GROUP 00

GENERAL <BODY AND CHASSIS>

CONTENTS

Continued on next page

HOW TO USE THIS MANUAL

M1001000101005

MAINTENANCE, REPAIR AND SERVICING EXPLANATIONS

This manual provides explanations, etc. concerning procedures for the inspection, maintenance, repair and servicing of the subject model. Unless otherwise specified, each service procedure covers all models. Procedures covering specific models are identified by the model codes, or similar designation (engine type, transmission type, etc.). A description of these designations is covered in this manual under "VEHICLE IDENTIFICATION."

ON-VEHICLE SERVICE

"ON-VEHICLE SERVICE" are procedures for performing inspections and adjustments of particularly important locations with regard to the construction and for maintenance and servicing, but other inspections (for looseness, play, cracking, damage, etc.) must also be performed.

SERVICE PROCEDURES

The service steps are arranged in numerical order. Attention must to be paid in performing vehicle service are described in detail in SERVICE POINTS.

DEFINITION OF TERMS

STANDARD VALUE

Indicates the value used as the standard for judging the quality of a part or assembly on inspection or the value to which the part or assembly is corrected and adjusted. It is given by tolerance.

LIMIT

Shows the standard for judging the quality of a part or assembly on inspection and means the maximum or minimum value within which the part or assembly must be kept functionally or in strength. It is a value established outside the range of standard value.

REFERENCE VALUE

Indicates the adjustment value prior to starting the work (presented in order to facilitate assembly and adjustment procedures, and so they can be completed in a shorter time).

DANGER, WARNING AND CAUTION

DANGER, WARNING and CAUTION call special attention to a necessary action or to an action that must be avoided. The differences among DANGER, WARNING and CAUTION are as follows:

- If a DANGER is not followed, the result is severe bodily harm or even death.
- If a WARNING is not followed, the result could be bodily injury.
- If a CAUTION is not followed, the result could be damage to the vehicle, vehicle components or service equipment.

TIGHTENING TORQUE INDICATION

The tightening torque indicates a median and its tolerance by a unit of N·m (in-lb) or N·m (ft-lb). For fasteners with no assigned torque value, refer to P.00-33.

SPECIAL TOOL NOTE

Only MMC special tool part numbers are called out in the repair sections of this manual. Please refer to the special tool cross reference chart, which is located in the service manual at the beginning of each group, for a cross reference from the MMC special tool number to the special tool number that is available in your market.

MODEL INDICATIONS

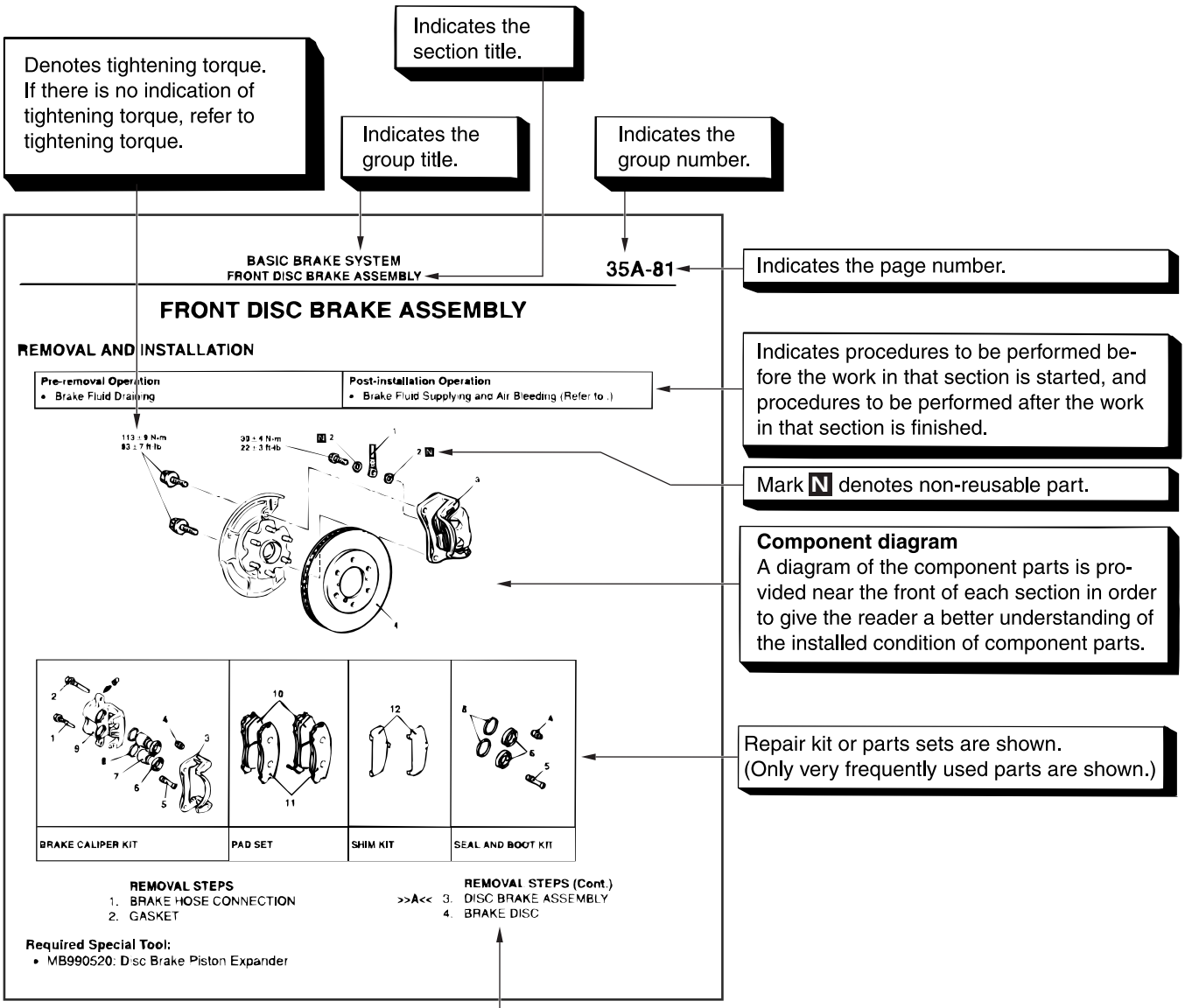
The following abbreviations are used in this manual for classification of model types.

A/T:Indicates automatic transmission, or models equipped with automatic transmission.

MFI:Indicates multiport fuel injection, or engines equipped with multiport fuel injection.

3.8L Engine:Indicates the 3.8 liter <6G75> engine, or a model equipped with such an engine.

EXPLANATION OF MANUAL CONTENTS



Maintenance and servicing procedures

The numbers provided within the diagram indicate the sequence for maintenance and servicing procedures.

- Removal steps :
  The part designation number corresponds to the number in the illustration to indicate removal steps.
- Disassembly steps :
  The part designation number corresponds to the number in the illustration to indicate disassembly steps.
- Installation steps :
  Specified in case installation is impossible in reverse order of removal steps. Omitted if installation is possible in reverse order of removal steps.
- Assembly steps :
  Specified in case installation is impossible in reverse order of removal steps. Omitted if assembly is possible in reverse order of disassembly steps.

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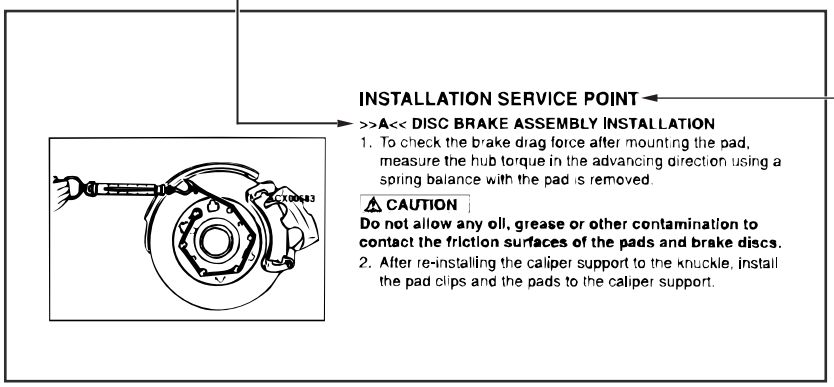
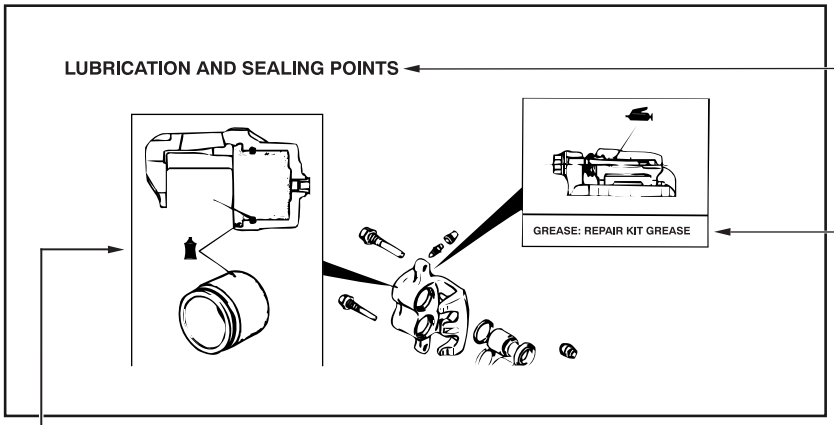
Classifications of major maintenance / service points

When there are major points relative to maintenance and servicing procedures (such as essential maintenance and service points, maintenance and service standard values, information regarding the use of special tools, etc.). These are arranged together as major maintenance and service points and explained in detail.

<<A>> : Indicates that there are essential points for removal or disassembly.
>>A<< : Indicates that there are essential points for installation or assembly.



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



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.

Indicates (by symbols) where lubrication is necessary.

Symbols for lubrication, sealants and adhesives

Symbols are used to show the locations for lubrication and for application of sealants and adhesives. These symbols are included in the diagram of component parts or on the page following the component parts page. The symbols do not always have accompanying text to support that symbol.

- : Grease (Multi-purpose grease unless there is a brand or type specified)
- : Sealant or adhesive
- : Brake fluid or automatic transmission fluid
- : Engine oil, gear oil or air conditioning compressor oil
- : Adhesive tape or butyl rubber tape

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TROUBLESHOOTING GUIDELINES

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VERIFY THE COMPLAINT

- Make sure the customer's complaint and the service writer's work order description are understood before starting work.
- Make sure the correct operation of the system is understood. Read the service manual description to verify any aspect of normal system operation.
- Operate the system to see the symptoms. Look for other symptoms that were not reported by the customer, or on the work order, that may be related to the problem.

DETERMINE POSSIBLE CAUSES

Compare the confirmed symptoms to the diagnostic symptom indexes to get to the right diagnosis procedure.
If the confirmed symptoms can not be found on any symptom index, determine other possible causes.

- Analyze the system diagrams and list all possible causes for the problem symptoms.
- Rank all these possible causes in order of probability, based on how much of the system they cover, how likely they are to be the cause, and how easy they will be to check. Be sure to take experience into account. Consider the causes of similar problems seen in the past. The list of causes should be ranked in order from general to specific, from most-likely to least-likely, and from easy-to-check to hard-to-check.

FIND THE PROBLEM

After the symptoms have been confirmed, and probable causes have been identified, the next step is to make step-by-step checks of the suspected system components, junctions, and links in logical order.
Use the diagnostic procedures in the service manual whenever possible. Follow these procedures carefully to avoid missing an important step in the diagnosis sequence. It might be the skipped step that leads to the solution of the problem.
If the service manual doesn't have step-by-step procedures to help diagnose the problem, come up with a series of checks based on the ranked list of probable causes. Troubleshooting checks should be made in the order that the list of causes was ranked:

- general to specific
- most-likely to least-likely
- easy-to-check to hard-to-check

REPAIR THE PROBLEM

When the step-by-step troubleshooting checks find a fault, perform the proper repairs. Make sure to fix the root cause of the problem, not just the symptom. Just fixing the symptom, without fixing the root cause, will cause the symptom to eventually return.

VERIFY THE REPAIR

After repairs are made, recheck the operation of the system to confirm that the problem is eliminated. Make sure to check the system thoroughly. Sometimes new problems are revealed after repairs have been made.

HOW TO USE TROUBLESHOOTING/INSPECTION SERVICE POINTS

TROUBLESHOOTING CONTENTS

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Troubleshooting of electronic control systems for which the scan tool can be used follows the basic outline described below. Even in systems for which the scan tool cannot be used, part of these systems still follow this outline.

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

Troubleshooting strategy is shown in each group.

SYSTEM OPERATION AND SYMPTOM VERIFICATION TESTS

If verification of the symptom(s) is difficult, procedures for checking operation and verifying symptoms are shown.

DIAGNOSTIC FUNCTION

The following trouble code diagnosis are shown.

- How to read diagnostic trouble codes
- How to erase diagnostic trouble codes
- Input inspection service points

DIAGNOSTIC TROUBLE CODE CHART

If the scan tool displays a diagnostic trouble code, find the applicable inspection procedure according to this chart.

SYMPTOM CHART

If there are symptoms, even though the scan tools show that no DTCs are set, inspection procedures for each symptom will be found by using this chart.

DIAGNOSTIC TROUBLE CODE PROCEDURES

Indicates the inspection procedures corresponding to each diagnostic trouble code (Refer to P.00-8).

SYMPTOM PROCEDURES

Indicates the inspection procedures corresponding to each symptom listed in the Symptom Chart. (Refer to P.00-8).

SERVICE DATA REFERENCE TABLE

Inspection items and normal judgment values have been provided in this chart as reference information.

CHECK AT ECU TERMINALS

Terminal numbers for the ECU connectors, inspection items, and standard values have been provided in this chart as reference information.

TERMINAL VOLTAGE CHECKS

1. Connect a needle-nosed wire probe to a voltmeter probe.

⚠ CAUTION

Short-circuiting the positive (+) probe between a connector terminal and ground could damage the vehicle wiring, the sensor, the ECU, or all three. Use care to prevent this!

2. Insert the needle-nosed wire probe into each of the ECU connector terminals from the wire side, and measure the voltage while referring to the check chart.

   NOTE: Measure voltage with the ECU connectors connected.
   You may find it convenient to pull out the ECU to make it easier to reach the connector terminals. Checks don't have to be carried out in the order given in the chart.

3. If voltage readings differ from normal condition values, check related sensors, actuators, and wiring. Replace or repair as needed.
4. After repair or replacement, recheck with the voltmeter to confirm that the repair has corrected the problem.

TERMINAL RESISTANCE AND CONTINUITY CHECKS

1. Turn the ignition switch to "LOCK" (OFF) position.
2. Disconnect the ECU connector.

⚠ CAUTION

If resistance and continuity checks are performed on the wrong terminals, damage to the vehicle wiring, sensors, ECU and/or ohmmeter may occur. Use care to prevent this!

3. Measure the resistance and check for continuity between the terminals of the ECU harness-side connector while referring to the check chart.

   NOTE: Checks don't have to be carried out in the order given in the chart.

4. If the ohmmeter shows any deviation from the Normal Condition value, check the corresponding sensor, actuator and related electrical wiring, then repair or replace.
5. After repair or replacement, recheck with the ohmmeter to confirm that the repair has corrected the problem.

INSPECTION PROCEDURES USING AN OSCILLOSCOPE

When there are inspection procedures using an oscilloscope, these are listed.

HOW TO USE THE INSPECTION PROCEDURES

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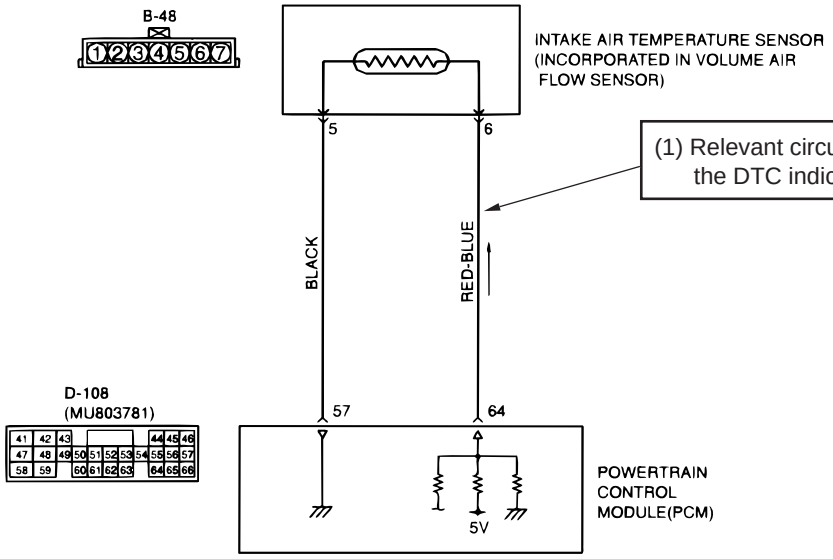
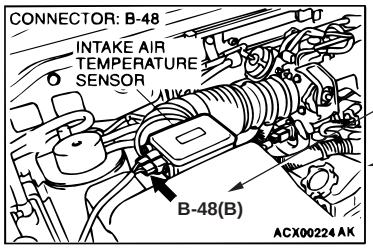
The causes of many of the problems occurring in electric circuitry are generally the connectors, components, the ECU, and the harnesses between connectors, in that order. These inspection procedures follow this order. They first try to discover a problem with a connector or a defective component.

DTC P0110: Intake Air Temperature Circuit Malfunction



(1) Relevant circuit(s) of the component which the DTC indicates are described.

(2) For connector color, refer to GROUP 80A, How to read configuration diagrams.



(3) Shows the location of the connector(s) from the circuit(s) above.

(4) Explains about the operation principle of the component or its relevant parts in that circuit.

CIRCUIT OPERATION

- Approximately 5 volts are applied to the intake air temperature sensor output terminal (terminal 6) from the PCM (terminal 64) via the resistor in the PCM. The ground terminal (terminal 5) is grounded with or PCM (terminal 57).
- The intake air temperature sensor is a negative temperature coefficient type of resistor. When the intake air temperature rises, the resistance decreases.
- The intake air temperature sensor output voltage increases when the resistance increases and decreases when the resistance decreases.

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(5) Explains about technical details.

(6) Describes the conditions for that DTC being set (stored).

TECHNICAL DESCRIPTION

- The engine coolant temperature sensor converts the engine coolant temperature to a voltage and output it.
- The PCM checks whether this voltage is within a specified range.

(7) Describes possible cause(s)for that DTC.

DTC SET CONDITIONS

Check Conditions

- Engine coolant temperature was 7°C (45°F) or more immediately before the engine was stopped at the last drive.

TROUBLESHOOTING HINTS (The most likely causes for this code to be set are:)

- Engine coolant temperature sensor failed.
- Open or shorted engine coolant temperature sensor circuit, or loose connector.
- PCM failed.

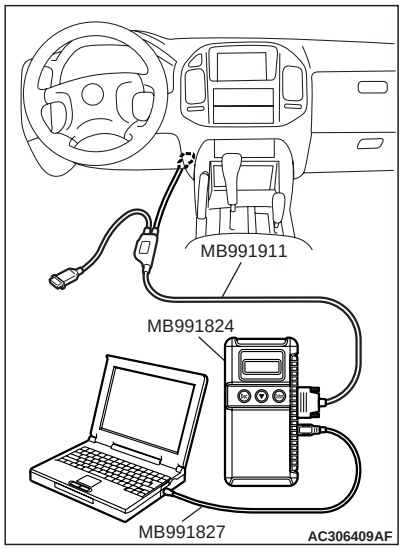
(8) Start of the diagnosis procedure for that DTC.

DIAGNOSIS

Required Special Tool:

- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness

(9) Identifies the special tool(s) necessary for diagnosing that DTC.



STEP 1. Using scan tool MB991958, check data list item 15: Transmission Fluid Temperature Sensor.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958 to the data link connector.

(2) Start the engine.

(3) Set scan tool MB991958 to the data reading mode for item 15, Transmission Fluid Temperature Sensor.

- When the engine is cool: Almost equal to the ambient temperature (atmospheric temperature)

NOTE: Set scan tool MB991958 to data reading mode for item number 13, Intake Air Temperature (IAT) Sensor and note the temperature measurement. When the engine is cool, the temperature should be almost equal to the ambient temperature (atmospheric temperature), and the IAT sensor measurement should be approximately the same as the Transmission Fluid Temperature Sensor.

- When the engine is warm: 70 to 80°C (158 to 176°F)

(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the sensor operating properly?

YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/ Inspection Service Points – How to Cope with Intermittent Malfunction .

