Indicates the group title.

Indicates the section title.

Indicates the group number.

Indicates the page number.

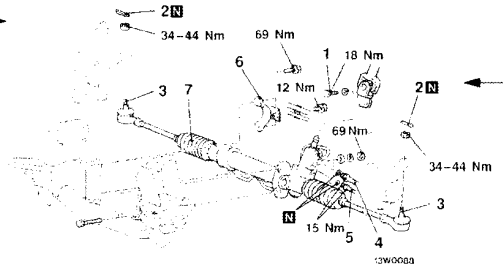
STEERING – Power Steering Oil Pump 37A-29

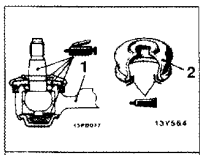
POWER STEERING GEAR BOX

REMOVAL AND INSTALLATION

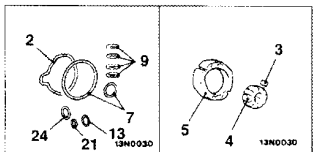
Pre-removal Operation
(1) Power Steering Fluid Draining (Refer to P. 37A-10.)
(2) Air Cleaner Assembly Removal
(3) Under Cover Removal (Refer to GROUP 42 Under Cover.)

<2WD>





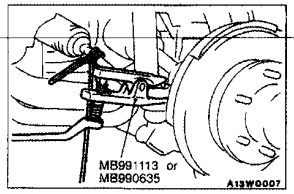
Sealant: 3M ATD Part No. 8661 or equivalent



Oil pump seal kit | Oil pump cartridge kit

Removal steps
1. Lower shaft assembly and gear box connecting bolt
2. Split pin
3. Connection for tie-rod end and knuckle
4. Connection for return tube
5. Connection for pressure tube
6. Clamp
7. Gear box assembly

◀A▶ ◀B▶

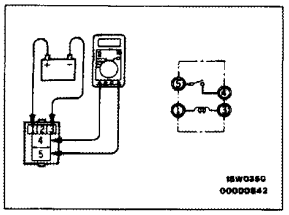


REMOVAL SERVICE POINTS

◀A▶ TIE-ROD END DISCONNECTION

Caution
1. **Using the special tool, loosen the tie rod end mounting nut. Only loosen the nut; do not remove it from the ball joint.**
2. **Support the special tool with a cord, etc. to prevent it from coming off.**

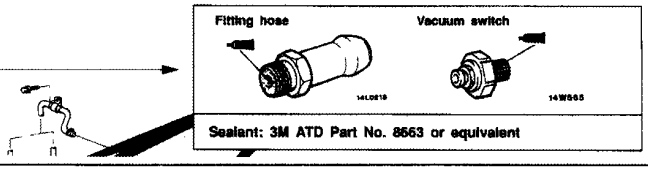
HEADLAMP RELAY CONTINUITY INSPECTION



Battery voltage	Terminal No.			
	1	3	4	5
Power is not supplied	○——○			
Power is supplied	⊕——⊖		○——○	

35A-26 BASIC BRAKE SYSTEM – Master Cylinder and Brake Booster

Lubrication and sealing points



Sealant: 3M ATD Part No. 8663 or equivalent

00002471

Denotes non-reusable part.

Denotes tightening torque. For bolts and nuts which do not have a tightening torque listed, refer to the "Standard Parts-tightening-torque Table".

Repair kit or set parts are shown. (Only very frequently used parts are shown.)

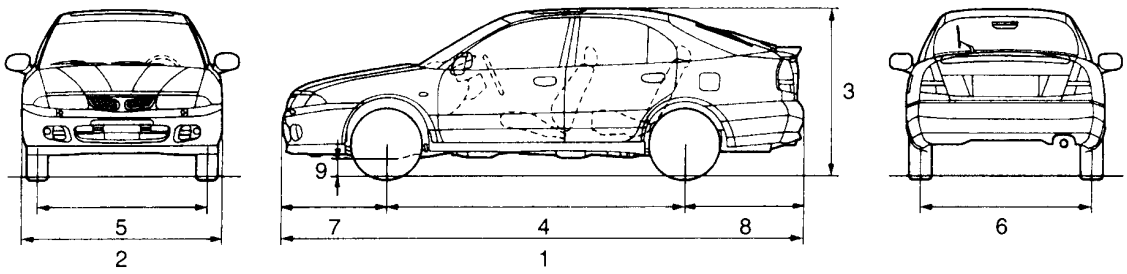
Operating procedures, cautions, etc. on removal, installation, disassembly and reassembly are described.

○——○ indicates that there is a continuity between the terminals.
⊕——⊖ indicates terminals to which battery voltage is applied.

The title of the page (following the page on which the diagram of component parts is presented) indicating the locations of lubrication and sealing procedures.

MAJOR SPECIFICATIONS

00100080044



00U0005

Items			DA1A LNDE L6, LNDE R6	DA1A LRDE L6, LRDE R6	DA1A LNJE L6, LNJE R6	DA1A LRJE L6, LRJE R6	DA2A LNJE L6, LNJE R6	DA2A LRJE L6, LRJE R6	DA2A LNPE L6, LNPE R6	DA2A LRPE L6, LRPE R6	DA2A LNG ML6
Vehicle dimensions mm	Overall length	1	4,435	4,435	4,435	4,435	4,435	4,435	4,435	4,435	4,435
	Overall width	2	1,695	1,695	1,695	1,695	1,695	1,695	1,695	1,695	1,695
	Overall height (unladen)	3	1,405	1,405	1,405	1,405	1,405	1,405	1,405	1,405	1,405
	Wheelbase (laden)	4	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550
	Track-front	5	1,455	1,455	1,455	1,455	1,455	1,455	1,455	1,455	1,455
	Track-rear	6	1,475	1,475	1,475	1,475	1,475	1,475	1,475	1,475	1,475
	Overhang-front	7	880	880	880	880	880	880	880	880	880
	Overhang-rear	8	1,005	1,005	1,005	1,005	1,005	1,005	1,005	1,005	1,005
	Ground clearance (unladen)	9	155	150	155	150	155	150	155	150	155
Vehicle weight kg	Kerb weight		1,105	1,135	1,110	1,140	1,130	1,160	1,135	1,165	1,175
	Max. gross vehicle weight rating		1,630	1,660	1,630	1,660	1,660	1,690	1,660	1,690	1,685
	Max. axle weight rating-front		900	900	900	900	900	900	900	900	900
	Max. axle weight rating-rear		865	865	865	865	875	875	875	875	880
Seating capacity			5								
Engine	Model No.		4G92				4G93				
	Total displacement mℓ		1,597				1,834				
Transmission	Model No.		F5MR1	F4A41	F5MR1	F4A41	F5MR2	F4A42	F5MR2	F4A42	F5MR2
	Type		5 speed-manual	4 speed-automatic	5 speed-manual	4 speed-automatic	5 speed-manual	4 speed-automatic	5 speed-manual	4 speed-automatic	5 speed-manual
Fuel system	Fuel supply system		Electronic control multipoint fuel injection								

