BODY ELECTRICAL SYSTEM

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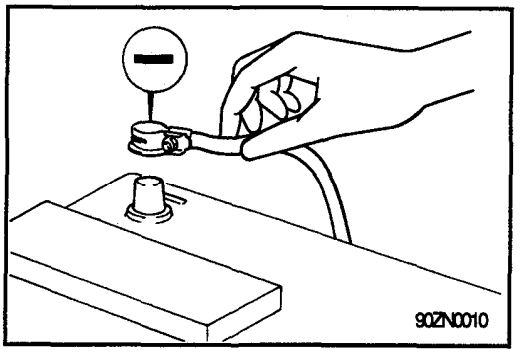
GENERAL

SERVICING THE ELECTRICAL SYSTEM

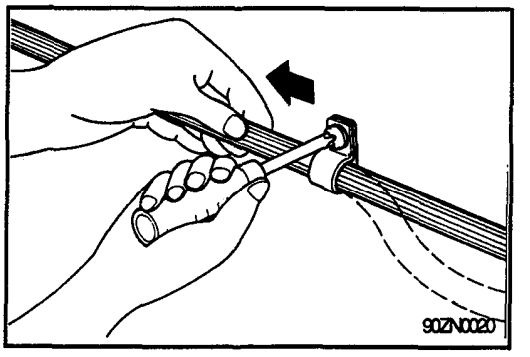
1. Prior to servicing the electrical system, be sure to turn off the ignition switch and disconnect the battery ground cable.

   NOTE:

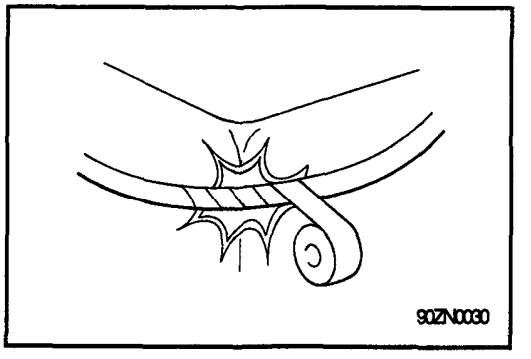
   In the course of MFI or ELC system diagnosis, when the battery cable is removed, any diagnostic code retained by the computer will be cleared.
   Therefore, if necessary, read the diagnostic codes before removing the battery cable.



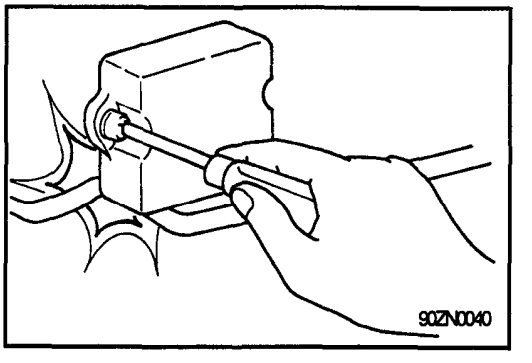
2. Secure the wiring harnesses by using clamps so that there is no slack. However, for any harness which passes to the engine or other vibrating parts of the vehicle, allow some slack within a range that does not allow the engine vibrations to cause the harness to come into contact with any of the surrounding parts, and then secure the harness by using a clamp.



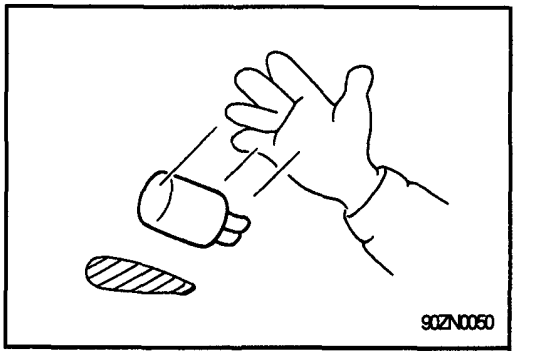
3. If any section of a wiring harness interferes with the edge of a part or a corner, wrap the section of the harness with tape or something similar in order to protect it from damage.



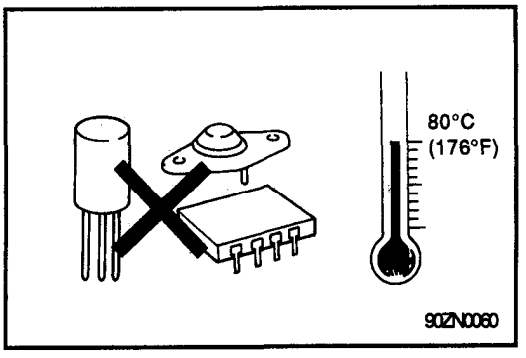
4. When installing any of the vehicle parts, be careful not to pinch or damage any of the wiring harnesses.



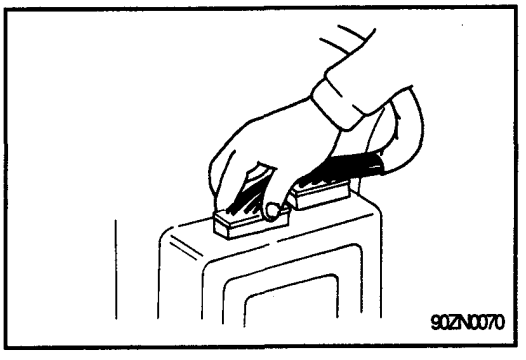
5. The sensors, relays, and electrical parts, must never be subjected to strong shocks. Do not allow them to fall and do not throw them when handling.



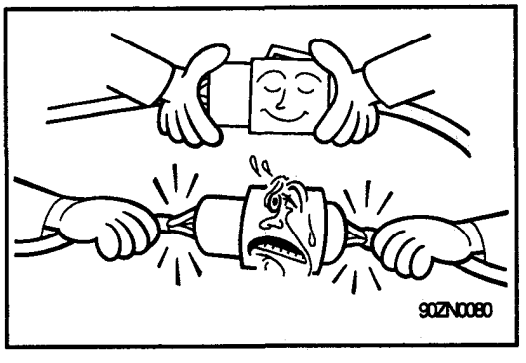
6. The electronic parts used in the computer, relays, etc. are readily damaged by heat. If there is a need for service operations that may cause the temperature to exceed 80°C (176°F), remove the electronic parts beforehand.



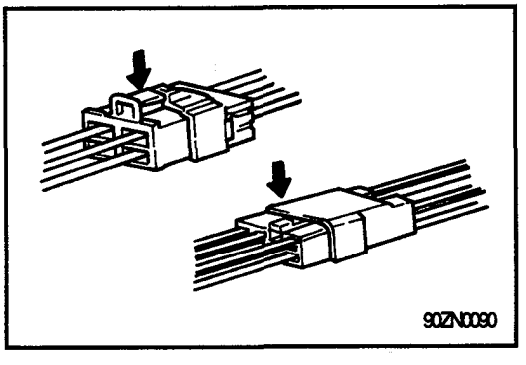
7. Loose connectors could be troubled. Make sure that connectors are connected securely.



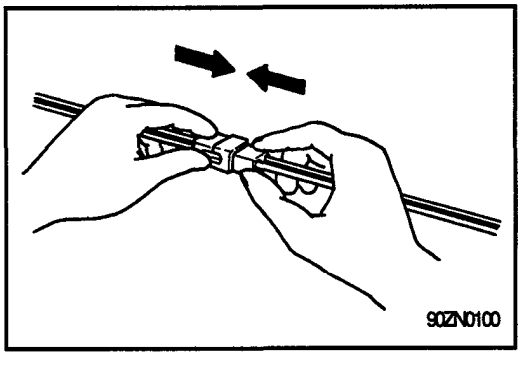
8. When removing a connector, be sure to pull only the connector, not the harness.



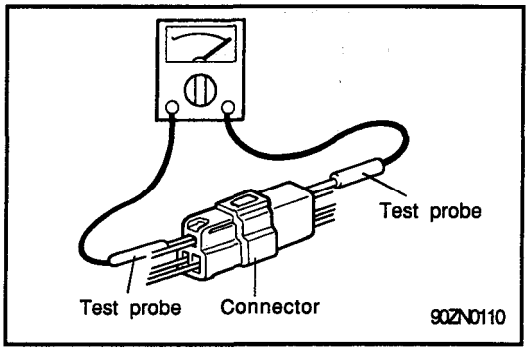
9. Remove connectors which have catches by pressing in the direction indicated by the arrows in the illustration.



10. Connect connectors which have catches by inserting the connectors 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.

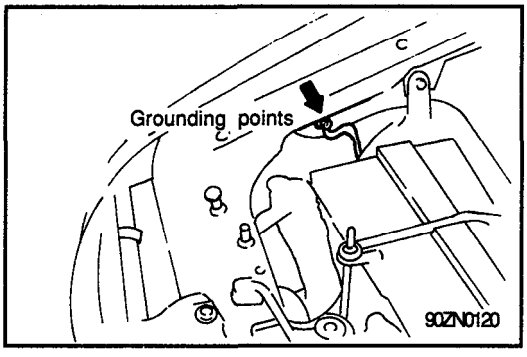


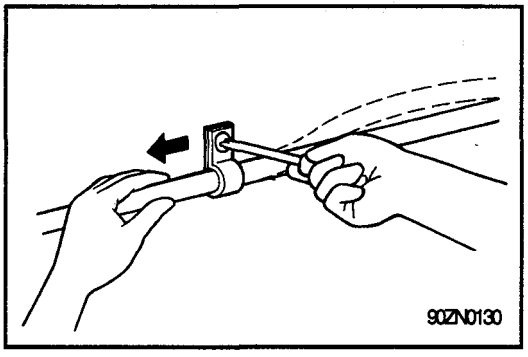
12. In order to avoid overloading the wiring, take the electrical current load of the optional equipment into consideration, and determine the appropriate wire size.

Nominal size	SAE gauge No.	Permissible current	
		In engine compartment	Other areas
0.3 mm	AWG 22	-	5A
0.5 mm	AWG 20	7A	13A
0.85 mm	AWG 18	9A	17A
1.25 mm	AWG 16	12A	22A
2.0 mm	AWG 14	16A	30A
3.0 mm	AWG 12	21A	40A
5.0 mm	AWG 10	31A	54A

CHECKING CABLES AND WIRES

1. Check the terminal for tightness.
2. Check terminals and wires for corrosion by battery electrolyte, etc.
3. Check terminals and wires for open circuit or impending open circuit.
4. Check wire insulation and coating for damage, cracks and degrading.
5. Check conductive parts of terminals for contact with other metallic parts (vehicle body and other parts).
6. Check grounding parts to verify that there is complete continuity between attaching bolt(s) and vehicle body.
7. Check for incorrect wiring.
8. Check that wirings are clamped so as to prevent contact with sharp corners of the vehicle body, etc. or hot parts (exhaust manifold, pipe, etc.).
9. Check that wirings are clamped firmly to secure enough clear ance from the fan pulley, fan belt and other rotating or moving parts.
10. Check that the wirings between the fixed parts such as the vehicle body and the vibrating parts such as the engine are made with adequate allowance for vibrations.





INSTALLATION OF RADIO EQUIPMENT

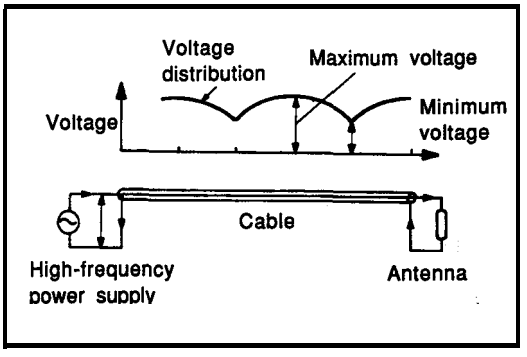
The computer for the electronic control system has been designed so that external radio waves will not interfere with their operation. However, if the antenna or cable of an amateur radio transceiver etc. is routed near the computers, it may affect the operation of the computers, even if the output of the transceiver is no more than 25W.

To protect each of the computers from interference by the transmitter (hum, transceiver, etc.), the following 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, 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 transmitter, run the engine at idle, emit radio waves from the transmitter and make sure that the engine is not affected.

* STANDING-WAVE RATIO

If an antenna and a cable having different impedances and connected, the input impedance Zi 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.



FUSIBLE LINKS & FUSES

FUSIBLE LINK

Specifications

Item	Specification
Main fusible link	
Type	Screw-up type
Ampere rating	50A (Charging circuit) 30A (Radiator fan circuit) 20A (Condenser fan circuit)
Housing color	50A-Red 30A-Pink 20A-Blue
	Located in engine compartment relay box
Sub-fusible link	Connector type
Type Ampere rating & circuit, housing color	

Circuit Item	Battery	IGN SW	MPI	H/Lamp,
Ampere rating	50A	30A	20A	30A
Housing color	Red	Pink	Blue	Pink

Inspection

1. Check for a burnt fusible link with an ohmmeter (fusible link must be removed from holder prior to testing).
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 burn out within 15 seconds if a higher current than specified flows through the circuit.

FUSES

Inspection

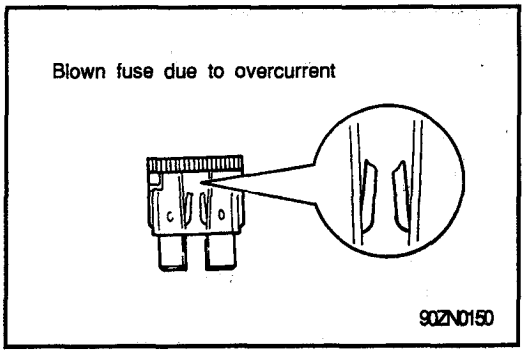
When a fuse is blown, there are two probable causes as follows. Which of the two causes is responsible can be easily determined by visual check after removing the fuses.

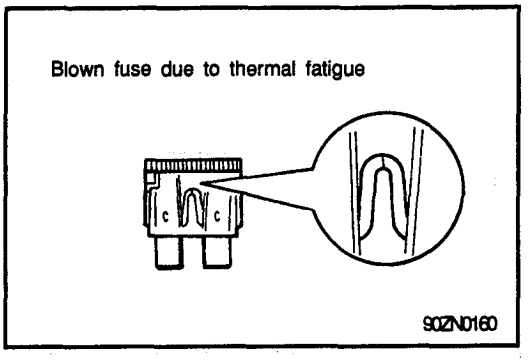
1. Fuse blown due to over-current.

Prior to replacing the fuse with a new one, check the circuit for a short and the related parts for abnormal condition.
Only after the correction of a short or replacement of abnormal parts, should a fuse with same ampere rating be installed.

2. Fuse blown due to repeated current on-off.

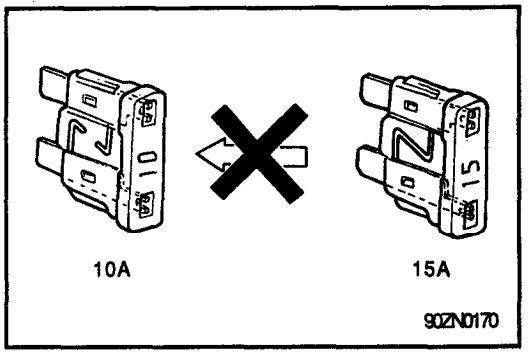
Normally, this type of problem occurs after fairly long period of use and hence is less frequent than the above type.
In this case, you may simply replace with a new fuse of the same capacity.



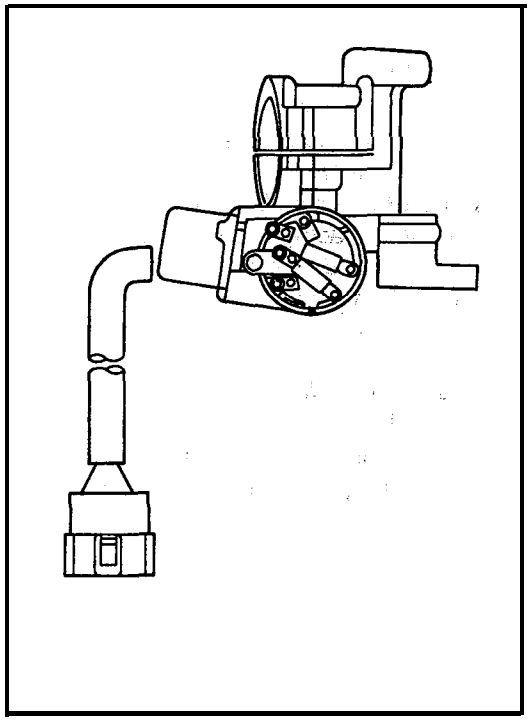


CAUTION:

A blade type fuse is identified by the numbered value in amperes.
If the 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.



IGNITION SWITCH (WITH DOOR WARNING SWITCH)



INSPECTION

1. Remove the connector located under the steering column.
2. Check for continuity between terminals.

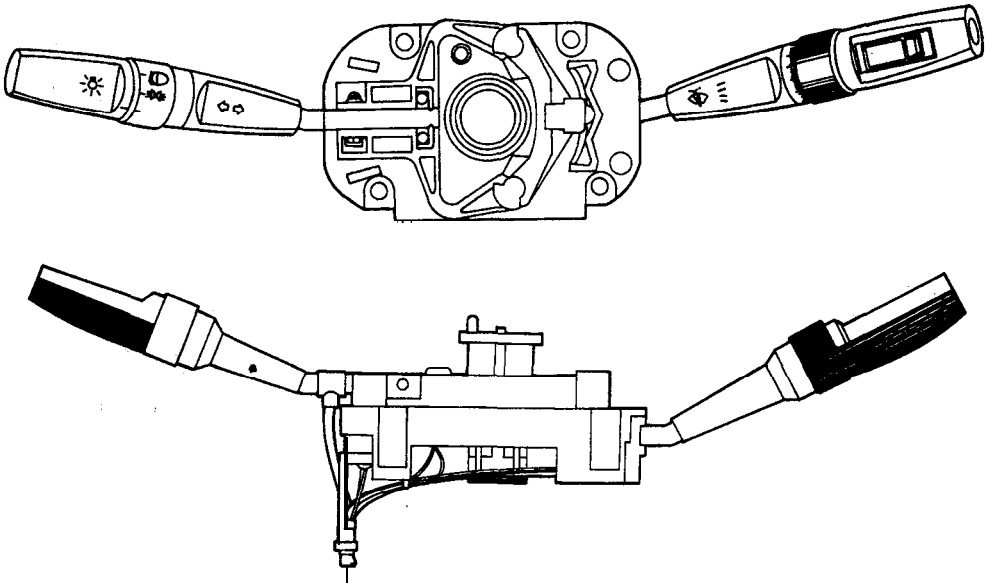
Switch / Terminal / Position	Key	Ignition switch (M36)					Door warning switch (M35)		Lock	
		1	2	4	5	6	1	2	RO	RE
LOCK	R								L	L
	I						O—O	O—O	L	F
ACC	I	O—O		O—O					F	F
ON	I	O—O	O—O	O—O		O—O			F	F
START	I			O—O	O—O	O—O			F	F

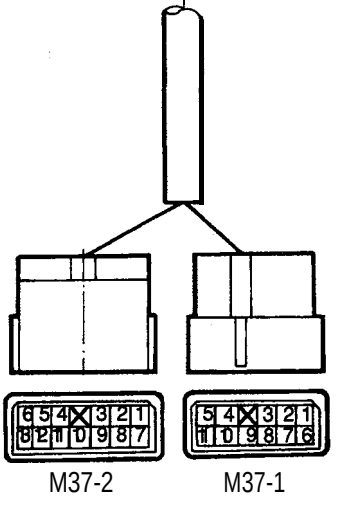
NOTE

O—O : indicates that there is a continuity between terminals.

RO : Round the locking bar, RE : Return the locking bar, R : Removed, I : Inserted, L : Lock, F : Free

MULTIFUNCTION SWITCH

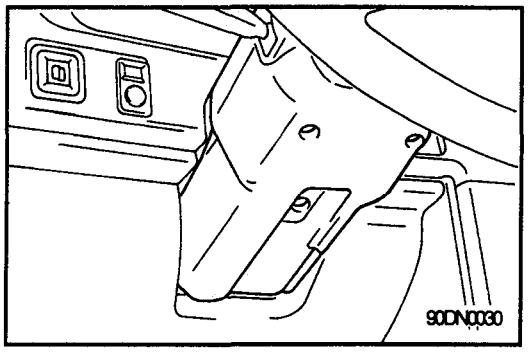




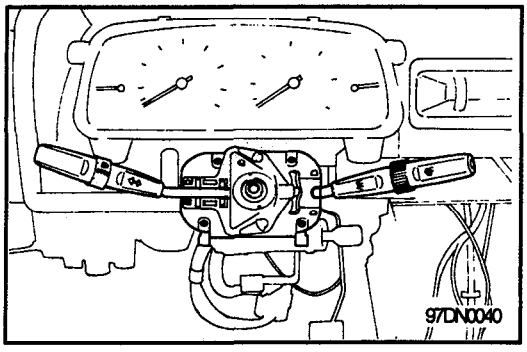
Circuit connection

Connection No.	Terminal No.	Wire size & color	Description
M37-1	1	0.85GY	Turn signal RH lamp
	2	0.5GL	Turn signal LH lamp
	3	0.5GR	Flash unit power
	4	0.3B	Head lamp ground (-)
	5	0.3LgW	No connection
	6	1.25LgB	Head lamp SW "passing"
	7	1.25RY	Head lamp lower beam power
	8	1.25RL	Head lamp upper beam power
	9	1.25B	Head lamp ground
	10	0.3LW	Head lamp switch
	11	0.3R	Tail lamp switch
M37-2	1	0.85LY	Washer
	2	0.85LW	Wiper low speed
	3	0.85BW	Horn
	4	0.3LgY	Speed resume accel
	5, 6	No connection	
	7	0.85RB	Wiper high speed
	8	0.85GB	Wiper parking
	9	0.85G	Intermittent wiper
	10	No connection	
	11	0.3BR	Intermittent wiper
	12	0.3L	Speed set coast
	13	0.3B	Cruise & Int. time switch ground

REMOVAL AND INSTALLATION



1. Disconnect the battery ground cable.
2. Remove the steering wheel.
3. Remove the steering column shroud.



4. Disconnect the harness connectors.
5. Remove the 3 straps.
6. Remove the multifunction switch ass'y by loosening the 4 screws shown in the illustration.
7. Installation is the reverse order of the removal procedure.