NO : Go to Step 2.

(10) Provides the inspection procedure for that DTC step by step.

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HARNESS INSPECTION

Check for an open or short circuit in the harness between the terminals which were faulty according to the connector measurements. Carry out this inspection while referring to GROUP 00E, Harness Connector Inspection P.00E-2. Here, "Check harness between power supply and terminal xx" also includes checking for blown fuse. For inspection service points when there is a blown fuse, refer to "Inspection Service Points for a Blown Fuse P.00-15."

MEASURES TO TAKE AFTER REPLACING THE ECU

If the trouble symptoms have not disappeared even after replacing the ECU, repeat the inspection procedure from the beginning.

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CONNECTOR MEASUREMENT SERVICE POINTS

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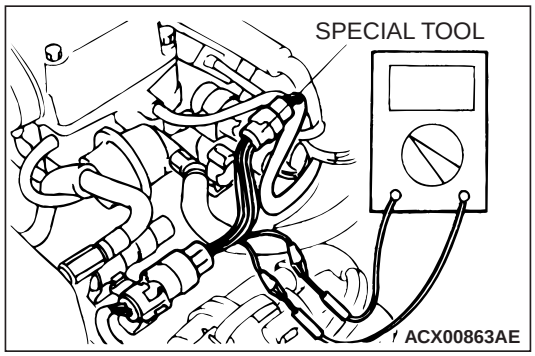
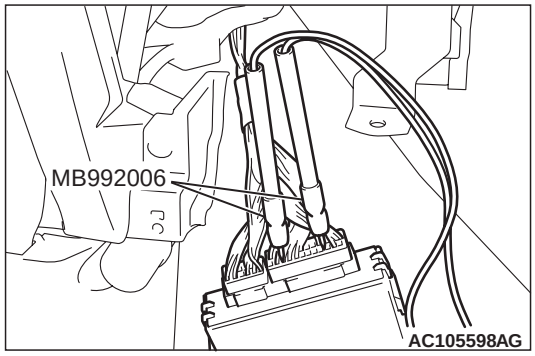
Turn the ignition switch to the "LOCK" (OFF) position when connecting and disconnecting the connectors. Turn the ignition switch to "ON" when measuring, unless there are instructions to the contrary.

IF INSPECTING WITH THE CONNECTOR CONNECTED <WATERPROOF CONNECTORS>



Be sure to use special tool. Never insert a test probe from the harness side, as this will reduce the waterproof performance and result in corrosion.

IF INSPECTING WITH THE CONNECTOR CONNECTED <ORDINARY (NON-WATERPROOF) CONNECTORS>



Required Special Tool:

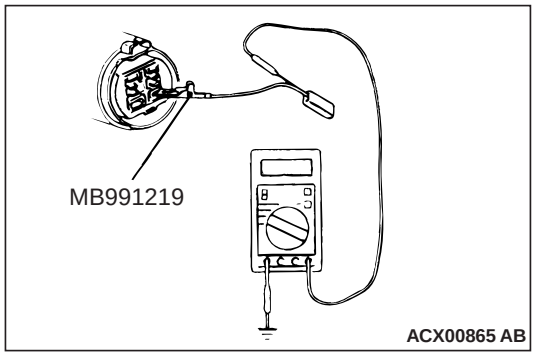
- MB992006: Extra Fine Probe

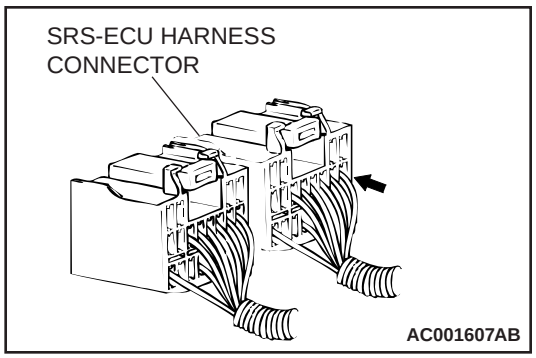
Inspect by inserting a test probe from the harness side. If the connector is too small to insert a test probe (e.g. control unit connector), do not insert it forcibly. Use special tool MB992006 (extra fine probe).

IF INSPECTING WITH THE CONNECTOR DISCONNECTED <WHEN INSPECTING A FEMALE PIN>

Required Special Tool:

- MB991219: Inspection Harness (Included in MB991223, Harness Set)
- The special tool MB991219 for connector pin contact pressure should be used. The test probe should never be forcibly inserted, as it may cause a defective contact.





- From back side of the connector (SRS-ECU harness side connector)

⚠ ***WARNING***

Insert the backprobing tool into the connector from the harness side, and connect the tester to the backprobing tool. If any tool other than the backprobing tool is used, it may cause damage to the harness and other components. Furthermore, measurement should not be carried out by touching the backprobing tool directly against the terminals from the front of the connector. The terminals are plated to increase their conductivity, so that if they are touched directly by the backprobing tool, the plating may break, which will decrease reliability.

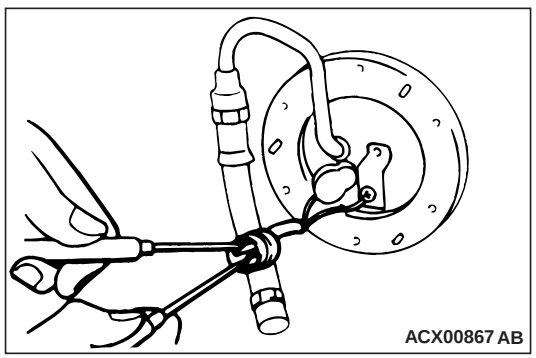
Since the SRS-ECU harness connector is plated to improve conductivity, observe the warning when checking this connector.

IF INSPECTING WITH THE CONNECTOR DISCONNECTED <WHEN INSPECTING A MALE PIN>

⚠ **CAUTION**

At this time, be careful not to short the connector pins with the test probes. Doing so may damage the circuits inside the ECU.

Touch the pin directly with the test probe.



CONNECTOR INSPECTION SERVICE POINTS

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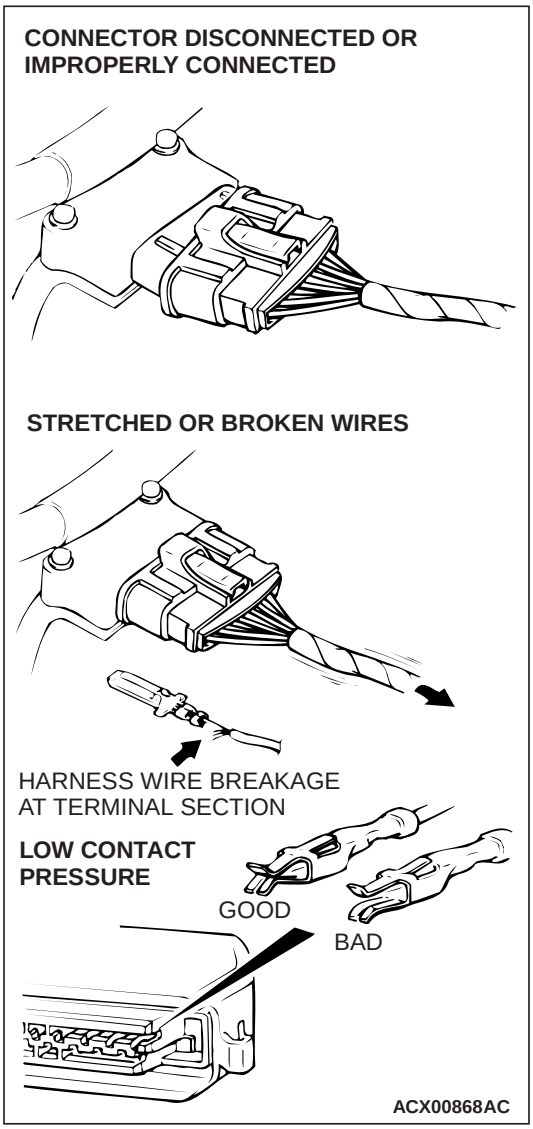
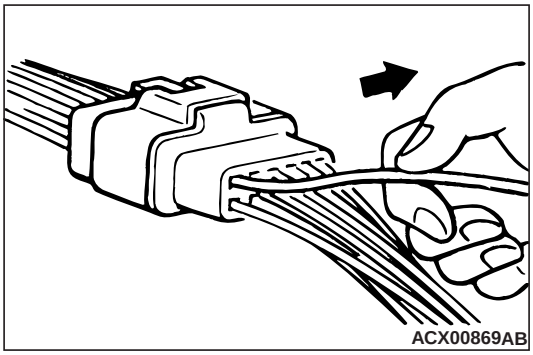
VISUAL INSPECTION



- Connector is disconnected or improperly connected
- Connector pins are pulled out
- Stretched an broken wires at terminal section
- Low contact pressure between male and female terminals
- Low connection pressure due to rusted terminals or foreign matter lodged in terminals

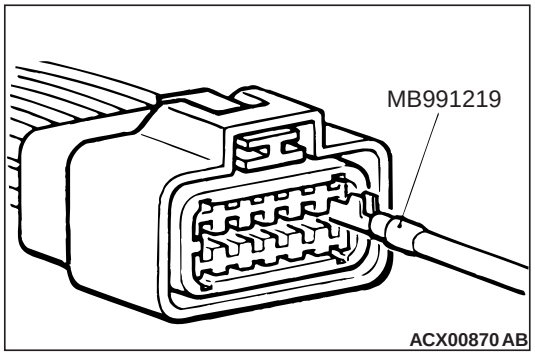
CONNECTOR PIN INSPECTION



If the connector pin stopper is damaged, the terminal connections (male and female pins) will not be perfect even when the connector body is connected, because the pins may pull out of the back side of the connector. Therefore, gently pull the wires one by one to make sure that no pins pull out of the connector.

CONNECTOR ENGAGEMENT INSPECTION

Required Special Tool:
MB991219: Inspection Harness (contained in MB991223 Test Harness)
Use special tool, MB991219 to inspect the engagement of the male pins and female pins. [Pin drawing force: 1 N (0.2 pound) or more]



HOW TO COPE WITH INTERMITTENT MALFUNCTIONS

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Most intermittent malfunctions occur under certain conditions. If those conditions can be identified, the cause will be easier to find.

TO COPE WITH INTERMITTENT MALFUNCTION

1. ASK THE CUSTOMER ABOUT THE MALFUNCTION

Ask what it feels like, what it sounds like, etc. Then ask about driving conditions, weather, frequency of occurrence, and so on.

2. DETERMINE THE CONDITIONS FROM THE CUSTOMER'S RESPONSES

Typically, almost all intermittent malfunctions occur from conditions like vibration, temperature and/or moisture change, poor connections. From the customer's responses, it should be reasoned which condition is most likely.

3. USE SIMULATION TEST

Use the simulation tests below to attempt to duplicate the customer's complaint. Determine the most likely circuit(s) and perform the simulation tests on the connectors and parts of that circuit(s). Be sure to use the inspection procedures provided for diagnostic trouble codes and trouble symptoms.
For temperature and/or moisture condition related intermittent malfunctions, try to change the conditions of the suspected circuit components, then use the simulation tests below.

4. VERIFY THE INTERMITTENT MALFUNCTION IS ELIMINATED

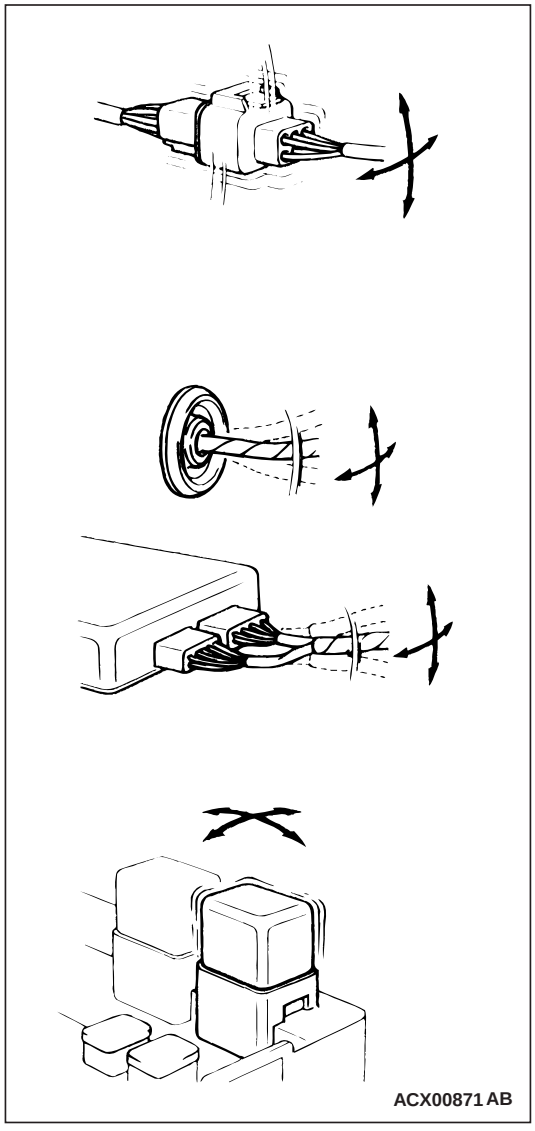
Repair the malfunctioning part and try to duplicate the condition(s) again to verify the intermittent malfunction has been eliminated.

SIMULATION TESTS

NOTE: In case of difficulty in finding the cause of the intermittent malfunction, the data recorder function in the scan tool is effective.

For these simulation tests, shake, then gently bend, pull, and twist the wiring of each of these examples to duplicate the intermittent malfunction.

- Shake the connector up-and-down, and right-and-left.
- Shake the wiring harness up-and-down, and right-and-left. Especially, check the splice points of wiring harnesses carefully.
- Shake the part or sensor.



INSPECTION SERVICE POINTS FOR A BLOWN FUSE

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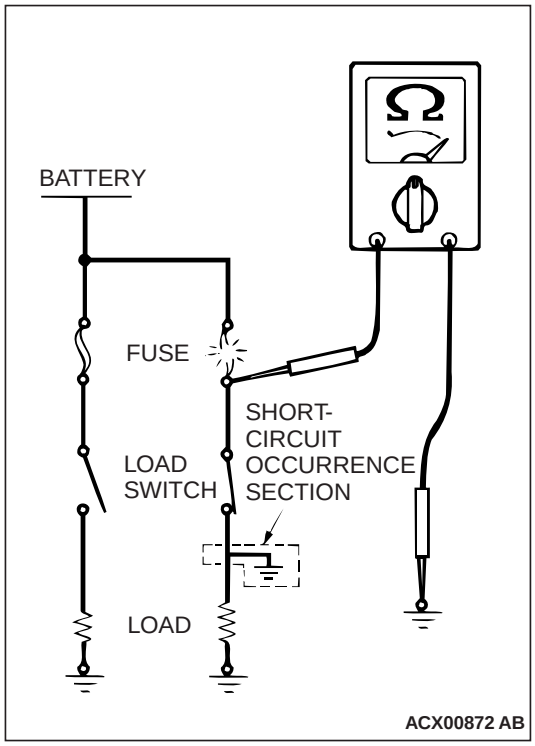

Remove the blown fuse and measure the resistance between the load side of the blown fuse and the ground. Close the switches of all circuits which are connected to this fuse. If the resistance is almost 0 ohm at this time, there is a short somewhere between these switches and the load. If the resistance is not 0 ohm, there is no short at the present time, but a momentary short has probably caused the fuse to blow.
The main causes of a short circuit are the following.

- Harness being clamped by the vehicle body
- Damage to the outer casing of the harness due to wear or heat
- Water getting into the connector or circuitry
- Human error (mistakenly shorting a circuit, etc.)

VEHICLE IDENTIFICATION

VEHICLE IDENTIFICATION

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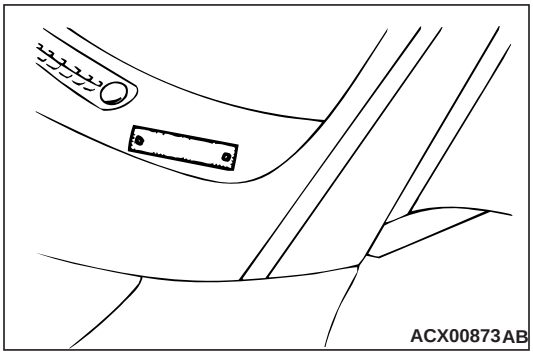
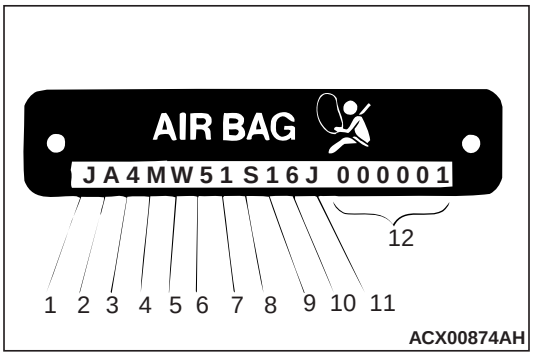
VEHICLE IDENTIFICATION NUMBER LOCATION



The vehicle identification number (VIN) is located on a plate attached to the left top side of the instrument panel.



VEHICLE IDENTIFICATION CODE CHART PLATE

All vehicle identification numbers contain 17 digits. The vehicle number is a code which tells country, make, vehicle type, etc.

NO.	ITEM	CONTENT
1	Country	J; Japan
2	Make	A; Mitsubishi
3	Vehicle type	4; Multi-purpose vehicle
4	Others	GROSS VEHICLE WEIGHT RATING/BRAKE SYSTEM M; 5,001-6,000 lb/HYDRAULIC
5	Line	W; MONTERO
6	Price class	3; Medium
		5; Premium
7	Body	1; 5-Door wagon
8	Engine	S; 3.8L
9	Check digits*	0, 1, 2, 3, ----------9, X
10	Model year	6; 2006 year
11	Plant	J; Pajero Manufacturing Co., Ltd.
12	Serial number	000001 to 999999

*NOTE: *: Check digit means a single number or letter X used to verify the accuracy of transcription of vehicle identification number.*

VEHICLE IDENTIFICATION NUMBER LIST

<VEHICLES FOR USA AND PUERTO RICO>

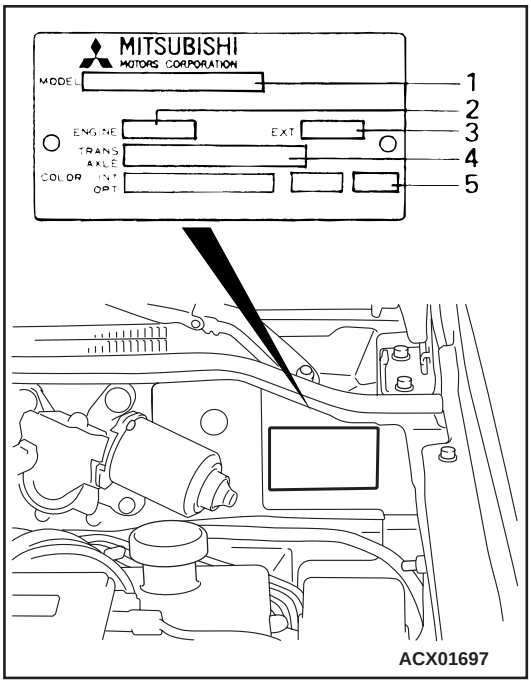
VIN (EXCEPT SEQUENCE NUMBER)	BRAND	ENGINE DISPLACEMENT	MODEL CODE
JA4MW31S_6J	MITSUBISHI MONTERO	3.8L	V77WLYHVL2M
JA4MW51S_6J			V77WLYXVL2M

<VEHICLES FOR CANADA>

VIN (EXCEPT SEQUENCE NUMBER)	BRAND	ENGINE DISPLACEMENT	MODEL CODE
JA4MW51S_6J	MITSUBISHI MONTERO	3.8L	V77WLYXVL3M

VEHICLE INFORMATION CODE PLATE

M1001005400859



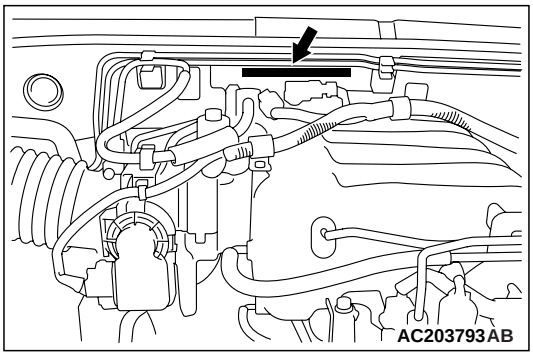
The vehicle information code plate is riveted onto the cowl top outer panel in the engine compartment.
The plate shows model code, engine model, transmission model and body color code.