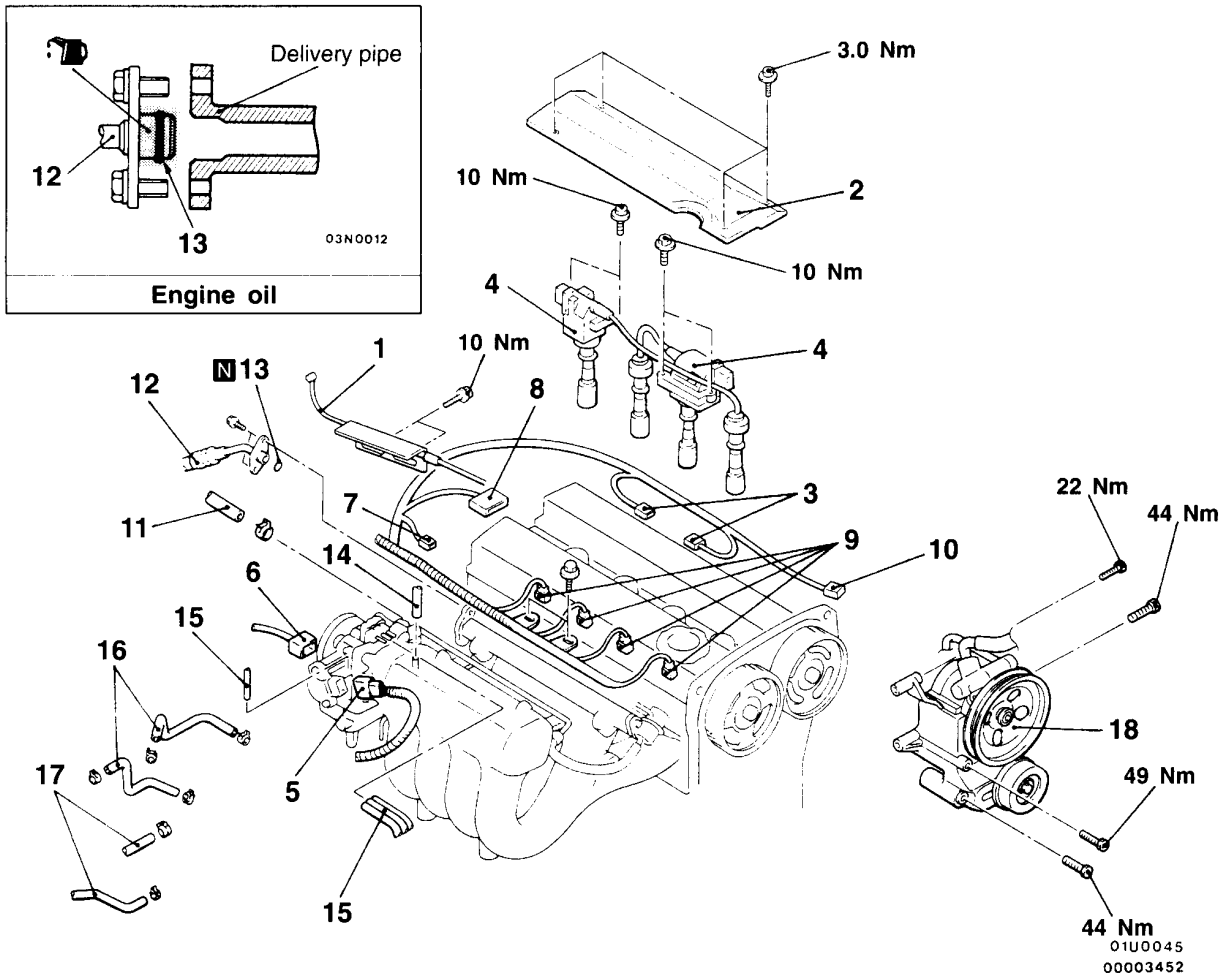
CYLINDER HEAD GASKET <DOHC>

11200400092

REMOVAL AND INSTALLATION

Pre-removal Operation
- Fuel Line Pressure Releasing (Refer to GROUP 13A – On-vehicle Service.)
- Engine Coolant Draining (Refer to GROUP 14 – On-vehicle Service.)
- Air Intake Hose Removal
- Timing Belt Removal (Refer to P.11-43.)

Post-installation Operation
- Timing Belt Installation (Refer to P.11-43.)
- Air Intake Hose Installation
- Engine Coolant Refilling (Refer to GROUP 14 – On-vehicle Service.)
- Accelerator Cable Adjustment (Refer to GROUP 13F – On-vehicle Service.)



Removal steps

1. Accelerator cable connection
2. Center cover
3. Ignition coil connector
4. Ignition coil assembly
5. TPS connector
6. Idle speed control servo connector
7. Oil presser switch connector
8. Ignition failure sensor connector
9. Injector connector
10. Cam position sensor connector

◀A▶

11. Fuel return hose connection

▶E◀ 12. Fuel high pressure hose connection

13. O-ring
14. Brake booster vacuum hose connection
15. Vacuum hoses connection
16. Water hoses connection
17. Heater hoses connection
18. Power steering oil pump and bracket assembly

INSPECTION PROCEDURE 19

Surge	Probable cause
Defective ignition system, abnormal air-fuel ratio, etc. are suspected.	• Malfunction of the ignition system • Malfunction of air-fuel ratio control system • Malfunction of the EGR control solenoid valve system

MUT-II SELF DIAG CODE
Are diagnosis codes output?
Yes → Refer to P.13A-14, INSPECTION CHART FOR DIAGNOSIS CODES.
No ↓

Check the injectors for operation sound.
NG → Check the injector system. (Refer to P.13A-26, INSPECTION PROCEDURE FOR DIAGNOSIS CODE 41.)
OK ↓

Check the ignition timing.
(Refer to GROUP 11A – On-vehicle Service.)
NG → Check that the distributor <SOHC> and crank angle sensor <DOHC> are installed properly.
OK ↓

MUT-II: Check if surge occurs.
(Refer to P.13-62, INSPECTION PROCEDURE 45.)
OK ↓

Check the fuel pressure. (Refer to P.13A-95.)
OK ↓

Check the following items.
- Check the ignition coil, spark plugs, spark plug cables. (Refer to GROUP 16 – On-vehicle Service.)
- Check the EGR system. (Refer to GROUP 17 – EGR system.)