INSPECTION

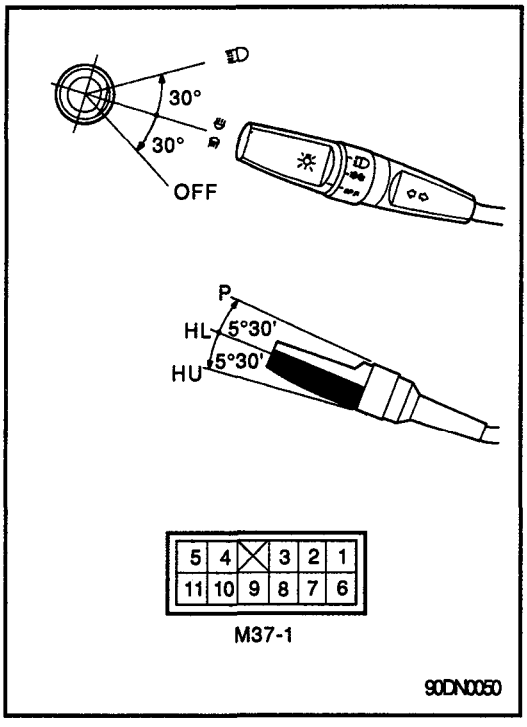
With the multifunction switch in each position, make sure that continuity exists between terminals below.

Lighting switch (Connector No.: M37-1)

Terminal / Position	4	5	10	11
OFF				
I	○	—	—	○
II	○	○	○	○

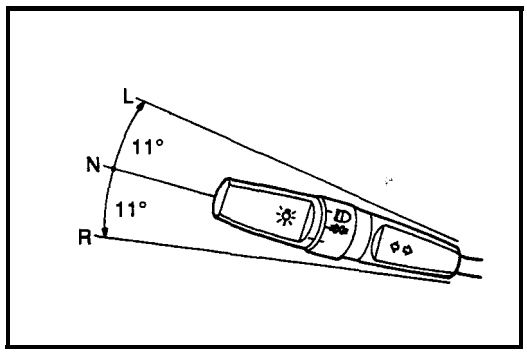
Dimmer and passing switch (Connector No.: M37-1)

Terminal / Position	6	7	8	9
HU			○	○
HL		○	—	○
P	○	—	○	○



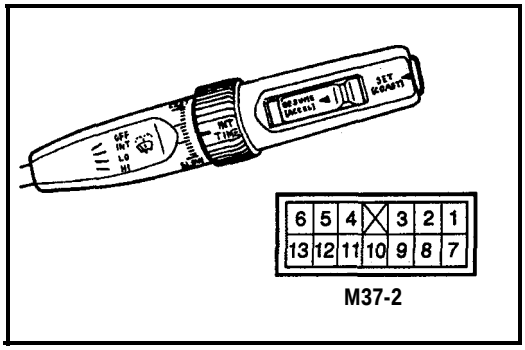
Turn signal switch (Connector No.: M37-1)

Hazard switch \ Terminal / Position	3	2	1
OFF	L	○——	——○	
	N			
	R	○——	———	——○



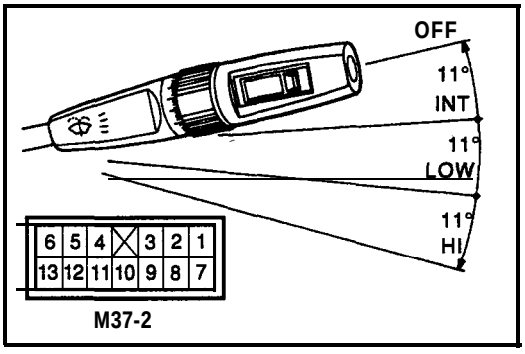
Cruise control switch (Connector No.: M37-2)

Position \ Terminal	4	12	13
RESUME (ACCEL)	○——	———	——○
N			
SET (COAST)		○——	——○



Wiper switch (Connector No.: M37-2)

Position \ Terminal	2	7	8	9	13	11
OFF	○——		——○			
INT	○——		——○	○——	——○	——○
LOW	○——				——○	
HIGH		○——			——○	



Washer switch (Connector No.: M37-2) *

Position \ Terminal	1	13
OFF		
ON	○——	——○

INSTRUMENTS AND WARNING SYSTEM
GENERAL SPECIFICATIONS

Instrument cluster		
Type	Package type (flexible P.C.B. with push connection)	
illumination lamps	12v 3.4w x 4, 1.2w x 2	
Illumination color	White	
Indicator and warning lamps	Bulb wattage	Illumination color
Battery charge	1.2	Red
Oil pressure	1.2	Red
Door ajar	1.2	Amber
Brake failure	1.2	Red
Low fuel	3.0	Amber
Direction indicator (LH, RH)	1.2	Green
High beam	3.0	Blue
Seat belt warning	1.2	Red
Trunk lid open	1.2	Amber
Over-drive OFF	1.2	Amber
Check engine	1.2	Amber

SERVICE SPECIFICATIONS

Speedometer

Type: Eddy current push connection type

Indication tolerance:

Speed (MPH)	10	20	40	60	80	100	120
Tolerance (MPH)	+2.5 0	+2 0	+2.5 0	+3.2 +0.3	+3.3 +0.3	+3.3 +0.3	+3.3 +0.3

Speed (Km/h)	20	40	60	80	100	120	140	160	180
Tolerance (Km/h)	+4 0	+4 0	+5 +1	+6 +2	+7 +2	+8 +3	+9 +4	+10 +5	

Tachometer

Type: Air cored type

Indication tolerance:

Standard (RPM)	Idle	2,000	3,000	4,000	5,000	6,000	7,000
Tolerance (RPM)	±100	±150	±200	±200	±200	±200	±300

Fuel gauge

Type: Air cored type (pointer remaining type)

Indication:

Fuel level	E (Empty)	1/2	F (Full)
Scale angle	-30°	0°	+30°
Tolerance	±2°24'	±5°	±2°24'
Tolerance when assembled with fuel sender	0° -5.36°	±10°	+7°06° -0°
Resistance (Ω)	95	32.5	6.5

Temperature gauge

Type: Air cored typeTemperature (°C)

Indication:

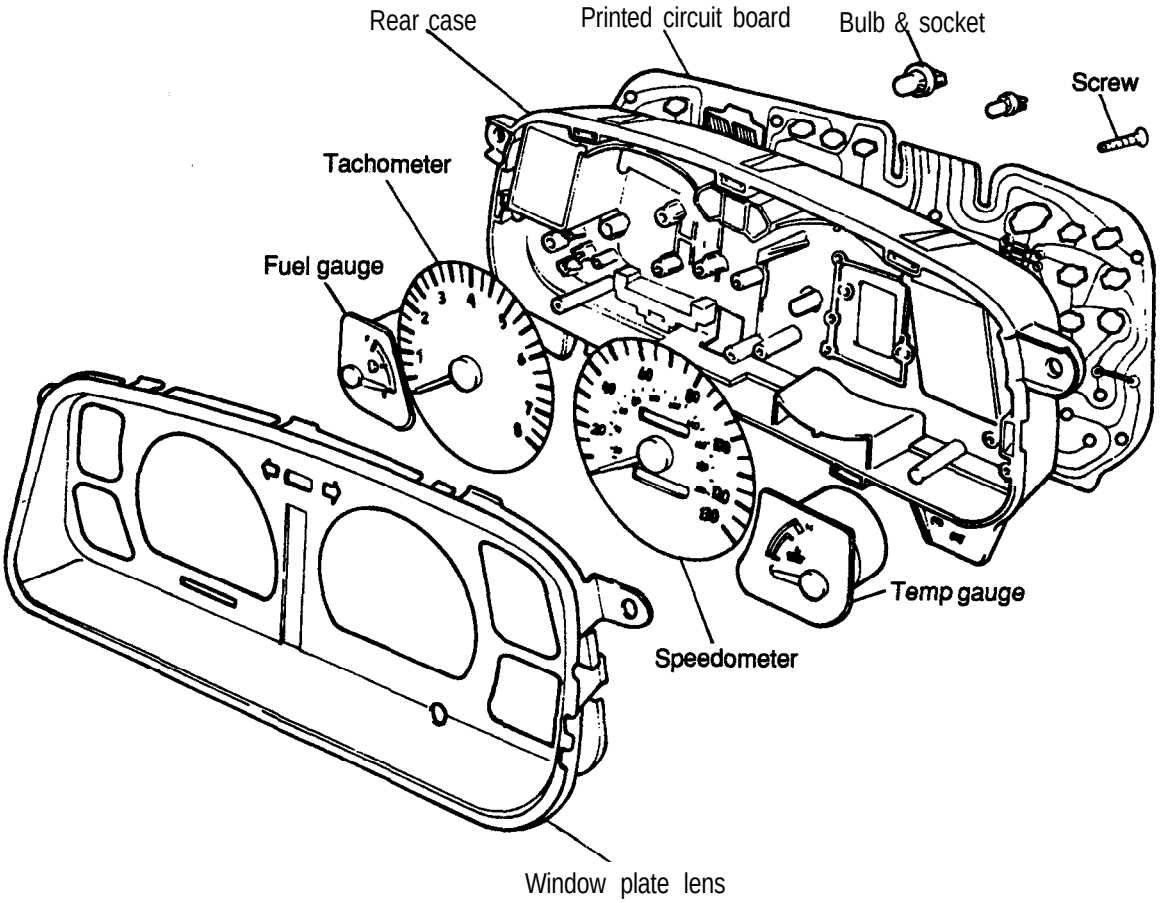
Temperature (°C)	70	115	Red; warning zone	130
Scale angle	-30°	14.5°	24°	30°
Tolerance	±2.5°	±3°	-	-
Tolerance when assembled with temp. sender	-	±6.5°	-	-

TROUBLESHOOTING

Problem	Probable cause	Remedy
Speedometer does not operate	No.13 fuse (10A) blown Speedometer faulty Reed switch faulty Wiring faulty	Check for short and replace fuse Check speedometer Check the switch located within the speedometer Repair if necessary
Tachometer does not operate	No.13 fuse (10A) blown Tachometer faulty Wiring Faulty	Check for short and replace fuse Check tachometer Repair if necessary
Fuel gauge does not operate	No. 13 fuse (10A) blown Fuel gauge faulty Fuel sender faulty Wiring faulty	Check for short and replace fuse Check gauge Check fuel sender Repair if necessary
Low fuel warning lamp does not light	No.13 fuse (10A) blown Bulb burned out Fuel level sensor faulty Wiring or ground faulty	Check for short and replace fuse Replace bulb Check switch Repair as necessary
Engine coolant temperature gauge does not operate	No. 13 (10A) fuse blown Engine coolant temperature gauge faulty Engine coolant temperature sender faulty Wiring or ground faulty	Check for short and replace fuse Check gauge Check sender Repair if necessary
Oil pressure warning lamp does not light	NO. 13 (10A) fuse blown Bulb burned out Oil pressure sender faulty Wiring or ground faulty	Check for short and replace fuse Replace bulb Check sender Repair if necessary
Low brake fluid warning lamp does not light	NO. 13 (10A) fuse blown Bulb burned out Brake fluid level warning switch faulty Parking brake switch faulty Wiring or ground faulty	Check for short and replace fuse Replace bulb Check switch Check switch Repair if necessary
Open door warning lamp does not light	NO. 5 (10A) fuse blown Bulb burned out Door switch faulty Wiring or ground faulty	Check for short and replace fuse Replace bulb Check switch Repair if necessary

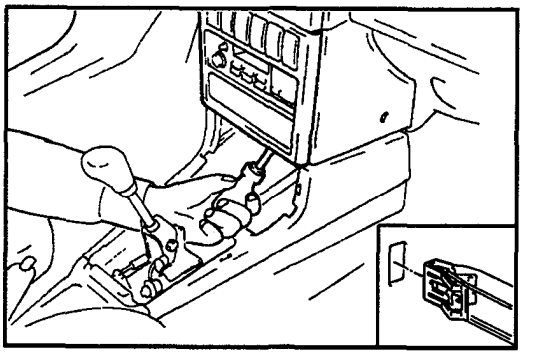
INSTRUMENT CLUSTER

COMPONENTS

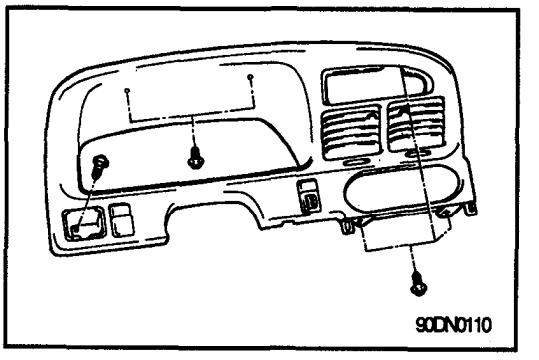


REMOVAL AND INSTALLATION

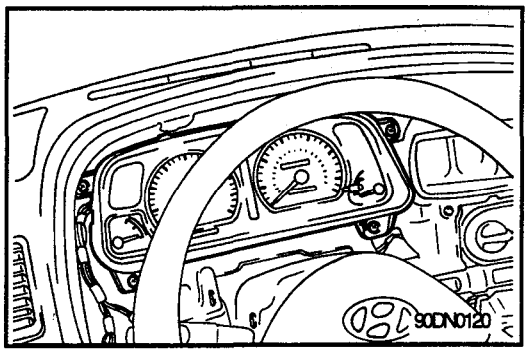
1. Disconnect the battery ground cable.
2. Remove the ash tray.
3. Remove the low crash pad center facia panel.



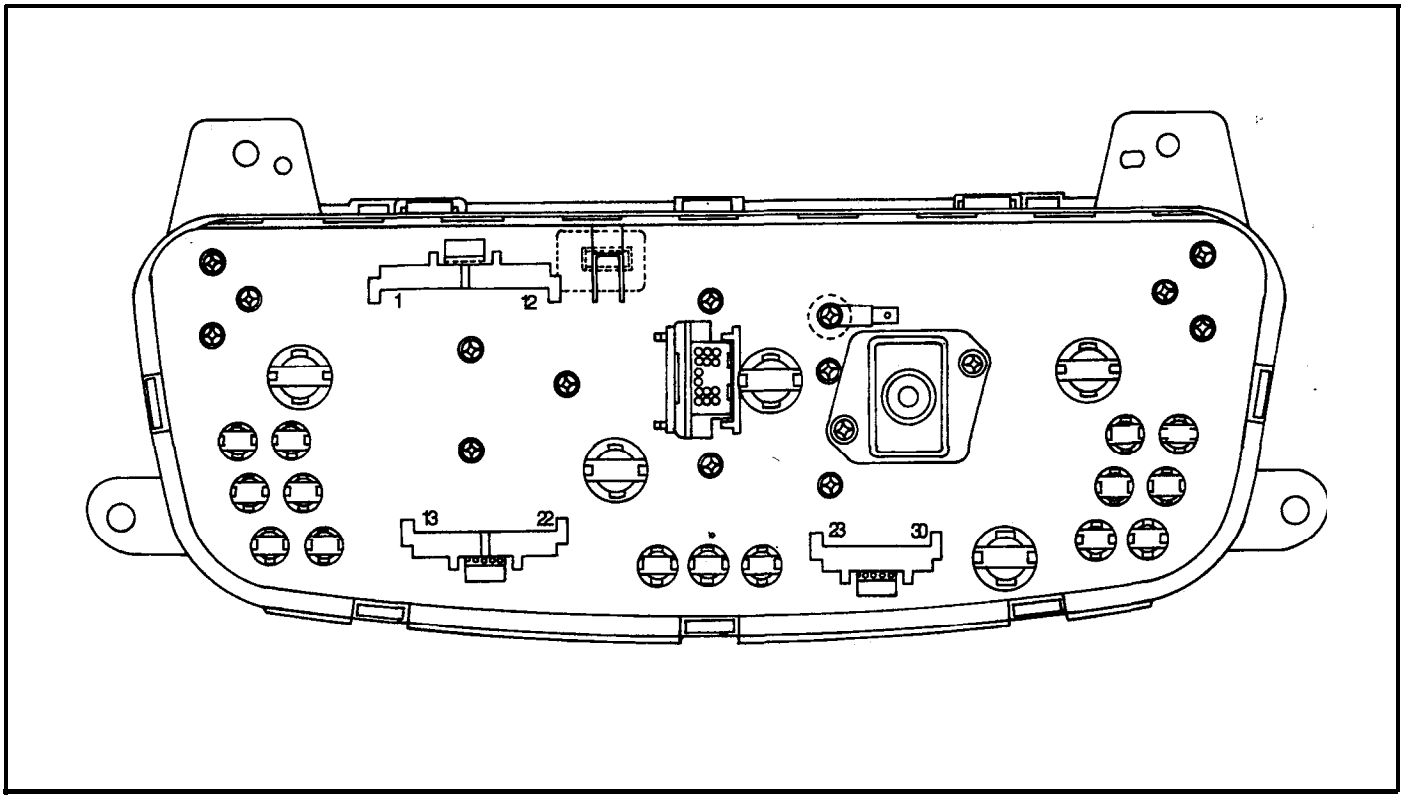
4. Remove the digital clock and remote control mirror switch.
5. Remove the cluster facia panel assembly.



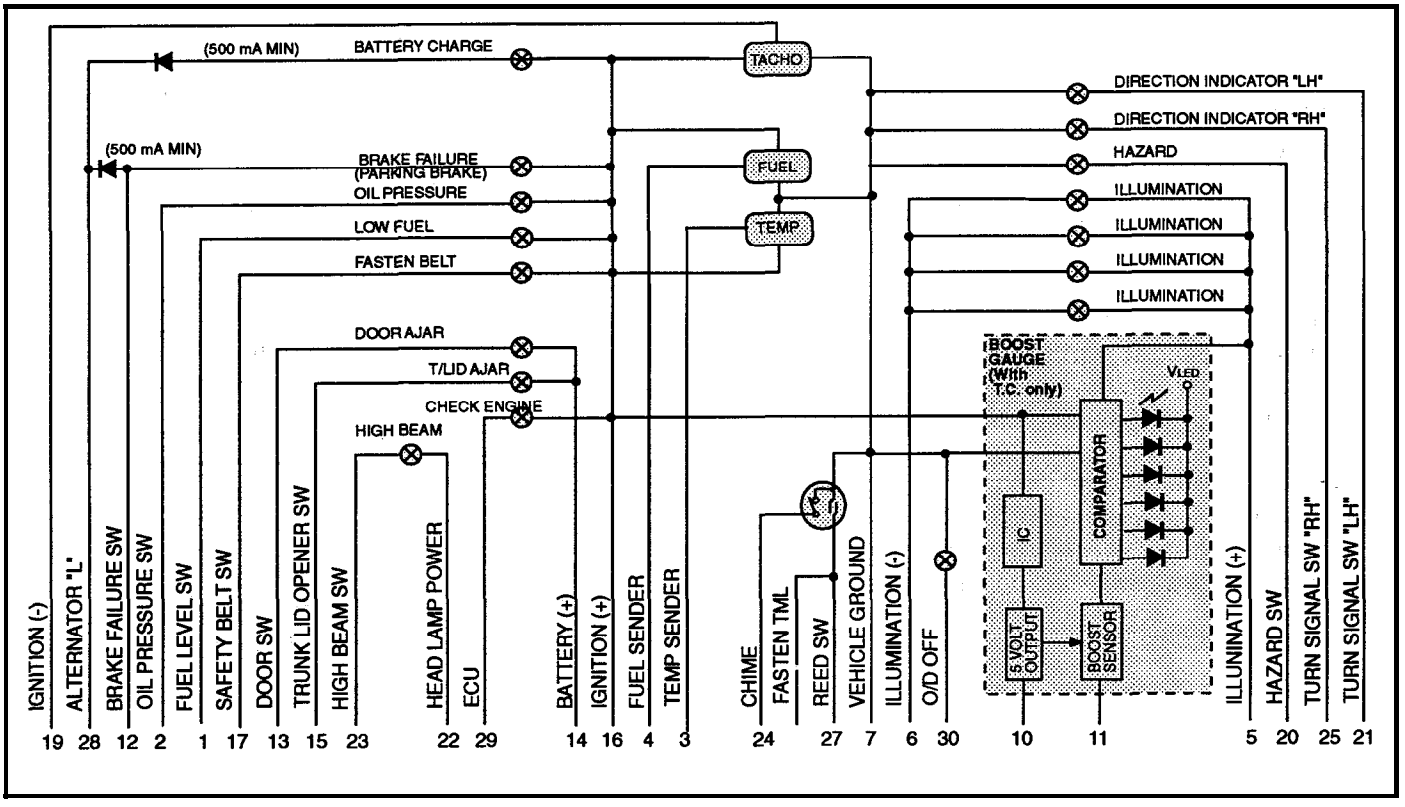
6. Remove the cluster retaining screws and carefully pull rear ward enough to disengage speedometer cable.
7. Carefully pull cluster away from instrument panel and disconnect the cluster wiring from the printed circuit board.
8. Installation is the reverse order of removal.



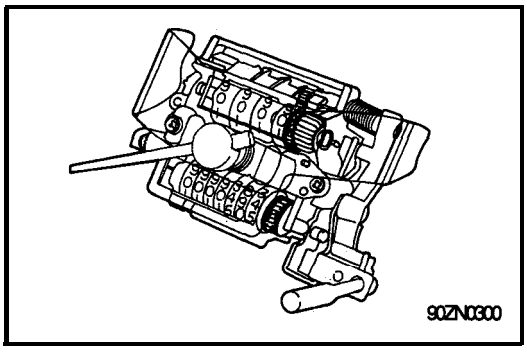
PRINTED CIRCUIT BOARD



CIRCUIT DIAGRAM



SPEEDOMETER AND SPEEDOMETER CABLE



Speedometer inspection

1. Using a speedometer tester, ensure that any indication error is within tolerance limits.

   NOTE

   It should be noted that the excessive tire wear and tire over or under-inflation will cause indication errors.

Speed (MPH)	10	20	40	60	80	100	120
Tolerance (MPH)	+2.5 0	+2 0	+2.5 0	+3.2 +0.3	+3.3 +0.3	+3.3 +0.3	+3.3 +0.3

Speed (Km/h)	20	40	60	80	100	120	140	160	180
Tolerance (Km/h)	+4 0	+4 0	+5 +1	+6 +2	+7 +2	+8 +3	+9 +4	+10 +5	

2. Check the speedometer for pointer fluctuation and abnormal noise.

   NOTE

   Pointer fluctuations can be caused by a faulty speedometer cable.

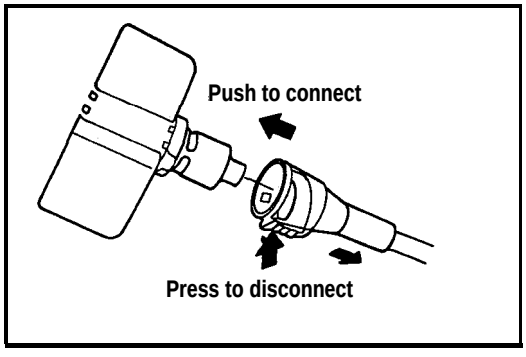
3. Check to see if the odometer is functioning properly.

