

CHASSIS ELECTRICAL

CONTENTS

E54AA--

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WARNINGS REGARDING SERVICE OF SUPPLEMENTAL RESTRAINT SYSTEM (SRS) EQUIPPED VEHICLES

WARNING!

- (1) **Improper service or maintenance of any component of the SRS, or any SRS-related component, can lead to personal injury or death to service personnel (from inadvertent firing of the air bag) or to the driver (from rendering the SRS inoperative).**
- (2) **Service or maintenance of any SRS component or SRS-related component must be performed only at an authorized MITSUBISHI dealer.**
- (3) **MITSUBISHI dealer personnel must thoroughly review this manual, and especially its GROUP 52B – Supplemental Restraint System (SRS), before beginning any service or maintenance of any component of the SRS or any SRS-related component.**

NOTE

The SRS includes the following components: SRS diagnosis unit, SRS warning lamp, air bag module, clock spring, and interconnecting wiring. Other SRS-related components (that may have to be removed/installed in connection with SRS service or maintenance) are indicated in the table of contents by an asterisk (*).

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NOTES

BATTERY

SPECIFICATIONS

GENERAL SPECIFICATIONS

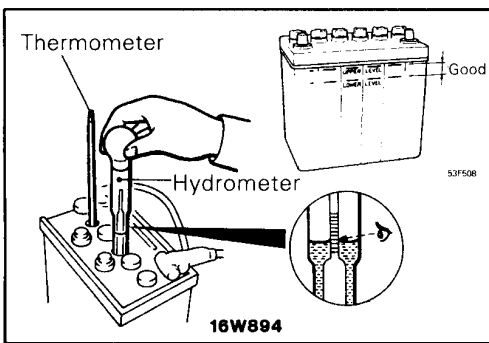
E54CA--

Item	Specification	
Type	75D26R	95D31R
Ampere hours (5HR)	Ah 57	70
Cranking rating [at -18°C (0°F)]	A 490	622
Reserve capacity	min. 123	159

SERVICE SPECIFICATIONS

E54CB--

Item	Specification
Specific gravity of the battery fluid	1.220–1.290 [20°C (68°F)]



SERVICE ADJUSTMENT PROCEDURES

E54CBAD

INSPECTION OF FLUID LEVEL AND SPECIFIC GRAVITY

1. Inspect whether or not the battery fluid is between the UPPER LEVEL and LOWER LEVEL marks.
2. Use a hydrometer and thermometer to check the specific gravity of the battery fluid.

Standard value: 1.220–1.290 [20°C (68°F)]

The specific gravity of the battery fluid varies with the temperature, so use the following formula to calculate the specific gravity for 20°C (68°F). Use the calculated value to determine whether or not the specific gravity is satisfactory.

$$D_{20} = Dt + 0.0007 (t-20)$$

D₂₀: specific gravity of the battery fluid calculated for 20°C (68°F).

Dt: actually measured specific gravity

t: actually measured temperature

VISUAL INSPECTION

Inspect after removing the battery.

Caution

If battery fluid has leaked from the battery, use rubber gloves to protect your hands when removing the battery.

- (1) If there is corrosion of the battery stays or battery brackets from the battery fluid, clean by washing in warm or cold water.
- (2) If there is a leak from a crack in the battery case, replace the battery.
- (3) Clean the battery terminals with a wire brush, and replace any parts that are damaged.

CHARGING











1. When charging a battery while still installed in the vehicle, disconnect the battery cables to prevent damage to electrical parts.
2. The current normally used to charge a battery should be approximately 1/10th the battery capacity.
3. When quick charging due to lack of time, etc., the charging current should never exceed the battery capacity as indicated in amperes.
4. Determining if charging is completed.
 - (1) If the specific gravity of the battery fluid reaches 1.250–1.290 and remains constant for at least one hour.
 - (2) If the voltage of each cell reaches 2.5 – 2.8 V and remains constant for at least one hour.

Caution

- (1) **Take care since the battery fluid level may rise during charging.**
- (2) **Keep all sources of fire away while charging because there is danger of explosion.**
- (3) **Take care not to do anything that could generate sparks while charging.**
- (4) **When charging is completed, replace the battery caps, pour clean water over the battery to remove any sulfuric acid any dry.**

BATTERY TEST

E54CBAA

TEST STEP		RESULT	ACTION TO TAKE
A0	VISUAL INSPECTION	 ►  ►	CLEAN terminals and clamps. Go to A1.
	<ul style="list-style-type: none"> • Remove negative cable, then positive cable. • Check for dirty or corroded connections. 		Go to A1.
A1	LOOSE BATTERY POST	 ►  ►	REPLACE battery.
	<ul style="list-style-type: none"> • Check for loose battery post. 		Go to A2.
A2	CRACKED BATTERY COVER	 ►  ►	REPLACE battery.
	<ul style="list-style-type: none"> • Remove hold-downs and shields. • Check for broken/cracked case or cover. 		Go to A3.
A3	OPEN CIRCUIT VOLTAGE TEST.	 ►  ►	CHARGE battery at 5 amps, then go to A3.
	<ul style="list-style-type: none"> • Turn headlamps on for 15 seconds. • Turn headlamps off for 2 minutes to allow battery voltage to stabilize. • Disconnect cables. • Read open circuit voltage. 		Go to A4.
A4	LOAD TEST	 ►  ►	REPLACE battery.
	<ul style="list-style-type: none"> • Connect a load tester to the battery. • Load the battery at the recommended discharge rate (See LOAD TEST RATE CHART) for 15 seconds. • Read voltage after 15 seconds, then remove load. 		Battery OK.
		OPEN CIRCUIT VOLTAGE UNDER 12.4 VOLTS OPEN CIRCUIT VOLTAGE 12.4 VOLTS OR MORE	
		VOLTAGE IS LESS THAN MINIMUM LISTED VOLTAGE IS MORE THAN MINIMUM LISTED	

Load test (amps)	Cranking rating [-18 °C (0°F)]	Reserve capacity (min.)	Application
240	490	123	75D26R
310	622	159	95D31R

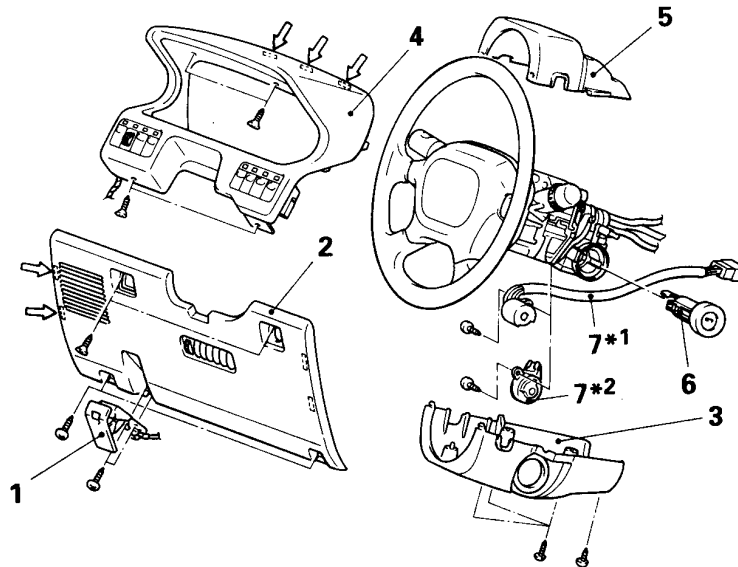
Minimum voltage	Temperature	
	°C	°F
9.6	21 and above	70 and above
9.5	16	60
9.4	10	50
9.3	4	40
9.1	-1	30
8.9	-7	20
8.7	-12	10
8.5	-18	0

IGNITION SWITCH

E54DH--

IGNITION SWITCH

REMOVAL AND INSTALLATION



Removal steps

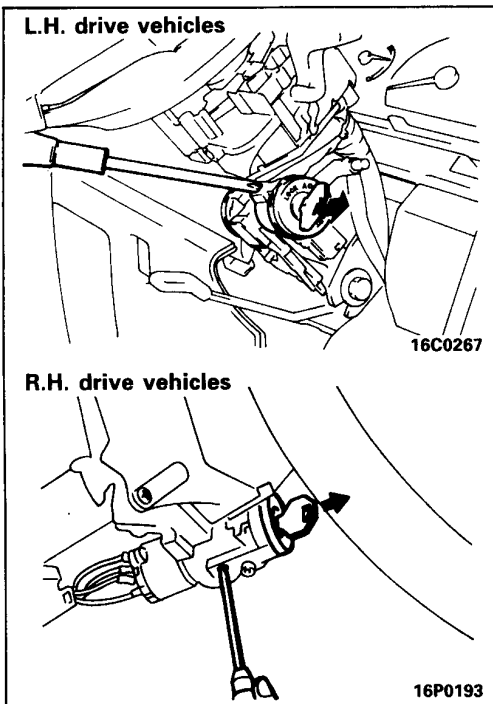
1. Hood lock release handle
2. Instrument panel under cover
3. Column cover lower
4. Meter hood
5. Column cover upper
6. Steering lock cylinder
7. Ignition switch segment

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NOTE

- (1) ← The mark indicates the metal clip positions.
- (2)*1 : Vehicles without SRS.
- (3)*2 : Vehicles with SRS.

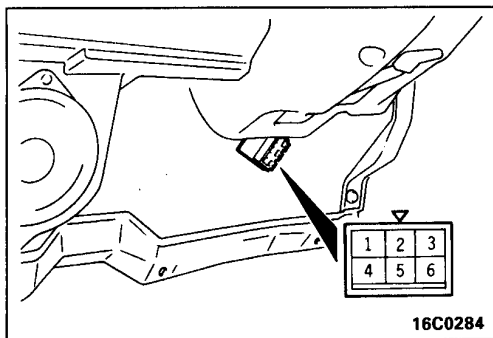


SERVICE POINTS OF REMOVAL

E54DIAH

6. REMOVAL OF STEERING LOCK CYLINDER

- (1) Insert the key in the steering lock cylinder and turn it to the "ACC" position.
- (2) Using a cross-tip (+) screwdriver (small) or a similar tool, push the lock pin of the steering lock cylinder inward and then pull the steering lock cylinder toward you.



INSPECTION

E54DJAQ

IGNITION SWITCH

- (1) Remove the instrument panel under cover.
- (2) Disconnect the wiring connector from the ignition switch, and connect a circuit tester to the switch side connector.
- (3) Operate the switch, and check the continuity between the terminals.

<Vehicles without SRS>

Terminal \ Position	1	2	3	4	5	6
LOCK						
ACC			○	—	—	○
ON		○	○	○	—	○
START	○	—	—	○	○	○

<Vehicles with SRS>

Terminal \ Position	1	2	3	4	5	6
LOCK						
ACC	○	—	—	—	—	○
ON	○	○	—	○	—	○
START	○	○	○	—	○	

NOTE

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

METERS AND GAUGES

SPECIFICATIONS

GENERAL SPECIFICATIONS

E54EA--

Items	Specifications
Speedmeter Type	Rotary magnet type
Tachometer Type	Cross coil type
Fuel gauge Type	Cross coil type fixed needle gauge
Fuel Gauge unit Type	Variable resistance type (with fuel level warning sensor)
Engine coolant temperature gauge Type	Cross coil type
Engine coolant temperature gauge unit Type	Thermistor type

SERVICE SPECIFICATIONS

E54EB--

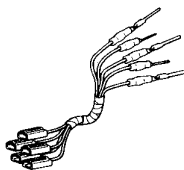
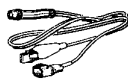
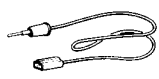

Items	SPACE RUNNER		SPACE WAGON	
Standard value				
Speedometer indication error km/h (mph)				
40 (20)	40-48 (20-25)		40-48 (20-25)	
80 (40)	80-92 (40-47)		80-92 (40-47)	
120 (60)	120-136 (60-69)		120-136 (60-69)	
160 (80)	160-180 (80-91)		160-180 (80-91)	
- (100)	- (100-114)		- (100-114)	
Tachometer indicator error r/min				
1,000	± 100		± 100	
3,000	± 150		± 150	
5,000	± 250		± 250	
6,000*	± 300		± 300	
Fuel gauge unit resistance Ω	<Vehicles built up to September 1991>	<Vehicles built from October 1991>	<Vehicles built up to September 1991>	<Vehicles built from October 1991>
<2WD>				
Float point "F"	0.9-5.1	0.9-5.1	0.9-5.1	0.9-5.1
Float point "E"	102.3-117.7	102.3-117.7	102.3-117.7	102.3-117.7
<4WD-Main>				
Float point "F"	0.5-3.1	0.6-3.0	0.7-2.7	0.5-2.5
Float point "E"	72.2-83.0	58.8-66.8	69.4-79.5	58.5-66.5
<4WD-Sub>				
Float point "F"	0.4-2.0	0.4-2.0	0.7-2.7	0.5-2.5
Float point "E"	30.1-34.7	44.2-50.2	32.4-37.7	44.5-50.5

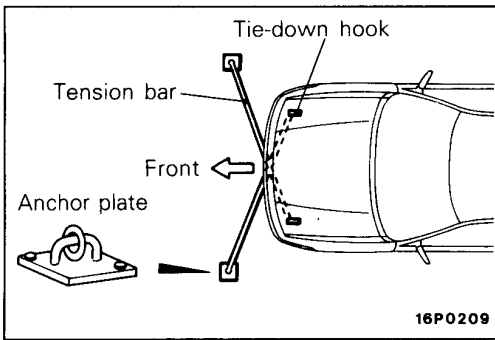
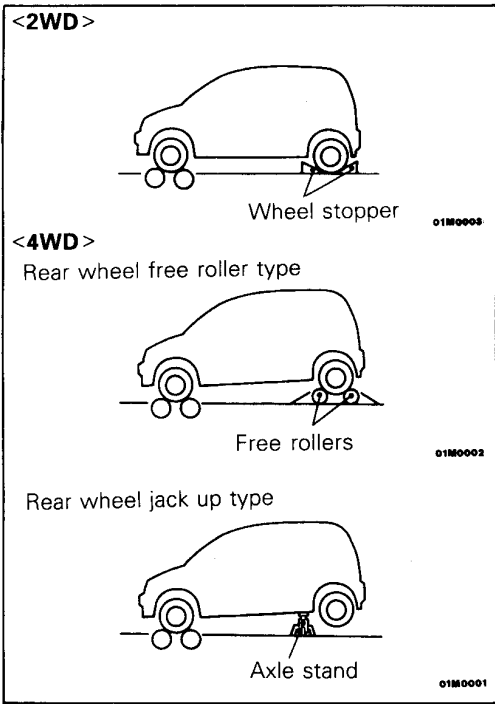
NOTE

The * symbol indicates petrol-powered vehicles.

Items		SPACE RUNNER	SPACE WAGON
Fuel gauge unit float height	mm (in.)		
<2WD>			
A (Float point "F")		46.0 (0.181)	13.7 (0.539)
B (Float point "E")		141.0 (5.551)	143.8 (5.661)
<4WD-Main>			
A (Float point "F")		43.9 (1.728)	8.0 (0.315)
B (Float point "E")		152.5 (6.004)	137.3 (5.406)
<4WD-Sub>			
A (Float point "F")		47.9 (1.886)	12.6 (0.496)
B (Float point "E")		156.7 (6.169)	158.4 (6.236)
Fuel gauge resistance	Ω		
<Vehicles without tachometer>			
power supply and earth		218.7–267.3	–
power supply and fuel gauge		74.7–91.3	–
fuel gauge and earth		144.0–176.0	–
<Vehicles with tachometer>			
power supply and earth		82.8–101.2	82.8–101.2
power supply and fuel gauge		58.5–71.5	58.5–71.5
fuel gauge and earth		85.5–104.5	85.5–104.5
Engine coolant temperature gauge resistance	Ω		
<Vehicles without tachometer>			
power supply and engine coolant temperature gauge		71.3–78.8	–
power supply and earth		200.7–245.3	–
engine coolant temperature gauge and earth		133.2–162.8	–
<Vehicles with tachometer>			
power supply and engine coolant temperature gauge		71.3–78.8	71.3–78.8
power supply and earth		82.8–101.2	82.8–101.2
engine coolant temperature gauge and earth		150.3–183.7	150.3–183.7

SPECIAL TOOLS

Tool	Number	Name	Use
	MD991223	Harness set	<ul style="list-style-type: none"> • Fuel gauge simple inspection
MB991219 Test harness 	MB991220 LED harness 	MB991221 LED harness adapter 	MB991219 Connector pin contact pressure inspection MB991220, MB991221 Power circuit inspection MB991222 Commercial tester connection
		MB991222 Probe 	



SERVICE ADJUSTMENT PROCEDURES

E54EGAX

SPEEDOMETER INSPECTION

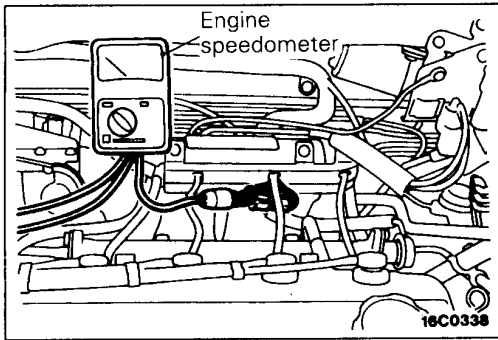
- (1) Adjust the pressure of the tyres to the specified level. (Refer to GROUP 31 – Service Specifications.)
- (2) Place the vehicle on a speedometer tester drum.
 - <2WD>
Make sure the parking brake has been set.
 - <4WD>
Place securely the free rollers to the floor, under the rear wheels so that they are fitted for the wheel base and the wheel tread. <Rear wheel free roller type>
Jack up the rear wheels and place the axle stands in the specified places. <Rear wheel jack-up type>
- (3) To prevent the front wheel from moving from side to side, attach tension bars to the tie-down hook, and secure both ends to anchor plates.
- (4) To prevent the vehicles from starting, attach a chain or wire to the rear traction hook, and make sure the end of the chain or wire is secured firmly.
- (5) Check if the speedometer indication range is within the standard values.

Caution

Do not operate the clutch suddenly or increase/decrease speed rapidly while testing.

Standard values:

Standard indication km/h (mph)	Allowable range km/h (mph)
40 (20)	40-48 (20-25)
80 (40)	80-92 (40-47)
120 (60)	120-136 (60-69)
160 (80)	160-180 (80-91)
- (100)	- (100-114)



TACHOMETER INSPECTION

Petrol-powered vehicles

- (1) Insert a paper clip in the connector from the harness side, and attach the engine speedometer.

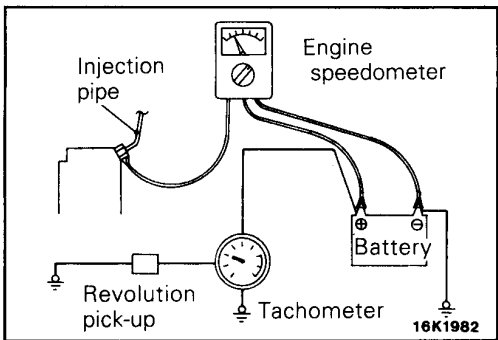
NOTE

For tachometer inspection, use of a fluxmeter-type engine speedometer is recommended. (Because a fluxmeter only needs to be clipped to the high tension cable.)

- (2) Compare the readings of the engine speedometer and the tachometer at every engine speed, and check if the variations are within the standard values.

Standard values:

Engine speed	Indicated variation
1,000 r/min.:	± 100 r/min.
3,000 r/min.:	± 150 r/min.
5,000 r/min.:	± 250 r/min.
6,000 r/min.:	± 300 r/min.



Diesel-powered vehicles

Connect engine speedometer as illustrated and compare the engine speedometer and tachometer readings. Replace tachometer if difference is excessive.

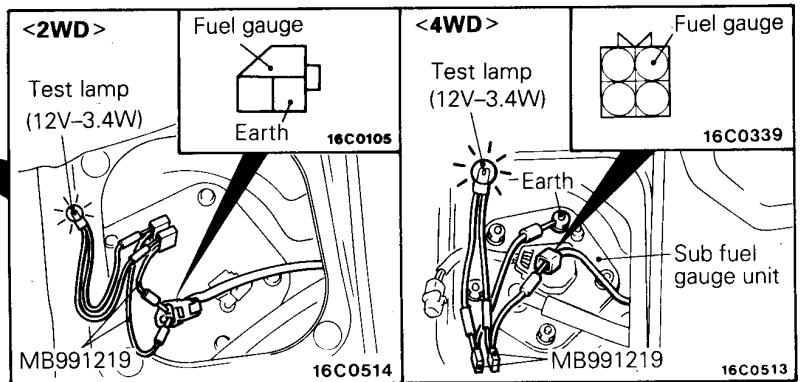
Standard value:

Engine speed	Indicated variation
1,000 r/min.	± 100 r/min.
3,000 r/min.	± 150 r/min.
5,000 r/min.	± 250 r/min.

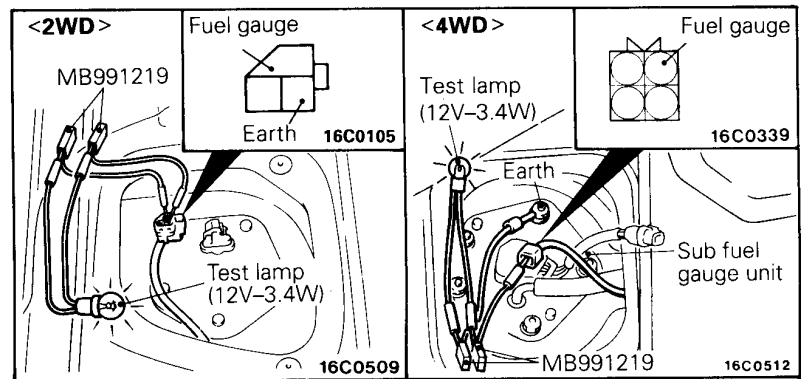
FUEL GAUGE SIMPLE INSPECTION

- Remove the fuel gauge unit connector.
- Connect a test lamp to the harness side connector.
- Turn the ignition switch to ON.