INSPECTION PROCEDURE 20

Knocking	Probable cause
In cases as the above, the cause is probably that the detonation control is defective or the heat value of the spark plug is inappropriate.	• Defective detonation sensor • Inappropriate heat value of the spark plug

MUT-II SELF DIAG CODE
Are diagnosis codes output?
Yes → Refer to P.13A-14, INSPECTION CHART FOR DIAGNOSIS CODES.
No ↓

Does knocking occur when driving with the sensor disconnected? At this time, use the MUT-II to check if the timing is retarded compared to when the detonation sensor connector is connected.
No → Check the detonation sensor system. (Refer to P.13A-25, INSPECTION PROCEDURE FOR DIAGNOSIS CODE 31.)
Yes ↓

Check the following items.
- Spark plugs
- Check if foreign materials (water, alcohol, etc.) got into fuel.

INSPECTION PROCEDURE 21

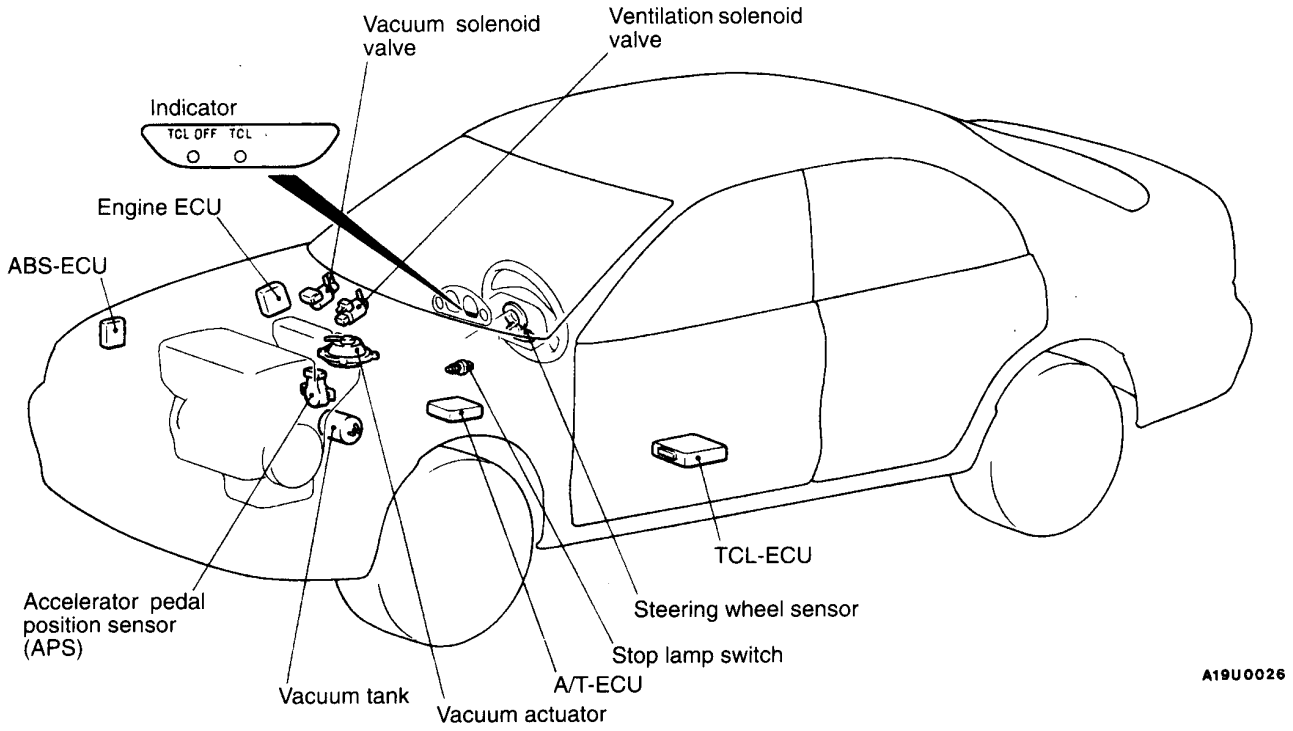
Dieseling	Probable cause
Fuel leakage from injectors is suspected.	• Fuel leakage from injectors

Check the injectors for fuel leakage.

GENERAL INFORMATION

13600010024

For GLS, the TCL system (slip control and trace control) is available as an option. This system facilitates starting, accelerating, and cornering on slippery roads such as snowy roads. In addition, this system improves driveability while cornering on normal roads and contributes to easier driving.



ENGINE CONTROL SYSTEM

17100010027

GENERAL INFORMATION

A cable-type accelerator mechanism and a suspended-type pedal have been adopted.

SERVICE SPECIFICATIONS

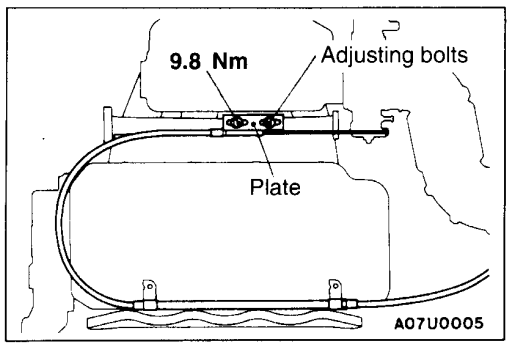
17100030030

Items		Standard value
Accelerator cable play mm		1–2
Engine idle speed r/min	4G92	750±50
	4G93	800±50

ON-VEHICLE SERVICE

17100090052

ACCELERATOR CABLE CHECK AND ADJUSTMENT



1. Turn A/C and lamps OFF.
   Inspect and adjust at no load.
2. Warm engine until stabilized at idle.
3. Confirm idle speed is at prescribed value.

