

GROUP 00

GENERAL <BODY AND CHASSIS>

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HOW TO USE THIS MANUAL

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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, transaxle type, etc.). A description of these designations is covered in this manual under "VEHICLE IDENTIFICATION."

ON-VEHICLE SERVICE

The "ON-VEHICLE SERVICE" section has procedures for performing inspections and adjustments of particularly important components. These procedures are done with regard to maintenance and servicing, but other inspections (looseness, play, cracking, damage, etc.) must also be performed.

SERVICE PROCEDURES

The service steps are arranged in numerical order. Attention 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 whether or not a part or adjustment is correct.

LIMIT

Shows the maximum or minimum value for judging whether or not a part or adjustment is acceptable.

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. 00-48.

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 located at the beginning of each group, for the special tool number that is available in your market.

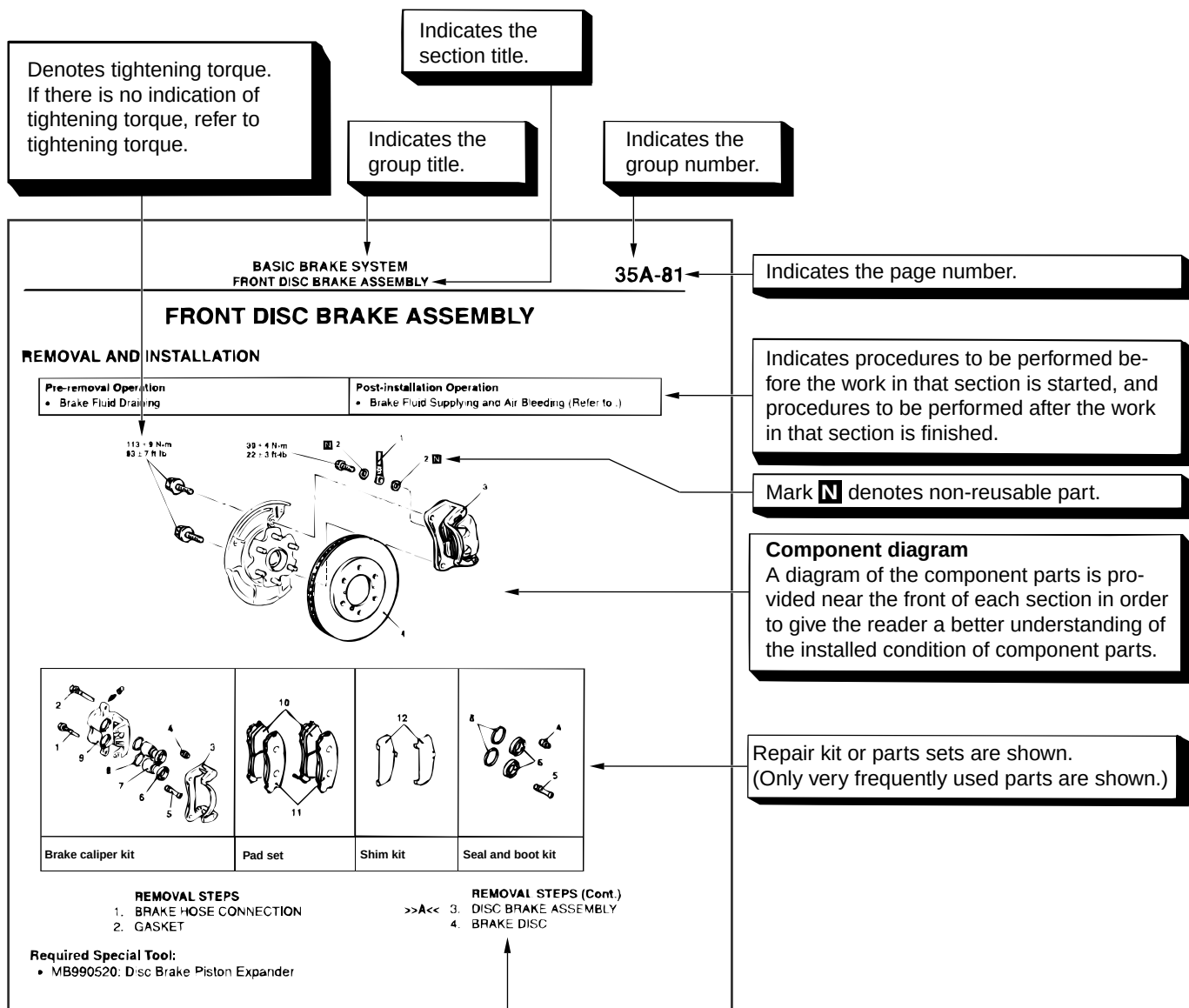
ABBREVIATIONS

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

NOTE:

- *A/T: Automatic transaxle, or models equipped with automatic transaxle.*
- *MFI: Multiport fuel injection, or engines equipped with multiport fuel injection.*
- *FWD: 2-wheel drive vehicles.*
- *AWD: 4-wheel drive vehicles.*
- *A/C: Air conditioning.*
- *3.0L Engine: 2.998 liter 6B31 engine, or a model equipped with such an engine.*
- *PCM: Powertrain control module*
- *SWS: Simplified wiring system*
- *Keyless Operation System (KOS): Free-hand Advanced Security Transmitter (F.A.S.T.-key)*

EXPLANATION OF MANUAL CONTENTS

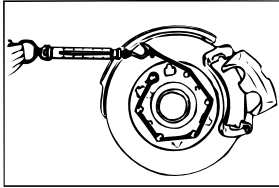


Classifications of major maintenance / service points

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.



INSTALLATION SERVICE POINT ←

>>A<< DISC BRAKE ASSEMBLY INSTALLATION

1. To check the brake drag force after mounting the pad, measure the hub torque in the advancing direction using a spring balance with the pad is removed.

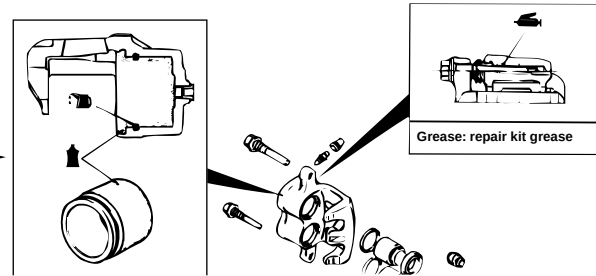
CAUTION

Do not allow any oil, grease or other contamination to contact the friction surfaces of the pads and brake discs.

2. After re-installing the caliper support to the knuckle, install the pad clips and the pads to the caliper support.

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

LUBRICATION AND SEALING POINTS ←



Grease: repair kit grease

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

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 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 find the right diagnosis procedure.

If the confirmed symptoms cannot 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, make 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. Be 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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⚠ DANGER

The SRS-ECU adopts the rollover specification that the curtain airbag and seat belt pre-tensioner operate at the occurrence of rollover. Therefore, do not tilt the vehicle to the right and left with the IG ON or tilt the SRS-ECU to the right and left with the IG ON and the harness installed.

⚠ CAUTION

During diagnosis, a diagnostic trouble code associated with other system may be set when the

ignition switch is turned "ON" with connector(s) disconnected. On completion, confirm all systems for diagnostic trouble code(s). If diagnostic trouble code(s) are set, erase them all.

⚠ WARNING

Since the radiator fan rotates during CAN bus line diagnostics, make sure that no one is servicing the engine compartment before diagnosing the CAN bus line. Since the CAN communication

stops when diagnosing the CAN bus line, the ETACS-ECU detects the time-out of the engine control module, and activates the radiator fan to prevent overheating as fail-safe.

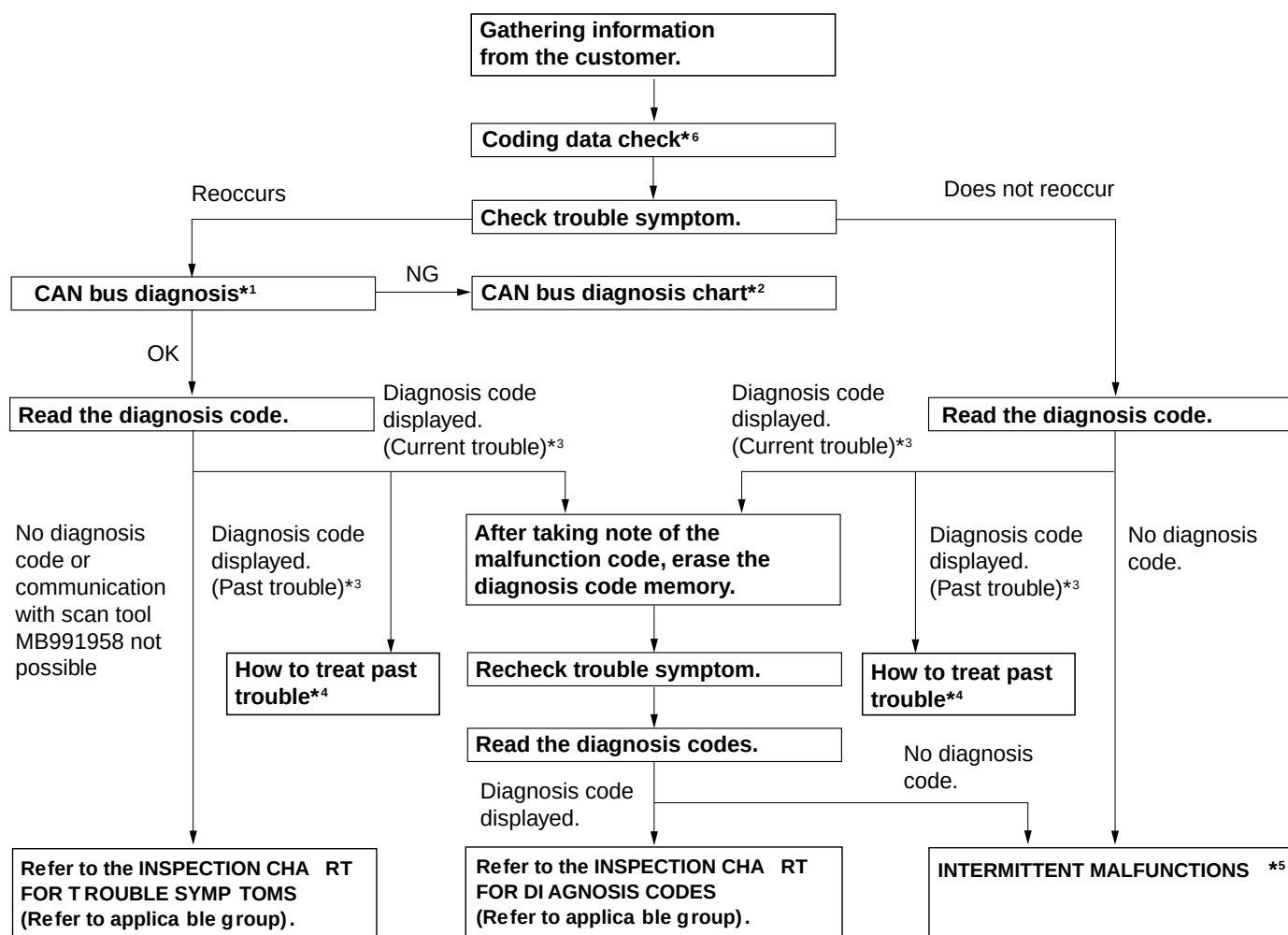
Troubleshooting of electronic control systems for which scan tool MB991958 can be used follows the basic outline described below. Even in systems for which scan tool MB991958 cannot be used, some of these systems still follow this outline.

1. STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

Troubleshooting sections are based on the diagnostic flow as below. If the diagnostic flow is different from that given below, or if additional explanation is

required, the details of such differences or additions will also be listed.

Diagnostic method



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*1: For how to diagnose CAN bus lines, refer to GROUP 54D P.54D-10.

*2: For the CAN bus diagnosis chart, refer to GROUP 54D P.54D-17.

*3: When scan tool MB991958 detects a diagnostic trouble code, its display informs users whether a mechanical problem currently exists or whether it existed before. The message for the former state identifies it as an "Active" and the message for the latter identifies it as a "Stored".

*4: For how to treat past trouble, refer to P. 00-17.

*5: For how to cope with intermittent malfunctions, refer to P.00-15.

*6: For coding data, refer to P.00-34.

2. SYSTEM OPERATION AND SYMPTOM VERIFICATION TESTS

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

3. 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

4. DIAGNOSTIC TROUBLE CODE CHART

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

5. 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.

6. DIAGNOSTIC TROUBLE CODE PROCEDURES

Indicates the inspection procedures corresponding to each diagnostic trouble code. (Refer to P.00-9).

7. SYMPTOM PROCEDURES

Indicates the inspection procedures corresponding to each symptom listed in the Symptom Chart. (Refer to P.00-9).

8. SERVICE DATA REFERENCE TABLE

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

9. 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 the "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.

10. INSPECTION PROCEDURES USING AN OSCILLOSCOPE

oscilloscope, these are listed.

When there are inspection procedures using an

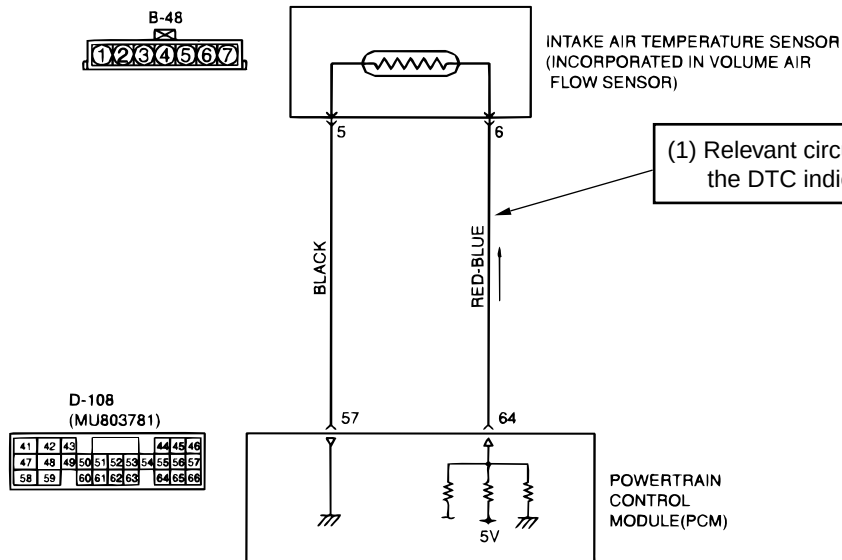
HOW TO USE THE INSPECTION PROCEDURES

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.

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DTC P0110: Intake Air Temperature Circuit Malfunction

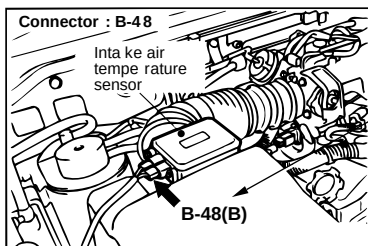


(1) Relevant circuit(s) of the component which the DTC indicates are described.

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

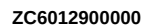
(3) Shows the location of the connector(s) from the circuit(s) above.

(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.



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

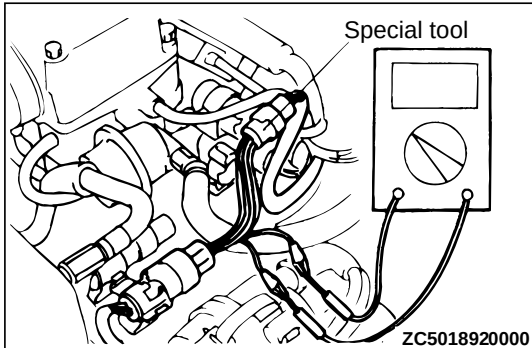
CONNECTOR MEASUREMENT SERVICE POINTS

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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.

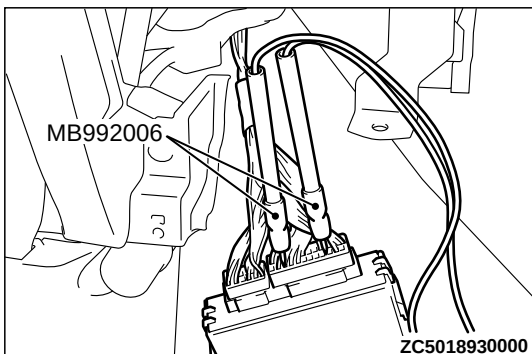


IF INSPECTING WITH THE CONNECTOR CONNECTED ORDINARY (NON-WATERPROOF) CONNECTORS

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

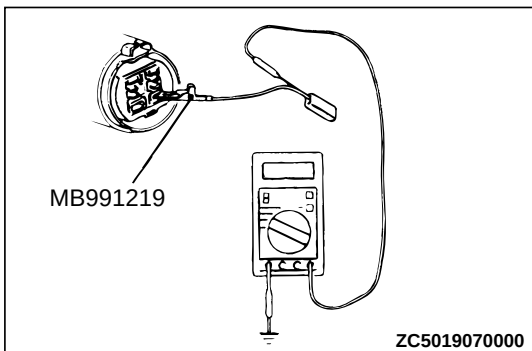
- From front side of the connector

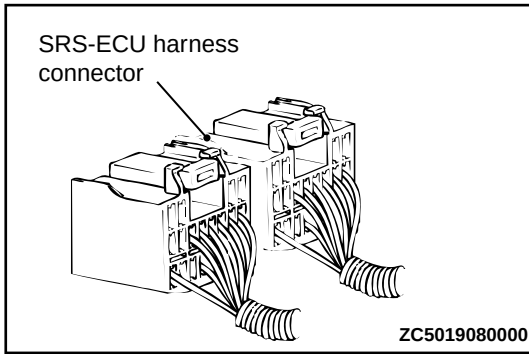
Required Special Tool:

MB991219: Inspection Harness (Included in MB991223, Harness Set)

The inspection harness 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)





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

⚠ WARNING

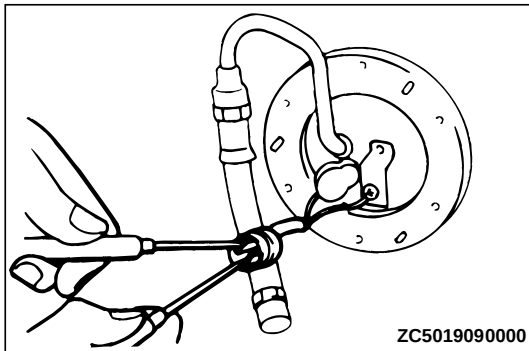
Insert the backprobing tool into the connector from the harness side, and connect the tester to the backprobing tool. If any tool other than the backprobing tool is used, it may cause damage to the harness and other components. Furthermore, measurement should not be carried out by touching the backprobing 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.