SPACE RUNNER



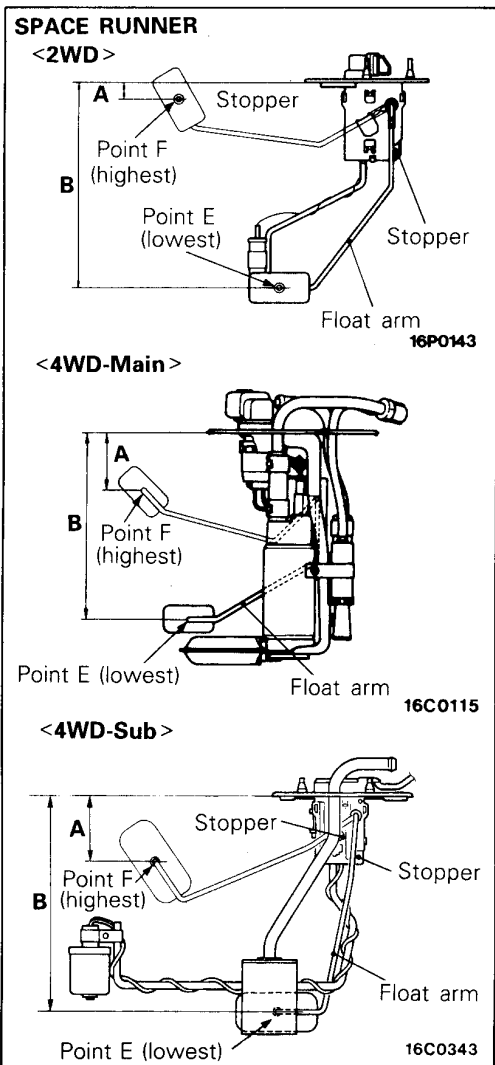
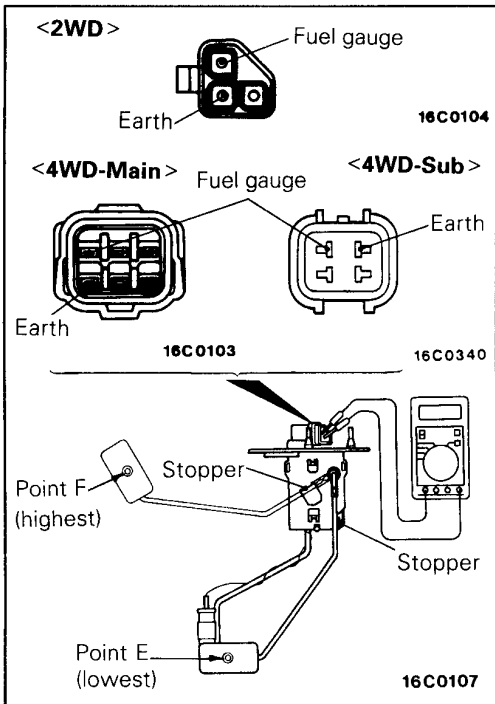
SPACE WAGON



NOTE
For vehicles with 4WD, carry out the simple inspection of the sub fuel gauge unit on the left side.

Check the condition of the test lamp and the gauge.

① Test lamp illuminates (Gauge needle is not moving)	Replace the fuel gauge.
② Test lamp illuminates (Gauge needle is moving)	Replace the fuel gauge unit.
③ Test lamp does not illuminate (Gauge needle is not moving)	Repair the harness.



FUEL GAUGE UNIT INSPECTION

To check, remove fuel gauge unit from fuel tank. (Refer to GROUP 13 – Fuel Tank.)

Fuel Gauge Unit Resistance

- Check that resistance value between the fuel gauge terminal and earth terminal is at standard value when fuel gauge unit float is at point F (highest) and point E (lowest).

Standard value:

SPACE RUNNER

Vehicles built up to September 1991

<2WD>	POINT F:	0.9–5.1 Ω
	POINT E:	102.3–117.7 Ω
<4WD-Main>	POINT F:	0.7–2.9 Ω
	POINT E:	72.2–83.0 Ω
<4WD-Sub>	POINT F:	0.4–2.0 Ω
	POINT E:	30.1–34.7 Ω

Vehicles built from October 1991

<2WD>	POINT F:	0.9–5.1 Ω
	POINT E:	102.3–117.7 Ω
<4WD-Main>	POINT F:	0.6–3.0 Ω
	POINT E:	58.8–66.8 Ω
<4WD-Sub>	POINT F:	0.4–2.0 Ω
	POINT E:	44.2–50.2 Ω

SPACE WAGON

Vehicles built up to September 1991

<2WD>	POINT F:	0.9–5.1 Ω
	POINT E:	102.3–117.7 Ω
<4WD-Main>	POINT F:	0.7–2.7 Ω
	POINT E:	69.4–79.5 Ω
<4WD-Sub>	POINT F:	0.7–2.7 Ω
	POINT E:	32.4–37.7 Ω

Vehicles built from October 1991

<2WD>	POINT F:	0.9–5.1 Ω
	POINT E:	102.3–117.7 Ω
<4WD-Main>	POINT F:	0.5–2.5 Ω
	POINT E:	58.5–66.5 Ω
<4WD-Sub>	POINT F:	0.5–2.5 Ω
	POINT E:	44.5–50.5 Ω

- Check that resistance value changes smoothly when float moves slowly between point F (highest) and point E (Lowest).

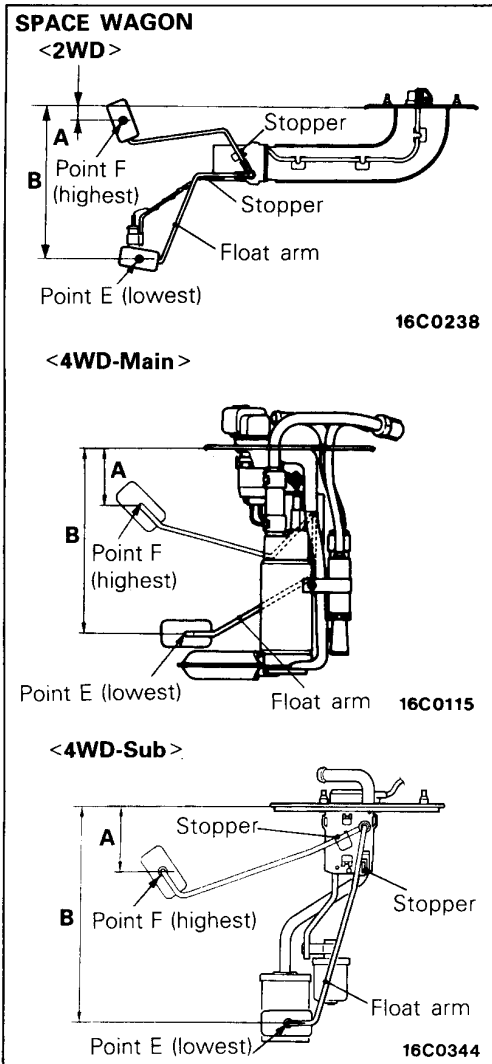
Fuel Gauge Unit Float Height

Move float and measure the height A at point F (highest) and B at point E (lowest) with float arm touching stopper.

Standard value:

SPACE RUNNER

<2WD>	A:	46.0 mm (0.181 in.)
	B:	141.0 mm (5.551 in.)
<4WD-Main>	A:	43.9 mm (1.728 in.)
	B:	152.5 mm (6.004 in.)
<4WD-Sub>	A:	46.6 mm (1.835 in.)
	B:	152.0 mm (5.984 in.)



SPACE WAGON
<2WD>

A: 13.7 mm (0.539 in.)

B: 143.8 mm (5.661 in.)

<4WD-Main>

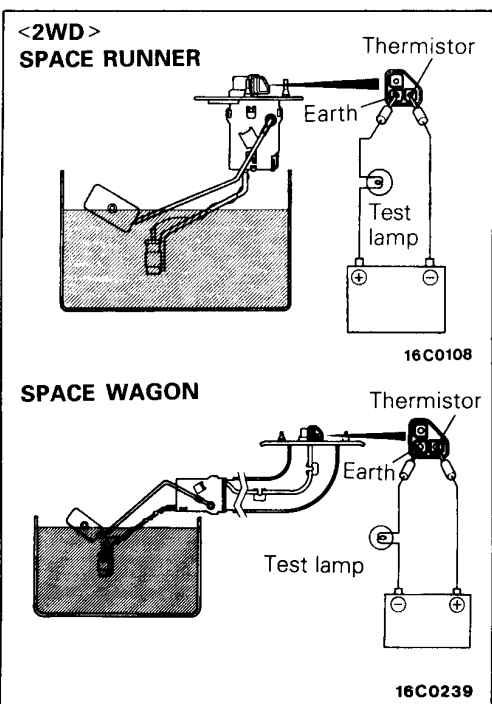
A: 8.0 mm (0.315 in.)

B: 137.3 mm (5.406 in.)

<4WD-Sub>

A: 12.6 mm (0.496 in.)

B: 158.4 mm (6.236 in.)

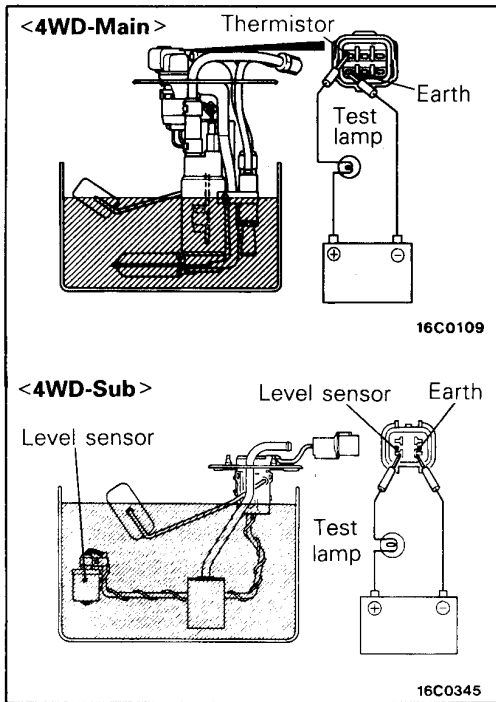


FUEL SENSOR INSPECTION

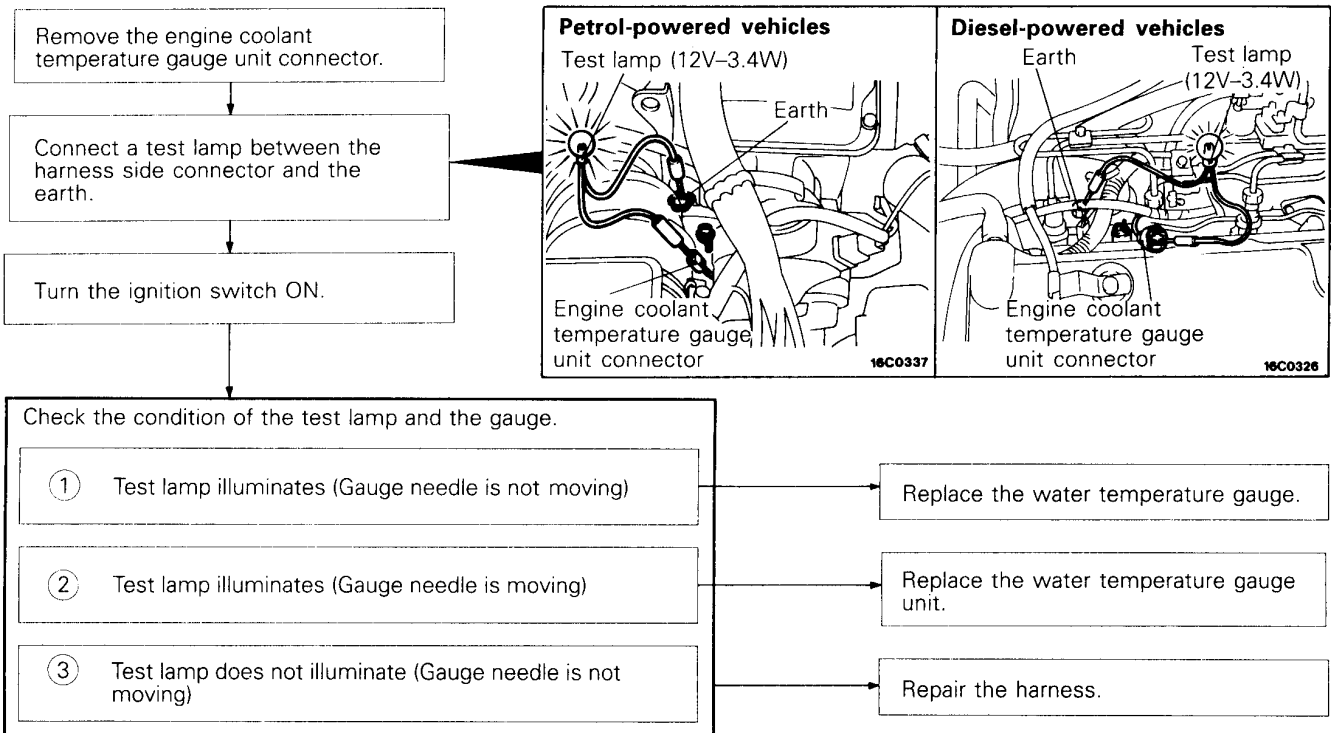
Connect fuel gauge unit to battery via test light (12V-3.4W). Immerse in water. Condition good if light goes off when unit thermistor is in water and lights when unit is removed from water.

Caution

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



ENGINE COOLANT TEMPERATURE GAUGE SIMPLE INSPECTION



ENGINE COOLANT TEMPERATURE GAUGE UNIT INSPECTION

Refer to GROUP 14 – Engine Collant Temperature Gauge Unit.

COMBINATION METER

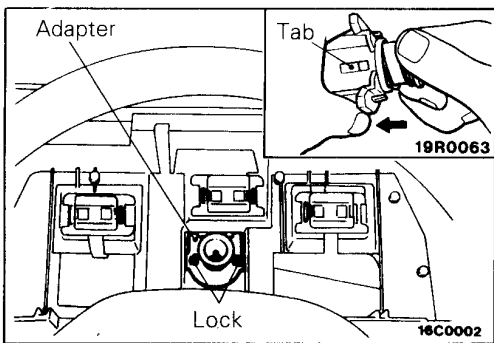
REMOVAL AND INSTALLATION

Removal steps

1. Meter hood
2. Combination meter
3. Adapter
4. Cluster switch assembly

NOTE
 ↔ The mark indicates the metal clip positions.

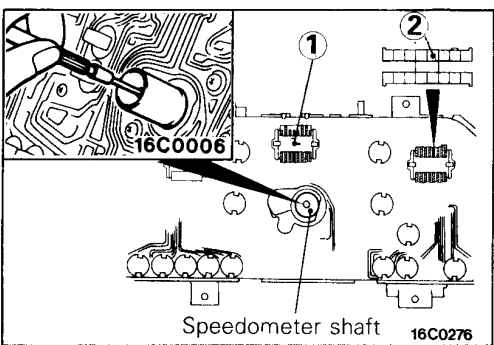
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SERVICE POINT OF REMOVAL

3. REMOVAL OF ADAPTER

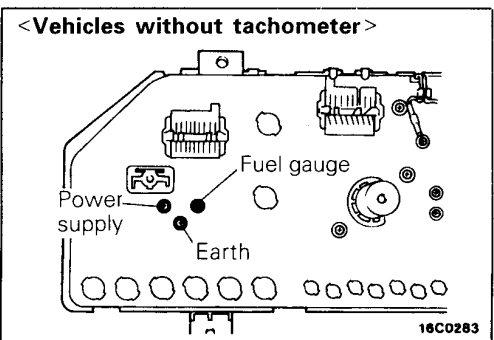
- (1) Remove the adapter lock.
- (2) Pull the speedometer cable slightly into the passenger compartment, and remove the rear side of the adapter from the cable.
- (3) After turning the adapter so that the notched section is aligned with the tab on the cable side, remove the adapter by sliding it backwards.



INSPECTION

REED SWITCH

Using a circuit tester, check that continuity and discontinuity alternates between terminals 1 and 2 four times at every rotation of the shaft of the speedometer cable connection.



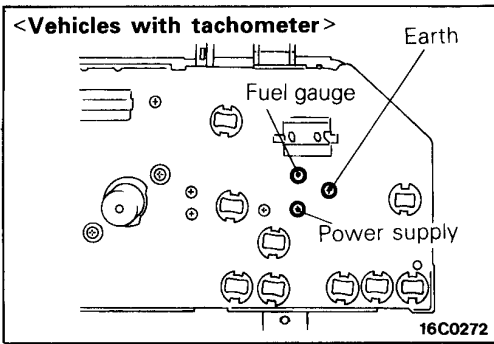
FUEL GAUGE RESISTANCE

Use a circuit tester to measure the resistance value between the terminals.

Standard value:

<Vehicles without tachometer>

Power supply – earth:	218.7–267.3 Ω
Power supply – fuel gauge:	24.7–91.3 Ω
Fuel gauge – earth:	144.0–176.0 Ω

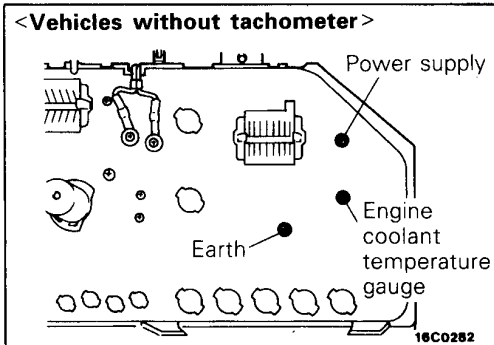


<Vehicles with tachometer>

Power supply – earth:	82.8–101.2 Ω
Power supply– fuel gauge:	58.5–71.5 Ω
Fuel gauge – earth:	85.5–104.5 Ω

Caution

When inserting the testing probe into the power supply terminal, be careful not to touch the printed board.



ENGINE COOLANT TEMPERATURE GAUGE RESISTANCE

Use a circuit tester to measure the resistance value between the terminals.

Standard value:

<Vehicles without tachometer>

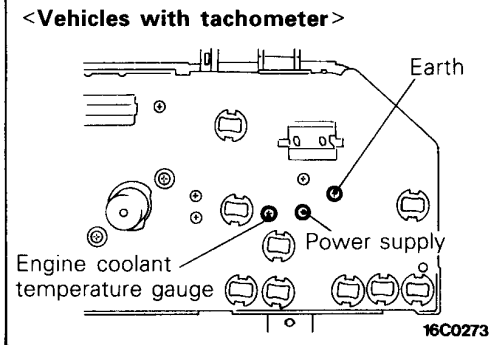
Power supply – engine coolant temperature gauge:	71.3–78.8 Ω
Power supply – earth:	200.7–245.3 Ω
Engine coolant temperature gauge – earth:	133.2–162.8 Ω

<Vehicles with tachometer>

Power supply – engine coolant temperature gauge:	71.3–78.8 Ω
Power supply – earth:	82.8–101.2 Ω
Engine coolant temperature gauge – earth:	150.3–183.7 Ω

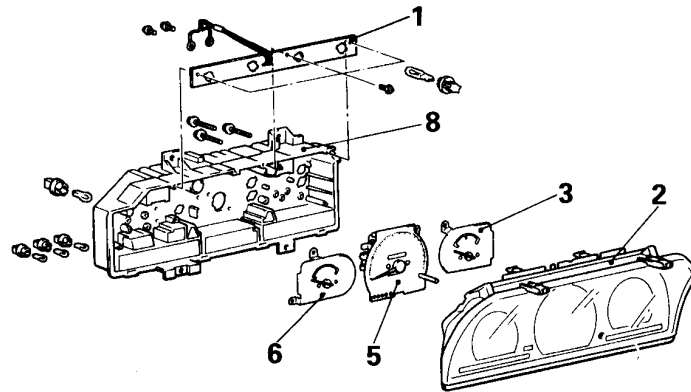
Caution

When inserting the testing probe into the power supply terminal, be careful not to touch the printed board.



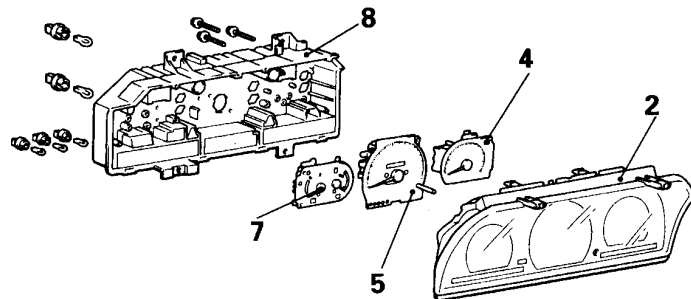
DISASSEMBLY AND REASSEMBLY

<Vehicles without tachometer>



16C0289

<Vehicles with tachometer>



16C0288

Disassembly steps

1. Printed-circuit board
2. Meter glass
3. Fuel gauge
4. Tachometer
5. Speedometer
6. Engine coolant temperature gauge
7. Fuel gauge/Engine coolant temperature gauge
8. Meter case

INDICATORS AND WARNING LAMPS

E54FBAH

<Up to April, 1993>

Unit: W

Items	Specifications
Upper-beam indication lamp	3.4
Turn-signal indication lamp	3.4
Hazard indication lamp	3.4
Rear fog lamp indication lamp	3.4
Overdrive off indication lamp (A/T)	1.4
Automatic transmission indication lamp	1.4
Oil pressure warning lamp	3.4
Brake warning lamp	3.4
Charge warning lamp* ¹	3.4
Low fuel warning lamp	3.4
Door ajar warning lamp	3.4
Low headlamp washer fluid warning lamp	3.4
Check engine warning lamp	3.4
Anti-lock braking system warning lamp	3.4
Low engine oil warning lamp	3.4
Fuel filter warning lamp* ²	3.4
A/T fluid temperature warning lamp* ³	3.4

NOTE

*1 <Petrol-powered vehicles>

*3 <4WD-A/T>

*2 <Diesel-powered vehicles>

<From May, 1993>

Unit: W

Items	Specifications
Upper-beam indication lamp	3.4
Turn-signal indication lamp	3.4
Hazard indication lamp	3.4
Rear fog lamp indication lamp	3.4
Overdrive off indication lamp (A/T)	1.4
Automatic transmission indication lamp	1.4
Oil pressure warning lamp	3.4
Brake warning lamp	3.4
Charge warning lamp	3.4
Low fuel warning lamp	3.4
Door ajar warning lamp	3.4
Low headlamp washer fluid warning lamp	1.4
Check engine warning lamp* ¹	3.4
Anti-lock braking system warning lamp	3.4
Low engine oil warning lamp* ³	3.4
Fuel filter warning lamp* ²	3.4
A/T fluid temperature warning lamp* ³	3.4
Glow indication lamp* ²	3.4
Supplemental restraint system warning lamp	3.0

NOTE

*1 <Petrol-powered vehicles>

*3 <SPACE WAGON>

*2 <Diesel-powered vehicles>

LIGHTING SYSTEM**SPECIFICATIONS**

E54GA--

GENERAL SPECIFICATIONS

Unit: W

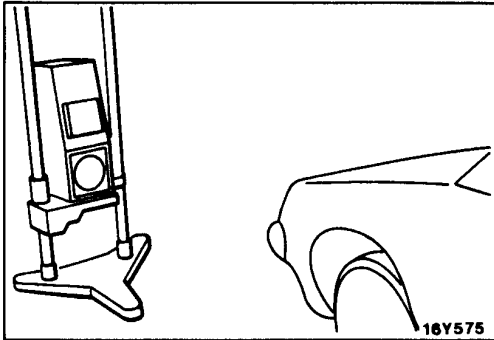
Items	Specifications
Exterior lamps	
Headlamp	60/55
Front turn signal lamp	21
Position lamp	5
Side turn signal lamp	5
Rear combination lamp	
Turn signal lamp	21
Stop and tail lamp	21/5
Tailgate lamp* ¹	
Stop and tail lamp	21/5
High mounted stop lamp* ³	5
Back-up lamp	21
Rear fog lamp	21
Licence plate lamp	4
Interior lamps	
Room lamp	10
Map lamp* ²	8
Door lamp* ¹	5
Cargo room lamp	10

NOTE

*¹ <SPACE WAGON>*² <Vehicles with sunroof>*³ <From July 1993>**SERVICE SPECIFICATION**

E54GB--

Items	Specifications
Standard value	
Headlamp aiming	
For lower beam adjustment	
Vertical direction	60 mm (2.36 in.) below horizontal (H)
Horizontal direction	Position where the 15° sloping section intersects the vertical line (V)
Resistance between resistor terminals <R.H. drive vehicles with dim-dip lamp>	Approx. 1Ω
Limit	
Headlamp intensity	30,000 cd or more



SERVICE ADJUSTMENT PROCEDURES

E54GGBA

HEADLAMP AIMING

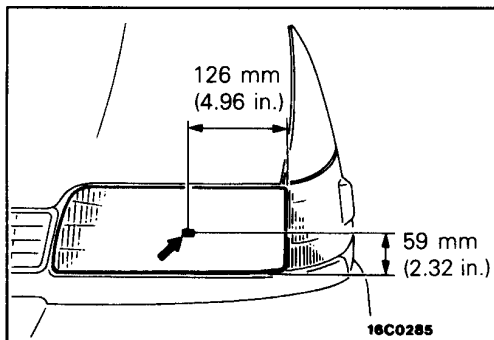
<USING A BEAMSETTING EQUIPMENT>

- (1) The headlamps should be aimed with the proper beamsetting equipment, and in accordance with the equipment manufacturer's instructions.