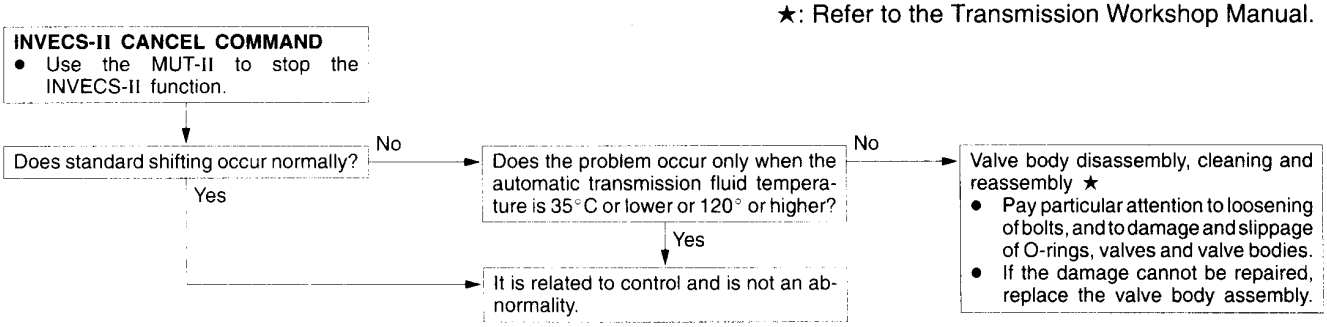
   Standard value:
   <4G92> 750±50 r/min
   <4G93> 800±50 r/min
4. Stop engine (ignition switch OFF).
5. Confirm there are no sharp bends in accelerator cable.
6. Check inner cable for correct slack.

   Standard value: 1–2 mm
7. If there is too much slack or no slack, adjust play by the following procedures.
   (1) Loosen the adjusting bolt to release the cable.
   (2) Move the plate until the inner cable play is at the standard value, and then tighten the adjusting bolt to the specified torque.

INSPECTION PROCEDURE 12

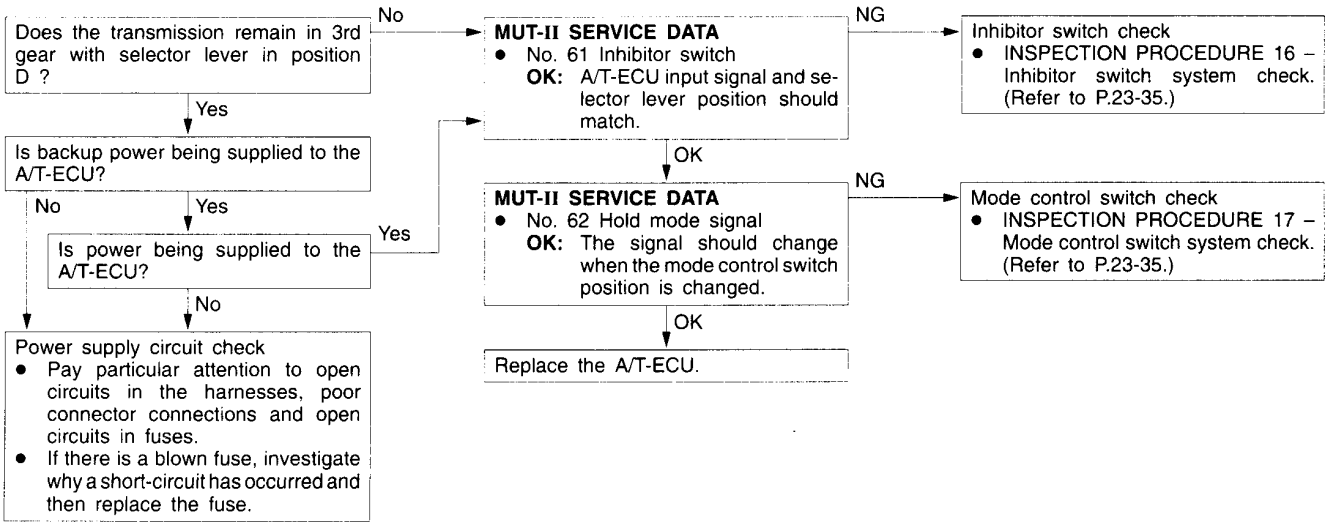
Some points (Displaced shifting points)	Probable cause
If some of the shift points are displaced while driving, the cause is probably a malfunction of the valve body, or it is related to control and is not an abnormality.	• Malfunction of the valve body

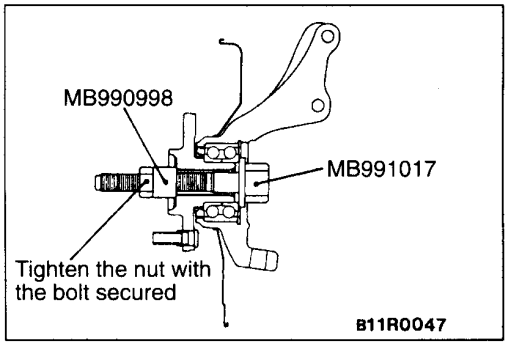
★: Refer to the Transmission Workshop Manual.



INSPECTION PROCEDURE 13

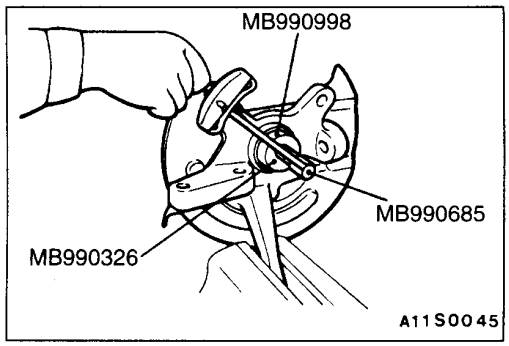
No diagnosis codes (Does not shift)	Probable cause
If shifting does not occur while driving and no diagnosis codes are output, the cause is probably a malfunction of the inhibitor switch, mode control switch or A/T-ECU.	• Malfunction of the inhibitor switch • Malfunction of the mode control switch • Malfunction of the A/T-ECU





▶C◀ WHEEL BEARING STARTING TORQUE CHECK

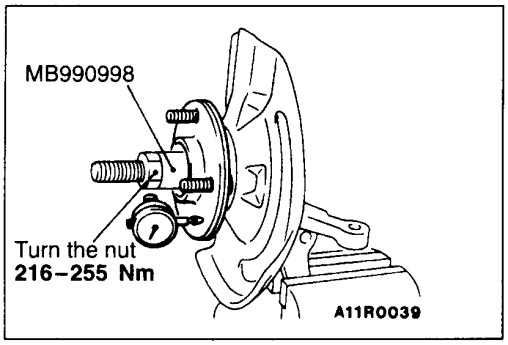
(1) Use the special tool to mount the hub onto the knuckle.
(2) Tighten the nut of the special tool to 216–255 Nm.
(3) Rotate the hub in order to seat the bearing.



(4) Measure the wheel bearing starting torque (hub starting torque) by using the special tools.

Limit: 1.8 Nm or less

(5) The starting torque must be within the limit and, in addition, the bearing must not feel rough when rotated.

