

BODY ELECTRICAL SYSTEM

Return To Main Table of Contents

GENERAL	2
LOCATION OF ELECTRICAL COMPONENTS	7
FUSIBLE LINKS AND FUSES	15
IGNITION SWITCH	16
INSTRUMENTS, GAUGES AND WARNING LAMPS ...	17
MULTIFUNCTION SWITCH	27
LIGHTING SYSTEM	30
AUDIO	43
WINDSHIELD WIPER AND WASHER	64
CLOCK	71
CIGARETTE LIGHTER	72
SLIDING SUN ROOF	73
PASSIVE SEAT BELT	75
HORN	82
DOOR LOCK CONTROL SYSTEM	83
POWER WINDOW REGULATOR SYSTEM	86
REMOTE CONTROL MIRROR	91
FUEL FILLER DOOR OPENER	93
TRUNK LID OPENER	95
E.T.A.C.S.	97
AUTOMATIC TRANSAXLE AND KEY LOCK CONTROL SYSTEM	103

GENERAL**SERVICING THE ELECTRICAL SYSTEM**

1. When servicing the electrical system, disconnect the negative cable from the terminal of the battery.

Caution

1. Before connecting or disconnecting the negative cable, be sure to turn off the ignition switch and the lighting switch.

(If this is not done, there is the possibility of electrical parts being damaged.)

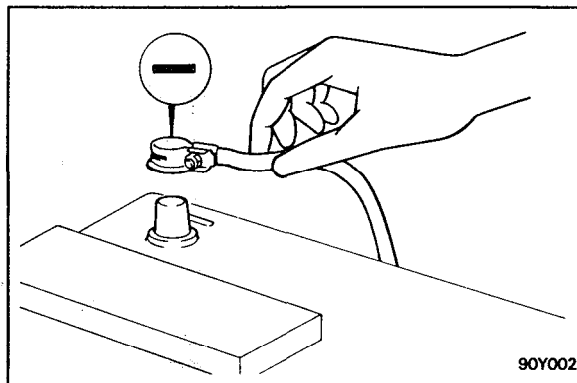
2. For MPI-equipped models, after completion of the work steps [when the battery's negative (-) terminal is connected], warm up the engine and allow it to idle for approximately five minutes under the conditions described below.

Engine water temperature: 80-95°C (175-203°F)

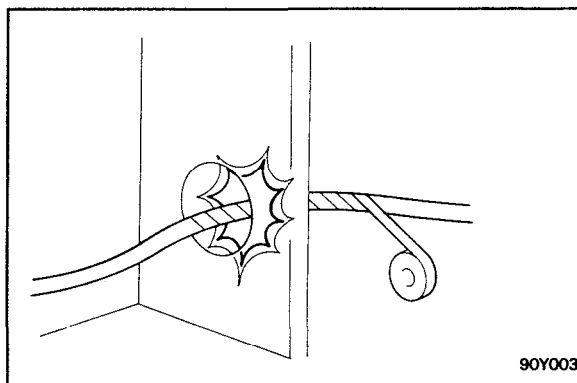
Lamps, electric fans, accessories: OFF

Transaxle: "N" or "P" position

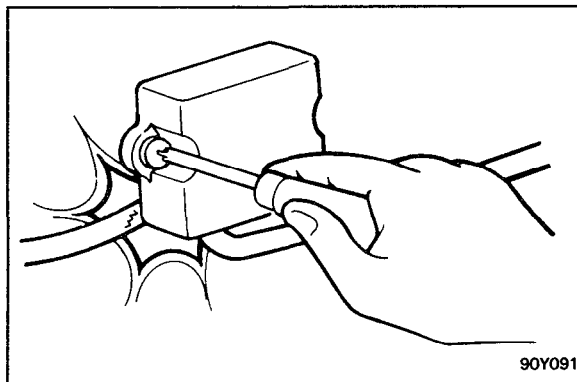
Steering wheel: neutral (center) position



2. If any section of a wiring harness interferes with the edge of a part or a corner, wrap the section of the harness with tape or something similar in order to protect it from damage.

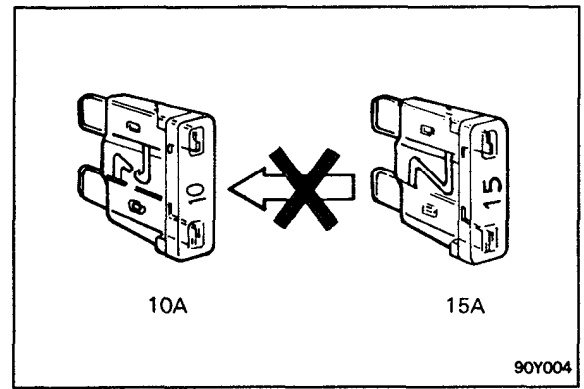


3. When installing any of the vehicle parts, be careful not to pinch or damage the wiring harnesses.

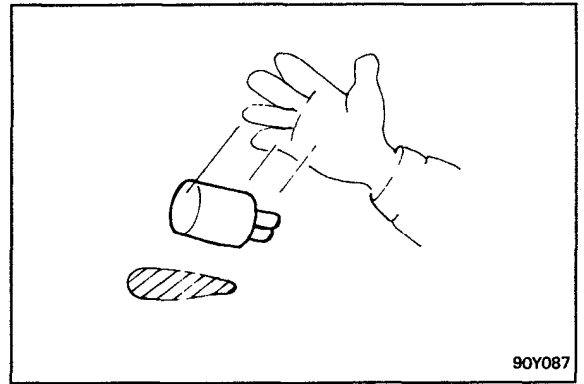


GENERAL

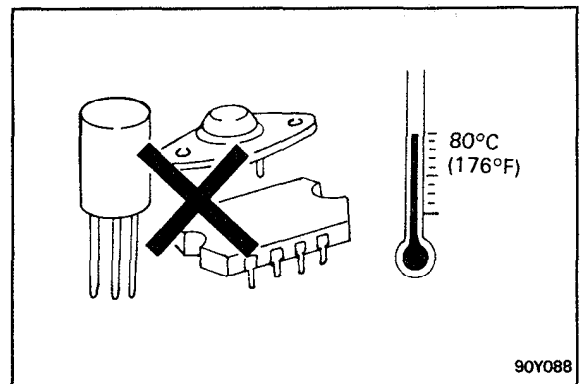
4. If a fuse is burnt-out, be sure to replace a fuse with the same ampere rating. If a fuse of higher capacity than specified is used, parts may be damaged and the danger of fire also exists.



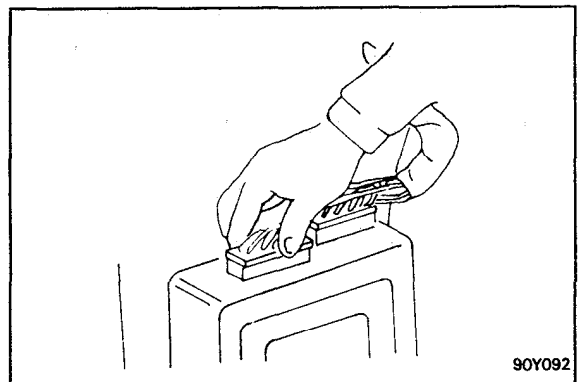
5. The sensors, relays, etc, must never be subjected to strong shocks.



6. The electronic parts used in the computer, relays, etc. are readily damaged by heat. Never let their temperature exceed 80°C (176°F).

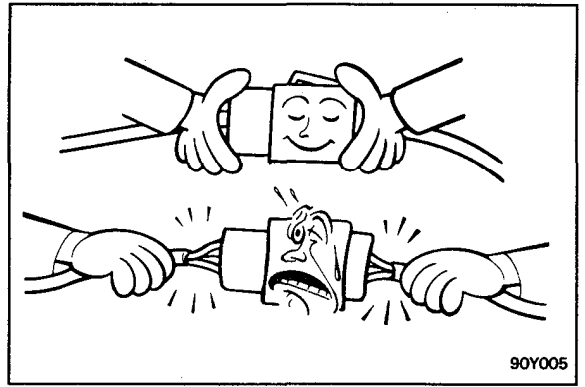


7. Loose connectors could be troubled. Make sure that the connectors are connected securely.

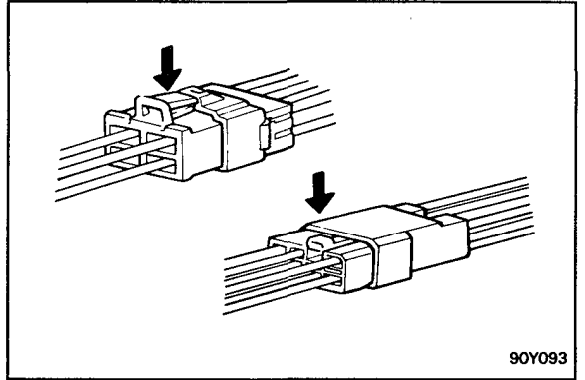


GENERAL

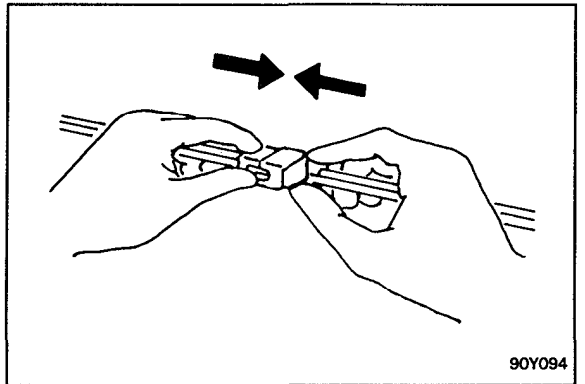
8. When removing a connector, be sure to pull only the connector, not the harness.



9. Remove connectors which have catches by pressing in the direction indicated by the arrows in the illustration.

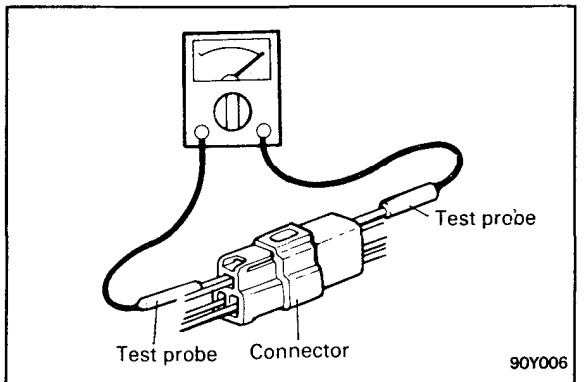


10. Join the connectors which have catches by inserting one into the other until a “snap” noise is heard.



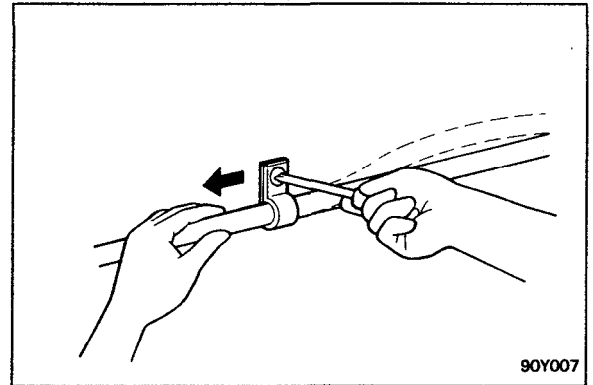
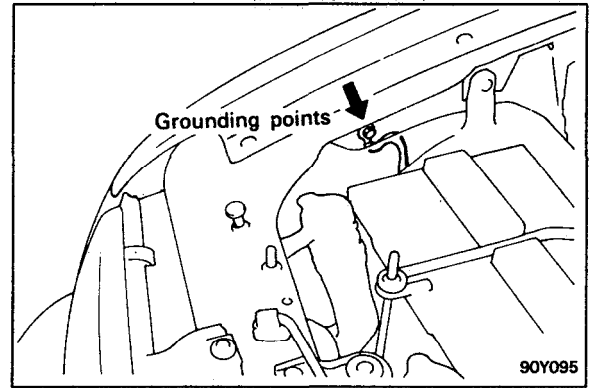
11. When using a circuit tester to perform continuity or voltage checks on connector terminals, insert the test probe from the harness side.

If the connector is a sealed connector, insert the test probe in through the hole in the rubber cap for the electrical wires, being careful not to damage the insulation of the wires. Continue to insert the test probe until it contacts the terminal.



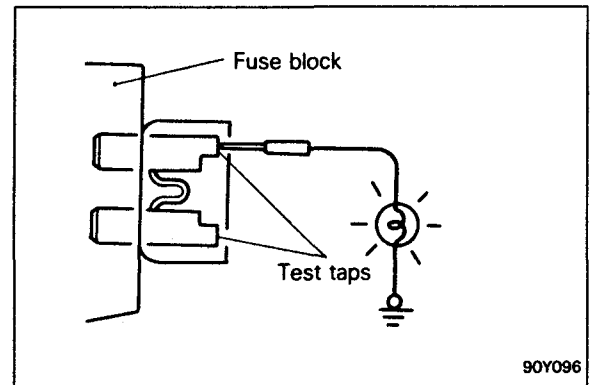
CHECKING CABLES AND WIRES

1. Check the terminal for tightness.
2. Check the terminals and wires for corrosion by battery electrolyte, etc.
3. Check the terminals and wires for open circuit or impending open circuit.
4. Check the wire insulation and coating for damage, cracks and deterioration.
5. Check the conductive parts of terminals for contact with other metallic parts (vehicle body and other parts).
6. Check grounding points to verify that there is continuity between attaching bolt(s) and vehicle body.
7. Check for incorrect wiring.
8. Check that the wiring is clamped securely to prevent them from contacting sharp corners of the vehicle body, etc. or hot parts (exhaust manifold, pipe, etc.).
9. Check that the wiring is clamped firmly to keep it away from the fan pulley, fan belt and other moving parts.
10. Check that the wiring between the vehicle body and the engine are made with adequate allowance for vibration.



CHECKING FUSES

A blade type fuse has test tabs that can be used to check the fuse without removing it from the fuse block. The fuse is okay if the test lamp comes on when its one lead is connected to the test tabs (one at a time) and the other lead is grounded. Make sure the key is in the correct position when checking fuses.



INSTALLATION OF RADIO EQUIPMENT

The computers of the electronic control system have been designed so that external radio waves will not interfere with their operation.

However, nearby amateur radio transmitters may affect the operation of the computers, even if the output of the transceiver is no more than 25W.

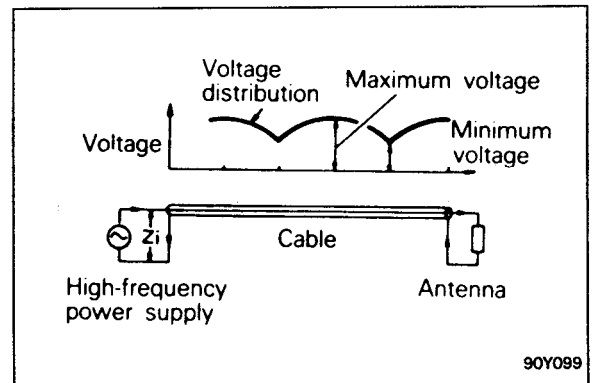
To protect each of the computers from interference by nearby transmitters, the following items should be observed.

1. Install the antenna on the roof or rear bumper.
2. Because radio waves are emitted from the coaxial cable of the antenna, keep it 200 mm (8 in.) away from the computers and the wiring harness. If the cable must cross the wiring harness, route it so that it runs at right angles to the wiring harness.
3. The antenna and the cable should be well matched, and the standing-wave ratio* should be kept low.
4. A transmitter having a large output should not be installed in the vehicle.
5. After installation of a transmitter, run the engine at idle, turn on the transmitter and make sure that the engine is not affected.

*STANDING-WAVE RATIO

If an antenna and a cable having different impedances are connected, the input impedance Z_i will vary in accordance with the length of the cable and the frequency of the transmitter, and the voltage distribution will also vary in accordance with the location.

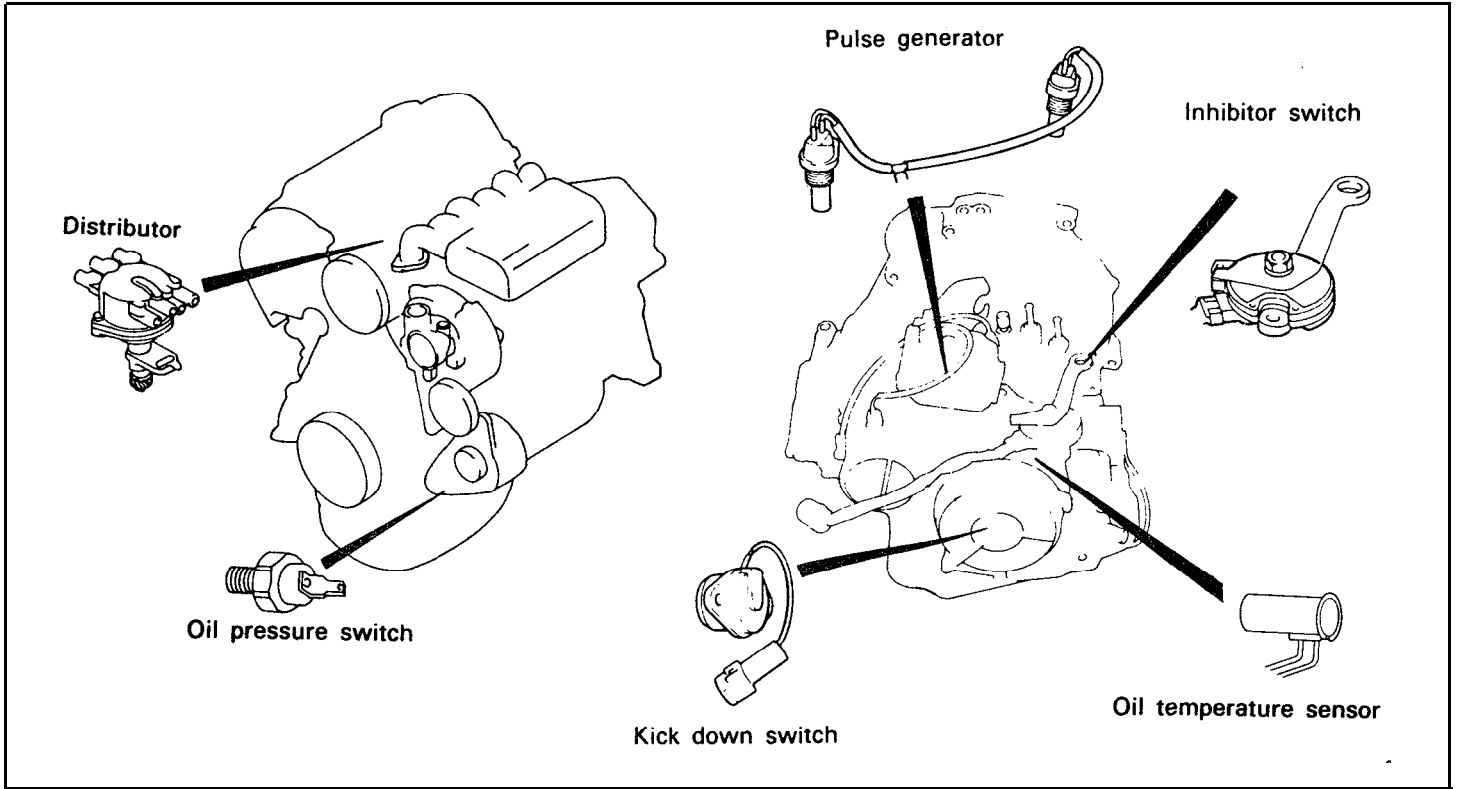
The ratio between this maximum voltage and minimum voltage is called the standing-wave ratio. It can also be represented by the ratio between the impedances of the antenna and the cable. The amount of radio waves emitted from the cable increases as the standing-wave ratio increases, and this increases the possibility of the electronic components being adversely affected.



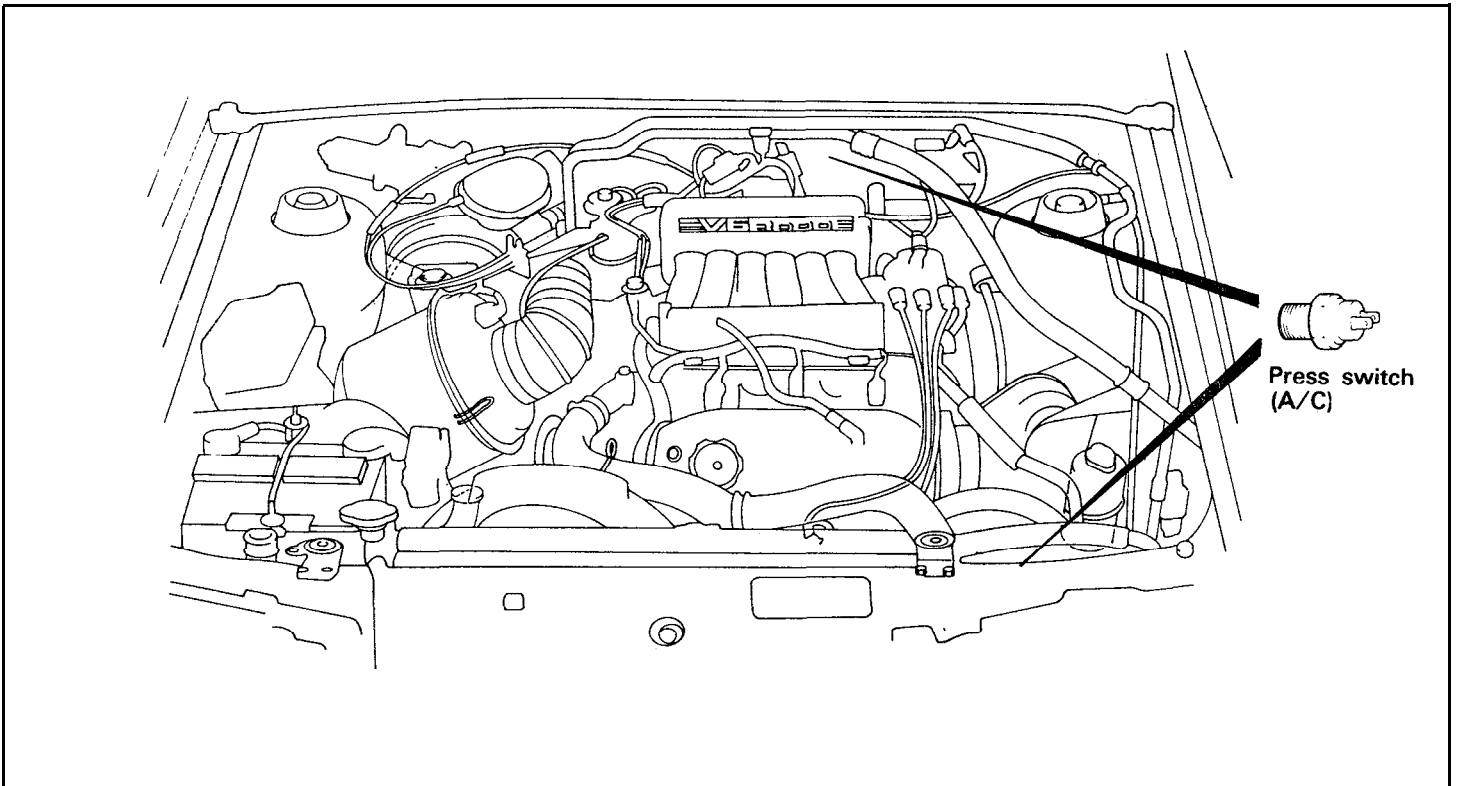
LOCATION OF ELECTRICAL COMPONENTS

LOCATION OF ELECTRICAL COMPONENTS

ENGINE AND TRANSAXLE

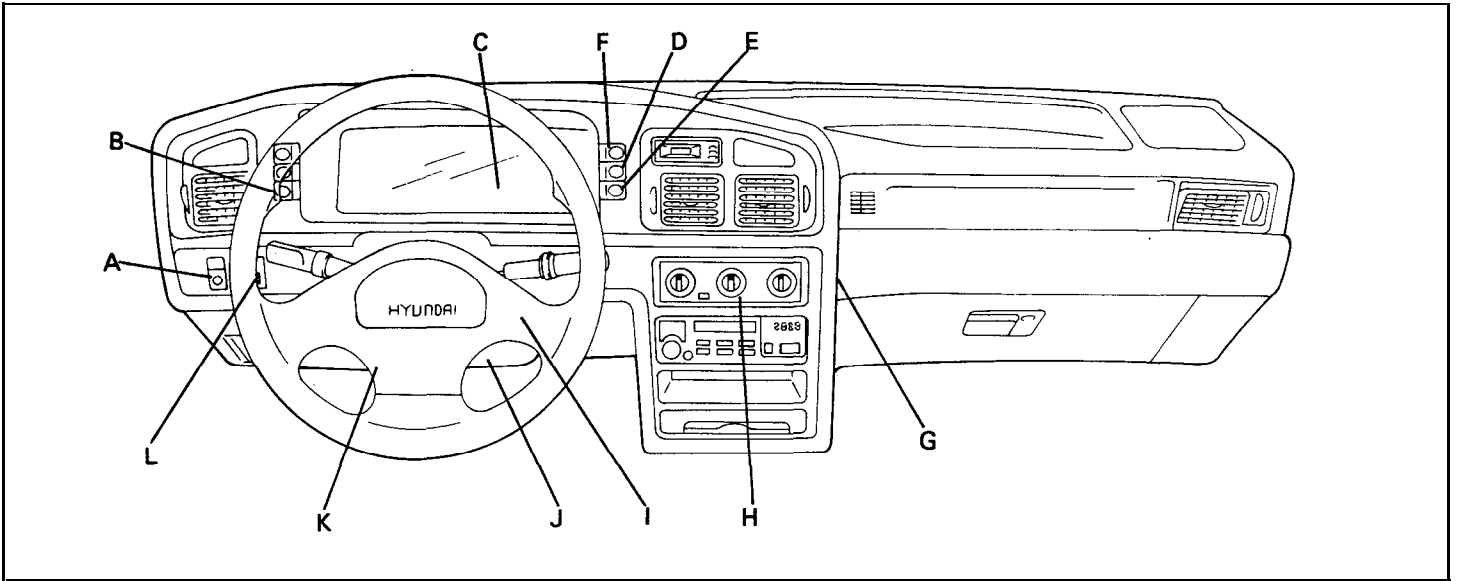


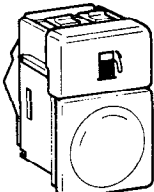
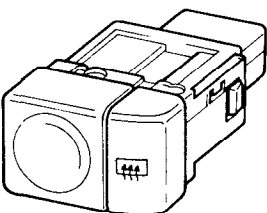
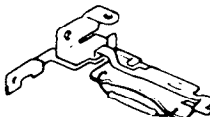
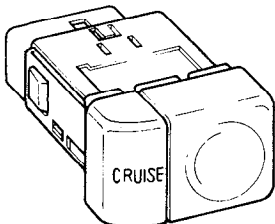
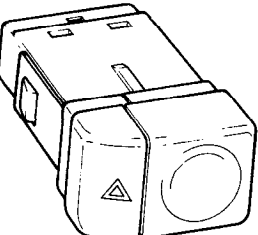
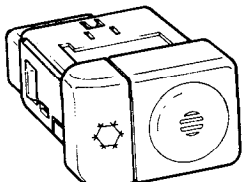

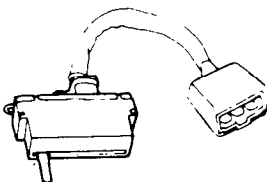


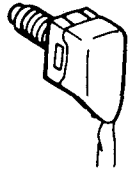
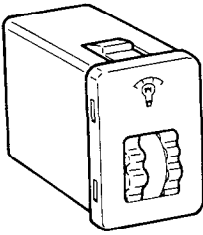
ENGINE COMPARTMENT



LOCATION OF ELECTRICAL COMPONENTS

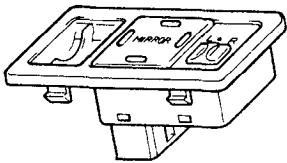
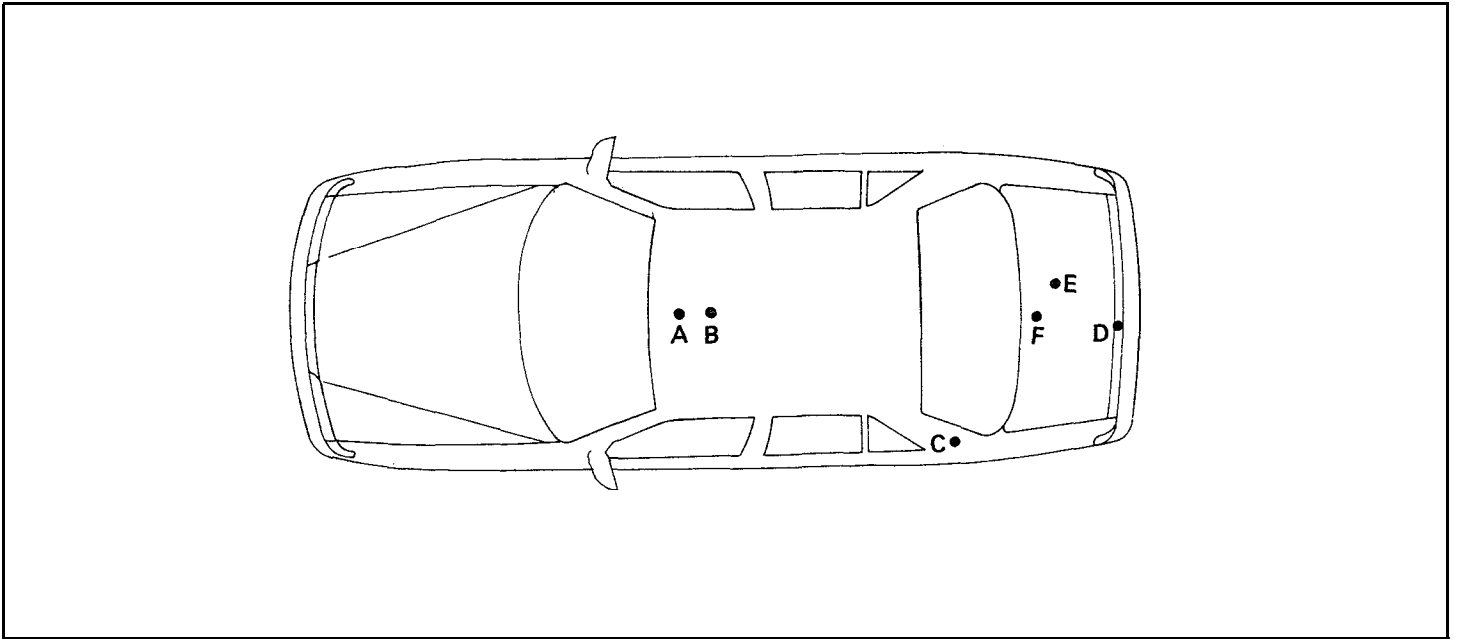
DASH AND STEERING COLUMN



90Y110	90Y111	90Y112	90Y113
			
A. Fuel filler door opener switch	B. Rear heated switch	C. Reed switch	D. Cruise control main switch
90Y114	90Y115	90Y116	90Y117
			
E. Hazard switch	F. Air conditioner switch (manual A/C only)	G. Glove box lamp switch	H. Blower switch
90Y118	90Y119	90Y120	90Y121
			
I. Ignition switch	J. Accel switch	K. Stop lamp switch	L. Rheostat

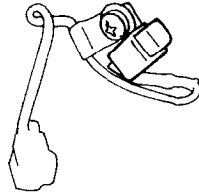
LOCATION OF ELECTRICAL COMPONENTS

PASSENGER COMPARTMENT



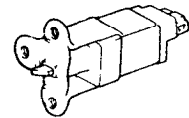
A. Outside mirror switch

90Y123



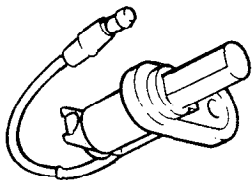
B. Parking brake switch

90Y124



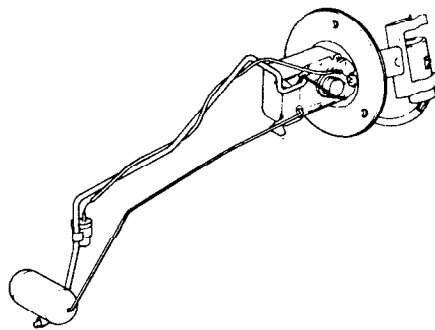
C. Fuel filler door opener

90Y125



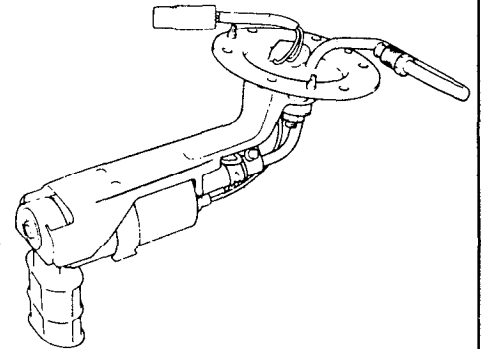
D. Trunk room lamp switch

90Y126



E. Fuel sender

90Y127

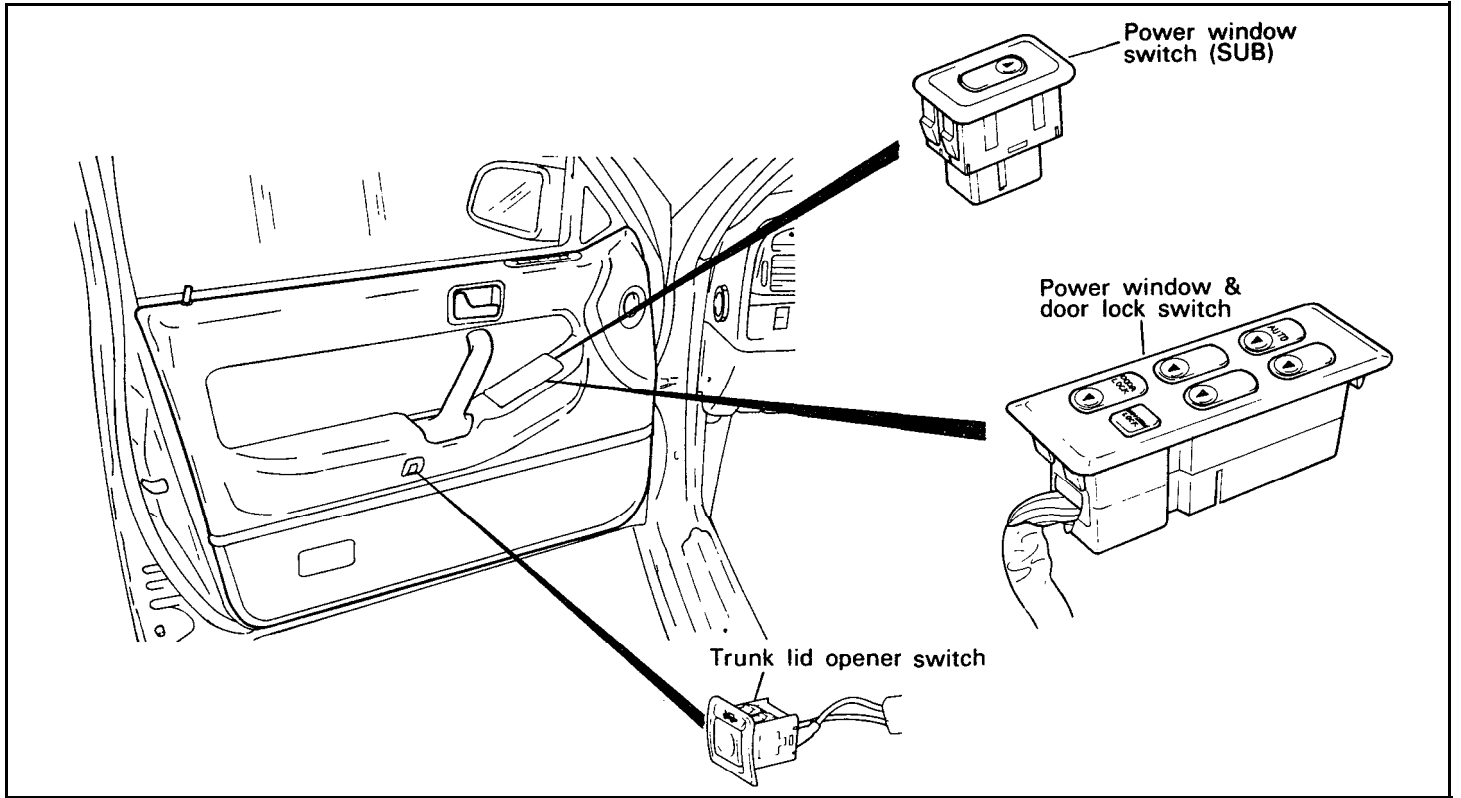


F. Fuel pump

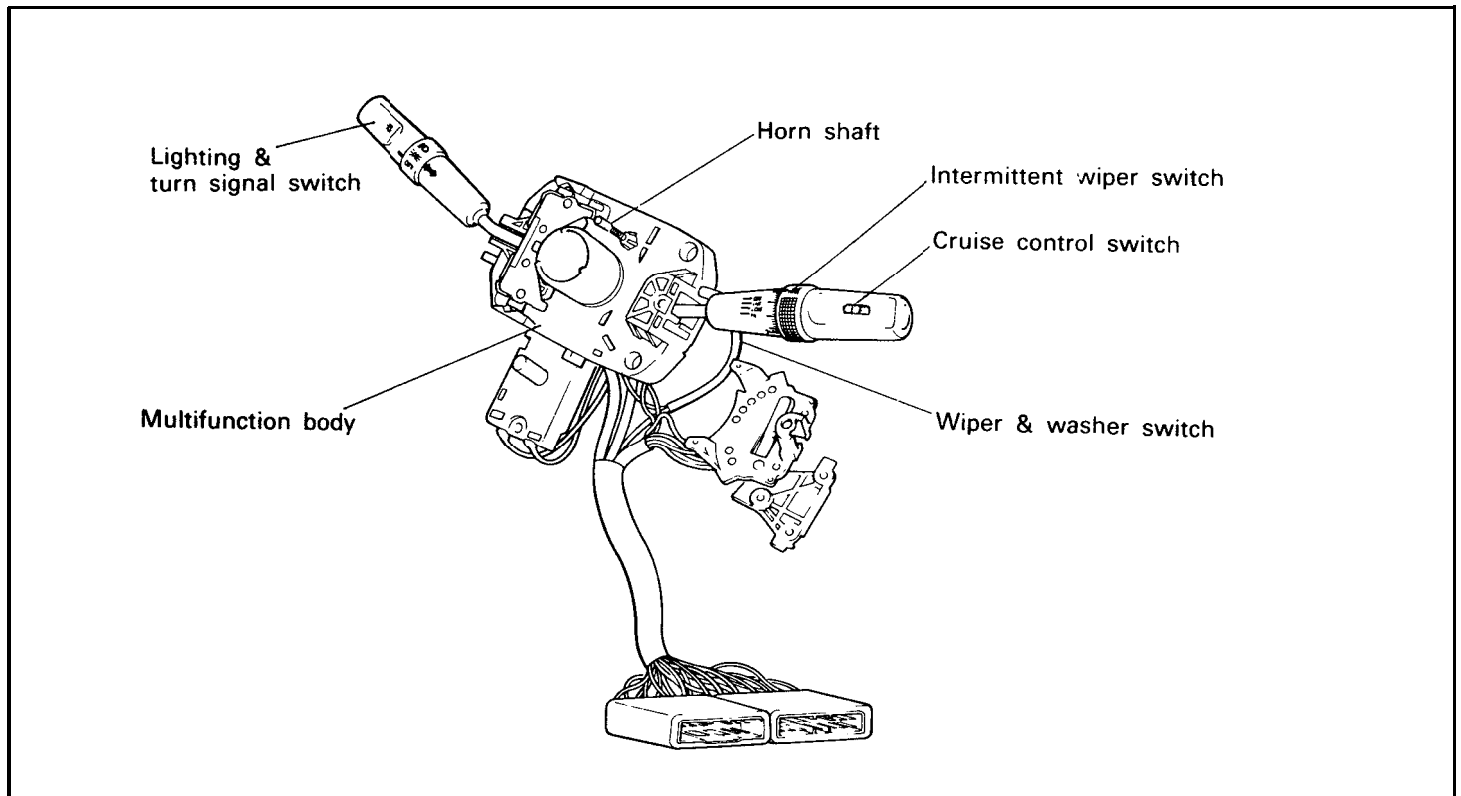
90Y128

LOCATION OF ELECTRICAL COMPONENTS

DOOR COMPARTMENT

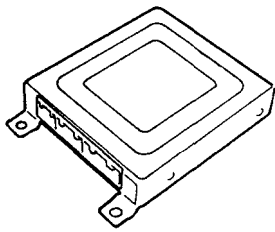
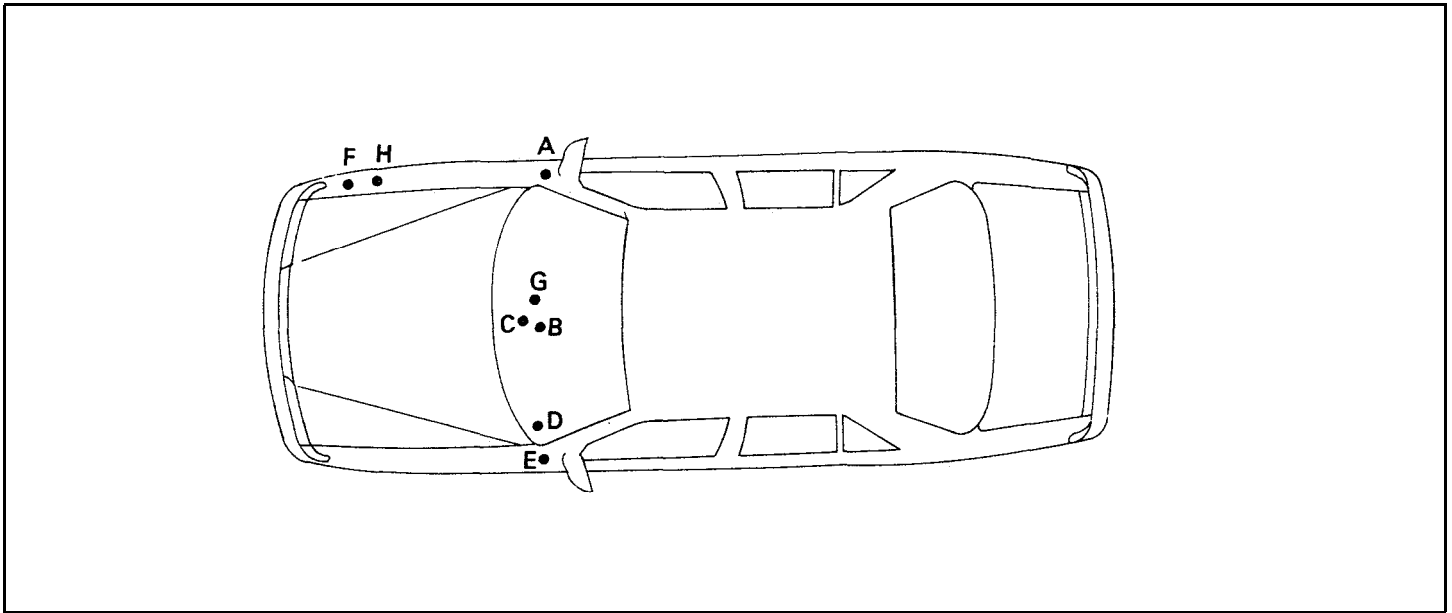


MULTIFUNCTION SWITCH

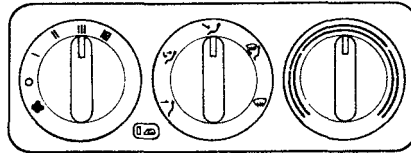


LOCATION OF ELECTRICAL COMPONENTS

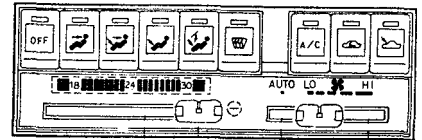
CONTROL UNIT



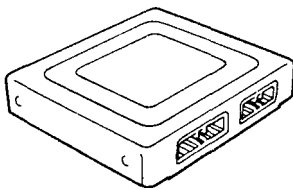
A. Electronic control unit (MPI)



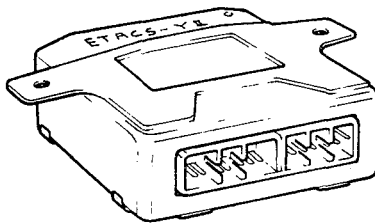
B. Air conditioner control unit (manual)



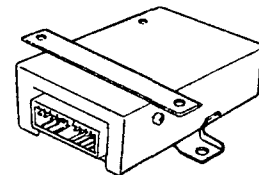
B. Air conditioner control unit (Auto A/C)



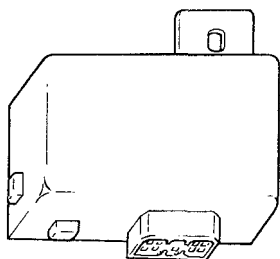
C. Transaxle control unit



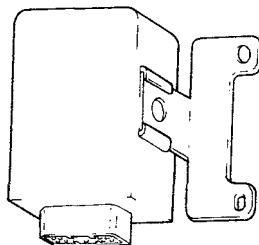
D. E.T.A.C.B.



