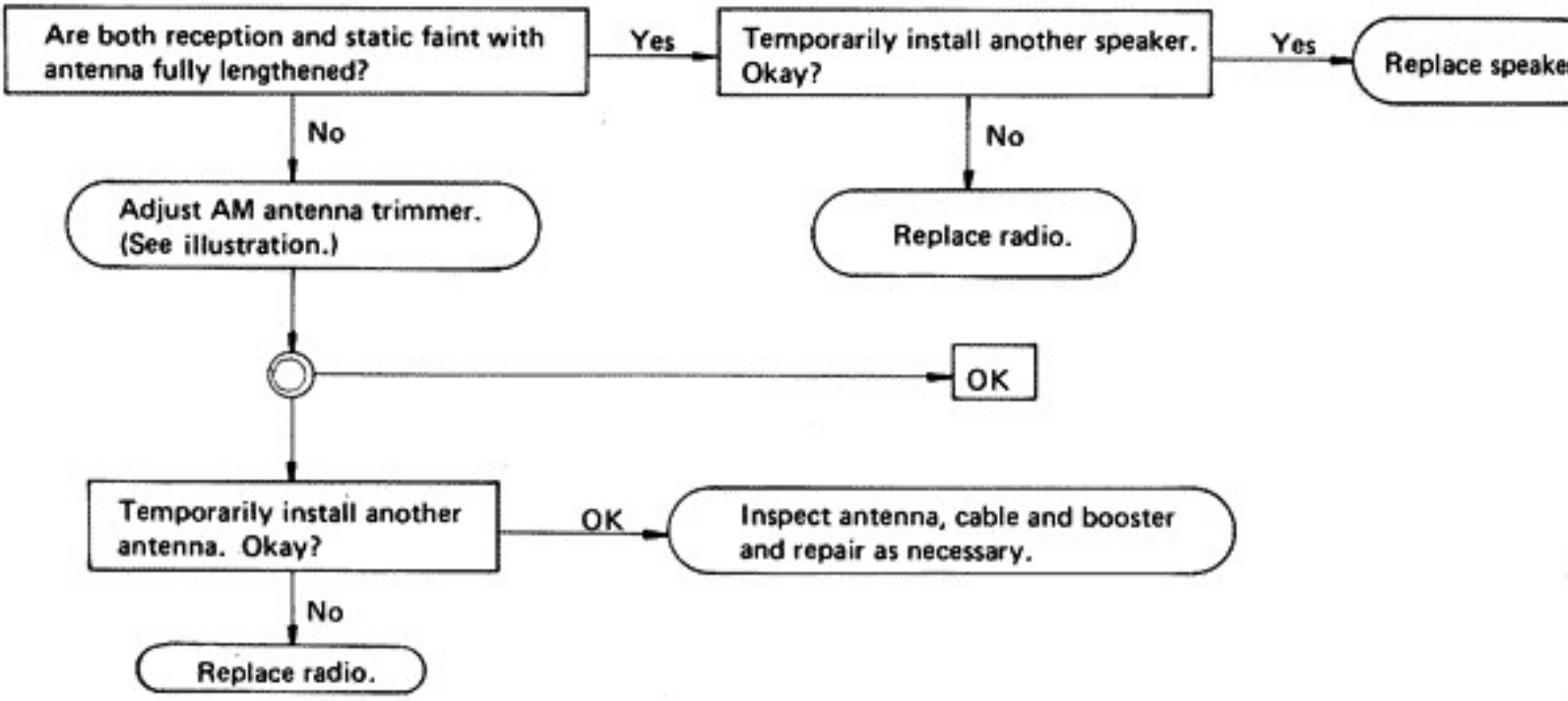


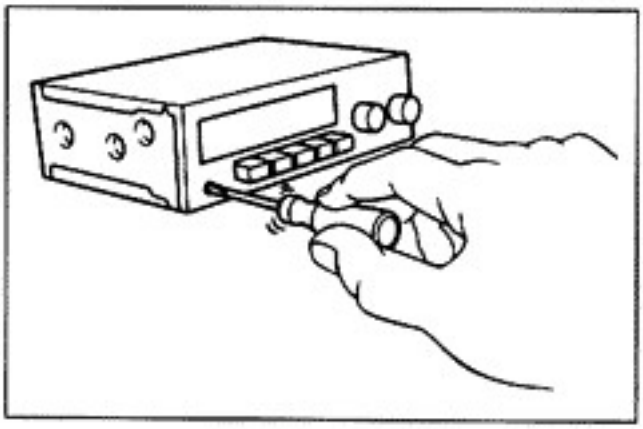
2. FAINT RECEPTION

Possible causes:

- Incorrectly adjusted antenna trimmer
- Defective antenna, cable or booster
- Defective speaker
- Defective radio

TEST





(Ex. Electronic search type)

NOTE: Adjustment of antenna trimmer.

(1) Fully lengthen the antenna.

(2) With the volume and tone at maximum, turn the di to around 1,400 kHz where there is no reception.

(3) Adjust the trimmer to where static is loudest.

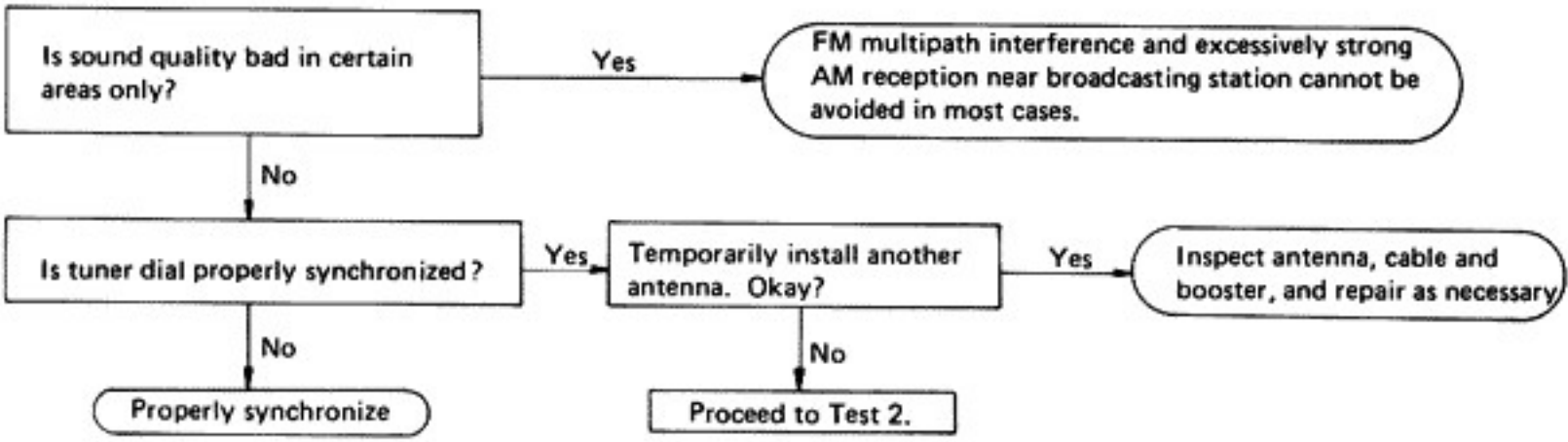
3. BAD SOUND QUALITY

(a) Sound quality bad when radio played.