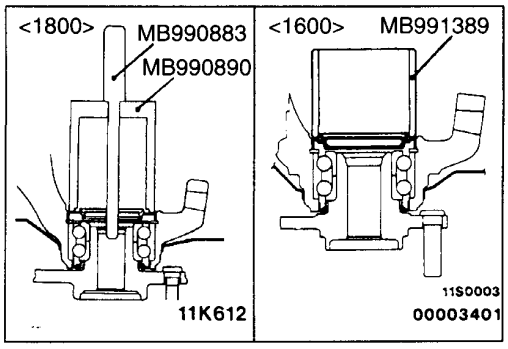


▶D◀ HUB AXIAL PLAY CHECK

(1) Measure to determine whether the axial play of the hub is within the specified limit or not.

Limit: 0.05 mm

(2) If the starting torque and hub axial play are not within the limit range while the nut is tightened to 216–255 Nm, the bearing, hub and/or knuckle have probably not been installed correctly. Replace the bearing and re-install.



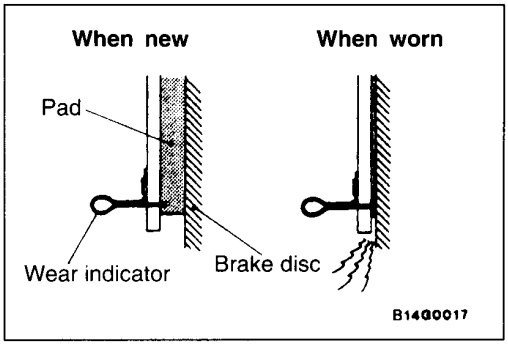
▶E◀ INNER OIL SEAL INSTALLATION

(1) Apply multipurpose grease to the reverse side of the inner oil seal.
(2) Drive the inner oil seal into the knuckle until it contacts the snap ring.
(3) Apply multipurpose grease to the lip of the inner oil seal.

INSPECTION

26100200013

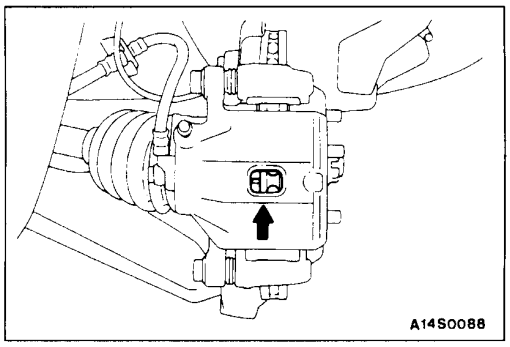
- Check the front hub and brake disc mounting surfaces for galling and contamination.
- Check the knuckle inner surface for galling and cracks.
- Check for defective bearing.



FRONT DISC BRAKE PAD CHECK AND REPLACEMENT

35100150044

NOTE
The brake pads have wear indicators that contact the brake disc when the brake pad thickness becomes 2 mm and emit a squealing sound to warn the driver.

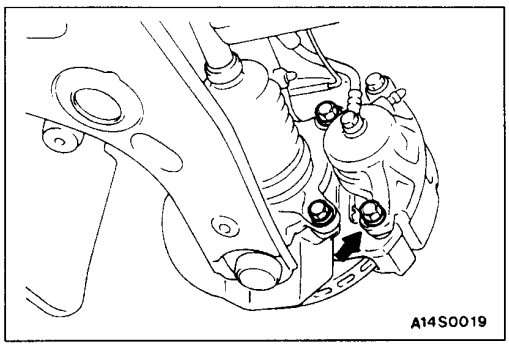


1. Check brake pad thickness through caliper body check port.

   Standard value: 10 mm

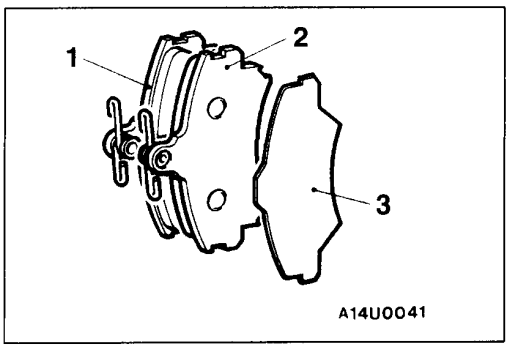
   Limit: 2.0 mm

   Caution
   1. **When the limit is exceeded, replace the pads at both sides, and also the brake pads for the wheels on the opposite side at the same time.**
   2. **If there is a significant difference in the thickness of the pads on the left and right sides, check the sliding condition of the piston, lock pin and guide pin.**



2. Remove lock pin. Lift caliper assembly and retain with wires.

   Caution
   Do not wipe off the special grease that is on the lock pin or allow it to contaminate the lock pin.



3. Remove the following parts from caliper support.
   1. Pad & wear indicator assembly
   2. Pad assembly
   3. Outer shim

4. In order to measure the brake drag torque after pad installation, measure the rotary-sliding resistance of the hub (A) with the pads removed. (Refer to P.35A-20.)
5. Install the pads and the caliper assembly, and then check the brake drag torque. (Refer to P.35A-20.)