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.

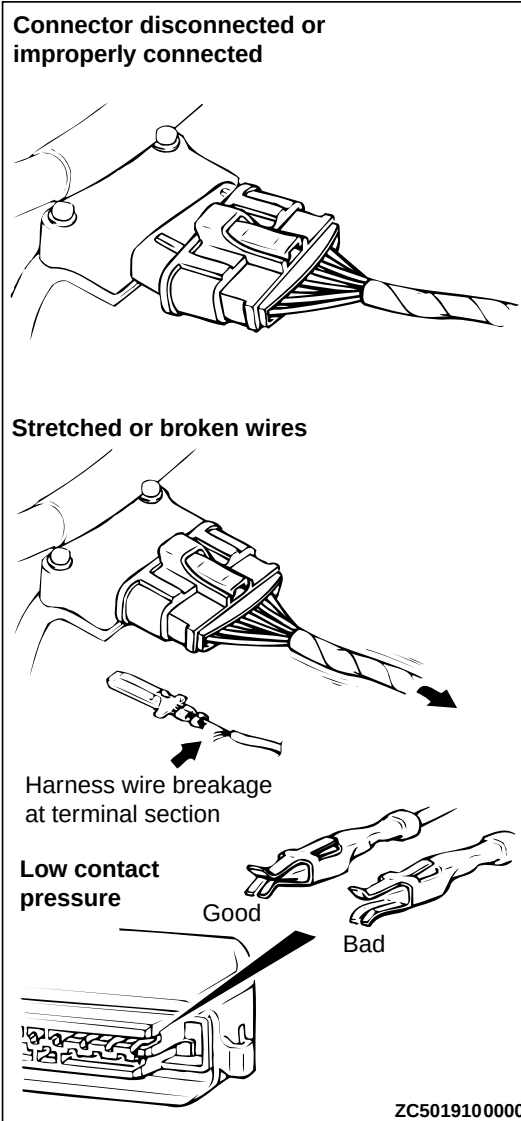
Touch the pin directly with the test probe.



CONNECTOR INSPECTION SERVICE POINTS

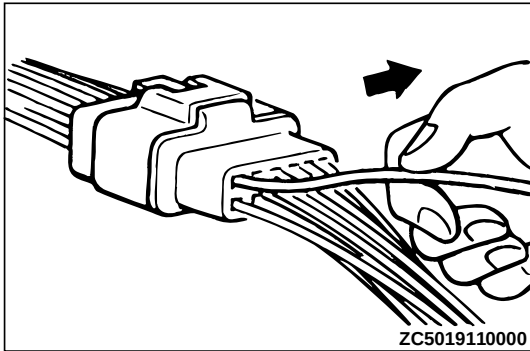
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VISUAL INSPECTION



Connector is disconnected or improperly connected

- Connector pins are pulled out
- Stretched and 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

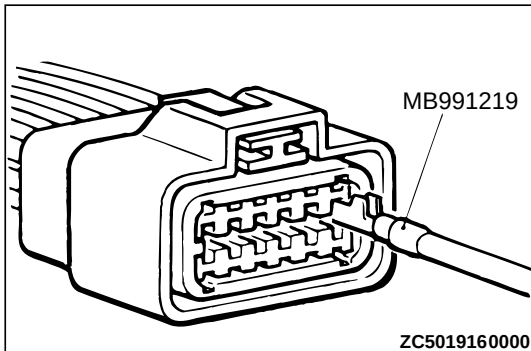
**CONNECTOR PIN INSPECTION**

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.

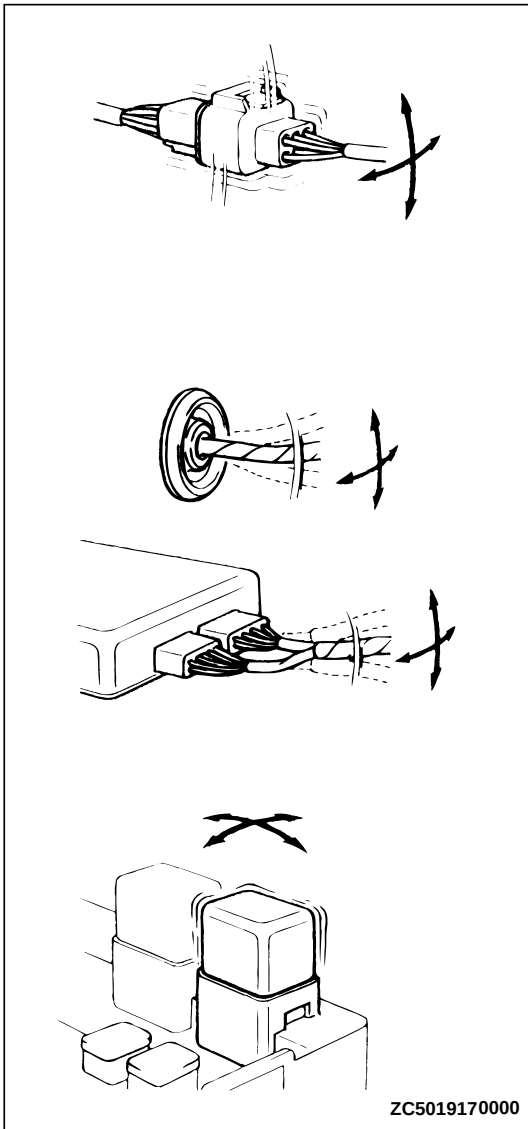
For temperature and/or moisture condition related intermittent malfunctions, try to change the conditions of the suspected circuit components, then use the simulation tests below.

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. Refer to GROUP 00E, Harness Connector Inspection P.00E-2.
- Shake the part or sensor.

HOW TO TREAT PAST TROUBLE

Since the trouble may still be present even the status is "Stored", set the vehicle to the diagnostic trouble code detection condition and check that the status changes to "Active". If the status does not change from "Stored", carry out the following procedure.

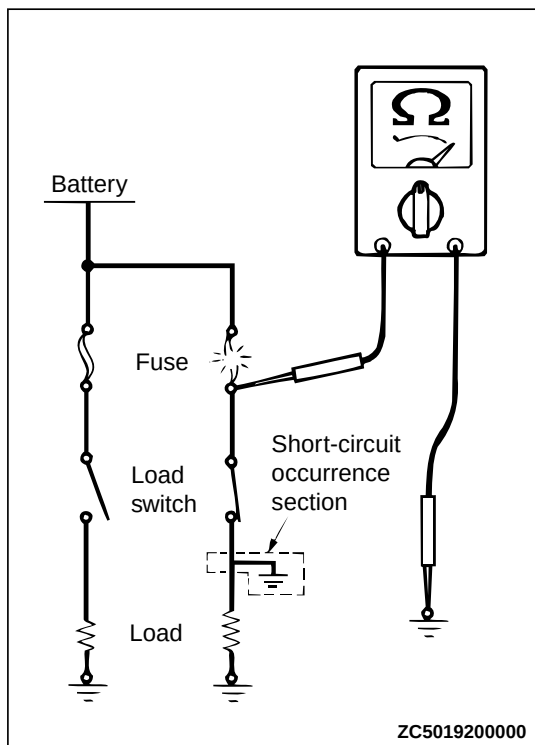
1. Establish from the customer whether a fuse or connector has been replaced or disconnected.
2. If yes, erase the diagnostic trouble code, and then check that no diagnostic code is reset. If no diagnostic trouble code is reset, the diagnosis is complete.

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3. If no, follow the applicable Diagnostic Trouble Code Chart. Then check the wiring harness and connector, and refer to "How to Cope with Intermittent Malfunction P.00-15."

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 $0\ \Omega$ at this time, there is a short somewhere between these switches and the load. If the resistance is not $0\ \Omega$, 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.

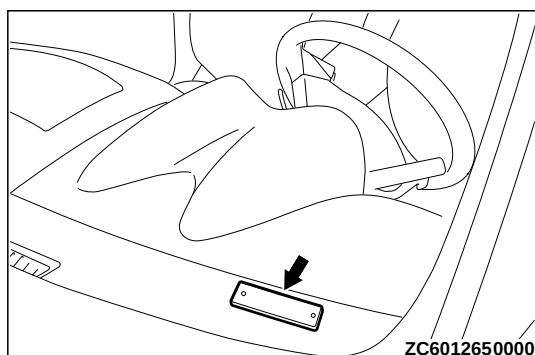
- Harness being clamped by the vehicle body
- Damage to the outer casing of the harness due to wear or heat
- Water getting into the connector or circuitry
- Human error (mistakenly shorting a circuit, etc.)

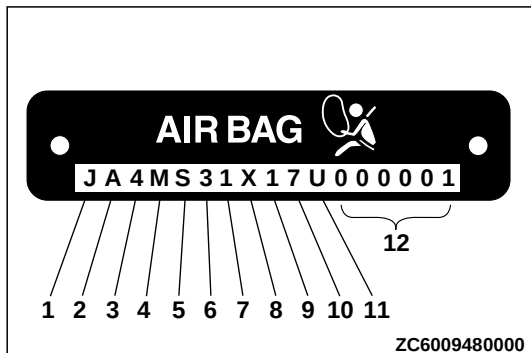
VEHICLE IDENTIFICATION

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VEHICLES 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: 5001-6000 lbs/HYDRAULIC
5	Line	S: OUTLANDER FWD T: OUTLANDER AWD
6	Price class	3: Medium 4: High
7	Body	1: 5-door wagon
8	Engine	X: 3.0L (6B31) MIVEC
9	Check digits*	0, 1, 2, 3, -----9, X
10	Model year	7: 2007 year
11	Plant	U: Mizushima
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 (FOR FEDERAL EMISSION REGULATION)

VIN (except sequence number)	Brand	Engine displacement	Model code
JA4MS31X_7U	MITSUBISHI OUTLANDER	3.0L	CW6WXL SYL2M
JA4MS41X_7U			CW6WXLH YL2M
			CW6WXLX YL2M
JA4MT31X_7U			CW6WXL SYZL2M
JA4MT41X_7U			CW6WXLH YZL2M
			CW6WXLX YZL2M

(FOR CALIFORNIA EMISSION REGULATION)

VIN (except sequence number)	Brand	Engine displacement	Model code
JA4MS31X_7U	MITSUBISHI OUTLANDER	3.0L	CW6WXL SYL7M
JA4MS41X_7U			CW6WXLH YL7M
			CW6WXLX YL7M

GENERAL <BODY AND CHASSIS>
VEHICLE IDENTIFICATION CODE PLATE

VIN (except sequence number)	Brand	Engine displacement	Model code
JA4MT31X_7U			CW6WXL SYZL7M
JA4MT41X_7U			CW6WXL HYZL7M
			CW6WXL XYZL7M

VEHICLES FOR PUERTO RICO

VIN (except sequence number)	Brand	Engine displacement	Model code
JA4MS31X_7U	MITSUBISHI OUTLANDER	3.0L	CW6WXL SYL2M
			CW6WXL MYL2M
JA4MS41X_7U			CW6WXL XYL2M
JA4MT31X_7U			CW6WXL SYZL2M

VEHICLES FOR CANADA

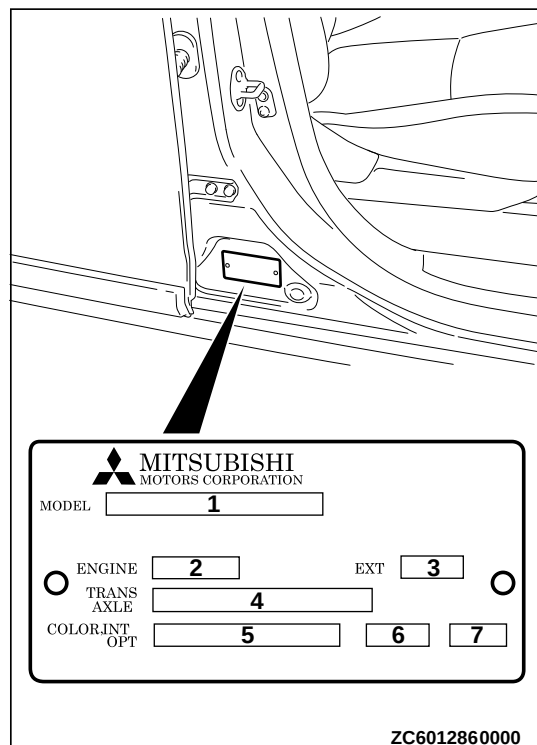
VIN (except sequence number)	Brand	Engine displacement	Model code
JA4MS31X_7U	MITSUBISHI OUTLANDER	3.0L	CW6WXL SYL3M
JA4MS41X_7U			CW6WXL XYL3M
JA4MT31X_7U			CW6WXL SYZL3M
JA4MT41X_7U			CW6WXL XYZL3M

VEHICLE IDENTIFICATION CODE PLATE

M10001000054USA0000010000

The vehicle information code plate is riveted to the face of the passenger's door sill.

The plate shows model code, engine model, transaxle model and body color code.

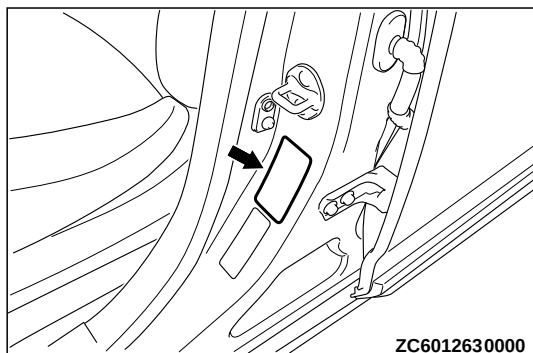


No.	Item	Content	
1	MODEL	CW6WXLS YL2M	CW6WX: Vehicle model
			LSYL2M: Model series
2	ENGINE	6B31	Engine model
3	EXT	G44B	Exterior code
4	TRANS AXLE	F6AJA	Transaxle model
5	COLOR	G44	Body color code
6	INT	11E	Interior code
7	OPT	Z06	Equipment code

For monotone color vehicles, the body color code shall be indicated.

TIRE AND LOADING INFORMATION PLACARD

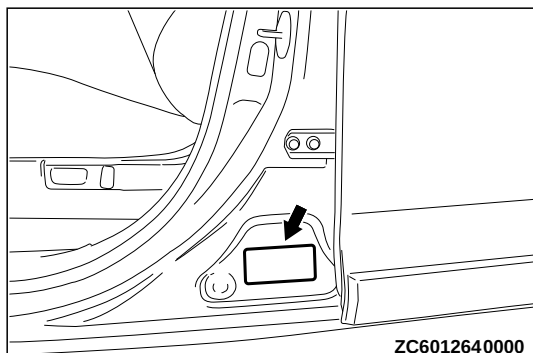
The tire and loading information placard is located on the inside sill of the driver's door.

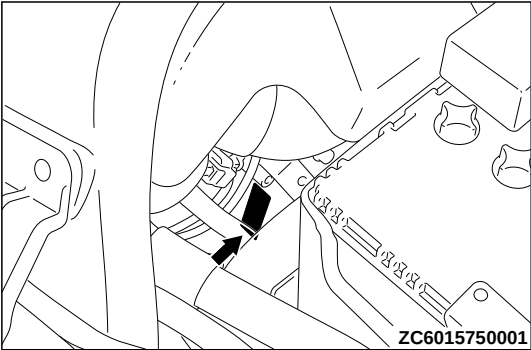


VEHICLE SAFETY CERTIFICATION LABEL

The vehicle safety certification label is attached to the face of the driver's 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

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

Engine model	Engine displacement
6B31	3.0L

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

THEFT PROTECTION

⚠ CAUTION

When replacing a part that has the theft protection plate, label or stamp on it, be sure that the part has either A or B shown in the figure. It is illegal if both A and B are attached, or neither A nor B is attached.

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 transaxle, as well as main outer panels:

Engine cylinder block, Transaxle housing, Front end crossmember, Front fender, Front floor crossmember front, Doors, liftgate, Hood

In addition, a theft-protection label is attached to replacement parts for the body outer panel main components, and the same data is stamped into replacement parts for the engine and the transaxle.

⚠ CAUTION

Cautions regarding panel repairs:

- When repainting original parts, do so after first masking the theft-protection label. After painting, be sure to peel off the masking tape.
- 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.
- The theft-protection label should not be removed from original parts or replacement parts.

