# GROUP 00

# GENERAL

## CONTENTS


**HOW TO USE THIS MANUAL. . . . . 00-2**

**HOW TO USE TROUBLESHOOTING/INSPECTION SERVICE POINTS . . . . . 00-5**

- CONTENTS OF TROUBLESHOOTING . . . 00-5
- DIAGNOSIS FUNCTION. . . . . 00-7
- HOW TO USE THE INSPECTION PROCEDURES . . . . . 00-8
- CONNECTOR MEASUREMENT SERVICE POINTS . . . . . 00-9
- CONNECTOR INSPECTION SERVICE POINTS . . . . . 00-10
- INSPECTION SERVICE POINTS FOR A BLOWN FUSE. . . . . 00-11
- HOW TO COPE WITH INTERMITTENT MALFUNCTIONS . . . . . 00-12
- HOW TO TREAT PAST TROUBLE . . . . . 00-12

**VEHICLE IDENTIFICATION . . . . . 00-13**

- MODELS. . . . . 00-13
- VEHICLE IDENTIFICATION NUMBER (CHASSIS NUMBER) . . . . . 00-14
- VEHICLE INFORMATION CODE PLATE. . 00-15
- MANUFACTURER PLATE . . . . . 00-15
- ENGINE MODEL STAMPING. . . . . 00-15

**GENERAL DATA AND SPECIFICATIONS . . . . . 00-16**

**PRECAUTIONS BEFORE SERVICE. 00-18**

- ABOUT THE DESCRIPTION OF THE IGNITION SWITCH . . . . . 00-18
- SUPPLEMENTAL RESTRAINT SYSTEM (SRS) . . . . . 00-19
- VEHICLES WITH AIR CONDITIONER . . . . 00-19
- MULTI USE TESTER (M.U.T.-III) SUB ASSEMBLY . . . . . 00-20
- SERVICING ELECTRICAL SYSTEM . . . . . 00-21
- HOW TO SHIFT LOCK FORCED RELEASE . . . . . 00-21
- HOW TO PERFORM CHASSIS NUMBER (CHASSIS NO.) WRITING FOR ENGINE-ECU, KOS-ECU AND ETACS-ECU . . . . . 00-21
- CODING LIST . . . . . 00-27
- INITIALISATION PROCEDURE FOR LEARNING VALUE IN MPI ENGINE . . . . . 00-36
- LEARNING PROCEDURE FOR IDLING IN MPI ENGINE. . . . . 00-37
- PRE-INSPECTION CONDITION. . . . . 00-37
- PRECAUTIONS FOR INSTALLATION OF ON-VEHICLE RADIO TRANSMISSION EQUIPMENT . . . . . 00-37
- ENGINE OILS . . . . . 00-38
- FORM–IN–PLACE GASKET (FIPG) . . . . . 00-38
- BOLTS AND NUTS WITH STABILIZER FOR COEFFICIENT OF FRICTION. . . . . 00-39
- APPLICATION OF ANTI-CORROSION AGENTS AND UNDERCOATS . . . . . 00-39
- VEHICLE WASHING . . . . . 00-39

**SUPPLEMENTAL RESTRAINT SYSTEM (SRS) . . . . . 00-39**

**SRS SERVICE PRECAUTIONS . . . . . 00-42**

**SUPPORT LOCATIONS FOR LIFTING AND JACKING . . . . . 00-44**

**TOWING AND HOISTING. . . . . 00-46**

# HOW TO USE THIS MANUAL

M1001000103357

## SCOPE OF MAINTENANCE, REPAIR AND SERVICING EXPLANATIONS

This manual provides explanations, etc. concerning procedures for the inspection, maintenance, repair and servicing of the subject model.

## ON-VEHICLE SERVICE

"On-vehicle Service" is procedures for performing inspections and adjustments of particularly important locations with regard to the construction and for maintenance and servicing, but other inspection (for looseness, play, cracking, damage, etc.) must also be performed.

## INSPECTION

Under this title are presented inspection and checking procedures to be performed by using special tools and measuring instruments and by feeling, but, for actual maintenance and servicing procedures, visual inspections should always be performed as well.

## DEFINITION OF TERMS

## STANDARD VALUE

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

## LIMIT

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

## REFERENCE VALUE

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

## DANGER, WARNING, AND CAUTION

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

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

## INDICATION OF TIGHTENING TORQUE

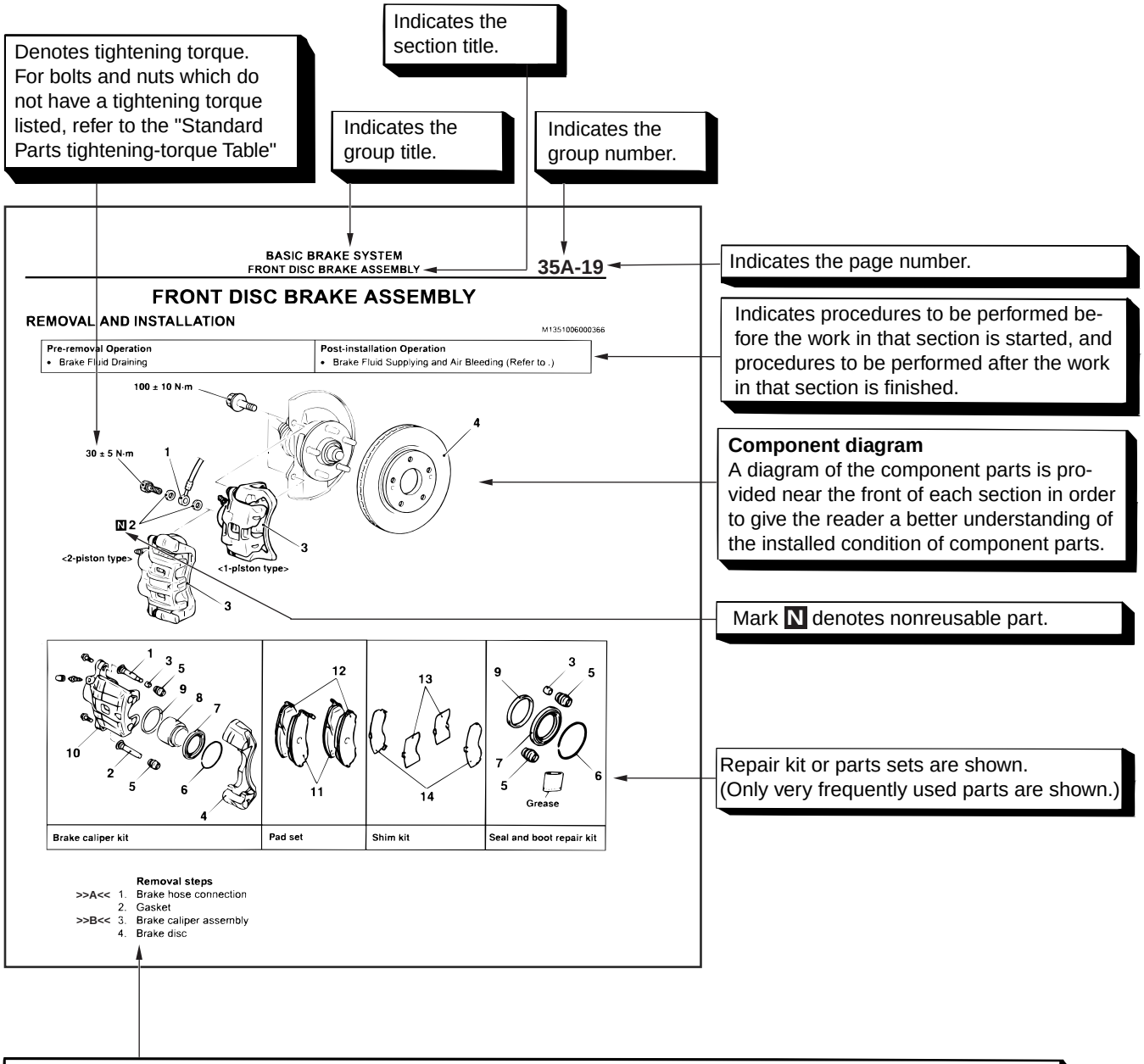
Tightening torques (units: N·m) are set to take into account the central value and the allowable tolerance. The central value is the target value, and the allowable tolerance provides the checking range for tightening torques.

## MODEL INDICATIONS

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

2000:Indicates models equipped with the 1,998 mL <4B11> petrol engine.
2400:Indicates models equipped with the 2,360 mL <4B12> petrol engine.
2WD:Indicates the 2-wheel drive vehicles.
4WD:Indicates the 4-wheel drive vehicles.
A/C:Indicates the air conditioner.
CVT: Indicates the continuously variable transmission.
DOHC:Indicates an engine with the double overhead camshaft.
INVECS: Indicates the (Mitsubishi) intelligent and innovative vehicles electronic control system.
MIVEC:Indicates the Mitsubishi innovative valve timing and lift electronic control system.
MPI:Indicates the multi point injection.

# EXPLANATION OF MANUAL CONTENTS




AC311238AE

**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.

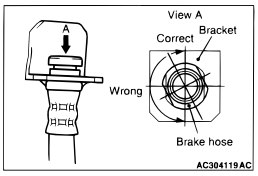
<<A>> : Indicates that there are essential points for removal or disassembly.
>>A<< : Indicates that there are essential points for installation or reassembly.



**INSTALLATION SERVICE POINTS**

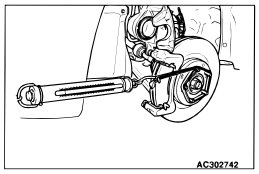
**>>A<< BRAKE HOSE INSTALLATION**

1. Install the brake hose end on the bracket and another end on the front brake assembly.




2. Twist the brake hose towards the lesser torsion between the brake hose and bracket as shown and secure it to the bracket.

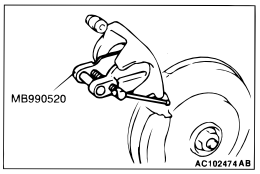
**>>B<< BRAKE CALIPER ASSEMBLY INSTALLATION**




1. In order to measure the brake drag torque, measure the hub torque with the pads removed by the following procedure.
   (1) Use a spring balance to measure the hub torque in the forward direction.
   (2) Record hub torque with pads removed.

**⚠ CAUTION**
**Do not let any oil, grease or other contamination get onto 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.

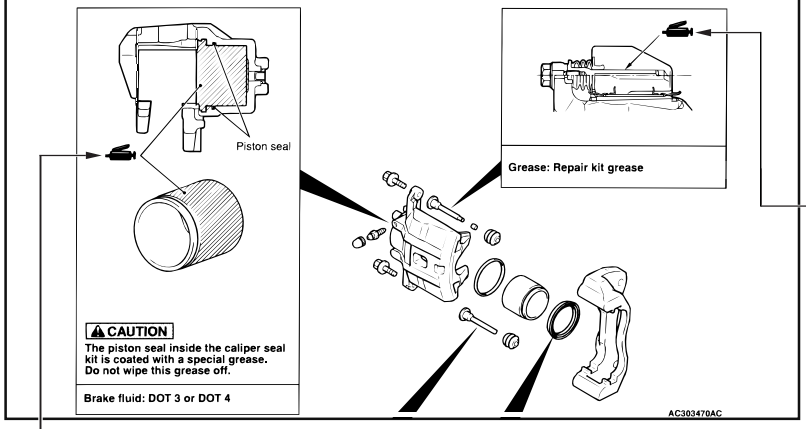



3. Clean the piston and insert into cylinder with special tool disc brake piston expander (MB990520).
4. Install the pad clips and the pads to the caliper support and tighten the pin bolt to the specified torque.

**Tightening torque : 38 ± 4 N·m**

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

**LUBRICATION POINTS**




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
- : Automatic transmission fluid, brake fluid, power steering fluid or air conditioning compressor oil
- : Engine oil or gear oil
- : Adhesive tape or butyl rubber tape

AC509265AF

# HOW TO USE TROUBLESHOOTING/INSPECTION SERVICE POINTS

## CONTENTS OF TROUBLESHOOTING

M1001013300824

**⚠ CAUTION**

**During diagnosis, a diagnosis 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 diagnosis code(s). If diagnosis code(s) are set, erase them all.**