Speedometer cable inspection

1. Check the cable for kinks, bents or damages in routing. If the conditions are severe, replace cable.
2. After disconnecting cable, check the core for kinks, burrs or bent tips.

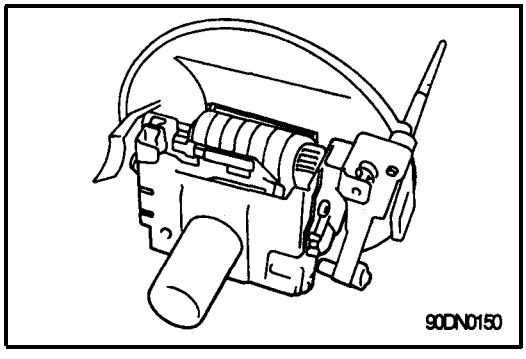
   NOTE

   When installing a cable, it is necessary that extra care should be taken to verify that the stopper of the cable is fitted properly into the speedometer groove and the cable is routed properly to eliminate any kinks.

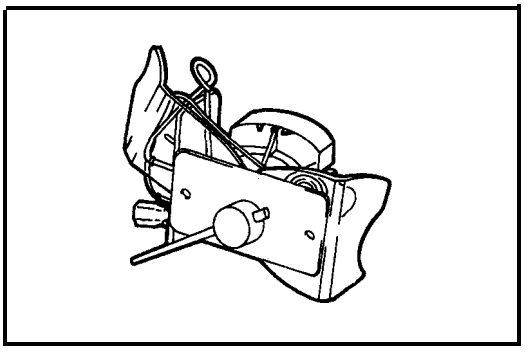


Reed switch inspection

1. Remove the instrument cluster.
2. Use an ohmmeter to check for continuing, or no continuing between the test points as the speedometer cable is rotated.



TACHOMETER

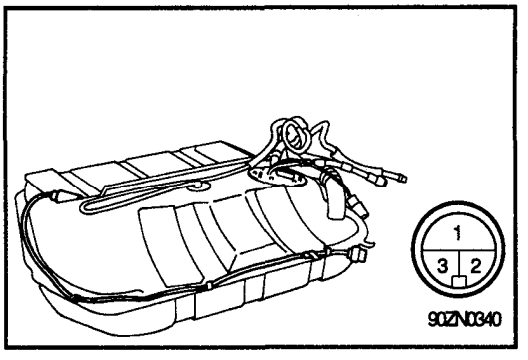


On-vehicle inspection

1. Connect the multi-use tester to the diagnosis connector in the fuse box, or install a tachometer.
2. With engine started, compare the readings of the tester with that of the tachometer.
   Replace tachometer if difference is excessive.

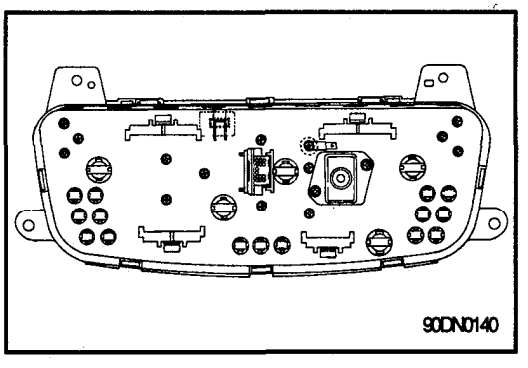
Standard (RPM)	Idle	2,000	3,000	4,000	5,000	6,000	7,000
Tolerance (RPM)	±100	±150	±200	±200	±200	±200	±300

FUEL GAUGE AND FUEL SENDER



Fuel gauge operation check (in-vehicle)

1. Raise the vehicle and disconnect the fuel sender connector from fuel sender.
2. Ground the harness side connector (terminal 2) via 12V, 3.4 W bulb.
3. Turn the ignition switch to the ON position.
4. Check to be sure that the test bulb flashes and that the indicator moves gradually to the "F" position.



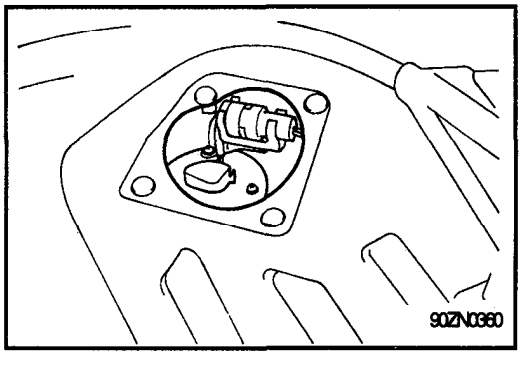
Fuel gauge inspection

1. Remove the instrument cluster.
2. Measure the resistance between terminals.

Standard resistance : **55Ω**

NOTE

If the resistance value is extremely low, there may be a short in the coil; if it is extremely high, there may a broken wire or some other problems in the coil.



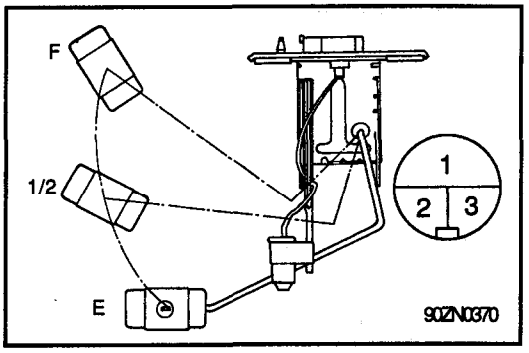
Fuel sender inspection

1. Remove the luggage covering carpet and spare tire.
2. Remove the fuel tank cover retaining screws.
3. Remove the fuel sender assembly.

4. Using an ohmmeter, measure the resistance between terminals 2 and 3 at each float level.

Float position	E	1/2	F
Resistance 4	110±7	32.5±4	3±2

5. Check that resistance changes smoothly when the float is moved to “E” or “F”.



Low fuel level sensor inspection

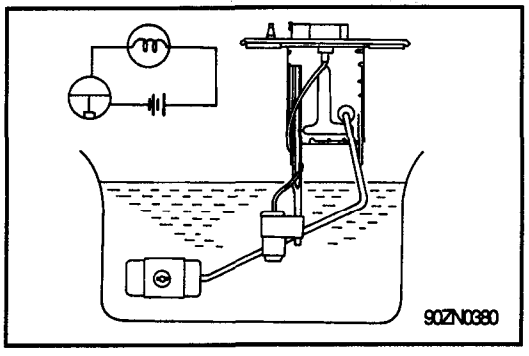
1. Connect the sender with a test lamp (12V, 3.4W) to the battery and immerse it in the water.
2. The lamp should be off while thermistor is beneath the water, and should illuminate when the sender is taken out of the water.

NOTE

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

CAUTION

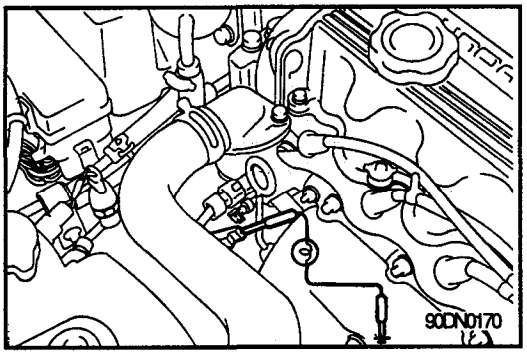
After completing this test, wipe the sender dry and install it in the fuel tank.



ENGINE COOLANT TEMPERATURE GAUGE AND SENDER

Engine coolant temperature gauge operation check (in-vehicle)

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

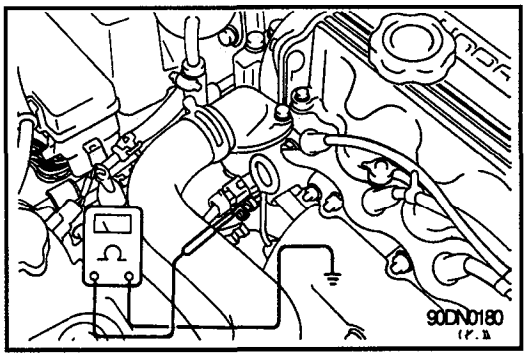


Engine coolant temperature sender inspection

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

If the resistance is out of specification, replace the sender.

Temperature °C (°F)	50 (112)	70 (158)	115 (239)	120 (248)
Resistance Ω	230	104±13.5	23.8±2.5	21

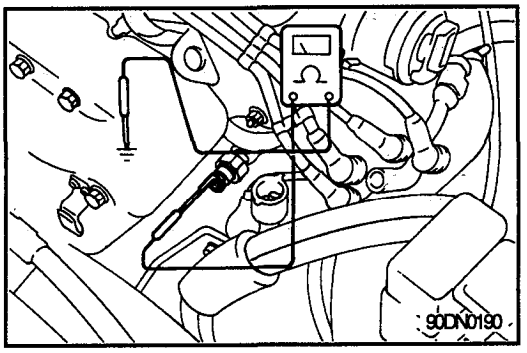


OIL PRESSURE SWITCH AND WARNING LAMP

Oil pressure switch inspection

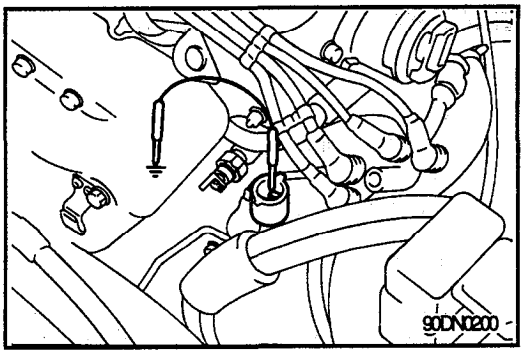
1. Pull out the connector from the oil pressure switch located at the cylinder block.
2. Ensure that there is continuity between switch terminal and ground under condition of pressure below.

Switch ON pressure	*
	0.3 ± 0.1 kg/cm^2 (29.4 ± 9.8 kPa, 4.3 ± 1.4 psi)



Oil pressure warning lamp inspection

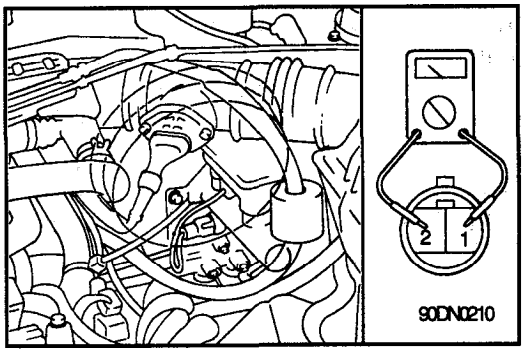
1. Pull out the connector from the oil pressure switch.
2. Ground the harness side connector.
3. Ensure that the oil pressure warning lamp lights when the ignition switch is turned ON.



BRAKE FLUID LEVEL WARNING SWITCH AND LAMP

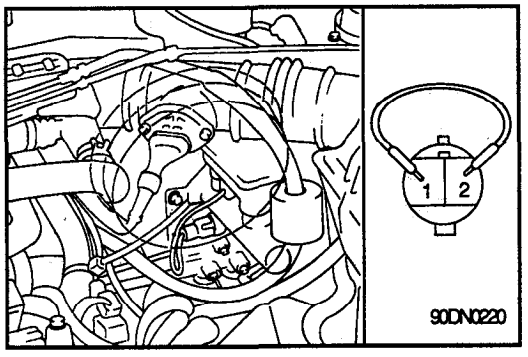
Brake fluid level warning switch inspection

1. Remove the connector from the switch located at brake fluid reservoir.
2. Ensure that the continuity exists between switch terminals 1 and 2 while pressing down the switch (float) with a rod.



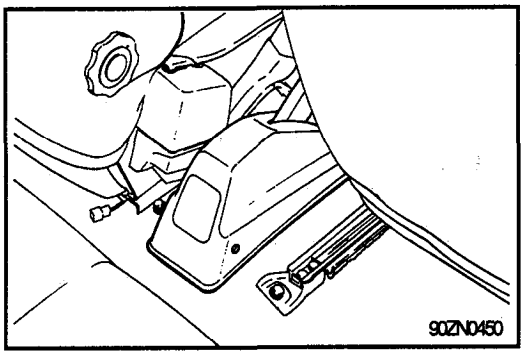
Brake fluid level warning lamp inspection

1. Start the engine.
2. Release the parking brake lever to the original position.
3. Disconnect the connector of the brake fluid level warning switch.
4. Ground the connector at the harness side.
5. Ensure that the warning lamp lights.



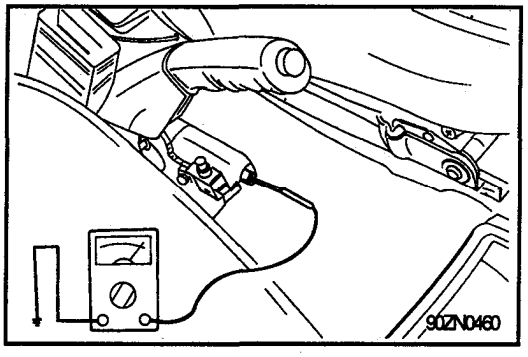
Parking brake switch inspection

1. Remove the rear console assembly.



2. Disconnect the connector of parking brake switch.
3. Check continuity between terminal and body ground.

Parking lever position	Continuity
Pulled forward	Conductive (0Ω)
Released backward	Non-conductive (∞Ω)

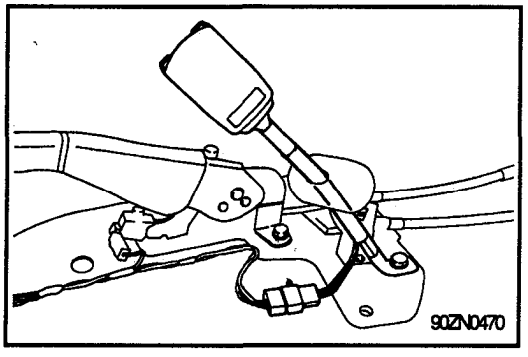


SEAT BELT WARNING SWITCH AND LAMP

Seat belt switch inspection

1. Disconnect the connector from the switch.
2. Check for continuity between terminals.

Seat belt condition	Continuity
Fastened	Non-conductive (∞Ω)
Non fastened	Conductive (0Ω)



Seat belt warning lamp inspection

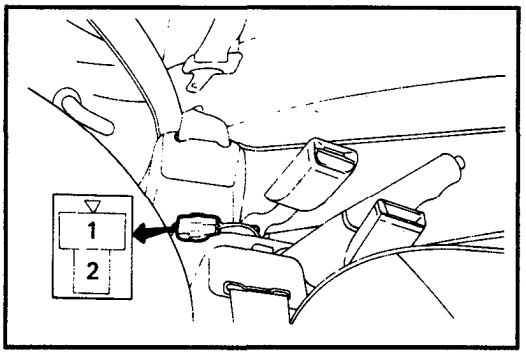
With the ignition switch turned ON, ensure that the lamp glows.

Seat belt condition	Warning lamp
Fastened	Off
Not fastened	Glows for about six seconds

Passive seat belt switch inspection

1. Disconnect the connector from the switch.
2. Check for continuity between terminals.

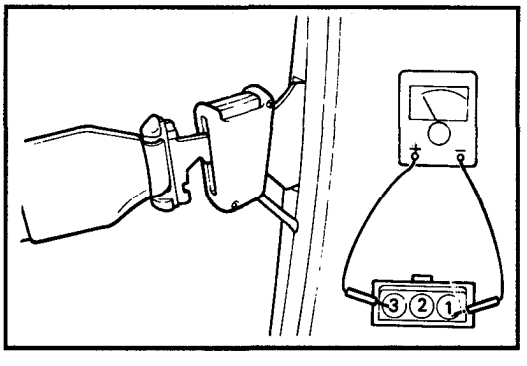
Seat belt condition	Continuity
Fastened	Non-conductive (∞Ω)
Non fastened	Conductive (0Ω)



Lap belt switch inspection (with passive seat)

1. Remove the connector from the switch
2. Check for continuity between terminals.

Seat belt condition	Continuity
Fastened	Non-conductive (∞Ω)
Non fastened	Conductive (0Ω)



LIGHTING SYSTEM

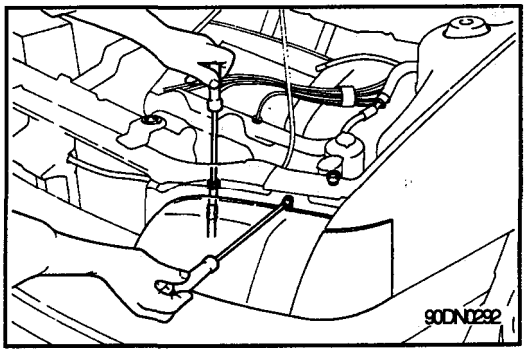
SPECIFICATION

Items	Specifications
Lamps	
Exterior lamps	
Head lamp	65/45 W
Front turn signal lamp (position lamp incorporated)	28/8 W
Front side marker lamp	4 w
Rear combination lamp	
Tail and stop lamp	27/8 W
Back-up lamp	27 W
Rear turn signal lamp	27 W
Rear side marker lamp	4 w
Licence plate lamp	8W
Interior lamps	
Luggage compartment lamp	5 w
High mounted stop lamp	17w
Map lamp	8W
Room lamp	10W
Flasher unit	
Blinking frequency	
Turn signal	85±10C/M
Hazard warning	80±12C/M

TROUBLESHOOTING

Problem	Possible cause	Remedy
One lamp only does not light (all exterior)	Bulb burnt out Socket, wire or ground faulty	Replace bulb Repair as necessary
No headlamps light	Sub-fusible link (30A) blown Headlamp relay faulty Lighting switch faulty Wiring or ground faulty	Replace sub-fusible link Check relay Check switch Repair as necessary
Tail, glove box and licence lamp do not light	Tail fuse blown (No. 15) Fusible link blown (30A) 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	Stop fuse (No. 4) blown Stop lamp switch fau!ty Wiring or ground faulty	Replace fuse and check for short Adjust or replace switch Repair as necessary
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 burnt-out Turn signal switch faulty Wiring or ground faulty	Replace bulb Check switch Repair as necessary
Turn signal does not operate	Sub-fusible link (30A) blown Turn signal fuse (No. 13) blown Turn signal flasher faulty Turn signal switch faulty Wiring or ground faulty	Replace fusible link Replace fuse and check for short Check flasher Check switch Repair as necessary
Hazard warning lamps do not operate	Sub-fusible link (50A) blown Hazard fuse (No. 3) blown Turn signal flasher faulty Hazard switch faulty Wiring or ground faulty	Replace fusible link Replace fuse and check for short Check flasher Check switch Repair as necessary
Flasher rate too slow or too fast	Lamps are of a wattage smaller or larger than is specified for use Defective flasher unit	Replace lamps Replace unit
Back up lamps do not light	Back up fuse blown Back up lamp switch faulty Damaged wiring or poor grounding	Check for short, replace fuse Check switch Repair as necessary
Overhead console and luggage lamp do not light	Sub-fusible link (50A) blown No. 5 (10A) fuse blown Wing or ground faulty	Replace fusible link Check for short and replace fuse Repair as necessary

HEADLAMP AIMING WITH SCREEN



The headlamps should be aimed with the proper beam-setting equipment, and in accordance with the equipment manufacturer's instructions.

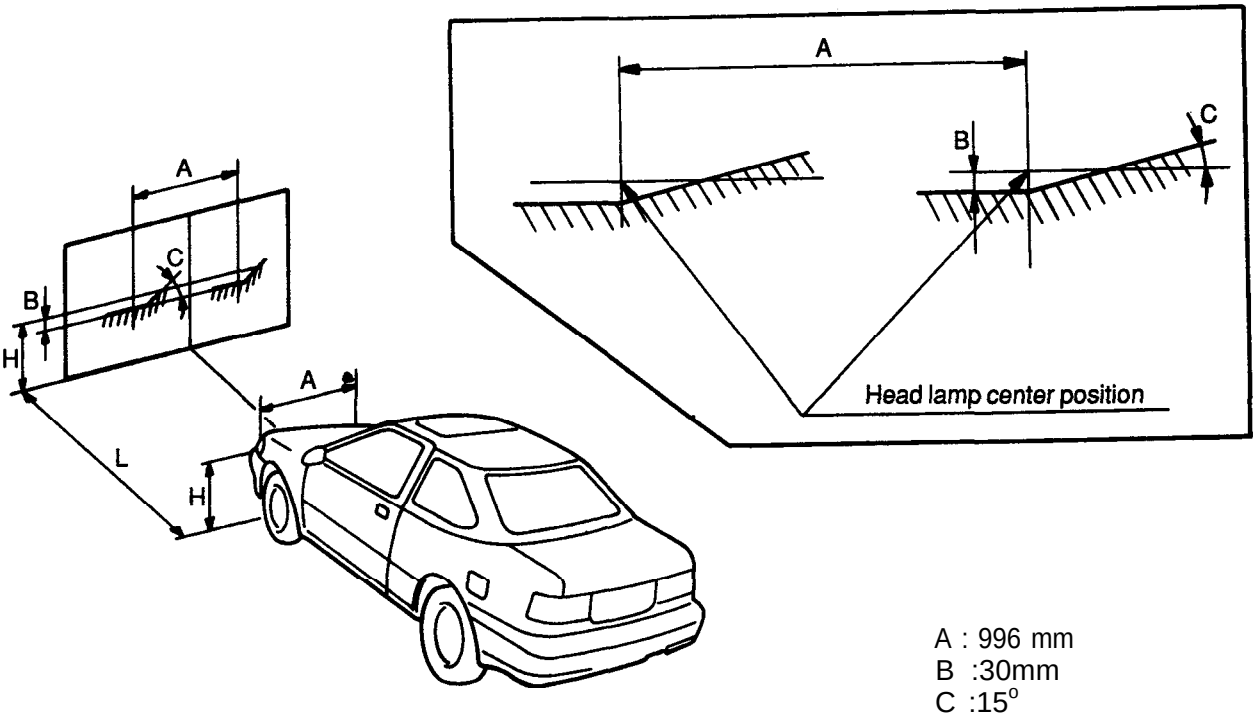
NOTE

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 meet 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, tool.
2. The vehicle should be placed on the flat 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 normal condition, aim the headlamps.

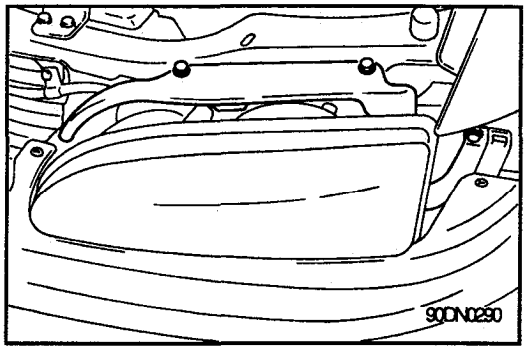
   Make the vertical and horizontal adjustment of the lower beam to the standard values by using the adjusting knobs.