Theft protection label

For original parts

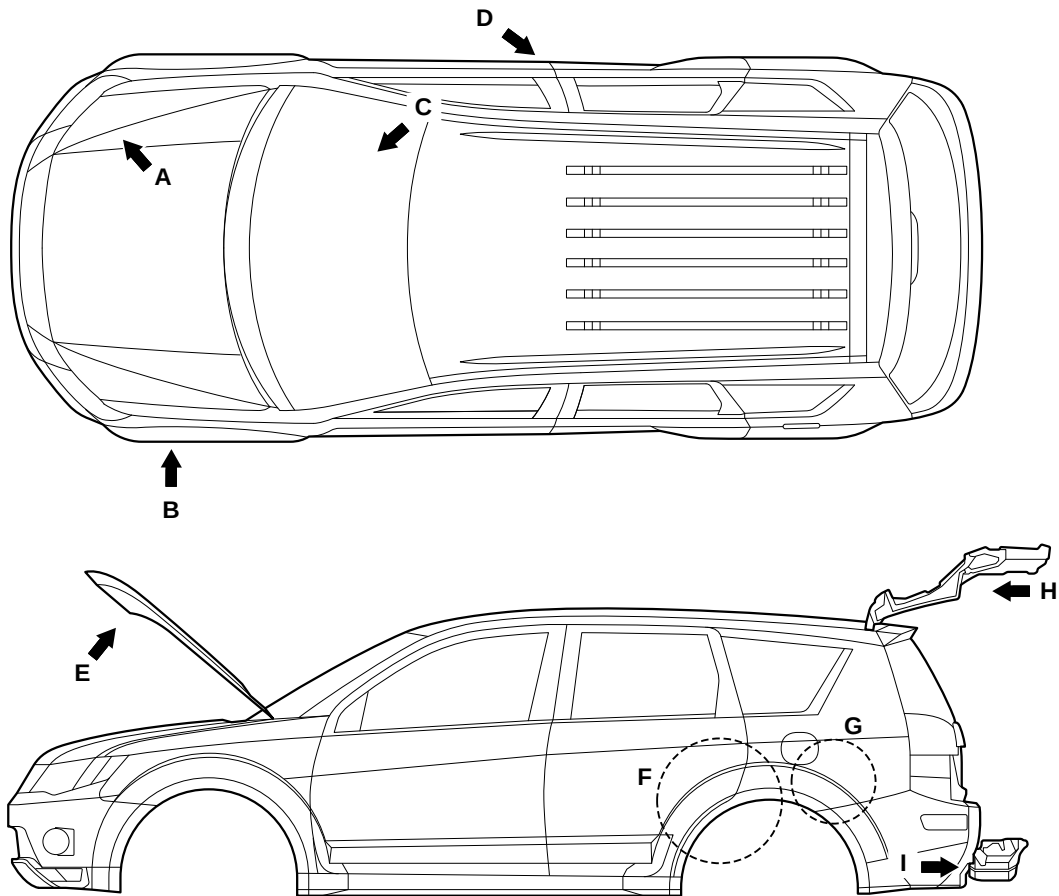
<Main outer panels>

<Engine, transaxle>

For replacement parts

ZC6026920000

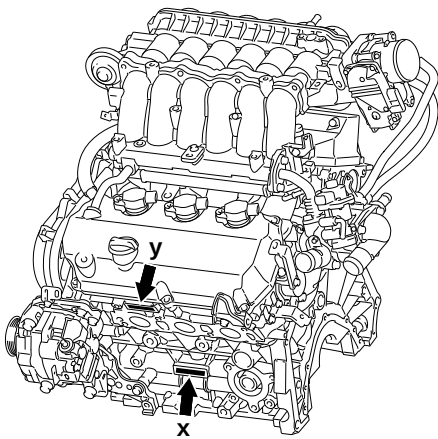
LOCATIONS



ZC6009470000

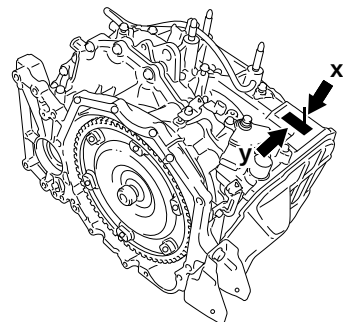
Label area (x: for original equipment parts, y: for replacement parts)

Engine



ZC601875 0001

Automatic transaxle

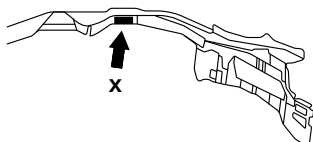


ZC601574 0001

GENERAL <BODY AND CHASSIS>
VEHICLE IDENTIFICATION CODE PLATE

Label area (x: for original equipment parts, y: for replacement parts)

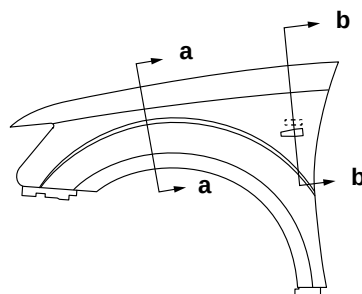
View A (Front end crossmember)



Right side only

ZC5018710000

View B (Front fender)



Section a - a

x

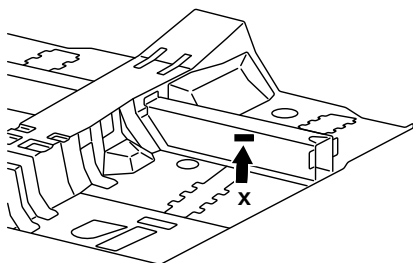
Section b - b

y

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

ZC5018700000

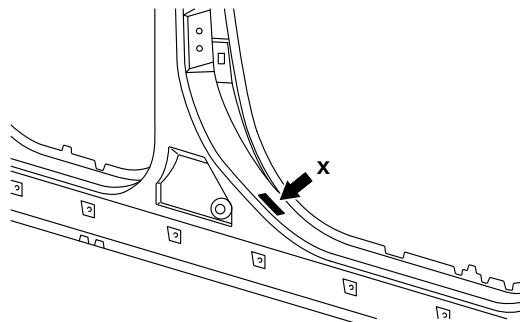
View C (Front floor crossmember front)



Right side only

ZC5018730000

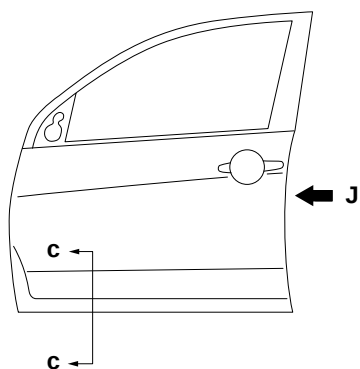
View D (Side outer panel)



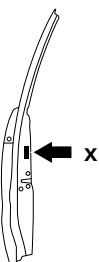
Right side only

ZC5018720000

(Front door)



View J



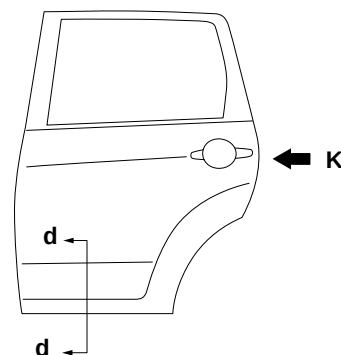
Section c - c



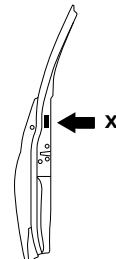
The illustration indicates left outer side.
Right side is symmetrically opposite.

ZC5018740000

(Rear door)



View K



Section d - d

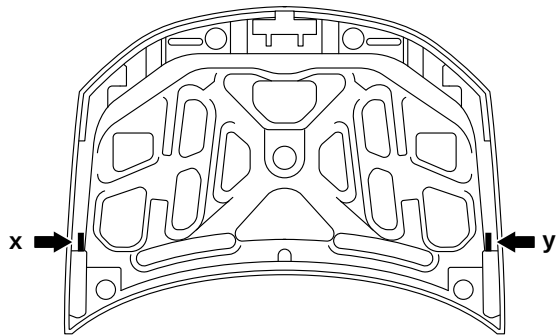


The illustration indicates left outer side.
Right side is symmetrically opposite.

ZC5018750000

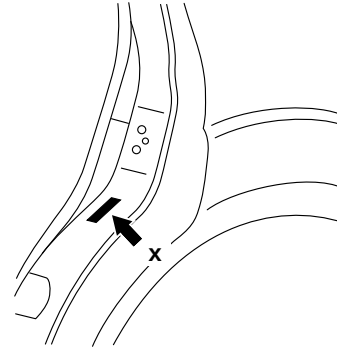
Label area (x: for original equipment parts, y: for replacement parts)

View E (Hood)



ZC5018710001

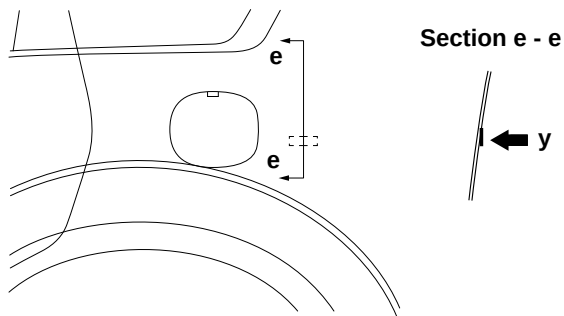
View F (Side outer panel)



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

ZC5018770000

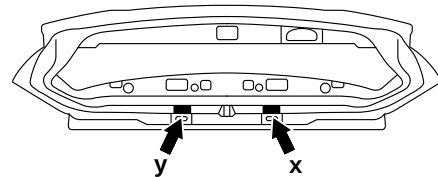
View G (Side outer panel)



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

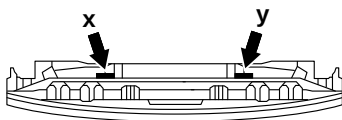
ZC5018770001

View H (Liftgate upper)



ZC5018760000

View I (Liftgate lower)



ZC5018760001

PRECAUTIONS BEFORE SERVICE

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

M10001000116USA0000010000

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.
 - Air bag module (driver's and passenger's)
 - Clock spring
 - SRS-ECU
 - Sunvisor
 - Seat belt with pre-tensioner (driver's seat and passenger's seat)
 - Side-airbag module (driver's seat and passenger's seat)
 - Curtain air bag module (right side and left side)
 - Lap pre-tensioner (driver's side)
 - Glove box
- (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 and clock spring). 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 and Seat Belt Pre-tensioner Disposal Procedures P.52B-352).

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-ECU, the air bag module, clock spring, the front impact sensor, the side impact sensor, and the seat belt pre-tensioner.
 - SRS-ECU, air bag module, clock spring, front impact sensor, the side impact sensor: 93 °C (200 °F) or more
 - Seat belt pre-tensioner: 90 °C (194 °F) or more

HOW TO PERFORM VEHICLE IDENTIFICATION NUMBER (VIN) WRITING

M10001000114USA0000010000

⚠ CAUTION

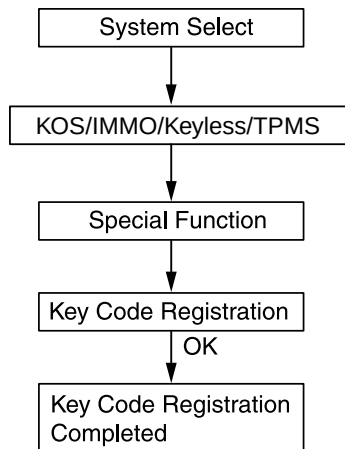
The F.A.S.T-Key (Free-hand Advanced Security Transmitter) is described as the Keyless Operation System (KOS) in this manual.

Follow the procedure below to register the VIN of the Wireless Control Module (WCM) and the Keyless Operation System (KOS).

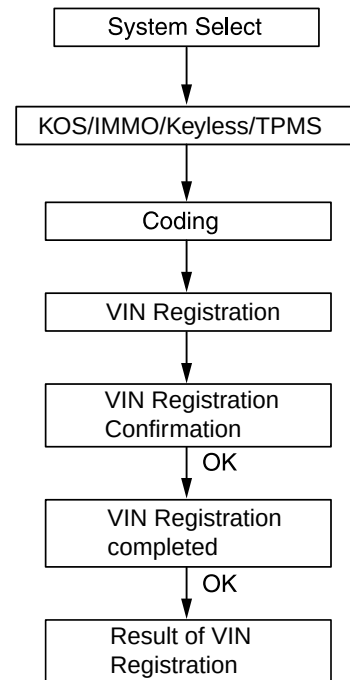
The VIN is stored in the engine control module (ECM), WCM, and the KOS-ECU. If the VIN is improperly erased, the engine warning light or the keyless operation system warning indicator illuminate, and the diagnostic trouble code is displayed. When the ECM, WCM, and the KOS-ECU are replaced, follow the procedure below to write the VIN.

Screen flow of M.U.T. - III

<When ECM is replaced>



<When WCM or KOS-ECU are replaced>



ZC6037920000

WRITING PROCEDURE

Required Special Tools:

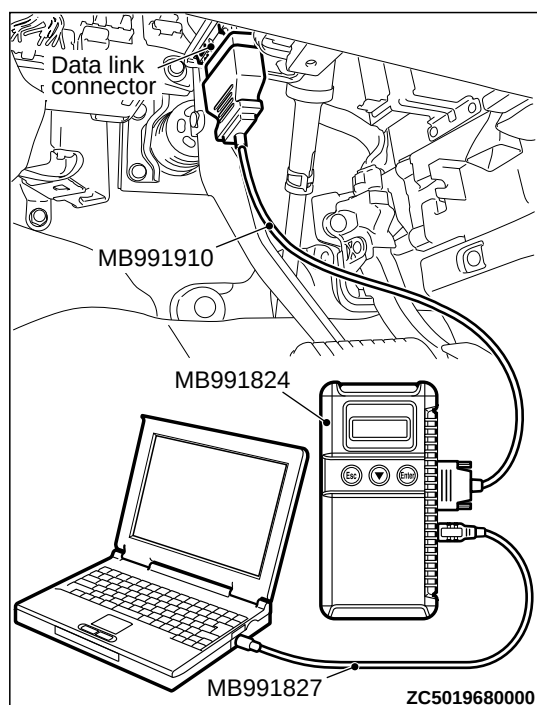
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: V.C.I.
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A

CAUTION

Check that diagnostic trouble code P0603 "EEPROM fail" is not set. When diagnostic trouble code P0603 "EEPROM fail" is set, the ECM cannot store the key code even if the key code is registered. If this diagnostic trouble code is set, troubleshoot the ECM and repair. Then register the key code to the ECM.

CAUTION

Check that diagnostic trouble code P0630 "VIN not programmed" is not set. When diagnostic trouble code P0630 "VIN not programmed" is set, the VIN is not written to the ECM. After VIN is written in ECM, the Key Code Registration is executed.



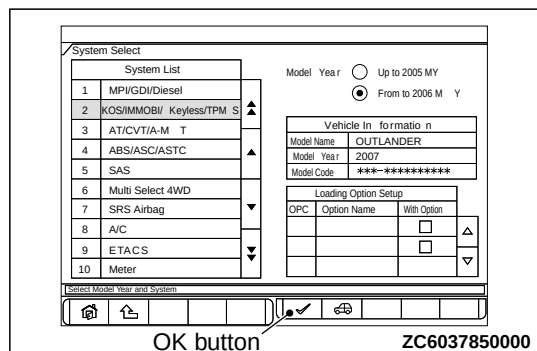
Connect scan tool MB991958 to the 16-pin data link connector as follows.

NOTE: For details on how to use scan tool MB991958, refer to the "M. U. T.-III Owner's Manual."

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to the special tool MB991824.
5. Connect special tool MB991910 to the data link connector of the vehicle.
6. Turn the special tool MB991824 power switch to the "ON" position.

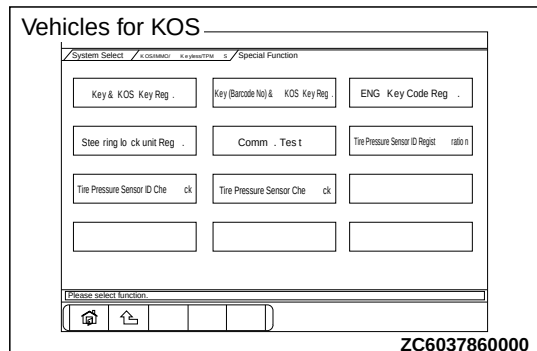
NOTE: When the special tool MB991824 is energized, the special tool MB991824 indicator light will be illuminated in a green color.

7. Start the "M.U.T.-III system" on the personal computer and turn the ignition switch to the "ON" position.

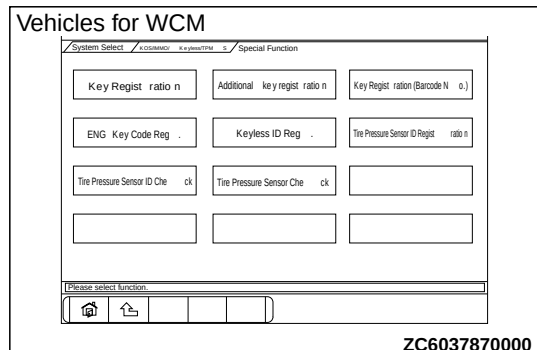


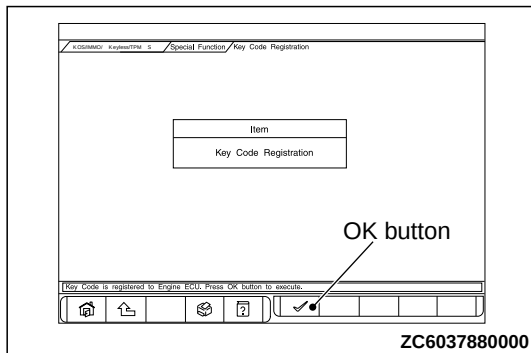
8. Select "KOS/IMMO/Keyless/TPMS" button from the "System Select" screen. Then, select the applicable option code item and push the OK button.

9. Select "Special Function" on the next screen.



10. Select "ENG Key Code Reg." from the "Special Function" screen.





11. Push the OK button after "ENG Key Code Reg." is displayed.
12. Push the OK button after "Completed." is displayed.
13. Turn off scan tool MB991958.
14. Turn the ignition switch to the "LOCK" (OFF) position and then disconnect scan tool MB991958.

VIN WRITING STEPS FOR WCM AND KOS-ECU

⚠ CAUTION

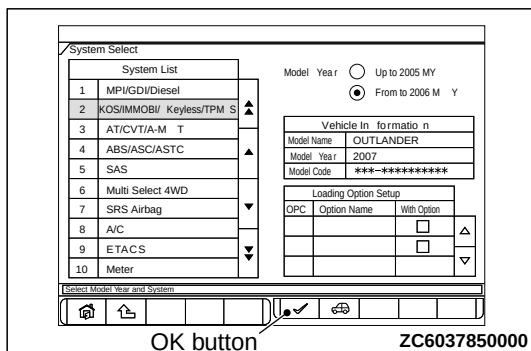
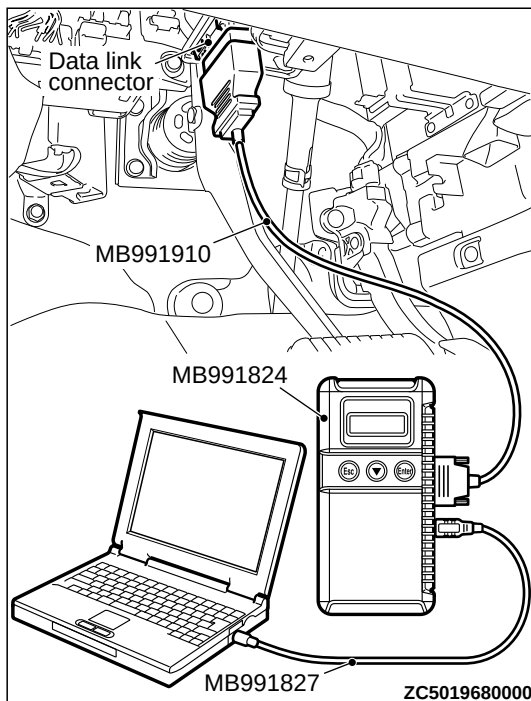
Check that diagnostic trouble code B2416 "ECU internal error" is not set. When diagnostic trouble code B2416 "ECU internal error" is set, the WCM and the KOS-ECU cannot store the VIN even if the VIN is written. If this diagnostic trouble code is set, troubleshoot the WCM or the KOS-ECU and repair. Then write the VIN to the WCM or the KOS-ECU. Connect scan tool MB991958 to the 16-pin data link connector as follows.