***⚠ WARNING***

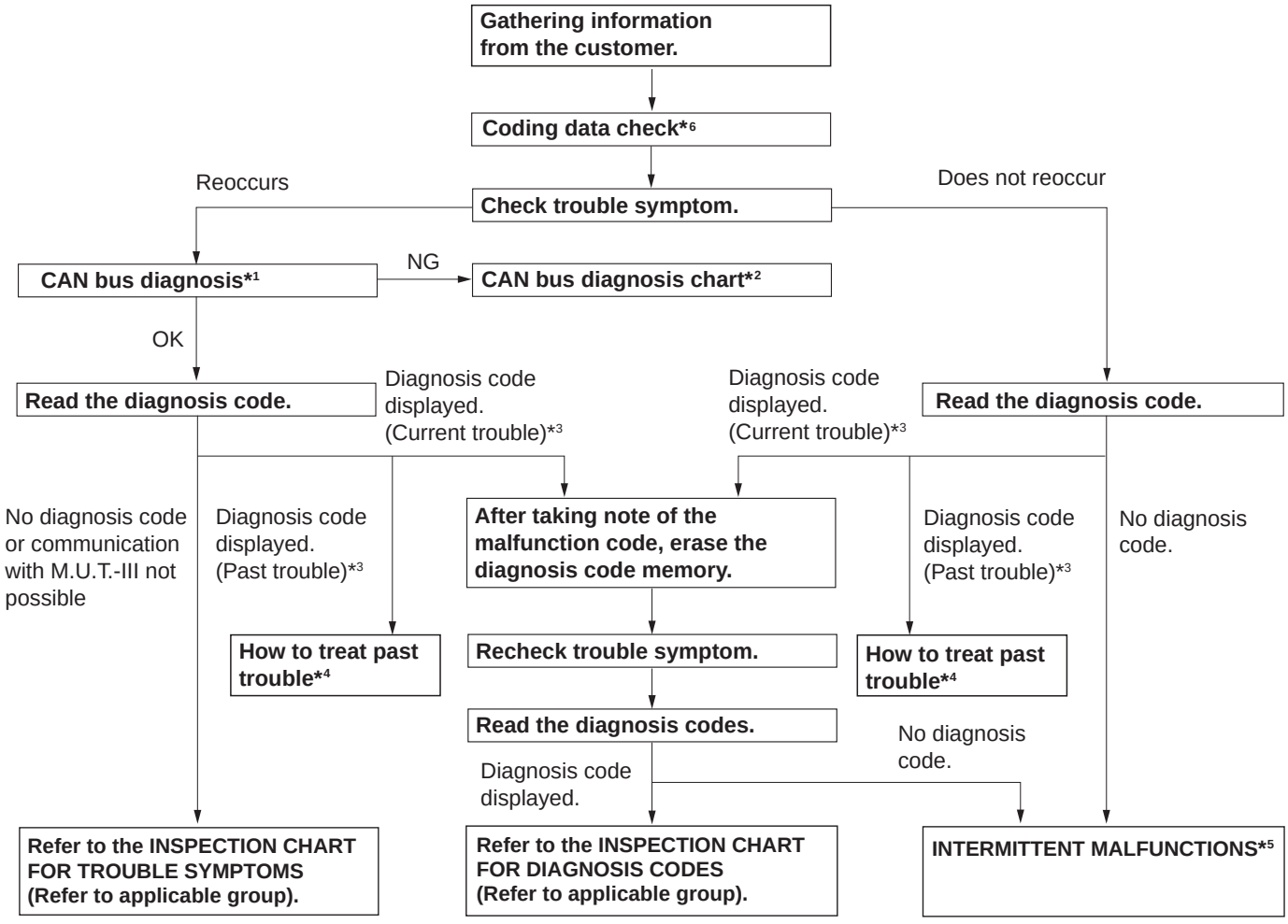
***Since the radiator fan rotates during CAN bus line diagnostics, make sure that no one is servicing the engine compartment before diagnosing the CAN bus line. Since the CAN communication stops when diagnosing the CAN bus line, the ETACS-ECU detects the time-out of the engine-ECU, and activates the radiator fan to prevent overheating as fail-safe.***

Troubleshooting of electronic control systems for which the M.U.T.-III can be used follows the basic outline described below. Even in systems for which the M.U.T.-III cannot be used, some of these systems still follow this outline.

## 1. STANDARD FLOW OF DIAGNOSIS 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.

## Diagnosis method




AC508911

- *1: For how to diagnose CAN bus lines, refer to GROUP 54C .
- *2: For the CAN bus diagnosis chart, refer to GROUP 54C .
- *3: When the M.U.T.-III detects a diagnosis 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.00-12.
- *5: For how to cope with intermittent malfunctions, refer to P.00-12.
- *6: For coding data, refer to P.00-27.

### 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. DIAGNOSIS FUNCTION

Details specific to individual systems are described.

### 4. DIAGNOSIS CODE CHART

Diagnostic trouble codes and diagnostic items are shown.

### 5. DIAGNOSIS CODE PROCEDURES

Indicates the inspection procedures corresponding to each diagnosis code (Refer to How to Use Inspection Procedures P.00-8).

## 6. TROUBLE SYMPTOM CHART

If there are trouble symptoms even though the M.U.T.-III does not find any diagnosis codes, Inspection procedures for each trouble symptom will be found by means of this chart.

## 7. SYMPTOM PROCEDURES

Indicates the inspection procedures corresponding to each symptom classified in the Symptom Chart (Refer to How to Use Inspection Procedures P.00-8).

## 8. DATA LIST REFERENCE TABLE

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

## 9. ACTUATOR TEST TABLE

The Actuator Test item numbers, inspection items, and judgement values have been provided in this chart as reference information.

## 10. CHECK AT ECU TERMINALS

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

## 11. INSPECTION PROCEDURE BY USING AN OSCILLOSCOPE

When there are inspection procedures using an oscilloscope, these are described here.

## DIAGNOSIS FUNCTION

M1001013401040

The diagnosis function retrieves diagnosis code and data list by M.U.T.-III and enables the performance of the actuator test.

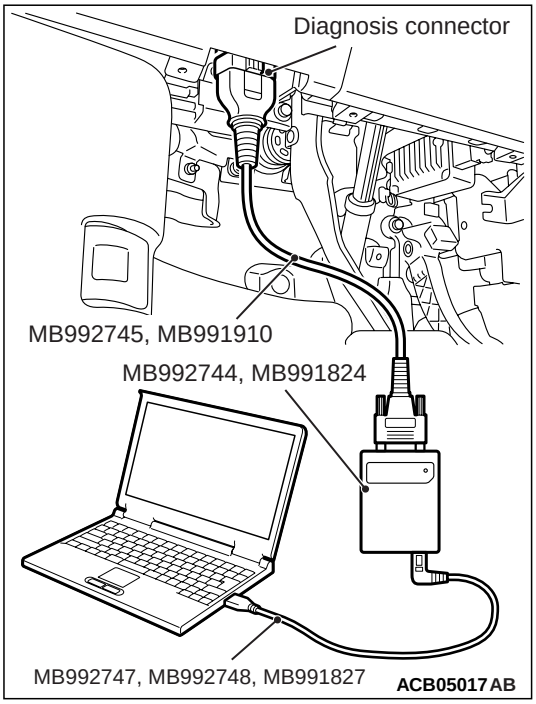
- DIAGNOSIS CODE
- Data list output
- Actuator test
- Diagnosis deletion using M.U.T.-III
- Freeze frame data
- Status indication by diagnosis code
- ECU information display

*NOTE: If a diagnosis code is set, the "status indication by diagnosis code" informs users whether a mechanical problem currently exists (current trouble) or whether it existed before but normal operation has been restored (past trouble).*

## HOW TO READ DIAGNOSIS CODE

**⚠ CAUTION**

**Before connecting or disconnecting the M.U.T.-III, turn the ignition switch to the "LOCK" (OFF) position.**




Connect the M.U.T.-III to the 16-pin diagnosis connector, and read the diagnosis code.

*NOTE:*

- *For details on how to use the M.U.T.-III, refer to the "M.U.T.-III operation manual."*

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool V.C.I.-Lite USB cable (MB992747/MB992748) or M.U.T.-III USB cable (MB991827) to V.C.I.-Lite (MB992744) or V.C.I. (MB991824) and the personal computer.
4. Connect V.C.I.-Lite main harness A (MB992745) or M.U.T.-III main harness A (MB991910) to the V.C.I.-Lite or V.C.I.
5. Connect the V.C.I.-Lite main harness A or M.U.T.-III main harness A to the diagnosis connector of the vehicle.

   *NOTE: When the V.C.I.-Lite is connected to the diagnosis connector, the V.C.I.-Lite indicator lamp will be illuminated in a green colour.*
6. Turn the V.C.I. power switch to the "ON" position. <When using the V.C.I.>

   *NOTE: When the V.C.I. is energized, the V.C.I. indicator lamp will be illuminated in a green colour.*

7. Start the M.U.T.-III system on the personal computer and turn the ignition switch to the "ON" position.
8. Read the diagnosis code.
9. Disconnecting the M.U.T.-III is the reverse of the connecting sequence, making sure that the ignition switch is at the "LOCK" (OFF) position.

## ERASING DIAGNOSIS CODE

**⚠ CAUTION**

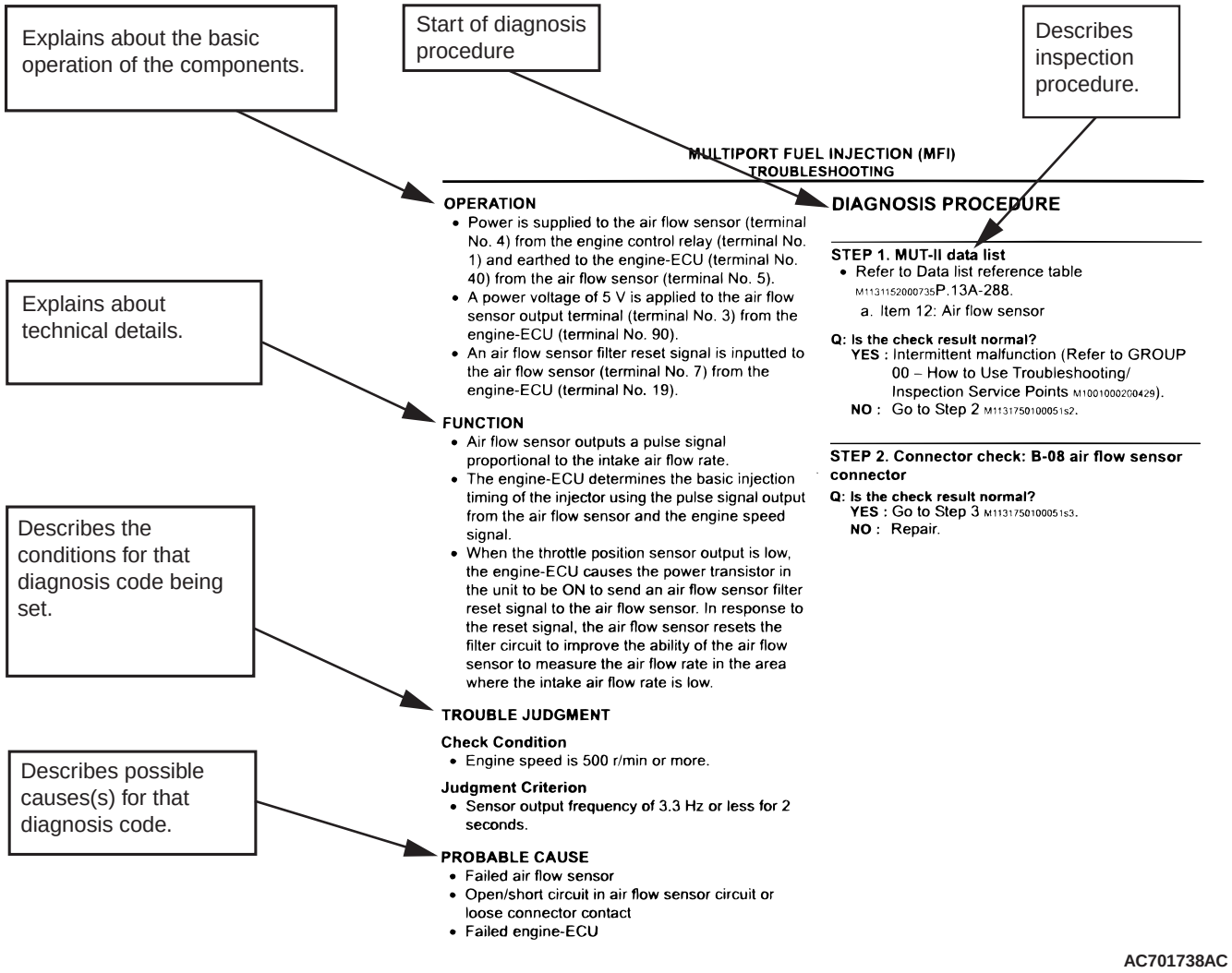
**Before connecting or disconnecting the M.U.T.-III, turn the ignition switch to the "LOCK" (OFF) position.**

Connect the M.U.T.-III to the diagnosis connector, and erase the diagnosis code. The procedure is the same as "How to Read Diagnosis Code ."

## HOW TO USE THE INSPECTION PROCEDURES

M1001013500862

The causes of many of the problems occurring in electric circuitry are generally the connectors, components, the ECU, the wiring 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.




AC701738AC

## CURRENT TROUBLE

Indicates that the status is "Active" and the trouble is currently present. Carry out troubleshooting as described in the applicable inspection procedure.

## PAST TROUBLE

Indicates that the status is "Stored" and the trouble is historic. Since the trouble may still be present, set the vehicle to the diagnosis code detection condition and check that the status changes to "Active". If the status does not change from "Stored", observe the applicable inspection procedure with particular emphasis on connector(s) and wiring harness.

## HARNESS CHECK

Check for an open or short circuit in the harness between the terminals which are faulty according to the connector measurements. Carry out this inspection while referring to the Electrical Wiring Manual. Here, "Check the wiring harness between the power supply and terminal xx" also includes checking for blown fuse. For inspection service points when there is a blown fuse, refer to "Inspection Service Points for a Blown Fuse P.00-11."