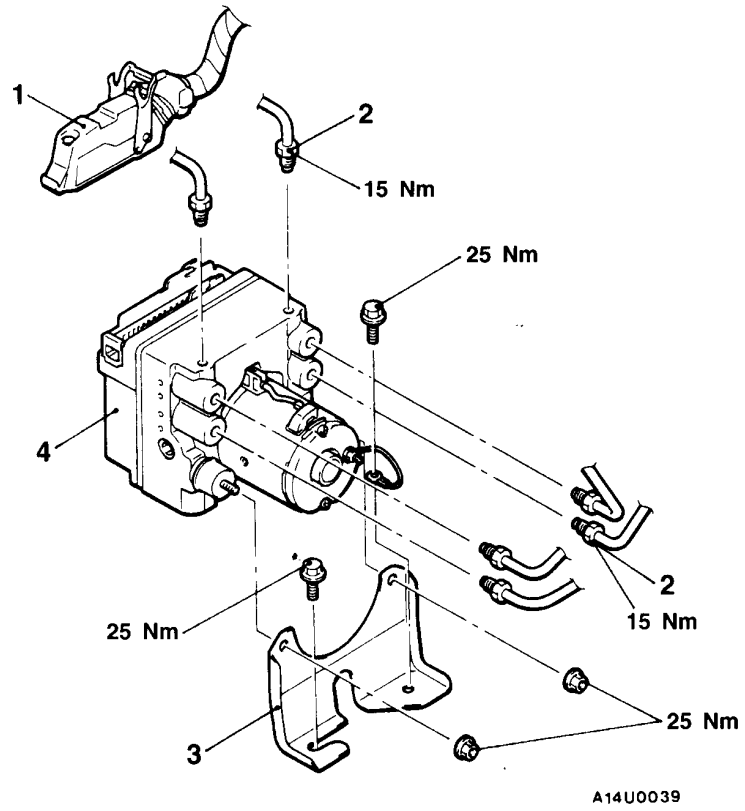
HYDRAULIC UNIT

35200860070

REMOVAL AND INSTALLATION

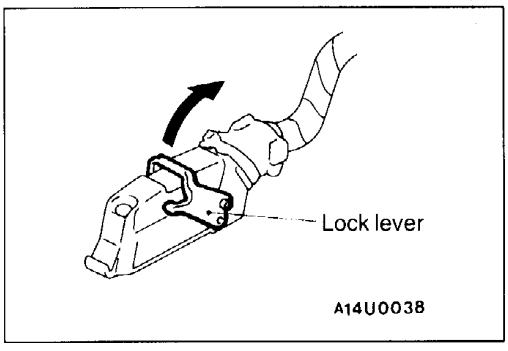
Pre-removal Operation
- Brake Fluid Draining
- A/C Relay Box Removal

Post-installation Operation
- A/C Relay Box Installation
- Brake Fluid Supplying
- Brake Line Bleeding
  (Refer to GROUP 35A – On-vehicle Service.)
- Brake Pedal Adjustment
  (Refer to GROUP 35A – On-vehicle Service.)



Removal steps

◀A▶ 1. ABS-ECU connector
▶A◀ 2. Brake pipe connection
3. Hydraulic unit bracket
◀B▶ 4. Hydraulic unit assembly



REMOVAL SERVICE POINTS

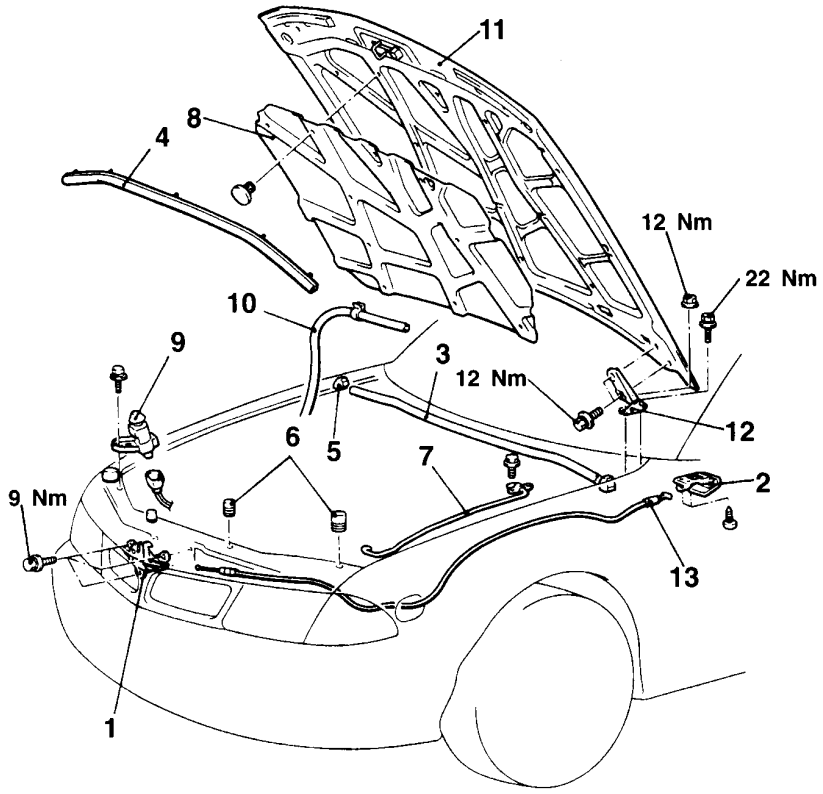
◀A▶ ABS-ECU CONNECTOR REMOVAL

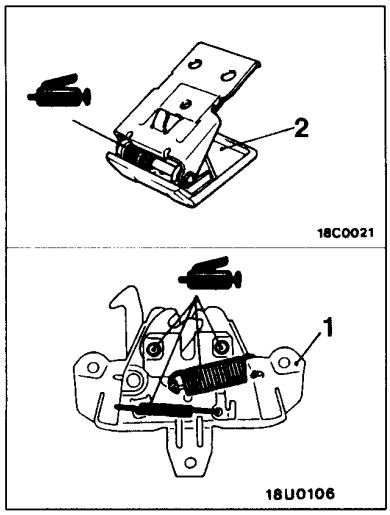
Raise the lock lever in the direction of the arrow to unlock the connector, and then disconnect the connector.

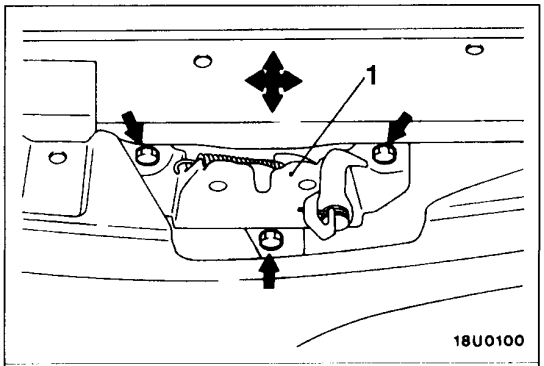
HOOD

42100160045

REMOVAL AND INSTALLATION

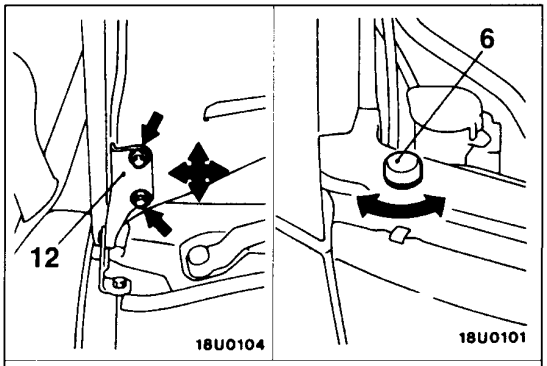






Adjustment of hood step and hood striker linkage

18U0085 00003430



Adjustment of clearance around hood and height

1. Hood latch
2. Hood lock release handle
3. Hood weatherstrip
4. Hood weatherstrip
   <Vehicles with air conditioner>
5. Hood side weatherstrip
6. Bumper
7. Hood support rod
8. Hood insulator
9. Hood switch
   <Vehicles with shaftalarm system>