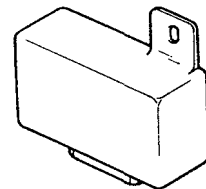
E. Auto speed control (cruise) unit



F. Day time running light (Canada)



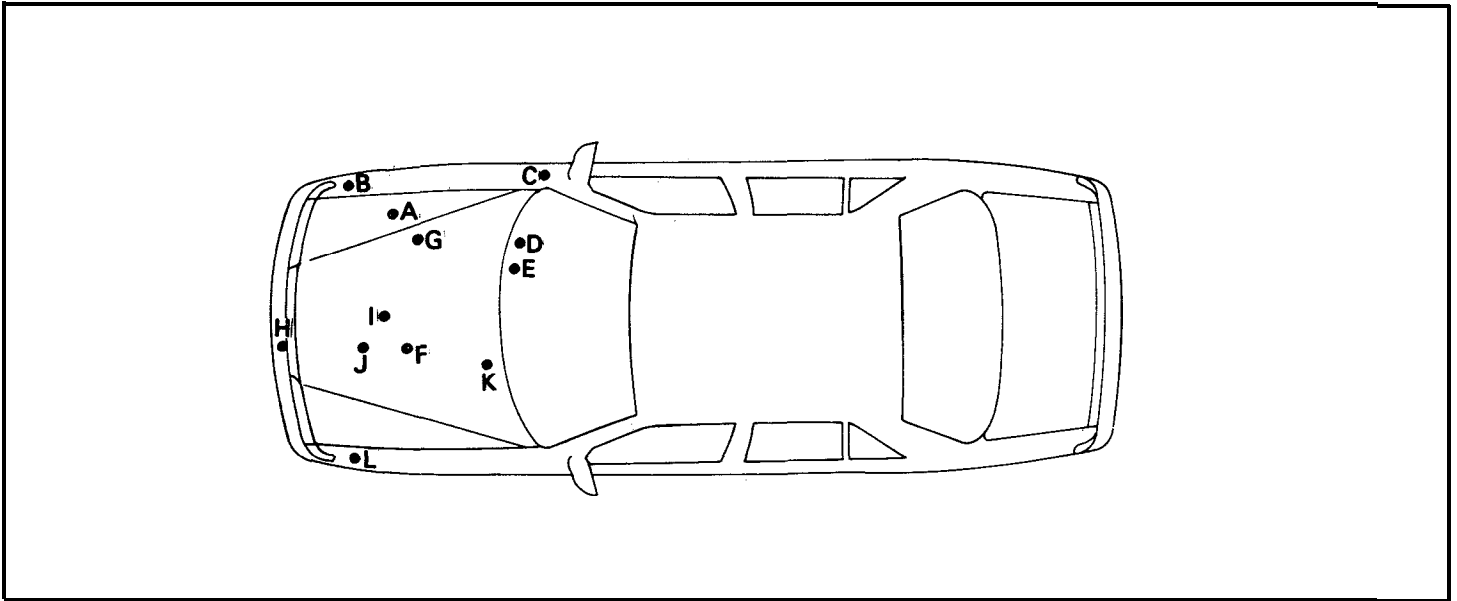
G. A/T & key lock control unit

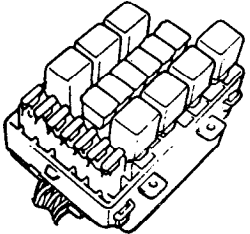
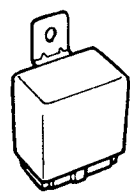
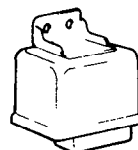


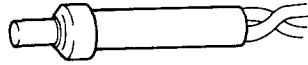
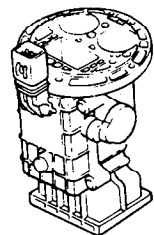
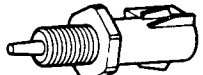

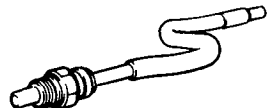




H. DIM DIP unit (U.K.)

LOCATION OF ELECTRICAL COMPONENTS

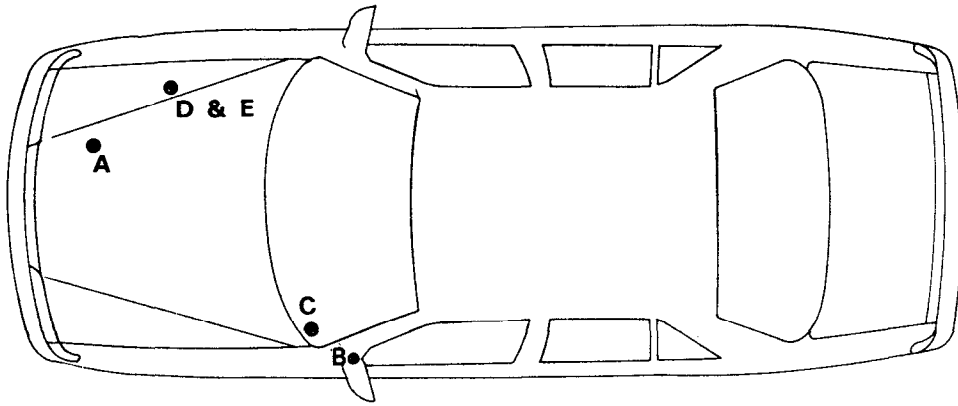
RELAY AND SENSOR



<p style="text-align: right;">90Y138</p>  <p>A. Relay box</p>	<p style="text-align: right;">90Y139</p>  <p>B. Blower relay</p>	<p style="text-align: right;">90Y140</p>  <p>C. Control relay</p>	<p style="text-align: right;">90Y141</p>  <p>D. Sun sensor (Auto A/C)</p>
<p style="text-align: right;">90Y142</p>  <p>E. In car sensor (Auto A/C)</p>	<p style="text-align: right;">90Y143</p>  <p>F. E.G.R. temperature sensor (California only)</p>	<p style="text-align: right;">90Y144</p>  <p>G. Air flow sensor</p>	<p style="text-align: right;">90Y145</p>  <p>H. Ambient sensor (Auto A/C)</p>
<p style="text-align: right;">90Y146</p>  <p>I. Water temperature sensor</p>	<p style="text-align: right;">90Y147</p>  <p>J. Oxygen sensor</p>	<p style="text-align: right;">90Y148</p>  <p>K. Relay with diode</p>	<p style="text-align: right;">90Y149</p>  <p>L. Condenser fan relay (low)</p>

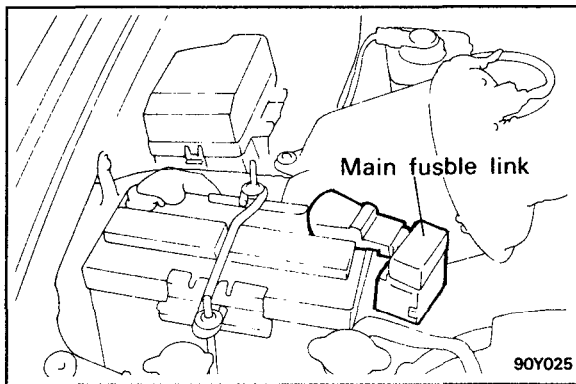
LOCATION OF ELECTRICAL COMPONENTS

FUSIBLE LINK AND FUSES

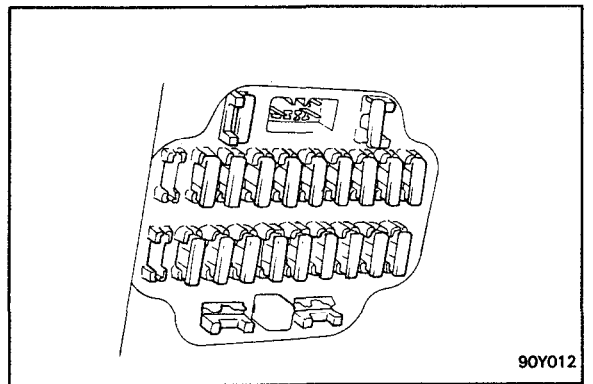


- A. Main fusible link
- B. Fuse box
- C. Relay box
- D. Sub fusible link
- E. Dedicated fuse (located in engine compartment relay box)

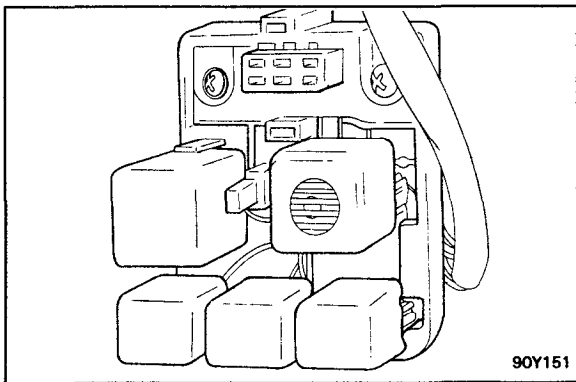
A



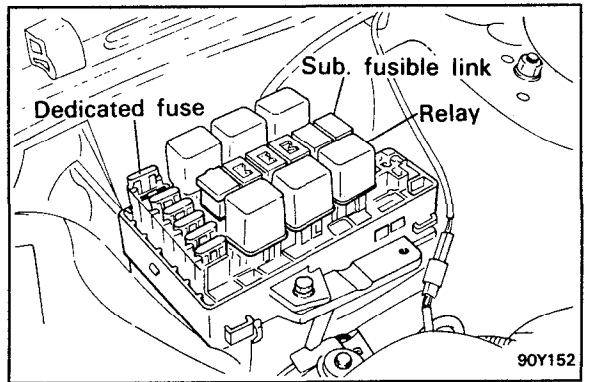
B



C

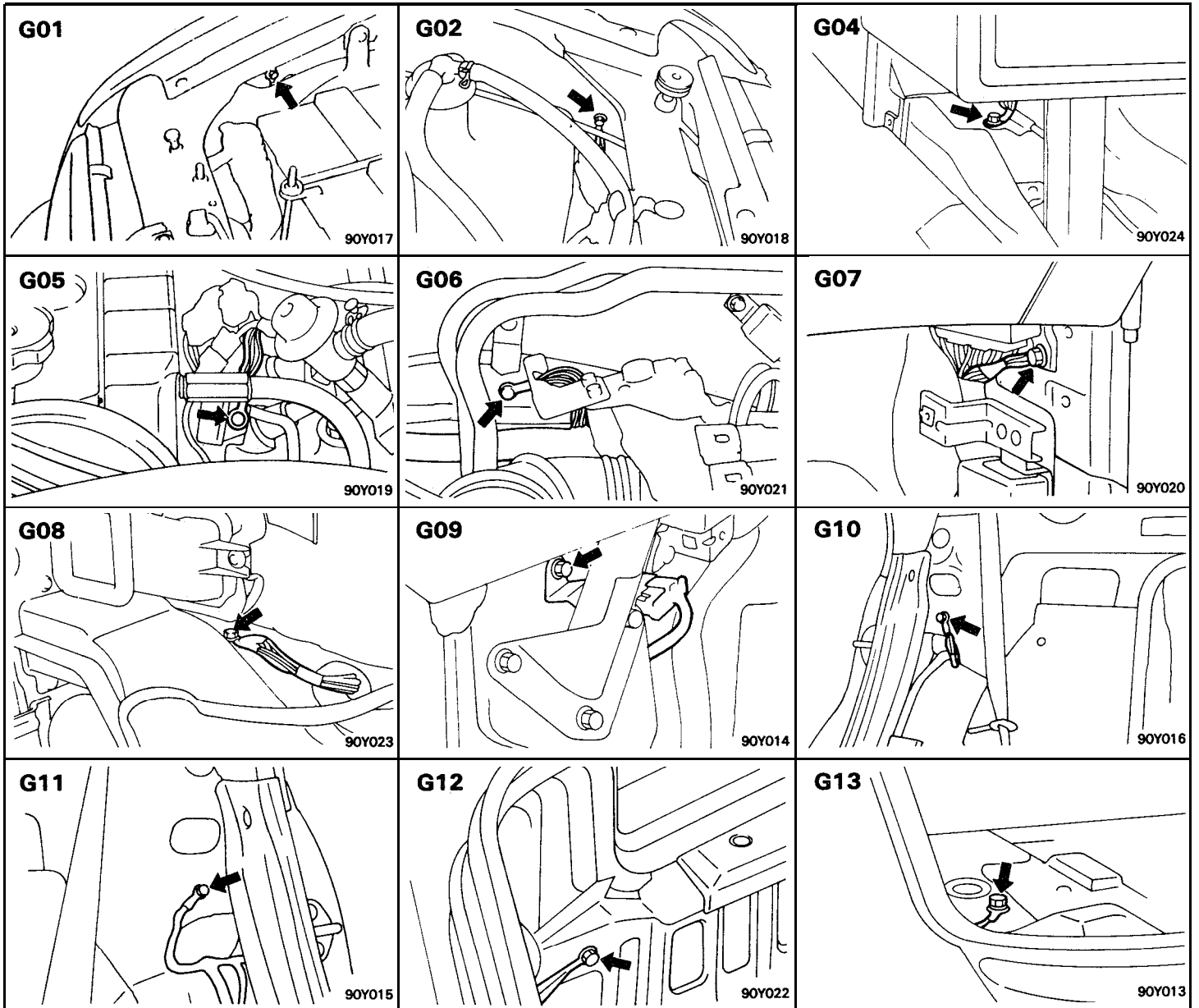
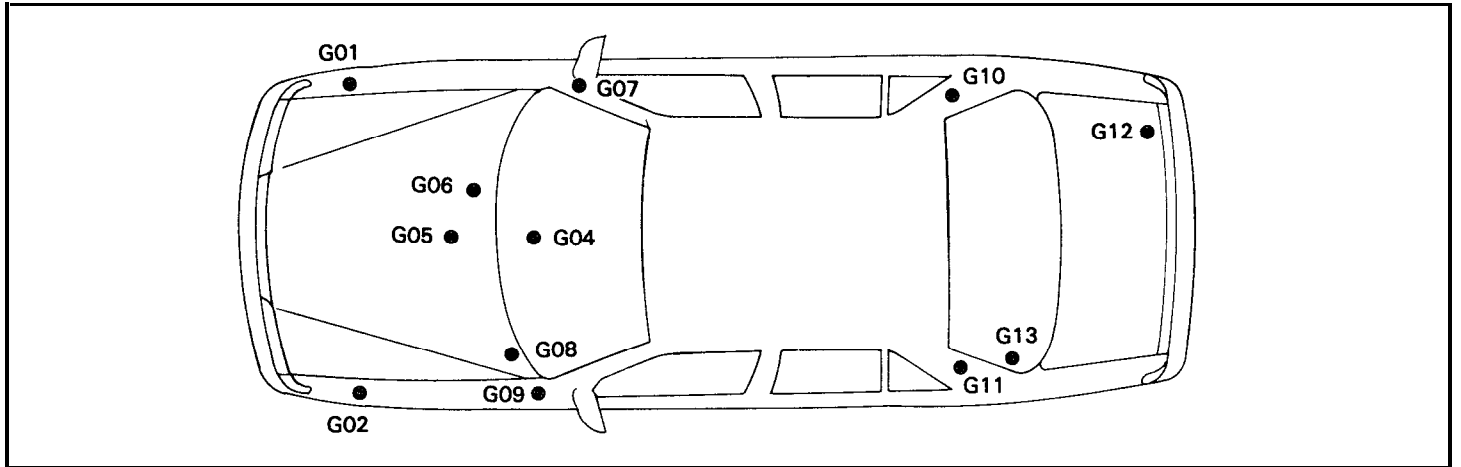


D & E



LOCATION OF ELECTRICAL COMPONENTS

GROUNDING POINT LOCATIONS



FUSIBLE LINKS AND FUSES

FUSIBLE LINK

SPECIFICATIONS

Items	Specifications						
Main fusible link	Rated capacity	Circuit		Type	Housing color		
	60A	Charging		Screw up	Yellow		
	20A	Cooling		Screw up	Blue		
Sub. fusible link (Located in engine compartment relay box)	Circuit Item	P/WDW	Head lamp	Battery	ECI	Air conditioner	Ignition switch
	Rated capacity	30A	30A	50A	20A	30A	30A
	Housing color	Pink	Pink	Green	Blue	Green	Pink
Type	Connector type						

INSPECTION

1. Check for a blown fusible link with an ohmmeter.
2. If a fusible link burns out, there is a short or some other problem in the circuit. Carefully determine the cause and correct it before replacing the fusible link.

NOTE

The fusible link will blow within 15 seconds if a higher current than specified flows through the circuit.

FUSE BOX

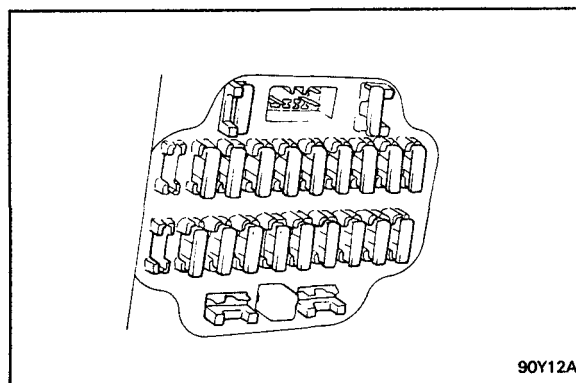
INSPECTION

1. Be sure there is no play in the fuse holders, and that the holders hold the fuses securely.
2. Check the fuse capacities for each circuit.
3. Check for any blown fuses.

If a fuse is to be replaced, be sure to use a new fuse of the specified capacity. Always determine why the fuse has blown and eliminate the problem before installing a new fuse.

CAUTION

Never use a fuse of higher capacity than specified.



90Y12A

IGNITION SWITCH

INSPECTION

1. Separate the connector located under the steering column.
2. Inspect the switch continuity between the terminals.
3. If continuity is not as specified, replace the switch.

Operation		Ignition switch						Door warning switch		Lock	
Switch position	Key	1	2	3	4	5	6	7	8	RO	RE
LOCK	Removed									L	L
	Inserted									L	F
ACC		○	————	○				○	○	F	F
ON		○	○		○	————	○			F	F
START			○	○	○	○				F	F

NOTE

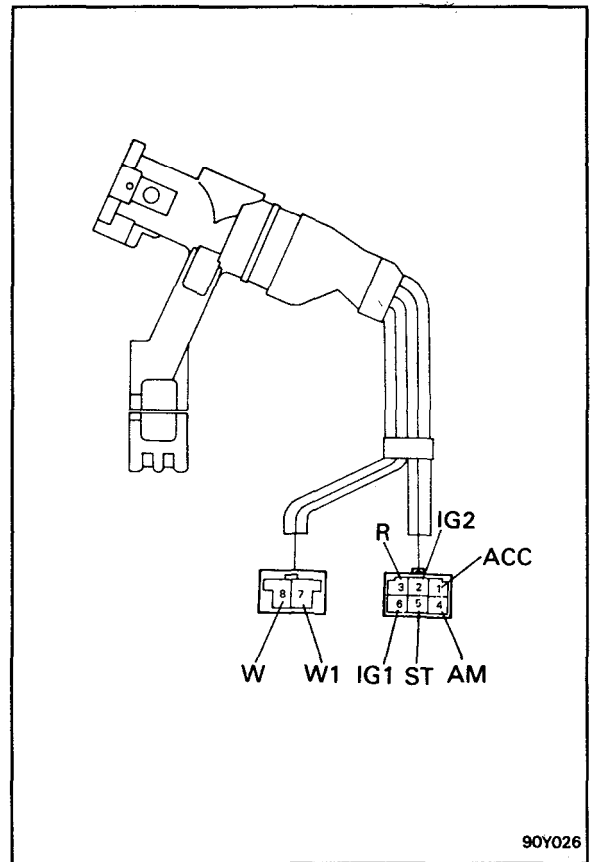
○—○ indicates that there is continuity between the terminal.

RO : Round the locking bar

RE : Return the locking bar

L : Lock

F : Free



90Y026

INSTRUMENTS, GAUGES AND WARNING LAMPS

INSTRUMENT CLUSTER SPECIFICATIONS

Analog Type

Items	Specifications
Speedometer Type	Eddy current, push connection type
Tachometer Type	Electronic type
Fuel gauge Type	Air cored type
Temp gauge Type	Air cored type
Volt gauge Type	Air cored type
Oil gauge Type	Air cored type

Indicators and Warning Lamps

Items	Specifications	
	Wattage	Color
Indicator lamps		
Direction indicator (LH. RH) W	1.2	Green
Battery charging W	1.2	Red
Oil pressure W	1.2	Red
Brake failure W	1.2	Red
Door warning W	1.2	Amber
Rear window defogger W	1.2	Amber
Check engine W	1.2	Amber
Low beam W	1.2	Green
Safety belt W	1.2	Red
High beam W	1.2	Blue
Low Beam W	1.2	Blue
Hazard W	1.2	Red
Low fuel W	3.0	Amber
Trunk lid opener W	1.2	Amber
Low washer W	1.2	Amber
Illumination	3.4	
A/T position indication		
P	1.2	Amber
R	1.2	Amber
N	1.2	Green
D	1.2	Green
2	1.2	Green
L	1.2	Green
OD OFF	1.2	Amber

INSTRUMENTS, GAUGES AND WARNING LAMPS

SERVICE STANDARD

Items	Specifications								
Speedometer indication error	Standard speed (MPH)	10	20	40	55	75	100		
	Allowable error (MPH)	±1.5	±1.5	±1.5	±1.5	±1.5	±1.5		
Tachometer indication error	Standard speed (km/h)	20	40	60	80	100	120	140	160
	Tolerance (km/h)	+4 0	+3 0	+4 0	+5 0	+5 0	+5.5 +0.5	+5.5 +0.5	+5.5 +0.5
Fuel gauge	Standard RPM	1000	2000	3000	4000	5000	6000	7000	
	Allowable RPM	±100	±125	±150	±150	±150	±180	±210	
Fuel sender	Fuel tank level	E		1/2		F			
	Standard resistance (Ω)	95		32.5		6.5			
	Indication error	2°24'		±5		+2°24'			
Fuel sender	Float position	F		1.2		E			
	Resistance (Ω)	3		32.5		110			
	Allowable error (Ω)	±2		±4		±7			
Water temperature gauge	Temperature (°C)	60	85	110	125				
	Angle	-30°	-7°	-7°	+30°				
	Tolerance		+2° -3°	+2° -3°	±5				
Water temperature sender	Temperature (°C)	60	85	110	125				
	Resistance (Ω)	125	48.4	24	15.2				
Voltmeter gauge	Voltage (V)	8	10	12	14	16			
	Angle	-30°	-16°	0°	16°	30°			
	Allowable error (V)		±0.5	±0.5		±0.6			

INSTRUMENTS, GAUGES AND WARNING LAMPS

Oil gauge	Pressure (Kg/cm ²)	0.3	2.7	7	10
	Angle	−32.5°	−21.5°	16°	32.5°
	Resistance (Ω)	±3°			±4
Oil pressure sender	Pressure KPa (kg/cm ² , psi)	0		677 (7.0, 98)	
	Resistance (Ω)	430±21.5		44±10	

TIGHTENING TORQUE

Items	Specifications		
	Nm	Kg.cm	lb.ft
Coolant temperature sender	10—12	100—120	7—9
Oil pressure sender	8—12	80—120	6—9
Oil pressure switch	8—12	80—120	6—9

INSTRUMENTS, GAUGES AND WARNING LAMPS

TROUBLESHOOTING

Problem	Possible cause	Remedy
Tachometer does not operate	NO.12 (10A) fuse blown Tachometer faulty Wiring faulty	Replace fuse and check for short Check tachometer Repair as necessary
Fuel gauge does not operate	NO.12 (10A) fuse blown Fuel gauge faulty Fuel sender faulty Wiring or ground faulty	Replace fuse and check for short Check gauge Check fuel sender Repair as necessary
Fuel level warning lamp does not light	NO.12 (10A) fuse blown Bulb burned out Fuel level sensor faulty Wiring or ground faulty	Replace fuse and check for short Replace bulb Check switch Repair as necessary
Water temperature gauge does not operate	NO.12 (10A) fuse blown Water temperature gauge faulty Water temperature sender faulty Wiring or ground faulty	Replace fuse and check for short Check gauge Check sender Repair as necessary
Low oil pressure warning lamp does not light	NO.12 (10A) fuse blown Bulb burned out Oil pressure sender faulty Wiring or ground faulty	Replace fuse and check for short Replace bulb Check sender Repair as necessary
Brake warning lamp does not light	NO.12 (10A) fuse blown Bulb burned out Brake fluid level warning switch faulty Parking brake switch faulty Wiring or ground faulty	Replace fuse and check for short Replace bulb Check switch Check switch Repair as necessary
Open door warning lamp does not light	NO.8 (10A) fuse blown Bulb burned out Door switch faulty Wiring or ground faulty	Replace fuse and check for short Replace bulb Check switch Repair as necessary
Seat belt warning does not operate	NO.8 (10A) fuse blown Bulb burned out Door warning switch faulty Buckle switch faulty E.T.A.C.S. faulty Wiring or ground faulty	Replace fuse and check for short Replace bulb Check switch Check switch E.T.A.C.S. Repair as necessary

SERVICE ADJUSTMENT PROCEDURES

SPEEDOMETER

Inspection

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

NOTE

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

- Check the speedometer for pointer vibration and abnormal noises.

NOTE

Pointer vibration can be caused by a loose or dry speedometer cable.

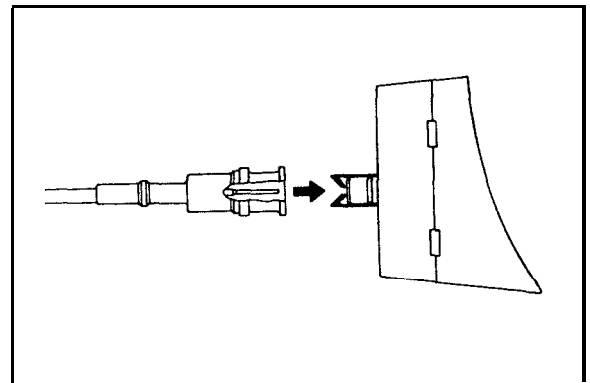
Standard indication (MPH)	10	20	40	55	75
Allowable error (MPH)	±1.5	±1.5	±1.5	±1.5	±1.5

SPEEDOMETER CABLE

Insert the cable until the stopper properly fits into the speedometer groove.

CAUTION

Poor installation of the cable may cause a fluctuating pointer, noise and a damaged harness inside the instrument panel.



TACHOMETER

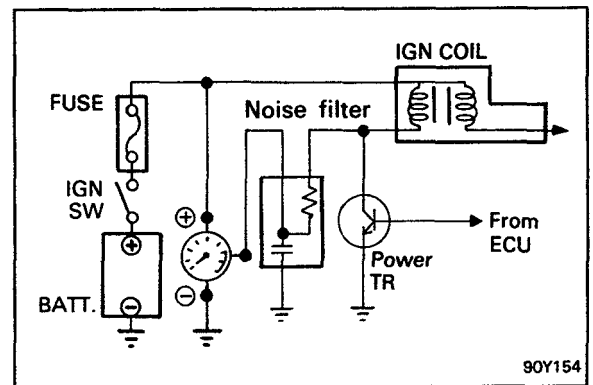
Inspection

- Connect a tachometer and start the engine.
- Compare the tester and tachometer indications.
If the difference is excessive, replace the tachometer.

CAUTION

- Reversing the connections of the tachometer will damage the transistor and diodes.
- When removing or installing the tachometer, be careful not to drop it or subject it to severe shock.

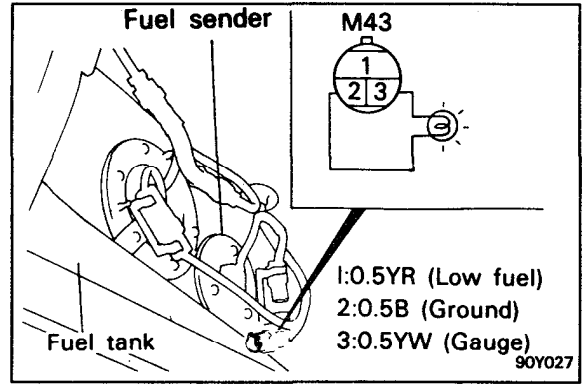
Temp	rpm	1,000	2,000	3,000	4,000	5,000	6,000	7,000
25°C (77°F)		±100	±125	±150	±150	±150	±180	±210
DC 13.5 V								



FUEL GAUGE AND FUEL SENDER

FUEL GAUGE SIMPLE TEST

1. Lift up the vehicle and disconnect the connector of the fuel gauge from the fuel sender.
2. Ground to the harness side connector via (terminals 3) the 12V, 3.4W bulb.
3. Turn the ignition key to the ON position.
4. Check to be sure that the test bulb flashes and that the indicator moves.

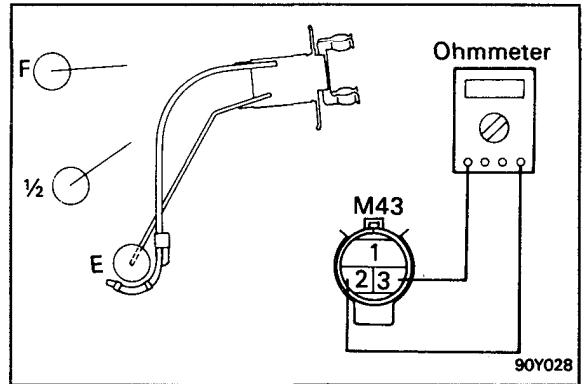


Fuel Sender Resistance Check

1. Measure (with the float at the "F" position and at the "E" position) the resistance between ground and the sender terminal for the fuel gauge.

Standard specification : Point F : $3 \pm 2 \Omega$
Point E : $110 \pm 7 \Omega$

2. Also check that the resistance changes smoothly when the float is moved to "F" and "E".



Fuel Level Sensor Check

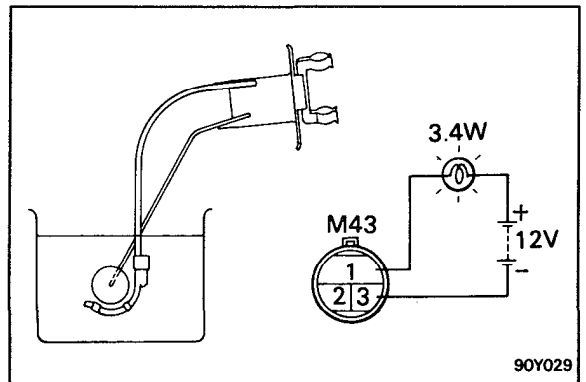
1. Connect the sender with a test lamp (12V, 3.4W) to the battery and immerse it in water.
2. The lamp should be off while the thermistor is beneath the water, and should illuminate when the sender is taken out of the water.

NOTE

If there is a malfunction, replace the fuel sender as an assembly.

CAUTION

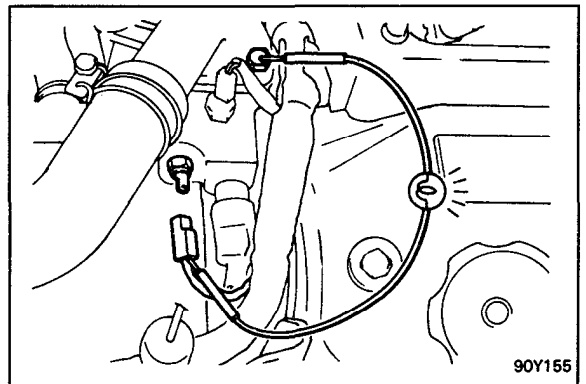
After completing this test, wipe the sender dry and install it in the fuel tank.



WATER TEMPERATURE GAUGE AND WATER TEMPERATURE SENDER

WATER TEMPERATURE GAUGE SIMPLE TEST

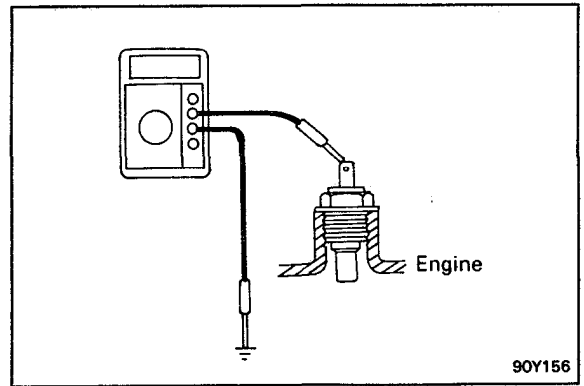
1. Disconnect the wiring connector from the water temperature sender in the engine compartment.
2. Ground to the harness side connector via the 12V, 3.4W bulb.
3. Turn the ignition key to the ON position.
4. Check to be sure that the test bulb flashes and that the indicator moves.



WATER TEMPERATURE SENDER

1. Using an ohmmeter, measure the resistance between the terminal and ground.
2. If the resistance value is not as shown in the table below, replace the temperature sender.

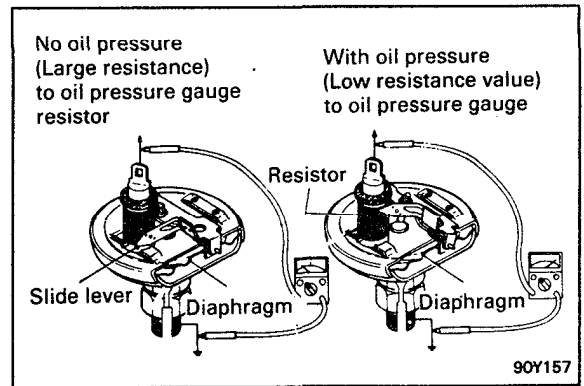
Temperature °C (°F)	60 (140)	110 (230)
Resistance Ω	125	24



OIL PRESSURE SWITCH AND OIL PRESSURE SENDER

OIL PRESSURE SENDER

1. Check the engine oil level. Add oil if insufficient, or replace it if the connection is bad.
2. Measure the resistance changes by connecting an ohmmeter between a good ground (vehicle body) and the terminal of the sender.
3. Refer to service standard.

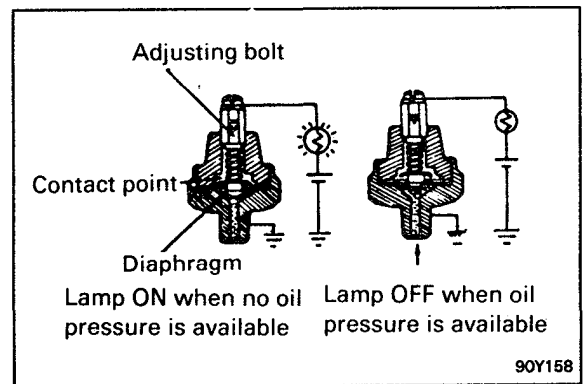


OIL PRESSURE SWITCH

Specifications

Type	contact points
Lighting oil pressure	0.3 kg/cm ² (4.27 psi)

If operation is not as specified, replace the oil pressure switch.



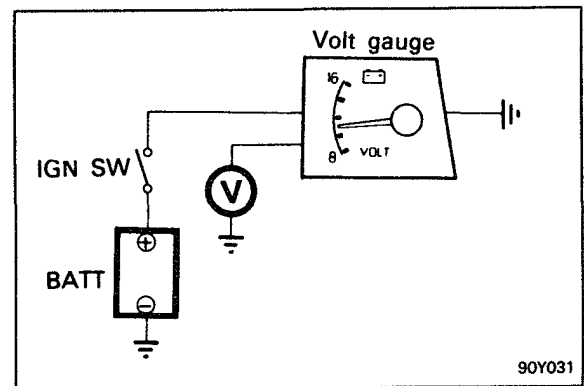
VOLTAGE GAUGE

INSPECTION

1. Connect the voltmeter in parallel with the volt gauge.
2. The voltmeter indication should be equal to the volt gauge.

Indication Tolerance

Standard	Tolerance
10V	+ 0.5V
12V	+ 0.5V
16V	+ 0.6V

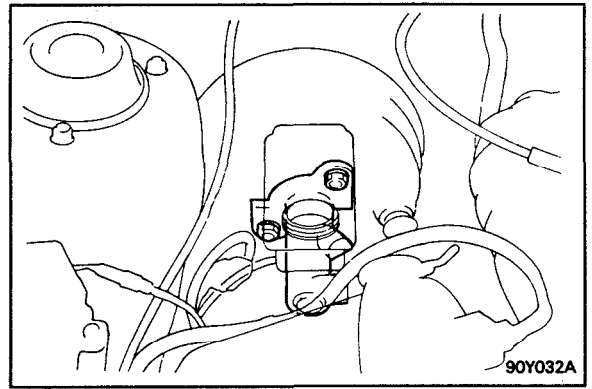


BRAKE WARNING LAMP AND SWITCH

The brake fluid level sensor or the parking brake switch is switched ON, and the brake warning lamp illuminates, when, with the ignition switch at the "ON" position, the brake fluid level is at or below the specified level, or the parking brake lever is pulled.

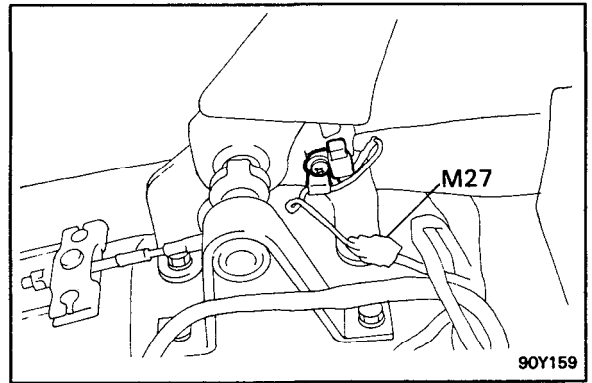
NOTE

The brake fluid level sensor is built into the master cylinder reservoir cap.



Parking Brake Switch

The parking brake switch is a push type and located under the parking brake lever. To adjust, move the switch mount up and down with the parking brake lever released all the way.



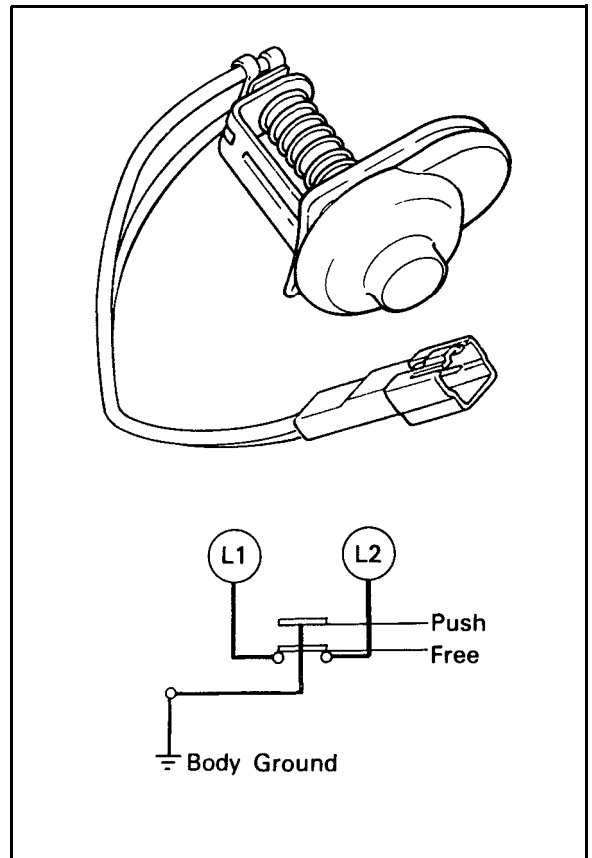
DOOR SWITCH

INSPECTION

Remove the door switch and check for continuity between the terminals.