A : 996 mm
B :30mm
C :15°
H : 619 mm (Without driver)
609 mm (With driver)
R : 3000 mm

HEADLAMP

Removal and installation



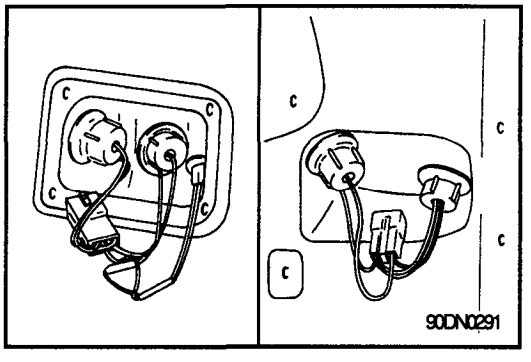
1. Remove the radiator grille.
2. Remove the front turn signal lamp.
3. Disconnect the headlamp connector.
4. Remove the head lamp.
5. Installation is the reverse order of removal procedure.

Tightening torque

Radiator grill mounting	2-3 N.m (20-30 kg.cm, 1.5-2.2 lb.ft)
Head lamp mounting	3-5 N.m (30-50 kg.cm, 2.2-3.6 lb.ft)

REAR COMBINATION LAMP

Removal and installation



1. Remove the trunk inner trim.
2. Disconnect the harness connector.
3. Remove the two (inside and outside) rear combination lamps by loosening the nuts.
4. Installation is the reverse order of removal procedure.

Tightening torque

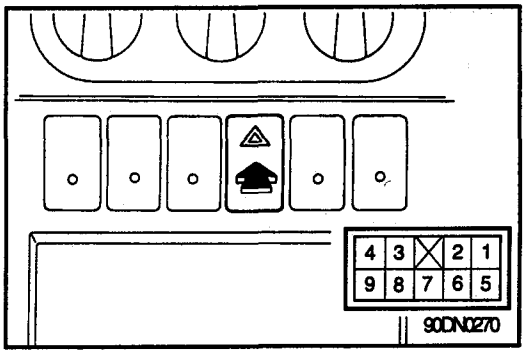
Rear combination lamp mounting	2.0-2.5 Nm (20-25 kg.cm, 1.4-1.8 lb.ft)

HAZARD SWITCH

Inspection

1. Remove the hazard switch located at digital clock.
2. Check for continuity between terminals.

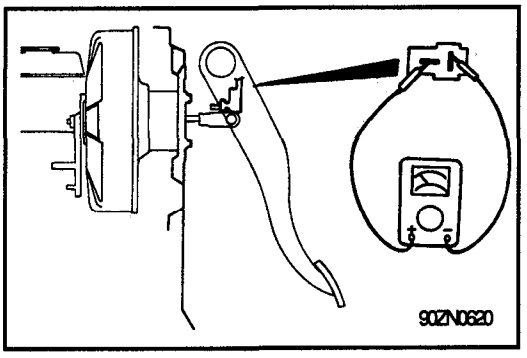
Terminal Position	2	6	7	8	3	4	9	1	5
OFF					○——		——○	○—⊗—○	
ON	○—○—○—○					○—○			



STOP LAMP SWITCH

Inspection

1. Remove the stop lamp switch connector located at brake pedal bracket.
2. Make sure that there is continuity between terminals 1 and 2 when the brake pedal is depressed.
3. Ensure that no continuity exists between the terminals when the pedal is released.

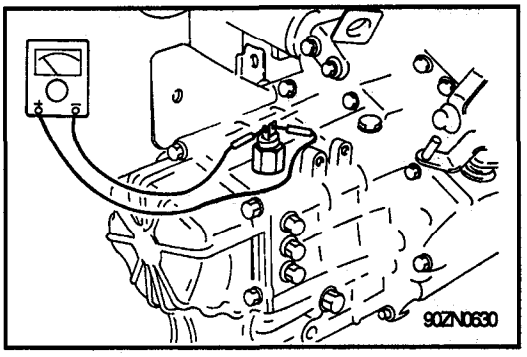


BACK UP LAMP SWITCH (M/T)

Inspection

1. Remove the back up lamp switch connector.
2. Check for continuity between terminals.

Gear shift position	1	2
No up		
Back up	○——	——○

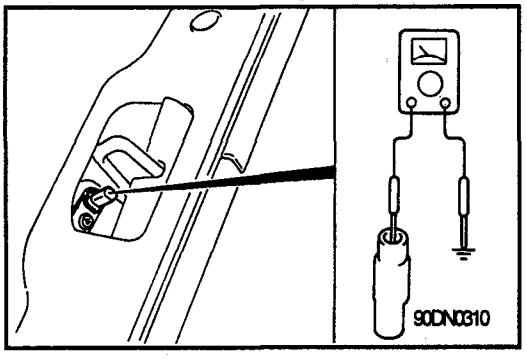


LUGGAGE COMPARTMENT LAMP SWITCH

Inspection

1. Remove the luggage compartment lamp switch connector.
2. Check for continuity between terminal and ground.

Trunk lid position	Continuity
Opened	0 ý
Closed	× ý

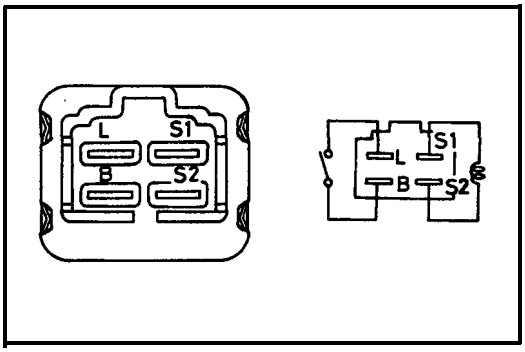


RELAY

Inspection

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

Condition \ Terminal	1	2	3	4
When de-energized	O		O	
When energized	⊕	O	O	O



NOTE

1. O—O indicates that there is continuity between the terminals.

2. ⊕ .....⊖ indicates power supply connection.

TURN SIGNAL FLASHER UNIT

Inspection

1, Connect the positive (+) lead from the battery to terminal B and the negative (-) lead to terminal E.

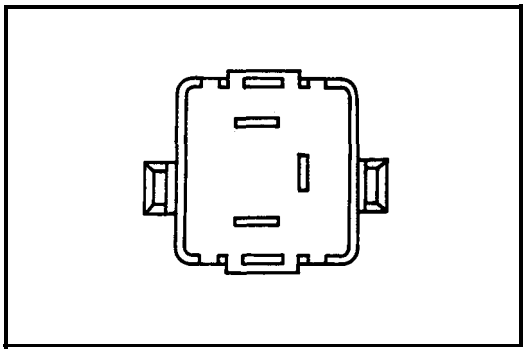
2. Connect the two turn signal lamps parallel to each other to terminal L and E, check that the bulbs turn on and off.

NOTE

The turn signal lamps should flash 75 to 95 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 operation is not as specified, replace the flasher unit.



AM/FM RADIO WITH CASSETTE BASE AND MEDIUM GRADE

Items	H-810	H-820
Radio		
Band	AM/FM	AM/FM1/FM2
Turning type	E.T.R.	E.T.R.
Memory (AM/FM)	6l6	6/12
Frequency range	AM : 530-1710 KHz FM : 87.9-108 MHz	AM : 530-1710 KHz FM :87.9-107.9 MHz
Audio		
Power output	MAX. 20W x 2CH	MAX. 25W x 4CH
Volume type	Rotary	Rotary
Tape player		
Deck type	Mechanical	Full logic
Eject type	Manual	Key off release
Operating type	Auto reverse	Auto reverse

DELUXE GARDE

Items	H-565
Radio	
Receiving band	AM/FM/FM2
Turing type	E.T.R.
Memory (AM/FM)	6/12
Frequency range	AM : 530-1710 KHz FM :87.9-107.9MHz
Tape player	
Deck type	Full logic
Eject type	Key off reverse
Reproducing type	Auto reverse
Compact disc player	
Frequency response	20KHz to 20KHz ± 3dB
Signal to noise ratio	80dB

SPEAKER

Items	Specifications
Front speaker	
Input power	NOM. 20W RMS MAX. 40W RMS
Rated impedance	**4Ω**
Distortion	MAX. 5%
Size	10cm(4in.)
Rear speaker	
Input power	NOM. 20W RMS MAX. 40W RMS
Rated impedance	**4Ω**

TROUBLESHOOTING

There are 5 areas where a problem can occur: the wiring harness, radio, cassette tape deck, speaker, and the antenna.
Your job in troubleshooting is to isolate the problem to a particular area.

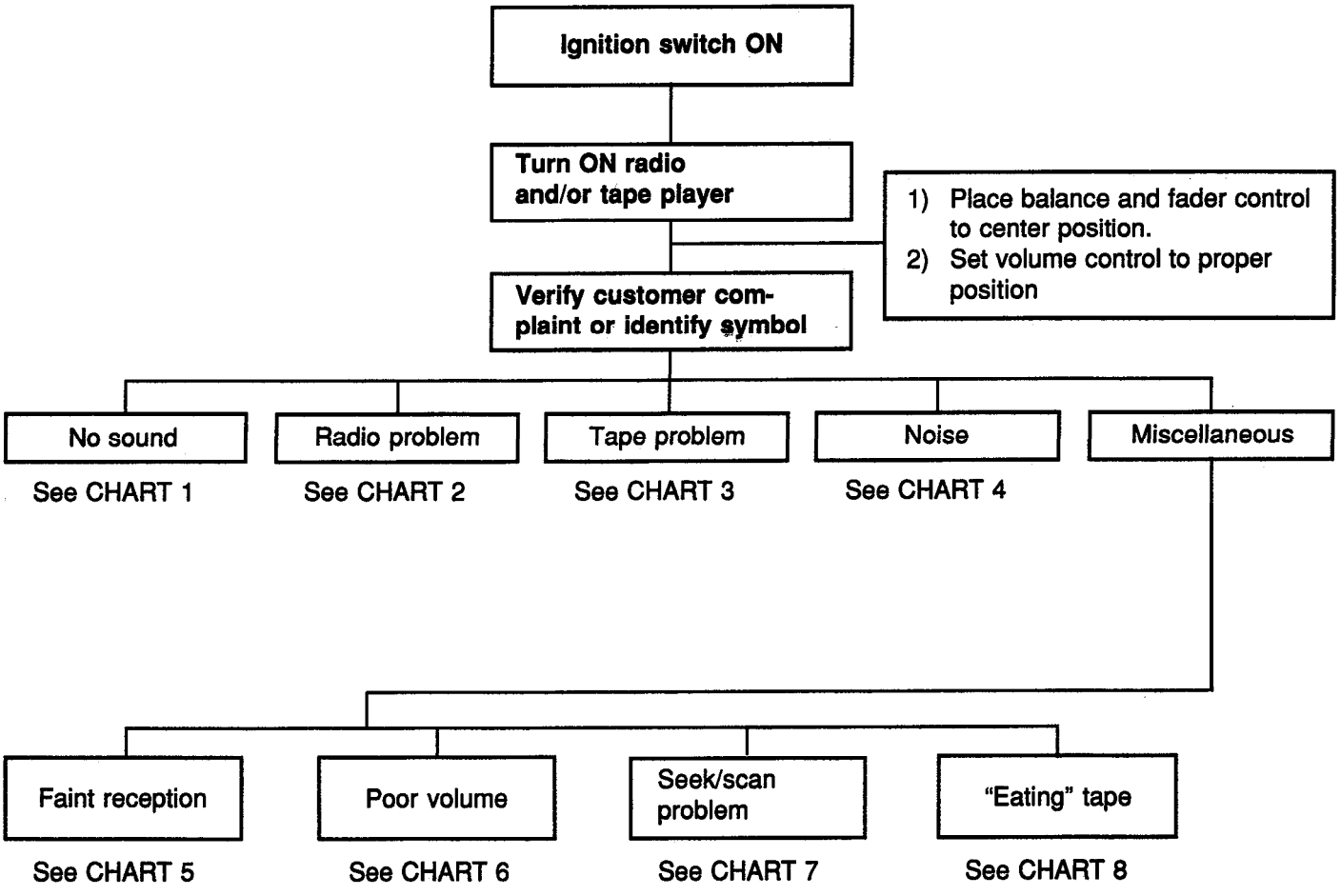
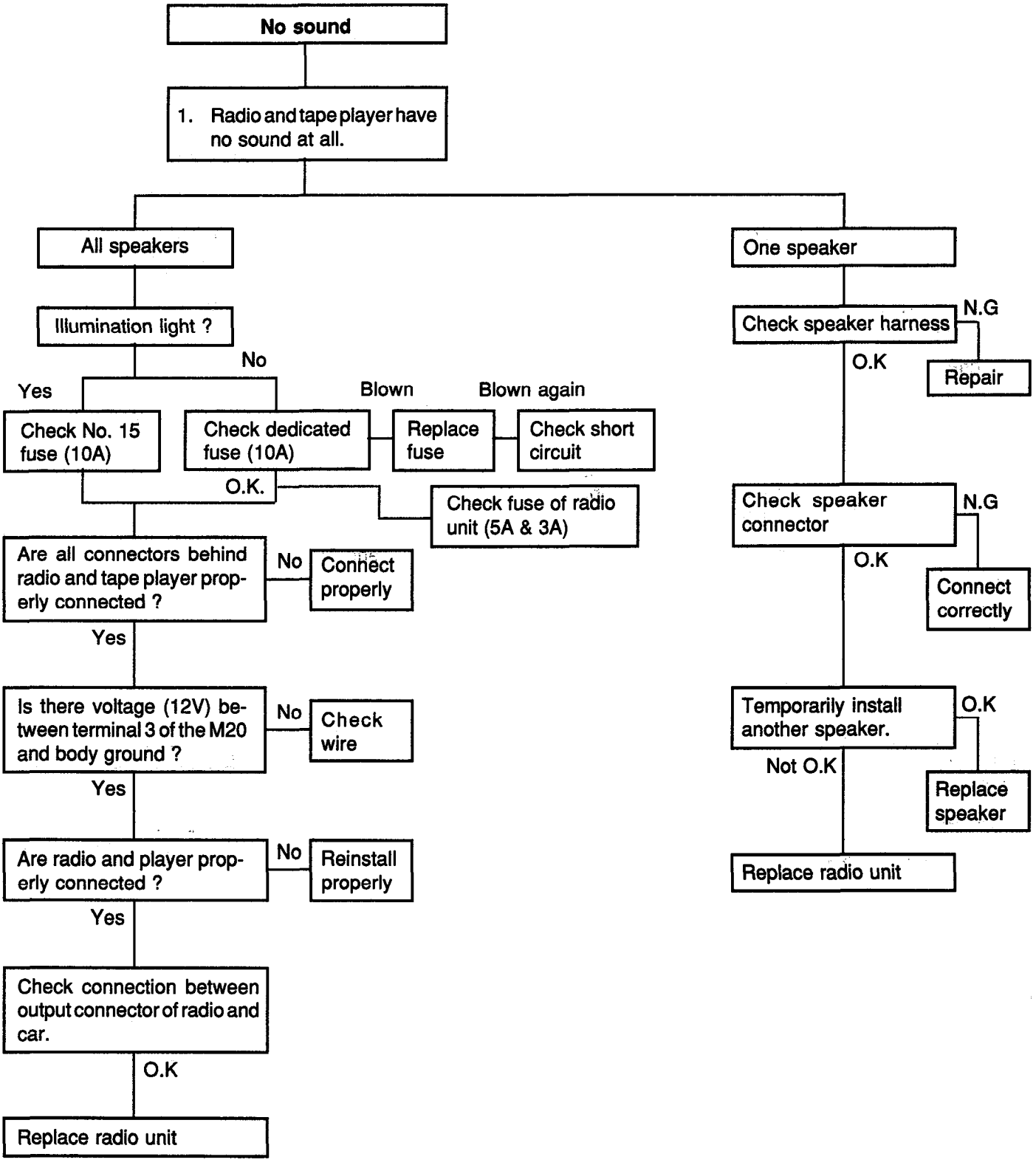


CHART 1


No sound
1. Radio and tape player have no sound at all.
All speakers
One speaker
Illumination light ?
No
Yes
Blown
Blown again
Check No. 15 fuse (10A)
Check dedicated fuse (10A)
Replace fuse
Check short circuit
O.K.
Check fuse of radio unit (5A & 3A)
Are all connectors behind radio and tape player properly connected ?
No
Connect properly
Yes
Is there voltage (12V) between terminal 3 of the M20 and body ground ?
No
Check wire
Yes
Are radio and player properly connected ?
No
Reinstall properly
Yes
Check connection between output connector of radio and car.
O.K
Replace radio unit
Check speaker harness
N.G
O.K
Repair
Check speaker connector
N.G
O.K
Connect correctly
Temporarily install another speaker.
O.K
Not O.K
Replace speaker
Replace radio unit

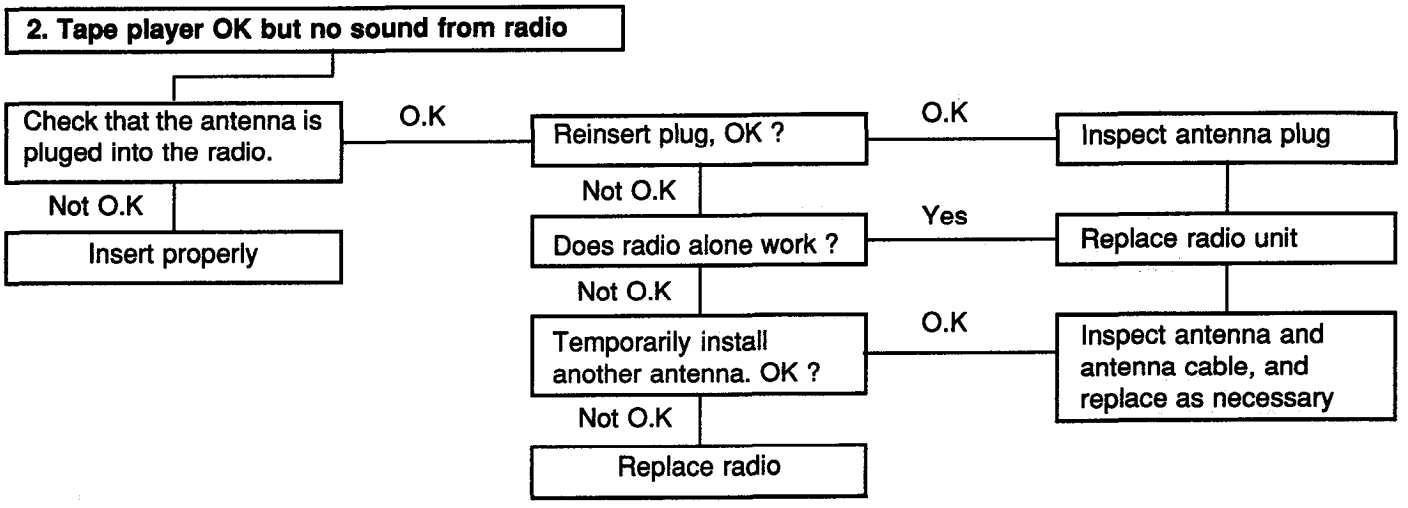
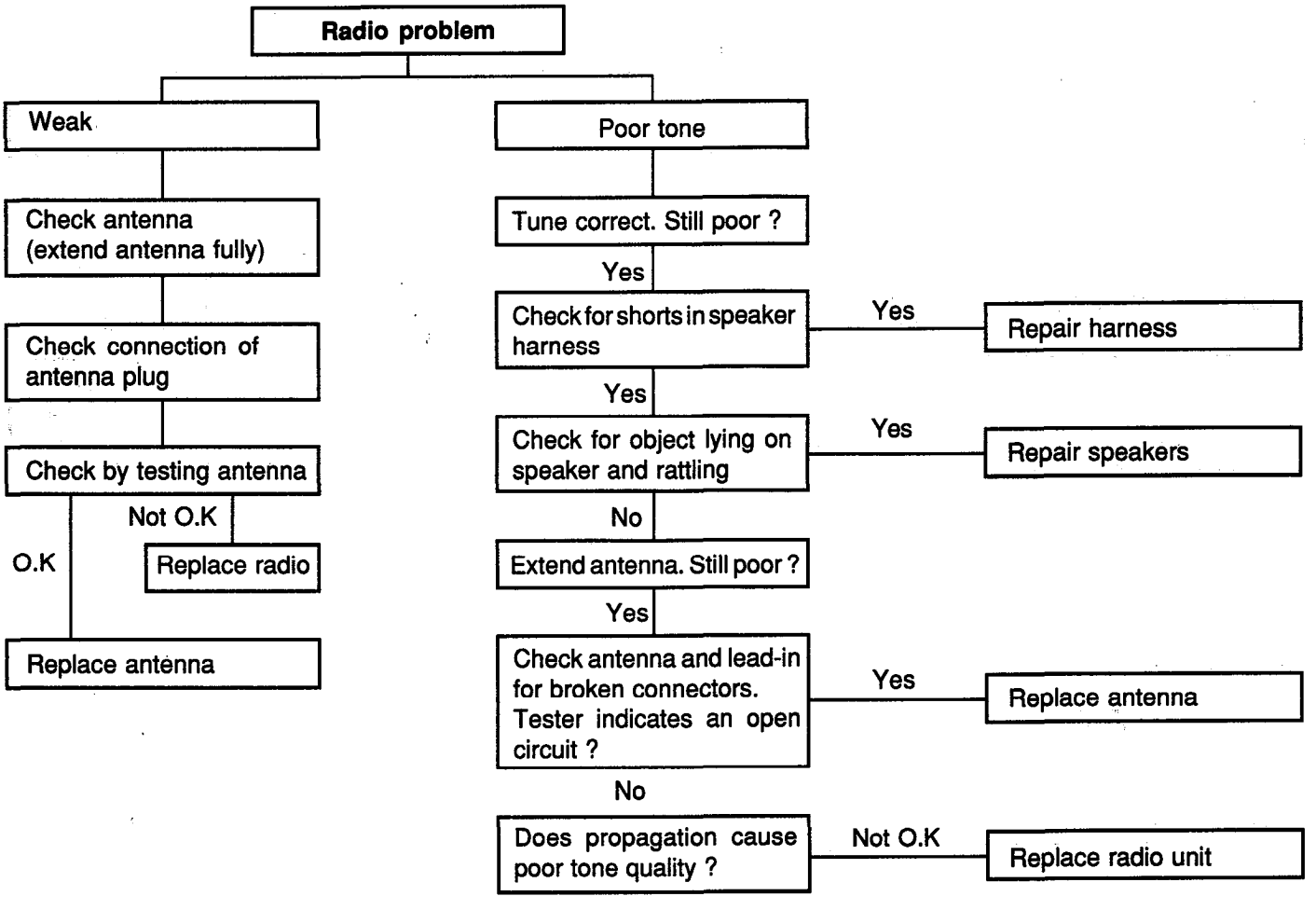