NOTE: For details on how to use scan tool MB991958, refer to the "M. U. T.-III Owner's Manual."

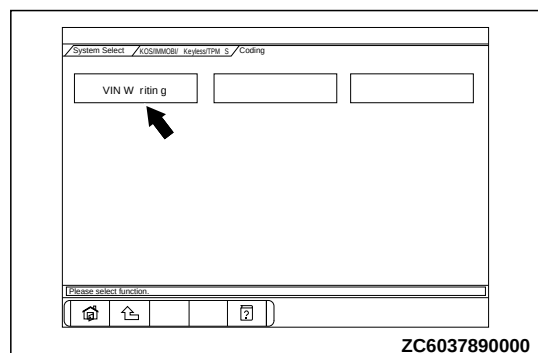
1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to the special tool MB991824.
5. Connect special tool MB991910 to the data link connector of the vehicle.
6. Turn the special tool MB991824 power switch to the "ON" position.

NOTE: When the special tool MB991824 is energized, the special tool MB991824 indicator light will be illuminated in a green color.

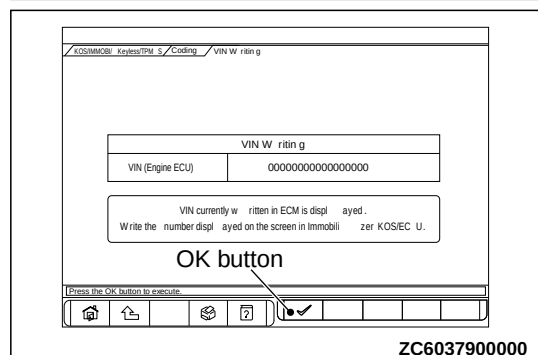
7. Start the "M.U.T.-III system" on the personal computer and turn the ignition switch to the "ON" position.



8. Select "KOS/IMMO/Keyless/TPMS" button from the "System Select" screen. Then, select the applicable option code item and push the OK button.
9. Select "Coding" on the next screen.



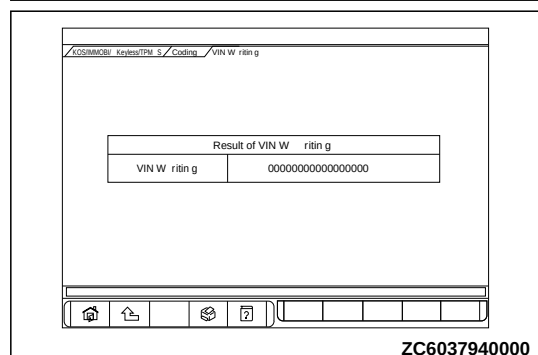
10. Select "VIN Writing" on "Coding" screen.



11. Push the OK button after the VIN written in the engine control module is displayed.

12. Push the OK button after "VIN Writing will start. Are you sure?" is displayed.

13. Push the OK button after "Completed." is displayed.



14. Result of VIN writing is displayed.

15. Register the other ID code. (Refer to GROUP 42B, Troubleshooting - ID Code Registration Judgment Table P. 42B-12Vehicles with KOS or GROUP 42C, Troubleshooting - ID Code Registration Judgment Table P. 42C-8Vehicles with WCM.)

INITIALIZATION PROCEDURE FOR LEARNING VALUE IN MFI ENGINE

M10001000117USA0000010000

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

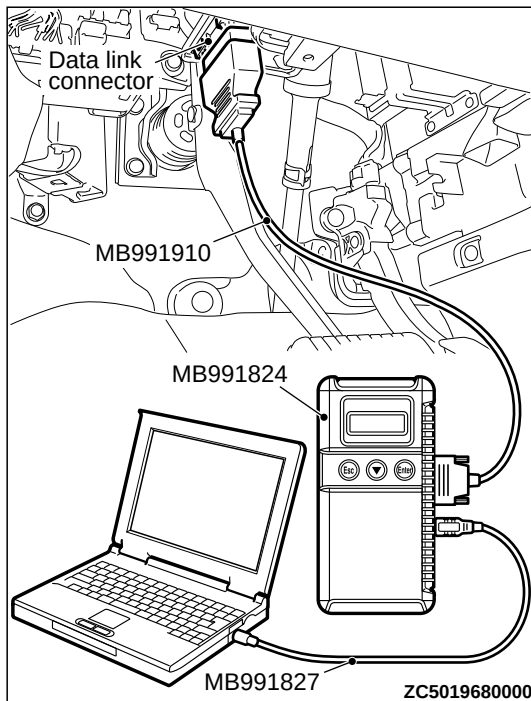
- Replacing engine assembly*
- Replacing throttle body and at cleaning
- Replacing knock sensor

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

INITIALIZATION PROCEDURE

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: V.C.I.
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A



Connect scan tool MB991958 to the 16-pin data link connector as follows.

NOTE: For details on how to use scan tool MB991958, refer to the "M. U. T. -III Owner's Manual."

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to the special tool MB991824.
5. Connect special tool MB991910 to the data link connector of the vehicle.
6. Turn the special tool MB991824 power switch to the "ON" position.

NOTE: When the special tool MB991824 is energized, the special tool MB991824 indicator light will be illuminated in a green color.

7. Turn the ignition switch to the "ON" position.
8. Select "Special Function" from the menu screen.
9. Select "Learned Value Reset" from the menu screen.
10. Initialize the learning value.
11. After initialization of the learning value, learn the idling in MFI engine. (Refer to LEARNING PROCEDURE FOR IDLING IN MFI ENGINE P.00-31).

ENGINE IDLING LEARNING PROCEDURE

M10001000118USA0000010000

PURPOSE

When the ECM is replaced, or when the learned value is initialized, the idle may not be stabilized. Carry out the learning method by following the procedures below.

LEARNING PROCEDURE

1. Start the engine and warm to reach 80°C (176°F) or more.

NOTE: 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.

2. Turn the ignition switch to "LOCK" (OFF) position.
3. After 10 seconds or more, start the engine again.
4. For 10 minutes, carry out the idling under the condition shown below and then confirm the engine has the normal idling.
 - Transaxle: P range
 - Operation in ignition-related, fan and attachments: Not to be operated
 - Engine coolant temperature: 80°C (176°F) or more

NOTE: If the engine stalls while idling, check for a dirty (on the throttle valve) of the throttle body and

clean if needed. Then perform the service from Procedure 1 again.

INITIALIZATION PROCEDURE FOR THROTTLE ACTUATOR CONTROL MOTOR

When the battery cable is disconnected and reconnected, throttle actuator control motor valve (Fully closed position) is eliminated, so that the throttle valve opening angle control would not be performed correctly. When the battery cable is disconnected and reconnected, initialize the throttle actuator control motor using the following procedure.

1. Turn the ignition switch to the "ON" position and then, place the ignition switch in "LOCK" (OFF) position.
2. For 10 seconds or more, keep the ignition switch in "LOCK" (OFF) position.

SERVICING ELECTRICAL SYSTEM

M10001000119USA0000010000

⚠ WARNING

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

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.

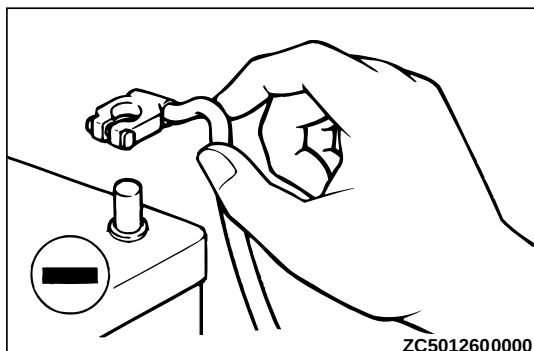
- Engine coolant temperature: 85 - 95°C (185 - 203°F)

- Lights and all accessories: OFF

- Transaxle: "P" position

- Steering wheel: straight-forward position

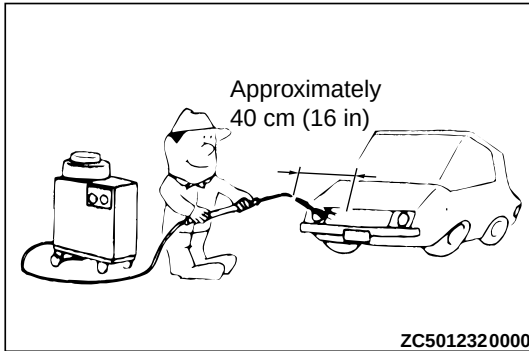
2. When servicing the electrical system, disconnect the negative cable terminal from the battery.



VEHICLE WASHING

M10001000120USA0000010000

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 40cm (16 inches) from any plastic parts and all opening parts (doors, luggage compartment, etc.).



APPLICATION OF ANTI-CORROSION AGENTS AND UNDERCOATS

M10001000110USA0000010000

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 (MULTI USE TESTER { M.U.T.-III } SUB ASSEMBLY)

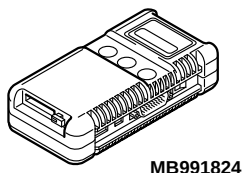
M10001000122USA0000010000

CAUTION

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

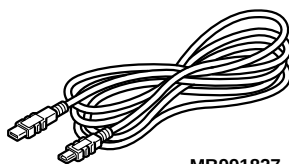
NOTE: M. U. T. -III trigger harness is not necessary when pushing V. C. I. ENTER key.

Vehicle communication interface (V.C.I.)



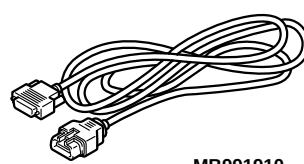
MB991824

M.U.T.-III USB cable



MB991827

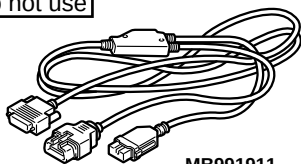
M.U.T.-III main harness A



MB991910

M.U.T.-III main harness B

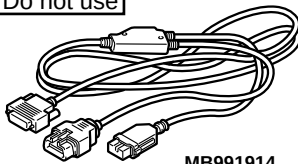
Do not use



MB991911

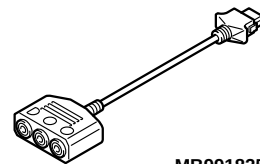
M.U.T.-III main harness C

Do not use



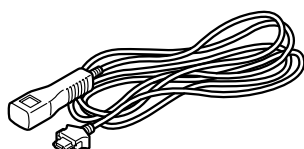
MB991914

M.U.T.-III measurement adapter



MB991825

M.U.T.-III trigger harness



MB991826

ZC5019290000

CODING LIST

M10001000147USA0000010000

Before troubleshooting, check that the coding data written into the engine control module and ETACS-ECU are normal. If they are not the same as the initial settings, various functions and systems will not work correctly.

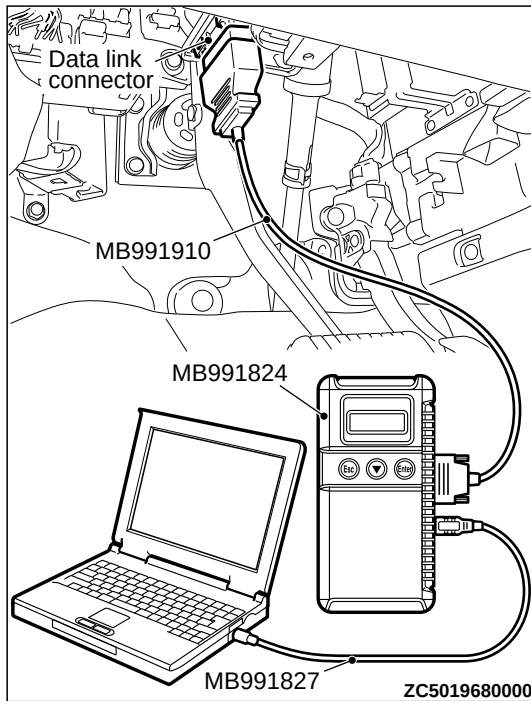
VARIANT CODING

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicle Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

⚠ CAUTION

The items marked with *³ are actually installed to a vehicle but their initial settings are "Not present." This is because the items do not adapt CAN, and does not indicate abnormal coding data.



The coding data can be checked by operating scan tool MB991958.

NOTE: For details on how to use the scan tool MB991958, refer to the "M. U. T. -III Owner's manual".

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. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to special tool MB991824.
5. Connect special tool MB991910 to the data link connector.
6. Turn the power switch of special tool MB991824 to the "ON" position.

NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.

7. Start the "M.U.T.-III system" on the personal computer.
8. Turn the ignition switch to the "ON" position.
9. Select "System select" from the start-up screen.
10. Select "From 2006 MY" under "Model Year". Check that "Vehicle Information" contents are correct.
11. On the system list screen, select "GasolineENG" to check the engine control module data, and "ETACS" to check the ETACS-ECU data.

NOTE:

*If "Loading Option Setup" list is shown, click appropriate box.

*When you select "GasolineENG" system, a selection screen appears asking whether MITSUBISHI. Select a button that the engine belongs to.

12. Select "Coding."
13. Select "Coding Information."
14. If the displayed coding information is different from the corresponding initial setting in the list, replace the ECU with a correctly coded one. For replacement of the engine control module, refer to GROUP 13Aa, engine control module P. 13Aa-37. For replacement of the ETACS-ECU, refer to GROUP 54Ad, ETACS P.54Ad-93.

ENGINE CONTROL MODULE CODING DATA LIST

Item name	Initial value
Vehicle Model	OUTLANDER
Model year	(Displays the model year)
Destination	U.S.
Detail Destination	USA (49STATES)
Transmission	6AT

Item name	Initial value
Engine type	S4 MIVEC
Engine power	Normal
Final drive	FWD or AWD
Final gear ratio	6.466
T/M Type	SPORTS MODE
Fuel cut Maximum Speed	210 km/h
Tire circumference	2124mm
IMMOBILIZER	Present
TCM	Present
ABS	Present or Not present
ASC	Present or Not present
Power window Dr	Present
Power window As	Not present
Power window RR	Not present
Power window RL	Not present
Power window RP	Not present
Sunroof	Sunroof not present or Sunroof present
S/W variation	Variation No.1

ETACS-ECU CODING DATA LIST

Item name	Initial value
Vehicle line	OUTLANDER
Model year	(Displays the model year)
Destination	U.S.
Transaxle	6AT
Engine type	S4 MIVEC
Engine power	Normal
Handle side	LHD
Final drive	Front Drive or AWD FF Base
Transfer	FWD or ECC
Tire size	225/55R18 or 215/70R16
Tire circumference	2155mm
Fuel tank	60L
DRL *1	Dimming DRL W/P or Independent DRL/P
Smart entry system	Not present or Type C
TPMS *1	Present
Keyless entry *2	Present
SKIM	Type B
Cruise control	Present

Item name	Initial value
Corner sensor	Not present
Head light auto leveling device	Not present
Oil level warning	Not present
Water separate warning	Not present
Speed meter scale	km/h or mph
Idle neutral control	Not present
ENG-CVT unit control	Not present
INVECS control	Not present
Lock-up slip control	Not present
Side air bag	Present
Number of speaker*2	Premium or 6 speakers
Seat material*2	Fabric or Leather
Auto light control	No
Front differential	Open
Rear differential	Undefined
Power window type	Type P4
Sunroof type	Not present or Type S4
WCM	Present
OCM	Present
ORC	Present
A/C	Present
AUDIO*2	Not present or Present
AND*3	Not present or Present
VES*3	Not present
DISP*3	Not present
NAVI*2 *3	Not present
CAMERA*3	Not present
TURNER*3	Not present
PSD_L	Not present
PSD_R	Not present
ETG	Not present
MSMD	Not present
HFM	Not present or Present
ABS	Not present or Present
A.S.C.	Not present or Present
SAS	Not present or Present
AWD	Not present or Present

Item name	Initial value
TCM	Present
ACTV_STB	Not present
Pre-Crush	Not present
EPS	Not present
ACDAYC	Not present
Power window Dr	Present
Power window As	Not present
Power window RR	Not present
Power window RL	Not present
Power window BK	Not present
Sunroof	Not present or Present
RLS* ²	Not present
IG key illumination	W/ getting off
Turn signal bulb	21W+21W+5W
Rear wiper	Enable
Fold mirror	Disabled
Head light	4 beams
Head light washer	Disabled
Front fog light mode	A spec.
Front fog light* ²	Not present or Present
Rear fog light* ²	Not present/ChgOK
Room light delay timer/door and H/L	Long
Room light by H/L	Full
Gate/Trunk light	Mode-2 (cargo)
Headlight auto cut mode	C-spec
Headlight auto cut	Enable
Door lock system	A-spec (NAS)
Auto door lock/unlock	Disabled
key reminder unlock	B-spec/Dr and As
Horn type* ²	Dual horn
Gate/trunk opener mode	Present
Cooling fan	Relay control
Security alarm mode	C-spec (US)
Security alarm function	Present/Chg Ng
Pre-alarm	Present
Multi mode RKE	Disabled
Gate/Trunk	Gate type
Manner switch* ²	Not present/ChgNg

Item name	Initial value
Remote engine starter*2	Not present/ChgNg
Panic Alarm	Enable
Front wiper	Speed Sensitive
Comfort flasher type	Present/Chg OK
Dome light Center Switch	Not present
Wiper washer check bulb	Present
H/L leveling type	Not present or Com less/static
AFS*1type	Not present
ARS*1type	Not present
Compressor type	Scroll type 90 cc/rev
Temparature type	Celsius or Fahrenheit
Rear view camera	Not present
Nose view camera	Not present
Side view camera	Not present
Average speed	Available
Language status	English
Fuel amount	Liter or US gallon
Fuel consumption scale	L/100km or MPG(US)
Speed gauge tolerance	U.S.
Coolant temp gauge threshold	Normal
Frost warning threshold	U.S.
Distance to empty	Available
Average fuel consumption	Available
Instant fuel consumption	Available
Time traveled	Not available
Distance traveled	Not available
Fuel used	Not available
Trip autoreset IG OFF -> ON	Available
Variable speed alarm	Not available
Rest reminder	Available
Instant speed	Not available
Seat belt reminder type	Type 1
Seat belt reminder flashing	Available
Seat belt reminder indicator	D and P independ
Reverse alarm	Not available
Key reminder	Available
Lighting monitor	Available
GCC speed alarm	Not available

Item name	Initial value
Condition tone alarm	Available
Rent-a-car mode always IG-OFF	Available
Rent-a-car mode door open IG-OFF	Available
Service reminder schedule table	NAS 10
ACD control display	Not available
TPMS information	220 kPa
Horn chirp by RKE	Present/ChgOK
Rear S/R unlock output	Not present
Trailer turn detection	present
Lever	Not present
AFS	Not present
SATR	Not present or Present
Fuel tank type	Type0 or Type1
KOS auto lock customize	Not present
DRL function	Present/Chg OK
FACU	Not present
S AWC control display	Not available
Diesel particulate filter	Not present
Language mode	Not available or Available
WSS	Not present or Present
Control bit for EEPROM writing	0 or 1

NOTE:

****1:** TPMS is an abbreviation of Tire Pressure Monitoring System, DRL of Daytime Running Light, AFS of Adaptive Front lighting System, and ARS of Advanced Rear lighting System. However, the systems are not used for this vehicle.