NOTE

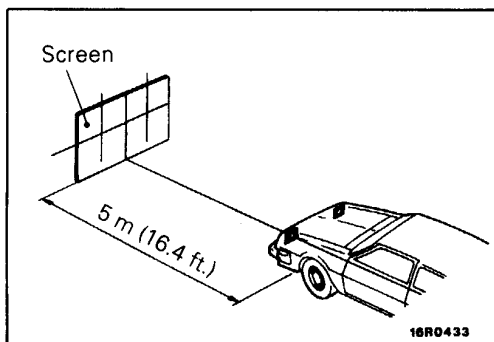
If there are any regulations pertinent to the aiming of headlamps in the area where the vehicle is to be used, adjust so as to meet those requirements.

- (2) Alternately turn the adjusting screw to adjust the headlamp aiming. (Refer to P.54-20.)

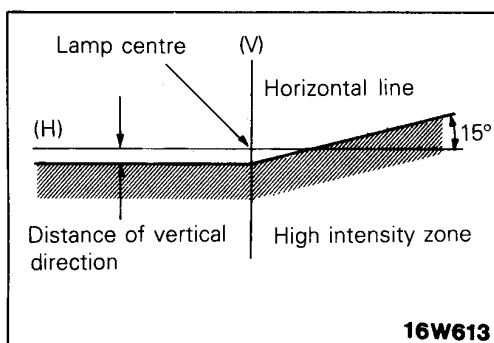


<USING A SCREEN>

- (1) Measure the centre of the headlamp as shown in the illustration.
- (2) Inflate the tyres to the specified pressures and remove the load from the vehicle (except a driver).



- (3) Set the distance between the screen and the centre of the headlamps as shown in the illustration.
- (4) With the engine running at 2,000 r/min, aim the headlamps.



- (5) Check if the beam shining onto the screen is at the standard value.

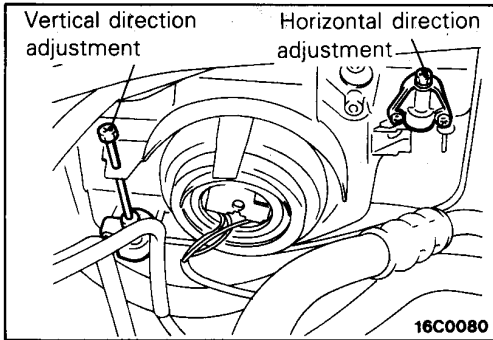
Standard value: <For lower beam adjustment>

(Vertical direction)

60 mm (2.36 in.) below horizontal (H)

(Horizontal direction)

Position where the 15° sloping section intersects the vertical line (V)



- (6) Alternately turn the adjusting screw to adjust the headlamp aiming.

Caution

Be sure to adjust the aiming adjustment screw in the tightening direction.

INTENSITY MEASUREMENT

Using a photometer, and following its manufacture's instruction manual, measure the headlamp intensity and check to be sure that the limit value is satisfied.

Limit: 30,000 cd or more

NOTE

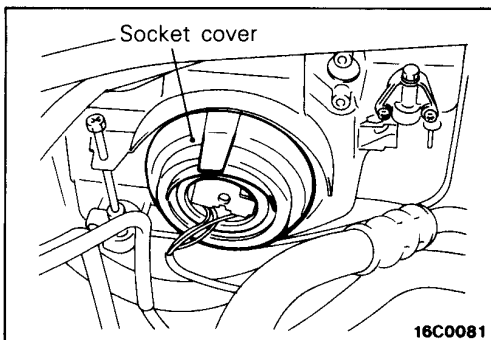
1. When measuring the intensity, maintain an engine speed of 2,000 r/min., with the battery in the charging condition.
2. There may be special local regulations pertaining to headlamp intensity; be sure to make any adjustments necessary to satisfy such regulations.
3. If an illuminometer is used to make the measurements, convert its values to photometer values by using the following formula.

$I = Er^2$ Where:

I = intensity (cd)

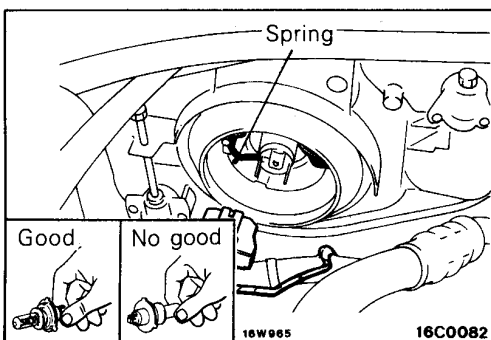
E = illumination (lux)

r = distance (m) from headlamps to illuminometer



REPLACEMENT OF REPLACEABLE BULB

1. Disconnect the connector.
2. Remove the socket cover.



3. Remove the bulb attachment spring and pull out the bulb.

Caution

Do not touch the surface of the headlamp bulb with hands or dirty gloves. If the surface dies become dirty, clean it with alcohol or thinner, and let it dry thoroughly before installing.

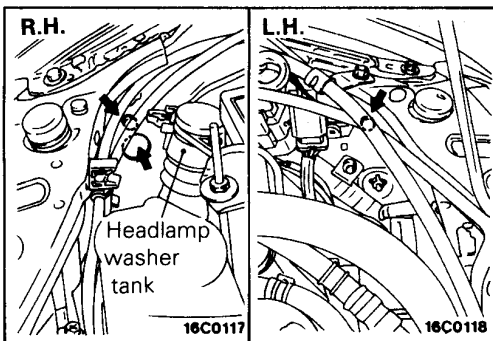
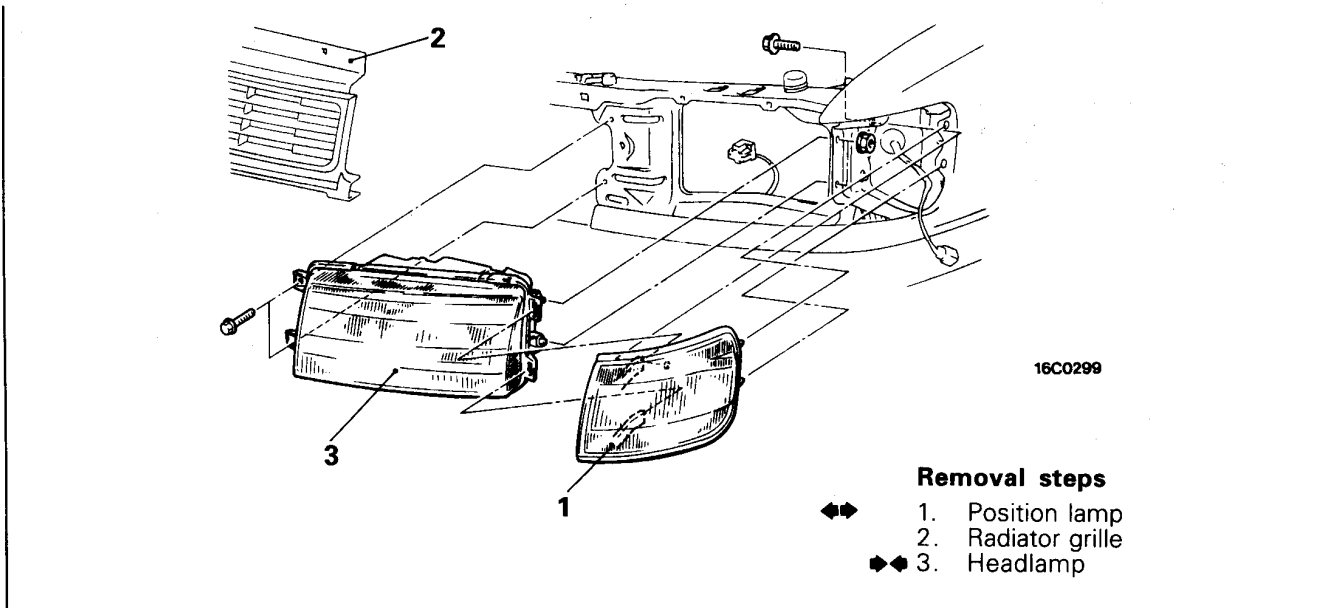
4. Install the socket cover securely.

NOTE

If the socket cover is not securely installed, the lens will be out of focus, or water will get inside the lamp unit, so the cover should be securely installed.

HEADLAMP AND POSITION LAMP

REMOVAL AND INSTALLATION



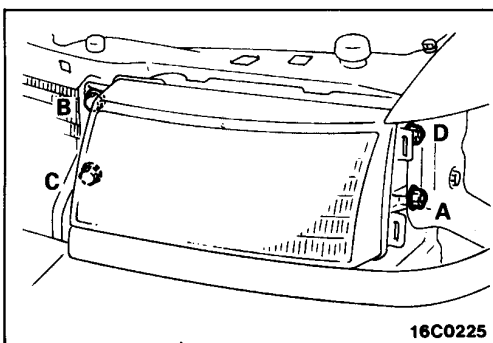
SERVICE POINTS OF REMOVAL

1. REMOVAL OF POSITION LAMP

Remove the position lamp mounting screws from inside the engine compartment.

NOTE

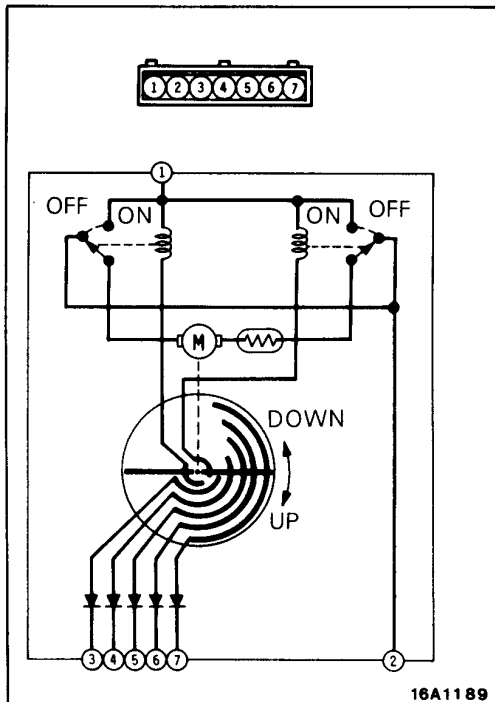
On the right-hand side, operation from the service hole will be made easier if the supply port fixing screws of the headlamp washer tank are removed.



SERVICE POINT OF INSTALLATION

3. INSTALLATION OF HEADLAMP

Tighten the mounting nuts and bolts in the order A, B, C and D.

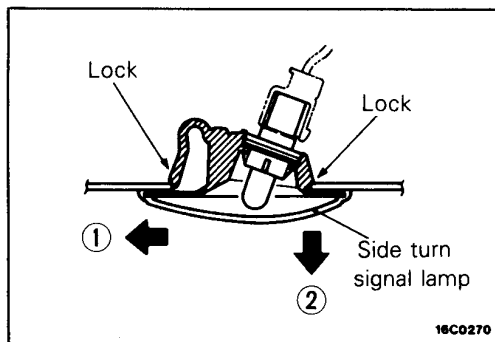


INSPECTION

INSPECTING THE HEADLAMP LEVELING UNIT

Set the switch to "0" before inspecting.

- (1) Check to be sure there is no continuity between terminals ① and ②.
- (2) Connect terminal ① to the battery and connect terminal ② to earth ground.
- (3) Check to make sure the motor is activated (headlamp reflector operates) for 0.6 to 1.0 second when terminals ④, ⑤, ⑥ and ⑦ are connected to earth in this order.
- (4) Next, check to make sure the motor is activated [headlamp reflector operates in reverse order of (3), above] for 0.6 to 1.0 second when terminals ⑥, ⑤, ④ and ③ are connected to earth in this order.
- (5) If the headlamp leveling unit is defective, replace the entire headlamp assembly.



SIDE TURN SIGNAL LAMP

E54GZAC

REMOVAL AND INSTALLATION SERVICE POINTS OF REMOVAL

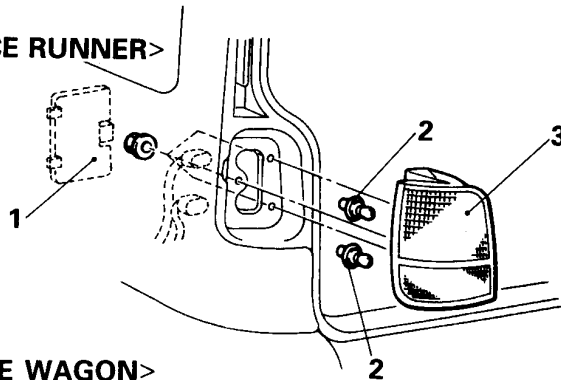
Move the side turn signal lamp in the order of the numbered arrows to remove the lock, and then remove the side turn signal lamp.

REAR COMBINATION LAMP

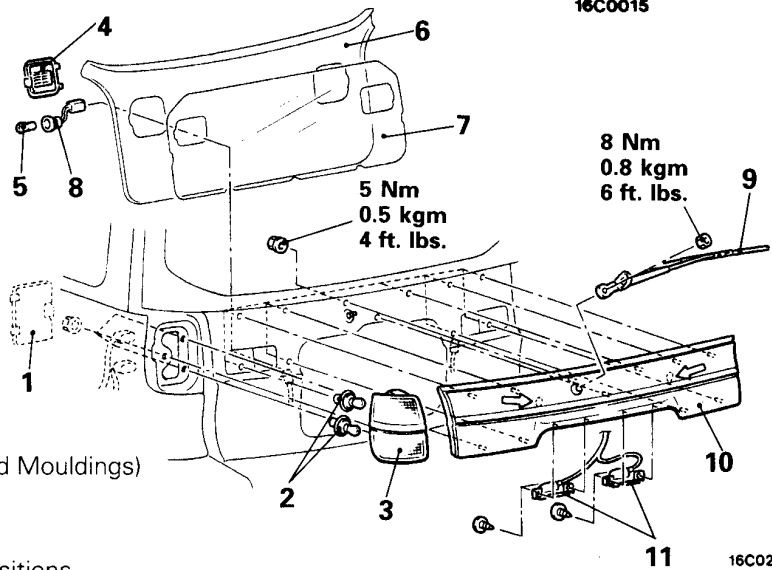
E54GVAH

REMOVAL AND INSTALLATION

<SPACE RUNNER>



<SPACE WAGON>



Removal steps of bulb

1. Rear combination lamp lid
2. Rear combination lamp bulb
4. Rear gate lamp lid
5. Rear gate lamp bulb

Removal steps of lamp unit

1. Rear combination lamp lid
3. Rear combination lamp unit
6. Tail gate lower trim (Refer to GROUP 42 – Tail Gate)
7. Tail gate water proof film
8. Connection of socket assembly
9. Rear wiper arm
10. Tailgate lamp assembly (Refer to GROUP 51 – Garnishes and Mouldings)
11. Connection of licence plate lamp

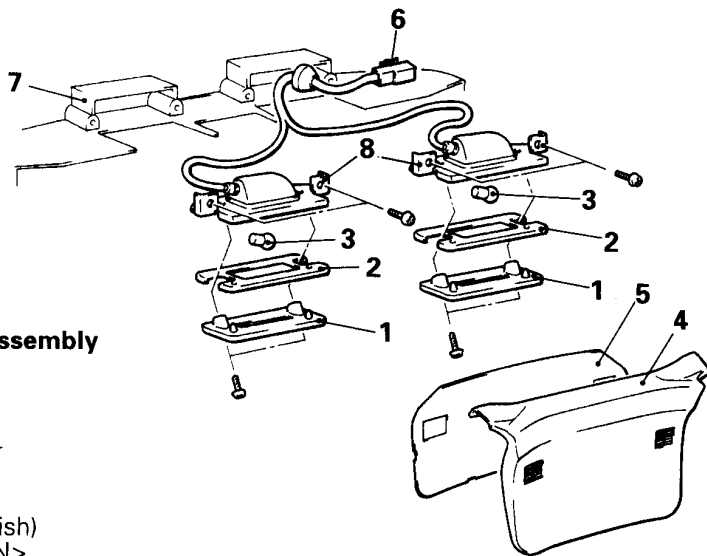
NOTE

↔ The mark indicates the resin clip positions.

LICENCE PLATE LAMP

E54GTAF

REMOVAL AND INSTALLATION



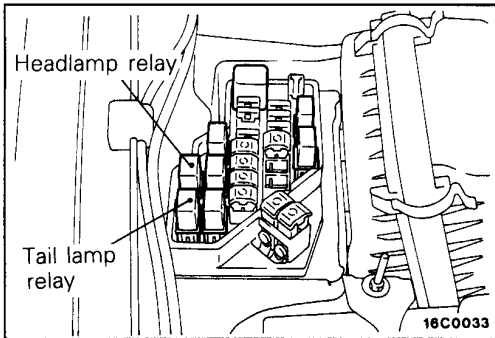
Removal steps of bulb

1. Lens
2. Gasket
3. Bulb

Removal steps of licence plate lamp assembly

4. Tail gate lower trim (Refer to GROUP 42 – Tail Gate)
5. Tail gate water proof film
6. Harness connector and tail gate inner panel connection
7. Tail gate garnish <SPACE RUNNER> (Refer to GROUP 51 – Tail Gate Garnish) Rear gate lamp unit <SPACE WAGON>
8. Bracket assembly

16C0071

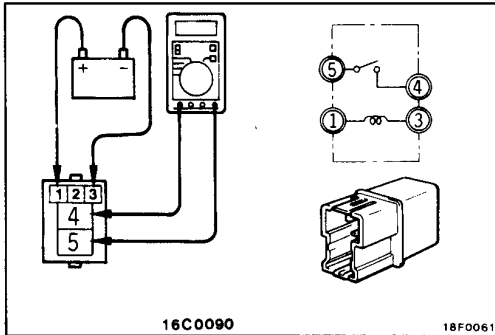


RELAY

INSPECTION

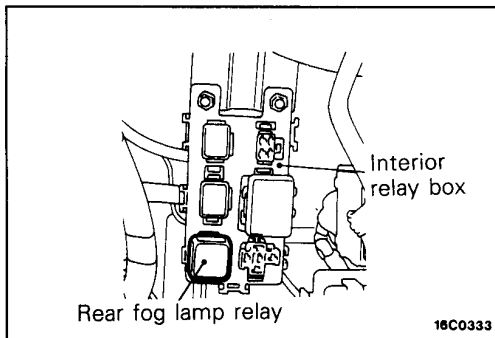
HEADLAMP RELAY, TAIL LAMP RELAY

(1) Remove the headlamp relay and tail lamp relay from the engine compartment relay box.



(2) Apply battery voltage to terminal ①, and check the continuity between the terminals when terminal ③ is earthed.

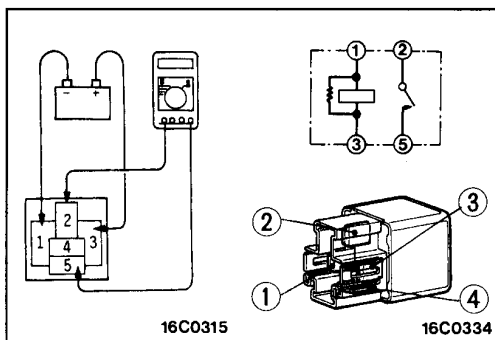
Power is supplied	4 – 5 terminals	Continuity
Power is not supplied	4 – 5 terminals	No continuity
	1 – 3 terminals	Continuity



REAR FOG LAMP RELAY

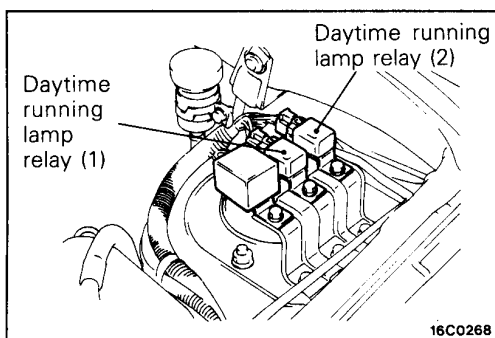
(1) Remove the instrument panel under cover. (Refer to P.54-4.)

(2) Remove the rear fog lamp from the interior relay box.



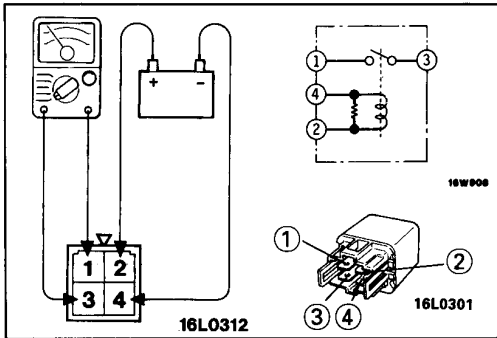
(3) Apply battery voltage to terminal ①, and check the continuity between the terminals when terminal ③ is earthed.

Power is supplied	2 – 5 terminals	Continuity
Power is not supplied	2 – 5 terminals	No continuity
	1 – 3 terminals	Continuity



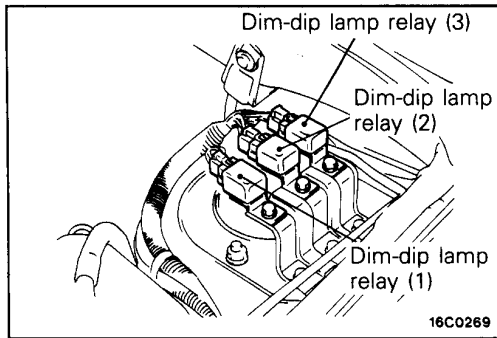
DAYTIME RUNNING LAMP RELAY (1), (2)
<Vehicles for Norway, Sweden and Iceland>

(1) Remove the daytime running lamp relay (1) and (2).