If continuity is not as specified, replace the door switch

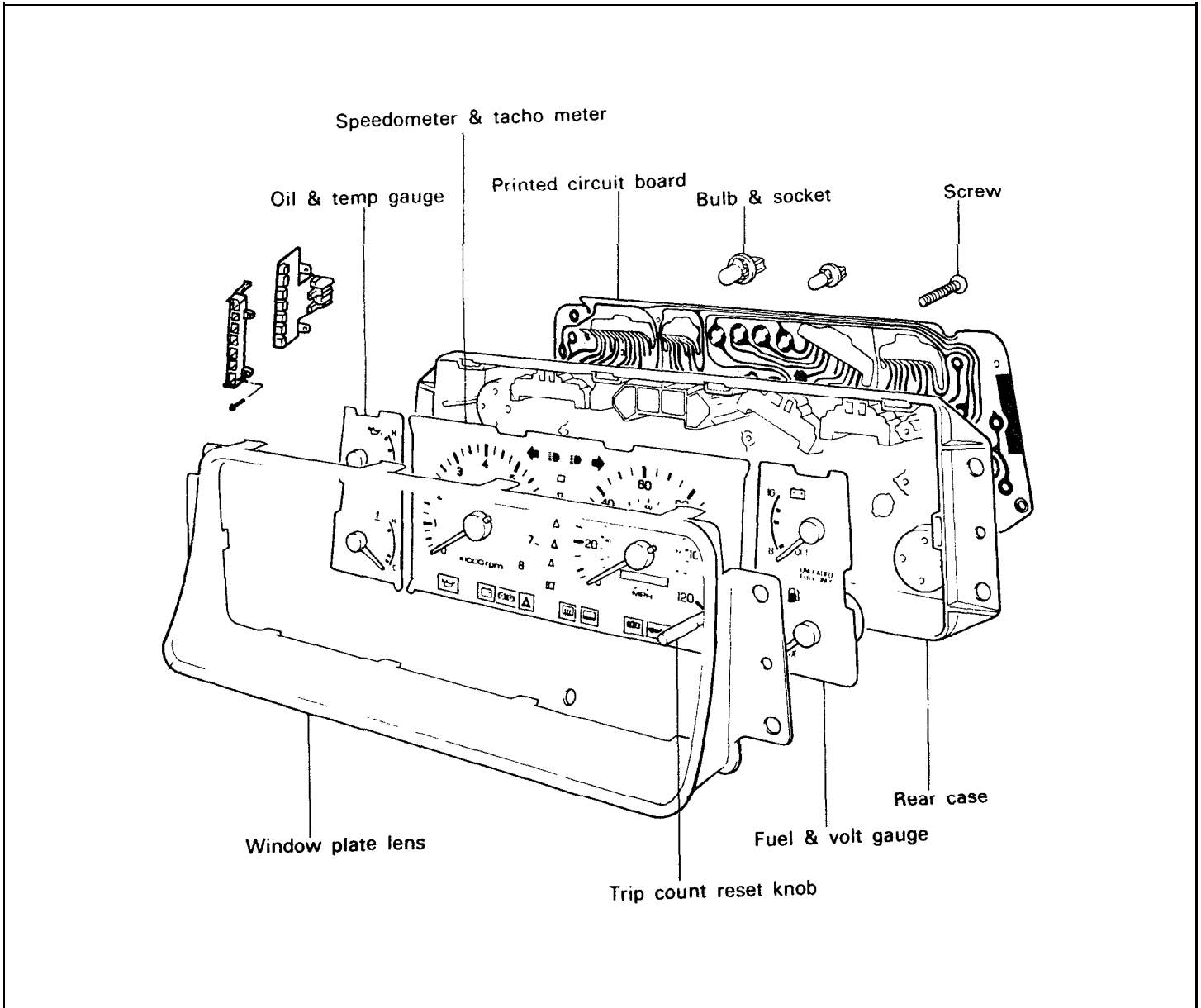
Lead wire \ Position	Ground (Body)	L1 (0.5RB)	L2 (0.5RL)
Free	○	○	○
Push			



INSTRUMENTS, GAUGES AND WARNING LAMPS

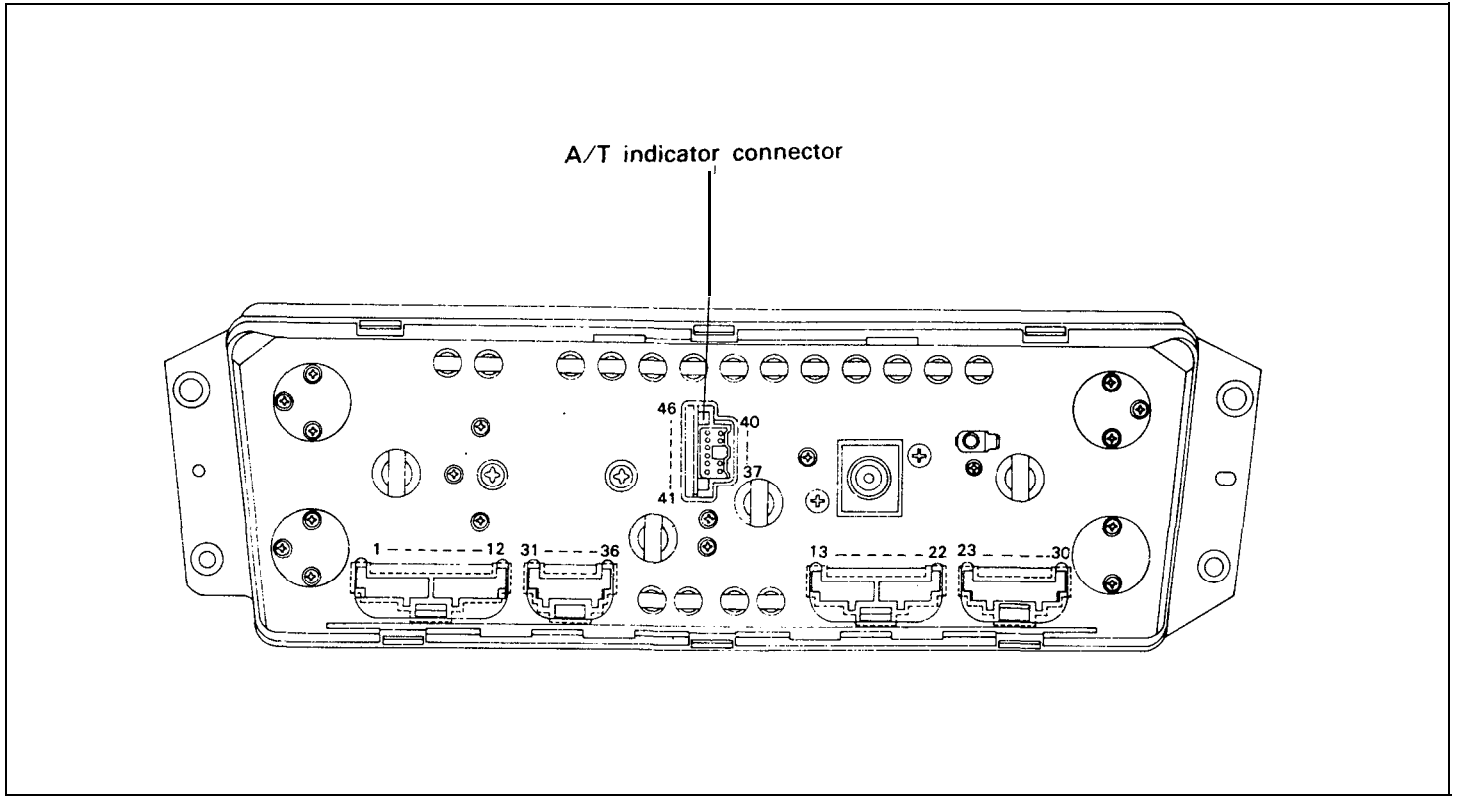
COMPONENTS

ANALOG TYPE

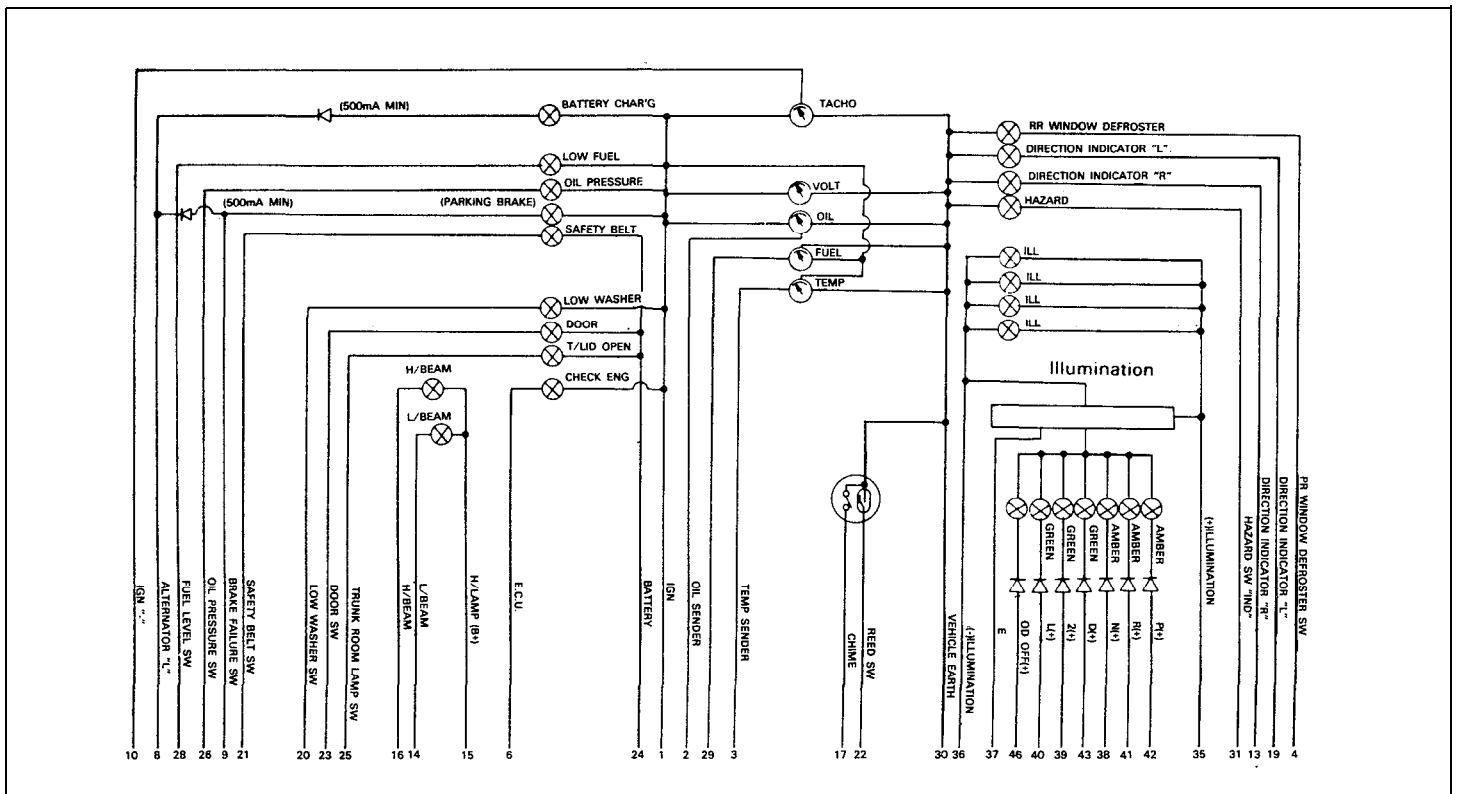


INSTRUMENTS, GAUGES AND WARNING LIGHTS

PRINTED CIRCUIT BOARD



CIRCUIT DIAGRAM



MULTIFUNCTION SWITCH

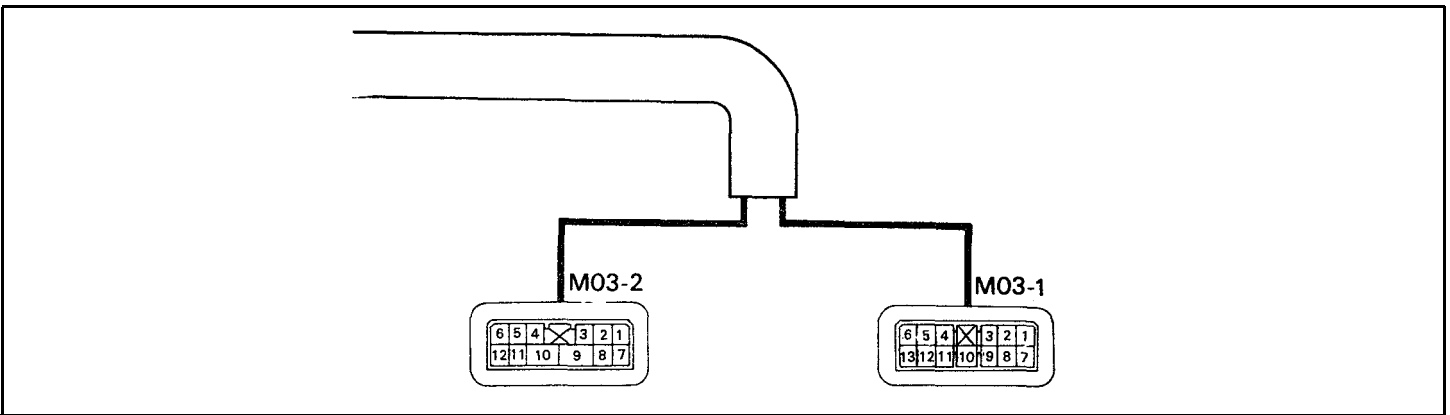
REMOVAL

1. Remove the steering wheel.
2. Remove the steering column shroud.
3. Remove the multifunction switch mounting screws.
4. Disconnect the multifunction switch wiring terminal.

CAUTION

Make sure the wire leads are not being pulled when you move the lever.

Check that lever works freely without binding.



Switch Attaching Plane

CONNECTOR NO.	PIN NO.	WIRE SIZE, COLOR	CIRCUIT	
M03-1	1	0.85 RW	WIPER PARKING	
	2	0.85 RY	WIPER HIGH SPEED	
	3	0.85 YB	WIPER LOW SPEED	
	6	0.5 B	GROUND	
	7	0.5 RL	WIPER INT.	
	8	0.5 WL	WASHER	
	9	0.5 GW	WIPER INT. (T)	
	10	0.85 B	GROUND	
	11	0.85 GB	HORN	
	12	0.3 L	CRUISE (SET)	
	13	0.3 LgW	CRUISE (RESUME)	
	M03-2	1	0.5 YR	TAIL LAMP SW.
		2	0.5 WB	HEAD LAMP SW. (HS1)
3		1.25 Br	HEAD LAMP SW. (HL)	
4		0.5 RB	TURN SIGNAL SW. (TB)	
5		0.5 RL	TURN SIGNAL SW. (TL)	
6		0.5 RY	TURN SIGNAL SW. (TR)	
7		0.3G	REAR FOG LAMP	
8		0.3 WB	HEAD LAMP SW. (EXCEPT, CANADA, U.K.)	
		0.85 B	D.R.L. DIM. DIP (CANADA, U.K.)	
9		1.25 RG	HEAD LAMP SW. (HU)	
10	1.25 B	GROUND		
	1.25 YW	D.R.L. (CANADA)		

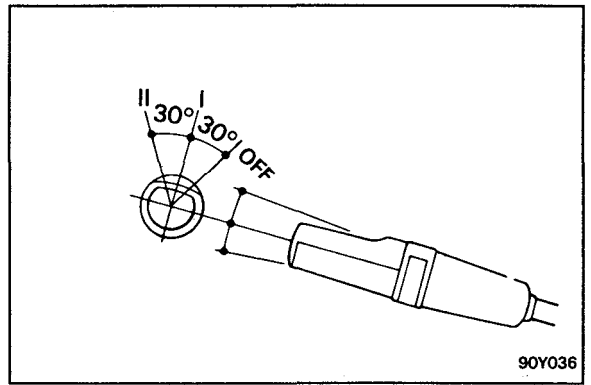
MULTIFUNCTION SWITCH

INSPECTION

Operate the switch and check the continuity between the terminals.

LIGHTING SWITCH

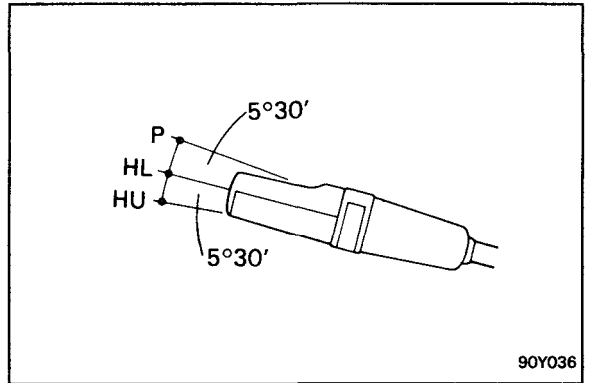
Terminal Position	TS	HS(1)	EL	F
OFF				
I	○	—————	○	
II	○	○	○	○



90Y036

DIMMER/PASSING SWITCH

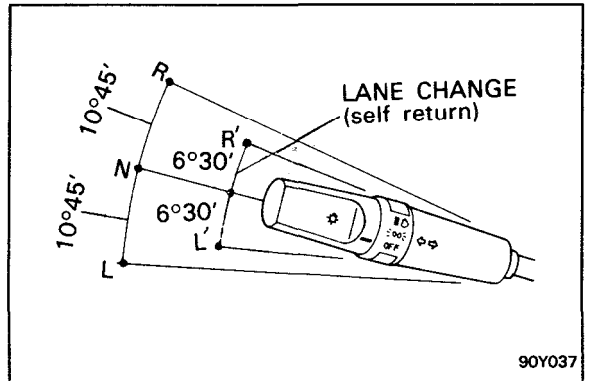
Terminal Position	Eb	HL	HU	Hs(2)
HU	○	—————	○	
HL	○	○		
P	○	—————	○	○



90Y036

TURN SIGNAL SWITCH

Terminal T/SIG	TB	TL	TR
Hazard			
L	○	○	
OFF			
N			
R	○		○



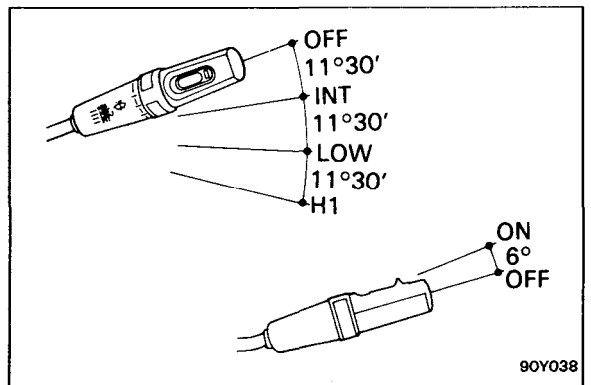
90Y037

WIPER SWITCH

Terminal Position	LO	HI	S	INT	EW	INT(T)
OFF	○	○				
INT	○	○	○	○	○	○
LO	○				○	
HI		○			○	

WASHER SWITCH

Terminal Position	W	EW
OFF		
ON	○	○



90Y038

MULTIFUNCTION SWITCH

AUTOMATIC SPEED CONTROL SWITCH (CRUISE)

Terminal Position	RESUME	SET	EA
SET		○————○	○
OFF			
RESUME	○————○		

NOTE

○ LIGHTING SW

I = TAIL

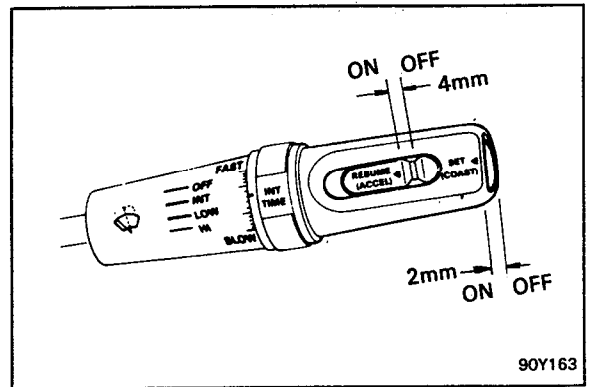
II = LIGHTING

○ DIMMER/PASSING SW

HU = HEAD LAMP UPPER BEAM

HL = HEAD LAMP LOWER BEAM

P = PASSING



LIGHTING SYSTEM

**LIGHTING SYSTEM
SPECIFICATIONS**

Item	Specification	
	U.S.A. & CANADA	EXCEPT U.S.A. & CANADA
Front combination lamp		
Headlamp	65/45 W	60/55 W
Turn signal lamp	28/8 W	-
Position lamp	-	4W
Front side marker and reflex reflector lamp	5 W	-
Front turn signal lamp	-	21 w
Side repeater lamp	-	4 W
Rear combination lamp (outside)		
Turn signal lamp	27 W	21 W
Tail and stop lamp	27/8 W	21/5 W
Side marker and reflex reflector lamp	5W	-
Rear combination lamp (inside)		
Tail and stop lamp	27/8 W	21/5 W (Except EC)
Back up lamp	27 W	21 W
Rear for lamp (EC only)	-	21 W
Interior lamp		
Luggage and glove box lamp	5 W	←
Room lamp	10 W	←
Map lamp	8 W	←
Door lamp	5 W	←
High mounted stop lamp	17 W	-
License plate lamp	8W	5 W
Flasher unit		
Turn signal blinking frequency	85 ± 10 C/M at 12.8 V	←
Hazard warning blinking frequency	80 ± 12 C/M at 12.8 V	←

LIGHTING SYSTEM

TROUBLESHOOTING

Problem	Possible cause	Remedy
Only one lamp does not light (all exterior)	Bulb burned out Socket, wire or ground faulty	Replace bulb Repair as necessary
Headlamps do not light	Bulb burned out Fusible link blown Headlamp relay faulty Lighting switch faulty Wiring or ground faulty	Replace bulb Replace fusible link Check relay Check switch Repair as necessary
Tail, parking and license lamp do not light	Taillamp fuse blown Fusible link blown Taillamp relay faulty Lighting switch faulty Wiring or ground faulty	Replace fuse and check for short Replace fusible link Check relay Check switch Repair as necessary
Stop lamps do not light	Circuit fuse blown Stop lamp switch faulty Wiring or ground faulty Bulb burned out	Replace fuse and check for short Adjust or replace switch Repair as necessary Replace bulb
Stop lamps stay on	Stop lamp switch faulty	Adjust or replace switch
Instrument lamps do not light (taillamps light)	Lamp control rheostat faulty Wiring or ground faulty	Check rheostat Repair as necessary
Turn signal does not flash on one side	Bulb burned out Turn signal switch faulty Wiring or ground faulty	Replace bulb Check switch Repair as necessary
Turn signal does not operate	Turn signal fuse blown Turn signal flasher faulty Turn signal switch faulty Wiring or ground faulty	Replace fuse and check for short Check flasher Check switch Repair as necessary
Hazard warning lamp does not operate	Hazard fuse blown Turn signal flasher faulty Hazard switch faulty Wiring or ground faulty	Replace fuse and check for short Check flasher Check switch Repair as necessary

LIGHTING SYSTEM

HEADLAMP AIMING (FOR U.S.A. CANADA)

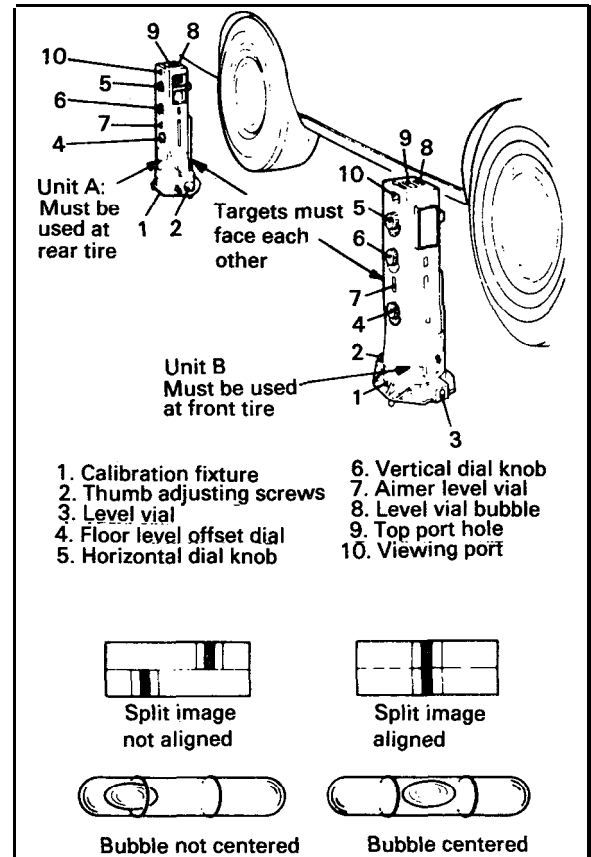
PRE-AIMING INSTRUCTIONS

1. Test dimmer switch operation.
2. Observe operation of high beam indicator lamp mounted in the instrument cluster.
3. Inspect for badly rusted or faulty headlamp assemblies. These conditions should be corrected before a satisfactory adjustment can be made.
4. Place the vehicle on a level floor.
5. Bounce the front suspension through three (3) oscillations by applying body weight to the bumper.
6. Check and correct tire inflation pressures.
7. Rock vehicle sideways to allow vehicle to assume its normal position.
8. If the fuel tank is not full, place a weight in the trunk of the vehicle to simulate the weight of a full tank.
9. There should be no other load in the vehicle other than that of the driver or substituted weight of approximately 70 kg (150 lbs.) placed in the driver's position.
10. Thoroughly clean the headlamp lenses.

COMPENSATING THE AIMERS FOR FLOOR SLOPE

The floor level offset dial must coincide with the floor slope for accurate aiming. Calibration fixtures are included with the aimers

1. Attach one calibration fixture to each aimer. Fixtures will easily snap into position on the aimer when properly positioned.
2. Place the aimers at the center line of each wheel on one side of the vehicle. Unit A must be placed at the rear wheel with the target facing forward. Unit B must be placed at the front wheel with the target facing rearward.
3. Adjust the thumb screw on each calibration fixture by turning either clockwise or counter-clockwise until the level vial bubble registers in a centered, level position.
4. Look into the top port hole of Unit A. Turn the horizontal knob until the split image is aligned.
5. Transfer the plus or minus reading indicated on the horizontal dial to the floor level offset dial on each aimer. Press the floor level dial inward to set reading.
6. Remove the calibration fixtures from both units.



TESTING AIMER CALIBRATION

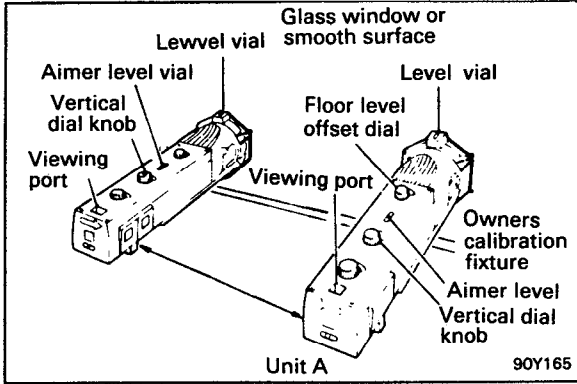
The aimer calibration may be off due to extended use. Calibration fixtures used in conjunction with the aimers can be used to check and adjust the aimer.

1. Turn the thumb adjusting screw on each calibration fixture until it is approximately the same distance as the supporting posts.
2. Attach the calibration fixtures to each unit with the level vials on top.
3. Locate a true vertical plate glass window or smooth surface and position the aimers three to five feet apart so that the split image targets can be located in the viewing ports.
4. Set the floor level dial to zero.
5. Rotate the thumb adjusting screws on each calibration fixture until the level vials on the fixtures are centered.
6. With both calibration level vials centered, turn the vertical dial knobs on each aimer until the aimer level vials are centered. If the aimer vertical dial pointers read between 1/2 up and 1/2 down, the aimers are within allowable vertical tolerance, Recalibrate the units if they are beyond these limits.

Vertical dial pointer reading (on each aimer)
1/2 up to 1/2 down

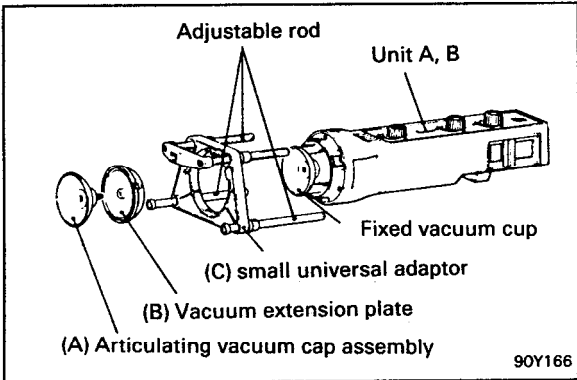
7. Adjust the horizontal dial knob on each aimer until the split image targets align. If the aimer horizontal dial pointers read between 1 left and 1 right, the aimers are within allowable tolerance limits. Recalibrate the units if beyond these limits.

Horizontal dial pointer reading (on each aimer)
1 left to 1 right



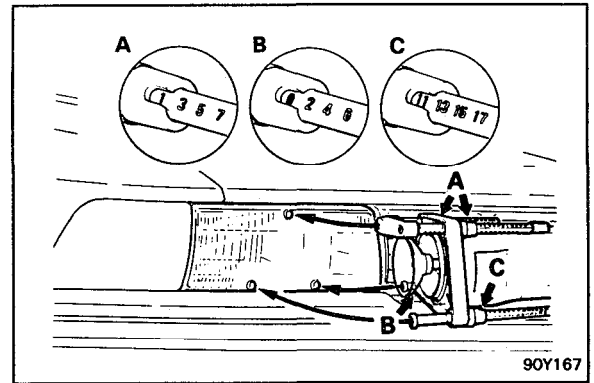
MOUNTING AIMERS

1. Remove the calibration fixture from the each unit.
2. As shown in the figure, install the articulating vacuum cup assembly (A), vacuum extension plate (B) and small universal adaptor (C) to each unit.



LIGHTING SYSTEM

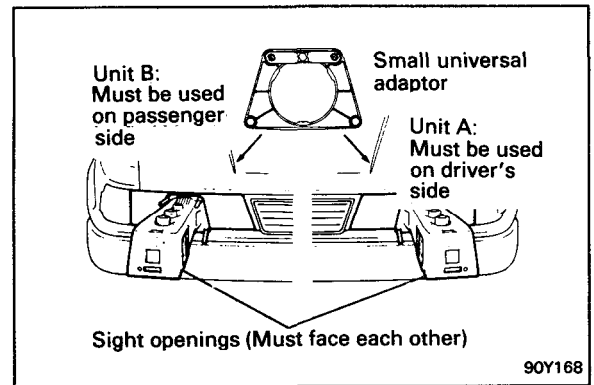
3. Mark the length of the adjustable rod as shown in the figure.



4. Position the aimers on the headlamps pushing the piston handle forward, engaging the rubber suction cup. Immediately pull back the piston handle until it is locked in place.

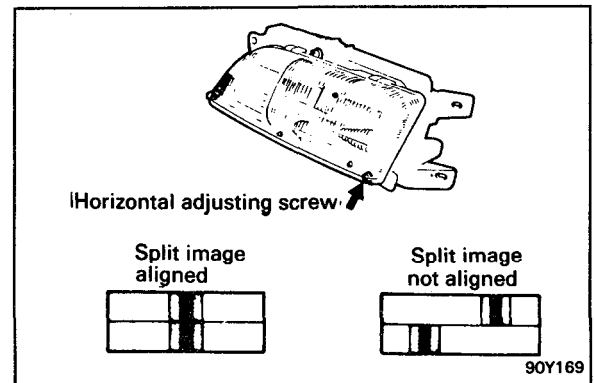
NOTE

Steel inserts are molded into position on the adaptor to insure accuracy. These inserts should be in contact with the three guide points on the lamps when the aimers are properly positioned.



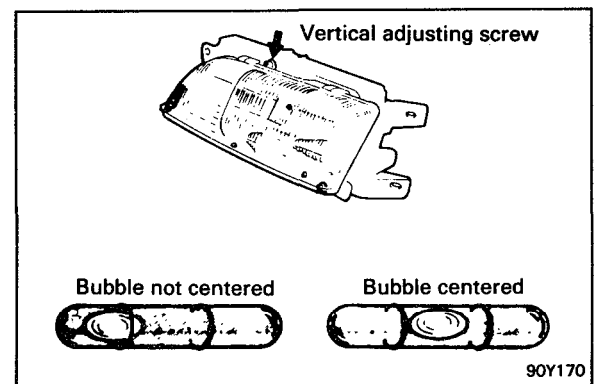
HORIZONTAL ADJUSTMENT

1. Set the horizontal dial to zero.
2. Check to see that the split image target lines are visible in the viewing port. If necessary, rotate each aimer slightly to locate the target.
3. Turn the horizontal screw on the side of the headlamp until the split image of target line appears in the mirrors as one solid line. To remove "backlash", make the final adjustment by turning adjusting screw in a clockwise direction.
4. Repeat the last three steps on the opposite headlamp.



VERTICAL ADJUSTMENT

1. The vertical dial should be set at zero. (For passenger vehicles, "O" setting is generally required. For special settings, consult local state laws.)
2. Turn the vertical adjusting screw until the level bubble is centered between the lines.
3. Repeat the last two steps on the opposite headlamp.
4. Re-check the target alignment on both aimers and readjust the horizontal aimer if necessary.
5. Remove the aimers by pressing "vacuum release" button located on the piston handle.

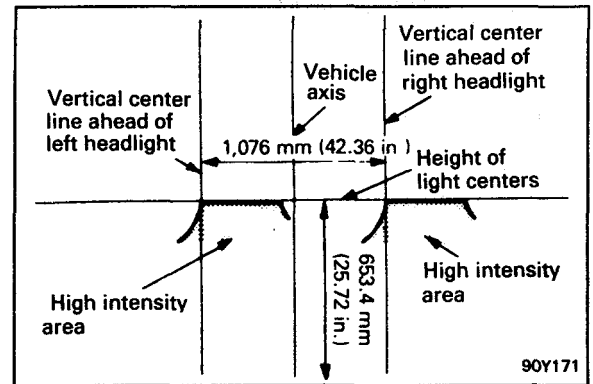


AIMING WITH SCREEN

HEADLAMP AIMING PREPARATION

Place the vehicle on a level floor 7.6 m (25 feet) apart from the aiming screen or a light-colored wall. Four lines of adhesive tape are required on the screen or wall:

1. Position a vertical piece of tape so that it is aligned with the vehicle center line
2. Position a horizontal piece of tape with reference to the center line of the headlamp.
3. Position a vertical piece of tape on the screen for vertical adjustment, adjust the side screw for horizontal adjustment.



VISUAL HEADLAMP ADJUSTMENT

1. A properly aimed low beam will appear on the aiming screen 7.6 m (25 feet) in front of the vehicle. The shaded area as shown in the illustration indicates a high intensity zone
2. Adjust the low beam headlamps to match the low beam pattern of the right and left headlamps.

NOTE

If the visual headlamp adjustment at low beam is made, the adjustment at high beam is not necessary.

LIGHTING SYSTEM

HEADLAMP AIMING (Except U.S.A. & Canada)

PRE-AIMING INSTRUCTIONS

The headlamps should be aimed with the proper beam-setting equipment and aimed in accordance with the equipment manufacturers instructions.

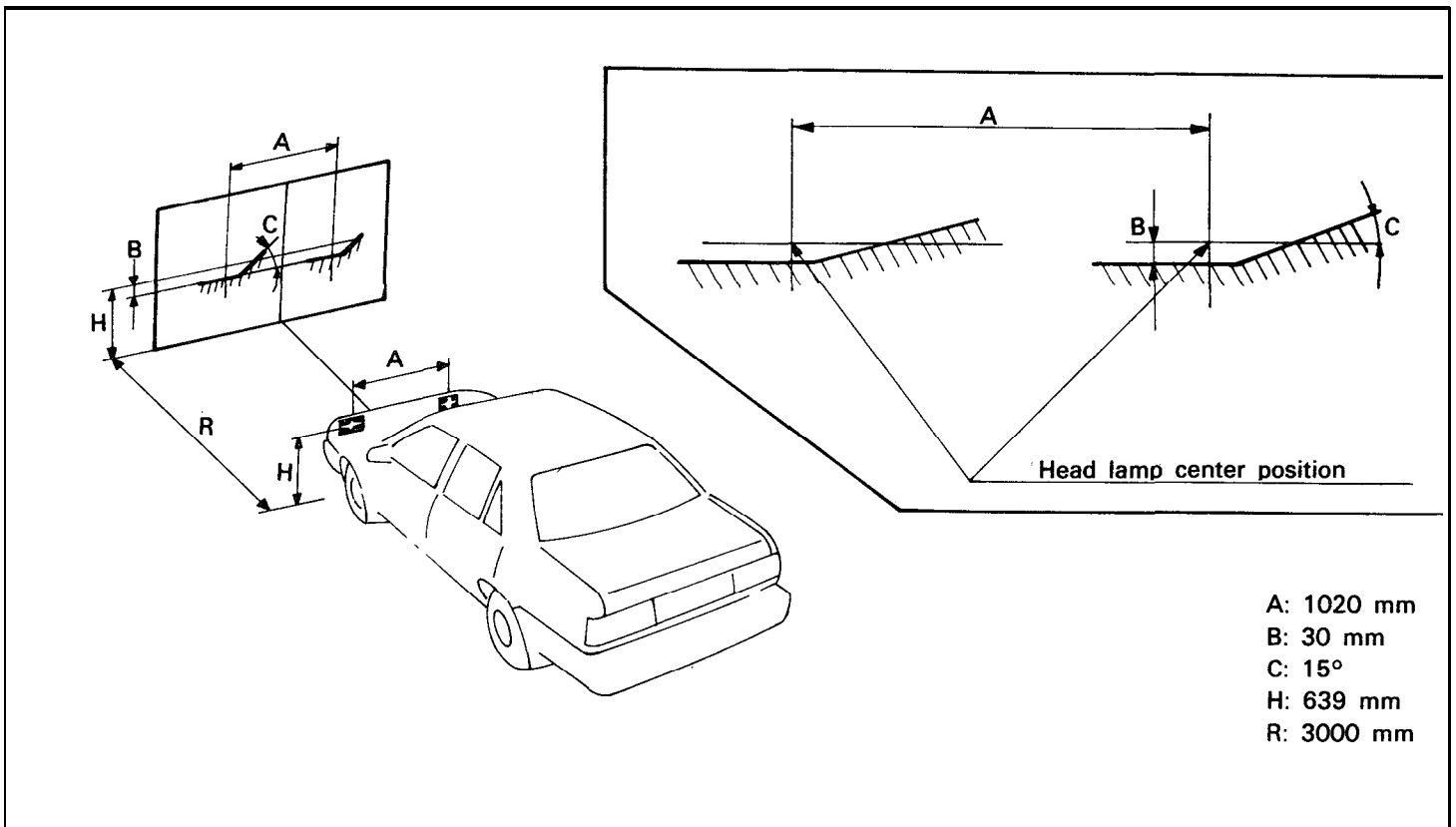
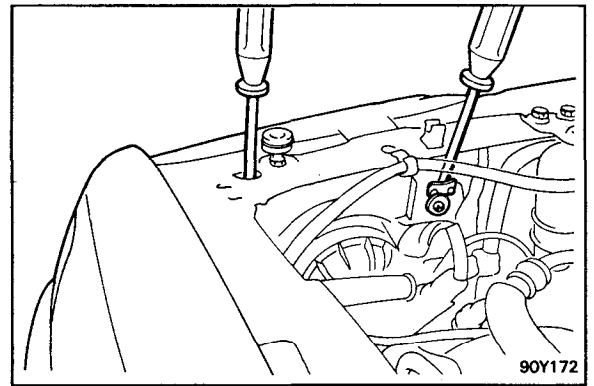
NOTE

If there are any regulations pertinent to the aiming of headlamps in the area where the vehicle is to be used, adjust so as to satisfy those requirements.

Alternately turn the adjusting bolts to adjust the headlamp aiming. If beam-setting equipment is not available, proceed as follows:

1. Inflate the tires to the specified pressure and remove the load from the vehicle except a driver, spare tire and tools.
2. The vehicle should be placed on the level floor.
3. Draw vertical lines (vertical lines passing through respective headlamp centers) and a horizontal line (horizontal line passing through center of headlamps) on the screen.
4. With the headlamp and battery in normal condition, aim the headlamps.

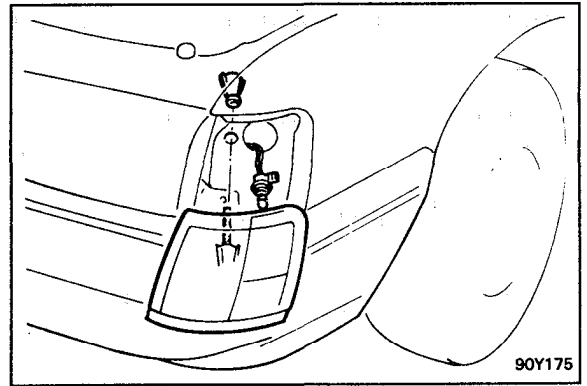
Make the vertical and horizontal adjustment of the lower beam to the standard values by using the adjusting knobs.



LIGHTING SYSTEM

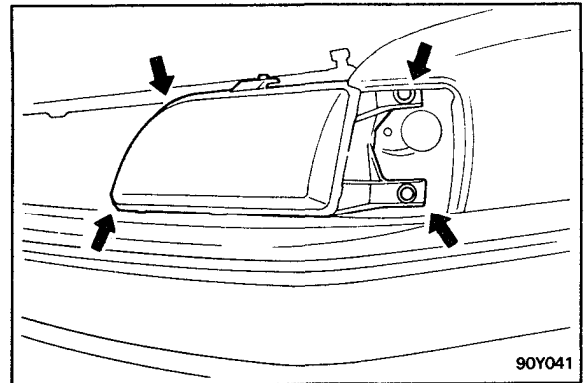
FRONT COMBINATION LAMP REMOVAL AND INSTALLATION

1. After removing the front side marker and reflex reflector lamp (U.S.A. & Canada), front turn signal lamp (Except U.S.A. & Canada) mounting nut, remove the lamp.
2. Remove the radiator grille.
3. Remove the front combination lamp mounting nuts.
Disconnect the wiring connector.
4. Remove the lamp assembly.
5. Installation is reverse order of the removal.



TIGHTENING TORQUE

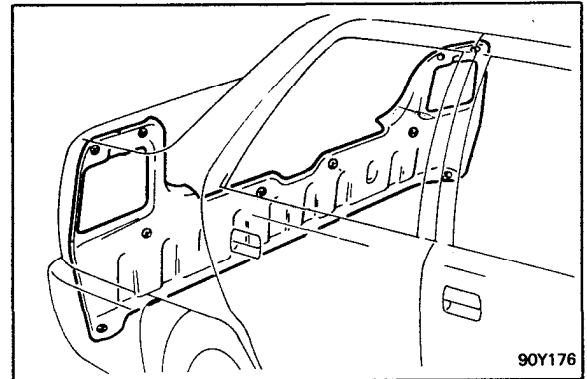
Front side marker and reflex reflector lamp (U.S.A., CANADA) Front turn signal lamp (Except U.S.A. & Canada)	2-3 Nm (20-30 kg.cm, 1.5-2.2 lb.ft)
Front combination lamp	3-5 Nm (30-50 kg.cm, 2.2-3.6 lb.ft)



REAR COMBINATION LAMP REMOVAL

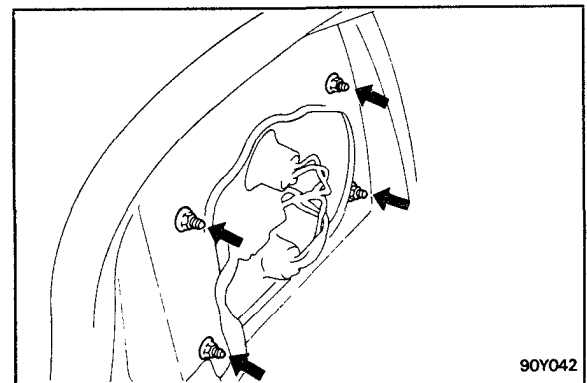
Back Panel Side (Outside of rear combination lamp)

1. Remove the trunk inner trim.
2. Remove the rear combination lamp mounting nuts.
3. Disconnect the wiring connector and remove the rear combination lamp assembly



TIGHTENING TORQUE

2-2.5 N.m (20-25 kg cm, 1.5-1.8 lb.ft)



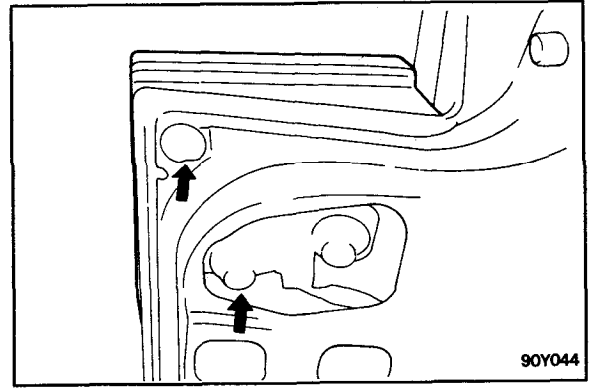
LIGHTING SYSTEM

Inside of trunk (Inside of rear combination lamp)

1. Disconnect the wiring connector.
2. Remove the rear combination lamp mounting nuts.
3. Remove the rear combination lamp assembly.

