

BODY ELECTRICAL SYSTEM

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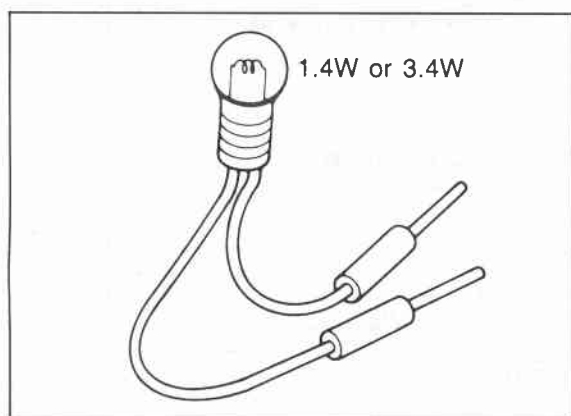
15 INTRODUCTION

INTRODUCTION

HOW TO USE THIS SECTION

Information regarding removal and installation of electrical equipment is given in **SECTION 14**. Understanding will be easier if this section is used in conjunction with the **WIRING DIAGRAMS**.

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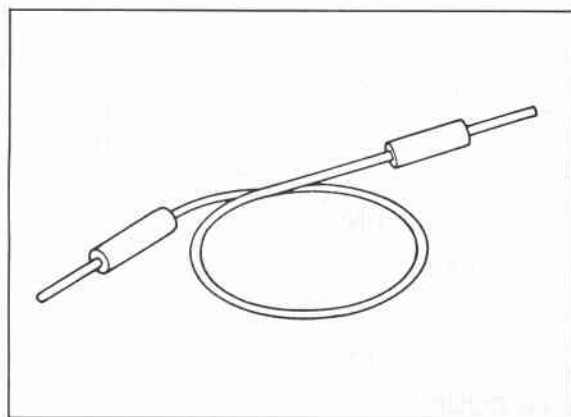
ELECTRICAL TROUBLESHOOTING TOOLS

Test Light

The test light, as shown in the figure, uses a 12V bulb. The two leads should be connected to probes. The test light is used for simple voltage checks and to check for short circuits.

Caution

When checking the control unit, never use a bulb over 3.4W.



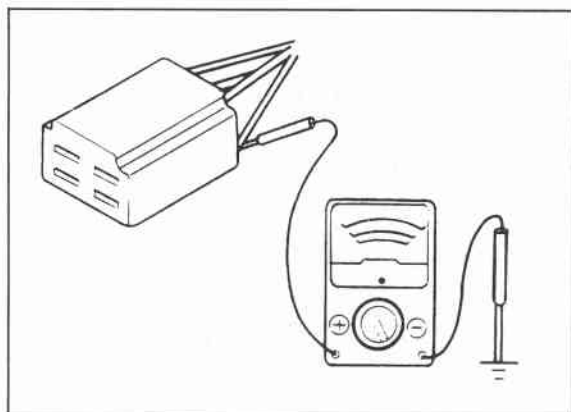
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Jumper Wire

The jumper wire is used for testing by short-circuiting switch terminals and to verify the condition of ground connections.

Caution

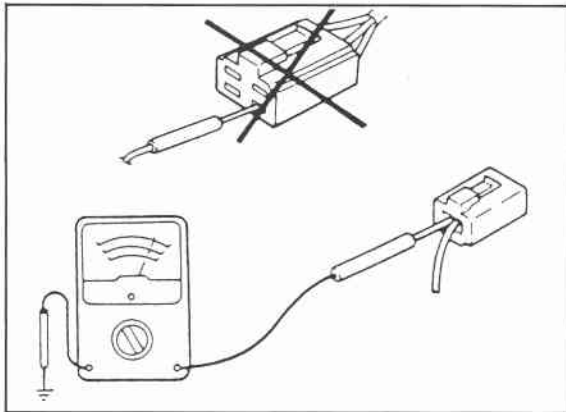
Do not connect the jumper wire between a power source line and body ground, because doing so may cause burning or other damage to harnesses or electronic components, etc.



69G15X-003

Voltmeter

The DC voltmeter is used for measurement of circuit voltage. A voltmeter with a range of 15V or more is used. It is used by connecting the positive (+) probe (red lead) to the point where voltage is to be measured and connecting the negative (-) probe (black lead) to the body ground.



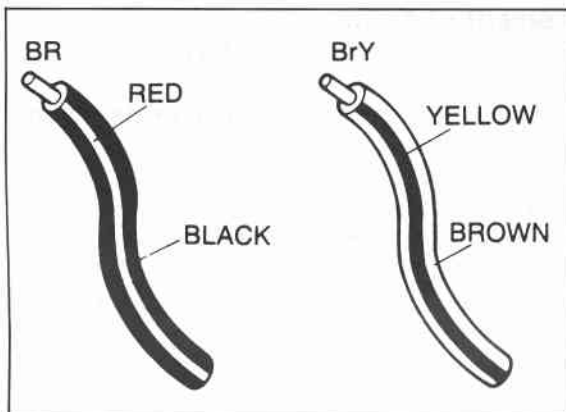
63U15X-005

Ohmmeter

The ohmmeter is used to measure the resistance between two points in a circuit, and is also used to check for continuity and diagnosis of short circuits.

Caution

Do not attempt to connect the ohmmeter to any circuit to which voltage is applied, because doing so may burn or otherwise damage the ohmmeter.



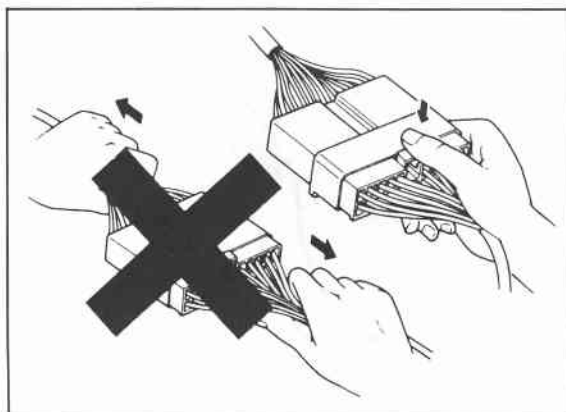
47U15X-008

PRECAUTION

Wiring Color Code

Two-color wires are indicated by a 2-letter symbol. The first letter indicates the base color of the wire and the second indicates the color of the stripe.

CODE	COLOR
B	BLACK
Br	BROWN
G	GREEN
L	BLUE
Lb	LIGHT BLUE
Lg	LIGHT GREEN
O	ORANGE
R	RED
Y	YELLOW
W	WHITE



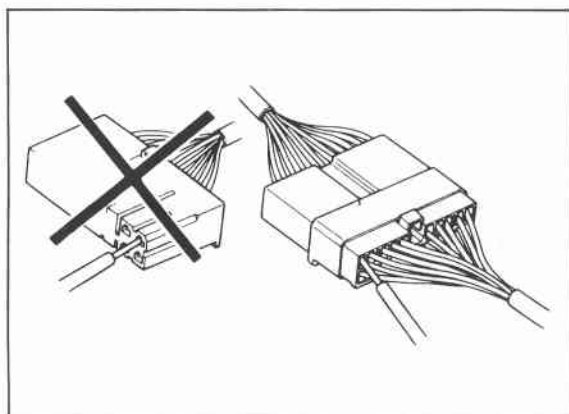
69G15X-004

Bulkhead-Type Connector

This connector can be separated by pressing the lock lever.

Do not pull the wire when removing the connector; be careful to hold the connector itself when disconnecting.

15 INTRODUCTION

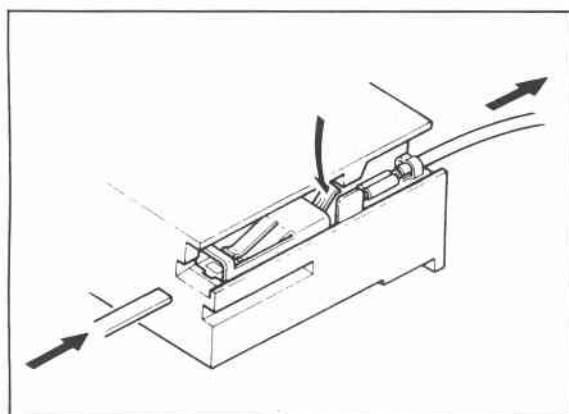


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Inspection note

When checking the continuity or voltage with a circuit tester, insertion of the test probe into the receptacle connector may open the fitting of the connector and result in poor contact.

Therefore, insert the test probe only from the wire harness side.



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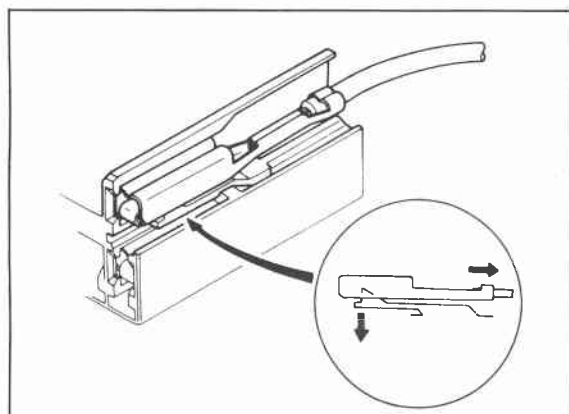
Replacement of Terminal

Use the appropriate tools to remove the terminal, as shown in the figure.

When installing a terminal, be sure to press it in until it locks securely.

<Female Type No.1>

Insert a push-tool or thin piece of metal from the terminal side of the connector, and then, with the locking tabs of the terminal pressed down, pull the terminal out from the rear side.

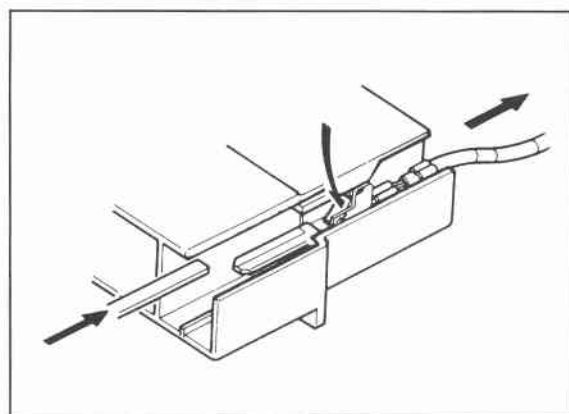


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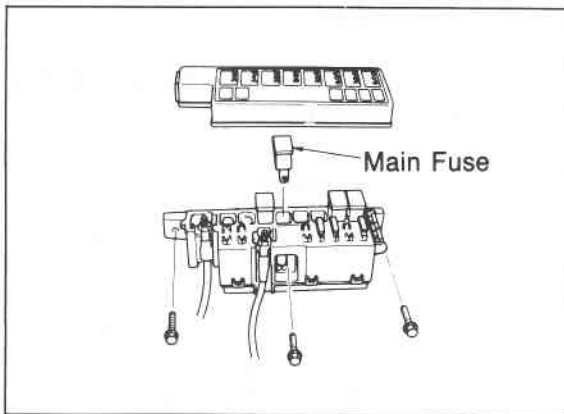
<Female Type No.2>

<Male Type>

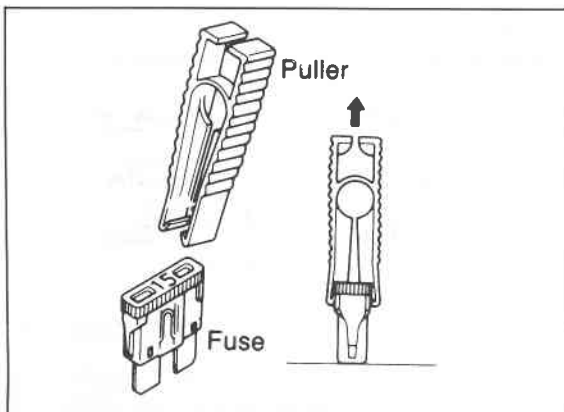
Same as the female type.



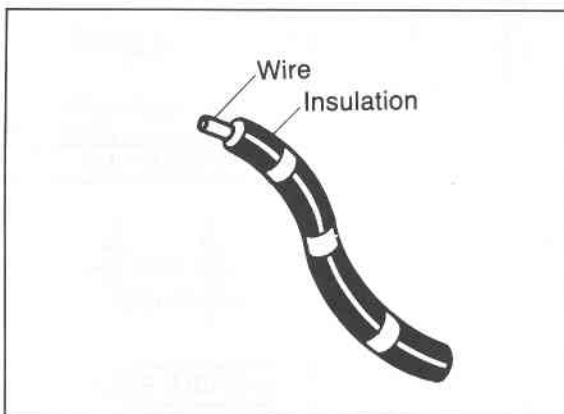
47U15X-012



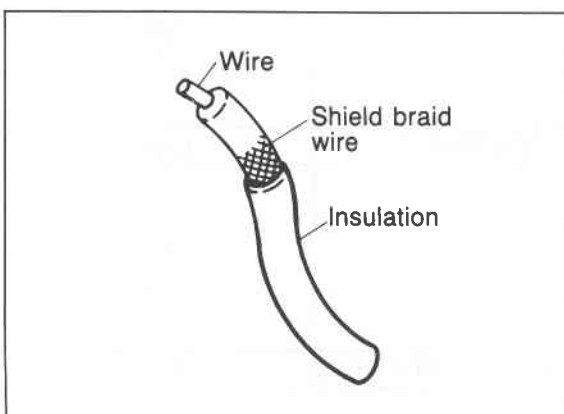
69G15X-006



4BG15X-003



69G15X-007



69G15X-008

Replacement of Fuse

1. When replacing a fuse, be sure to replace it with one of the specified capacity.
If, after a fuse has been replaced, it fails again, there is probably a short in the circuit, and the wiring should be checked.
2. Be sure the negative battery terminal is disconnected before replacing a main fuse.

3. When replacing a fuse, use the supplied fuse puller in the fuse box cover.

Thin Insulation Wire

To reduce the weight of the wiring harness, a thin coating of high resistance insulation material is used.

Shielded braid wire

This wire is used to prevent a malfunction in important circuits that are susceptible to outside signals or interference.

Eg.

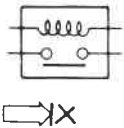
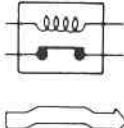
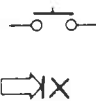
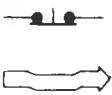
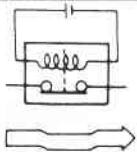
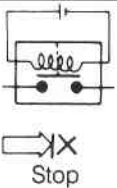
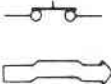
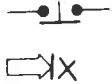
- Ignition coil
- O₂ sensor

15 INTRODUCTION









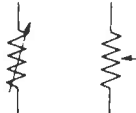




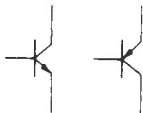



ELECTRICAL SYMBOLS

Switches and Relays

There is an NC (normally closed) and NO (normally open) indication for switches and relays; this indicates the condition when there has been no change of operating conditions.

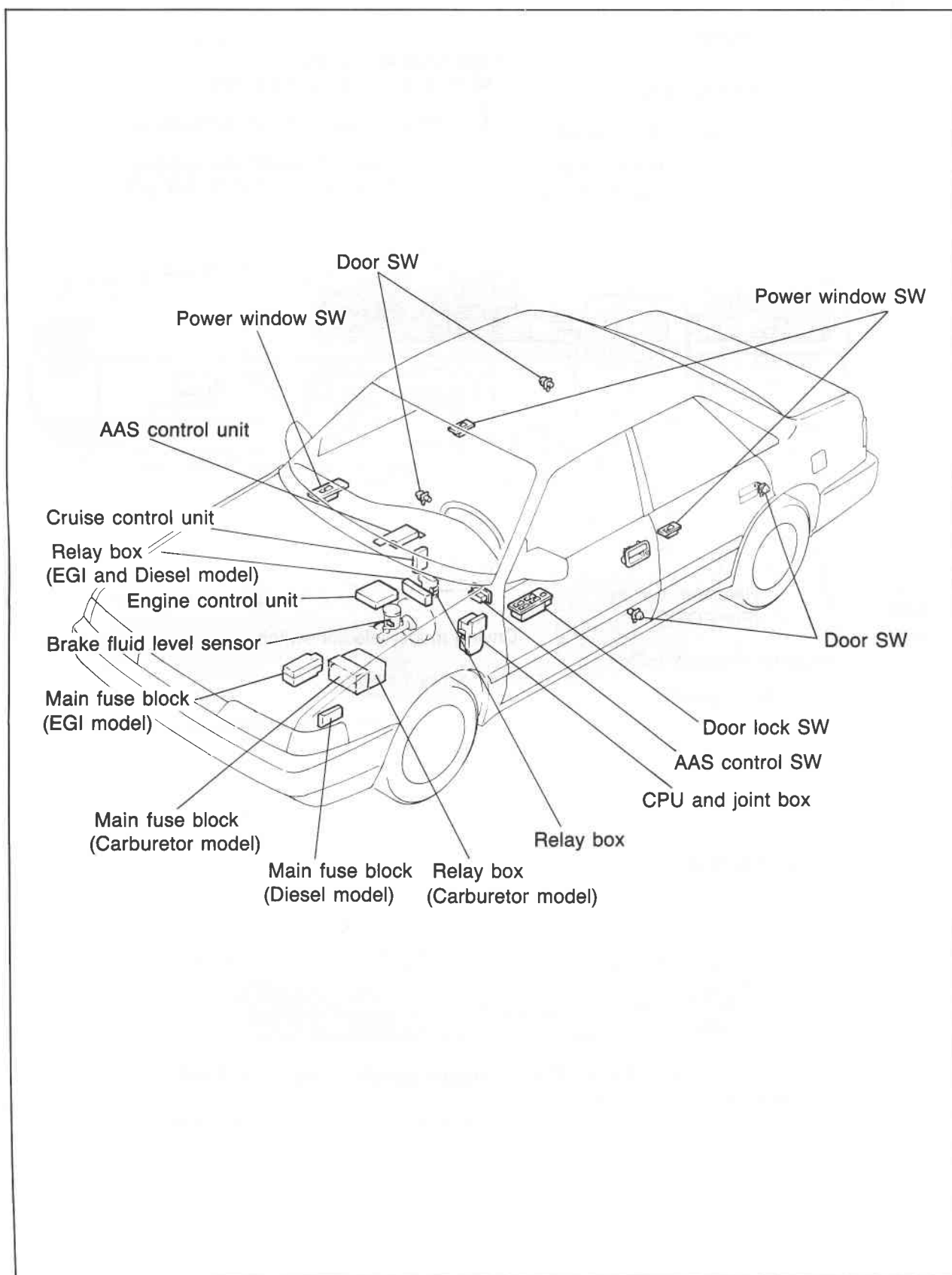
	Relay		Switch	
	NO type relay	NC type relay	NO switch	NC switch
Not in operation (No power supply)	 Stop	 Flow	 Stop	 Flow
In operation (Power supply)	 Flow	 Stop	 Flow	 Stop

Other Electrical Symbols

		 Holder  Box	
BATTERY	BODY GROUND	FUSE	FUSIBLE LINK
			
MOTOR	COIL, SOLENOID	RESISTOR	VARIABLE RESISTOR
			
THERMISTER	DIODE	CONDENSER	LIGHT
			
TRANSISTOR	SPEAKER	CIGARETTE LIGHTER	HEATER

LOCATION OF UNIT, RELAY AND SWITCH

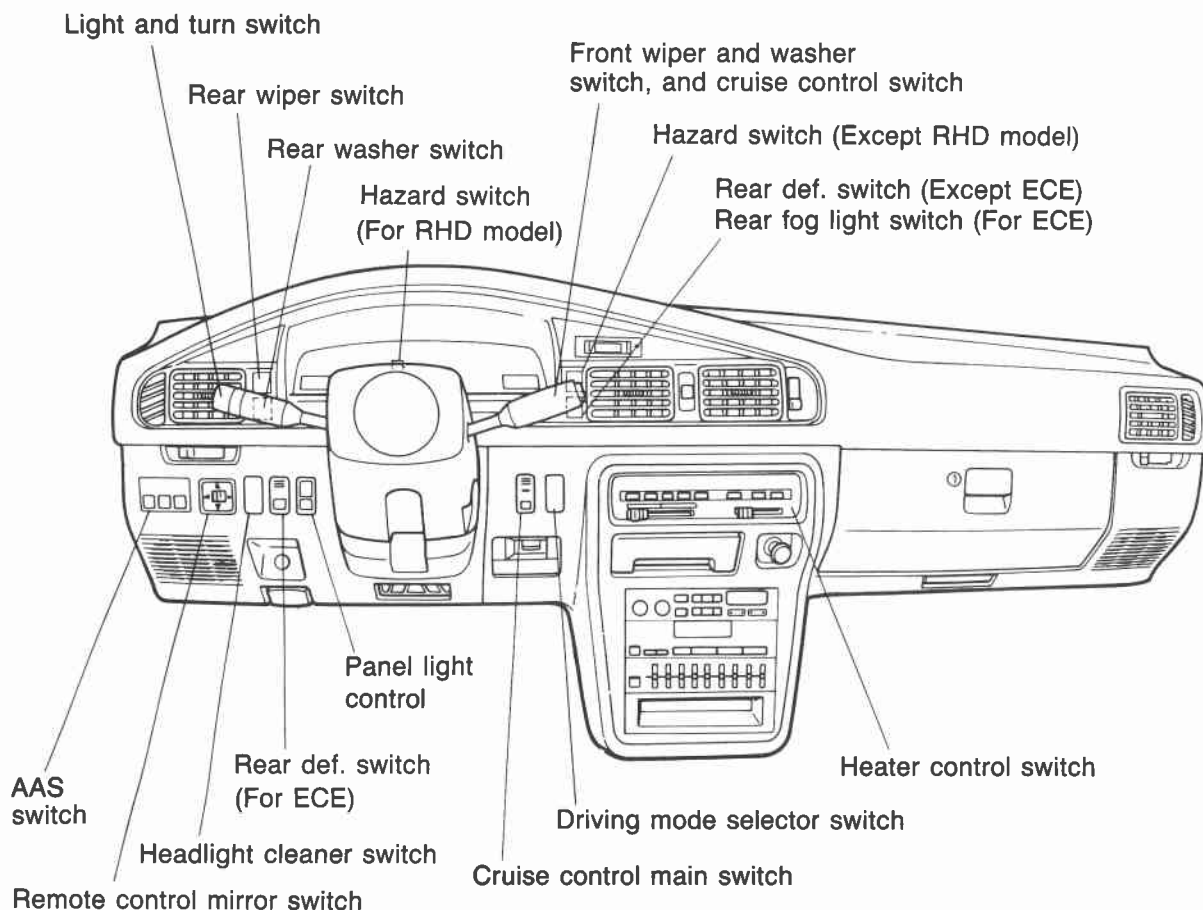
STRUCTURAL VIEW



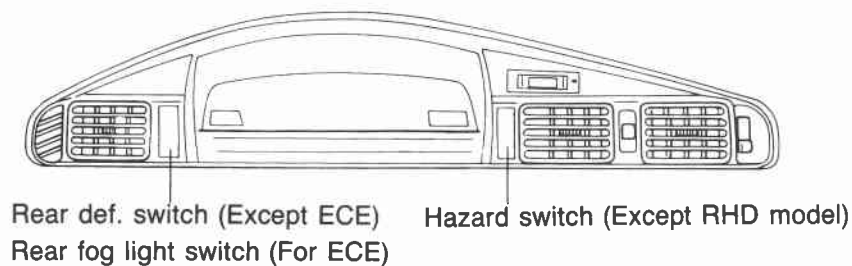
15 LOCATION OF UNIT, RELAY AND SWITCH

STRUCTURAL VIEW

Hatchback



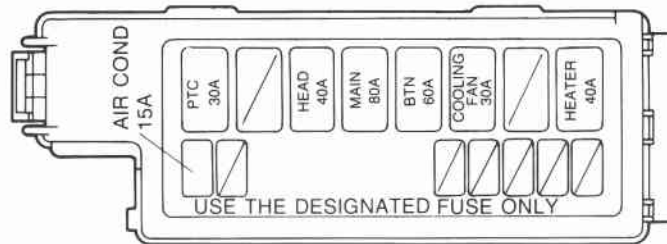
Coupe/MX-6 and Sedan



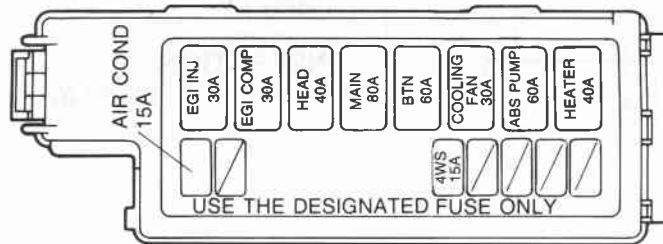
MAIN FUSE BLOCK

STRUCTURAL VIEW

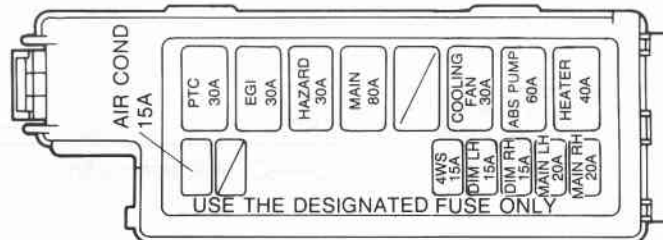
LHD and RHD General, Middle East, ECE (Carburetor model)



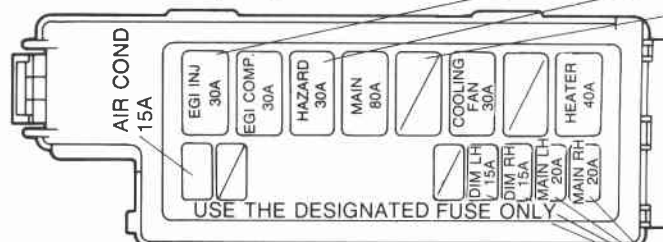
ECE (EGI model)



West Germany (Carburetor and EGI model)



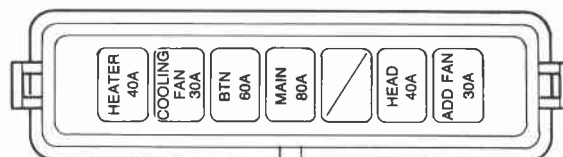
Unleaded fuel model (EGI)



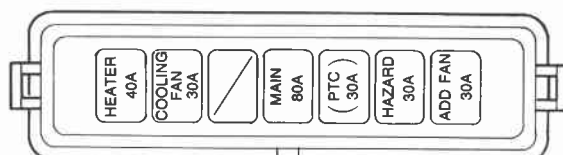
PTC 30A (Sweden)
HEAD 40A (Sweden)
BTN 40A (Sweden)

LHD and RHD General, ECE (Diesel model)

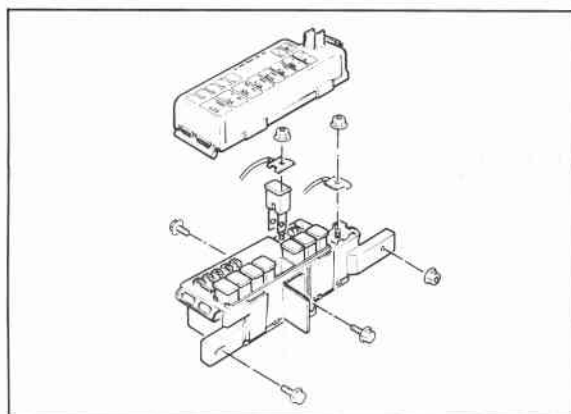
Except Sweden



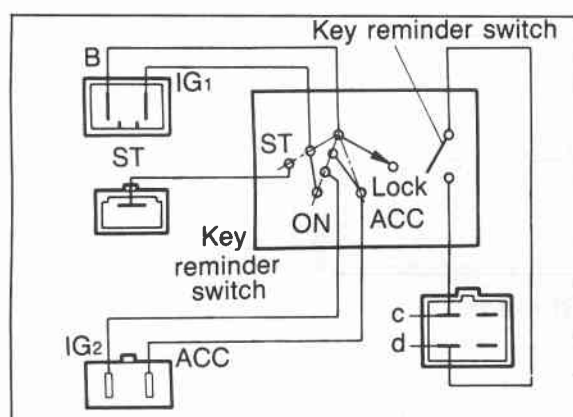
West Germany (Diesel model)



5 IGNITION SWITCH



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REPLACEMENT

Disconnect the negative battery terminal. 30, 40 and 60A fuses: pull out and push in a new fuse.


















80A fuse:

1. Remove the main fuse box.
2. Open the cover.
3. Remove the terminal.
4. Pull out and push in a new fuse.

IGNITION SWITCH

INSPECTION

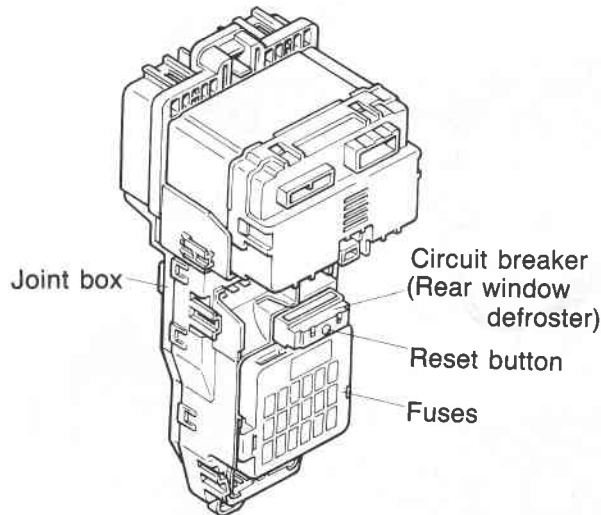
1. Use an ohmmeter to check continuity of the terminals of the switch.
2. If continuity is not as specified, replace the switch.

Terminal Position		B	ACC	IG ₂	IG ₁	ST	c	d
LOCK	Remove							
	Insert							
ACC								
ON								
ST								

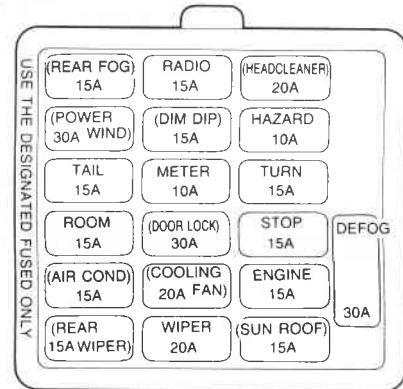
○—○: Indicates continuity

JOINT BOX AND FUSE

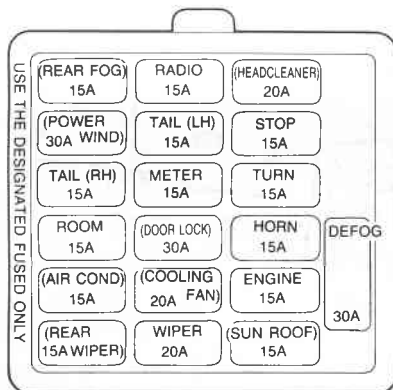
STRUCTURAL VIEW



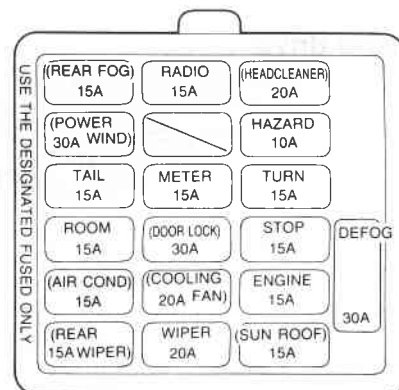
UK, RHD General



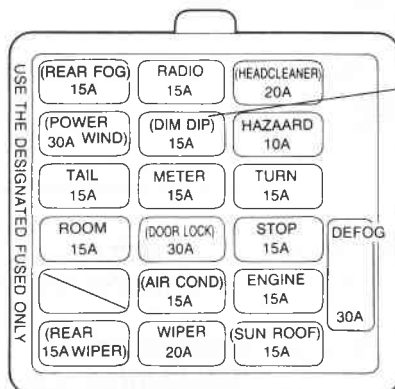
West Germany



ECE, Middle East, LHD General

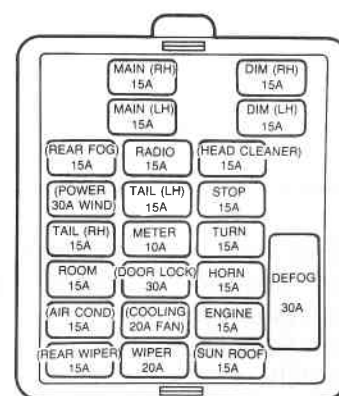


ECE, LHD and RHD General (Diesel model)



RHD General only

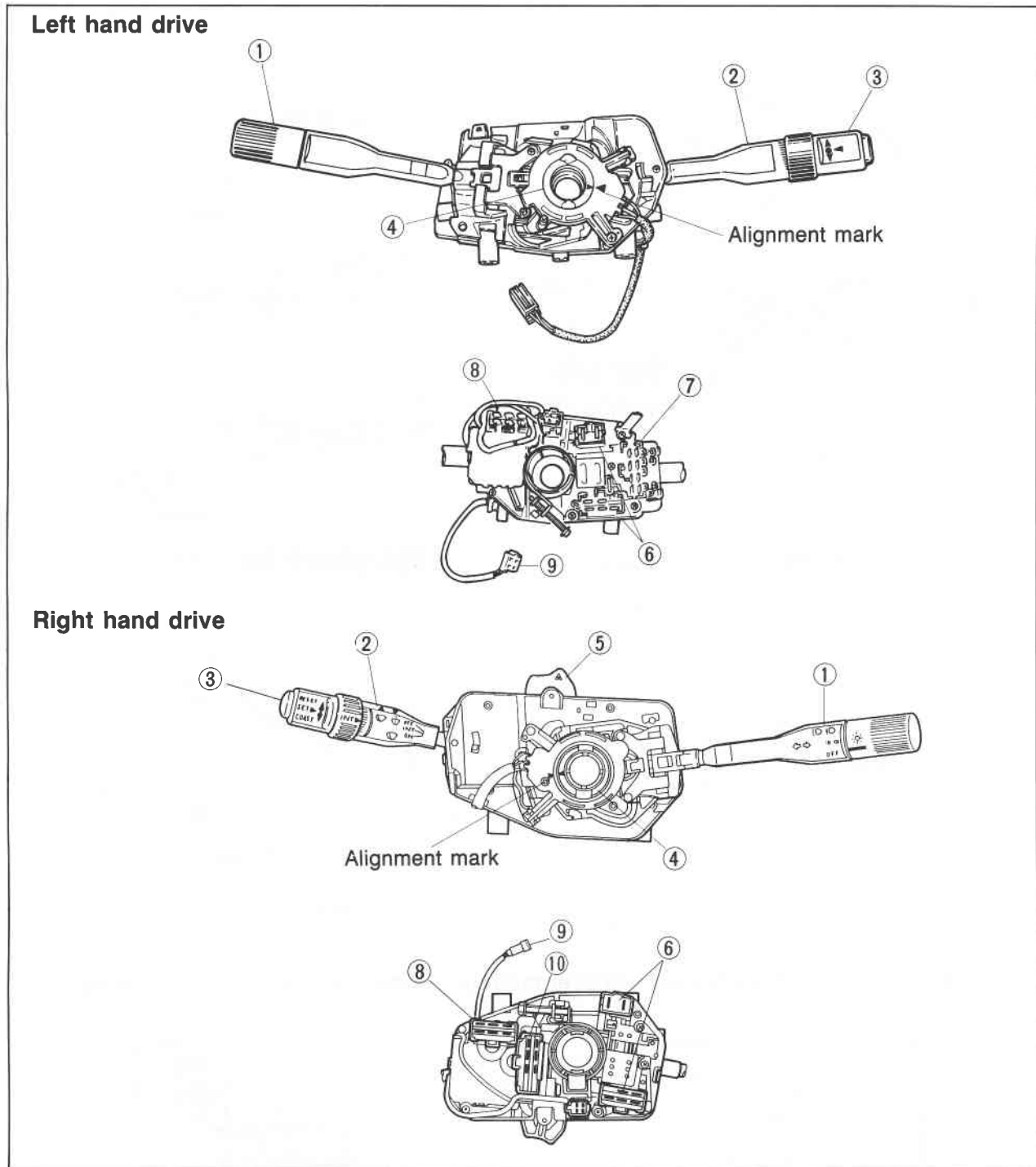
West Germany (Diesel model)



15 COMBINATION SWITCH

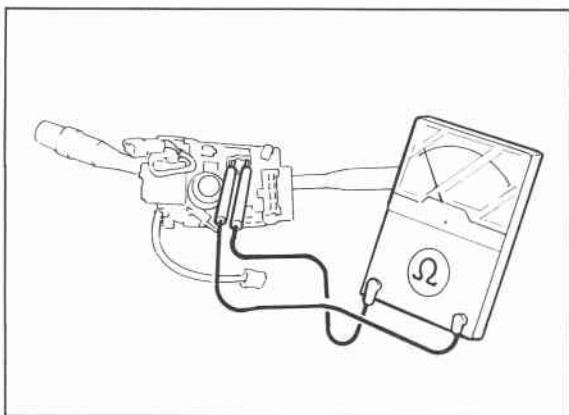
CONBINATION SWITCH

STRUCTURAL VIEW



76G15X-002

- | | |
|---|---|
| 1. Light and turn signal switch lever | 7. Turn signal switch connector |
| 2. Windshield wiper and washer switch lever | 8. Windshield wiper and washer switch connector |
| 3. Cruise control switch | 9. Steering angle sensor connector |
| 4. Steering angle sensor | 10. Turn signal and hazard switch connector |
| 5. Hazard switch | |
| 6. Light switch connectors | |



86U15X-008

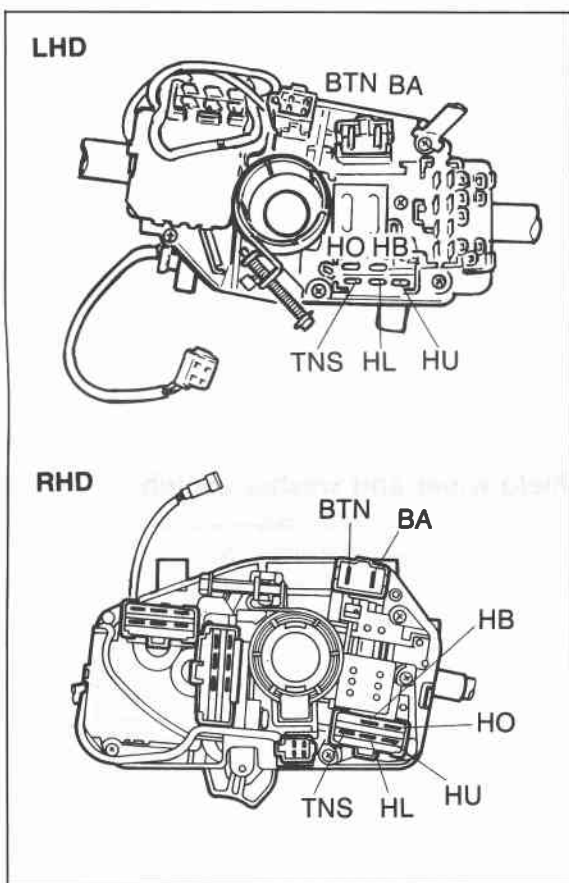
INSPECTION

1. Check for continuity or the resistance between the terminals in each position with an ohmmeter.
2. If the continuity or resistance is not as specified, replace the switch.

Light, dimmer, and passing switch

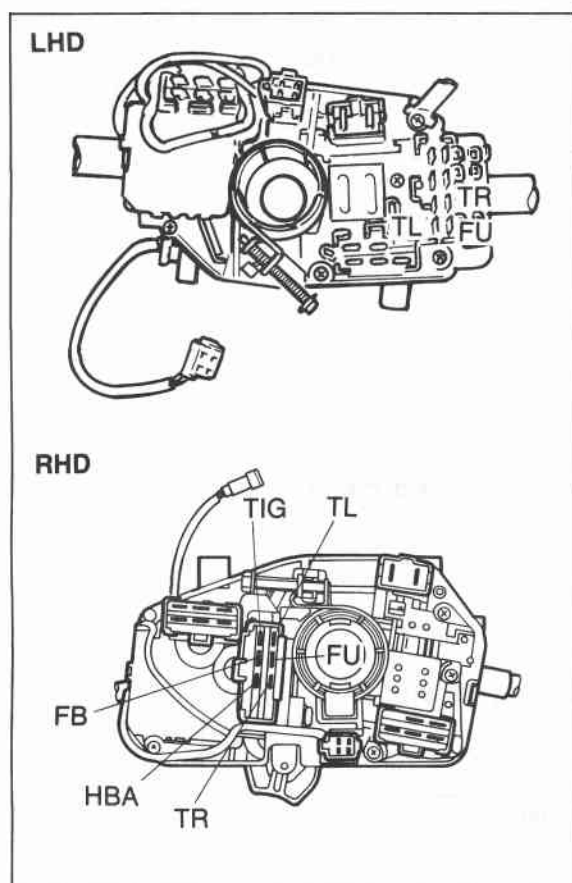
		Terminal					
Position		HB	HL	HU	BA	BTN	TNS
Headlight	Low beam	○—○			○	○—○	
	High beam	○—○		○	○	○—○	
Passing				○—○			
Tail, parking						○—○	

○—○: indicates continuity



76G15X-027

15 COMBINATION SWITCH



76G15X-028

Turn signal switch For LHD

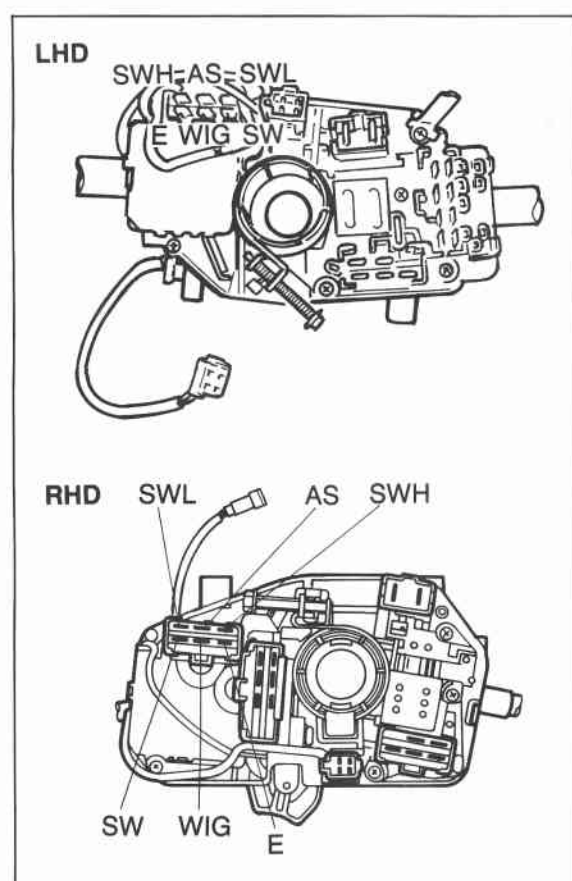
Terminal	FU	TL	TR
Position			
Left	○—○	○	
Right	○		○

○—○: indicates continuity

For RHD (with hazard switch)

Hazard switch	Turn switch	FU	TL	TR	TIG	HBA	FB
OFF	Left	○—○			○—○		○
	OFF				○—○		○
	Right	○—○		○	○		○
ON	OFF	○—○	○	○		○—○	

○—○: indicates continuity

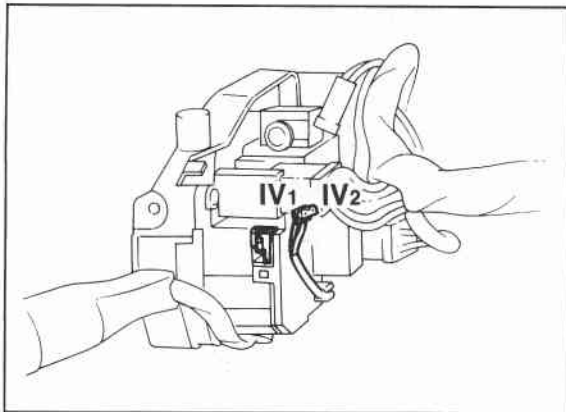


76G15X-029

Windshield wiper and washer switch

Position	Terminal	AS	WIG	SWL	SWH	E	SW
Wiper switch	OFF	○—○		○	○—○		
	ON			○	○—○		
	INT			○	○—○		
	I (Low)			○	○—○		
Washer switch	ON				○—○		

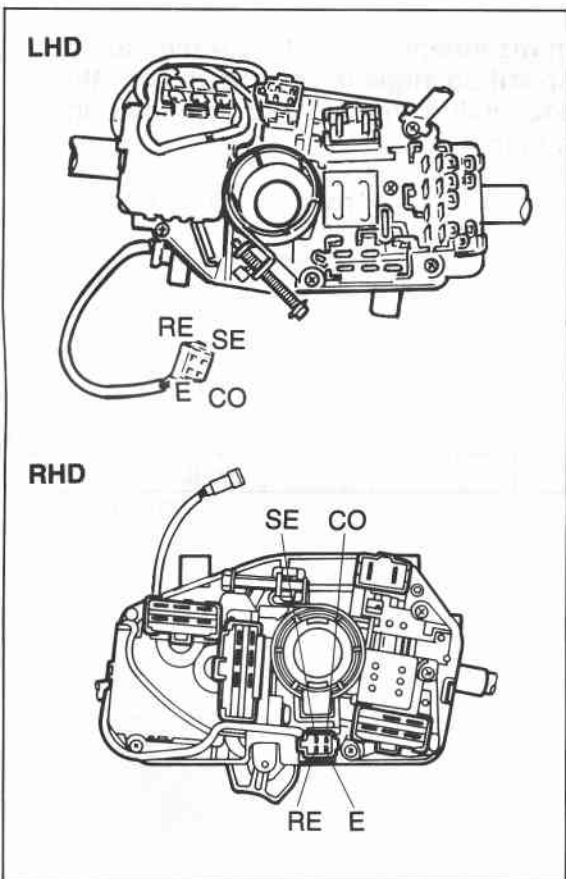
○—○: indicates continuity



86U15X-012

Variable speed intermittent wiper timer control resistance

Position	Terminal	IV1 — IV2
Slow		0 — 1 kΩ
Fast		40 — 60 kΩ



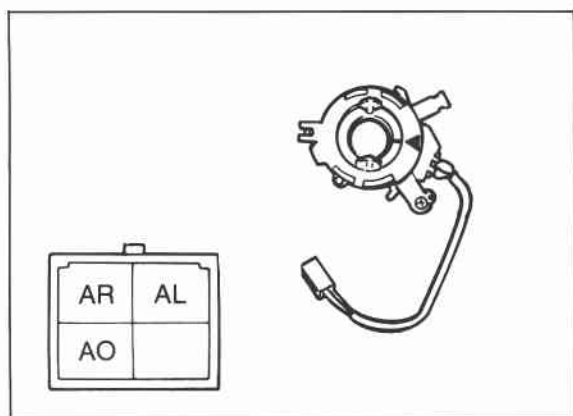
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Cruise control switch

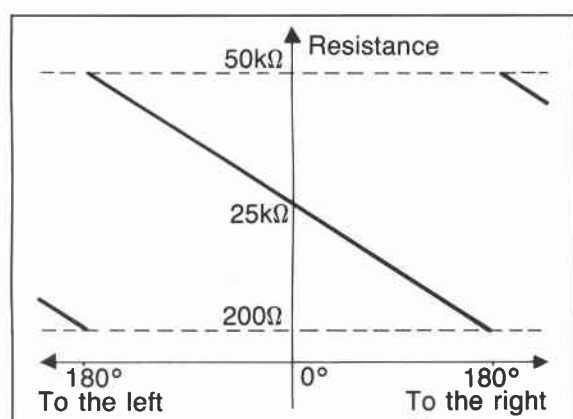
Position	Terminal	CO	RE	SE	E
OFF					
SET				○ — ○	○ — ○
Resume			○ — ○		○ — ○
Coast		○ — ○			○ — ○

○ — ○: indicates continuity

15 COMBINATION SWITCH



86U15X-014



86U15X-015

Steering angle sensor

Terminal	Steering wheel position	Resistance value
AO to AR	Turn the wheel a little at a time from the straight-ahead position 180° to the right.	Decreases from about 25 kΩ to about 200 Ω.
AO to AR	Straight-ahead position	About 25 kΩ
AO to AR	Turn the wheel a little at a time from the straight-ahead position 180° to the left.	Increases from about 25 kΩ to about 50 kΩ.
AL to AR	Straight-ahead position	About 50 kΩ

Note

When the steering wheel is turned more than the specified angle in the above test, the resistance value will become as shown in the table below.

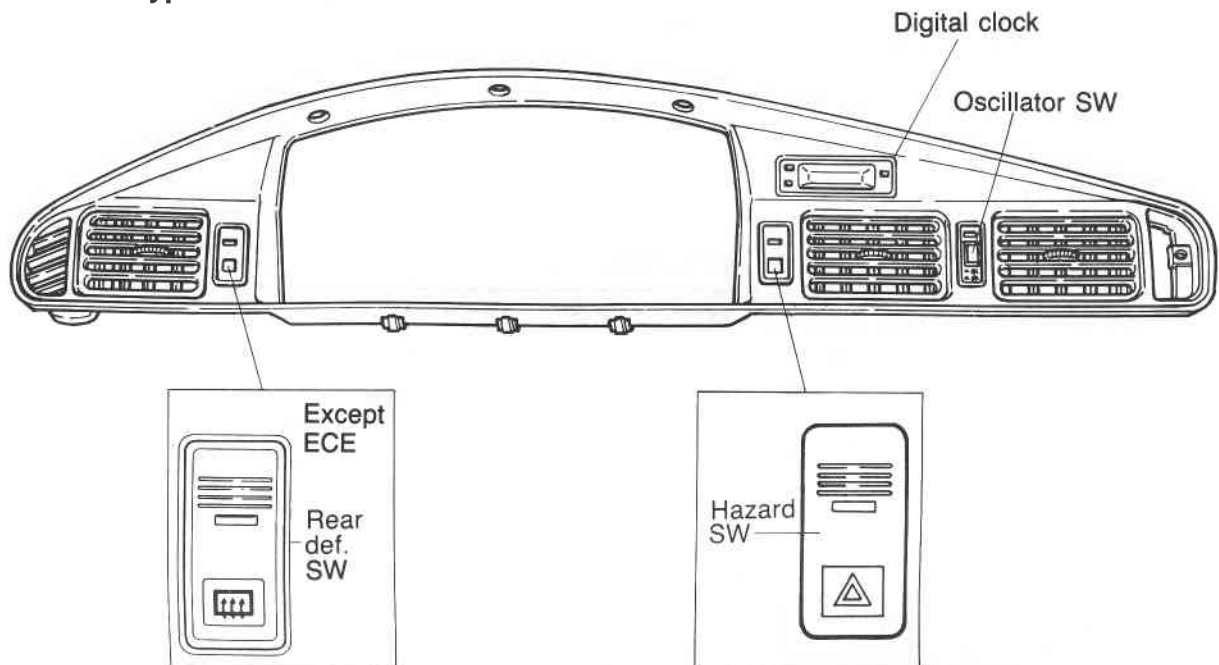
Terminal	Steering wheel position	Resistance value
AO to AR	When turned 180° or more to the right from the straight-ahead position.	Resistance slowly and gradually decreases after there is once an indication of about 50 kΩ.
AO to AR	When turned 180° or more to the left from the straight-ahead position.	Resistance slowly and gradually increases after there is once an indication of about 200 Ω.

CLUSTER SWITCH

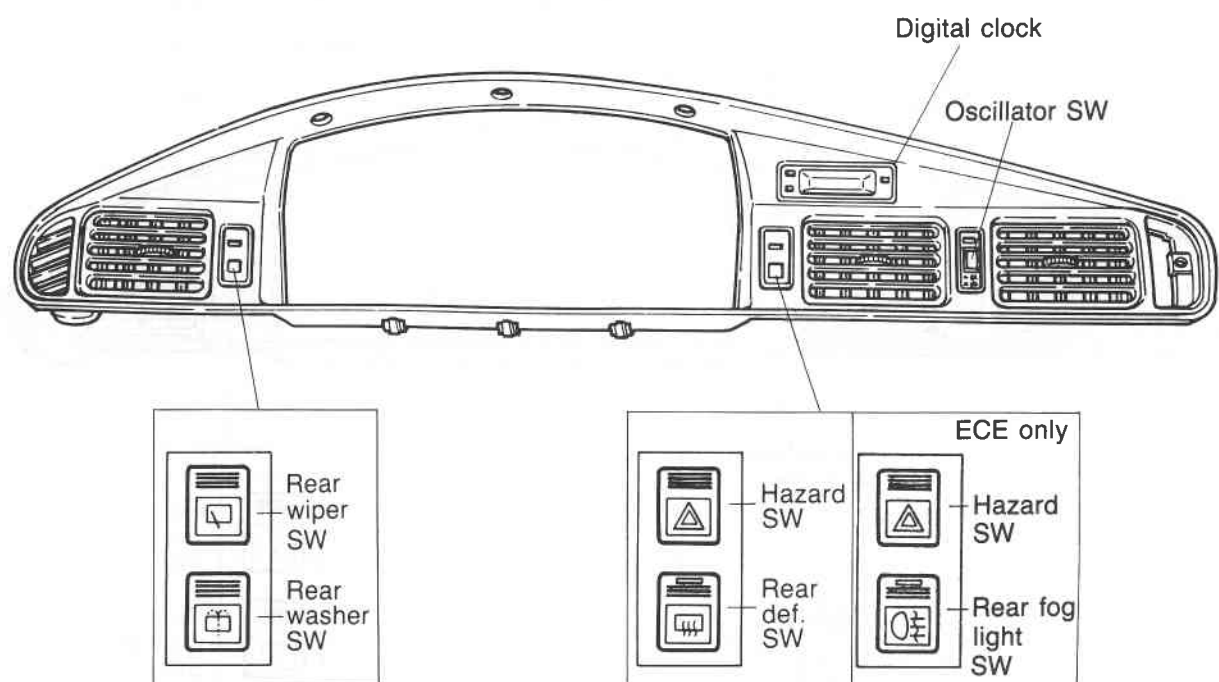
STRUCTURAL VIEW

For Left Hand Drive

Rocker type



Push type

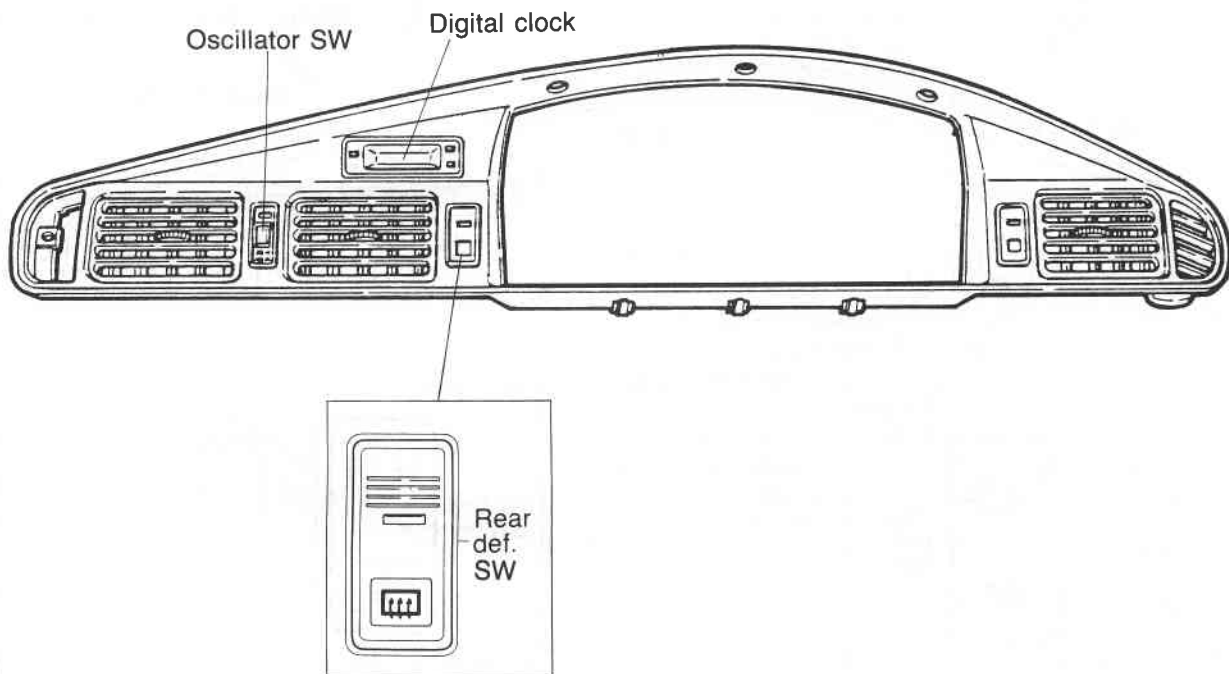


15 CLUSTER SWITCH

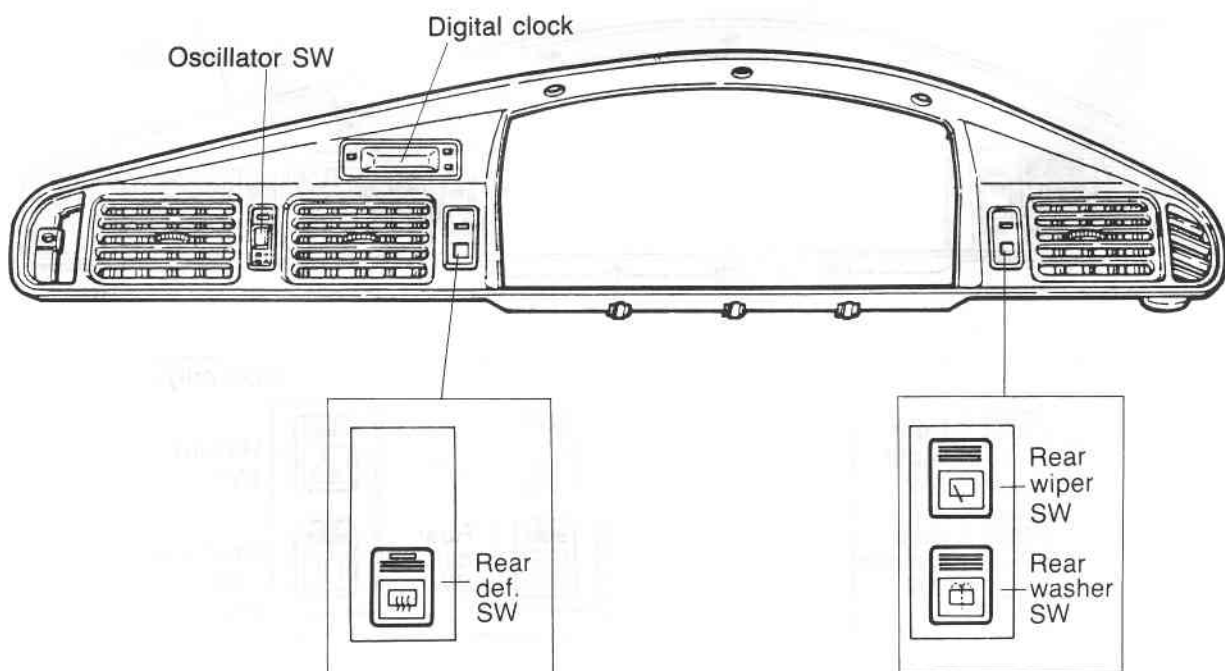
STRUCTURAL VIEW

For Right Hand Drive

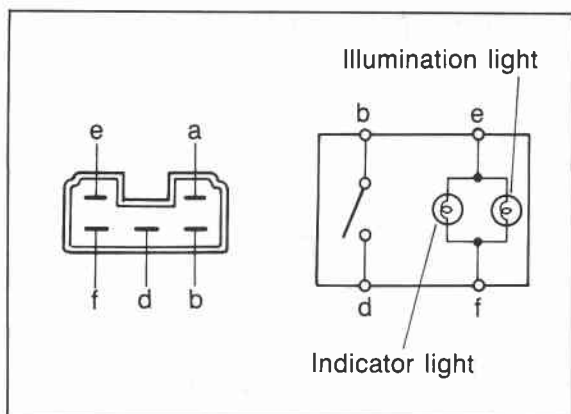
Rocker type



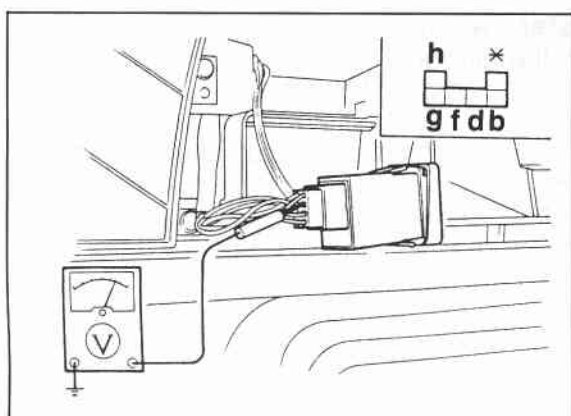
Push type



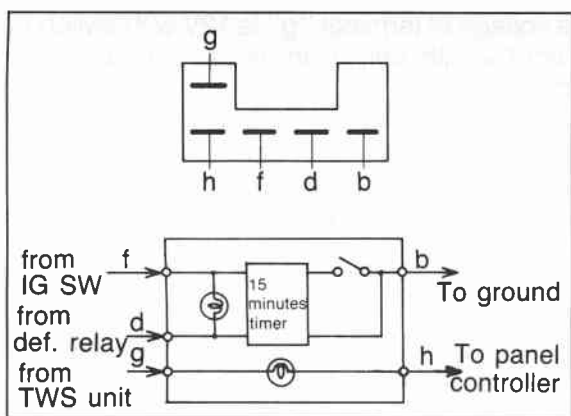
76G15X-004



76G15X-088



86U15X-018



86U15X-019

INSPECTION OF ROCKER TYPE

Hazard switch

1. Check for continuity between the terminals in each position with an ohmmeter.

Position \ Terminal	a	b	d	e	f
OFF				○—○	
ON		○—○		○—○	

○—○: Indicates continuity

2. If continuity is not as specified, replace the switch or replace the light(s).

Defroster switch

1. Turn the ignition switch ON.
2. Push the defroster switch to ON, and check the lights for lighting.
3. If the lights do not light, replace the lights.
4. Check that the switch goes off after 15 min from switch ON.
5. Check the voltage between each terminal and a body ground.