NO.	ITEM	CONTENT	
1	MODEL	V77WLYXV L2M	V77W; Vehicle model
			LYXVL2M; Model series
2	ENGINE	6G75	Engine model
3	EXT	A69D	Exterior code
4	TRANS AXLE	V5A51 4300	V5A51; Transmission model
			4300; Rear differential reduction
5	COLOR, INT OPT	A69 21T Z08	A69; Body color code
			21T; Interior code
			Z08; Equipment code

For monotone color vehicles, the body color code shall be indicated. For two-tone vehicles, each color code only shall be indicated in series.

CHASSIS NUMBER

STAMPING LOCATION

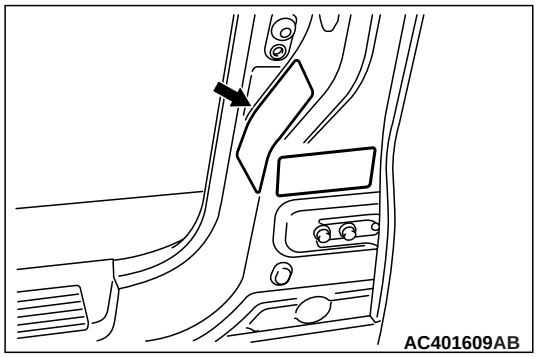


The chassis number is stamped on the center of the dash panel.

CHASSIS NUMBER CODE CHART

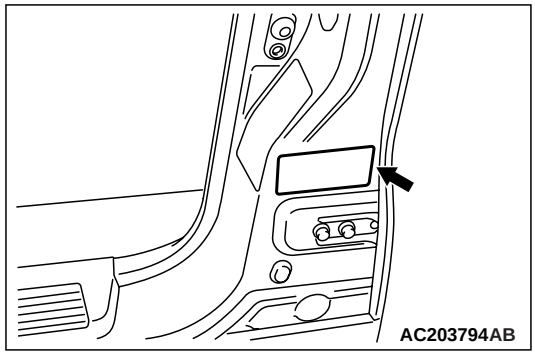
CHASSIS NUMBER CODE	CONTENT	
V77W6J000001	V77W; Vehicle line	V77W; MONTERO
	6J000001; Refer to 10th thru 17th digits of VIN plate	

TIRE AND LOADING INFORMATION PLACARD


AC401609AB

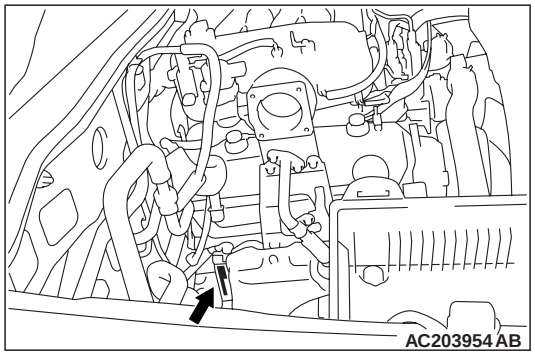
The tire and loading information placard is located on the inside sill of the driver's door.

VEHICLE SAFETY CERTIFICATION LABEL


AC203794AB

The vehicle safety certification label is attached to the face of the left door sill.
This label indicates the month and year of manufacture, Gross Vehicle Weight Rating (GVWR), front and rear Gross Axle Weight Rating (GAWR), and Vehicle Identification Number (VIN).

ENGINE MODEL STAMPING


AC203954AB

The engine model is stamped on the cylinder block.
These engine model numbers are as shown as follows.

ENGINE MODEL	ENGINE DISPLACEMENT
6G75	3.8L

The engine serial number is stamped near the engine model number.

THEFT PROTECTION

In order to protect against theft, a Vehicle Identification Number (VIN) is attached as a plate or label to the following major parts of the engine and transmission, as well as main outer panels: Engine cylinder block, Transmission housing. Fender, Doors, Liftgate, Quarter panel, Hood, Bumpers
In addition, a theft-protection label is attached to replacement parts for the body outer panel main components, and the same data are stamped into replacement parts for the engine and the transmission.

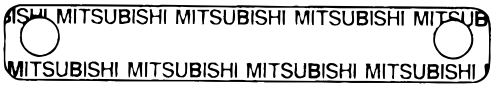
⚠ CAUTION

Cautions regarding panel repairs:

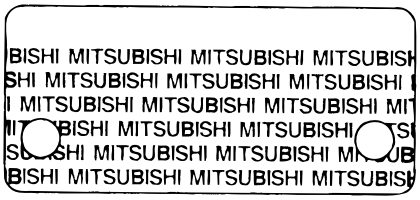
1. **When repainting original parts, do so after first masking the theft-protection label. After painting, be sure to peel off the masking tape.**
2. **The theft-protection label for replacement parts is covered by masking tape, so such parts can be painted as is. The masking tape should be removed after painting is finished.**
3. **The theft-protection label should not be removed from original parts or replacement parts.**

THEFT PROTECTION PLATE (VIN PLATE)

FOR ENGINE



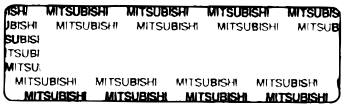
FOR TRANSMISSION



THEFT PROTECTION LABEL

FOR MAIN OUTER PANELS

[FOR ORIGINAL PARTS]



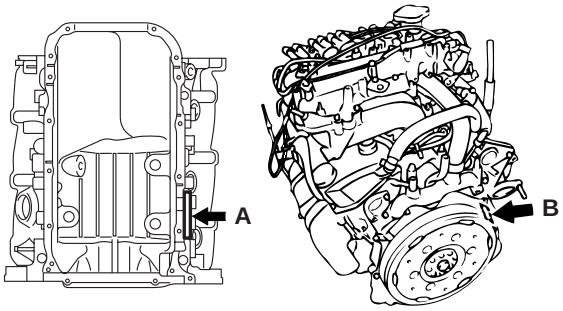
[FOR REPLACEMENT PARTS]

ACX00878 AB

LOCATIONS

TARGET AREA (A: FOR ORIGINAL EQUIPMENT PARTS, B: FOR REPLACEMENT PARTS)

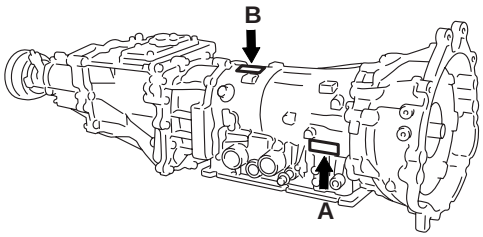
ENGINE



ENGINE UNDERSIDE

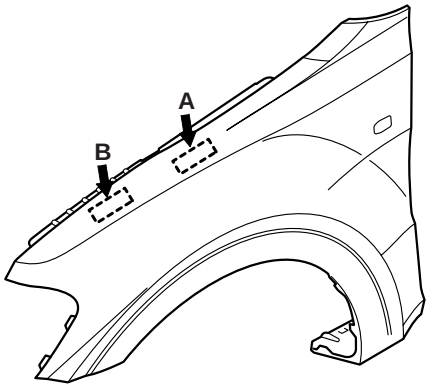
ACX01547AB

AUTOMATIC TRANSMISSION



ACX01191AC

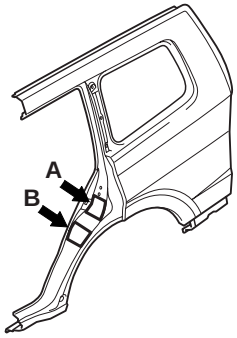
FENDER



The illustration indicates left outer side.
Right side is symmetrically opposite.

ACX01192AB

QUARTER PANEL



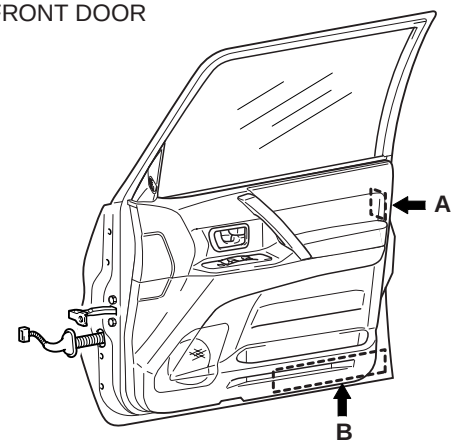
The illustration indicates left outer side.
Right side is symmetrically opposite.

ACX01193AB

TSB Revision

TARGET AREA (A: FOR ORIGINAL EQUIPMENT PARTS, B: FOR REPLACEMENT PARTS)

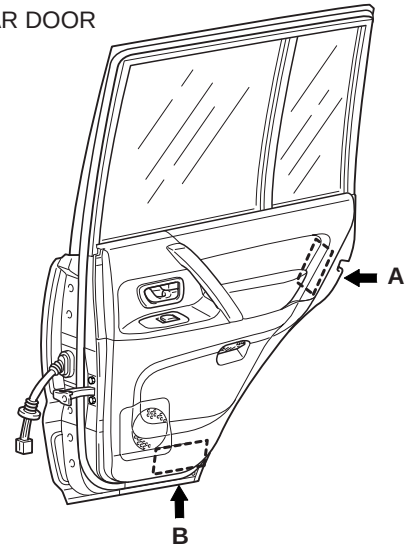
FRONT DOOR



The illustration indicates right outer side.
Left side is symmetrically opposite.

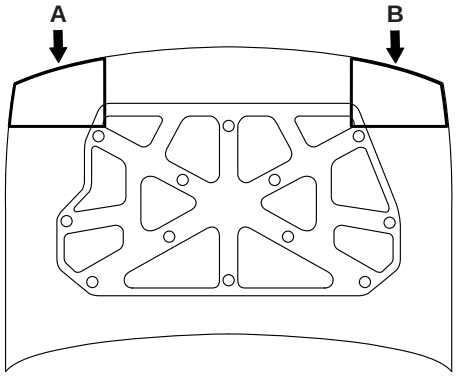
AC500603AB

REAR DOOR



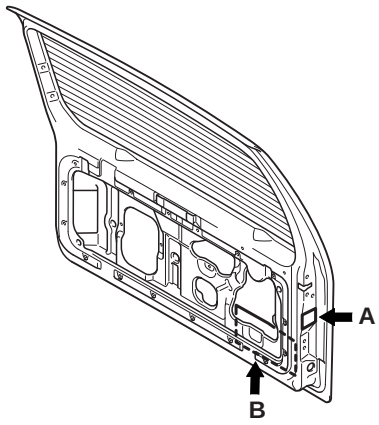
The illustration indicates right outer side.
Left side is symmetrically opposite. ACX01195AB

HOOD



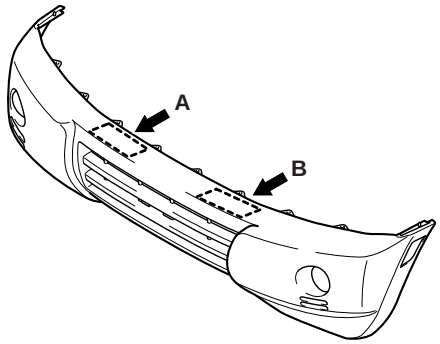
ACX01196 AB

BACK DOOR



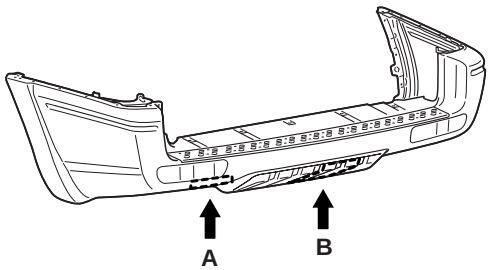
ACX01197 AB

FRONT BUMPER



AC203795AB

REAR BUMPER



AC203796 AB

PRECAUTIONS BEFORE SERVICE

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

M1001011600131

1. Items to review when servicing SRS
   (1) Be sure to read GROUP 52B, Supplemental Restraint System (SRS). For safe operation, please follow the directions and heed all warnings.
   (2) Wait at least 60 seconds after disconnecting the battery cable before doing any further work. The SRS system is designed to retain enough voltage to deploy the air bag even after the battery has been disconnected. Serious injury may result from unintended air bag deployment if work is done on the SRS system immediately after the battery cable is disconnected.
   (3) Warning labels must be heeded when servicing or handling SRS components. Warning labels can be found in the following locations.

- Hood
- Front impact sensor, side impact sensor
- Sun visor
- Glove box
- SRS-ECU
- Steering wheel
- Air bag module, side−airbag modules
- Clock spring
- Steering gear box
- Seat belt pre-tensioner

   (4) Always use the designated special tools and test equipment.
   (5) Store components removed from the SRS in a clean and dry place. The air bag module should be stored on a flat surface and placed so that the pad surface is facing upward.
   (6) Never attempt to disassemble or repair the SRS components (SRS-ECU, air bag module, clock spring and seat belt pre-tensioner). If there is a defect, replace the defective part.
   (7) Whenever you finish servicing the SRS, check the SRS warning light operation to make sure that the system functions properly.
   (8) Be sure to deploy the air bag before disposing of the air bag module or disposing of a vehicle equipped with an air bag (Refer to GROUP 52B, Air Bag Module Disposal Procedures P.52B-234).
2. Observe the following when carrying out operations on places where SRS components are installed, including operations not directly related to the SRS air bag.
   (1) When removing or installing parts, do not allow any impact or shock to occur to the SRS components.
   (2) If heat damage may occur during paint work, remove the SRS components. After re-installing them, check the SRS warning light operation to make sure that the system functions properly.

- SRS-ECU, air bag module, clock spring: 93°C (200°F) or more
- Seat belt pre-tensioner: 90°C (194°F) or more

HOW TO PERFORM VEHICLE IDENTIFICATION NUMBER (VIN) WRITING

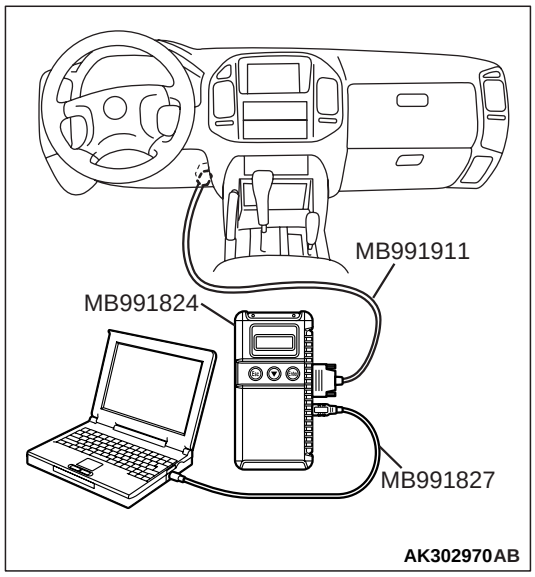
M1001011400052

The Vehicle Identification Number (VIN) is stored in the PCM by the vehicle manufacture. If the VIN to be stored in the PCM is eliminated fraudulently, the Malfunction Indicator Lamp (SERVICE ENGINE SOON or Check Engine Lamp) illuminates and Diagnostic Trouble Code (DTC) No. P0630 (VIN malfunction) is shown. When the PCM is replaced, and entry of the VIN necessary due to DTC No. P0630 (VIN malfunction). Enter the VIN in accordance with the procedure as follows:

Writing Procedure

Required Special Tools:

- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: V.C.I
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B



⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Confirm DTC No. P0630 (EEPROM malfunction) is not shown.

   NOTE: When DTC No. P0630 (EEPROM malfunction) is shown, the VIN cannot be stored even if entered. Therefore, the troubleshooting is performed when this DTC is shown.
4. Select "Coding" form the menu screen.
5. Select "VIN writing" form the menu screen.
6. Enter the VIN.
7. After entry of the VIN, turn the ignition switch to the "LOCK" (OFF) position. After ten seconds or more passed, turn to the "ON" position again.
8. Confirm DTC No. P0630 (VIN malfunction) is not shown.

   NOTE: When DTC No. P0630 (VIN malfunction) is shown, enter the VIN again because that would be not appropriate.

INITIALIZATION PROCEDURE FOR LEARNING VALUE IN MFI ENGINE

M1001011700202

When the following service is performed, initialize the learning value.

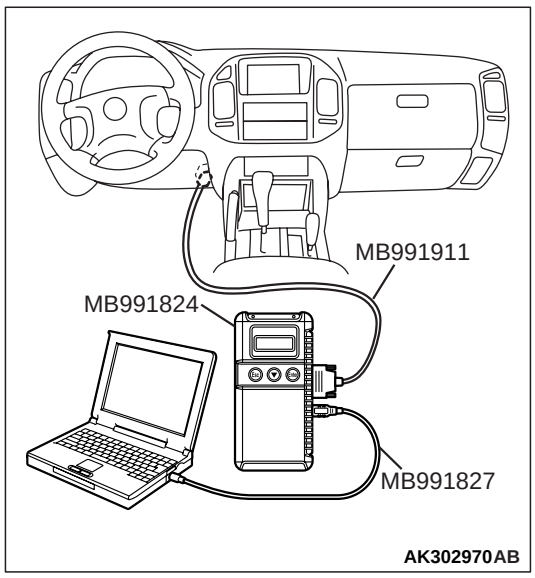
- At replacing engine assembly*
- At replacing throttle body and at cleaning
- At replacing knock sensor

*NOTE: * Initialize A/T-related learning value.*

INITIALIZATION PROCEDURE

Required Special Tools:

- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: V.C.I
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B



⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "Check Mode" form the menu screen.
4. Select "ERASE MEMORY" form the menu screen.
5. Initialize the learning value.
6. After initialization of the learning value, learn the idling in MFI engine. (Refer to LEARNING PROCEDURE FOR IDLING IN MFI ENGINE P.00-24.)

LEARNING PROCEDURE FOR IDLING IN MFI ENGINE

M1001011800221

PURPOSE

When the PCM is replaced, or when the learning value is initialized, the idling is not stabilized because the learning value in MFI engine is not completed. In this case, carry out the learning method for the idling through the following procedures.

LEARNING PROCEDURE

1. Start the engine and carry out the warm-up for the engine coolant temperature to reach 80°C (176°F) or more.
2. When the engine coolant temperature is 80°C (176°F) or more, the warm-up is not needed if the ignition switch is in "ON" position once.
3. Place the ignition switch in "LOCK" (OFF) position and stop the engine.
4. After 10 seconds or more, start the engine again.
5. For 10 minutes, carry out the idling under the condition shown below and then confirm the engine has the normal idling.
   - Transmission: "P" range
   - Operation in ignition-related, fan and attachments: Not to be operated
   - Engine coolant temperature: 80°C (176°F) or more

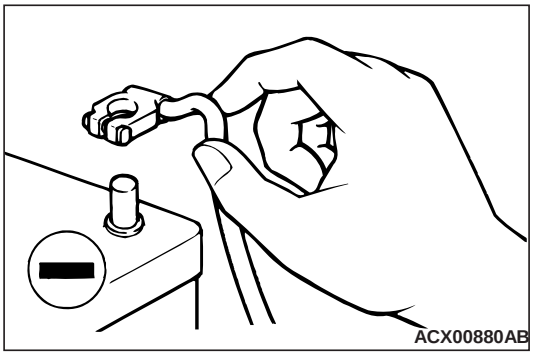
   NOTE: When the engine stalls during the idling, check the dirtiness (on the throttle valve) of the throttle body and then perform the service from Procedure 1 again.

SERVICING ELECTRICAL SYSTEM

M1001011900121

⚠ *WARNING*

Battery posts, terminals and related accessories contain lead and lead compounds. WASH HANDS AFTER HANDLING.


ACX00880AB

1. Note the following before proceeding with working on the electrical system.

   Never perform unauthorized modifications to any electrical device or wiring. Such modifications might lead to a vehicle malfunction, over-capacity or short-circuit that could result in a fire in the vehicle.