2. Tape player OK but no sound from radio
Check that the antenna is pluged into the radio.
O.K
Reinsert plug, OK ?
O.K
Inspect antenna plug
Not O.K
Insert properly
Not O.K
Does radio alone work ?
Yes
Replace radio unit
Not O.K
Temporarily install another antenna. OK ?
O.K
Inspect antenna and antenna cable, and replace as necessary
Not O.K
Replace radio

CHART 2


Radio problem
Weak
Check antenna (extend antenna fully)
Check connection of antenna plug
Check by testing antenna
Not O.K
Replace radio
O.K
Replace antenna
Poor tone
Tune correct. Still poor ?
Yes
Check for shorts in speaker harness
Yes
Repair harness
Yes
Check for object lying on speaker and rattling
Yes
Repair speakers
No
Extend antenna. Still poor ?
Yes
Check antenna and lead-in for broken connectors. Tester indicates an open circuit ?
Yes
Replace antenna
No
Does propagation cause poor tone quality ?
Not O.K
Replace radio unit

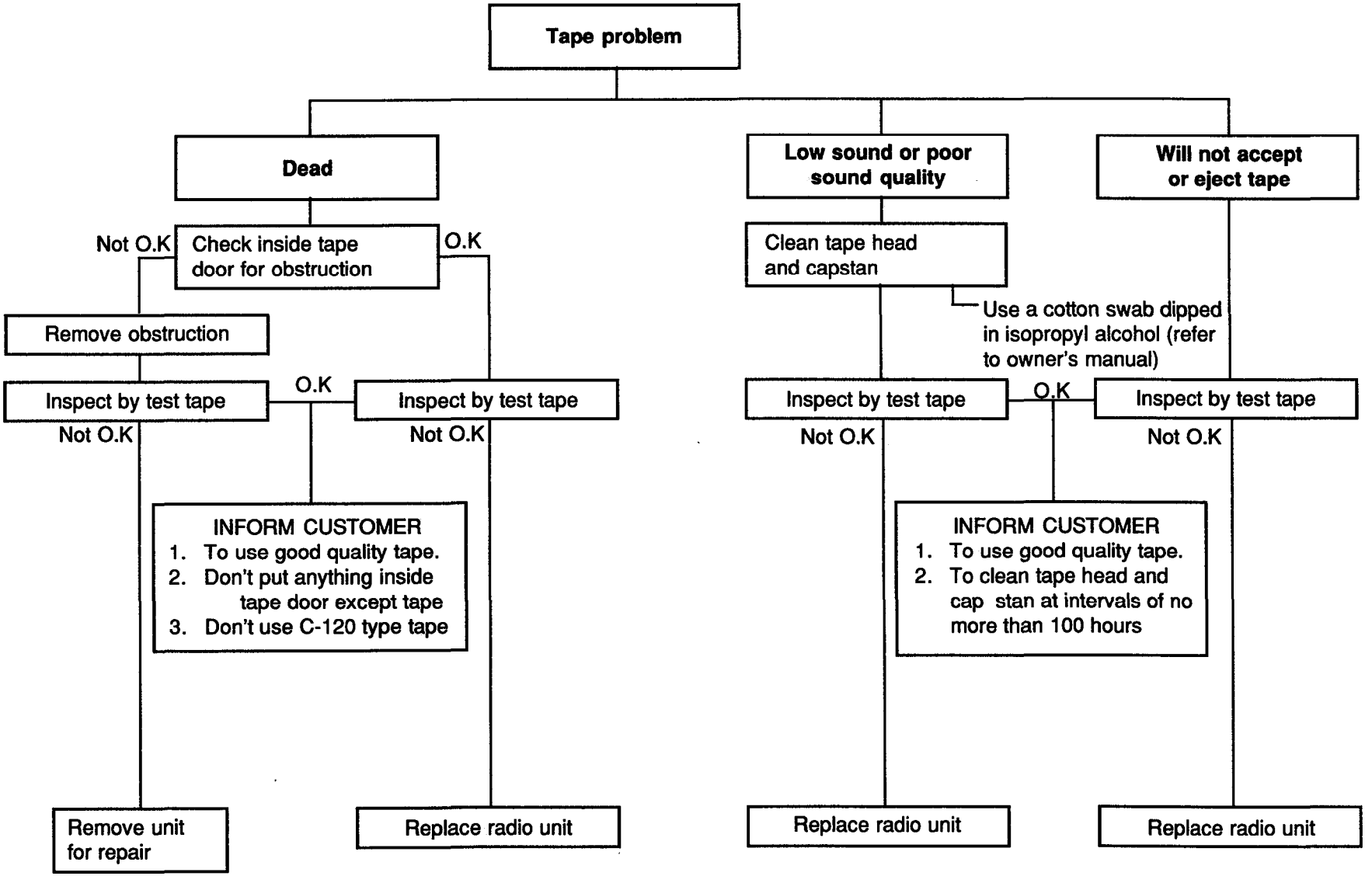

Tape problem
Dead
Low sound or poor sound quality
Will not accept or eject tape
Not O.K
Check inside tape door for obstruction
O.K
Clean tape head and capstan
Use a cotton swab dipped in isopropyl alcohol (refer to owner's manual)
Remove obstruction
Inspect by test tape
O.K
Inspect by test tape
Inspect by test tape
O.K
Inspect by test tape
Not O.K
Not O.K
Not O.K
Not O.K
INFORM CUSTOMER
1. To use good quality tape.
2. Don't put anything inside tape door except tape
3. Don't use C-120 type tape
INFORM CUSTOMER
1. To use good quality tape.
2. To clean tape head and cap stan at intervals of no more than 100 hours
Remove unit for repair
Replace radio unit
Replace radio unit
Replace radio unit

CHART 4

1. RADIO

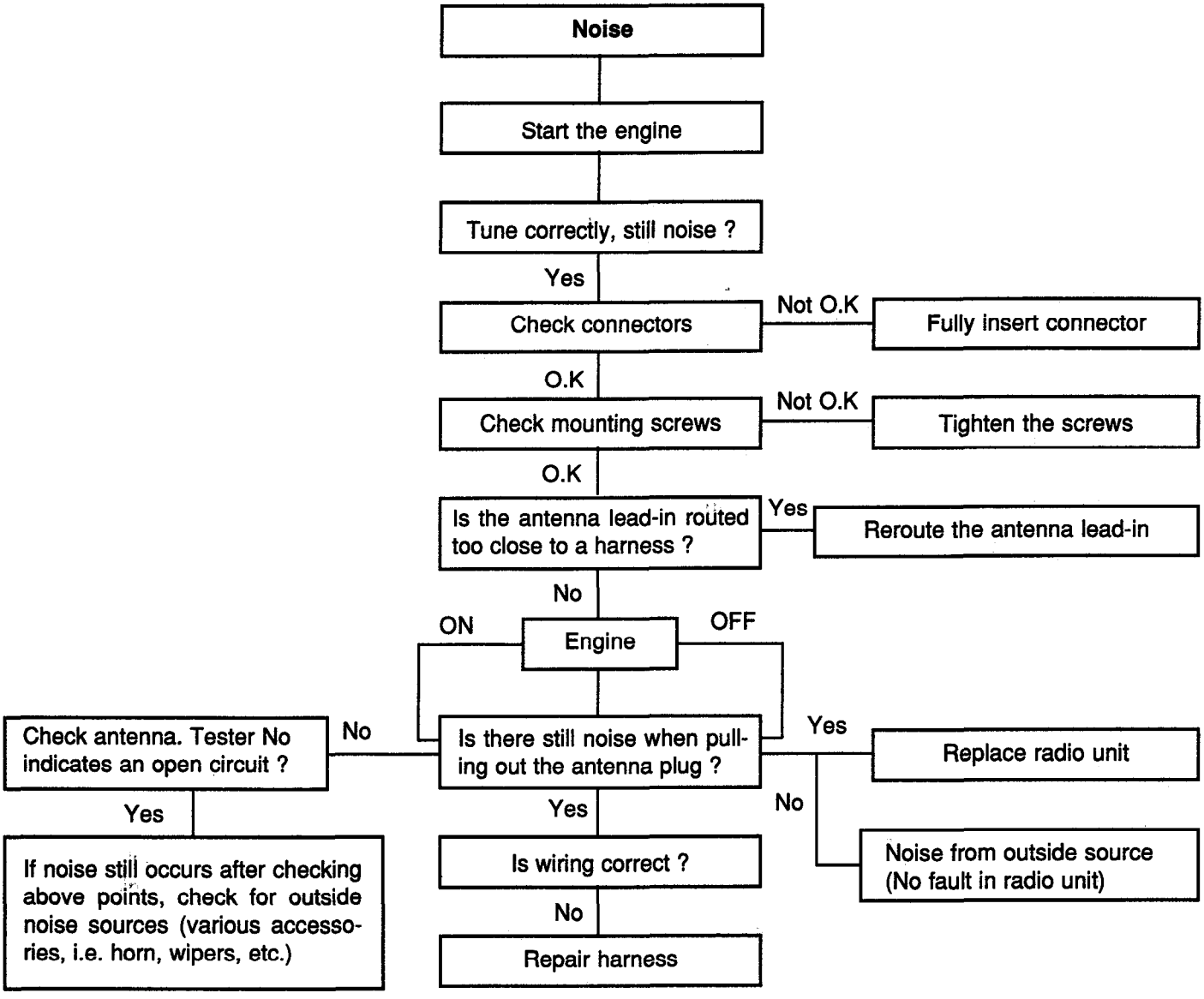


CHART 4 (Continued)

2. TAPE

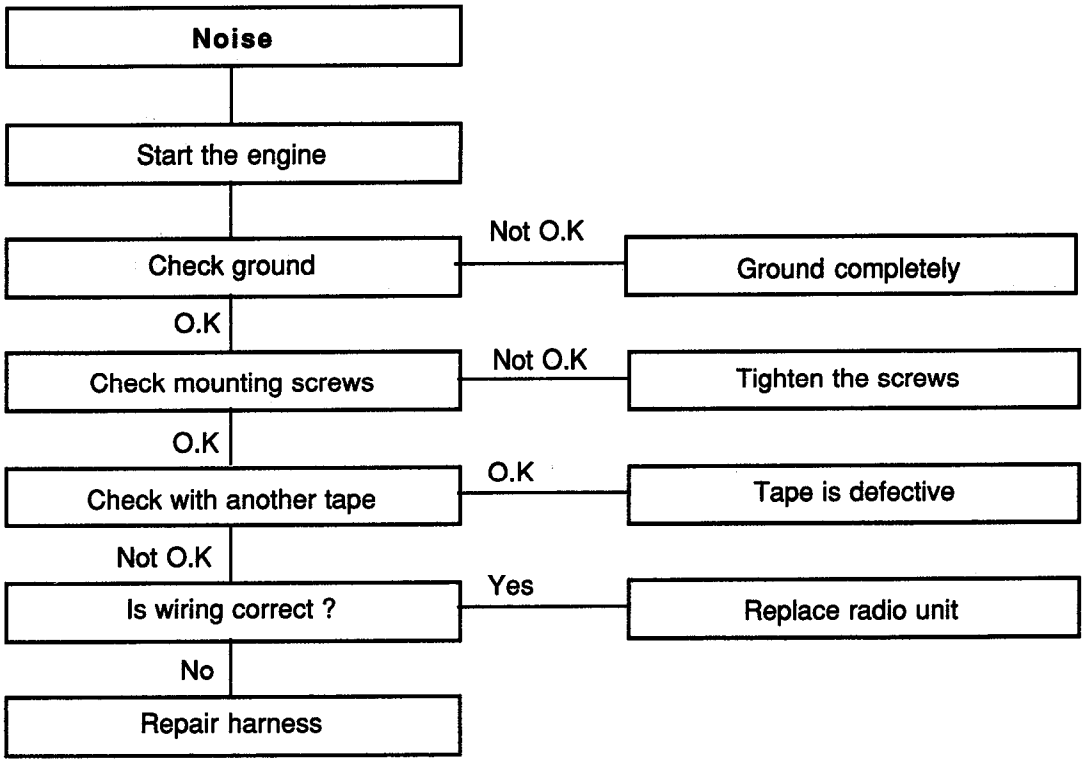


CHART 5

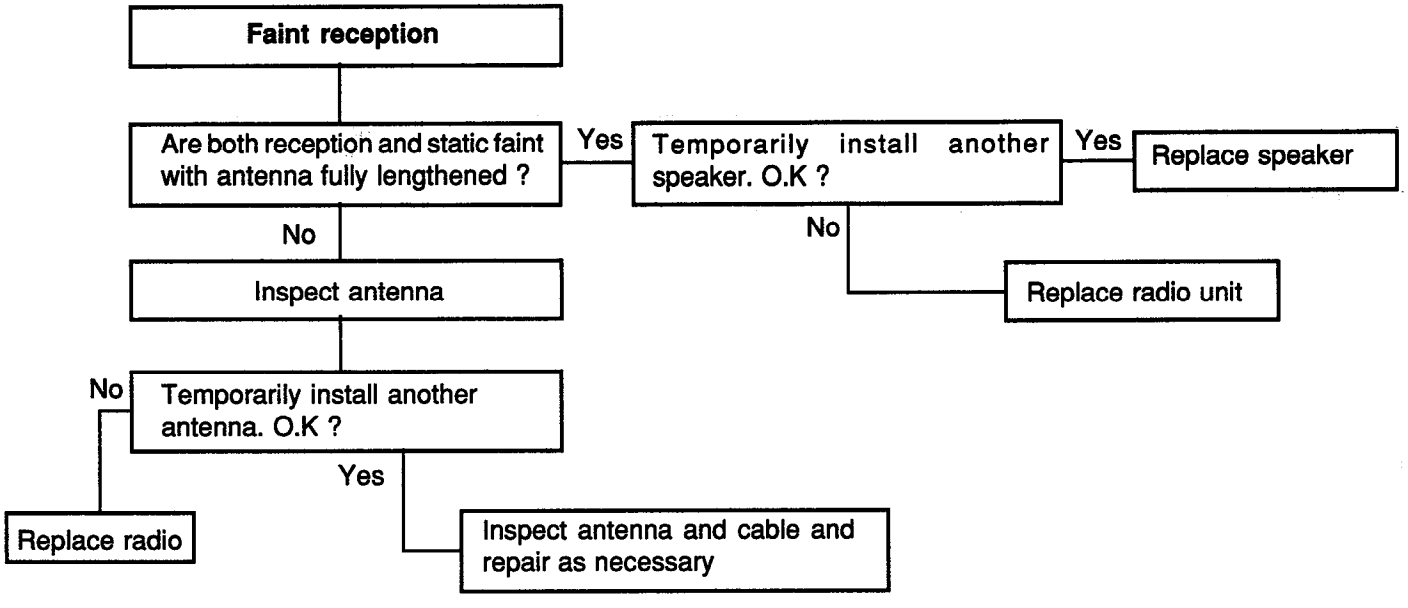


CHART 6

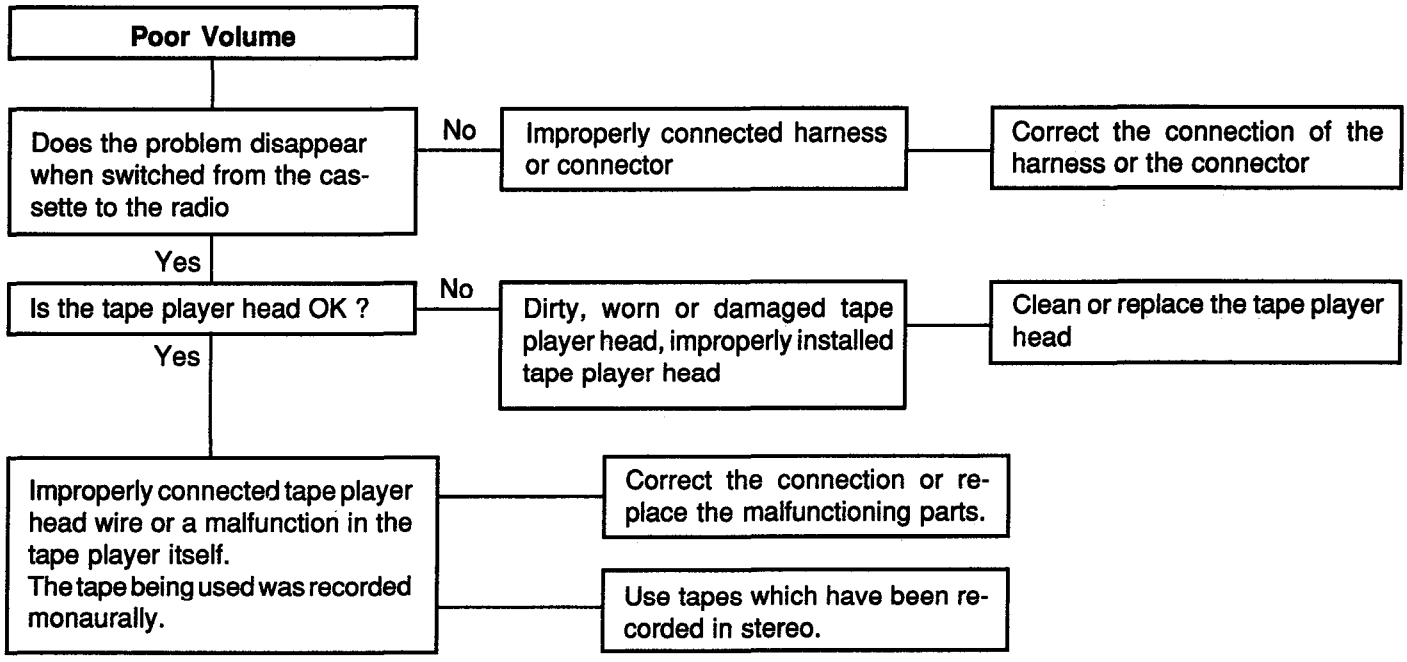


CHART 7

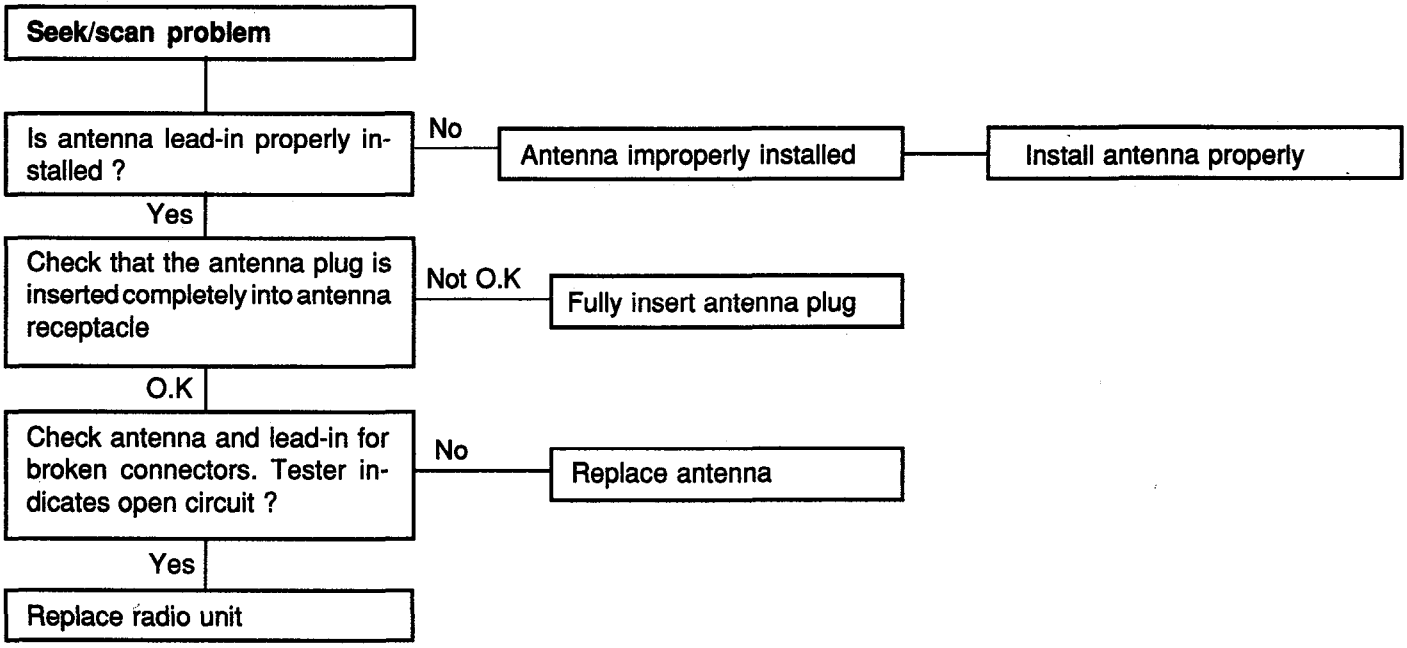
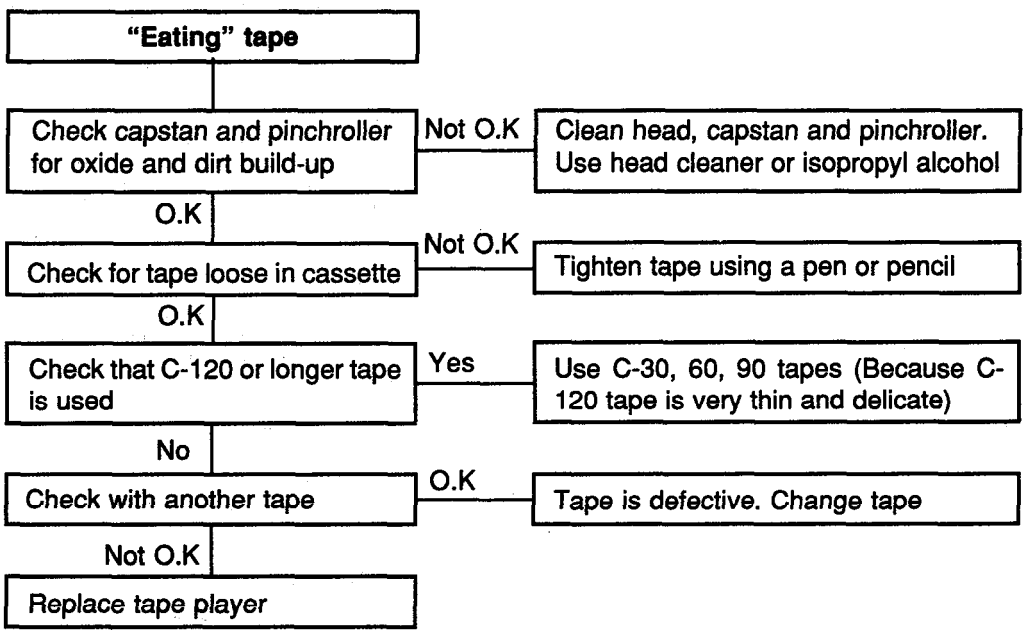


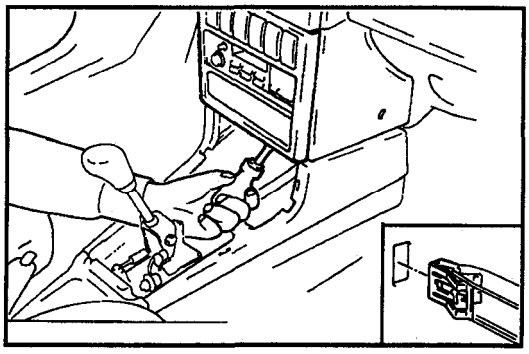
CHART 8.