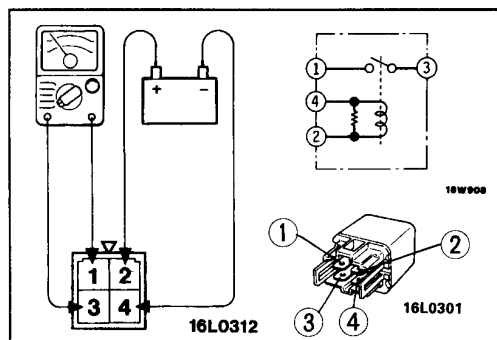
(2) Apply battery voltage to terminal ②, and check the continuity between the terminals when terminal ④ is earthed.

Power is supplied	1 – 3 terminals	Continuity
Power is not supplied	1 – 3 terminals	No continuity
	2 – 4 terminals	Continuity



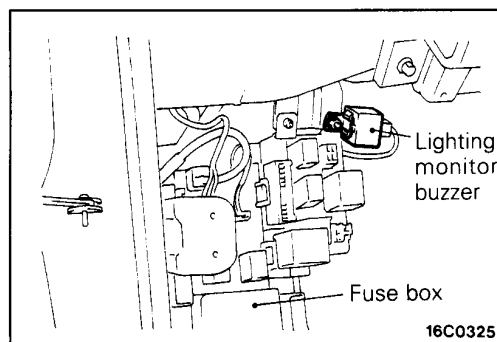
DIM-DIP LAMP RELAY (1), (2), (3) <R.H. Drive Vehicles>

(1) Remove the dim-dip lamp relay (1), (2) and (3).



(2) Apply battery voltage to terminal ②, and check the continuity between the terminals when terminal ④ is earthed.

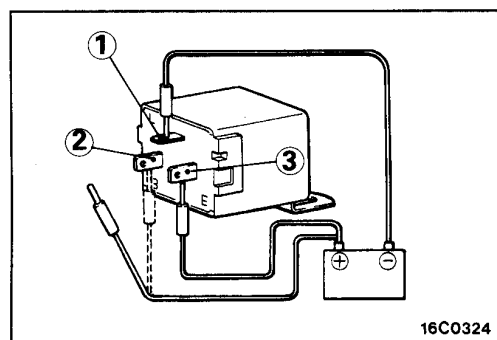
Power is supplied	1 – 3 terminals	Continuity
Power is not supplied	1 – 3 terminals	No continuity
	2 – 4 terminals	Continuity



LIGHTING MONITOR BUZZER

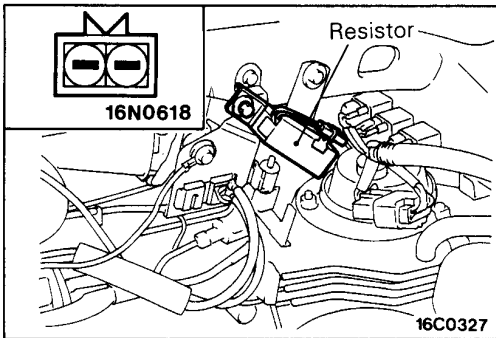
INSPECTION

(1) Remove the instrument panel under cover. (Refer to P.54-4.)
 (2) Remove the lighting monitor buzzer.



(3) Check to be sure that the buzzer sounds when battery voltage is applied to terminal ③ and terminal ① is earthed.

(4) Check to be sure that the buzzer stops sounding when battery voltage is applied to terminal ②.

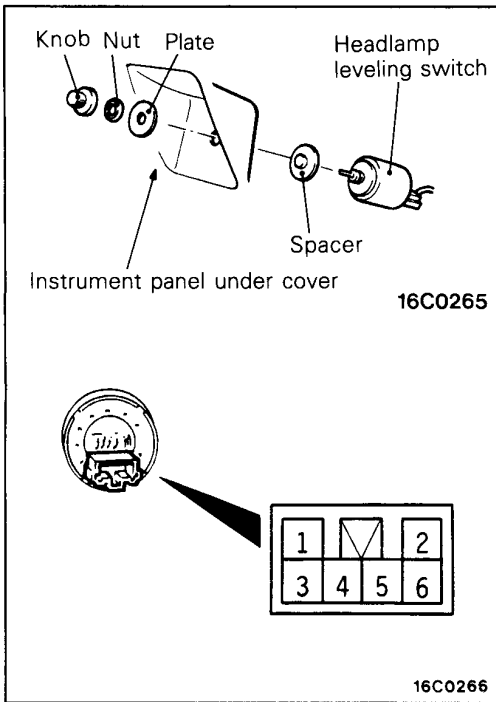


RESISTOR <R.H. Drive Vehicle>

INSPECTION

- (1) Remove the resistor connector.
- (2) Connect an ohmmeter to the resistor connector terminal and check the resistance value.

Standard value: Approx. 1 Ω



SWITCH

E54GYAE

INSPECTION

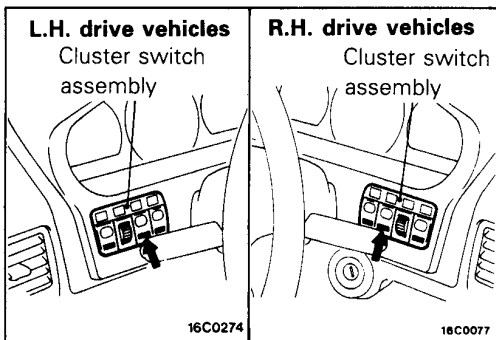
HEADLAMP LEVELING SWITCH

- (1) Remove the instrument panel under cover. (Refer to P.54-4.)
- (2) Operate the switch, and check the continuity between the terminals.

Terminal No.	1	2	3	4	5	6
Switch position 0	○—○					
1	○					○
2	○				○	
3	○			○		
4	○	○				

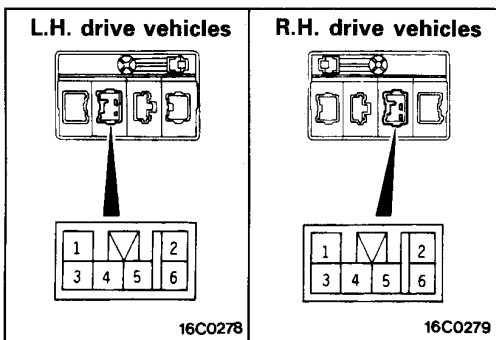
NOTE

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



REAR FOG LAMP SWITCH

- (1) Remove the meter hood from the instrument panel. (Refer to P.54-14.)

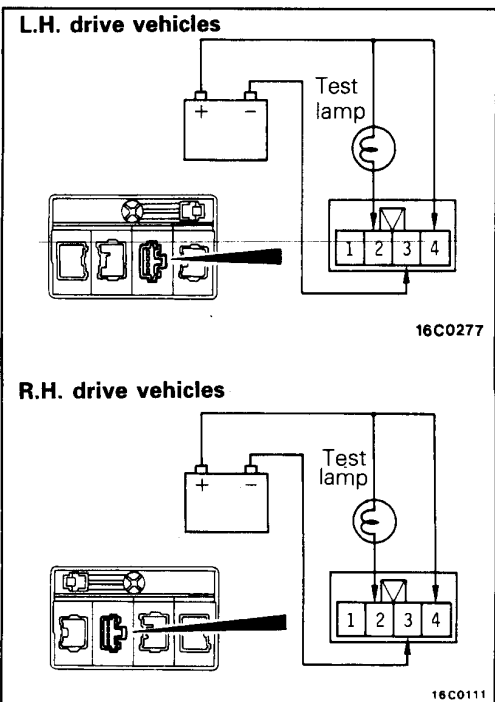
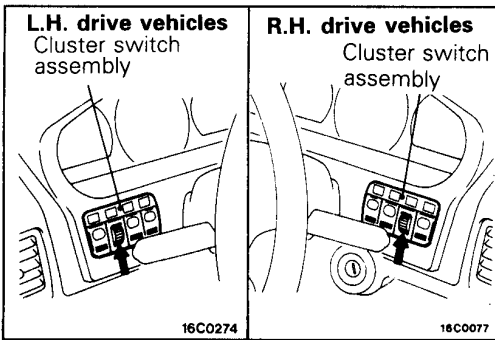
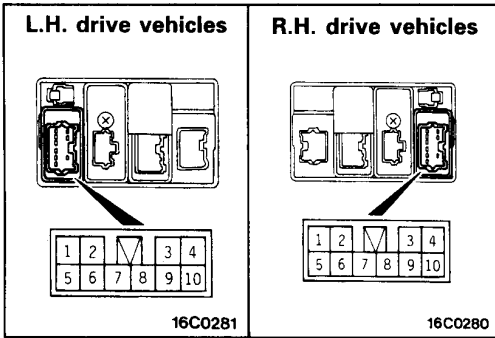
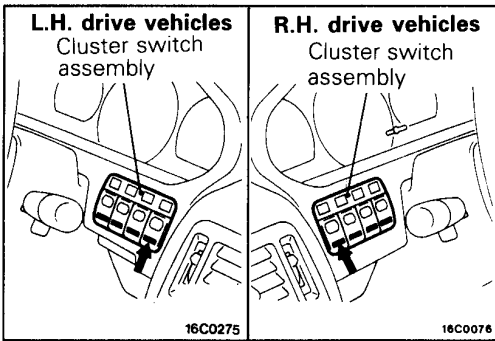


- (2) Operate the switch and check for continuity between the terminals.

Terminal No.	3	5
Switch position OFF		
ON	○—○	○—○

NOTE

○—○ indicates that there is continuity between is terminals.



HAZARD LAMP SWITCH

(1) Remove the meter hood from the instrument panel.
(Refer to P.54-14.)

(2) Operate the switch and check for continuity between the terminals.

Terminal No.	1	2	3	5	6	7	8	9	10
Switch position									
OFF	○—○			○—○					
ON		○—○				○—○	○—○	○—○	○—○

NOTE

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

RHEOSTAT

E54GNAI

INSPECTION

(1) Remove the meter hood from the instrument panel.
(Refer to P.54-14.)

- (2) Connect the battery and the test bulb (40W) as shown in the illustration.
- (3) Operate the rheostat, and if the brightness changes smoothly without switching off, then the rheostat function is normal.

COLUMN SWITCH**SPECIFICATIONS****GENERAL SPECIFICATIONS**

Items	Specifications
Column switch	
Lighting switch	
Rated load	A 0.30 ± 0.05, 0.22 ± 0.05*
Voltage drop	V 0.2 or less
Turn-signal switch	
Rated load	A 6.6 ± 0.5
Voltage drop	V 0.2 or less
Dimmer/Passing switch	
Rated load	A
High beam	10.7 ± 0.8
Low beam	9.8 ± 0.7
Voltage drop	V 0.2 or less
Windshield wipers and washer switch	
Rated load	A
Wiper switch	4
Washer switch	Max. 4
Voltage drop	V
Wiper switch	0.2 or less
Washer switch	0.5 or less
Intermittent wiper switch	
Operation mode	Adjustable-timing intermittent wipers
Intermittent interval	sec. Approx. 1–6.5
Headlamp washer switch	
Rated load	A 0.5 ± 0.1
Voltage drop	V 0.2 or less
Horn switch	
Rated load	A Max. 6

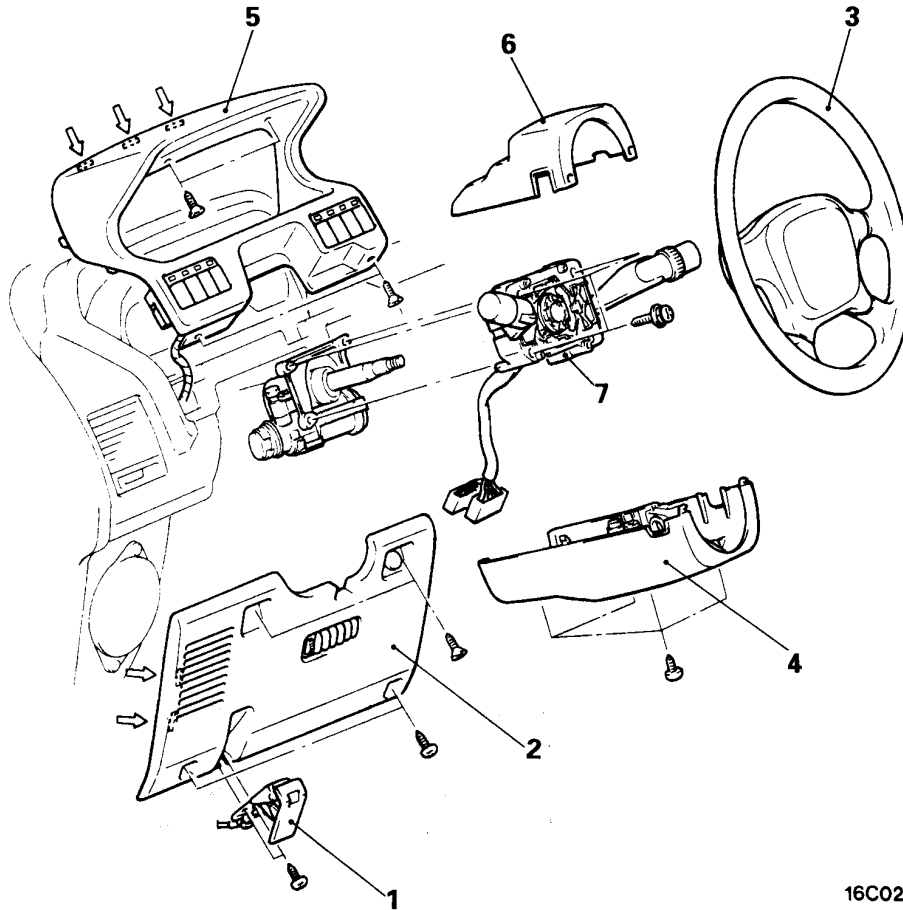
NOTE

*: Vehicles with SRS

COLUMN SWITCH <VEHICLES WITHOUT SRS>

E54HH--

REMOVAL AND INSTALLATION



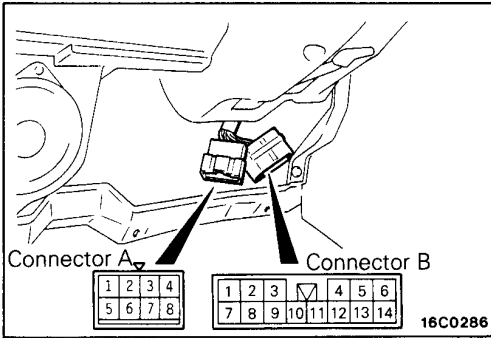
16C0264

Removal steps

1. Hood lock release handle
2. Instrument panel under cover
3. Steering wheel (Refer to GROUP 37A – Steering Wheel)
4. Column cover lower
5. Meter hood
6. Column cover upper
7. Column switch

NOTE

↔ The mark indicates the metal clip positions.



INSPECTION

- (1) Remove the instrument panel under cover.
- (2) Remove the column switch connector.
- (3) Operate the switch and check for continuity between the terminals.

Terminal No.		Connector A			Connector B							
		1	5	6	6	3	9	10	11	12	14	
Switch position												
TURN SIGNAL	RH							○	—	○		
	OFF											
	LH							○	—	○		
LIGHTING	OFF											
	TAIL						○	—	○			○
	HEAD						○	—	○			○
DIMMER/PASSING	LOWER	○	—	○								
	UPPER		○	—	○							
	PASSING		○	—	○	○	—	○				

NOTE

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

WIPER AND WASHER SWITCH

Refer to GROUP 51 - Windshield Wiper and Washer

HEADLAMP WASHER SWITCH

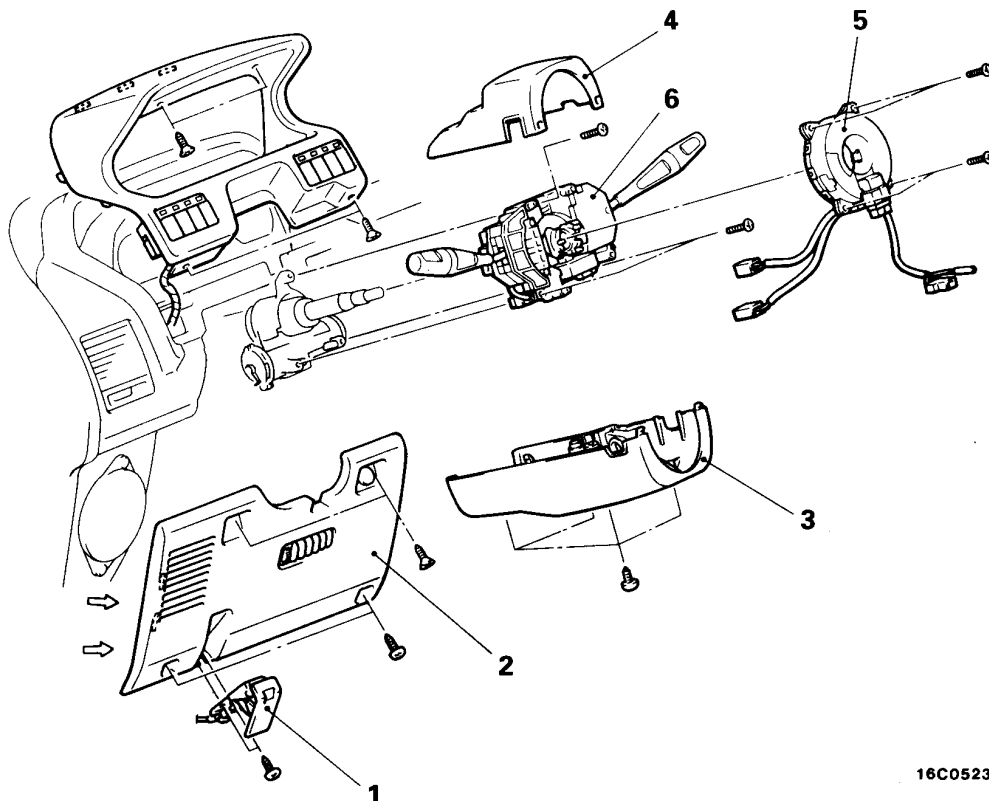
Refer to GROUP 51 - Headlamp Washer.

COLUMN SWITCH <VEHICLES WITH SRS>

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- Removal and Installation of Air Bag Module and Steering Wheel (Refer to GROUP 52B – Air Bag Module and Clock Spring)



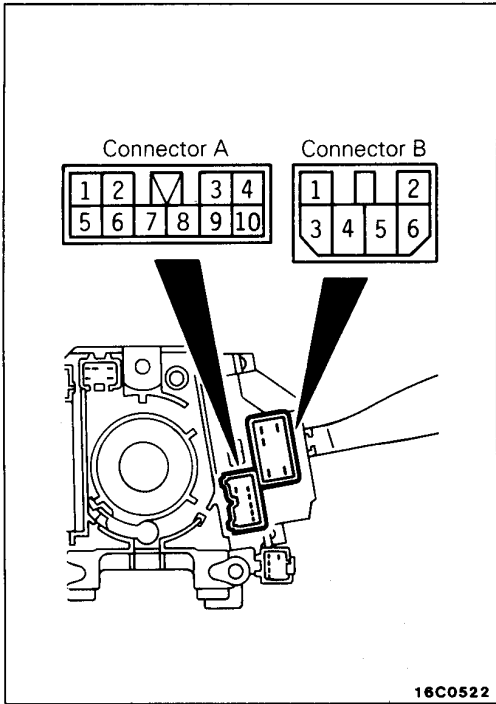
16C0523

Removal steps

1. Hood lock release handle
2. Instrument panel under cover
3. Column cover lower
4. Column cover upper
5. Clock spring (Refer to GROUP 52B – Air Bag Module and Clock Spring)
6. Column Switch

NOTE

⇔ The mark indicates the metal clip positions.



INSPECTION

Terminal No.		Connector A						Connector B											
		3	5	6	7	8	9	1	2	3	4	6							
TURN SIGNAL	RH																		
	OFF																		
	LH																		
LIGHTING	OFF																		
	TAIL																		
	HEAD																		
DIMMER/PASSING	LOWER																		
	UPPER																		
	PASSING																		

NOTE

- indicates that there is continuity between the terminals.
- *1: The dimmer switch is at lower position.
- *2: The dimmer switch is at upper position.

WIPER AND WASHER SWITCH

Refer to GROUP 51 – Windshield Wiper and Washer

HEADLAMP WASHER SWITCH

Refer to GROUP 51 – Headlamp Washer

HORN SYSTEM

E54IA--

SPECIFICATIONS

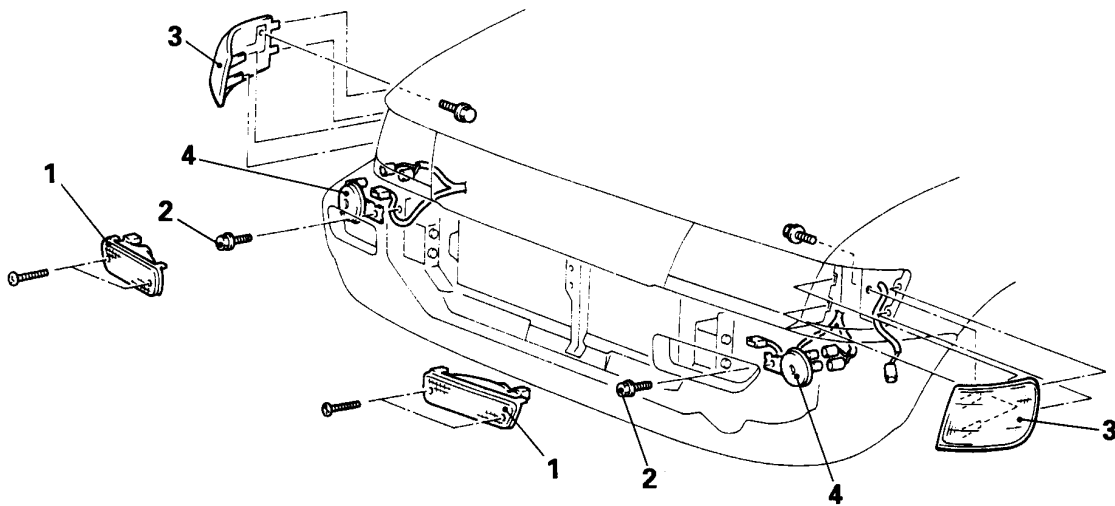
GENERAL SPECIFICATIONS

Items	Specifications
Type	Flat type
Effective sounding voltage	V 11.5–15
Power consumption	A 3.5
Sound level	dB
"low" sound	105–115
"high" sound	105–115
Fundamental frequency	Hz
"low" sound	370
"high" sound	430
Identification colour	
"low" sound	Black
"high" sound	White

HORN

E54IPAM

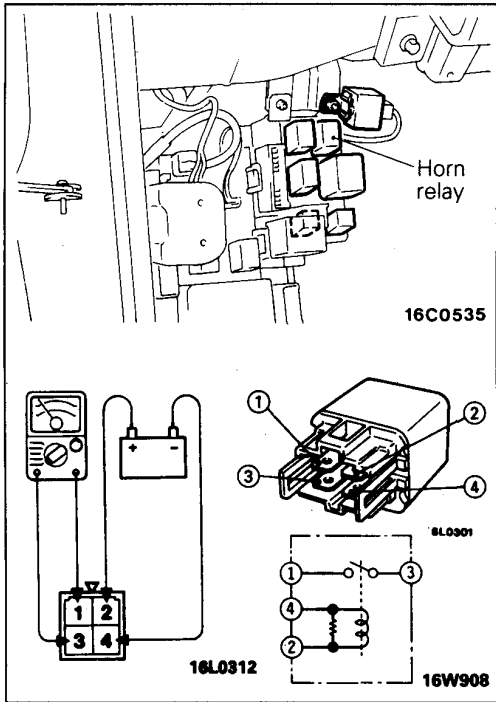
REMOVAL AND INSTALLATION



16C0233

Removal steps

1. Front turn signal lamp
2. Bolt
3. Position lamp (Refer to P.54-21.)
4. Horn



INSPECTION

HORN RELAY <Vehicles with SRS>

Apply battery voltage to terminal 2, and check the continuity between the terminals when terminal 4 is earthed.