## MEASURES TO TAKE AFTER REPLACING THE ECU

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

## CONNECTOR MEASUREMENT SERVICE POINTS

M1001013600405

**⚠ CAUTION**

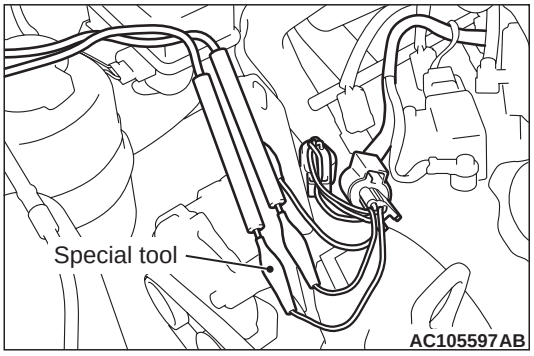
**During diagnosis, a diagnosis code associated with other system may be set when the ignition switch is turned on with connector(s) disconnected. On completion, confirm all systems for diagnosis code(s). If diagnosis code(s) are set, erase them all.**

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>

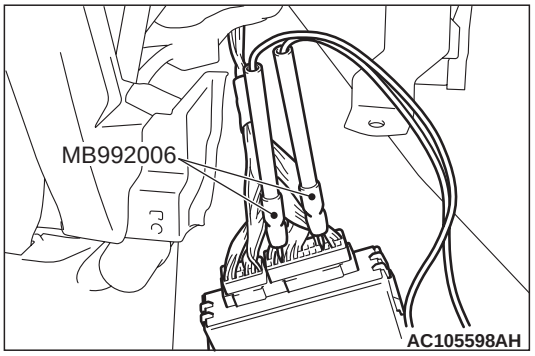
**⚠ CAUTION**

**Never insert a test probe from the harness side, as this will reduce the waterproof performance and result in corrosion.**




Use the special tools such as test harness, harness connector or check harness.

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

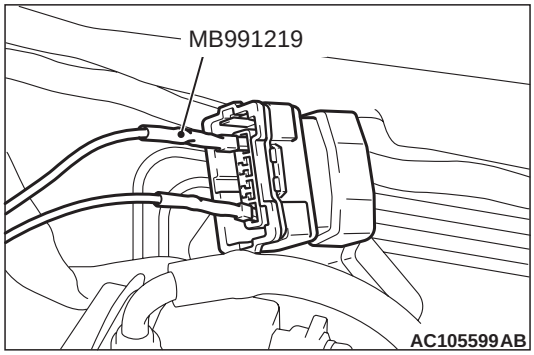



Inspect by inserting a test probe from the harness side. If the connector is too small to insert a test probe (e.g. control unit connector), do not insert it forcibly. Use special tool extra fine probe (MB992006).

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

**⚠ CAUTION**

- **Use special tool inspection harness (MB991219). If the test bar is inserted forcibly, it will cause a poor contact.**
- **If the connector is disconnected, a diagnosis code may be stored for the system to be checked or other systems.**

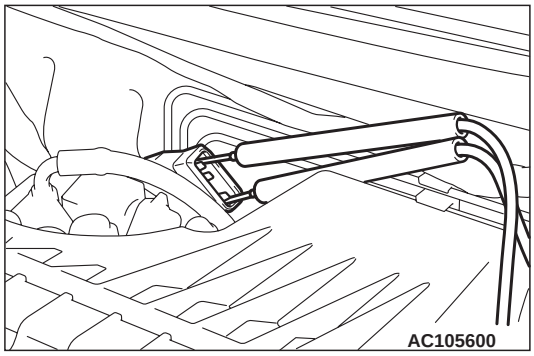



Use inspection harness (MB991219) of special tool harness set (MB991223).

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

**⚠ CAUTION**

- **Be careful not to short the connector pins with the test bars. To do so may damage the circuits inside the ECU.**
- **If the connector is disconnected, a diagnosis code may be stored for the system to be checked or other systems.**

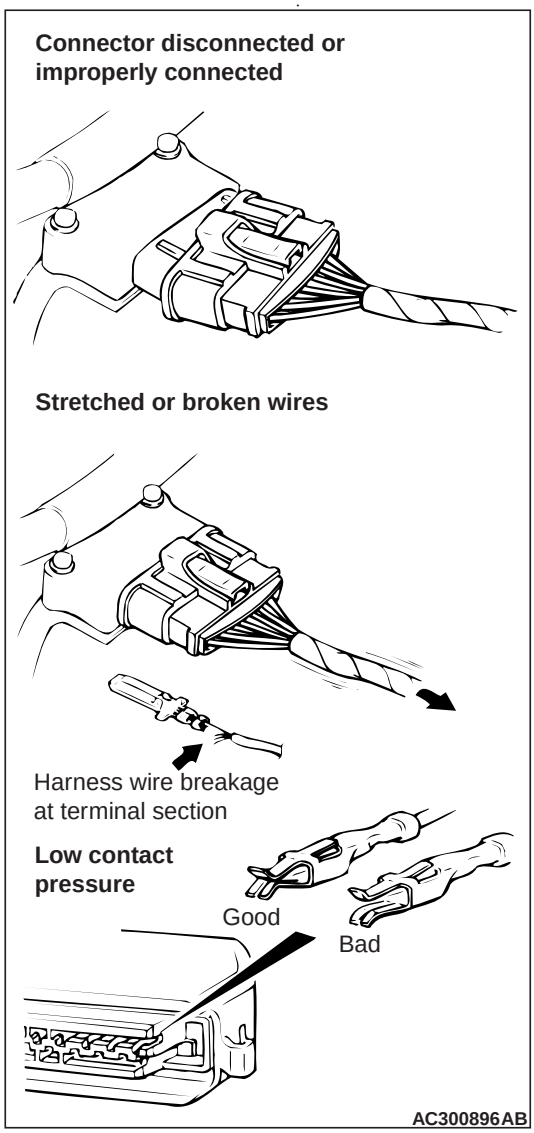



Touch the pin directly with the test bar.

## CONNECTOR INSPECTION SERVICE POINTS

M1001013700286

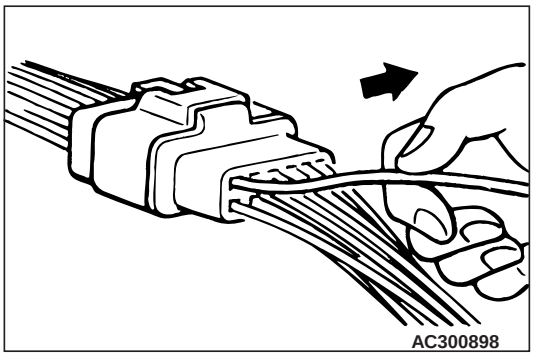
## VISUAL INSPECTION




Connector is disconnected or improperly connected

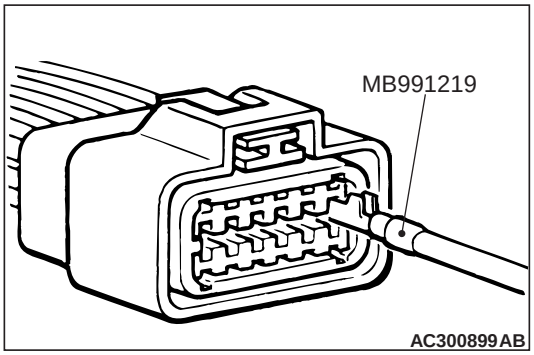
- Connector pins are pulled out
- Due to harness tension at terminal section
- Low contact pressure between male and female terminals
- Low connection pressure due to rusted terminals or foreign matter lodged in terminals

## CONNECTOR PIN INSPECTION




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

## CONNECTOR ENGAGEMENT INSPECTION



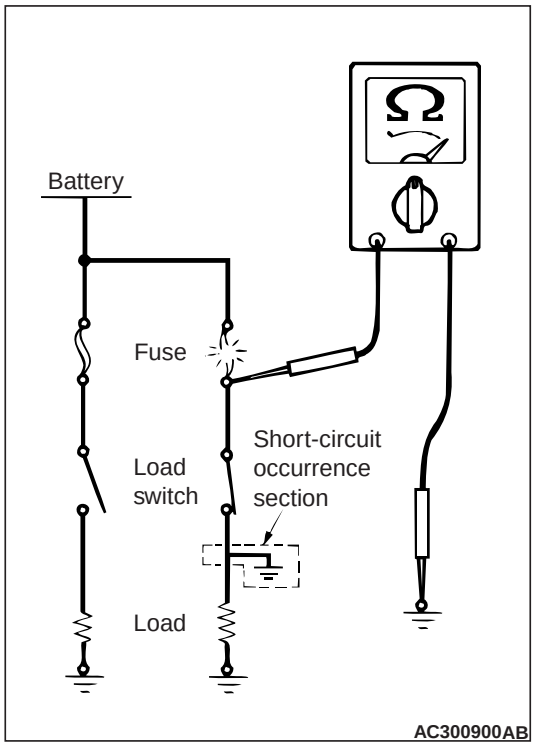

Use special tool inspection harness (MB991219) (connector pin connection pressure inspection harness of the inspection harness set) to inspect the engagement of the male pins and female pins. (Pin drawing force: 1 N or more)

## INSPECTION SERVICE POINTS FOR A BLOWN FUSE

M1001013800261

**⚠ CAUTION**

**A diagnosis code may be stored due to a blown fuse.**



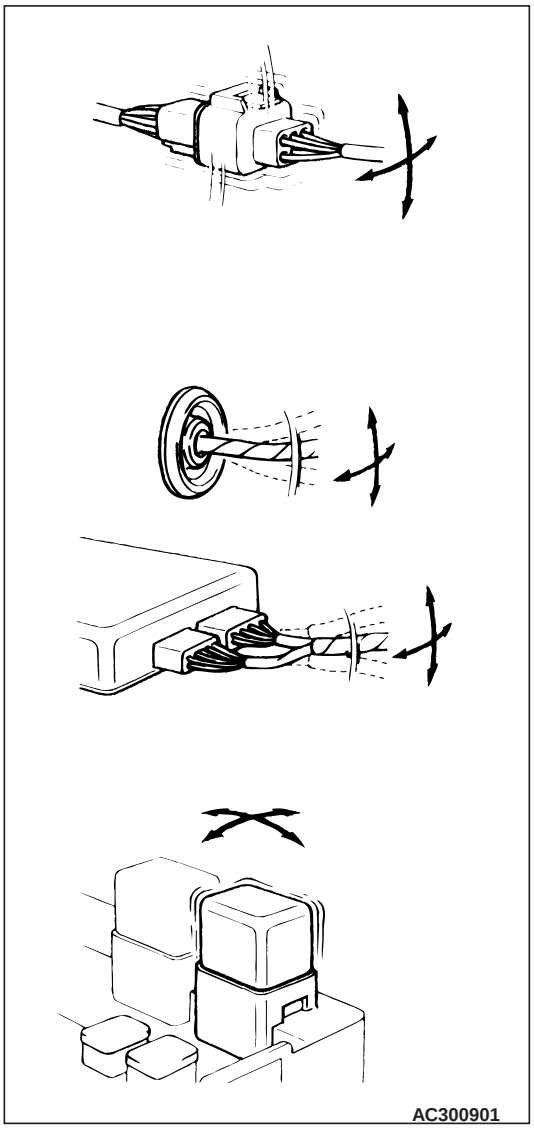

Remove the blown fuse and measure the resistance between the load side of the blown fuse and the earth. Close the switches of all circuits which are connected to this fuse. If the resistance is almost 0 Ω at this time, there is a short somewhere between these switches and the load. If the resistance is not 0 Ω, 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.)

## HOW TO COPE WITH INTERMITTENT MALFUNCTIONS

M1001013900268




Intermittent malfunctions often occur under certain conditions, and if these conditions can be ascertained, determining the cause becomes simple. In order to ascertain the conditions under which an intermittent malfunction occurs, first ask the customer for details about the driving conditions, weather conditions, frequency of occurrence and trouble symptoms, and then try to recreate the trouble symptoms. Next, ascertain whether the reason why the trouble symptom occurred under these conditions is due to vibration, temperature or some other factor. If vibration is thought to be the cause, carry out the following checks with the connectors and components to confirm whether the trouble symptom occurs. The objects to be checked are connectors and components which are indicated by inspection procedures or given as probable causes (which generates diagnosis codes or trouble symptoms).

- Gently shake the connector up, down and to the left and right.
- Gently shake the wiring harness up, down and to the left and right.
- Gently rock each sensor and relay, etc. by hand.
- Gently shake the wiring harness at suspensions and other moving parts.

*NOTE: If determining the cause is difficult, the drive recorder function of the M.U.T.-III can also be used. (For details on how to use the M.U.T.-III, refer to the "M.U.T.-III operation manual).*

## HOW TO TREAT PAST TROUBLE

M1001014100470

Since the trouble may still be present even the status is "Stored", set the vehicle to the diagnosis 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 diagnosis code, and then check that no diagnostic code is reset. If no diagnosis code is reset, the diagnosis is complete.
3. If no, follow the applicable Diagnosis Code Chart. Then check the wiring harness and connector, and refer to "How to Cope with Intermittent Malfunction P.00-12 ."