TIGHTENING TORQUE

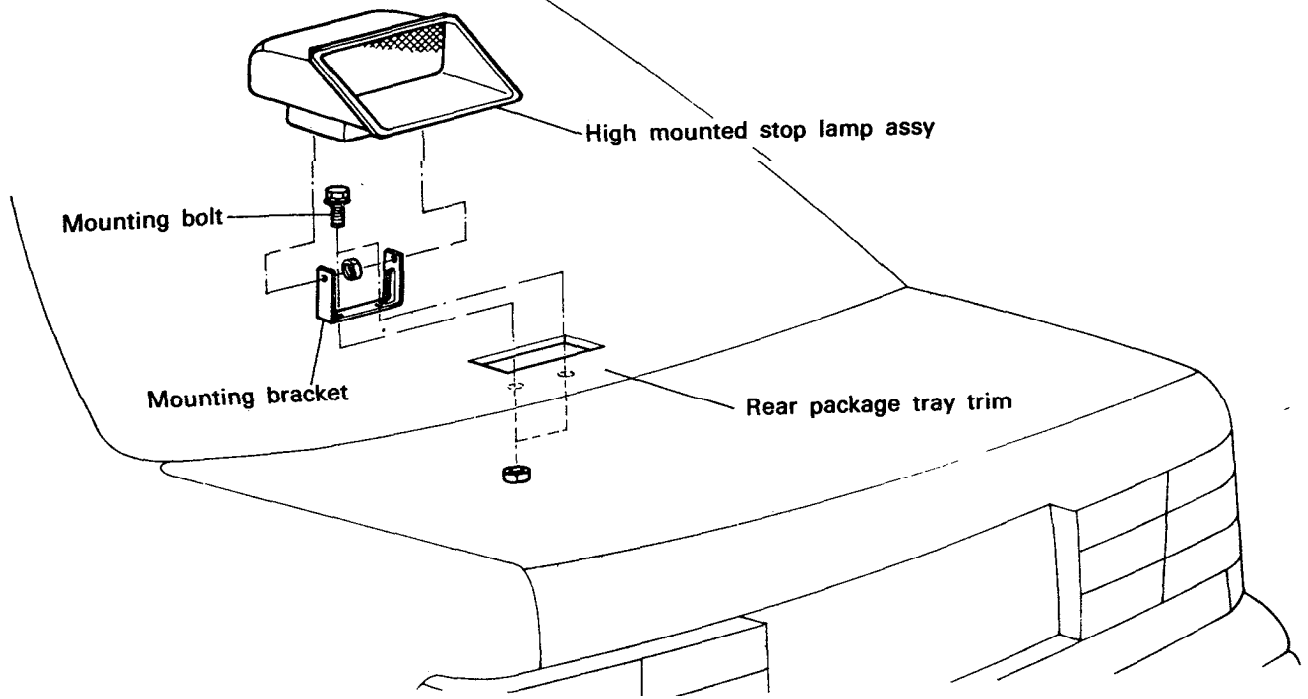
2-2.5 Nm (20-25 kg cm, 1.5-1.8 lb.ft)



LIGHTING SYSTEM

HIGH MOUNTED STOP LAMP

COMPONENTS



INDIVIDUAL PART INSPECTION

HEADLAMP AND TAILLAMP RELAY

1. Remove the headlamp relay and taillamp relay.
2. Check for continuity between the terminals.

HEADLAMP RELAY

Terminal	B	S ₂	L	S ₁
Condition				
When de-energized		○ ————— ○		
When energized	○ ————— ○	⊕ ■ ■ ■ ■ ■ ⊖		

TAILLAMP RELAY

Terminal	B	S	L
Condition			
When de-energized	○ ————— ○		
When energized	⊕ ■ ■ ■ ■ ■ ⊖		○ ————— ○

NOTE

1. ⊕ ————— ⊖ indicates that there is continuity between the terminals.
2. ⊕ ■ ■ ■ ■ ■ ⊖ indicates power supply connection.

TURN SIGNAL FLASHER UNIT

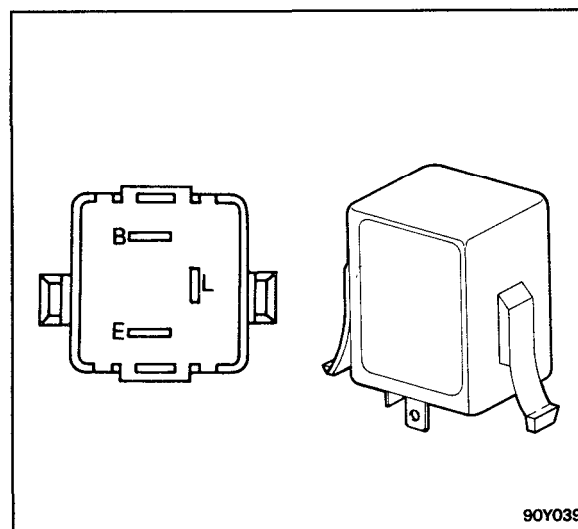
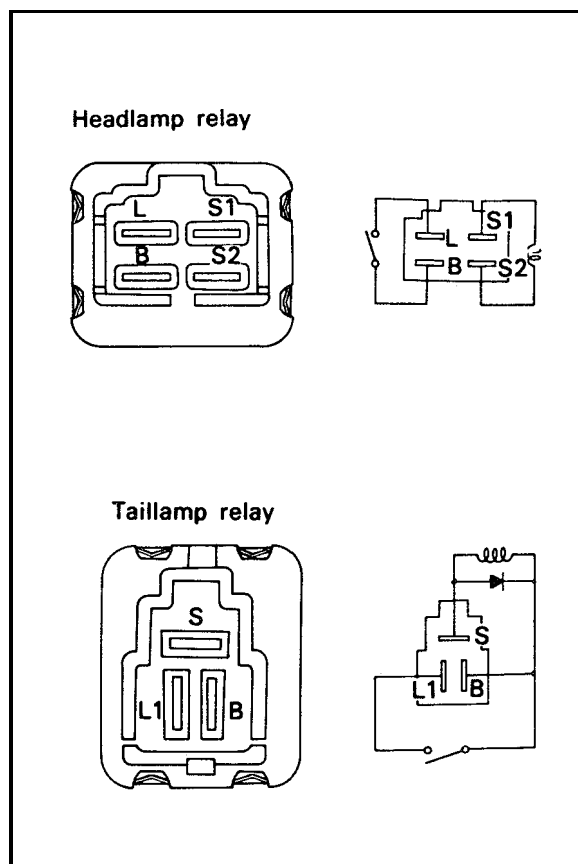
1. Connect the positive (+) lead from the battery to terminal B and the negative (-) lead to terminal E.
2. Connect the two turn signal lamps parallel to each other to terminal L and E, check that the bulbs turn on and off.

NOTE

The turn signal lamps should flash 60 to 120 times per minute.

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

If the operation is not as specified, replace the flasher unit.



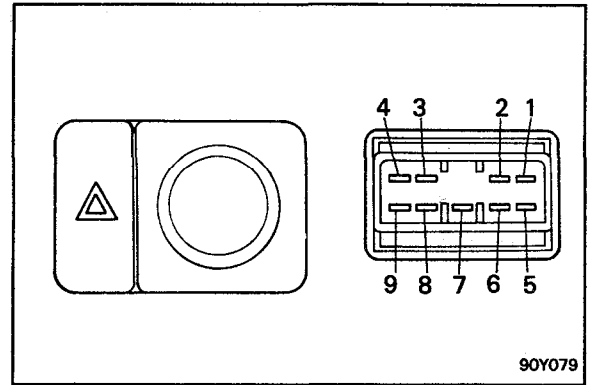
90Y039

LIGHTING SYSTEM

HAZARD SWITCH

1. Remove the hazard switch located in the cluster housing.
2. Operate the switch and check continuity between the terminals by using an ohmmeter.

Terminal No. Position	3	4	9	2	6	7	8	1	5
OFF	● ——— ●							● ——— ●	
ON		● ——— ●		● ——— ● ——— ● ——— ●				● ——— ●	



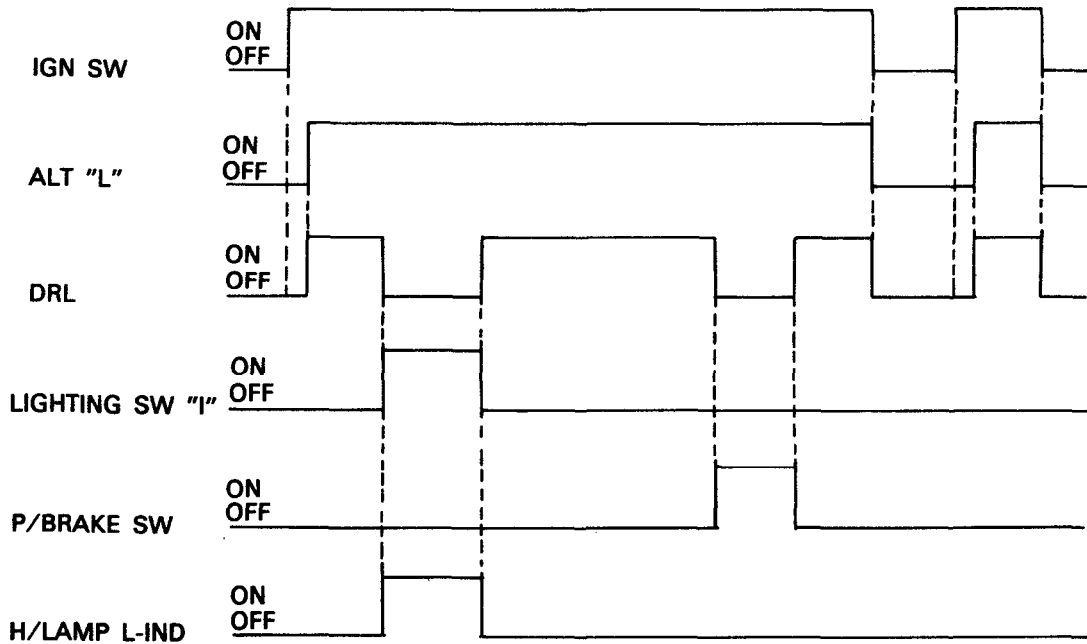
LIGHTING SYSTEM

DAYTIME RUNNING LIGHT (For CANADA)

SPECIFICATIONS

Items	Specifications
Electronic control unit	
Rated voltage	DC 12V
Operating voltage range	DC 8 ~ 16V
Rated load	7.5A (lamp load)
Operating temperature range	-30 ~ +95°C (-22 ~ 203°F)
Insulation resistance	MIN. 1MΩ (at DC 500V megger)

TIMING CHART



AUDIO

AUDIO

SPECIFICATIONS

AM/FM RADIO WITH CASSETTE

BASE GRADE

Items	C-420	H-510	HC-700
Radio			
Receiving band	AM/FM1/FM2	AM/FM1/FM2	AM/FM
Tuning type	E.T.R.	E.T.R.	E.T.R.
Memory (AM/FM)	6/12	6/12	6/6
Frequency range	AM : 530 - 1620 KHz FM : 87.5 - 108 MHz	AM : 530 - 1620 KHz FM : 87.5 - 108 MHz	AM : 530 - 1620 KHz FM : 87.5 - 108 MHz
Amplifier			
Output power	MAX. 6W x 4CH	MAX. 20W x 2CH	MAX. 25W x 2CH
Volume type	Rotary	Rotary	Rotary
Tape player			
Deck type	Mechanical	Mechanical	Mechanical
Reproducing type	Auto reverse	Auto reverse	Auto reverse

MEDIUM GRADE

Items	H 4 5 0	H-560	HC-800
Radio			
Receiving band	AM/FM1 /FM2	AM/FM1 /FM2	AM/FM1 /FM2
Turning type	E.T.R.	E.T.R.	E.T.R.
Memory (AM/FM)	6/12	6/12	6/12
Frequency range	AM : 530 - 1610 KHz FM : 87.9 - 108 MHz	AM : 530-1710 KHz FM : 87.9- 108 MHz	AM : 530-1620 KHz FM : 87.9-108 Mhz
Amplifier			
Output power	MAX. 25W x 2CH	MAX. 25W x 4CH	MAX. 25W x 2CH
Volume type	Rotary	Rotary	Rotary
Tape player			
Deck type	Full logic	Full logic	Full logic
Eject type	Key off release	Key off release	Key off release
Reproducing type	Auto reverse	Auto reverse	Auto reverse

AUDIO

DELUXE GRADE

Items	H-600	H - 5 6 5
Radio		
Receiving band	AM/FM1 /FM2	
Turning type	E.T.R.	
Memory (AM/FM)	6/12	
Frequency range	AM : 530 - 1620 KHz FM : 87.9 - 107.9 MHz	AM : 530 - 1710 KHz FM : 87.9 - 107.9 MHz
Tape player		
Deck type	Full logic	
Eject type	Key-off eject	Key-off release
Reproducing type	Auto reverse	
Amplifier		
Output power	MAX. 25W x 4CH	
input impedance	MON. 10 K Ω (8—12 Ω)	
Sound dimensional array	S.D.A.-H3	
Compact disc player		
Frequency response		5 HZ-20 KHz \pm 1.0 dB
Signal to noise ratio		NOM. 85 dB (with IHF-A)

PREMIUM GRADE

Items	H-700	H-590
Radio		
Receiving band	AM/FM1 /FM2	
Tuning type	E.T.R.	
Memory (AM/FM)	6/12	
Frequency range	AM : 530 -1620 KHz FM : 87.9 - 107.9 MHz	AM : 530 - 1710 KHz FM : 87.9 - 107.9 MHz
Tape player		
Deck type	Full logic	
Eject type	Key-off eject	Key-off release
Reproducing type	Auto reverse	
Amplifier		
Output power	MAX. 60W x 4CH	MAX. 40W x 4CH
Input impedance	N O M . 1 0 K Ω (8—1	
Sound dimensional array	S.D.A.-H4	
Compact disc player		
Frequency response	5Hz-20KHz \pm 1.0dB	
Current	NOM. 0.8A	

AUDIO

SPEAKER

BASE AND MEDIUM GRADE

Items	Specifications
Front speaker Input power Rated impedance Distortion Size	NOM. 20W (MAX. 40W) 4 ± 0.6 Ω (at 400 Hz, 1V) MAX. 5% (at 400 Hz, 20W) 10 cm (4 in.)
Rear speaker Woofers Input power Rated impedance Distortion Size	NOM. 20W (MAX. 40W) 4 ± 0.6 Ω (at 400 Hz, 1V) MAX. 5% (at 400 Hz, 20W) 16 cm (6.5 in.)
Tweeter Input power Rated impedance Distortion Size	NOM. 5W (MAX. 7W) 4 ± 0.6 Ω (at 3 KHz, 1V) 5% MAX. (at 100 KHz, 5W) 5 cm (2 in.)

DELUXE GRADE

Items	Specifications
Front speaker Mid-woofer Input power Rated impedance Distortion Size	NOM. 10W RMS (MAX. 20W RMS) 4.0 ± 0.5 Ω (at 400 Hz, 1V) MAX. 5% (at 400 Hz, 2V) 10 cm (4 in.)
Tweeter Input power Rated impedance Distortion Size	NOM. 10W RMS (MAX. 20W RMS) 4.0 ± 0.5 Ω (at 1 KHz, 1V) MAX. 2.5% (at 4.3 KHz, 2V) 5 cm (2 in.)
Rear speaker Woofers (double) Input power Rated impedance Distortion Size	NOM. 15W RMS (MAX. 30W RMS) 3.0 ± 0.5 Ω (at 400 Hz, 1V) MAX. 1.5% (at 400 Hz, 2V) 16 cm (6.5 in.)

AUDIO

PREMIUM GRADE

Items	Specifications
Front speaker Mid-woofer Input power Rated impedance Distortion Size Tweeter Input power Rated impedance Distortion Size	NOM. 10W RMS (MAX. 20W RMS) 4.0 ± 0.5 Ω (at 400 Hz, 1V) MAX. 5% (at 400 Hz, 2V) 10 cm (4 in.) NOM. 10W RMS (MAX. 20W RMS) 4.0 ± 0.5 Ω (at 1 KHz, 1V) MAX. 2.5% (at 4.3 KHz, 2V) 5 cm (2 in.)
Rear speaker Woofers (coaxial) Input power Rated impedance Distortion Size	NOM. 15W RMS (MAX. 30W RMS) 3.0 ± 0.5 Ω (at 400 Hz, 1V) MAX. 3% (at 400 Hz, 2V) 16 cm (6.5 in.)
Door speaker, sub woofer speaker Woofers (single) Input power Rated impedance Distortion Size	NOM. 15W RMS (MAX. 30W RMS) 3.0 ± 0.5 Ω (at 400 Hz, 1V) MAX. 1.5% (at 400 Hz, 2V) 16 cm (6.5 in.)

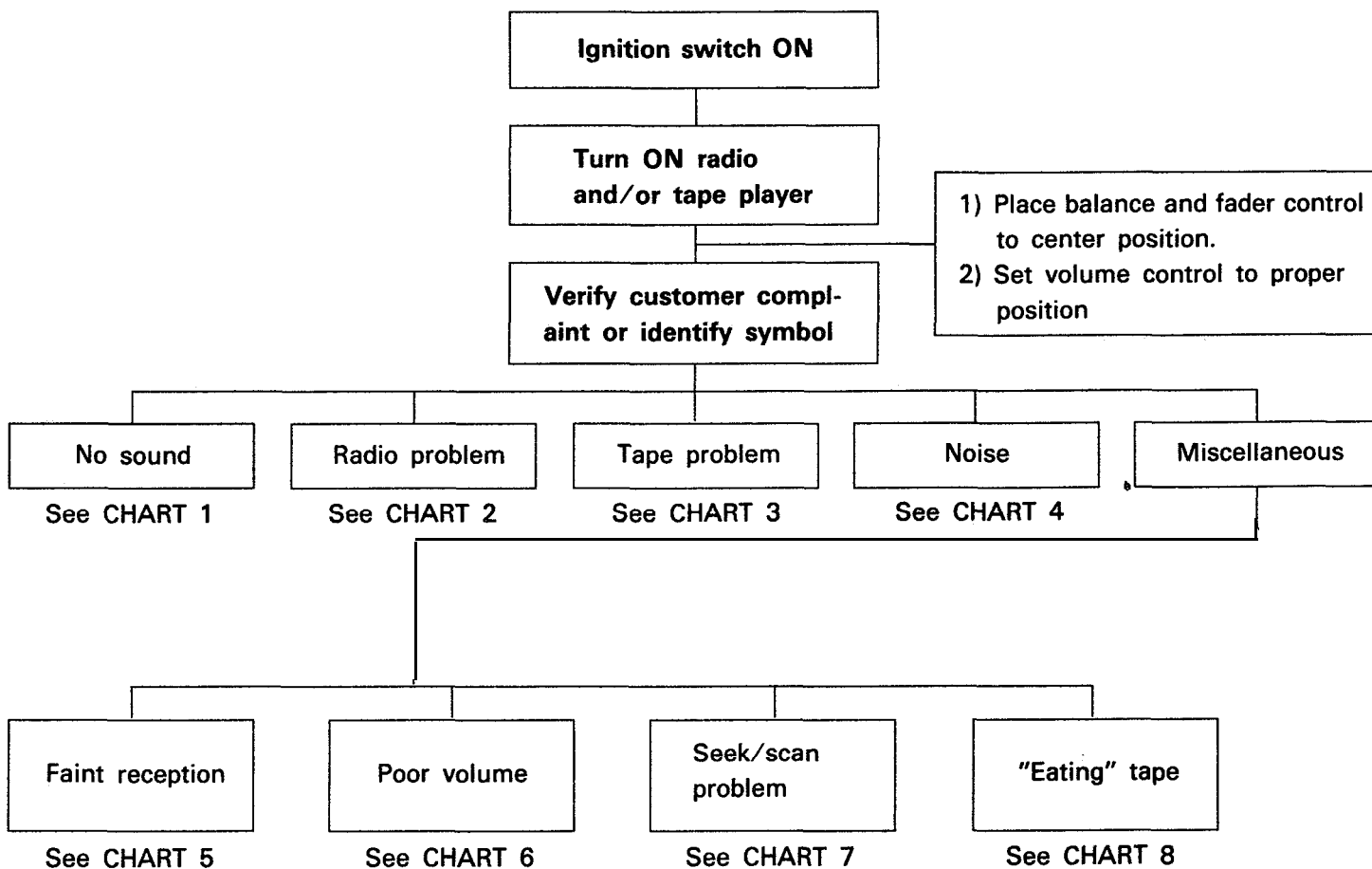
ANTENNA

Items	Specifications
Manual antenna Type Insulating resistance Electrostatic capacity Operating force	Telescopic rod MIN. 100 MΩ (at DC 500V megger) 80 ± 8 PF 0.3 ~ 6 kg
Power antenna Rated voltage Operating amperage Insulating resistance Electrostatic capacity Operating force	DC 12V MAX. 6A (Lock current MAX 15A) MIN. 100 MΩ (at DC 500V megger) 80 ± 8 PF 5 kg

TROUBLESHOOTING

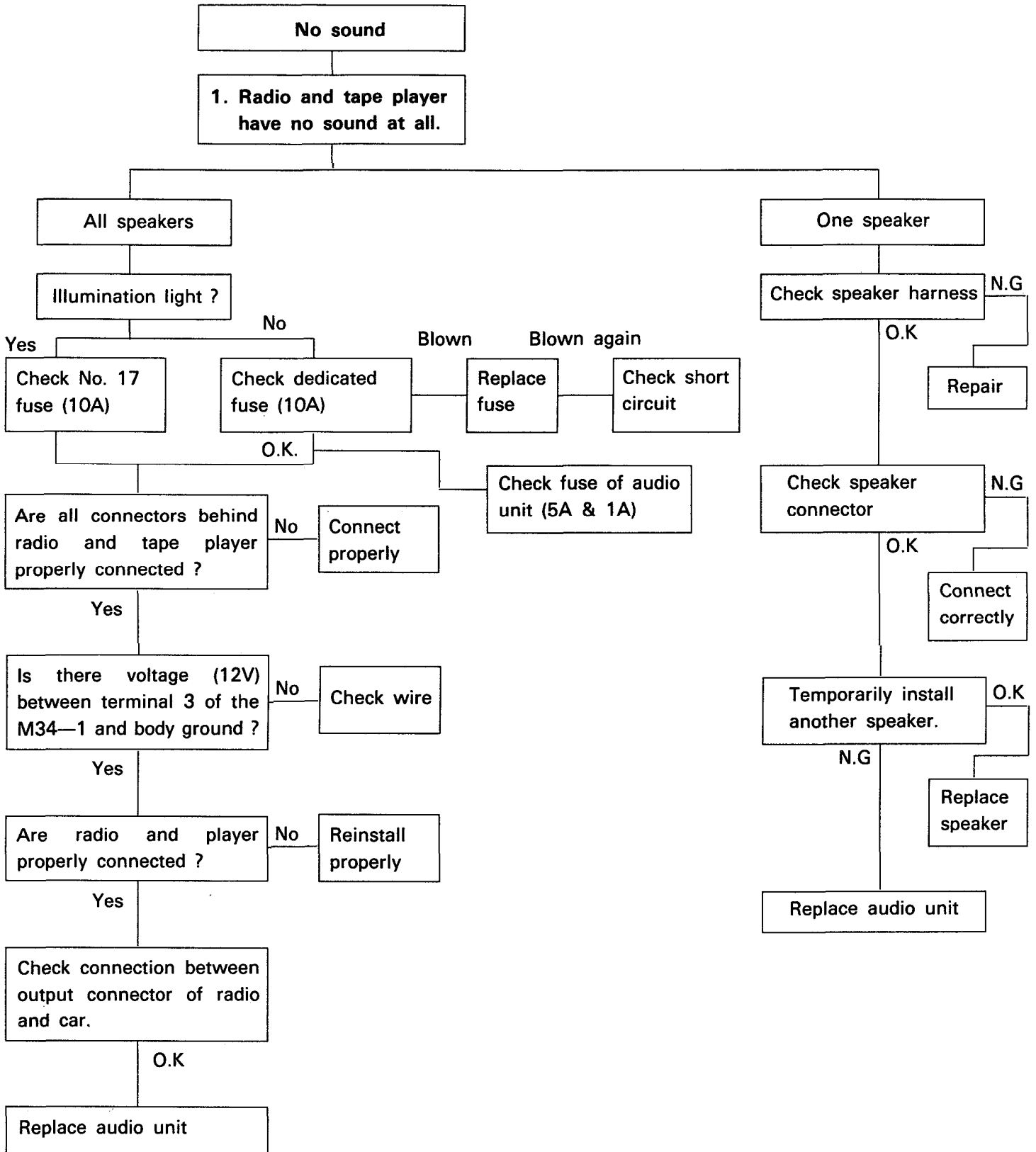
There are 5 areas where a problem can occur the wiring harness, the radio, cassette tape deck, the speaker, and the antenna.

Your job in troubleshooting is to isolate the problem to a particular area.



AUDIO

CHART 1



AUDIO

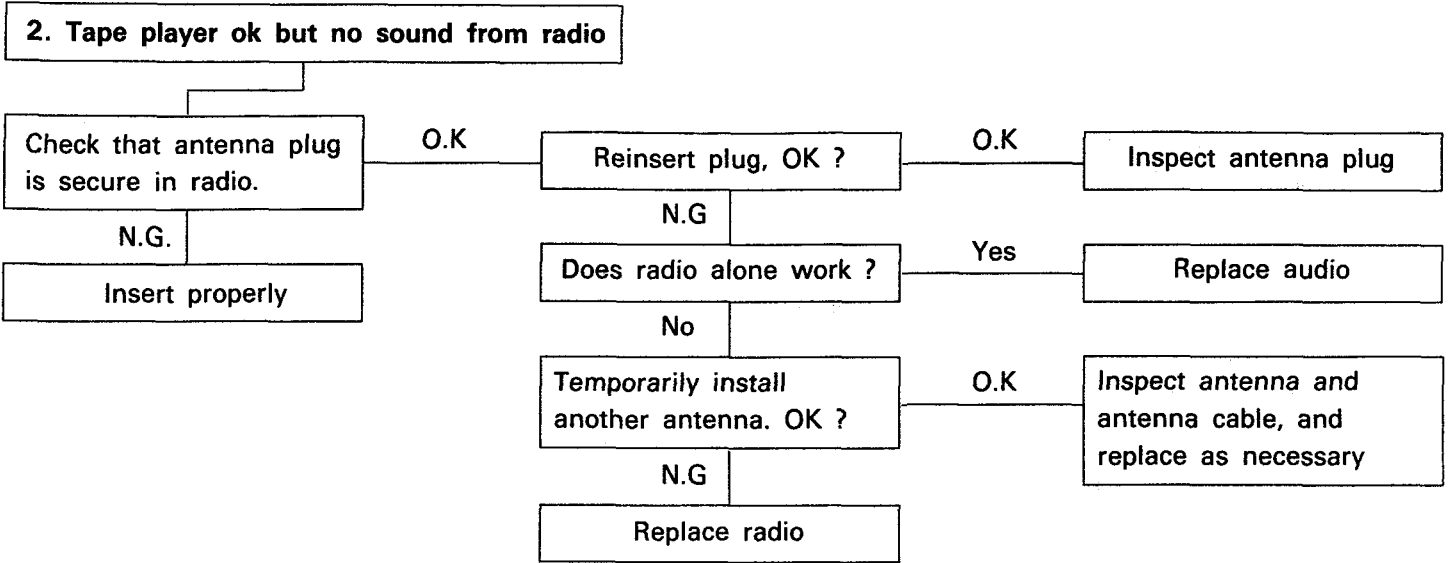
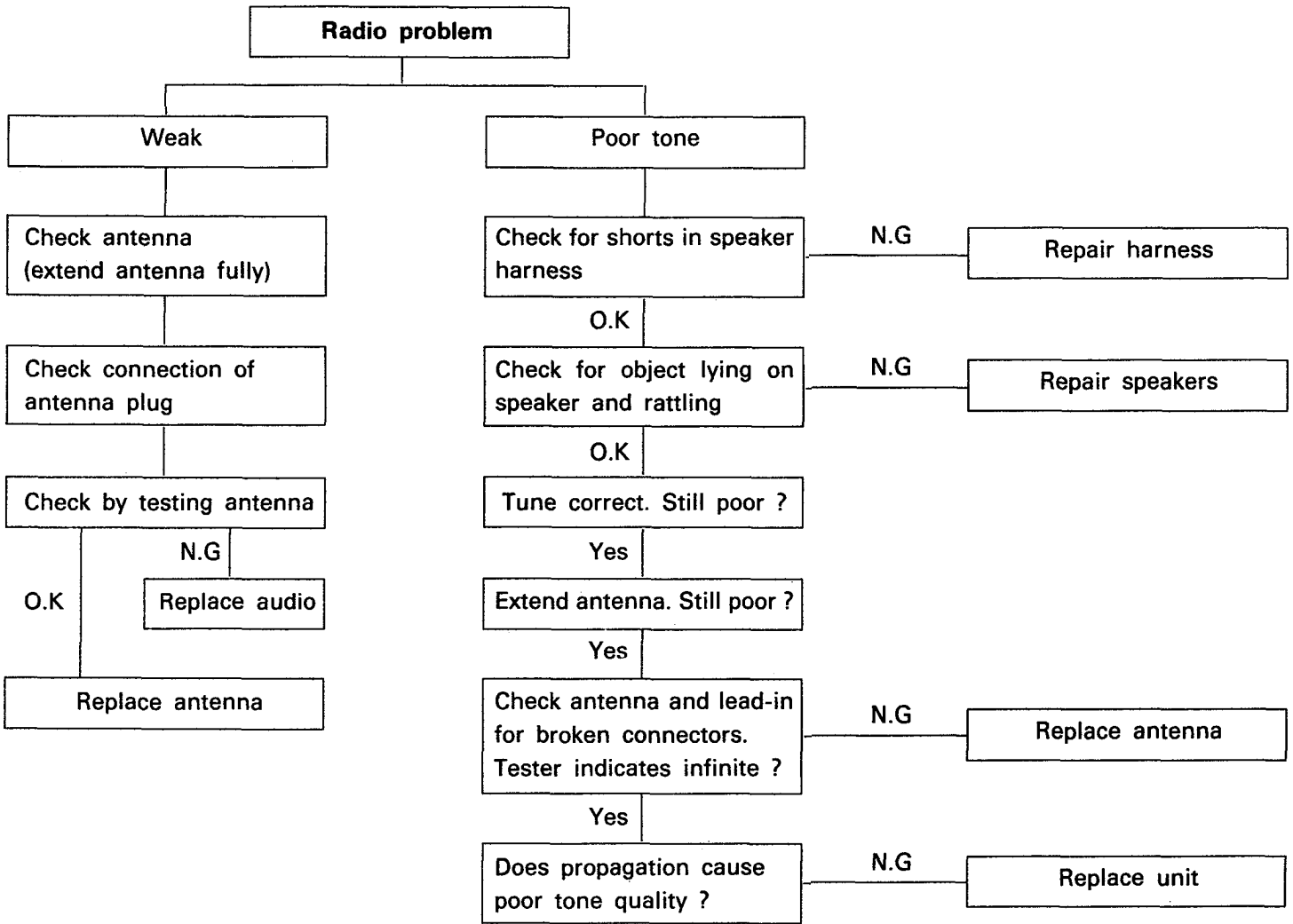


CHART 2



AUDIO

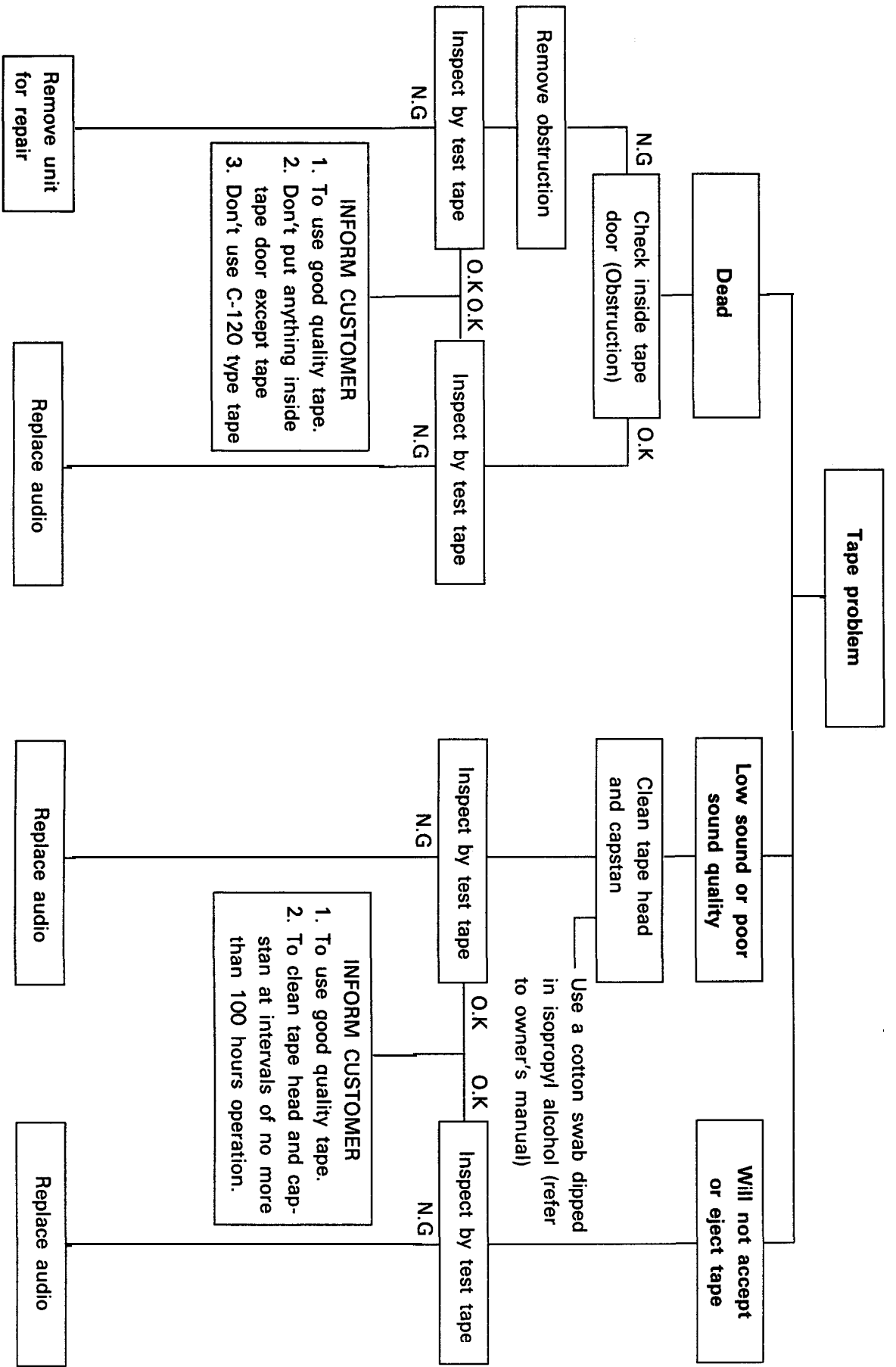
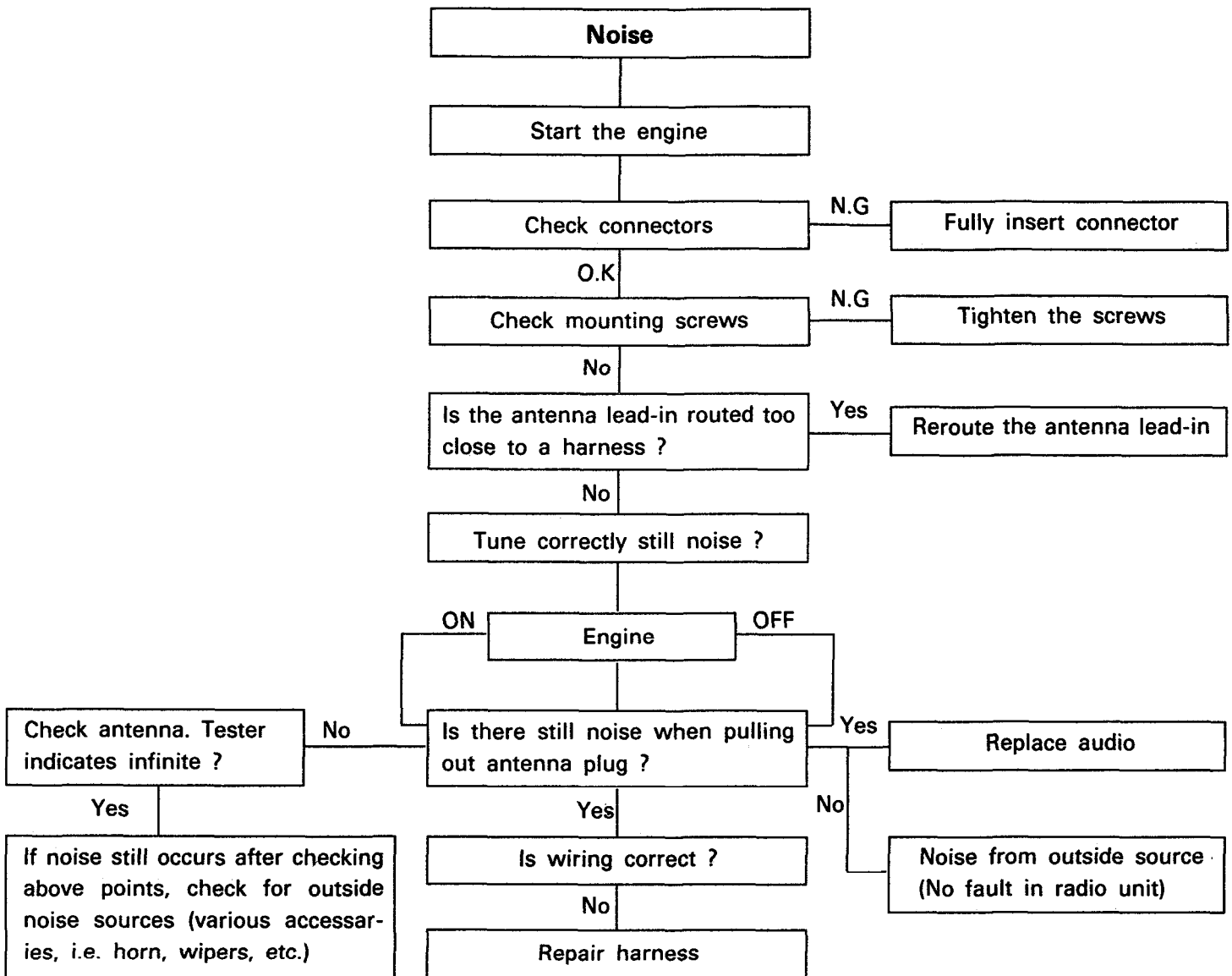


CHART 3

AUDIO

CHART 4

1. RADIO



AUDIO

2. TAPE

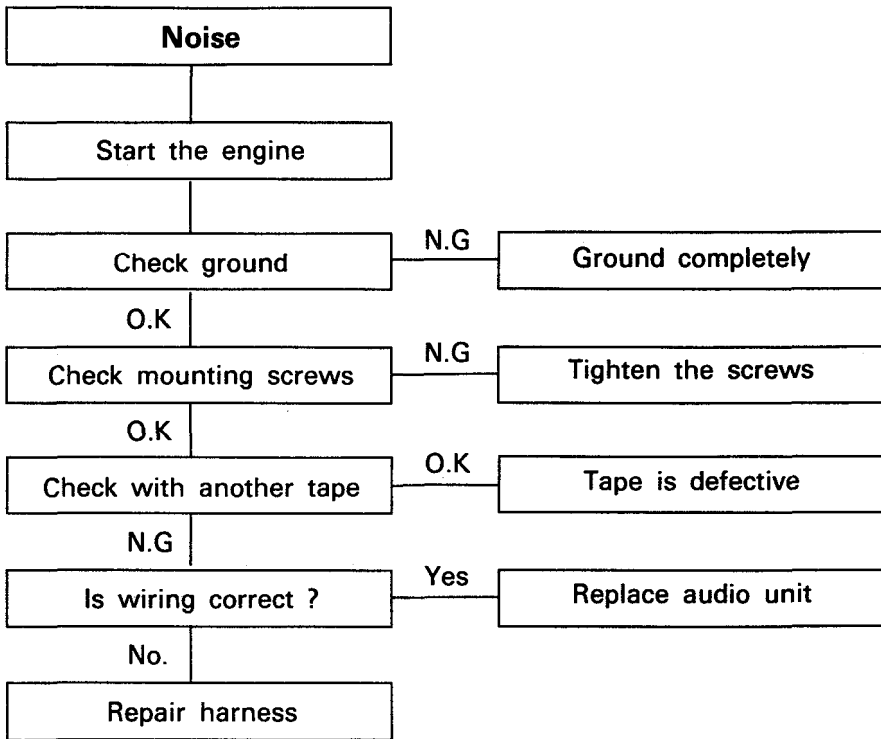
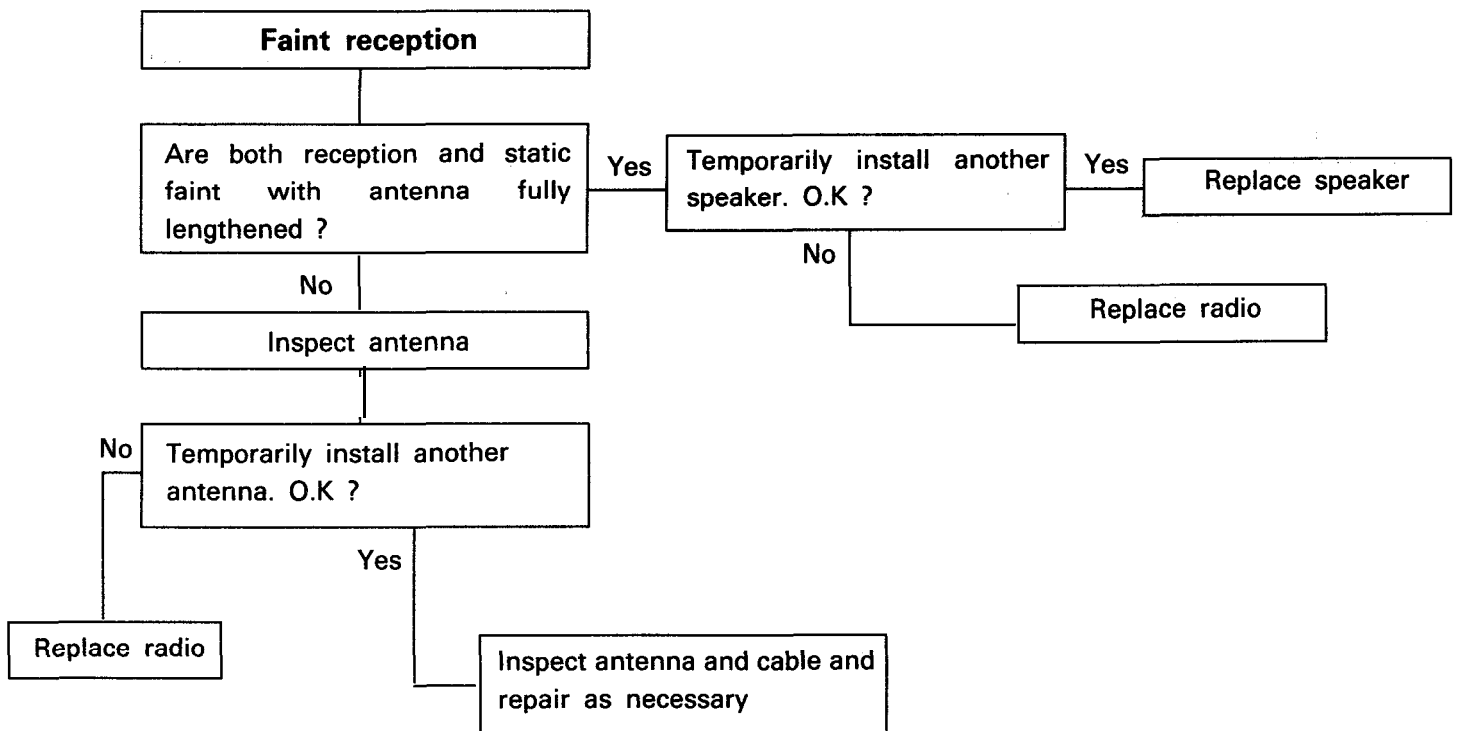