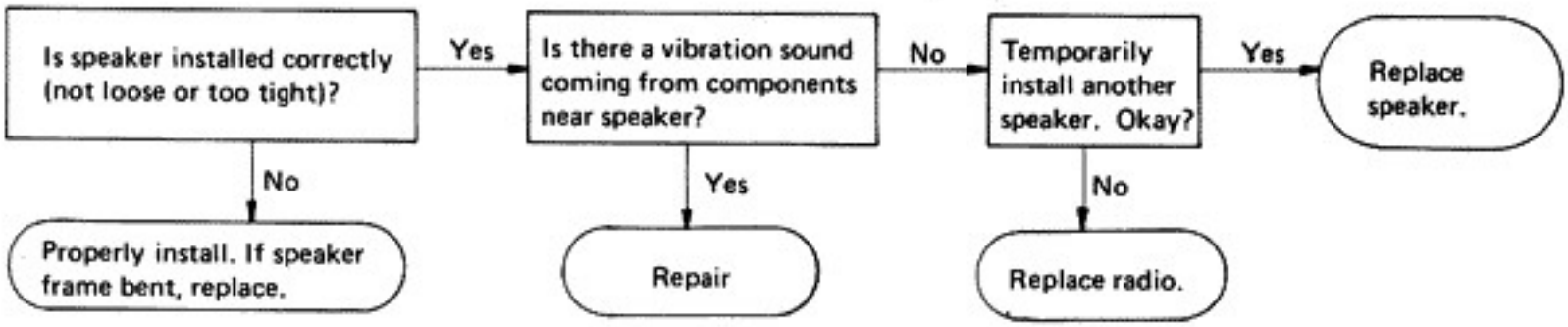
Possible causes:

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

TEST 1



TEST 2



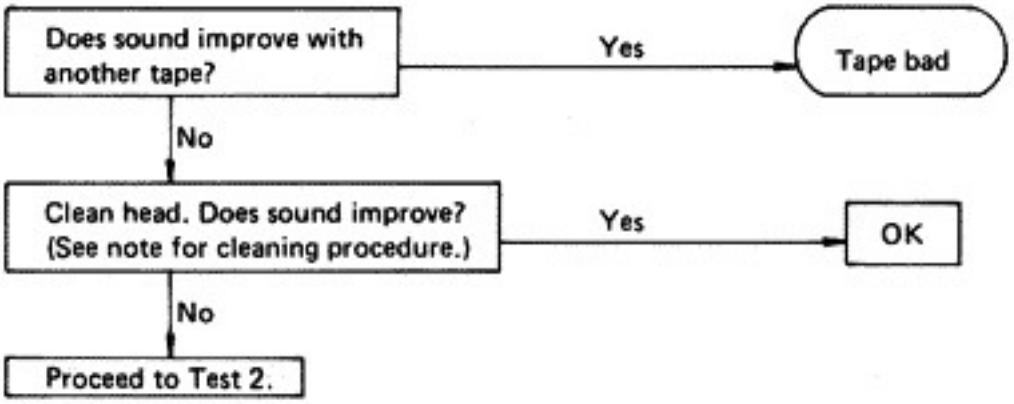
NOTE: FM distortion tends to increase sharply if the tuner is not synchronized.

(b) Sound quality bad when tape player played.

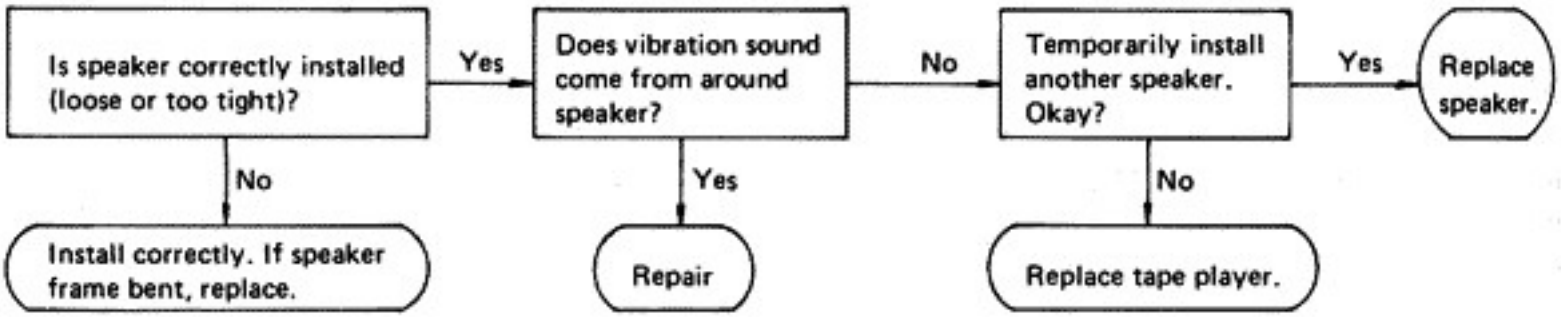
Possible causes:

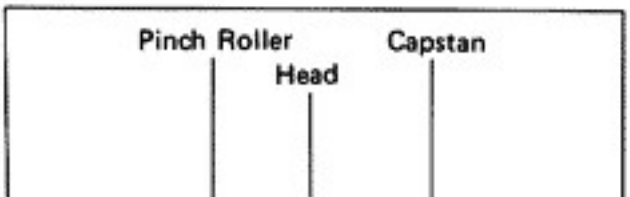
- Bad tape
- Dirty head
- Incorrectly installed speaker
- Vibration noise from around speaker
- Defective speaker
- Defective tape player

TEST 1



TEST 2





NOTE: Head cleaning procedure.