Power is supplied	1-3 terminals	Continuity
Power is not supplied	1-3 terminals	No continuity
	2-4 terminals	Continuity

NOTES

CIGARETTE LIGHTER

SPECIFICATIONS

GENERAL SPECIFICATIONS

E54JA--

Items		Specifications
Max. input	W	120
Reset time second		Within 18
Thermal fuse fusion temperature	°C (°F)	180–250 (356–482)

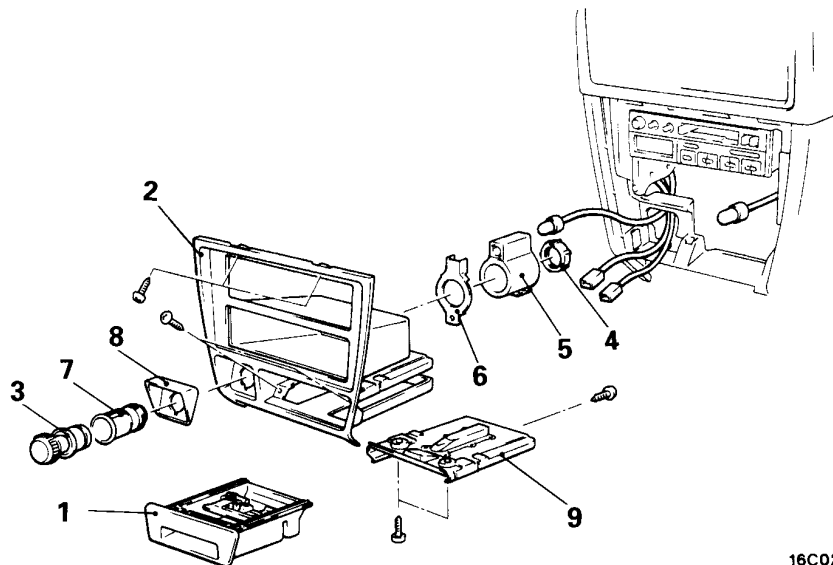
CIGARETTE LIGHTER

REMOVAL AND INSTALLATION

E54JH--

Removal steps

1. Ashtray
2. Center panel
3. Plug
4. Fixing ring
5. Socket case
6. Plate
7. Socket
8. Protector
9. Ashtray holder



16C0287

INSPECTION

E54JJAD

- Take out the plug, and check for a worn edge on the element spot connection, and for shreds of tobacco or other material on the element.
- Using a circuit tester, check the continuity of the element.

CAUTIONS FOR USE OF THE CIGARETTE LIGHTER SOCKET AS AUXILIARY POWER SOURCE

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 in the receptacle.
Use of "plug-in" type accessories may damage the receptacle and result in poor retention of the lighter.
3. The specified load should be strictly observed, because overloaded cord burns the ignition switch and harness.

CLOCK

SPECIFICATIONS


GENERAL SPECIFICATIONS

E54KA--

Items	Specifications
Type Display method Standard error (seconds/day)	Crystal oscillator Fluorescent digital display ± 2 [at 20°C (68°F)]

SPECIAL TOOLS

E54KF--

Tool	Number	Name	Use
	MB990784	Ornament remover	Removal of Clock

AUDIO SYSTEM**SPECIFICATIONS**

E54LA--

GENERAL SPECIFICATIONS

Items	Specifications	
Radio		
Model	AR-4325	RX-264
Receiving band	AM/FM, MPX	AM/FM, MPX
Speaker		
Front		
Model	SR-10Z4-DK	SR-10WZ4-2-DK
Allowable input	W	
Rated input	5	15
Max. input	7	20
Rear		
Model	–	SR-16SZ4-2-WK
Allowable input	W	
Rated input	–	15
Max. input	–	30
Antenna		
Type	Pole antenna	Pole antenna

TROUBLESHOOTING

E54LC

QUICK-REFERENCE TROUBLESHOOTING CHART

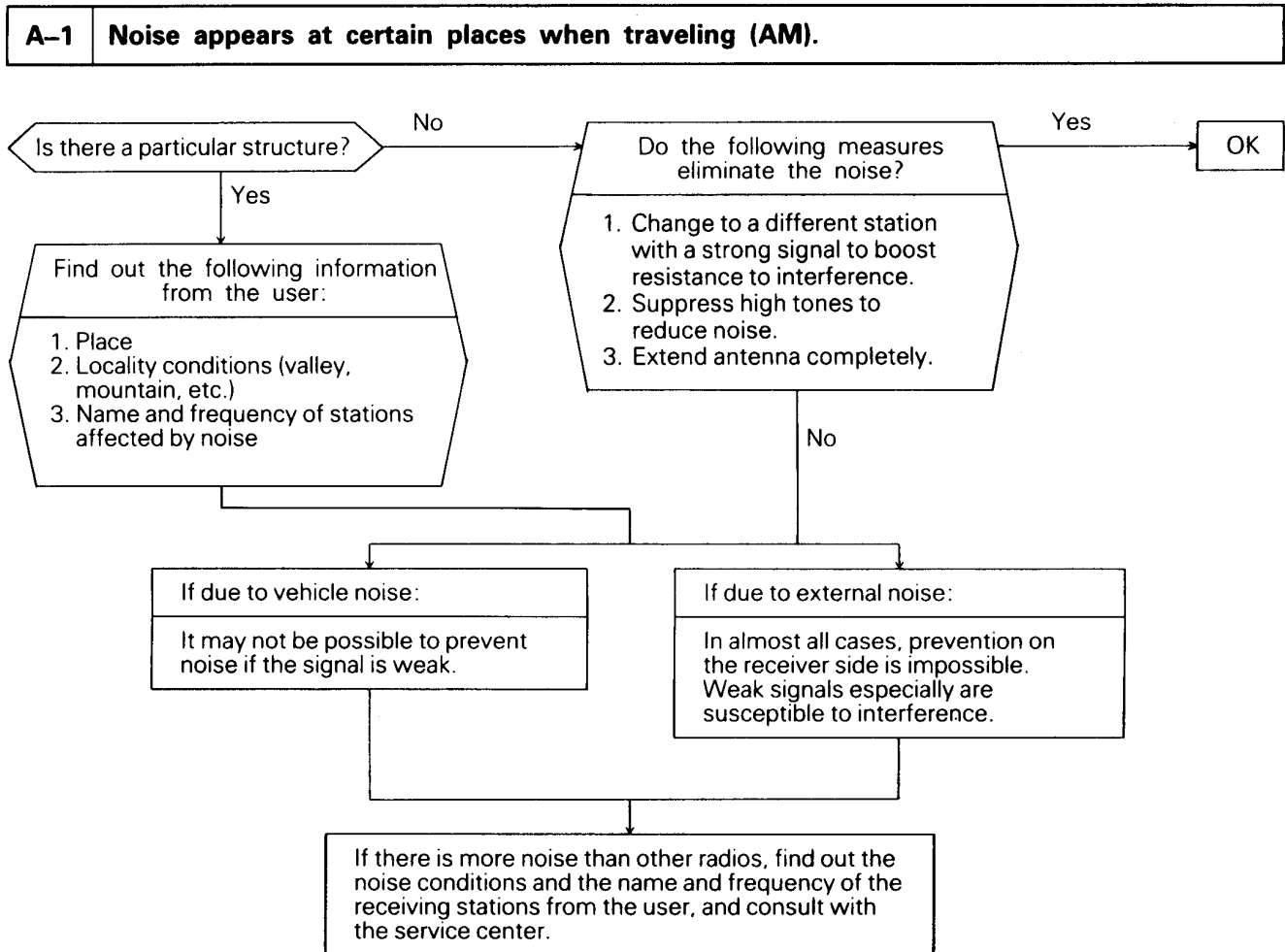
Items	Problem symptom	Relevant chart
Noise	Noise appears at certain places when traveling (AM).	A-1
	Noise appears at certain places when traveling (FM).	A-2
	Mixed with noise, only at night (AM).	A-3
	Broadcasts can be heard but both AM and FM have a lot of noise	A-4
	There is more noise either on AM or on FM.	A-5
	There is noise when starting the engine.	A-6
	Some noise appears when there is vibration or shocks during traveling	A-7
	Noise sometimes appears on FM during traveling.	A-8
	Ever-present noise.	A-9
Radio	When switch is set to ON, no power is available.	B-1
	No sound from one speaker.	B-2
	There is noise but no reception for both AM and FM or no sound from AM, or no sound from FM.	B-3
	Insufficient sensitivity.	B-4
	Distortion on AM or on both AM and FM.	B-5
	Distortion on FM only.	B-6
	Too few automatic select stations.	B-7
	Insufficient memory (preset stations are erased).	B-8
Tape player	Cassette tape will not insert.	C-1
	No sound.	C-2
	No sound from one speaker.	C-3
	Sound quality is poor, or sound is weak.	C-4
	Cassette tape will not eject.	C-5
	Uneven revolution. Tape speed is fast or slow.	C-6
	Faulty auto reverse.	C-7
	Tape gets caught in mechanism.	C-8

NOTE

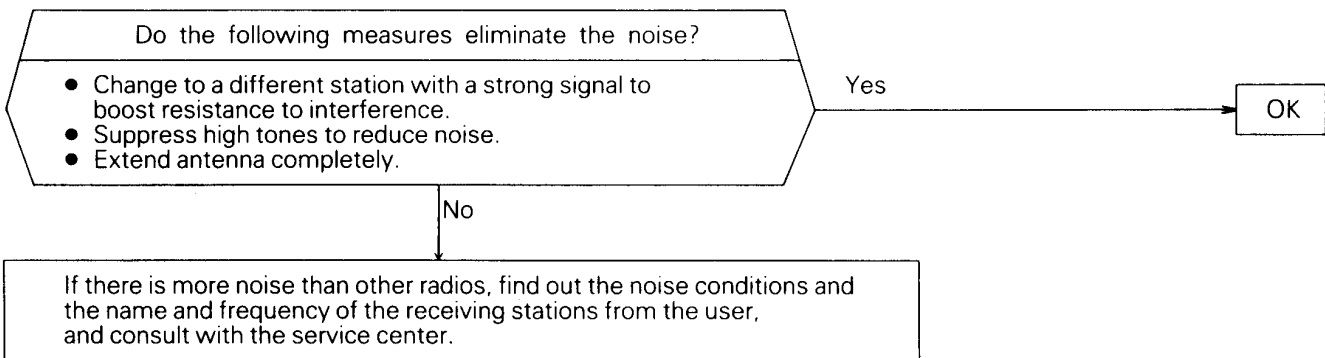
Refer to problem symptoms of AM radio for LW and MW radio.

CHART

A. NOISE



A-2 Noise appears at certain places when traveling (FM).



NOTE

About FM waves:

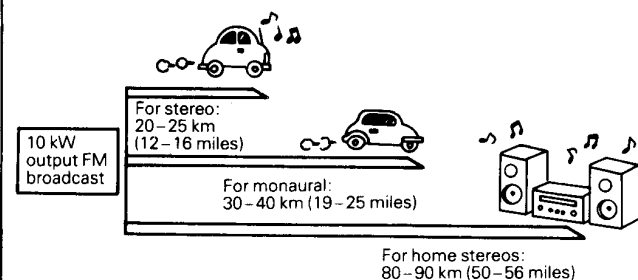
FM waves have the same properties as light, and can be deflected and blocked. Wave reception is not possible in the shadow of obstructions such as buildings or mountains.

1. The signal becomes weak as the distance from the station's transmission antenna increases. Although this may vary according to the signal strength of the transmitting station and intervening geographical formations or buildings, the area of good reception is approx. 20 – 25 km (12 – 16 miles) for stereo reception, and 30 – 40 km (19 – 25 miles) for monaural reception.
2. The signal becomes weak when an area of shadow from the transmitting antenna (places where there are obstructions such as mountains or buildings between the antenna and the car),

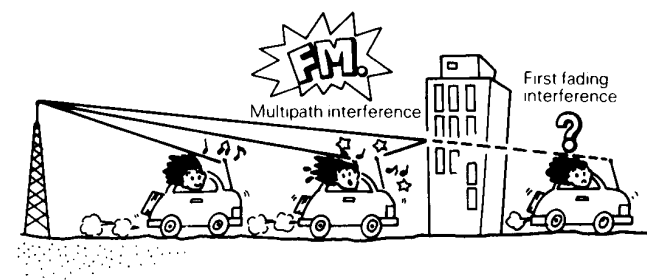
and noise will appear. <This is called first fading, and gives a steady buzzing noise.>

3. If a direct signal hits the antenna at the same time as a signal reflected by obstructions such as mountains or buildings, interference of the two signals will generate noise. During traveling, noise will appear each time the vehicle's antenna passes through this kind of obstructed area. The strength and interval of the noise varies according to the signal strength and the conditions of deflection. <This is called multipath noise, and is a repetitious buzzing.>
4. Since FM stereo transmission and reception has a weaker field than monaural, it is often accompanied by a hissing noise.

FM Broadcast Good Reception Areas



FM Signal Characteristics and Signal Interference



16A0663

16A0664

A-3 Mixed with noise, only at night (AM).

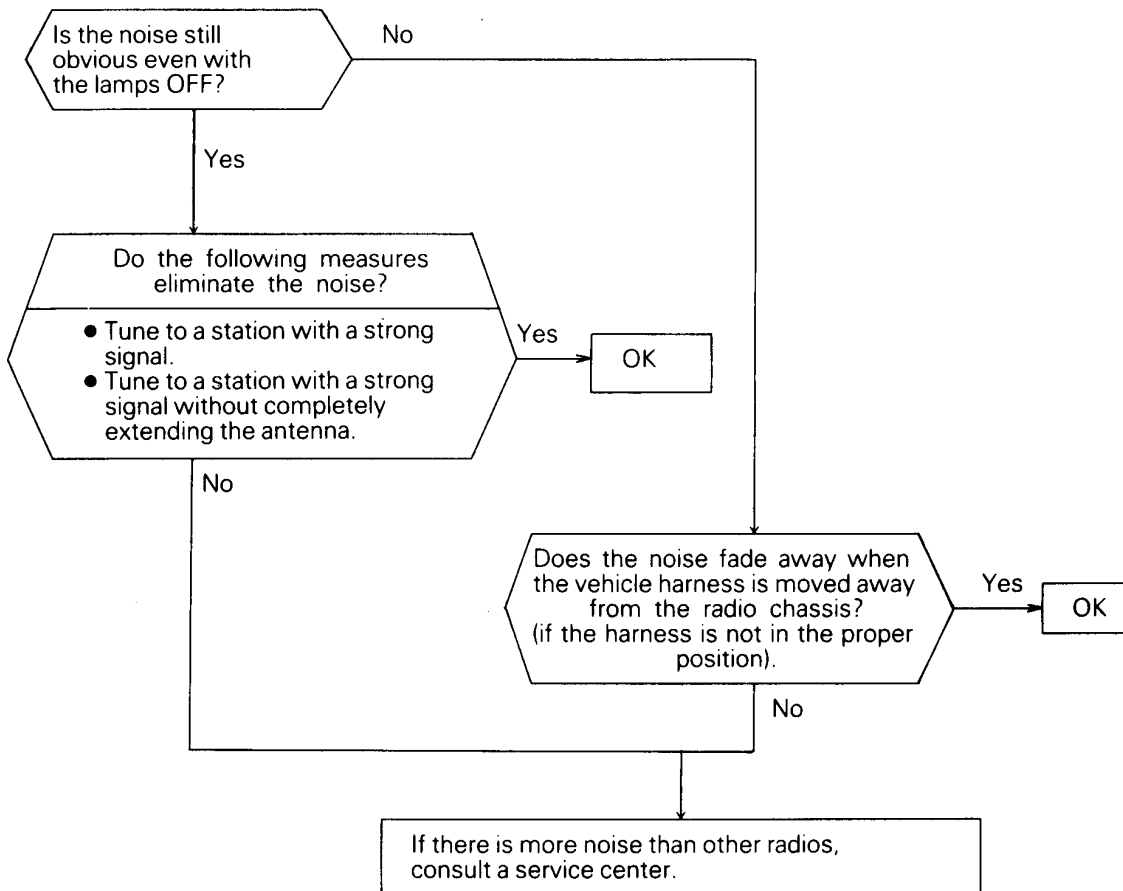
The following factors can be considered as possible causes of noise appearing at night.

1. Factors due to signal conditions: Due to the fact that long-distance signals are more easily received at night, even stations that are received without problem during the day may experience interference in a general worsening of reception conditions. The weaker a station is the more susceptible it is to interference, and a change to a different station or the appearance of a beating

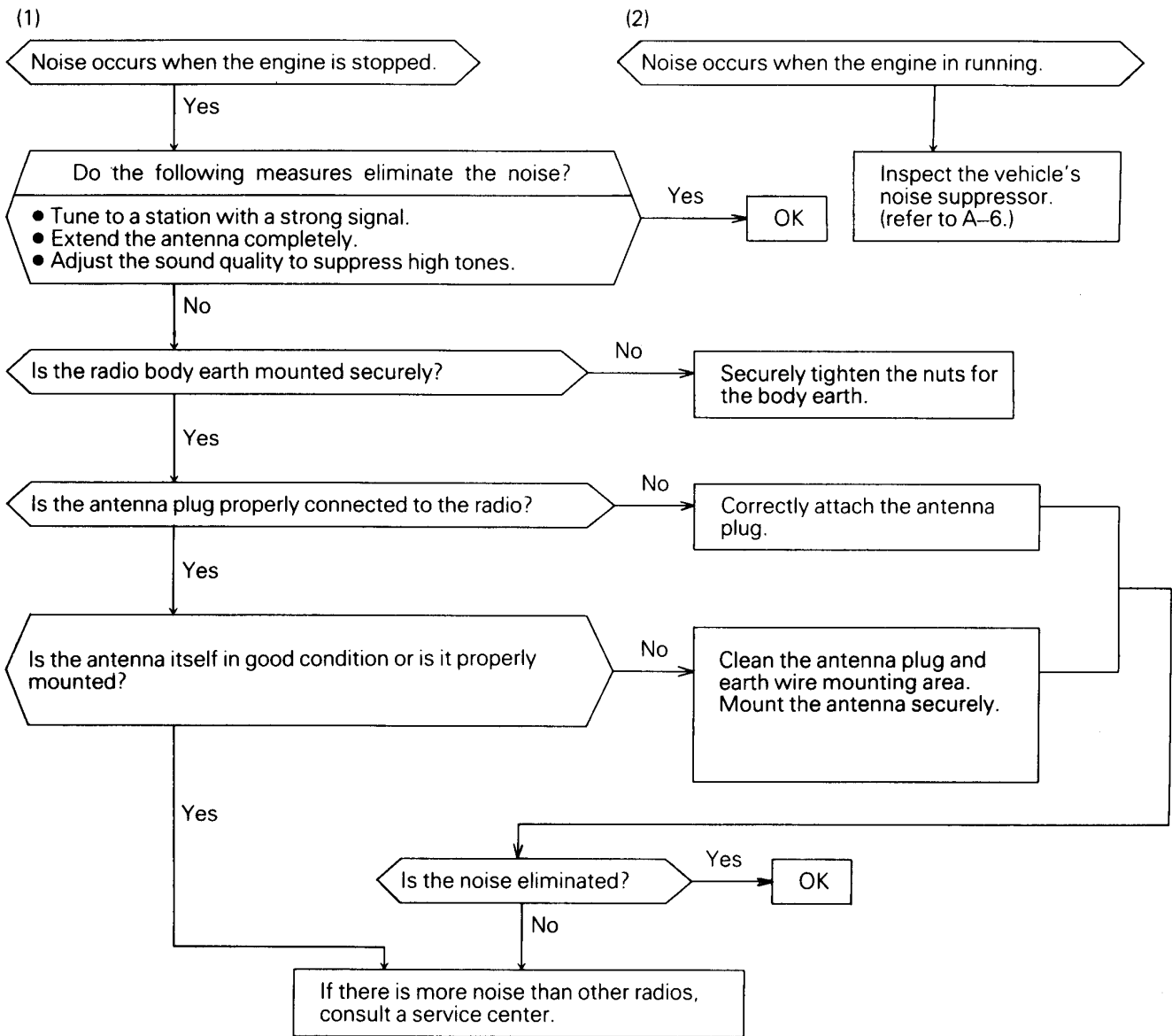
sound* may occur.

Beat sound*: Two signals close in frequency interfere with each other, creating a repetitious high-pitched sound. This sound is generated not only by sound signals but by electrical waves as well.

2. Factors due to vehicle noise: Alternator noise may be a cause.



A-4 Broadcasts can be heard but both AM and FM have a lot of noise.



NOTE

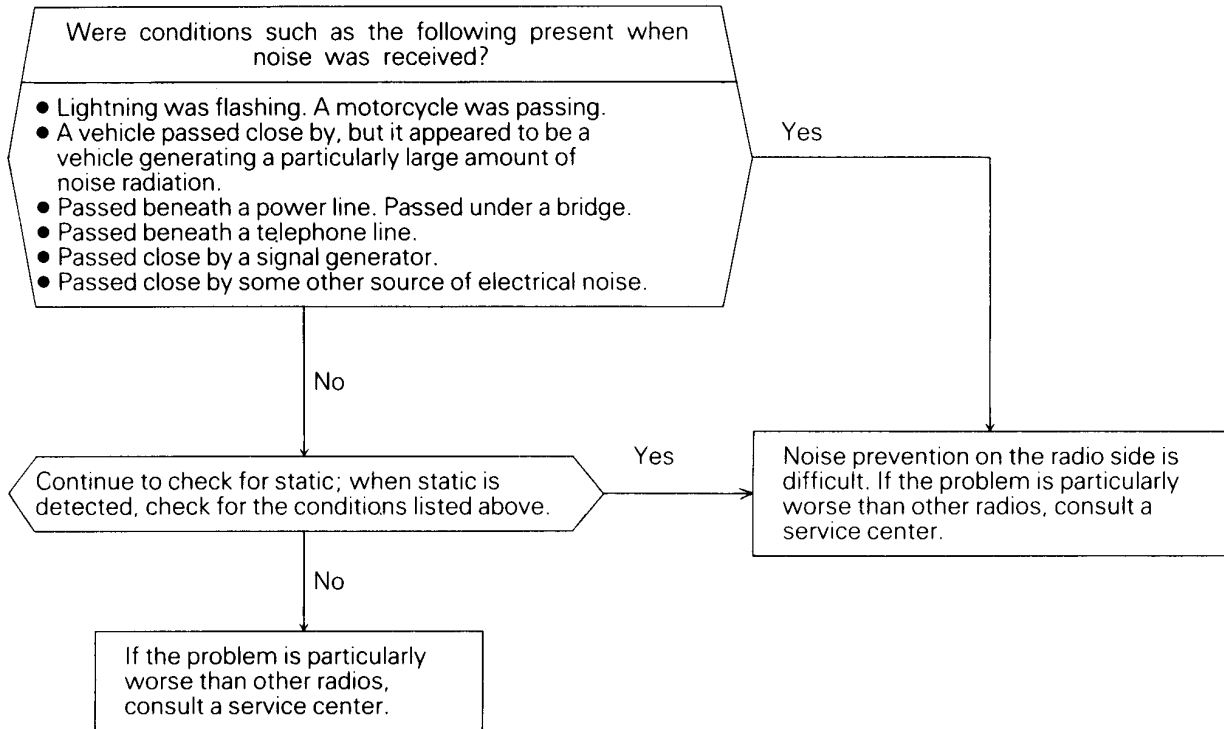
About noise encountered during FM reception only. Due to differences in FM and AM systems, FM is not as susceptible as AM to interference from engines, power lines, lightning, etc. On the other hand, there are cases due to the characteristics of FM waves of noise or distortion generated by typical

noise interference (first fading and multipath). (Refer to A-2.)