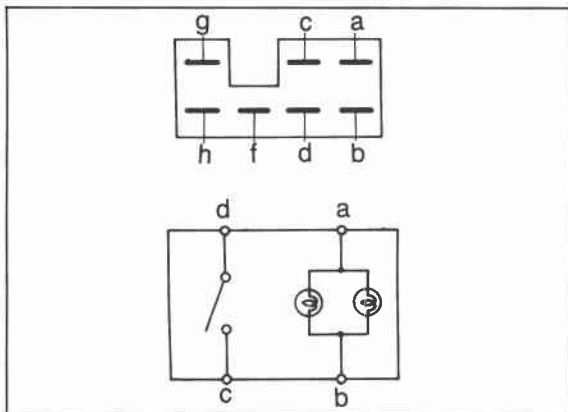
Position	Terminal voltage (V)				
	b	d	f	g	h
OFF	0	12	12	0	12
ON	0	0	12	0	12
ON (head light switch ON)	0	0	12	2-12	12
OFF (head light switch ON)	0	12	12	2-12	12

6. If the voltage of "d" terminal is 12V with switch off but not 0V with switch on, replace the defroster switch.

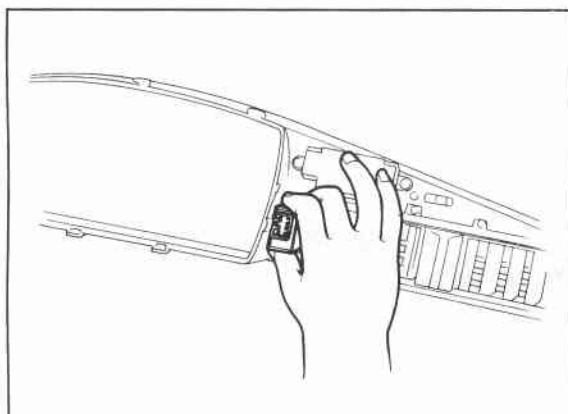
If the voltage of "d" terminal is not 12V with switch off, trouble is in defroster relay or harness.

If the voltages of the other terminals are not correct, trouble is in the other parts or harness.

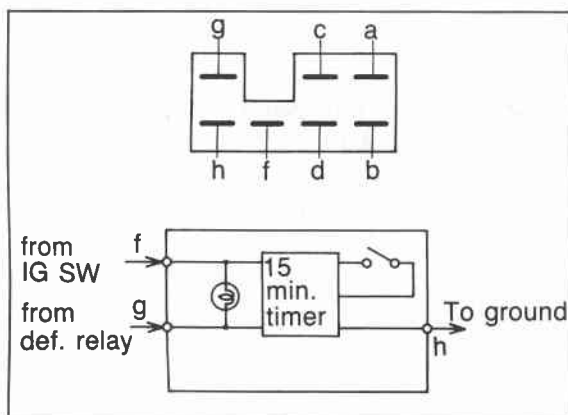
15 CLUSTER SWITCH



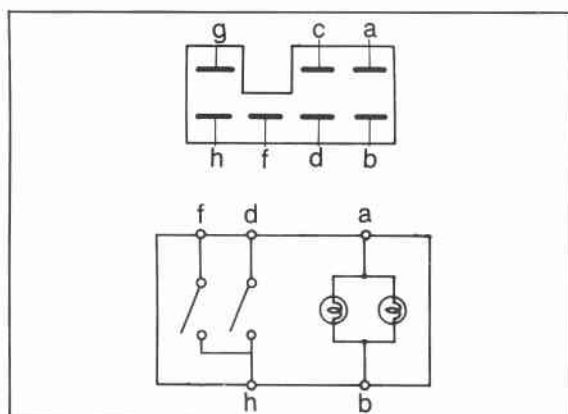
86U15X-020



86U15X-021



86U15X-022



86U15X-023

INSPECTION OF FOUR SWITCH TYPE

Hazard switch

1. Check for continuity between terminals of the switch.

Position \ Terminal	a	b	c	d
OFF	○—○	○—○		
ON	○—○	○—○	○—○	○—○

○—○: Indicates continuity

2. If continuity is not as specified, replace the switch.

Defroster switch

1. Turn the ignition switch ON.
2. Check the light for lighting.
3. If the light doesn't light, replace the light.
4. Check that the switch goes off after 15 min from switch on.
5. Check the voltage between each terminal and a body ground.

Position	Terminal voltage (V)		
	f	g	h
OFF	12	12	0
ON	12	0	0

6. If the voltage of terminal "g" is 12V with switch off but not 0V with switch on, replace the defroster switch

If the voltage of terminal "g" is not 12V with switch off, trouble is in defroster relay or harness.

If the voltage of terminal "f" and "h" is not correct, the trouble is in the other parts or harness.

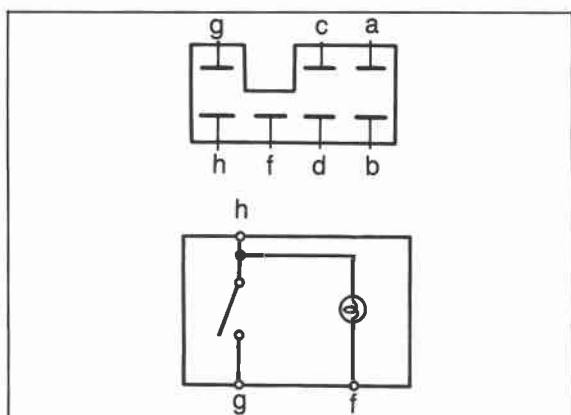
Rear wiper and washer switch

1. Check for continuity between the terminals in each position with an ohmmeter.

Position \ Terminal	a	b	d	f	h
Rear wiper switch	OFF	○—○			
ON	○—○	○—○	○—○		○—○
Rear washer switch	OFF	○—○			
ON	○—○	○—○		○—○	○—○

○—○: Indicates continuity

2. If continuity is not as specified, replace the switch.



76G15X-006

Rear fog light switch

1. Check for continuity between the terminals in each position with an ohmmeter.

Position \ Terminal	f	g	h
OFF	○		○
ON	○	○	○

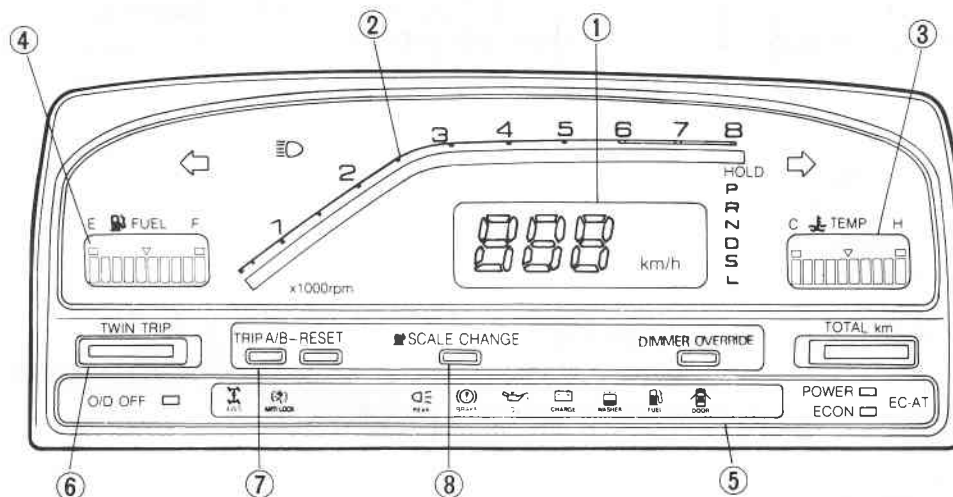
○—○: Indicates continuity

2. If continuity is not as specified, replace the switch or replace the light(s).

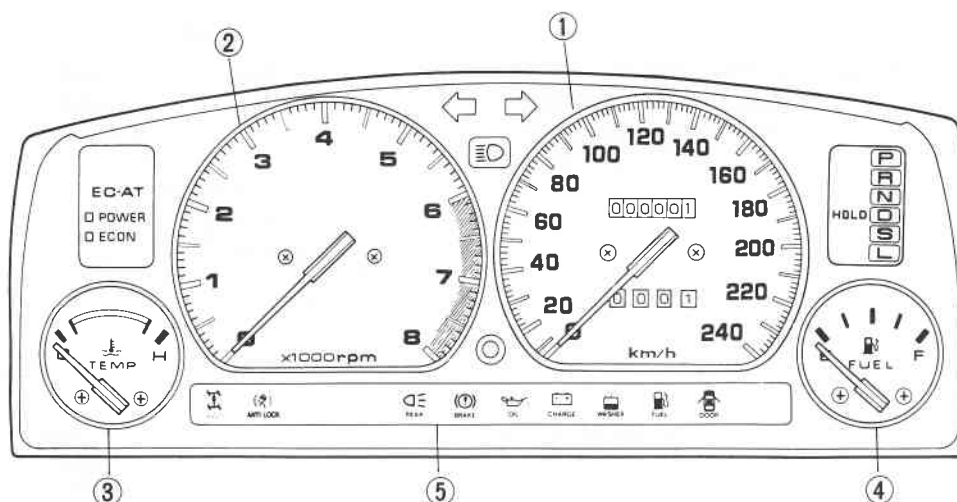
METER

STRUCTURAL VIEW

DIGITAL ELECTRONIC DISPLAY METER



ANALOG DISPLAY METER

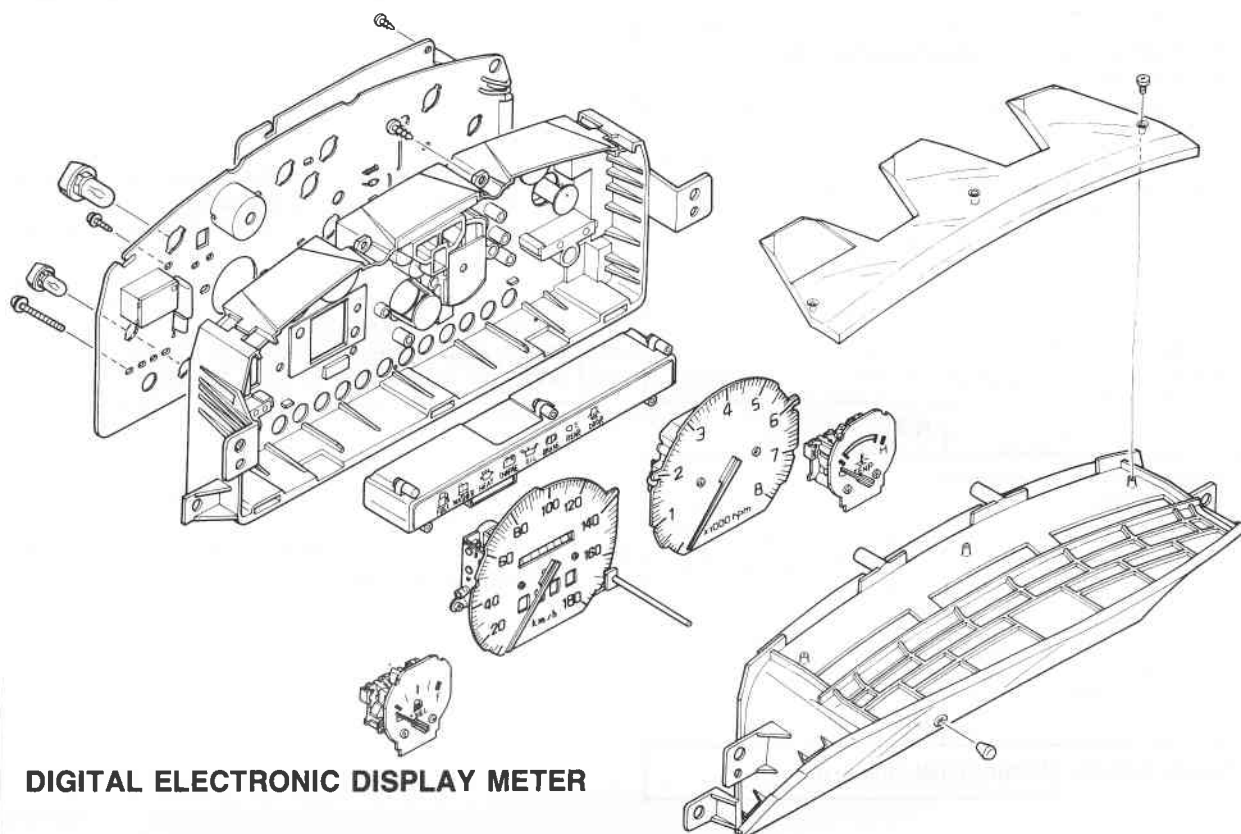


76G15X-007

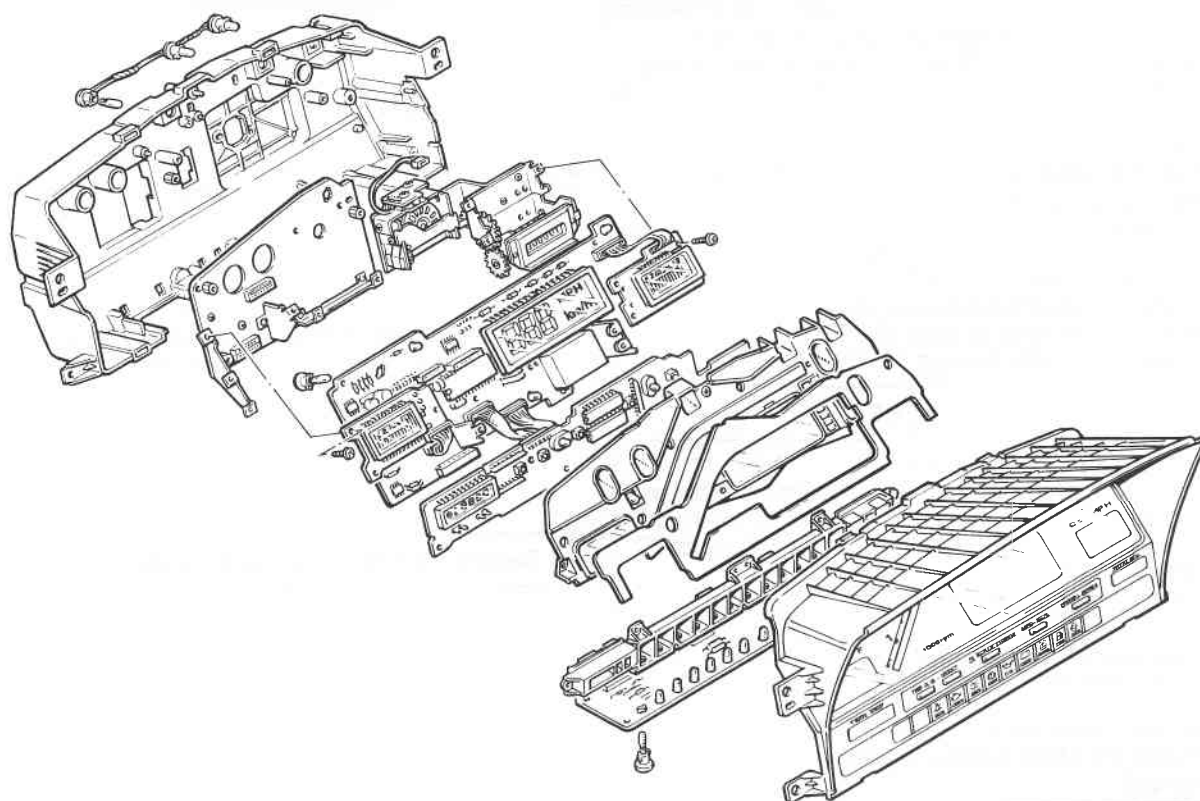
- | | |
|----------------------------|-----------------------------------|
| 1. Speedometer | 5. Warning and indicator lights |
| 2. Tachometer | 6. Tripmeter |
| 3. Water temperature gauge | 7. Twin tripmeter change switch |
| 4. Fuel gauge | 8. Fuel gauge scale change switch |

DISASSEMBLY AND ASSEMBLY

ANALOG DISPLAY METER



DIGITAL ELECTRONIC DISPLAY METER



15 METER

TROUBLESHOOTING

Note

Check the METER 10 or 15A fuse in the fuse box for fusing before troubleshooting.

Fuel gauge does not operate when ignition switch ON.

Turn the ignition switch on, and check that some warning lights illuminate.

NG

Repair harness. (Fuse box to meter)

OK

Check the fuel gauge.
analog meter: refer to page 15—26
digital meter: refer to page 15—28

OK

Check the fuel tank unit.
except 4WS model: refer to page 15—29
only 4WS model: refer to page 15—30

NG

Remove the meter assembly.
Connect 1R terminal of 22 pin connector to a battery (+) terminal, 1N and 1P terminal of 22 pin connector to a battery (–) terminal, and check the voltage at 2B (Y) terminals of 14 pin connector.

NG

Replace the fuel gauge.

Terminal	Voltage
2B (Y)	12V

OK

Repair harness. (Meter to fuel tank unit)

76G15X-031

Water temperature gauge does not operate when ignition switch on. (after warming engine)

Turn the ignition switch on, and check that some warning lights illuminate.

NG

Repair harness (Fuse box to Meter)

OK

Check the water temperature gauge.
analog meter: refer to page 15—27
digital meter: refer to page 15—29

OK

Check the water thermo sensor. refer to page 15—30

NG

Remove the meter assembly.
Connect 1R terminal of 22 pin connector to a battery (+) terminal, 1N and 1P terminal of 22 pin connector to a battery (–) terminal, and check the voltage at 2D (BL) terminals of 14 pin connector.

NG

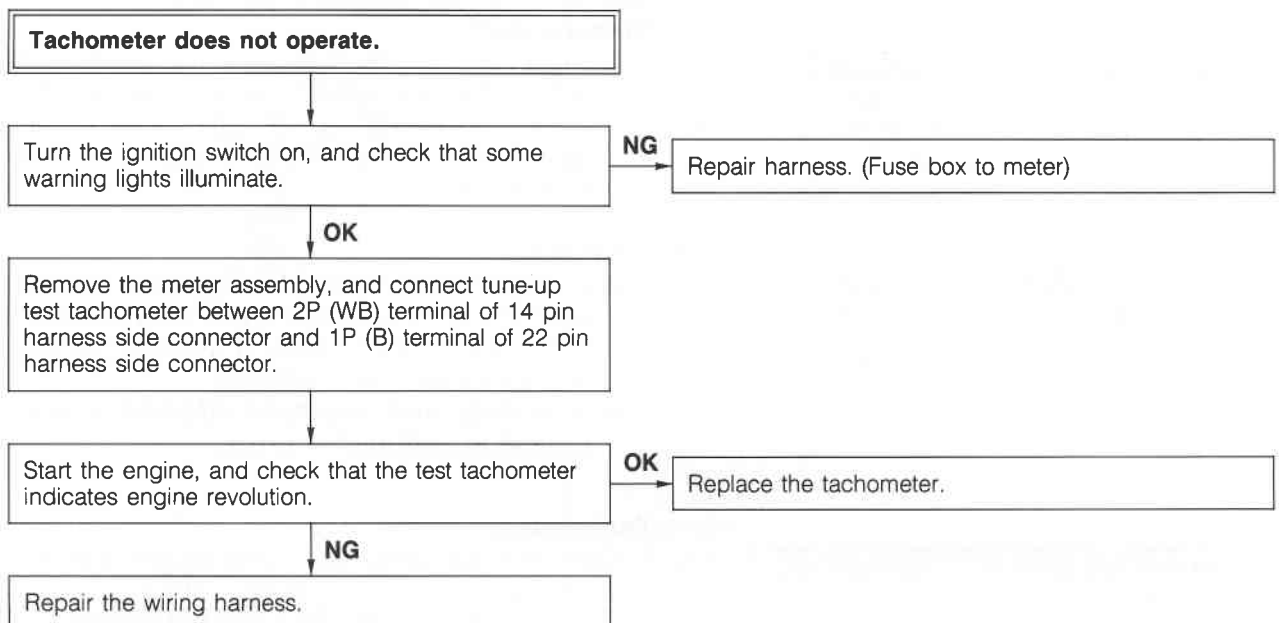
Replace the water temperature gauge.

Terminal	Voltage
2D (BL)	12V

OK

Repair the wiring harness. (Meter to water thermo sensor)

76G15X-032



86U15X-028

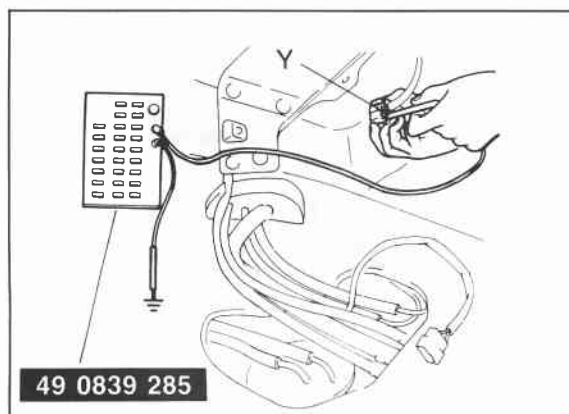
Standard indication (km/h)	Allowable range (km/h)
40	40— 43
80	80— 84
120	120—126

Standard indication (mph)	Allowable range (mph)
30	30—32
50	50—53
80	80—84

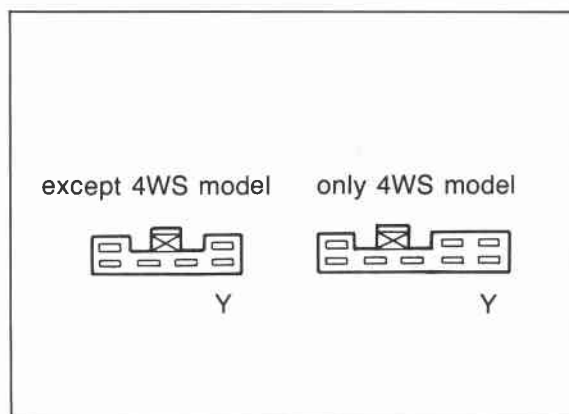
86U15X-029

Standard Indication (rpm)	Allowable range (rpm)
1000	850—1090
2000	1910—2210
3000	2850—3330
4000	3820—4420
5000	4790—5510
6000	5760—6600

86U15X-030



86U15X-031



86U15X-032

INSPECTION OF ANALOG METER

Speedometer

1. Using a speedometer tester, check the speedometer for allowable indication error, and check the operation of the odometer. Replace if necessary.
2. Check the speedometer for fluctuation and/or abnormal noise.

Caution

a) **If significant fluctuation occurs or the speedometer does not move at all, remove the speedometer cable. If normal, replace the speedometer assembly.**

b) **Tire wear and improper inflation will increase speedometer error.**

Tachometer

1. Connect a test tachometer to the engine, and start the engine.
2. Check the tachometer for allowable indicator error. Replace if necessary.

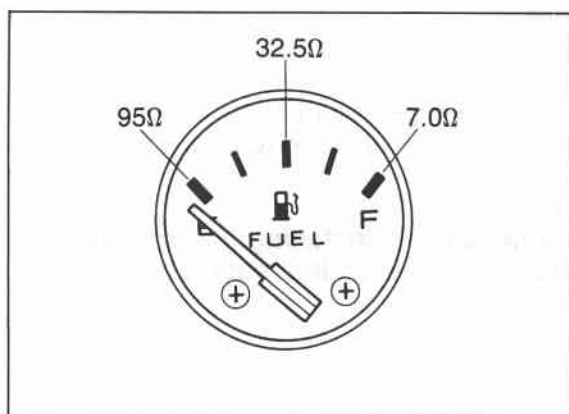
Caution

When removing or installing the tachometer, be careful not to drop it.

Fuel Gauge

1. Disconnect the connector from the fuel tank unit.

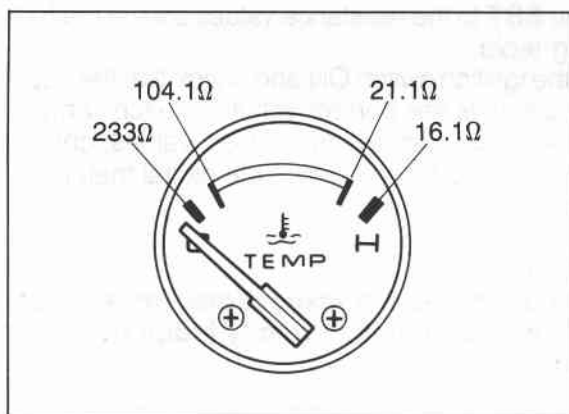
2. Connect the red lead of the **SST** to the terminal "Y", and the black lead to a body ground.



86U15X-033



86U15X-034



86U15X-035

Standard indication (km/h)	Allowable range (km/h)
60	60—63

Standard indication (mph)	Allowable range (mph)
60	60—63

86U15X-036

3. Set the **SST** to the resistance values shown in the figure.
4. Turn the ignition switch ON, and check that the needle indicator displays the correct values. If the needle displays correctly, check the gauge unit. If not, replace the fuel gauge in the meter or repair the wiring harness.

Caution

- a) Continue the above checks for at least two minutes each to correctly judge the condition.
- b) The allowable indication error is twice the width of the needle.

Water Temperature Gauge

1. Disconnect the connector from the water thermo sensor.
2. Connect the red lead of the **SST** to the connector, and the black lead to a body ground.

3. Set the **SST** to the resistance values shown in the figure.
4. Turn the ignition switch ON, and check that the needle indicator displays the correct values. If the needle displays the correct values, the trouble is in the gauge unit; if not, the trouble is in the meter or the wiring harness.

Caution

- a) Continue the above checks for at least two minutes each to correctly judge the condition.
- b) The allowable indication error is twice the width of the needle.

INSPECTION OF DIGITAL METER

Speedometer

1. Using a speedometer tester, check the speedometer for allowable indication error, and check the operation of the odometer. Replace the meter assembly if necessary.
2. Check the speedometer for fluctuation and/or abnormal noise.

Caution

- a) If significant fluctuation occurs or the speedometer does not move at all, remove the speedometer cable. If normal, replace the digital meter assembly.
- b) Tire wear and improper inflation will increase speedometer error.

15 METER

Standard Indication (rpm)	Allowable range (rpm)
1000	900— 950
2000	1900—1950
3000	2900—2950
4000	3900—3950
5000	4900—4950
6000	5900—5950

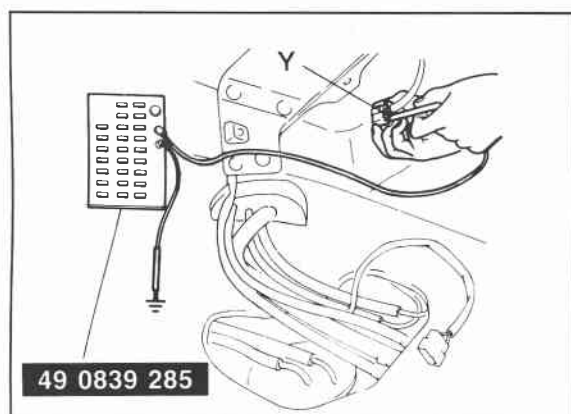
86U15X-037

Tachometer

1. Connect a test tachometer to the engine, and start the engine.
2. Check the tachometer for the allowable indicator error. Replace digital meter assembly.

Caution

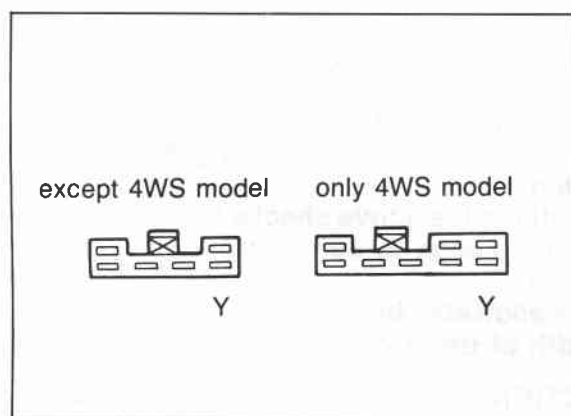
When removing or installing the tachometer, be careful not to drop it or subject it to sharp impact.



86U15X-038

Fuel Gauge

1. Disconnect the connector from the fuel tank unit.
2. Connect the red lead of the **SST** to terminal “Y” and the black lead to body ground.

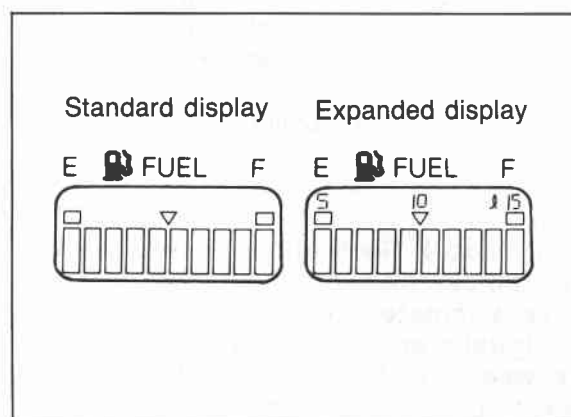


86U15X-039

3. Set the **SST** to the resistance values shown the following table.
4. Turn the ignition switch ON and check that the segment displays the correct values in each range. If the segment displays the correct values, check the gauge unit. If not, replace the digital meter assembly.

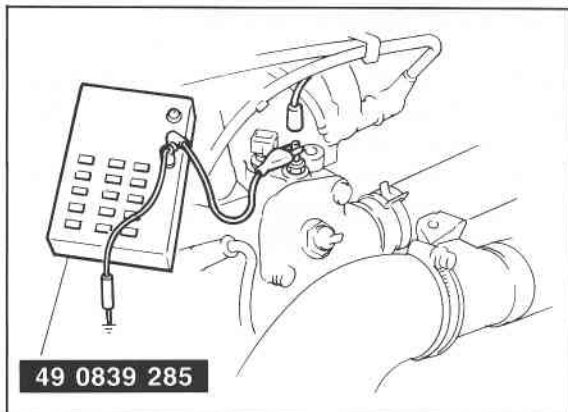
Caution

Continue the above inspections for at least two minutes each to correctly judge the condition.

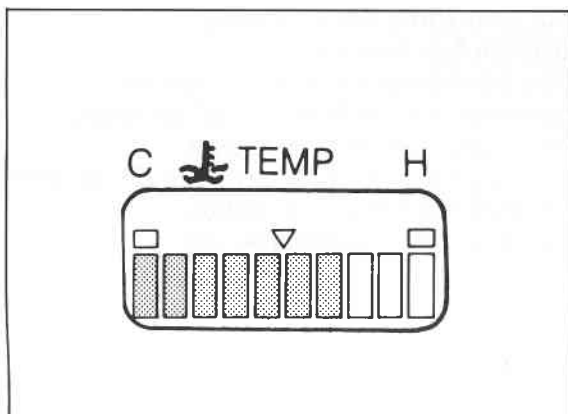


86U15X-040

Segment	Standard display	Expanded display
	Resistance (Ω)	
1—10	less than 8	less than 63
1— 9	8—14	63—66
1— 8	14—20	66—70
1— 7	20—25	70—74
1— 6	25—30	74—78
1— 5	30—37	78—82
1— 4	37—46	82—86
1— 3	46—63	86—90
1— 2	63—86	90—93
1	86—98	93—98
1 (flashing)	more than 98	less than 98



86U15X-041



86U15X-042

Water Temperature Gauge

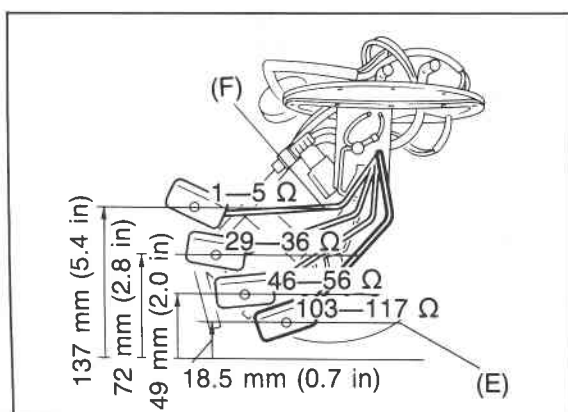
1. Remove the connector from the water thermo sensor.
2. Connect the red lead of the **SST** to the connector, and the black lead to a body ground.

3. Set the **SST** to the resistance values shown in the following table.
4. Turn the ignition switch ON and check that the segment displays the correct values. If the segment displays the correct values, check the gauge unit. If not, replace the digital meter assembly or repair wiring harness.

Caution

Continue the above checks for at least two minutes each to correctly judge the condition.

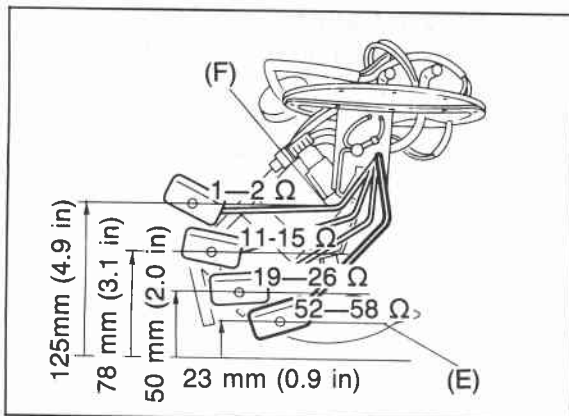
Segment	Resistance (Ω)	Segment	Resistance (Ω)
1—10	less than 17	1—5	33—89
1— 9	17—20	1—4	89—120
1— 8	20—26	1—3	120—145
1— 7	26—28	1—2	145—177
1— 6	28—33	1	more than 177



86U15X-043

INSPECTION OF METER SENDER Fuel tank unit (except 4WS model)

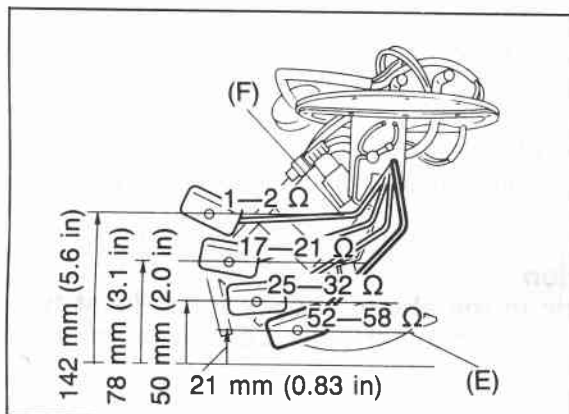
1. Disconnect the connector from the fuel tank unit.
2. Remove the fuel tank unit from the tank.
3. Connect an ohmmeter to terminal "b" of connector.
4. Move the unit arm slowly from point (F) to point (E), and read the resistance values. If not as specified, replace the unit.



86U15X-044

Fuel transfer unit (only 4WS model)

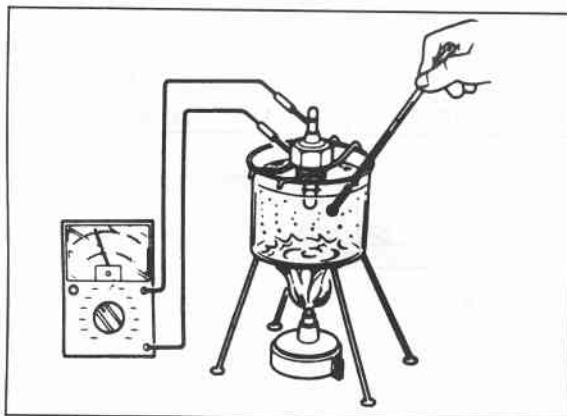
1. Remove the fuel transfer unit referring to section 4.
2. Remove the connector from the fuel transfer unit.
3. Connect an ohmmeter between "b" and "d" terminal of the connector.
4. Move the unit arm slowly from point (F) to point (E), and read the resistance values.
5. If not as specified, replace the unit.



86U15X-045

Fuel tank unit (only 4WS model)

1. Remove the fuel tank unit.
2. Remove the connector from the fuel tank unit.
3. Connect an ohmmeter between "d" terminal of the connector and fuel tank unit cover.
4. Move the unit arm slowly from point (F) to point (E) and read the resistance values.
5. If not as specified, replace the unit.



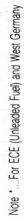
76G15X-089

Water Thermo Sensor

1. Remove the sensor.
2. Place the sensor in water along with a thermometer.
3. Heat the water gradually, and check the resistance of the sensor with an ohmmeter.
4. If the resistance is not as specified, replace the sensor.

Resistance: 49.3—57.7 Ω at 80°C (176°F)

CIRCUIT DIAGRAM



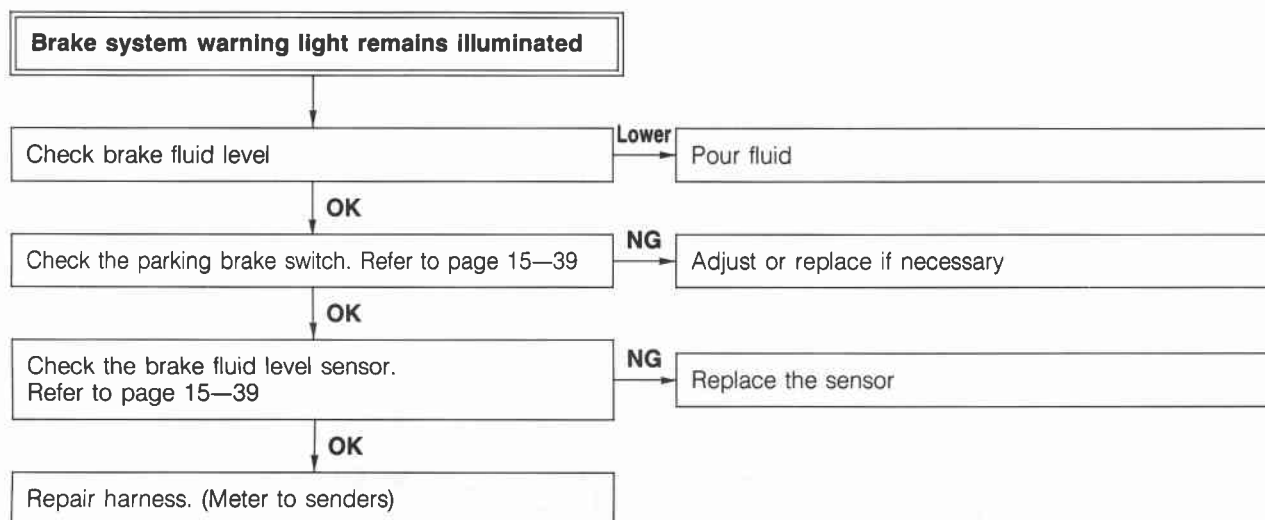
15 WARNING LIGHT AND SENDER

TROUBLESHOOTING

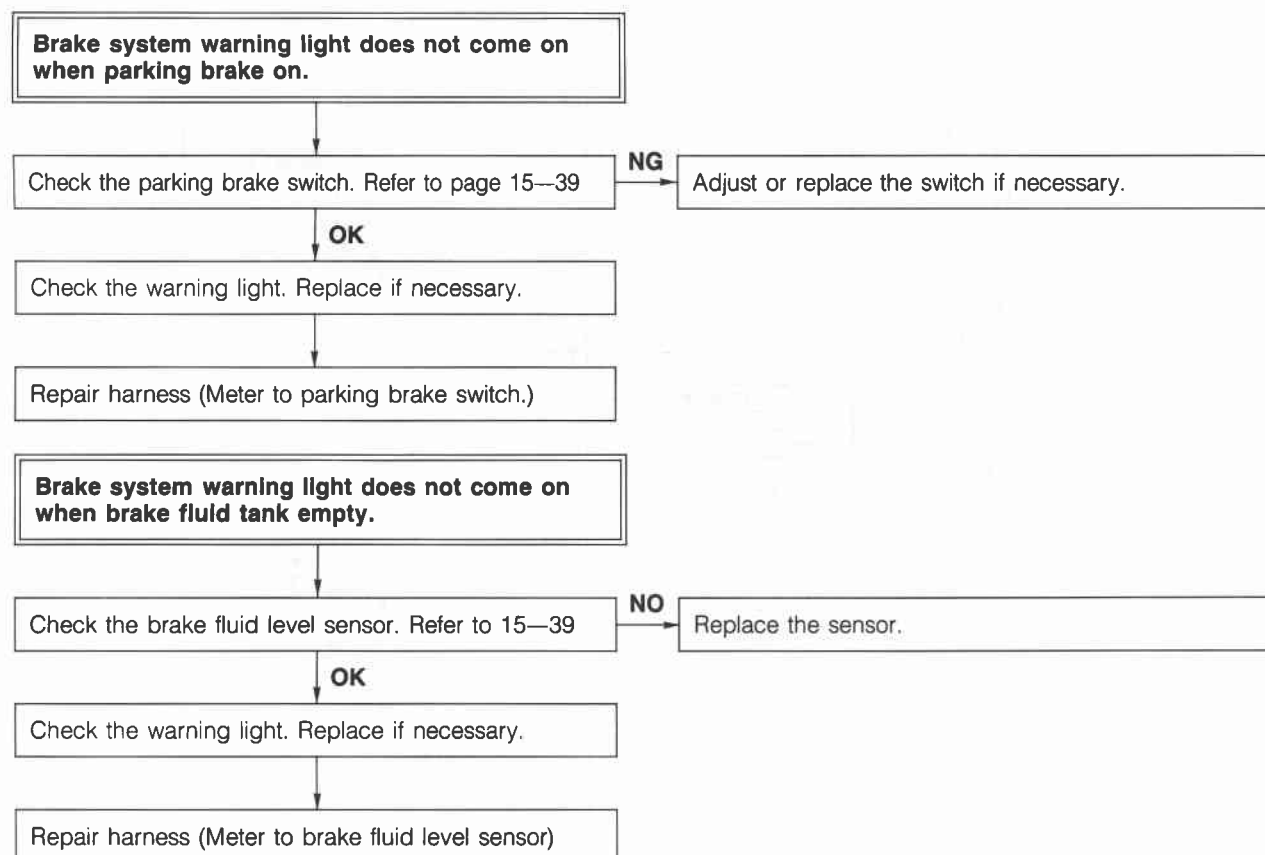
Note

Check the “Meter 10 or 15A” fuse in the fuse box before troubleshooting. If normal, refer to the following troubleshooting chart.