⚠ **CAUTION**

- **Before connecting or disconnecting the negative battery cable, be sure to turn the ignition switch to the "LOCK" (OFF) position and turn off the lights. (If this is not done, there is the possibility of semiconductor parts being damaged).**
- **After completion of the work (and the negative battery terminals is connected), warm up the engine and allow it to idle for approximately 10 minutes under the conditions described below in order to stabilize engine control conditions, and then check to be sure that the idle is satisfactory.**

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

   Engine coolant temperature: 85 – 95°C (185 – 203°F)

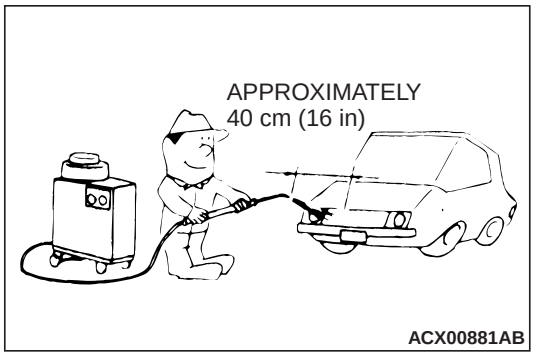
   Lights and all accessories: OFF

   Transmission: "N" or "P" position

   Steering wheel: straight-forward position

VEHICLE WASHING

M1001012000091



ACX00881AB

If high-pressure car-washing equipment or steam car-washing equipment is used to wash the vehicle, be sure to maintain the spray nozzle at a distance of at least approximately 40 cm (16 inches) from any plastic parts and all opening parts (doors, luggage compartment, etc).

APPLICATION OF ANTI-CORROSION AGENTS AND UNDERCOATS

M1001011000087

Be careful not to apply oil or grease to the heated oxygen sensor. If applied, the sensor may malfunction. Protect the heated oxygen sensor with a cover before applying anti-corrosion agent, etc.

SCAN TOOL (MUT-III SUB ASSEMBLY)

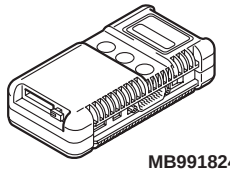
M1001012200222

⚠ CAUTION

Turn the ignition switch to the "LOCK" (OFF) position before disconnecting or connecting the scan tool.

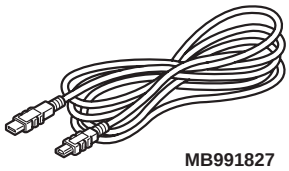
NOTE: MUT-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.

VEHICLE COMMUNICATION INTERFACE (V.C.I.)



MB991824

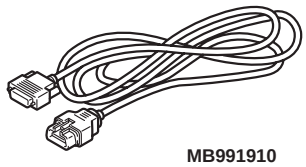
MUT-III USB CABLE



MB991827

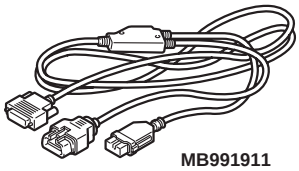
MUT-III MAIN HARNESS A

DO NOT USE



MB991910

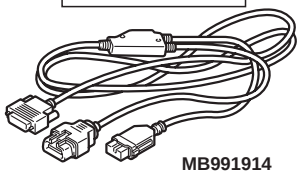
MUT-III MAIN HARNESS B



MB991911

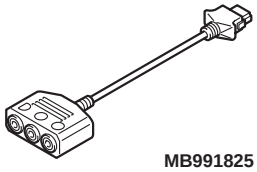
MUT-III MAIN HARNESS C

DO NOT USE



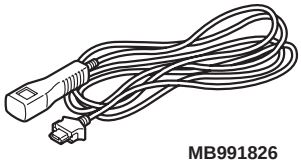
MB991914

MUT-III MEASUREMENT ADAPTER



MB991825

MUT-III TRIGGER HARNESS



MB991826

AC500580AB

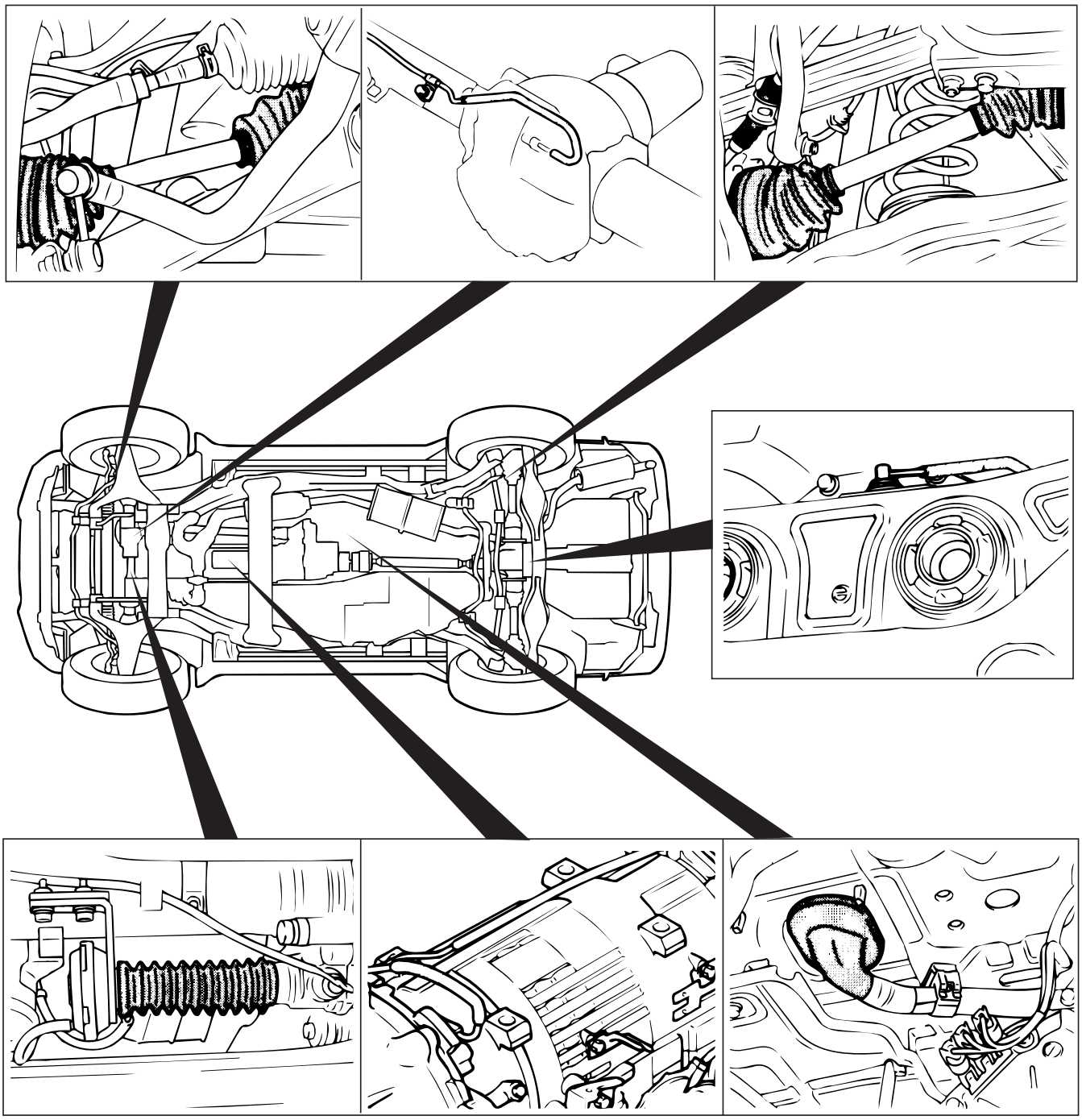
TREATMENT BEFORE/AFTER DRIVING THROUGH WATER

M1001000600074

INSPECTION AND SERVICE BEFORE DRIVING THROUGH WATER

Vehicles which are driven through water, or which may possibly be driven through water, should be subjected to the following inspections and maintenance procedures in advance.

- Inspect the dust boot and breather hose for cracks or damage, and replace them if cracks or damage are found.

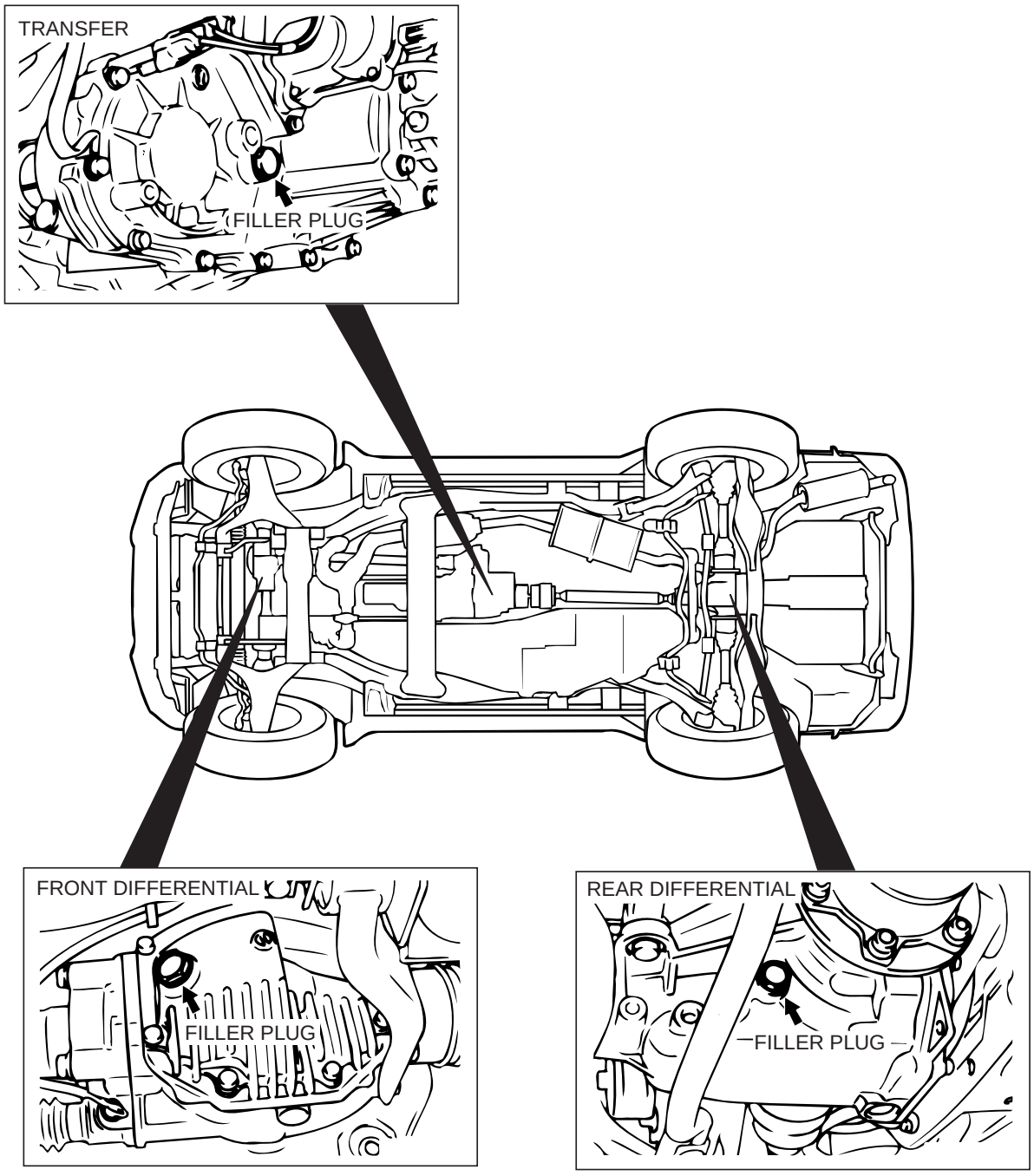


ACX00850AB

INSPECTION AND SERVICE AFTER DRIVING THROUGH WATER

After fording a stream, check the following points. If abnormal condition is evident, clean, replace or lubricate.

- Check for water, mud, sand, etc. in the rear brake drum, starter motor, brake pipe and fuel pipe.
- Check for water in the fluid or oil inside the front differential, rear differential, transmission and transfer.
- Check all boots and breather hoses for cracks and damage.



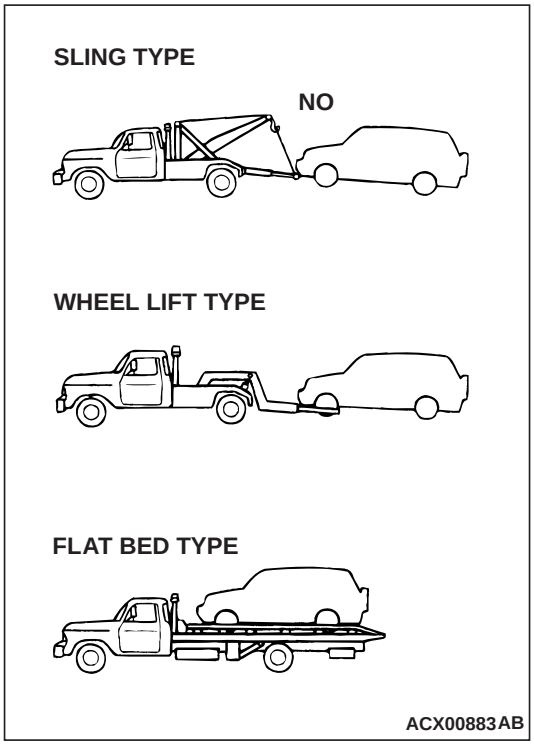
ACX00851AB

TOWING AND HOISTING

M1001000800142

WRECKER TOWING RECOMMENDATION

FRONT TOWING PICKUP

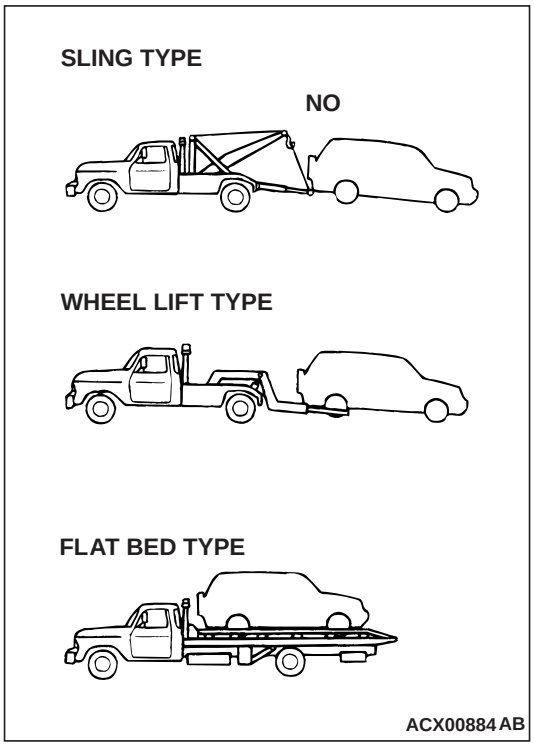


⚠ CAUTION

- **Do not tow this vehicle with a wrecker using sling-type equipment to prevent the bumper from deformation. If this vehicle is towed, use wheel lift or flat bed equipment.**
- **Make sure that the transmission remains in the "N" position.**
- **For the four-wheel-drive vehicle, move the transfer shift lever to "2H" position**

The vehicle may be towed on its rear wheels for extended distances provided the parking brake is released. It is recommended that vehicles be towed using the front pickup whenever possible.

REAR TOWING PICKUP



⚠ CAUTION

- **This vehicle cannot be towed by a wrecker using sling-type equipment to prevent the lower arm from deformation.If this vehicle is towed, use a wheel lift or flat bed equipment.**
- **Do not use the steering column lock to secure the front wheel for towing.**
- **For the four-wheel-drive vehicle, move the transfer shift lever to "2H" position.**
- **If these limits cannot be met, the front wheels must be placed on a tow dolly.**

Automatic transmission vehicle may be towed on the front wheels at speeds not to exceed 50 km/h (30 mph) for distances not to exceed 30 km (18 miles).

TOWING WHEN KEYS ARE NOT AVAILABLE

When a locked vehicle must be towed and keys are not available, the vehicle may be lifted and towed from the front, provided the parking brake is released. If not released, the rear wheels should be placed on a tow dolly.

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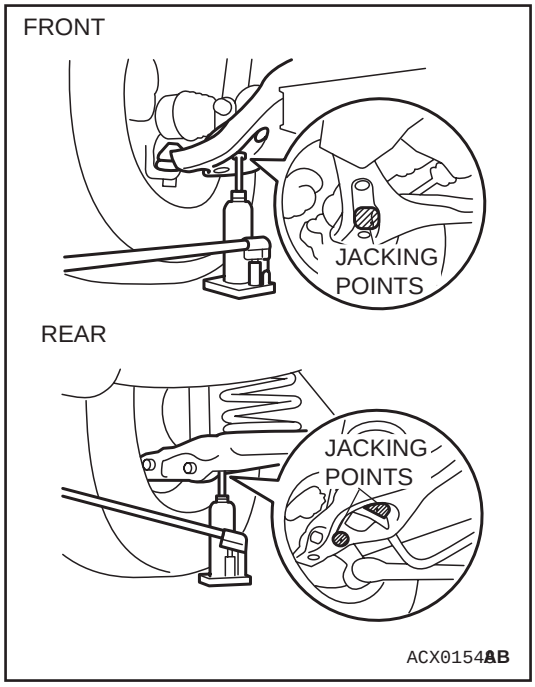
HOISTING

EMERGENCY JACKING

Place a jack under one of the jacking points shown in the illustration.

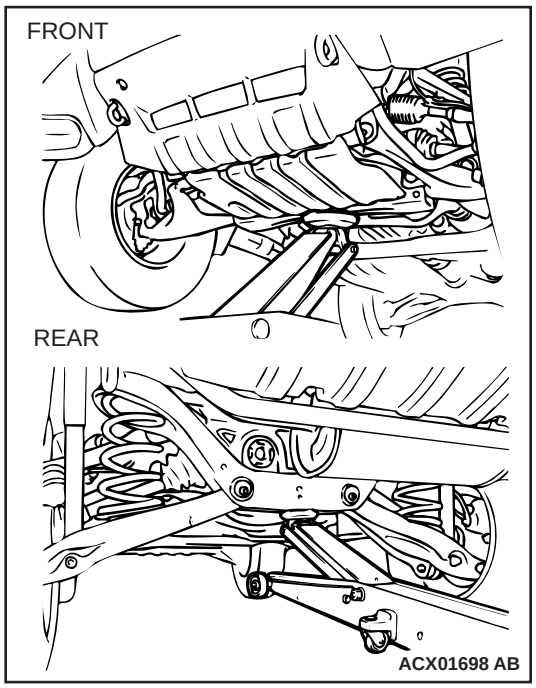


FLOOR JACK

⚠ CAUTION

- **A floor jack must never be used on any part of the underbody.**
- **Do not attempt to raise one entire side of the vehicle by placing a jack midway between front and rear wheels. This practice may result in permanent damage to the body.**

A regular floor jack may be used under the front crossmember or rear frame.



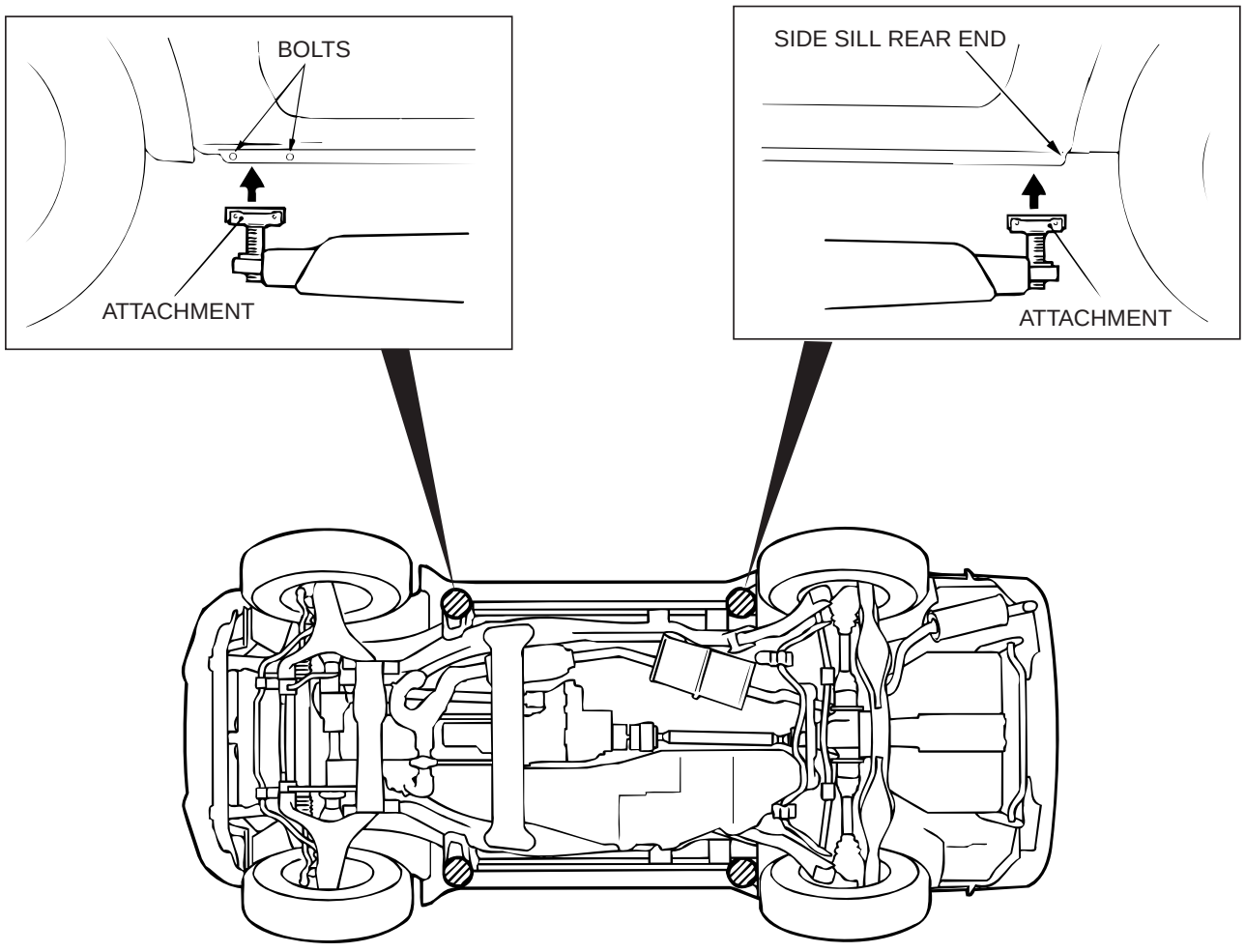
POST TYPE

⚠ CAUTION

When service procedures require removal of the rear suspension, the fuel tank or the spare tire, place additional weight on the rear end of the vehicle or anchor the vehicle to a hoist to prevent center of gravity changes.