<Noise (hissing) occurs in weak signal areas such as mountainous regions, but this is not due to a problem with the radio.>

A-5 There is more noise either on AM or on FM.

1. There is much noise only on AM
Due to differences in AM and FM systems, AM is more susceptible to noise interference.



2. There is much noise only on FM
Due to differences in FM and AM systems, FM is not as susceptible as AM to interference from engines, power lines, lightning, etc. On the other hand, there are cases due to the characteristics of FM waves of noise or distortion

generated by typical noise interference (first fading and multipath). (Refer to A-2) <Noise (hissing) occurs in weak signal areas such as mountainous regions, but this is not due to a problem with the radio.>

A-6 There is noise when starting the engine.

Noise type Sounds are in parentheses ().	Conditions	Cause	Inspection or replacement	
			Noise-preventive part	Mounting place (next page)
AM, FM: Ignition noise (Popping, Snapping, Cracking, Buzzing)	<ul style="list-style-type: none"> Increasing the engine speed causing the popping sound to speed up, and volume decreases. Disappears when the ignition switch is turned to ACC. 	<ul style="list-style-type: none"> Mainly due to the spark plugs. Due to the engine noise. 	<ul style="list-style-type: none"> Earth cable Noise capacitor 	<p>2, 3</p> <p>1</p>
Other electrical components	–	Noise may appear as electrical components become older.	Repair or replace electrical components.	
Static electricity (Cracking, Crinkling)	<ul style="list-style-type: none"> Disappears when the vehicle is completely stopped. Severe when the clutch is engaged. 	Occurs when parts or wiring move for some reason and contact metal parts of the body.	Return parts or wiring to their proper position.	
	<ul style="list-style-type: none"> Various noises are produced depending on the body part of the vehicle. 	Due to detachment from the body of the front hood, bumpers, exhaust pipe and muffler, suspension, etc.	Earth parts by bonding. Cases where the problem is not eliminated by a single response to one area are common, due to several body parts being imperfectly earthed.	

Caution

- Connecting a high tension cable to the noise filter may destroy the noise filter and should never be done.**
- Check that there is no external noise. Since failure due this may result in misdiagnosis due to inability to identify the noise source, this operation must be performed.**
- Noise prevention should be performed by suppressing strong sources of noise step by step.**

NOTE

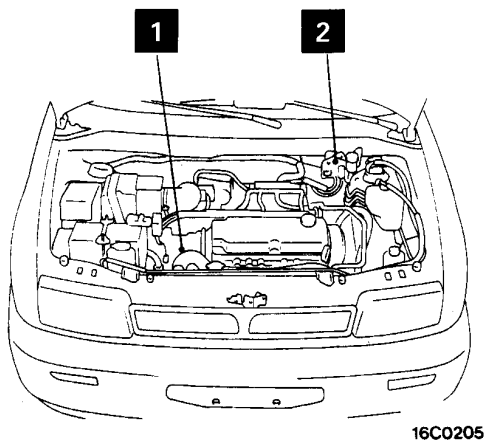
- Capacitor**
The capacitor does not pass D.C. current, but as the number of waves increases when it passes A.C. current, impedance (resistance against

A.C.) decreases, and current flow is facilitated. A noise suppressing condenser which takes advantage of this property is inserted between the power line for the noise source and the earth. This suppresses noise by earthing the noise component (A.C. or pulse signal) to the body of the vehicle.

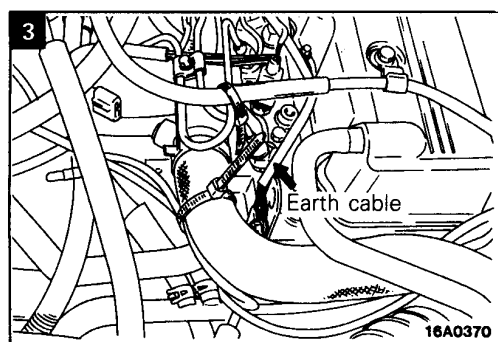
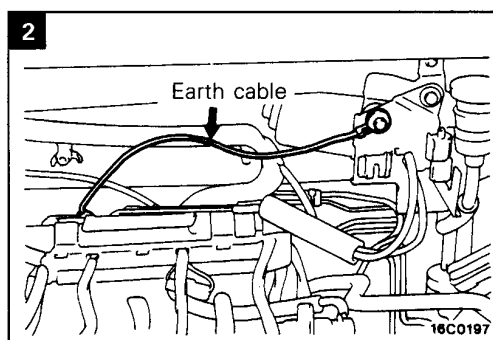
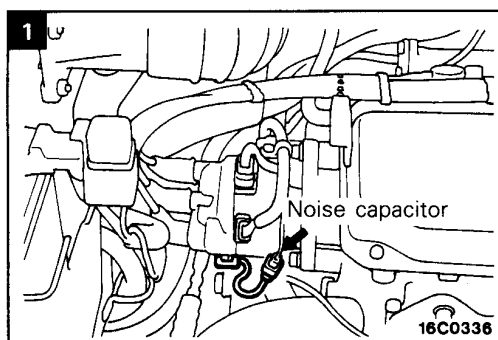
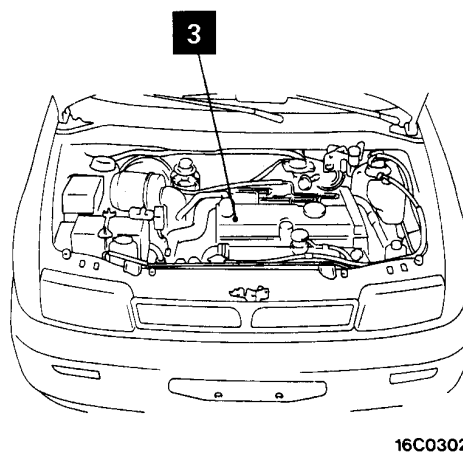
- Coil**
The coil passes D.C. current, but impedance rises as the number of waves increases relative to the A.C. current. A noise suppressing coil which takes advantage of this property is inserted into the power line for the noise source, and works by preventing the noise component from flowing or radiating out of the line.

NOISE SUPPRESSOR MOUNTING LOCATION

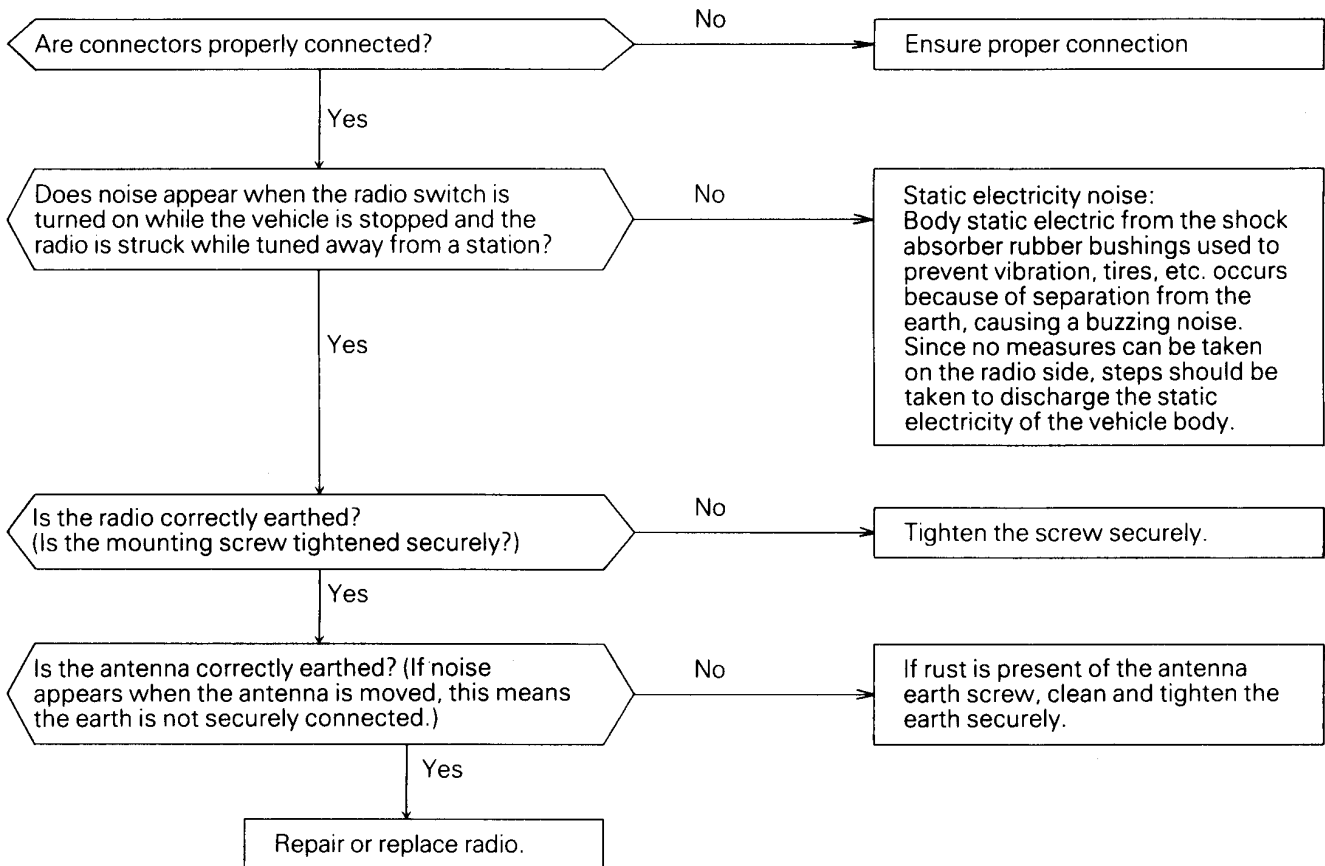
<Petrol-powered vehicles>



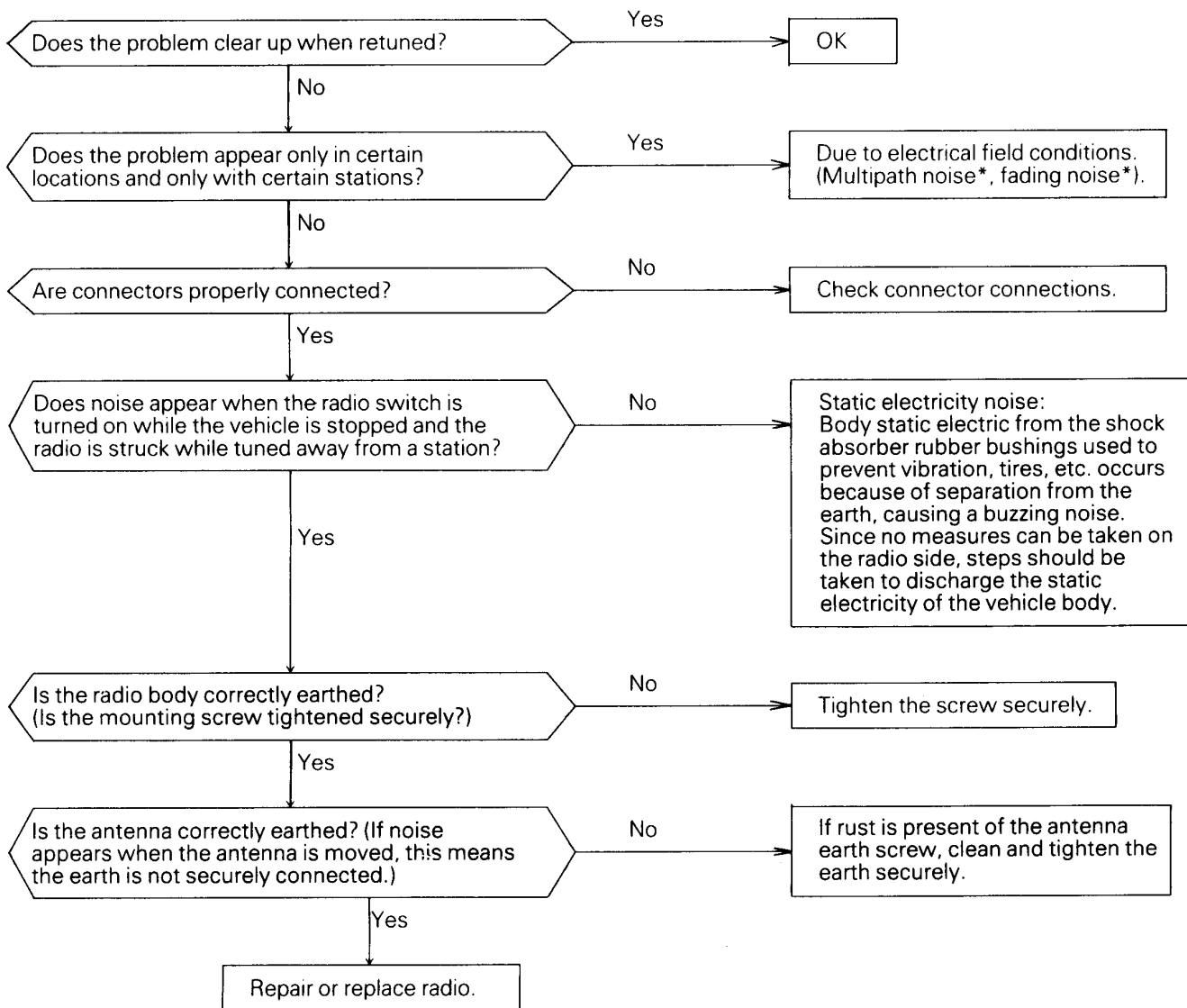
<Diesel-powered vehicles>



A-7 Some noise appears when there is vibration or shocks during traveling.



A-8 Noise sometimes appears on FM during traveling.



* About multipath noise and fading noise
 Because the frequency of FM waves is extremely high, it is highly susceptible to effects from geological formations and buildings. These effects disrupt the broadcast signal and obstruct reception in several ways.

- Multipath noise
 This describes the echo that occurs when the broadcast signal is reflected by a large

- Fading noise
 This is a buzzing noise that occurs when the broadcast beam is disrupted by obstructing objects and the signal strength fluctuates intricately within a narrow range.

A-9 Ever-present noise.

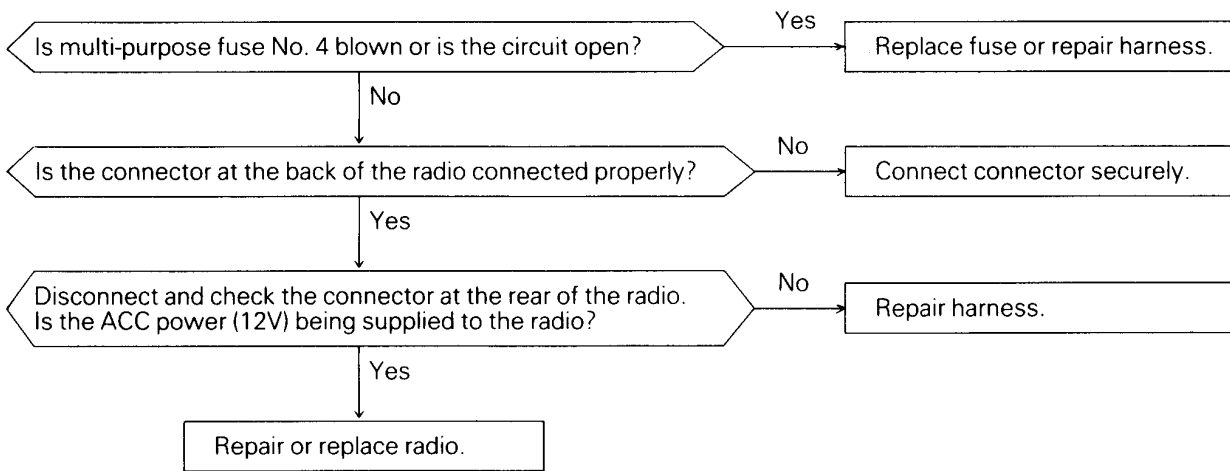
Noise is often created by the following factors, and often the radio is OK when it is checked individually.

- Traveling conditions of the vehicle
- Terrain of area traveled through
- Surrounding buildings
- Signal conditions
- Time period

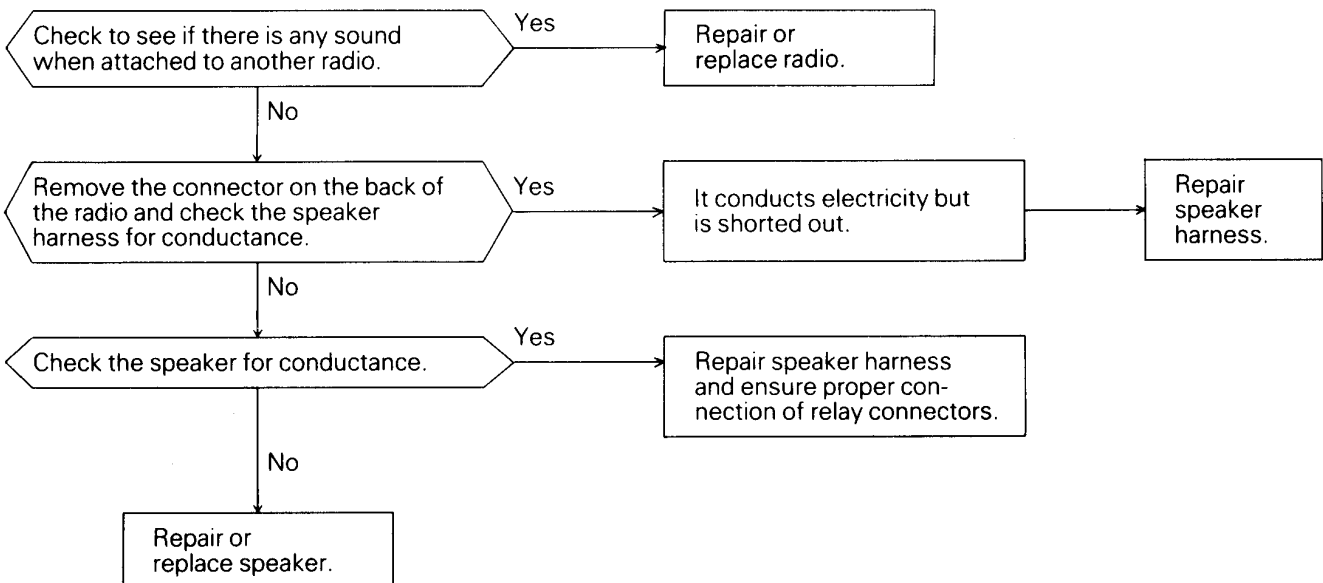
For this reason, if there are still problems with noise even after the measures described in steps A-1 to A-8 have been taken, get information on the factors listed above as well as determining whether the problem occurs with AM or FM, the station names, frequencies, etc., and contact a service center.

B. RADIO

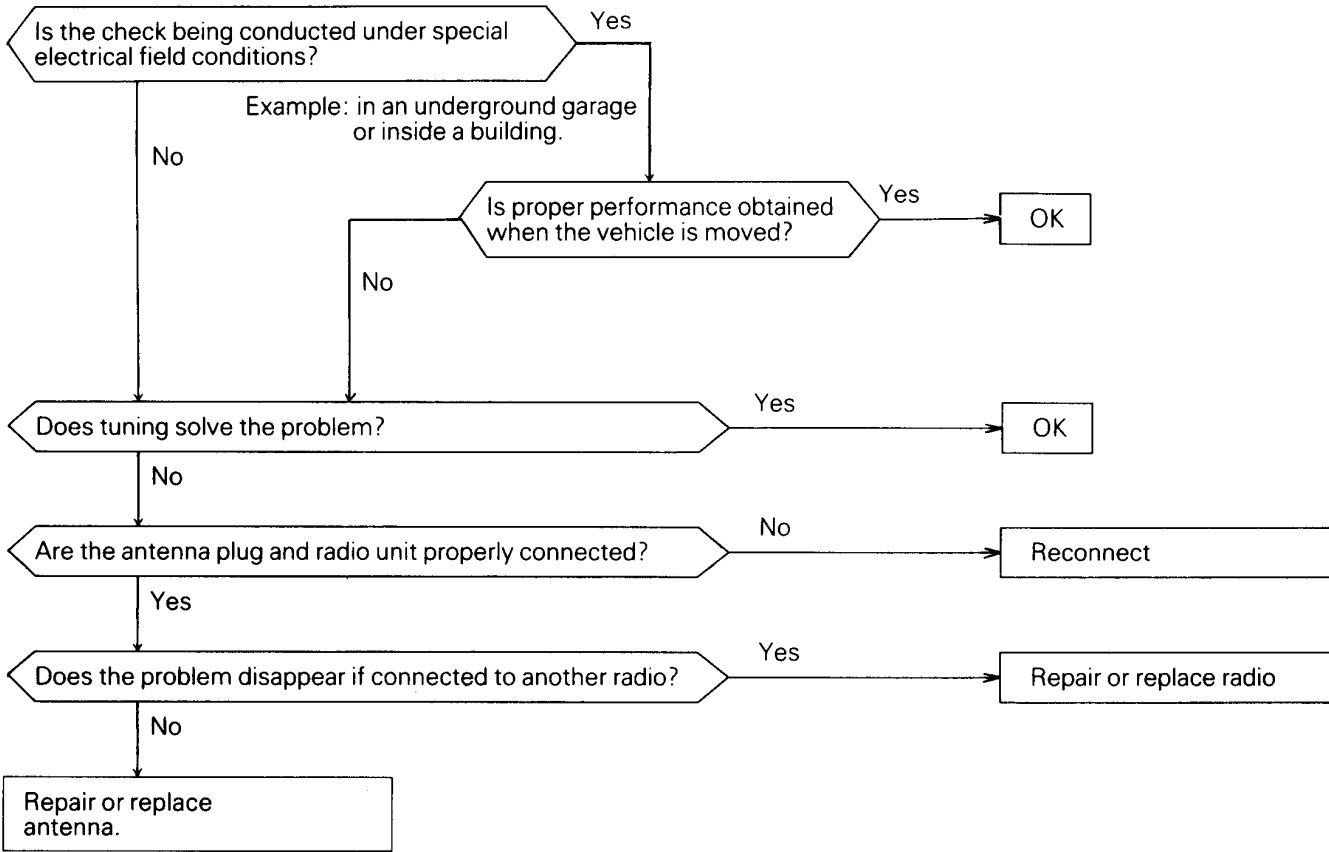
B-1 No power is supplied when the switch is set to ON.