# VEHICLE IDENTIFICATION

## MODELS

M1001000306758

## VEHICLES FOR RUSSIA (EASTERN EUROPE COUNTRIES)

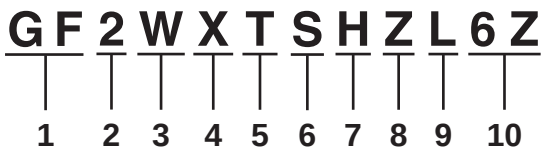
**<2000>**

| Model code | | Seating capacity | Engine model | Transmission model | Fuel supply system |
|---|---|---|---|---|---|
| GF2W | XTSHL6Z | 5-persons | 4B11 (1,998 mL) DOHC MIVEC petrol engine | F1CJA (Front wheel drive 2WD, INVECS-III CVT with sport mode) | MPI |
| | XTSHZL6Z | | | W1CJA (Electronic control 4WD, INVECS-III CVT with sport mode) | |

**<2400>**

| Model code | | Seating capacity | Engine model | Transmission model | Fuel supply system |
|---|---|---|---|---|---|
| GF3W | XTHHZL6Z | 5-persons | 4B12 (2,360 mL) DOHC MIVEC petrol engine | W1CJA (Electronic control 4WD, INVECS-III CVT with sport mode) | MPI |

## MODEL CODE



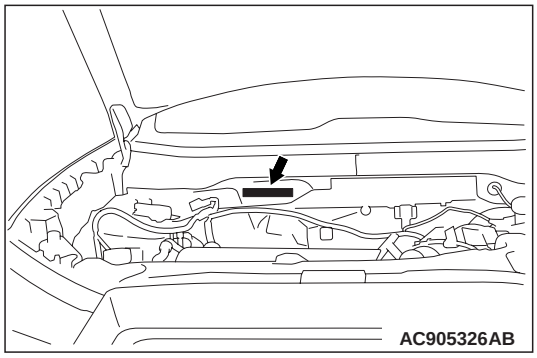

ACB04331AB

| No. | Item | Content | |
|---|---|---|---|
| 1 | Development | GF | OUTLANDER |
| 2 | Engine type | 2 | 2.0L MPI (4B11) |
| | | 3 | 2.4L MPI (4B12) |
| 3 | Vehicle type | W | Station wagon |
| 4 | Body style | X | 4-door with tailgate |
| 5 | Transmission type | T | CVT |
| 6 | Trim level (Price class) | S | INFORM <2000 – 2WD> |
| | | H | INVITE <2000 – 4WD>, INSTYLE <2400> |
| 7 | Engine specification | H | MIVEC (DOHC) |
| 8 | Special feature | None | 2WD |
| | | Z | 4WD |
| 9 | Steering wheel location | L | Left handle |
| 10 | Destination | 6Z | Vehicles for Russia |

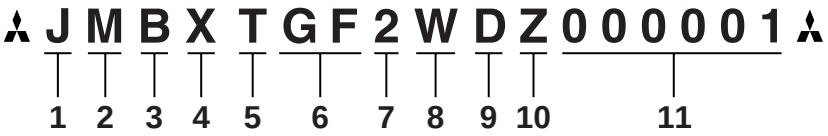
## VEHICLE IDENTIFICATION NUMBER (CHASSIS NUMBER)

M1001005602730

The vehicle identification number (chassis number) is stamped or scratched on the toeboard inside the engine compartment.




## CODE CHART

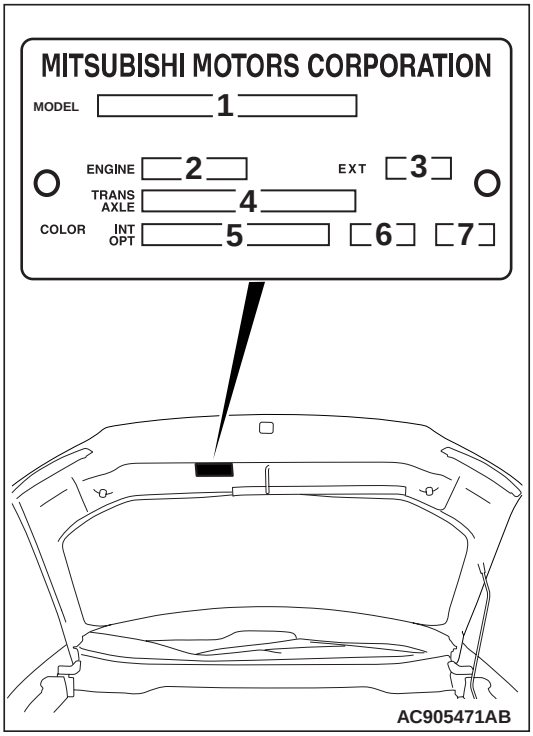



ACB04342

| No. | Item | Content | |
|---|---|---|---|
| 1 | Country | J | Japan |
| 2 | Make | M | Mitsubishi Motors Corporation |
| 3 | Destination | B | Vehicles for Europe, left handle drive |
| 4 | Body style | X | 4-door with tailgate |
| 5 | Transmission type | T | CVT |
| 6 | Development order | GF | OUTLANDER |
| 7 | Engine type | 2 | 2.0L MPI (4B11) |
| | | 3 | 2.4L MPI (4B12) |
| 8 | Vehicle type | W | Station wagon |
| 9 | Model year | D | 2013 year |
| 10 | Plant | Z | Okazaki |
| 11 | Serial number | 000001 to 999999 | |

## VEHICLE INFORMATION CODE PLATE

M1001005403308



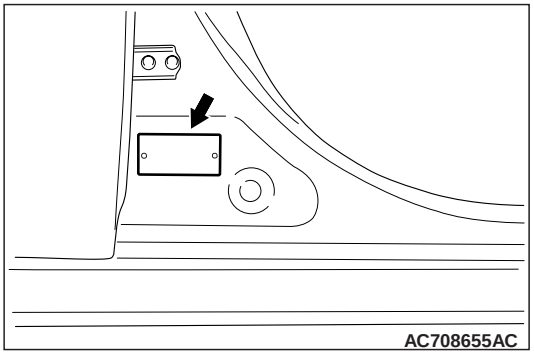

The vehicle information code plate is riveted to the back of the hood.

### CODE CHART

| No. | Item | Example | Content |
|---|---|---|---|
| 1 | MODEL | GF2WXT HHZL6Z | GF2W: Vehicle model<br>THHZL6Z: Model series |
| 2 | ENGINE | 4B11 | Engine model |
| 3 | EXT | A31A | Exterior code |
| 4 | TRANS AXLE | W1CJA 6466 | W1CJA: Transmission model<br>6466: Rear differential final gear ratio (a decimal point is omitted) |
| 5 | COLOUR | A31 | Body colour code |
| 6 | INT | 12X | Interior code |
| 7 | OPT | Z34 | Equipment code |

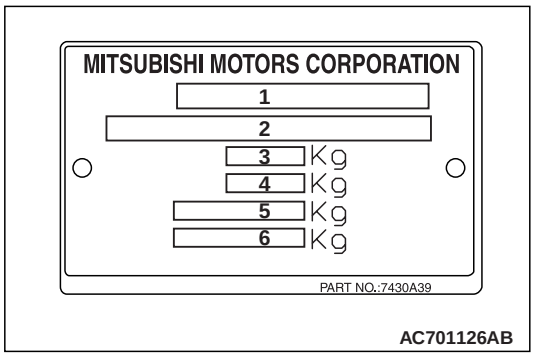
## MANUFACTURER PLATE

M1001017600678




The manufacturer plate is riveted onto the underside of the centre pillar on the right side.

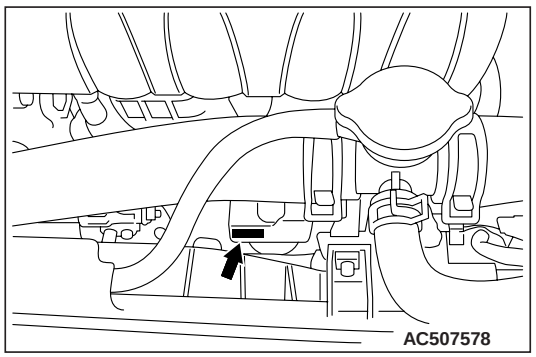
### CODE CHART




| No. | Content |
|---|---|
| 1 | WVTA No. (Whole vehicle type approval number) <Vehicles for Europe> |
| | None <Vehicles for Russia> |
| 2 | Chassis No. (Vehicle identification number) |
| 3 | Gross vehicle weight |
| 4 | Gross combination weight |
| 5 | Gross axle weight front |
| 6 | Gross axle weight rear |

## ENGINE MODEL STAMPING

M1001005701165




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

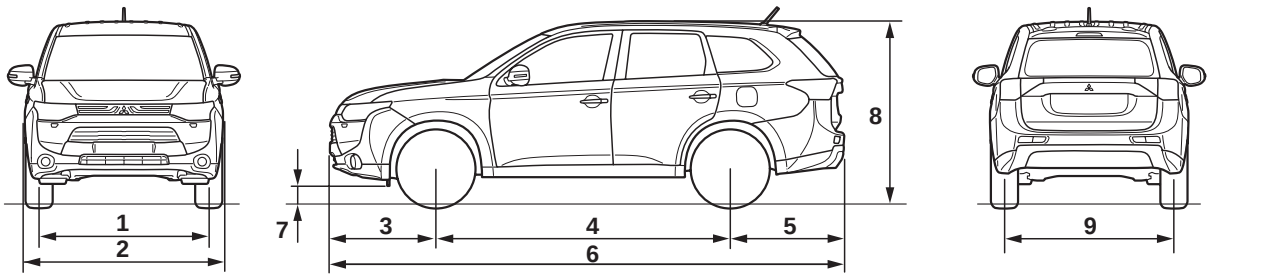
| Engine model | Engine displacement |
|---|---|
| 4B11 | 1,998 mL |
| 4B12 | 2,360 mL |

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

| Engine number | AA0201 to YY9999 |
|---|---|

# GENERAL DATA AND SPECIFICATIONS

M1001000906954




ACB04339AB

**<2000>**

| Item | | | INTENSE | |
|---|---|---|---|---|
| | | | GF2W | |
| | | | XTSHL6Z | XTSHZL6Z |
| Vehicle dimension mm | Front track | 1 | 1,540 | 1,540 |
| | Overall width | 2 | 1,800 | 1,800 |
| | Front overhang | 3 | 955 | 955 |
| | Wheelbase | 4 | 2,670 | 2,670 |
| | Rear overhang | 5 | 1,030 | 1,030 |
| | Overall length | 6 | 4,655 | 4,655 |
| | Ground clearance (unladen) | 7 | 215 | 215 |
| | Overall height (unladen) | 8 | 1,680 | 1,680 |
| | Rear track | 9 | 1,540 | 1,540 |
| Vehicle weight kg | Kerb weight | Without full optional parts | 1,415 | 1,480 |
| | | With full optional parts | 1,484 | 1,559 |
| | Gross vehicle weight | | 1,985 | 1,985 |
| | Gross axle weight rating-front | | 1,150 | 1,150 |
| | Gross axle weight rating-rear | | 1,250 | 1,250 |
| | Gross combination weight | | 3,665 | 3,665 |
| Seating capacity | | | 5 | 5 |
| Engine | Model No. | | 4B11 | 4B11 |
| | Type | | DOHC MIVEC | DOHC MIVEC |
| | Total displacement mL | | 1,998 | 1,998 |
| | Max. output <EEC> kW/rpm | | 107/6,000 | 107/6,000 |
| | Max. torque <EEC> N·m/rpm | | 196/4,200 | 196/4,200 |
| Fuel system | Fuel supply system | | MPI | MPI |

| Item | | INTENSE | |
|---|---|---|---|
| | | GF2W | |
| | | XTSHL6Z | XTSHZL6Z |
| Transmission | Model code | F1CJA | W1CJA |
| | Type | Front wheel drive 2WD, INVECS-III CVT with sport mode | Electronic control 4WD, INVECS-III CVT with sport mode |
| Turning radius m | Body | 5.73 | 5.73 |
| | Wheel | 5.3 | 5.3 |

**<2400>**

| Item | | | | INSTYLE |
|---|---|---|---|---|
| | | | | GF3W |
| | | | | XTHHZL6Z |
| Vehicle dimension mm | Front track | | 1 | 1,540 |
| | Overall width | | 2 | 1,800 |
| | Front overhang | | 3 | 955 |
| | Wheelbase | | 4 | 2,670 |
| | Rear overhang | | 5 | 1,030 |
| | Overall length | | 6 | 4,655 |
| | Ground clearance (unladen) | | 7 | 215 |
| | Overall height (unladen) | | 8 | 1,680 |
| | Rear track | | 9 | 1,680 |
| Vehicle weight kg | Kerb weight | Without full optional parts | | 1,495 |
| | | With full optional parts | | 1,569 |
| | Gross vehicle weight | | | 2,210 |
| | Gross axle weight rating-front | | | 1,150 |
| | Gross axle weight rating-rear | | | 1,250 |
| | Gross combination weight | | | 3,890 |
| Seating capacity | | | | 5 |
| Engine | Model No. | | | 4B12 |
| | Type | | | DOHC MIVEC |
| | Total displacement mL | | | 2,360 |
| | Max. output <EEC> kW/rpm | | | 123/6,000 |
| | Max. torque <EEC> N·m/rpm | | | 222/4,100 |
| Fuel system | Fuel supply system | | | MPI |
| Transmission | Model code | | | W1CJA |
| | Type | | | Electronic control 4WD, INVECS-III CVT with sport mode |
| Turning radius m | Body | | | 5.73 |
| | Wheel | | | 5.3 |

# PRECAUTIONS BEFORE SERVICE

## ABOUT THE DESCRIPTION OF THE IGNITION SWITCH

M1001020400038

In this manual, the engine switch of vehicles with KOS and the ignition switch of vehicle without KOS are described as an ignition switch. (However, not "ignition switch", but "engine switch" is described in the GROUP 42B-KOS)

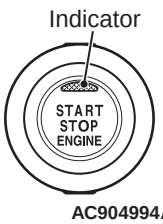
### Power supply mode by the engine switch operation

When the engine switch is pressed, the power supply mode changes according to the shift position and brake pedal operation state.

| Shift position | Brake pedal operation | Power supply mode at engine switch operation |
|---|---|---|
| P position | Released | Every time the switch is pressed, the power supply mode changes from OFF to ACC to ON to OFF. |
| | Depressed | While the power supply mode is OFF, the engine is started when the switch is pressed. |
| | | While the power supply mode is ACC, the engine is started when the switch is pressed. |
| | | While the power supply mode is ON, the engine is started when the switch is pressed. |
| | Depressed or released | When the switch is pressed after the engine is started, the power supply mode is turned OFF (the engine stops). |
| Other than P position | Depressed or released | When the switch is pressed while the power supply mode is ACC, the power supply mode is turned ON. |
| | | When the switch is pressed while the power supply mode is ON, the power supply mode is turned to ACC. |
| | | When the switch is pressed after the engine is started, the power supply mode is turned to ACC. |

## ENGINE SWITCH INDICATOR

Check that the engine switch indicator is switched as follows in each power supply mode and when an error is detected.

| INDICATOR | Power supply mode and at error detection | INDICATOR |
|---|---|---|
|  AC904994AB | OFF | Extinguished |
| | ACC | Illuminated in orange |
| | ON | Illuminated in green |
| | ON (after engine start) | Extinguished at 3 seconds after the engine is started |
| | System error | Flashes in orange |
| | Special operation mode * | Flashes in green (when ACC and ON only) |

*NOTE: *: The special operation mode indicates that OSS-ECU is brand new.*

## SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

M1001011601662

## SRS AND SEAT BELT WITH PRE-TENSIONER

**⚠ CAUTION**

**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/Caution labels must be heeded when servicing or handling SRS components. Warning labels can be found in the following locations. (Refer to WARNING/CAUTION LABELS .)**
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. Do not place anything on top of it.**
6. **Never attempt to disassemble or repair the SRS components (SRS-ECU, air bag module and clock spring).**
7. **Whenever you finish servicing the SRS, check the SRS warning lamp operation to make sure that the system functions properly.**
8. **Be sure to deploy the air bag before disposing of the air bag module or disposing of a vehicle equipped with an air bag (Refer to GROUP 52B – Air Bag Module Disposal Procedures).**

**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 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 or more**
   - **Seat belt pre-tensioner: 90 °C or more**

## VEHICLES WITH AIR CONDITIONER

M1001011300088

**⚠ CAUTION**

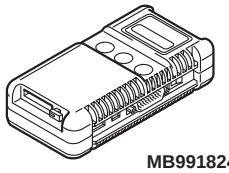
**Never start the engine with the refrigerant system empty as it will damage the A/C compressor.**

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

M1001012400572

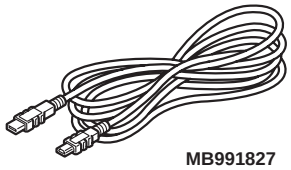
**MULTI USE TESTER (M.U.T.-III) sub assembly**

Vehicle communication interface (V.C.I.)