Special care should be taken when raising the vehicle on a frame contact type hoist. The hoist must be equipped with the proper adapters in order to support the vehicle at the proper locations shown in the illustration.

Conventional hydraulic hoists may be used after determining that the adapter plates will make firm contact with the side frame.



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GENERAL DATA AND SPECIFICATIONS

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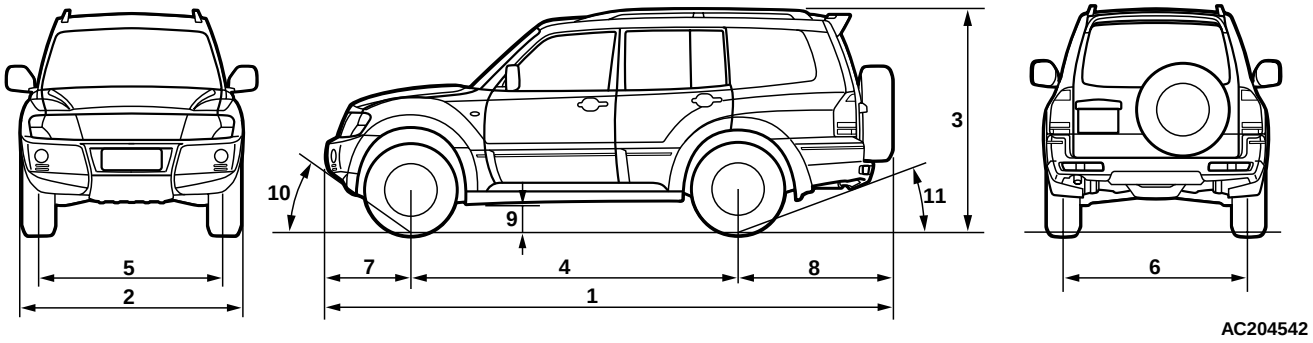

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ITEM		V77WLYHVL2M	V77WLYXVL2M/3M
Vehicle dimensions			
Overall length mm (in)	1	4,830 (190.2)	4,830 (190.2)
Overall width mm (in)	2	1,895 (74.6)	1,895 (74.6)
Overall height (unladen) mm (in)	3	1,885 (74.2)	1,885 (74.2)
Wheelbase mm (in)	4	2,780 (109.4)	2,780 (109.4)
Tread – front mm (in)	5	1,560 (61.4)	1,560 (61.4)
Tread – rear mm (in)	6	1,560 (61.4)	1,560 (61.4)
Overhang – front mm (in)	7	710 (28.0)	710 (28.0)
Overhang – rear mm (in)	8	1,305 (51.4)	1,305 (51.4)
Minimum running ground clearance mm (in)	9	235 (9.3)	235 (9.3)
Angle of approach degrees	10	39°	39°
Angle of departure degrees	11	24°	24°
Vehicle weight kg (lb)			
Curb weight		2,135 (4,707)	2,180 (4,806)<2M>, 2,185 (4,817)<3M>
Gross vehicle weight rating		2,720 (5,997)	2,720 (5,997)
Gross axle weight rating - front		1,200 (2,646)	1,200 (2,646)
Gross axle weight rating - rear		1,650 (3,638)	1,650 (3,638)
Seating capacity		7	7
Engine			
Model No.		6G75	6G75
Piston displacement		3.8L	3.8L
Transmission			
Model No.		V5A51	V5A51
Type		5-speed automatic	5-speed automatic
Fuel system			
Fuel supply system		Electronic-controlled multiport fuel injection	

TIGHTENING TORQUE

M1001001100511

Each torque value in the table is a standard value for tightening under the following conditions.

1. Bolts, nuts and washers are all made of steel and plated with zinc.
2. The threads and bearing surface of bolts and nuts are all in dry condition.

The values in the table are not applicable:

1. If toothed washers are inserted.
2. If plastic parts are fastened.
3. If bolts are tightened to plastic or die-cast inserted nuts.
4. If self-tapping screws or self-locking nuts are used.

STANDARD BOLT AND NUT TIGHTENING TORQUE

THREAD SIZE		STANDARD TIGHTENING TORQUE		
NOMINAL BOLT DIAMETER (mm)	PITCH (mm)	HEAD MARK "4"	HEAD MARK "7"	HEAD MARK "8"
M5	0.8	2.5 ± 0.5 N·m (23 ± 4 in-lb)	5.0 ± 1.0 N·m (44 ± 9 in-lb)	6.0 ± 1.0 N·m (53 ± 9 in-lb)
M6	1.0	5.0 ± 1.0 N·m (44 ± 9 in-lb)	8.5 ± 1.5 N·m (76 ± 13 in-lb)	10 ± 2 N·m (89 ± 17 in-lb)
M8	1.25	11 ± 2 N·m (98 ± 17 in-lb)	20 ± 4 N·m (15 ± 3 ft-lb)	24 ± 4 N·m (18 ± 3 ft-lb)
M10	1.25	23 ± 4 N·m (17 ± 3 ft-lb)	42 ± 8 N·m (31 ± 6 ft-lb)	53 ± 7 N·m (39 ± 5 ft-lb)
M12	1.25	42 ± 8 N·m (31 ± 6 ft-lb)	80 ± 10 N·m (59 ± 7 ft-lb)	93 ± 12 N·m (68 ± 9 ft-lb)
M14	1.5	70 ± 10 N·m (52 ± 7 ft-lb)	130 ± 20 N·m (96 ± 15 ft-lb)	150 ± 20 N·m (111 ± 14 ft-lb)
M16	1.5	105 ± 15 N·m (78 ± 11 ft-lb)	195 ± 25 N·m (144 ± 18 ft-lb)	230 ± 30 N·m (170 ± 22 ft-lb)
M18	1.5	150 ± 20 N·m (111 ± 14 ft-lb)	290 ± 40 N·m (214 ± 29 ft-lb)	335 ± 45 N·m (247 ± 33 ft-lb)
M20	1.5	210 ± 30 N·m (155 ± 22 ft-lb)	400 ± 60 N·m (295 ± 44 ft-lb)	465 ± 65 N·m (343 ± 48 ft-lb)
M22	1.5	290 ± 40 N·m (214 ± 29 ft-lb)	540 ± 80 N·m (398 ± 59 ft-lb)	630 ± 90 N·m (465 ± 66 ft-lb)
M24	1.5	375 ± 55 N·m (277 ± 40 ft-lb)	705 ± 105 N·m (520 ± 77 ft-lb)	820 ± 120 N·m (605 ± 88 ft-lb)

FLANGE BOLT AND NUT TIGHTENING TORQUE

THREAD SIZE		STANDARD TIGHTENING TORQUE		
NOMINAL BOLT DIAMETER (mm)	PITCH (mm)	HEAD MARK "4"	HEAD MARK "7"	HEAD MARK "8"
M6	1.0	5.0 ± 1.0 N·m (44 ± 9 in-lb)	10 ± 2 N·m (89 ± 17 in-lb)	12 ± 2 N·m (107 ± 17 in-lb)
M8	1.25	13 ± 2 N·m (111 ± 22 in-lb)	24 ± 4 N·m (18 ± 3 ft-lb)	28 ± 5 N·m (20 ± 4 ft-lb)
M10	1.25	26 ± 5 N·m (19 ± 4 ft-lb)	50 ± 5 N·m (37 ± 4 ft-lb)	58 ± 7 N·m (43 ± 5 ft-lb)
M10	1.5	25 ± 4 N·m (18 ± 3 ft-lb)	46 ± 8 N·m (34 ± 6 ft-lb)	55 ± 5 N·m (41 ± 3 ft-lb)
M12	1.25	47 ± 9 N·m (35 ± 6 ft-lb)	93 ± 12 N·m (68 ± 9 ft-lb)	105 ± 15 N·m (78 ± 11 ft-lb)
M12	1.75	43 ± 8 N·m (32 ± 6 ft-lb)	83 ± 12 N·m (61 ± 9 ft-lb)	98 ± 12 N·m (72 ± 9 ft-lb)

LUBRICATION AND MAINTENANCE

M1001001200369

Maintenance and lubrication service recommendations have been compiled to provide maximum protection for the vehicle owner's investment against all reasonable types of driving conditions. Since these conditions vary with the individual vehicle owner's driving habits, the area in which the vehicle is operated and the type of driving to which the vehicle is subjected, it is necessary to prescribe lubrication and maintenance service on a time frequency as well as mileage interval basis.
Oils, lubricants and greases are classified and graded according to standards recommended by the Society of Automotive Engineers (SAE), the American Petroleum Institute (API) and the National Lubricating Grease Institute (NLGI).

MAINTENANCE SCHEDULES

Information for service maintenance is provided in the "SCHEDULED MAINTENANCE TABLE." Three schedules are provided; one for "Required Maintenance." one for "General Maintenance" and one for "Severe Usage Service."

The item numbers in "SCHEDULED MAINTENANCE TABLE" correspond to the section numbers in "MAINTENANCE SERVICE."

SEVERE SERVICE

Vehicles operating under severe service conditions will require more frequent service.
Component service information is included in appropriate units for vehicles operating under one or more of the following conditions:

1. Trailer towing or police, taxi or commercial type operation.
2. Operation of Vehicle
   (1) Short-trip operation at freezing temperature (engine not thoroughly warmed up)
   (2) More than 50% operation in heavy city traffic during hot weather greater than 32°C(90°F)
   (3) Extensive idling
   (4) Driving in sandy areas
   (5) Driving in salty areas
   (6) Driving in dusty conditions
   (7) Driving off-road

ENGINE OIL

⚠ CAUTION

Test results submitted to EPA have shown that laboratory animals develop skin cancer after prolonged contact with used engine oil. Accordingly, the potential exists for humans to develop a number of skin disorders, including cancer, from such exposure to used engine oil. Therefore, when changing engine oil, be careful not to touch it as much as possible. Protective clothing and gloves, that cannot be penetrated by oil, should be worn. The skin should be thoroughly washed with soap and water, or use waterless hand cleaner, to remove any used engine oil. Do not use gasoline, thinners, or solvents.

Either of the following engine oils should be used:

1. Engine oil displaying ILSAC certification mark.
2. Engine oil conforming to the API classification SL, SL/CF.

For further details, refer to "LUBRICANTS SELECTION."

LUBRICANTS AND GREASES

Semi-solid lubricants bear the NLGI designation and are further classified as grades 0, 1, 2, 3, etc.
Whenever "Chassis Lubricant" is specified, Multipurpose Grease, NLGI grade Number 2, should be used.

FUEL USAGE STATEMENT

⚠ CAUTION

Using leaded gasoline in your car will damage the catalytic converters and heated oxygen sensors, and affect the warranty coverage validity.

This vehicle must use unleaded gasoline only.
Premium fuel is recommended.
This vehicle has a fuel filler tube which is especially designed to accept only the smaller-diameter unleaded gasoline dispensing nozzle.

Your car is designed to operate on premium grade unleaded gasoline having a minimum octane rating of 91 [(MON + RON)/2], or 95 RON. If premium grade unleaded gasoline is not available, unleaded gasoline having an octane rating of 87 [(MON + RON)/2], or 91 RON may be used. However, the performance level may be reduced.
MON: Motor Octane Number
RON: Research Octane Number

GASOLINES CONTAINING ALCOHOL

Some gasolines sold at service stations contain alcohol although they may not be so identified.
Using fuels containing alcohol is not recommended unless the nature of the blend can be determined as being satisfactory.
Gasohol: A mixture of 10% ethanol (grain alcohol) and 90% unleaded gasoline may be used in your vehicle. If driveability problems are experienced as a result of using gasohol, it is recommended that the vehicle be operated on gasoline.
Methanol: **Do not use gasolines containing methanol (wood alcohol).** Using this type of alcohol can result in vehicle performance deterioration and damage critical parts in the fuel system components. Fuel system damage and performance problems resulting from the use of gasolines containing methanol may not be covered by the new vehicle warranty.

GASOLINES CONTAINING METHY TERTIARY BUTYL ETHER (MTBE)

Unleaded gasoline containing 15% or less MTBE may be used in your vehicle. (Fuel containing MTBE over 15% in volume may cause reduced engine performance and produce vapor lock or hard starting.

MATERIALS ADDED TO FUEL

Indiscriminate use of fuel system cleaning agents should be avoided. Many of these materials intended for gum and varnish removal may contain highly active solvents or similar ingredients that can be harmful to gasket and diaphragm materials used in fuel system component parts.

RECOMMENDED LUBRICANTS AND LUBRICANT CAPACITIES TABLE

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RECOMMENDED LUBRICANTS

PART	SPECIFICATION	REMARK
Engine oil	Engine oil displaying ILSAC certification mark or conforming to the API classification SL, SL/CF	For further details, refer to "LUBRICANTS SELECTION" section.
Automatic transmission	MITSUBISHI genuine ATF SP-III	-
Transfer	API classification GL-4	SAE grade number: SAE 75W-90 or 75W-85W
Front axle, Rear axle	API classification GL-5 or higher	For further details, refer to "Lubricants Selection" section.
Power steering	GENUINE MITSUBISHI POWER STEERING FLUID	-
Brakes	Conforming to DOT 3 or DOT 4	
Engine coolant	Long life antifreeze coolant or an equivalent	-
Door hinges, back door hinges	Engine oil	-

LUBRICANT CAPACITY TABLE

DESCRIPTION		SPECIFICATION
Engine oil dm^3 (qt)	Oil pan (excluding oil filter)	4.3 (4.5)
Engine oil dm^3 (qt)	Oil filter	0.3 (0.32)
Engine oil dm^3 (qt)	Oil cooler	0.3 (0.32)
Engine coolant dm^3 (qt)		9.0 (9.5)
Automatic transmission dm^3 (qt)		9.3 (9.8)
Transfer dm^3 (qt)		2.8 (3.0)
Differential	Front axle dm^3 (qt)	1.2 (1.3)
	Rear axle dm^3 (qt)	1.6 (1.7)
Power steering dm^3 (qt)		1.0 (1.1)
Fuel tank dm^3 (gal)		90 (23.8)

LUBRICANT SELECTION

ENGINE OIL

⚠ CAUTION

Never use nondetergent or straight mineral oil.

Oil Identification Symbol

Use only engine oils displaying the ILSAC certification mark ("Starburst" symbol) on the container.

ILSAC CERTIFICATION MARK ("STARBURST" SYMBOL)

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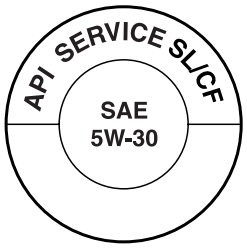
API SERVICE SYMBOL



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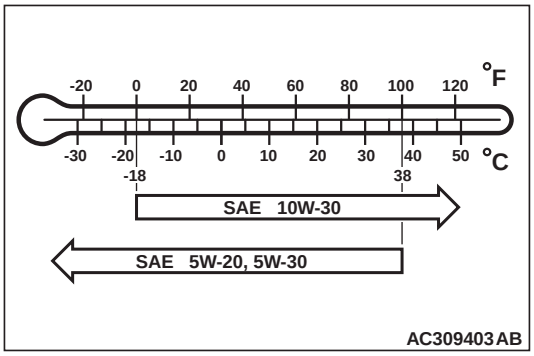
If these oils are not available, an API classification SL, SL/CF can be used.

OIL VISCOSITY

The SAE grade number indicates the viscosity of the oil. A proper SAE grade number should be selected according to ambient temperature.

NOTE: SAE 5W-20, SAE 5W-30 and SAE 10W-30 engine oil can be used in outdoor temperatures ranging from −18 to 38°C (0 to 100°F). However, for optimum fuel economy and cold starting, select the low SAE viscosity grade oil for the expected temperature range. SAE 5W-20 or SAE 5W-30 engine oil is recommended.



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FRONT AXLE/REAR AXLE

LUBRICANT	API CLASSIFICATION GL-5 OR HIGHER
Expected temperature range	Viscosity range
Above −23°C (−10°F)	SAE 90, SAE 85W-90 or SAE 80W-90
From −34 to −23°C (−30 to −10°F)	SAE 80W or SAE 80W-90
Below −34°C (−30°F)	SAE 75W

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SELECTION OF COOLANT

COOLANT

Relationship between Coolant Concentration and Specific Gravity

⚠ CAUTION

- **If the concentration of the coolant is less than 30%, the anti-corrosion property will be adversely affected. In addition, if the concentration is greater than 60%, both the anti-freeze and engine cooling properties will decrease, affecting the engine adversely. For these reasons, be sure to maintain the concentration level within the specified range.**
- **Do not use a mixture of different brands of anti-freeze.**

COOLANT TEMPERATURE °C (°F) AND SPECIFIC GRAVITY					FREEZING TEMPERATURE	SAFE OPERATING TEMPERATURE	COOLANT CONCENTRATION (SPECIFIC VOLUME)
10 (50)	20 (68)	30 (86)	40 (104)	50 (122)	°C (°F)	°C (°F)	%
1.054	1.050	1.046	1.042	1.036	−16 (3.2)	−11 (12.2)	30
1.063	1.058	1.054	1.049	1.044	−20 (−4)	−15 (5)	35
1.071	1.067	1.062	1.057	1.052	−25 (−13)	−20 (−4)	40
1.079	1.074	1.069	1.064	1.058	−30 (−22)	−25 (−13)	45
1.087	1.082	1.076	1.070	1.064	−36 (−32.8)	−31 (−23.8)	50
1.095	1.090	1.084	1.077	1.070	−42 (−44)	−37 (−35)	55
1.103	1.098	1.092	1.084	1.076	−50 (−58)	−45 (−49)	60

Example

- The safe operating temperature is −15°C (5° F) when the specific gravity is 1.058 at the coolant temperature of 20° C (68° F)

SCHEDULED MAINTENANCE TABLE

M1001001400642

SCHEDULED MAINTENANCE SERVICE FOR EMISSION CONTROL AND PROPER VEHICLE PERFORMANCE

Inspection and service should be performed any time if a malfunction is observed or suspected.