****2:** The setting can be changed by the option coding. Refer to.

****3:** The item is actually installed to a vehicle, but its initial setting is "Not present." This is because the item does not adapt CAN, and does not indicate abnormal coding data.

OPTION CODING**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

CAUTION

If there is any item indicated by the option coding after equipment change, set ETACS-ECU so that the option coding data corresponds with the equipment content. Functions and systems do not work normally if the setting does not correspond with the equipment.

The ETACS-ECU option coding data can be checked or changed by operating scan tool MB991958.

•How to check option coding data

1. Connect the scan tool MB991958. Refer to P. 00-34.
2. Turn the ignition switch to the "ON" position.
3. Select "System select" from the start-up screen.
4. Select "From 2006 MY" under "Model Year". Check that "Vehicle Information" contents are correct.
5. Select "ETACS" from "System List", and then press "OK" button.

NOTE: If "Loading Option Setup" list is shown, click appropriate box.

6. Select "Coding."
7. Select "Option Coding Information."

8. Check the displayed option coding information.

•How to change option coding data

1. Connect the scan tool MB991958. Refer to.
2. Turn the ignition switch to the "ON" position.
3. Select "System select" from the start-up screen.
4. Select "From 2006 MY" under "Model Year". Check that "Vehicle Information" contents are correct.
5. Select "ETACS" from "System List", and then press "OK" button.

NOTE: If "Loading Option Setup" list is shown, click appropriate box.

6. Select "Coding."
7. Select "Option Coding."
8. Change to correct option coding data.

LIST

Item name
Auto light control
AUDIO (CAN)
RLS
Number of speaker
Seat material
Front fog light
Rear fog light
Horn type
Manner switch
Remote engine starter
AND
HFM
SATR
Compressor type
DRL function
Wiper washer check bulb

TOWING AND HOISTING

M10001000008USA0000010000

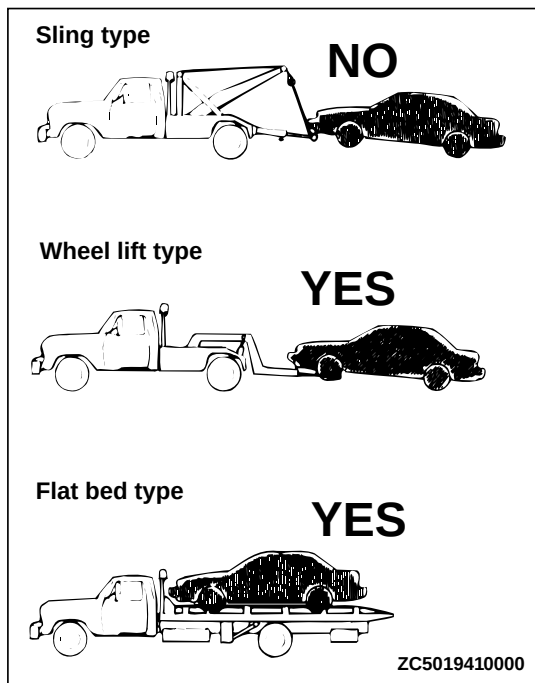
WRECKER TOWING RECOMMENDATION

FRONT TOWING PICKUP <FWD>

⚠ CAUTION

This vehicle cannot be towed by a wrecker using sling-type equipment; as the bumper may become deformed. If this vehicle is towed, use wheel lift or flat bed equipment.

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.



FRONT TOWING PICKUP <AWD>

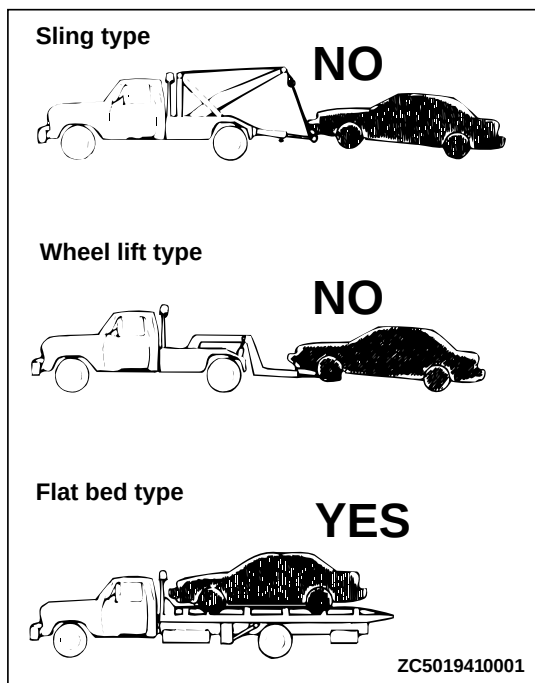
⚠ CAUTION

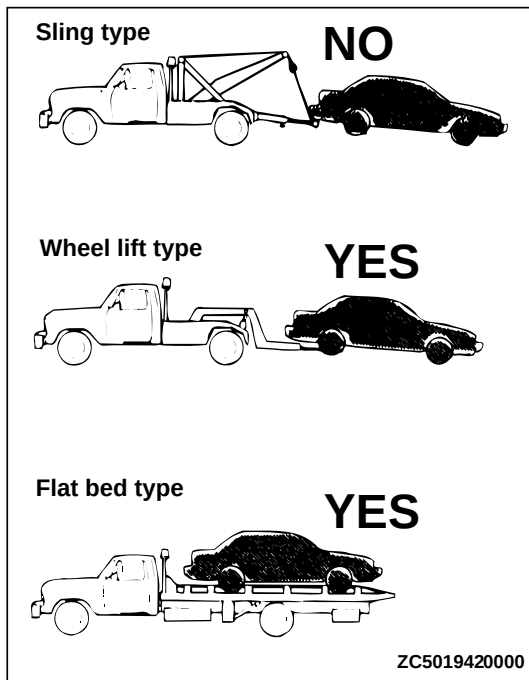
• If only the front wheels or only the rear wheels are lifted for towing, the bumper will be damaged.

In addition, lifting of the rear wheels causes the transfer case oil to flow forward, and may result in heat damage to the rear bushing of the transfer.

• The vehicle must not be towed by placing only its front wheels or only the rear wheels on a rolling dolly. This will result in deterioration of the viscous coupling causing the vehicle to jump forward suddenly.

If this vehicle is towed, use flat bed equipment only.



**REAR TOWING PICKUP <FWD>****⚠ CAUTION**

• This vehicle cannot be towed by a wrecker using sling-type equipment; doing so may cause the lower arm to become deformed.

If this vehicle is towed, use a wheel lift or flat bed equipment.

• Do not use the steering column lock to secure the front wheels for towing.

• Make sure the transaxle is in Neutral if vehicle will have drive wheels on the ground.

• If these requirements cannot be met, the front wheels must be placed on a tow dolly.

Automatic transaxle vehicles 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.

SAFETY PRECAUTIONS

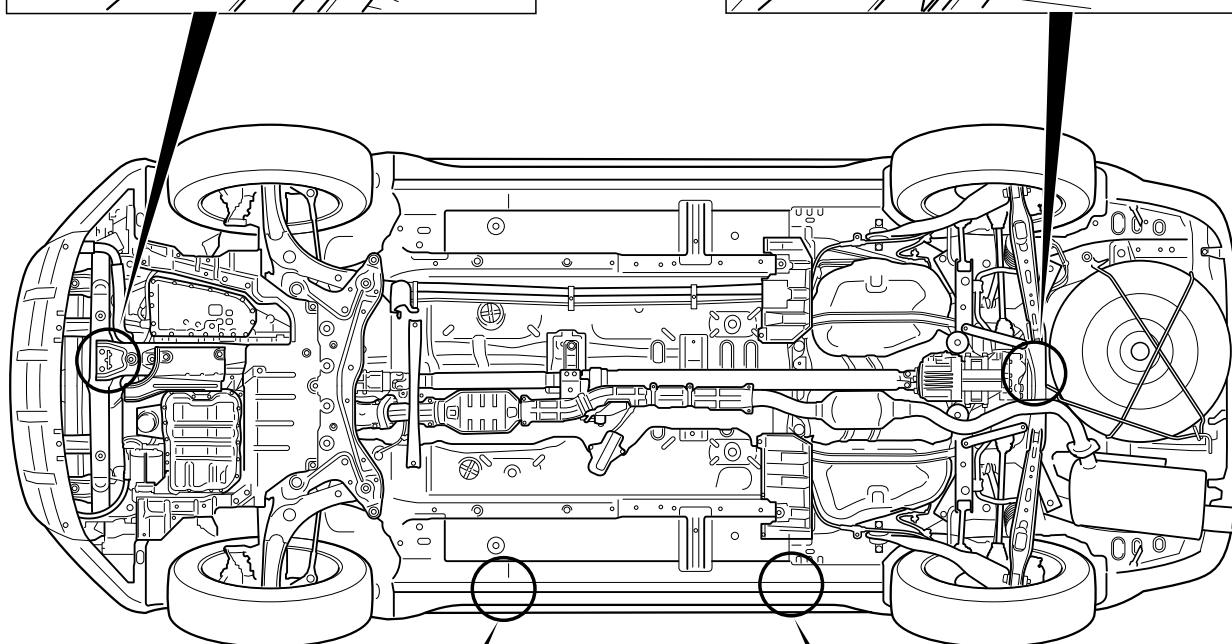
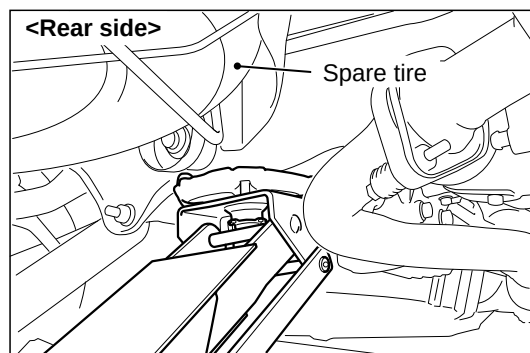
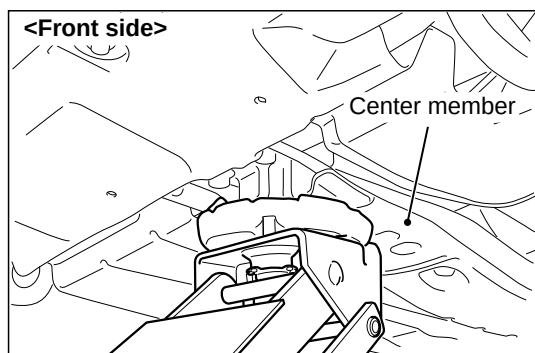
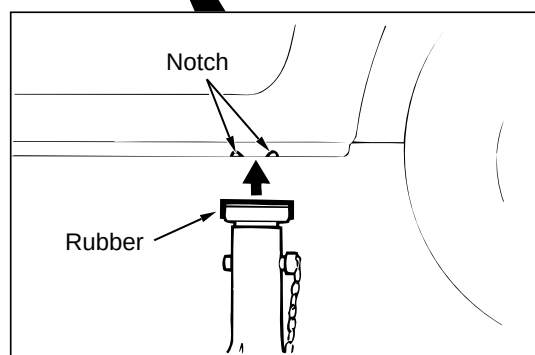
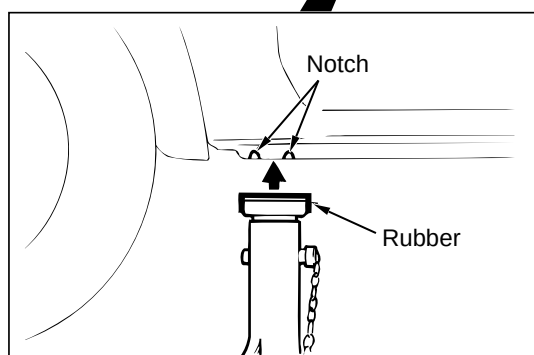
The following precautions should be taken when towing the vehicle:

1. DO NOT LIFT OR TOW THE VEHICLE BY ATTACHING TO OR WRAPPING AROUND THE BUMPER.
2. Any loose, protruding, or damaged parts such as hoods, doors, fenders, trim, etc. should be secured or removed prior to moving the vehicle.
3. Refrain from going under a vehicle when it is lifted by the towing equipment, unless the vehicle is adequately supported by safety stands.
4. Never allow passengers to ride in a towed vehicle.
5. State and local rules and regulations must be followed when towing a vehicle.

LIFTING, JACKING SUPPORT LOCATION**FLOOR JACK****⚠ CAUTION**

• Never support any point other than the specified one, or that point will be deformed.

• For lifting, put rubber or similar material between the side sill and rigid rack, or the side sill area will be damaged.

**Rigid rack**

ZC501944 0000

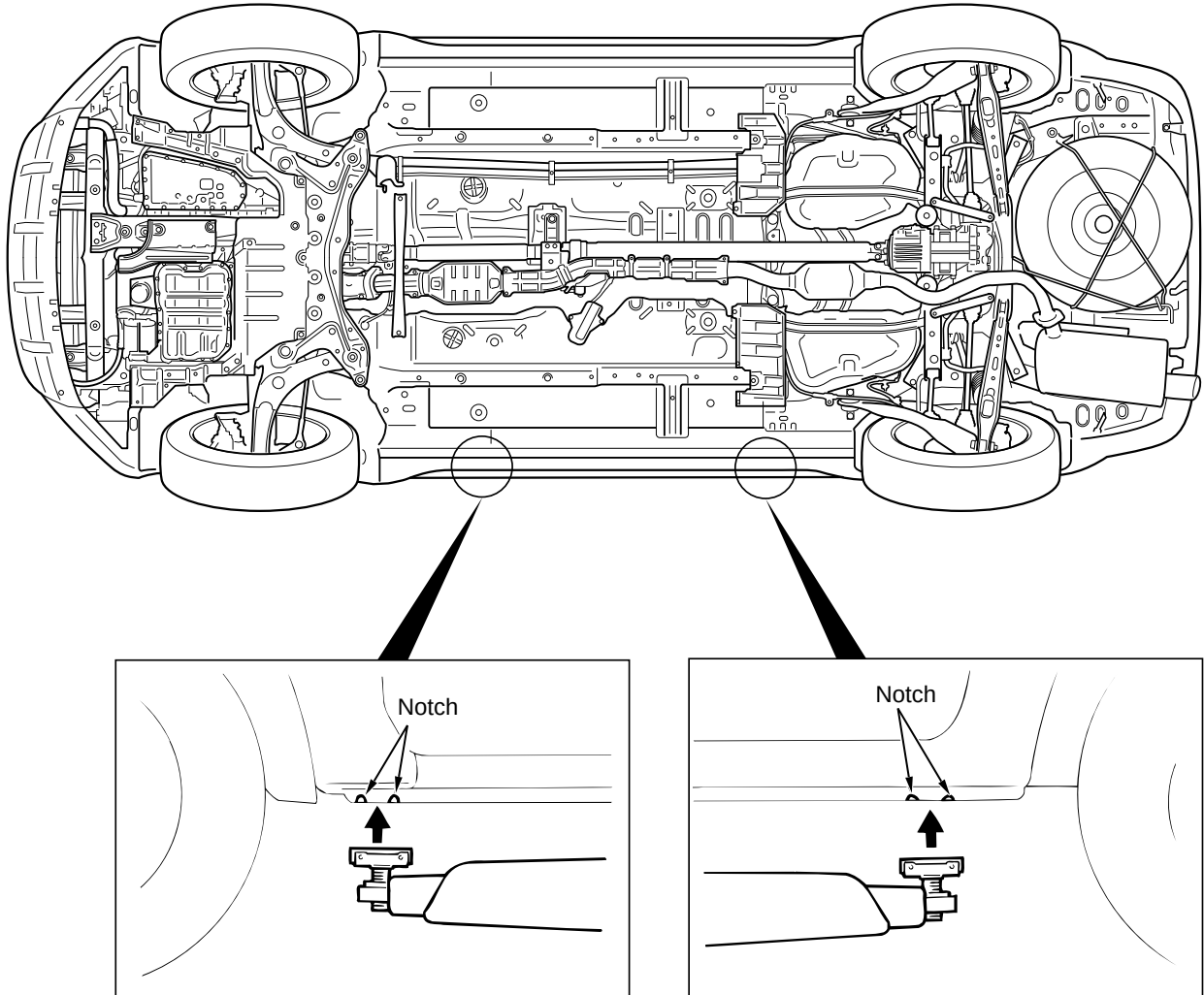
POST TYPE

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.