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

(2) Using a cleaning pen or cotton applicator soaked i alcohol, clean the head surface, pinch rollers an

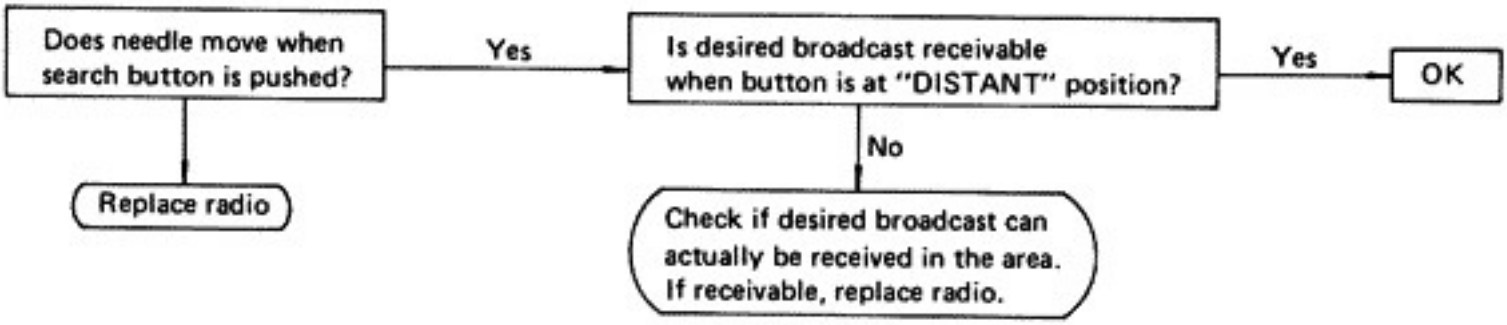
4. DEFECTIVE AUTO-SEARCH MECHANISM

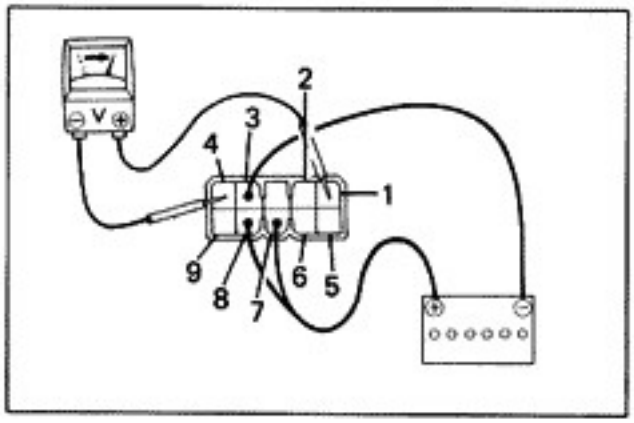
Manual search possible but automatic search mechanism does not function or does not stop at all receivable stations.

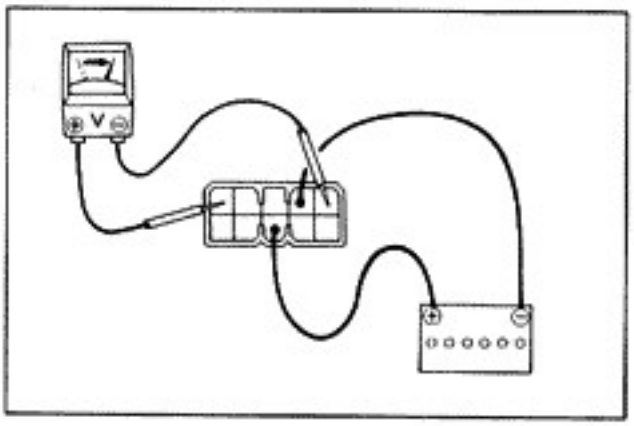
Possible causes:

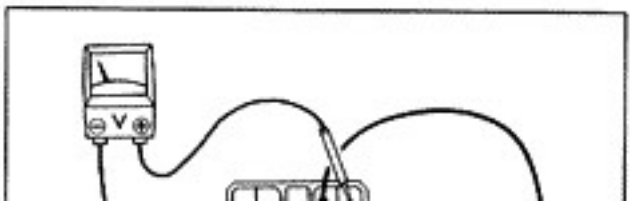
- Poor search sensitivity (SENS button)
- Defective radio

TEST









Antenna Motor Control Relay

INSPECTION OF ANTENNA MOTOR CONTROL 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 7 and 8. Connect the negative (–) lead to terminal 3.

(c) Check that there is battery voltage.

2. INSPECT RELAY OPERATION (ANTENNA DOWN)

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

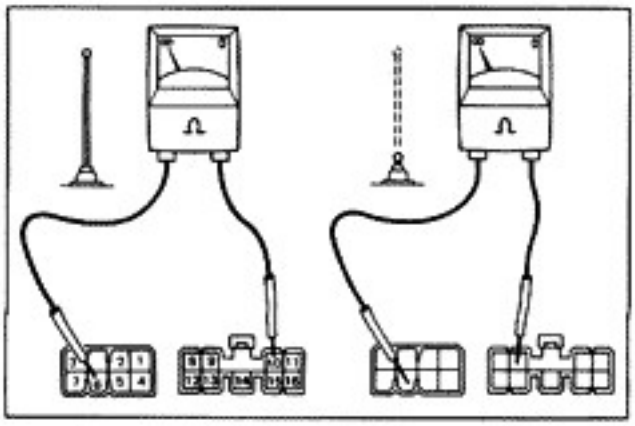
(b) Connect the positive (+) lead from the battery to terminal 7. Connect the negative (–) lead to terminal 2.

(c) Check that there is battery voltage.