CHART 5



AUDIO

CHART 6

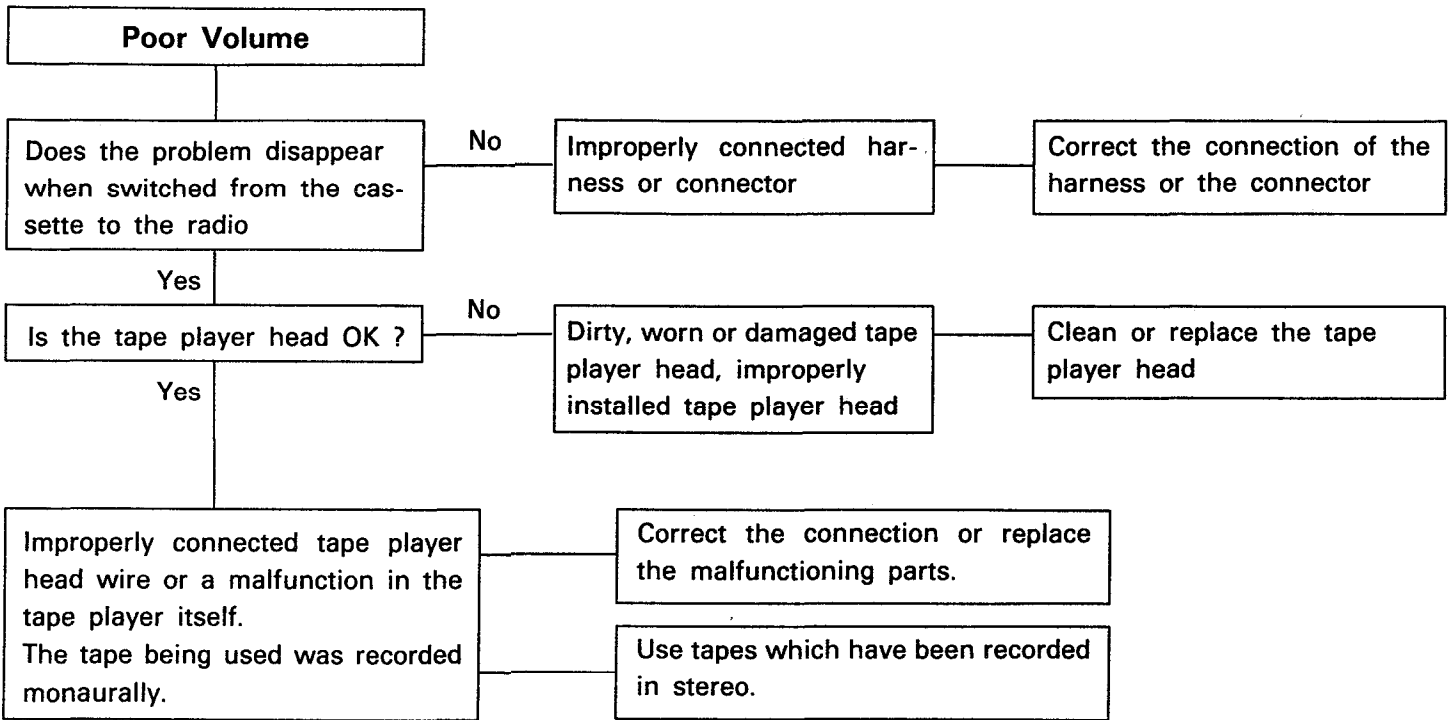


CHART 7

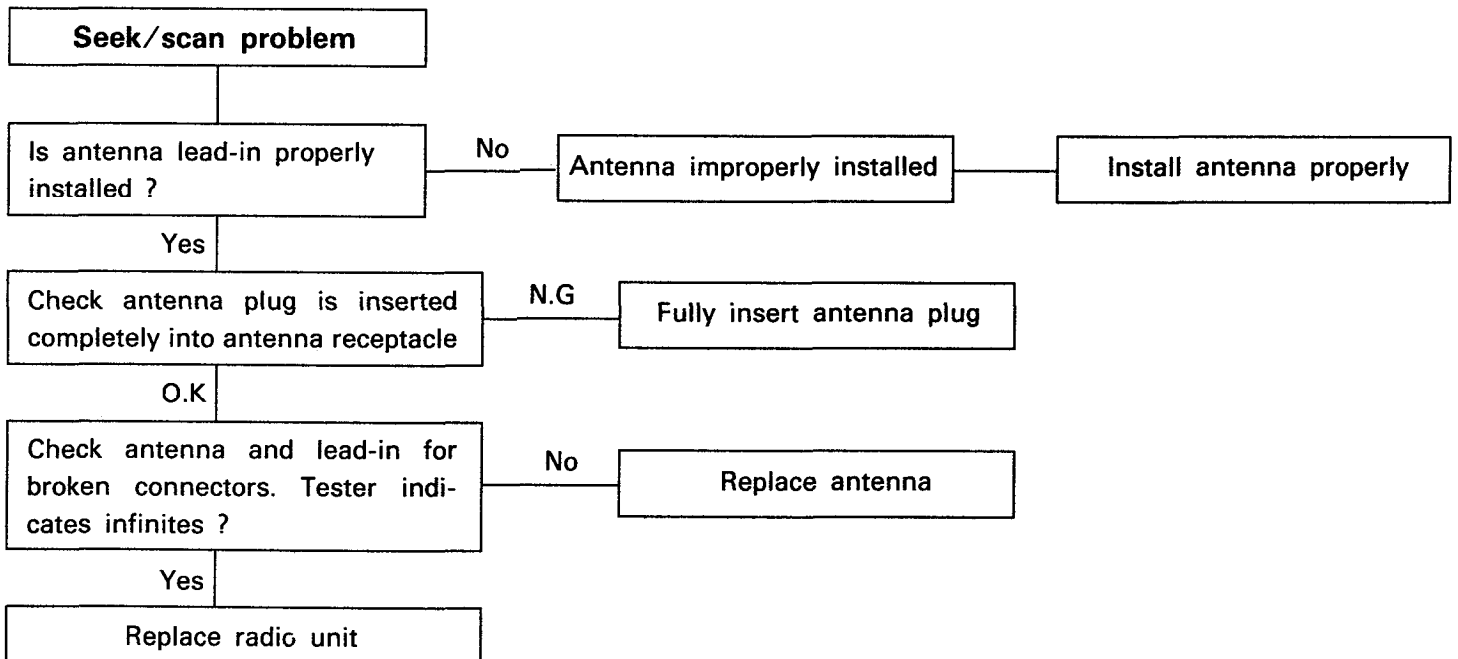
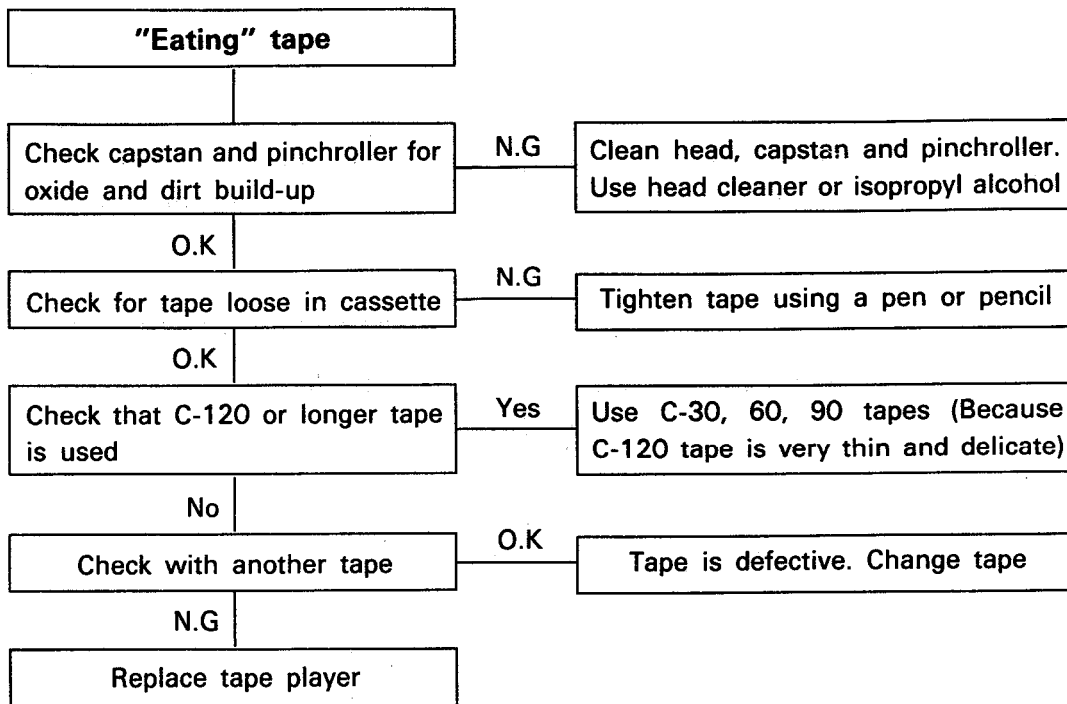


CHART 8



COMPACT DISC PLAYER

TROUBLESHOOTING

Symptoms	Cause	Solution
<ul style="list-style-type: none"> o Skips o Stuck on one track o Disc ejects during play 	<ul style="list-style-type: none"> o Scratches o Fingerprint marks or dust (Unclean surfaces) 	<ul style="list-style-type: none"> o Handle disc by edge only. o Keep disc clean by using a cleaning kit specifically designed for compact discs.
	<ul style="list-style-type: none"> o Pin holes 	<ul style="list-style-type: none"> o Check for pin holes by holding disc up to a light aspect and observing it. o Defective disc should not be used in player.
<ul style="list-style-type: none"> o Disc loads but ejects after a few seconds 	<ul style="list-style-type: none"> o Disc is not centered on clamping mechanism. 	<ul style="list-style-type: none"> o Disc center hole can be defective during manufacturing process. o Defective disc should not be used in player.
	<ul style="list-style-type: none"> o Rough edges 	<ul style="list-style-type: none"> o Rough edges may touch mechanism parts and can be corrected by lightly sanding disc edges.
<ul style="list-style-type: none"> o Disc loads but function switch won't operate and display is erratic. 	<ul style="list-style-type: none"> o Battery voltage drop or a momentary loss of B+. 	<ul style="list-style-type: none"> o When replacing or charging vehicle battery, reset button should be depressed to restore normal function.
<ul style="list-style-type: none"> o Error indication 	<ul style="list-style-type: none"> o Laser diode protection circuit is being activated due to excessive scratches or environmental heat. 	<ul style="list-style-type: none"> o An excessive scratched disc may cause the tracking servo to move more than necessary, resulting in internal heat build up. o Remove disc and allow C.D. player to return to a safe operating temperature before re-inserting.

SERVICE ADJUSTMENT PROCEDURES

FUSE REPLACEMENT

Be sure to use the specified fuse when making a replacement.

Radio unit	Permissible current
LOW GRADE	1A & 3A
MEDIUM GRADE	3A & 5A
DELUXE GRADE	3A & 5A
PREMIUM GRADE	3A & 5A

CAUTION

Substituting with a higher capacity fuse, or connection without a fuse may result in damage to the unit.

TAPE HEAD AND CAPSTAN CLEANING

1. To obtain optimum performance, clean the head and capstan as often as necessary, depending upon frequency of use and tape cleanliness.
2. To clean the tape head and capstan, use a cotton swab dipped in ordinary rubbing alcohol. Wipe the head and capstan.

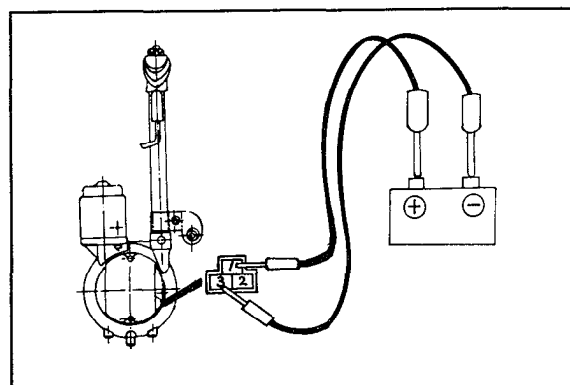
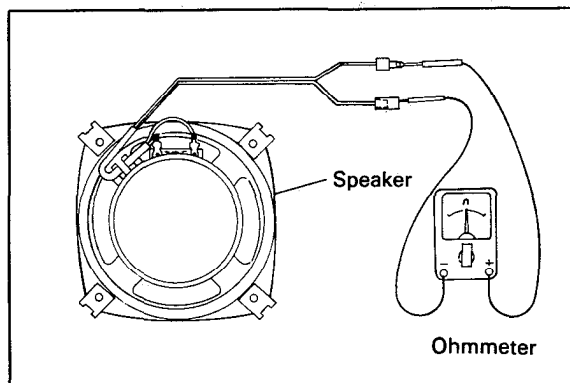
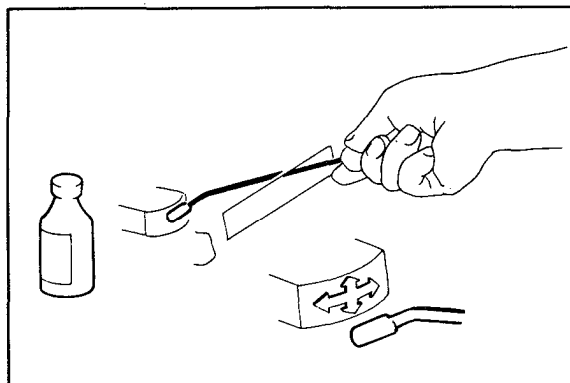
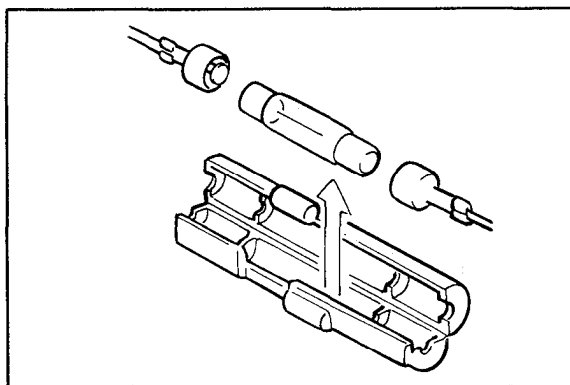
SPEAKER CHECKING

1. Check the speaker by using an ohmmeter.
If an ohmmeter indicates the impedance of the speaker when checking between the speaker (+) and speaker (-) of the same channel, the speaker is ok.
2. If clicking sound is emitted from the speaker when the ohmmeter plugs touch the speaker terminals, the speaker is ok.

ANTENNA (AUTOMATIC)

INSPECTION

Connect the motor terminals directly to the battery and check that the motor operates smoothly. Next, reverse the polarity and check that the motor operates smoothly in the reverse direction.

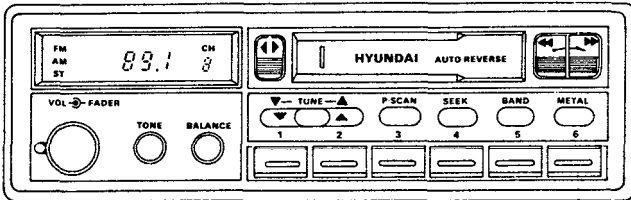


AUDIO

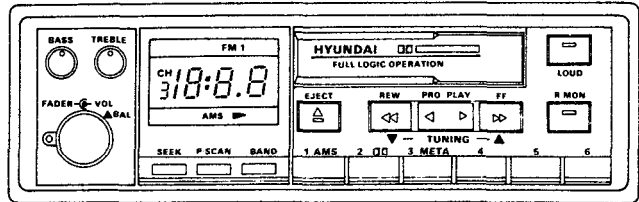
STRUCTURAL VIEW

- FRONT SIDE -

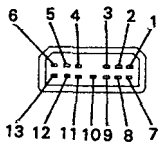
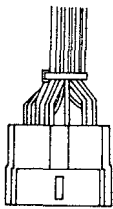
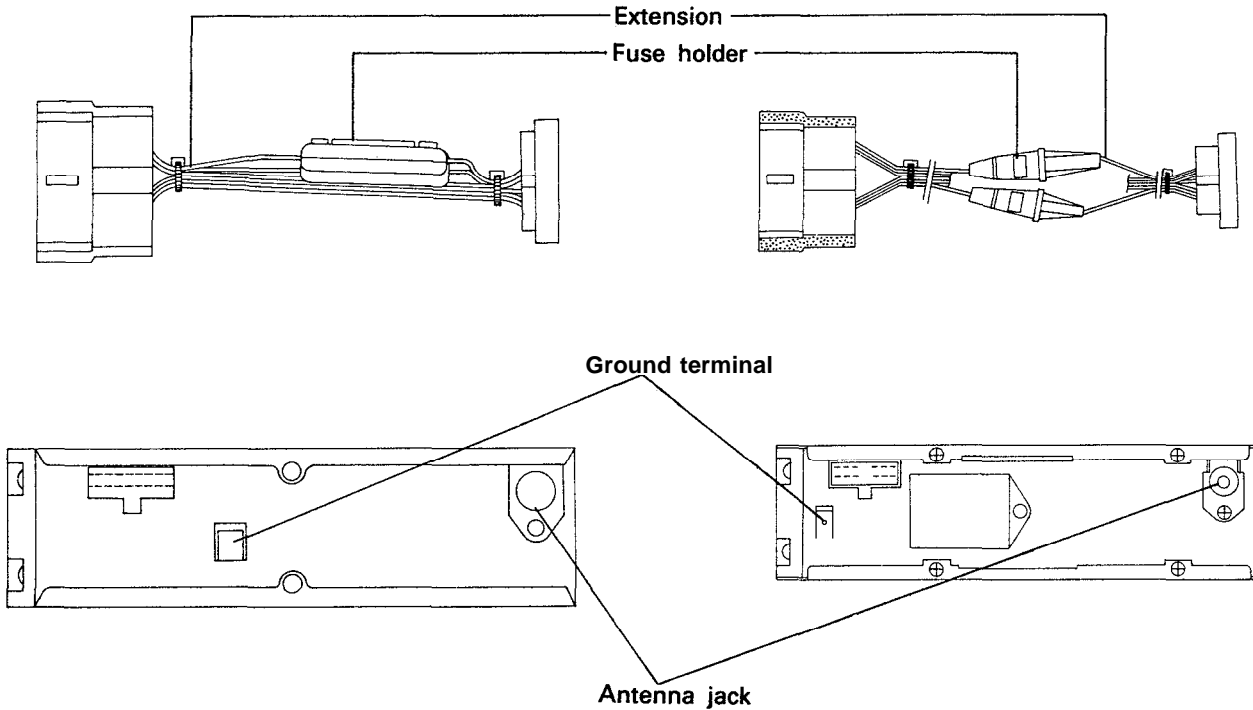
Base (HC-700)



Medium (HC-800)



- BACK SIDE -



13P Connector (M34-1)

No.	Circuit	No.	Circuit
1	Speaker rear LH (+)	8	Speaker front LH (+)
2	Speaker front LH (+)	9	Battery (+)
3	Accessory power (+)	10	Power antenna
4	Speaker front RH (+)	11	Speaker front RH (-)
5	Speaker rear RH(+)	12	Speaker rear RH (-)
6	ILL (+)	13	ILL (-)
7	Speaker rear LH (-)		

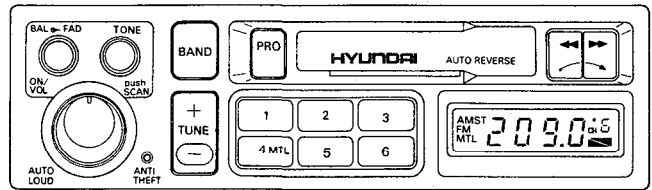
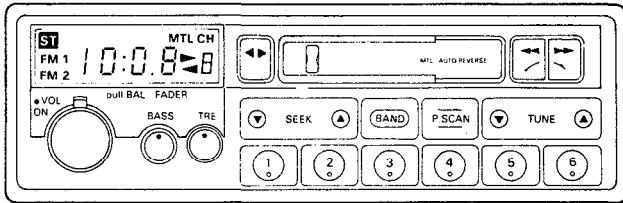
AUDIO

STRUCTURAL VIEW (BASE GRADE)

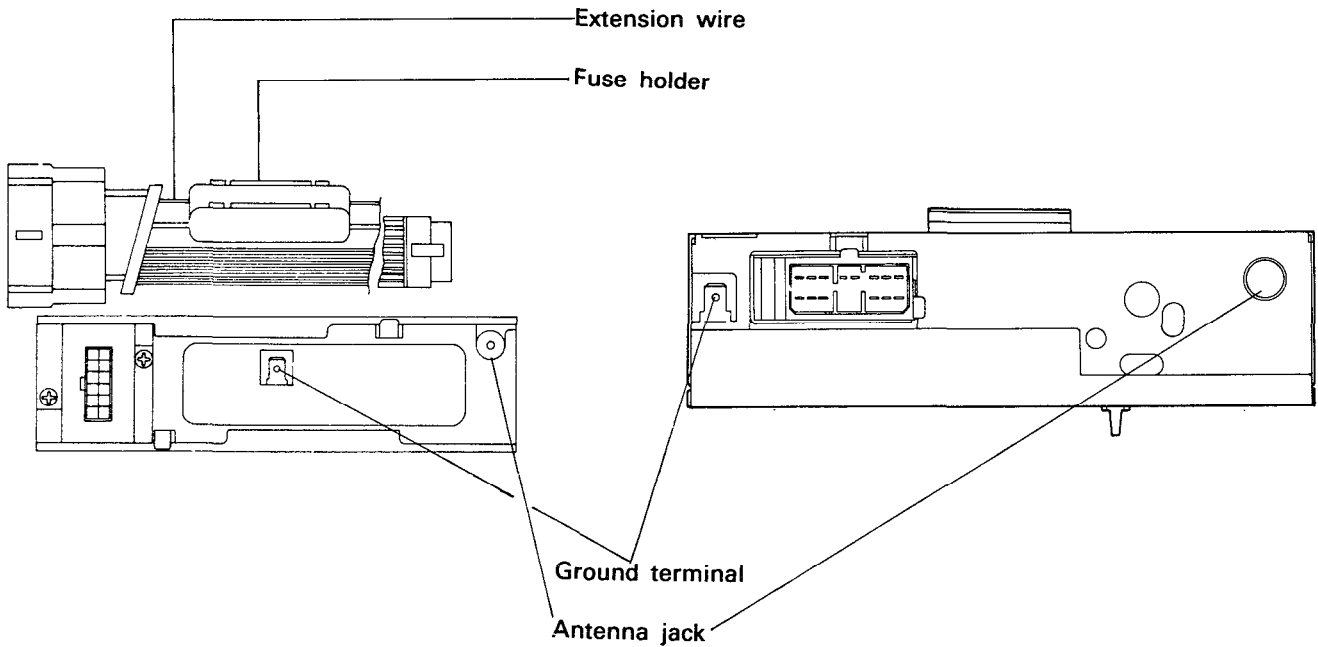
-FRONT SIDE-

C-420

H-510



-BACK SIDE-



13P Connector (M34-1)

No.	Circuit	No.	Circuit
1	Speaker rear LH (+)	8	Speaker front LH (+)
2	Speaker front LH (+)	9	Battery (+)
3	Accessory power (+)	10	Power antenna
4	Speaker front RH (+)	11	Speaker front RH (-)
5	Speaker rear RH (+)	12	Speaker rear RH (-)
6	ILL (+)	13	ILL (-)
7	Speaker rear LH (-)		

14P Connector (M34-3)

No.	Circuit	No.	Circuit
1	ILL (-)	8	Speaker rear LH (+)
2	Speaker rear RH (-)	9	Speaker front LH (+)
3	Speaker front RH (-)	10	ACC
4	Speaker rear RH (+)	11	B+
5	Speaker rear LH (-)	12	Speaker front RH (+)
6	Power antenna	13	Speaker rear RH (-)
7	ILL (+)	14	Ground

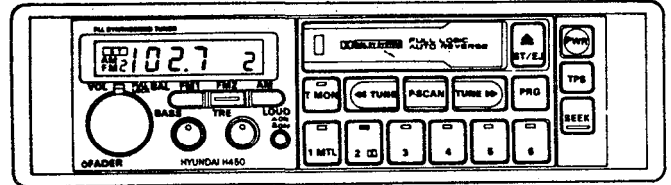
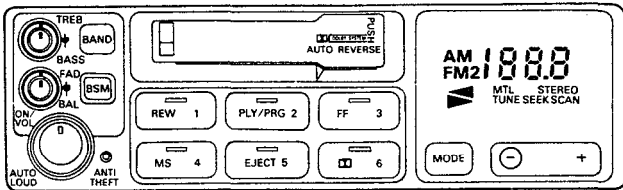
AUDIO

STRUCTURAL VIEW (MEDIUM GRADE)

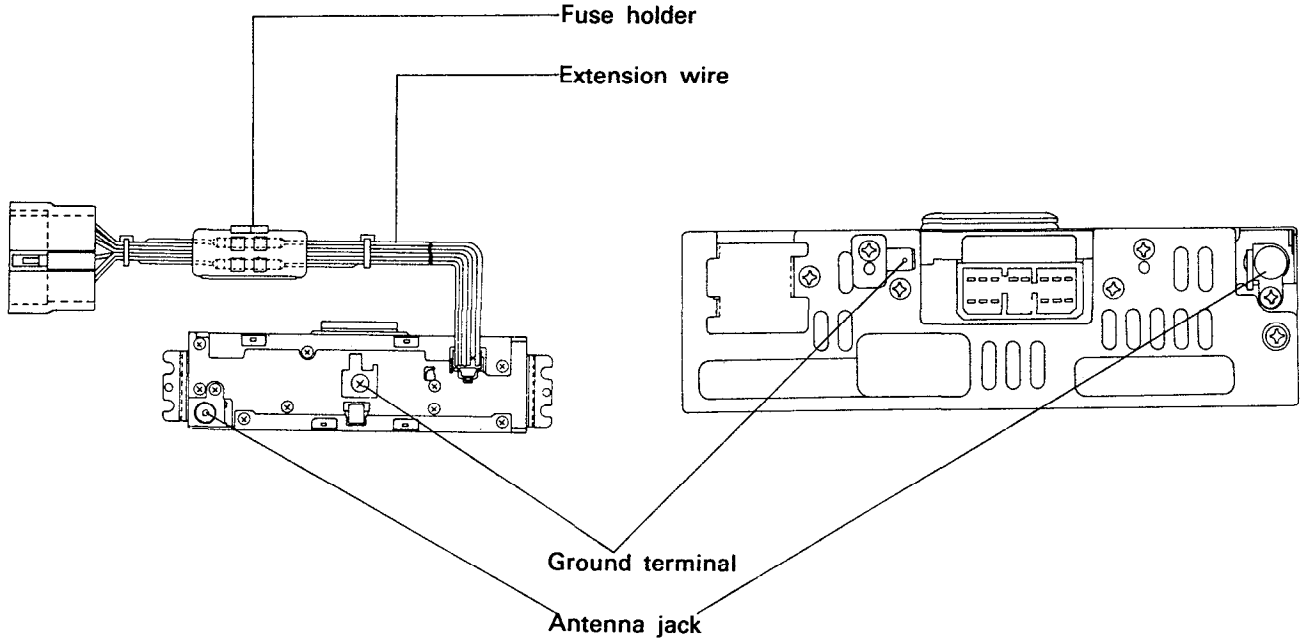
-FRONT SIDE-

H 4 5 0

H-560



-BACK SIDE-



13P Connector (M34-1)

No.	Circuit	No.	Circuit
1	Speaker rear LH (+)	8	Speaker front LH (+)
2	Speaker front LH (+)	9	Battery (+)
3	Accessory power (+)	10	Power antenna
4	Speaker front RH (+)	11	Speaker front RH (-)
5	Speaker rear RH (+)	12	Speaker rear RH (-)
6	ILL (+)	13	ILL (-)
7	Speaker rear LH (-)		

14P Connector (M34-3)

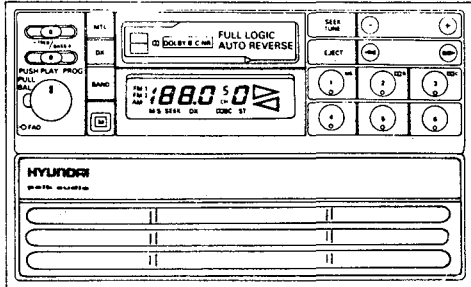
No.	Circuit	No.	Circuit
1	ILL (-)	8	Speaker rear LH (+)
2	Speaker rear RH (-)	9	Speaker front LH (+)
3	Speaker front RH (-)	10	ACC
4	Speaker rear RH (+)	11	B+
5	Speaker rear LH (-)	12	Speaker front RH (+)
6	Power antenna	13	Speaker rear RH (-)
7	ILL (+)	14	Ground

AUDIO

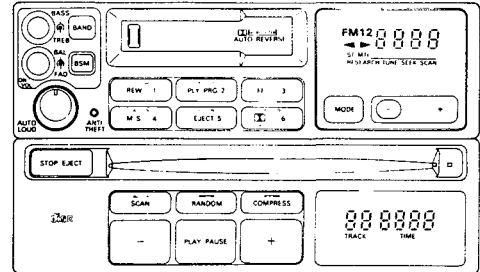
STRUCTURAL VIEW (DELUXE GRADE)

-FRONT SIDE-

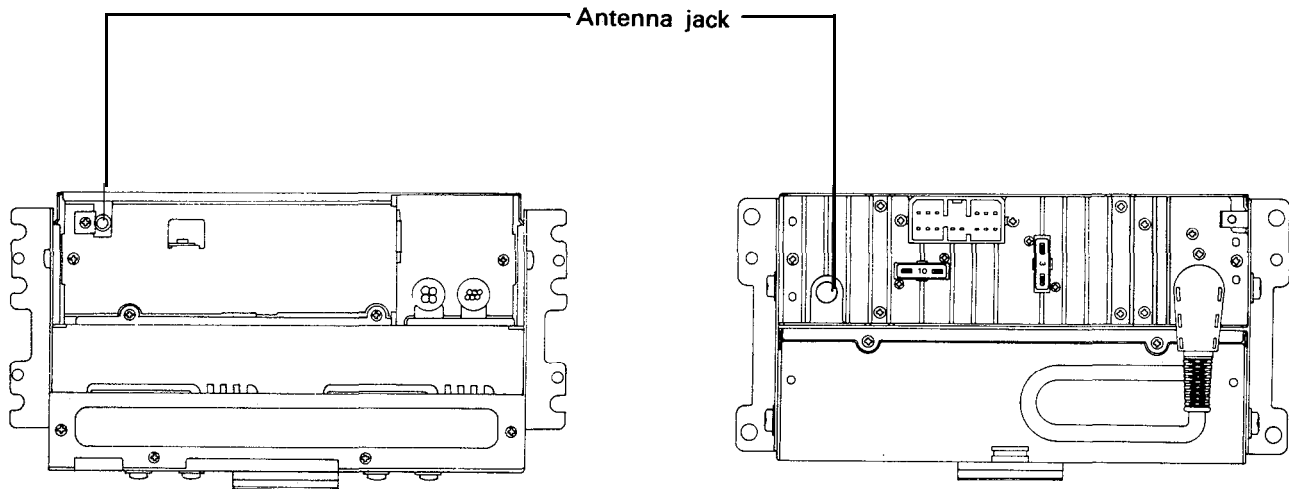
H-600



H-565



-BACK SIDE-



13P Connector (M34-1)

No.	Circuit	No.	Circuit
1	Speaker rear LH (+)	8	Speaker front LH (+)
2	Speaker front LH (+)	9	Battery (+)
3	Accessory power (+)	10	Power antenna
4	Speaker front RH (+)	11	Speaker front RH (-)
5	Speaker rear RH (+)	12	Speaker rear RH (-)
6	ILL (+)	13	ILL (-)
7	Speaker rear LH (-)		

14P Connector (M34-3)

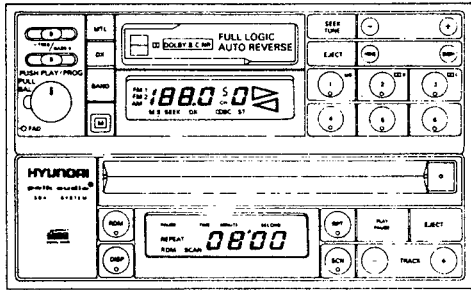
No.	Circuit	No.	Circuit
1	ILL (-)	8	Speaker rear LH (+)
2	Speaker rear RH (-)	9	Speaker front LH (+)
3	Speaker front RH (-)	10	ACC
4	Speaker rear RH (+)	11	B+
5	Speaker rear LH (-)	12	Speaker front RH (+)
6	Power antenna	13	Speaker rear RH (-)
7	ILL (+)	14	Ground

AUDIO

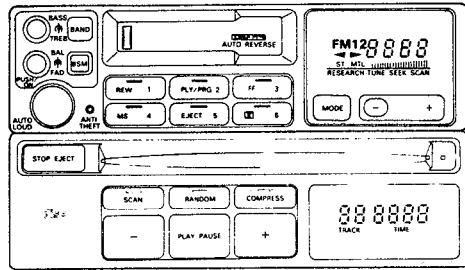
STRUCTURAL VIEW (PREMIUM GRADE)

-FRONT SIDE-

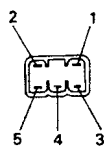
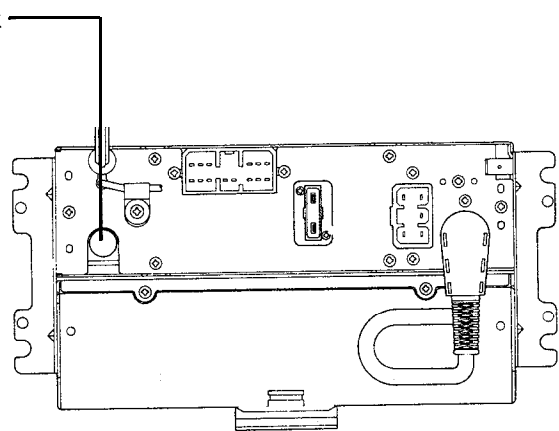
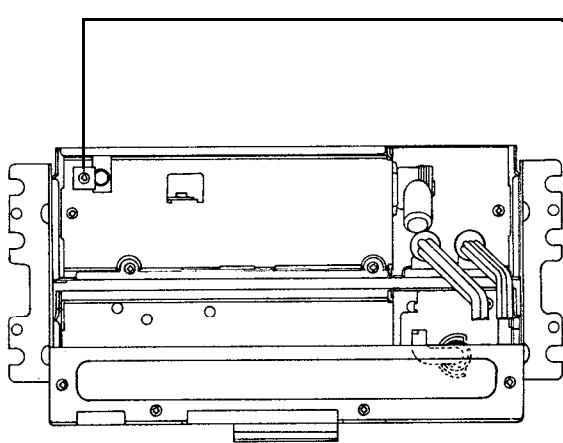
H-700



H-590



-BACK SIDE-



5P Connector (M34-2)

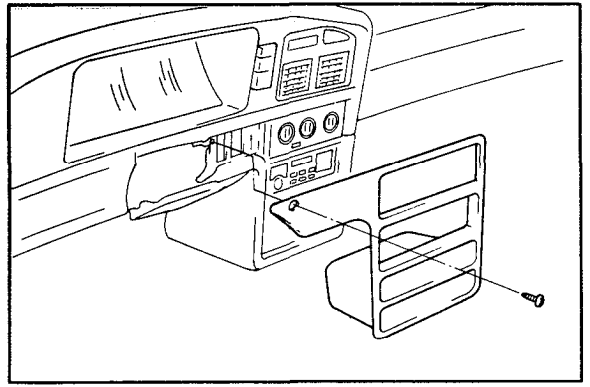
No.	Circuit
1	Battery (+)
2	Accessory power (+)
3	Ground
4	Illumination (+)
5	Power antenna

AUDIO

REMOVAL AND INSTALLATION

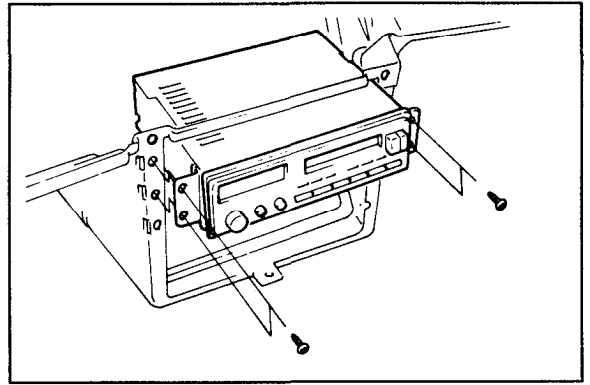
RADIO UNIT

1. Remove the center lower crash pad facia panel.



2. Unscrew the mounting screws and remove the radio unit from the mounting bracket.

3. Replace in reverse order of preceding steps.



SPEAKER

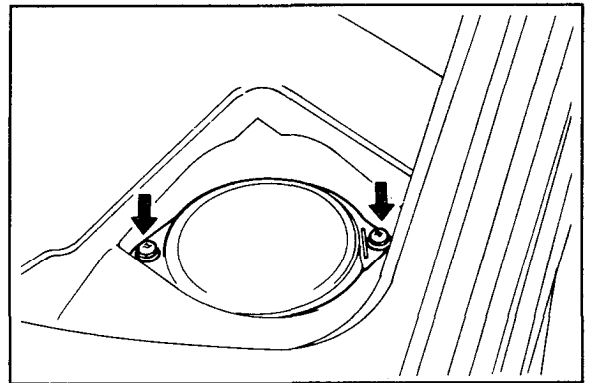
FRONT SPEAKER

1. Remove the front speaker grille.

2. Remove the speaker mounting bolts.

3. Remove the speaker assembly.

4. Replace in reverse order of the preceding steps.

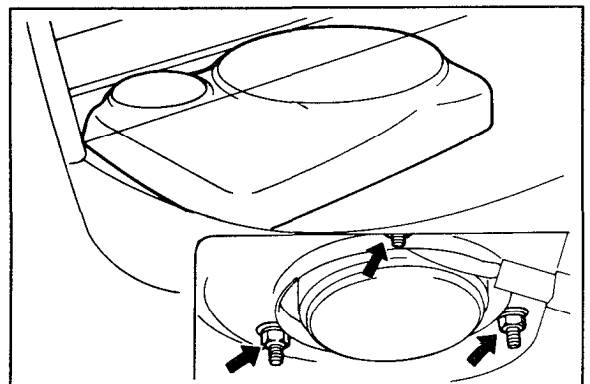


REAR SPEAKER

1. Remove the speaker mounting nuts.

2. Disconnect the wiring connector.

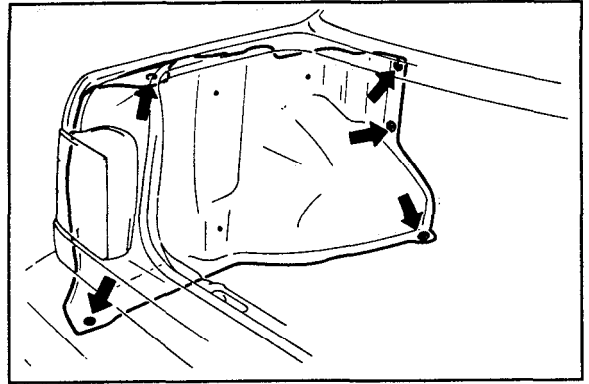
3. Replace in reverse order of the preceding steps.



ANTENNA (AUTOMATIC)

REMOVAL

1. Remove the luggage side trim.

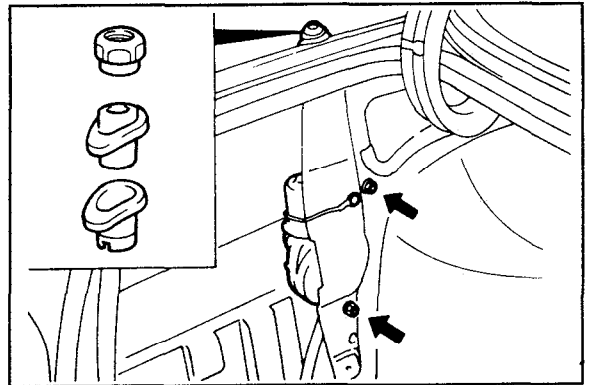


2. Remove the antenna mounting nuts and tapping screw for ground.

3. Disconnect the wiring connector and antenna cable.

4. Remove the antenna assembly.

5. Replace in reverse order of the preceding steps.



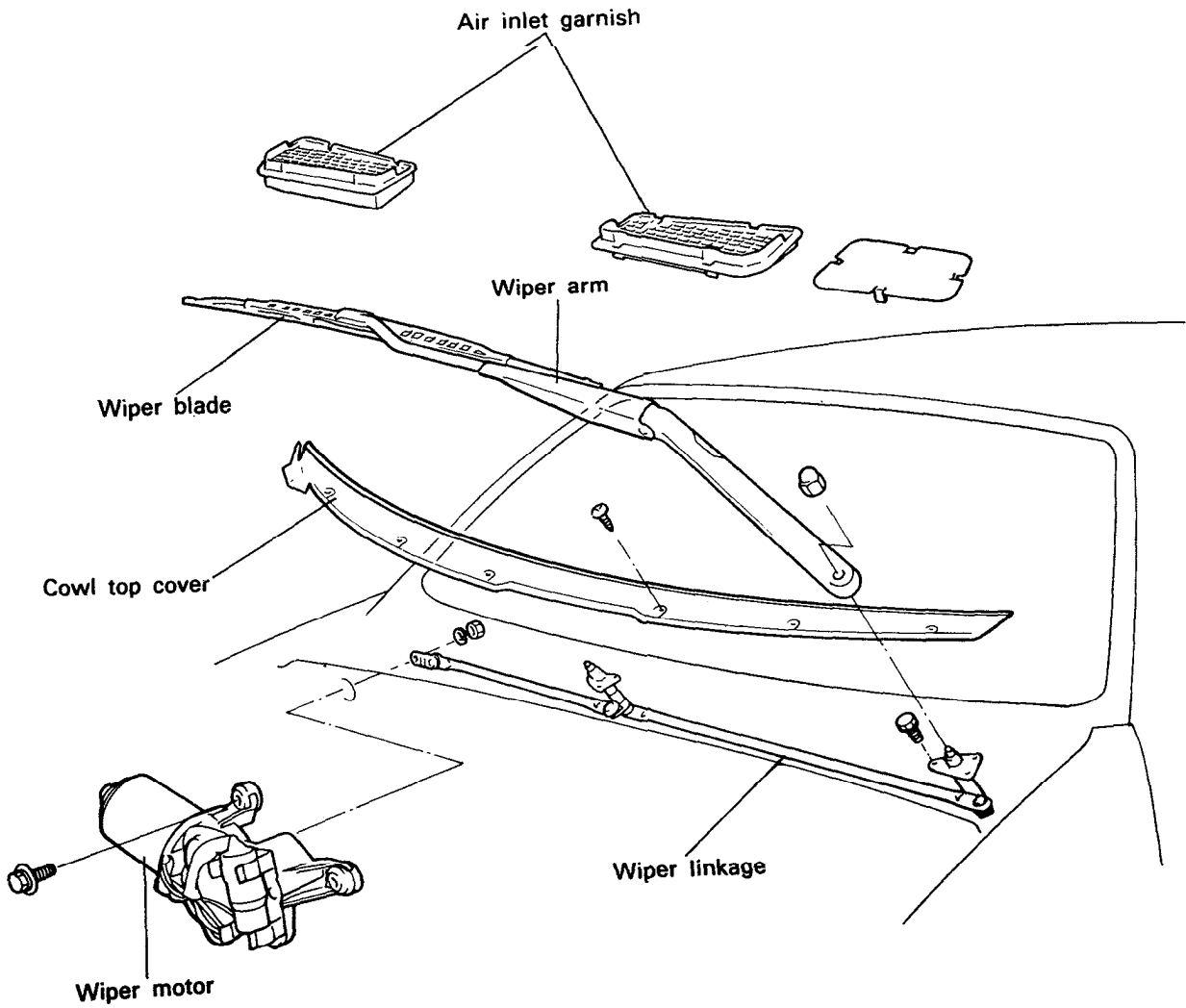
WINDSHIELD WIPER AND WASHER

SPECIFICATIONS

Items	Specifications
Wiper motor	
Rated voltage	DC 12V
Testing voltage	13.5 V (terminal voltage)
Starting voltage	MAX. 8V
Operating voltage range	DC 10 ~ 15 V
Load speed (10 kg.cm)	
Low	48 ~ 56 rpm/MAX. 3.5 A
High	64 ~ 78 rpm/MAX. 4.5 A
Load speed (40 kg.cm)	
Low	40 ~ 48 rpm/MAX. 5.5 A
High	56 ~ 68 rpm/MAX. 7 A
Wiper blade	
Wiping angle	
Driver's side	87.2° ₊₁
Passenger's side	100° ₋₅
Wiper blade length	510 mm
Intermittent wiper relay	
Rated voltage	DC 12 V
Operating voltage range	DC 9 ~ 16 V
Load capacity range	MAX. 60 A
Windshield washer	
Motor type	DC ferrite magnet type
Pump type	Centrifugal pump
Rated voltage	DC 12 V
Current	MAX. 3.9 A
Discharge pressure	1.2 kg/cm ²
Flow rate	Min. 1320 cc/min.
Over load capacity (continuous operation)	
With water	MAX. 60 sec
Racing	MAX. 20 sec

WINDSHIELD WIPER AND WASHER

COMPONENTS



WINDSHIELD WIPER AND WASHER

TROUBLESHOOTING

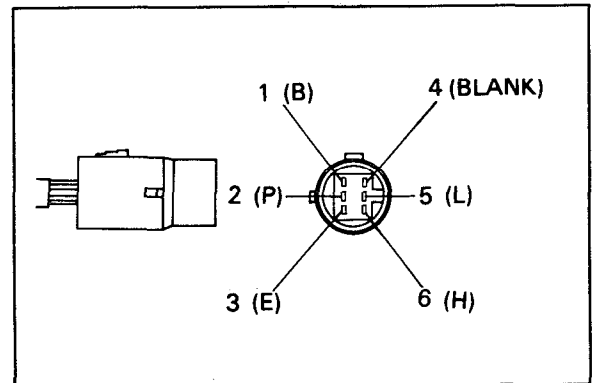
Problem	Possible cause	Remedy
Wipers do not operate or return to off position	Wiper fuse blown Wiper motor faulty Wiper switch faulty Wiring or ground faulty	Replace fuse and check for short Check motor Check switch Repair as necessary
Wipers do not operate in INT position	Intermittent relay faulty Wiper switch faulty Wiper motor faulty Wiring or ground faulty	Check intermittent relay. Check switch Check motor Repair as necessary
Washers do not operate	Washer hose or nozzle clogged Washer motor faulty Washer switch faulty Wiring faulty	Repair as necessary Replace motor Check switch Repair as necessary

SERVICE ADJUSTMENT PROCEDURES

WIPER MOTOR

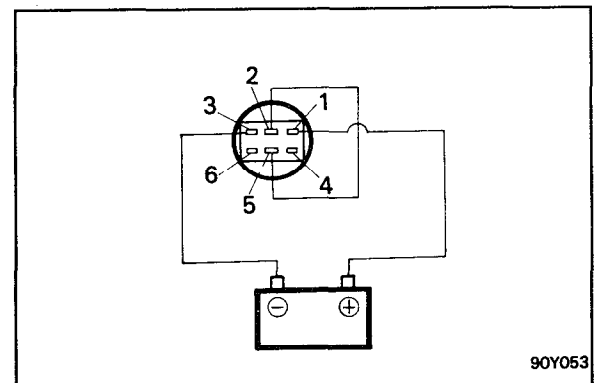
Speed operation check

1. Remove the connector from the wiper motor.
2. Attach the positive (+) lead from the battery to terminal 5 and the negative (-) lead to terminal 3.
3. Check that the motor operates at low speed.
4. Connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 3.
5. Check that the motor operates at high speed.