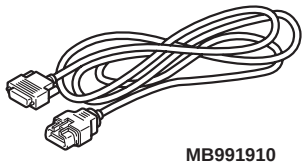
MB991824

M.U.T.-III USB cable



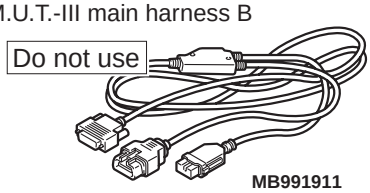
MB991827

M.U.T.-III main harness A



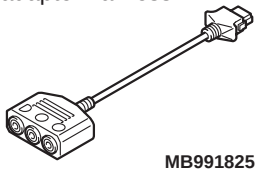
MB991910

M.U.T.-III main harness B



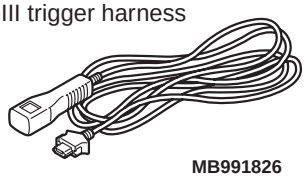

MB991911

M.U.T.-III adapter harness



MB991825

M.U.T.-III trigger harness

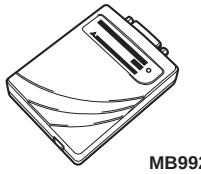


MB991826

AC305090AJ

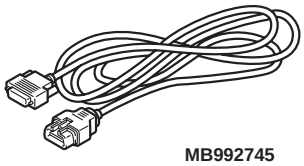
**MULTI USE TESTER (M.U.T.-III)**

Vehicle communication interface-Lite (V.C.I.-Lite)



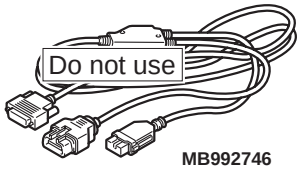
MB992744

V.C.I.-Lite main harness A



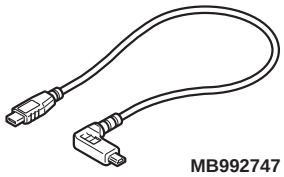
MB992745

V.C.I.-Lite main harness B



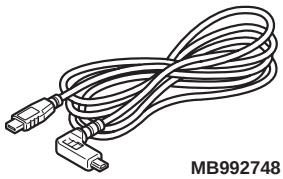

MB992746

V.C.I.-Lite USB cable short



MB992747

V.C.I.-Lite USB cable long



MB992748

ACB05419AB

- Both the special tool V.C.I. (MB991824) and the special tool V.C.I.-Lite (MB992744) can be used.

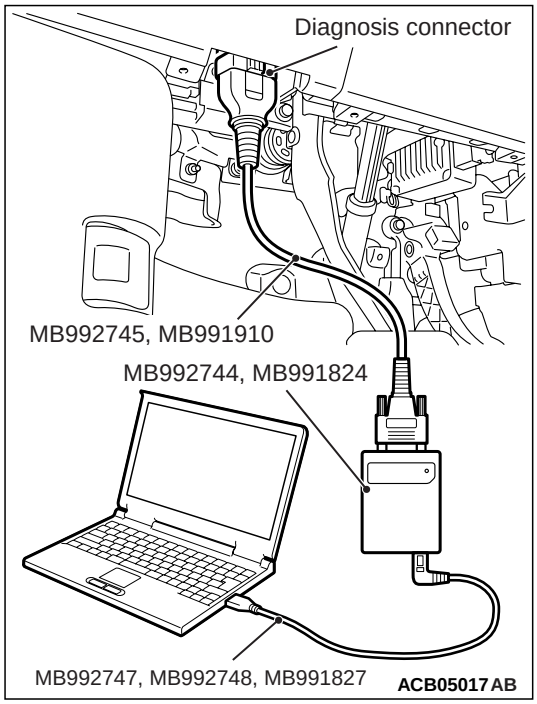
**⚠ CAUTION**

**For the V.C.I., use MB991827 and MB991910. For the V.C.I.-Lite, use MB992745, MB992747 and MB992748.**

- Refer to the "M.U.T.-III OPERATION MANUAL" for instructions on handling the M.U.T.-III.

**⚠ CAUTION**

**Turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting the M.U.T.-III.**



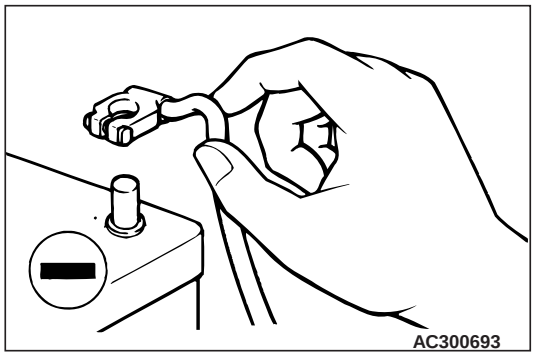

Connect the M.U.T.-III to the diagnosis connector as shown in the illustration.

## SERVICING ELECTRICAL SYSTEM

M1001011900314

**⚠ CAUTION**

**Before connecting or disconnecting the negative (–) cable, be sure to turn off the ignition switch and the lighting switch (If this is not done, there is the possibility of semiconductor parts being damaged).**

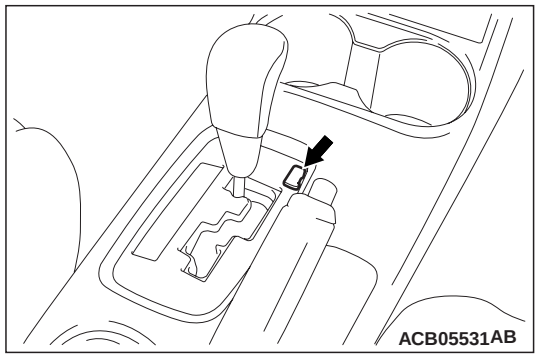



Before replacing a component related to the electrical system and before undertaking any repair procedures involving the electrical system, be sure to first disconnect the negative (–) cable from the battery in order to avoid damage caused by short-circuiting.

## HOW TO SHIFT LOCK FORCED RELEASE

M1001018100290

If the shift lever cannot be moved from the P position due to discharged battery or similar reasons, release the shift lock by observing the procedure below.



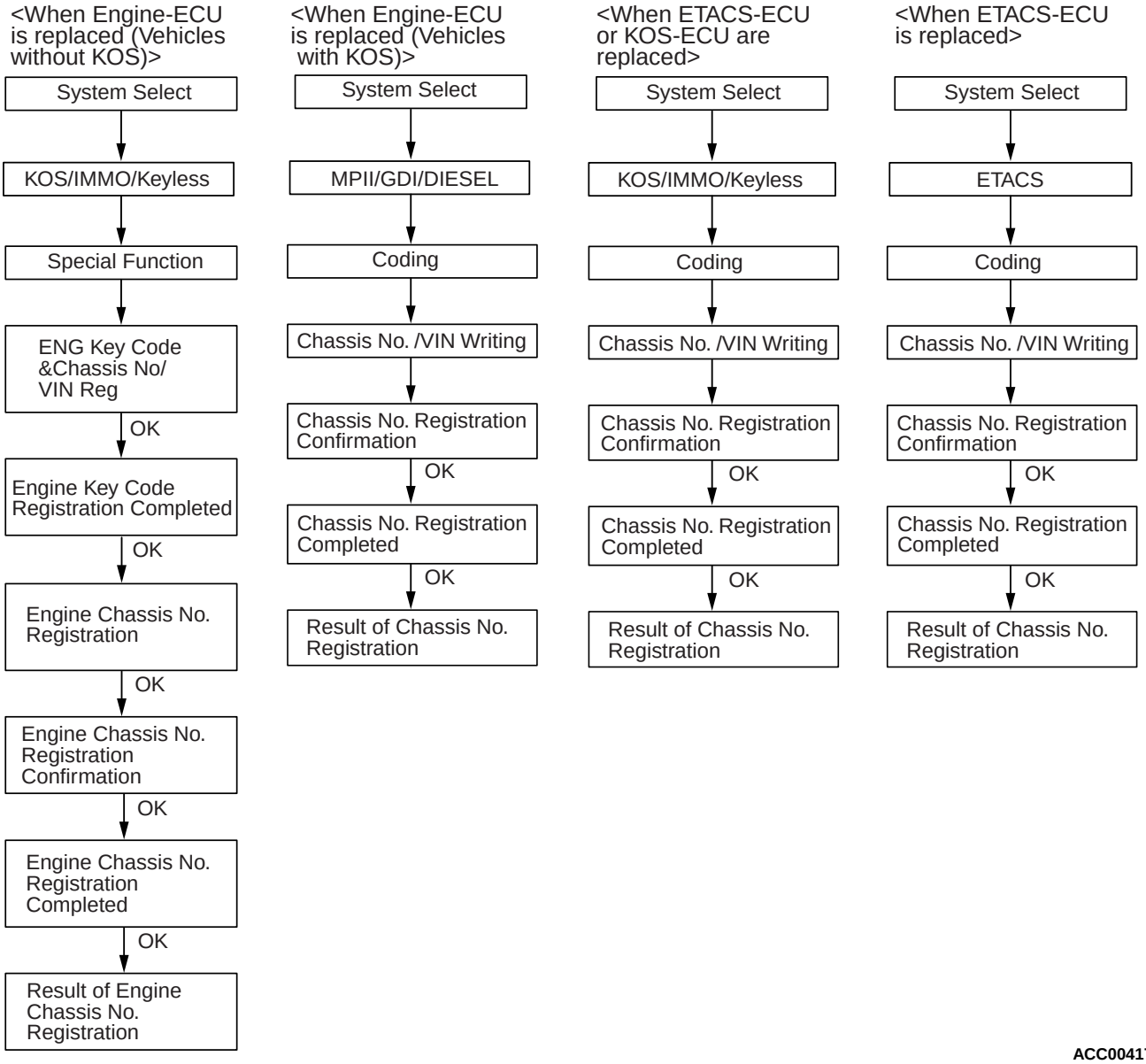

Remove the cover as shown, then insert a straight blade (or flat-tipped screwdriver) into the shift lock release hole, and move the selector lever while pressing the blade down.

## HOW TO PERFORM CHASSIS NUMBER (CHASSIS NO.) WRITING FOR ENGINE-ECU, KOS-ECU AND ETACS-ECU

M1001011400814

Follow the procedure below to register the Chassis No. of the ETACS-ECU and the Keyless Operation System (KOS).

Chassis No. is stored in the engine-ECU, ETACS-ECU, and the KOS-ECU. If the Chassis No. is improperly erased, the engine warning lamp or the keyless operation system warning indicator illuminates, and the diagnosis code is displayed. When the engine-ECU, ETACS-ECU, and the KOS-ECU are replaced, follow the procedure below to write the Chassis No.