Brake System Warning Light

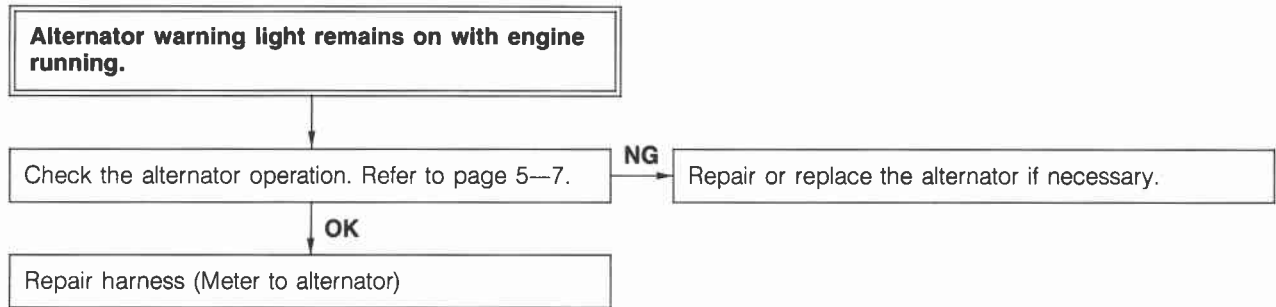


76G15X-033

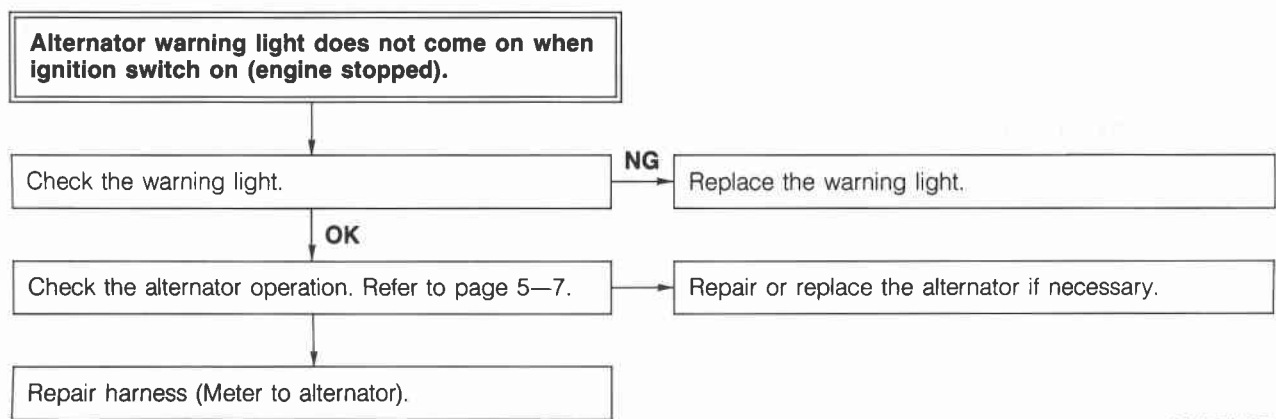


76G15X-034

Alternator Warning Light

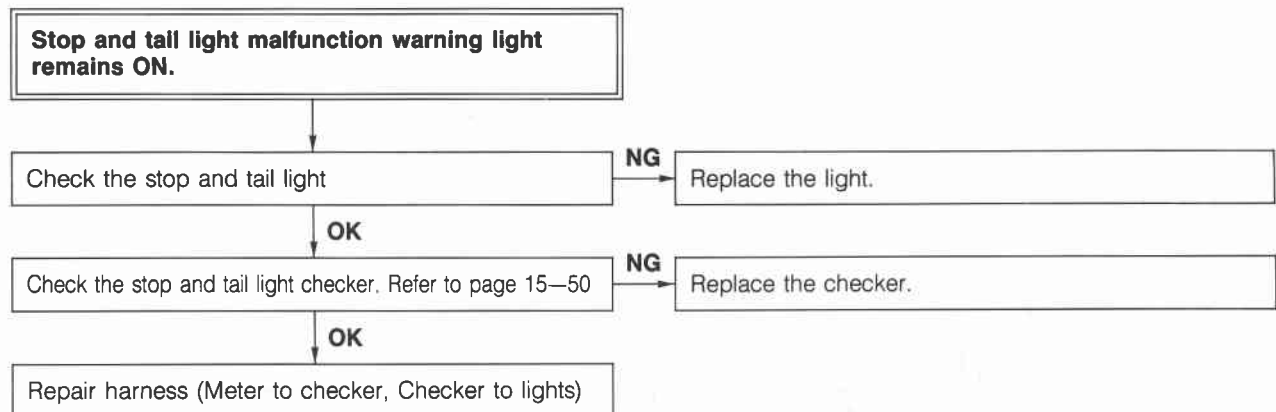


86U15X-050



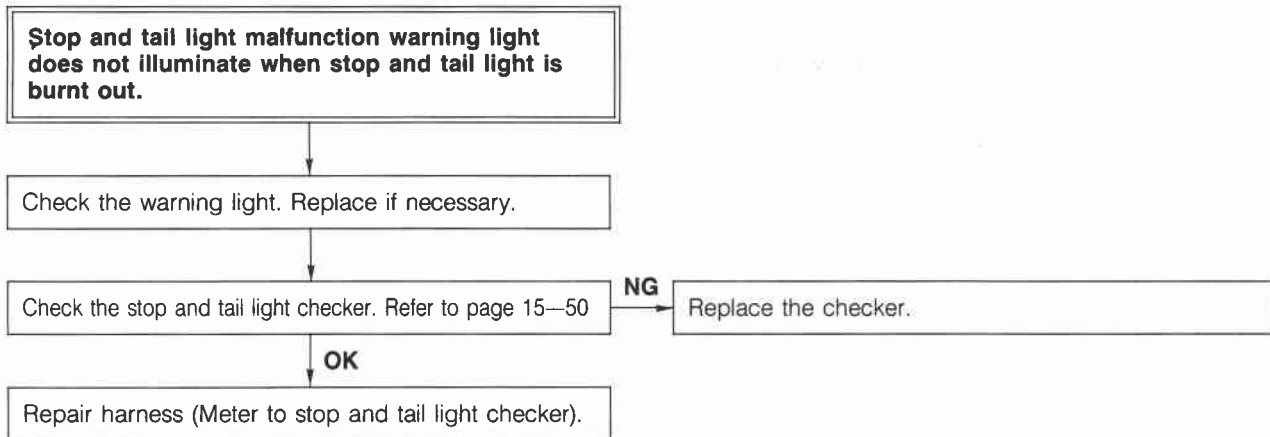
86U15X-051

Stop And Tail Light Malfunction Warning Light



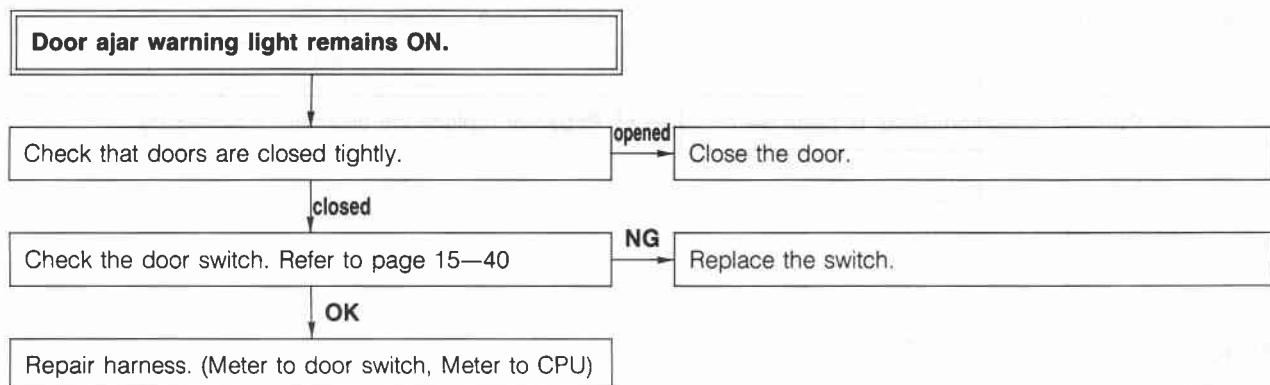
76G15X-035

15 WARNING LIGHT AND SENDER

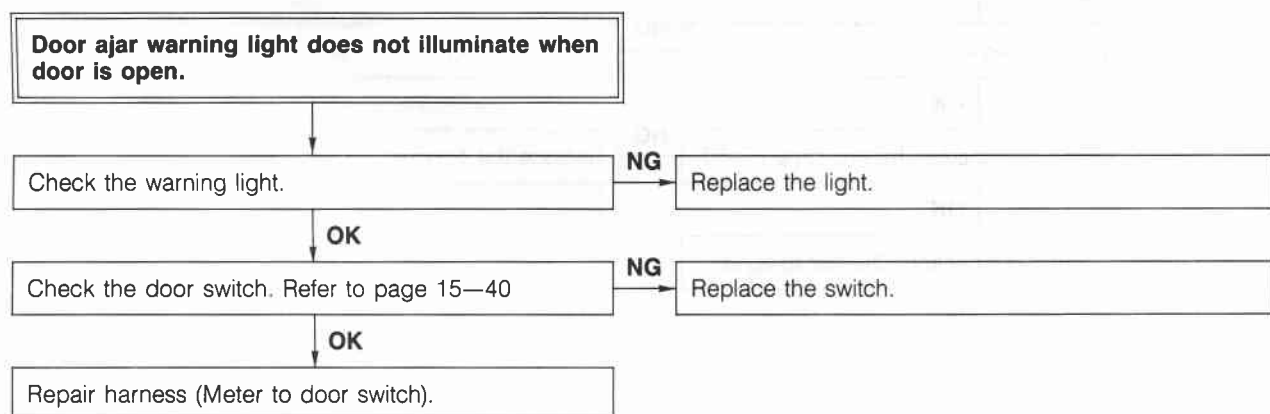


76G15X-036

Door Ajar Warning Light

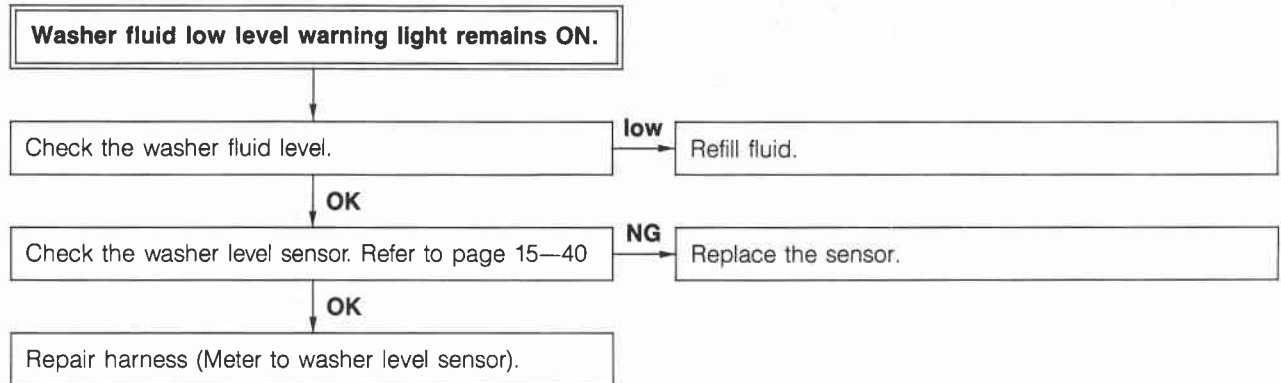


76G15X-037

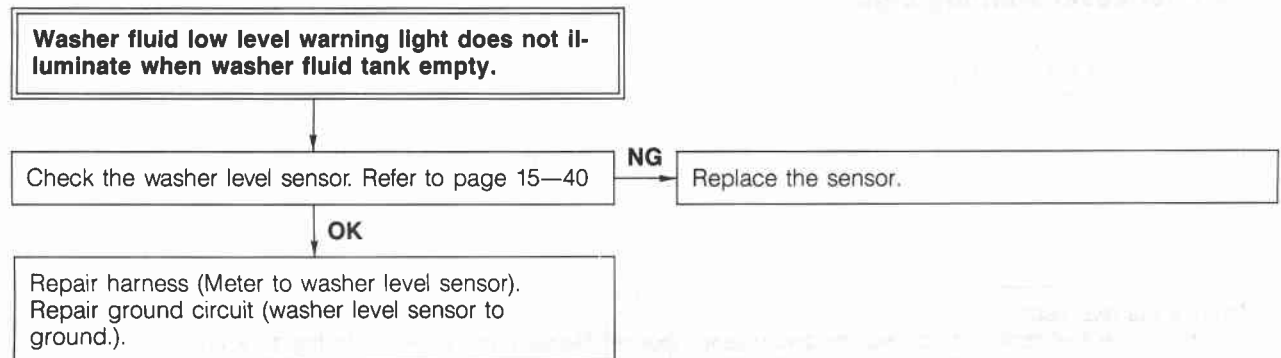


76G15X-038

Washer Fluid Low Level Warning Light

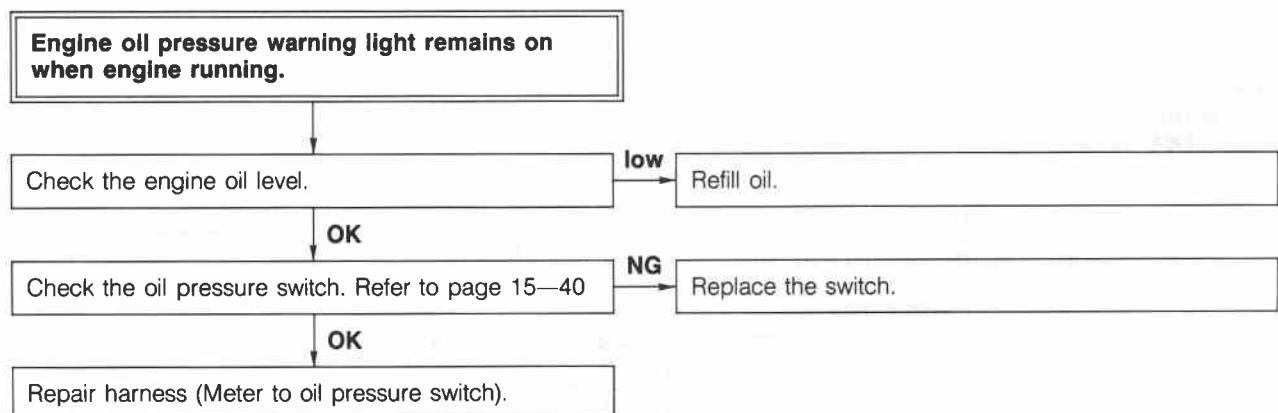


76G15X-039



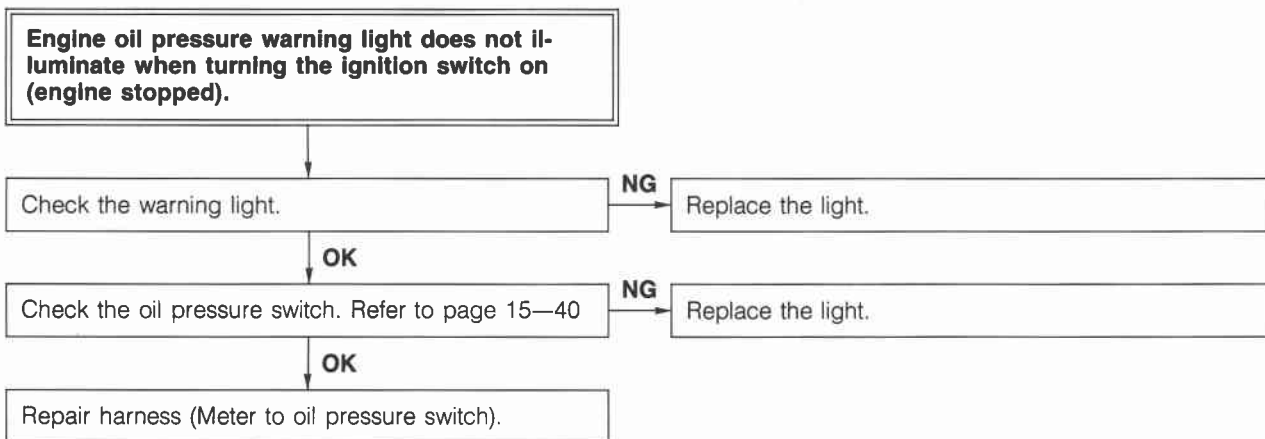
76G15X-040

Engine Oil Pressure Warning Light



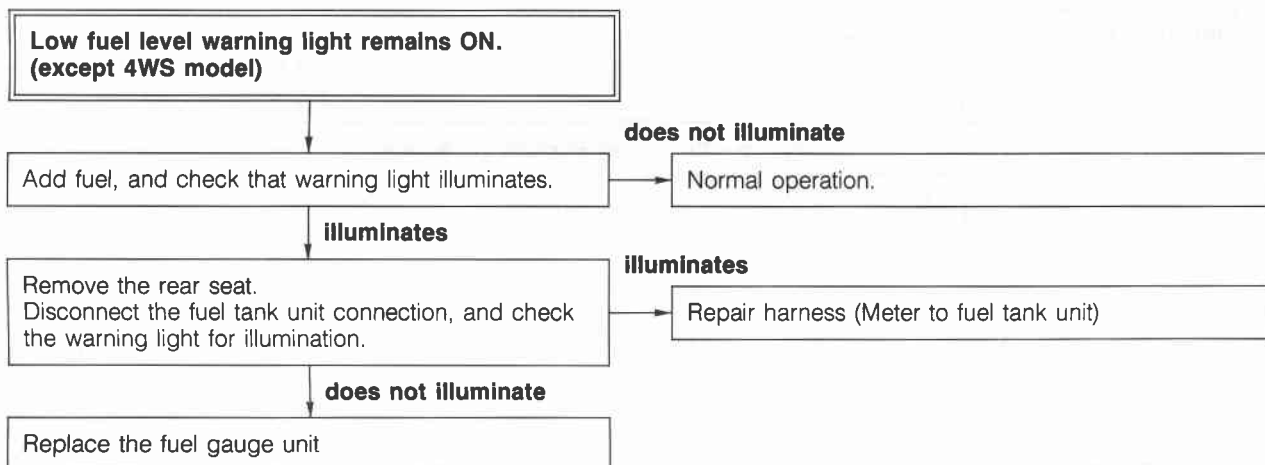
76G15X-041

15 WARNING LIGHT AND SENDER

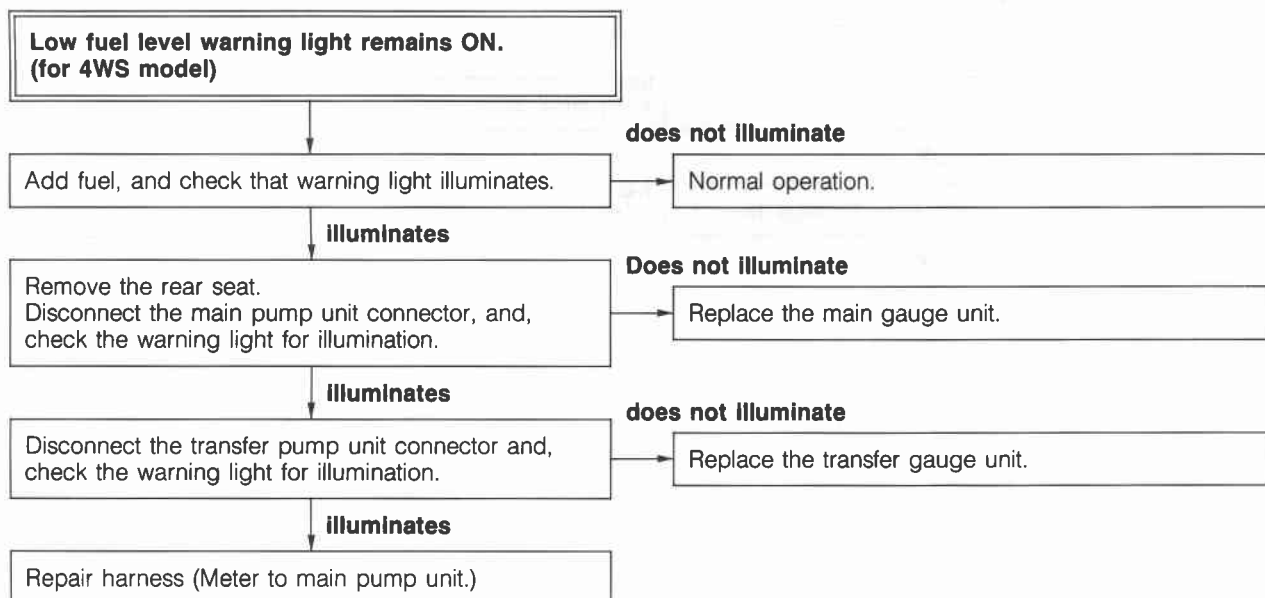


76G15X-042

Low Fuel Level Warning Light



86U15X-060



86U15X-061

Low fuel level warning light illuminates earlier than fuel gauge indicates low fuel.

Refer to page 4C—59

76G15X-090

Seat Belt Warning Light

Seat belt warning light remains ON even if 6 seconds pass after ignition switch ON.

Check that the seat belt warning light comes on when turning the ignition switch ON with unfastened seat belt.

OK

Normal operation.

NG

Repair harness (Meter to CPU) or replace CPU

76G15X-043

EC-AT Mode Indicator Light

POWER and ECONO indicator lights do not illuminate.

Check the hold switch. Refer to page 7B—63

NG

Replace the switch.

OK

Check the mode switch. Refer to page 7B—63

NG

Replace the switch.

OK

Replace the bulb or repair the harness (Meter to mode switch, EC-AT switch to control unit).

76G15X-091

HOLD Indicator lights do not illuminate when ignition switch and hold switch ON.

Check the hold switch. Refer to page 7B—63

NG

Replace the switch.

OK

Disconnect the EC-AT control unit connector and check the voltage at **BrY (2K)** terminal of the harness side connector with ignition switch on.

NG

Replace the bulb or repair the harness (Meter to control unit).

Terminal	Voltage
BrY (2K)	12V

76G15X-044

15 WARNING AND SENDER

Shift Indicator Light

All shift indicator lights do not illuminate when ignition switch on. (other warning light are all right.)

Check the voltage at **BY** terminal of the inhibitor switch connector with ignition switch on.

Terminal	Voltage
BY	12V

NG

Repair the harness (Fuse box to inhibitor switch).

OK

Check the inhibitor switch. Refer to page 7B—65

NG

Replace the inhibitor switch.

OK

Check the bulbs of the shift indicator lights.

NG

Replace the bulb.

OK

Turn the ignition switch on, and check the voltage at each terminal of the meter connector with each condition.

Terminal	Selector lever	Voltage
YL (2J)	P	12V
RG (1L)	R	12V
YR (2L)	N	12V
Y (1V)	D	12V
YB (1S)	2	12V
YW (1M)	1	12V

NG

Repair the harness (Inhibitor switch to meter).

76G15X-087

O/D OFF Indicator Light

O/D OFF Indicator light does not illuminate when ignition switch ON and O/D OFF switch released.

Check the O/D OFF switch. Refer to page 7B—64

NG

Replace the switch.

OK

Check for 12V at **BrB** terminal of the O/D OFF switch connector.

NG

Replace the bulb or repair the harness (Meter to O/D OFF switch).

OK

Repair the harness (O/D OFF switch to ground).

76G15X-092

Coolant Level Warning Light

Coolant level warning light remains on when engine running.

Check the coolant level.

Low

Refill coolant.

OK

Check the coolant level sensor.
Refer to page 15—40

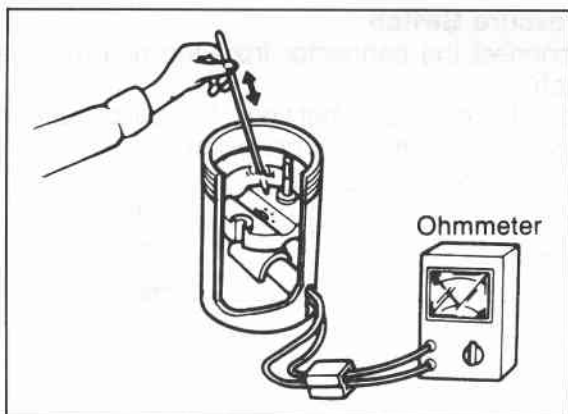
NG

Replace the switch

OK

Repair harness (Meter to coolant level sensor).

76G15X-093



86U15X-065

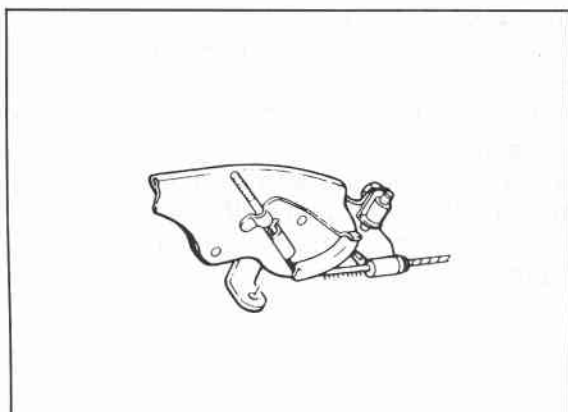
INSPECTION

Brake Fluid Level Sensor

1. Check for continuity of the sensor with an ohmmeter.

Float level	Continuity
Below min	Yes
Above min	No

2. If continuity is not as specified, replace the sensor.



86U14X-066

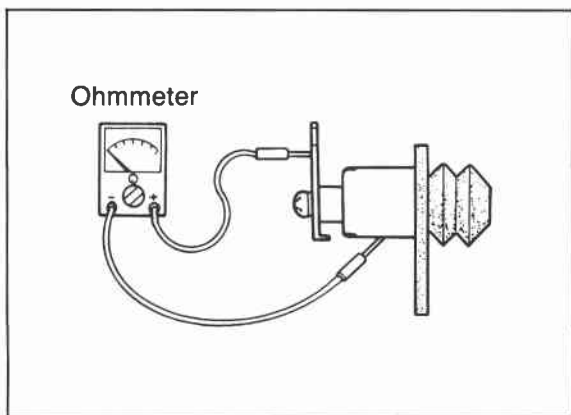
Parking Brake Switch

1. Check for continuity between (R) terminal and a body ground with an ohmmeter.

Lever	Continuity
Pulled one notch	Yes
Released	No

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

15 WARNING AND SENDER



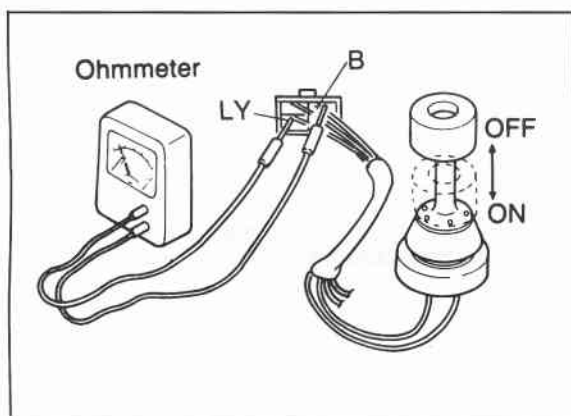
86U15X-068

Door Switch

1. Check for continuity of the switch with an ohmmeter.

Switch	Continuity
Pushed	No
Released	Yes

2. If continuity is not as specified, replace the switch.



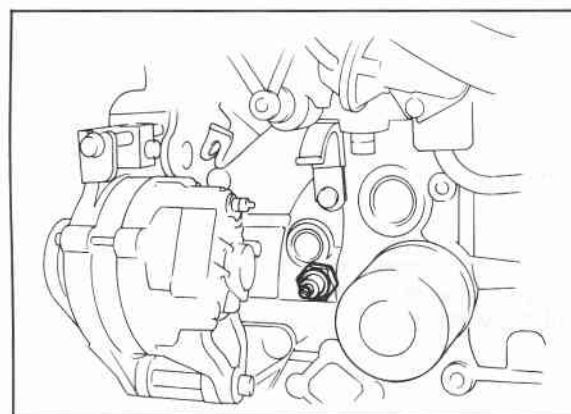
86U15X-069

Washer Level Sensor

1. Check for continuity between **C (LY)** terminal and **D (B)** terminal of the washer level sensor connector.

Terminals	Float level	Continuity
C (LY)—D (B)	Bottom	Yes
	Above bottom	No

2. If continuity is not as specified, replace the sensor.

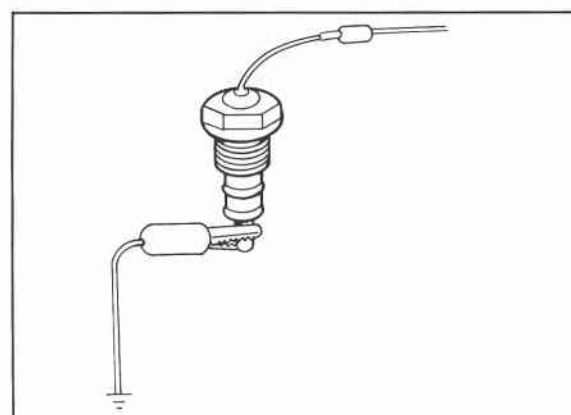


86U15X-070

Oil Pressure Switch

1. Disconnect the connector from the oil pressure switch.
2. Check for continuity between the switch and a body ground with each condition.

Engine	Continuity
Running	Yes
Stop	No



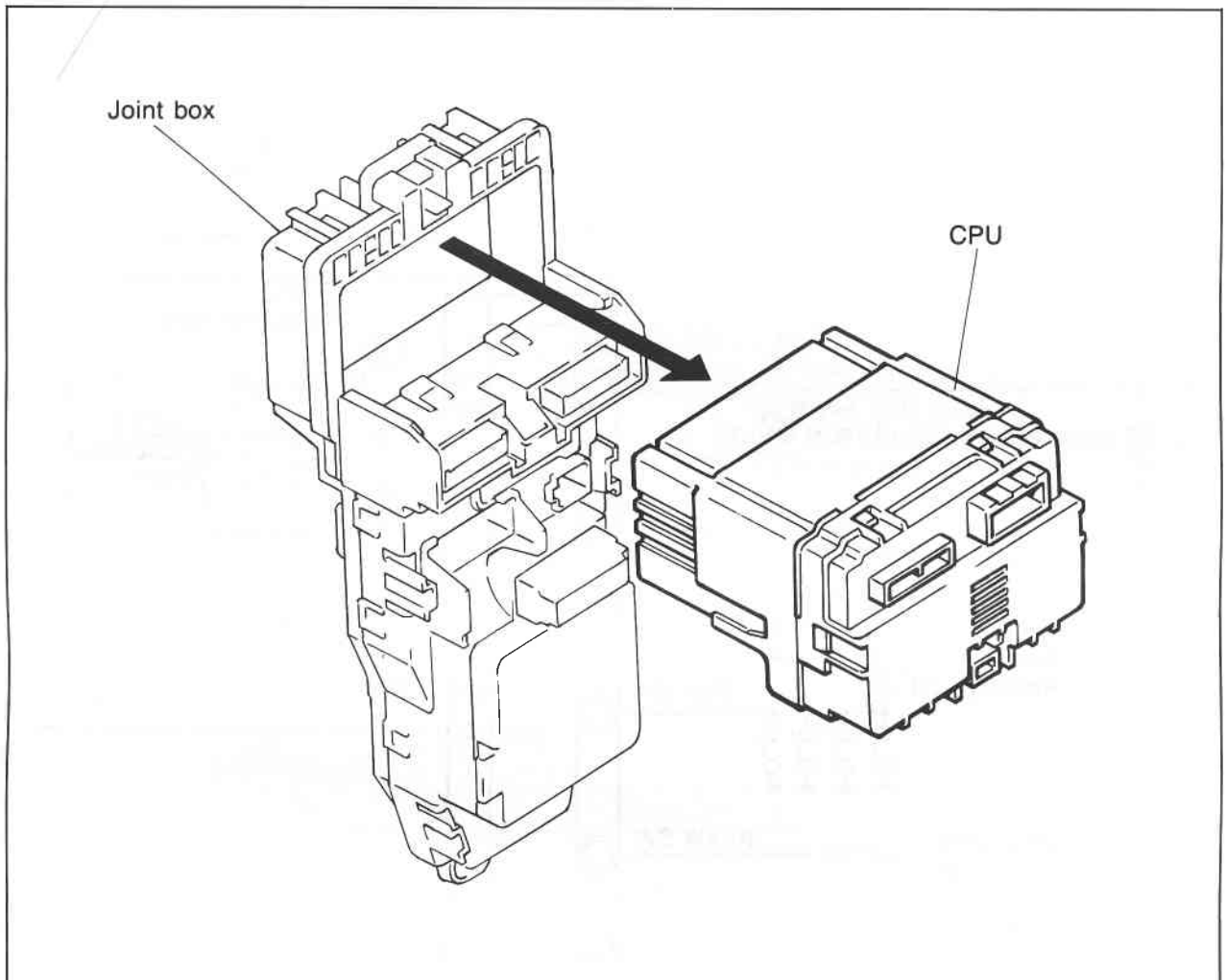
73G15X-013

Coolant Level Sensor

1. Remove the level sensor and connect the connector.
2. With the sensor not grounded to the body, start the engine.
3. After checking that the warning light illuminates, ground the threaded part of the sensor.
4. If the warning light remains illuminated, the sensor is faulty and replace it.

CENTRAL PROCESSING UNIT (CPU)

STRUCTURAL VIEW



86U15X-071

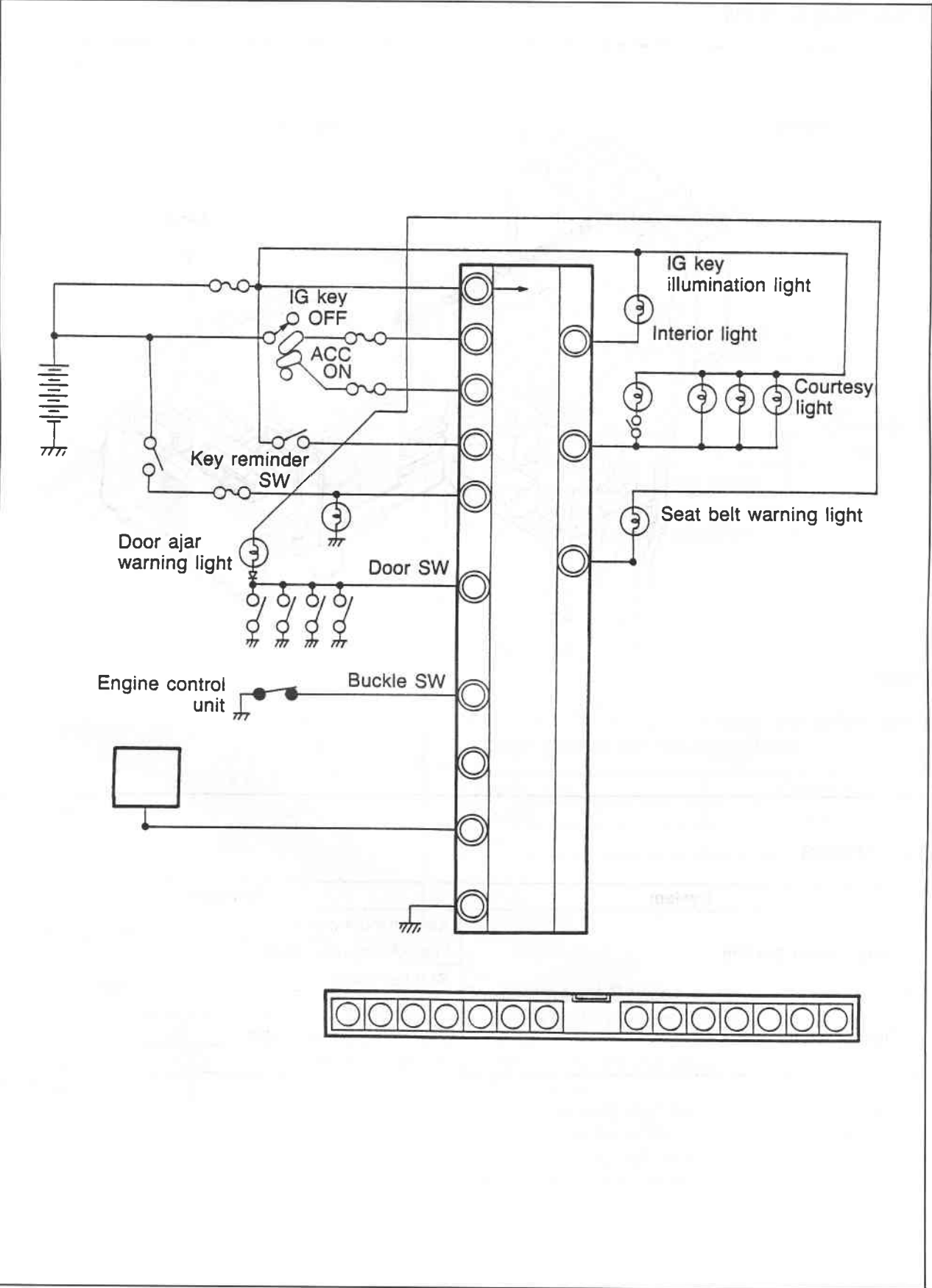
FUNCTIONS

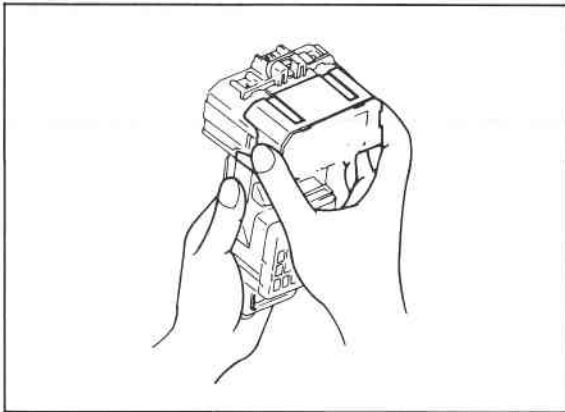
System	Function
Sound Alarm System	Key reminder alarm
	Light-off reminder alarm
	Seat belt alarm
Timer System	Seat belt timer
	Key illumination light timer
	Interior light timer

76G15X-008

15 CENTRAL PROCESSING UNIT (CPU)

CIRCUIT DIAGRAM

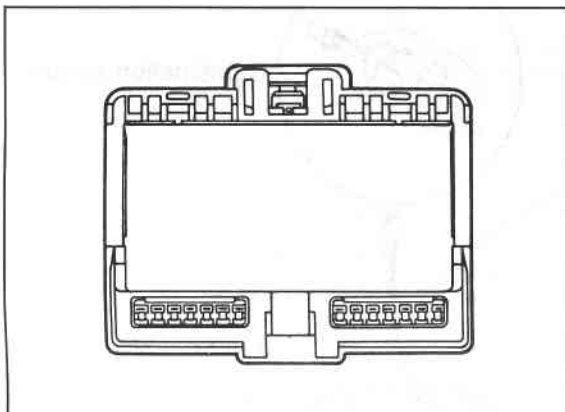




86U15X-074

REMOVAL AND INSTALLATION

1. Disconnect the negative battery cable.
2. Disconnect the CPU connectors.
3. Release the lock and remove the CPU from the joint box.
4. Install in the reverse order of removal.



86U15X-075

ON-VEHICLE INSPECTION

Note: Check the voltage between “a through l” terminal and ground.
Check the continuity between “m, n” terminal and ground.

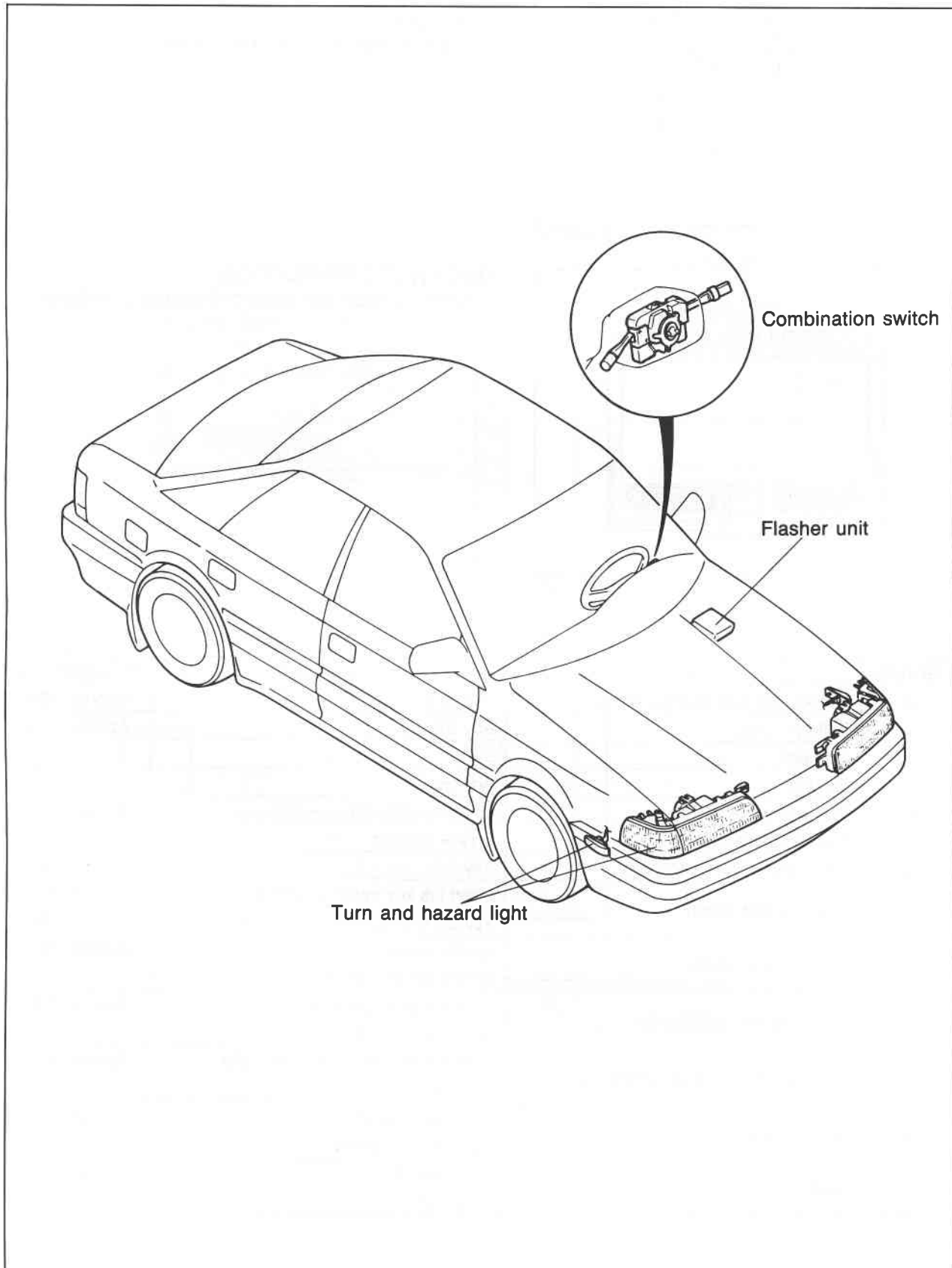
Terminal	Connecting to	Measurement condition	Measurement value
a	Interior light and courtesy lights	Any time	Approx. 12V
b	Battery	Any time	Approx. 12V
c	No used	—	—
d	Ground	Any time	0V
e	Seat belt warning light	Ignition switch ON	Approx. 12V
f	Engine control unit	Engine running	Approx. 12V
g	Key cylinder illumination light	Any time	Approx. 12V
i	Key reminder switch	Insert the key into the cylinder Pull out the key from the cylinder	Approx. 12V 0V
j	Ignition switch (ON)	Ignition switch ON Ignition switch OFF or ACC	Approx. 12V 0V
k	Ignition switch (ACC)	Ignition switch ON or ACC Ignition switch OFF	Approx. 12V 0V
l	Light switch (In the combination switch)	Turn the light switch ACC and ON Light switch OFF	Approx. 12V 0V
m	Seat belt switch	Seat belt fastened Seat belt unfastened	0Ω ∞
n	Door switch	Door closed Door open	∞ 0Ω

76G15X-009

15 TURN AND HAZARD LIGHT

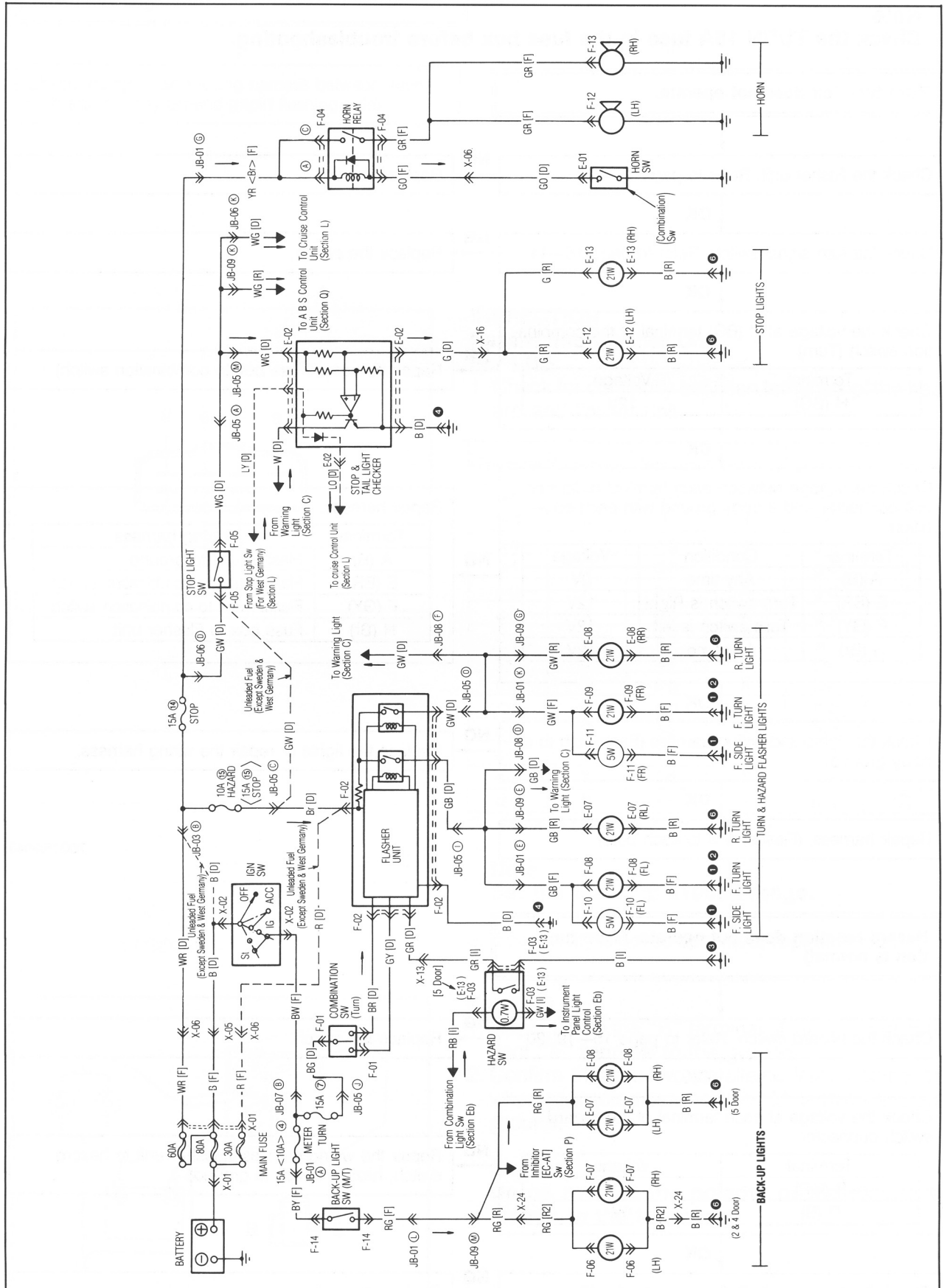
TURN AND HAZARD LIGHT

STRUCTURAL VIEW



86U15X-077

CIRCUIT DIAGRAM



86U15X-078

15 TURN AND HAZARD LIGHT

TROUBLESHOOTING

Note

Check the TURN 15A fuse in the fuse box before troubleshooting.

Turn function does not operate.

Check the flasher unit. Refer to page 15—47

NG

Replace the unit.

OK

Check the turn signal switch. Refer to page 15—14

NG

Replace the switch.

OK

Check the voltage at H (BG) terminal of the combination switch (Turn).

Terminal	Voltage
H (BG)	12V

NG

Repair harness. (Fuse box to combination switch)

OK

Check the voltage between each terminal of flasher unit connector and a body ground with each condition.

Terminal	Condition	Voltage
A (B)	Any time	0V
E (BR)	Turn switch is Right	12V
F (GY)	Turn switch is left	12V
H (Br)	Any time	12V

NG

Repair harness.

Terminal	Wiring harness
A (B)	Flasher unit to ground
E (BR)	Flasher unit to combination switch
F (GY)	Flasher unit to combination switch
H (Br)	Fuse box to Flasher unit

OK

Check the lights and wiring harness (Each bulb to a body ground)

NG

Replace the lights or repair the wiring harness.

OK

Repair harness. (Flasher unit to each bulb)

76G15X-045

Hazard function does not operate. (Turn function is normal)

Check the hazard switch. Refer to page 15—19, 20

NG

Replace the switch.

OK

Check the voltage at each terminal of the hazard switch connector.

Terminal	Voltage
B (GR)	12V
D (B)	0V

NG

Repair the wiring harness. (Flasher unit to hazard switch, hazard switch to ground)

OK

Check the flasher unit. Refer to page 15—47

NG

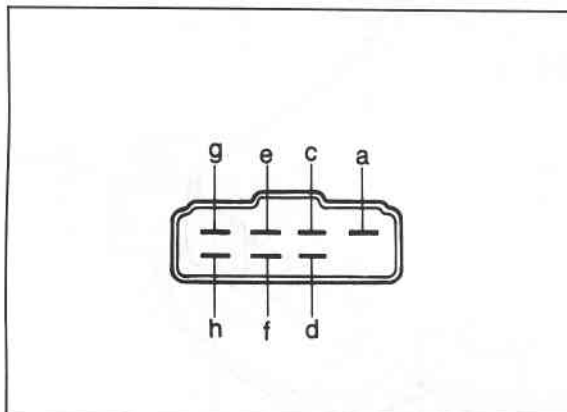
Replace the unit.

76G15X-046

Rapid flashing

Check the lights and wiring harness between each bulb and a body ground (rapid flashing side).

86U15X-081



76G15X-047

INSPECTION Hazard and Flasher Unit For LHD

1. Check for continuity between terminals of the hazard and flasher unit.

Terminal	Continuity	Terminal	Continuity	Terminal	Continuity
a-c	X	d-e	X	f-g	X
a-d	X	d-f	X	f-h	X
a-e	○	d-g	X	g-a	X
a-f	○	d-h	X	g-c	X
a-g	X	e-a	X	g-d	X
a-h	X	e-c	X	g-e	X
c-a	○	e-d	X	g-f	X
c-d	○	e-f	X	g-h	X
c-e	○	e-g	X	h-a	○
c-f	○	e-h	X	h-c	○
c-g	○	f-a	X	h-d	○
c-h	○	f-c	X	h-e	○
d-a	X	f-d	X	h-f	○
d-c	X	f-e	X	h-g	○

○: Indicates continuity X: No continuity

Note

Set the tester to x1000Ω range.

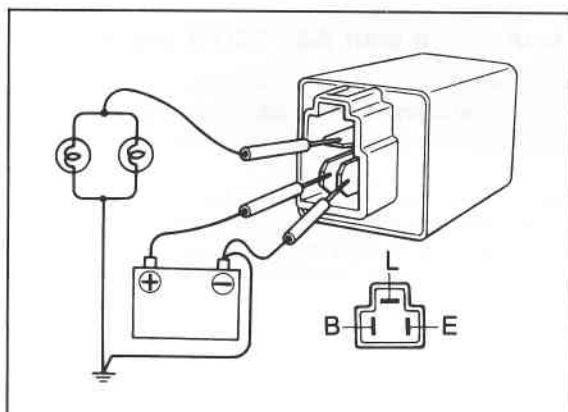
2. If continuity is not as specified, replace the switch.

For RHD

1. Apply 12V to the "B" terminal of the unit and connect "E" terminal to the ground.
2. Confirm that the two paralleled lamps come on when connected between the "L" terminal and the ground.

Caution

Do no reverse the polarity of the electrical source to the terminals.

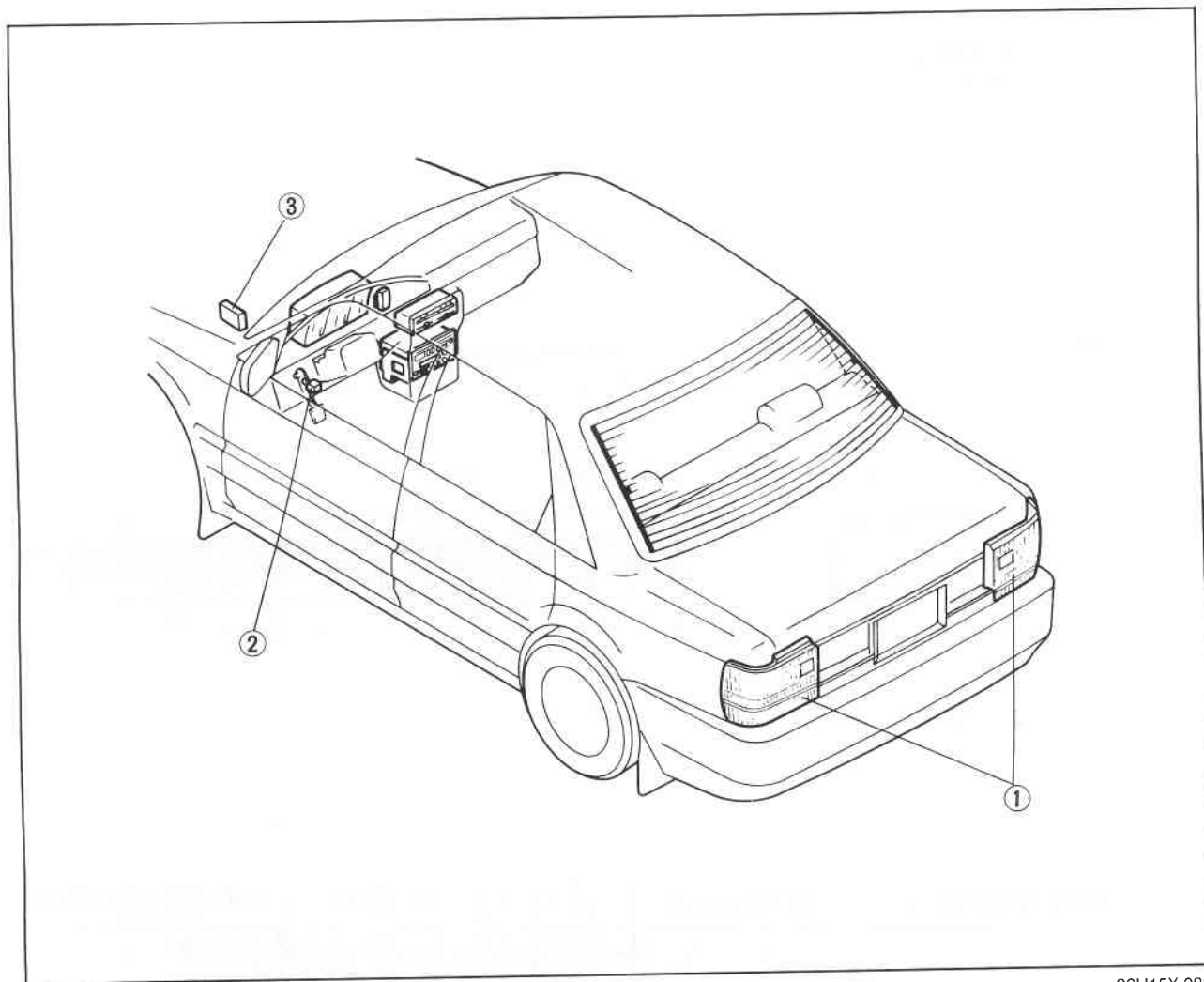


76G15X-048

15 STOP LIGHT

STOP LIGHT

STRUCTURAL VIEW

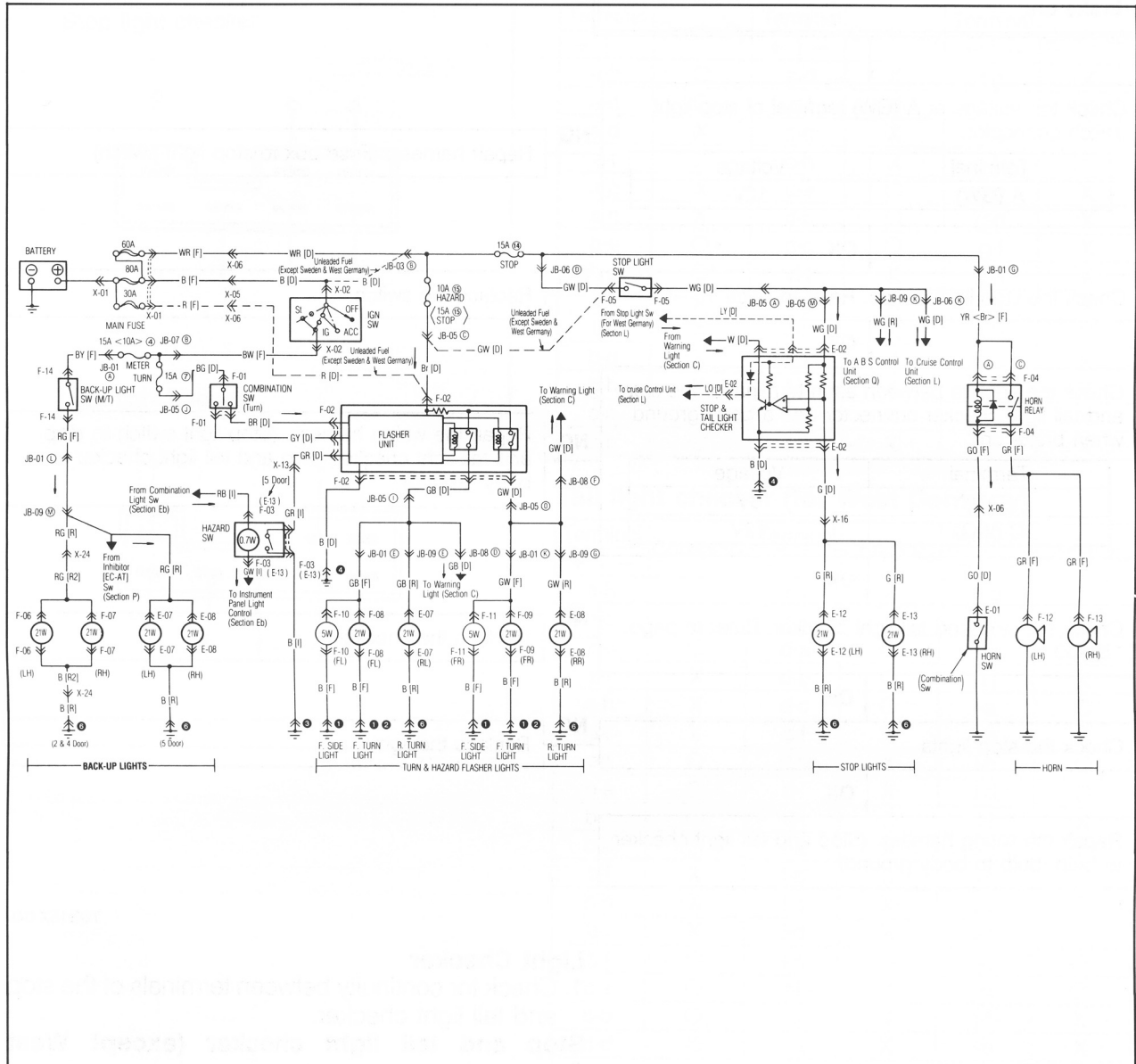


86U15X-083

- 1. Stop light
- 2. Stop light switch

- 3. Stop and tail light checker

CIRCUIT DIAGRAM



86U15X-084

TROUBLESHOOTING

Note

Check the STOP 15A fuse in the fuse box before troubleshooting.

One side stop light does not illuminate.

Replace the light or repair the wiring harness (Stop and tail light checker to light, light to ground).

86U15X-085

15 STOP LIGHT

Both side stop lights do not illuminate when brake on.

Check the voltage at A (GW) terminal of stop light switch connector.

Terminal	Voltage
A (GW)	12V

NG

Repair harness. (Fuse box to stop light switch)

OK

Check the stop light switch. Refer to page 15—51

NG

Replace the switch.

OK

Check the voltage between each terminal of the stop and tail light checker connector and a body ground when brake on.

Terminal	Voltage
B (B)	0V
C (WG)	12V

NG

Repair the wiring harness. (Stop light switch to stop and tail light checker, stop and tail light checker to body ground)

OK

Check the stop and tail light checker. Refer to page 15—50

NG

Replace the checker.

OK

Check the stop lights

NG

Replace the light.

OK

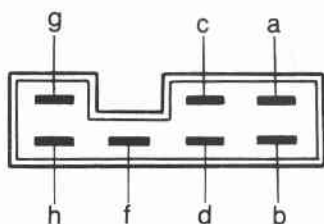
Repair the wiring harness. (Stop and tail light checker to bulb, bulb to body ground)

76G15X-049

Light Checker

1. Check for continuity between terminals of the stop and tail light checker.

Stop and tail light checker (except West Germany)

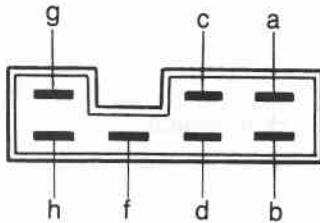


76G15X-050

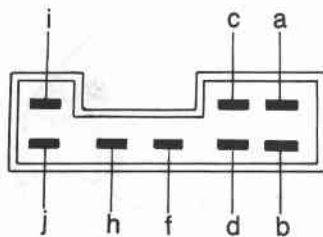
Terminal	Continuity	Terminal	Continuity	Terminal	Continuity
+	-	+	-	+	-
a-b	○	c-d	X	f-g	X
a-c	○	c-f	○	f-h	○
a-d	X	c-g	X	g-a	○
a-f	○	c-h	○	g-b	○
a-g	X	d-a	○	g-c	○
a-h	○	d-b	○	g-d	X
b-a	○	d-c	○	g-f	○
b-c	○	d-f	○	g-h	○
b-d	X	d-g	X	h-a	○
b-f	○	d-h	○	h-b	○
b-g	X	f-a	○	h-c	○
b-h	○	f-b	○	h-d	X
c-a	○	f-c	○	h-f	○
c-b	○	f-d	X	h-g	X

○: Indicates continuity X: No continuity

Stop light checker



Tail light checker



76G15X-051

Stop light checker (for West Germany)

Terminal	Continuity	Terminal	Continuity	Terminal	Continuity
+ -		+ -		+ -	
a-b	○	c-d	X	f-g	X
a-c	○	c-f	X	f-h	X
a-d	X	c-g	X	g-a	X
a-f	X	c-h	X	g-b	X
a-g	X	d-a	○	g-c	X
a-h	X	d-b	○	g-d	X
b-a	○	d-c	○	g-f	X
b-c	○	d-f	X	g-h	X
b-d	X	d-g	X	h-a	X
b-f	X	d-h	X	h-b	X
b-g	X	f-a	X	h-c	X
b-h	X	f-b	X	h-d	X
c-a	○	f-c	X	h-f	X
c-b	○	f-d	X	h-g	X

Tail light checker (for West Germany)

Terminal	Continuity	Terminal	Continuity	Terminal	Continuity
+ -		+ -		+ -	
a-b	○	c-i	X	h-d	X
a-c	○	c-j	○	h-f	○
a-d	○	d-a	○	h-i	X
a-f	X	d-b	○	h-j	X
a-h	X	d-c	○	i-a	○
a-i	X	d-f	X	i-b	○
a-j	○	d-h	X	i-c	○
b-a	○	d-i	X	i-d	○
b-c	○	d-j	○	i-f	X
b-d	○	f-a	X	i-h	X
b-f	X	f-b	X	i-j	○
b-h	X	f-c	X	j-a	○
b-i	X	f-d	X	j-b	○
b-j	○	f-h	○	j-c	○
c-a	○	f-i	X	j-d	○
c-b	○	f-j	X	j-f	X
c-d	○	h-a	X	j-h	X
c-f	X	h-b	X	j-i	X
c-h	X	h-c	X	—	—

○: Indicates continuity X: No continuity

Note

Set the tester to x1000Ω range.

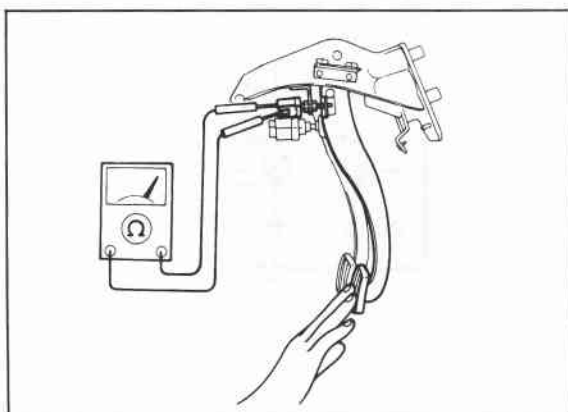
- If continuity is not as specified, replace the light checker.

Stop Light Switch

- Disconnect the stop light switch connector.
- Check for continuity between terminals of the switch.