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



Antenna Motor

INSPECTION OF ANTENNA MOTOR

INSPECT LIMIT SWITCH OPERATION

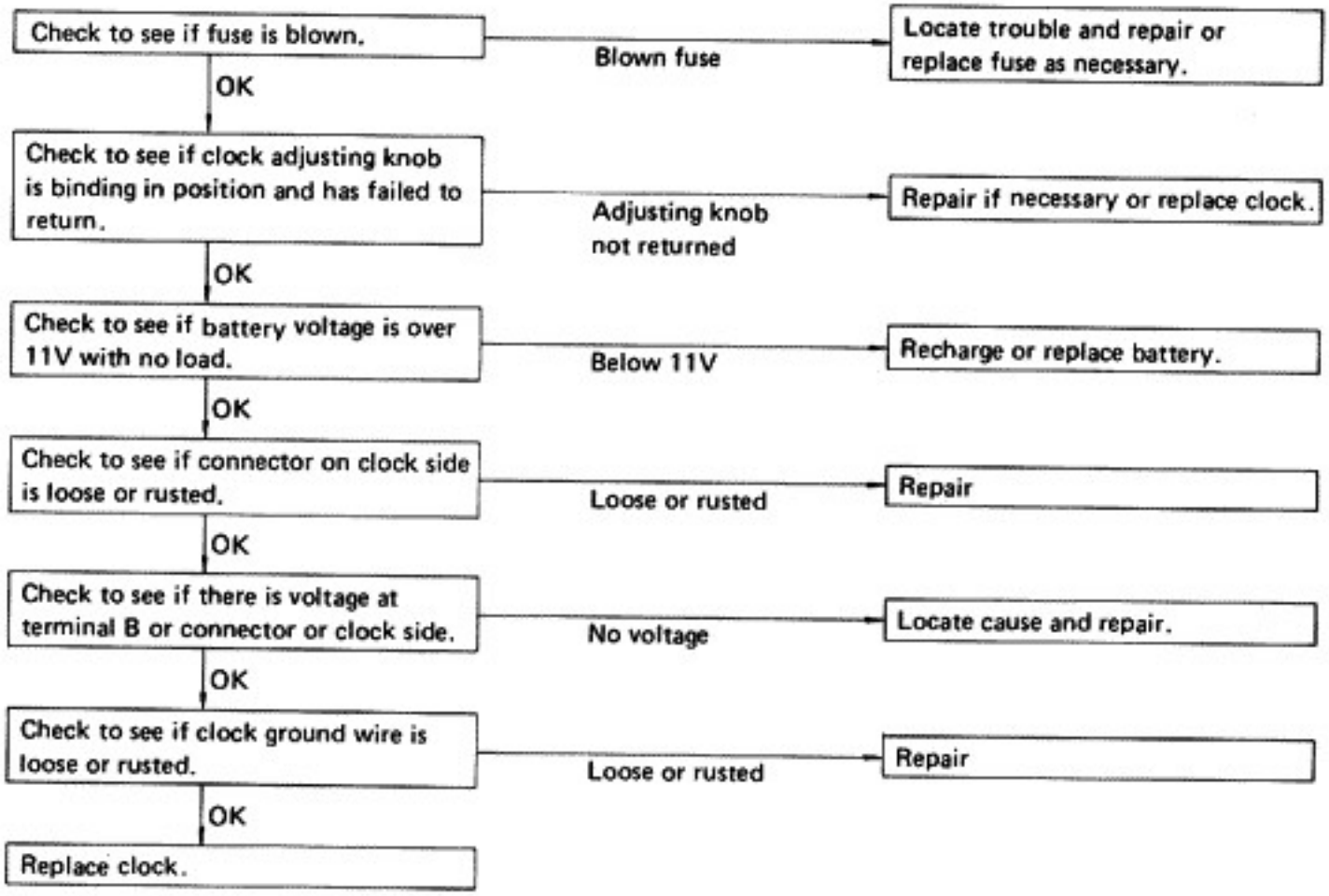
(a) If the motor stops with the antenna up, check tha
there is no continuity between terminals 6 and 1

(b) If the motor stops with the antenna down, check tha
there is no continuity between terminals 6 and 9.

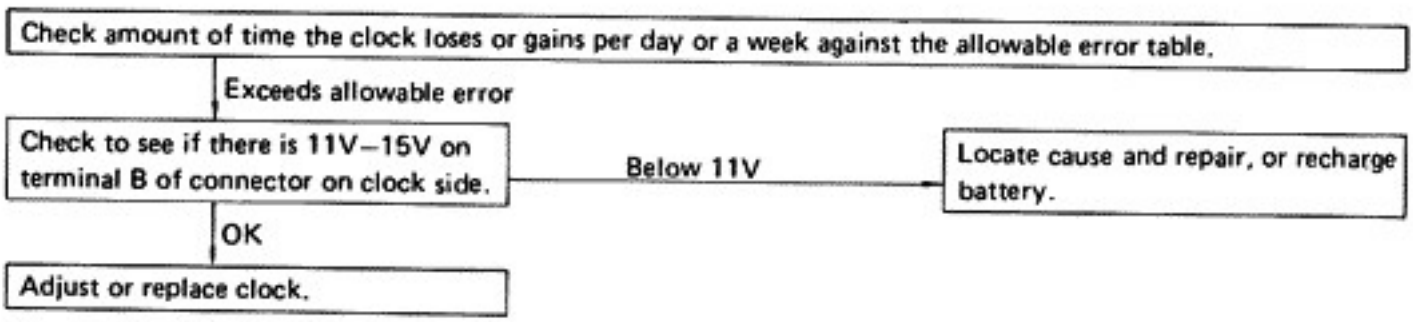
CLOCK

Troubleshooting

CLOCK WILL NOT OPERATE



CLOCK LOSES OR GAINS TIME

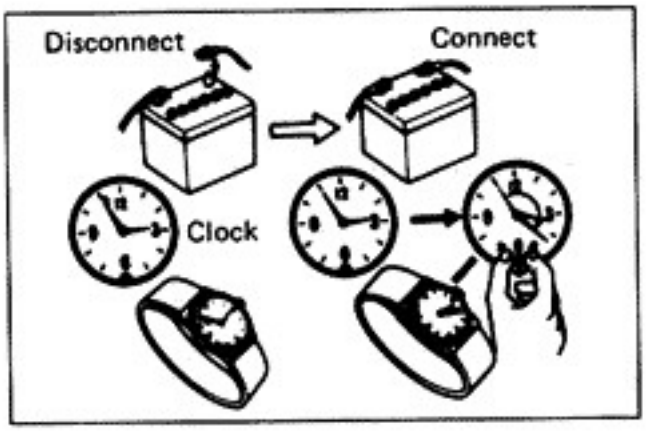


1. INSPECT ALLOWABLE ERROR OF CLOCK

Type	Allowable Error (per day)
3-hand quartz	±4.0 seconds
Digital quartz	±2.5 seconds

2. ADJUSTMENT OF CLOCK

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



3. STARTING OF CLOCK

(a) Connect the battery terminal.