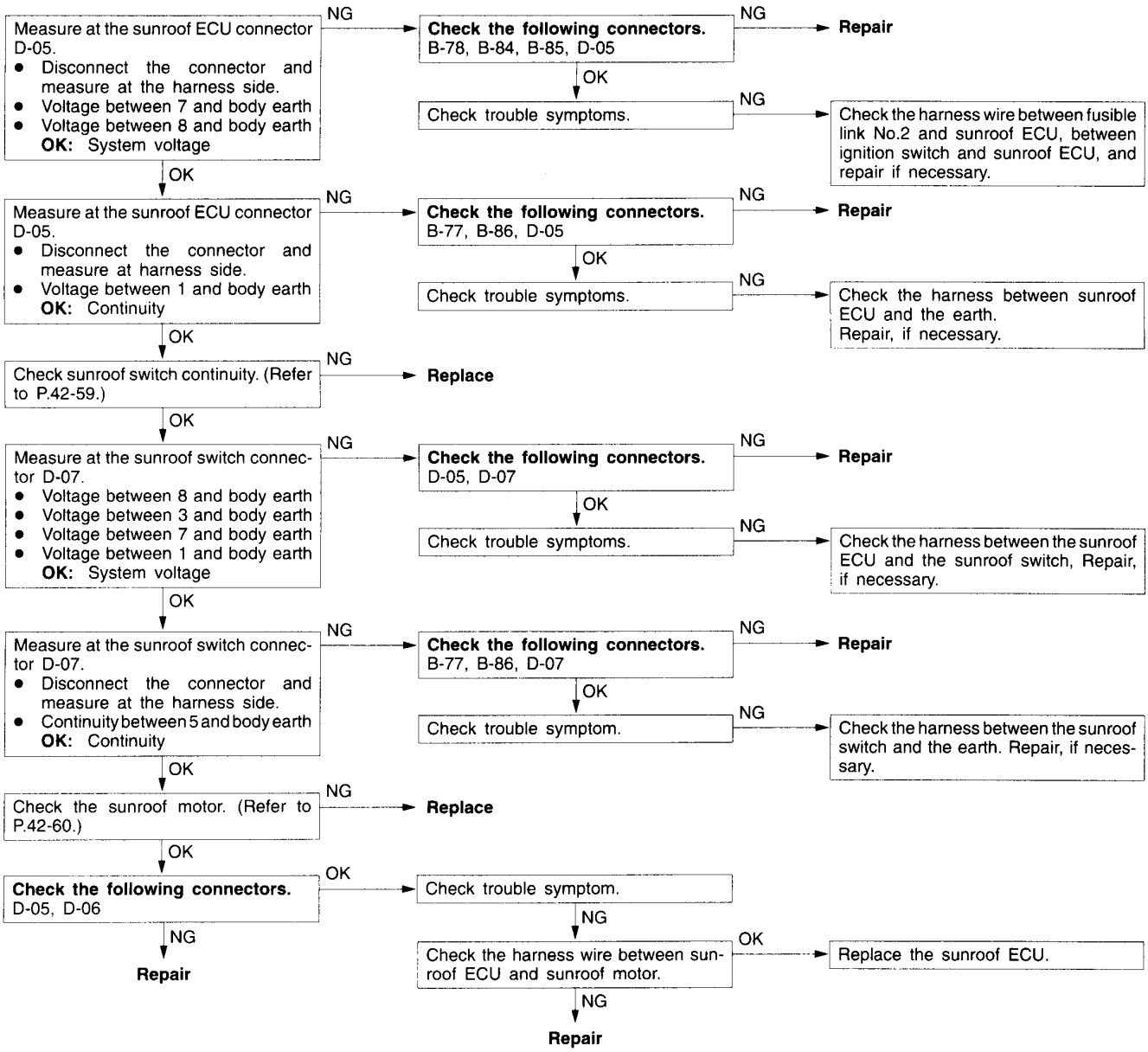
Hood and hood hinge removal steps

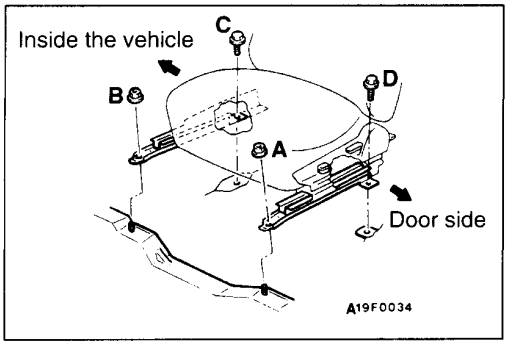
10. Washer hose connection
11. Hood
    - Front deck garnish
12. Hood hinge

Hood lock release cable removal steps

- Splash shield <Driver's side> (Refer to P.42-4.)

13. Hood lock release cable

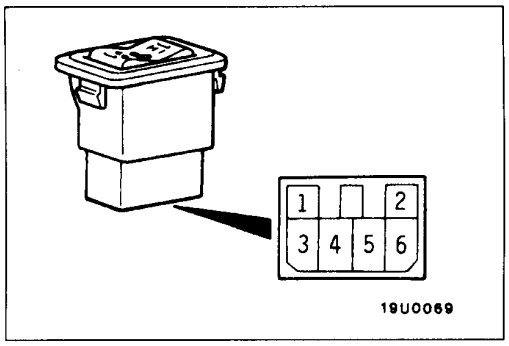

Measure at the sunroof ECU connector D-05.
• Disconnect the connector and measure at the harness side.
• Voltage between 7 and body earth
• Voltage between 8 and body earth
OK: System voltage
NG
Check the following connectors. B-78, B-84, B-85, D-05
NG
Repair
OK
Check trouble symptoms.
NG
Check the harness wire between fusible link No.2 and sunroof ECU, between ignition switch and sunroof ECU, and repair if necessary.
OK
Measure at the sunroof ECU connector D-05.
• Disconnect the connector and measure at harness side.
• Voltage between 1 and body earth
OK: Continuity
NG
Check the following connectors. B-77, B-86, D-05
NG
Repair
OK
Check trouble symptoms.
NG
Check the harness between sunroof ECU and the earth. Repair, if necessary.
OK
Check sunroof switch continuity. (Refer to P.42-59.)
NG
Replace
OK
Measure at the sunroof switch connector D-07.
• Voltage between 8 and body earth
• Voltage between 3 and body earth
• Voltage between 7 and body earth
• Voltage between 1 and body earth
OK: System voltage
NG
Check the following connectors. D-05, D-07
NG
Repair
OK
Check trouble symptoms.
NG
Check the harness between the sunroof ECU and the sunroof switch, Repair, if necessary.
OK
Measure at the sunroof switch connector D-07.
• Disconnect the connector and measure at the harness side.
• Continuity between 5 and body earth
OK: Continuity
NG
Check the following connectors. B-77, B-86, D-07
NG
Repair
OK
Check trouble symptom.
NG
Check the harness between the sunroof switch and the earth. Repair, if necessary.
OK
Check the sunroof motor. (Refer to P.42-60.)
NG
Replace
OK
Check the following connectors. D-05, D-06
OK
Check trouble symptom.
NG
Check the harness wire between sunroof ECU and sunroof motor.
OK
Replace the sunroof ECU.
NG
Repair
NG
Repair