NO.	EMISSION CONTROL SYSTEM MAINTENANCE	SERVICE INTERVALS		KILOMETERS IN THOUSANDS	24	48	72	96	120	144	168	192
				MILEAGE IN THOUSANDS	15	30	45	60	75	90	105	120
				MONTHS	12	24	36	48	60	72	84	96
1	Fuel system (tank, pipe line and connection, and fuel tank filler tube cap)	Check for leaks						X				X
2	Fuel hoses	Check condition				X*1		X		X		X
3	Air cleaner filter	Replace				X		X		X		X
4	Evaporative emission control system (except evaporative emission canister)	Check for leaks and clogging						X				X
5	Spark plugs	Standard type	Replace			X		X		X		X
		Platinum-tipped type						X				X
		Iridium-tipped type			Every 84 months or every 168,000 km (105,000 miles)							
6	Intake and exhaust valve clearance (4G6-MIVEC engine only)	Inspect and adjust If valve noise increases, adjust valve clearance				X		X		X		X
7	Timing belt	Replace			Every 96,000 km (60,000 miles) *2 *NOTE: Replace the timing belt at every 168,000 km (105,000 miles) when it has not been replaced at the first 96,000 km (60,000 miles).*							
8	Drive belts (for the generator, water pump and power steering pump)	Check condition				X		X		X		X
9	Exhaust system (connection portion of muffler, muffler pipes and converter heat shields)	Check and service				X*1		X		X		X

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GENERAL MAINTENANCE SERVICE FOR PROPER VEHICLE PERFORMANCE

NO.	GENERAL MAINTENANCE	SERVICE INTERVALS	KILOMETERS IN THOUSANDS	24	48	72	96	120	144	168	192
			MILEAGE IN THOUSANDS	15	30	45	60	75	90	105	120
			MONTHS	12	24	36	48	60	72	84	96
10	Engine oil	Change		Every 6 months or every 12,000 km (7,500 miles)							
11	Engine oil filter	Replace		Every 6 months or every 12,000 km (7,500 miles)							
12	Transmission oil/Transmission fluid	Check fluid level and condition			X		X		X		X
13	Engine coolant	Change					X at first		X		X
14	Coolant hoses (radiator hose, heater hose)	Inspect			X		X		X		X
15	Disc brake pads, rotors	Inspect for wear		Every 12 months or every 24,000 km (15,000 miles)							
16	Brake hoses	Check for deterioration or leaks		Every 12 months or every 24,000 km (15,000 miles)							
17	Ball joint and steering linkage seals	Inspect for grease leaks and damage			X		X		X		X
18	Drive shaft boots	Inspect for grease leaks and damage		Every 12 months or every 24,000 km (15,000 miles)							
19	Suspension system	Inspect for looseness and damage			X		X		X		X
20	Rear axle oil	Check oil level			X		X		X		X
21	Propeller shaft joints with grease nipple	Lubricate grease			X		X		X		X
22	SRS air bag	Inspect the SRS system		Every 10 years							
23	Tires	Rotate		Every 12,000 km (7,500 miles)							

NOTE:

- *[*1]: This maintenance is recommended but is not required to maintain the emissions warranty.*
- *[*2]: For California, Massachusetts, Vermot and Maine, this maintenance is recommended but is not required to maintain the emissions warranty.*

SCHEDULED MAINTENANCE UNDER SEVERE USAGE CONDITIONS

Maintenance should be carried out according to the following table:

NO.	MAINTENANCE ITEM	SERVICE INTERVALS	KILOMETERS IN THOUSANDS	24	48	72	96	120	144	168	192
			MILEAGE IN THOUSANDS	15	30	45	60	75	90	105	120
			MONTHS	12	24	36	48	60	72	84	96
3	Air cleaner filter	Replace		X	X	X	X	X	X	X	X
5	Spark plugs	Standard type	Replace	X	X	X	X	X	X	X	X
		Platinum-tipped type					X				X
		Iridium-tipped type		Every 168,000 km (105,000 miles)							
7	Timing belt	Change		Every 48 months or every 960,000 km (6,000 miles)							
10	Engine oil	Change		Every 3 months or every 6,000 km (3,750 miles)							
11	Engine oil filter	Replace		Every 3 months or every 6,000 km (3,750 miles)							
12	Transmission oil	Change oil			X		X		X		X
	Transmission fluid	Change fluid		X check	X	X check	X	X check	X	X check	X
15	Disc brake pads, rotors	Inspect for wear		Every 6 months or every 12,000 km (7,500 miles)							
21	Tires	Rotate		Every 12,000 km (7,500 miles)							

Severe usage conditions:

1. Driving on dusty, rough, muddy or salt-spread roads
2. Towing or police, taxi or commercial operation
3. Extensive idling and/or low speed operation
4. Repeated short-trip operation at freezing temperatures (engine not thoroughly warmed up)
5. Extended use of brakes while driving
6. Driving in sandy areas
7. More than 50% operation in heavy city traffic during hot weather above 90°F (32°C)

MAINTENANCE SERVICE

1. FUEL SYSTEM (TANK, PIPE LINE AND CONNECTIONS, AND FUEL TANK FILLER TUBE CAP) (Check for leaks)

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1. Check for damage or leakage in the fuel lines and connections.
2. Inspect the surface of fuel hoses for heat and mechanical damage. Hard and brittle rubber, cracking, checking, tears, cuts, abrasions and excessive swelling indicate deterioration of the rubber.
3. If the fabric casing of the rubber hose is exposed by cracks and abrasions in the fuel system, the hoses should be replaced.

2. FUEL HOSES (CHECK CONDITION)

M1001001700137

Make sure that the hoses do not come in contact with any heat source or moving component which might cause heat damage or mechanical wear.

3. AIR CLEANER ELEMENT (Replace)

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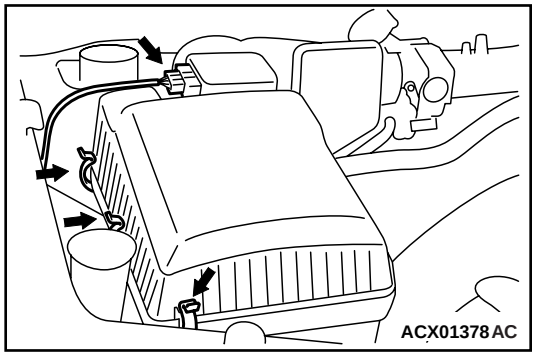
The air cleaner element will become dirty during use, reducing its effect. Replace it with a new one.



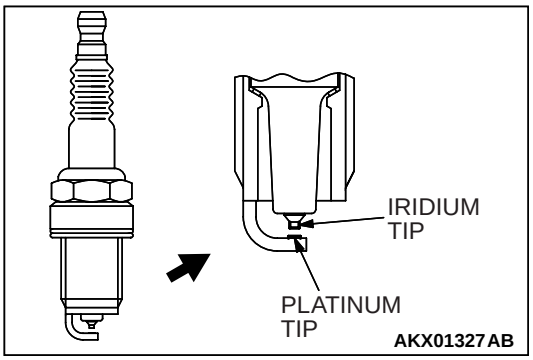
REPLACEMENT OF AIR CLEANER ELEMENT

1. Loosen the clamp coupling the air intake hose and the air cleaner housing cover, and separate the air intake hose.
2. Disconnect the volume airflow sensor connector.
3. Disconnect the air cleaner housing cover clips.
4. Remove the air cleaner housing cover and replace the air cleaner element with a new one.
5. Clamp the clips and coupling, and then connect the volume airflow sensor connector.

4. EVAPORATIVE EMISSION SYSTEM (CHECK FOR LEAKS AND CLOGGING) - EXCEPT EVAPORATIVE EMISSION CANISTER

M1001001900272

If the fuel-vapor vent line is clogged or damaged, the fuel vapor mixture will escape into the atmosphere causing excessive emissions. Disconnect the line at both ends, and blow it clean with compressed air. Remove the fuel tank filler tube cap from the filler tube and check to see if there is evidence that the packing makes improper contact to the filler tube.



5. SPARK PLUGS (REPLACE)

M1001002000302

⚠ CAUTION

Iridium plugs are used. Use care not to damage the iridium and platinum tips of the plugs. Do not adjust the spark plug gap.

1. Spark plugs must spark properly to assure proper engine performance and reduce exhaust emission level. Therefore, they should be replaced periodically with new ones.
   Spark plug type

MAKER	IDENTIFICATION NO.
NGK	IFR6S
DENSO	SK20PR-A8

2. The new plugs should be checked for the proper gap.
   Spark plug gap: 0.7 – 0.8 mm (0.028 – 0.031 inch)
3. Install the spark plugs and tighten to 25±5 N·m (18±4 ft-lb).

6. TIMING BELT (REPLACE)

M1001002300370

Replace the belt with a new one according to the maintenance schedule on P.00-39 to assure proper engine performance. For removal and installation procedures, refer to GROUP 11A, Engine Mechanical – Timing Belt – Removal and Installation P.11A-35.

7. DRIVE BELT (FOR GENERATOR AND WATER PUMP, POWER STEERING PUMP) (CHECK CONDITION)

M1001002500482

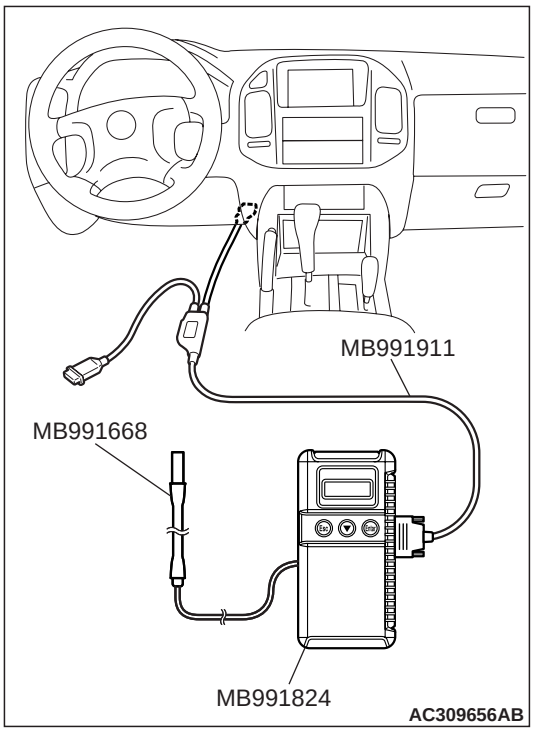
DRIVE BELT TENSION CHECK

Check the drive belt tension by the following procedure.

<When using scan tool MB991958>

Required Special Tools:

- MB991668: Belt Tension Meter Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991911: MUT-III Main Harness B



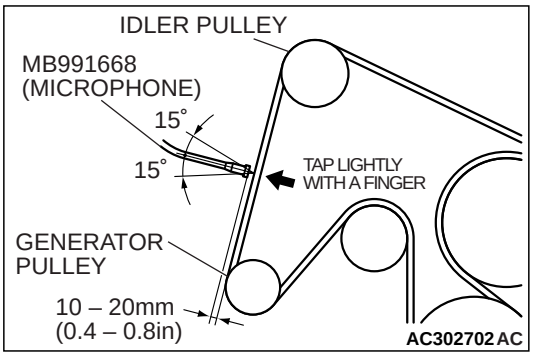
⚠ CAUTION

To prevent damage to scan tool MB991824, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991824.

1. Connect special tool MB991668 to scan tool MB991824.
2. Connect scan tool MB991911 to scan tool MB991824.
3. Connect scan tool MB991911 to the data link connector.
4. Turn the ignition switch to the "ON" position and select "Belt Tension" from the menu scan tool MB991824 screen.

⚠ CAUTION

- **The temperature of the surface of the belt should be as close as possible to underhood temperature.**
- **Do not let any contaminants such as water or oil get onto the microphone.**
- **If strong gusts of wind blow against the microphone or if there are any loud sources of noise nearby, the values measured by the microphone may not correspond to actual values.**
- **If the microphone is touching the belt while the measurement is being made, the values measured by the microphone may not correspond to actual values.**
- **Do not take the measurement while the vehicle's engine is running.**



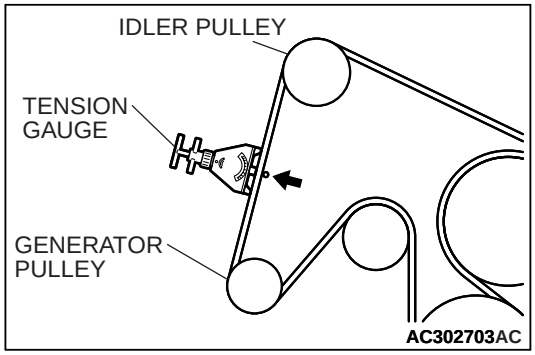
5. Hold special tool MB991668 (microphone) to the middle of the drive belt between the pulleys (at the place indicated by the arrow), about 10 – 20 mm (0.4 – 0.8 inch) away from the rear surface of the belt and so that it is perpendicular to the belt (within an angle of ± 15 degree angle).
6. Gently tap the middle of the belt between the pulleys (the place indicated by the arrow) with your finger as shown in the illustration, and check that the vibration frequency of the belt is within the standard value.

   Standard value: 88 – 121 Hz

<When using the tension gauge>

Use a belt tension gauge to check that the belt tension is within the standard value.

Standard value: 197 – 371 N (44 – 83 lb)



8. EXHAUST SYSTEM (CONNECTION PORTION OF MUFFLER, PIPINGS AND CONVERTER HEAT SHIELDS) (CHECK AND SERVICE AS REQUIRED)

M1001005800341

1. Check for holes and gas leaks due to damage, corrosion, etc.
2. Check the joints and connections for looseness and gas leaks.
3. Check the hanger rubber and brackets for damage.

9. ENGINE OIL (CHANGE)

M1001002600467

Use the specified oil. (Refer to P.00-36.)

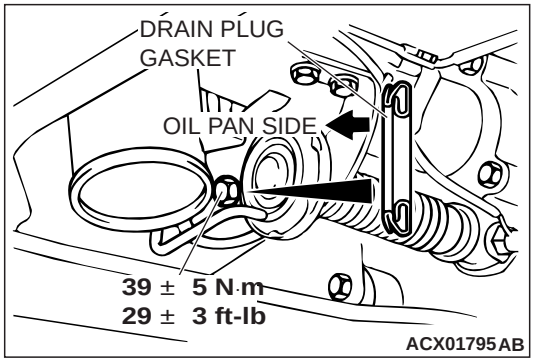
1. After warming up the engine, remove the oil filler cap.

⚠ *WARNING*
Use care. Oil could be hot.

2. Remove the drain plug to allow the engine oil to drain.
3. Replace the drain plug gasket with a new one, and then tighten the drain plug to the specified torque.

   NOTE: Install the drain plug gasket so it faces in the direction shown in the illustration.

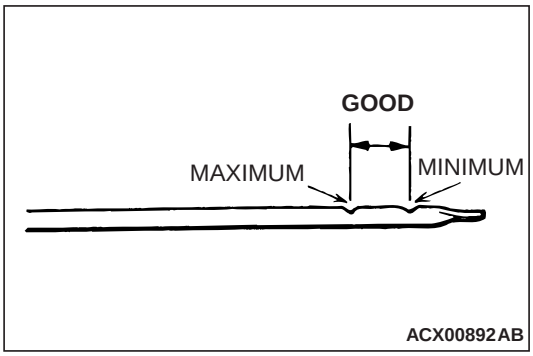
   Tightening torque: 39 ± 5 N·m (29 ± 3 ft-lb)



4. Pour new engine oil in through the oil filler tube.

   Engine oil capacity: 4.3 dm^3 (4.5 quarts) [excluding oil filter 0.3 dm^3 (0.32 quart), oil cooler 0.3 dm^3 (0.32 quart)]

5. Start the engine and run it at idle for a few minutes.
6. Stop the engine and check to ensure that the engine oil level is within the level range indicated on the dip stick.

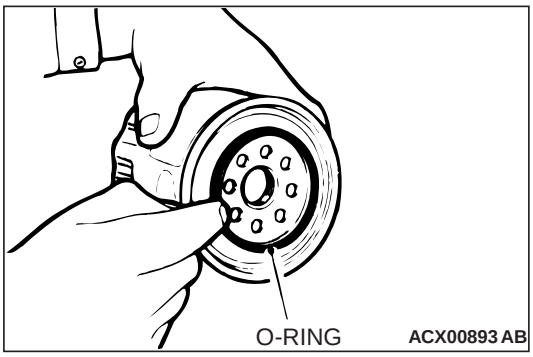


10. ENGINE OIL FILTER (REPLACE)

M1001002700408

The quality of replacement filters varies considerably. Only high quality filters should be used to assure most efficient service. Genuine oil filters require that the filter is capable of withstanding a pressure of 1,765 kPa (256 psi) are high quality filters and are recommended as follows:

Mitsubishi Oil Filter Part Number: MD352626 or equivalent



ENGINE OIL FILTER SELECTION

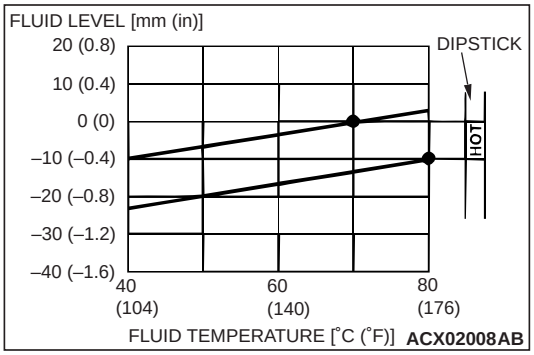
This vehicle is equipped with a full-flow, throw-away oil filter. The same type of filter is recommended as a replacement filter for this vehicle. It is possible, particularly in cold weather, that this vehicle may develop high oil pressure for a short duration. Make sure that any replacement filter used on this vehicle is a high-quality filter. The filter can withstand a pressure of 1,765 kPa (256 psi) [manufacturer's specifications] to avoid the filter and engine damage. The following is a high-quality filter and is strongly recommended for use on this vehicle: Mitsubishi Engine Oil Filter Part number MD352626.
Any replacement oil filter should be installed in accordance with the oil filter manufacturer's installation instructions.

1. Remove the under cover.
2. Drain the engine oil by removing the oil drain plug.
3. Use an oil filter wrench to remove the engine oil filter.
4. Clean the contact surface of the filter bracket.
5. Lubricate the O-ring of the new oil filter with a small amount of new engine oil.

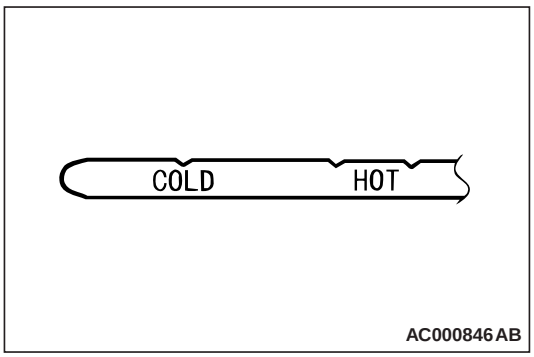
11. TRANSMISSION FLUID

M1001002900402

Checking transmission fluid level



1. Drive the vehicle until the fluid temperature rises to the normal temperature [70 – 80°C (158 – 176°F)].
   If it takes some amount of time until the transmission fluid reaches its normal operating temperature [70 – 80°C (158 – 176°F)], check the transmission fluid level by referring to the diagram at left.
   NOTE: The transmission fluid temperature is measured with scan tool MB991502.
2. Park the vehicle on a level surface.
3. Move the selector lever through all positions to fill the torque converter and the hydraulic circuits with fluid, and then move the selector lever to the "N" position.
4. After wiping off any dirt from around the dipstick, remove the dipstick and check the condition of the fluid.
   NOTE: If the fluid smells as if it is burnt, it means that the fluid has been contaminated by fine particles from the bushings and friction materials, a transmission overhaul and flashing the cooler line flushing may be necessary.



5. Check that the fluid level is at the "HOT" mark on the dipstick. If the fluid level is lower than this, pour in more MITSUBISHI GENUINE ATF SP-III or equivalent until the level reaches the "HOT" mark.
   NOTE: If the fluid level is too low, the oil pump will draw in air along with the fluid, which will cause bubbles to form. This will in turn cause the hydraulic pressure to drop, which will result in late shifting and slipping of the clutches and brakes.

If the fluid level is too high, the gear makes bubbles in transmission fluid. Same phenomena will occur when the transmission fluid volume is little.
In either case, air bubbles can interfere with normal valve, clutch, and brake operation. Foaming can cause fluid to escape from the transmission vent, in which case it may be mistaken for a leak.

6. Securely insert the dipstick.

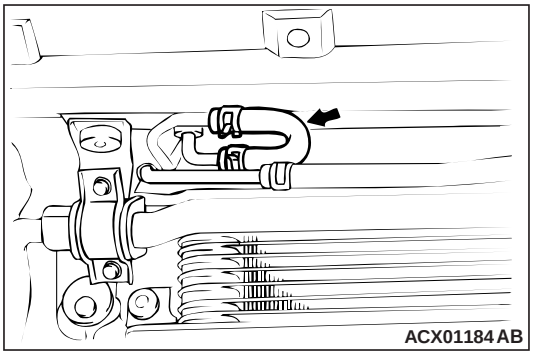
NOTE: The fluid and filter should always be replaced when:

- *When trouble shooting the transmission*
- *When overhauling the transmission*
- *When the oil is noticeably dirty or burnt (vehicle was driven under severe conditions)*

Further more, the oil filters are special filters which are only to be used for the automatic transmission.