"Eating" tape
Check capstan and pinchroller for oxide and dirt build-up
Not O.K
Clean head, capstan and pinchroller. Use head cleaner or isopropyl alcohol
O.K
Check for tape loose in cassette
Not O.K
Tighten tape using a pen or pencil
O.K
Check that C-120 or longer tape is used
Yes
Use C-30, 60, 90 tapes (Because C-120 tape is very thin and delicate)
No
Check with another tape
O.K
Tape is defective. Change tape
Not O.K
Replace tape player

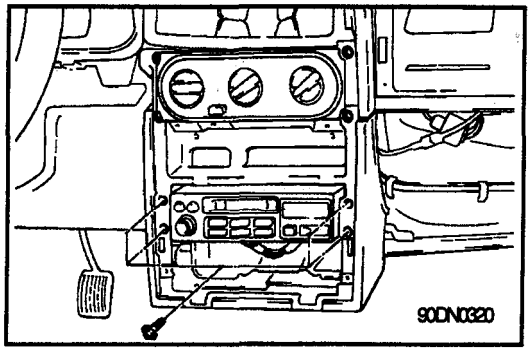
REMOVAL AND INSTALLATION

Audio

1. Remove the ash tray.
2. Remove the center lower crash pad facia panel mounting screws.

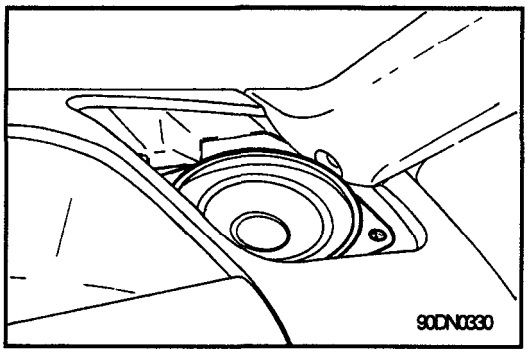


3. Pull out the facia panel.
4. Remove the radio unit mounting screws.
5. Remove the radio unit from the mounting bracket.
6. Replace in reverse order of preceding steps.



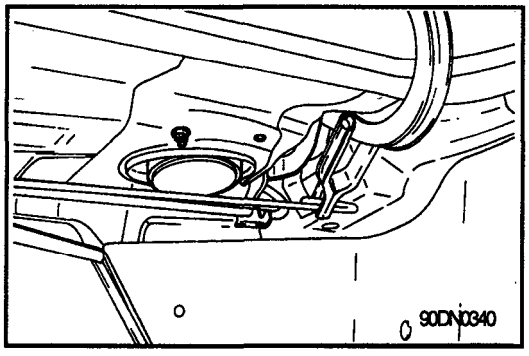
Front speaker

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.

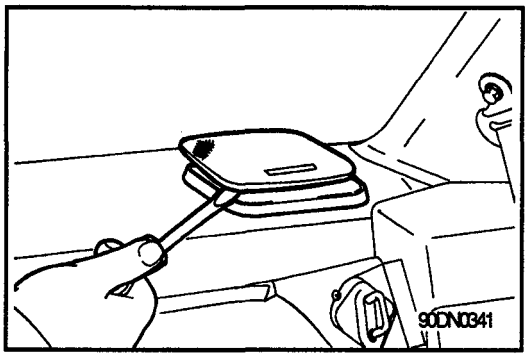


Rear speaker

1. Open the trunk lid.
2. Remove the speaker mounting nut.
3. Disconnect the speaker connector.



4. Disconnect the speaker grille from the speaker.
5. Installation is the reverse order of removal.



SERVICE INSTRUCTIONS

Fuse replacement

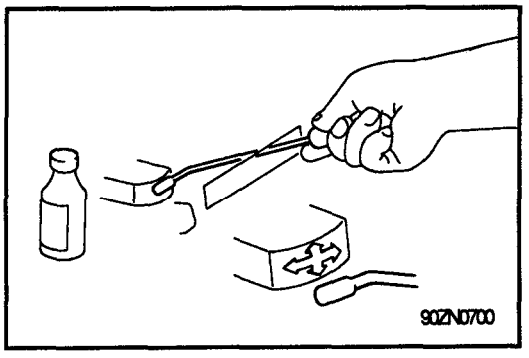
Be sure to use the specified fuse when making a replacement.

CAUTION

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

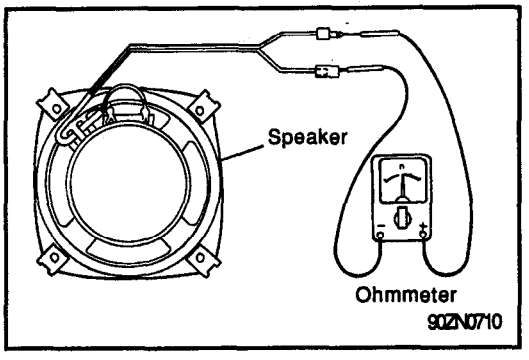
Tape player head and capstan cleaning

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 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.



WINDSHIELD WIPER AND WASHER

SPECIFICATIONS

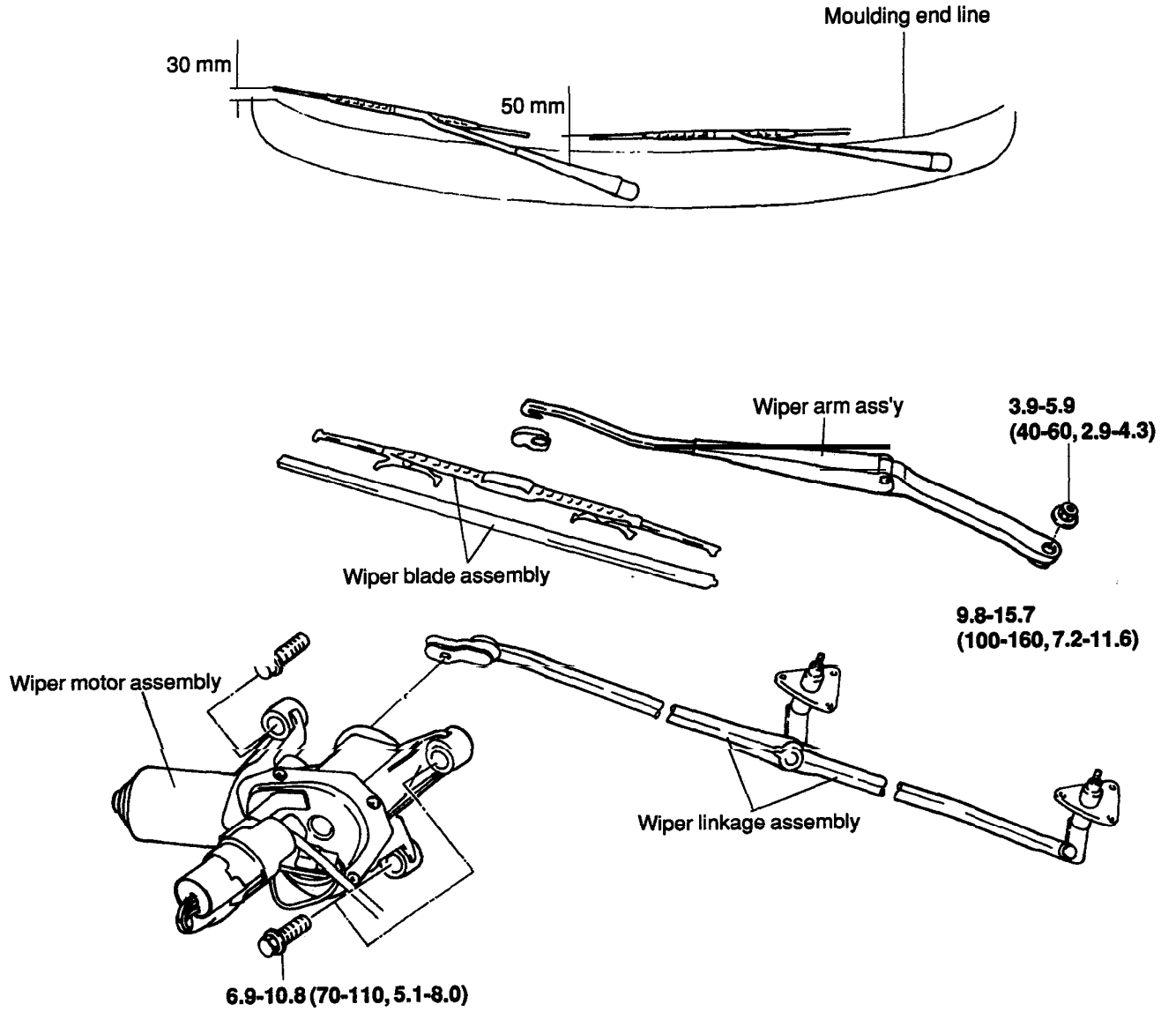
Items	Specification
Wiper motor	
Speed/current at 10 kg.cm load test (1.0 Nm, 0.7 lb.ft)	Low : 52 ± 4 rpm/3.5A or less High : 71 ± 7 rpm/4.5A or less
Speed/current at 40 kg.cm load test (3.9 Nm, 2.9 lb.ft)	Low : 44 ± 4 rpm/5.5A or less High : 62 ± 6 rpm/7A or less
Current when locking	Low : 20A or less High : 22A or less
Wiper arm and blade	
Arm spring type	Tension type
Blade rubber length	Driver side : 481 mm Passenger side : 455 mm
Wiping angle	Driver side : $82.5^{o} \pm 1^{o}$ Passenger side : $89.5^{o} \pm 1^{o}$
Windshield washer	
Motor type	DC ferrite magnet type
Pump type	Centrifugal type
Current	3.8A or less
Discharge pressure	1.2 kg/cm^2 or more
Flow rate	1,320 cc/min. or more
Overload capacity (Continuous operation)	
With water	60 sec. or less

TROUBLESHOOTING

Problem	Possible cause	Remedy
Wipers do not operate or return to off position	Wiper fuse (No.10; 15A) blown Wiper motor faulty Wiper switch faulty Wiring or ground faulty	Check for short and replace fuse Check motor Check switch Repair as necessary
Wipers do not operate in **INT** position	TACM (Intermittent relay) faulty Wiper switch faulty Wiper motor faulty Wiring or ground faulty	Check TACM Check switch Check motor Repair as necessary

FRONT WIPER

COMPONENTS



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

REMOVAL AND INSTALLATION

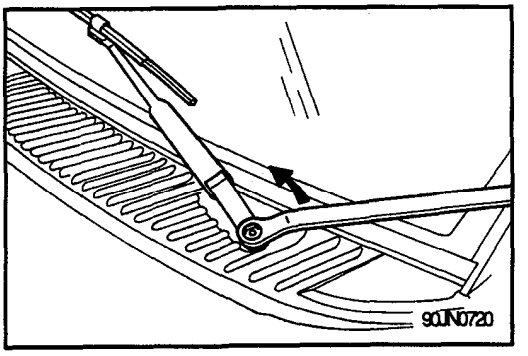
Removal

1. Remove the wiper arm mounting nut.

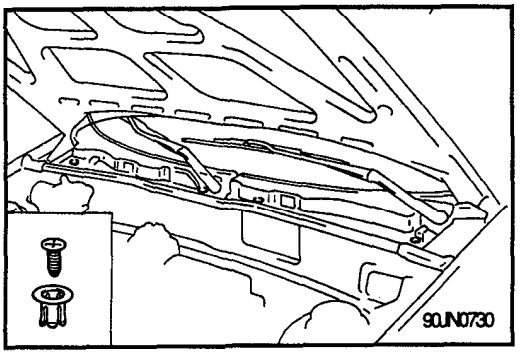
   NOTE

   Care must be taken not to scratch in the engine hood.

2. Remove wiper arm and blade assembly.



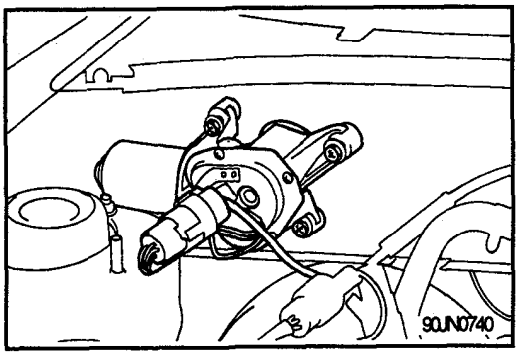
3. Remove the cowl top sealing cap.
4. Remove the cowl top cover.



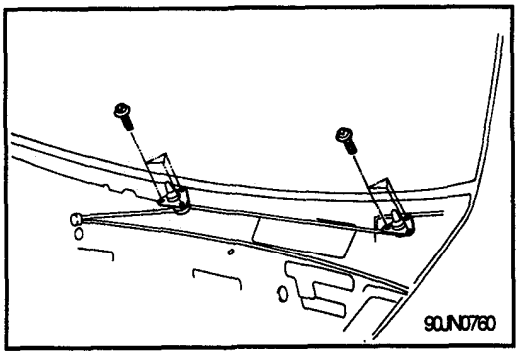
5. Remove the wiper motor connector.
6. Remove the wiper motor mounting bolt.
7. Disconnect the motor from the link, then remove the motor assembly.

   NOTE

   When removing the wiper motor only, it can be done by steps 5 to 7.

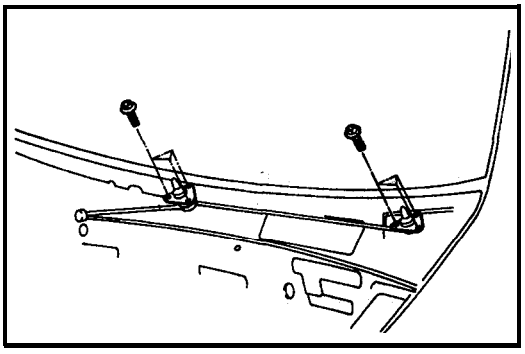


8. Remove the wiper link mounting bolt.
9. Take out the wiper link assembly from the cowl top panel.

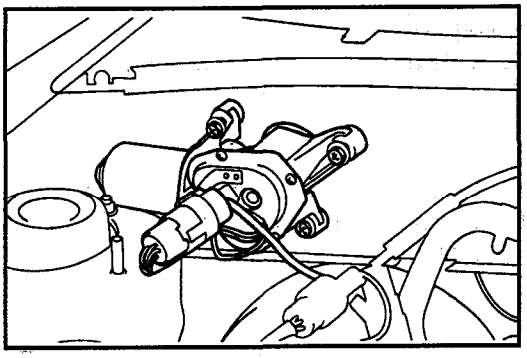


Installation

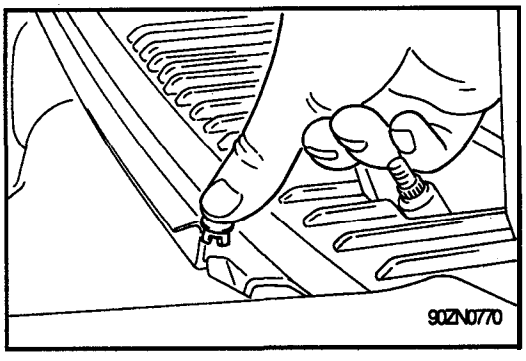
1. Install the windshield wiper link assembly.



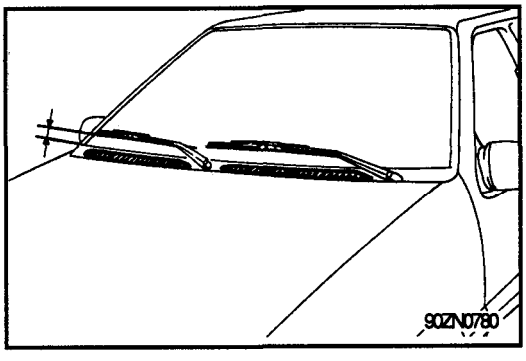
2. Connect the wiper motor to the link securely, then install the motor assembly.



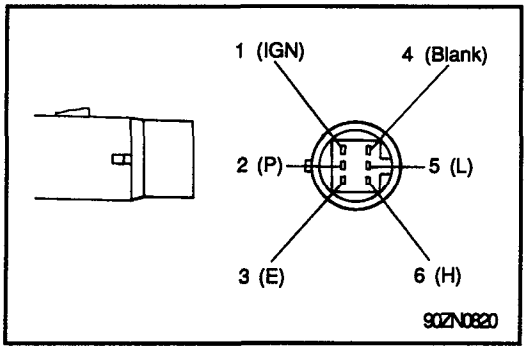
3. Install the cowl top cover.
4. Install the cowl top sealing cap to the drive shaft.



5. Connect the wiper arm and blade assembly to the wiper pivot housing.
6. Position the wiper arm and blade assembly at the distance of 30 mm from the windshield glass moulding endline.
7. Tighten the wiper arm and blade mounting nut.

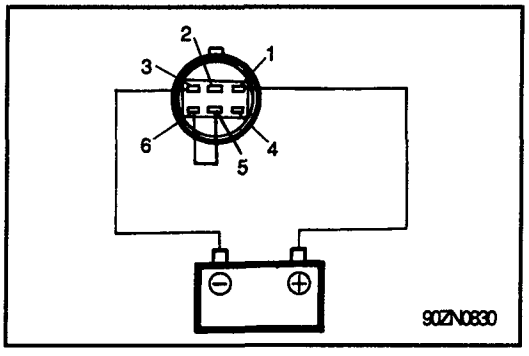


INSPECTION OF WIPER MOTOR



Speed operation check

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



Automatic stop operation check

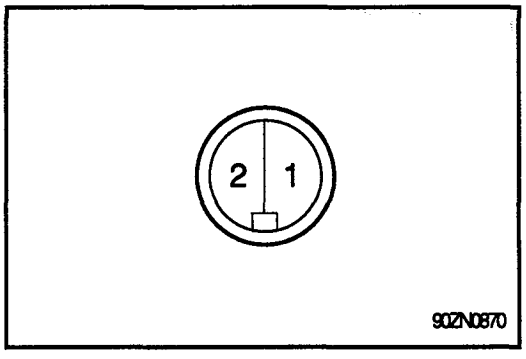
1. Operate the motor at low speed.
2. -Stop motor operation anywhere except at the off position by disconnecting terminal 5.
3. Connect terminals 2 and 5.
4: Connect the positive (+) lead from the battery to terminal 1.
5. Check that the motor stops-running at the off position after the motor operates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

WINDSHIELD WASHER SPECIFICATIONS

Items	Specifications
Washer motor	
Motor type	DC ferrite magnet type
Pump type	Centrifugal type
Rated voltage	DC 12V
Current	MAX. 3.6A
Discharge pressure	MIN. 1.2 kg/cm
Flow rate	MIN. 1,320 cc/min.
Over load capacity (continuous operation)	
With water	MAX. 60 sec.

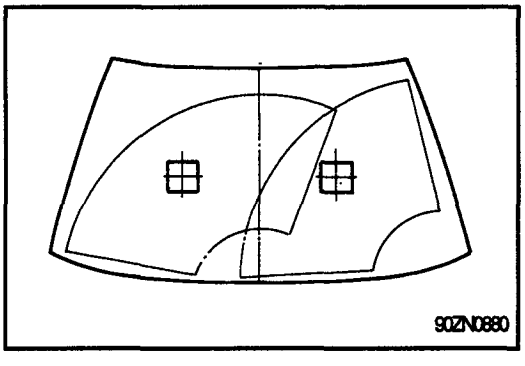
INSPECTION
WASHER MOTOR

1. With the washer motor installed to the washer tank, fill the washer tank with washer fluid.
2. Attach the positive (+) lead from the battery to terminal 2, and negative (-) lead to the ground.
3. Check that the washer motor runs and washer fluid is ejected.
4. If the motor fails to run smoothly, replace it.



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 motor runs smoothly and little or no washer fluid is pumped, check for disconnected, blocked washer hose or clogged outlet and faulty pump in the motor.



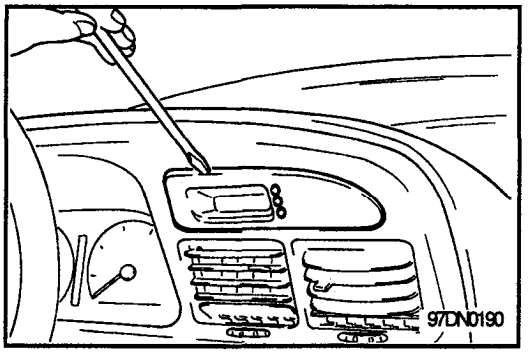
CLOCK

SPECIFICATIONS

items	Specifications
Rated voltage	DC. 12V
Operating voltage	DC. 6~16V
Operating temperature range	-30 ~ 80°C (-24 ~ +174°F)
Current consumption (with DC. 13V)	MAX. 20 mA (without display illuminated) MAX. 160 mA (with display illuminated)

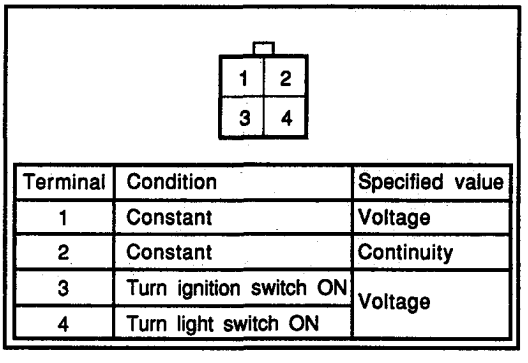
REMOVAL AND INSTALLATION

1. Pull out the electronic digital clock with a trim stick.
2. Grasp clock and put outward to remove.
3. Disconnect clock connector.
4. To install, connect clock connector and snap clock back into place



INSPECTIoN

1. Disconnect clock connector.
2. Inspect each terminal for applicable trouble, as shown in the illustration.
3. If there is any trouble, repair or replace clock.