ACC00417AB

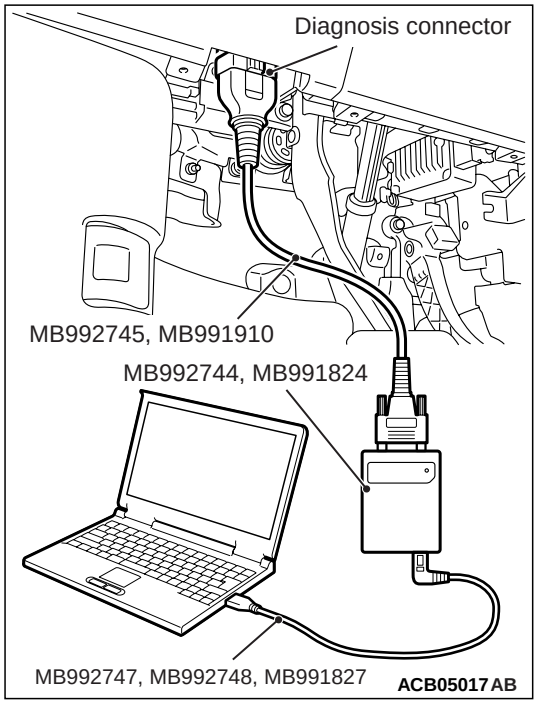
*NOTE:*

- *Chassis number writing of the OSS ECU and ESL ECU is described in "Keyless Operation System (KOS)". (Refer to GROUP 42B – On-vehicle Service <OSS ECU> .)*
- *Perform the variant coding of the engine-ECU when the chassis No. or the vehicle identification number is registered to the engine-ECU.*

## ENGINE KEY CODE AND CHASSIS NUMBER (CHASSIS NO.) REGISTRATION STEPS FOR THE ENGINE-ECU <VEHICLES WITHOUT KOS>

**⚠ CAUTION**

- **Check that diagnosis code No.P0603 "EEPROM fail" is not set. When diagnosis code No. P0603 "EEPROM fail" is set, the engine-ECU cannot store engine key code and chassis No. even if the engine key code and chassis No. are registered. If this diagnosis code is set, troubleshoot the engine-ECU and repair, and then register the engine key code and chassis No. to the engine-ECU.**
- **Before connecting or disconnecting the M.U.T.-III, turn the ignition switch to the "LOCK" (OFF) position.**



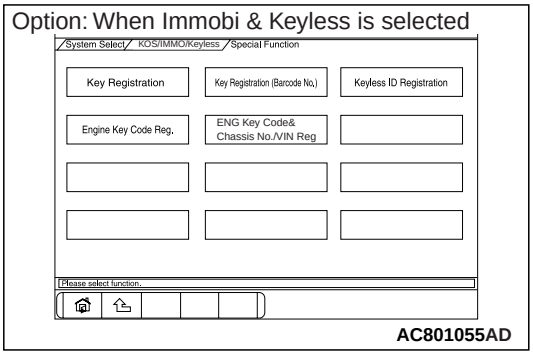

Connect the M.U.T.-III to the 16-pin diagnosis connector as follows.

*NOTE: For details on how to use the M.U.T.-III, refer to the "M.U.T.-III User's Manual."*

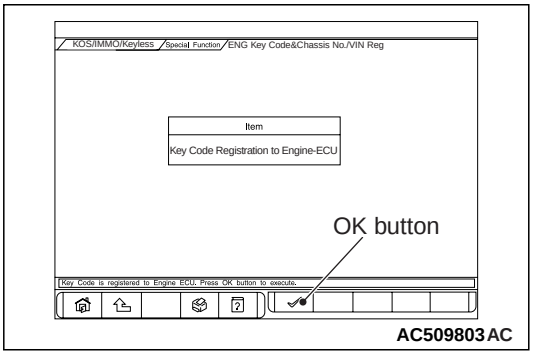
1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool V.C.I.-Lite USB cable (MB992747/MB992748) or M.U.T.-III USB cable (MB991827) to V.C.I.-Lite (MB992744) or V.C.I. (MB991824) and the personal computer.
4. Connect V.C.I.-Lite main harness A (MB992745) or M.U.T.-III main harness A (MB991910) to the V.C.I.-Lite or V.C.I.
5. Connect the V.C.I.-Lite main harness A or M.U.T.-III main harness A to the diagnosis connector of the vehicle.

   *NOTE: When the V.C.I.-Lite is connected to the diagnosis connector, the V.C.I.-Lite indicator lamp will be illuminated in a green colour.*
6. Turn the V.C.I. power switch to the "ON" position. <When using the V.C.I.>

   *NOTE: When the V.C.I. is energized, the V.C.I. indicator lamp will be illuminated in a green colour.*
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" button from the "System Select" screen. Then, select the applicable option code item and push the OK button.
   - The display of "Special Function" screen changes, depending on the contents of the option. For vehicles with KOS, select "KOS&Immobi." For vehicles without KOS, select "Immobi&Keyless."
9. Select "Special Function" on the next screen.

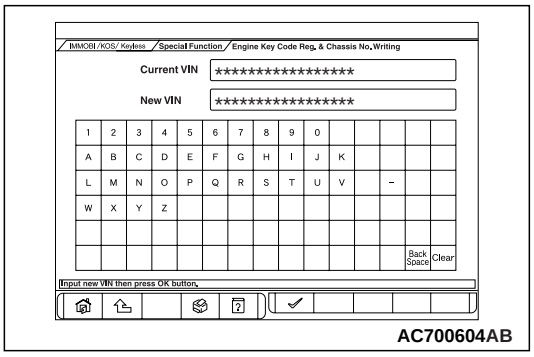



10. Select "ENG Key Code&Chassis No./VIN Reg." from the "Special Function" screen.




11. Push the OK button after "Key Code Registration to Engine-ECU" is displayed.

12.Push the OK button after "Completed. Press the OK button and move to Chassis No./VIN writing function." is displayed.

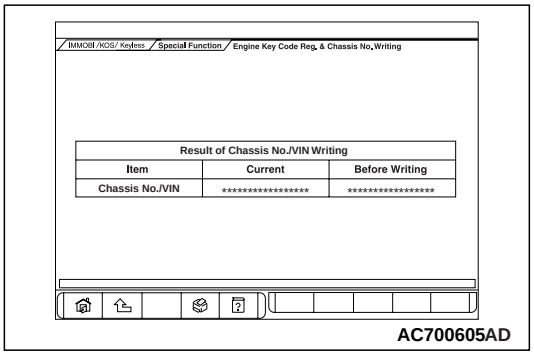



13.Enter the Chassis No./VIN of registering vehicle and push the OK button.

14.Push the OK button after "Chassis No./VIN Writing will start. Are you sure?" is displayed.

15.Return to the previous screen and "In Progress" is displayed at the lower-left corner on the screen.

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




17.Chassis No./VIN writing result is displayed.

18.Complete the M.U.T.-III.

19.Disconnecting the M.U.T.-III is the reverse of the connecting sequence, making sure that the ignition switch is at the "LOCK" (OFF).

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

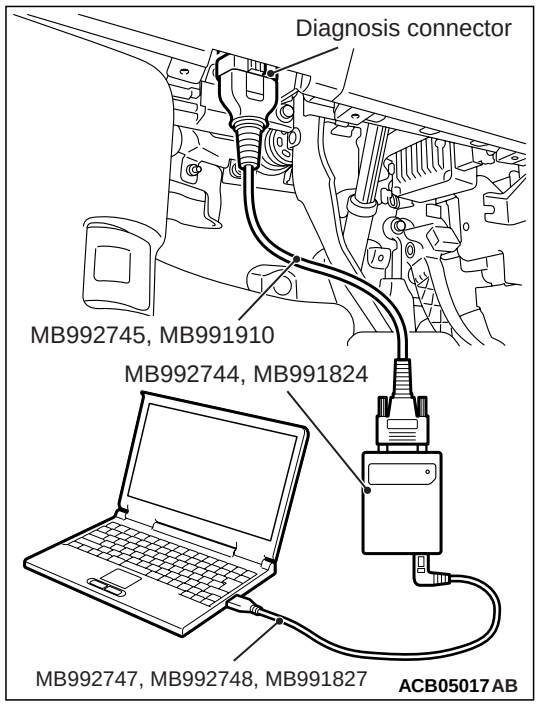
21.Terminate the M.U.T.-III.

22.Turn the ignition switch to the LOCK (OFF) position and then disconnect the M.U.T.-III.

## CHASSIS NUMBER (CHASSIS NO.) REGISTRATION STEPS FOR THE ENGINE-ECU <VEHICLES WITH KOS>

**⚠ CAUTION**

- **Check that diagnosis code No.P0603 "EEPROM fail" is not set. When diagnosis code No. P0603 "EEPROM fail" is set, the engine-ECU cannot store engine key code and chassis No. even if the engine key code and chassis No. are registered. If this diagnosis code is set, troubleshoot the engine-ECU and repair, and then register the engine key code and chassis No. to the engine-ECU.**
- **Before connecting or disconnecting the M.U.T.-III, turn the ignition switch to the "LOCK" (OFF) position.**




Connect the M.U.T.-III to the 16-pin diagnosis connector as follows.

*NOTE: For details on how to use the M.U.T.-III, refer to the "M.U.T.-III operation manual."*

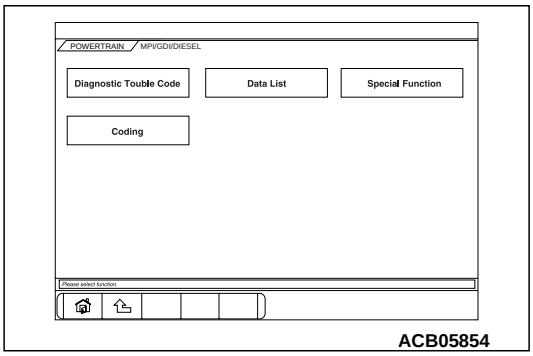
1. Start up the personal computer.
2. Connect special tool V.C.I.-Lite USB cable (MB992747/MB992748) or M.U.T.-III USB cable (MB991827) to V.C.I.-Lite (MB992744) or V.C.I. (MB991824) and the personal computer.
3. Connect V.C.I.-Lite main harness A (MB992745) or M.U.T.-III main harness A (MB991910) to the V.C.I.-Lite or V.C.I.
4. Connect the V.C.I.-Lite main harness A or M.U.T.-III main harness A to the diagnosis connector of the vehicle.

*NOTE: When the V.C.I.-Lite is connected to the diagnosis connector, the V.C.I.-Lite indicator lamp will be illuminated in a green colour.*

5. Turn the V.C.I. power switch to the "ON" position. <When using the V.C.I.>

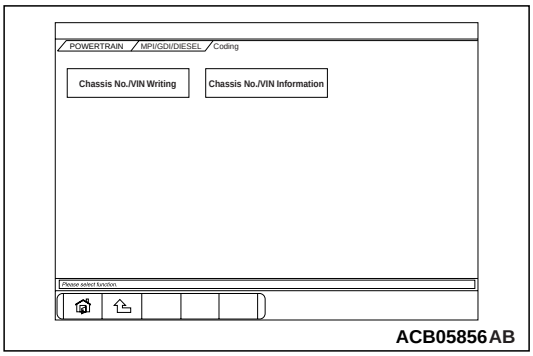
   *NOTE: When the V.C.I. is energized, the V.C.I. indicator lamp will be illuminated in a green colour.*

6. Start the M.U.T.-III system on the personal computer and turn the ignition switch to the "ON" position.
7. Select "MPI/GDI/DIESEL" button from the "System Select" screen.



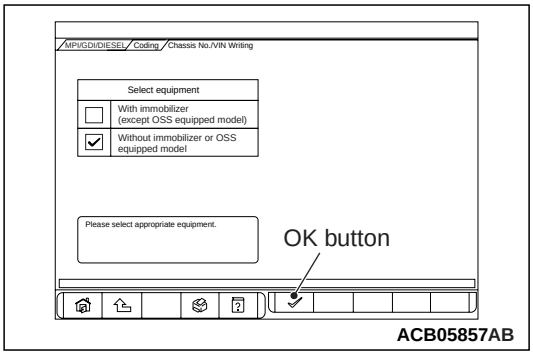
ACB05854

8. Select "Coding" on the next screen.



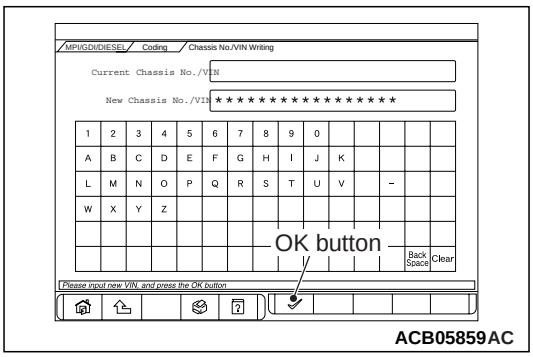
ACB05856AB

9. Select "Chassis No./VIN Writing" screen.



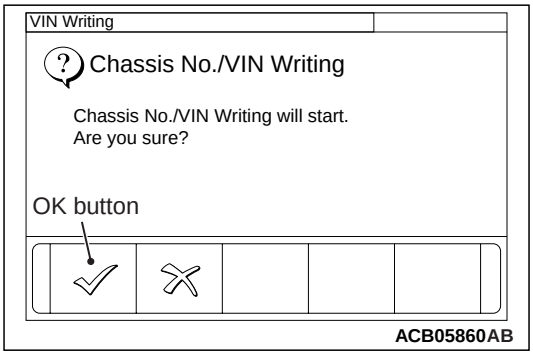
ACB05857AB

10. Select whether the vehicle is equipped with immobilizer system or not.
    - For vehicles with KOS, select "With immobilizer (except OSS equipped model)".
    - For vehicles without KOS, select " Without immobilizer or OSS equipped model".