Position	Terminal	a	b
Pedal depressed		○	○
Pedal released			

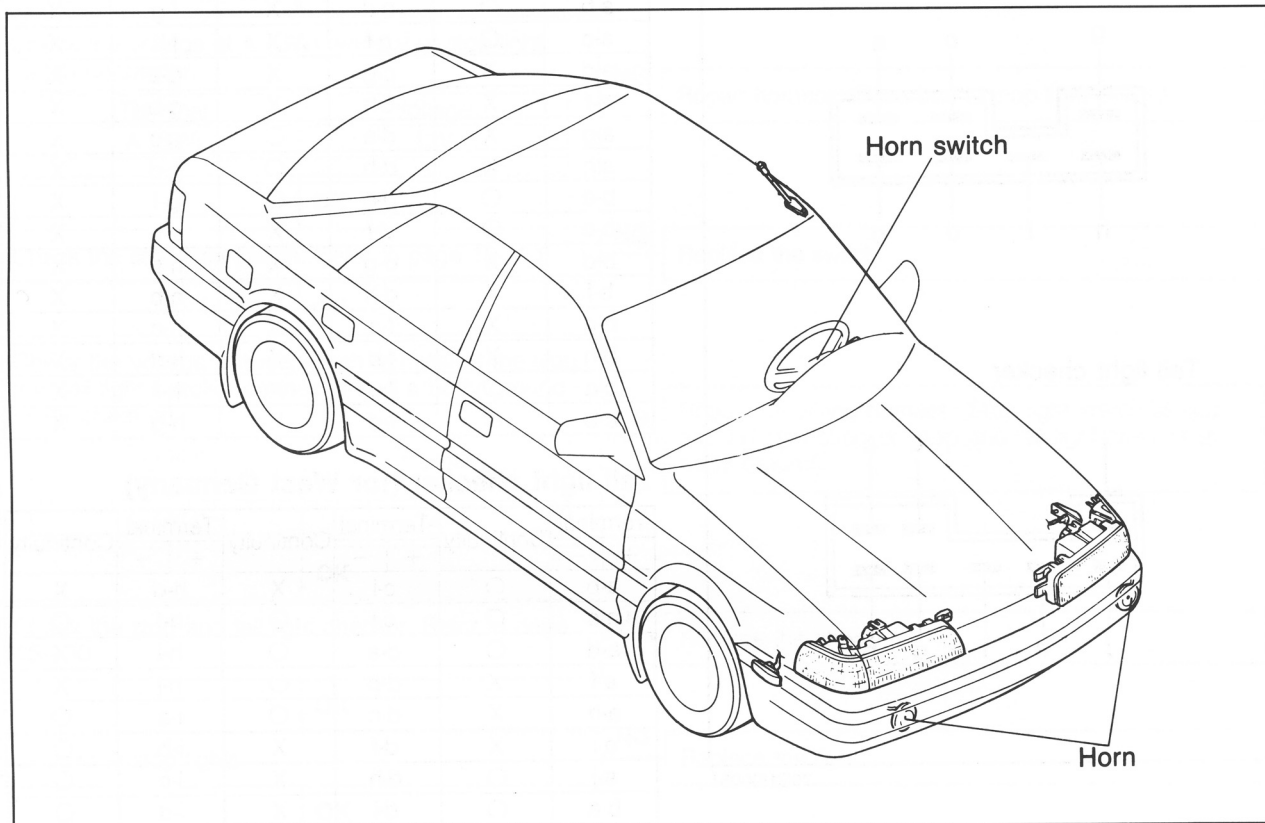
○—○ : Indicates continuity



86U15X-088

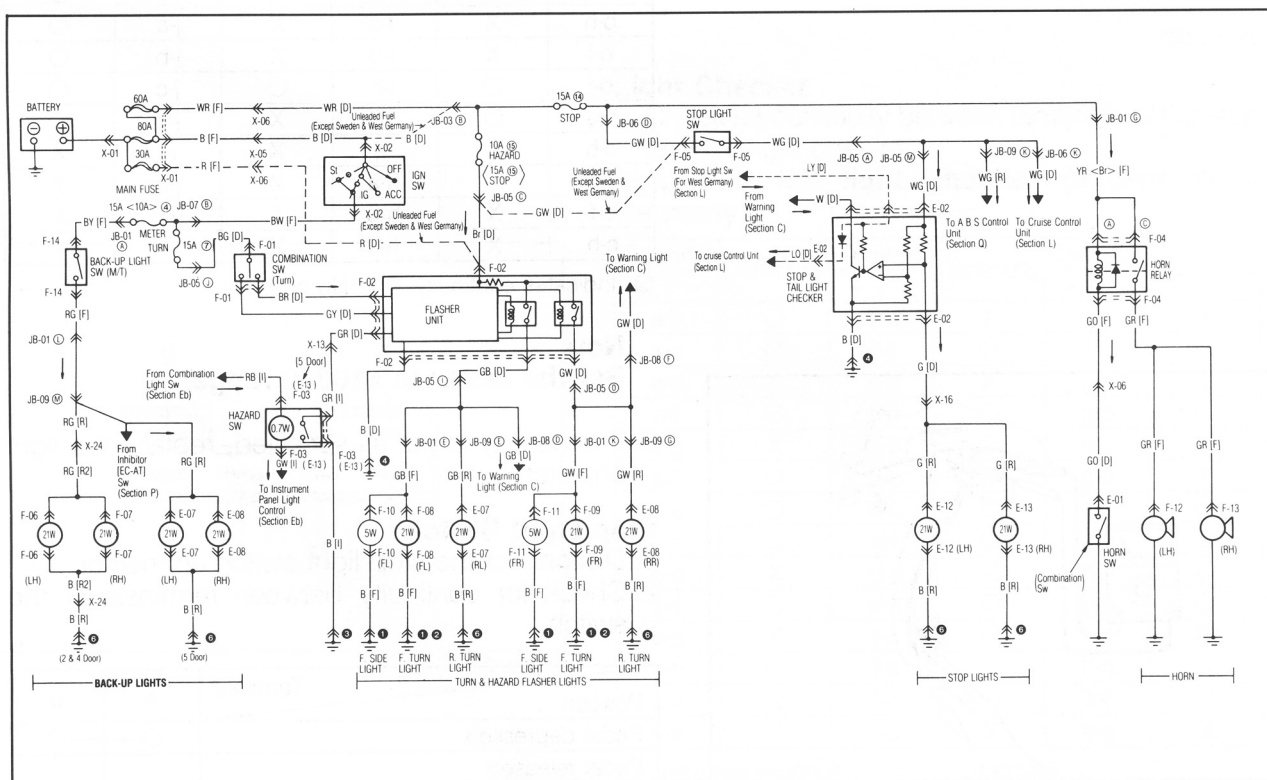
HORN

STRUCTURAL VIEW



86U15X-089

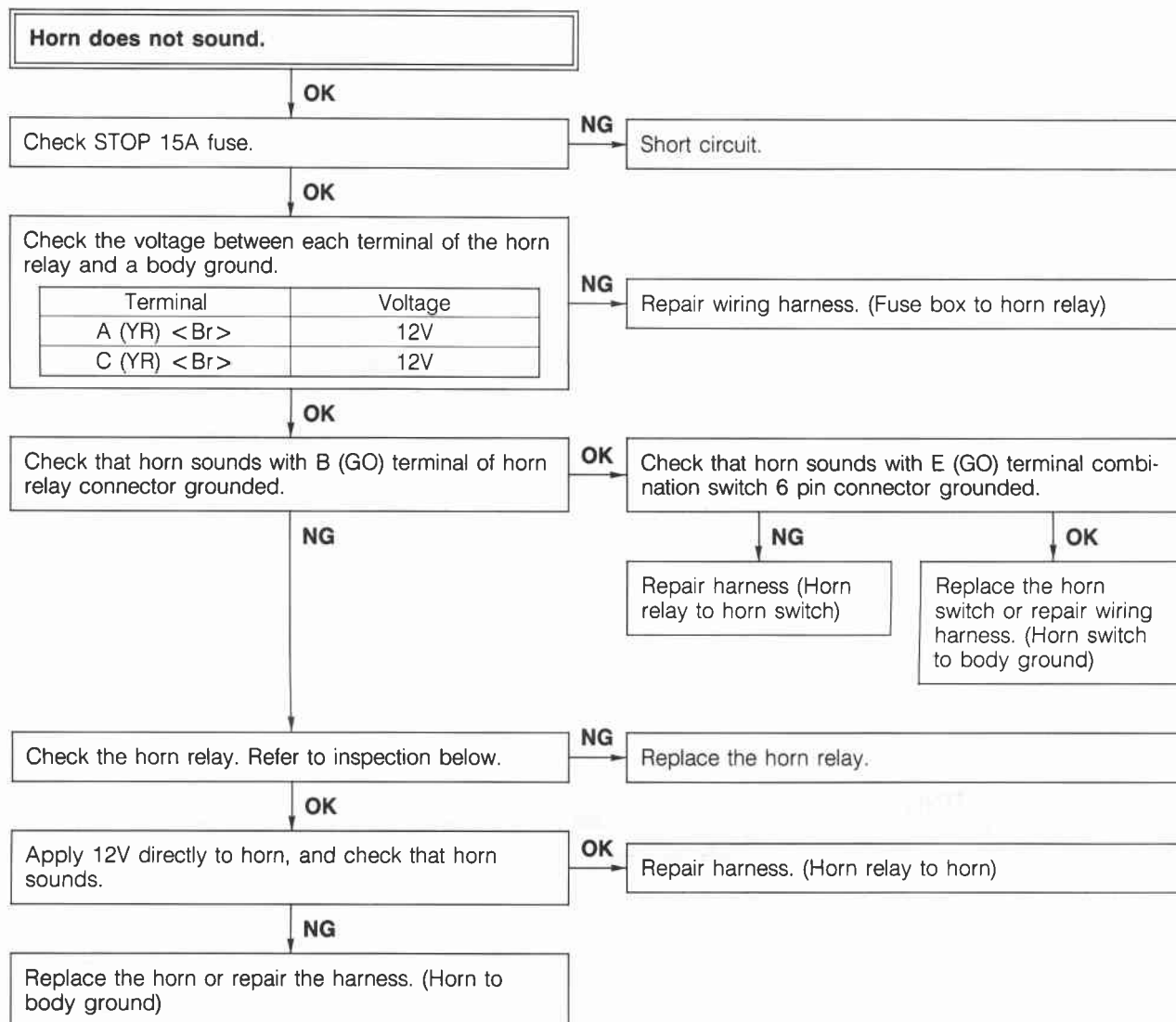
CIRCUIT DIAGRAM



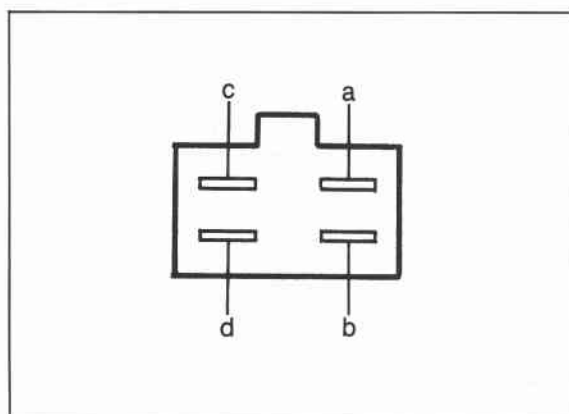
86U15X-090

TROUBLESHOOTING

< > ...For West Germany



76G15X-052



86U15X-092

INSPECTION

Horn Relay

Check for continuity between terminals of the relay.

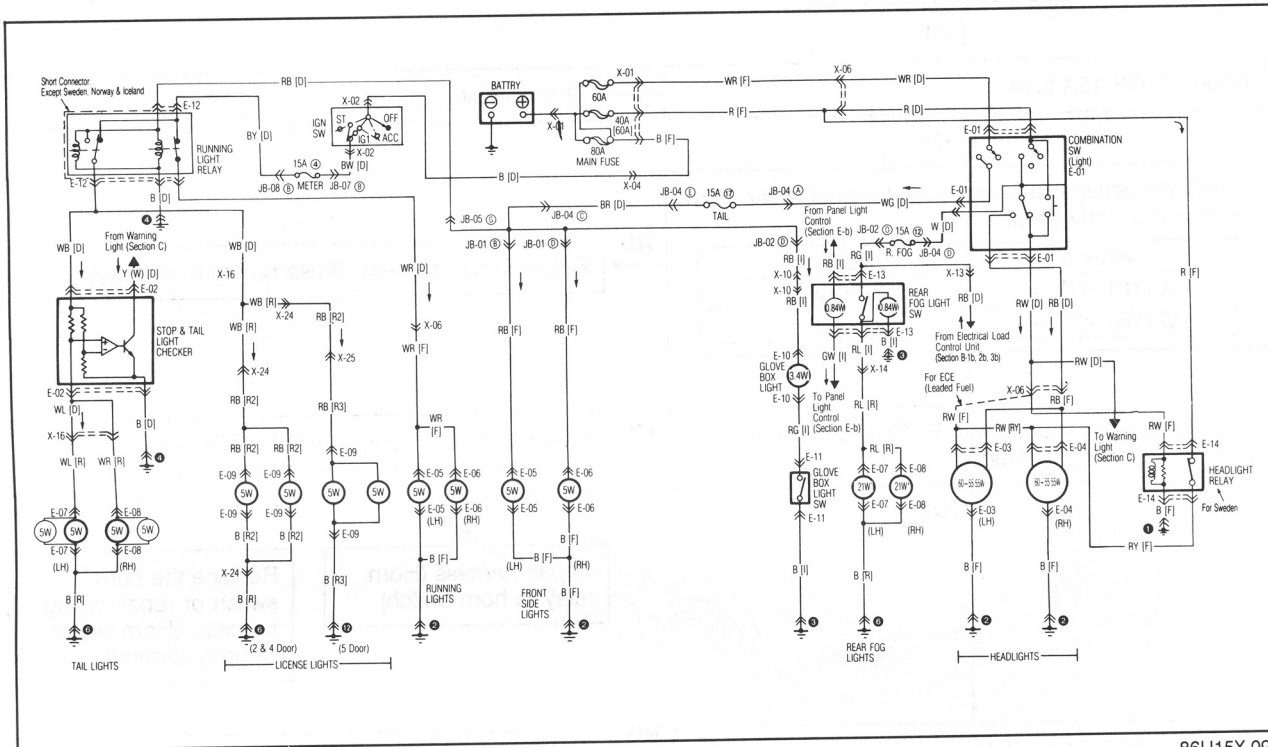
Connecting to		Terminal			
12V	Ground	a	b	c	d
—	—	○	○		
a	b			○	○

○—○: indicates continuity

15 HEADLIGHT

HEADLIGHT

CIRCUIT DIAGRAM



86U15X-094

TROUBLESHOOTING

Leaded Fuel Model

Headlights do not operate (Low and/or High)

Check HEAD (40A) fuse

NG

Short circuit.

OK

Check for 12V at "R" wire of combination switch 2 pin connector

NG

Repair harness (Main fuse to combination switch)

OK

Check for 12V at "RB" wire (when low and/or "RW" wire (when high) of combination switch 6 pin connector

NG

Replace combination switch

OK

Check for 12V at "RB" wire (when low) and/or "RW" wire (when high) of headlights 3 pin connector

NG

Repair harness (Combination switch to headlight)

OK

Check for continuity of "B" wire of headlight connector to ground

NG

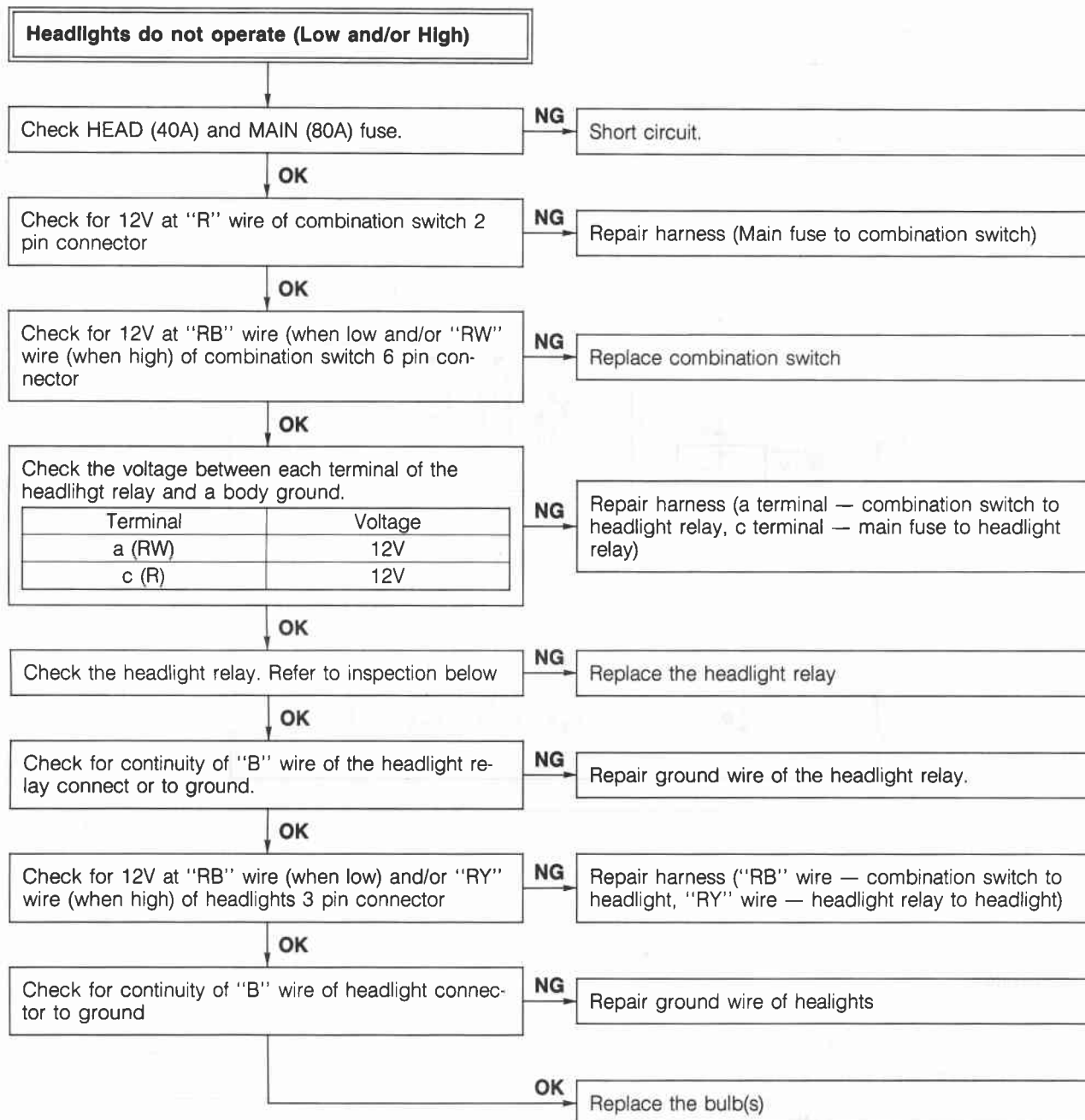
Repair ground wire of headlights

OK

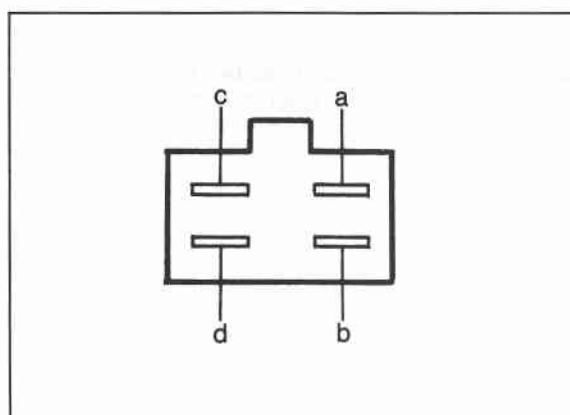
Replace the bulb(s)

76G15X-055

Unleaded fuel model



76G15X-053



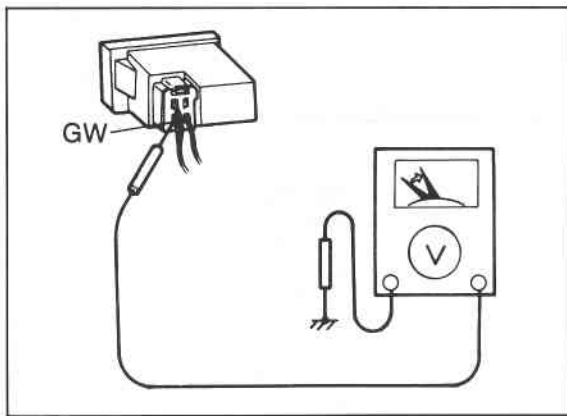
76G15X-054

INSPECTION Headlight Relay

Check for continuity between terminals of the relay.

Connecting to		Terminal			
12V	Ground	a	b	c	d
—	—	○	○		
a	b			○	○

○—○: indicates continuity



86U15X-100

INSPECTION

Panel Light Controller

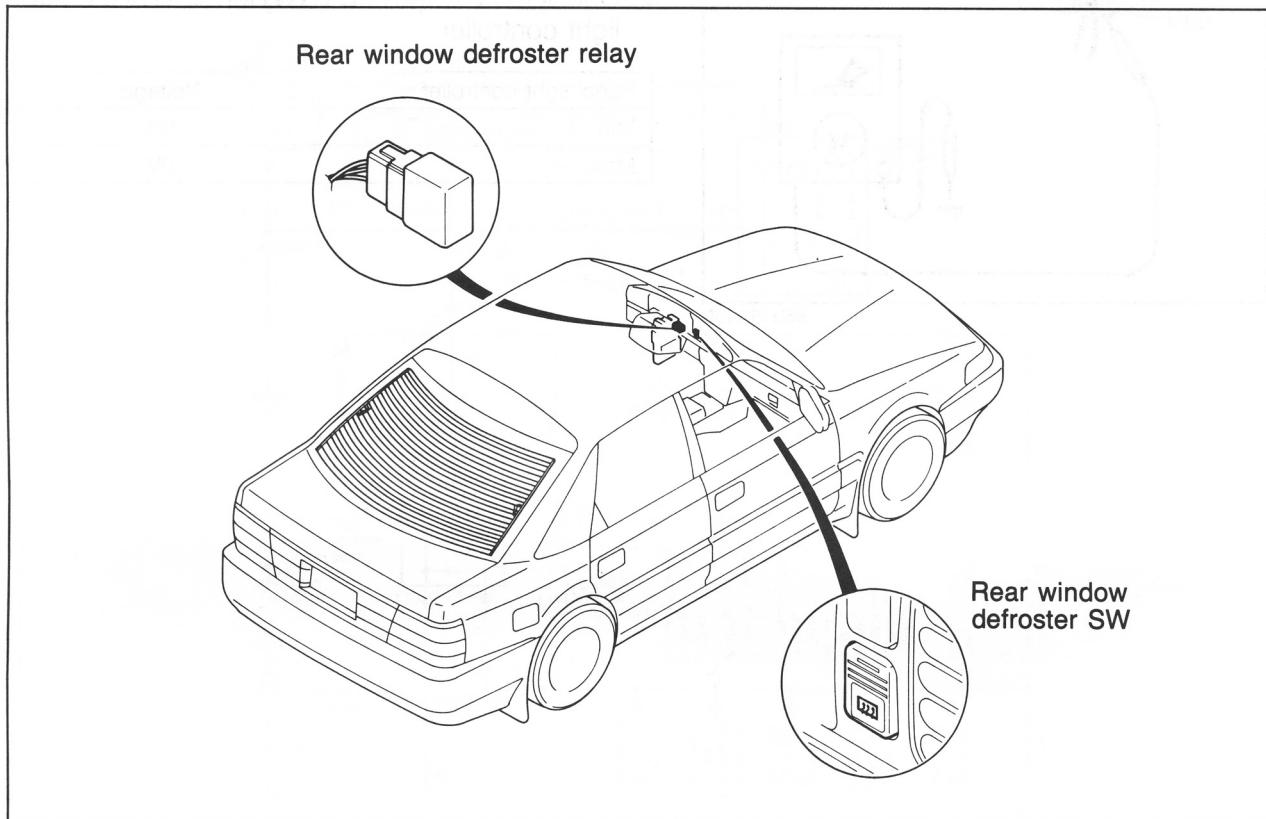
1. Remove the panel light controller.
2. Check the voltage at **D (GW)** terminal of the panel light controller.

Panel light controller	Voltage
Min	10V
Max.	0V

15 REAR WINDOW DEFROSTER

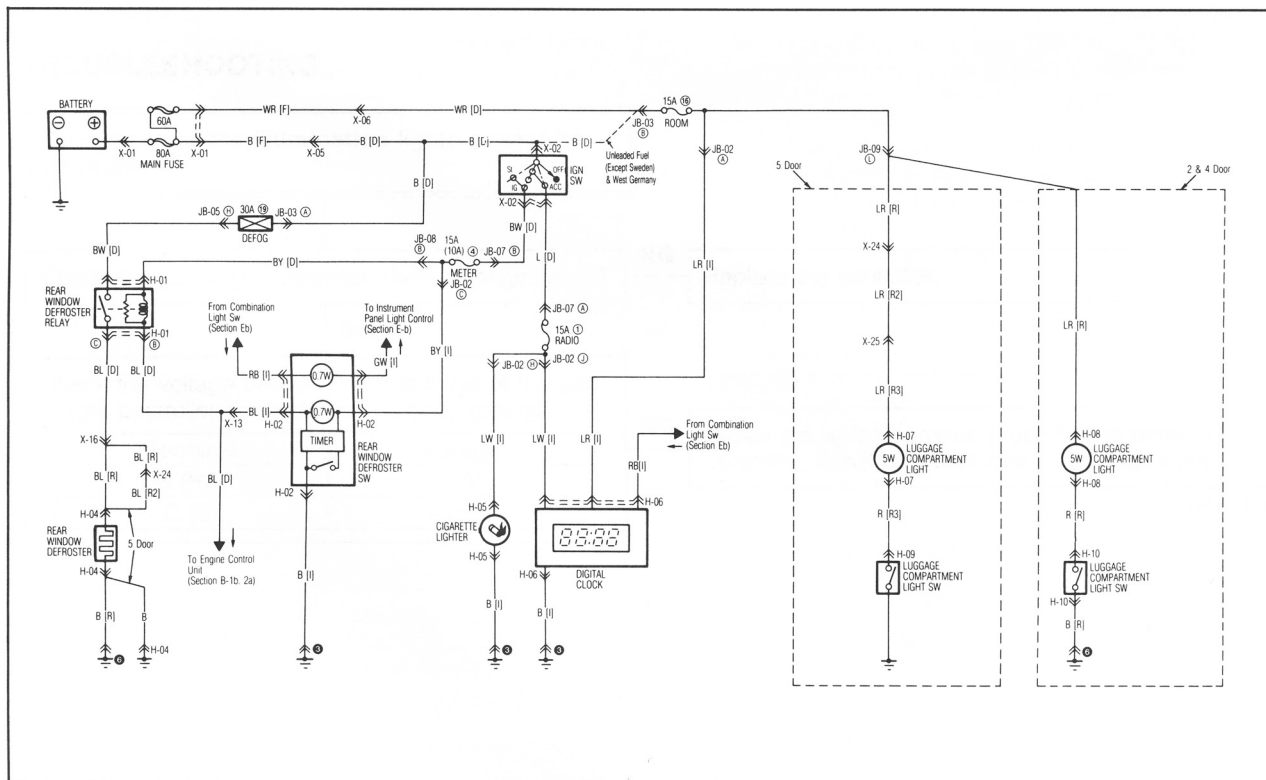
REAR WINDOW DEFROSTER

STRUCTURAL VIEW



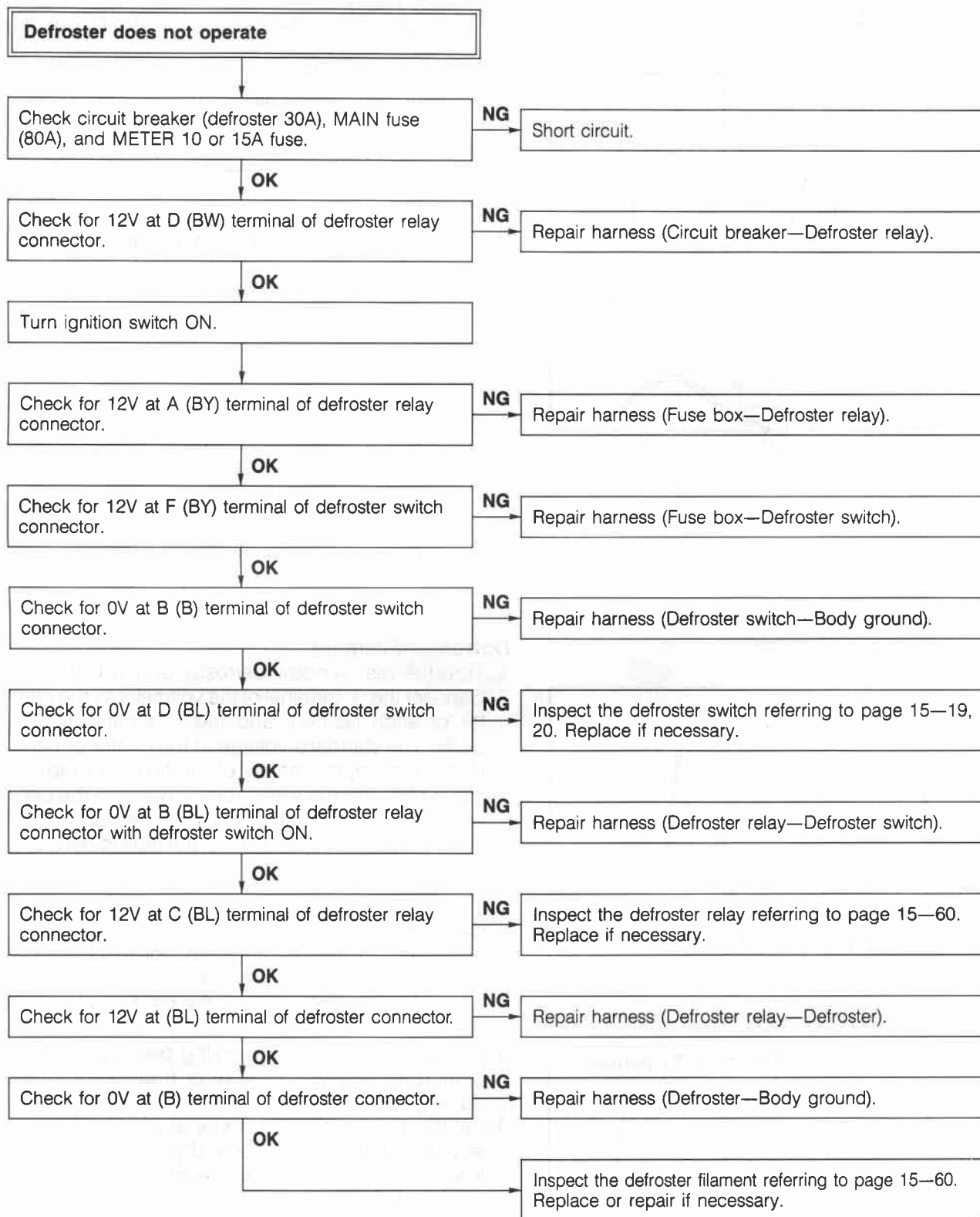
86U15X-101

CIRCUIT DIAGRAM



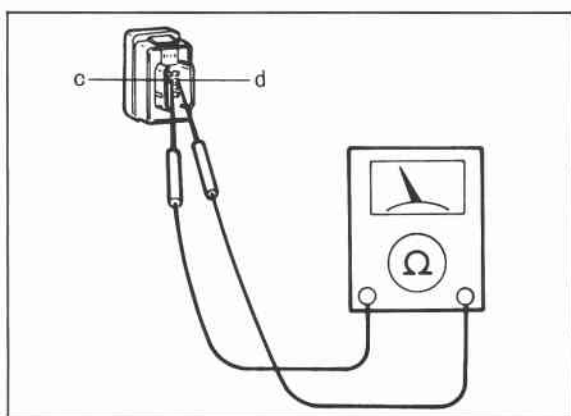
86U15X-102

TROUBLESHOOTING



76G15X-057

15 REAR WINDOW DEFROSTER



86U15X-104

INSPECTION

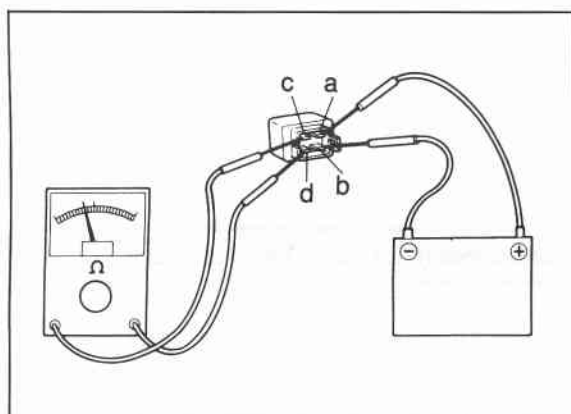
Defroster Relay

1. Check for continuity between terminals of the relay.

Connecting to		a	b	c	d
12V	ground				
—	—	○—○			
a	b			○—○	

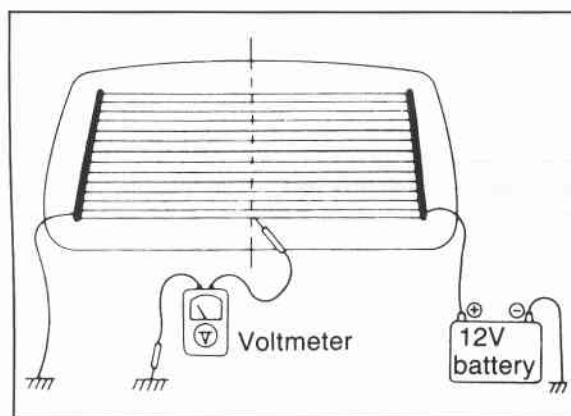
○—○: Indicates continuity

2. If continuity is not as specified, replace the relay.



Defroster Filament

1. Turn the rear window defroster switch ON.
2. Connect the + terminal of the voltmeter to the center of each filament and the – terminal to the body. The standard voltage at the center of each filament is approximately 6V. If the meter indication is high, there is a short circuit between the center and the grounded side of the filament. If the indication is low or zero, the fault is between the center and positive side.



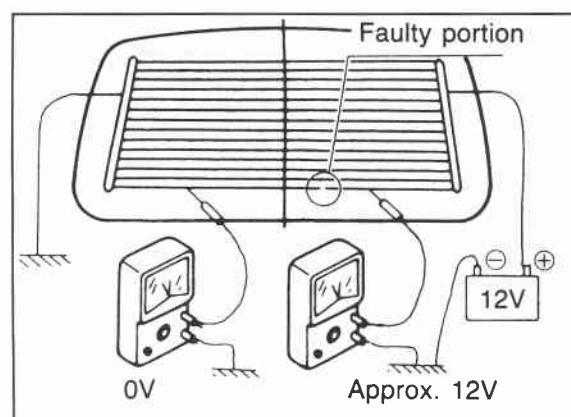
76G15X-058

Repairing Filament

1. Use paint thinner or ethyl alcohol to clean the damaged part of the filament.
2. Attach tape to both sides of the damaged part of the filament.
3. Using a small brush or marking pen, apply silver paint (part no 2835 77 600) or equivalent to the damaged part.
4. Let the paint set for 24 hours at 20°C (68°F) to let it dry completely. (If a blow dryer is used to heat it to 60°C (140°F), it can be dried in about 30 minutes.)

Note

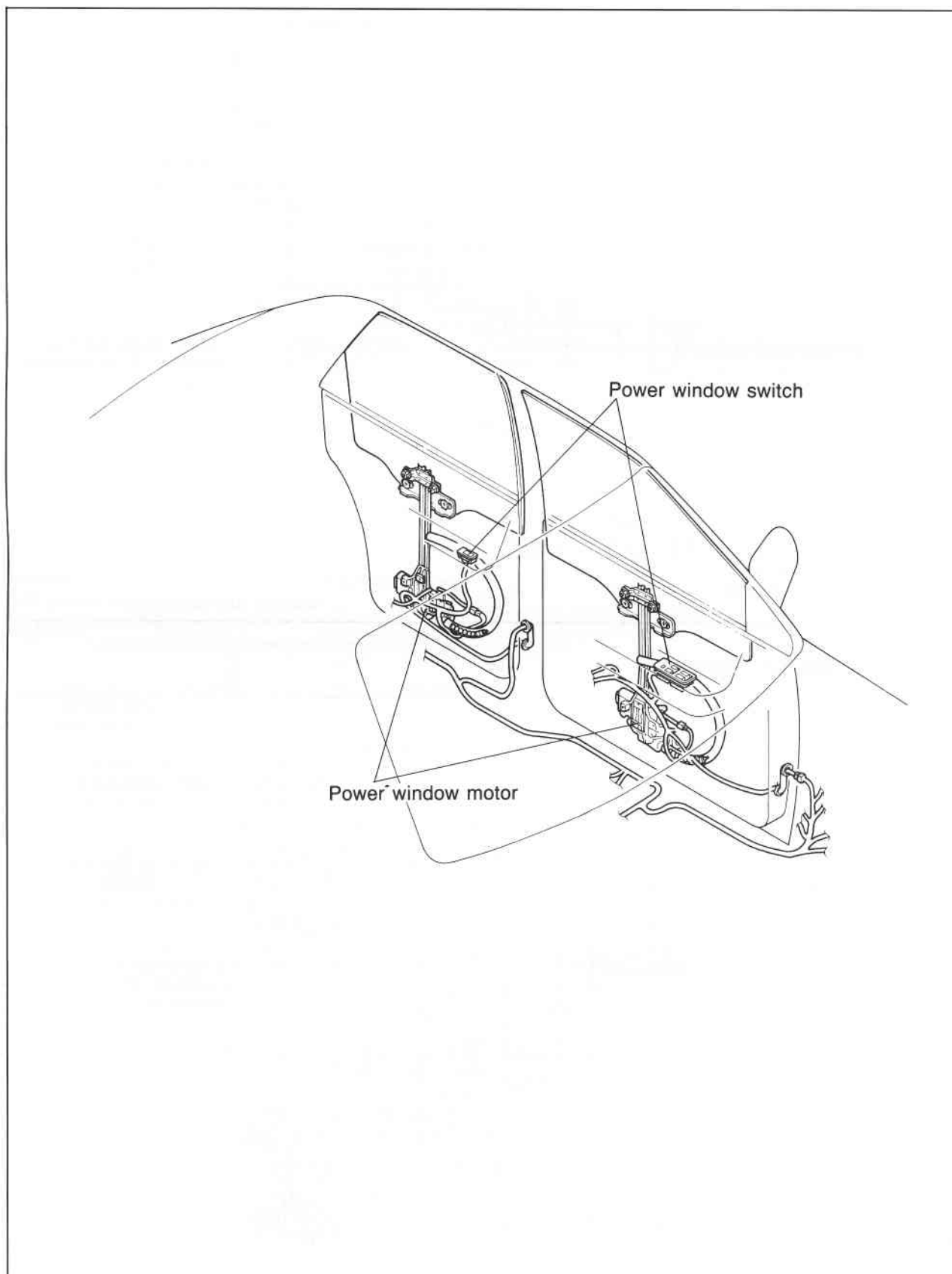
- a) Do not use the rear-window defroster until the paint is dry.
- b) Do not use gasoline or similar solvents to clean the damaged part.



86U15X-107

POWER WINDOW

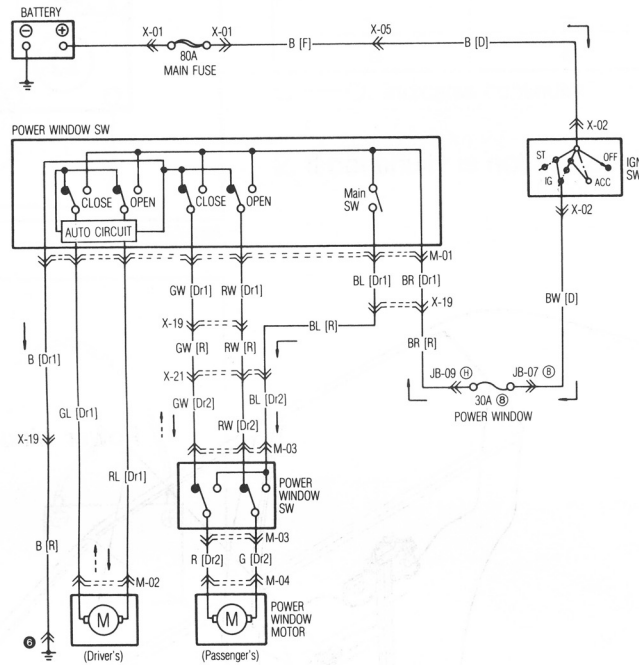
STRUCTURAL VIEW



15 POWER WINDOW

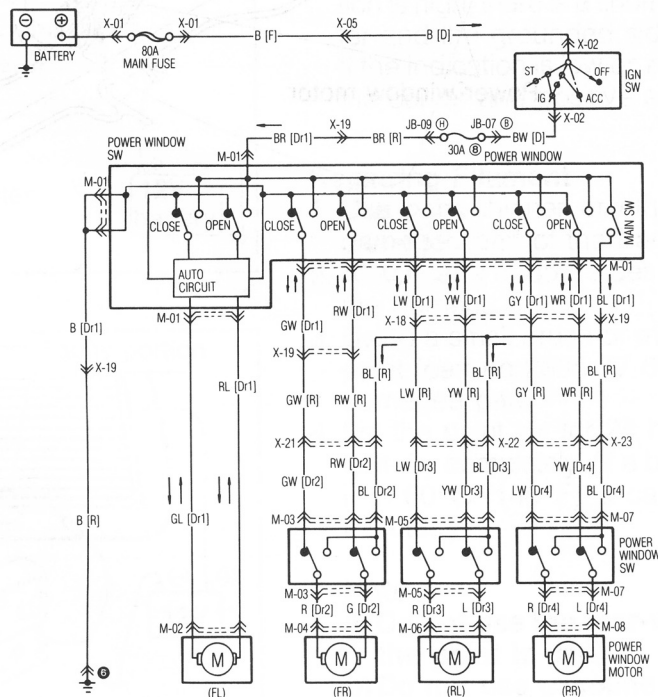
CIRCUIT DIAGRAM

(Coupe/MX-6)

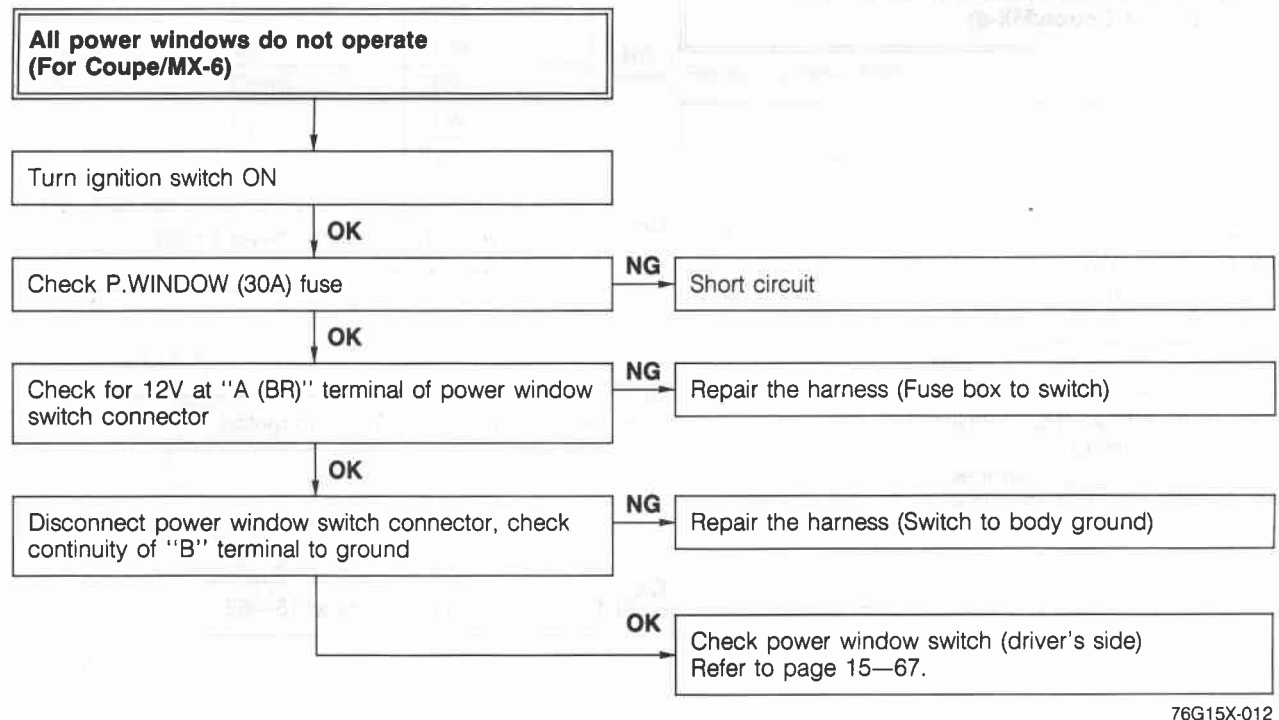
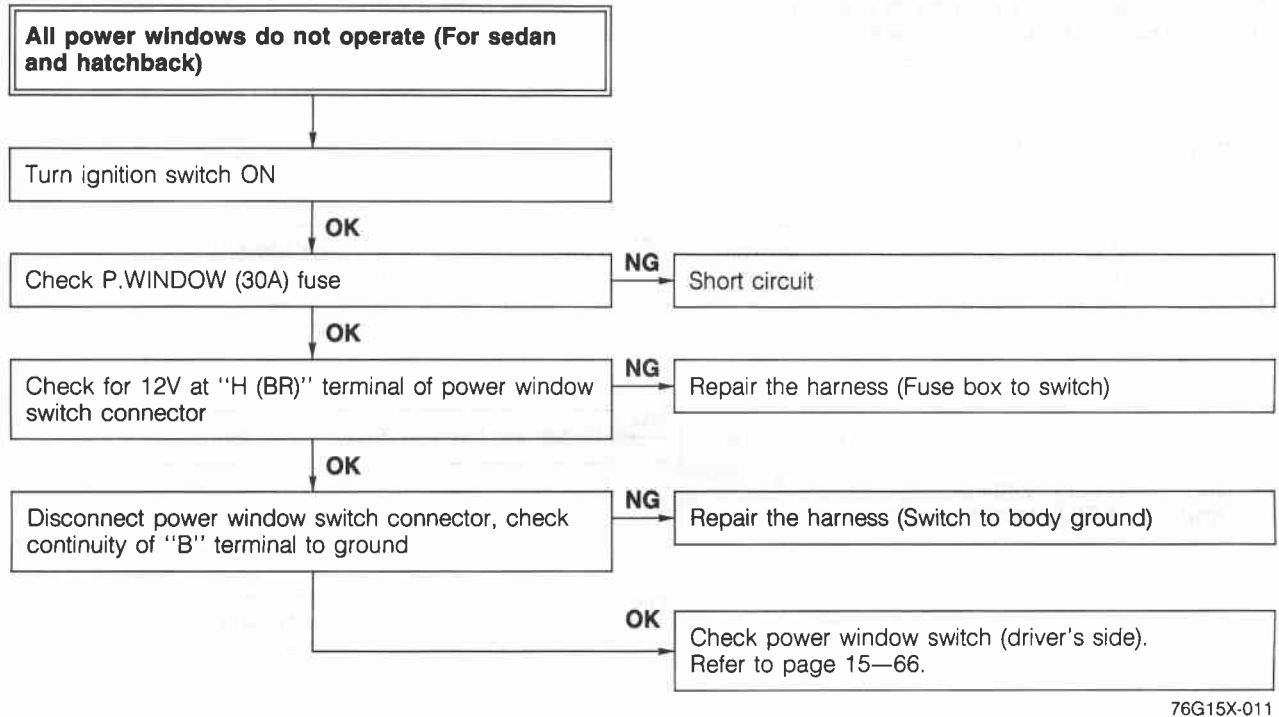


76G15X-010

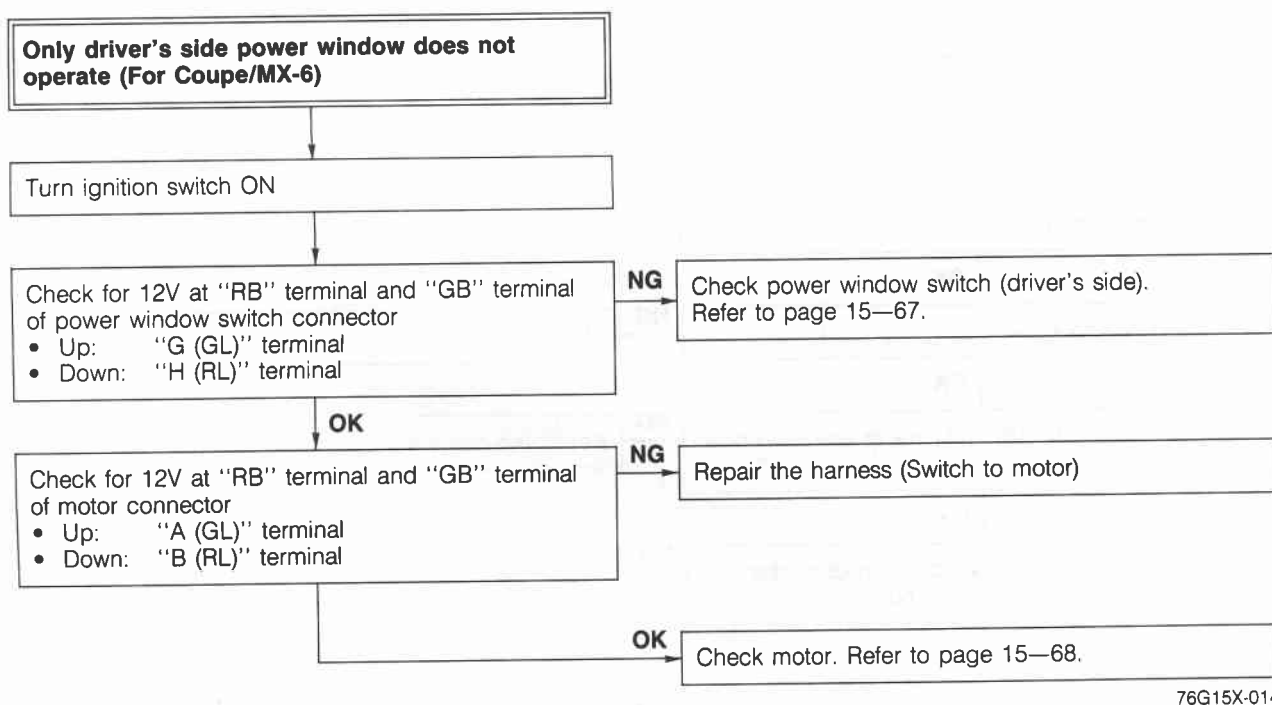
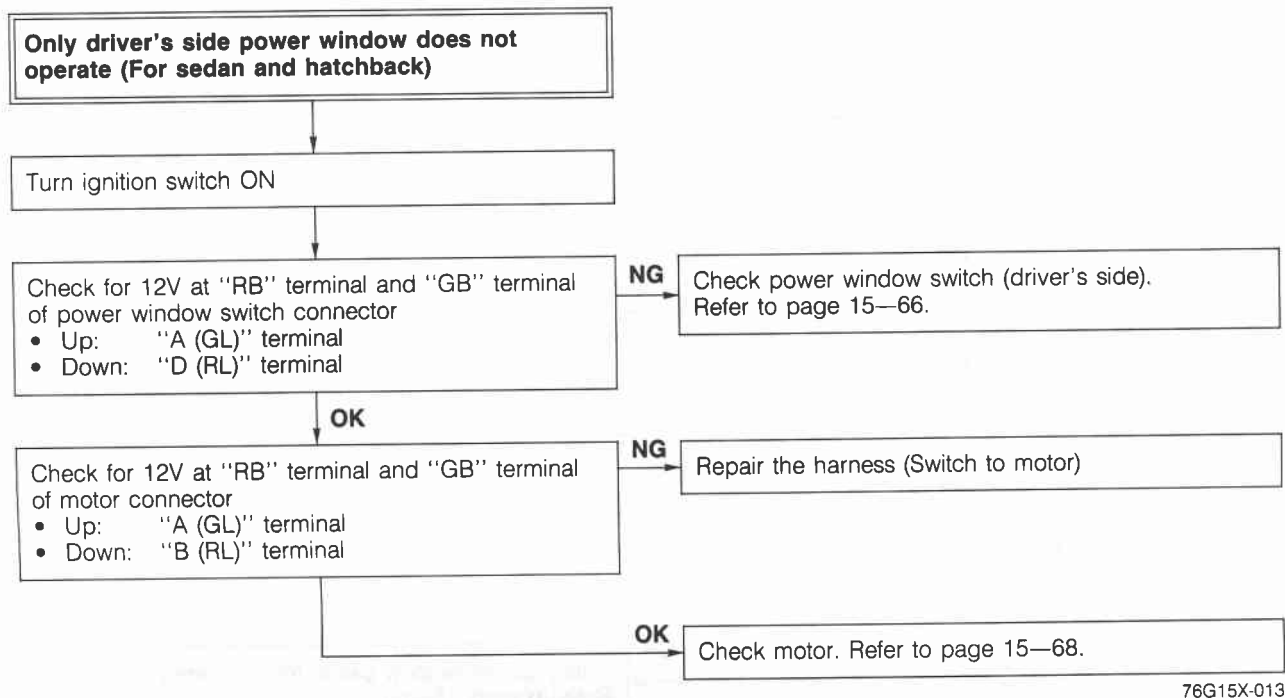
(For Sedan and Hatchback)



TROUBLESHOOTING



15 POWER WINDOW



Power windows (except for driver's side) cannot be operated by main switch

Turn ignition switch ON

Note
Use only the main switch during the checking operation.

Check for 12V at terminal of power window switch connector while operating main switch (driver's side)

Door	Operation	Wire
Passenger side	Up	"GW"
	Down	"RW"
Rear left side (except Coupe)	Up	"LW"
	Down	"YW"
Rear right side (except Coupe)	Up	"GY"
	Down	"WR"

NG

Check power window switch (driver's side). Refer to page 15—66, 67.

OK

Check for 12V at terminal to each door power window switch connector (5 pin) while operating main switch (driver's side)

Door	Operation	Wire
Passenger side	Up	"GW"
	Down	"RW"
Rear left side (except Coupe)	Up	"LW"
	Down	"YW"
Rear right side (except Coupe)	Up	"GY"
	Down	"WR"

NG

Repair harness (Main switch—Switch on each door)

OK

Check for 12V at "R" terminal and "G" terminal of each door switch connector (5 pin) while operating main switch (driver's side)

- Up: "R" terminal
- Down: "G" terminal

NG

Check switch on each door. Refer to page 15—67.

OK

Check for 12V at "R" terminal and "G" terminal of each motor connector (2P) while operating main switch (driver's side)

- Up: "R" terminal
- Down: "G" terminal

NG

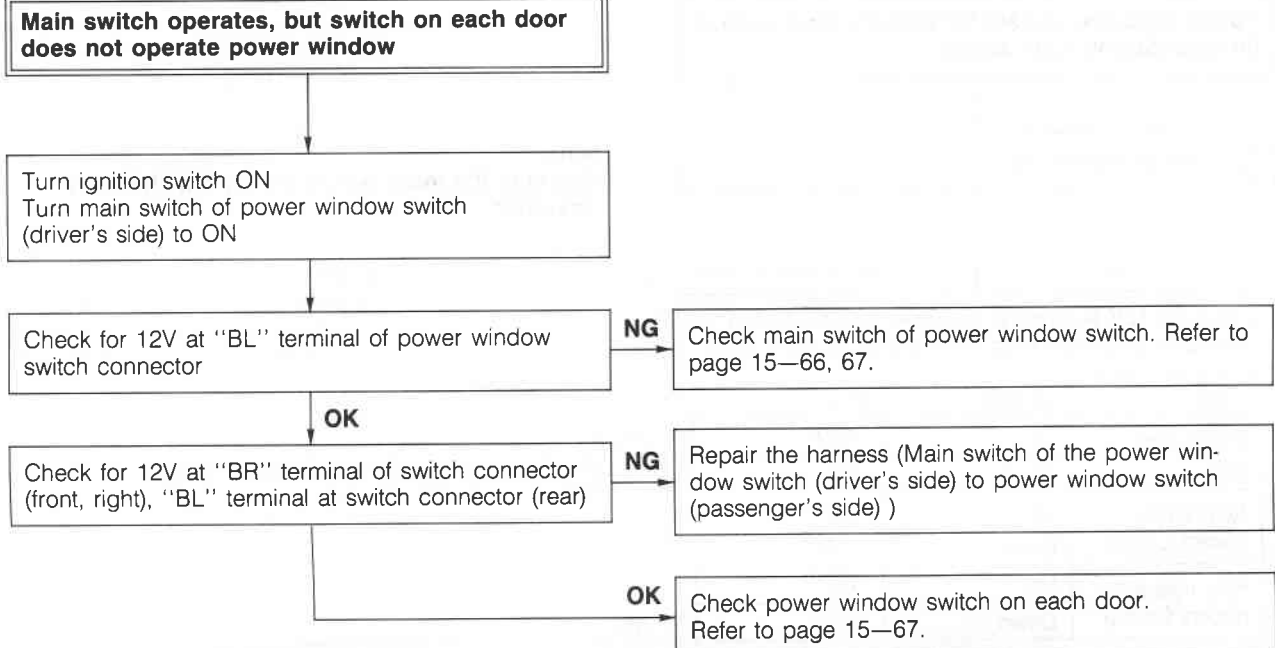
Repair harness (Switch on each door ~ Motor)

OK

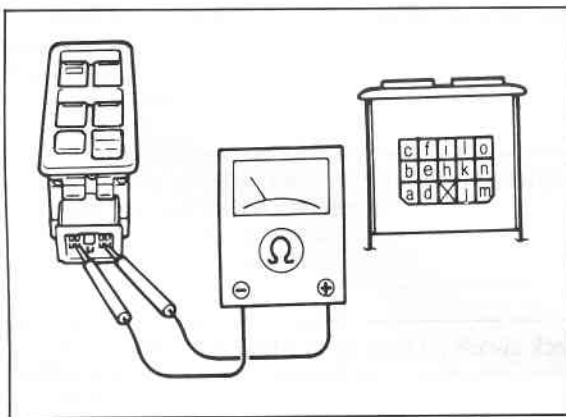
Check motor. Refer to page 15—68.