Terminal	Condition	Specified value
1	Constant	Voltage
2	Constant	Continuity
3	Turn ignition switch ON	Voltage
4	Turn light switch ON	

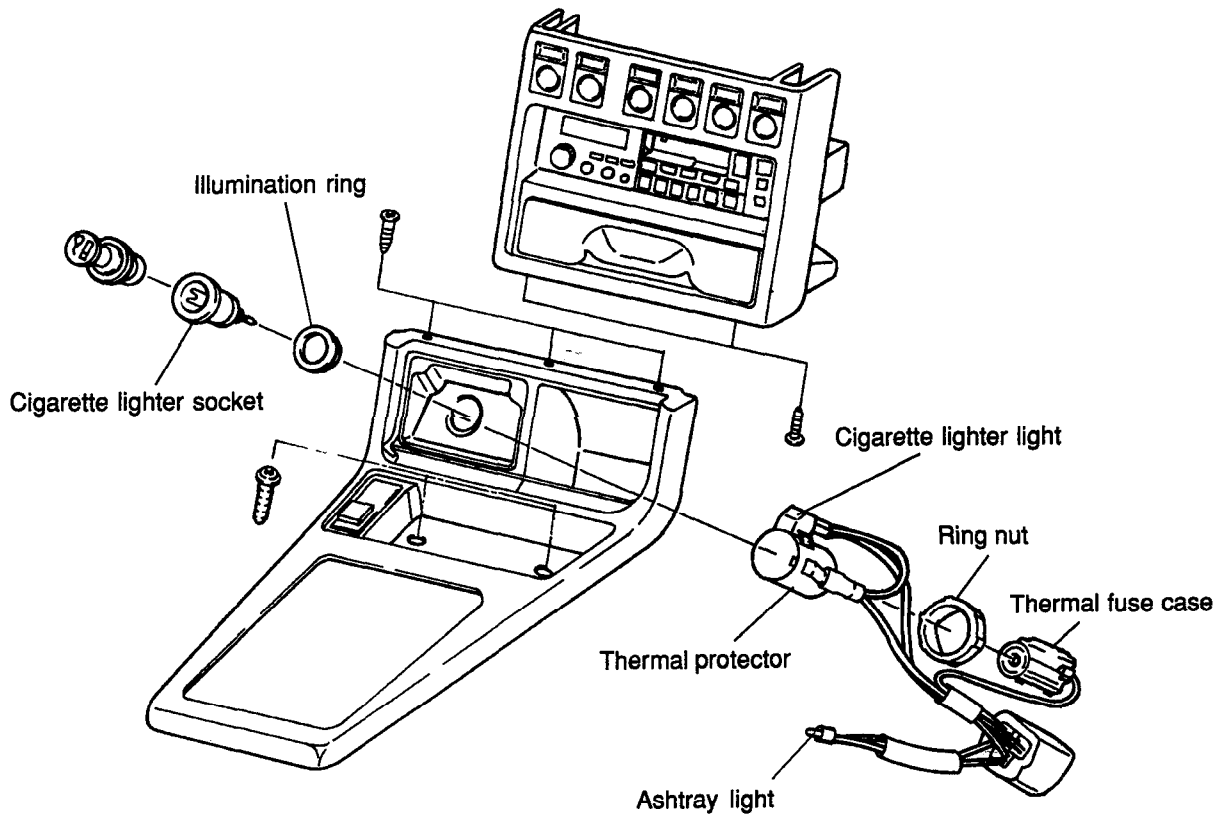
CIGARETTE LIGHTER

SPECIFICATIONS

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

REMOVAL AND INSTALLATION

1. After removing the ashtray, remove the 5 screws and the front console.
2. Then disconnect the 3-p connector from the cigarette lighter.
3. Disconnect the thermo fuse case from the socket end.
4. Remove the ring nut and separate the cigarette lighter socket from the thermal protector.



NOTE:
When installing the cigarette lighter, align each lug on the illumination ring and cigarette lighter socket with the groove of the hole, then position the bulb case on the thermal protector between the stoppers of the center panel.

INSPECTION

1. Take out the plug.
2. Check 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.

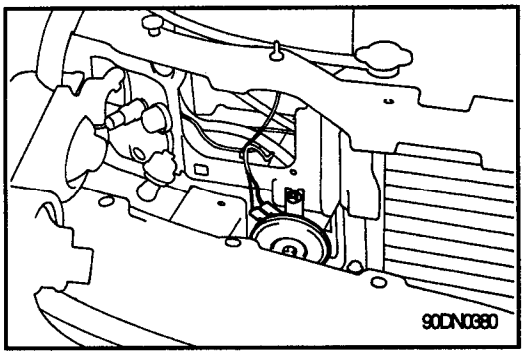
HORN

SPECIFICATIONS

Items	Specifications
Type	Plate type
Rated voltage	DC. 12V
Rated current	3.5A (at DC 12V) or less
Sound level	110 ± 5dB (at DC12V,2m)
Operating voltage range	DC 10V ~ DC 14.5V
Operating temperature range	-40°C ~ +8O°C (-42°F ~ +174°F)
Insulation resistance	MIN. 1 (By 500V megger)
Fundamental frequency	
Low pitch	350 ± 20 Hz (at DC 12V)
High pitch	415 ± 20 Hz (at DC 12V)

REMOVAL

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

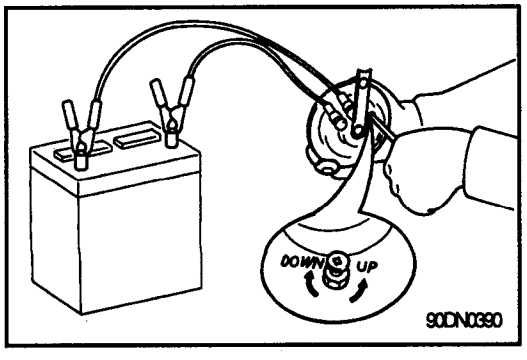


ADJUSTMENT

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

CAUTION

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



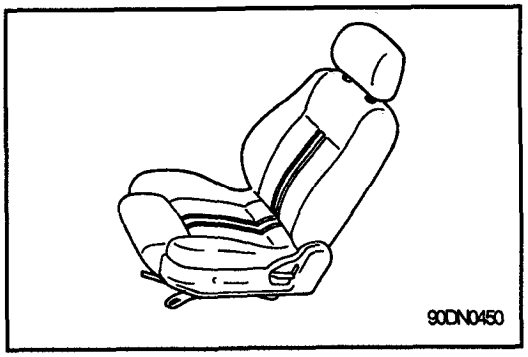
TIME AND ALARM CONTROL SYSTEM (TACM)

SPECIFICATIONS

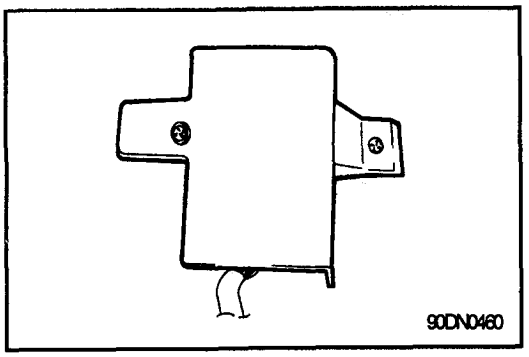
Items	Specification
Rated voltage	DC 12V
Operating voltage range	DC9 ~ 16V
Operating temperature range	-30° ~ +8O°C (-22°F ~ +176°F)
Rated load	
Variable intermittent wiper	MAX. 5A (Inductance load)
Rear defogger (heated) timer	DC 14.3V, 200W (Resistance load)
Seat belt warning	DC 12V, 1.2W (Lamp load)
	DC 13.5V, 350mA (Inductance load)
Door warning	DC 13.5V, 350mA (Inductance load)

REMOVAL

1, Remove the front LH seat.

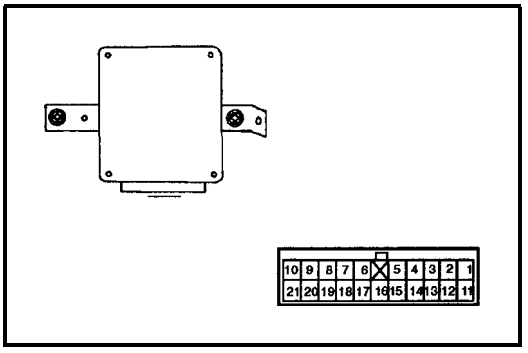


2. Remove the TACM cover.
3. Remove the TACM from the floor.
4. Remove the connector.



CHECKING OPERATION

1. Make sure that the control unit related components are operated properly. If there is a problem at any operation, check the circuit between power supply (battery) and control unit.
2. After no problem is ensured in the circuit, replace the control unit. Then, check for proper operation again.
3. If system operates properly, the original control unit is faulty.



Variable intermittent wiper

1. Operating characteristic
   T_1 : MAX. 0.5 sec.
   T_2 : Time of wiper motor 1 rotation.
   T_3 : 1.5 ± 0.7 sec. (VR=0 kΩ) ~ 10.5 ± 3 sec. (VR=50 kΩ)
2. Variable resistance (VR) : 50 ± 10 kΩ

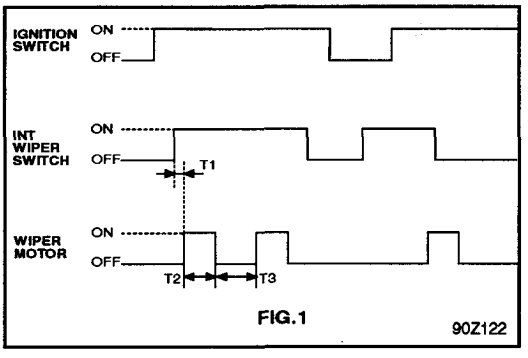


FIG.1 90Z122

Washer

1. Operating characteristic
   T_1 : 0.4 ~ 1.2 sec.
   T_2 : 2.0 ~ 4.7 sec.
2. This function should be operated preferentially even though the variable intermittent wiper is operating.

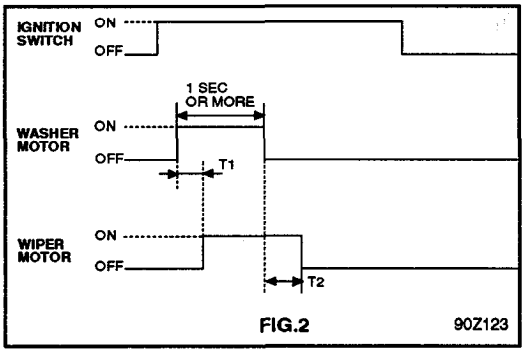


FIG.2 90Z123

Seat belt warning

1. Operating characteristic
   T_1:6 ± 1 sec.
   T_2:MAX. 6 ± 1 sec.
   T_3, T_4 : 0.3 ± 0.1 sec.

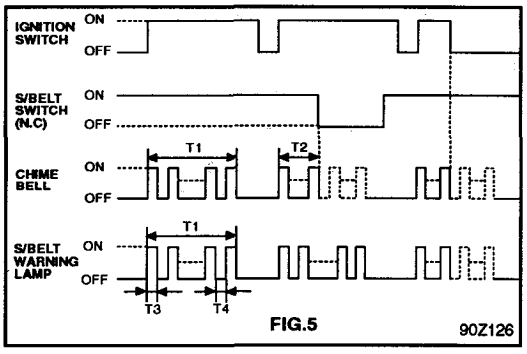


FIG.5 90Z126

Rear heated (defogger) timer

1. Operating characteristic
   T_1 : MAX. 0.5 sec.
   T_2: 10 ± 3min.

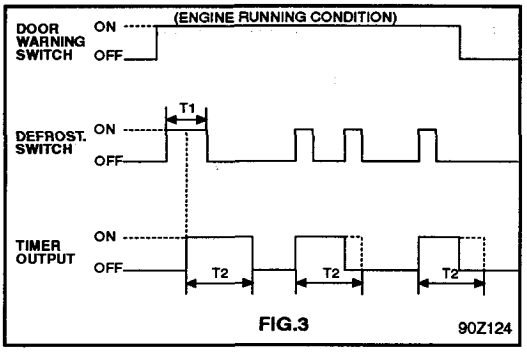


FIG.3 90Z124

Door warning

1. Operating characteristic
   T_1, T_2 : 0.3 ± 0.1 sec.

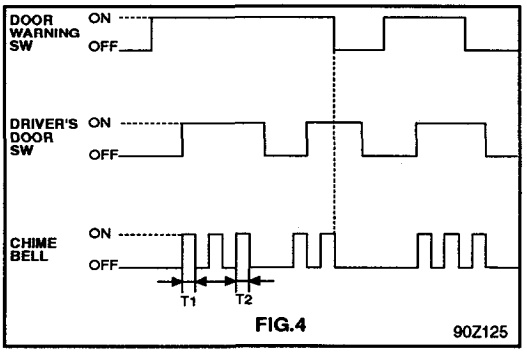


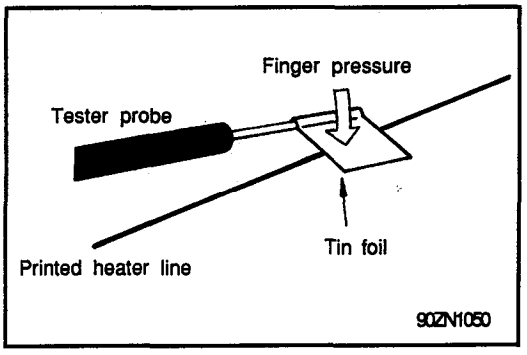
FIG.4 90Z125

REAR HEATED (DEFOGGER) GLASS

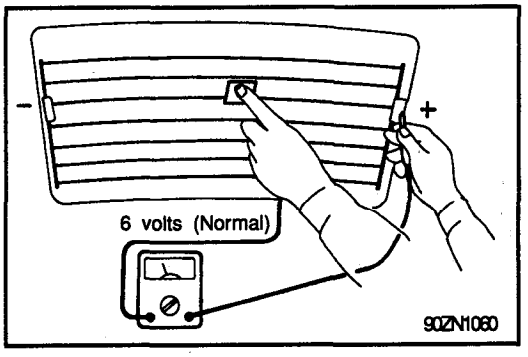
Printed heater line check

CAUTION

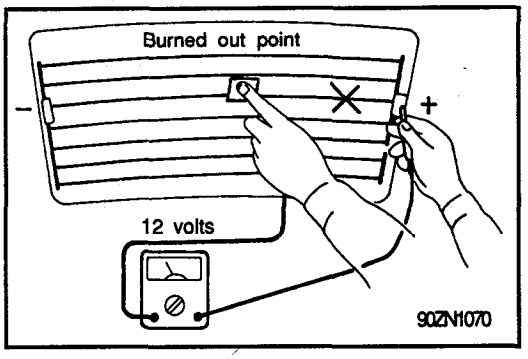
Wrap tin foil around the end of the voltmeter test lead to prevent damaging the heater line. Apply finger pressure on the tin foil, moving the tin foil along the grid line to check for open circuits.



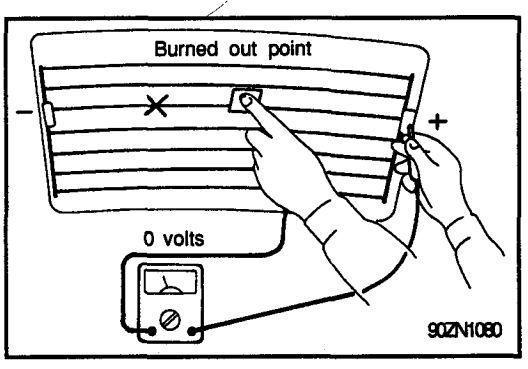
1. Turn on the defogger switch and use a voltmeter to measure the voltage of each heater line at the glass center point. If a voltage of approximately 6V is indicated by the voltmeter, the heater line of the rear window is considered satisfactory.



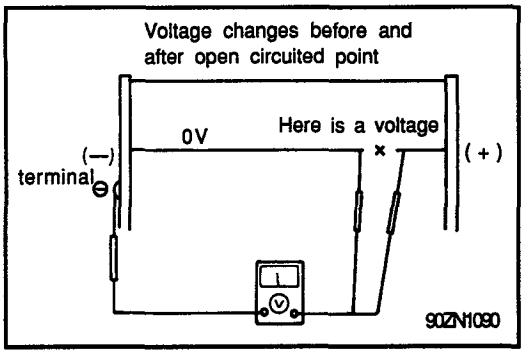
2. If a heater line is burned out between the center point and (+) terminal, voltmeter indicates 12 volts.



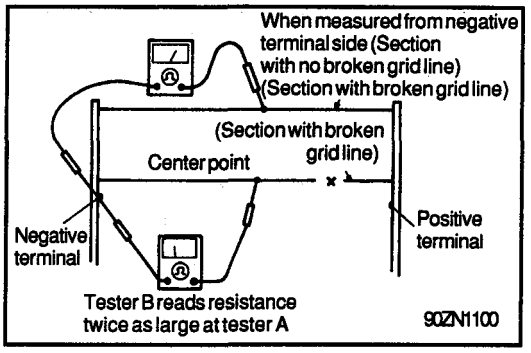
3. If a heater line is burned out between the center point and (-) terminal, the voltmeter indicates 12 volts.



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 OV. The point where the voltage has changed is the open-circuited point.



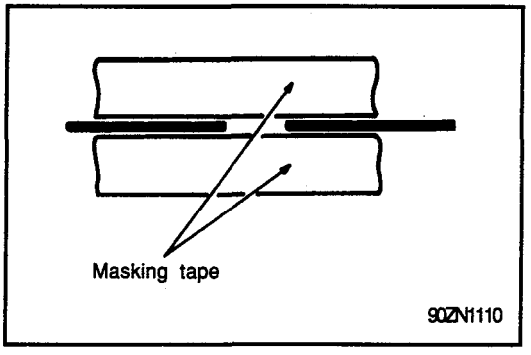
5. Use an ohmmeter to measure the resistance of each heater line between a terminal and the center of a grid line and between the same terminal and the center of one adjacent heater line after another. The section involving a broken heater line indicates resistance twice as that in other section. In 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

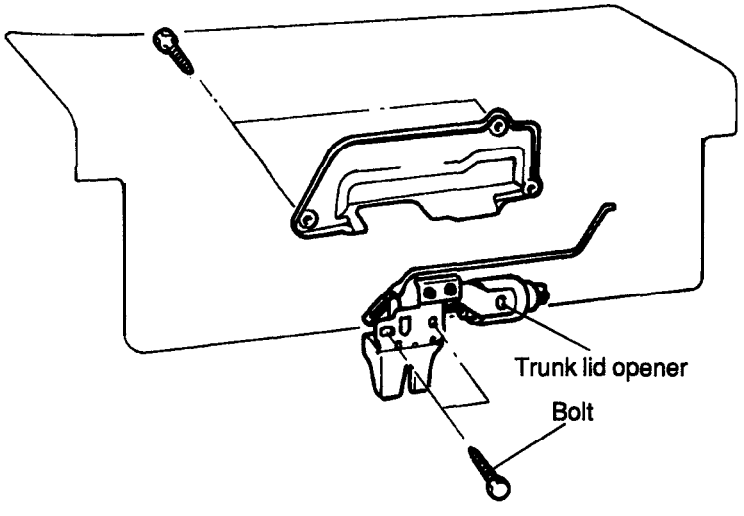
After repairing, clean the glass with a soft dry cloth or wipe along the grid line with a slightly moistened cloth.

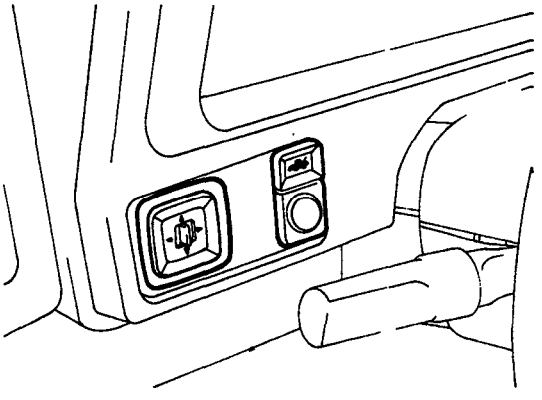
TRUNK LID OPENER AND SWITCH

SPECIFICATIONS

Item	Specification
Trunk lid opener	
Rated voltage	DC 12V
Rated current	12A or less
Operating temperature range	-40°C ~ +8O°C
Pulling stroke	9 ± 0.5 mm
Circuit breaker	
Trip time	4 ~ 9 sec.
Recovery time	5 sec. or less
Trunk lid opener switch	
Type	Auto return type
Rated voltage	DC 12V

COMPONENTS





INSPECTION

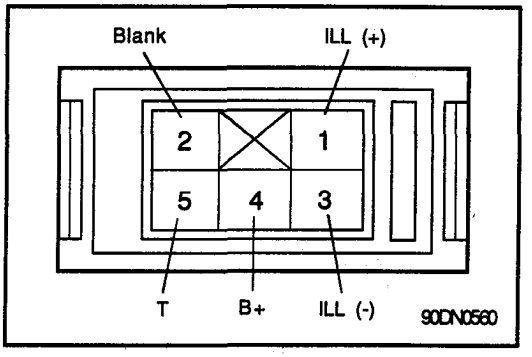
Trunk lid opener switch

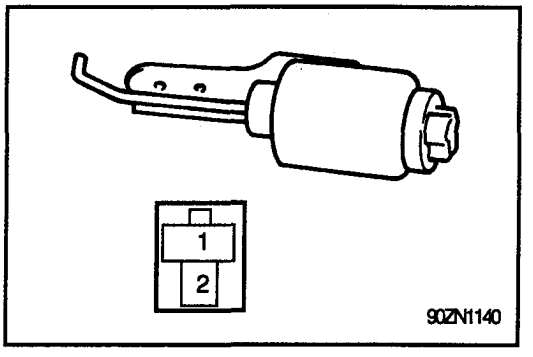
Remove the trunk lid opener switch and check for continuity between the terminals. If continuity is not as specified, replace the switch.

T / P	4	5	1	3
OFF			⊗	
ON	o	o		

Trunk lid opener

Remove the trunk lid opener and check for continuity between the terminals. If there is no continuity, replace the opener assembly.