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

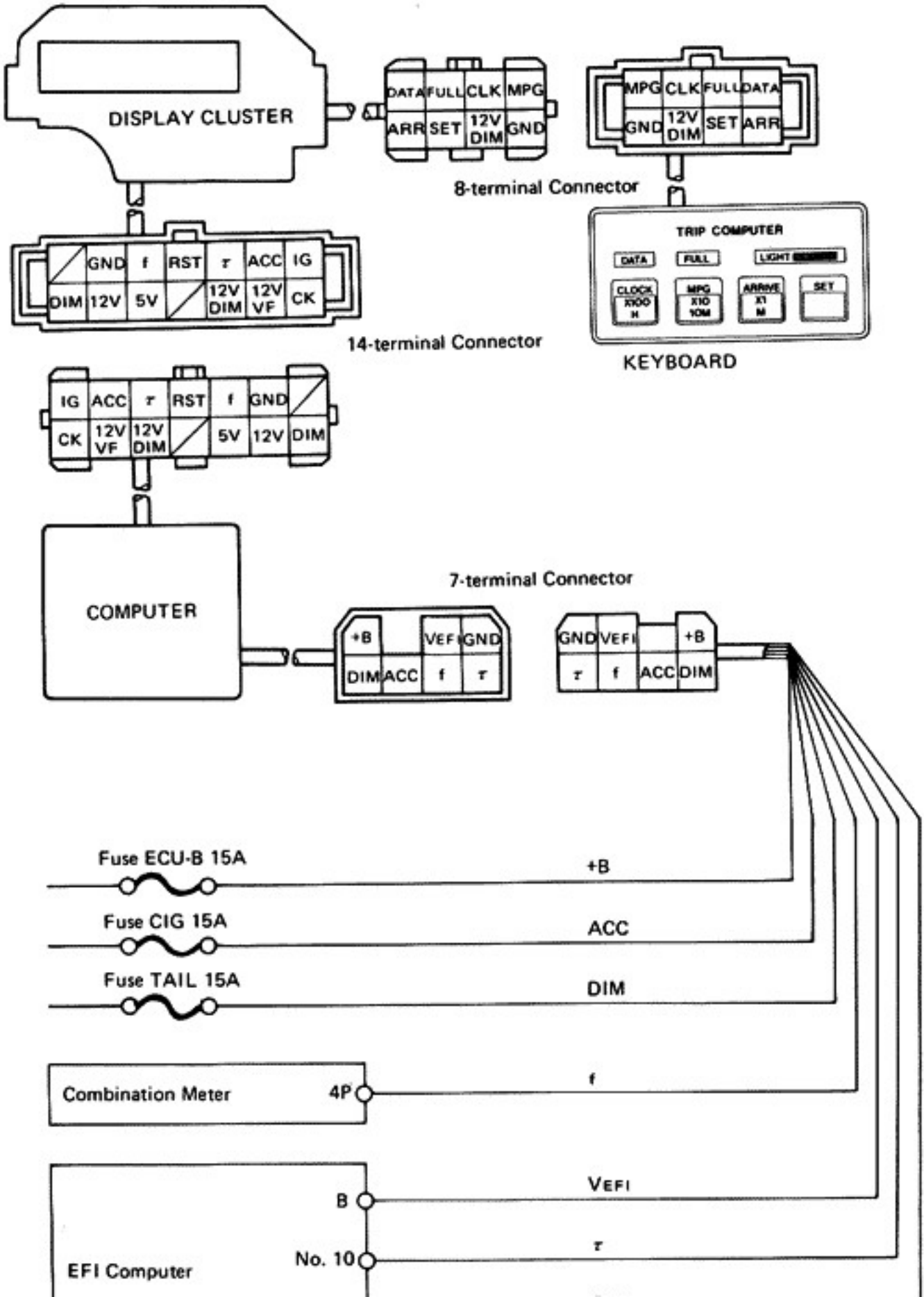
NOTE: Whenever the battery terminal is disconnecte make sure to set the clock to the correct time after reco necting it.

TRIP COMPUTER

PRECAUTIONS

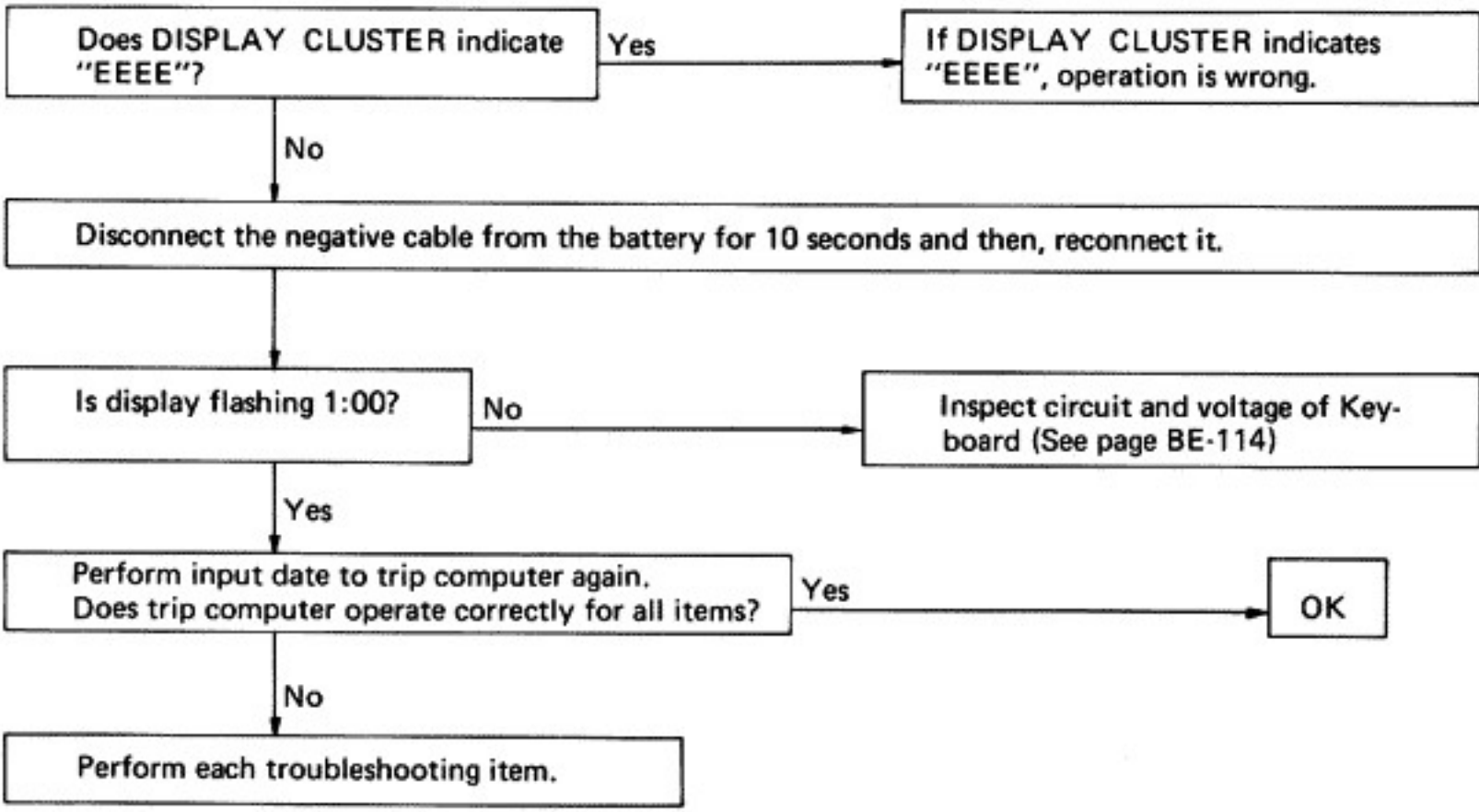
1. Before beginning troubleshooting, check that the trip computer operation is correct.
2. First check the wiring connector lines (See page BE-112) and confirm that the input source is normal.
3. When checking voltage, resistance, etc., use a high-impedance type tester (it is impossible with a simple tester).
4. Do not attempt to disassemble or repair individual components.
5. Do not attempt to make checks with an external power (battery, etc.) applied directly to the component.
6. In the flow chart, there is a high probability that the replacement part will solve the problem, although it is not 100% guaranteed.
7. Do not touch circuit components as there is danger of circuit damage due to static electricity. Never reverse battery connections as it could result in instant damage to the interior of the components.
8. Do not disconnect the battery while the engine is running as this would cause an instant reverse charge (100V), resulting in damage to the interior of the components.
9. Always disconnect the battery terminals before pulling apart connectors or terminals.
10. To prevent damage, handle meters with care.