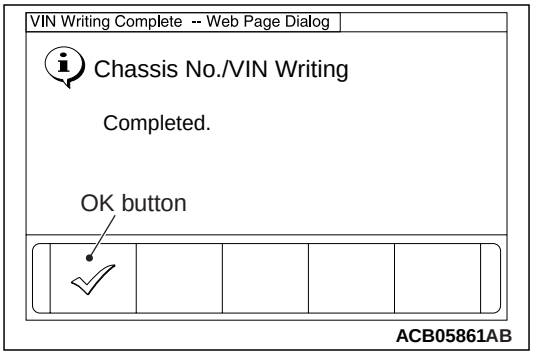
ACB05859AC

11. Enter the chassis number in the New Chassis No. frame. Confirm the number and press the OK button.



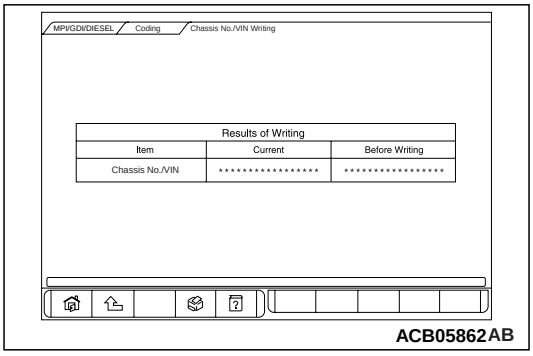
ACB05860AB

12. Following the instruction on the screen, press the OK button to execute the chassis number writing.



ACB05861AB

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



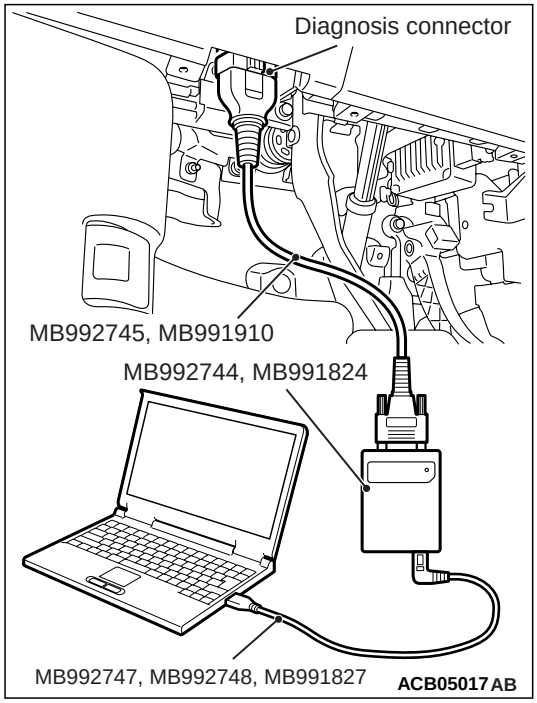
ACB05862AB

14.On the writing result confirmation screen, check that the chassis number is written, and finish the registration.

## CHASSIS NO. WRITING STEPS FOR ETACS-ECU AND KOS-ECU

**⚠ CAUTION**

- **Before the chassis No. registration to ETACS-ECU, check that the chassis Nos. of engine-ECU and vehicle are matched.**
- **Check that diagnosis code No. B2416 "ECU internal error" is not set. When diagnosis code No. B2416 "ECU internal error" is set, the ETACS-ECU and the KOS-ECU cannot store the Chassis No. even if the Chassis No. is written. If this diagnosis code is set, troubleshoot the immobilizer system or the KOS-ECU and repair, and then write the Chassis No. to the ETACS-ECU or the KOS-ECU.**
- **Before connecting or disconnecting the M.U.T.-III, turn the ignition switch to the "LOCK" (OFF) position.**



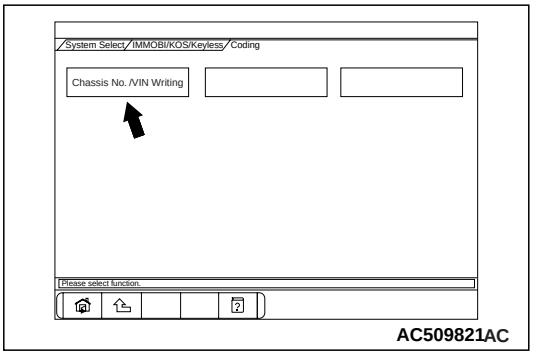

Connect the M.U.T.-III to the 16-pin diagnosis connector as follows.

*NOTE: For details on how to use the M.U.T.-III, refer to the "M.U.T.-III operation manual."*

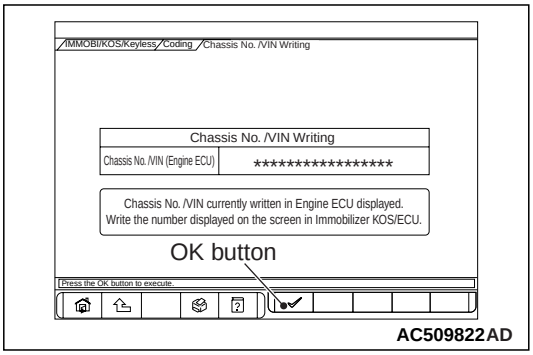
1. Start up the personal computer.
2. Connect special tool V.C.I.-Lite USB cable (MB992747/MB992748) or M.U.T.-III USB cable (MB991827) to V.C.I.-Lite (MB992744) or V.C.I. (MB991824) and the personal computer.
3. Connect V.C.I.-Lite main harness A (MB992745) or M.U.T.-III main harness A (MB991910) to the V.C.I.-Lite or V.C.I.
4. Connect the V.C.I.-Lite main harness A or M.U.T.-III main harness A to the diagnosis connector of the vehicle.

   *NOTE: When the V.C.I.-Lite is connected to the diagnosis connector, the V.C.I.-Lite indicator lamp will be illuminated in a green colour.*
5. Turn the V.C.I. power switch to the "ON" position. <When using the V.C.I.>

   *NOTE: When the V.C.I. is energized, the V.C.I. indicator lamp will be illuminated in a green colour.*
6. Start the M.U.T.-III system on the personal computer and turn the ignition switch to the "ON" position.
7. Select "KOS/IMMO/Keyless" button from the "System Select" screen. Then, select the applicable option code item and push the OK button.
   - For vehicles with KOS, select "KOS&Immobi." For vehicles without KOS, select "Immobi&Keyless."
8. Select "Coding" on the next screen.



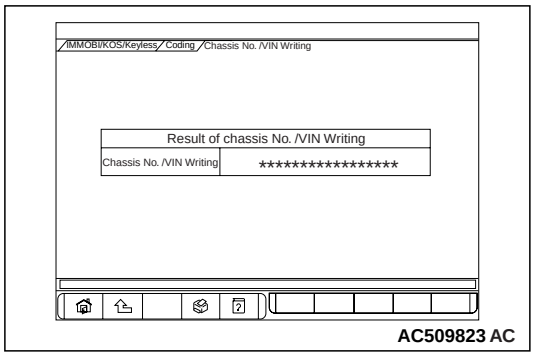

9. Select "Chassis No. /VIN Writing" on "Coding" screen.




10.Push the OK button after the Chassis No./VIN written in the engine-ECU is displayed.

11.Push the OK button after "Chassis No./VIN Writing will start. Are you sure?" is displayed.

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




13.Result of Chassis No./VIN writing is displayed.

14.Resister the other ID code. (Refer to GROUP 42A, On-vehicle service – ID Codes Registration Procedure <Vehicles without KOS>, GROUP 42B, On-vehicle service – ID Codes Registration Procedure <Vehicles with KOS> or GROUP 54A, On-vehicle service – ID Codes Registration Procedure <Vehicles without KOS>.)

## CODING LIST

M1001015001866

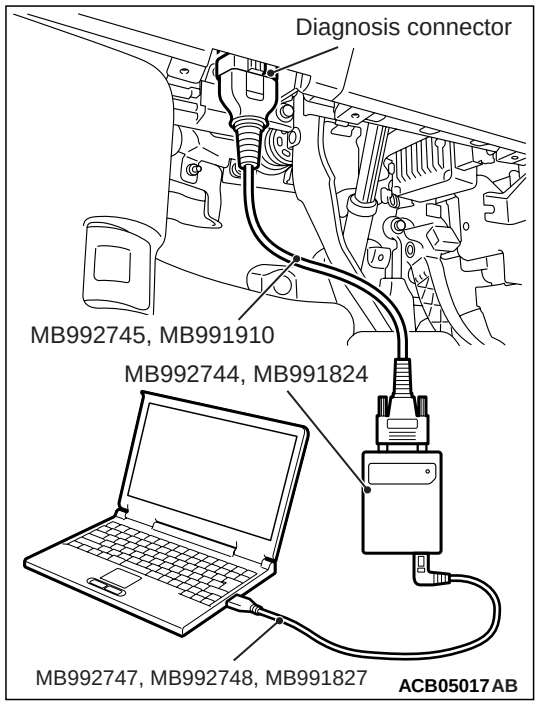
**⚠ CAUTION**

**With the ETACS functions being customised, if any of the ETACS-ECU variant coding and option coding items are changed, the customised contents are reset. In such case, the functions need to be recustomised.**

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

## VARIANT CODING

The coding data can be checked by operating M.U.T.-III.




*NOTE: For details on how to use the M.U.T.-III, refer to the "M.U.T.-III operation manual."*

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool V.C.I.-Lite USB cable (MB992747/MB992748) or M.U.T.-III USB cable (MB991827) to V.C.I.-Lite (MB992744) or V.C.I. (MB991824) and the personal computer.
4. Connect V.C.I.-Lite main harness A (MB992745) or M.U.T.-III main harness A (MB991910) to the V.C.I.-Lite or V.C.I.
5. Connect the V.C.I.-Lite main harness A or M.U.T.-III main harness A to the diagnosis connector of the vehicle.

   *NOTE: When the V.C.I.-Lite is connected to the diagnosis connector, the V.C.I.-Lite indicator lamp will be illuminated in a green colour.*
6. Turn the V.C.I. power switch to the "ON" position. <When using the V.C.I.>

   *NOTE: When the V.C.I. is energized, the V.C.I. indicator lamp will be illuminated in a green colour.*
7. Start the M.U.T.-III system on the personal computer and turn the ignition switch to the "ON" position.
8. On the system selection screen, select "MPI/GDI/DIESEL" to check the engine-ECU data, "SRS-AIR BAG" to check the SRS-ECU data, and "ETACS" to check the ETACS-ECU data.

9. Select "Coding."
10. Select "Coding Information & Copy."
11. 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-ECU, refer to GROUP 13A – Engine-ECU . For replacement of the SRS-ECU, refer to GROUP 52B – SRS Control Unit . For replacement of the ETACS-ECU, refer to GROUP 54A – ETACS .

## ENGINE ECU CODING DATA LIST

*NOTE: The items to be displayed may differ depending on the version of the M.U.T.-III.*

| Item name | Initial value |
|---|---|
| Final drive | 2WD |
| | 4WD |
| Final gear ratio | 6.466 |
| Tyre circumference | 2155mm |
| IMMOBILIZER | Present |
| Auto Stop & Go (AS&G) | Not present |
| ABS | Not present <Vehicles with ASC> |
| | Present <Vehicles without ASC> |
| A.S.C. | Not present <Vehicles without ASC> |
| | Present <Vehicles with ASC> |
| EPS | Present |
| ECO indicator | Not present |
| Adaptive cruise control | Not present |
| ECO mode switch | Not present |
| Power window(DR) | Not present |
| Power window(AS) | Not present |
| Power window(RR) | Not present |
| Power window(RL) | Not present |
| Power window(RP) | Not present |
| Sun roof | Not present or Present |
| M/T temperature sensor | Not present |
| Cruise control | Not present or Present |
| Speed limit function*2 | Not present |
| Cruise control option coding | Not accept |
| Speed limit function OP coding | Not accept |
| S/W variation | No.1 |

## SRS-ECU CODING DATA LIST

*NOTE: The items to be displayed may differ depending on the version of the M.U.T.-III.*

| Item name | Initial value |
|---|---|
| DR airbag squib(1st) | Present |
| PS airbag squib(1st) | Present |

| Item name | Initial value |
|---|---|
| DR airbag squib(2nd) | Not present |
| PS airbag squib(2nd) | Not present |
| DR pretensioner squib | Present |
| PS pretensioner squib | Present |
| PS lap pretensioner squib | Present |
| RH side airbag squib | Not present or Present |
| LH side airbag squib | Not present or Present |
| RH curtain airbag squib | Not present or Present |
| LH curtain airbag squib | Not present or Present |
| DR knee airbag squib | Not present or Present |
| Occupant classification module | Not present |
| DR seat position sensor | Not present |
| Seatbelt warning indicator(CAN) | Not present |
| PS cut off SW | Present |
| DR buckle SW (mecha) | Not present |
| DR buckle SW (hall) | Not present |
| PS buckle SW (mecha) | Not present |
| PS buckle SW (hall) | Not present |
| Passenger's SRS OFF lamp | Present |
| Passenger's SRS ON lamp | Present |
| LH front G sensor | Present |
| RH front G sensor | Present |
| RH side sensor B-pillar | Not present or Present |
| LH side sensor B-pillar | Not present or Present |
| RH side sensor C-pillar | Not present |
| LH side sensor C-pillar | Not present |
| Roll over sensor | Not present |
| Disposal | Present |
| High volt.cutoff | Not present |
| Emergency call | Not present |
| 2nd seat(RH) pretensioner squib | Not present |
| 2nd seat(LH) pretensioner squib | Not present |
| Crash parameter flag(#0) | ON |
| Crash parameter flag(#1) | OFF |
| Crash parameter flag(#2) | OFF |
| Crash parameter flag(#3) | OFF |
| Crash parameter flag(#4) | OFF |
| Crash parameter flag(#5) | OFF |
| Crash parameter flag(#6) | OFF |
| Crash parameter flag(#7) | OFF |