76G15X-015

15 POWER WINDOW



76G15X-059



76G15X-016

INSPECTION

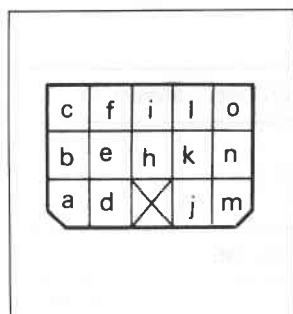
Power Window Driver's Side Switch (For Sedan and Hatchback)

Check for continuity between terminals of the switch.

Main switch

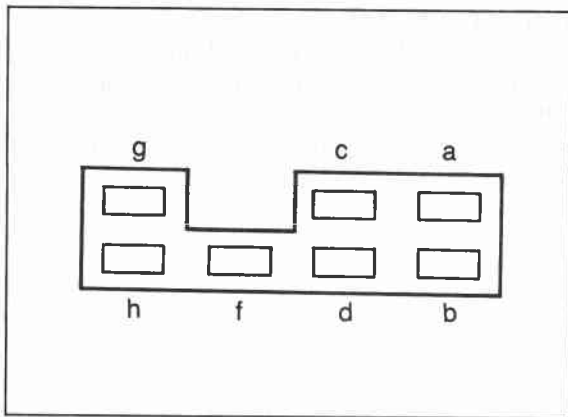
Terminal	h	i
Position		
Lock		
Unlock	○	○

○—○: Indicates continuity

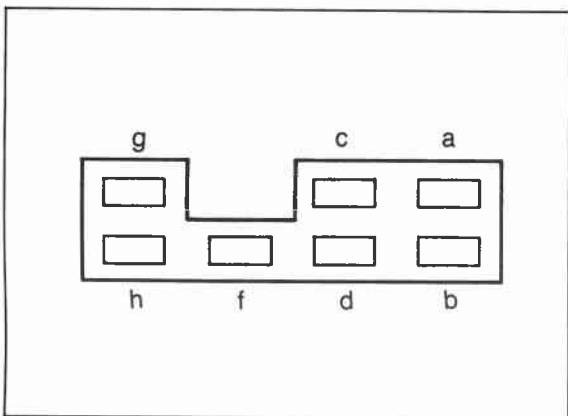


Switch	Driver's side				Passenger's side				Rear right				Rear left			
Terminal	h	f	d	a	h	f	m	j	h	f	e	b	h	f	n	k
Position																
UP	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
OFF		○	○	○		○	○	○		○	○	○		○	○	○
DOWN	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

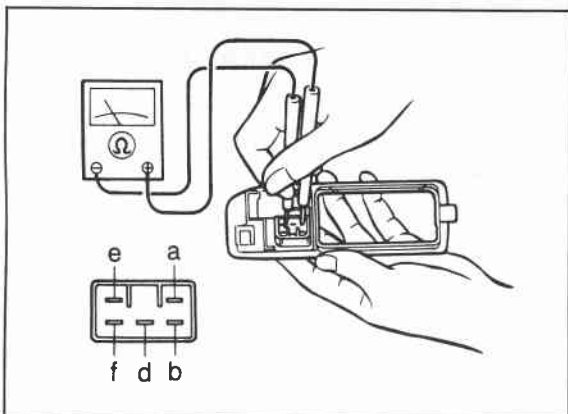
○—○: Indicates continuity



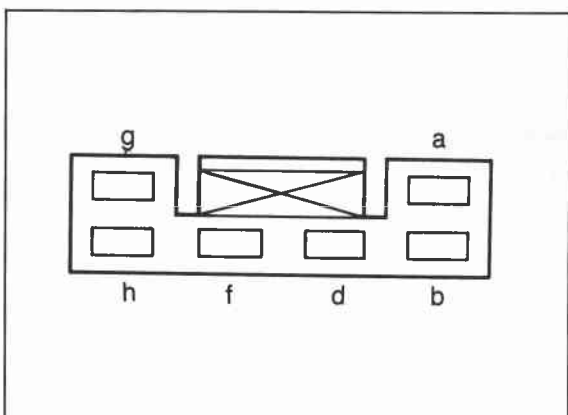
76G15X-017



86U15X-118



76G15X-018



76G15X-019

(For Coupe/MX-6)

Check for continuity between terminals of the switch.

Main switch

Position \ Terminal	a	c
Lock		
Unlock	○—○	○—○

○—○: Indicates continuity

Switch	Driver's side				Passenger's side			
Terminal \ Position	a	b	h	g	a	b	d	f
UP	○—○			○—○	○—○			
OFF		○—○				○—○		
DOWN	○—○			○—○	○—○			

○—○: Indicates continuity

Switch on Each Side

(For Sedan And Hatchback)

Check for continuity between terminals of the switch.

Position \ Terminal	a	b	d	e	f
UP	○—○			○—○	
OFF	○—○			○—○	
DOWN		○—○		○—○	

○—○: Indicates continuity

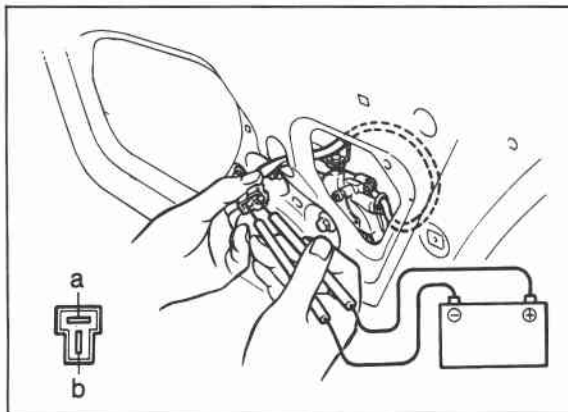
(For Coupe/MX-6)

Check for continuity between terminals of the switch.

Position \ Terminal	a	b	d	f	h
UP	○—○			○—○	
OFF	○—○			○—○	
DOWN		○—○		○—○	

○—○: Indicates continuity

15 POWER WINDOW



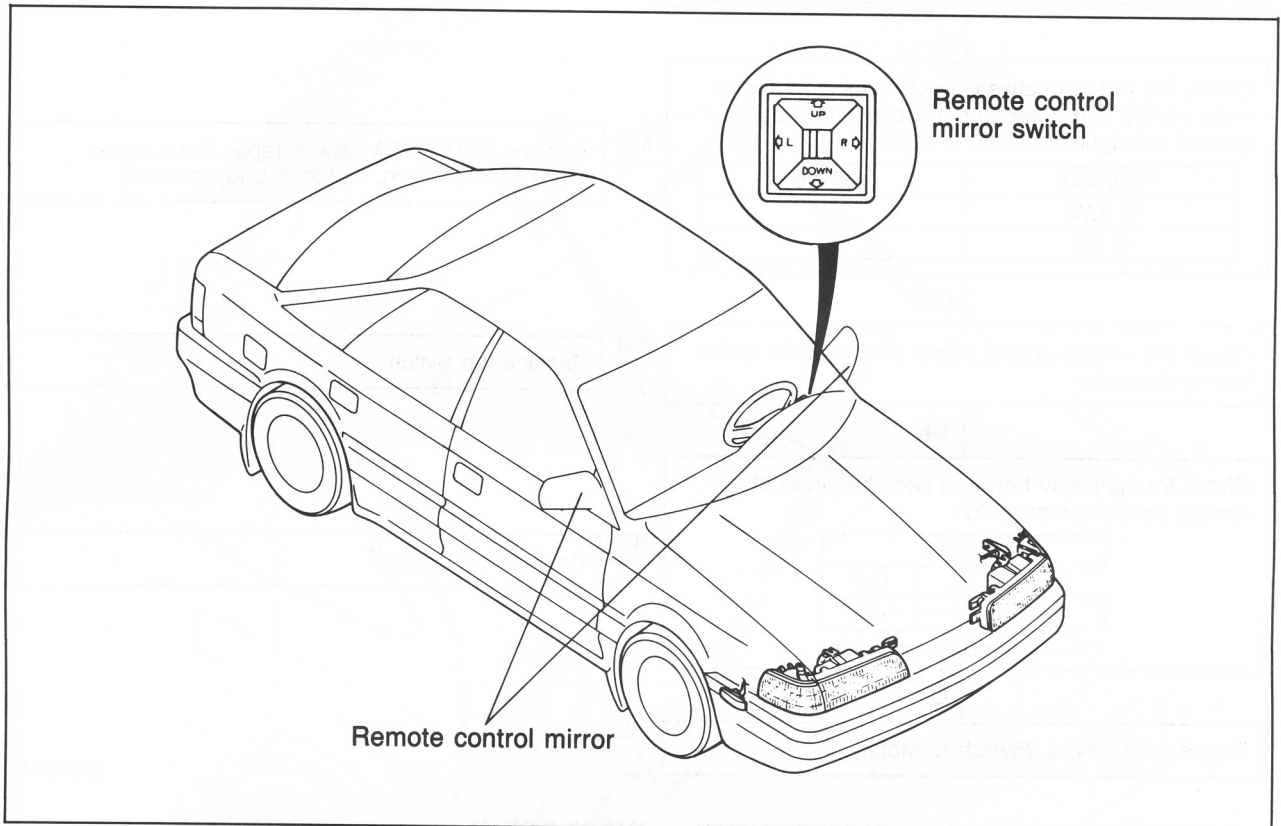
86U15X-121

Power Window Motor

1. Connect 12V to the "a" terminal and ground the "b" terminal of the motor connector, and check that the motor operates.
2. Reverse the above connections and check for reverse operation of the motor.

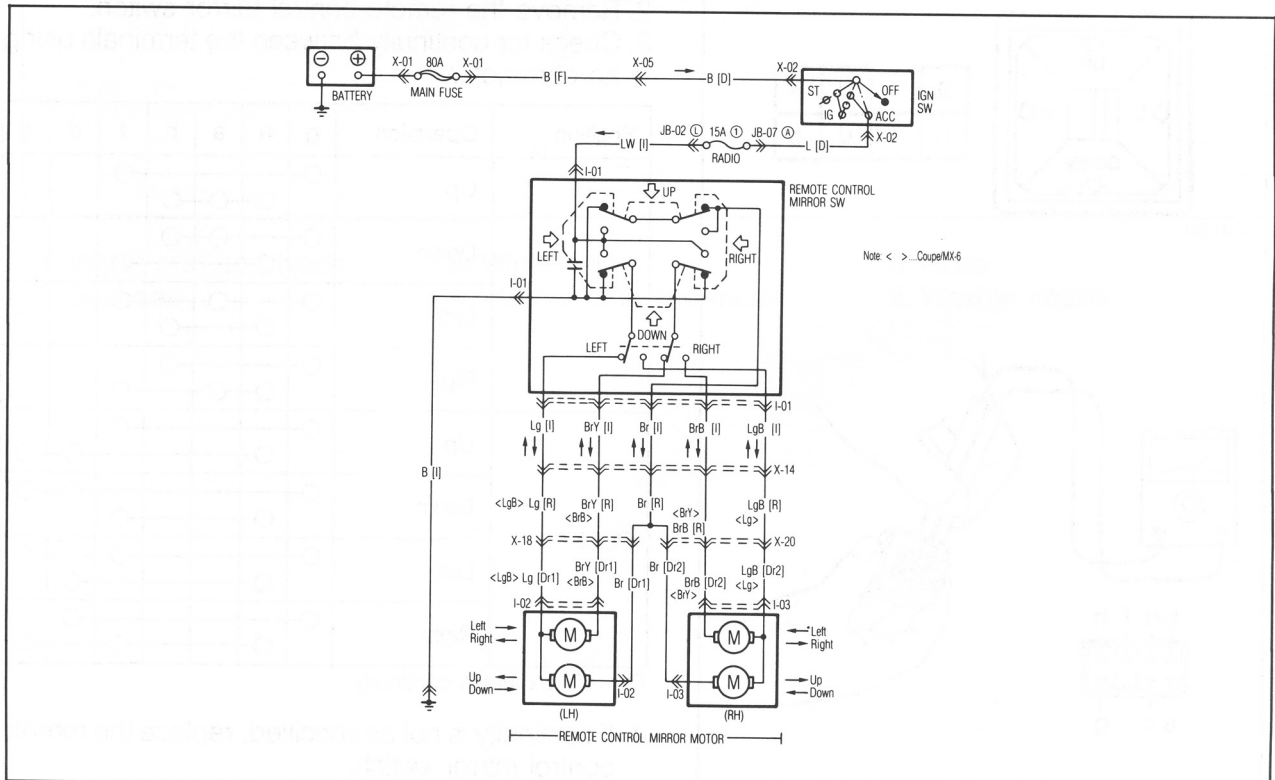
REMOTE CONTROL MIRROR

STRUCTURAL VIEW



86U15X-122

CIRCUIT DIAGRAM



86U15X-123

15 REMOTE CONTROL MIRROR

TROUBLESHOOTING

Remote control mirrors do not operate.

Check the voltage between each terminal of the remote control mirror switch connector and a body ground with ignition switch in ACC.

Terminal	Voltage
G (LW)	12V
H (B)	0V

NG

Replace RADIO 15A fuse or repair the harness (Fuse box to switch, switch to body ground)

OK

Check the remote control mirror switch. Refer to following inspection.

NG

Replace the switch.

OK

Check for continuity between each terminals of the remote control mirror motor.

Terminal
Br
Lg
BrY

○—○: indicate continuity

NG

Replace the motor.

OK

Repair the harness. (Switch to Motor)

86U15X-124

INSPECTION

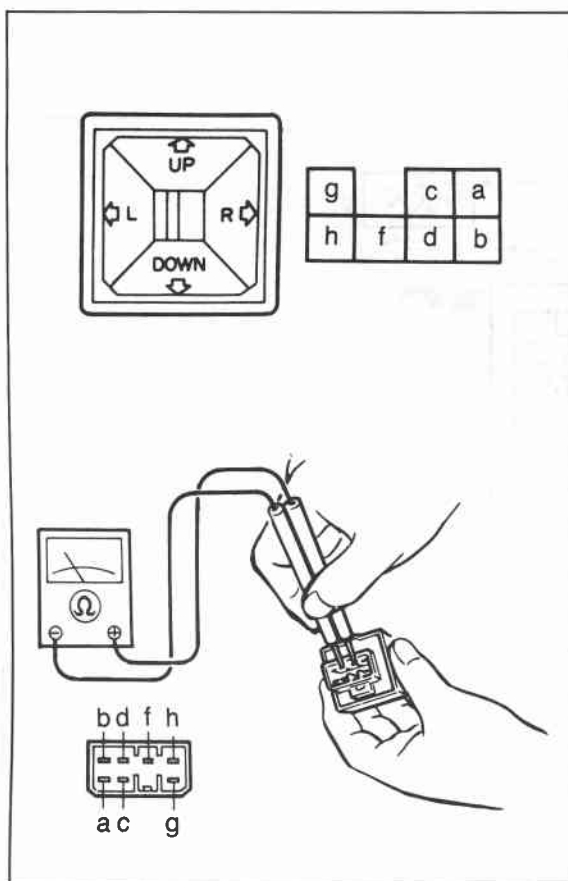
Remote Control Mirror Switch

1. Remove the negative battery cable.
2. Remove the remote control mirror switch.
3. Check for continuity between the terminals using an ohmmeter.

Position	Operation	g	h	a	b	f	d	c
Left	Up	○		○	○	○		
	Down	○		○	○		○	
	Left	○		○		○		
	Right	○		○			○	
Right	Up	○					○	○
	Down	○					○	○
	Left	○				○		○
	Right	○					○	○

○—○: Indicates continuity

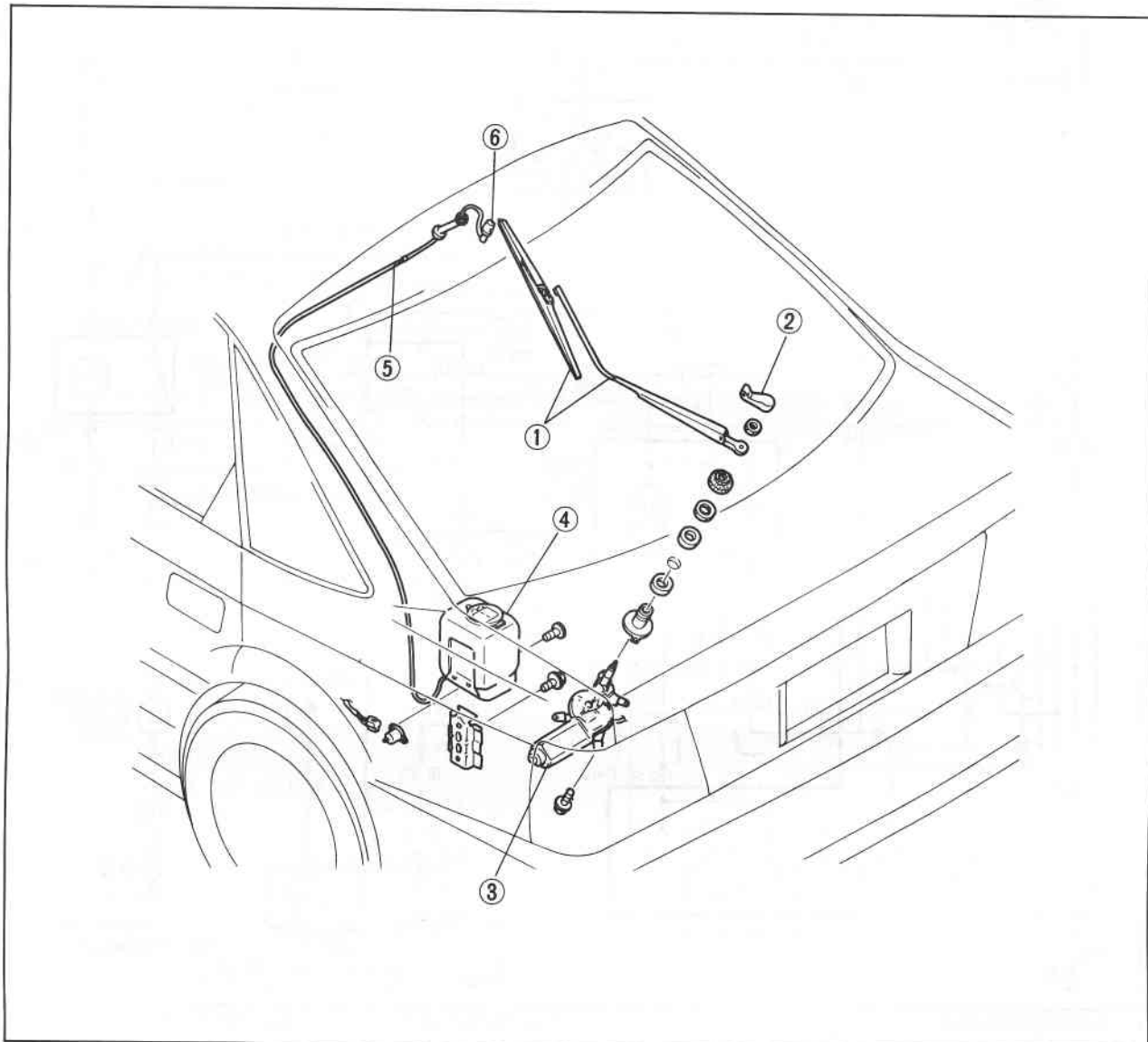
4. If continuity is not as specified, replace the remote control mirror switch.



86U15X-125

REAR WINDOW WIPER

STRUCTURAL VIEW



86U15X-126

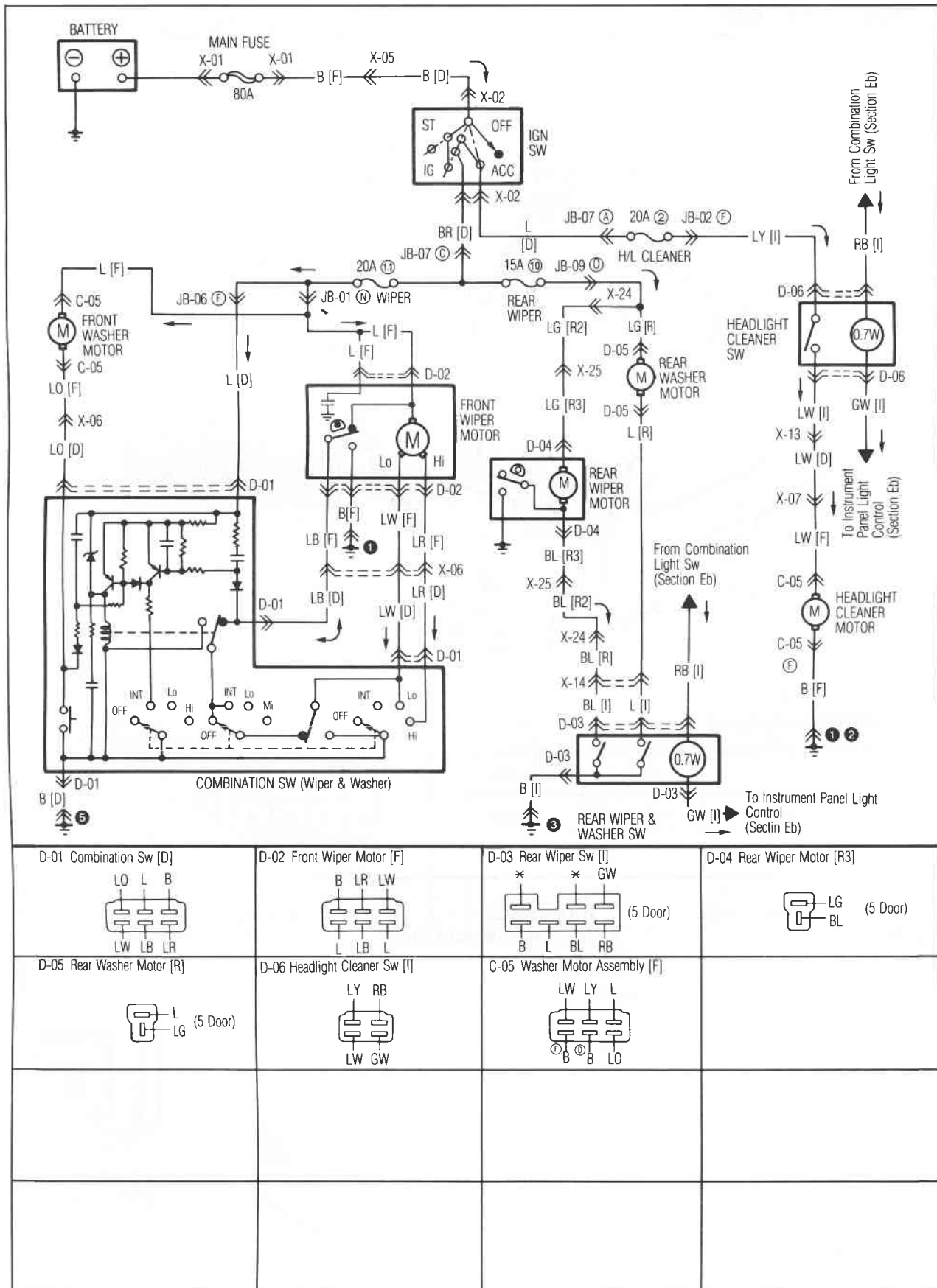
1. Wiper arm and blade
2. Seal cap

3. Wiper motor
4. Washer tank and motor

5. Hose
6. Washer nozzle

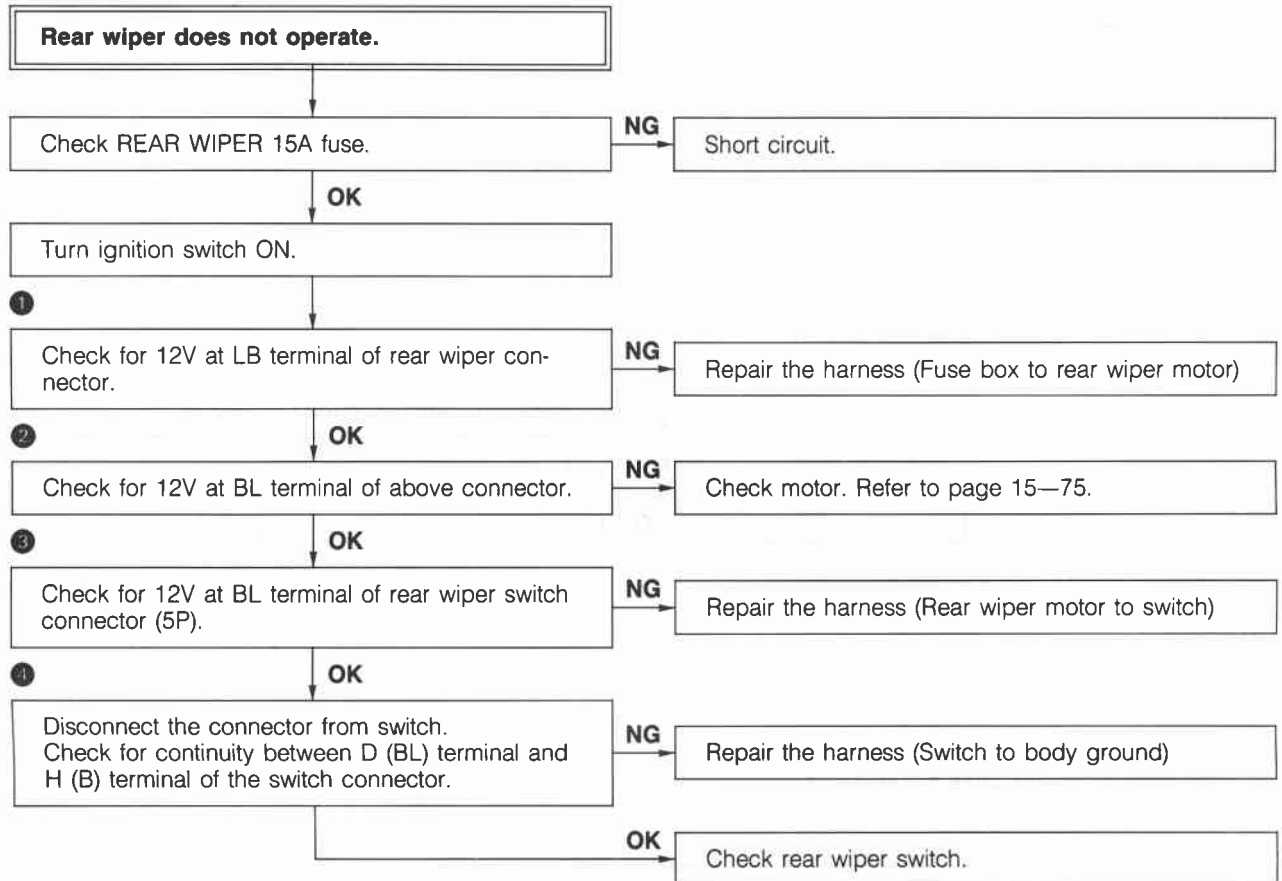
15 REAR WINDOW WIPER

CIRCUIT DIAGRAM

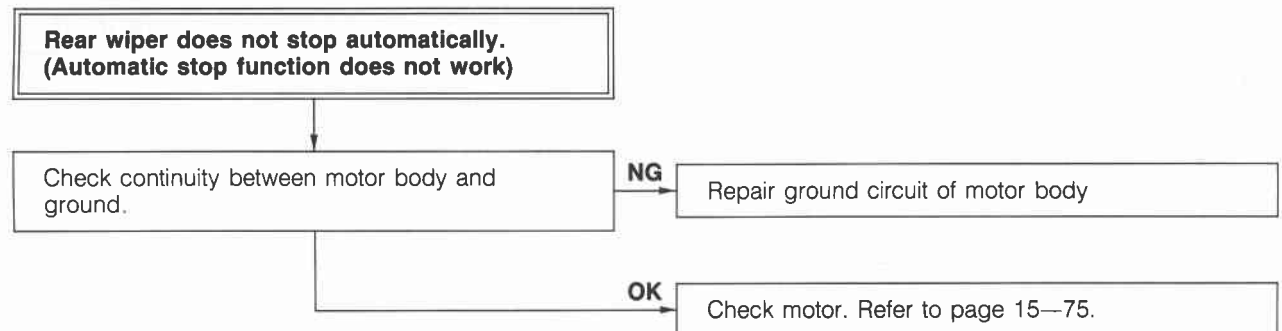


86U15X-127

TROUBLESHOOTING

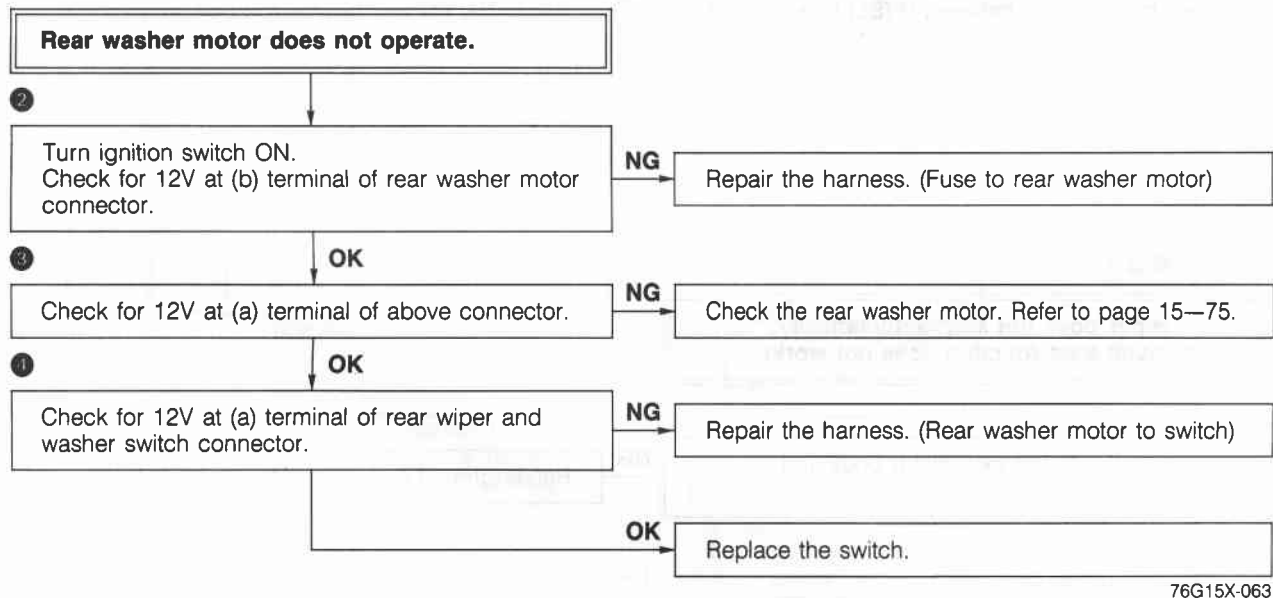
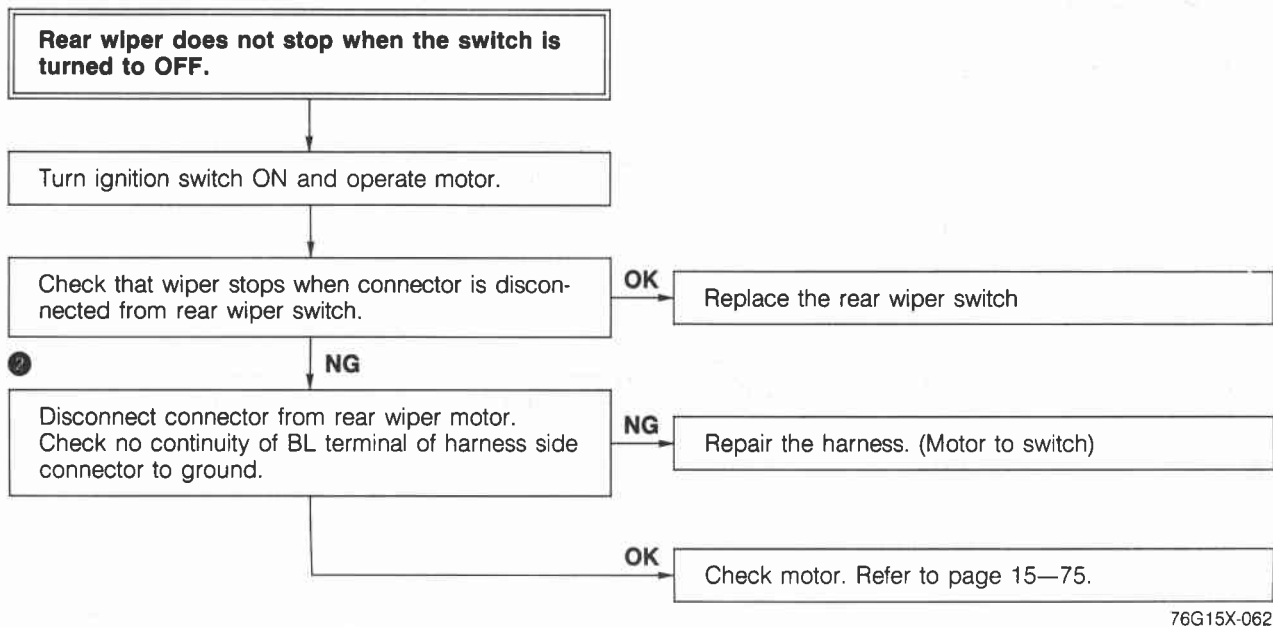


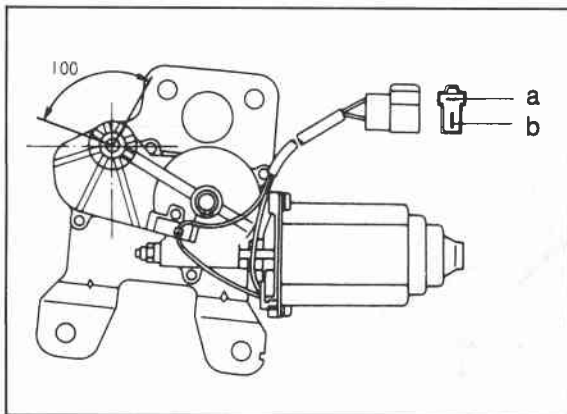
76G15X-060



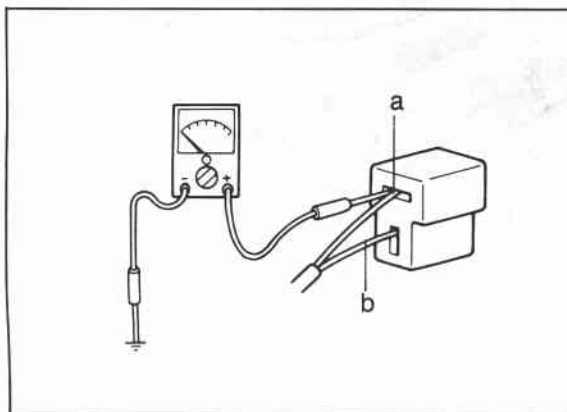
76G15X-061

15 REAR WINDOW WIPER





86U15X-132



76G15X-094

INSPECTION

Operation Check of Rear Wiper Motor

1. Check that the motor operates continuously when 12V is connected to the (a) terminal and ground is connected to the (b) terminal of the motor.

2. Start the motor again.

Disconnect the ground from the (b) terminal, and then connect the ground to the motor body immediately. Check that the motor shaft reaches the auto-stop position, and that there is conductivity through the grounding of the motor body.

Note:

Be sure to re-install the rubber seal correctly.

Operation Check of Rear Washer Motor

1. Using a voltmeter, measure the voltage between the (b) terminal and a body ground with the ignition switch ON.

2. If no voltage, check the fuse or repair the harness.

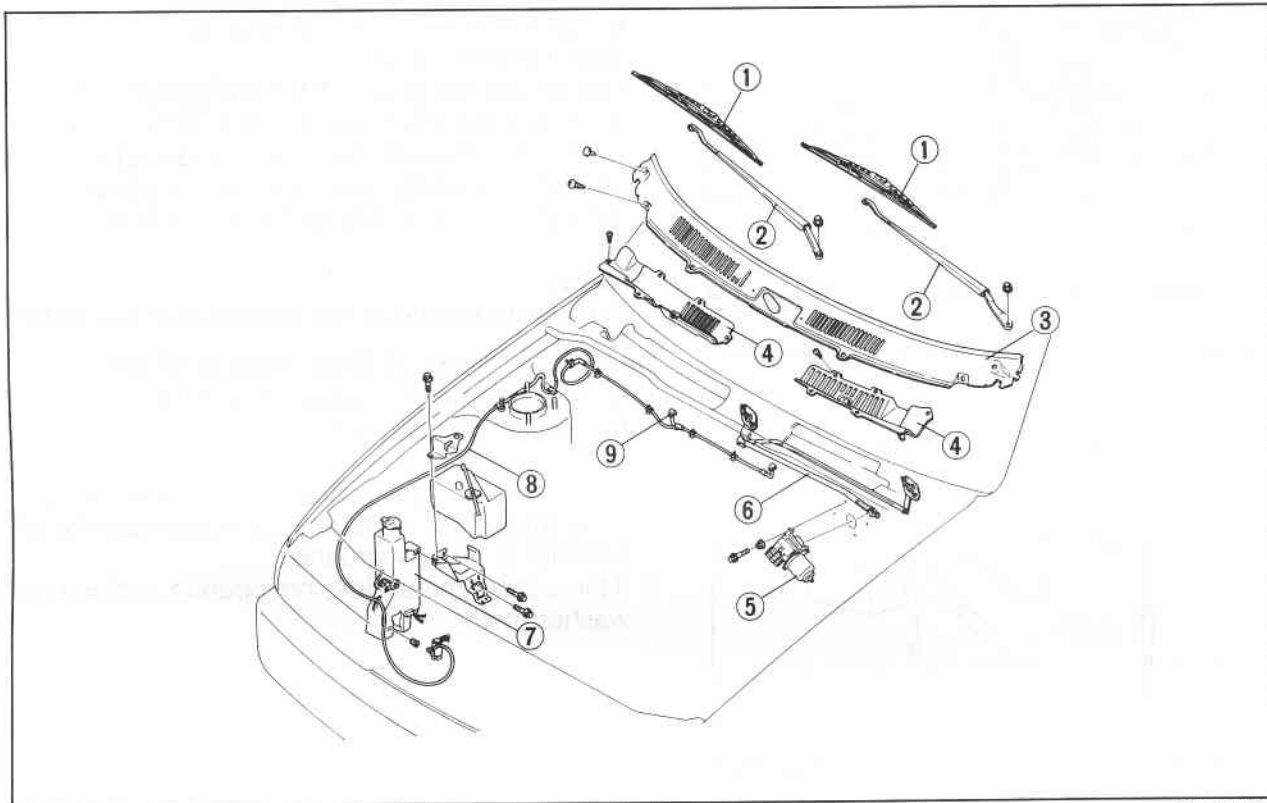
3. If the (b) terminal voltage is 12 V, connect the (a) terminal to a body ground.

4. If the washer motor does not operate, replace the washer motor.

15 WINDSHIELD WIPER

WINDSHIELD WIPER

STRUCTURAL VIEW



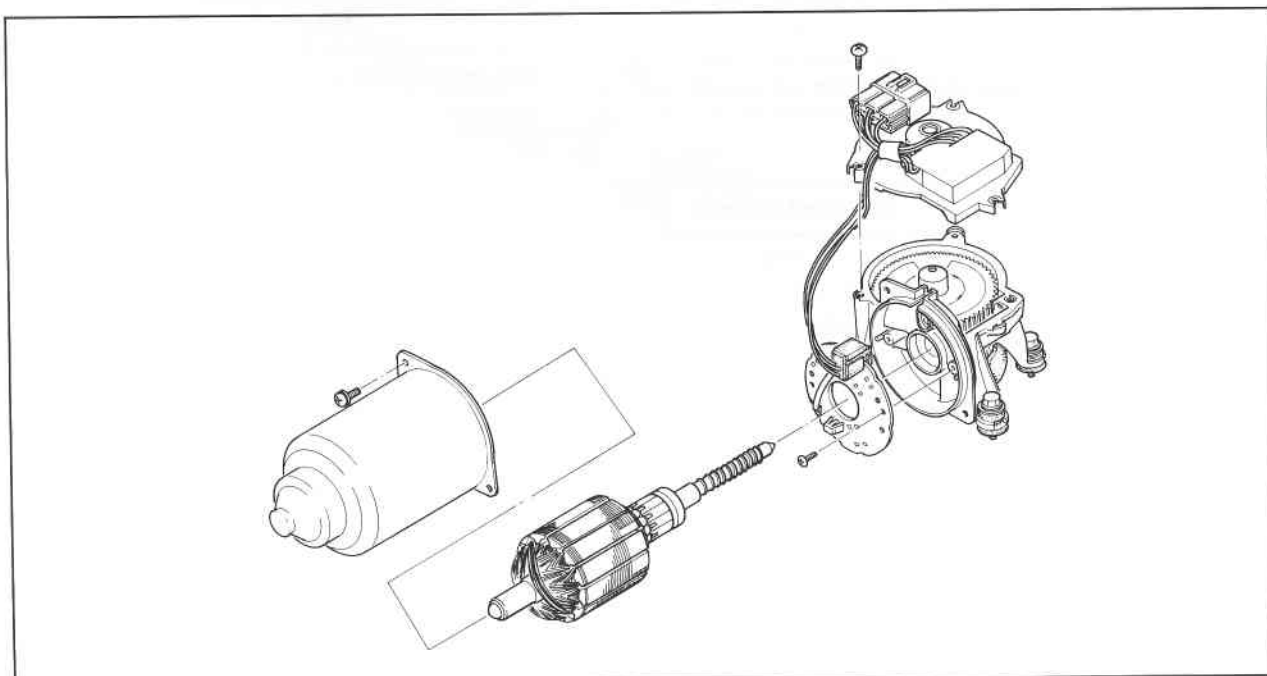
86U15X-134

1. Wiper blade
2. Wiper arm
3. Cowl grille

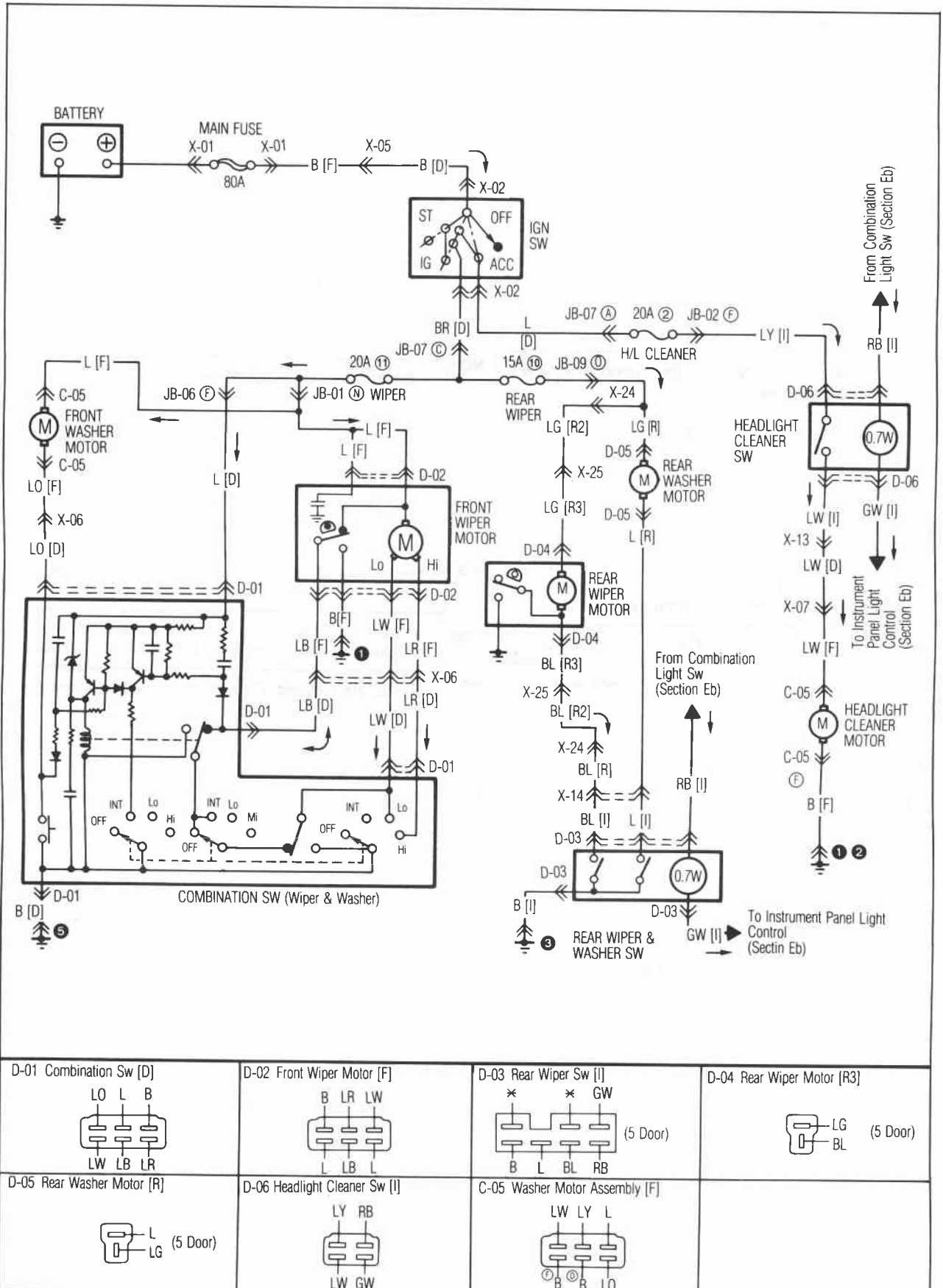
4. Cover
5. Wiper motor
6. Link assembly

7. Washer tank
8. Nozzle hose
9. Washer nozzle

DISASSEMBLY AND ASSEMBLY OF WIPER MOTOR



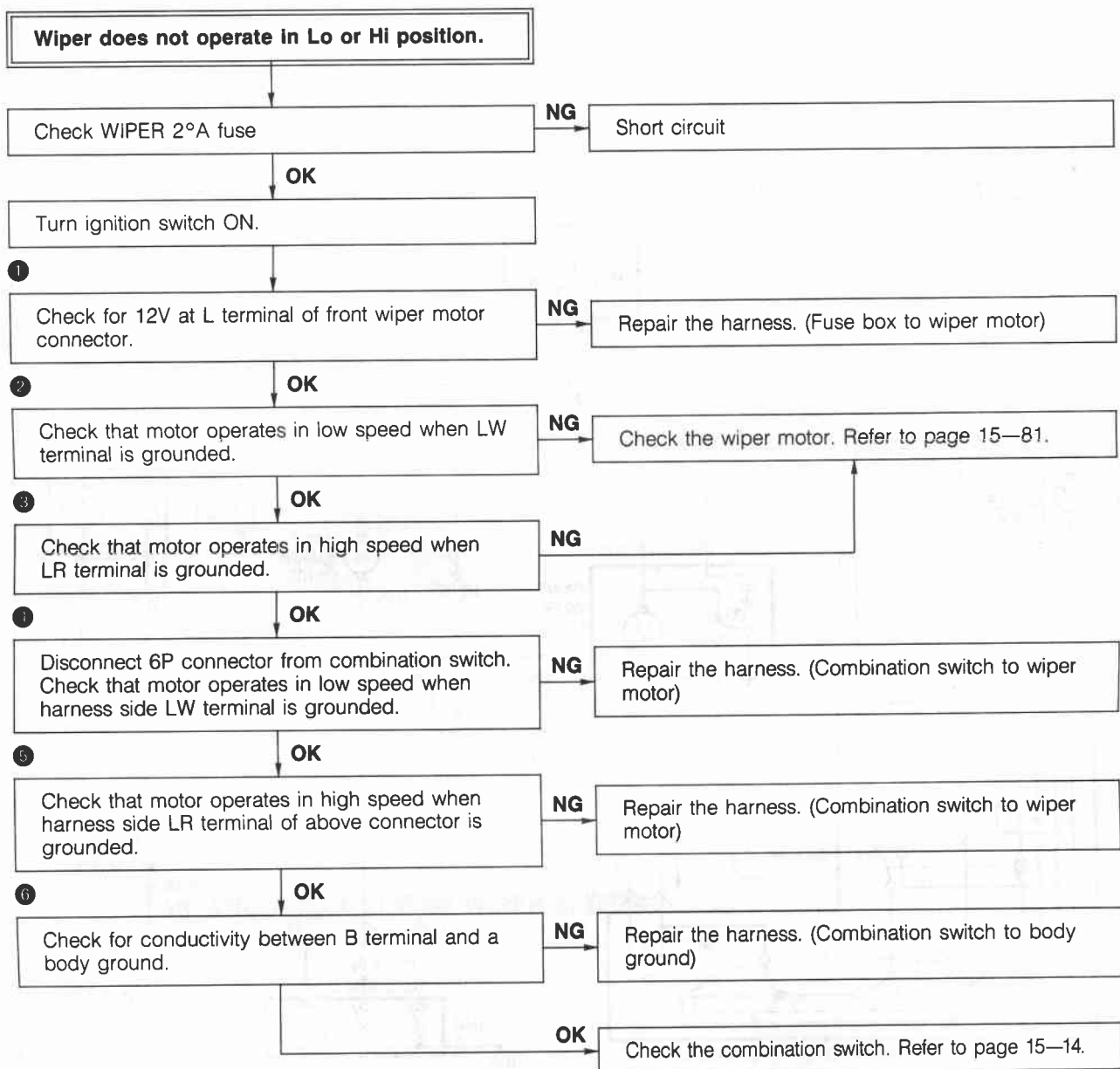
CIRCUIT DIAGRAM



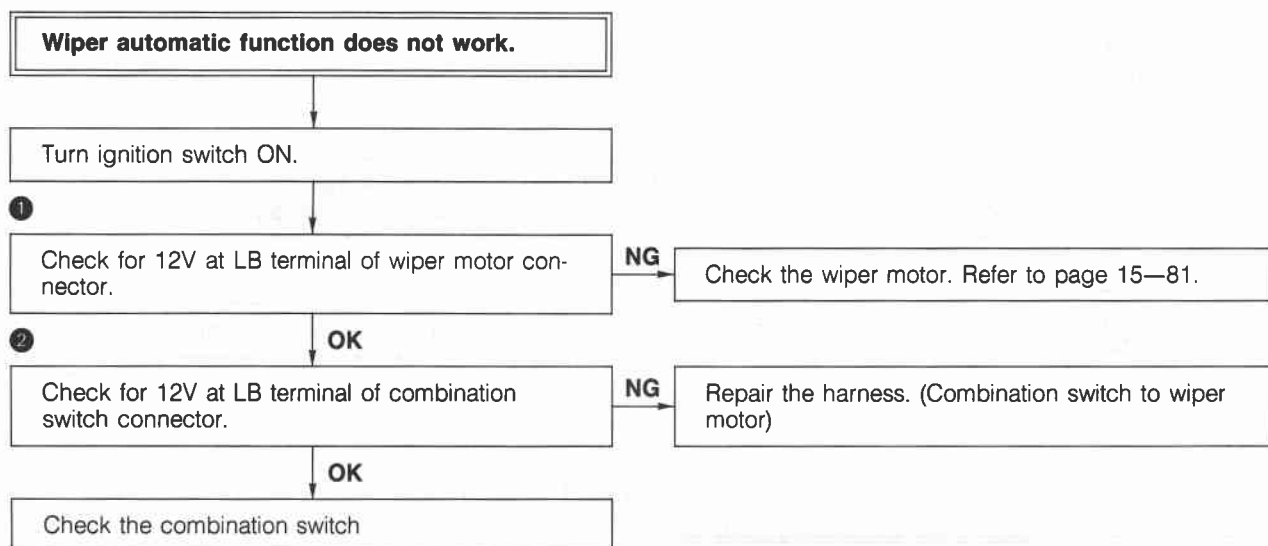
86U15X-135

15 WINDSHIELD WIPER

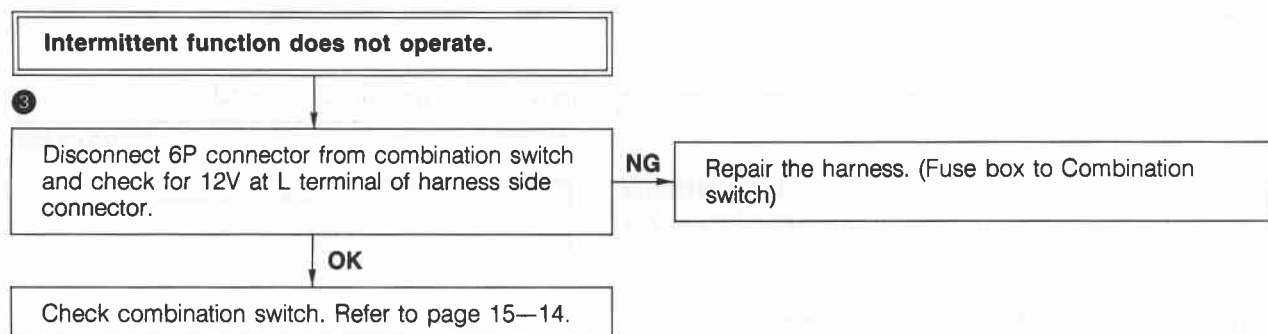
TROUBLESHOOTING



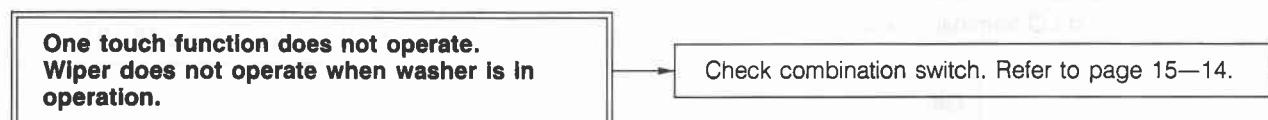
76G15X-064



76G15X-065

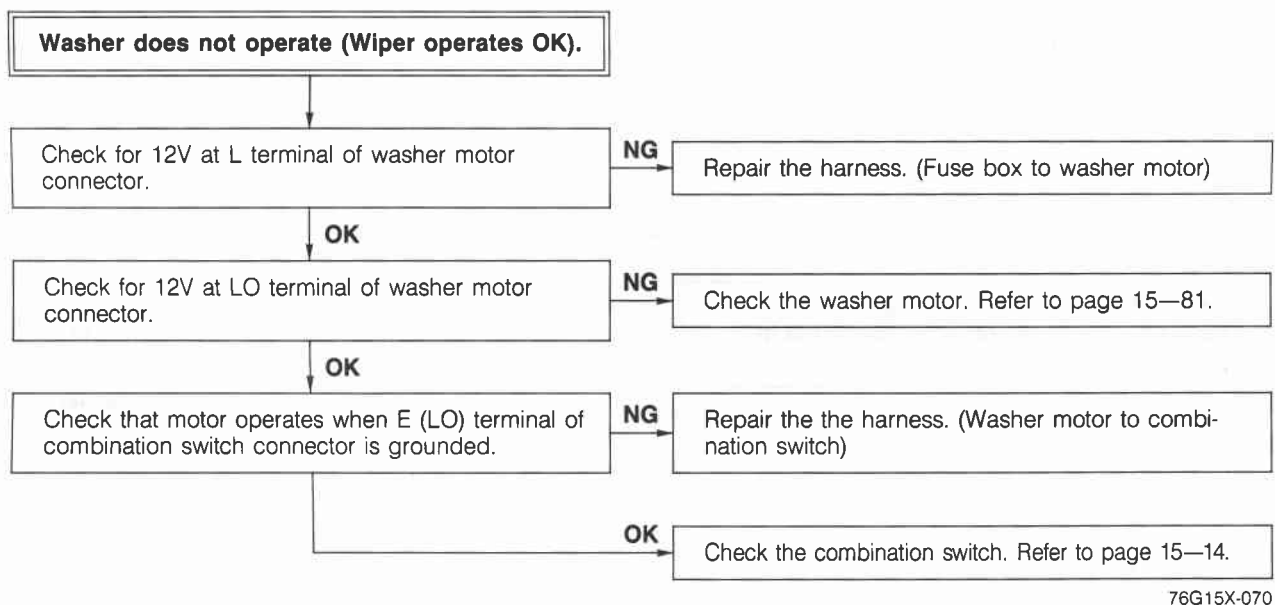
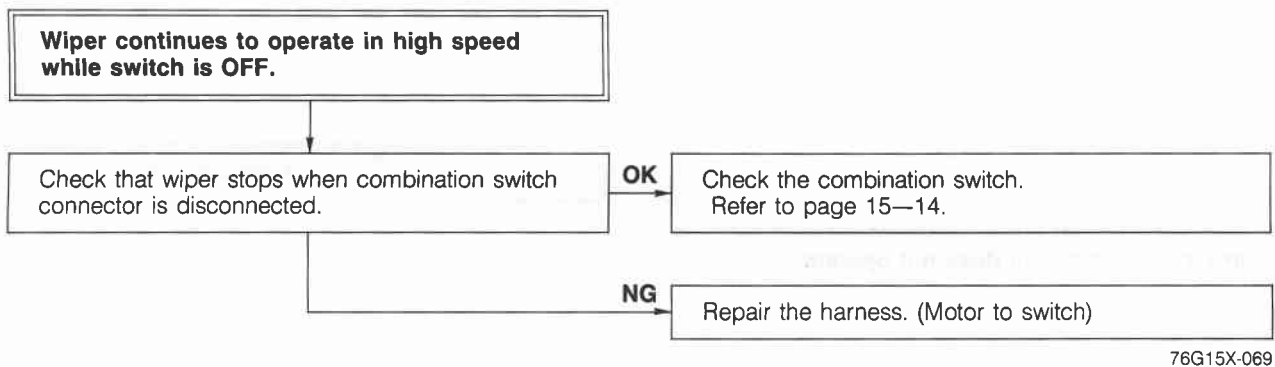
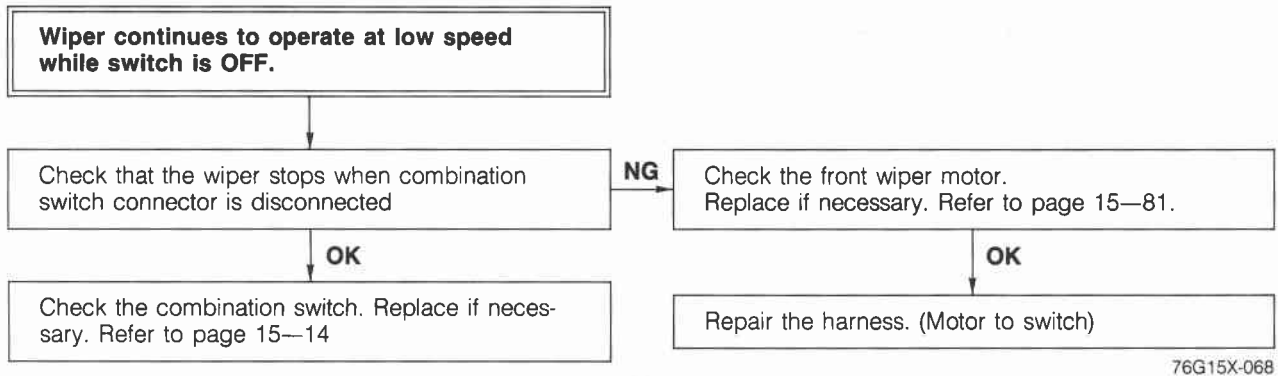