Automatic stop operation check

1. Operate the motor at low speed.
2. Stop the motor operation anywhere except at the off position by disconnecting terminal 5.
3. Connect terminals 5 and 2.
4. Attach the positive (+) lead from the battery to terminal 1.
5. Check that the motor stops running at the off position.



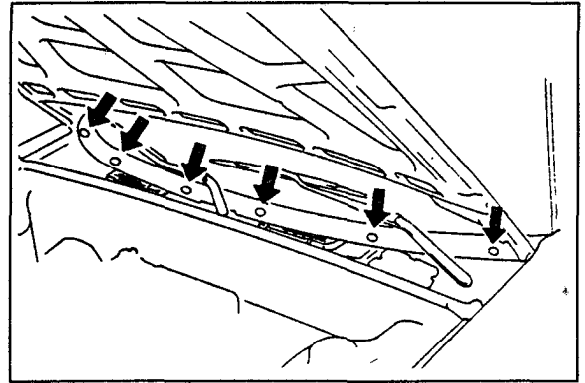
90Y053

WINDSHIELD WIPER AND WASHER

SERVICE POINTS OF REMOVAL

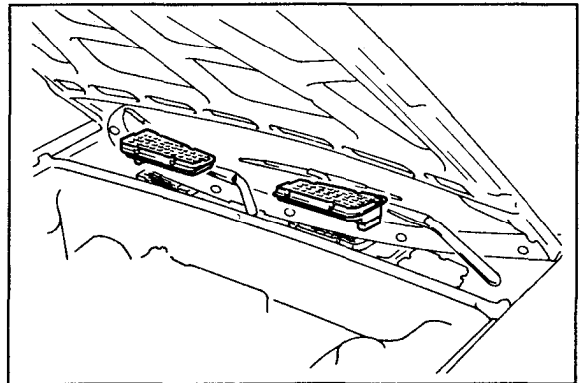
REMOVAL OF FRONT DECK PANEL

Unscrew the mounting screws to pry up the front deck panel and remove the front deck panel.



REMOVAL OF AIR INLET GARNISH

Remove the air inlet garnish while pressing the tab.

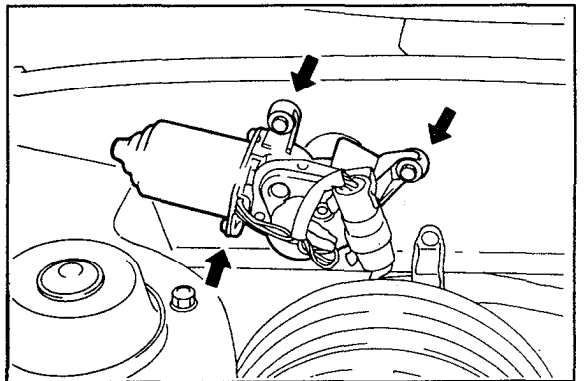


REMOVAL OF WIPER MOTOR

Loosen the wiper motor assembly mounting bolts, and then remove the wiper motor assembly. Disconnect the linkage and the motor assembly, and then remove the linkage.

CAUTION

Because the installation angle of the crank arm and the motor has been set, do not remove them unless it is necessary to do so. If they must be removed, remove them only after marking their mounting positions.

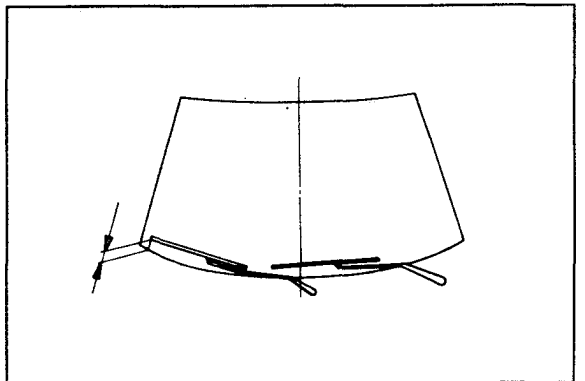


SERVICE POINTS OF INSTALLATION

INSTALLATION OF WIPER ARM

Mount the wiper arms onto the pivot shaft so that the stopping position of the wiper blades is in agreement with the standard specifications.

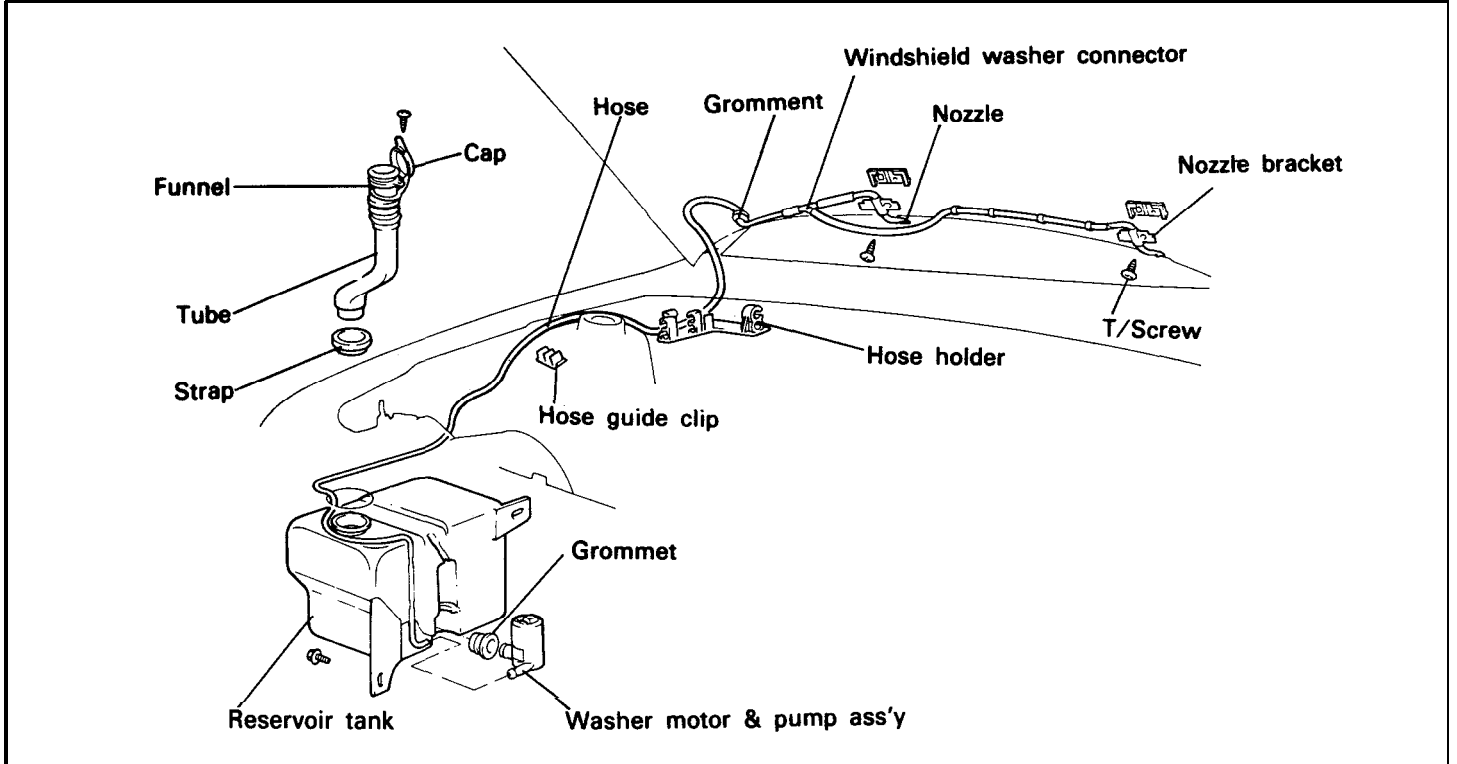
Standard specifications (distance between the blade tip and the front deck garnish) : 30 ± 3 mm (1.2 in.)



WINDSHIELD WIPER AND WASHER

WINDSHIELD WASHER

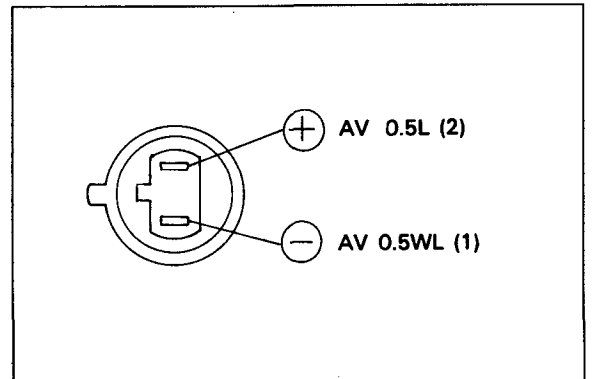
COMPONENTS



INSPECTION

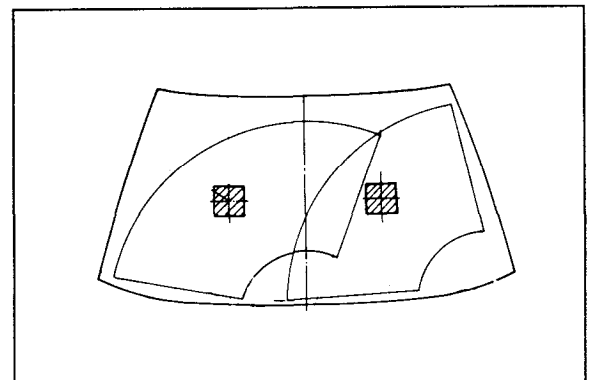
WASHER MOTOR

1. With the washer motor installed to the washer tank, fill the washer tank with water.
2. Connect battery positive (+) and negative (-) cables to terminals 2 and 1 respectively to see that the washer motor runs and water is pumped.



SERVICE ADJUSTMENT PROCEDURES

1. Check the washer fluid contact point.
2. Adjust the washer fluid contact point by using a metal wire to move the washer nozzle ball.
3. If the amount of washer fluid ejected is too small, check for clogged, bent or crushed washer piping. Check the clipped points too, because the tube might be crushed.



WINDSHIELD WIPER AND WASHER

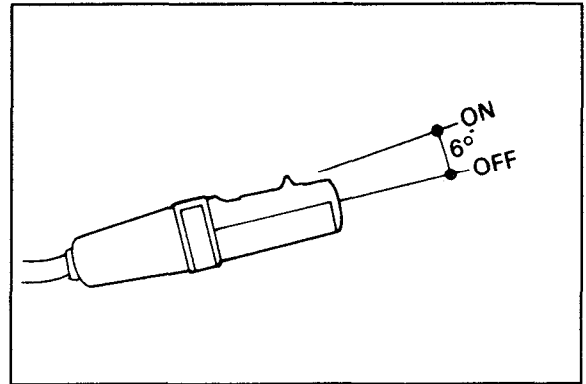
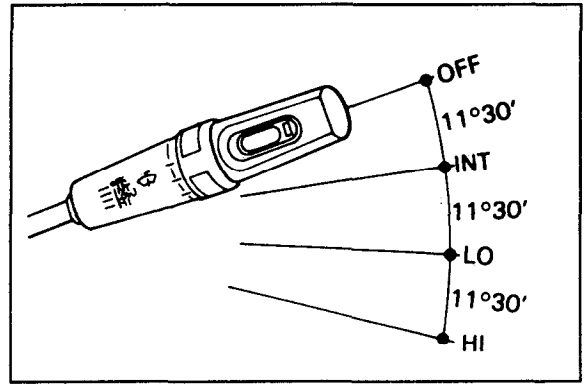
WINDSHIELD WIPER AND WASHER SWITCH INSPECTION

Inspect the switch continuity between the terminals.

Terminal \ Position	LO	HI	S	INT	EW	INT(T)
OFF	● ——— ●					
INT	● ——— ●			● ——— ●	● ——— ●	● ——— ●
LO	● ——— ●				● ——— ●	
HI		● ——— ●			● ——— ●	

Terminal \ Position	W	EW
OFF		
ON	● ——— ●	

If continuity is not as specified, replace the switch.



INTERMITTENT WIPER RELAY

CIRCUIT DIAGRAM

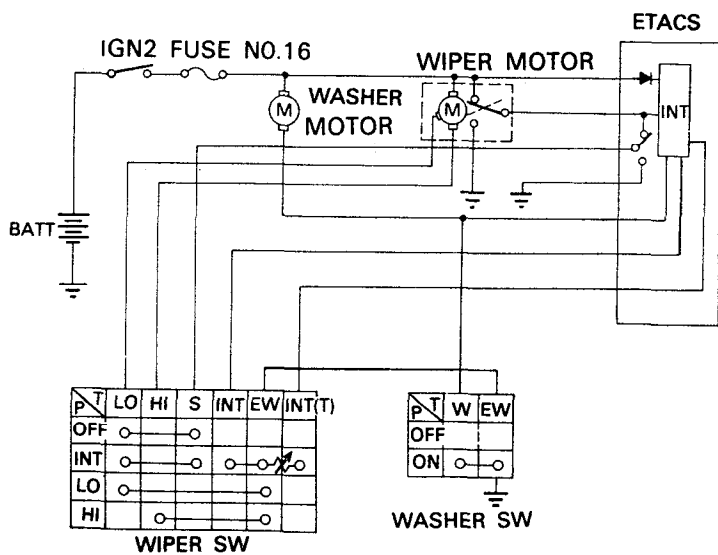


FIG 1

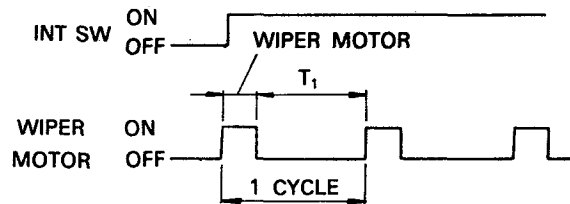
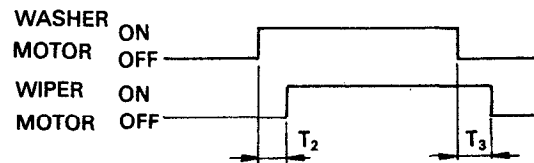


FIG 2



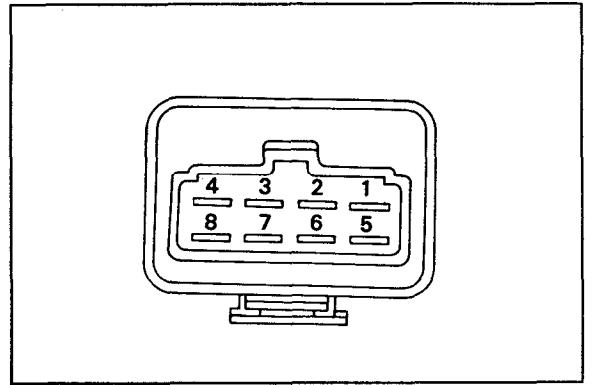
- $T_1 = 1.5 \pm 0.7 \text{ sec (at VR} = 0 \text{ k}\Omega)$
- $T_1 = 10.5 \pm 3 \text{ sec (at VR} = 50 \text{ k}\Omega)$
- $T_2 = 0.4\text{--}1.2 \text{ sec.}$
- $T_3 = 2.0\text{--}4.7 \text{ sec.}$

WINDSHIELD WIPER AND WASHER

INSPECTION

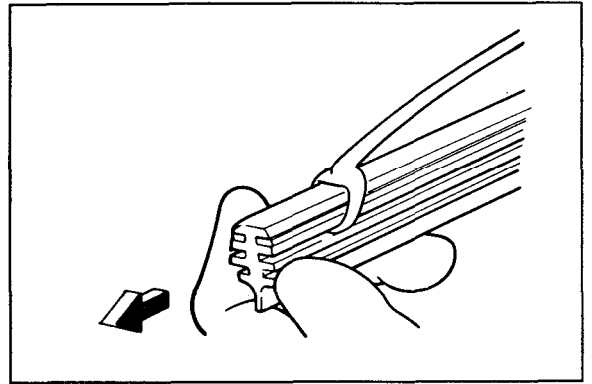
The intermittent relay operating time is controlled by variable resistance.

When the wiper system has been troubleshooted, replace the intermittent relay with other new one. And then the system is completely operated, the relay is faulty.

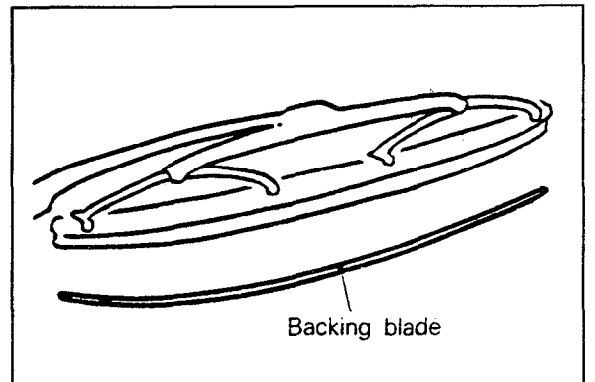


WIPER BLADE RUBBER REPLACEMENT

1. Pull out the rubber and backing blade from the stopper side.



2. Remove the backing blade from the rubber.
3. To attach a new rubber, assemble the rubber and backing blade, insert from the direction opposite the stopper, and secure by the stopper. Note that, because the backing blade is curved, installation should be as shown in the figure.



CLOCK

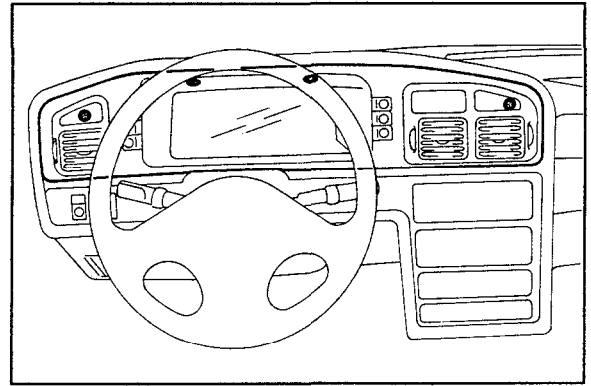
CLOCK

SPECIFICATIONS

Items	Specifications
Rated voltage	DC 12V
Operating voltage range	DC 10 ~ 16V
Time accuracy	Within ~ 2 sec./day (at DC 13V)
Operating temperature range	- 30 ~ +80°C (-22 ~ +176°F)
Current consumption (with DC 13V)	MAX. 150 mA

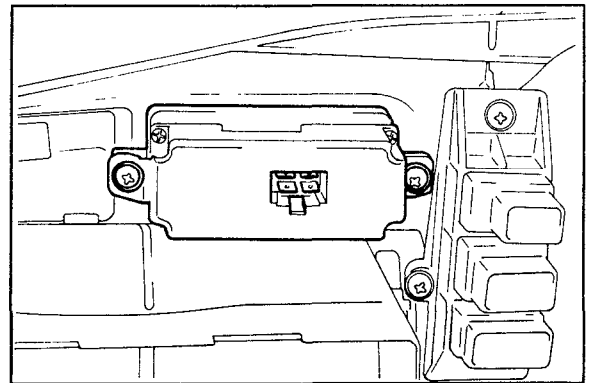
REMOVAL

1. Remove the 4 screws and pull out the cluster.



2. Disconnect the wiring connector.

3. Remove the digital clock assembly by unscrewing the 2 screws.



CAUTION

The clock is composed of delicate electronic components containing a crystal oscillator, transistor, etc. and should be handled with care. Specialized technical skill is needed to repair the internal mechanism of this clock. Do not attempt to disassemble it. If the clock itself is malfunctioning, replace the entire assembly.

CIGARETTE LIGHTER

CIGARETTE LIGHTER

SPECIFICATIONS

Items	Specification
Max. input	120W
Insulation resistance	MIN. 5M Ω (at the 500V megger)
Return time	13 \pm 5 sec. (after pushing the lighter in)
Break temperature of fuse °C (°F)	138 ~ 151°C (278.4 ~ 303.4°F)

INSPECTION

1. Take out the plug.
2. Examine the element spot connection for remnants of tobacco and other materials.
3. Using an ohmmeter, check for the continuity of the element.

Cautions for use of the cigarette lighter socket as auxiliary power

1. When using a "plug-in" type of accessory, do not use anything with a load of more than 120W.
2. It is recommended that only the lighter be inserted into the holder.

SLIDING SUN ROOF

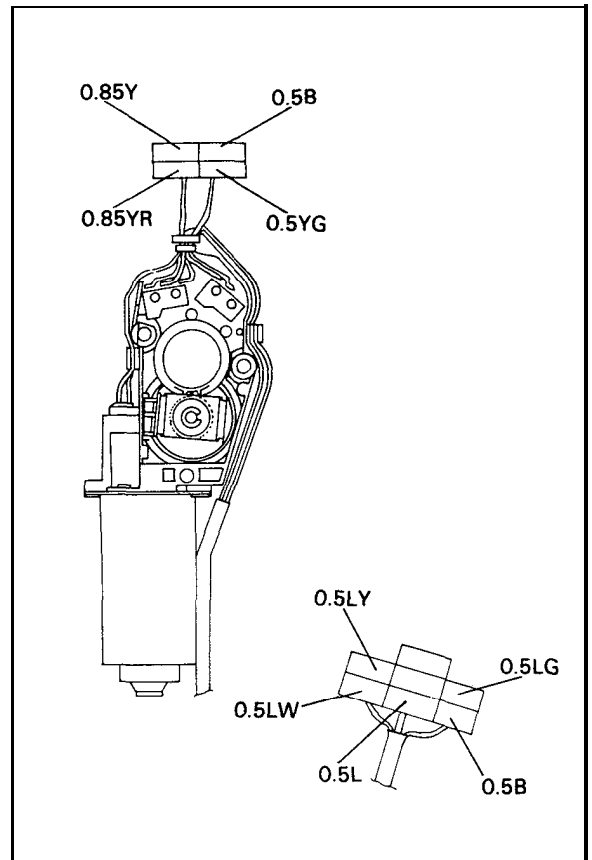
SPECIFICATIONS

Items	Specifications
Sun roof motor	
Rated voltage	DC 12V
Operating voltage	DC 9 ~ 15 V
Testing voltage	DC 13 ± 0.2 V
No load rotation and electric current	MAX 180 rpm, MAX. 6 A
Restriction torque and electric current	MIN 50 kg.cm, MAX 35 A
Clutch quality for output shaft	
Early days torque	30 ~ 40 kg.cm
20,000 cycle test	25 ~ 50 kg.cm
Insulating resistance	MIN 1MΩ (with 200 V megger)
Sun roof relay	
Rated voltage	DC 12 V
Rated load	Motor 6 A Lock 15 A
Operating voltage	DC 9 - 15 V
Operating temperature	- 40 - 100°C (40 ~ 212°F)
Excitation current	MAX. 250 mA
Voltage drop (between both terminals)	MAX. 0.15 V
Sun roof motor switch	
Rated load	DC 12 V, 1 A
Type of operation	Push ON and self return
Operating force	0.5 ~ 1.0 kg

INSPECTION

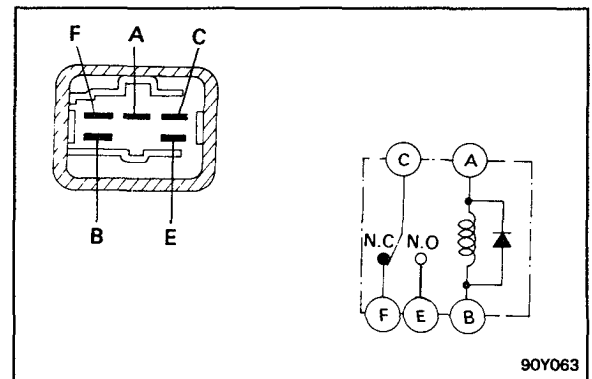
MOTOR

1. Disconnect the motor connector.
2. Apply DC 12V to the 0.85 YR wire and ground the 0.85Y wire.
3. Check that the motor turns in the direction to tilt up and closed position.
4. Reverse the connections and check that the motor turns from open, to closed, to tilt up position.



RELAY

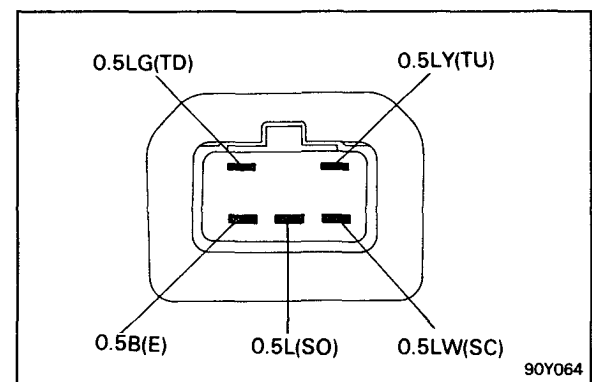
1. Check the continuity between the terminals "A" and "B", "C" and "F" by using an ohmmeter.
2. Apply DC 12 to the terminal "A".
3. Ground the terminal "B".
4. Check for continuity between the terminals "C" and "E".



SWITCH

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

Terminal Position		Terminal				
		SO	SC	TU	TD	E
OFF						
Slide switch	Open	○	—————	○		
	Close		○	—————	○	
Tilt switch	Up			○	—————	○
	Down				○	—————




PASSIVE SEAT BELT

PASSIVE SEAT BELT (FOR U.S.A.)

SPECIFICATIONS

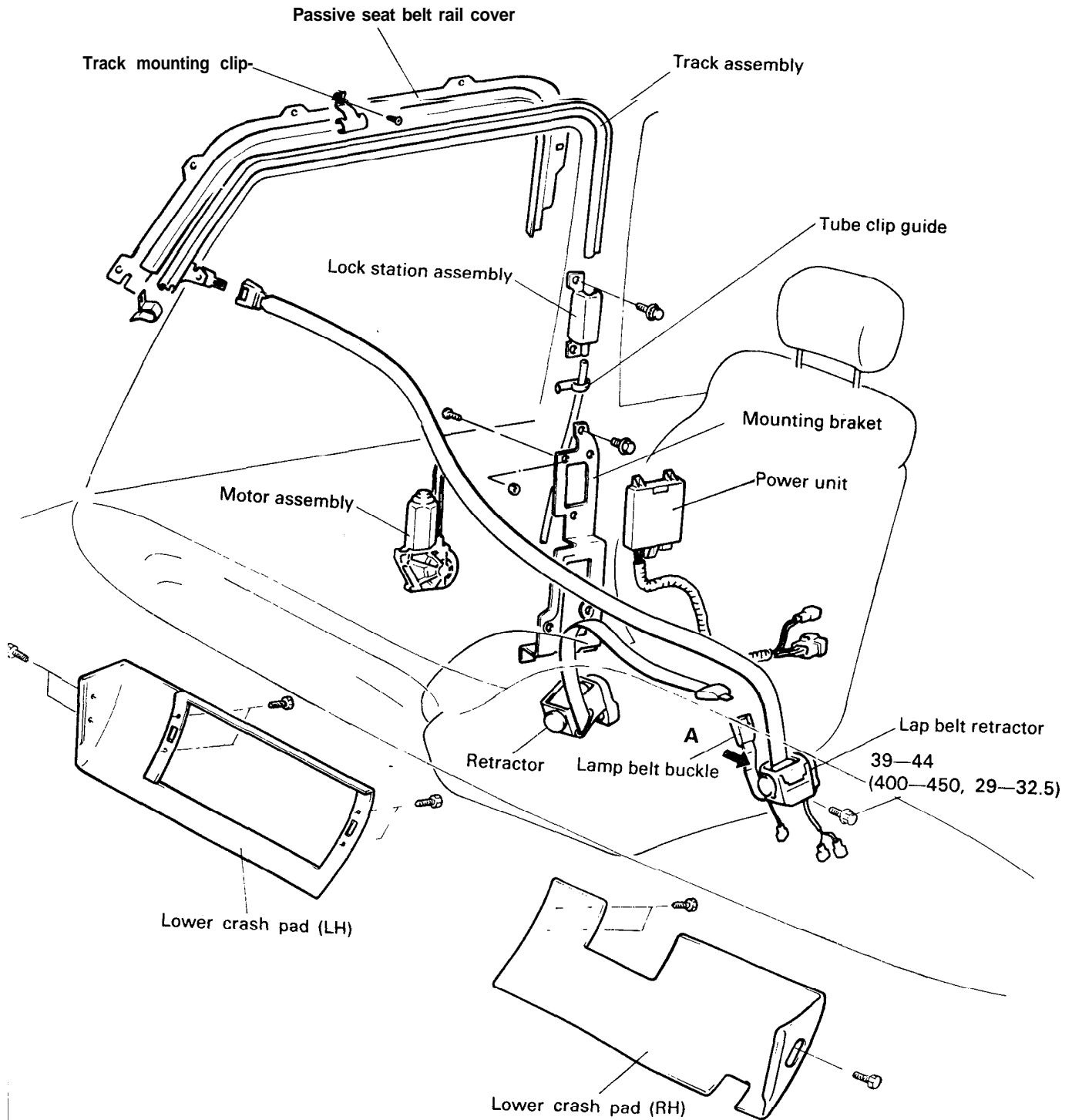
Items	Specifications
Electronic control unit	
Rated voltage	DC 12 V
Operating voltage	DC 9 - 16 V
Testing voltage	DC 13.5 ~ 14.5 V
Operating temperature	-40 ~ +85°C (-40 ~ +185°F)
Motor	
Rated voltage	DC 12 V
Operating voltage	DC 9 - 16 V
Operating temperature	-35 ~ +85°C (-31 ~ +185°F)

SPECIAL SERVICE TOOL

Tool (Number and name)	Illustration	Use
09888 - 33000 Diagnostic controller		Reading diagnosis

PASSIVE SEAT BELT

COMPONENTS



TORQUE : Nm (kg.cm, lb.ft)

PASSIVE SEAT BELT

DEFINITION

ITEMS	DEFINITIONS
A PILLAR	This is the forward pillar of the front door. The Diagonal belt should be at or moving to this position when the ECU is in the "STOWED MODE".
B PILLAR	This is the rear pillar of the front door. The diagonal belt should be at or moving to this position when the ECU is in the "LATCHED MODE".
STOWED MODE	This is the output mode of the ECU which commands the Diagonal belt to be at or moving to the "A PILLAR".
LATCHED	This is the output mode of the ECU which commands the Diagonal belt to be at or moving to the "B PILLAR".
RETRACTOR INHIBITOR MODE	This is the output mode of the ECU which commands the Diagonal belt to stay in the current "STOWED" or "LATCHED" mode and activate the RETRACTOR INHIBIT SOLENOID.
RETRACTOR INHIBITOR SOLENOID	The solenoid is used to keep the retractor from locking while the Diagonal belt is moving to or from the "A or B PILLAR".
DIAGONAL TIMEOUT	A DIAGONAL TIMEOUT will stop the motor if the Diagonal belt does not reach the correct position within a period of 15 seconds. This is used to keep the motor from running during a MOTOR and RAIL failure. A DIAGONAL TIMEOUT causes a warning if the ignition is on. The ECU will recognize a DIAGONAL TIMEOUT until the output mode changes to or from STOWED or LATCHED.
VERSION 1	Version 1 (KEY IN type) ECU's use the KEY IN switch to drive the motor logic.
VERSION 2	Version 2 (IGN ON type) ECU's use the IGN switch to drive the motor logic.

PASSIVE SEAT BELT

WARNING LOGIC

The warnings are listed in order of priority thus a higher priority warning will always occur over a lower priority warning. If a higher priority warning occurs while in a lower priority warning, the higher output will occur until no longer needed, then the lower warning will resume. All warnings are off when the IGN is off except FMVSS114 chime which is only activated when the IGN is off. All oscillating 1 Hz outputs have a 50% duty cycle.

ITEMS	DESCRIPTION	WARNING
SOLENOID WARNING	Activated if RTR INH SOLENOID is grounded externally and IGN ON.	LAMP ON BUZZER OFF CHIME OFF
DIAGONAL TIMEOUT WARNING	Activated if seat belt transport is not at the correct position for a period of 15 seconds and delayed 15 seconds after IGN ON.	LAMP [1 Hz] BUZZER [1 Hz] (60 SEC TIMEOUT) CHIME OFF
DIAGONAL DISCONNECT WARNING	Activated if DIAGONAL DISCONNECT INPUT is active and IGN ON.	LAMP [1 Hz] BUZZER [1 Hz] (6 SEC TIMEOUT) CHIME OFF
LAP DISCONNECT WARNING (drivers only)	Activated if LAP CONNECT INPUT is not active during the first 6 seconds after IGN ON.	LAMP ON BUZZER OFF CHIME [1 Hz]
OK WARNING	Always activated during the first 6 seconds after IGN ON unless a higher priority warning is active.	LAMP ON BUZZER OFF CHIME OFF
LATCHED WARNING	Activated if (IGN ON) and (LATCHED MODE) and (B SWITCH NOT ACTIVE).	LAMP ON BUZZER OFF CHIME OFF
FMVSS114 KEY IN WARNING (drivers only)	Activated if (IGN OFF) and (KEY IN) and (DOOR OPEN).	LAMP OFF BUZZER OFF CHIME [1 HZ]

DIAGNOSIS

The Diagnostic Controller receives the serial information from the Seatbelt ECU and displays this information on 16 red LEDs. This information is useful for diagnosis and testing.

The Diagnostic Controller is plugged into the Passive Seatbelt ECU through the B pillar of the car with a 5 pin connector.

When the Diagnostic Controller is plugged into the ECU, it performs a 3 second LED test. All 16 LEDs should turn on for 3 seconds. If all 16 LEDs do not turn on during the first 3 seconds, the ECU does not have power applied to it or the Diagnostic Controller does not work correctly.

After the 3 second LED test, the LED should be continuously updated with the current input signals and output mode. If all LEDs stay on after the lamp test, the ECU is not communicating with the Diagnostic Controller and may not be working correctly.

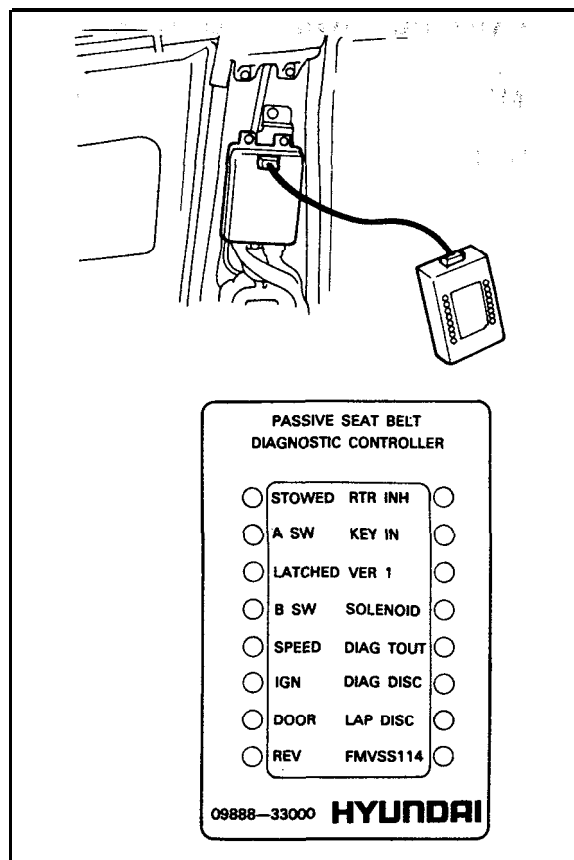
When the ECU is working properly, it should be in only one of the 3 modes (STOWED, LATCHED, RTR INHIBIT). This mode is determined from the following input signals (SPEED, IGN ON, DOOR CLOSED, REVERSE).

If the STOWED MODE is active, the Diagonal belt should be at or move to the "A PILLAR". If the Diagonal belt is moving to the "A PILLAR", the "A SWITCH LED" will be OFF. If the Diagonal belt is at the "A PILLAR" then both the "STOWED MODE LED" and "A SWITCH LED" are ON.

If the LATCHED MODE is active, the Diagonal belt should be at or move to the "B PILLAR". If the Diagonal belt is moving to the "B PILLAR". the "B SWITCH LED" will be OFF. If the Diagonal belt is at the "B PILLAR", both the "LATCHED MODE LED" and "B SWITCH LED" are ON.

If the STOWED MODE is active but the B SWITCH is active or the LATCHED MODE is active but the A SWITCH is active, then check if a DIAG TOUT has occurred.

If the Diagonal belt is stopped between the A PILLAR and B PILLAR, check if a DIAG TOUT has occurred. The DIAG TOUT will cause the motor to stop after 15 seconds if the Diagonal belt did not reach the appropriate position.



PASSIVE SEAT BELT

LED OUTPUT (DIAGNOSIS OUTPUT)

ITEMS	DESCRIPTIONS
STOWED	This LED is ON if the ECU is in the STOWED mode. The STOWED mode indicates that the seatbelt transport should be moving to the STOWED position or already at the STOWED position. The only exception to this is a failure such as a motor STALL or a DIAGONAL TOUT.
A SW	This LED corresponds to the "A SWITCH" on the motor and rail (J3-3). This LED is ON if the "A SW" is active which indicates that the motor transport is at the STOWED position. The STOWED LED should be ON when the "A SW" LED is ON unless a STALL or a DIAGONAL TOUT has occurred.
LATCHED	This LED is ON if the ECU is in the LATCHED mode. The LATCHED mode indicates that the seatbelt transport should be moving to the LATCHED position or already at the LATCHED position. The only exception to this is a failure such as a motor STALL or a DIAGONAL TOUT.
B SW	This LED corresponds to the "B SWITCH" on the motor and rail (J3-4). This LED is ON if the "B SW" is active which indicates that the motor transport is at the LATCHED position. The LATCHED LED should be ON when the "B SW" is ON unless a STALL or a DIAGONAL TOUT has occurred.
SPEED	This LED is ON if the vehicle speed is greater than 3 MPH. This LED corresponds to the speed input signal on (J1-12). KEY IN This LED is ON if the key is inserted in the ignition switch. This corresponds to the KEY IN SWITCH on (J1-4).
IGN	This LED is ON if the ignition switch is on. This corresponds to the Ignition switch (J1-2).
DOOR CLOSED	This LED is ON if the door is closed. This corresponds to the DOOR CLOSED SWITCH on (J1-3).
REVERSE	This LED is ON if the transaxle is in reverse gear. This corresponds to the REVERSE SWITCH on (J1-1).
RTR INH	This LED is ON if the ECU Retractor Inhibit Mode is selected. This occurs if the IGN SWITCH ON DOOR OPEN REVERSE
KEY IN	This LED is ON if the KEY IN SWITCH is on. This corresponds to the KEY IN SWITCH (J1-4).
SOLENOID WARN	This LED is ON if the SOLENOID warning is active. This indicates that the Retractor Inhibit solenoid is shorted to ground.
VER 1	This LED is ON if the ECU is a Version 1 ECU. The Version 1 (KEY IN type) ECU's use the KEY IN switch to drive the motor logic. The Version 2 (IGN ON type) ECU's use the IGN switch to drive the motor logic.

PASSIVE SEAT BELT

LED OUTPUT (Diagnosis output) (Continued)

ITEMS	DESCRIPTIONS
DIAG TOUT	This LED is ON if a DIAGONAL TIMEOUT has occurred. A diagonal timeout is defined as the motor transport not at the correct position(STOWED or LATCHED) within a period of 15 seconds. When a diagonal timeout occurs, the motor stops and waits for the output mode to change (STOWED , LATCHED). The ECU will output a DIAG TOUT WARNING if a DIAGONAL TIMEOUT occurs and if the Ignition has been on for a period of 15 seconds.
DIAGONAL DISCONNECT	This LED is ON if the DIAGONAL DISCONNECT SWITCH is active (J1-10). The ECU will output a DIAG DISC WARNING if the DIAGONAL DISCONNECT SWITCH is active and if the Ignition switch is on.
LAP DISC	This LED is ON if the LAP BELT SWITCH is 'active (J1-6). The ECU will output a LAP DISC WARNING during the first 6 seconds after the ignition is turned on if the LAP DISCONNECT SWITCH is active.
FMVSS114 WARNING	This LED is ON if KEY IN IGN OFF DOOR OPEN The ECU will output a FMVSS114 WARNING if this LED is ON.