WIRING DIAGRAM

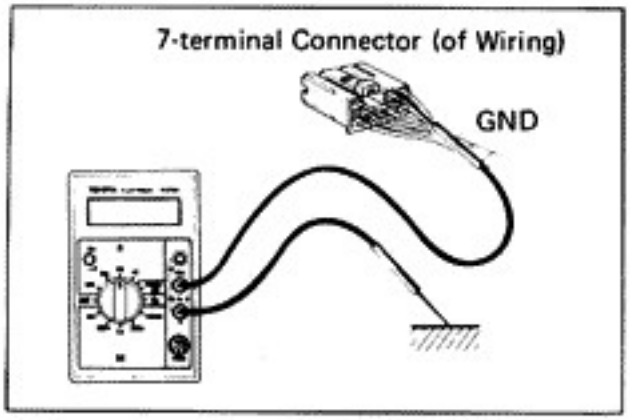


Troubleshooting

Check the following before beginning Troubleshooting.



Symptom	Possible Cause	Trouble
Function keys do not operate.	DISPLAY CLUSTER or Keyboard	A
MPG display is always zero. Trip reading does increase or "ARRIVE" mode indicate " - - - - - - - " always.	DISPLAY CLUSTER or Keyboard	B
MPG display is always 70 or trip reading does not change.	DISPLAY CLUSTER or Keyboard	C
Lights does not dim.	DISPLAY CLUSTER or Keyboard	D
Inaccurate clock.	DISPLAY CLUSTER	E

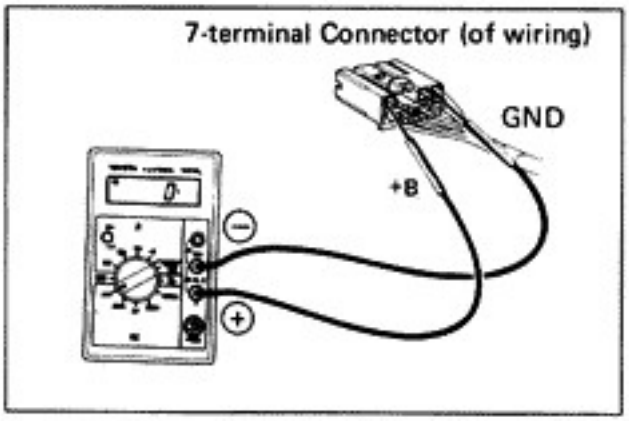


INSPECTION OF WIRING CONNECTOR LINE

1. INSPECT GROUND CONNECTION

Inspect the ground connection between terminal E an body ground of the wiring connector.

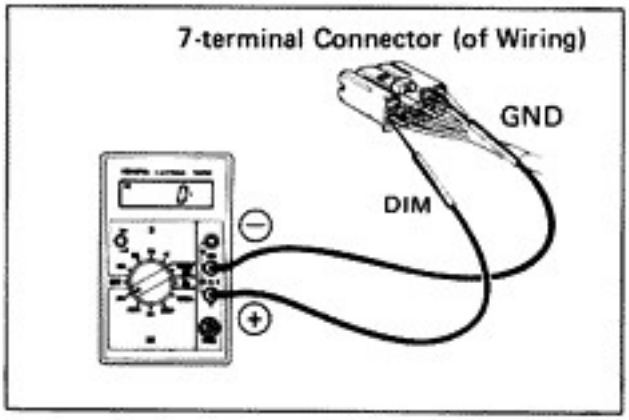
If there is no voltage repair or replace the ECV fus connector and wire harness.



2. INSPECT POWER SOURCE LINE TO CONNECTOR

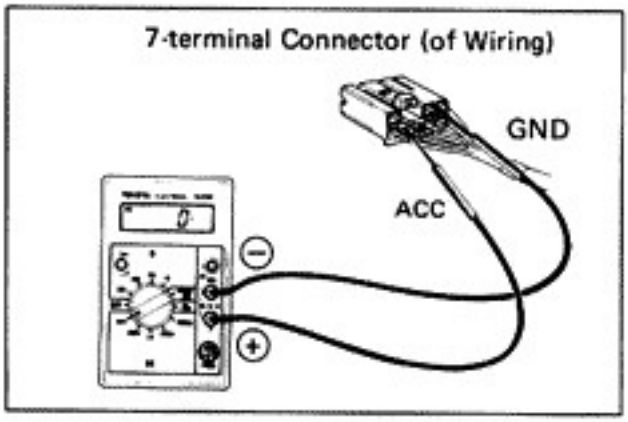
(a) Inspect the battery voltage between terminals +B an GND of the wiring connector.

If there is no voltage, repair or replace the ECV fuse, co nector and wire harness.