⚠ CAUTION

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

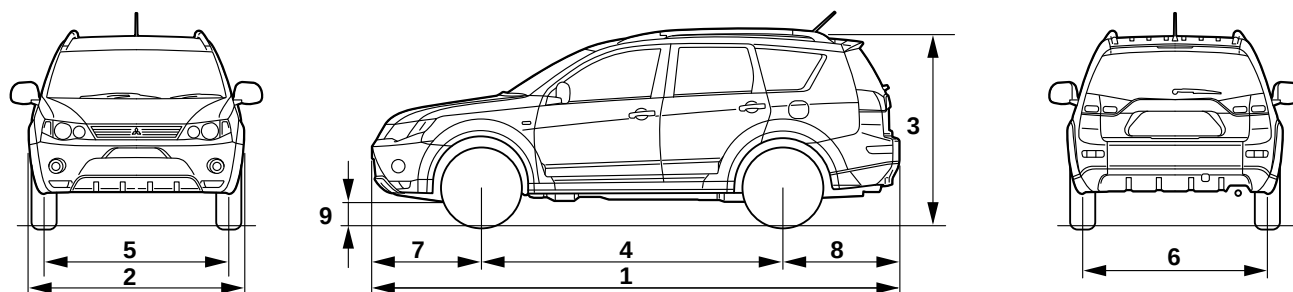


ZC501945 0000

GENERAL DATA AND SPECIFICATIONS

M10001000009USA0000010000

<Except vehicles for CANADA>

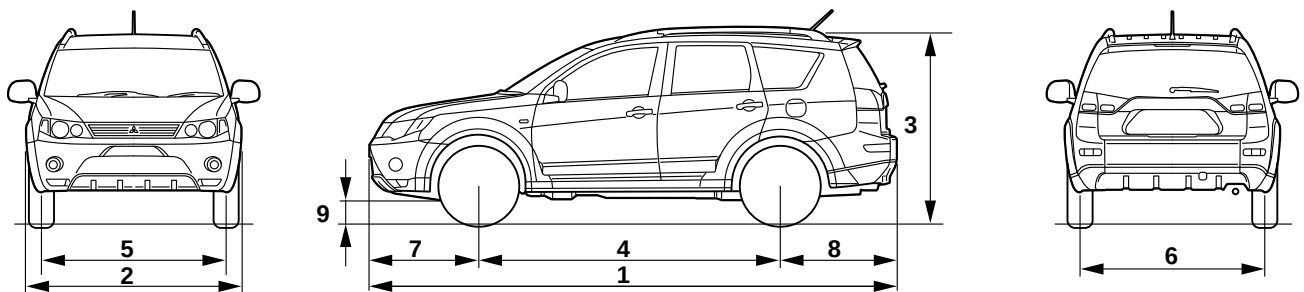


ZC5019470000

Item			CW6W			
			XLSYL2M/7M	XLHYL2M/7M	XLSYZL2M/7M	XLHYZL2M/7M
Vehicle dimension mm (in)	Overall length	1	4,640 (182.7)	4,640 (182.7)	4,640 (182.7)	4,640 (182.7)
	Overall width	2	1,800 (70.9)	1,800 (70.9)	1,800 (70.9)	1,800 (70.9)
	Overall height (unladen)	3	1,680 (66.1) <Vehicles without roof rail> 1,720 (67.7) <Vehicles with roof rail>	1,720 (67.7) <Vehicles with roof rail>	1,680 (66.1) <Vehicles without roof rail> 1,720 (67.7) <Vehicles with roof rail>	1,720 (67.7) <Vehicles with roof rail>
	Wheelbase	4	2,670 (105.1)	2,670 (105.1)	2,670 (105.1)	2,670 (105.1)
	Tread-front	5	1,540 (60.6)	1,540 (60.6)	1,540 (60.6)	1,540 (60.6)
	Tread-rear	6	1,540 (60.6)	1,540 (60.6)	1,540 (60.6)	1,540 (60.6)
	Overhang-front	7	965 (38.0)	965 (38.0)	965 (38.0)	965 (38.0)
	Overhang-rear	8	1,005 (39.6)	1,005 (39.6)	1,005 (39.6)	1,005 (39.6)
	Ground clearance	9	215 (8.5)	215 (8.5)	215 (8.5)	215 (8.5)
	Vehicle weight kg (lb)	Curb weight		1,615 (3,560)	1,635 (3,604)	1,680 (3,703)
Gross vehicle weight rating		2,300 (5,071)		2,350 (5,181)	2,350 (5,181)	
Gross axle weight rating-front		1,090 (2,403)				
Gross axle weight rating-rear		1,280 (2,822)				
Seating capacity			5			
Engine	Model No.		6B31			
	Piston displacement		3.0 L			
Transaxle	Model No.		F6AJA		W6AJA	
	Type		6-speed automatic			
Fuel system	Fuel supply system		Multiport fuel injection			

Item			CW6W		
			XLMYL2M	XLXYL2M/7M	XLXYZL2M/7M
Vehicle dimension mm (in)	Overall length	1	4,640 (182.7)	4,640 (182.7)	4,640 (182.7)
	Overall width	2	1,800 (70.9)	1,800 (70.9)	1,800 (70.9)
	Overall height (unladen)	3	1,680 (66.1) <Vehicles without roof rail> 1,720 (67.7) <Vehicles with roof rail>	1,720 (67.7) <Vehicles with roof rail>	1,680 (66.1) <Vehicles without roof rail> 1,720 (67.7) <Vehicles with roof rail>
	Wheelbase	4	2,670 (105.1)	2,670 (105.1)	2,670 (105.1)
	Tread-front	5	1,540 (60.6)	1,540 (60.6)	1,540 (60.6)
	Tread-rear	6	1,540 (60.6)	1,540 (60.6)	1,540 (60.6)
	Overhang-front	7	965 (38.0)	965 (38.0)	965 (38.0)
	Overhang-rear	8	1,005 (39.6)	1,005 (39.6)	1,005 (39.6)
	Ground clearance	9	215 (8.5)	215 (8.5)	215 (8.5)
Vehicle weight kg (lb)	Curb weight		1,675 (3,692)	1,670 (3,681)	1,735 (3,825)
	Gross vehicle weight rating		2,300 (5,071)		2,350 (5,181)
	Gross axle weight rating-front		1,090 (2,403)		
	Gross axle weight rating-rear		1,280 (2,822)		
Seating capacity			7		
Engine	Model No.		6B31		
	Piston displacement		3.0 L		
Transaxle	Model No.		F6AJA		W6AJA
	Type		6-speed automatic		
Fuel system	Fuel supply system		Multiport fuel injection		

<Vehicles for CANADA>



ZC5019470000

Item			CW6W			
			XLSYL3M	XLSYZL3M	XLXYL3M	XLXYZL3M
Vehicle dimension mm (in)	Overall length	1	4,640 (182.7)	4,640 (182.7)	4,640 (182.7)	4,640 (182.7)
	Overall width	2	1,800 (70.9)	1,800 (70.9)	1,800 (70.9)	1,800 (70.9)
	Overall height (unladen)	3	1,680 (66.1) <Vehicles without roof rail> 1,720 (67.7) <Vehicles with roof rail>	1,720 (67.7) <Vehicles with roof rail>	1,680 (66.1) <Vehicles without roof rail> 1,720 (67.7) <Vehicles with roof rail>	1,720 (67.7) <Vehicles with roof rail>
	Wheelbase	4	2,670 (105.1)	2,670 (105.1)	2,670 (105.1)	2,670 (105.1)
	Tread-front	5	1,540 (60.6)	1,540 (60.6)	1,540 (60.6)	1,540 (60.6)
	Tread-rear	6	1,540 (60.6)	1,540 (60.6)	1,540 (60.6)	1,540 (60.6)
	Overhang-front	7	965 (38.0)	965 (38.0)	965 (38.0)	965 (38.0)
	Overhang-rear	8	1,005 (39.6)	1,005 (39.6)	1,005 (39.6)	1,005 (39.6)
	Ground clearance	9	215 (8.5)	215 (8.5)	215 (8.5)	215 (8.5)
Vehicle weight kg (lb)	Curb weight		1,615 (3,560)	1,680 (3,703)	1,670 (3,681)	1,735 (3,825)
	Gross vehicle weight rating		2,300 (5,071)	2,350 (5,181)	2,300 (5,071)	2,350 (5,181)
	Gross axle weight rating-front		1,090 (2,403)			
	Gross axle weight rating-rear		1,100 (2,425)			
Seating capacity			5		7	
Engine	Model No.		6B31			
	Piston displacement		3.0 L			
Transaxle	Model No.		F6AJA	W6AJA	F6AJA	W6AJA
	Type		6-speed automatic			
Fuel system	Fuel supply system		Multiport fuel injection			

TIGHTENING TORQUE

M10001000011USA0000010000

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

Maintenance and lubrication service recommendations have been compiled to provide maximum protection for the vehicle owner's investment against all reasonable types of driving

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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 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 above 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: Engine oils displaying ILSAC certification symbol or conforming to the API classification SL, SL/CF.

For further details, refer to "RECOMMENDED LUBRICANTS AND LUBRICANT CAPACITIES TABLE - LUBRICANT SELECTION P.00-51."

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 this car will damage the catalytic converters and heated oxygen sensors, and affect the warranty coverage validity.

This vehicle must use unleaded gasoline only.

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

The 2.4L model is designed to operate on unleaded gasoline having a minimum octane rating of 87 [(MON + RON)/2], or 91 RON.

NOTE:

*MON: Motor Octane Number

*RON: Research Octane Number

GASOLINE CONTAINING ALCOHOL

Some gasoline 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 gasoline 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 gasoline containing methanol may not be covered by the new vehicle warranty.

GASOLINE CONTAINING METHYL 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.

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.

MATERIALS ADDED TO FUEL

Indiscriminate use of fuel system cleaning agents should be avoided. Many of these materials intended

RECOMMENDED LUBRICANTS AND LUBRICANT CAPACITIES TABLE

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RECOMMENDED LUBRICANTS

Lubricant	Specifications	Remarks
Engine oil	Engine oils displaying ILSAC certification symbol ("Starburst" symbol) or conforming to the API classification SM or higher	For further details, refer to "LUBRICANTS SELECTION" section.
Transmission fluid	DIA QUEEN J2	-
Transfer oil	Hypoid gear oil API classification GL-5 or higher	-
Rear differential gear oil	Hypoid gear oil API classification GL-5 or higher *Above -23°C(-10°F): SAE90, 85W-90, 80W-90 *From -34°C to -23°C(-30°F to -10°F): SAE80W, 80W-90 *Below -34°C(-30°F): SAE75W	-
Power steering fluid	Genuine Mitsubishi Power Steering Fluid	-
Brakes fluid	Conforming to Brake fluid 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)	4.0 (4.2)
	Oil filter	0.3 (0.32)
Engine coolant dm ³ (qt)		7.0 (7.4)
Transmission fluid dm ³ (qt)		8.4 (8.9)
Transfer oil dm ³ (qt)		0.53 (0.56)
Rear differential gear oil dm ³ (qt)		0.5 (0.53)
Power steering fluid dm ³ (qt)		1.0 (1.06)

Description	Specification
Fuel tank dm ³ (gal)	60 (15.9)

LUBRICANT SELECTION

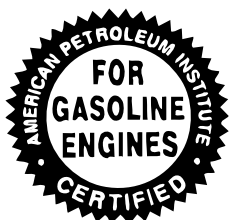
ENGINE OIL

⚠ CAUTION

Never use nondetergent or straight mineral oil.

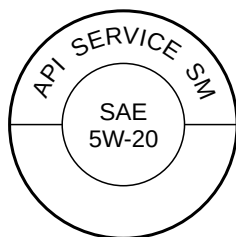
Use only engine oils displaying the ILSAC certification symbol ("Starburst" symbol) on the container.

ILSAC certification symbol
("Starburst" symbol)



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API service symbol



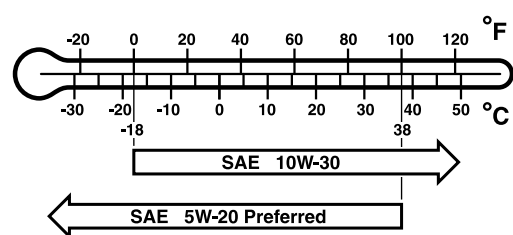
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If these oils are not available, an API classification SM or higher can be used.

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 engine oil is strongly recommended for optimum fuel economy and cold starting. If the ambient temperature is not within the usable temperature range of SAE 5W-20 shown in the above illustration, use SAE 10W-30 engine oil.



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SELECTION OF COOLANT

COOLANT

Relationship between Coolant Concentration and Specific Gravity

⚠ CAUTION

***If the concentration of the coolant is below 30%, the anti-corrosion property will be adversely**

affected. In addition, if the concentration is above 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)	-11 (12)	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 (-33)	-31 (-24)	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

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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 and pipes	Check condition			X*		X		X		X
3	Air cleaner element	Replace			X		X		X		X
4	Evaporative emission control system (except evaporative emission canister)	Check for leaks and clogging					X				X

GENERAL <BODY AND CHASSIS>
SCHEDULED MAINTENANCE TABLE

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
5	Spark plugs	Iridium-tipped type	Replace	Every 84 months or every 168,000 km (105,000 miles)							
6	Intake valve clearance	Inspect and adjust			X		X		X		X
7	Timing belt			If valve noise increases, adjust valve clearance							
7	Timing belt	Replace		Every 168,000 km (105,000 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*		X		X		X

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)							
13	Transfer oil	Check oil level and condition			X		X		X		X
		Change					X				X
14	Engine coolant	Change					X at first		X		X
15	Coolant hoses (radiator hose, heater hose)	Inspect			X		X		X		X
16	Disc brake pads, rotors	Inspect for wear		Every 12 months or every 24,000 km (15,000 miles)							
17	Brake hoses	Check for deterioration or leaks		Every 12 months or every 24,000 km (15,000 miles)							
18	Ball joint and steering linkage seals	Inspect for grease leaks and damage			X		X		X		X

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
19	Drive shaft boots	Inspect for grease leaks and damage	Every 12 months or every 24,000 km (15,000 miles)								
20	Suspension system	Inspect for looseness and damage		X		X		X		X	
21	Rear axle oil	Check oil level		X		X		X		X	
22	Tires	Rotate	Every 12,000 km (7,500 miles)								
23	Air filter	Replace	Every 18 months or every 24,000 km (15,000 miles)								

*NOTE: *: 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 element	Replace	Every 12 months or every 24,000 km (15,000 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 fluid	Change		X check	X	X check	X	X check	X	X check	X
16	Disc brake pads, rotors	Inspect for wear	Every 6 months or every 12,000 km (7,500 miles)								
17	Brake hoses	Check for deterioration or leaks	Every 12 months or 24,000 km (15,000 miles)								
19	Drive shaft boots	Inspect for grease leaks and damage	Every 12 months or 24,000 km (15,000 miles)								
20	Suspension system	Inspect for looseness and damage	Every 6 month or 12,000 km (7,500 miles)								
23	Air filter	Inspect for clogging	Every 3 months or every 6,000 km (3,750 miles)								
		Replace	<i>NOTE: inspect and replace alternately</i>								

Severe usage conditions:

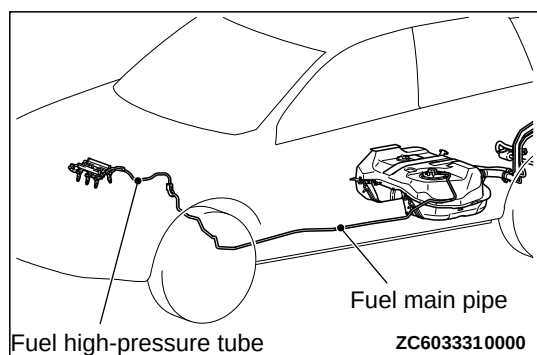
1. Driving on dusty, rough, muddy or salt-spread roads
2. Towing or police, taxi or commercial operation
3. Extensive idling and/or low speed operation
4. Repeated short-trip operation at freezing temperatures (engine not thoroughly warmed up)
5. Extended use of brakes while driving
6. Driving in sandy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

MAINTENANCE SERVICE

1. FUEL SYSTEM (TANK, PIPE LINE AND CONNECTION, AND FUEL TANK FILLER TUBE CAP) (CHECK FOR LEAKS)

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Check for damage or leakage in the fuel lines and connections.



2. FUEL HOSES (CHECK CONDITION)

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

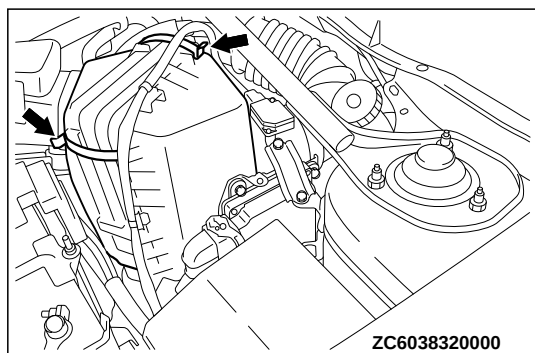
3. AIR CLEANER ELEMENT (REPLACE)

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

Replacement of air cleaner element:

1. Unclasp the air cleaner housing.
2. Remove the air cleaner element and install a new one.
3. When clamping the air cleaner housing in place, be sure that the cover is completely closed.



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

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If the fuel-vapor vent line is clogged or damaged, fuel vapor 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 seal makes improper contact to the filler tube.

5. SPARK PLUGS (REPLACE)

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CAUTION

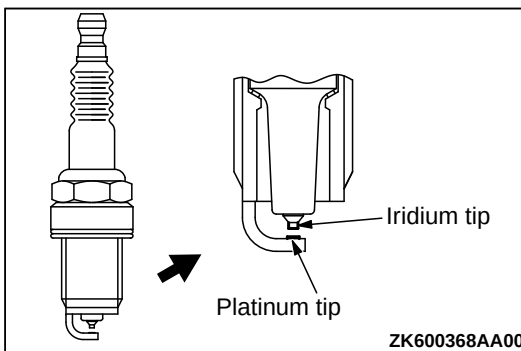
Iridium plugs are used. Use care not to damage the iridium tips of the plugs. Do not adjust the spark plug gap.

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
NGK

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).



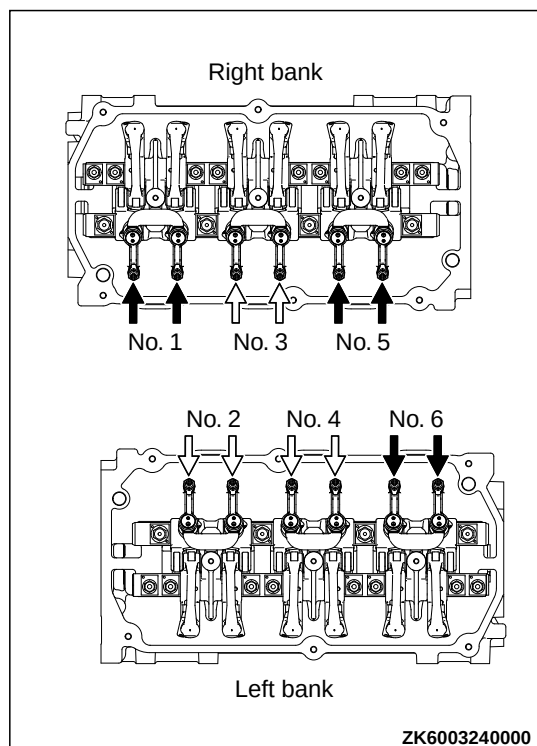
6. INTAKE AND EXHAUST VALVE CLEARANCE <INTAKE SIDE ONLY> (INSPECT AND ADJUST)

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1. Before checks, check that the engine oil, starter and battery are normal. Also, set the vehicle in the following condition:
 - Engine coolant temperature: 80 - 95°C (176 - 203°F)
 - Lights and all accessories: OFF
 - Transaxle: P range

NOTE: On vehicles for Canada, the headlight, taillight, etc. remain lit even when the lighting switch is in "OFF" position but this is no problem for checks and adjustment.