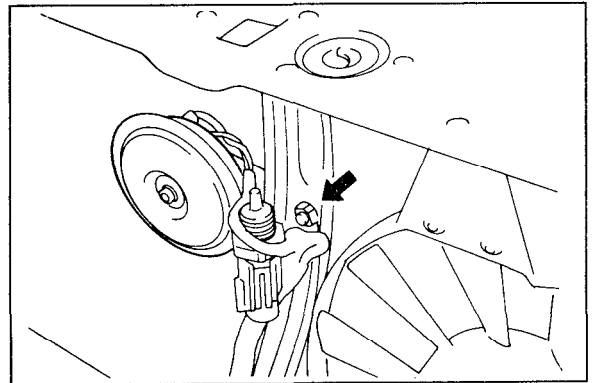
HORN

SPECIFICATIONS

Items	Specifications
Type Rated voltage Current consumption Sound level Operating voltage range Insulating resistance Basic frequency Low pitch High pitch	Plate type DC 12V MAX. 3.5 A (at DC 12 V) 105 ± 5 dB (at DC 12 V, 2 m) DC 11 V ~ DC 14.5 V MIN. 5 MΩ (By 500 V megger) 360 ± 20 Hz (at DC 12 V) 420 ± 20 Hz (at DC 12 V)

REMOVAL

1. Disconnect the negative cable of the battery.
2. Remove the horn attaching bolt (on the radiator support panel).
3. Disconnect the horn connector.
4. Remove the horn.

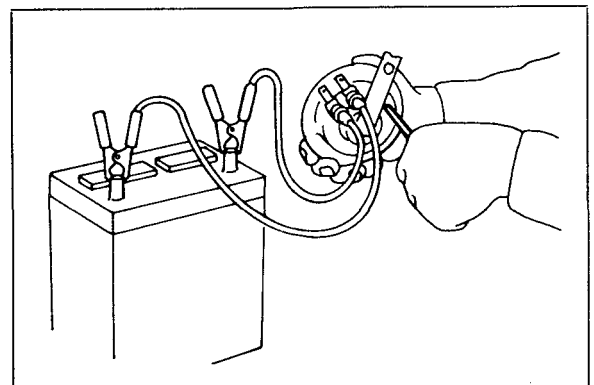


ADJUSTMENT

Operate the horn, and adjust the tone to a suitable level (by turning the adjusting screw).

CAUTION

After the adjustment, apply a small amount paint around the screw head to keep it from loosening.

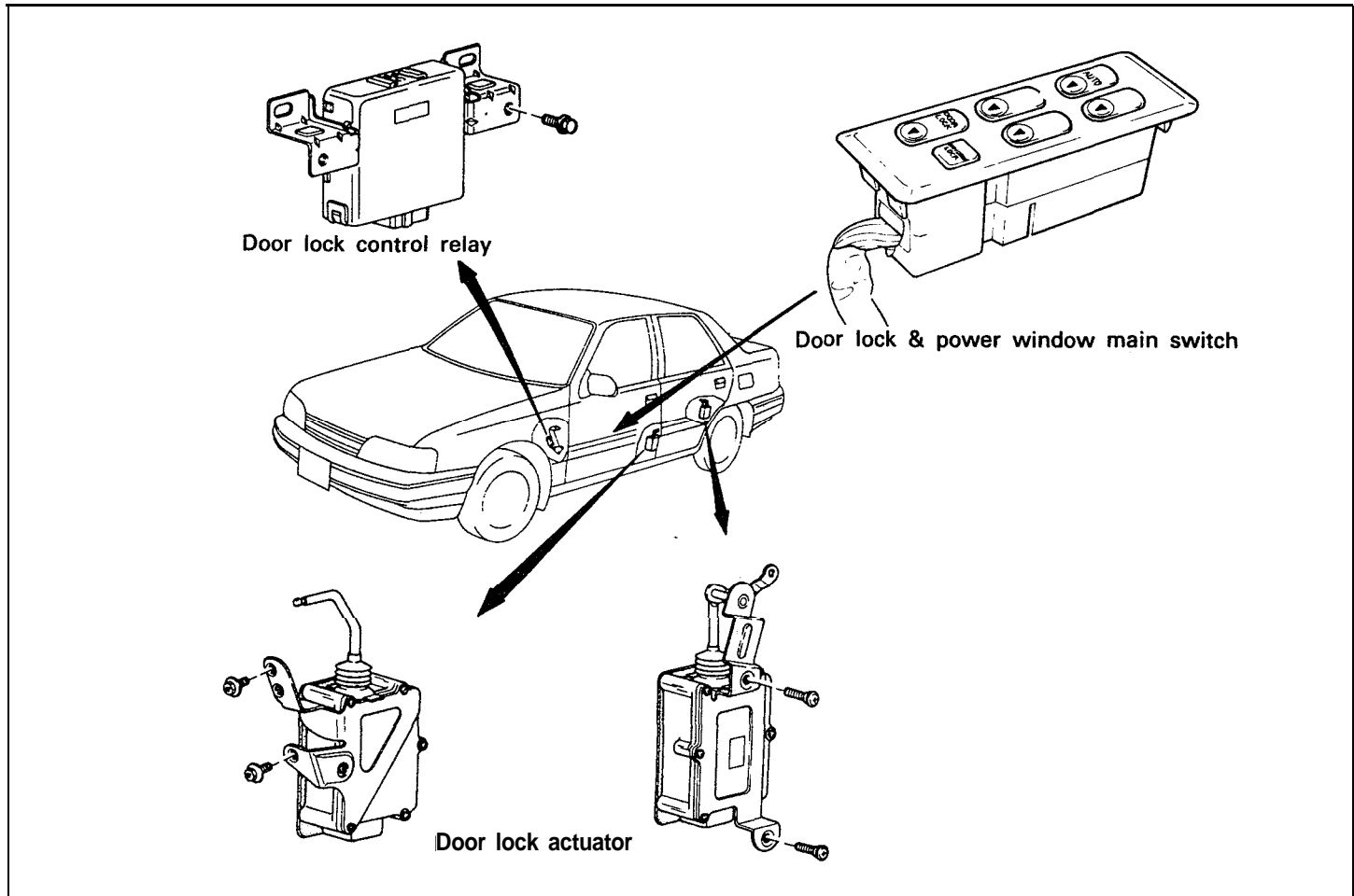


DOOR LOCK CONTROL SYSTEM

SPECIFICATIONS

items	Specifications
<p>Door lock actuator Rated voltage Operating voltage range Lock current Switch Contact resistance Insulating resistance Manual operating force</p> <p>Push/Pulling force Door lock control relay Rated voltage Operating voltage range Time interval (T)</p>	<p>DC 12 V DC 9 - 15 V MAX. 4.5 A</p> <p>MAX. 100 Ω (at 1 mA) MIN 1 MΩ MAX. 0.4 kg (at rod type) MAX. 0.5 kg (at lever type) MIN. 2 kg (at DC 9V)</p> <p>DC 12 V DC 9 ~ 16V 500 + 250 -0 ms</p>

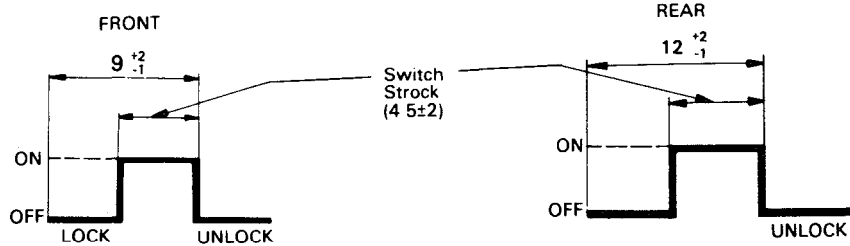
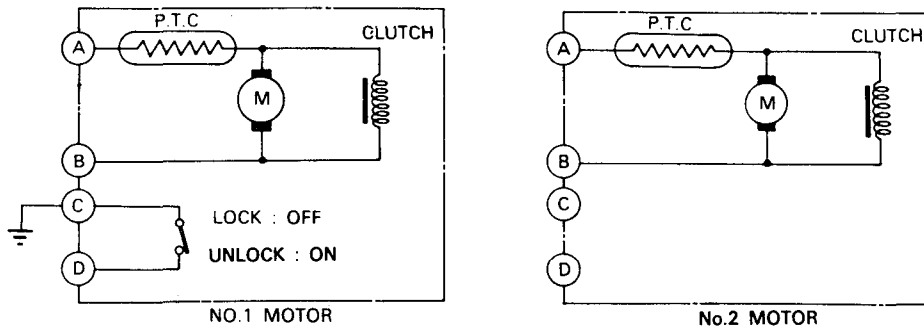
COMPONENTS



DOOR LOCK CONTROL SYSTEM

DOOR LOCK CONTROL ACTUATOR

CIRCUIT DIAGRAM



INSPECTION

1. Disconnect the actuator connector from the wiring harness.
2. Apply battery voltage (DC 12 V) to each terminal as shown in the below table and confirm that the actuator makes corresponding operation.

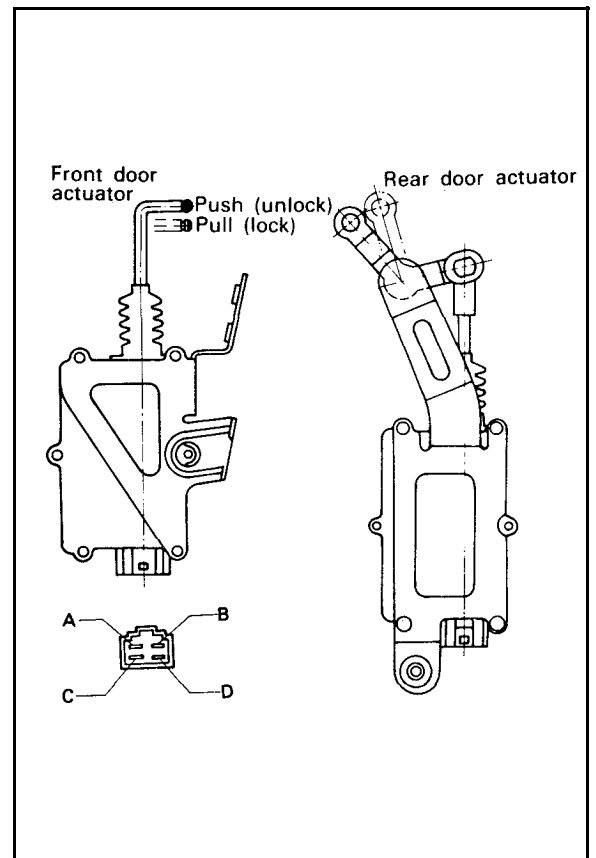
Front actuator

Terminal \ Operation	PUSH	PULL
	UNLOCK	LOCK
A	+	-
B	-	+

Rear actuator

Terminal \ Operation	PUSH	PULL
	LOCK	UNLOCK
A	+	-
B	-	+

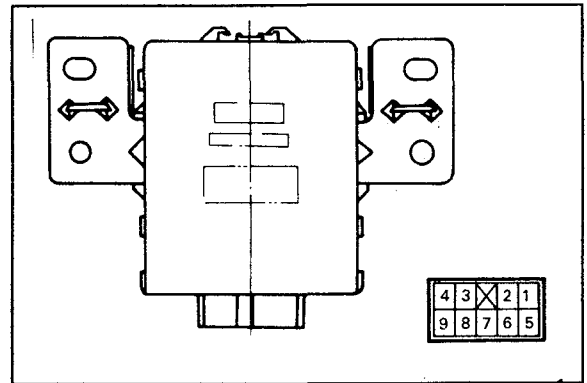
NOTE : Energized (+), ground (-)



DOOR LOCK CONTROL RELAY

INSPECTION

1. After tracing the problem to the control relay, replace it with a new one. Check for proper operation.
2. If system operates properly, the original control relay is faulty.



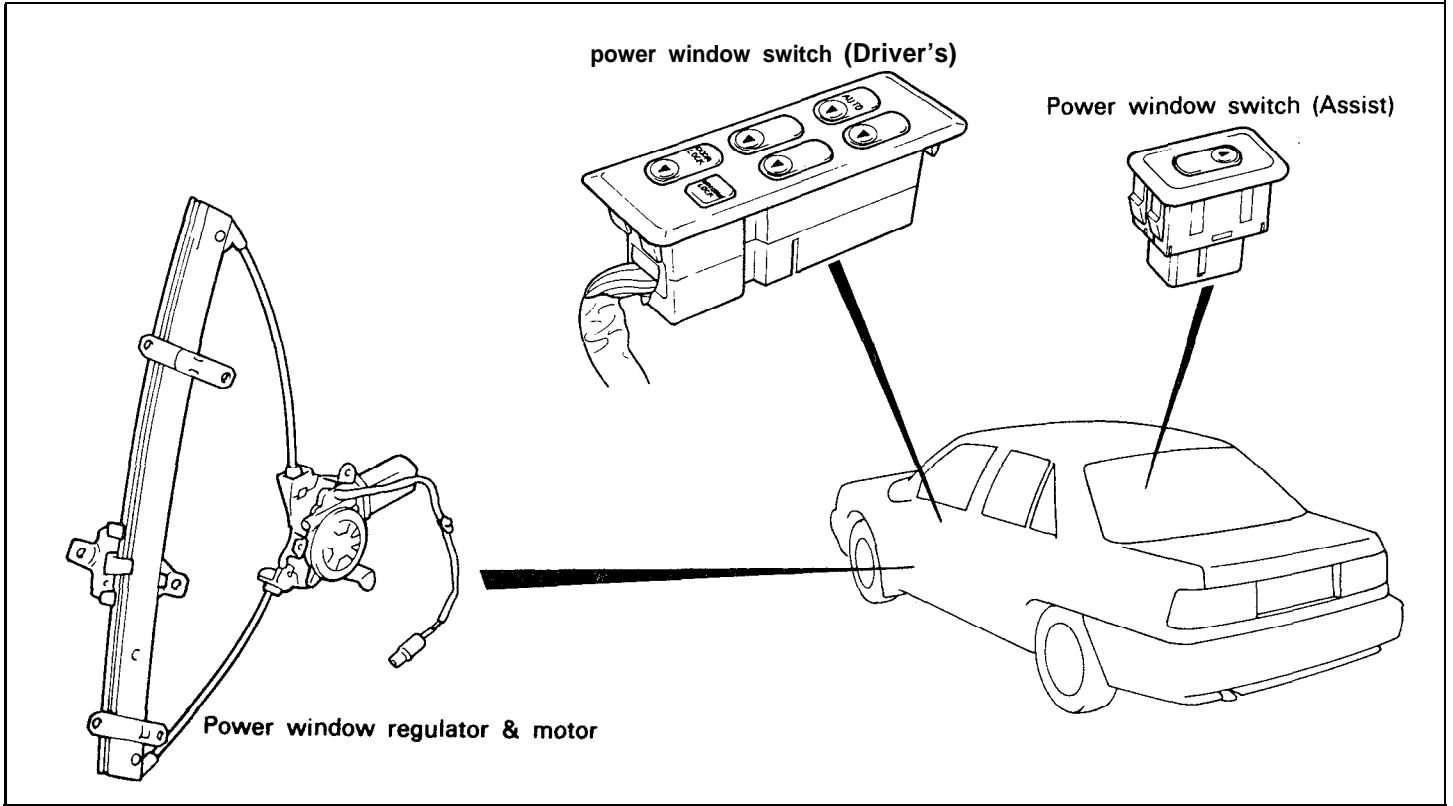
POWER WINDOW REGULATOR SYSTEM

SPECIFICATIONS

Items	Specifications
Power window motor	
Rated voltage	DC 13.5 V
Rated current	6 A or less
Environment of use	
Temperature	- 4 ~ 80°C (40 ~ +176°F)
Electrical source (Motor terminal voltage)	DC 11 ~ 15 V
Power window relay	
Rated voltage	DC 12 V
Range of voltage used	DC 10 ~ 15 V
Rated load current	20 A
Exciting coil rated current	MAX. 150 mA (at 24°C)
Voltage drop between terminal	0.3 V or less
Power window switch (Main)	
Rated voltage	DC 12 V
Range of voltage used	DC 10 ~ 16 V
Operating temperature	- 30 ~ +80°C (-22 ~ +176°F)
Rated load current	20 A
Voltage drop	0.4 V or less
Insulating resistance	1 MΩ or more (by DC 500 V megger)
Consumption current	0.35 A or less
Power window switch (Sub.)	
Rated voltage	DC 13V
Rated current	10 A
Voltage drop	0.3 V or less
Insulating resistance	100 MΩ or more (by DC 500 V megger)
Operating force	0.3 ~ 1.0 kg
Operating temperature	- 30 ~ +80°C (-22 ~ +176°F)

POWER WINDOW REGULATOR SYSTEM

COMPONENTS



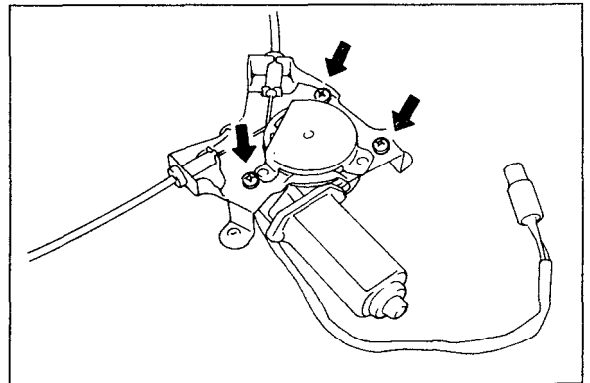
POWER WINDOW MOTOR

REMOVAL

1. Detach the regulator assembly.
2. Disconnect the power window motor from the regulator assembly.

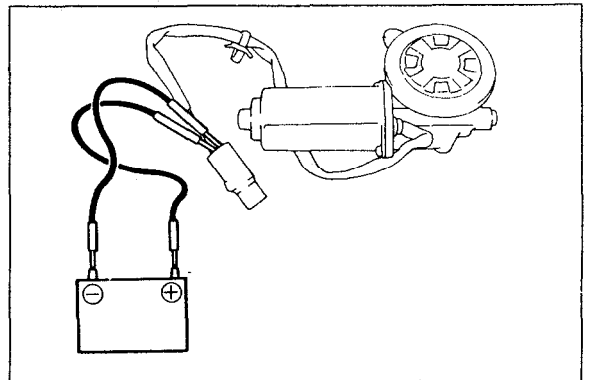
CAUTION

When loosening the connecting screws of the regulator and the motor assembly, the compressed force of the regulator spring may cause the regulator arm to spring up.



INSPECTION

Connect the motor terminals directly to the battery and check that the motor operates smoothly. Next reverse the polarity and check that the motor operates smoothly in the reverse direction. If the operation is abnormal, replace the motor.



POWER WINDOW REGULATOR SYSTEM

POWER WINDOW RELAY

INSPECTION

Check for continuity between the terminals.

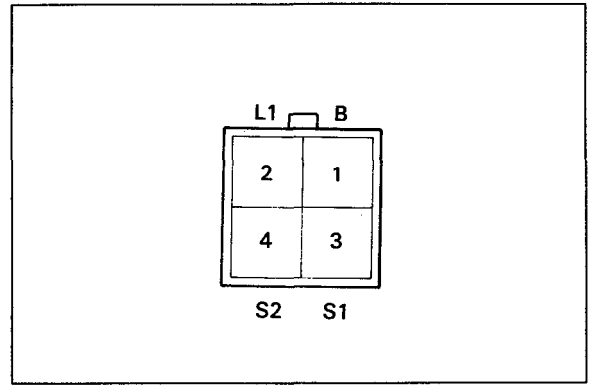
While power is not supplied

Between terminal L₁ - B : no continuity

Between terminal S₁ - S₂ : Continuity

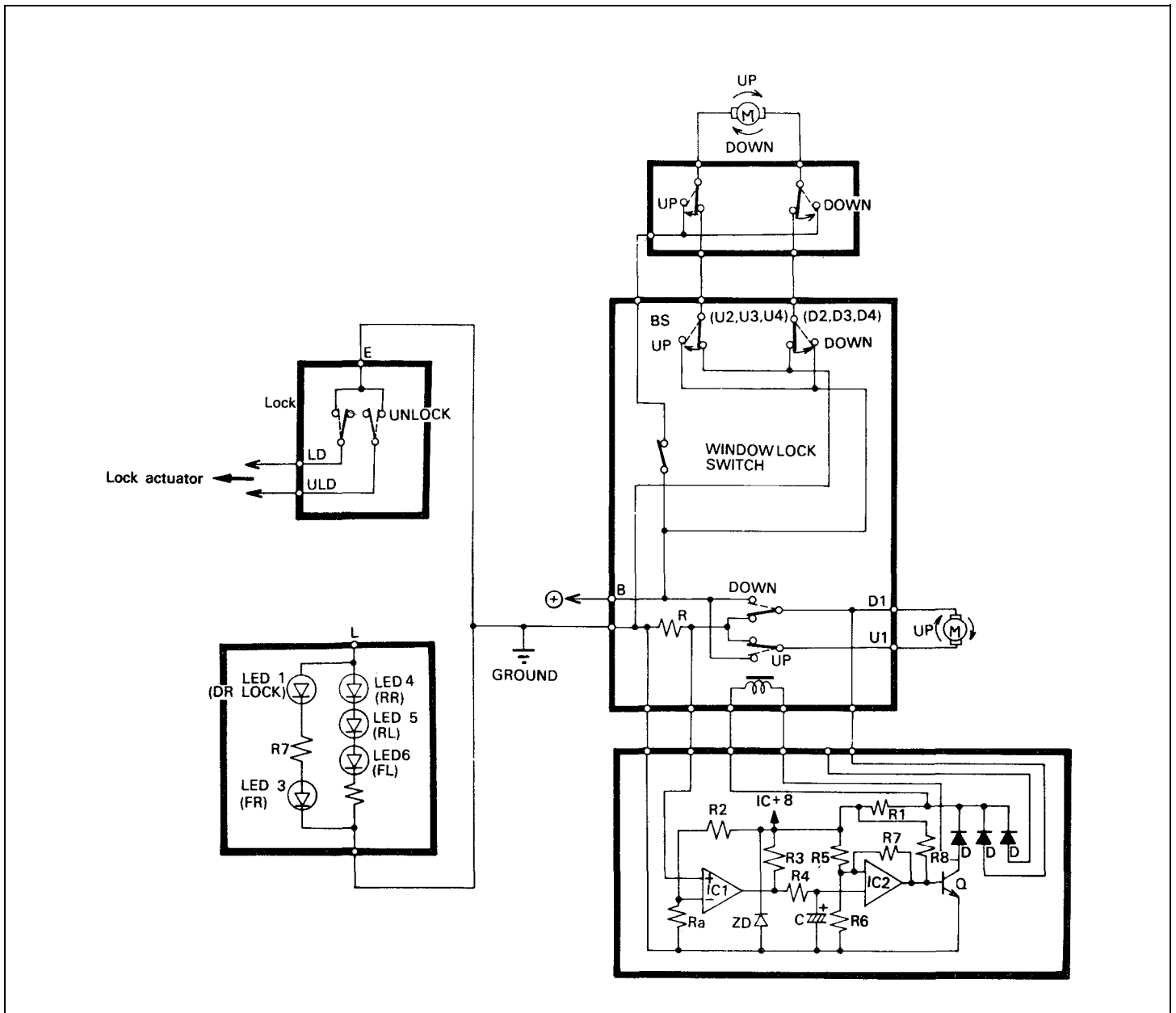
While power is supplied

Between terminal L₁ - B : Continuity



POWER WINDOW SWITCH (MAIN)

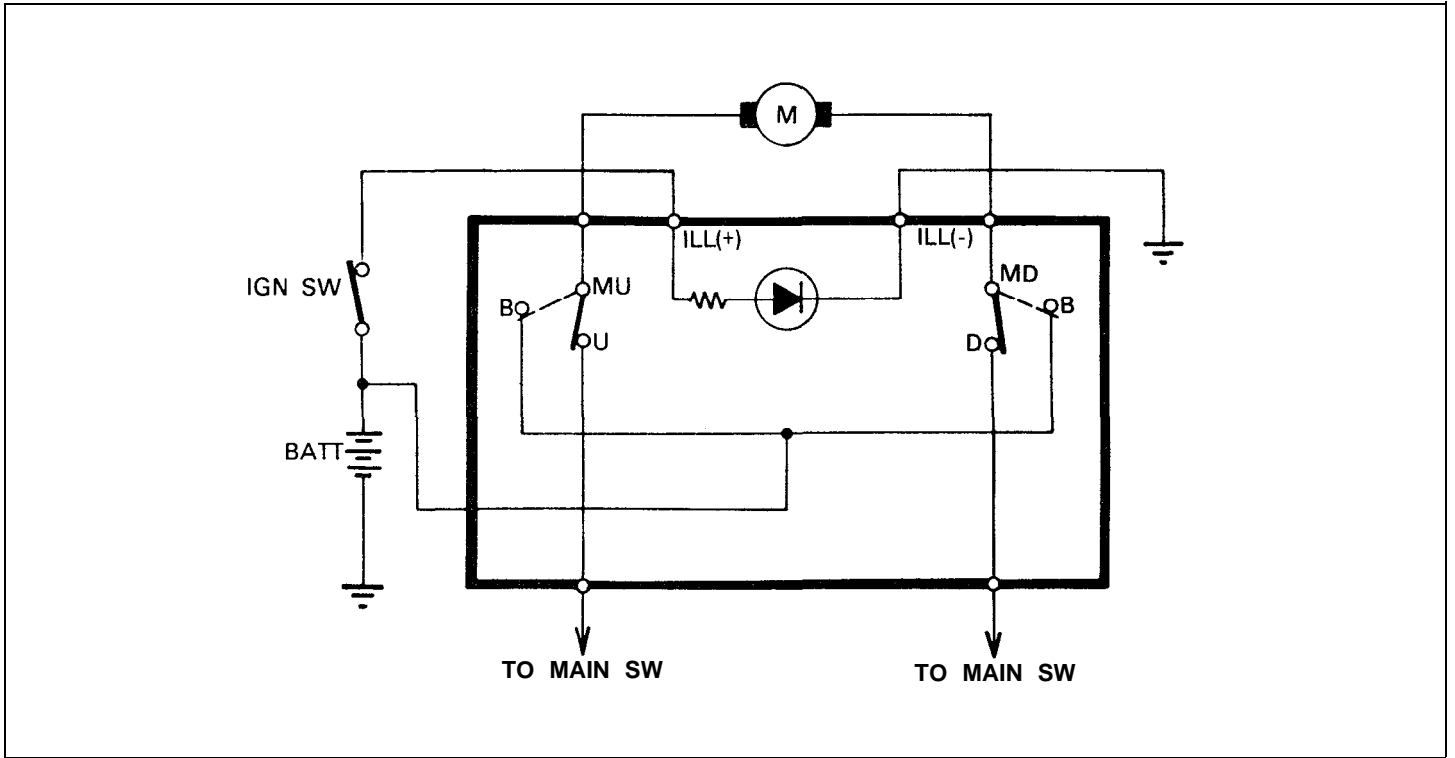
CIRCUIT DIAGRAM



POWER WINDOW REGULATOR SYSTEM

POWER WINDOW SWITCH (SUB.)

CIRCUIT DIAGRAM

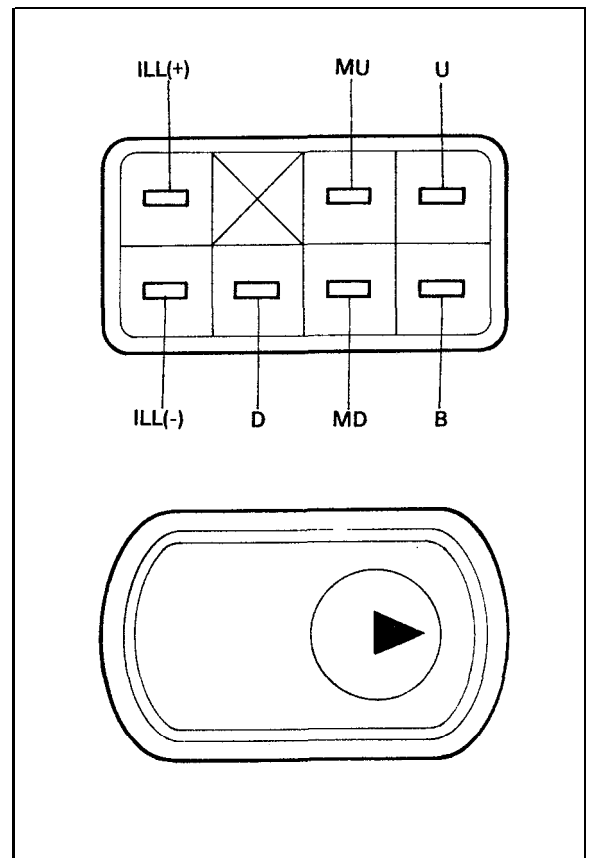


INSPECTION

Operate the switch, and check for the continuity between the terminals.

If continuity is not as specified, replace the switch.

Terminal name Switch position	B	D	U	MD	MU	ILL(+)	ILL(-)
UP	○	○	○	○	○	○	○
OFF		○	○	○	○	○	○
DOWN	○	○	○	○	○	○	○



POWER WINDOW REGULATOR SYSTEM

INSPECTION

1. Disconnect the power window main switch.
2. Operate the switch, and check for continuity between the terminals.
3. If continuity is not as specified, replace the switch.

Switch position Window lock switch	Power window switch & terminal Power window switch	FRONT, (RH)				FRONT, (LH)				RR, LH				RR, RH			
		B	U1	D1	E	B	U2	D2	E	B	U3	D3	E	B	U4	D4	E
NORMAL	UP	○—○		○—○		○—○		○—○		○—○		○—○		○—○		○—○	
	OFF	○—○—○—○				○—○—○—○				○—○—○—○				○—○—○—○			
	DOWN	○—○		○—○		○—○		○—○		○—○		○—○		○—○		○—○	
LOCK	UP	○—○		○—○		○—○		○—○		○—○		○—○		○—○		○—○	
	OFF	○—○—○—○				○—○—○—○				○—○—○—○				○—○—○—○			
	DOWN	○—○		○—○		○—○		○—○		○—○		○—○		○—○		○—○	

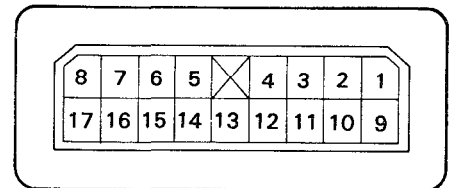
Terminal Switch position	LD	ULD	E
LOCK	○—○—○		
OFF	○—○—○		
UNLOCK	○—○—○		

DOOR LOCK SWITCH

Terminal Power	E	L
OFF	○—○—○	
TAIL ON	○—○	

GROUND

NO	CIRCUIT	WIRE SIZE & COLOR	NO	CIRCUIT	WIRE SIZE & COLOR
1	LD	AV 0.5 LgW	10	Tail	AV 0.5 GW
2	U1 (U2)	AV 1.25 LW	11	E	AV 2.0 B
3	B+	AV 2 YR	12	D4	AV 1.25 YBr
4	U4	AV 1.25 Y	13	LD	AV 0.5 LgW
5	V1	AV 1.25 LW	14	D3	AV 1.25 LR
6	V2	AV 1.25 YL	15	D2	AV 1.25 GL
7	V3	AV 1.25 YG	16	D1	AV 1.25 Br
8	Blank		17	Blank	
9	Blank				



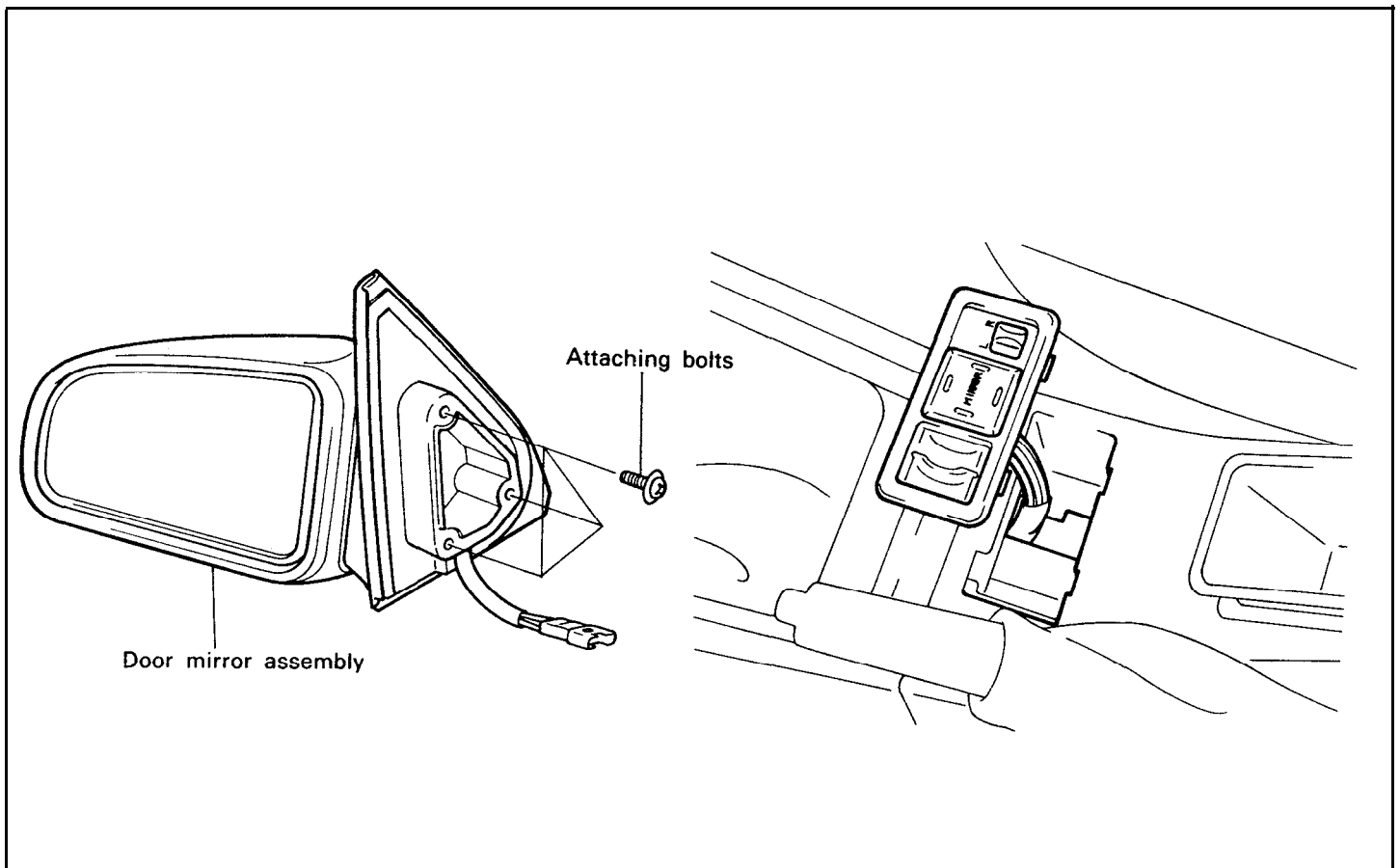
90Y079

REMOTE CONTROL MIRROR

SPECIFICATIONS

Items	Specifications
Remote control mirror actuator	
Rated voltage	DC 12V
Rated current	60 mA
Travel speed	3° ± 1°/sec (at DC 13.5 V)
Current consumption	MAX 150 mA
Adjustment angle	9° (up. down. right. left)
Remote control mirror switch	
Rated voltage	DC 12V
Rated current	0.2 A (MAX. 0.5 A)

COMPONENTS

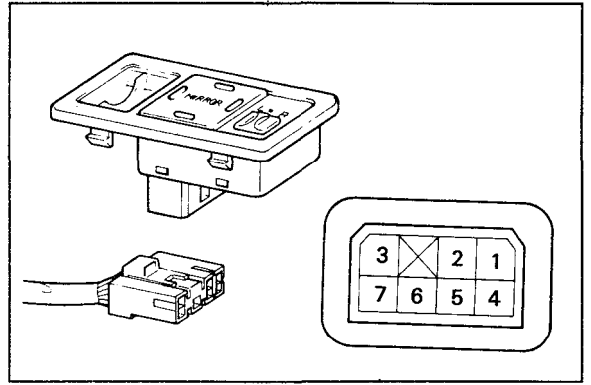


REMOTE CONTROL MIRROR

MIRROR SWITCH

Inspection

1. Disconnect the mirror switch connector from the wiring harness.
2. Operate the switch and check for continuity between the terminals. If continuity is not as specified, replace the mirror switch.



Class	Terminal No.	2	3	1	6	5	7	4
	Direction	VL	HL	VR	HR	C	B(+)	E(-)
LH	Up	○	—————	○		○	○	○
	Down	○	—————			○	○	○
	Off							
	Left		○	—————		○	○	○
	Right		○	—————		○	○	○
RH	Up			○	—————	○	○	○
	Down			○	—————	○	○	○
	Off							
	Left				○	—————	○	○
	Right				○	—————	○	○

NOTE

- VL : Vertical Left
- VR : Vertical Right
- HL : Horizontal Left
- HR : Horizontal Right

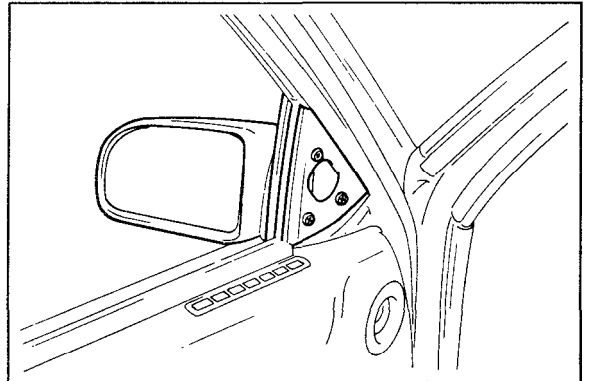
REMOVAL

1. Remove the outside mirror switch on the rear console.
2. Disconnect the connector.

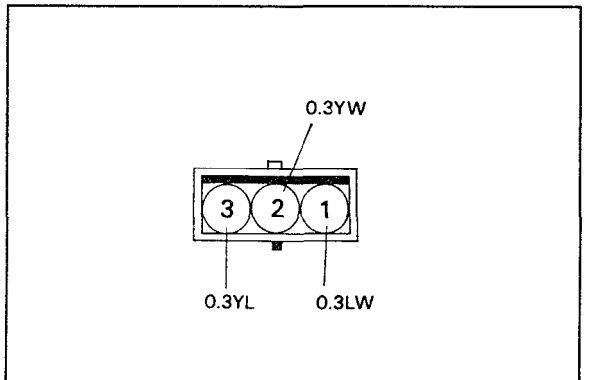
MIRROR ACTUATOR

Inspection

Apply battery voltage to each terminal as shown in the table and confirm that the mirror makes corresponding operation.



Direction of operation	Terminal	Power supply	Ground	1	2	3
	Up		○	—————	○	
Down		○	—————		○	
Left		○	—————			○
Right		○	—————			○

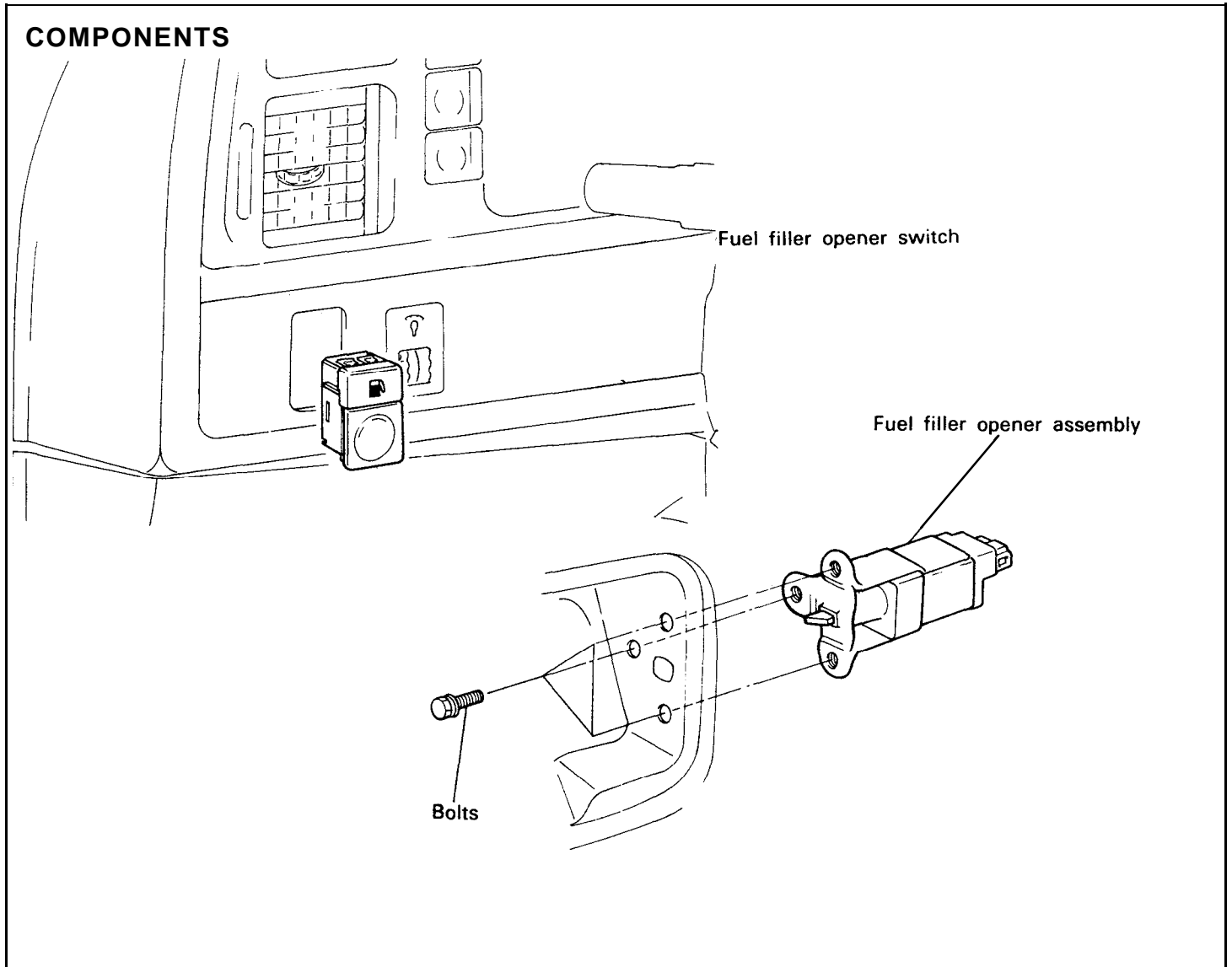


FUEL FILLER DOOR OPENER

SPECIFICATIONS

Items	Specifications
Fuel filler door opener switch	
Rated voltage	DC 12V
Voltage drop	0.15 V or less
Insulating resistance	MIN. 5M Ω (With 500V megger)
Operating force	0.3 ~ 1.0 kg
Fuel filler door opener	
Rated voltage	DC 12 V (short time, rating)
Exciting current	MAX. 15A (at 12 V)
Operating voltage	DC 10 ~ 15 V
Operating temperature	- 41 ~ +80°C (40 ~ +107°F).

COMPONENTS




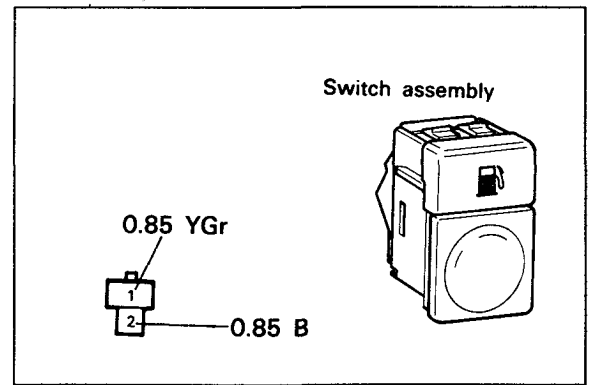
FUEL FILLER DOOR OPENER

FUEL FILLER OPENER SWITCH

INSPECTION

Operate the switch, and check continuity between the terminals. If continuity is not as specified, replace the switch.