INSTALLATION SERVICE POINT

▶A◀ FRONT SEAT ASSEMBLY INSTALLATION

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



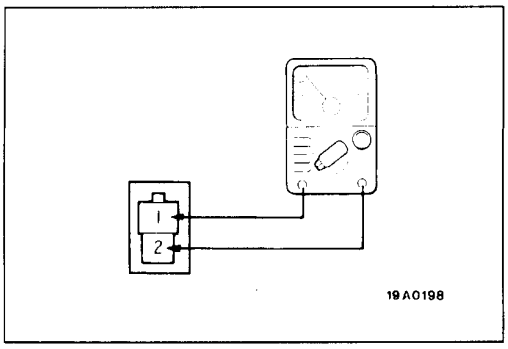
INSPECTION

52200140027

HEATED SEAT SWITCH CONTINUITY CHECK

Switch position	Terminal No.								
	1	4	–	5	–	6	2	–	3
HI	○	○	⊖ ▶ ⊕	○	⊕ ◀ ⊖	○			
	⊖		⊖ ▶ ⊕	⊕		⊖			
		⊖		⊖ ▶ ⊕		⊕			
LO	⊖			⊖ ▶ ⊕	⊕ ◀ ⊖	⊕	○	○	○
		○		⊕		⊖			
	⊖		⊖ ▶ ⊕						
OFF	⊖		⊖ ▶ ⊕						

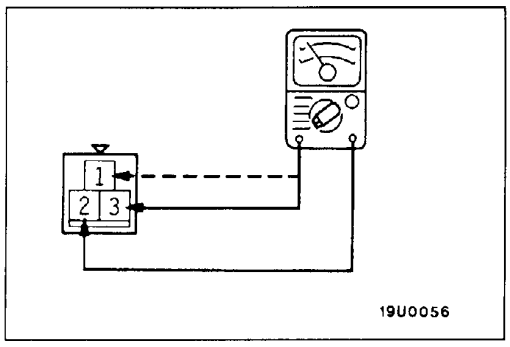
NOTE
To inspect the diode, match the polarity of the circuit tester with the (+) (–) polarities in the table.



SEATBACK HEATER CHECK

Measure the resistance between terminals.

Standard value (When ambient temperature is 20°C):
Between terminals 6.84–7.92 Ω



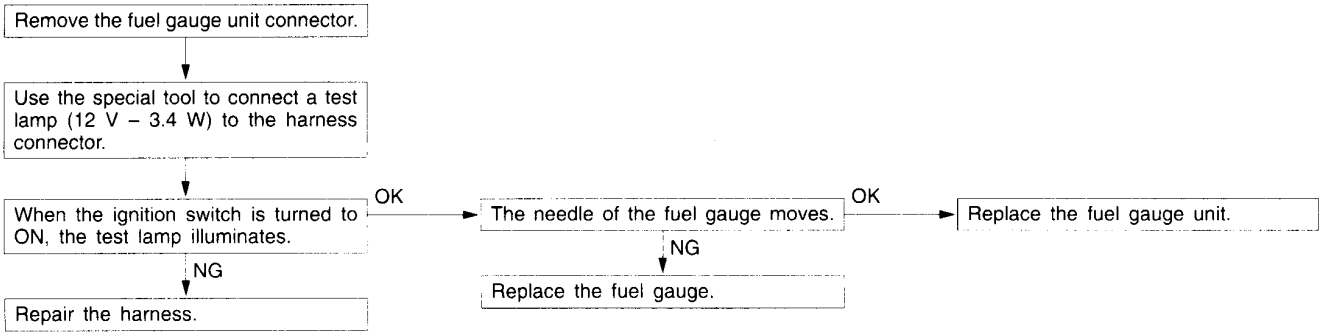
SEAT CUSHION HEATER CHECK

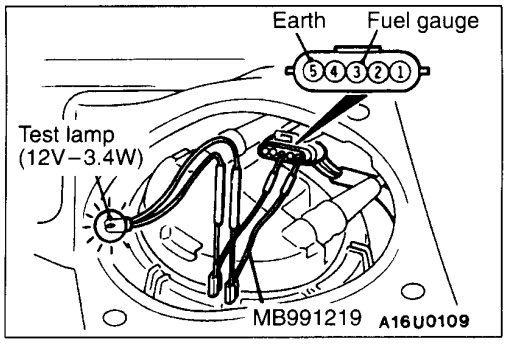
Measure the resistance between terminals.

Standard value (When ambient temperature is 20°C):
Between terminals 1 and 2 0.38–0.44 Ω
Between terminals 2 and 3 6.84–7.92 Ω
Between terminals 1 and 3 6.46–7.48 Ω

FUEL GAUGE SIMPLE CHECK

54300110032





FUEL GAUGE UNIT CHECK

54300120059

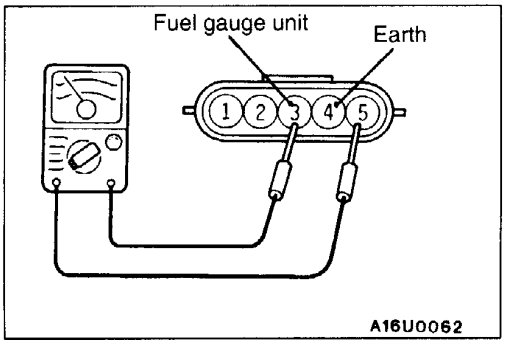
Remove the fuel gauge unit from the fuel tank.
(Refer to GROUP 13F.)

FUEL GAUGE UNIT RESISTANCE

1. 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:
   Point F: 7.9–14.6 Ω
   Point E: 107.9–118.9 Ω

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



Inspection procedure 3

Headlamp leveling does not occur when the headlamp leveling switch is operated.	Probable cause
The cause is probably a malfunction of the headlamp leveling switch circuit system or a malfunction of the headlamp leveling unit circuit system. If there is a blown fuse, there may also be a short-circuit in a harness.	• Malfunction of fuse • Malfunction the headlamp leveling switch • Malfunction of connector • Malfunction of harness • Malfunction of the headlamp leveling unit