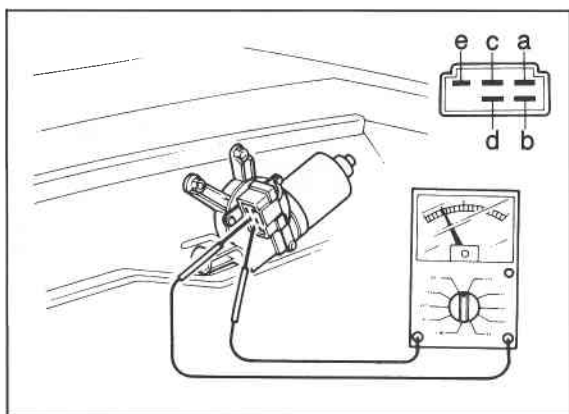
76G15X-066



76G15X-067

15 WINDSHIELD WIPER





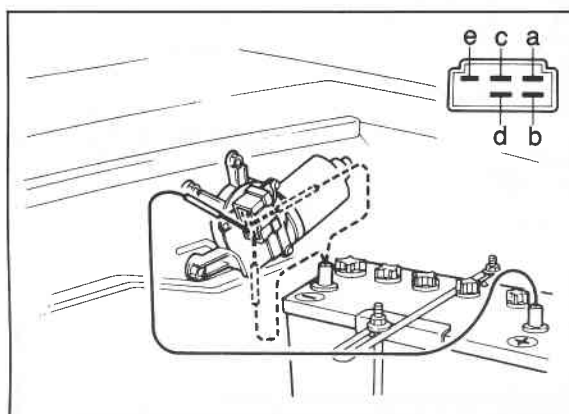
76G15X-071

INSPECTION

Wiper Motor

1. Check for continuity between the terminals when wiper in normal resting position.

Terminals	Continuity
b—a	Yes
d—c	Yes
b—d	Yes
e—d	No

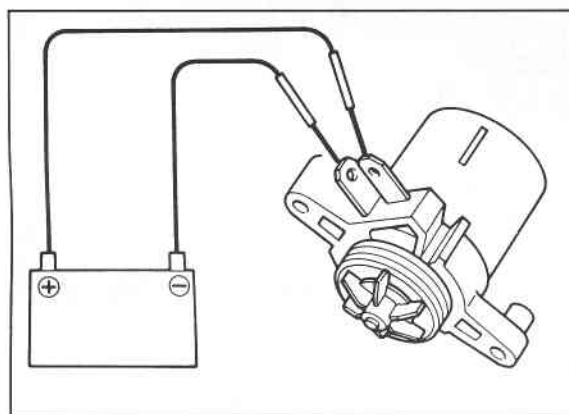


86U15X-144

Checking Operation

1. Check the operation by applying 12V between each terminal of the motor connector.

Terminal		Operation speed
12V	Ground	
b	a	Low
	c	High



86U15X-145

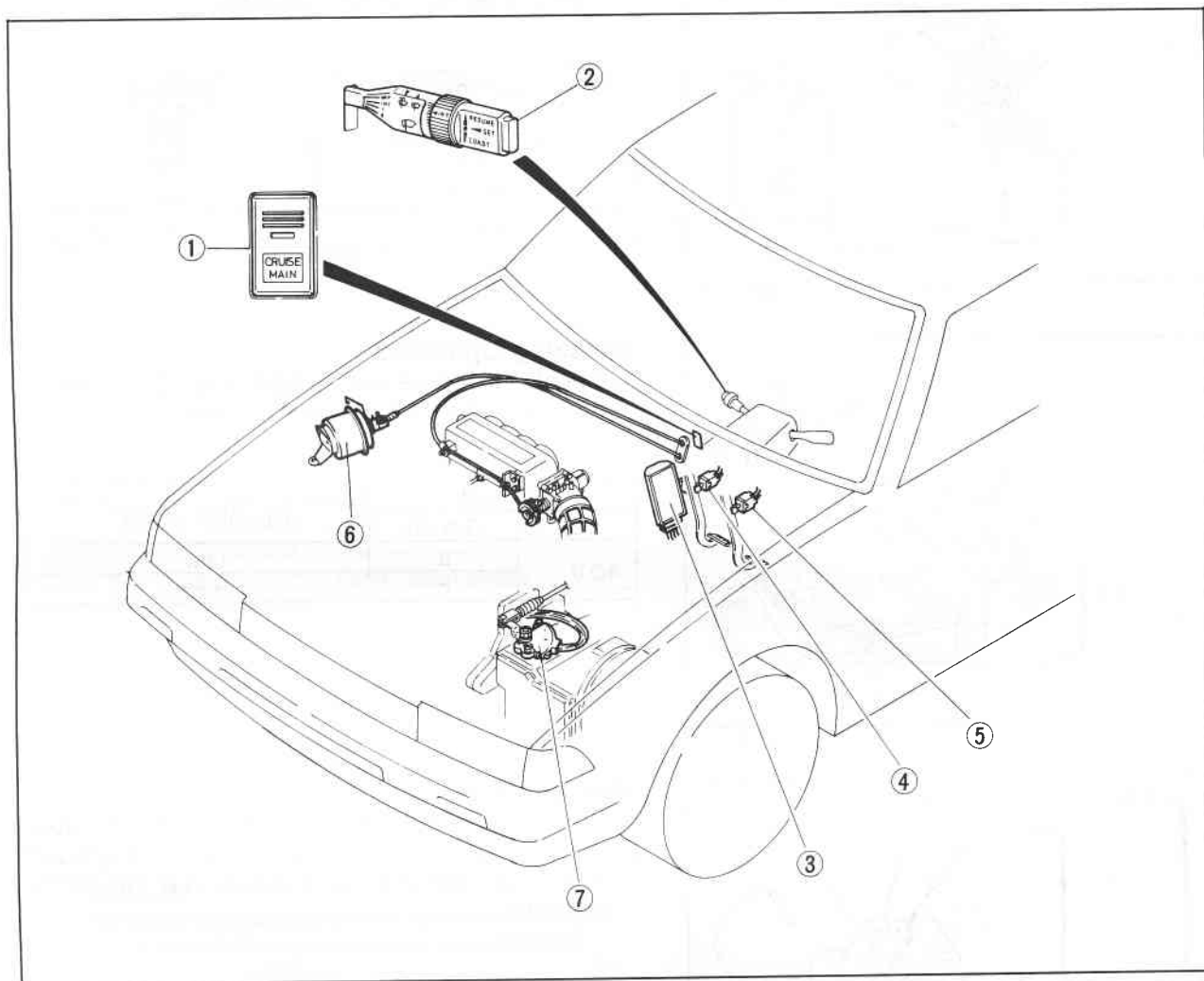
Washer Motor

1. Check for continuity of the motor with an ohmmeter.
2. Connect 12V to the "a" terminal and the ground to the "b" terminal, and check that the motor operates.

15 CRUISE CONTROL SYSTEM

CRUISE CONTROL SYSTEM

STRUCTURAL VIEW



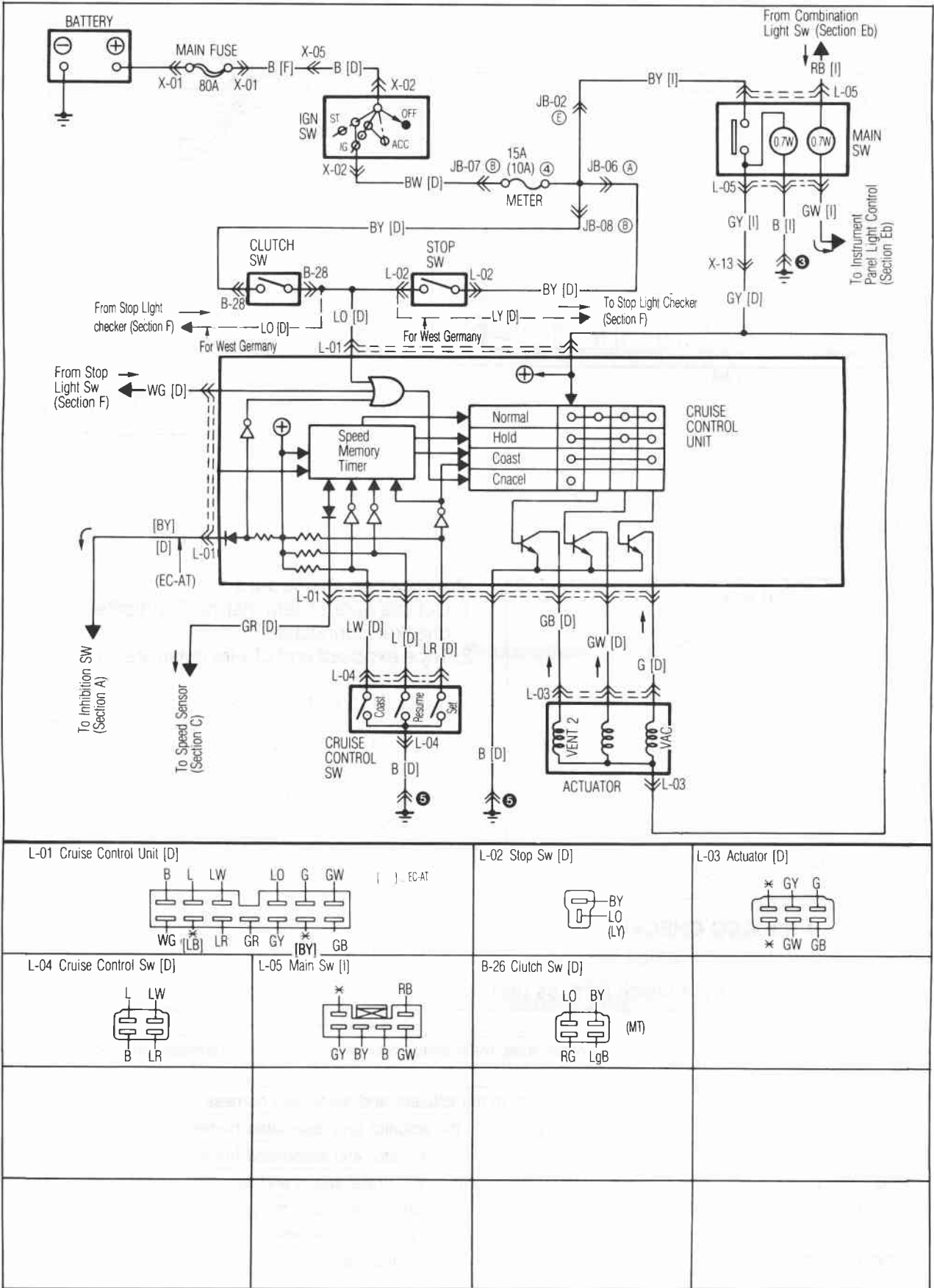
86U15X-146

1. Main switch
2. Control switch
3. Control unit

4. Stop switch
5. Clutch switch (MTX)
6. Actuator

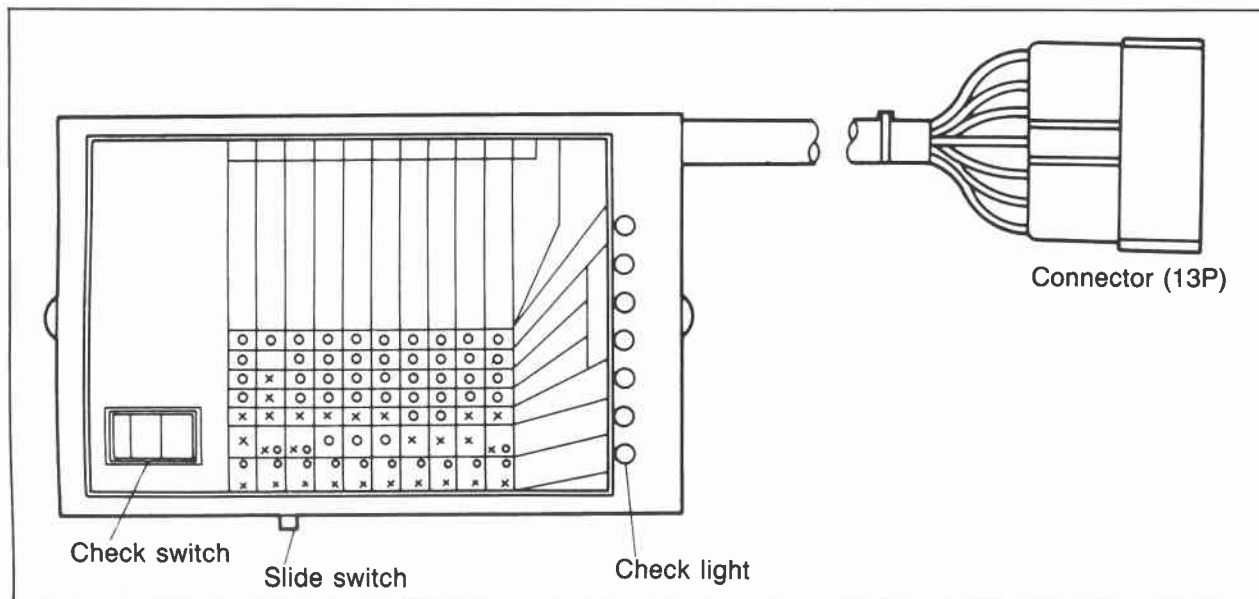
7. Inhibitor switch (ATX)

CIRCUIT DIAGRAM



15 CRUISE CONTROL SYSTEM

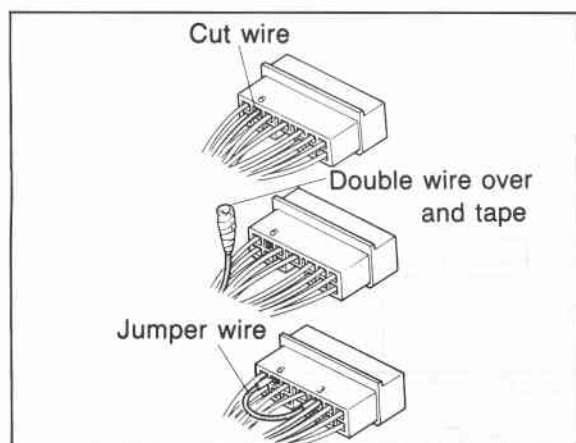
ON-VEHICLE INSPECTION (USING ACC CHECKER 49 9200 010)



76G15X-072

Note:

When checking the actuator on '88 models with EC-AT using this checker, the checker should be modified as shown below in order to avoid damage of the EC-AT control unit.



Modification Procedure

1. Cut the wire at terminal no.6 indicated on ACC checker connector.
2. Tape exposed end of wire cut in step 1 as shown.

This modification does not affect the usage of the ACC checker except when used on the '81 RX-7 and 626 models. When the modified ACC checker is used on these models, use a jumper wire and jump across terminal no.6 to 3 indicated on ACC checker connector as shown.

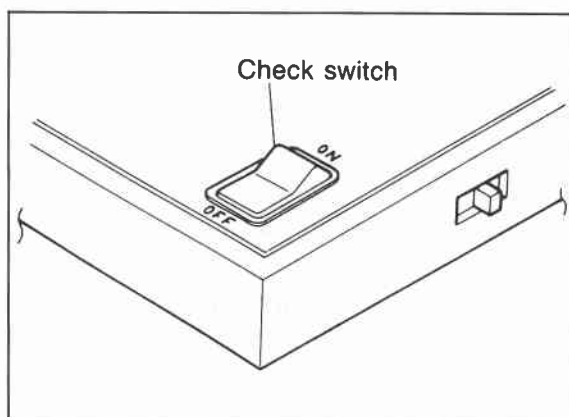
Function of the ACC CHECKER

A. Check lights

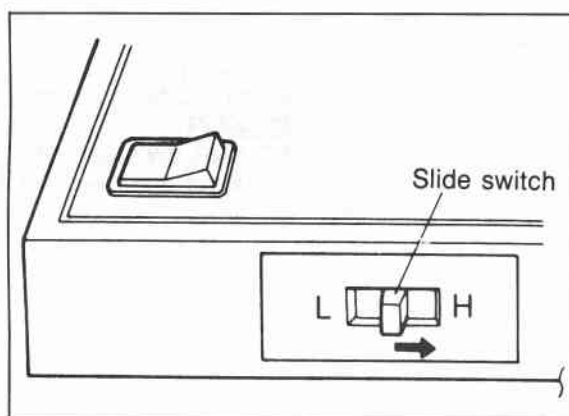
Each item is verified by a check light, as described below.

Check light	Check Items
MAIN SW.	Ignition switch, fuse, main switch and associated wiring harness terminals and connectors.
ACTUATOR—VAC	VAC coil continuity in the actuator and associated harness.
ACTUATOR—VENT 2	VENT 2 coil continuity in the actuator and associated harness.
ACTUATOR—VENT 1	VENT 1 coil continuity in the actuator and associated harness.
CLUTCH/BRAKE SW.	Clutch switch (M/T vehicles only), brake switch and associated harness
COMBINATION/INH. SW.	"SET", "COAST" and "RESUME" positions in the combination switch, inhibitor switch (A/T vehicles only), and associated harness.
GENERATOR	Speed sensor output and associated harness.

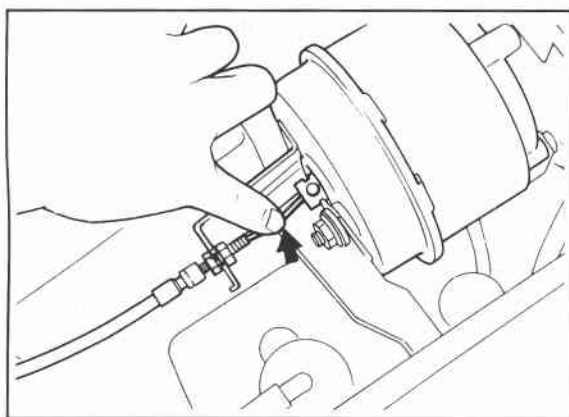
76U15X-193



76G15X-073



76U15X-319



76G15X-074

B. Check Switch

The check switch in the ACC checker is used to check the actuator operation while the engine is running. When the check switch is held on after the engine is started, the engine speed increases to approximately 2,000 to 3,000 rpm and is maintained at that level. When the check switch is released, the engine speed decreases to idle speed.

C. Slide switch

Before using the check switch, first move the slide switch to the "L" position.

Then use the check switch to increase the engine rpm.

If the engine rpm stabilizes after increasing to 2,000—3,000 rpm, there is no problem. If there is no increase at all, or only a slight increase, try again after setting the slide switch to the "H" position. If there is still no increase to 2,000—3,000 rpm, adjust the free play of the actuator inner cable.

Preparation

1. ACC checker installation

Depress the lock hook of the harness connector. Remove the connector from the ACC control unit after the ignition switch and main switch are turned off, and then connect the harness connector to the ACC checker.

2. Checking the free play of the actuator inner cable

Remove the clip and adjust the nut so that the actuator control cable play is as follows when the cable is pressed lightly.

Standard play: 1—3 mm (0.039—0.118 in)

15 CRUISE CONTROL SYSTEM

Checking the System

Check table

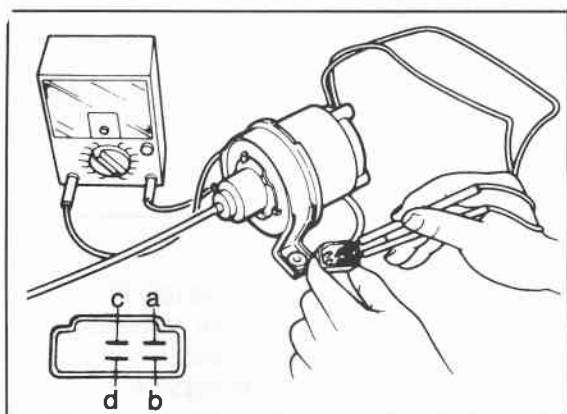
○: Represents: Light ON
X: Represents: Light OFF

CHECK ITEMS AND CONDITIONS	CHECK LIGHTS (correct response)							TROUBLESHOOTING (INCORRECT RESPONSE)
	MAIN SW	ACTUATOR			CLUTCH/BRAKE SW	COMBINATION/INH SW	GENERATOR	
		VAC	VENT2	VANT1				
1. MAIN SW. CONTINUITY: • Ignition switch ON • Main switch ON	○	○	○	○	X	A/T ○ M/T X	○ or X	ALL LIGHTS OFF: Check ignition switch, main switch, fuse, and associated harness terminals and connectors
2. INHIBITOR SW. CONTINUITY: • Ignition and main switch ON. • Shift lever to "D" (A/T) • Depress brake pedal	○	○	○	○	X	X	○ or X	COMBINATION/INH. SW. LIGHT ON: Check inhibitor switch and associated harness.
3. BRAKE SW. CONTINUITY: • Ignition and main switch ON • Shift lever to "D" (A/T) • Depress brake pedal	○	○	○	○	○	X	○ or X	CLUTCH/BRAKE SW. LIGHT OFF: Check brake switch and associated harness.
4. CLUTCH SW. CONTINUITY: • Ignition switch ON • Main switch ON • Depress clutch pedal	○	○	○	○	○	X	○ or X	CLUTCH/BRAKE SW. LIGHT OFF: Check clutch switch and associated harness.
5. "SET" POSITION OF COMBINATION SWITCH: • Ignition switch ON • Main switch ON • Shift lever to "D" (A/T) • Push to "SET" position of combination switch	○	○	○	○	X	○	○ or X	COMBINATION/INH. SW. LIGHT OFF: Check "SET" position of combination switch and associated harness.
6. "COAST" POSITION OF COMBINATION SWITCH • Ignition switch ON • Main switch ON • Shift lever to "D" (A/T) • Turn to "COAST" position of combination switch	○	○	○	○	X	○	○ or X	COMBINATION/INH. SW. LIGHT OFF: Check "COAST" position in combination switch and associated harness.
7. "RESUME" POSITION OF COMBINATION SWITCH • Ignition switch ON • Main switch ON • Shift lever to "D" (A/T) • Turn to "RESUME" position of combination switch	○	○	○	○	X	○	○ or X	COMBINATION/INH. SW. LIGHT OFF: Check "RESUME" position of combination switch and associated harness.

76U15X-198

CHECK ITEMS AND CONDITIONS	CHECK LIGHTS (correct response)							TROUBLESHOOTING (INCORRECT RESPONSE)
	MAIN SW	VAC	VENT2	VANT1	CLUTCH/BRAKE SW	COMBINATION/INH SW	GENERATOR	
8. START THE ENGINE • Shift lever to "N" position (A/T)	○	○	○	○	X	A/T ○ M/T X	○ or X	—
9. ACTUATOR OPERATION: (EGI model only) • After engine is started, set the slide switch "L" or "H". Then turn on check switch (keep in "D" position) Note: Engine speed should increase to 2,000—3,000 rpm. If over 4,000 rpm release the switch immediately.	○	X ↓ ○	X	X	X	A/T ○ M/T X	○ or X	If engine speed does not come up to and remain in the 2,000 to 3,000 rpm. range, check the actuator and associated harness.
10. SPEED SENSOR OUTPUT Keeping idling condition, drive vehicle slowly.	○	○	○	○	X	X	○ ↓ X	If GENERATOR LIGHT does not flash, trouble may be with speed sensor and associated harness.

76U15X-199



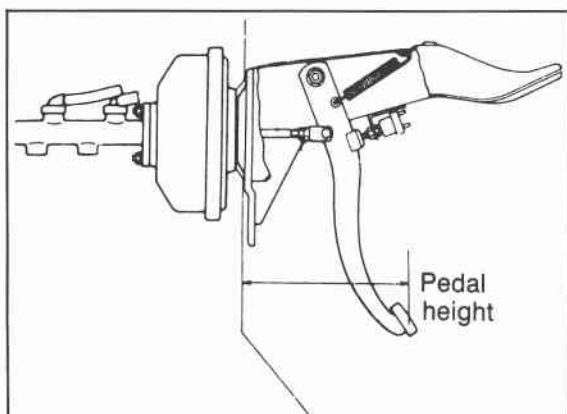
76G15X-075

INSPECTION

Actuator

Measure the actuator solenoid resistance by using an ohmmeter.

Check terminals	Resistance
c — d	Approx. 25 to 35 ohms
c — a	
c — b	



76G15X-076

Cruise Control Unit

If there is an operation malfunction of the cruise control system, and no abnormal condition when checking above, replace the cruise control unit and check system operation.

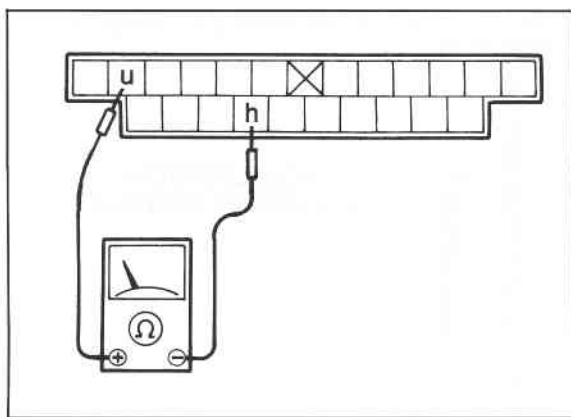
Clutch Switch, Brake Switch

When removing these switches, turn each of them so that the corresponding pedal height agrees with the standard value.

Brake pedal height: 222 ± 5 mm (8.74 ± 0.20 in)

Clutch pedal height:
 216.5 ± 5 mm (8.52 ± 0.20 in)

15 CRUISE CONTROL SYSTEM



76G15X-077

Speed sensor

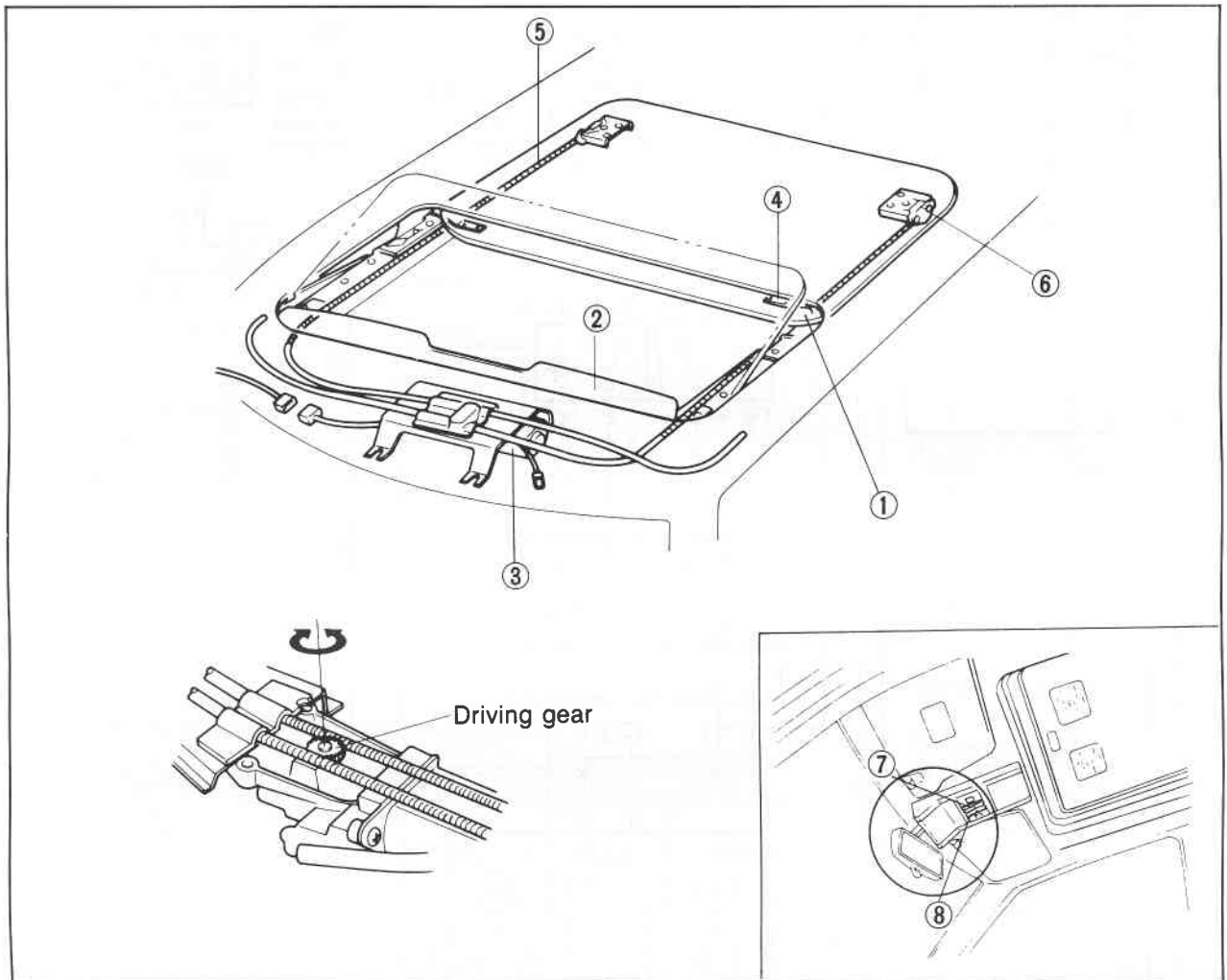
1. Remove the combination meter.
2. Connect an ohmmeter between "u" and "n" terminals of the 22 pin connector.
3. Confirm continuity between terminals when rotating the speedometer cable shaft.
4. If not 4 times per rotation, replace the speedometer.

Inhibitor switch

Refer to Section 7B.

SLIDING SUNROOF

STRUCTURAL VIEW



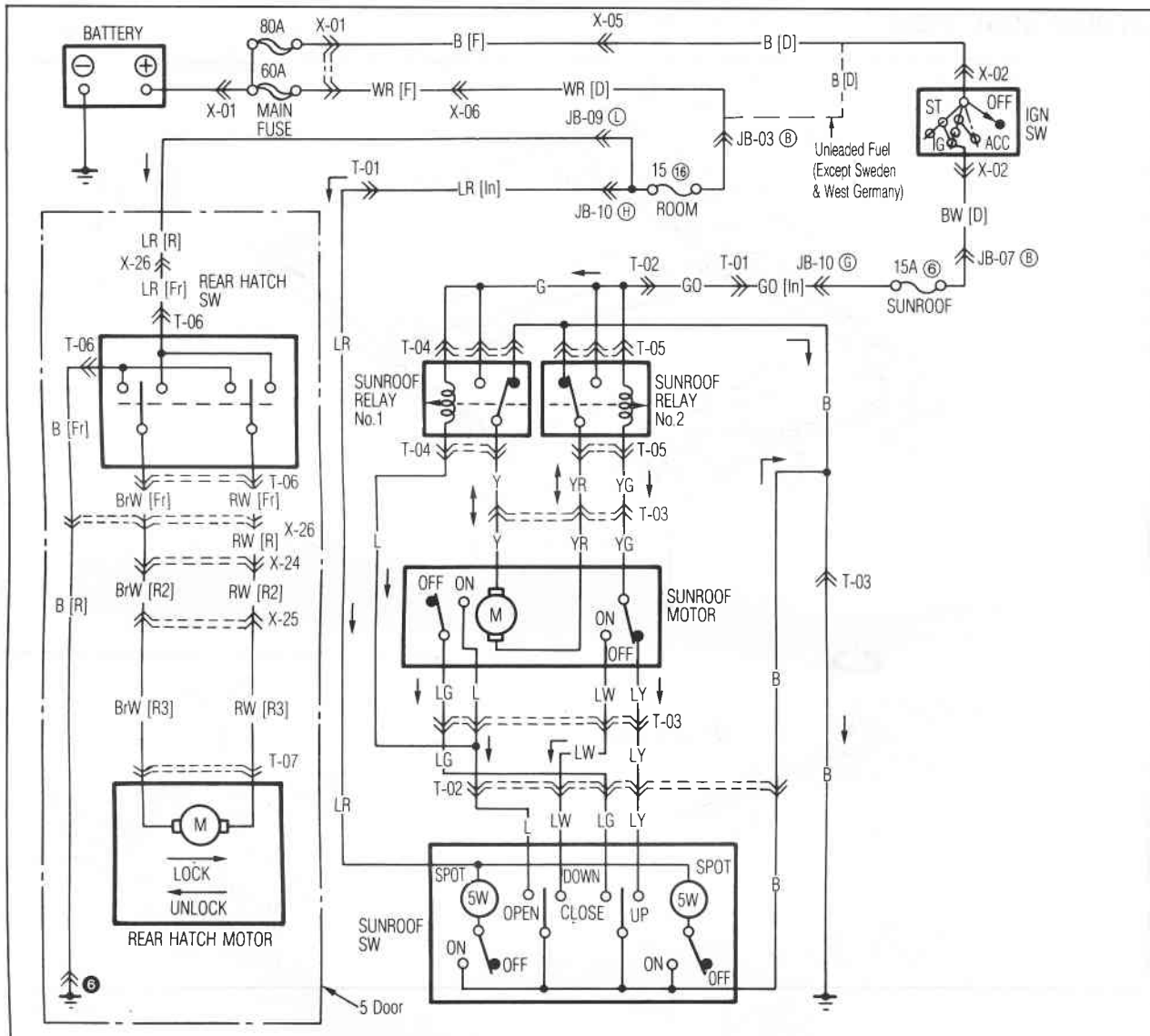
86U15X-148

1. Slide panel
2. Deflector assembly
3. Motor assembly
4. Guide bracket

5. Driving cable
6. Guide bracket assembly rear
7. Tilt up switch
8. Slide switch

15 SLIDING SUNROOF

CIRCUIT DIAGRAM



<p>T-01 Connector Between Interior Light Harness [In] and Sunroof</p>	<p>T-02 Sunroof Sw</p>	<p>T-03 Sunroof Motor</p>	<p>T-04 Sunroof Relay No.1</p>	<p>T-05 Sunroof Relay No.2</p>	<p>T-06 Rear Hatch Sw [R]</p>	<p>T-07 Rear Hatch Motor [R3]</p>

86U15X-149

TROUBLESHOOTING

Sunroof does not operate correctly.

Check SUNROOF 15A fuse.

Turn ignition switch ON

Check the voltage at each terminal of the sunroof relay No. 1 and No. 2.

Relay	Terminal	Voltage
No. 1	G	12V
	G	12V
	B	0V
No. 2	G	12V
	G	12V
	B	0V

NG Repair the harness. (Fuse box to relay, Relay to body ground)

OK

Check the sunroof relays. Refer to page 15—92.

NG Replace the relays.

OK

Check the voltage at each terminal of the sunroof motor.

Terminal	Voltage
Y	0V
YR	0V
YG	12V

NG Repair the harness. (Relay to motor).

OK

Check the sunroof motor and limit switch. Refer to page 15—92, 93.

NG Replace the motor and limit switch.

OK

Check for 12V at L terminal of the sunroof motor connector.

NG Repair the harness. (Relay to motor)

OK

Check the voltage at each terminal of the sunroof switch connector with each roof condition.

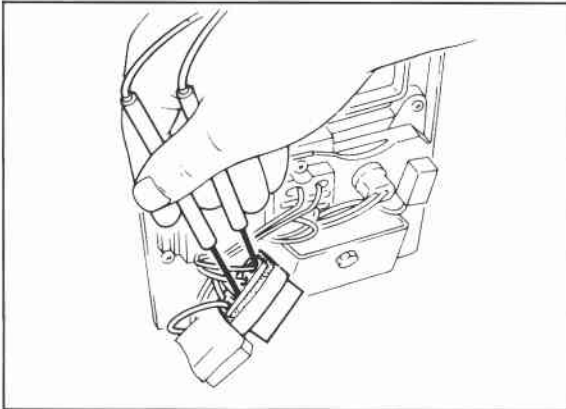
Terminal	Roof condition	Voltage
L	Close	12V
LY		12V
LG	Open	12V
LW	Tilt up	12V
LR	Any time	12V
B		0V

NG Repair the harness. (Motor to switch Fuse box to switch Switch to body ground)

OK

Check the sunroof switch. Replace if necessary. Refer to page 15—92.

15 SLIDING SUNROOF



76U15X-156

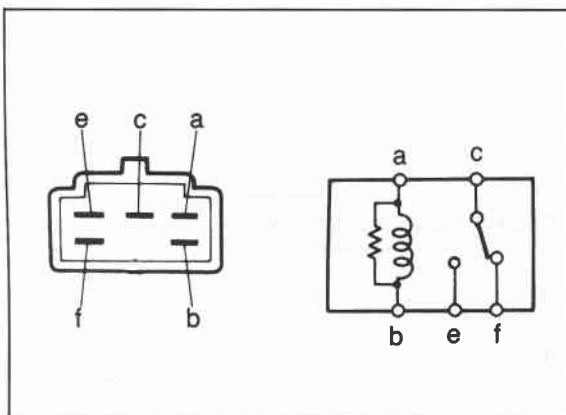
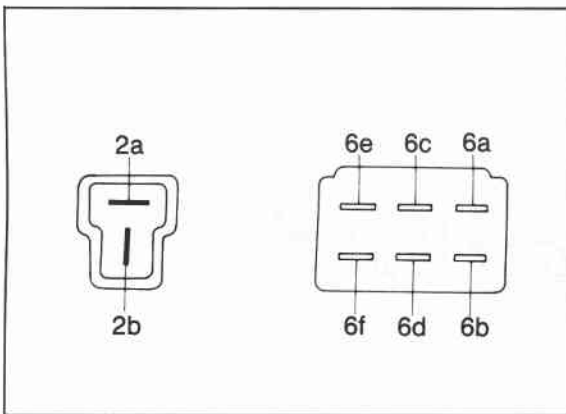
INSPECTION Switch

Use an ohmmeter to check the continuity of the terminals of the switch.

If continuity is not as indicated, replace the switch.

Terminal Position		2a	2b	6a	6b	6c	6d	6e	6f
OFF		○	○						
Slide SW	OPEN						○		○
	CLOSE					○			○
Tilt SW	UP				○				○
	DOWN							○	○

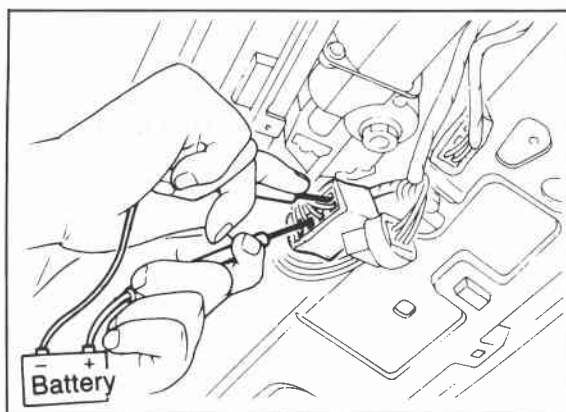
○—○: Indicates conductive



76U15X-314

Relay

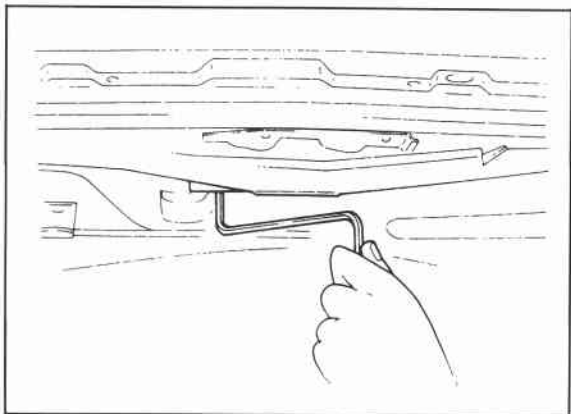
1. Check the continuity between a—b and c—f.
2. Apply power source to the terminal a.
3. Connect the negative lead to the terminal b.
4. Check the continuity between c—e.



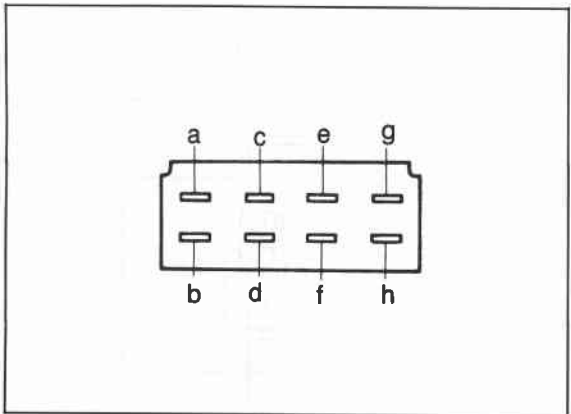
76U15X-315

Motor

1. Disconnect the connector of the motor.
2. Apply power source to YR and connect Y to the ground.
3. Check that motor turns in the direction from the tilt up, to the closed, to the open position.
4. Reverse the connection and check motor turns from the open, to the closed, to the tilt up position.



76U15X-160



76U15X-161

Limit Switch

1. Using hex-head wrench furnished in the glove box, set the sunroof in each position.

2. Use an ohmmeter to check the continuity of the terminals of the switch.

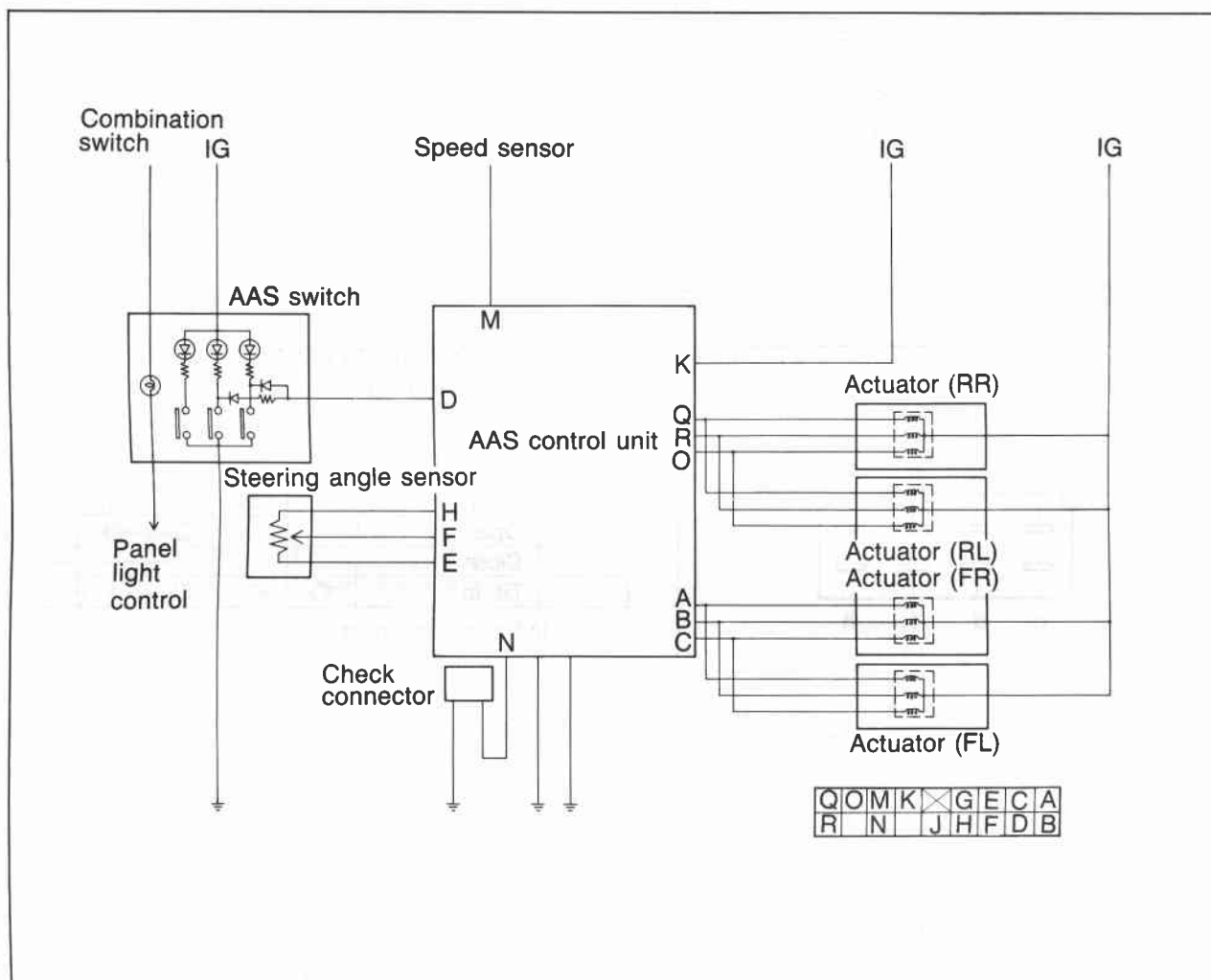
SW Terminal color	LS1		LS2		
	e	d	a	b	c
Roof condition	L	LG	YG	LW	LY
Open			○—○		
Close			○—		○
Tilt up	○—○		○—		○

○—○: Indicates conductive

15 AUTO ADJUSTING SUSPENSION (AAS)

AUTO ADJUSTING SUSPENSION (AAS)

CIRCUIT DIAGRAM



86U15X-151

TROUBLESHOOTING GUIDE

The AAS control unit has a self-diagnosis function detecting the unit itself, electrical parts for AAS system, and wiring harness open circuit, to inform mechanics. If it detects their malfunctions, outputs the output pattern to A (LW) terminal of service connector according to the settled pattern for each malfunction.

Troubleshooting against AAS system can be conducted by knowing the output pattern (See page 15—96, 97) to detect trouble location.

76G15X-020



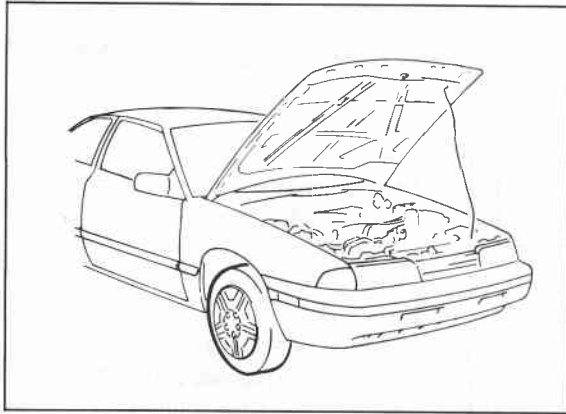
76G15X-079

TROUBLESHOOTING

How To Use Self-Diagnosis System

By using the control unit's self-diagnosis function and a voltmeter, malfunctions of the system are easily determined. When diagnosing malfunctions, follow the steps below.

1. Connect a voltmeter to A (LW) terminal of the service connector in engine room.
2. Read out the output patterns (See page 15—96) in following condition.



86U15X-154

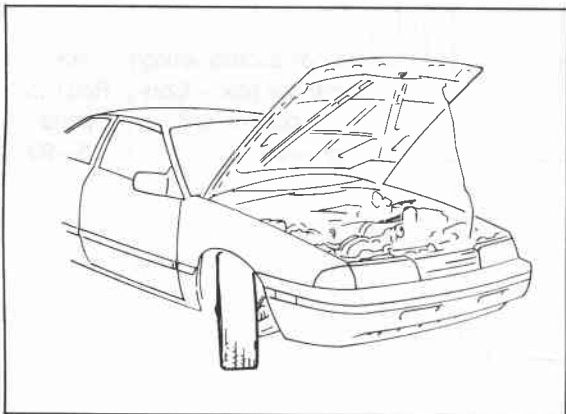
Checking Condition

Note:

Turn the ignition switch OFF to reset the control unit before each test.

Condition A

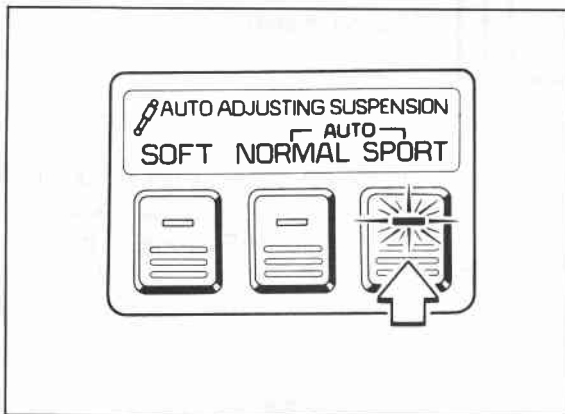
1. Turn the ignition switch ON.
2. Set steering wheel in the straight-ahead position, and check the output pattern.



86U15X-155

Condition B

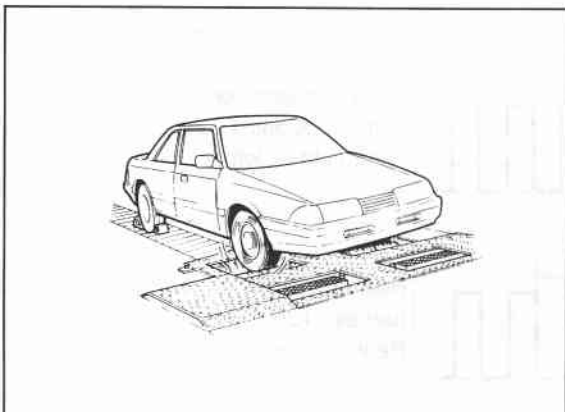
1. Turn the ignition switch ON.
2. Turn the steering wheel right and left, and check the output pattern.



86U15X-156

Condition C

1. Turn the ignition switch ON.
2. Change the AAS switch from NORMAL to SPORT or from SPORT to NORMAL, and check the output pattern.



86U15X-157

Condition D


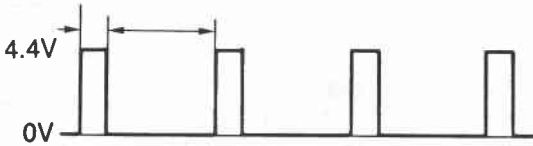
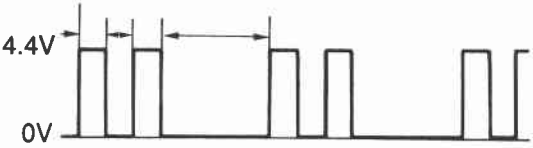

1. Operate the vehicle on a chassis roller.
2. Check the output pattern at above 15 km/h (9.3 mph).

Caution

- a) Block the rear wheels.
- b) In vehicle equipped with ABS, ABS warning light may come on, which is not a failure. The light goes off by turning ignition switch OFF and again ON.