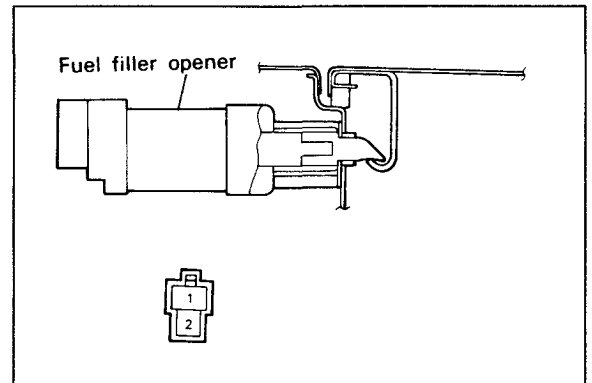
Position \ Terminal	1	2
ON		
OFF		



FUEL FILLER OPENER

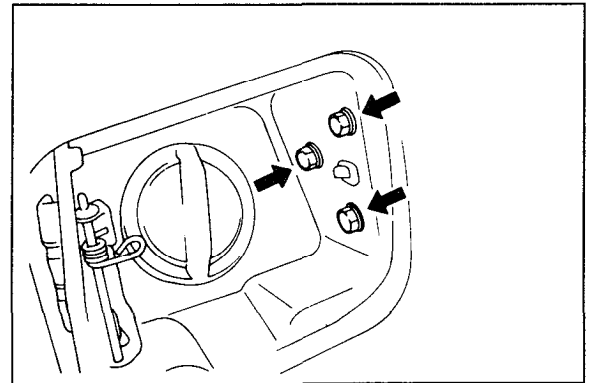
INSPECTION

Check continuity between terminals 1 and 2. If there is no continuity, replace the fuel filler opener.



REMOVAL

1. Remove the luggage compartment side trim.
2. Open the fuel filler door.
3. Loosen the three bolts securing the fuel filler opener and then disconnect the wiring connector.



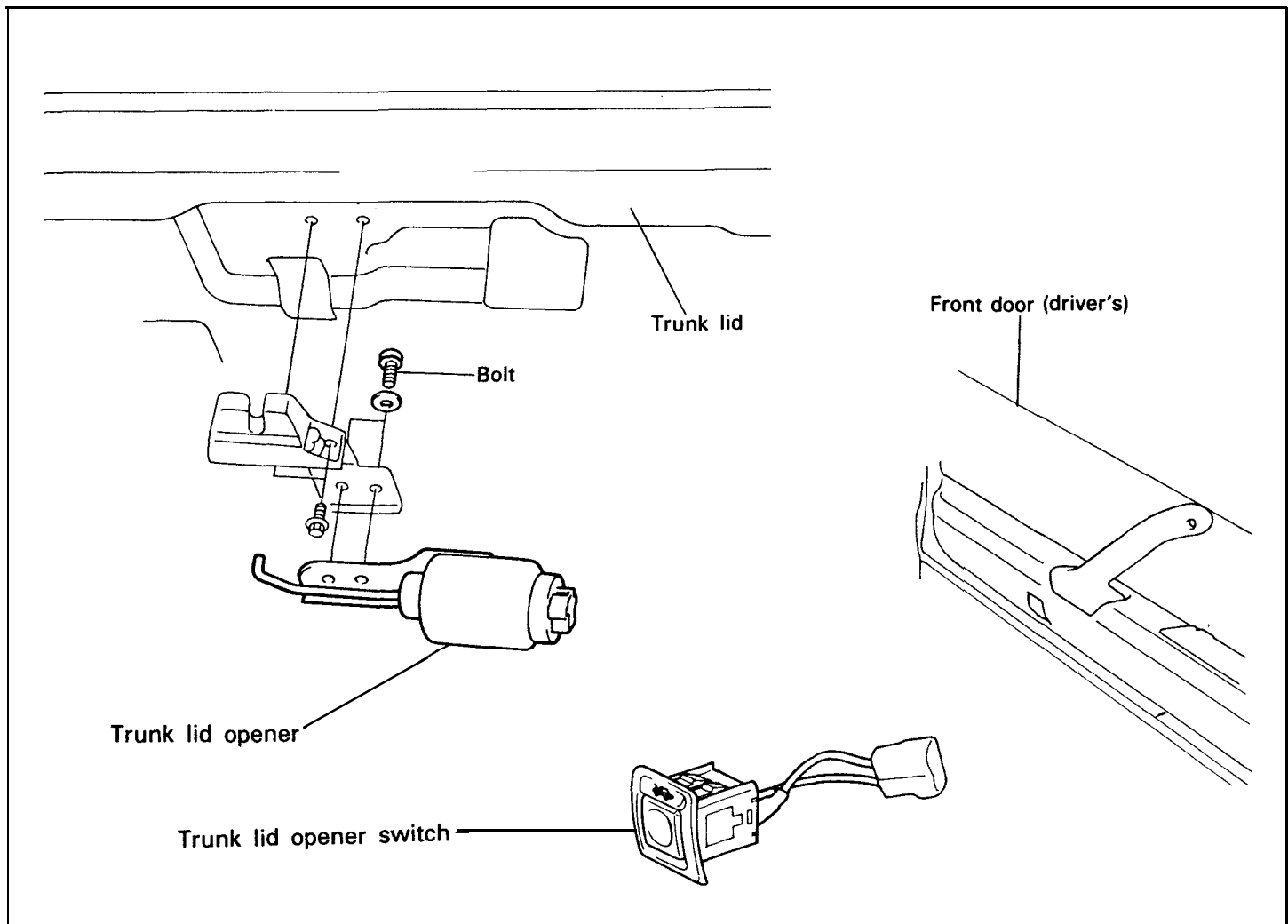
TRUNK LID OPENER

TRUNK LID OPENER

SPECIFICATIONS

Items	Specifications
Trunk lid opener	DC 12 V
Rated voltage	Min. 1 M Ω (with 500 V megger)
Insulating resistance	Max. 12 A
Rated current	Min. 3.6 kg
Initial pulling torque	
Circuit breaker (at 7.5 A)	
Trip time	4 ~ 9 sec.
Recovery time	5 sec.
Trunk lid opener switch	
Rated voltage	DC 12 V
Current consumption	21 A
Operating force	0.5 ~ 1.1 kg
Insulating resistance	Min. 5 M Ω (with 500 V megger)

COMPONENTS



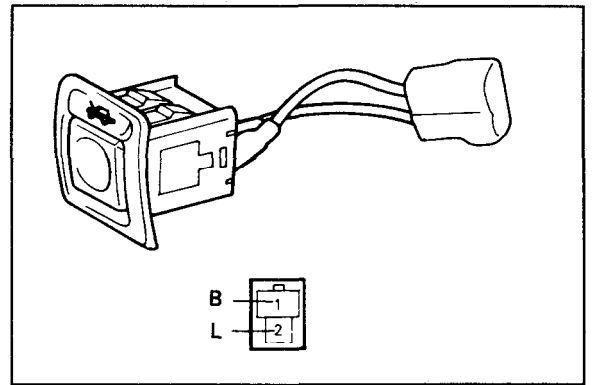
TRUNK LID OPENER

INSPECTION

TRUNK LID OPENER SWITCH

Remove the trunk lid opener switch and check continuity between the terminals

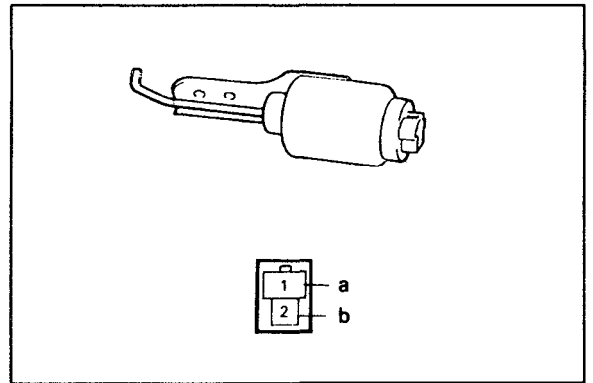
P \ T	B	L
OFF		
ON	●—————●	



TRUNK LID OPENER

Remove the trunk lid opener and check continuity between the terminal "a" and "b".

If there is no continuity, replace the opener assembly.

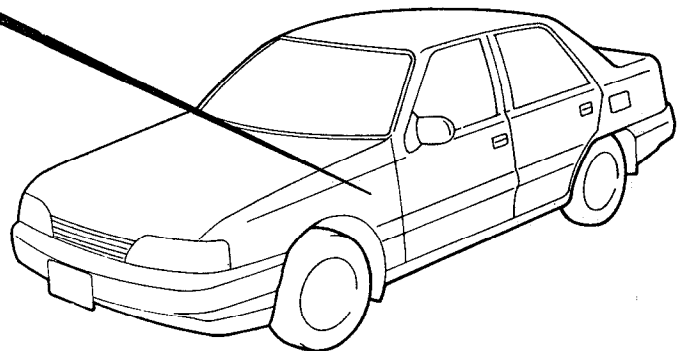
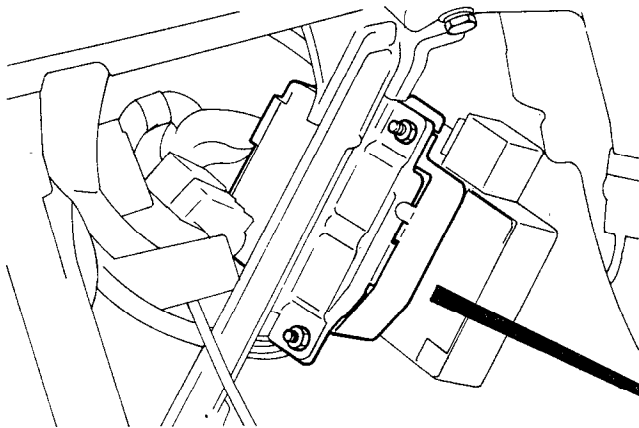


E.T.A.C.S. (Electronic Time and Alarm Control System)

SPECIFICATIONS

Items	Specifications
Rated voltage	DC 12V
Operating voltage range	DC 9-16V
Voltage drop	
Before durability	MAX. 0.25V
After durability	MAX. 0.4V
Insulation resistance	100 MΩ with 500V megger
Operating temperature range	- 30 ~ +80°C (-22 ~ +176°F)
Rated load	
Variable intermittent wiper	DC 12V, 6A (Inductive load)
Rear defogger timer	DC 12V. 200mA (Inductive load)
Seat belt warning	DC 12V, 1.2W (Lamp load)
Key illumination & delay out room lamp	DC 12V, 1.2W, 10W (Lamp load)
Door lock actuator (lock, unlock)	DC 12V, 200mA (Inductive load)
Chime bell	DC 13.5V. 350mA (Inductive load)

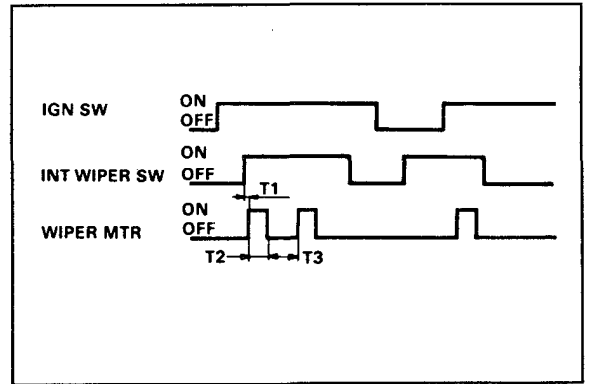
COMPONENTS



INSPECTION

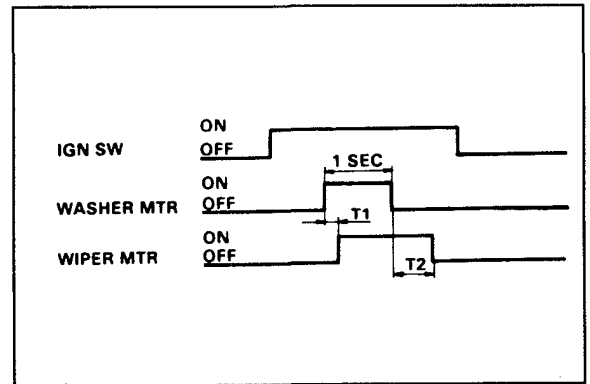
VARIABLE INTERMITTENT WIPER

1. Operating characteristic: Fig.1
2. Time specification
 - T₁: MAX. 0.5 sec.
 - T₂: Time of wiper motor 1 rotation.
 - T₃: 1.5±0.7 sec. (VR=0kΩ)~10.5±3 sec. (VR=50 kΩ)
3. Variable resistance (VR) : 0~50 kΩ



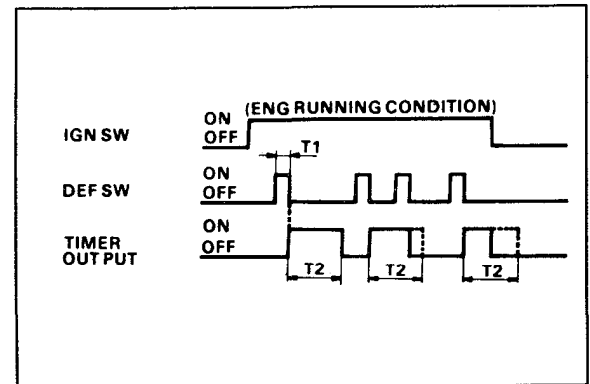
WASHER

1. Operating characteristic: Fig.2
2. Time specification
 - T₁: 0.4~1.2 sec
 - T₂: 2.0~4.7 sec
3. This function should be operated preferentially even though the variable intermittent wiper is operating.



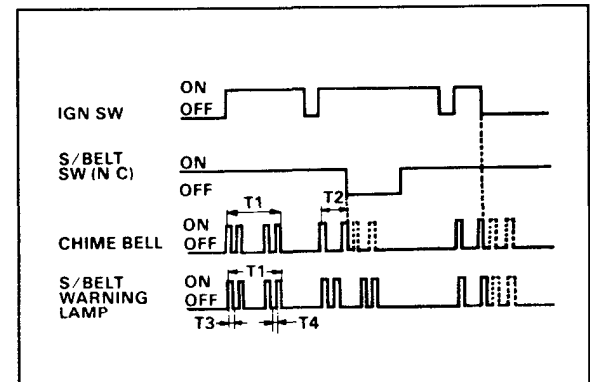
REAR DEFOGGER (HEATED) TIMER

1. Operating characteristic: Fig.3
2. Time specification
 - T₁: MIN. 0.5 sec.
 - T₁: 10±3 mm



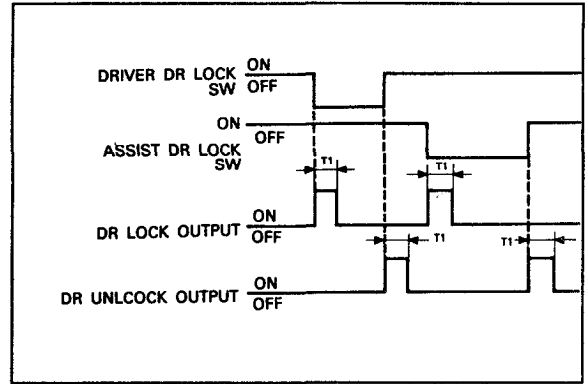
SEAT BELT WARNING

1. Operating characteristic: Fig.4
2. Time specification
 - T₁: 6±1 sec.
 - T₂: MAX. 6±1 sec.
 - T₃: 0.3±0.1 sec.



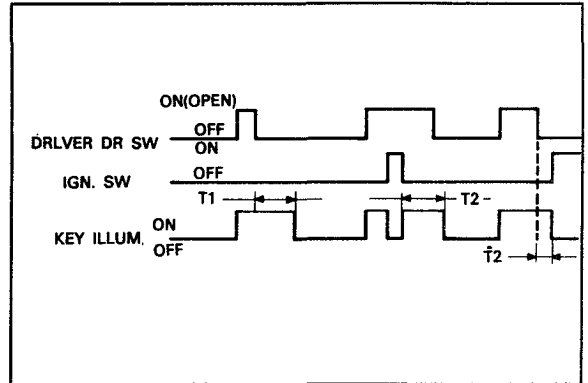
DOOR LOCK ACTUATOR

1. Operating characteristic: Fig.5
2. Time specification
 T_1 : 0.5 sec.



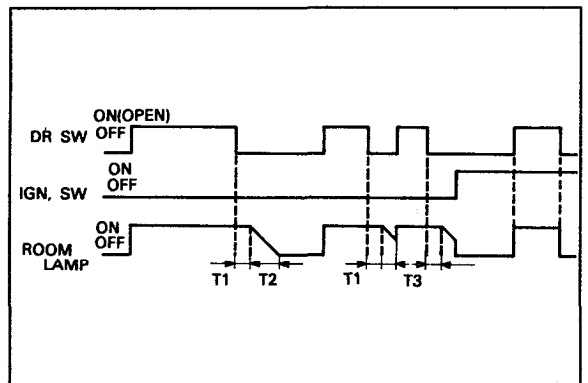
IGN KEY HOLE ILLUMINATION

1. Operating characteristic: Fig.6
2. Time specification
 T_1 : 6 sec.
 T_2 : 0~ sec.



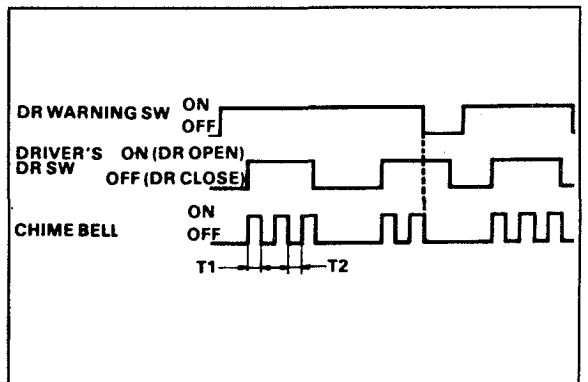
DELAY OUT ROOM LAMP

1. Operating characteristic: Fig.7
2. Time specification
 T_1 : 2 sec.
 T_2 : 4 sec.
 T_3 : 0~4 sec.



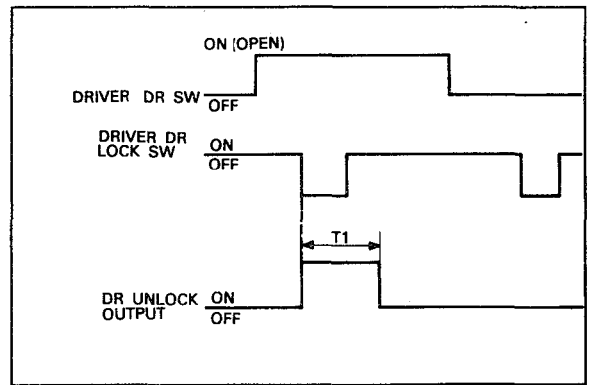
DOOR WARNING

1. Operating characteristic: Fig.8
2. Time specification
 T_1 : 0.3±0.1 sec.



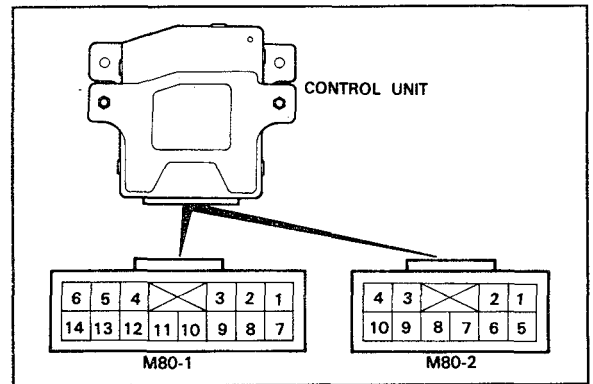
IGN KEY REMINDER

1. Operating characteristic: Fig. 9
2. Time specification
 T_1 : 5 sec.



CONTROL UNIT

1. After tracing the problem to the control unit, replace it with a new one. Check for proper operation.
2. If system operates properly, the original control unit is faulty.



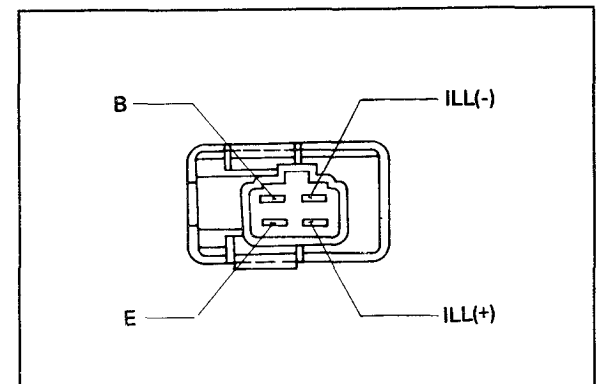
REAR WINDOW DEFOGGER (HEATED GLASS) SPECIFICATIONS

Items	Specifications
Rear window defogger (heated) switch	
Rated voltage	DC 12V
Operating force	0.3 ~ 1.0 kg
Insulating resistance	MIN. 5M Ω (DC 500V megger)
Indicator lamp	1.2 W
Rear window heated glass	
Rated voltage	DC 12V
Power consumption	185 \pm 10 W (per sheet)

REAR WINDOW DEFOGGER SWITCH INSPECTION

Disconnect the defogger switch connector from the wiring harness. Operate the switch, and check the continuity between the terminals

Position	Terminal	B	E	ILL(+)	ILL (-)
OFF					
ON		○	○	○	○

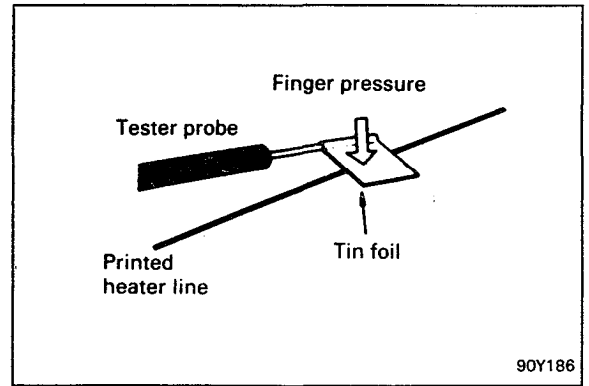


If continuity is not as specified, replace the switch.

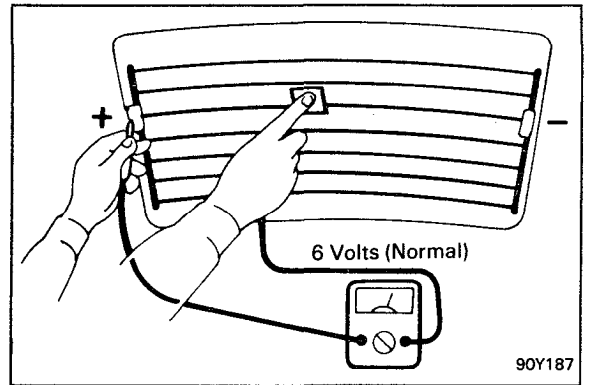
PRINTED HEATER LINE CHECK

CAUTION,

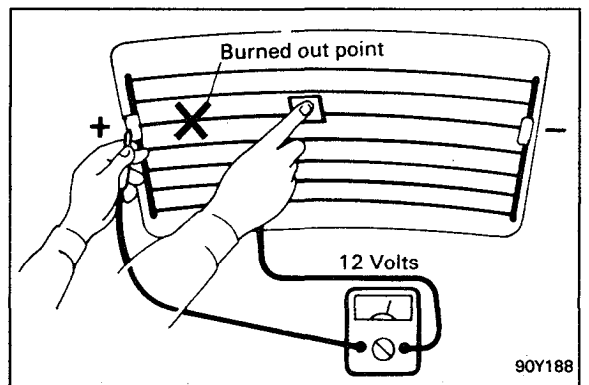
Wrap tin foil around the end of the voltmeter test lead to prevent damaging the heater line. Apply finger pressure on the tin foil, moving the tin foil along the grid line to check for open circuits.



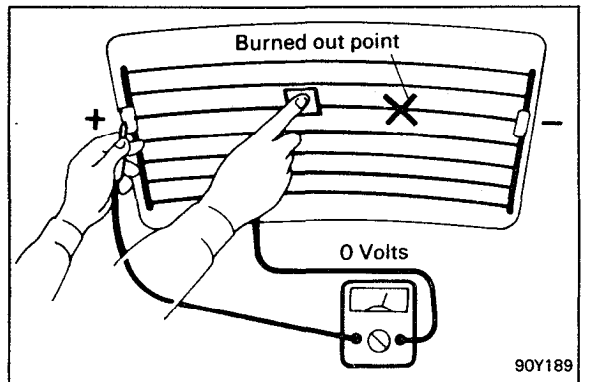
1. Turn on the defogger switch and use a voltmeter to measure the voltage of each heater line at the glass center point. If a voltage of approximately 6V is indicated by the voltmeter, the heater line of the rear window is considered satisfactory.



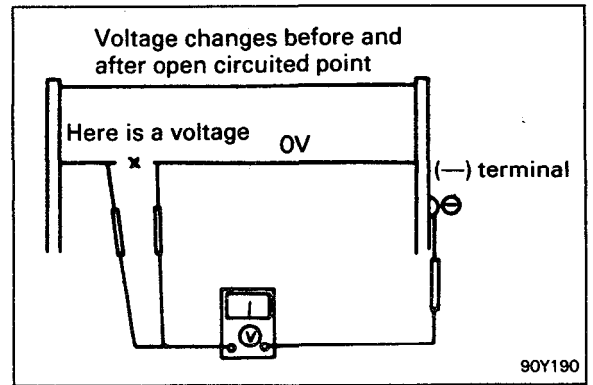
2. If a heater line is burned out between the center point and (+) terminal, voltmeter indicates 12 volts.



3. If a heater line is burned out between the center point and (-) terminal, the voltmeter indicates 0 volt.

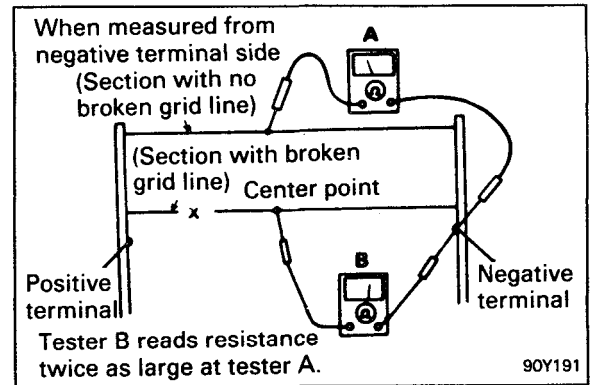


4. To check for open circuits, slowly move the test lead in the direction that the open circuit seems to exist. Try to find a point where a voltage is generated or changes to 0V. The point where the voltage has changed is the open-circuited point.



Defogger OFF

5. Use an ohmmeter to measure the resistance of each heater line between a terminal and the center of a grid line and between the same terminal and the center of one adjacent heater line after another. The section involving a broken heater line indicates resistance twice as that in other section. In the affected section, move the test lead to a position where resistance sharply changes.



Repair

Provide the following items:

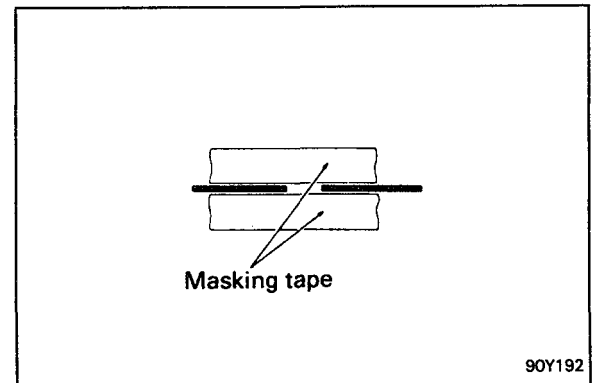
1. Conductive paint
2. Paint thinner
3. Masking tape.
4. Silicone remover
5. Thin brush

Wipe the glass adjacent to the broken heater line, clean with silicone remover and attach the masking tape as shown. Shake the conductive paint container well, and apply three coats with a brush at intervals of about 15 minutes apart. Remove the tape and allow sufficient time for drying before applying power.

For a better finish, scrape away excess deposits with a knife after completely dried. (allow 24 hours)

CAUTION

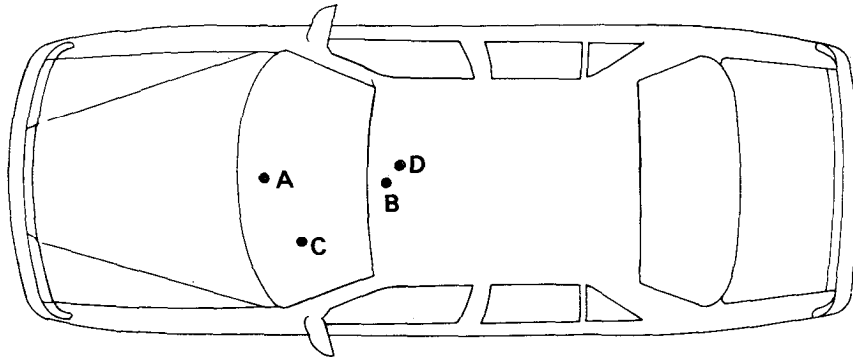
After repairing, clean the glass with a soft dry cloth or wipe along the grid line with a slightly moistened cloth.



AUTOMATIC TRANSAXLE AND KEY LOCK CONTROL SYSTEM SPECIFICATION

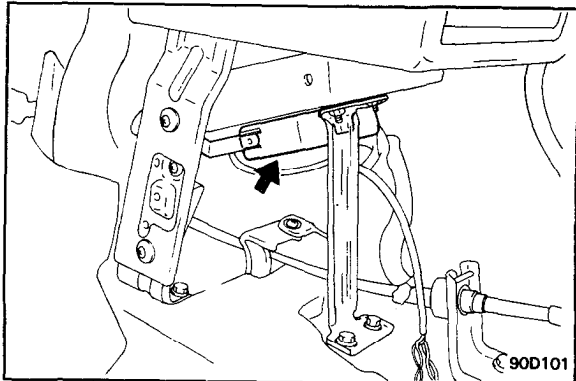
Items	Specifications
Control unit	
Rated voltage	DC 12V
Operating voltage range	DC 9 ~ 16V
Operating temperature range	-30° ~ +80°C (-22°F ~ +176°F)
Rated load	MAX. 1A (A/T solenoid) MAX. 0.8A (Key lock solenoid)
A/T solenoid	
Rated voltage	DC 12V
Rated current	1A (MAX. 2A)
Operating voltage range	DC 9 ~ 16V
Operating temperature range	-30° ~ +80°C (-22°F ~ +176°F)
Operating force	
Initial pull in force	0.4 kg.cm (at 12V, 20°C)
Spring force	0.2 kg.cm (at 12V, 20°C)
Holding force	1.5 kg.cm (at 12V, 20°C)
Key lock solenoid	
Operating voltage range	DC 9 ~ 16V
Operating temperature range	-30° ~ +80°C (-22°F ~ +176°F)
Exciting current	MAX. 0.9A
Operating force	
Pull in force	MIN. 0.17 kg.cm (at DC 7.5 ± 0.1V)
Holding force	MIN. 0.25 kg.cm (at DC 6 ± 0.1V)
Parking position switch	
Rated load	1A (resistance load, at DC 12V)
Operating force	0.8 ± 0.2 kgf
Operating temperature range	-30° ~ +80°C (-22°F ~ +176°F)

COMPONENTS LAYOUT

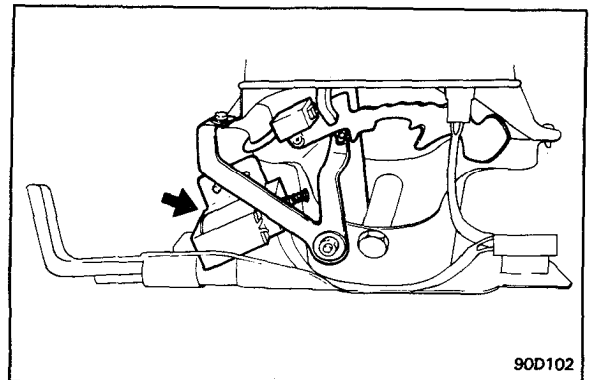


- A. Below front of center console
- B. Shift lever assembly
- C. Ignition key
- D. Shift lever assembly

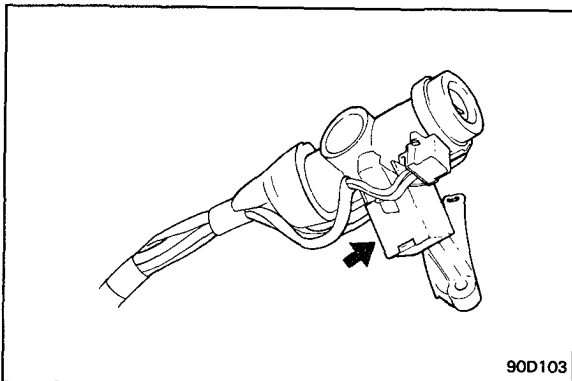
A. Control unit



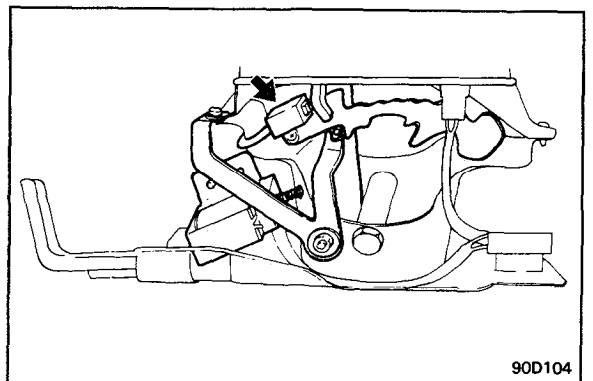
B. A/T solenoid



C. Key lock solenoid



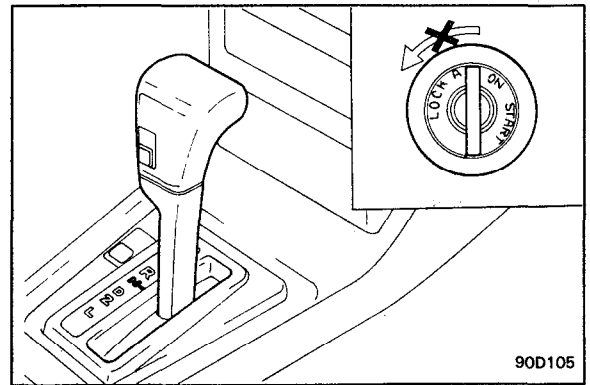
D. P/position switch



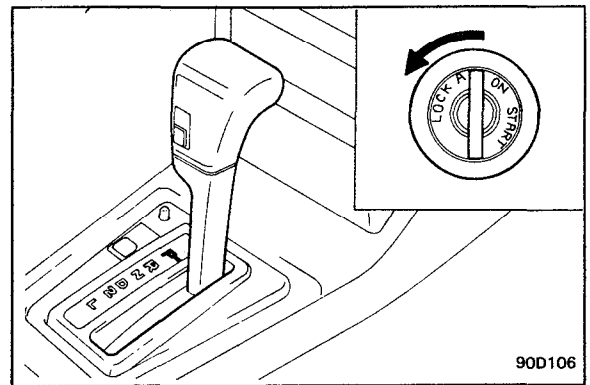
SYSTEM CHECK

KEY LOCK SYSTEM

1. Check that the ignition key cannot be turned to "LOCK (OFF)" position, when the position of the shift lever is not in "P" position.



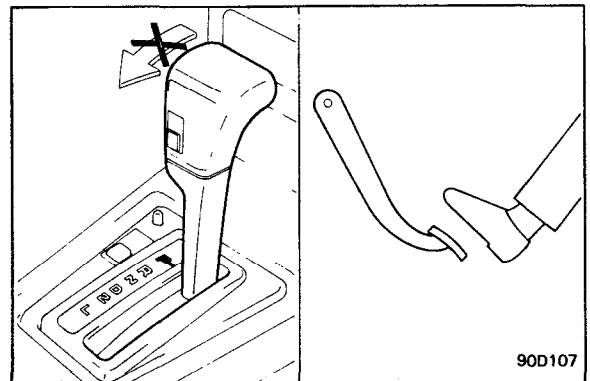
2. Check that the ignition key turns to the "LOCK (OFF)" position, when the shift lever is set to the "P" position.



SHIFT LOCK SYSTEM

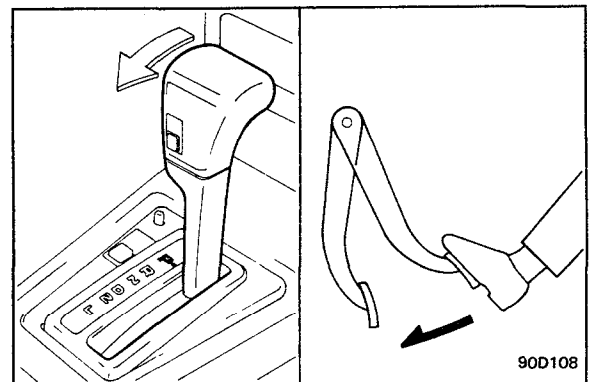
1. Check that under the following conditions, the shift lever cannot be moved from the "P" position to any other position.

**IGNITION KEY POSITION : "ON"
BRAKE PEDAL : NOT DEPRESSED
BUTTON : PRESSED**

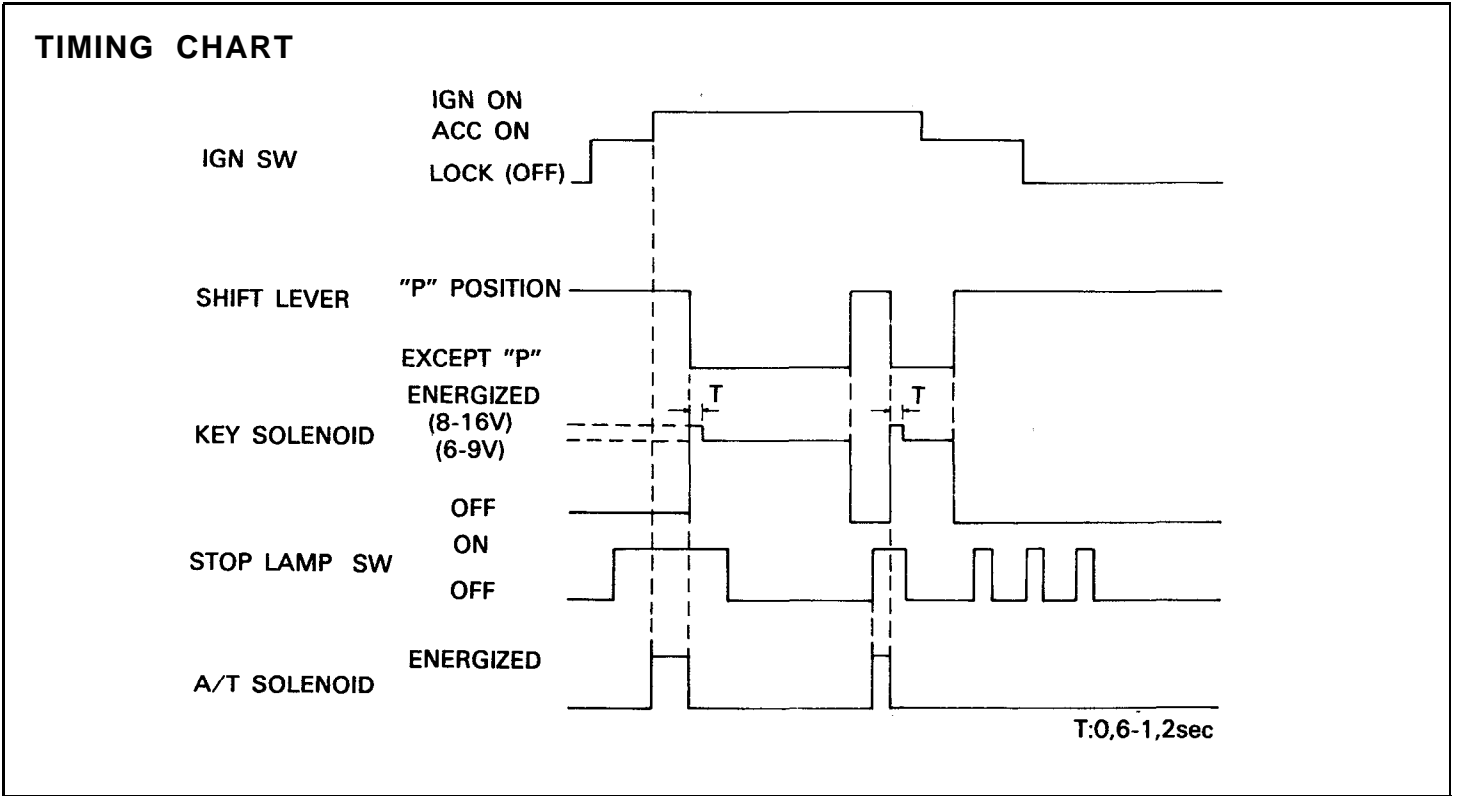


2. Check that under the following conditions, the shift lever can be moved from the "P" position to other position.

**IGNITION KEY POSITION : "ON"
BRAKE PEDAL : DEPRESSED
BUTTON : PRESSED**



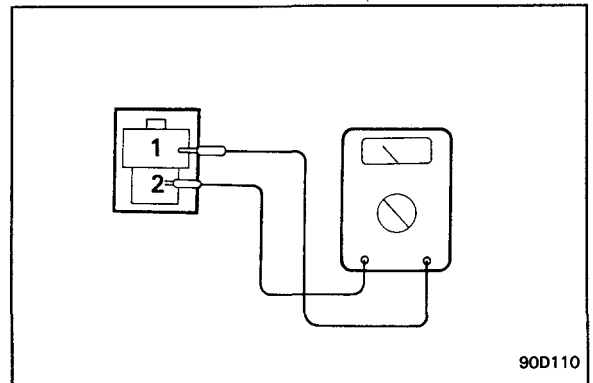
INSPECTION



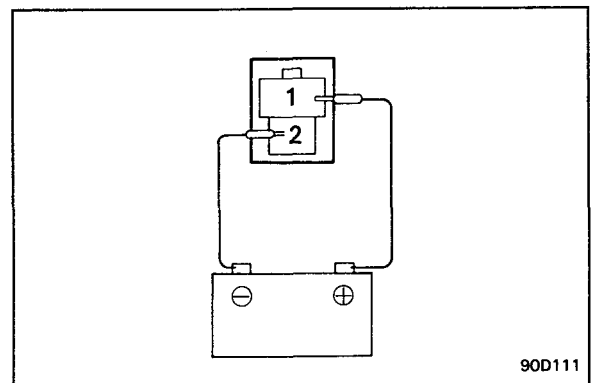
AUTOMATIC TRANSAXLE SOLENOID

1. Remove the solenoid connector.
2. Using an ohmmeter, measure the resistance between terminals.

Standard resistance : 12—16Ω



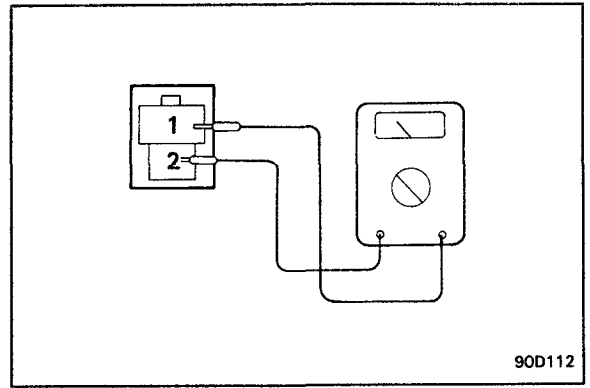
3. Attach the positive (+) lead from the battery to terminal 1. and the negative (-) lead to terminal 2.
4. Check that an operation noise can be heard from the solenoid.



KEY LOCK SOLENOID

1. Remove the solenoid connector.
2. Using an ohmmeter, measure the resistance between terminals.

Standard resistance : 12.5-16.5Ω



3. Attach the positive (+) lead from the battery to terminal 2. and the negative (-) lead to terminal 1.
4. Check that an operating noise can be heard from the solenoid.