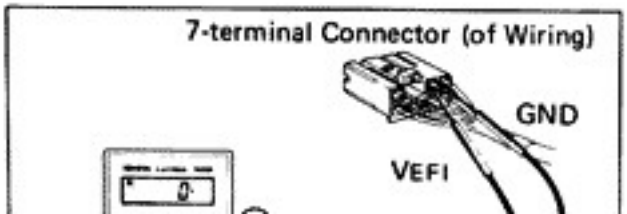
(b) Inspect the battery voltage between terminals DI and GND of the wiring connector with the ligh switch turned ON.

NOTE: The voltage is nearly equal to battery voltage.



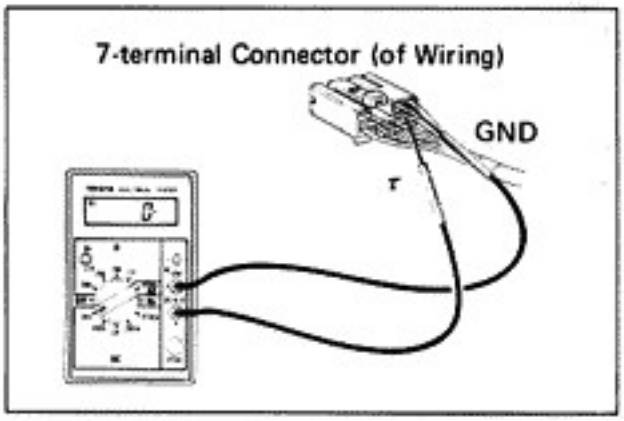
(c) Inspect the battery voltage between terminals AC and GND of the wiring connector with the ignitio switch at ACC or ON position.

NOTE: The voltage is nearly equal to battery voltage.

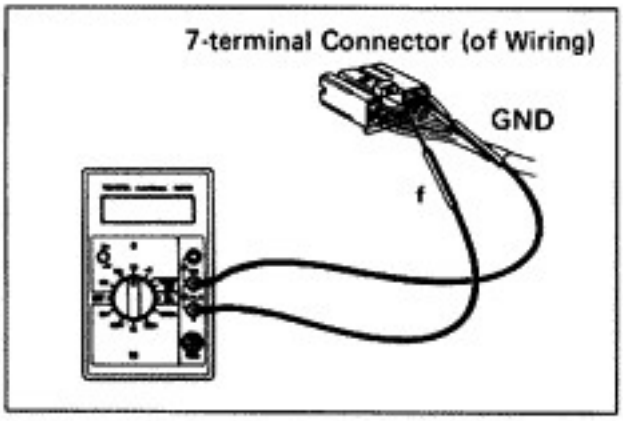


(d) Inspect the battery voltage between terminals VEF and GND of the wiring connector with the ignitio switch at ON position.

NOTE: The voltage is nearly equal to battery voltage.



(e) Inspect the battery voltage between terminal τ and body ground of wiring connector with the ignition switch at ON position.



3. INSPECT SPEED SENSOR LINE TO CONNECTOR

With the ignition switch at ON position, check that there is continuity between terminals f and GND of wiring connector four times per each revolution of the magnet shaft.

TEST	TROUBLE
A	Function keys do not operate.

Disconnect 8-terminal connector.

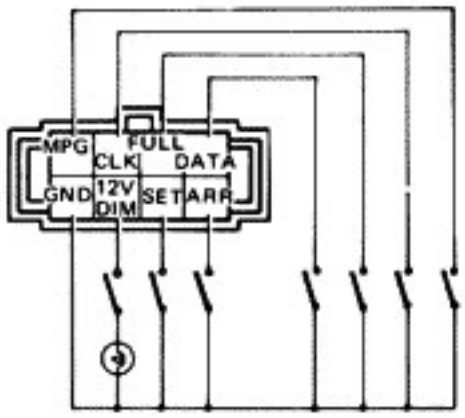
Is there continuity between the following terminals of 8-terminal connector when the key is pushed?

Key	Terminal	Key	Terminal
DATA	DATA – GND	MGP	MGP – GND
FUEL	FUEL – GND	ARRIVE	ARR – GND
CLOCK	CLK – GND	SET	SET – GND

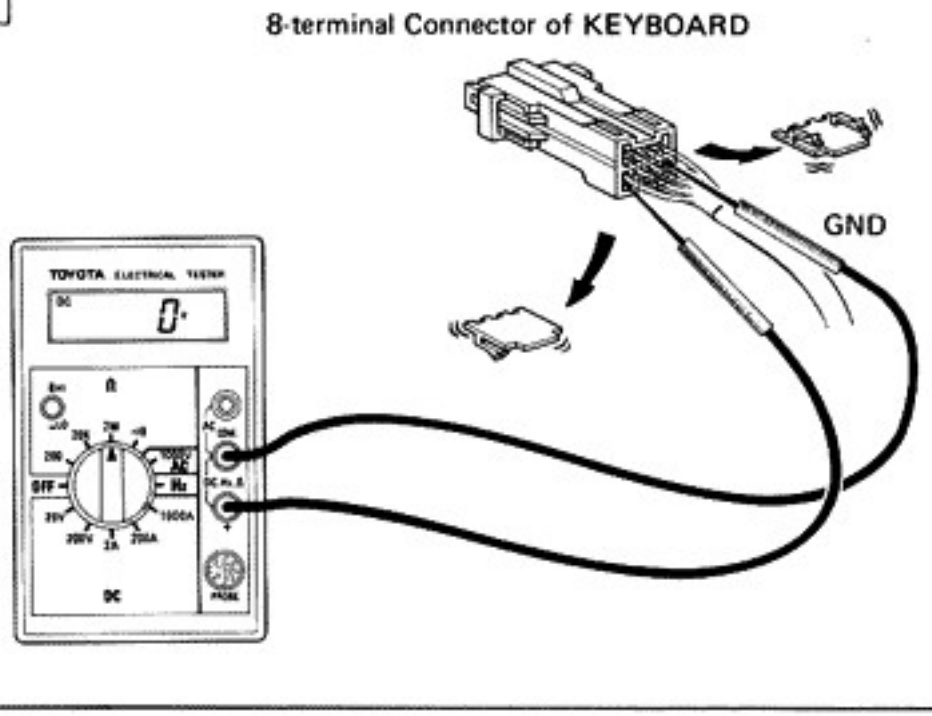
OK → Replace DISPLAY CLUSTER or COMPUTER.

No → Replace Keyboard.