2. Remove all of the ignition coils.
3. Remove the rocker cover.
4. Turn the crankshaft clockwise until the notch on the pulley is lined up with the "T" mark on the timing indicator.



5. Move the rocker arms on the No.1 and No.4 cylinders up and down by hand to determine which cylinder has its piston at the top dead center on the compression stroke.

If both intake and exhaust valve rocker arms have a valve lash, the piston in the cylinder corresponding to these rocker arms is at the top dead center on the compression stroke.

6. Valve clearance inspection and adjustment can be performed on rocker arms indicated by white arrow mark when the No.1 cylinder piston is at the top dead center on the compression stroke, and on rocker arms indicated by black arrow mark when the No.4 cylinder piston is at the top dead center on the compression stroke.

7. Measure the valve clearance for intake side.

If the valve clearance is not as specified, loosen the rocker arm lock nut and adjust the clearance using a thickness gauge while turning the adjusting screw.

Standard value (hot engine): 0.20 mm (0.008 inch)

NOTE: Valve clearance check and adjustment is unnecessary for exhaust side due to auto lash adjuster installed.

8. While holding the adjusting screw with a screwdriver to prevent it from turning, tighten the lock nut to the specified torque.

Tightening torque: 9 ± 1 N·m (80 ± 9 in-lb)

9. Turn the crankshaft 360 degrees to line up the notch on the crankshaft pulley with the "T" mark on the timing indicator.
10. Repeat steps (7) and (8) on other valves for clearance adjustment.
11. Install the rocker cover.
12. Install the ignition coils.

7. TIMING BELT (REPLACE)

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Replace the belt with a new one according to the maintenance schedule P.00-53 to assure proper engine performance.

For removal and installation procedures, refer to GROUP 11A, Engine Mechanical - Timing Belt - Removal and Installation P. 11A-49.

8. DRIVE BELT (FOR GENERATOR, WATER PUMP, POWER STEERING OIL PUMP) (CHECK CONDITION)

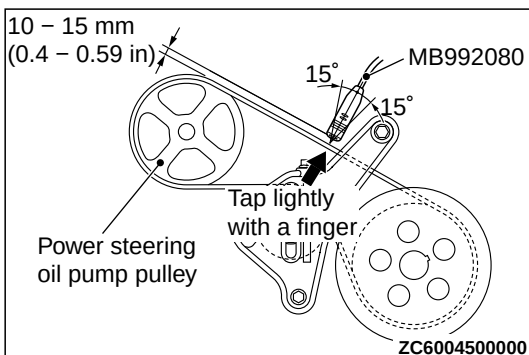
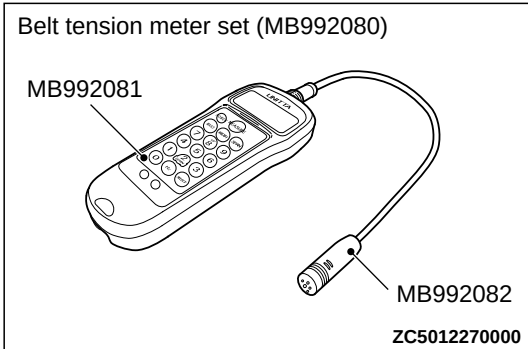
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Power steering oil pump drive belt tension check

When using special tool MB992080: recommendation

Required Special Tools:

- MB992080: Belt tension meter set



- MB992081: Belt tension meter
- MB992082: Microphone assembly

NOTE: The vibration frequency measuring method is recommended for check and adjustment of the drive belt tension.

1. Connect the special tool MB992082 to the special tool MB992081 of the Special tool MB992080.
2. Press the "POWER" button to turn on the power supply.
3. Press the numeral key of "1" and check that "No.1" appears on the upper left of the display.

NOTE: This operation is to temporarily set the preset data such as the belt specifications, because if the measurement is taken without input of the belt specifications, conversion to tension value (N) cannot be made, resulting in judgement of error.

4. Press "Hz" button twice to change the display to the frequency display (Hz).

⚠ CAUTION

- The temperature of the surface of the belt should be as close to normal temperature as possible.
 - Do not allow any contaminants such as water or oil to 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 MB992080 to the middle of the drive belt between the pulleys (at the place indicated by arrow), approximately 10 - 15 mm (0.4 - 0.59 inch) away from the rear surface of the belt so that it is perpendicular to the belt (within an angle of ± 15 degree).
 6. Press the "MEASURE" button.
 7. 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 measure that the vibration frequency of the belt is within the standard value.

Standard value: 128 - 165 Hz

When using scan tool MB991958: recommendation

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicle Communication Interface (V.C.I.)
- MB991910: M.U.T.-III Main Harness A

• MB991668: Belt Tension Meter Set

NOTE: The vibration frequency measuring method is recommended for check and adjustment of the drive belt tension.

⚠ CAUTION

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

1. Connect special tool MB991668 to special tool MB991824.
2. Connect special tool MB991910 to special tool MB991824.
3. Connect scan tool MB991910 to the data link connector.
4. Turn the ignition switch to the "ON" position and select "Belt Tension" from the menu special tool MB991824 screen.

⚠ CAUTION

• The temperature of the surface of the belt should be as close to normal temperature as possible.

• Do not allow any contaminants such as water or oil to get onto the microphone.

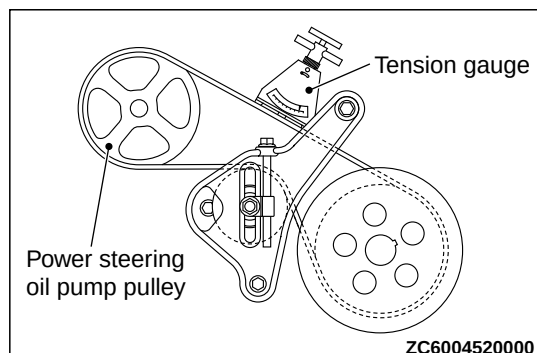
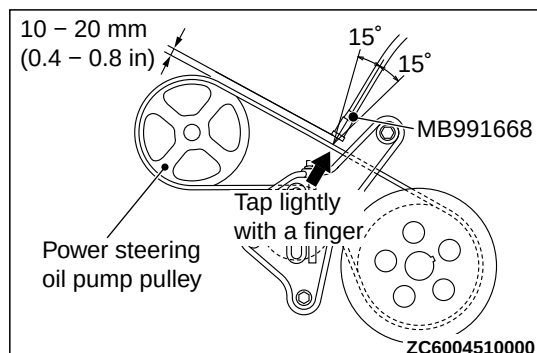
• If strong gusts of wind blow against the microphone or if there are any loud sources of noise nearby, the values measured by the microphone may not correspond to actual values.

• 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 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.

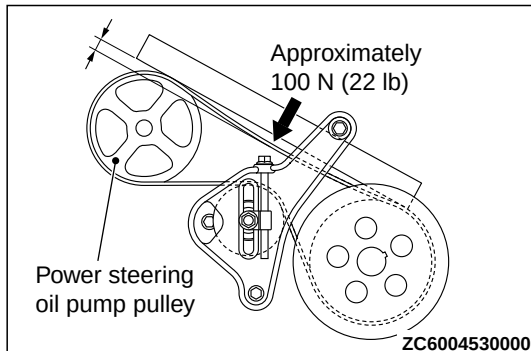
Standard value: 128 - 165 Hz



WHEN USING A TENSION GAUGE

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

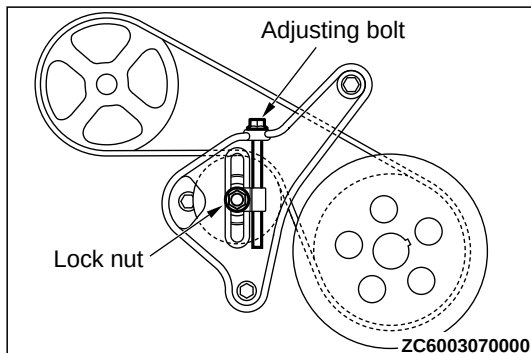
Standard value: 294 - 490 N (66 - 110 lb)



Belt deflection check

Apply approximately 100 N (22 lb) of force to the middle of the drive belt between the pulleys (at the place indicated by the arrow) and check that the amount of deflection is within the standard value.

Standard value: 11.9 - 15.6 mm (0.47 - 0.61 in)



Power steering drive belt tension adjustment

If the tension or deflection is outside the standard value, adjust by the following procedure.

1. Loosen the tensioner pulley lock nut.
2. Adjust the belt tension to the standard value by turning the adjusting bolt. The tension will increase when turning the adjusting bolt clockwise, and decrease when turning counterclockwise.

Standard value:

Item	When adjusted	When replaced
Vibration frequency Hz	138 - 157	165- 196
Tension N (lb)	343 - 441 (77 - 99)	490 - 686 (110 - 154)
Deflection (Reference) mm (in)	12.7 - 14.6 (0.50 - 0.57)	9.2 - 11.9 (0.36 - 0.47)

3. Tighten the lock nut to the specified torque.

Tightening torque: 47 ± 11 N·m (35 ± 8 ft-lb)

CAUTION

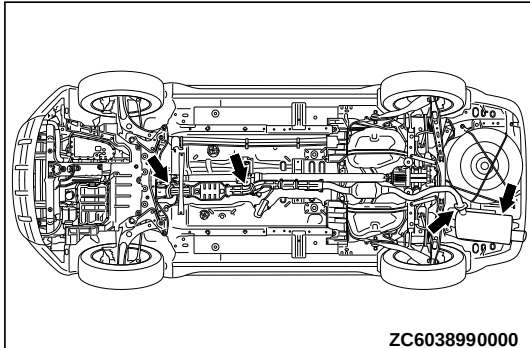
Check after turning the crankshaft one or more rotations clockwise.

4. Check the belt deflection amount and tension, and readjust if necessary.
5. When the belt tension is adjusted by measuring the belt deflection, adjust it with a tool for vibration frequency measurement or tension measurement afterward.

9. EXHAUST SYSTEM (CONNECTIONS PORTION OF MUFFLER, MUFFLER PIPES AND CONVERTER

HEAT SHIELDS) (CHECK AND SERVICE AS REQUIRED)

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

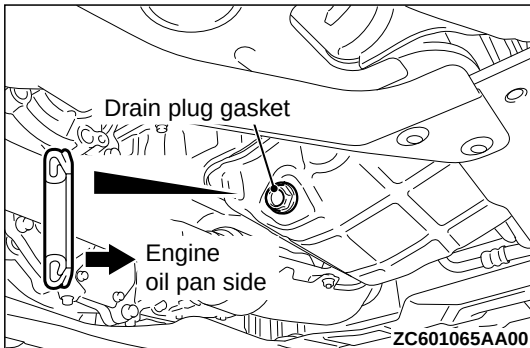
10. ENGINE OIL (CHANGE)

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1. Start the engine and allow it to warm up until the temperature of the coolant reaches 80 - 90°C (176 - 194°F).

⚠ WARNING***Use care as oil could be hot.***

2. Remove the engine oil filler cap.
3. Remove the drain plug to drain oil.
4. Install a new drain plug gasket so that it faces in the direction shown in the illustration, and then tighten the drain plug to the specified torque.

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

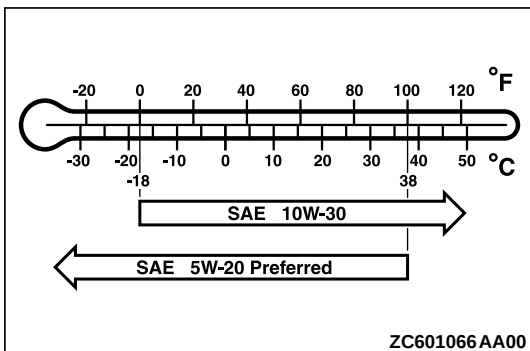
5. Refill the specified quantity of oil.

Specified Engine Oil: Engine oils displaying ILSAC certification symbol ("Starburst" symbol) or conforming to the API classification SL, SL/CF or higher

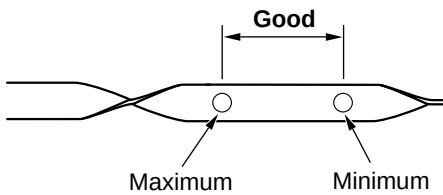
Total quantity: 4.3 dm³(4.5 quarts)

NOTE: SAE 5W-20 engine oil is strongly recommended for optimum fuel economy and cold starting. If the ambient temperature is not within the usable temperature range of SAE 5W-30 shown in the above illustration, use SAE 10W-30 engine oil.

6. Install the engine oil filler cap.



Oil dipstick (engine cover side)



ZC604409 AA00

7. Pull out the oil dipstick, clean off the engine oil on the oil dipstick, and then reinsert the oil dipstick.
8. Pull out the oil dipstick, and check the engine oil level is within the marks on one side of the oil dipstick (engine cover side).

NOTE:

**Check might be difficult shortly after the engine stopping or the engine oil replacement.*

**If difficult, take some time (approx. 30 sec.) and try again.*

**Information label indicating the engine oil check process on the rocker cover.*

9. Check that the engine oil is not excessively dirty, that there is no coolant or gasoline mixed in, and that it is sufficiently thick and slippery.
10. Start the engine and run it at idle for a few minutes.
11. Check the level range indicated on the dipstick.

11. ENGINE OIL FILTER (REPLACE)

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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: MD332687, MD365876, MD360935 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 must withstand a pressure of 1,765 kPa (256 psi) [manufacturer's specifications] to avoid filter and ultimately engine damage. The following is a high-quality filter and is strongly recommended for use on this vehicle: Mitsubishi Engine Oil Filter Part number MD332687, MD365876 and MD360935.

Any replacement oil filter should be installed in accordance with the oil filter manufacturer's installation instructions.

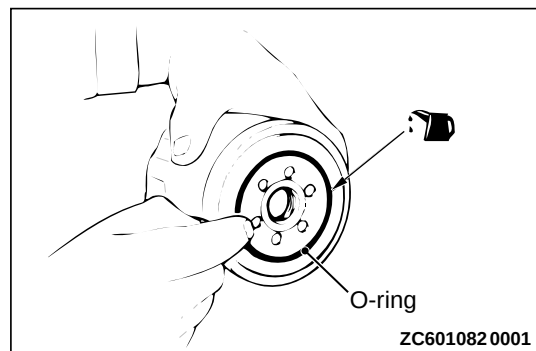
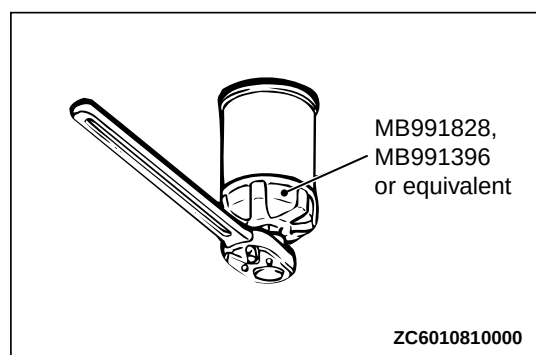
Oil Filter Replacement

1. Start the engine and allow it to warm up until the temperature of the coolant reaches 80 - 90°C (176 - 194°F)

⚠ WARNING

Use care as oil could be hot.

2. Remove the engine oil filler cap.
3. Remove the drain plug to drain oil.



4. Use the respective tool in the following table to remove the engine oil filter.

Number	Special tool
MD332687 or MD365876	Oil filter wrench (MB991828) or equivalent
MD360935	Oil filter wrench (MB991396) or equivalent

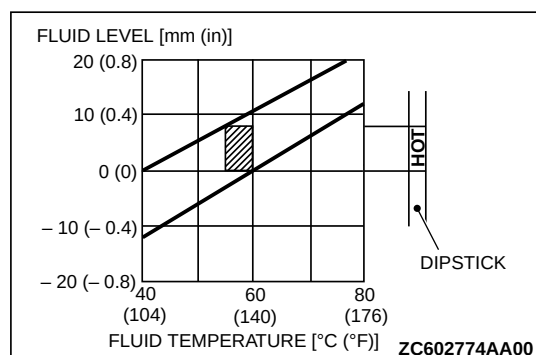
5. Clean the filter bracket side mounting surface and ensure the old O-ring has been removed.
6. Apply a small amount of engine oil to the O-ring of the new oil filter.
7. Screw on the oil filter by hand until it touches the surface of the flange and then tighten it with an oil filter wrench.

Number	Special tool	Tightening torque
MD332687 or MD365876	MB991828 or equivalent	Approximately 3/4 turn [16 ± 4 N·m (12 ± 3 ft-lb)]
MD360935	MB991396 or equivalent	Approximately one turn [14 ± 2 N·m (124 ± 18 in-lb)]

8. Install the drain plug and refill engine oil (Refer to P.12-4).
9. Rev the engine a few times, and check to be sure that no engine oil leaks at the oil filter.

12. TRANSMISSION FLUID

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Check fluid level and condition

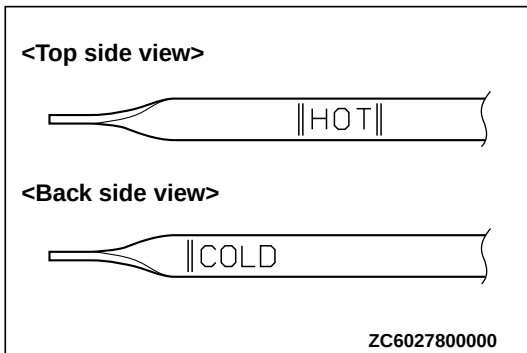
1. Drive the vehicle until the transmission fluid temperature rises to the normal operating temperature [70 - 80°C (158 - 176°F)].

NOTE: The transmission fluid temperature is measured with scan tool MB991958.

NOTE: 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 left diagram.

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 around the dipstick, remove the dipstick and check the condition of the transmission fluid.

NOTE: If the transmission fluid smells as if it is burnt, it means that the transmission fluid has been contaminated by fine particles from the bushings and friction materials. Transaxle overhaul and cooler line flushing may be necessary.



5. Check transmission fluid level is at the "HOT" mark on the dipstick. If the transmission fluid level is less than this, add DIA QUEEN J2 until the level reaches the "HOT" mark.