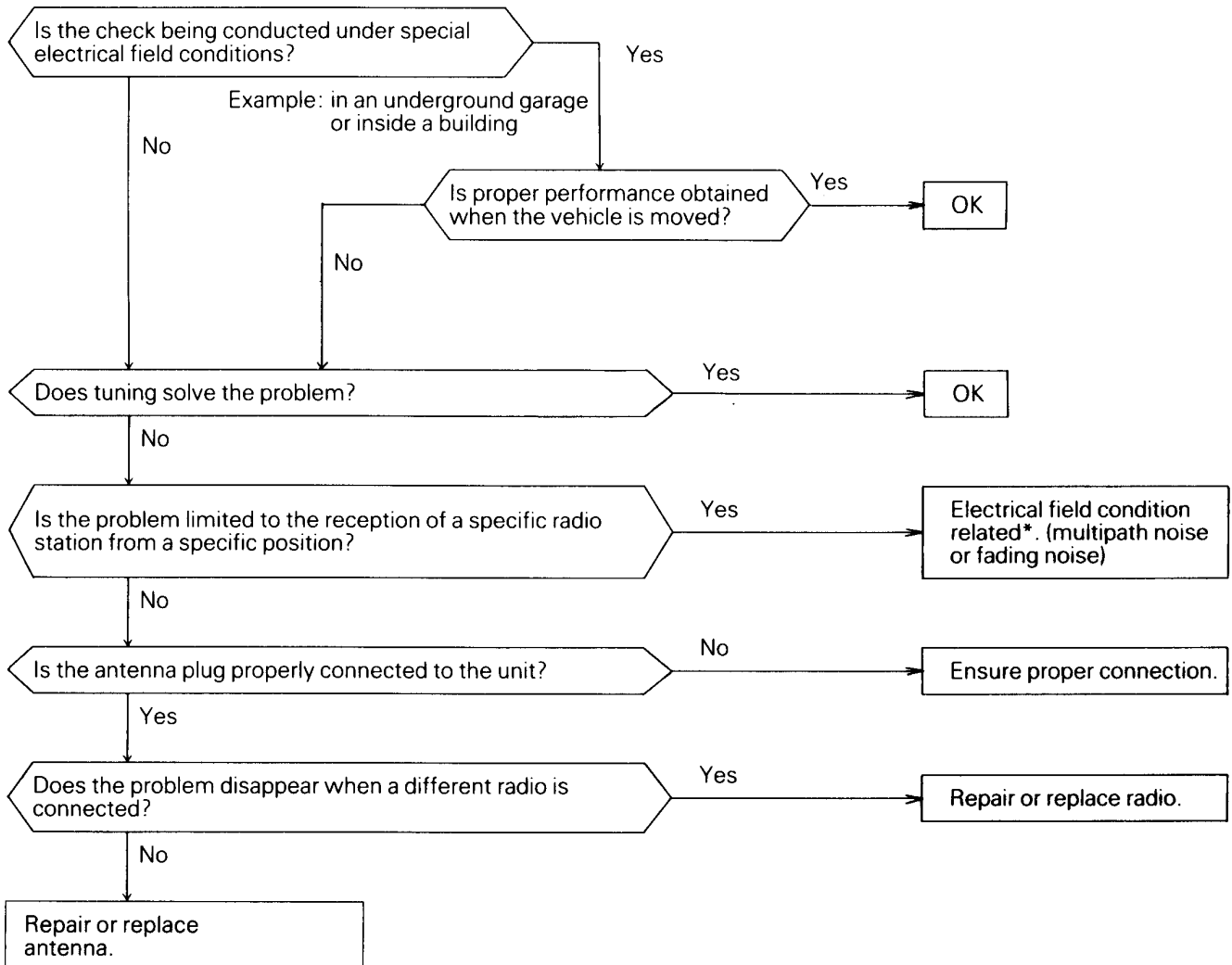
B-2 No sound from one speaker.



B-3 There is noise but no reception for both AM and FM or no sound from AM, or no sound from FM.

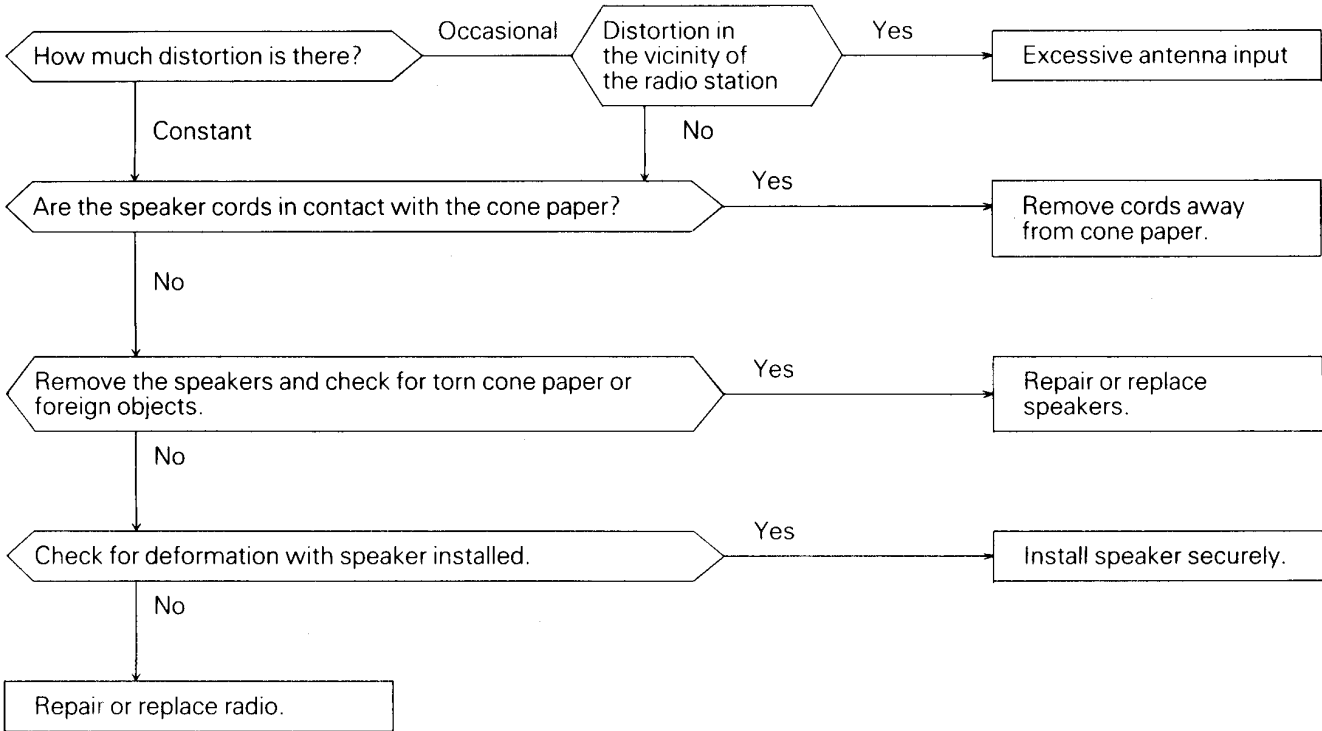


B-4 Insufficient sensitivity.

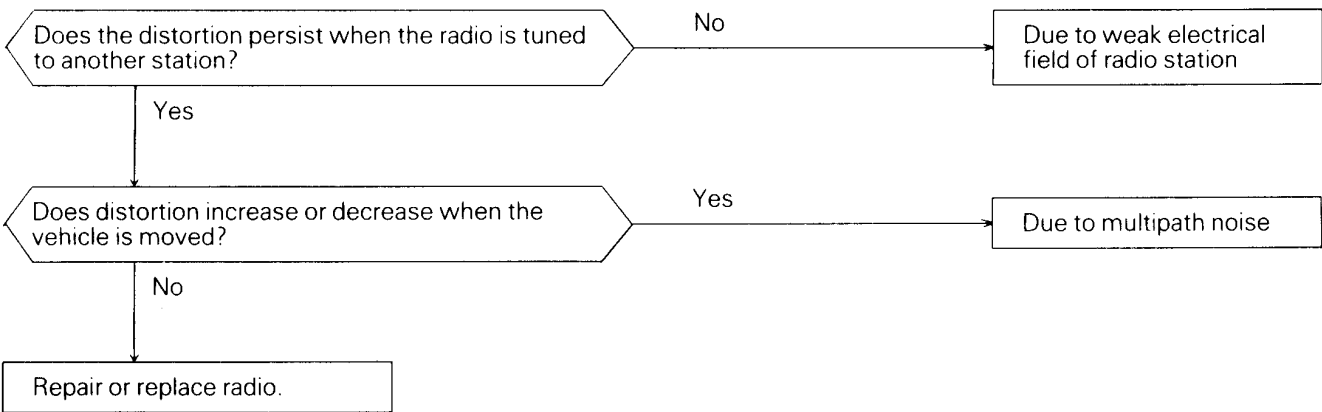


* For multipath noise and fading noise problems, refer to P.54-44.

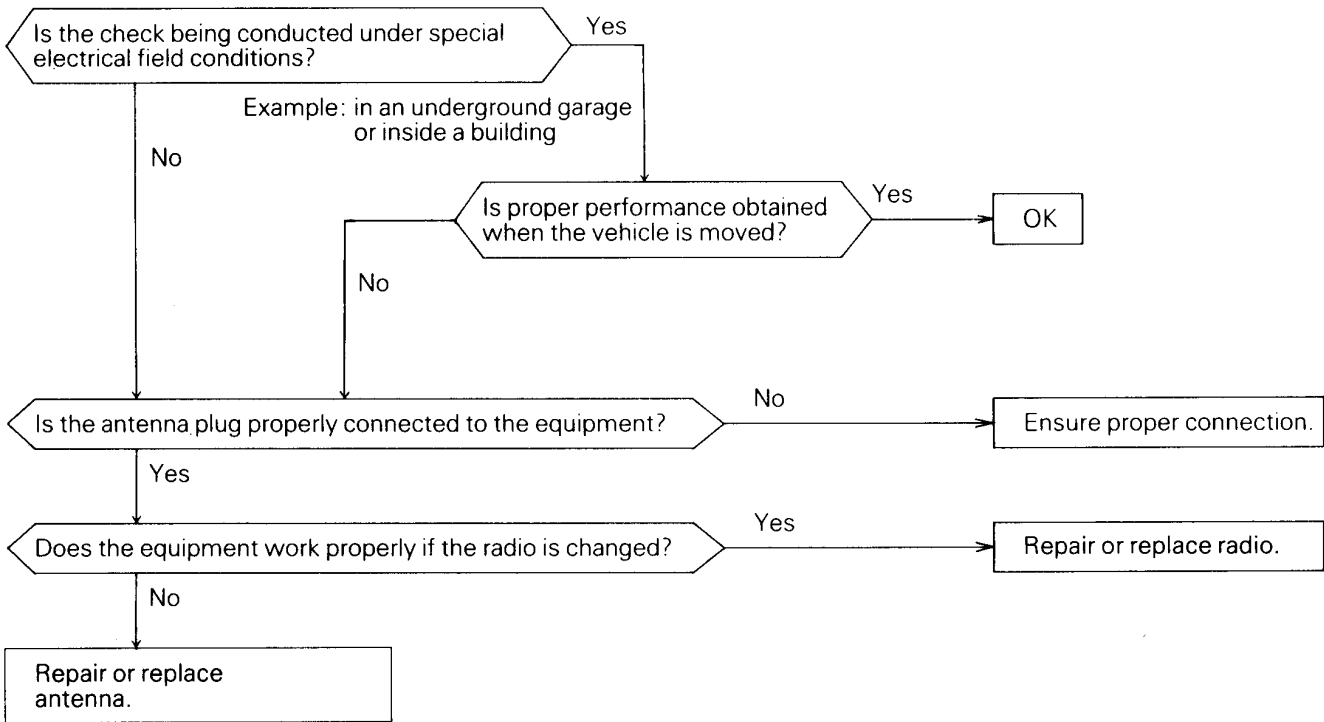
B-5 Distortion on AM or on both AM and FM.



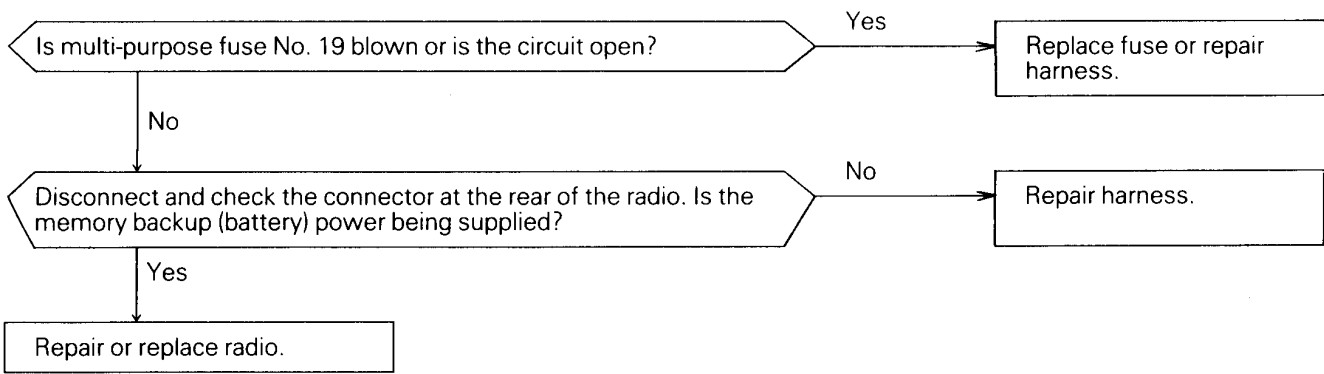
B-6 Distortion on FM only



B-7 Too few automatic select stations.

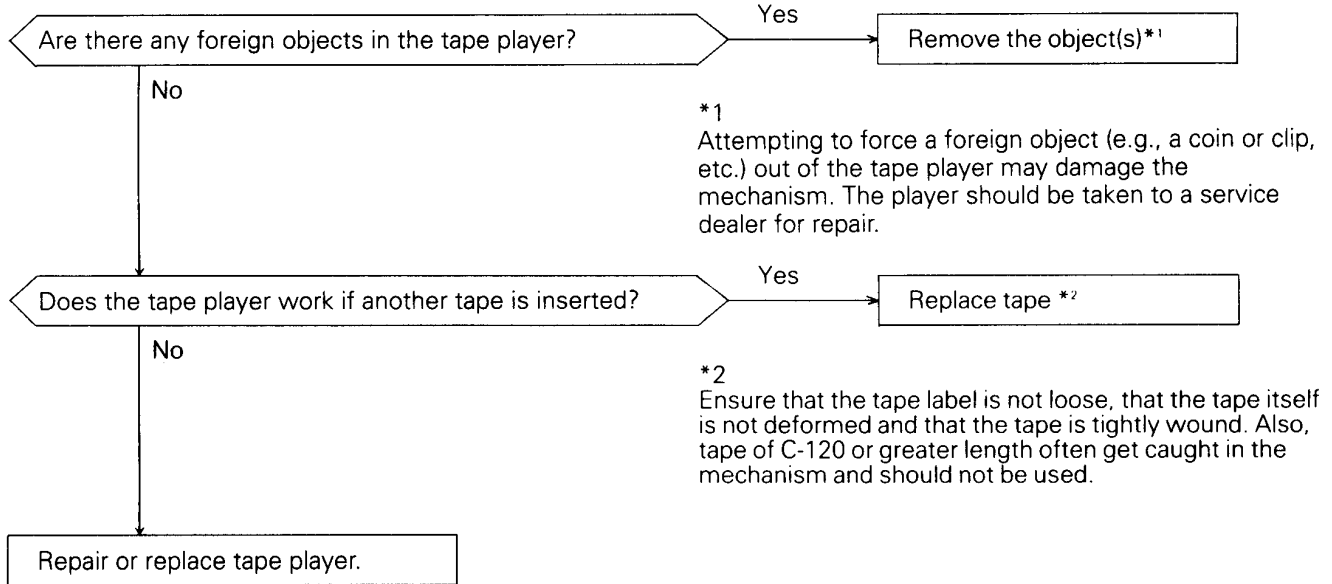


B-8 Insufficient memory (preset stations are erased).

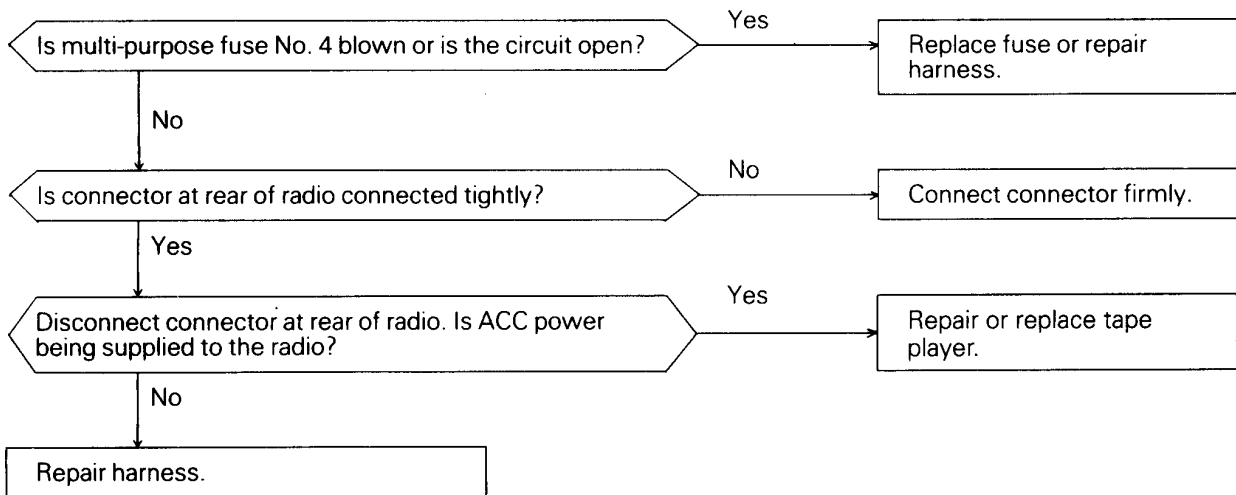


C. TAPE PLAYER

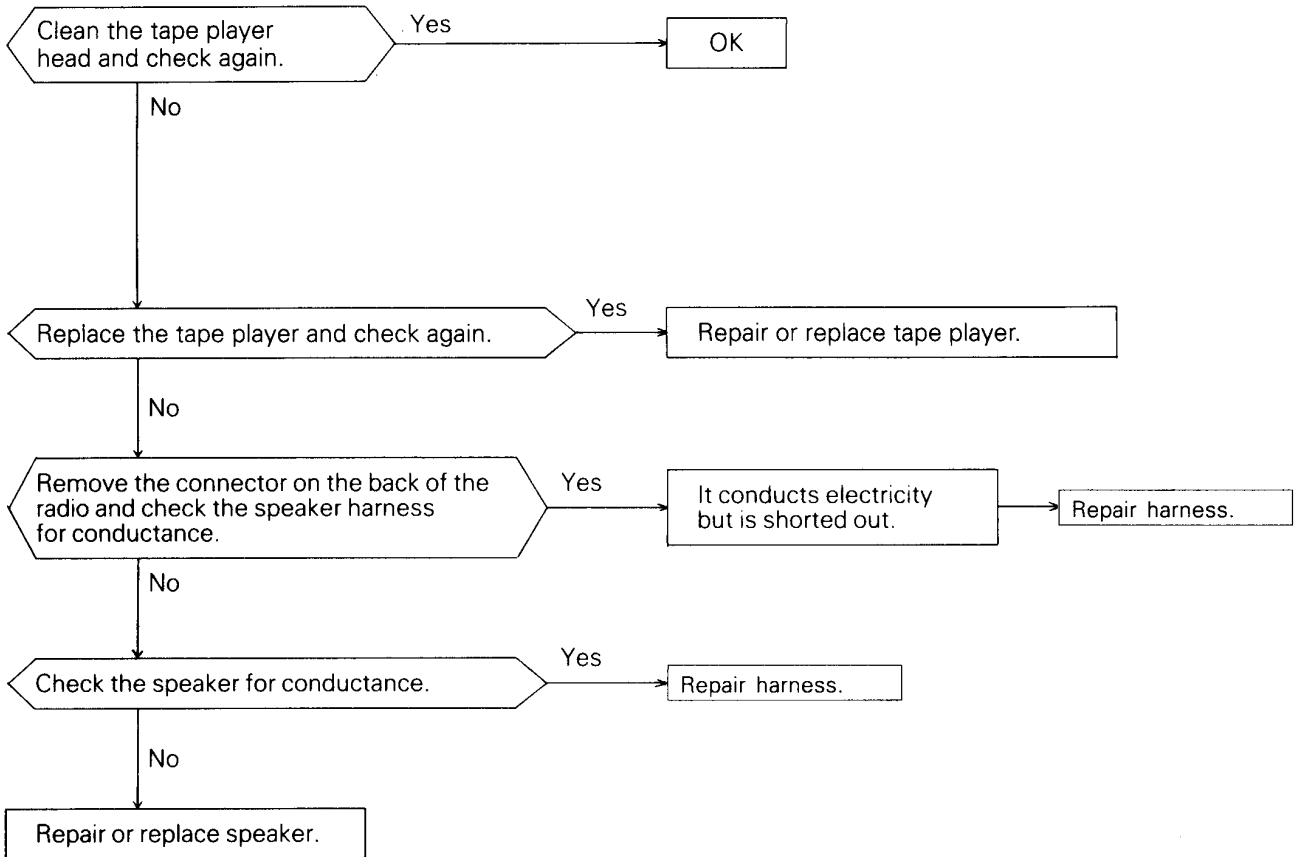
C-1 **Cassette tape will not be inserted.**



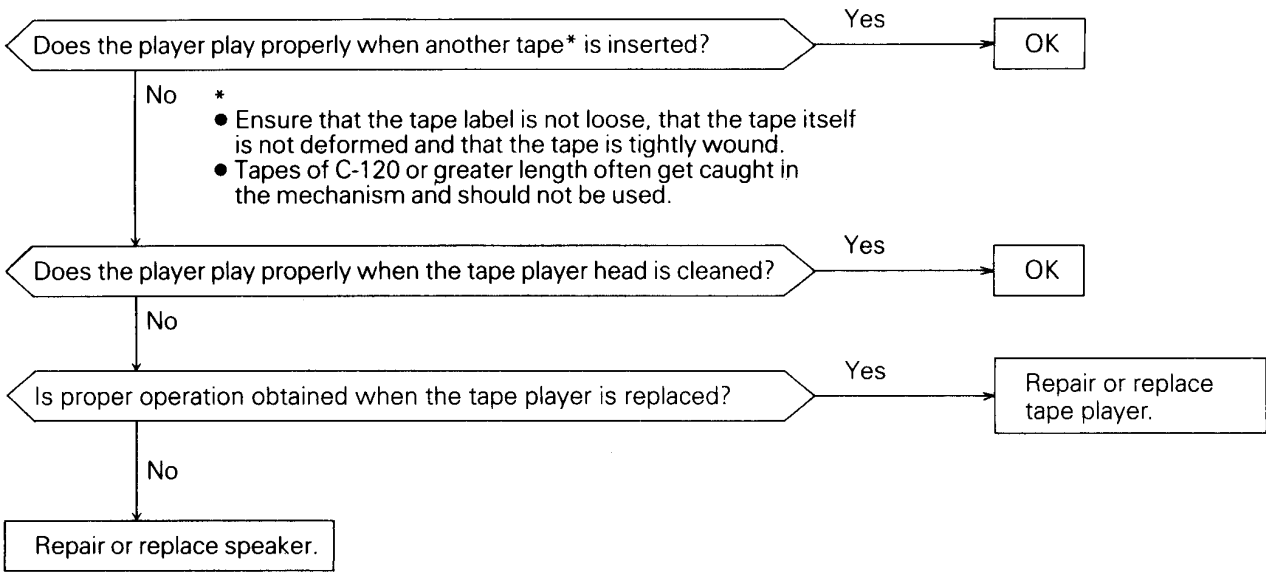
C-2 **No sound (even after a tape has been inserted).**



C-3 No sound from one speaker.