POWER WINDOW

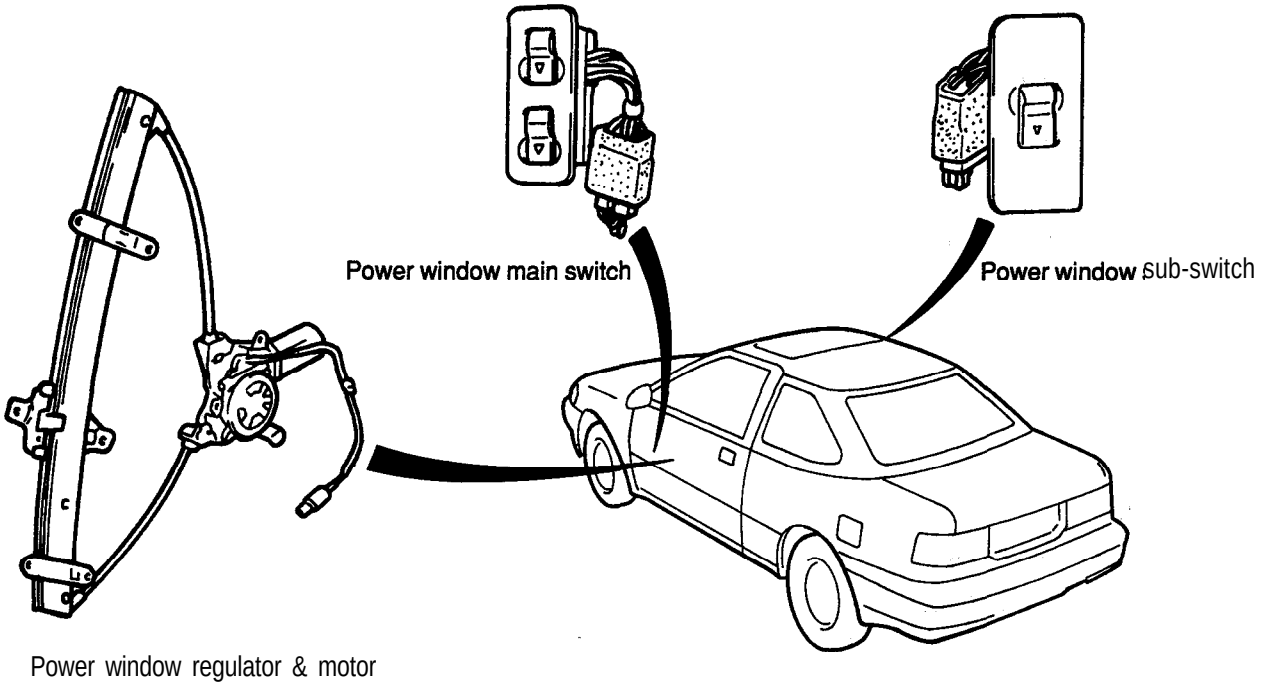
SPECIFICATIONS

Item	Specification
Power window motor	
Type	DC motor and reduction gear
Rated voltage	DC 13.5V
Rated current (at 30 kg.cm load)	8A or less
No-load current	3A or less
Lock (80 kg.cm or more) current	19A or less
Circuit breaker	
Trip time	3 ~ 5.5 set
Trip current	17A

TROUBLESHOOTING

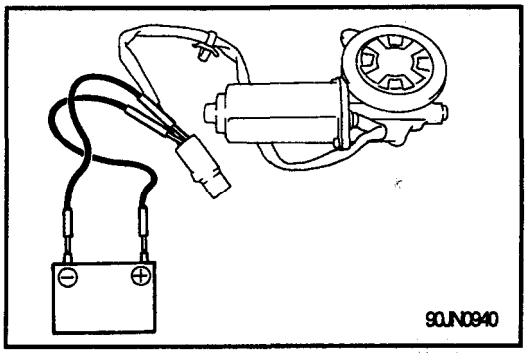
Symptom	Probable cause	Remedy
All windows do not operate by main switch	o Sub-fusible link (30A, for IGN) blown	o Replace
	o No.12 fuse (15A) blown	o Check the circuit and replace fuse
	o Poor ground (G01)	o Clean and retighten the ground terminal mounting bolt
	o Defective power window main switch	o Check the switch Replace as necessary
	o Open circuit in wires or loose or disconnected connector	o Repair or replace
Driver's side window only does not operate	o No.11 fuse (15A) blown	o Check the circuit and replace fuse
	o Defective power window main switch	o Check for LH (RH in case of RHD vehicle) switch
	o Defective LH (RH) motor or circuit breaker	o Replace the motor
	o Open circuit in wires or loose or disconnected connector	o Check the harness and the connector
Passenger's side window only does not operate	o Defective power window sub-switch	o Replace the switch
	o Defective motor or circuit breaker	o Replace the motor
	o Wiring faulty or disconnected connector	o Repair as necessary

COMPONENTS


Power window main switch
Power window sub-switch
Power window regulator & motor

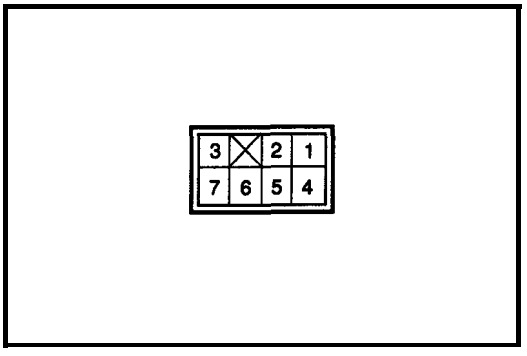
INSPECTION OF COMPONENTS

Power window motor



1. After applying the power to the motor, check the smooth operation while changing the polarity in turn.
2. If the operation is not specified, replace the motor.

Power window main switch

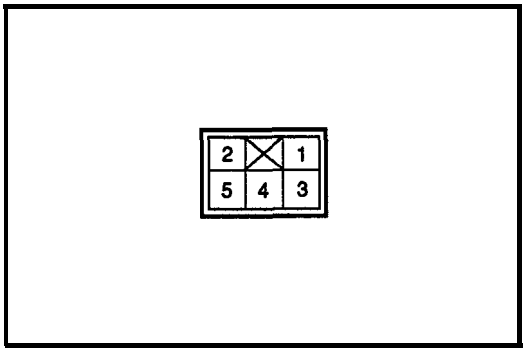


1. Remove the switch from the door grip handle.
2. Check for continuity between the terminals.

Door / Terminal / Position	LH				RH			
	3	4	1	7	2	6	1	5
UP	○—○		○—○		○—○		○—○	
OFF	○		○—○		○		○—○	
DOWN	○	○—○			○	○—○		

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

Power window sub-switch



1. Remove the power window sub-switch.
2. Check for continuity between the terminals.

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

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

REMOTE CONTROL MIRROR

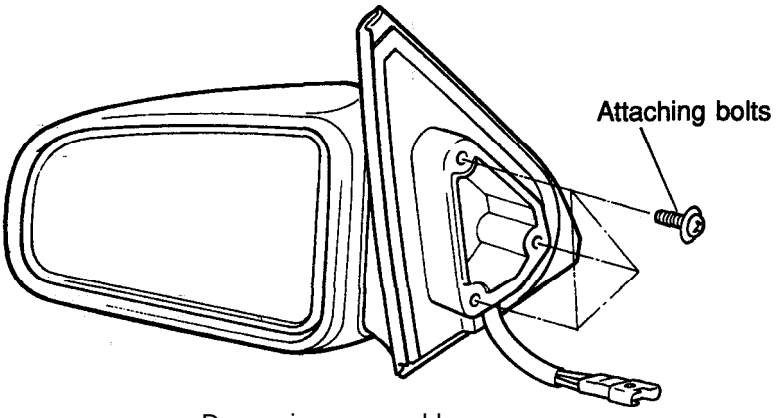
SPECIFICATIONS

Item	Specification
Remote control mirror actuator	
Rated voltage	DC 12V
Rated current	60 mA (Max. 150 mA)
Adjustment angle	9^{o} (up, down, left, right)
Remote control mirror switch	
Rated voltage	DC 12V
Rated current	0.2A (Max. 0.5A)

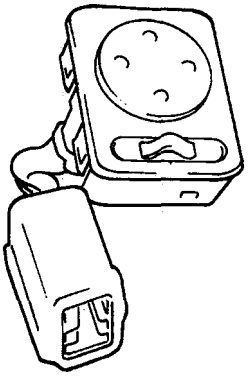
TROUBLESHOOTING

Symptom	Probable cause	Remedy
All mirrors do not operate	o Sub-fusible link (30A, for IGN) blown o No.7 fuse (10A) blown o Poor ground (G01) o Defective mirror switch o Open circuit in wires or loose or disconnected connector	o Replace o Check the circuit and replace fuse o Clean and retighten the ground terminal mounting bolt o Check the switch Replace as necessary o Repair or replace
One mirror do not operate	o Defective mirror switch o Defective LH (RH) mirror actuator o Open circuit in wires or loose or disconnected connector	o Check the switch Replace as necessary o Replace the actuator o Repair or replace

COMPONENTS



Door mirror assembly

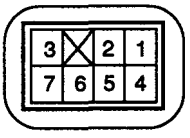


Remote control mirror switch

INSPECTION

Mirror switch

1. Remove the mirror switch from the cluster facia panel.
2. Operate the switch and check for continuity between the terminals. If continuity is not as specified, replace the mirror switch.



Class	Position \ Terminal	1	2	5	6	7	4	3
LH	UP			○		○	○	○
	DOWN			○		○		○
	LEFT		○			○	○	○
	RIGHT		○			○		○
RH	UP				○	○	○	○
	DOWN				○	○		○
	LEFT	○				○	○	○
	RIGHT	○				○		○

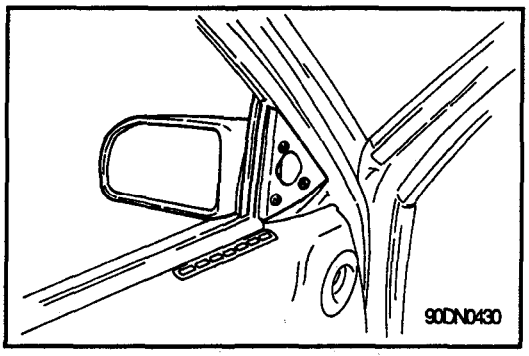
Mirror actuator

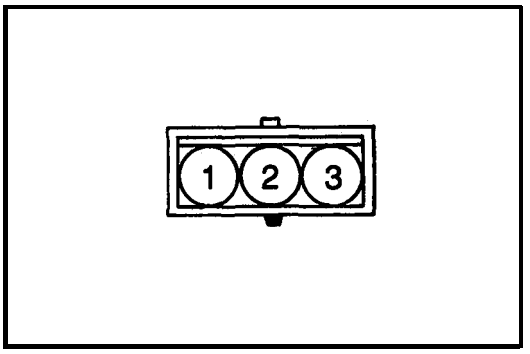
Apply battery voltage to each terminal as shown in the table and confirm that the mirror operates properly.

Terminal / Defection	1	2	3
UP	⊕		⊖
DOWN	⊖		⊕
LEFT		⊕	⊖
RIGHT		⊖	⊕

NOTE

⊕, ⊖ ; indicates connection of terminals between actuator and battery.



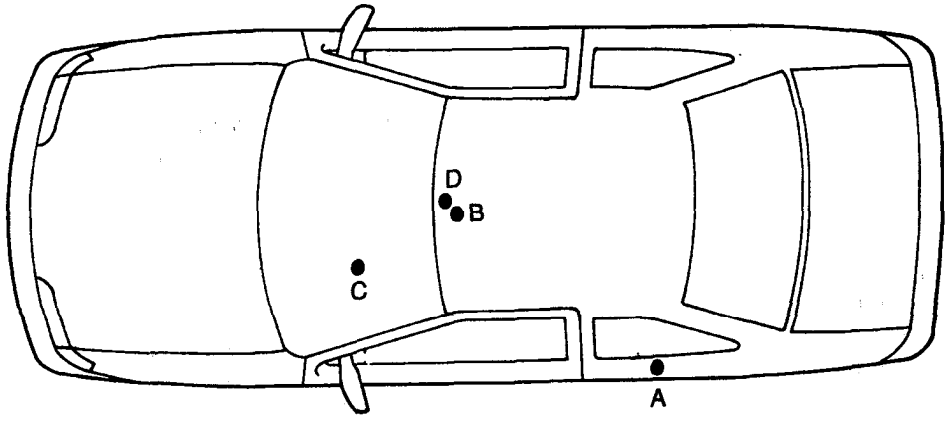


AUTOMATIC TRANSAXLE AND KEY LOCK CONTROL SYSTEM

SPECIFICATION

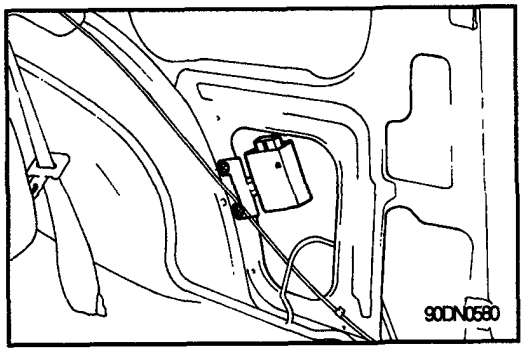
Items	Specifications
Control unit	
Rated voltage	DC 12V
Operating voltage range	DC 9 ~ 16V
Operating temperature range	-3O°C ~ +8O°C (-22°F ~ +176°F)
Rated load	MAX. 1A (A/T solenoid) MAX. 0.8A (Key lock solenoid)
A/T solenoid	
Rated voltage	DC 12V
Rated current	1A (MAX. 2A)
Operating voltage range	DC9 ~ 16V
Operating temperature range	-30°C ~ +80% (-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 ~ 16V
Operating temperature range	-30°C ~ +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°C ~ +80°C (-22°F ~ +176°F)

COMPONENTS LAYOUT

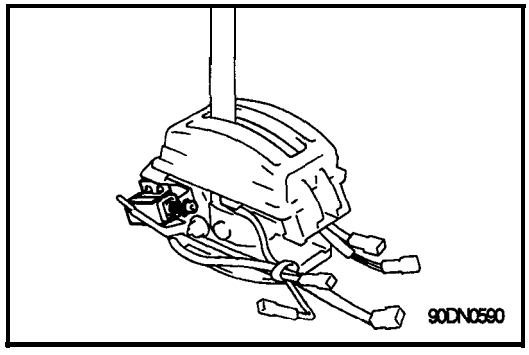


A. Cowl side panel
B. Shift lever assembly
C. Ignition key
D. Shift lever assembly

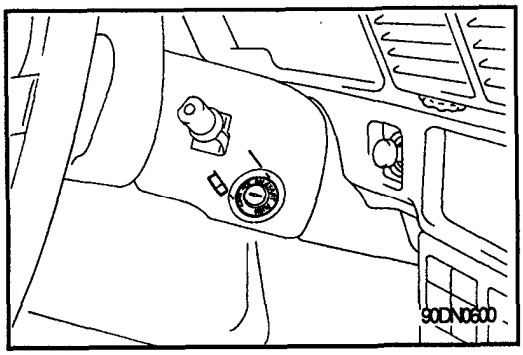
A. Control unit

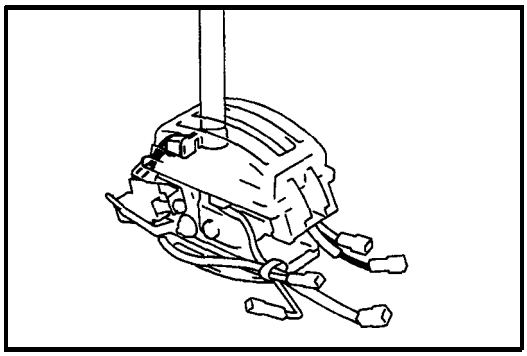


B. A/T solenoid



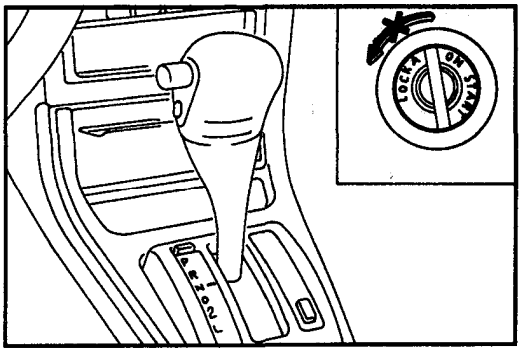
C. Key lock solenoid



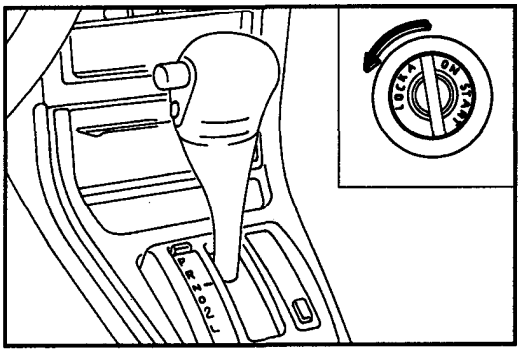


SYSTEM CHECK
KEY LOCK SYSTEM

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.

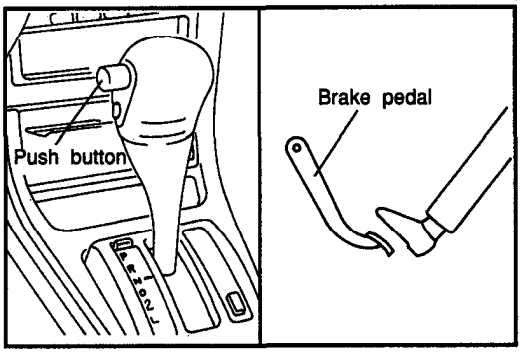


2. Check that the ignition key turns to the “LOCK (OFF)” position, when the shift lever is set to the “P” position.

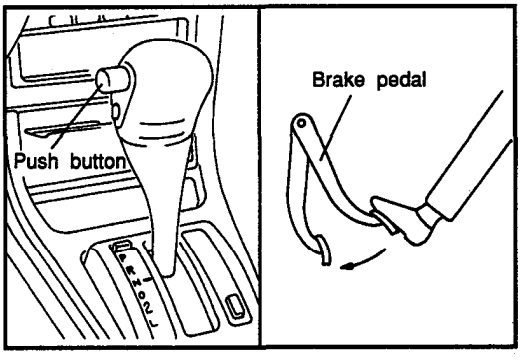


SHIFT LOCK SYSTEM

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

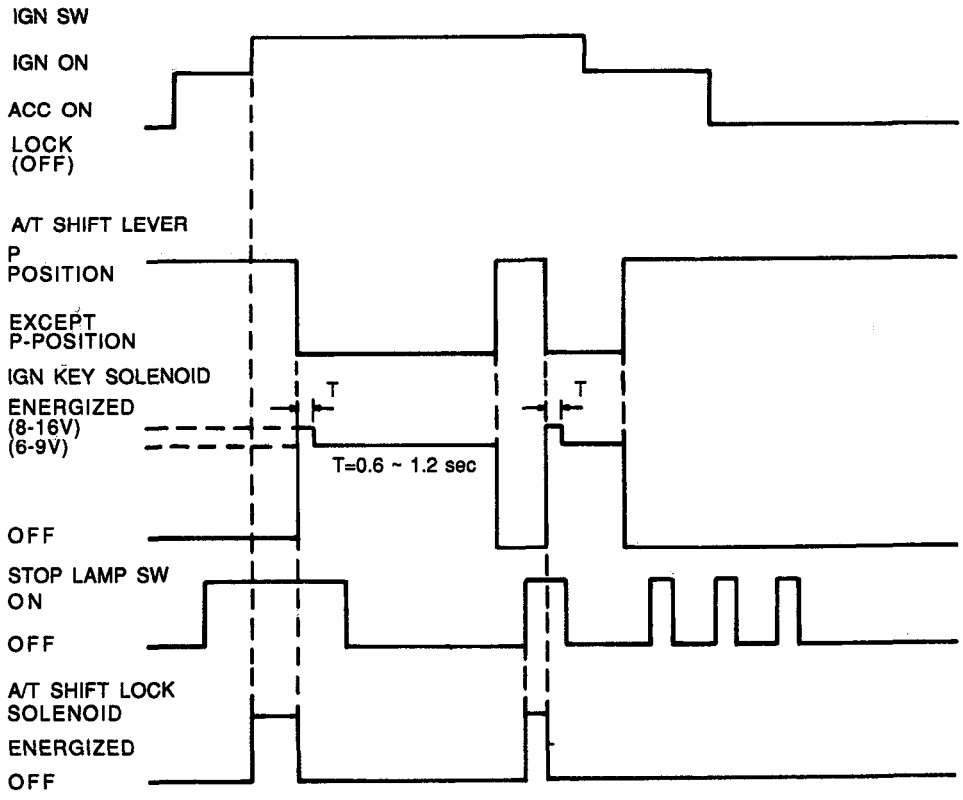


2. Check that under the following conditions, the shift lever can be moved from the “P” position to other position.
   IGNITION KEY POSITION : “ON”
   BRAKE PEDAL : DEPRESSED
   BUTTON : PRESSED



INSPECTION

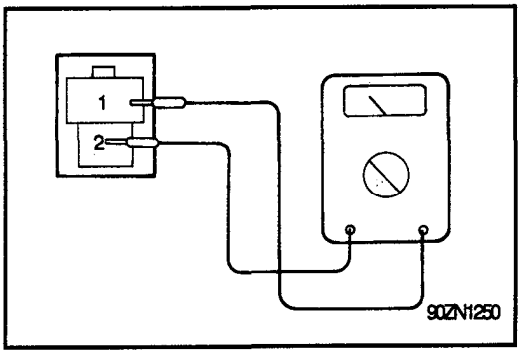
TIMING CHART



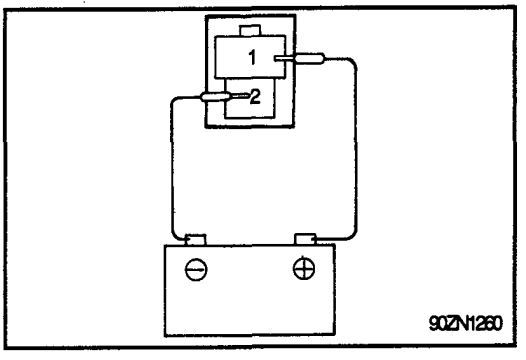
AUTOMATIC TRANSAXLE SOLENOID

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

Standard resistance : 12 - 16Ω



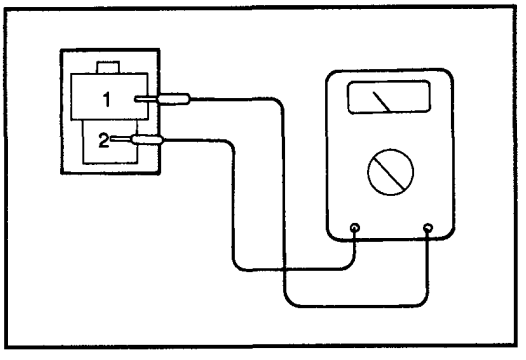
3. Attach the positive (+) lead from the battery to terminal 1. and the negative (-) lead to terminal 2.
4. Check that an operation noise can be heard from the solenoid.



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 the an operating noise can be heard from the solenoid.