Change transmission fluid

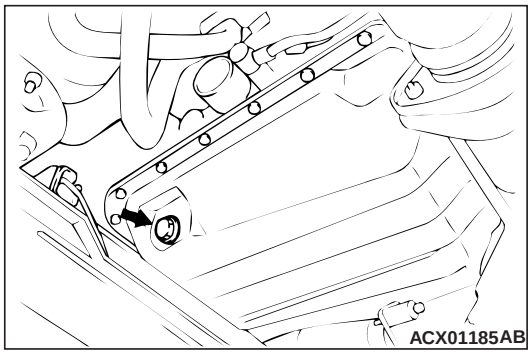
If you have a fluid changer, replace the fluid by the following procedure.


ACX01184AB

1. Disconnect the hose shown in the illustration which connects the transmission and the oil cooler (inside the radiator). Place a container under the hose to collect the transmission fluid.
2. Start the engine and let the fluid drain out.

Running conditions: "N" range with engine idling

⚠ CAUTION
The engine should be stopped within one minute after it is started. If the fluid has all drained out before then, the engine should be stopped at that point.


ACX01185AB

3. Remove the drain plug from the bottom of the transmission case to drain the fluid.

Discharge volume: Approximately 2.0 dm^3 (2.1 quarts)

4. Install the drain plug with a new gasket, and tighten it to the specified torque.

Tightening torque: 32 ± 2 N·m (24 ± 1 ft-lb)

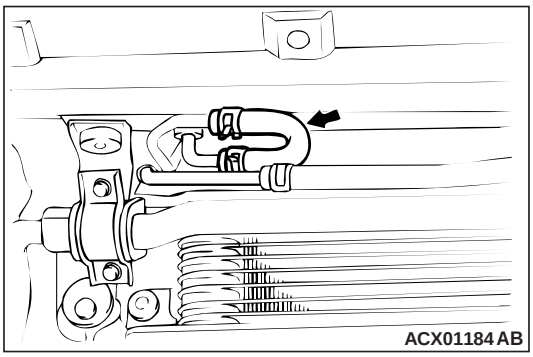
5. Pour new transmission fluid in through the oil filler tube.

Adding volume: Approximately 6.0 dm^3 (6.3 quarts)

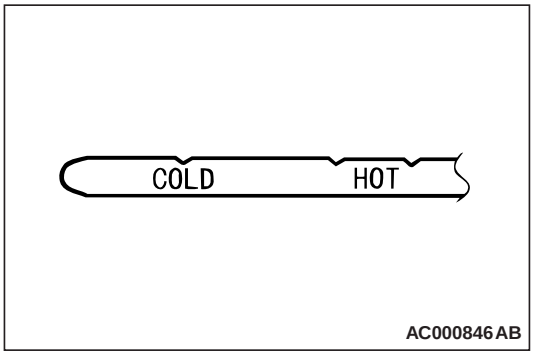
⚠ CAUTION
Stop pouring if the full volume of fluid cannot be poured in.

6. Repeat the procedure in Step 2. (to pump out the rest of the contaminated fluid)
7. Pour the transmission fluid in through the oil filler tube.

NOTE: Check the fluid for contamination or burnt smell. If fluid is still contaminated or burnt, repeat Steps 7 and 8 before proceeding to Step 8.

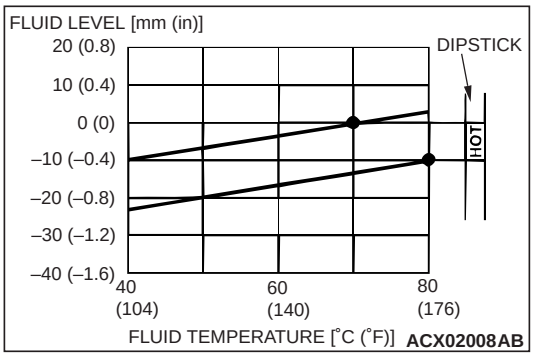

ACX01184AB

8. Reconnect the hose which was disconnected in step 1 above, and firmly replace the dipstick.
9. Start the engine and run it at idle for 1 – 2 minutes.
10. Move the selector lever through all positions, and then move it to the "N" position.



AC000846AB

11. Check that the fluid level is at the "COLD" mark on the dipstick. If the level is lower than this, pour in more fluid.



ACX02008AB

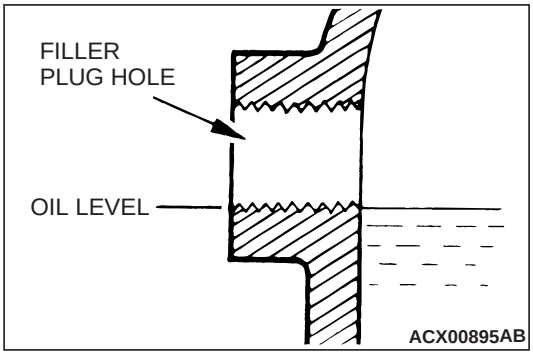
12. Drive the vehicle until the fluid temperature rises to the normal temperature [70 – 80°C (158 – 176°F)], and then check the fluid level again. If it takes some amount of time until the transmission fluid reaches its normal operating temperature [70 – 80°C (158 – 176°F)], check the transmission fluid level by referring to the diagram at left. The transmission fluid level must be at the "HOT" mark.

    NOTE: The transmission fluid temperature is measured with scan tool MB991502. The "COLD" level is for reference only; the "HOT" level should be regarded as the standard level.
13. Firmly insert the dipstick into the oil filler tube.

12. TRANSFER OIL

M1001003000156

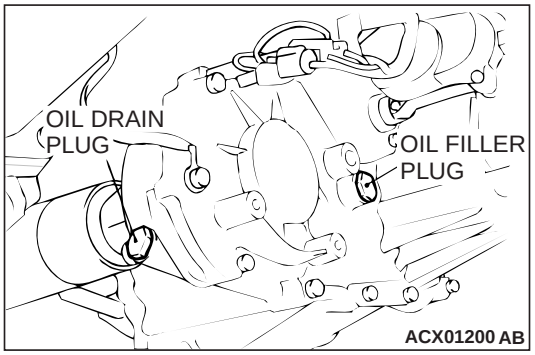
Checking transfer oil level



ACX00895AB

1. Remove the filler plug.
2. Check that the oil level is up to the lower edge of the filler plug hole.
3. Check that the oil is not noticeably dirty, and that it has a suitable viscosity.
4. Tighten the filler plug to the specified torque.

    Tightening torque: 32 ± 2 N·m (24 ± 1 ft-lb)



Changing transfer oil

1. Remove the filler plug.
2. Remove the drain plug and drain oil.
3. Tighten the drain plug to the specified torque.
   Tightening torque: 32 ± 2 N·m (24 ± 1 ft-lb)
4. Add the oil until the level comes to the lower portion of the filler plug hole.
   Specified oil: Hypoid gear oil SAE 75W-90 or 75W-85W conforming to API classification GL-4
   Quantity: 2.8 dm^3 (3.0 quarts)
5. Tighten the filler plug to the specified torque.
   Tightening torque: 32 ± 2 N·m (24 ± 1 ft-lb)

13. ENGINE COOLANT (CHANGE)

M1001003100432

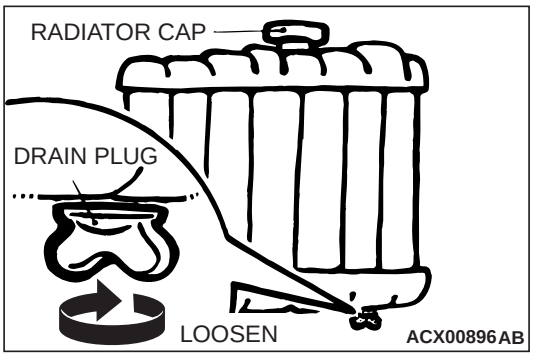
Required Special Tool:
- MB991871: LLC Changer

Check the cooling system parts such as the radiator, heater and oil cooler hoses, thermostat and their connections for leakage and damage.

Changing Coolant

1. Set the temperature control knob to the "HOT" position.

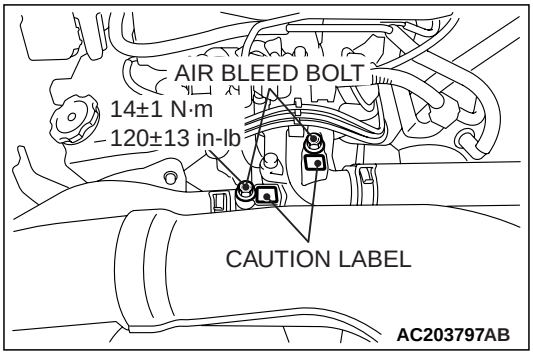
⚠ ***WARNING***
When removing the radiator cap, use care to avoid contact with hot coolant or steam. Place a shop towel over the cap and turn the cap counterclockwise a little to let the pressure escape through the vinyl tube. After relieving the steam pressure, remove the cap by slowly turning it counterclockwise.



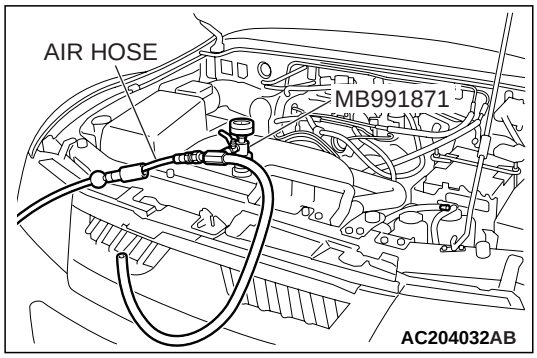
2. Remove the radiator cap, radiator drain plug and engine drain plug to drain the coolant.
3. Remove the reserve tank and drain the coolant.
4. After completely draining the coolant, reinstall the drain plugs and flush the engine and radiator using a radiator cleaning fluid.
5. After the flushing is completed, completely drain the cleaning fluid and install the radiator and engine drain plugs.
6. Assemble the reservoir tank.

⚠ **CAUTION**
Do not use alcohol or methanol anti-freeze or any engine coolants mixed with alcohol or methanol anti-freeze. The use of an improper anti-freeze can cause the corrosion of the aluminum components.

7. <Refilling engine coolant without the special tool>
   (1) Loosen the air bleed bolt.



(2) By referring to the section on coolant, select an appropriate concentration for safe operating temperature within the range of 30 to 60%. Refill the system with a high quality ethylene glycol antifreeze at the selected concentration. A convenient mixture is a 50% water and 50% antifreeze solution [freezing point: −31°C (−32.8°F)]. Pour in coolant until it overflows from the air bleed bolt hole, and then tighten the air bleed bolt.



8. <When special tool MB991871 is used>
   By referring to the section on coolant, select an appropriate concentration for safe operating temperature within the range of 30 to 60 %. Use special tool MB991871 to refill the coolant. A convenient mixture is a 50 % water and 50 % antifreeze solution [freezing point: −31°C (−32.8 °F)].
   NOTE: For how to use special tool MB991871, refer to its manufacturer's instructions.
   Recommended antifreeze: Long life antifreeze coolant or an equivalent
   Quantity: 9.0 dm^3 (9.5 quarts)
9. Reinstall the radiator cap.
10. Start the engine and let it warm up until the thermostat opens.
11. After repeatedly revving the engine up to 3,000 r/min several times, then stop the engine.
12. Remove the radiator cap after the engine has become cold, and pour in coolant up to the brim. Reinstall the cap.

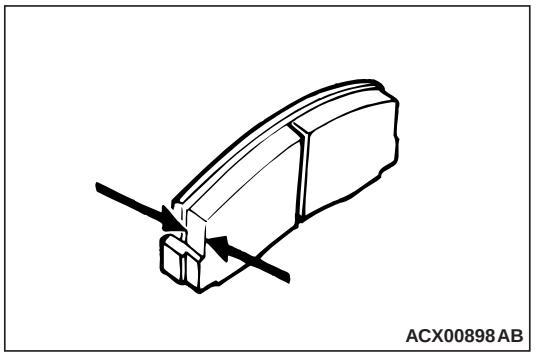
⚠ CAUTION
Do not overfill the reserve tank.

13. Add coolant to the reserve tank between the "FULL" and "LOW" mark if necessary.

14. COOLANT HOSES (RADIATOR HOSE, HEATER HOSE) (INSPECT)

M1001009700067

Inspect the surface of radiator hoses and heater hoses for heat and mechanical damage. Hard and brittle rubber, cracking, tears, cuts, abrasions and excessive swelling indicate deterioration of the rubber.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15. DISC BRAKE PADS (INSPECT FOR WEAR)

M1001003200343

Check for fluid contamination and wear. Replace the complete set of pads if defective.

Thickness of lining
Minimum limit: 2.0 mm (0.08 inch)

⚠ CAUTION

The pads for the right and left wheels should be replaced at the same time. Never split or intermix brake pad sets. All four pads must be replaced as a complete set.

16. BRAKE HOSES (CHECK FOR DETERIORATION OR LEAKS)

M1001003400369

Inspection of brake hoses and tubing should be included in all brake service operations.
The hoses should be checked for:

1. Incorrect length, severe surface cracking, pulling, scuffing or worn spots. (If the fabric casing of the hoses is exposed by cracks or abrasion in the rubber hose cover, the hoses should be replaced. Eventual deterioration of the hose and possible bursting failure may occur.)
2. Incorrect installation, twisting or interference with wheel, tire or chassis.

17. BALL JOINT AND STEERING LINKAGE SEALS (INSPECT FOR GREASE LEAKS AND DAMAGE)

M1001003500377

1. These components, which are permanently lubricated at the factory, do not require periodic lubrication. Damaged seals and boots should be replaced to prevent leakage or grease contamination.
2. Inspect the dust cover and boots for proper sealing, leakage and damage, and replace them if defective.

18. DRIVE SHAFT BOOTS (INSPECT FOR GREASE LEAKS AND DAMAGE)

M1001003600363

1. These components, which are permanently lubricated at the factory, do not require periodic lubrication. Damaged seals and boots should be replaced to prevent leakage or grease contamination.
2. Inspect the dust cover and boots for proper sealing, leakage and damage. Replace them if defective.

19. SUSPENSION SYSTEM (INSPECT FOR LOOSENESS AND DAMAGE)

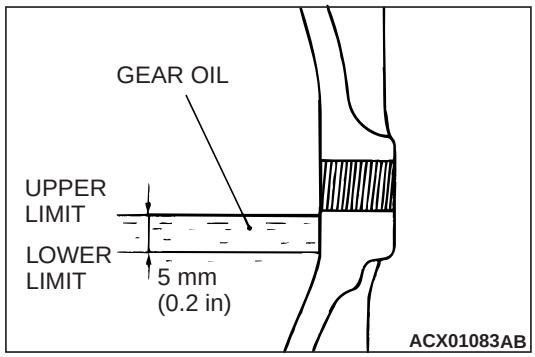
M1001009600082

Visually inspect the front/rear suspension components for deterioration and damage. Re-tighten the front/rear suspension components retaining bolts to specified torque.

20. REAR AXLE OIL (CHECK OIL LEVEL)

M1001007500090

Rear differential Oil Check

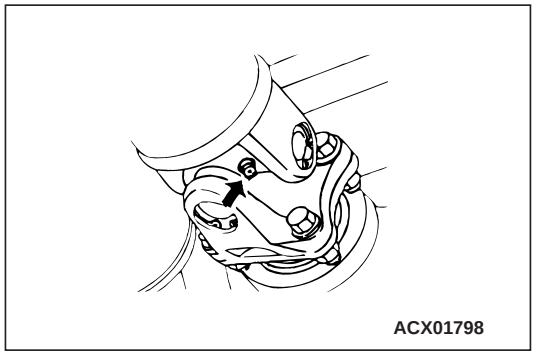


Check that gear oil level is not 5 mm (0.2 inch) below the bottom of filler plug hole.

Specified gear oil: Hypoid gear oil API classification GL-5 or higher
Above −23°C(−10°F): SAE 90, 85W-90, 80W-90
From −34 to −23°C(−30 to −10°F): SAE 80W, 80W-90
Below −34°C(−30°F): SAE 75W

21. PROPELLER SHAFT JOINTS WITH GREASE NIPPLE (LUBRICATE WITH GREASE)

M1001007300126

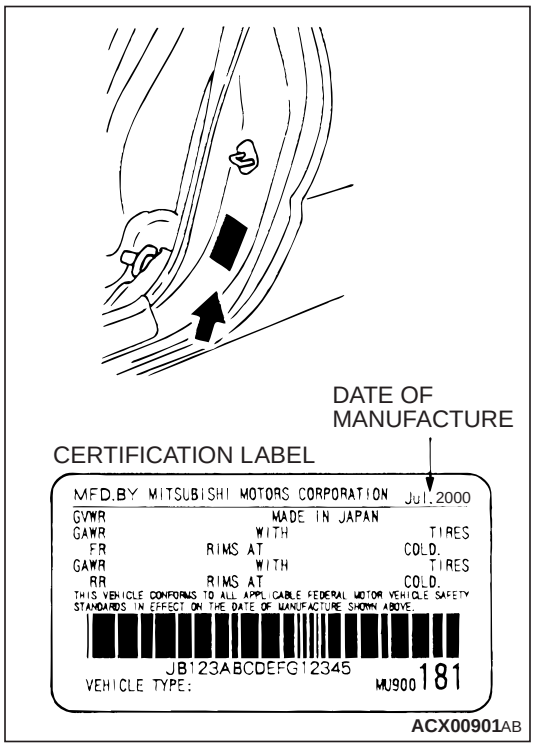


Lubricate the propeller shaft joints with grease.
The propeller shaft joints should be repacked with multipurpose grease.

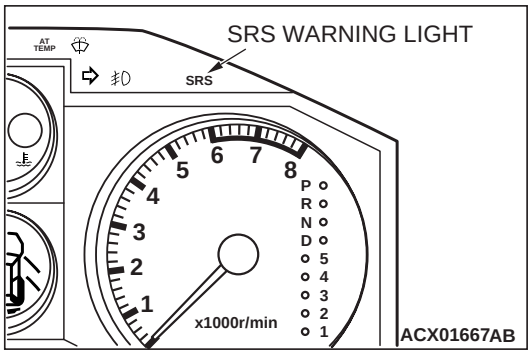
22. SRS AIR BAG (INSPECT FOR SRS SYSTEM)

M1001003700519

The SRS must be inspected by an authorized dealer 10 years after the car manufacture date shown on the certification label located on the left center sill.

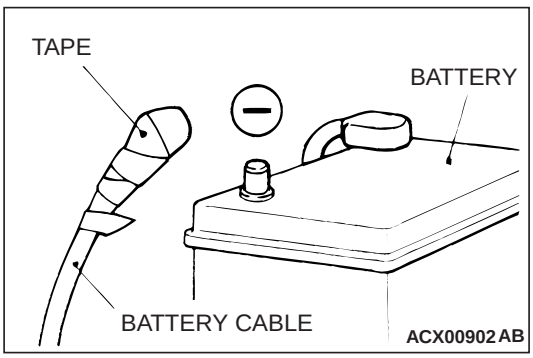


SRS WARNING LIGHT CHECK



Turn the ignition key to the "ON" position. Does the "SRS" warning light illuminate for about seven seconds, and then remain off for at least five seconds after turning OFF? If yes, the SRS system is functioning properly. If no, refer to GROUP 52B, Diagnosis P.52B-24.

SRS COMPONENT VISUAL CHECK



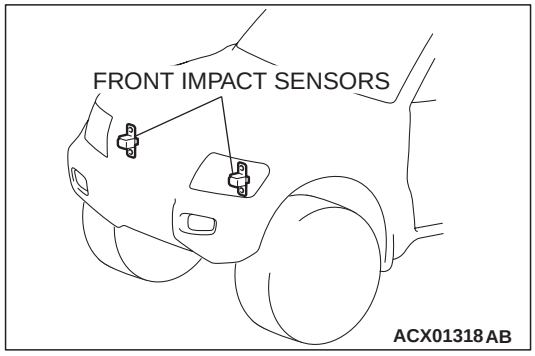
⚠ DANGER

Wait at least 60 seconds after disconnecting the battery cable before doing any further work. The SRS system is designed to retain enough voltage to deploy the air bag for a short time even after the battery has been disconnected, so serious injury may result from unintended air bag deployment if work is done on the SRS system immediately after the battery cable is disconnected.