15 AUTO ADJUSTING SUSPENSION (AAS)

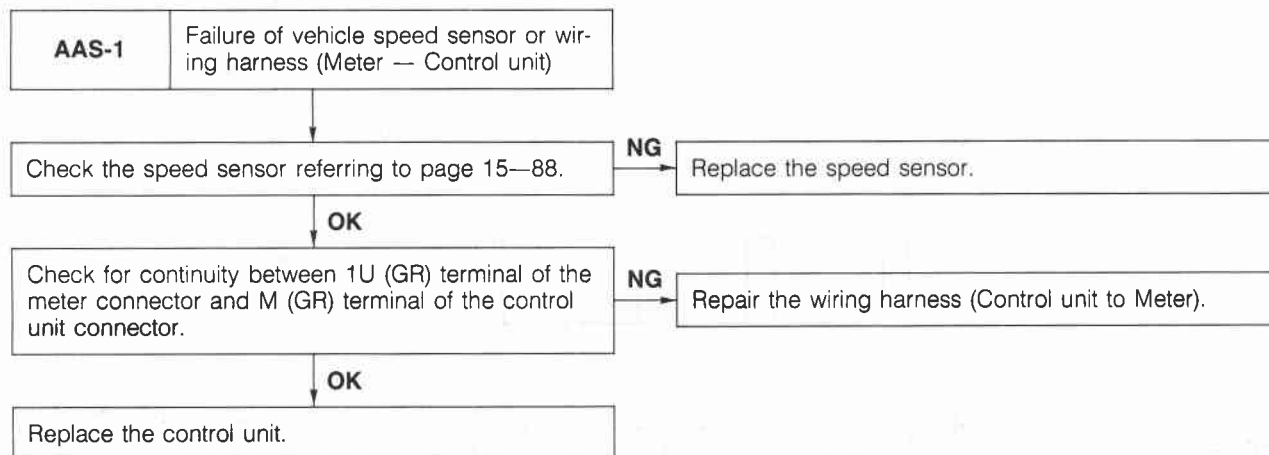
Condition	Output pattern	Malfunction	Flow chart No.
A Set steering wheel in straight ahead position		Vehicle speed sensor or wiring harness (Meter — Control unit)	AAS-1 Refer to page 15—98
		Steering wheel angle sensor or wiring harness (Angle sensor — Control unit)	AAS-2 Refer to page 15—98
		Normal operation or wiring harness (Fuse box — Control unit, control unit — Body ground)	AAS-3 Refer to page 15—99
B Turn the steering wheel right and left		Vehicle speed sensor or wiring harness (Meter — Control unit)	AAS—1 Refer to page 15—98
		Normal operation	—
		Wiring harness (Fuse box — Control unit, Control unit — Body ground) See page	AAS-4 Refer to page 15—99
C Change the switch from NORMAL to SPORT or from SPORT to NORMAL		Normal operation	—
		Front actuators or wiring harness (Control unit — Front right or left actuator)	AAS-5 Refer to page 15—100
		Rear actuators or wiring harness (Control unit — Rear right or left actuator)	AAS-6 Refer to page 15—101

<p>C (Cont'd)</p>		<p>AAS switch or wiring harness (Fuse box — Control box and AAS switch, AAS switch — Control box and Body ground)</p>	<p>AAS—7 Refer to page 15—102</p>
<p>D Operate the vehicle at above 15 km/h (9.3 mph) on a chassis roller</p>		<p>Normal operation</p>	<p>—</p>
		<p>Speed sensor or Steering wheel angle sensor or wiring harness (Control unit — Meter, Control unit — Angle sensor)</p>	<p>AAS-8 Refer to page 15—102</p>
		<p>Speed sensor or Wiring harness (Control unit — Meter, Fuse box — Control unit, Control unit — Body ground)</p>	<p>AAS-9 Refer to page 15—103</p>

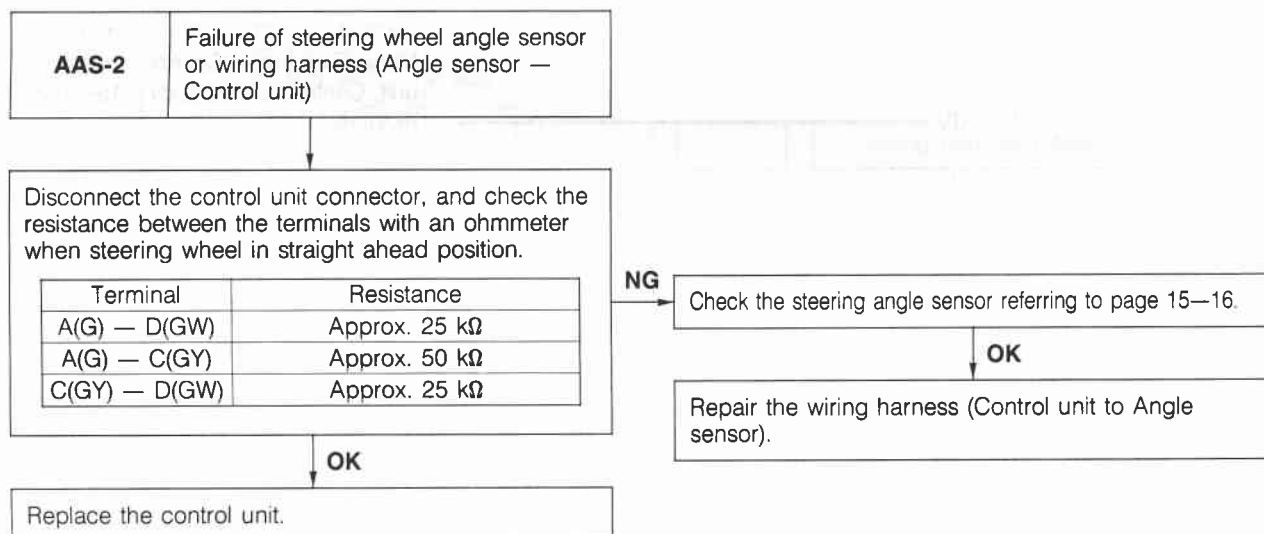
76G15X-080

15 AUTO ADJUSTING SUSPENSION

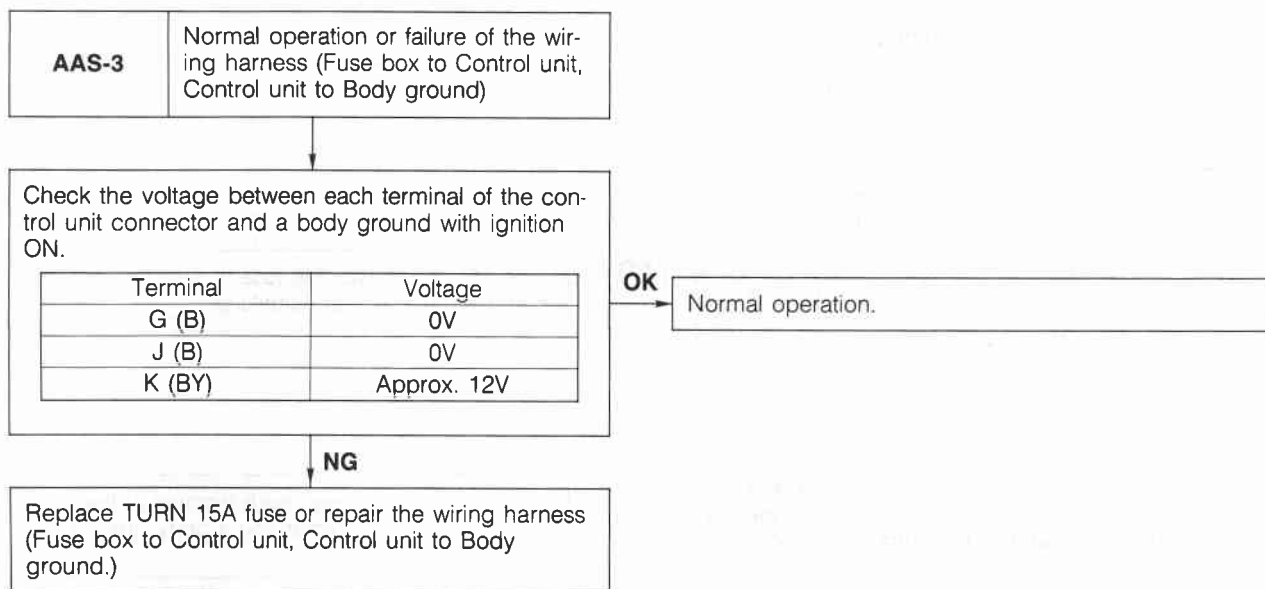
Inspection of circuit



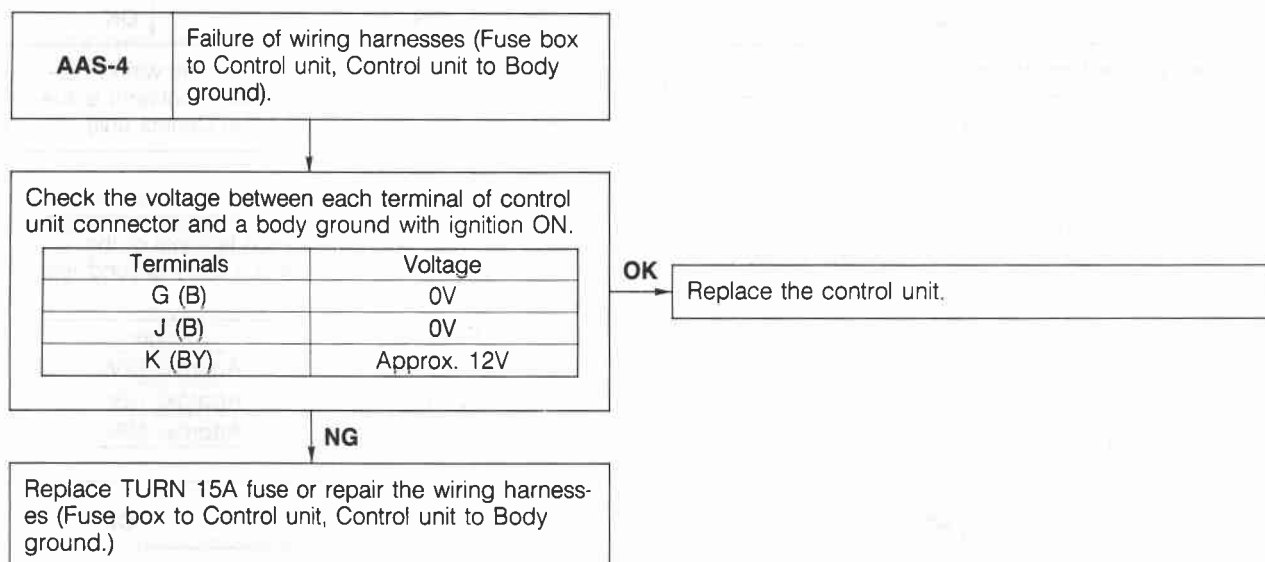
76G15X-081



76G15X-082

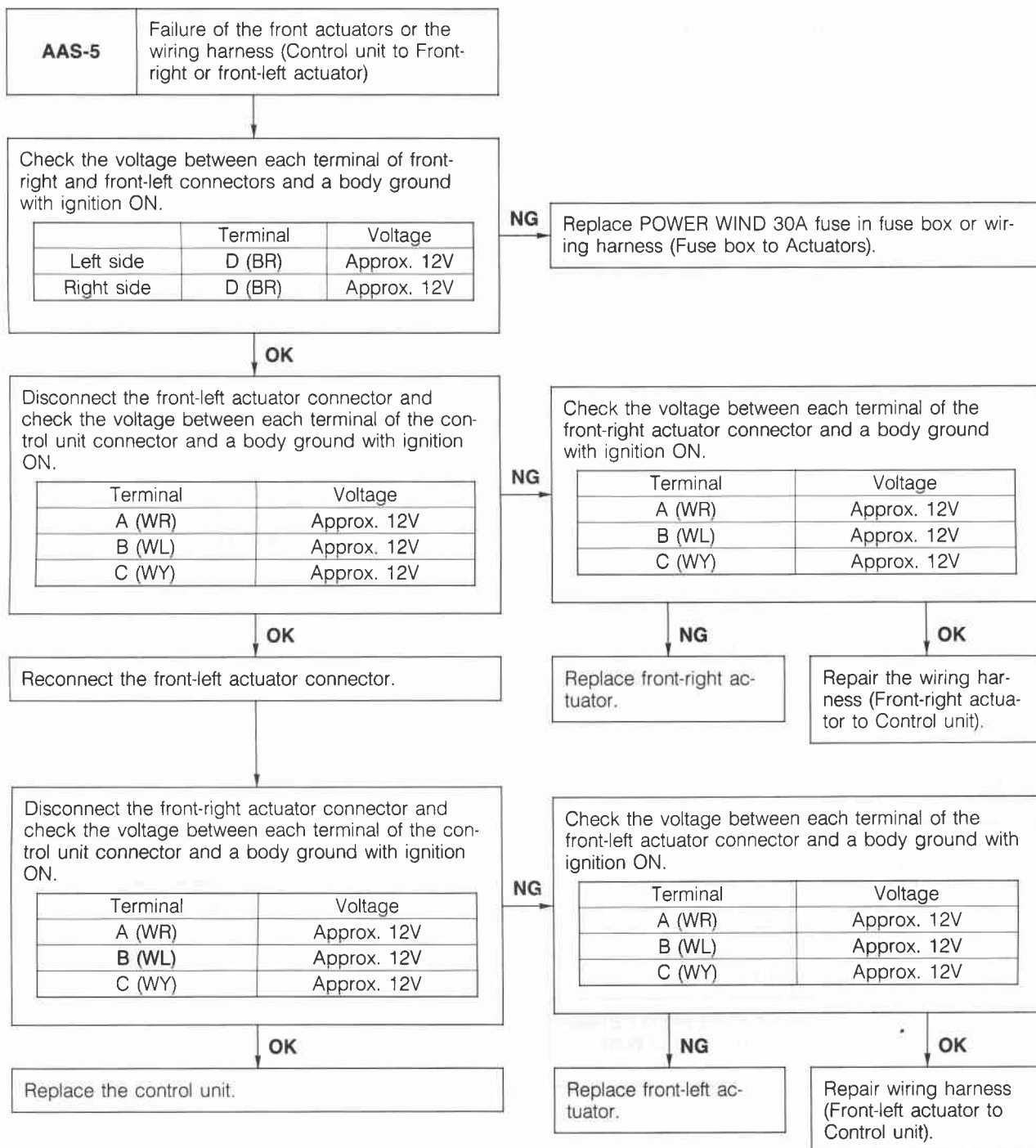


86U15X-161

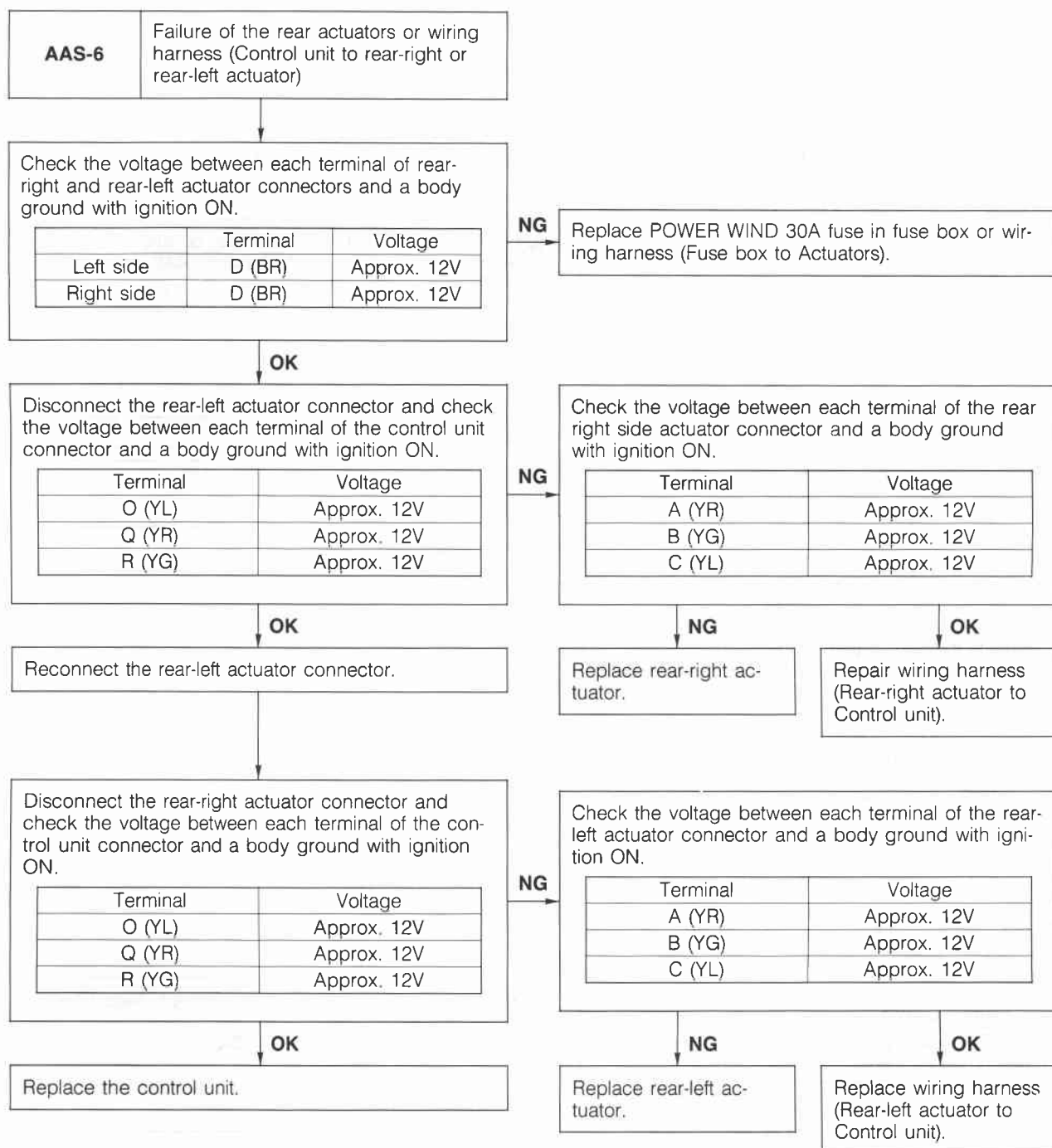


86U15X-162

15 AUTO ADJUSTING SUSPENSION (AAS)



86U15X-163



86U15X-164

15 AUTO ADJUSTING SUSPENSION

AAS-7 Failure of AAS switch or wiring harness (Fuse box to Control unit and AAS switch, AAS switch to Control unit and Body ground)

Check the voltage between each terminal of AAS switch connector and a body ground with ignition ON.

Terminal	Voltage
F (BY)	12V
H (B)	0V

NG

Replace METER 10 or 15A fuse or repair the wiring harness (Fuse box to AAS switch, AAS switch to Body ground).

OK

Check the operation of the AAS switch referring to page 15—104.

NG

Replace the AAS switch.

OK

Check for continuity, between D (LY) terminal of control unit and D (LY) terminal of AAS switch.

NG

Repair wiring harness.

OK

Replace the control unit.

AAS-8 Failure of speed sensor or steering wheel angles sensor or wiring harness (Control unit to Meter, Control unit to Angle sensor).

Disconnect the control unit connector, and check the resistance between the terminals with steering wheel in straight ahead position with an ohmmeter.

Terminal	Resistance
A(G) — D(GW)	Approx. 25 k Ω
A(G) — C(GY)	Approx. 50 k Ω
C(GY) — D(GW)	Approx. 25 k Ω

NG

Check the steering angle sensor referring to page 15—16.

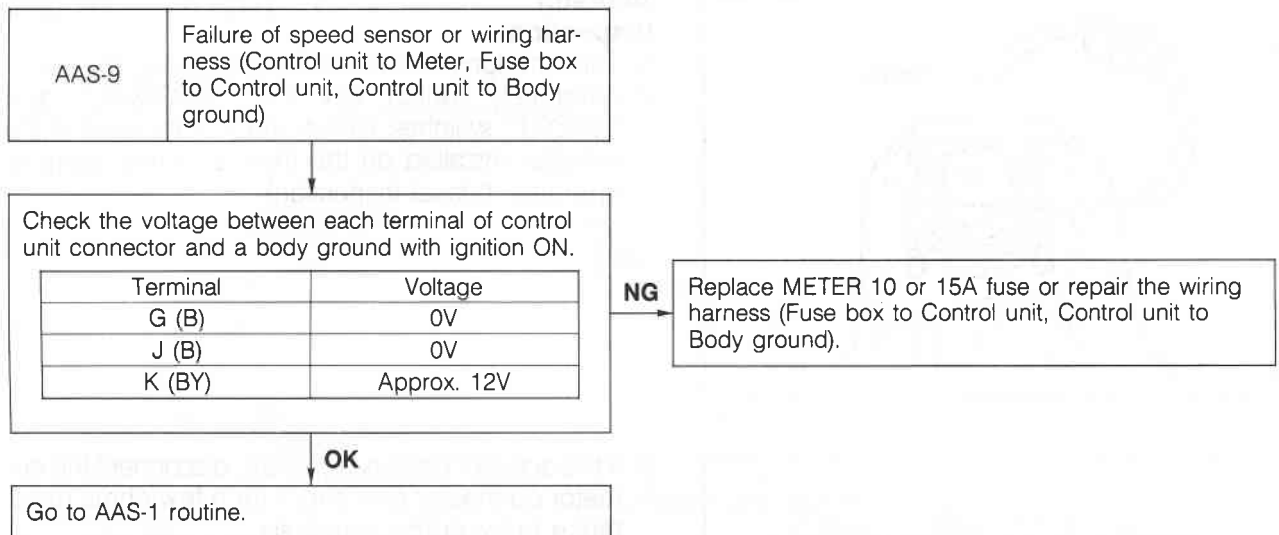
OK

Repair the wiring harness (control unit to Angle sensor).

OK

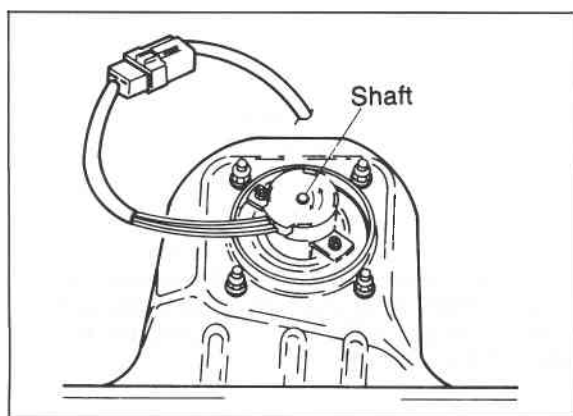
Go to AAS-1 routine.

76G15X-083



76G15X-084

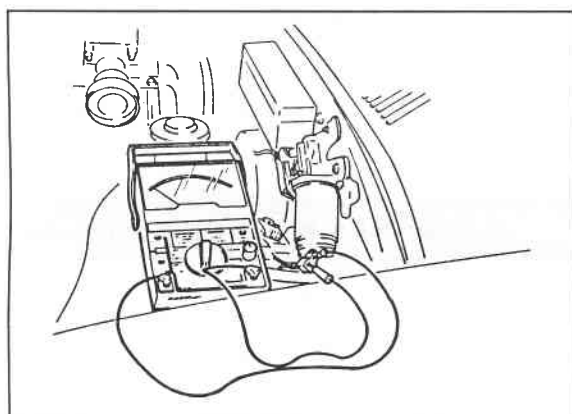
15 AUTO ADJUSTING SUSPENSION



86U15X-167

Actuator Inspection

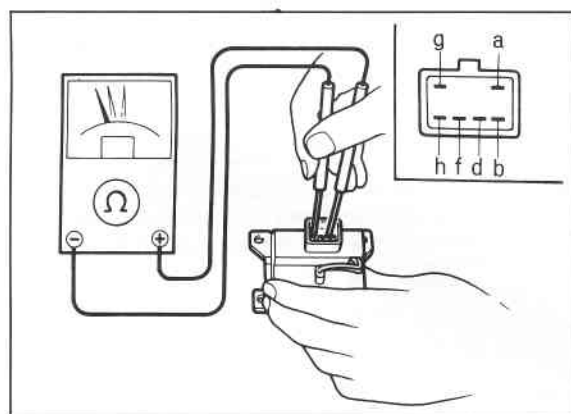
1. Turn the ignition switch ON.
2. Alternately switch ON the "NORMAL" and "SPORT" switches. Check whether the shaft of the actuator installed on the front and rear damper operates. (Visual inspection)



86U15X-168

3. If the actuator does not operate, disconnect the actuator connector and check for a few ohms resistance between the terminals.

Terminal		Resistance
Front	A(WR) — D(BR)	2—8 (Ω)
	B(WL) — D(BR)	
	C(WR) — D(BR)	
Rear	A(YR) — D(BR)	
	B(YG) — D(BR)	
	C(YL) — D(BR)	



76G15X-095

AAS Switch Inspection

1. Use an ohmmeter to check continuity of the terminals of the switch.
2. If continuity is not as specified, replace the switch.

Position \ Terminal	a	b	d	f	g	h
SOFT	○—○			○—▶—○		
NORMAL	○—○		○—▶—○	○—▶—○		
SPORT	○—○		○—▶—○	○—▶—○		

○—○: Indicates continuity

Steering Wheel Angle Sensor Inspection

See page 15—16

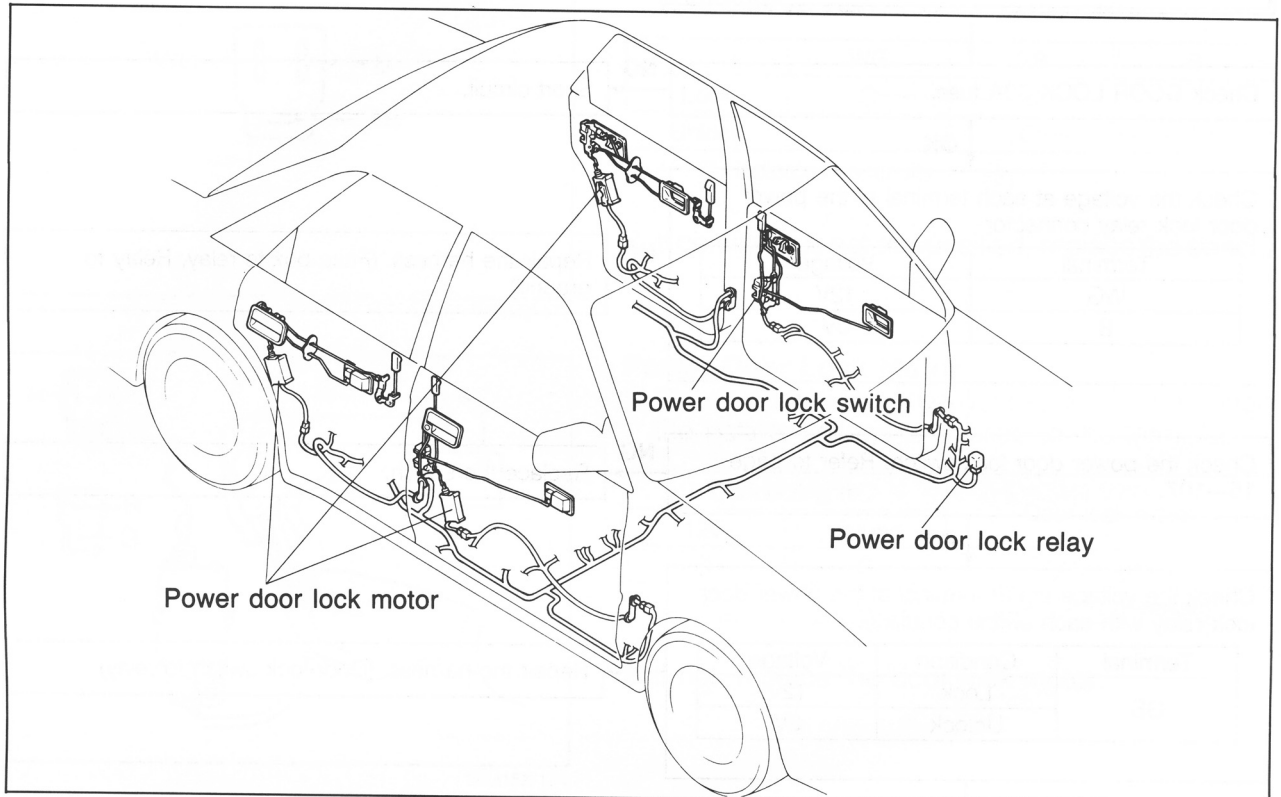
Vehicle Speed Sensor Inspection

See page 15—88

76G15X-085

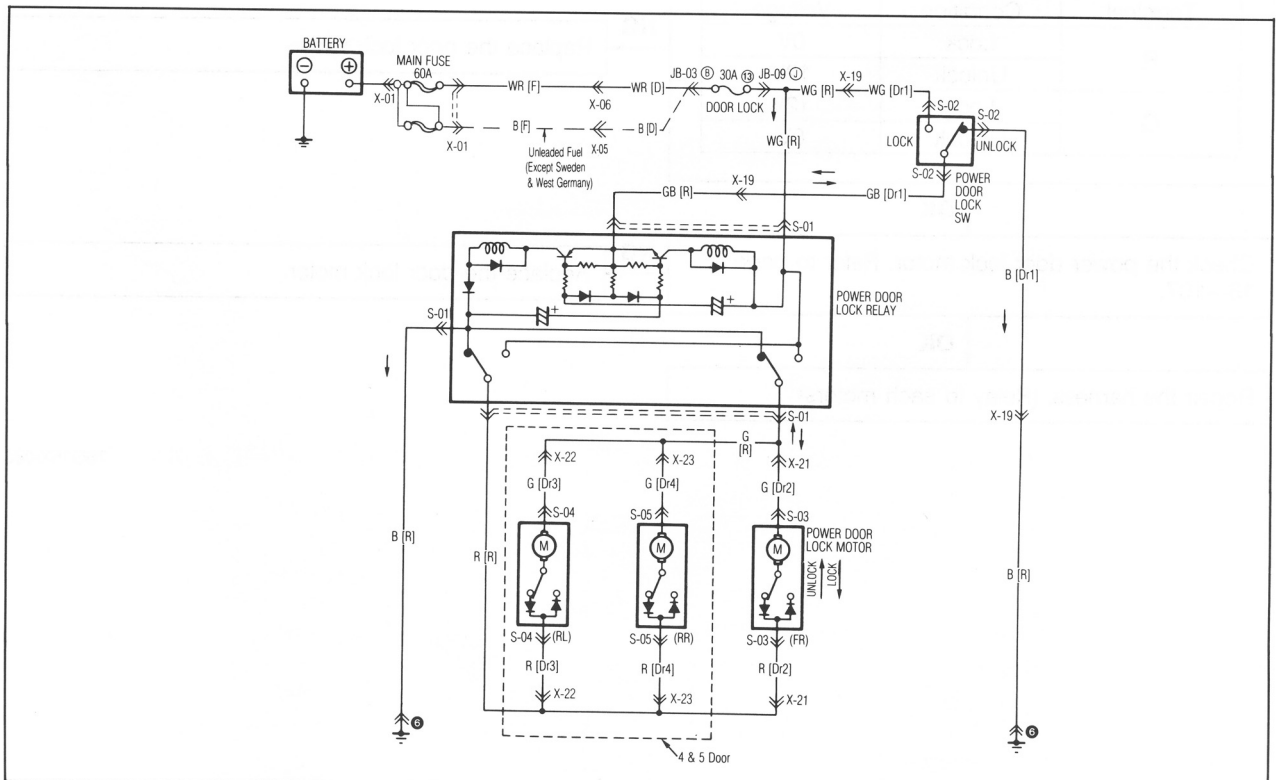
POWER DOOR LOCK

STRUCTURAL VIEW



86U15X-170

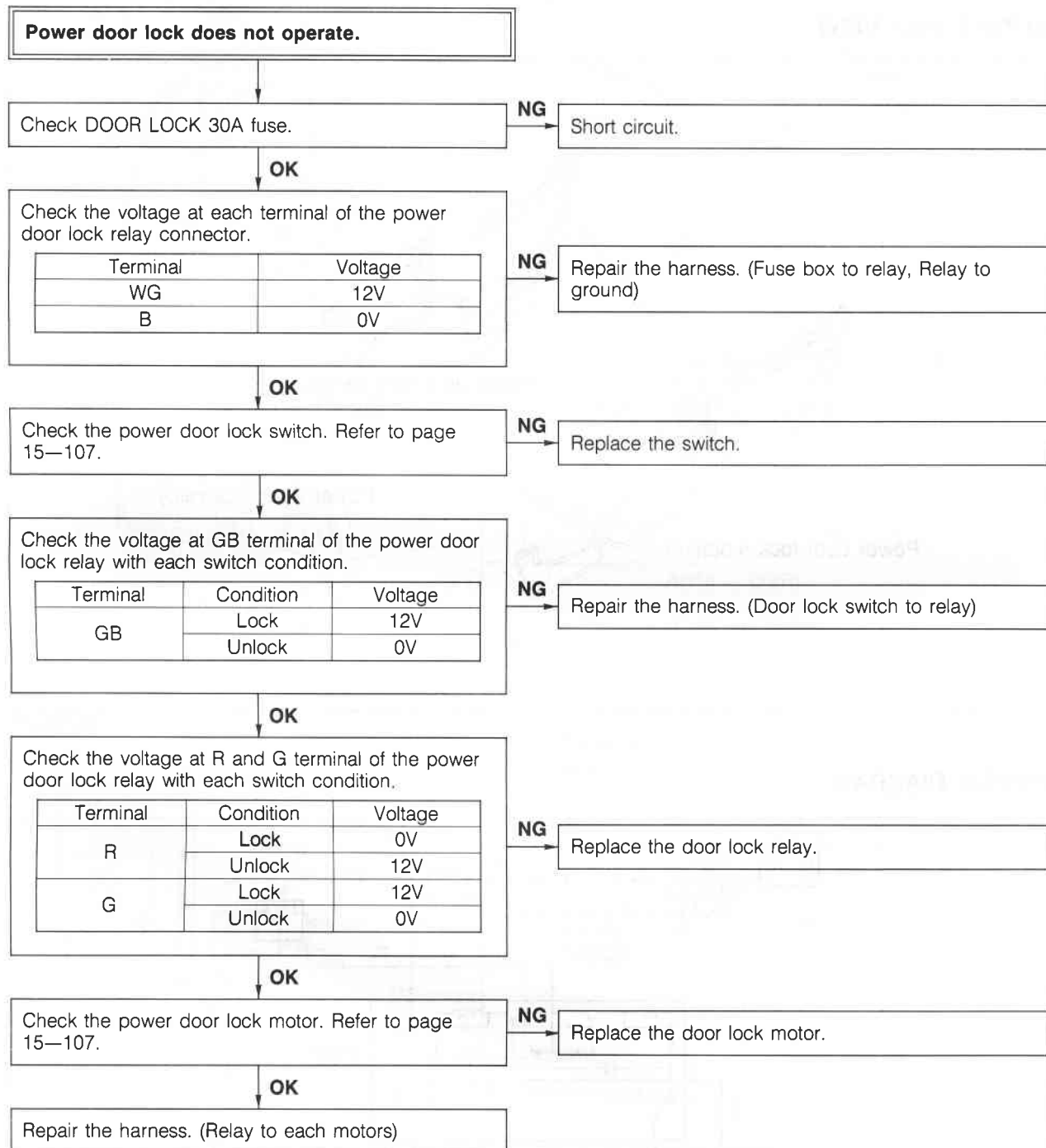
CIRCUIT DIAGRAM



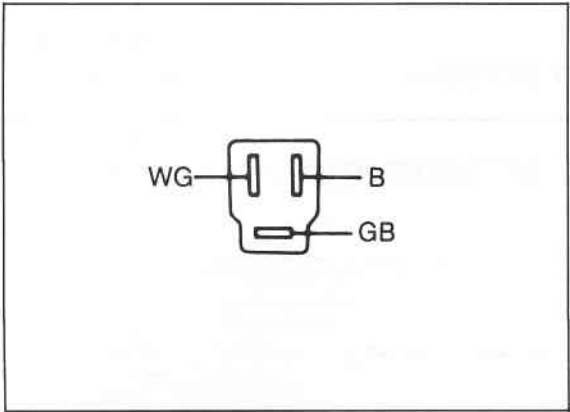
86U15X-171

15 POWER DOOR LOCK

TROUBLESHOOTING



76G15X-086



86U15X-173

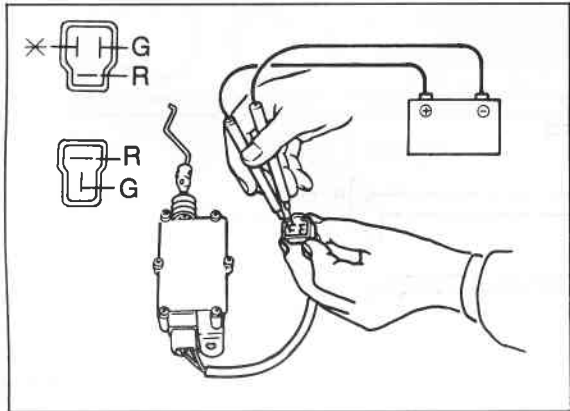
INSPECTION
Power Door Lock Switch

1. Check for continuity of the switch with an ohmmeter.

	WG	GB	B
Lock	○	○	
Unlock		○	○

○—○: indicates continuity

2. If continuity is not as specified, replace the switch.



86U15X-174

Power Door Lock Motor

1. Check operation of the door lock actuator when the battery voltage is applied to the terminal.

Connecting to		Door lock motor
12V	ground	
G	R	LOCK (Pull)
R	G	UNLOCK (Release)

2. If not, replace the door lock motor.

15 AUDIO SYSTEM

AUDIO SYSTEM

OUTLINE OF AUDIO

SYSTEM 1

AM RADIO (MTR)

SYSTEM 2

AM/SW RADIO (MTR)



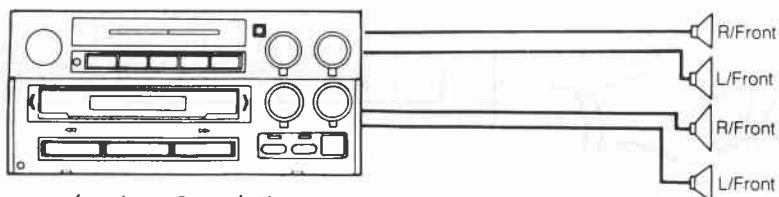
(system 1 and 2)

SYSTEM 3

AM RADIO (MTR) + CASSETTE TAPE PLAYER

SYSTEM 4

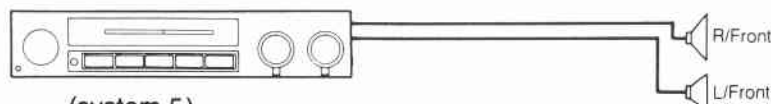
AM/SW RADIO (MTR) + CASSETTE TAPE PLAYER



(system 3 and 4)

SYSTEM 5

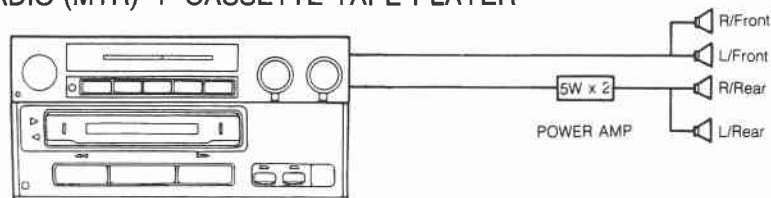
AM/FM RADIO (MTR)



(system 5)

SYSTEM 6

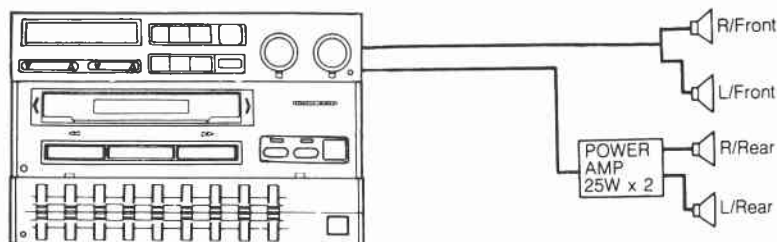
AM/FM RADIO (MTR) + CASSETTE TAPE PLAYER



(system 6)

SYSTEM 7

AM/FM MULTIPLEX RADIO (ETR) + CASSETTE TAPE PLAYER + GRAPHIC EQUALIZER

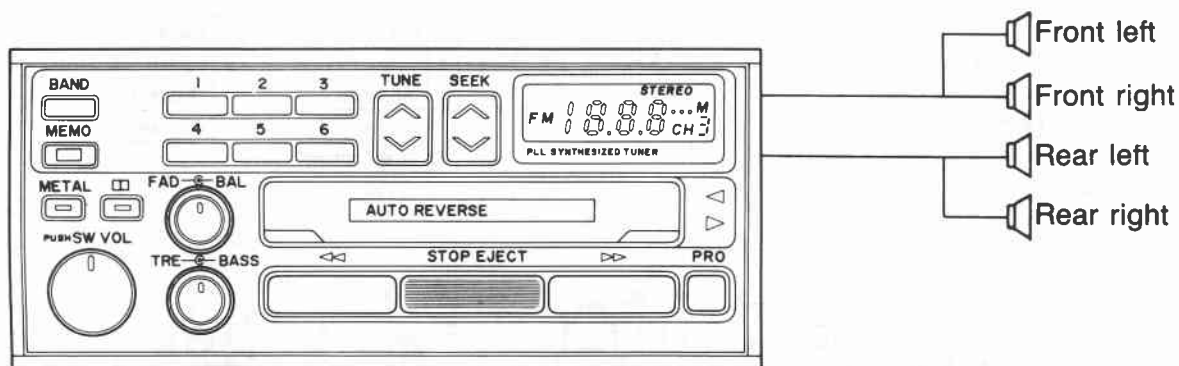


(system 7)

76G15X-021

SYSTEM 8 AM/FM/LW RADIO WITH CASSETTE TAPE PLAYER

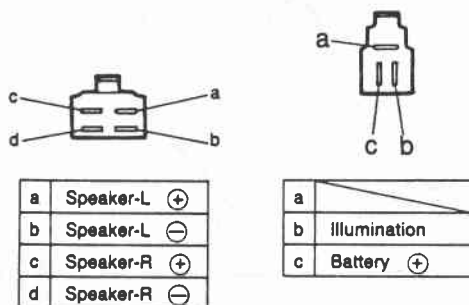
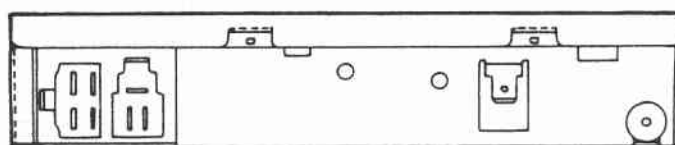
SYSTEM 9 AM/FM/SW RADIO WITH CASSETTE TAPE PLAYER



(system 8 and 9)

REAR CONNECTOR VIEW

AM/SW or AM RADIO (MTR)



15 AUDIO SYSTEM

AM/FM MULTIPLEX RADIO (ETR)

a	Speaker-L ⊕
b	Speaker-L ⊖
c	Speaker-R ⊕
d	Speaker-R ⊖

a	Battery ⊕
---	-----------

a	Motor antenna (Earthed when radio is ON)
b	Illumination
c	ACC ⊕

To AMP	
1	Output-F-R ⊕
2	Battery ⊕
3	Output-F-L ⊕
4	Output-F-R ⊖
5	Output-F-L ⊖
6	Ground
E	Shield ground

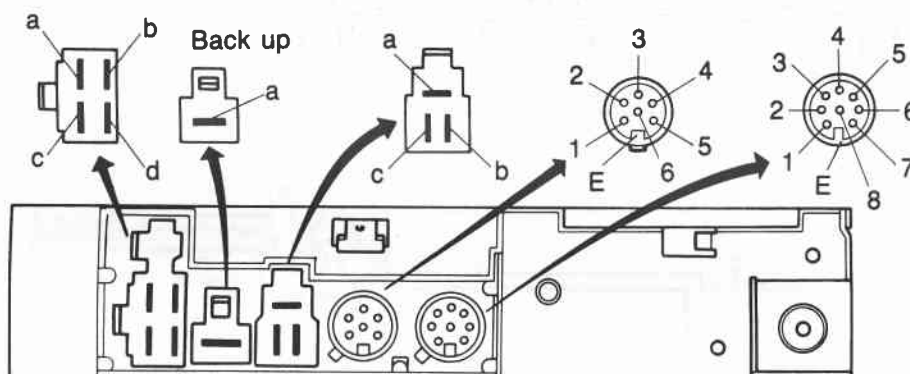
To cassette deck or equalizer

1	Output-L ⊕
2	Input-L ⊕
3	ACC ⊕
4	Illumination
5	Signal ground
6	Input-R ⊕
7	Output-R ⊕
8	Not used
E	Shield ground

To front speaker

To AMP

To cassette deck or equalizer

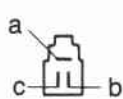


56G15X-085

AM/FM MULTIPLEX RADIO (MTR)

a	Antenna relay (Earth when radio is ON)
b	Illumination
c	Battery (ACC)

To front speaker



a	Speaker-L ⊕
b	Speaker-L ⊖
c	Speaker-R ⊕
d	Speaker-R ⊖

1	Output-R-R ⊕	Output-F-R ⊕
2	ACC ⊕	ACC ⊕
3	Output-R-L ⊕	Output-F-R ⊕
4	Output-R-R ⊖	Output-F-R ⊖
5	Output-R-L ⊖	Output-F-L ⊖
6	Ground	Ground
E	Shield ground	Shield ground

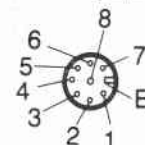
To rear AMP

To front AMP



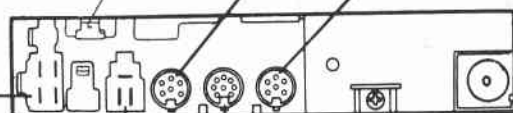
1	Output-L ⊕
2	Input-L ⊖
3	ACC ⊕
4	Illumination
5	Signal ground
6	Input-R ⊕
7	Output-R ⊕
8	Not used
E	Shield ground

To cassette deck



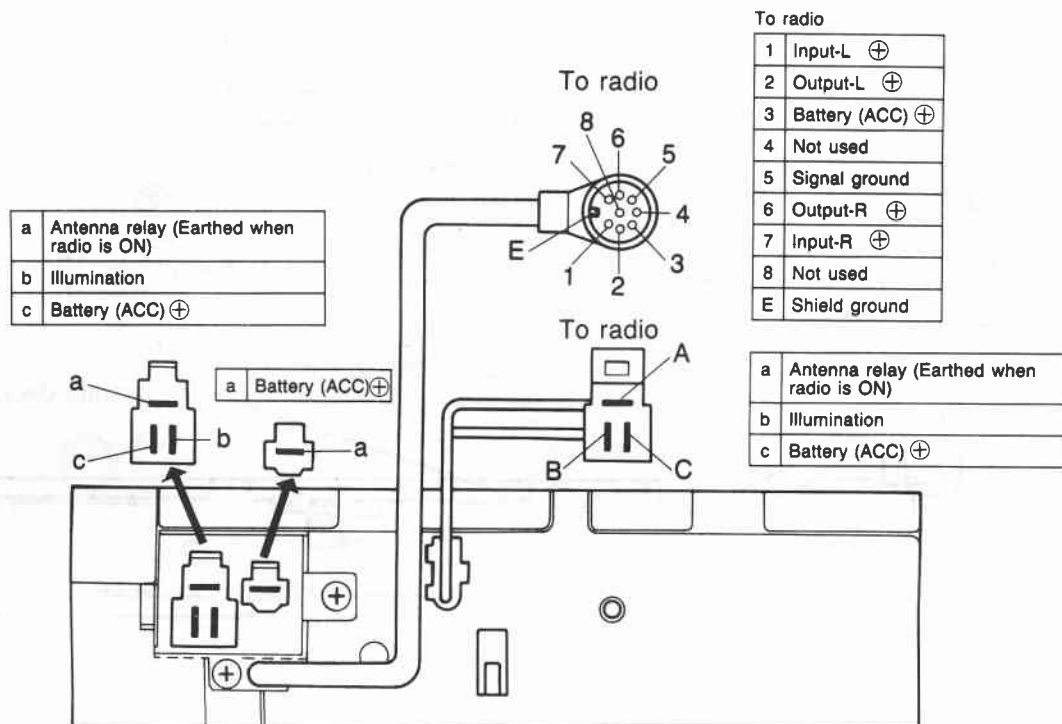
Not used
(Never connect
back-up line)

Antenna
feeder



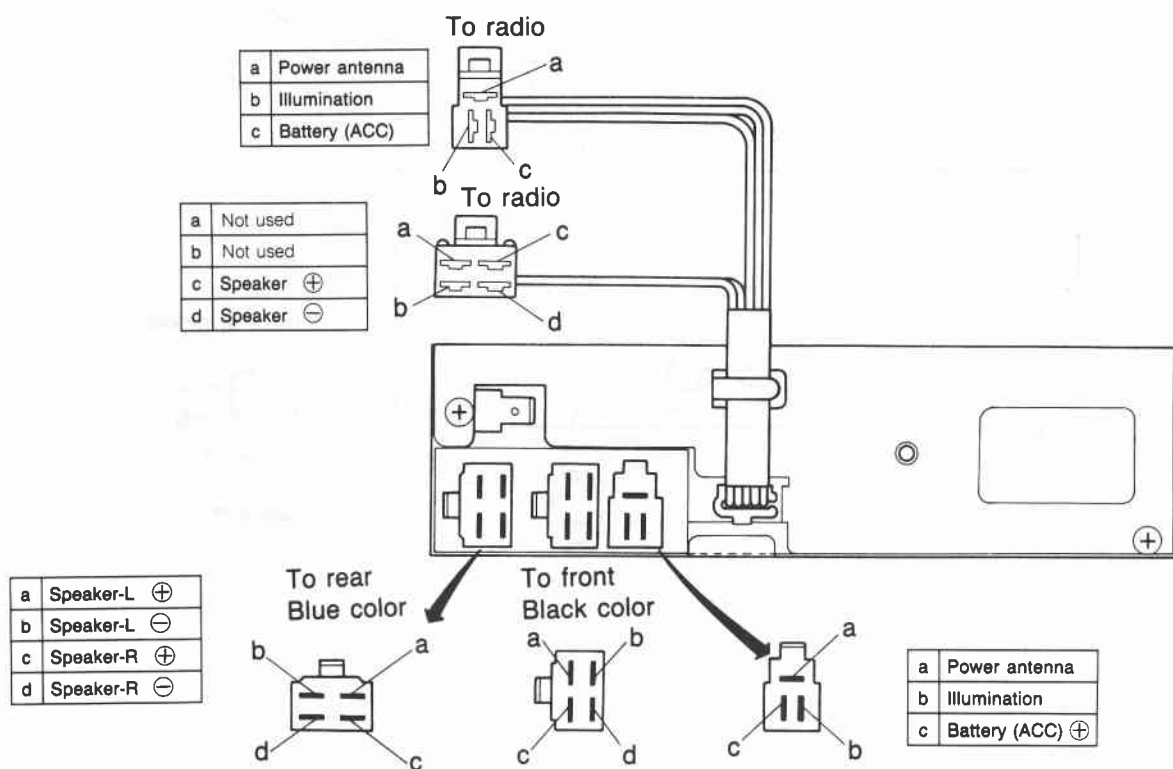
56G15X-086

CASSETTE DECK



56G15X-088

CASSETTE DECK (SYSTEM 3 AND 4)

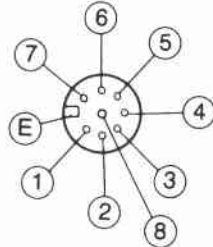


56G15X-089

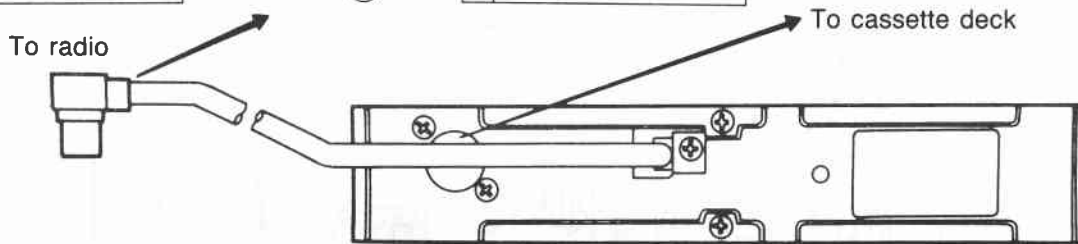
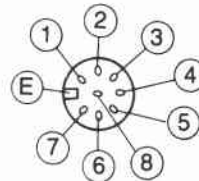
15 AUDIO SYSTEM

GRAPHIC EQUALIZER

1	INPUT-L ⊕
2	OUTPUT-L ⊕
3	BATTERY (ACC) ⊕
4	ILLUMINATION
5	SIGNAL GROUND
6	OUTPUT-R ⊕
7	INPUT-R ⊕
8	NOT USED
E	SHIELD GROUND



1	NOT USED
2	INPUT-L ⊕
3	BATTERY (ACC) ⊕
4	NOT USED
5	SIGNAL GROUND
6	INPUT-R ⊕
7	NOT USED
8	NOT USED
E	SHIELD GROUND

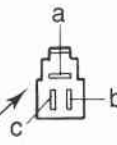
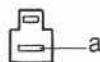


56G15X-091

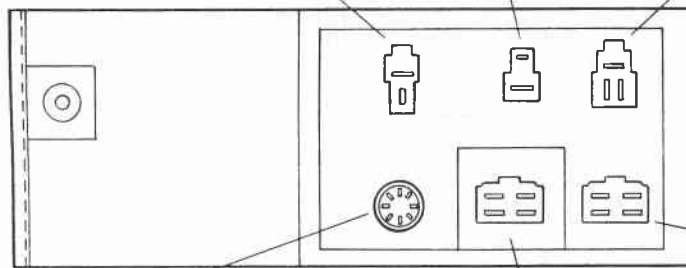
AM/FM/SW RADIO WITH CASSETTE TAPE PLAYER

a	Amp cont (13.2 V)
b	⊕ Battery

a	Back-up
---	---------



a	Motor antenna ground- ed when radio ON
b	Illumination
c	⊕ 13.2 V (ACC)



To front speaker

a	Speaker LH ⊕
b	Speaker LH ⊖
c	Speaker RH ⊕
d	Speaker RH ⊖

To rear speaker

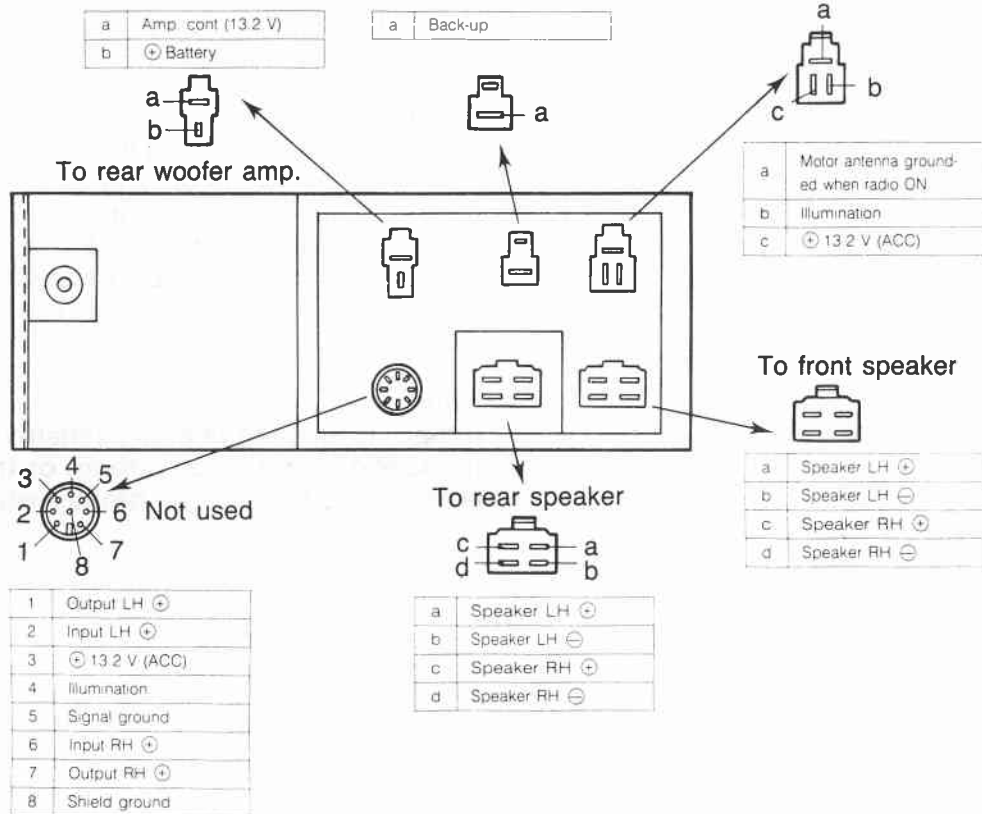
a	Speaker LH ⊕
b	Speaker LH ⊖
c	Speaker RH ⊕
d	Speaker RH ⊖



1	Output LH ⊕
2	Input LH ⊕
3	⊕ 13.2 V (ACC)
4	Illumination
5	Signal ground
6	Input RH ⊕
7	Output RH ⊕
8	Shield ground

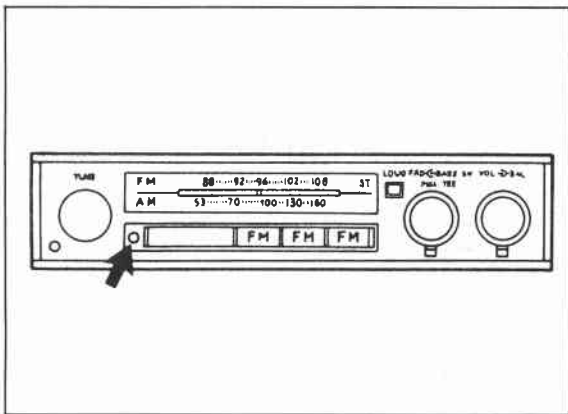
76G15X-023

AM/FM/LW RADIO WITH CASSETTE TAPE PLAYER



76G15X-024

15 AUDIO SYSTEM



56G15X-106

ADJUSTMENT (MTR)

Antenna adjustment

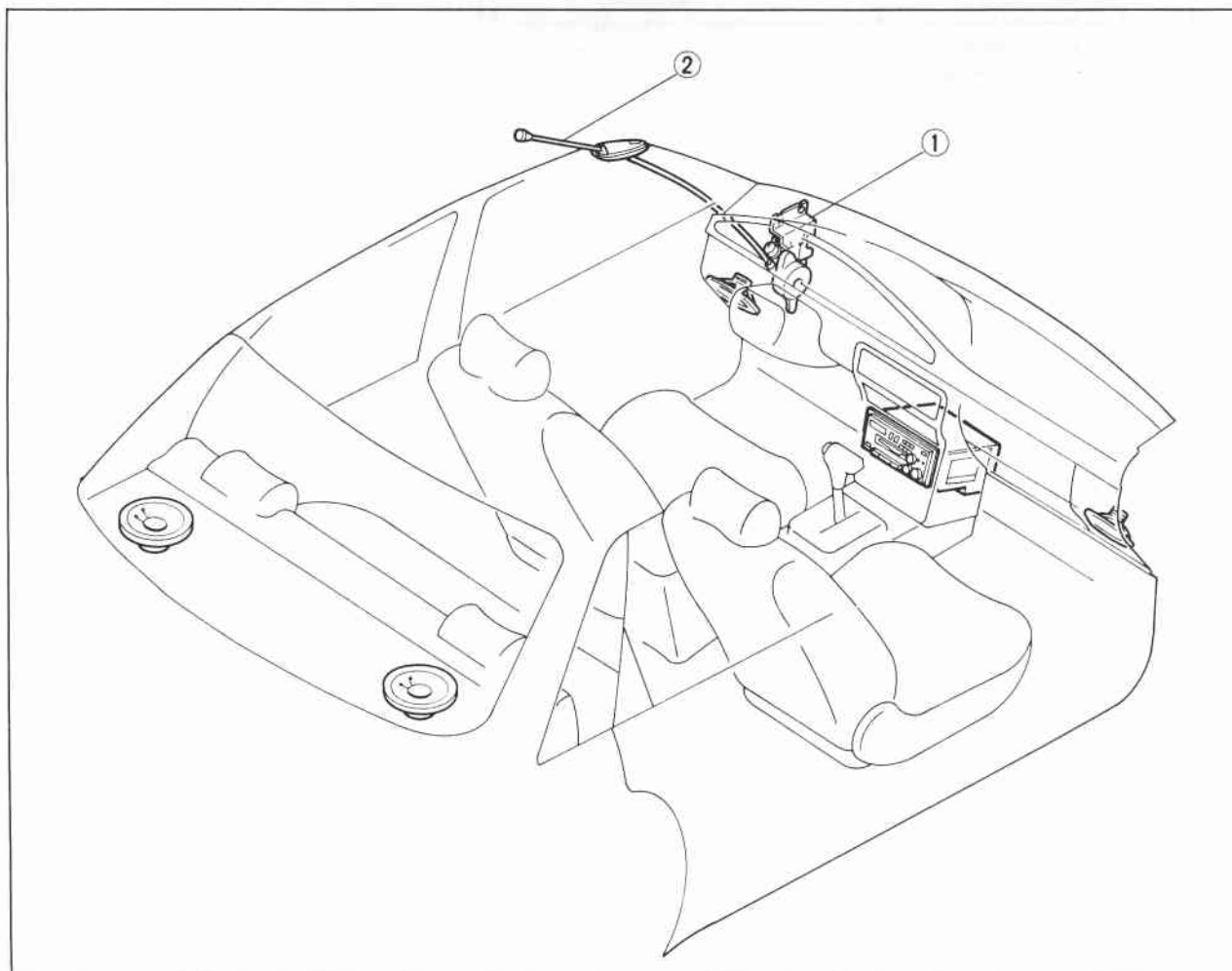
Use the following adjustment procedure to obtain optimum antenna and radio reception sensitivity.