1



2



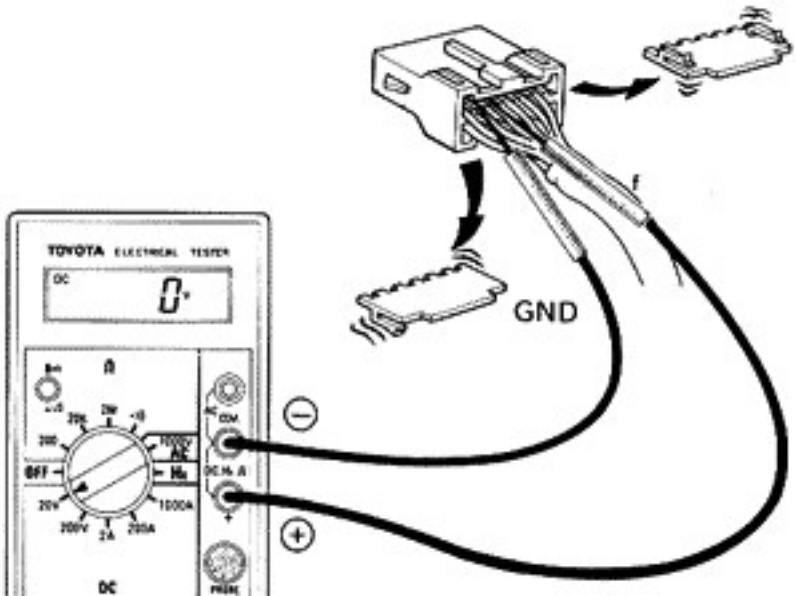
TEST	TROUBLE
B	MPG indication always Zero. Trip reading increases or "ARRIVE" mode indicates " ..... " always.

Is MPG indication always zero?
- No → Replace DISPLAY CLUSTER.
- Yes → Disconnect 14-terminal connector.

① With the ignition switch at ON position, does voltage between terminals f and GND of the 14-terminal connector fluctuate between 0 to 5V when vehicle is moved about 1 meter? (engine not running)
- Yes → Replace DISPLAY CLUSTER.
- No → Is there continuity speed sensor and wire harness?
  - Yes → Replace Keyboard.
  - No → Repair and replace speed sensor and wire harness.

1

14-terminal Connector of COMPUTER



TEST	TROUBLE
C	MPG indication always 70 miles/gal or trip reading does not change.

Does MPG always indicate 70 or trip reading not change?

Yes → Replace DISPLAY CLUSTER.

No

① Does voltage change from 0 to 5V between terminals τ and GND of 14-terminal connector in accordance with fuel consumption?

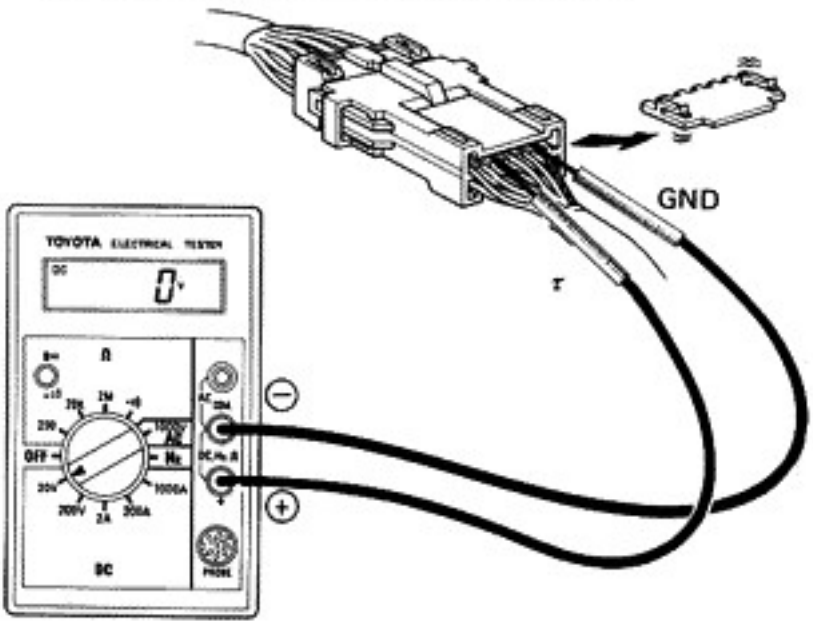
No → Replace Keyboard.

Yes → Replace DISPLAY CLUSTER.

NOTE: If tester indication can be verified, this check is okay.
Analog Type: Needle fluctuation
Digital Type : Number change

1

14-terminal Connector of DISPLAY CLUSTER



TEST	TROUBLE
D	Lights do not dim.

Disconnect 14-terminal connector.

↓

① With the ignition switch at ACC position and light switch turned ON, is there 0V between terminals DIM and GND of the 14-terminal connector?

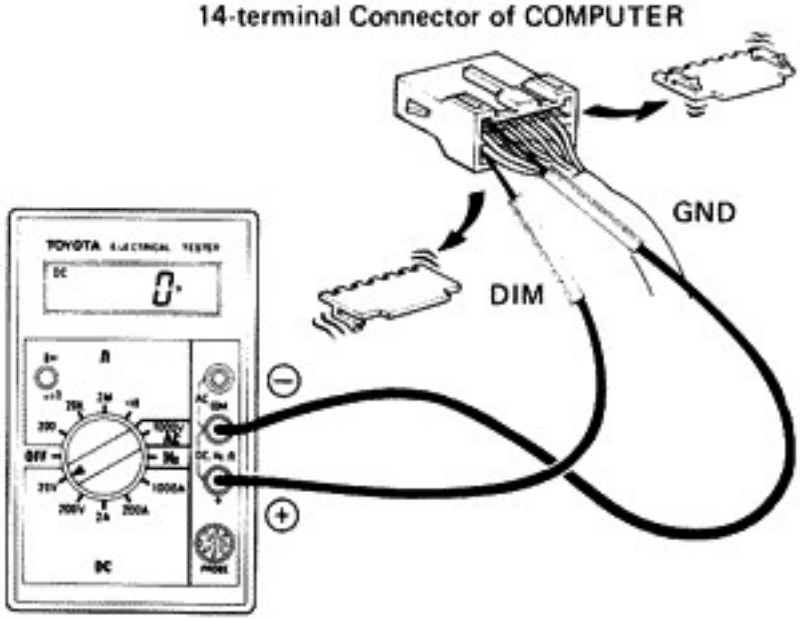
No ↓

Replace Keyboard.

Yes ↓

Replace DISPLAY CLUSTER.

1



TEST	TROUBLE
E	Inaccurate clock.

Replace DISPLAY CLUSTER