⚠ WARNING
Battery posts, terminals and related accessories contain lead and lead compounds. WASH HANDS AFTER HANDLING.

1. Turn the ignition switch to the "LOCK" (OFF) position, disconnect the negative battery cable and tape the terminal.
2. Remove the floor console assembly. (Refer to GROUP 52A, Floor Console P.52A-7.)
3. Disconnect a connector from the SRS-ECU.

FRONT IMPACT SENSORS



1. Check that the arrows on the sensors face toward the front of the vehicle.

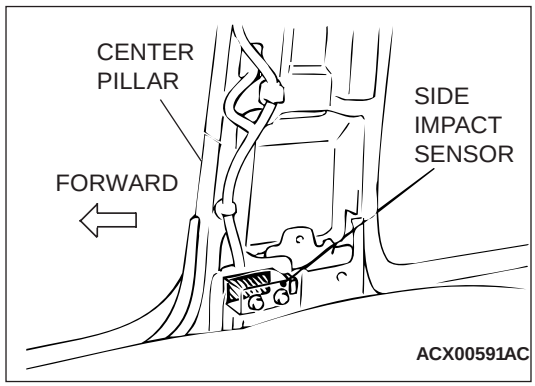
⚠ WARNING
The SRS may not activate if a front impact sensor is not installed properly, which could result in serious injury or death to the vehicle's driver and passenger.

2. Check the radiator support panel and front impact sensor for deformation or rust.
3. Check the front impact sensor wiring harness for binding;check the connector for damage; and check the terminals for deformation.

   Replace the sensor and/or wiring harness if they fail the visual check. (Refer to GROUP 52B, SRS Service Precautions P.52B-20 and GROUP 52B, Front Impact Sensor P.52B-212.)

SIDE IMPACT SENSORS

⚠ WARNING
- ***If the side impact sensor is not installed securely and correctly, the side-airbag may not operate normally.***
- ***If a dent, crack, deformation or rust is detected, replace with a new sensor.***



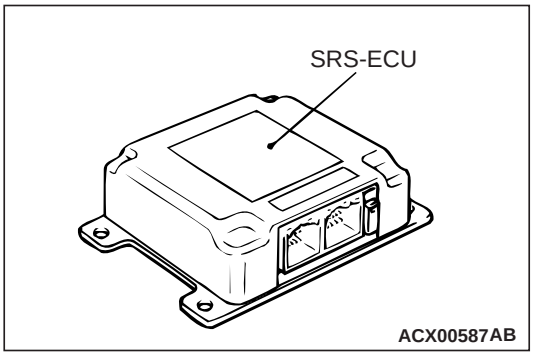
1. Check the side impact sensor for dents, cracks or deformation. The side impact sensors are located inside the center pillars (LH/RH).
2. Check the connector for damage, and terminal for deformation.
3. Check that there is no bending or corrosion in the center pillars (LH/RH).

NOTE: The illustration at left shows the right side impact sensor (RH). The position of the side impact sensor (LH) is symmetrical to this.

SRS AIR BAG CONTROL UNIT (SRS-ECU)

⚠ ***WARNING***

The SRS may not activate if the SRS-ECU (with built-in safing G-sensor and analog G-sensor) is not installed properly, which could result in serious injury or death to the vehicle's driver and passenger.



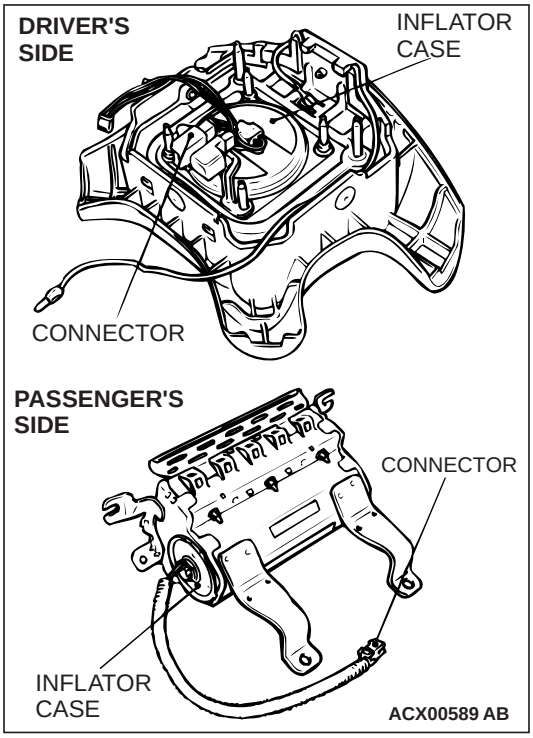
1. Check the SRS-ECU case and brackets for dents, cracks, deformation or rust.
2. Check the connector for damage, and check the terminals for deformation or rust.
   Replace the SRS-ECU if it fails the visual check. (Refer to GROUP 52B, SRS Air bag Control Unit P.52B-217.)

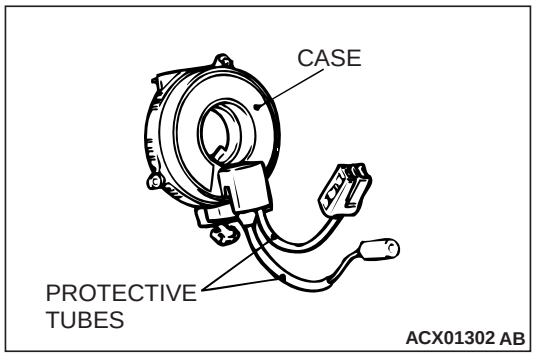
AIR BAG MODULE, STEERING WHEEL AND CLOCK SPRING

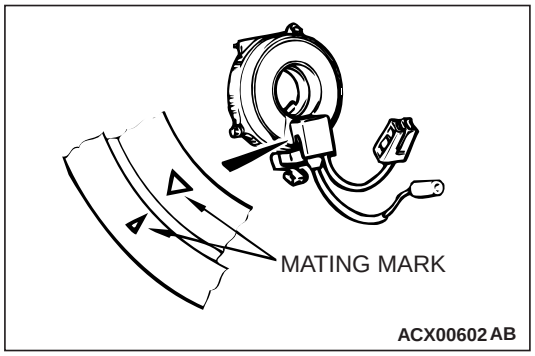
⚠ ***WARNING***

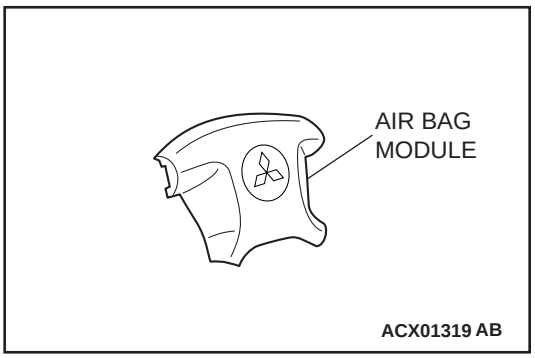
The removed air bag module should be stored in a clean, dry place with the pad cover face up.

1. Remove the air bag module, steering wheel and clock spring. (Refer to GROUP 52B, Air Bag Module and Clock Spring P.52B-219.)
2. Check the pad cover for dents, cracks or deformation.
3. Check the connector for damage and deformed terminals, and check the harness for binding.
4. Check the air bag inflator case for dents, cracks or deformation.
5. Check the harness (built into the steering wheel) and connectors for damage, and check the terminals for deformation.









6. Check the clock spring connectors and protective tube for damage, and terminals for deformities.
7. Visually check the case for damage.

⚠ WARNING

If the clock spring's mating mark is not properly aligned, the steering wheel may not completely rotate during a turn, or the flat cable within the clock spring may be severed, obstructing normal operation of the SRS and possibly leading to serious injury to the vehicle's driver and passenger.

8. Align the mating marks of the clock spring, and after turning the front wheels to the straight-ahead position, install the clock spring to the column switch.

Mating marks alignment

- After turning the clock spring fully clockwise, turn it approximately 3 4/5 turns counterclockwise until the mating marks are aligned.

9. Install the steering column covers, steering wheel and air bag module.
10. Check the steering wheel for noise, binding or difficult operation.

⚠ DANGER

The SRS may not activate if any of the above components are not installed properly, which could result in serious injury or death to the vehicle's driver and passenger.

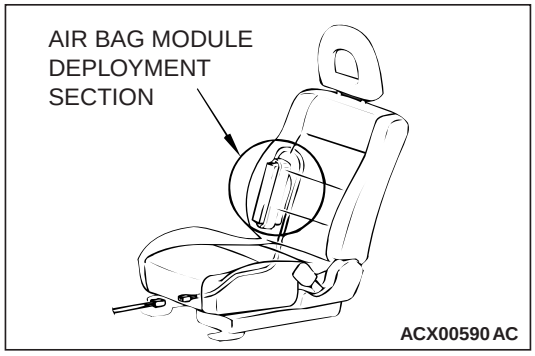
11. Check the steering wheel for excessive free play.

    Replace any visually inspected part if it fails that inspection. (Refer to GROUP 52B, Air Bag Module and Clock Spring P.52B-219.)

FRONT SEATBACK ASSEMBLY WITH SIDE-AIRBAG MODULE

⚠ ***WARNING***

- ***If any improper part is found during the following inspection, replace the front seatback assembly with a new one.***
- ***Dispose of the old one according to the specified procedure. (Refer to GROUP 52B, Air Bag Module and Seat Belt Pre-Tensioner Disposal Procedures P.52B-234.)***
- ***Never attempt to measure the circuit resistance of the air bag module (squib) even if you are using the specified tester. If the circuit resistance is measured with a tester, accidental air bag deployment will result in serious personal injury.***



1. Check the air bag module deployment section for dents or deformation.
2. Check the connector for damage; check the terminals for deformation; and check the harness for binding.

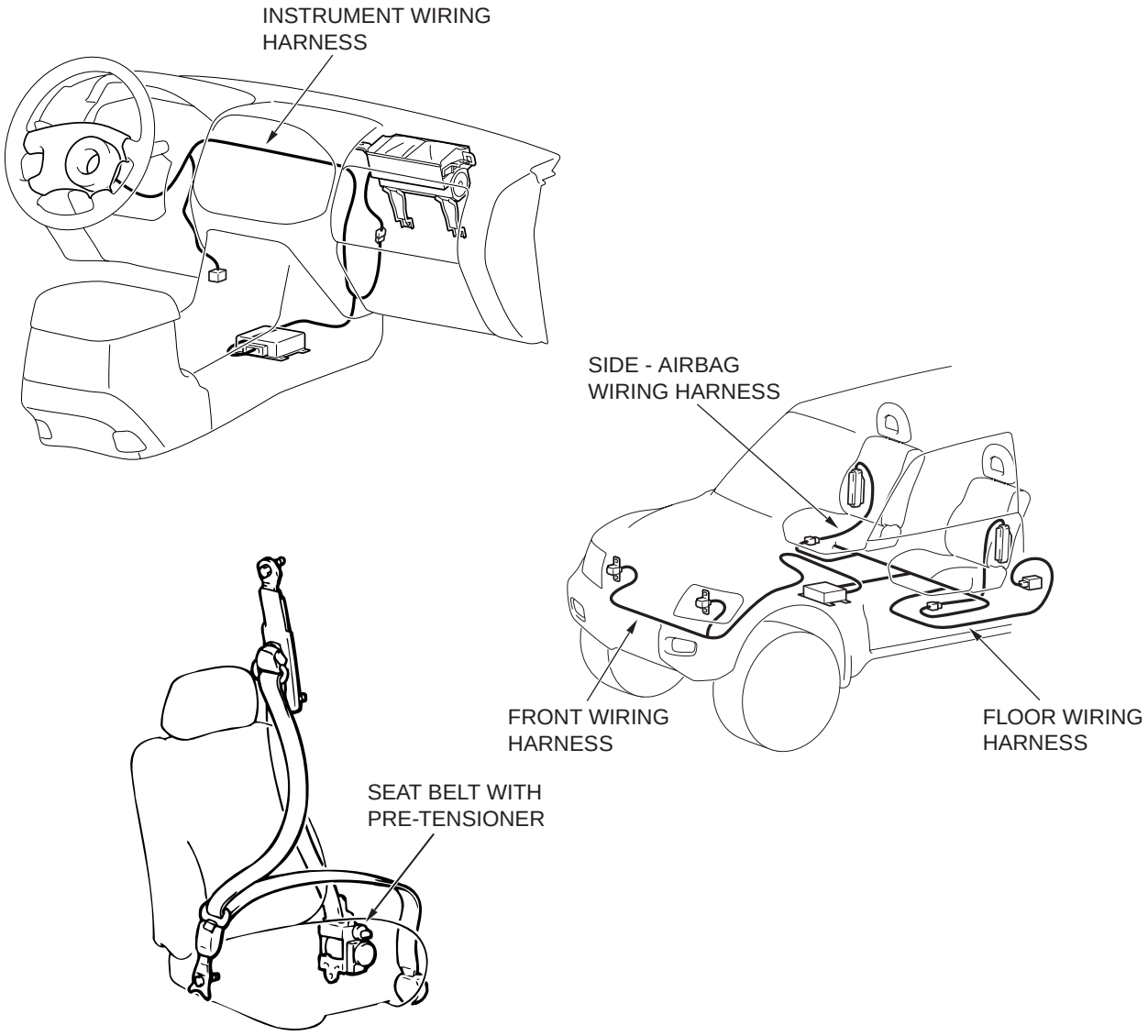
SEAT BELT WITH PRE-TENSIONER

⚠ ***WARNING***

- ***If the seat belt pre-tensioner is not installed securely and correctly, the seat belt pre-tensioner may not operate normally.***
- ***If a dent, crack, deformation or rust is detected, replace with a new seat belt pre-tensioner.***

1. Check the seat belt pre-tensioner for dents or deformation.
2. Check that the seat belt pre-tensioner is installed correctly to the vehicle body.

WIRING HARNESS



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1. Check the connector for poor connection.

⚠ ***DANGER***

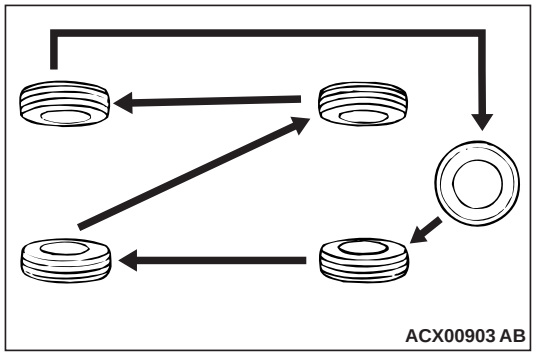
The SRS system may not operate if SRS harnesses or connectors are damaged or improperly connected, which could result in serious injury or death to the vehicle's driver and passenger.

2. Check the harness for binding; check the connectors for damage; and check the terminals for deformation. Replace any connectors or harness that fail the visual inspection. (Refer to GROUP 52B, SRS Service Precautions P.52B-20.)

TSB Revision

23. TIRES (ROTATE)

M1001008900422



Rotate tires regularly to equalize tire wear and help extend tire life. Recommended tire rotation is every 12,000 km (7,500 miles).
Timing for the rotation may vary according to vehicle condition, road surface conditions, and individual driver's habits.
When rotating tires, check for uneven wear, damage, and wheel alignment. Abnormal wear is usually caused by incorrect tire pressure, improper wheel alignment, out-of balance wheels, or severe braking.
The first rotation is the most important to achieve more uniform wear for all tires on the vehicle.

MAIN SEALANT AND ADHESIVE TABLE

M1001003800367

APPLICATION		3M™ NO.	LOCTITE®/ PERMATEX®NO.
ENGINE AND DRIVETRAIN	Between rocker cover and camshaft bearing cap. Between rocker cover, semicircular packing and cylinder head. Between oil pressure switch and engine.	3M™ AAD Part No. 8672 Ultrapro High Temp. Silicone Gasket or 3M™ AAD Part No. 8679 Black/8678 Black Press-In-Place Silicone gasket strips	Permatex® Ultra Black 598, No.82180
	Between engine coolant temperature switch, engine coolant temperature sensor, thermo valve, thermo switch, joint, engine coolant temperature gauge unit (large-size) and engine	3M™ AAD Part No. 8731 Medium Strength Blue Threadlocker	Loctite®242 Blue Service Tool Removable 24200
	Between oil pan and engine block	3M™ AAD Part No. 8672, 3M™ AAD Part No. 8704 or 3M™ AAD Part No. 8679/8678	Permatex® Ultra Gray 599, No.82194
WEATHERSTRIPPING FOR GLASS	Between tempered glass, body flanges, and weatherstrip	3M™ AAD Part No. 8509 Auto Bedding and Glazing Compound or 3M™ AAD Part No. 8633 Windo-weld Resealant	-
WEATHERSTRIPPING FOR GLASS	Between laminated glass and weatherstrip	3M™ AAD Part No. 8633	-

APPLICATION		3M™ NO.	LOCTITE®/ PERMATEX®NO.
INTERIORS	Adhesive of vinyl chloride cloth	3M™ AAD Part No. 8088 General Trim Adhesive or 3M™ AAD Part No. 8064 Vinyl Trim Adhesive	Permatex® Vinyl Repair Kit No.81786
	Adhesion of door weatherstrip	3M™ AAD Part No. 8001 (yellow) or 3M™ AAD Part No. 8008 (black) Super Weatherstrip Adhesive or 3M™ AAD Part No. 8011 Black Weatherstrip Adhesive	Permatex® Super Black Weatherstrip Adhesive No.82, 81850
	Sealing of various grommets and packing	3M™ AAD Part No. 8509 or 3M™ AAD Part No. 8678	-
	Adhesion of headliners and various interior decorative materials	3M™ AAD Part No. 8088 General Trim Adhesive or 3M™ AAD Part No. 8090 Super Trim Adhesive	Permatex® Spray Adhesive No.82019
BODY SEALANTS	Sealing of sheet metal joints, drip rail, floor, side panels, trunk, front panel, tail gate hinge	3M™ AAD Part No. 8531 Heavy Drip-Check Sealer (gray) or 3M™ AAD Part No. 8302 Ultrapro Autobody Sealant (clear) or 3M™ AAD Part No. 8361 Urethane A/B Sealant (gray or white)	-
	Miscellaneous body sealants (original mounted w/adhesive tape) • Waterproof door film • Fender panel • Splash shield • Mud guard • Rear combination lamp	3M™ AAD Part No. 8633 Windo-weld Resealant	-
	Fuel Tank and Pad	3M™ AAD Part No. 8088 General Trim Adhesive or 3M™ AAD Part No. 8090 Super Trim Adhesive	Permatex® Spray Adhesive No.82019

APPLICATION		3M™ NO.	LOCTITE®/ PERMATEX®NO.
CHASSIS SEALANT	Sealant of various flange faces and threaded parts. Packing of fuel gauge unit	3M™ AAD Part No. 8730 High Strength Red Threadlock or 3M™ AAD Part No. 8731 Medium Strength Blue Threadlocker	Loctite®272 High Strength and High Temperature 27200
	Sealing of various threaded parts, dust covers. Differential carrier packing, dust covers and ball joint and linkage. Packing and shims of steering box, sealing of rack support cover and top cover of steering box housing, seal of junction face of knuckle arm flange	3M™ AAD Part No. 8672 Ultrapro High Temp. Silicone Gasket or 3M™ AAD Part No. 8679 (black) or 3M™ AAD Part No. 8678 (black) Press-In-Place Silicone gasket strips 3M™ AAD Part No. 8661 or 3M™ AAD Part No. 8663 Super Silicone sealant	Permatex® The Right Stuff No.25223
	Seal of brake shoe hold down pin and wheel cylinder of drum brakes	3M™ AAD Part No. 8633 Windo-weld Resealant	-
QUICK FIX ADHESIVE	-	3M™ AAD Part No. 8155 Quick Fix Adhesive	Loctite®Quicktite Super Glue 21309
ANAEROBIC STRONG SEALING AGENT	Fixing of various threads, bolts, screws. Fixing of differential drive gear bolt, Connecting of tilt steering bolt. Fan, pulley, gear Sealing of small gaps and flange faces	3M™ AAD Part No. 8730 High Strength Threadlocker or 3M™ AAD Part No. 8731 Medium Strength Threadlocker	Loctite®271, High-Strength Threadlocker 27100 or 27200
UNDER COATING AGENT	-	3M™ AAD Part No. 8883 Rubberized Undercoating Aerosol or 3M™ AAD Part No. 8864 Body Schutz Undercoating (qt)	Permatex® Heavy-Duty Undercoating 81833

NOTES