1. Extend the antenna fully.
2. Set the ignition key to ACC.
3. Turn on the radio, and set it to AM reception.
4. Tune in a distant station with a weak signal at around 1400 kHz. If such a station cannot be found, use static to make the adjustment.
5. Turn the antenna trimmer adjustment screw to the left and right to find the maximum sensitivity (of either the broadcast or the static).

Note

If there is no change in the sensitivity, either the tuned signal is too strong, or there is an antenna malfunction or broken wire.

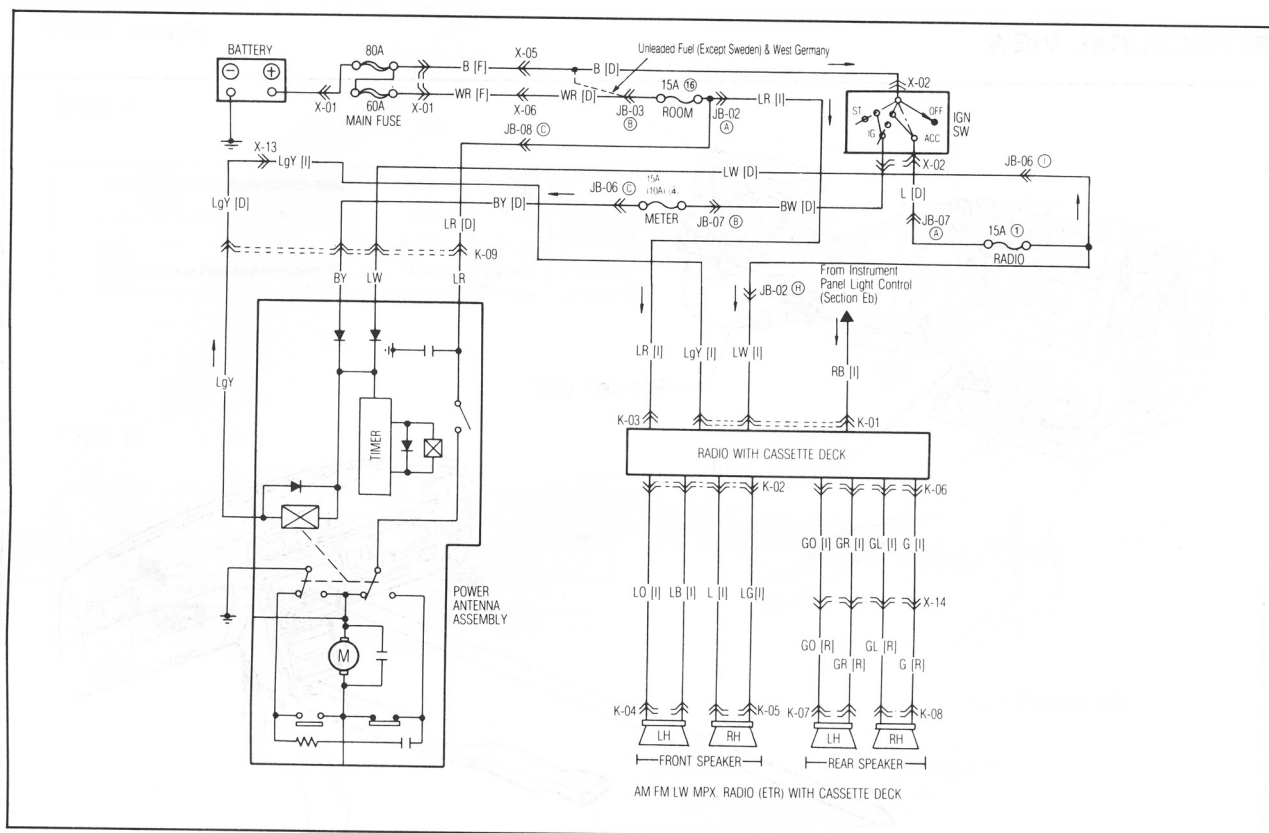
POWER ANTENNA STRUCTURAL VIEW



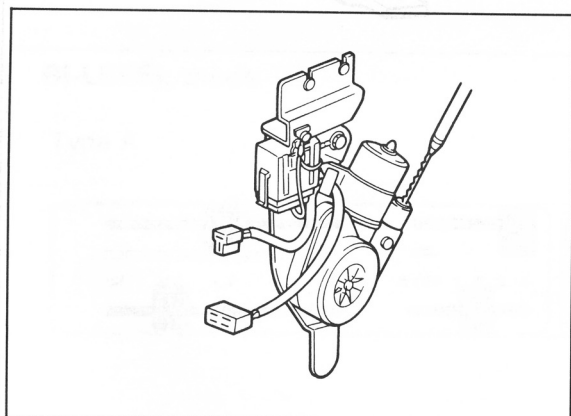
76G15X-025

1. Antenna motor
2. Antenna

Power Antenna Circuit



86U15X-194



76G15X-096

Inspection Of Power Antenna Relay

1. Check the voltage at each terminal of the relay connector harness side with each condition.

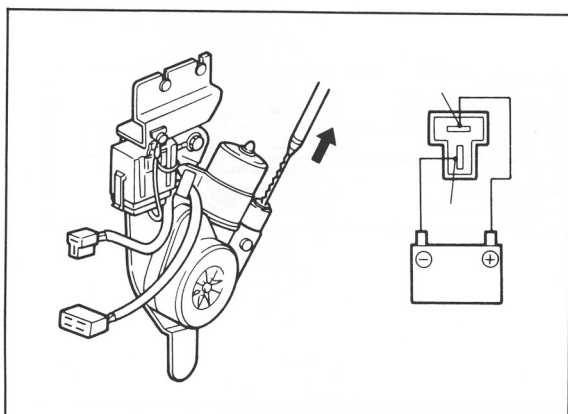
Terminal	Condition	Voltage
LW	Ignition switch ACC	12V
BY	Ignition switch ON	12V
LgW	Ignition switch ACC and radio power switch ON	0V
LR	Any time	12V

If not, repair the harness.

2. Turn the ignition switch on, and check the operation of the power antenna with each condition.

Condition	Antenna operation
GW wire is connected to a body ground	Rises
GW wire is not connected to a body ground	Goes down

If the power antenna does not operate, replace the power antenna relay or power antenna motor.

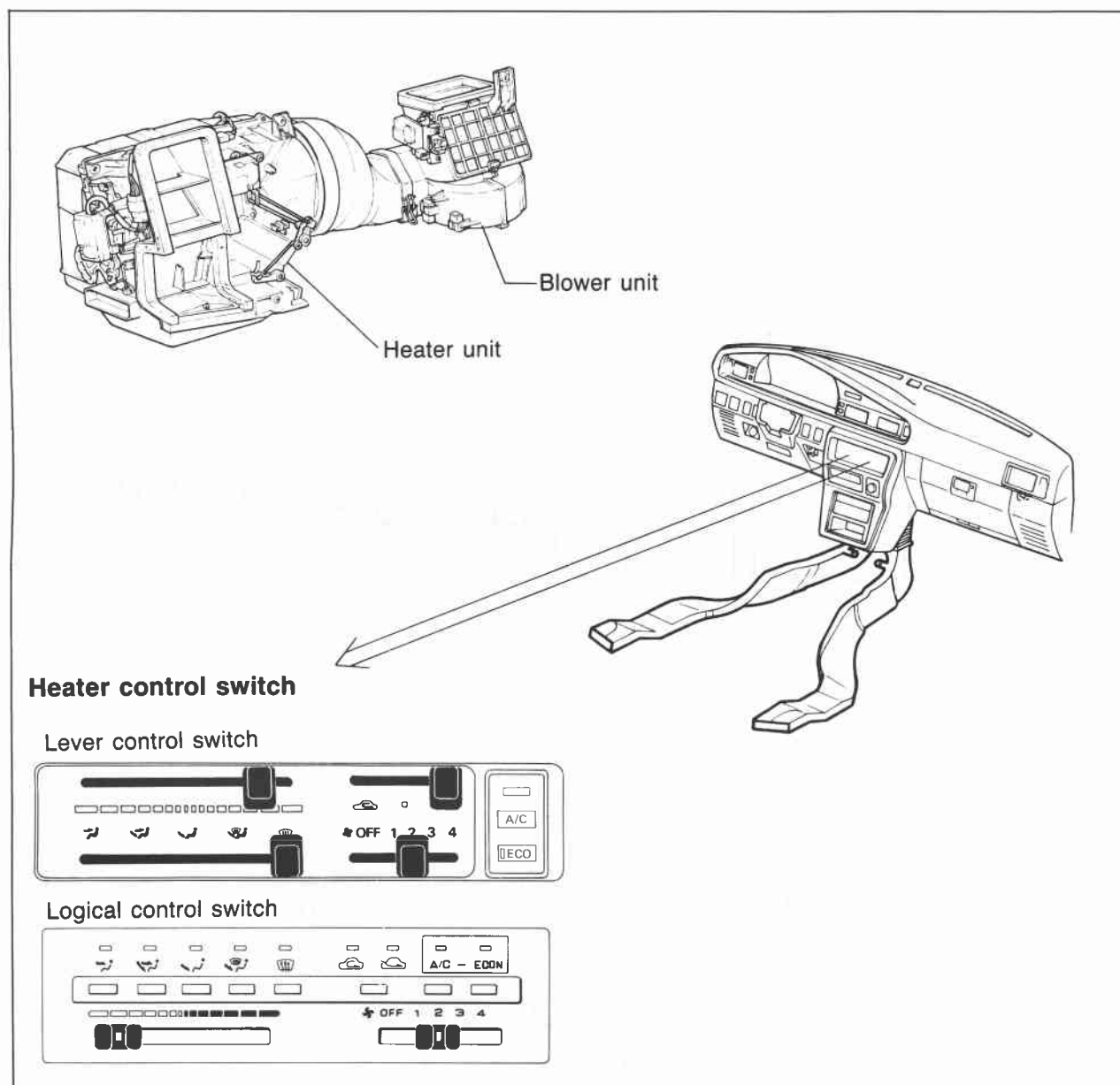


86U15X-196

15 HEATER

HEATER

STRUCTURAL VIEW

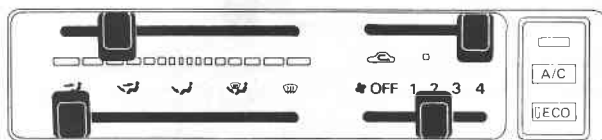


86U15X-197

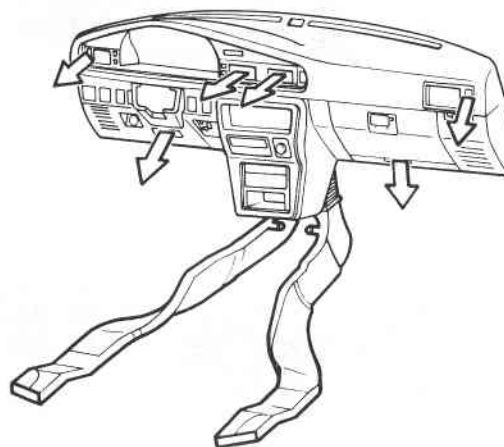
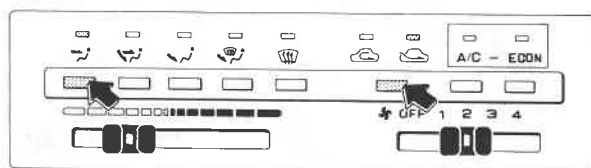
AIR FLOW AT EACH MODE

VENT mode

Type A



Type B

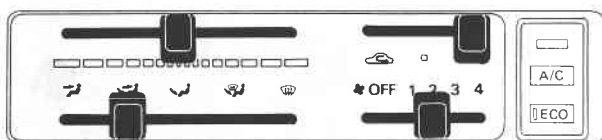


⇒ Fresh air

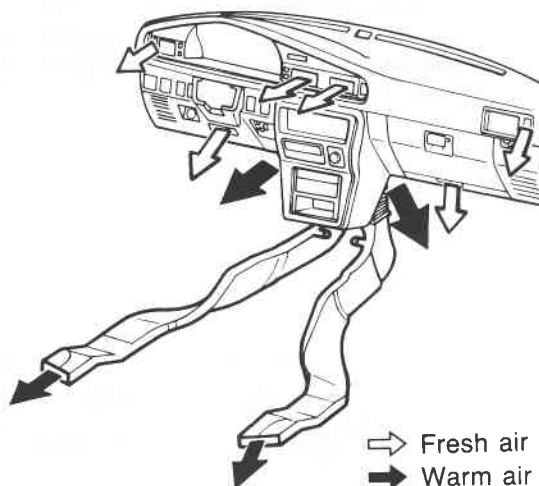
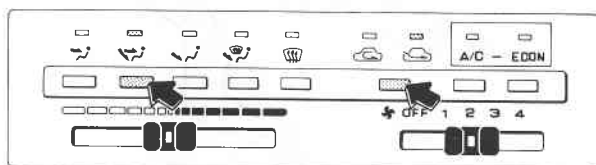
86U15X-198

BI-LEVEL mode

Type A



Type B



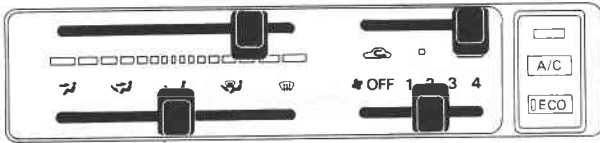
⇒ Fresh air
⇒ Warm air

86U15X-199

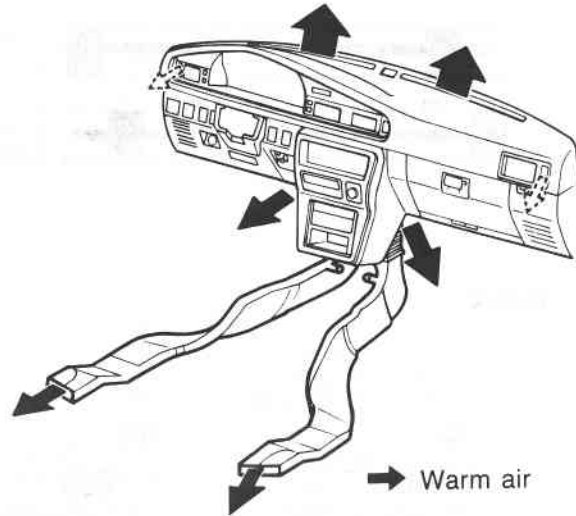
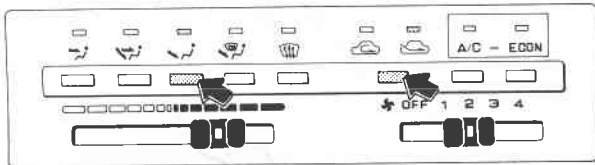
15 HEATER

HEAT mode

Type A



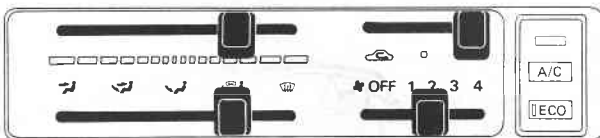
Type B



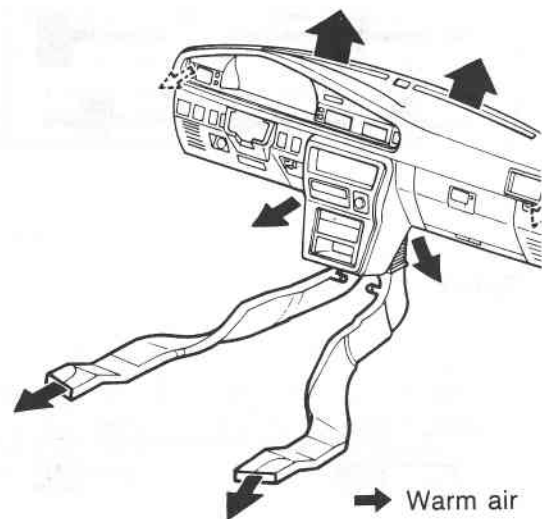
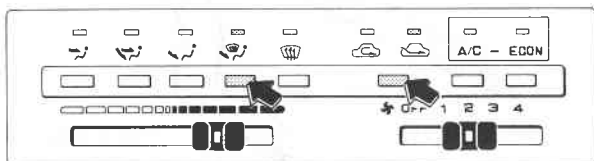
86U15X-200

HEAT/DEF mode

Type A



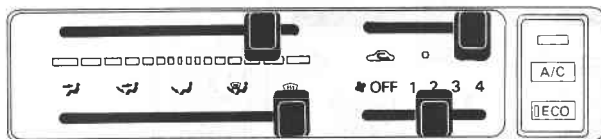
Type B



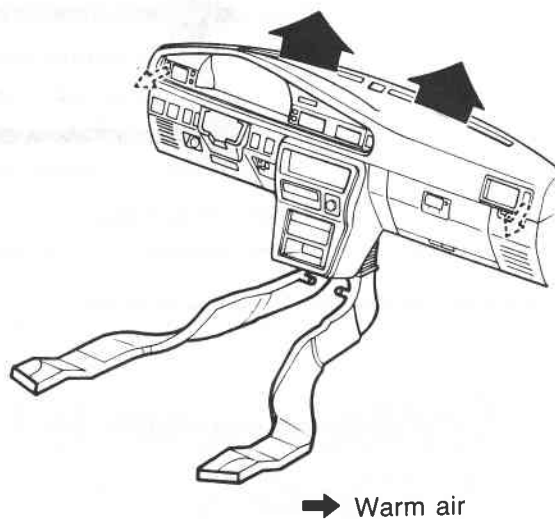
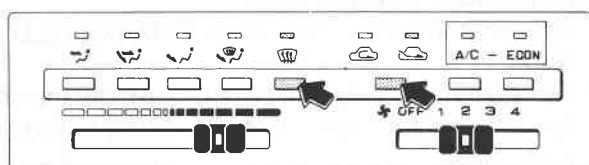
86U15X-201

DEF mode

Type A



Type B



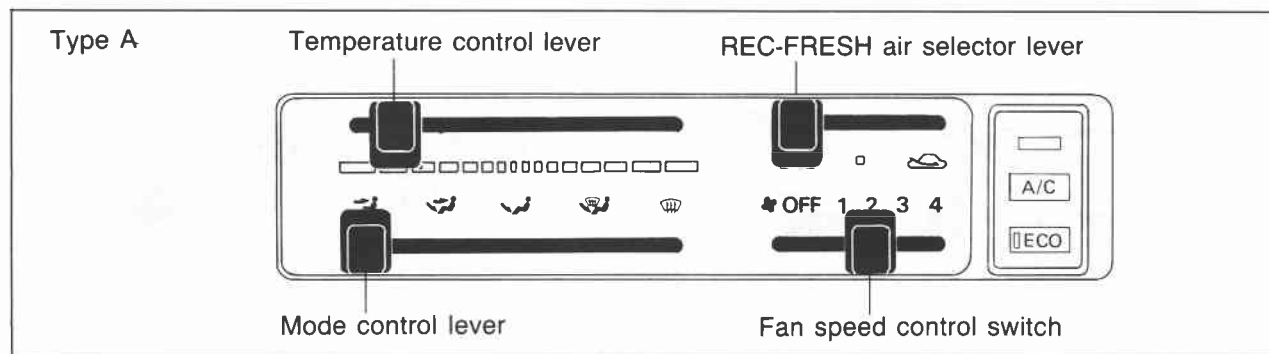
86U15X-202

RATE OF AIR FLOW

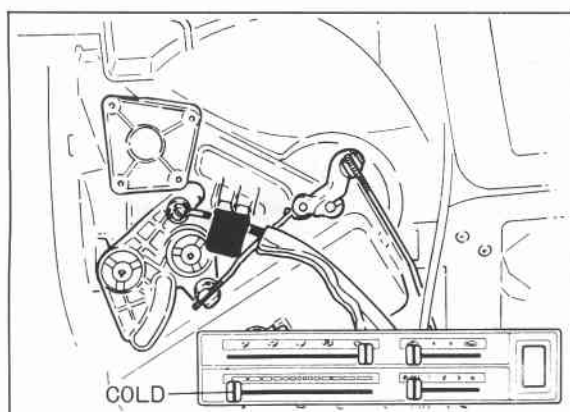
MODE	AIR	VENT OPEN	DEF OPEN	HEAT OPEN
VENT	FRESH	100%	—	—
BI-LEVEL	1/2 warm	50%	—	50%
HEAT	WARM	—	20%	80%
DEFROSTER/HEAT	WARM	—	50%	50%
DEFROSTER	WARM	—	100%	—

15 HEATER

LEVER CONTROL TYPE



69G15X-203



86U15X-203

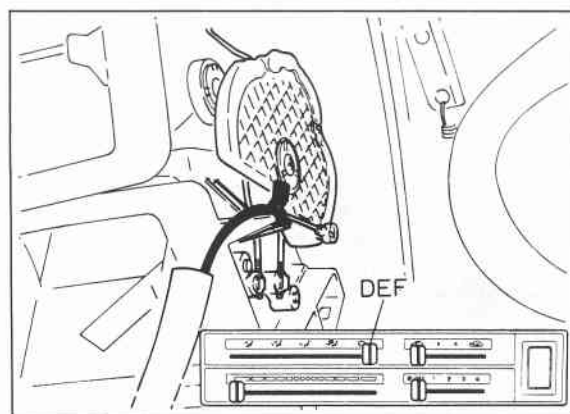
Adjustments

Air-mix door control wire

1. Set temperature control lever at MAX-COLD position.
2. Connect and clamp the control wire with the shutter lever on the heater unit all the way to the right side.

Caution

Move the temperature control lever to be sure the wire is attached. Also, be sure it can move the full stroke between HOT and COLD.



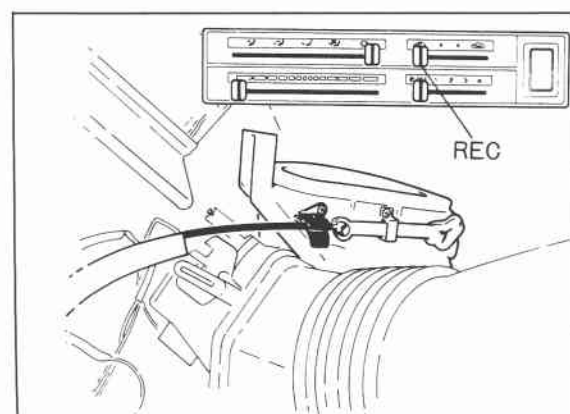
86U15X-204

Mode control wire

1. Set mode control lever to DEF position.
2. Connect and clamp the control wire with the shutter lever on the heater unit at its closest point.

Caution

Move the mode lever to be sure the wire is attached. Also, be sure it can move the full stroke between DEF and VENT.



86U15X-205

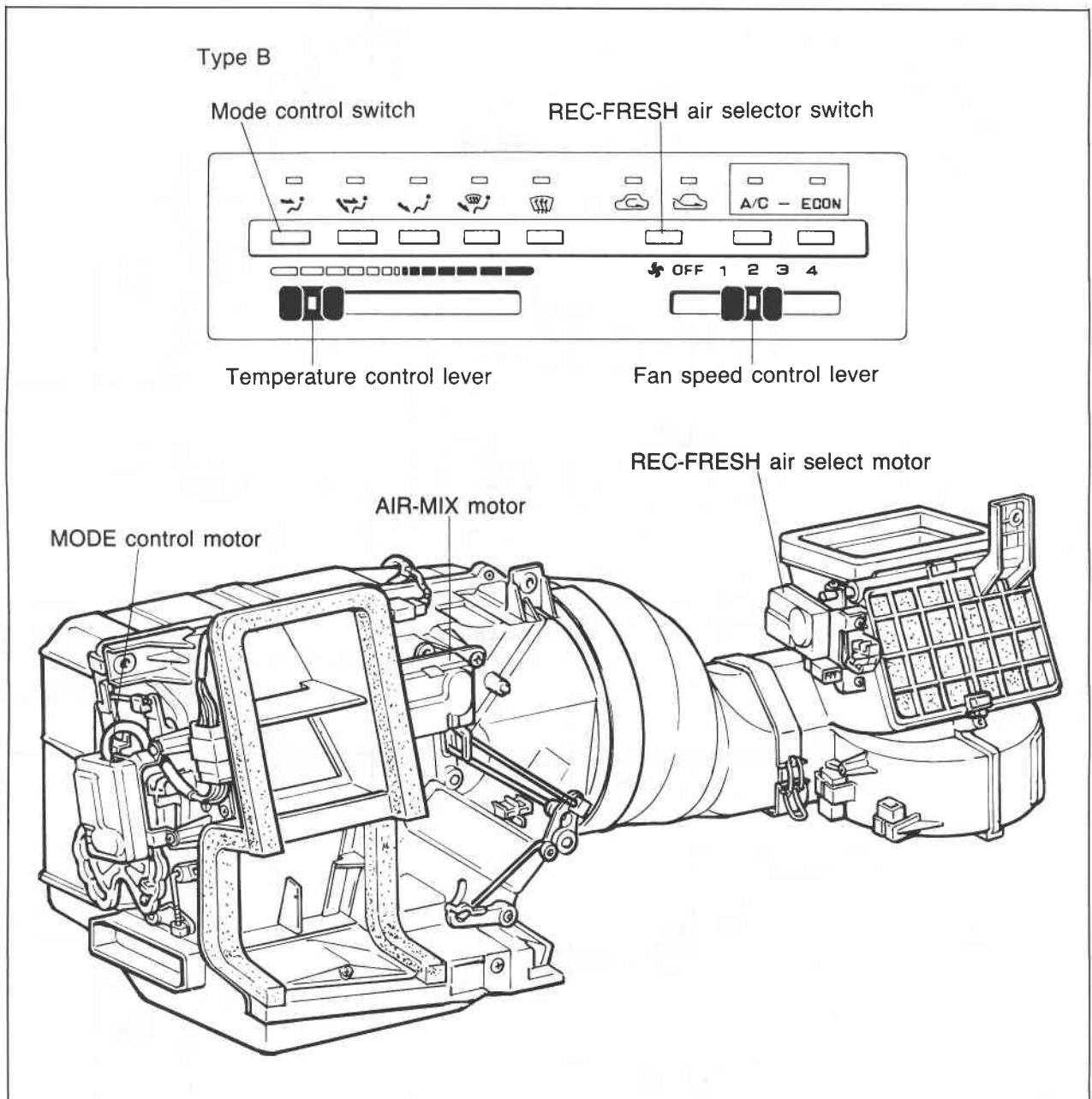
REC-FRESH air selector wire

1. Set the selector lever to REC position.
2. Connect and clamp the control wire with the shutter lever on the blower unit at its closest point.

Caution

Move the rec-fresh lever to be sure the wire is attached. Also, be sure it can move the full stroke between REC and FRESH.

LOGICAL CONTROL TYPE

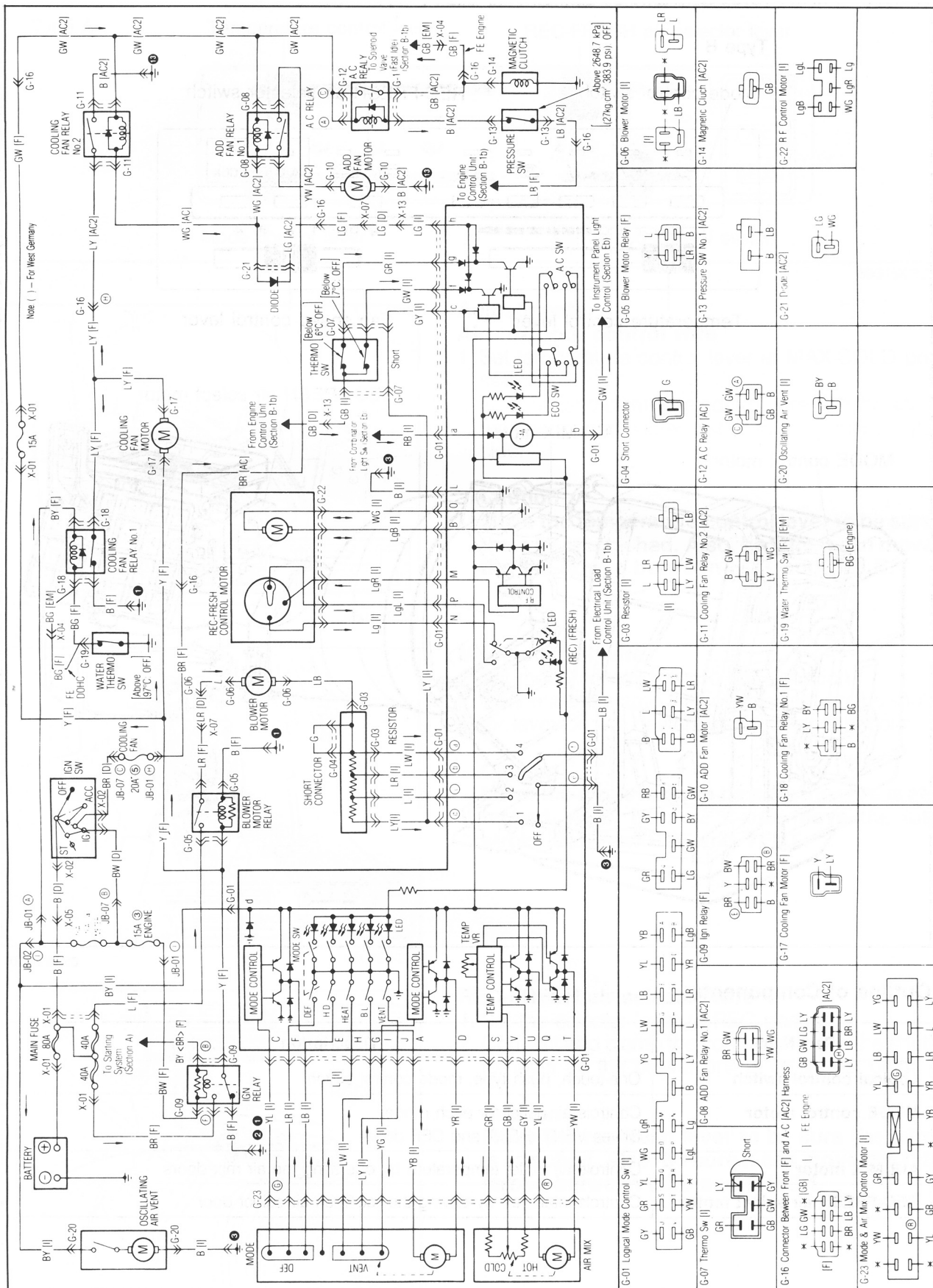


69G15X-207

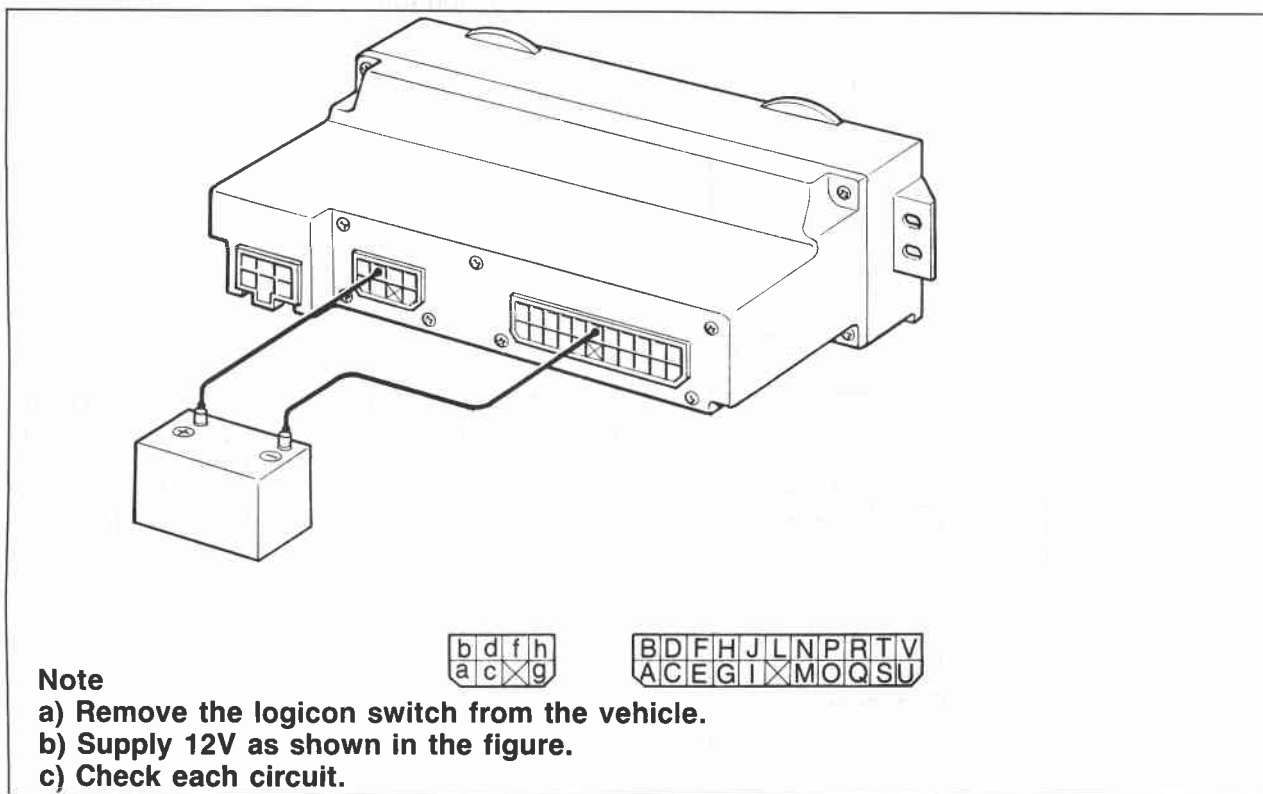
Outline of Components

Part Name	Description
Logical control switch	One-touch, push type, mode control switch
MODE control motor	Controls air outlet for each mode Drives VENT, HEAT and DEF doors
AIR MIX motor	Controls air outlet temperature by operating the air mix doors
REC-FRESH air select motor	Controls intake air by driving the rec-fresh air select door

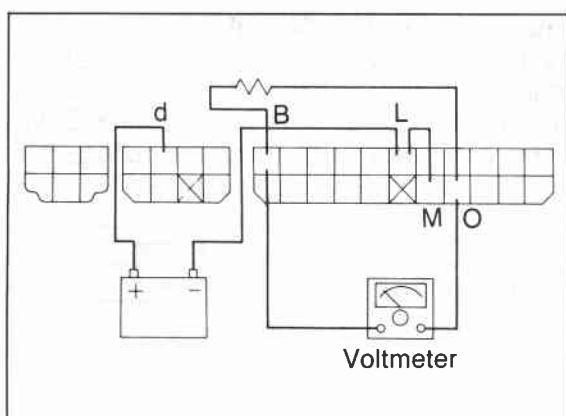
Circuit Diagram



LOGICON SWITCH Inspection



86U15X-207



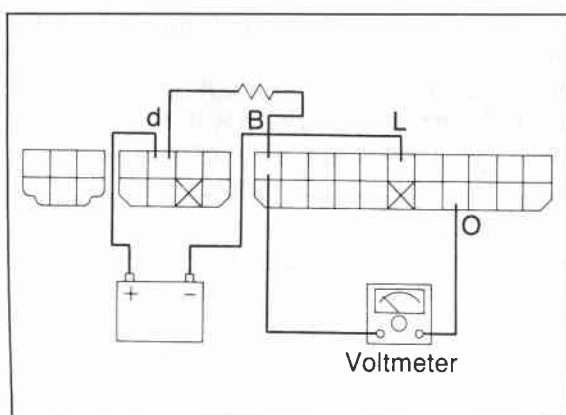
86U15X-208

Checking REC-FRESH Air Selector Circuit

1. Connect a jumper wire between M terminal and L terminal.

Connect a resistance (at least 1 k Ω) between B terminal and O terminal, and check the voltage between these terminals using a voltmeter.

Terminals	Voltage
B — O	Approx. 12V

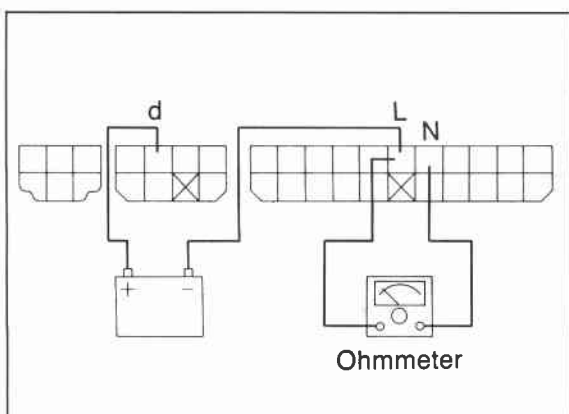


86U15X-209

2. Connect a resistance (at least 1 k Ω) between d terminal and B terminal, and check the voltage between d terminal and O terminal using a voltmeter.

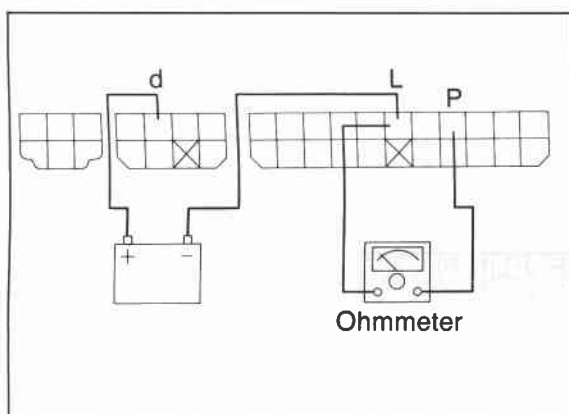
Terminals	Voltage
B — O	Less than 1V

15 HEATER



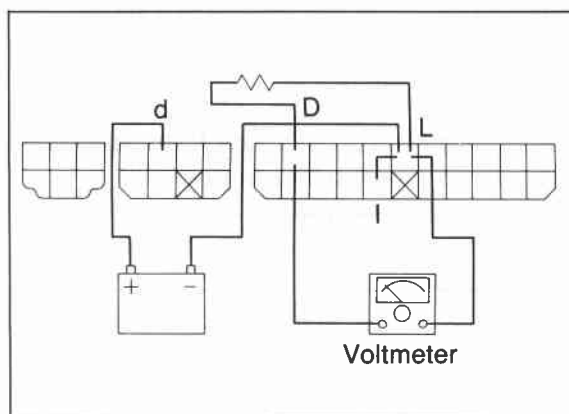
86U15X-210

3. Check for continuity between N terminal and L terminal with the REC-FRESH selector switch in FRESH position (out) using an ohmmeter.



86U15X-211

4. Check for continuity between P terminal and L terminal with the REC-FRESH air selector switch in REC position (in) using ohmmeter.



86U15X-212

Checking Mode Control Circuit

1. Connect a jumper wire between I terminal and L terminal.

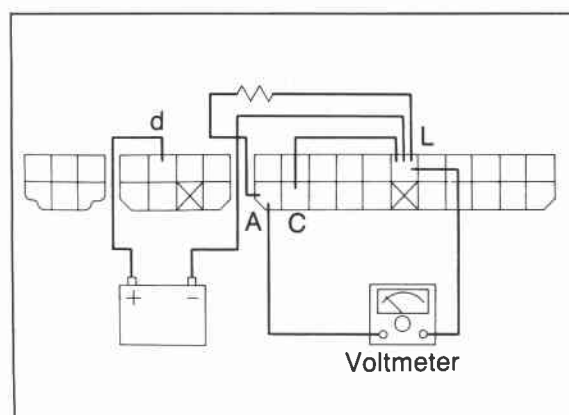
Connect a resistance (at least 1 k Ω) between D terminal and L terminal, and check the voltage between these terminals using a voltmeter.

Terminals	Voltage
D — L	Approx. 12V

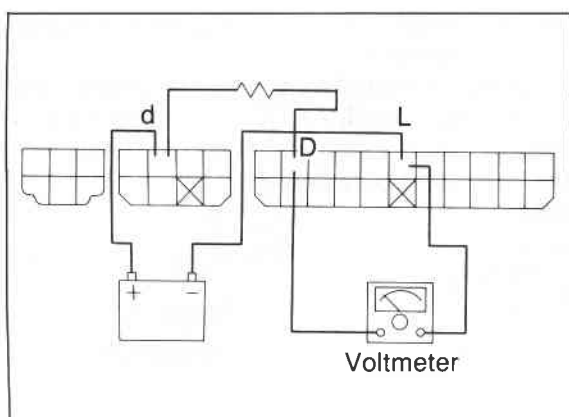
2. Connect a jumper wire between C terminal and L terminal.

Connect a resistance (at least 1 k Ω) between A terminal and L terminal, and check the voltage between these terminals using a voltmeter.

Terminals	Voltage
A — L	Approx. 12V



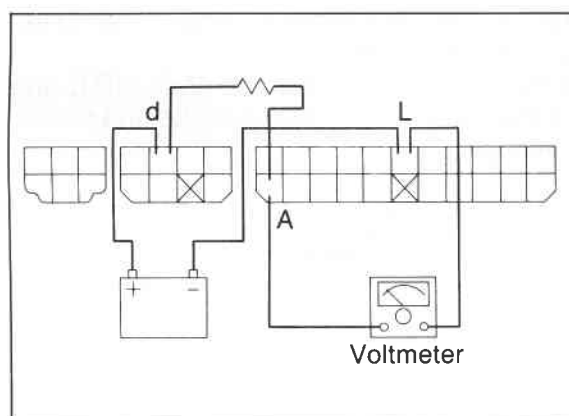
86U15X-213



86U15X-214

3. Connect a resistance (at least 1 k Ω) between d terminal and D terminal, and check the voltage between D terminal and L terminal using a voltmeter.

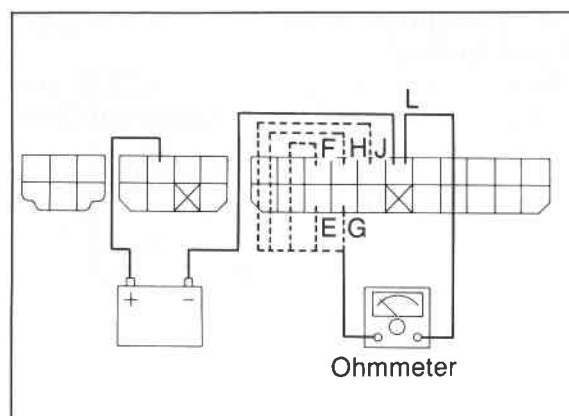
Terminals	Voltage
D — L	Less than 1V



86U15X-215

4. Connect a resistance (at least 1 k Ω) between d terminal and A terminal, and check the voltage between A terminal and L terminal using a voltmeter.

Terminal	Voltage
A — L	Less than 1V



86U15X-216

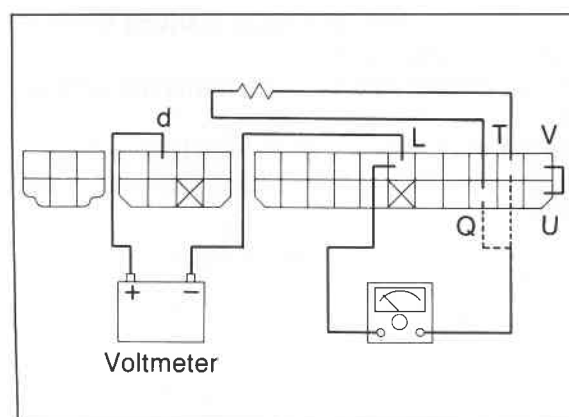
5. Check for continuity between each terminal with following condition using an ohmmeter.

Condition	Terminals	Continuity
Push the VENT switch	J — L	Yes
Push the B/L switch	G — L	Yes
Push the HEAT switch	H — L	Yes
Push the H/D switch	E — L	Yes
Push the DEF switch	F — L	Yes

Checking Air Mix Control Circuit

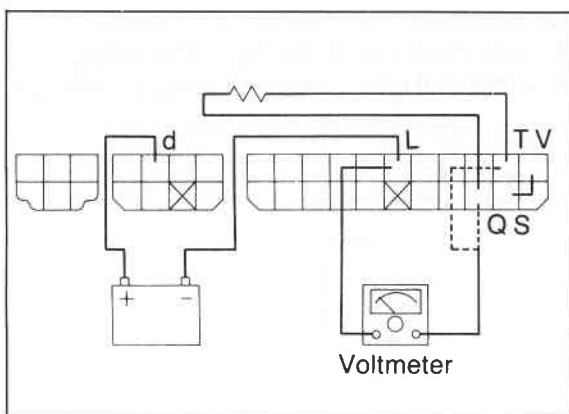
1. Connect a resistance (at least 1 k Ω) between Q terminal and T terminal. Set temperature control lever to center position between MAX HOT and MAX COLD. Connect a jumper wire between V terminal and U terminal, and check the voltage between each terminals.

Terminals	Voltage
T — L	Approx. 12V
Q — L	Less than 1V



86U15X-217

15 HEATER

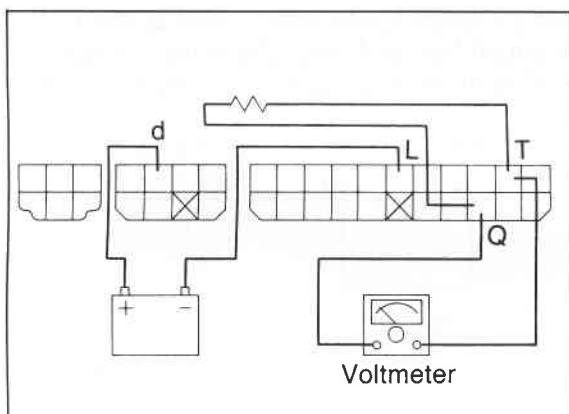


86U15X-218

2. Connect a resistance (at least 1 k Ω) between Q terminal and T terminal.

Set temperature control lever to center position between MAX HOT and MAX COLD. Connect a jumper wire between V terminal and S terminal, and check the voltage between each terminal using a voltmeter.

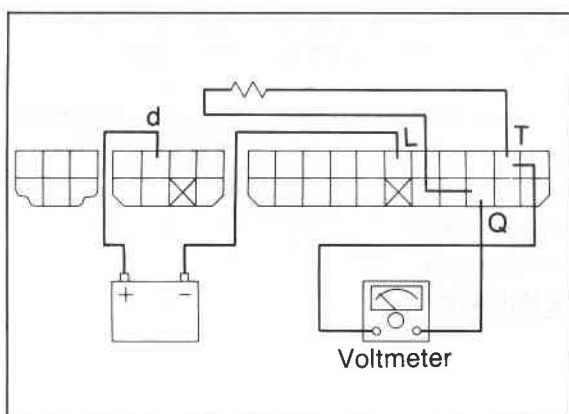
Terminals	Voltage
Q — L	Approx. 12V
T — L	Less than 1V



86U15X-219

3. Connect a resistance (at least 1 k Ω) between Q terminal and T terminal.

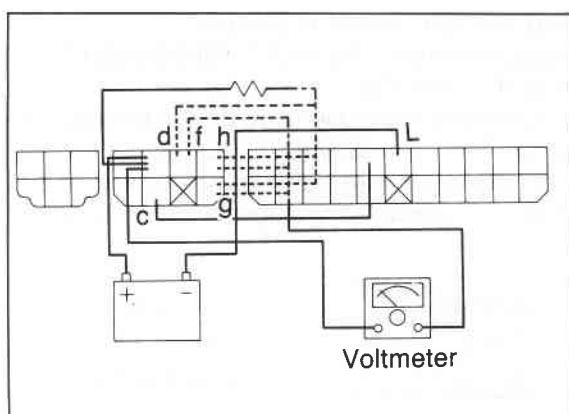
Set temperature control lever to MAX HOT, and check that Q terminal voltage is higher than terminal t voltage.



86U15X-220

4. Connect a resistance (at least 1 k Ω) between Q terminal and terminal t.

Set temperature control lever to MAX COLD, and check that T terminal voltage is higher than Q terminal voltage.



86U15X-221

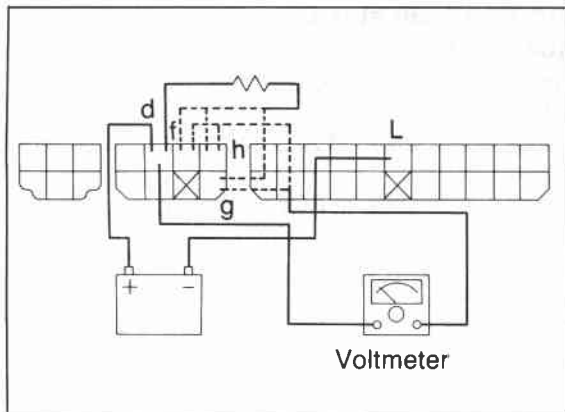
Checking A/C Switch and ECO Switch Circuit

1. Turn the A/C switch off.

Connect a jumper wire between terminal c and terminal L.

Connect a resistance (at least 1 k Ω) between each terminals, and check the voltage between these terminals.

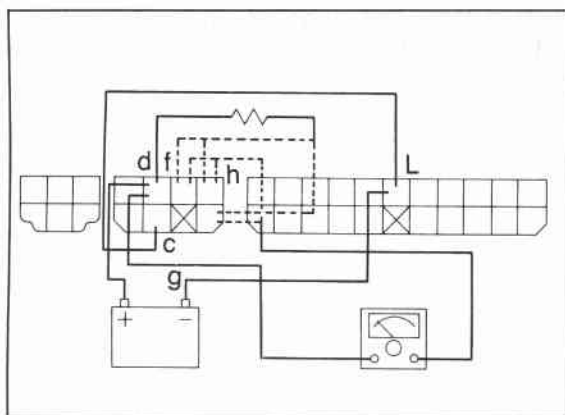
Terminals	Voltage
d — g	0V
d — f	0V
d — h	0V



86U15X-222

- Turn the A/C switch on.
Connect a resistance (at least 1 k Ω) between each terminal, and check the voltage between these terminals.

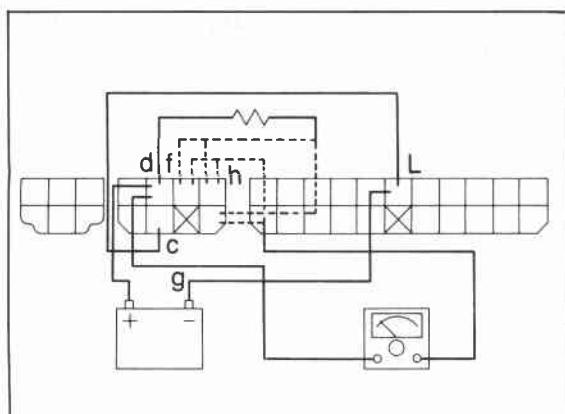
Terminals	Voltage
d — g	0V
d — f	0V
d — h	0V



86U15X-223

- Turn the A/C switch on and the ECO switch off.
Connect a jumper wire between terminal c and L terminal.
Connect a resistance (at least 1 k Ω) between each terminals, and check the voltage between these terminals.

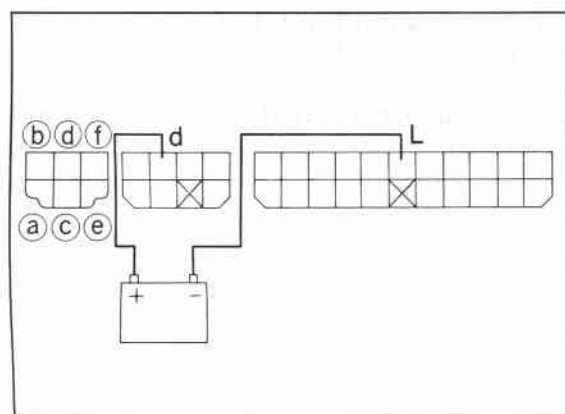
Terminals	Voltage
d — g	0V
d — f	Approx. 12V
d — h	Approx. 12V



86U15X-224

- Turn the A/C switch and the ECO switch on.
Connect a jumper wire between terminal c and L terminal.
Connect a resistance (at least 1 k Ω) between each terminals, and check the voltage between these terminals.

Terminals	Voltage
d — g	Approx. 12V
d — f	0V
d — h	Approx. 12V



86U15X-225

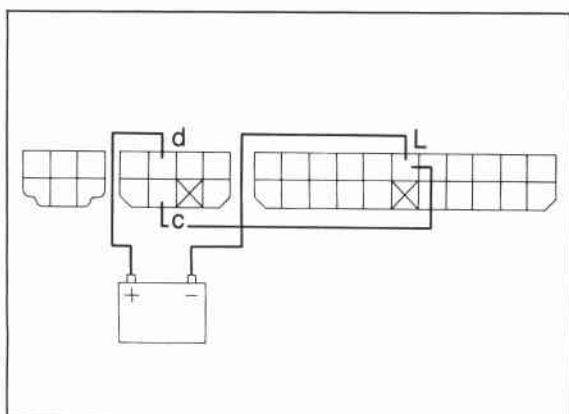
Checking Fan Speed Control Lever

Check for continuity between each terminal of 6 pin connector.

Fan switch condition	(a)	(b)	(c)	(d)	(e)	(f)
OFF						
1				○—○		
2			○—○		○—○	
3		○—○			○—○	○—○
4	○—○				○—○	○—○

○—○: indicates continuity

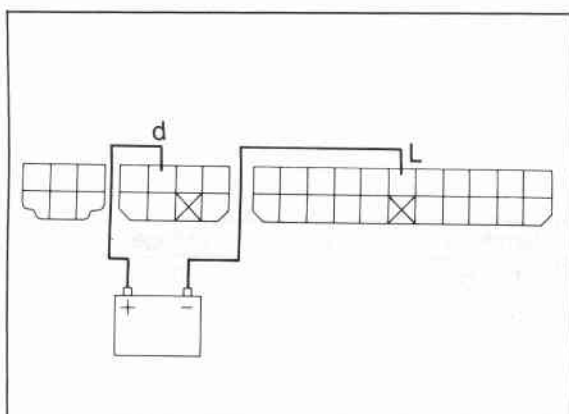
15 HEATER



86U15X-226

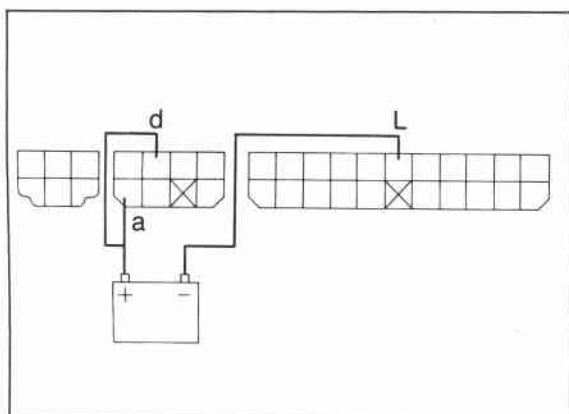
Checking Dim Indicator Circuits (Indicator circuit)

1. Connect a jumper wire between terminal c and terminal L.
Check for illumination at A/C switch indicator with A/C switch on.
Check for illumination at ECO switch indicator with ECO switch on.



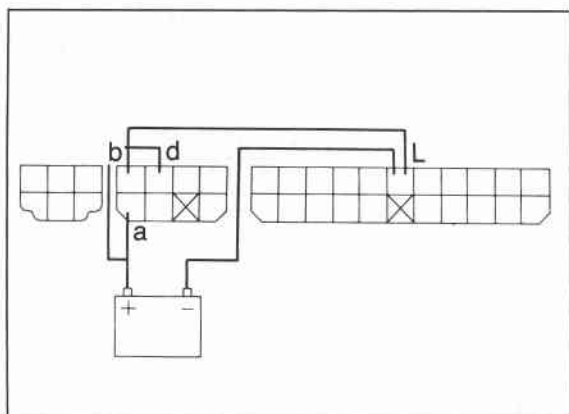
86U15X-227

2. Check that the mode control switch and REC-FRESH select switch indicators when the respective switches ON.



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3. Apply 12V to terminal a, and check that the indicators are dim.



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Checking Illumination Circuit

1. Connect a jumper wire between terminal b and terminal L.
2. Apply 12V to terminal a, and check that the indicators are dim.