NOTE: If the transmission fluid level is too low, the oil pump will draw in air along with the transmission fluid, which will form bubbles. If the transmission fluid level is too high, rotating components inside the transaxle will churn the fluid and air into a foamy liquid. Both conditions (level too low or too high) will cause the hydraulic pressure to drop, which will result in late shifting and slipping of the clutches and brakes.

NOTE: In either case, air bubbles can interfere with normal valve, clutch, and brake operation. Also, foaming can cause transmission fluid to escape from the transaxle vent where it may be mistaken for a leak.

6. Securely insert the dipstick.

NOTE: The transmission fluid should always be replaced under the following conditions:

- *When troubleshooting the transaxle.
- *When overhauling the transaxle.
- *When the transmission fluid is noticeably dirty or burnt (driving under severe conditions).

Change transmission fluid

If you have a transmission fluid changer, use this changer to replace the transmission fluid. If you do not have a transmission fluid changer, replace the transmission fluid by the following procedure.

1. Disconnect the hose shown in the illustration which connects the transaxle and the oil cooler (inside the radiator). Place a container under the hose to collect the fluid.

CAUTION

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

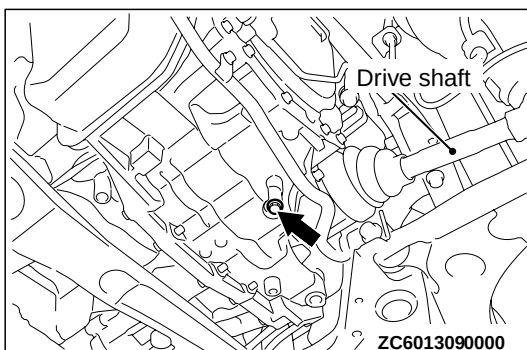
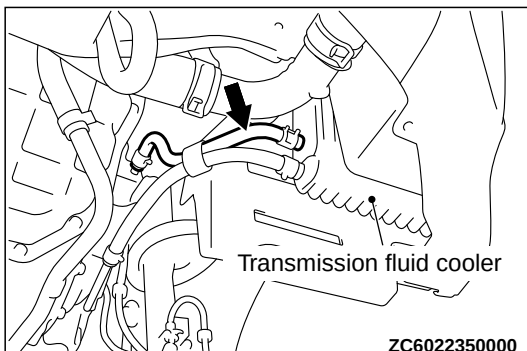
2. Start the engine and let the transmission fluid drain out.
(Running conditions: "N" range with engine idling)

Approximately 3.5 dm³(3.7 quarts) of transmission fluid should be removed.

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

Approximately 2.0 dm³(2.1 quarts) of transmission fluid should be removed.

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



Tightening torque: 32 ± 2 N·m (23 ± 2 ft-lb)**CAUTION****Stop pouring if the full volume of transmission fluid cannot be added.**

5. Add new transmission fluid (DIA QUEEN J2) through the oil filter tube.

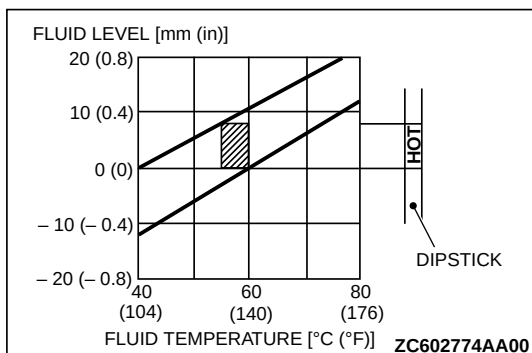
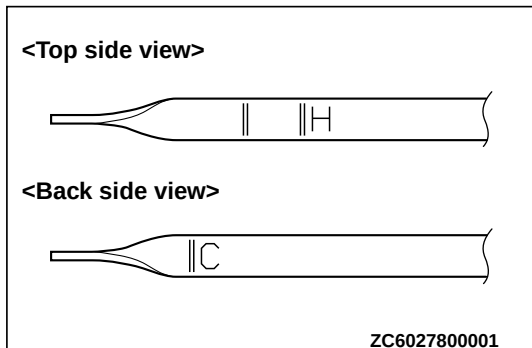
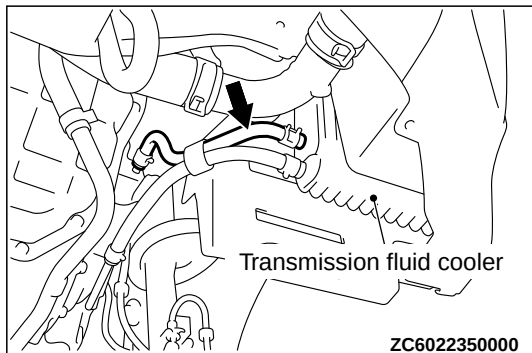
Approximately 5.5 dm³(5.8 quarts) of transmission fluid should be added.

6. Repeat the procedure in Step 2. (to pump out the rest of the contaminated transmission fluid)
7. Add new transmission fluid (DIA QUEEN J2) through the oil filter tube.

Approximately 3.5 dm³(3.7 quarts) of transmission fluid should be added.

NOTE: Check for contamination or a burnt odor. If the transmission fluid is still contaminated or burnt, repeat Steps 6 and 7 before proceeding to Step 8.

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



11. Check that the transmission fluid level is at the "COLD" mark on the dipstick. If the level is less than this, add transmission fluid.

12. Drive the vehicle until the transmission fluid temperature rises to the normal operating temperature [70 - 80°C (158 - 176°F)], and then check the transmission fluid level again. The transmission fluid level must be at the "HOT" mark.

NOTE: The transmission fluid temperature is measured with scan tool MB991958.

NOTE: The "COLD" level is for reference only; the "HOT" level should be regarded as the standard level.

NOTE: 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 left diagram.

13. If the transmission fluid is less than the specified level, add transmission fluid.
If the transmission fluid is greater than the specified level, drain the excess fluid through the drain plug to adjust the transmission fluid to the specified level.
14. Firmly insert the dipstick into the oil filler tube.

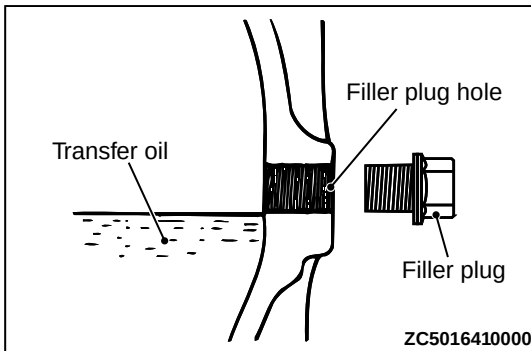
13. TRANSFER OIL

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Checking transfer oil level

1. Remove the oil filler plug.
2. Check that the oil level is just below the lower edge of the oil filler plug hole.
3. Check that the oil is not excessively foul and has moderate viscosity.
4. Install the oil filler plug and tighten to the specified torque.

Tightening torque: 32 ± 2 N·m (23 ± 2 ft·lb)



Change transfer oil

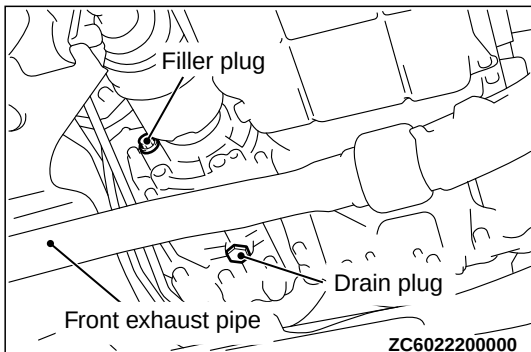
1. Remove the oil drain plug to drain the transfer oil.
2. Install the oil drain plug and tighten to the specified torque.
3. Remove the oil filler plug and fill the transfer oil up to the lower edge of the oil filler plug hole.

Brand name: Hypoid gear oil API classification GL-5 SAE 90

Filling amount: 0.53 dm^3 (0.56 quarts)

4. Install the oil filler plug and tighten to the specified torque.

Tightening torque: 32 ± 2 N·m (23 ± 2 ft·lb)



14. ENGINE COOLANT (CHANGE)

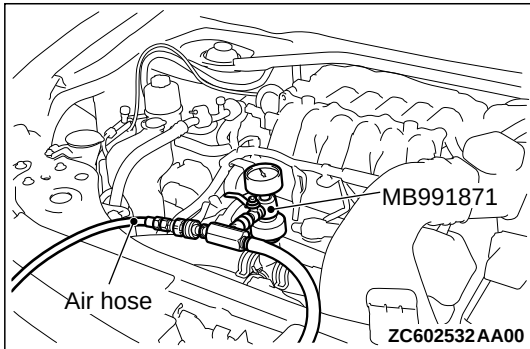
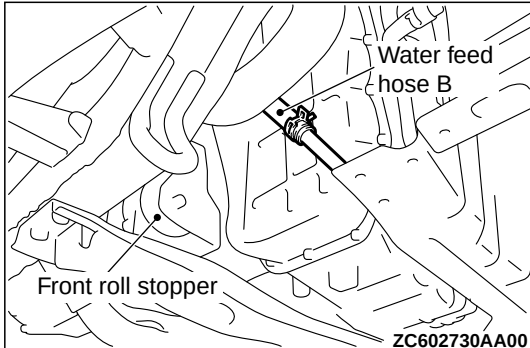
M10001000031USA0000010000

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

Change Coolant**⚠ 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.

1. Remove the radiator cap and drain plug to drain the coolant.
2. Remove the water feed hose B, and drain the coolant in the water jacket.
3. Remove the radiator condenser tank assembly and drain the coolant.
4. Drain the coolant then clean the path of the coolant by injecting water into the radiator from the radiator cap area.
5. Install the water feed hose B.
6. Securely tighten the radiator drain plug.
7. Assemble the radiator condenser tank assembly.

**⚠ 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 corrosion of the aluminum components.

• Vehicles for California emission regulation: If the coolant contact the PremAir® direct ozone reduction (DOR) radiator, wash it with water at once.

8. 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 (-24 °F)].

Recommended antifreeze: Long Life Antifreeze Coolant or an equivalent

Quantity:

9.5 dm³(10.0 quarts)

10.0 dm³(10.6 quarts) <Vehicles with Towing Package or DOR radiator>

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, stop the engine.
12. Remove the radiator cap after the engine has cooled, and pour in coolant up to the brim. Reinstall the cap.

⚠ CAUTION

Do not overfill the radiator condenser tank assembly.

13. Add coolant to the radiator condenser tank assembly between the "FULL" and "LOW" mark if necessary.

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

M10001000097USA0000010000

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.

16. DISC BRAKE PADS (INSPECT FOR WEAR)

M10001000032USA0000010000

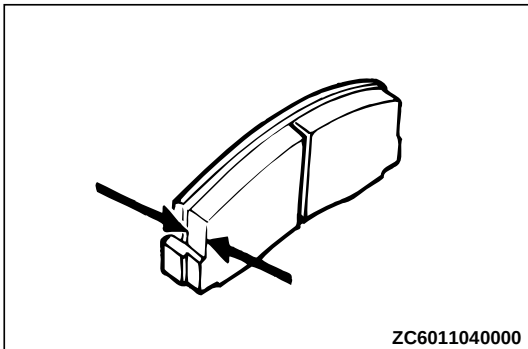
Check for fluid contamination and wear. Replace the complete set of pads if any one pad is defective.

Thickness of lining

Minimum limit: 2.0 mm (0.08 in)

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.



17. BRAKE HOSES (CHECK FOR DETERIORATION OR LEAKS)

M10001000034USA0000010000

Inspection of brake hoses should be included in all brake service operations.

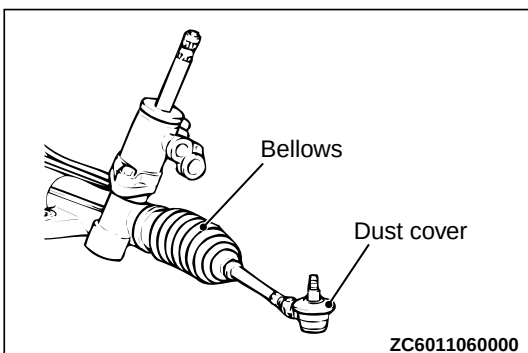
The hoses should be checked for:

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.

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

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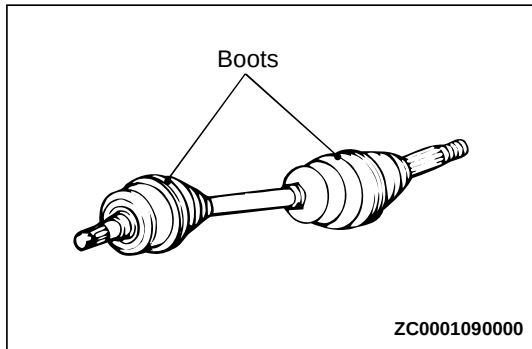
1. These components, which are permanently lubricated at the factory, do not require periodic lubrication. Damaged seals and bellows should be replaced to prevent leakage or grease contamination.
2. Inspect the dust cover and bellows for proper sealing, leakage and damage, and replace them if defective.



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

M10001000036USA0000010000

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 boots for proper sealing, leakage and damage. Replace them if defective.

**20. SUSPENSION SYSTEM (INSPECT FOR LOOSENESS AND DAMAGE)**

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

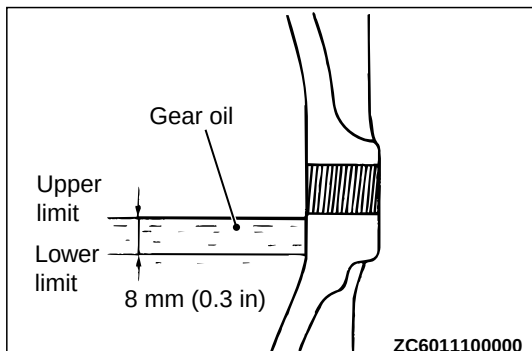
21. REAR AXLE OIL (CHECK OIL LEVEL)

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Rear differential oil check

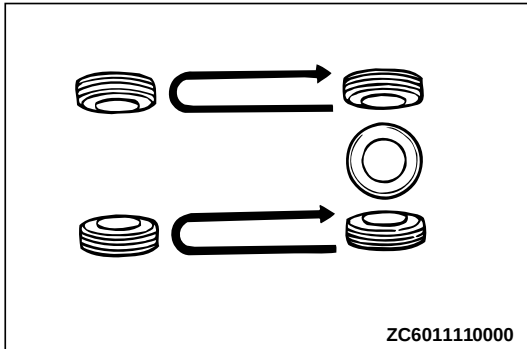
1. Remove the filler plug.
2. Check that gear oil level is not 8 mm (0.3 inch) below the bottom of filler plug hole.
3. Tighten the filler plug to the specified torque.

Tightening torque: 32 ± 2 N·m (23 ± 2 ft-lb)



22. TIRES (ROTATE)

M10001000089USA0000010000



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.

23. AIR FILTER (REPLACE)

M10001000090USA0000010000

1. Remove the glove box. (Refer to GROUP 52A - Instrument Panel Removal and Installation P.52A-2)
2. Remove the two screws as shown, and replace the clean air filter.
3. Install the glove box.

MAIN SEALANT AND ADHESIVE TABLE

M10001000038USA0000010000

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. 08672 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. 08731 Medium Strength Blue Threadlocker	Loctite® 242 Blue Service Tool Removable 24200
	Between oil pan and engine block	3M™ AAD Part No. 08672, 3M™ AAD Part No. 08704 or 3M™ AAD Part No. 08679/8678	Permatex® Ultra Gray 599, No.82194
WEATHERSTRIPPING FOR GLASS	Between tempered glass, body flanges, and weatherstrip	3M™ AAD Part No. 08509 Auto Bedding and Glazing Compound or 3M™ AAD Part No. 08633 Windo-weld Resealant	-

GENERAL <BODY AND CHASSIS>
MAIN SEALANT AND ADHESIVE TABLE

Application		3M™ No.	Loctite®/ permatex® No.
WEATHERSTRIPPING FOR GLASS	Between laminated glass and weatherstrip	3M™ AAD Part No. 08633	-
INTERIORS	Adhesive of vinyl chloride cloth	3M™ AAD Part No. 08088 General Trim Adhesive or 3M™ AAD Part No. 08064 Vinyl Trim Adhesive	Permatex® Vinyl Repair Kit No.81786
	Adhesion of door weatherstrip	3M™ AAD Part No. 08001 (yellow) or 3M™ AAD Part No. 08008 (black) Super Weatherstrip Adhesive or 3M™ AAD Part No. 08011 Black Weatherstrip Adhesive	Permatex® Super Black Weatherstrip Adhesive No. 82, 81850
	Sealing of various grommets and packing	3M™ AAD Part No. 08509 or 3M™ AAD Part No. 8678	-
	Adhesion of headliners and various interior decorative materials	3M™ AAD Part No. 08088 General Trim Adhesive or 3M™ AAD Part No. 08090 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. 08531 Heavy Drip-Check Sealer (gray) or 3M™ AAD Part No. 08302 Ultrapro Autobody Sealant (clear) or 3M™ AAD Part No. 08361 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 light	3M™ AAD Part No. 08633 Windo-weld Resealant	-
	Fuel Tank and Pad	3M™ AAD Part No. 08088 General Trim Adhesive or 3M™ AAD Part No. 08090 Super Trim Adhesive	Permatex® Spray Adhesive No.82019
CHASSIS SEALANT	Sealant of various flange faces and threaded parts. Packing of fuel gauge unit	3M™ AAD Part No. 08730 High Strength Red Threadlock or 3M™ AAD Part No. 08731 Medium Strength Blue Threadlocker	Loctite® 272 High Strength and High Temperature 27200

GENERAL <BODY AND CHASSIS>
MAIN SEALANT AND ADHESIVE TABLE

00-73

Application		3M™ No.	Loctite®/ permatex® No.
	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. 08672 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. 08661 or 3M™ AAD Part No. 08663 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. 08633 Windo-weld Resealant	-
QUICK FIX ADHESIVE	-	3M™ AAD Part No. 08155 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. 08730 High Strength Threadlocker or 3M™ AAD Part No. 08731 Medium Strength Threadlocker	Loctite® 271, High-Strength Threadlocker 27100 or 27200
UNDER COATING AGENT	-	3M™ AAD Part No. 08883 Rubberized Undercoating Aerosol or 3M™ AAD Part No. 08864 Body Schutz Undercoating (qt)	Permatex® Heavy-Duty Undercoating 81833

MEMO