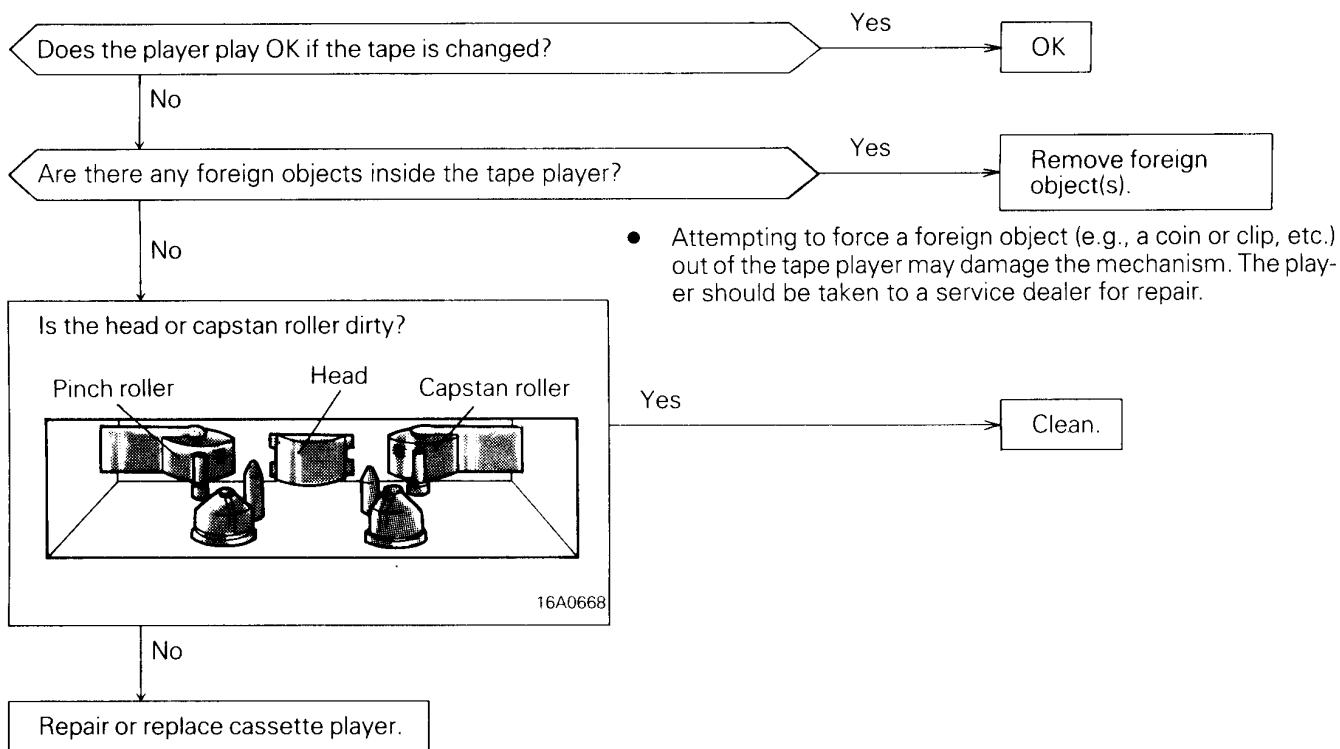
C-4 Sound quality is poor, or sound is weak.



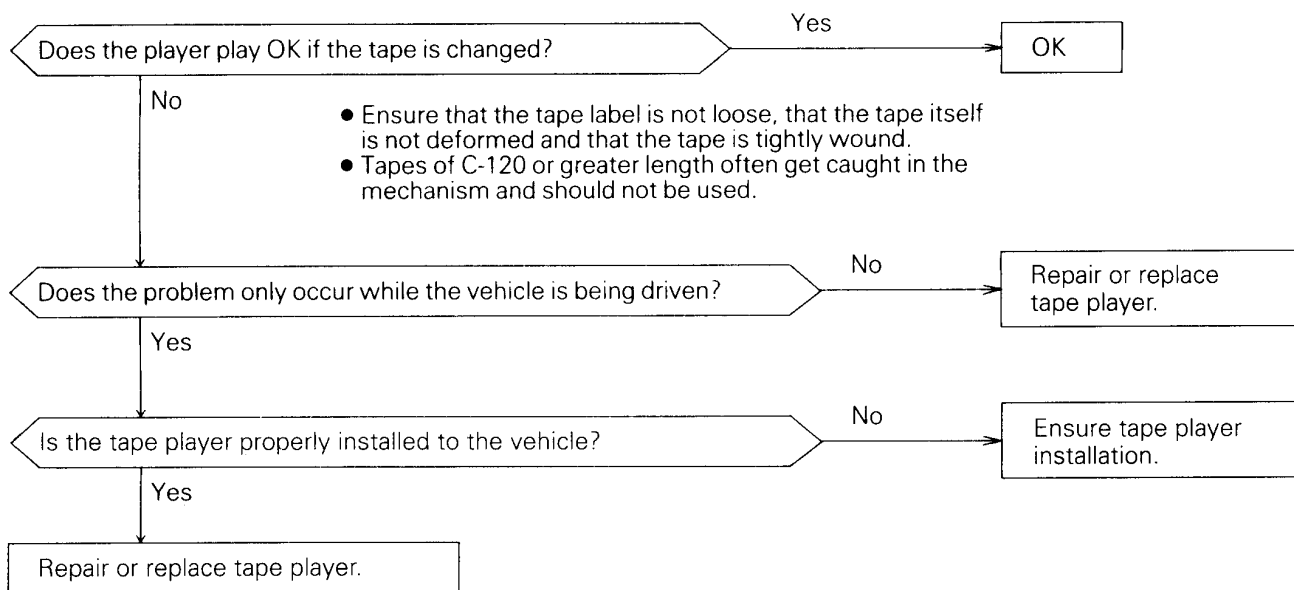
C-5 Cassette tape will not eject.

The problems covered here are all the result of the use of a bad tape (deformed or not properly tightened) or of a malfunction of the cassette player itself. Malfunctions involving the tape becoming caught in the mechanism and ruining the case are also possible, and attempting to force the tape out of the player can cause damage to the mechanism. The player should be taken to a service dealer for repair.

C-6 Uneven revolution. Tape speed is fast or slow.

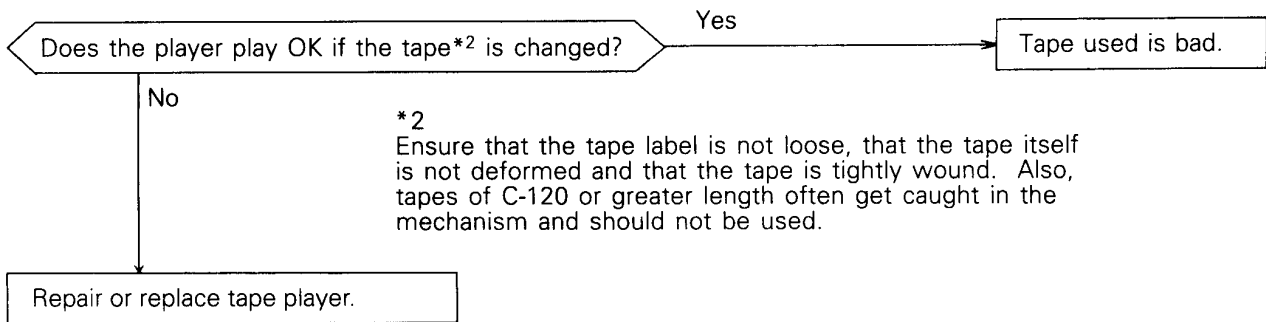


C-7 Faulty auto reverse.



C-8 Tape gets caught in mechanism*1.

*1
When the tape is caught in the mechanism, the case may not eject. When this occurs, do not try to force the tape out as this may damage the tape player mechanism. Take the cassette to a service dealer for repair.

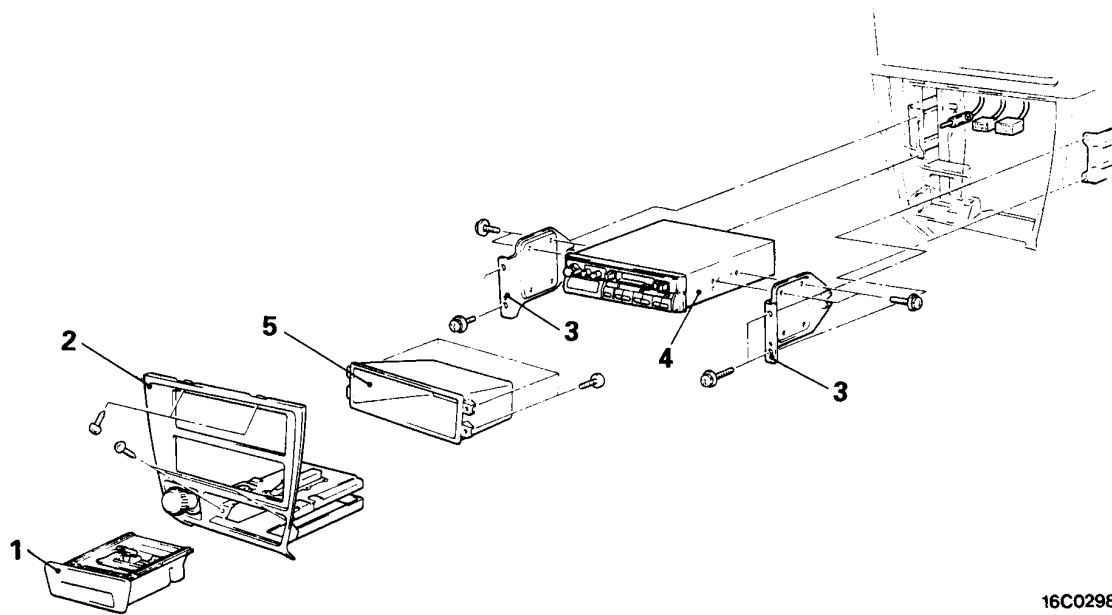


*2
Ensure that the tape label is not loose, that the tape itself is not deformed and that the tape is tightly wound. Also, tapes of C-120 or greater length often get caught in the mechanism and should not be used.

RADIO AND TAPE PLAYER

E54LHAP

REMOVAL AND INSTALLATION



16C0298

Removal steps

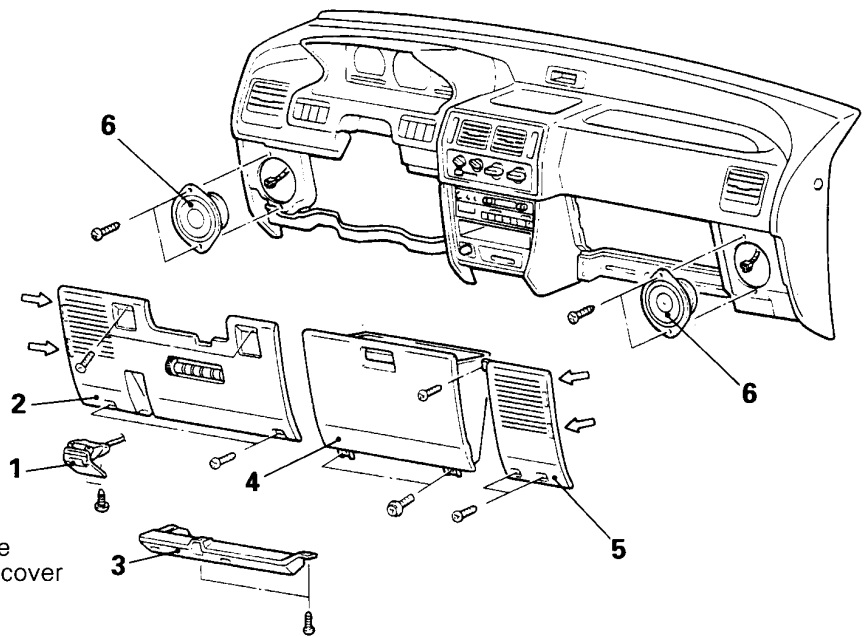
1. Ashtray
2. Center panel
3. Radio bracket
4. Radio and tape player
5. Box

SPEAKER

E54LIAL

Front speaker

REMOVAL AND INSTALLATION



Removal steps

1. Hood lock release handle
2. Instrument panel under cover
3. Lap heater duct
4. Glove box
5. Speaker garnish
6. Speaker

NOTE

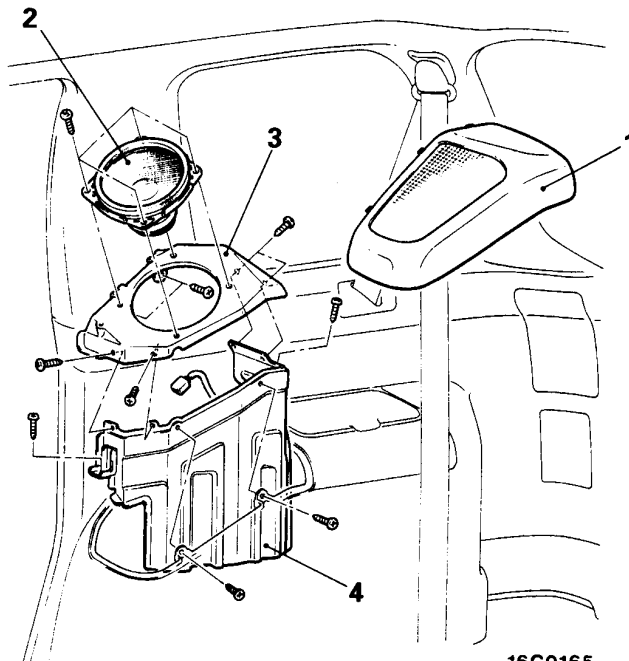
← The mark indicates the metal clip positions.

16C0301

Rear speaker <SPACE WAGON>

E54LIBH

REMOVAL AND INSTALLATION



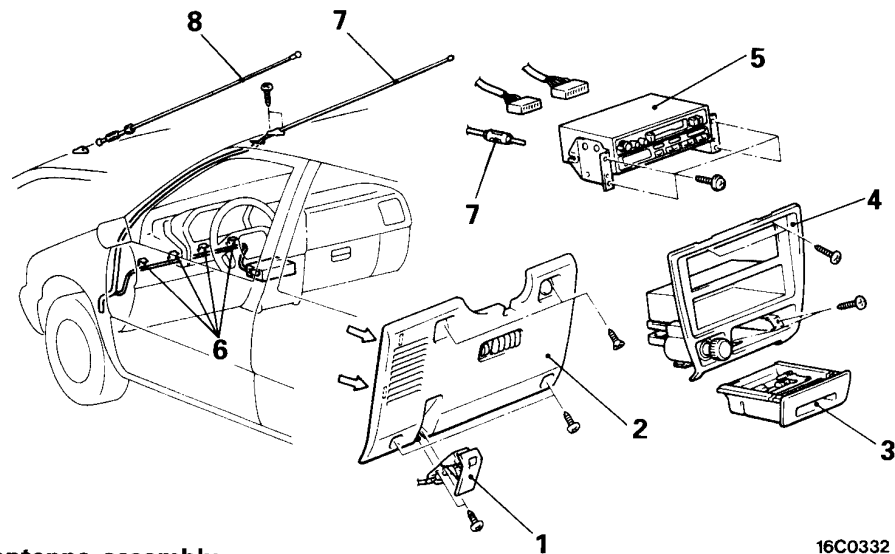
Removal steps

1. Speaker garnish
2. Speaker
3. Upper bracket
4. Lower bracket

16C0165

POLE ANTENNA

REMOVAL AND INSTALLATION



16C0332

Removal steps of antenna assembly

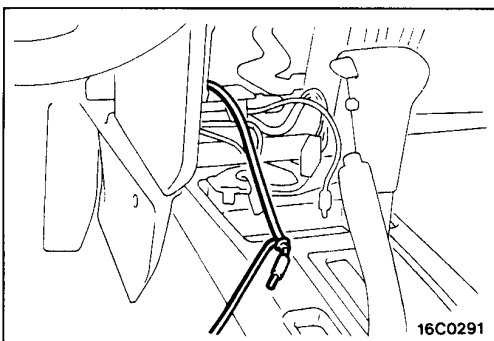
1. Hood lock release handle
2. Instrument panel under cover
3. Ashtray
4. Center panel
5. Radio
6. Clip
- ↔ 7. Antenna assembly

Removal of pole

8. Pole

NOTE

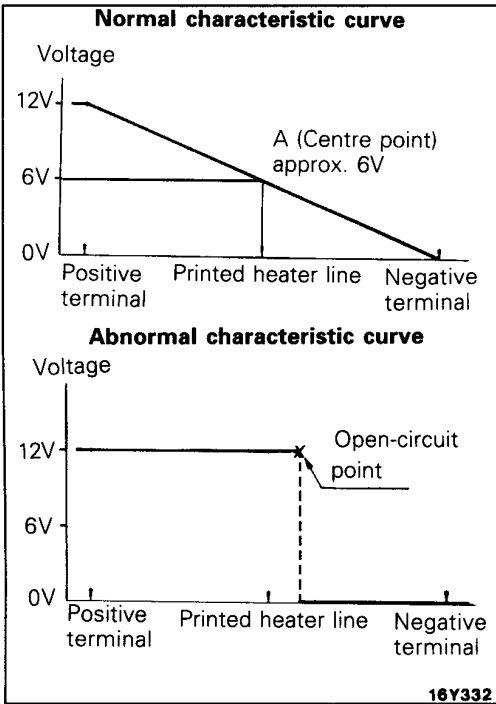
↔ The mark indicates the metal clip positions.



SERVICE POINT OF REMOVAL

7. REMOVAL OF ANTENNA ASSEMBLY

To make wiring easier when installing, tie a cord to the feeder cable terminal, and then pull out the feeder cable to the antenna side.

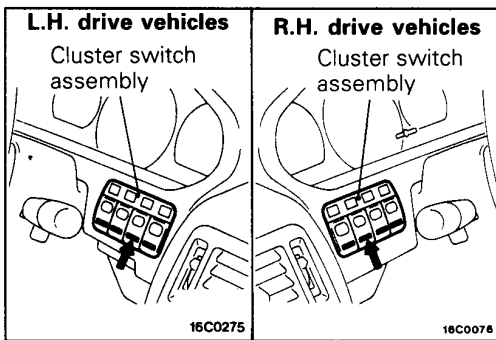


REAR WINDOW DEFOGGER SERVICE ADJUSTMENT PROCEDURES

E54MLAA

PRINTED-HEATER LINE CHECK

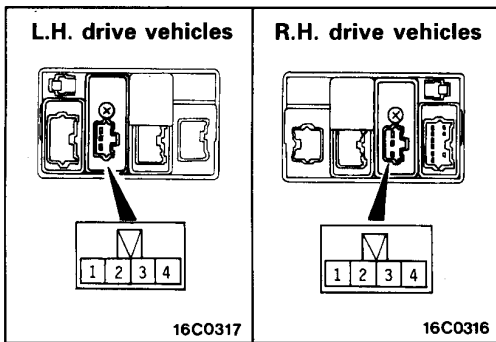
- (1) Run engine at 2,000 r/min. Check heater element with battery at full.
- (2) Turn ON rear window defogger switch. Measure heater element voltage with circuit tester at rear window glass centre A. Condition good of indicating about 6V.
- (3) If 12V is indicated at A, there is a break in the negative terminals from A. Move test bar slowly to negative terminal to detect where voltage changes suddenly (0V).
- (4) If 0V is indicated at A, there is a break in the positive terminals from A. Defect where the voltage changes suddenly (12V) with the same method described.



REAR WINDOW DEFOGGER SWITCH INSPECTION

E54MMAF

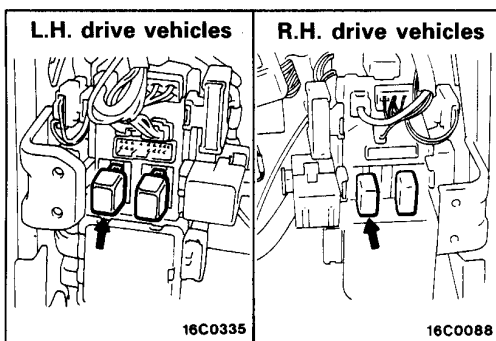
- (1) Remove the meter hood from the instrument panel. (Refer to P.54-14.)



- (2) Operate the switch and check for continuity between the terminals.

Terminal No	1	2	4
Switch position OFF	○	○ IND	○
Switch position ON	○	○ IND	○

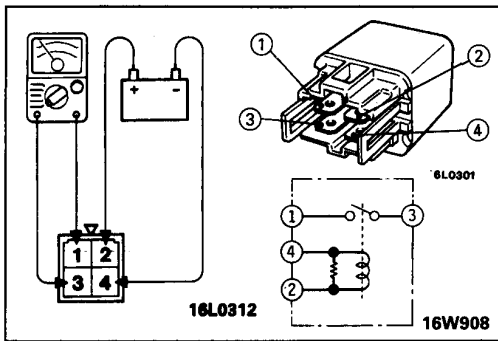
NOTE
○—○ indicates that there is continuity between the terminals.



REAR WINDOW DEFOGGER RELAY INSPECTION

E54MIAE

- (1) Remove the rear window defogger relay from the junction block.



(2) Apply voltage to terminal ②, and check the continuity between the terminals when terminal ④ is earthed.

Power is supplied	1 – 3 terminals	Continuity
Power is not supplied	1 – 3 terminals	No continuity
	2 – 4 terminals	Continuity