## ETACS-ECU CODING DATA LIST

*NOTE: The items to be displayed may differ depending on the version of the M.U.T.-III.*

| Item name | Initial value |
|---|---|
| Vehicle line | NEW SUV |
| Model year | (Displays the model year) |
| Handle side | LHD |
| Destination | EUR |
| Transmission | CVT <CVT> |
| Engine type | 4B11 D4 MIVEC <4B11> |
| | 4B12 D4 MIVEC <4B12> |
| Smart entry system | Not present or Type B |
| Keyless entry*2 | Present |
| Immobilizer | Type A |
| WCM/KOS | Not present or Present |
| Panic Alarm*2 | Disable |
| OSS | Not present or Present |
| KOS LF output | Type 3 |
| KOS SW type(Gate/trunk) | Gate 2SW |
| Engine Type for OSS | Undefined or Gasoline |
| Transmission Type for OSS | Undefined |
| TPMS*1 | Not present |
| TPMS information | N/A |
| TPMS Off mode function | Not present |
| AUDIO*2 | Not present or Present |
| AND*2 | Not present or Present |
| Destination for HFM | EUR |
| Entertainment Vehicle Line | NEW SUV |
| Entertainment model year | (Displays the model year) |
| Radio Frequency*2 | EUR |
| Number of speaker*2 | Premium RF or 6 speakers |
| AUX equipment | Not Present |
| KOS door entry type | Switch |
| Corner sensor control unit | Not present or Present |
| CAMERA | Not present |
| Rear view camera | Not present or Present |
| Nose view camera | Not present |
| Left side view camera | Not present |
| FCM function | Not present |
| FCM type | Undefined |

| Item name | Initial value |
|---|---|
| ACCS type | Undefined |
| ACCS | Not present |
| ACCS function | Not present |
| Remote engine starter*2 | Present/Chg Ok |
| IG key illumination | W/ getting off |
| Comfort flasher type | Present/Chg Ok |
| Trailer turn detection | Present |
| Front wiper*2 | Speed Sensitive or Rain Sensitive |
| After wipe customize | Enable(def.D) |
| Rear wiper mode | With Lo control |
| Rear wiper by reverse customize | Enable(d.FR/RR) |
| Auto fold mirror | Keyless/KOS |
| Manner switch*2 | Not present/ChgNg |
| Auto lamp control*2 | No/Chg Ng or Hi RLS/Chg Ng |
| Coming home lamp customize | Enable(def.E) |
| Welcome lamp customize | Enable(d.Small) |
| Room lamp delay timer/door & H/L | Short |
| Room lamp by H/L | Full |
| Gate/Trunk lamp | Mode-2 (cargo) |
| Head lamp auto cut | Enable |
| Head lamp auto cut mode | B-spec |
| Door Unlock Mode Customize*2 | Customize Enable |
| Door unlock by IG lock customize | Enable(def.D) |
| Key reminder unlock | Disable |
| Horn chirp by keyless | Not Present/ChgNg |
| Security alarm function | NotPresent/ChgNg |
| Security alarm mode | Not present |
| Pre-alarm | Not present |
| Security alarm sensor | Not present |
| Security alarm siren | Not present |
| Security sensor gain setting | Type 1 |
| Siren answer | Disable |
| MiEV REMOTE-ECU*2 | Not present |
| Security type(MiEV REMOTE)*2 | Not Present |
| Security alarm(MiEV REMOTE) | Not present |
| Door control(MiEV REMOTE) | Not present |
| Panic Alarm control(MiEV REMOTE) | Not present |
| Position lamp cont.(MiEV REMOTE) | Not present |
| Head lamp control(MiEV REMOTE) | Not present |

| Item name | Initial value |
|---|---|
| Horn control(MiEV REMOTE) | Not present |
| Battery reminder(MiEV REMOTE) | Not present |
| Battery charge(MiEV REMOTE) | Not present |
| Pre-A/C control(MiEV REMOTE) | Not present |
| Power window type | Type 5(NAFTA) |
| Power window Dr | Not present |
| Power window As | Not present |
| Power window RR | Not present |
| Power window RL | Not present |
| Multi mode RKE | Disable or Enable |
| Gate/Trunk | Gate type |
| RLS overwipe type | Type 2 |
| RLS WS type | Type 2 (Green) |
| RLS*2 | Not present or Present |
| RLS Communication Type | LIN |
| LDW equipment status | Not Present |
| LDW Parameter status | Not parameter |
| LDW production setup status | Not Present |
| LDW | Not present |
| ORC | Present |
| DRL*1 type | DRL not present |
| DRL function*2 | NotPresent/ChgNg |
| Electric Slide door (Left) | Not present |
| Electric Slide door (Right) | Not present |
| Sun roof type | Not present or Type S2 |
| Sun roof | Not present or Present |
| Rear S/R unlock output | Not present |
| ETG | Not present or Present |
| Head lamp | 4 beams |
| Head lamp washer | Disable or Popup2 w/ washer |
| Fold mirror | Disable or Enable |
| Front fog lamp mode | B spec. |
| Front fog lamp*2 | Not present or Present |
| Rear fog lamp*2 | Present/ChgNg |
| Door lock system | B-Spec/exceptUSH |
| Gate/trunk opener mode | Present(Type 1) |
| Horn type*2 | Dual horn |
| H/L leveling type | Not present or 2 height sensor |
| Head Lamp Leveling system type | NEW SUV |

| Item name | Initial value |
|---|---|
| Rear wiper | Enable |
| Wiper washer check bulb*2 | Present |
| Intelligent/Comfort washer custom | Enable(def.D) |
| ESS by turn lamp | Not present |
| Turn signal bulb | 21W+21W+5W or 21/21/21/21/0.36 |
| ESL | Not present or Present |
| Final drive | Front Drive <2WD> |
| | 4WD FF Base <4WD> |
| T/M oil cooler | Not present |
| S-AWC | Not present or Present |
| TCM | Present |
| Shift lock | Present |
| Transmission control type | Def./Not present |
| Average speed | Not available or Available |
| Coolant temp gauge threshold | Normal |
| Vehicle language status | Russian |
| Fuel consumption scale | L/100 km |
| Tire circumference | 2155mm |
| Frost warning threshold | EUR |
| Distance to empty | Available |
| Average fuel consumption | Available |
| Instant fuel consumption | Available |
| Seat belt reminder logic | Except EU |
| Rear door type | HINGE |
| Shift Display Layout | LHD |
| Trip autoreset IG OFF | Available |
| GCC speed alarm indicator | Not present |
| AS&G status | Not present |
| Gear shift reminder | Not present |
| Reverse alarm | Not available |
| Seat belt reminder control type | Non AABT |
| Charging Time Display | Not present |
| Seat belt reminder indicator | D&P independent |
| Key reminder | Not available |
| Brake vacuum warning | Not present |
| GCC speed alarm | Not available |
| Rent-a-car mode IG-OFF always | Available |
| S-AWC Control display | Not available |
| Service reminder schedule table | Normal |
| Display opening type | MMC |

| Item name | Initial value |
|---|---|
| Language mode | Available |
| Fuel tank type | Type 0 or Type 1 |
| GSI system | Not present |
| Launch gear block alarm | Not present |
| Service reminder for month | 12 month |
| Service reminder for km | 20000km |
| Service reminder for mile | 12500mile |
| Drive mode | Not present or Present |
| A/C control type | EUR |
| ECO gauge | Not present |
| ECO score | Not present |
| Electric motor switch reminder | Not present |
| Gate/Trunk | Gate type |
| Steering Wheel Switch | Not present or Present |
| Distance to empty(PHEV) | Not present |
| Energy Flow | Not present |
| EV ratio | Not present |
| Outside temperature | Present |
| ECO SW(Except for PHEV) | Not present |
| OCM | Not present |
| A/C | Present |
| Indirect lamp | Not present |
| Room lamp Centre Switch | Not present |
| Compressor type*2 | Type 1 |
| Temperature type | Celsius |
| Option Heater | No present |
| Indirect lamp | Type1/No present |
| Heater Control Panel Type | Single LCD or Dual LCD |
| EPS | Present |
| EPS type | Type 1 |
| ABS | Not present <Vehicles with ASC> |
| | Present <Vehicles without ASC> |
| Vehicle Type for A.S.C. | Not present <Vehicles without ASC> |
| | Type 1 <2.0/2.4L 2WD> |
| | Type 2 <2.0/2.4L 4WD> |
| Brake Type for A.S.C. | Not present <Vehicles without ASC> |
| | Type 1 <Vehicles with ASC> |
| HBA Type | Not present <Vehicles without ASC> |
| | Type 1 <Vehicles with ASC> |

| Item name | Initial value |
|---|---|
| ABS Type | Not present <Vehicles without ASC> |
| | Type 1 <Vehicles with ASC> |
| TCL Type | Not present <Vehicles without ASC> |
| | Type 9 <2.0L CVT> |
| | Type 10 <2.4L CVT> |
| A.S.C. Type | Not present <Vehicles without ASC> |
| | Type 1 <Vehicles with ASC> |
| A.S.C. | Not present <Vehicles without ASC> |
| | Present <Vehicles with ASC> |
| HSA Type | Not present <Vehicles without HSA> |
| | Type 1 <Vehicles with HSA> |
| AS&G brake hold Type | Not present |
| Brake prefill | Not present |
| Brake fade support | Not present |
| S-AWC Brake | Not present |
| Enhanced TCL | Not present |
| TSA Type | Not present |
| ACC Type for A.S.C. | Not present |
| FCM Type for A.S.C. | Not present |
| Engine power | Normal |
| Water separate warning | Not present |
| Cooling fan | Relay control |
| Auto Stop & Go (AS&G) | Not present |
| EV | Not present |
| ETG Buzzer | Not present |
| ETG Answerback | Not present |

*NOTE:*

- *[*1] : TPMS is an abbreviation of Tyre Pressure Monitoring System, DRL of Daytime Running Lamp.*
- *[*2] : The setting can be changed by the option coding. Refer to P.00-35.*

## OPTION CODING

**⚠ 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. Pay attention to that the concerned functions and systems do not work normally if the setting does not correspond with the equipment.**
- **With the ETACS functions being customised, if any of the ETACS-ECU option coding items are changed, the customised contents are reset. In such case, the functions need to be recustomised.**

The ETACS-ECU option coding data can be checked or changed by operating M.U.T.-III.

- How to check option coding data
  1. Connect the M.U.T.-III. Refer to P.00-27.

2. Select "MPI/GDI/DIESEL" or "ETACS" on the system selection screen.
3. Select "Coding."
4. Select "Option Coding Information."
5. Check the displayed option coding information.

- How to change option coding data
  1. Connect the M.U.T.-III. Refer to P.00-27.
  2. Select "MPI/GDI/DIESEL" or "ETACS" on the system selection screen.
  3. Select "Coding."
  4. Select "Option Coding."
  5. Change to correct option coding data.

**LIST <Engine-ECU>**

| Item name |
|---|
| Cruise control |
| Speed limit function |

**LIST <ETACS-ECU>**

| Item name |
|---|
| Auto lamp control |
| Keyless entry |
| AUDIO |
| RLS |
| Number of speaker |
| Radio Frequency |
| Front fog lamp |
| Rear fog lamp |
| Horn type |
| Manner switch |
| Remote engine starter |
| AND |
| Compressor type |
| DRL function |
| Wiper washer check bulb |
| ESS Cancel Function |
| MiEV REMOTE-ECU |
| Security type(MiEV REMOTE) |
| Panic Alarm |
| Door Unlock Mode Customize |
| Front wiper |

## INITIALISATION PROCEDURE FOR LEARNING VALUE IN MPI ENGINE

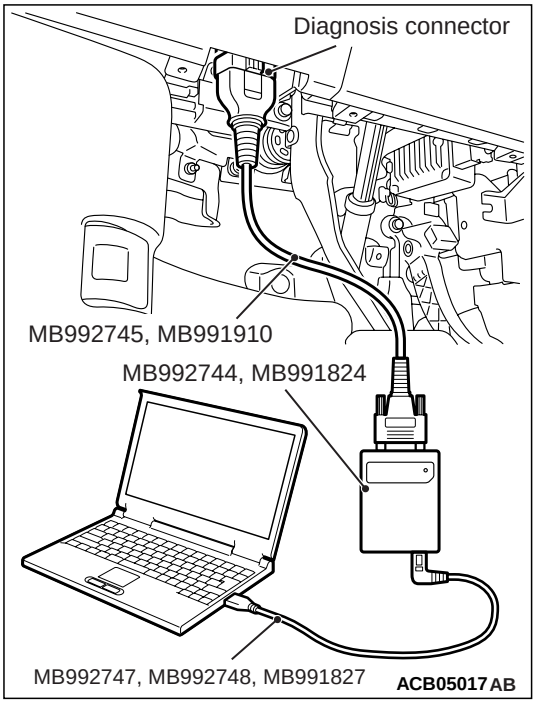
M1001011701517

Initialise learning values in the MPI engine when one of the following service operations is performed.

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

*NOTE: *: Initialise CVT related learning value.*

## INITIALISATION PROCEDURE




**⚠ CAUTION**

**To prevent damage to M.U.T.-III, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting M.U.T.-III.**

1. After the ignition switch is in "LOCK" (OFF) position, connect the M.U.T.-III to the diagnosis connector.
2. Turn the ignition switch to the "ON" position.
3. Select "MPI/GDI/DIESEL" from System select Screen of the M.U.T.-III.
4. Select "Special Function" from MPI/GDI/DIESEL Screen.
5. Select "Learned value reset" from Special Function Screen.
6. Select "All learned value" from Learned value reset Screen
7. Initialise the learning value by pressing the "OK" button.

8. After initialising the learning value, the learning value of MPI engine idling is necessary. Learning procedure for idling in MPI engine (Refer to P.00-37).

## LEARNING PROCEDURE FOR IDLING IN MPI ENGINE

M1001011801451

### PURPOSE

When the engine-ECU is replaced, or when the learning value is initialised, the idling is not stabilized because the learning value in MPI engine is not completed. In this case, carry out the learning method for the idling through the following procedures.

### LEARNING PROCEDURE

1. Start the engine and carry out the warm-up for the engine coolant temperature to reach 80°C or more.

   When the engine coolant temperature is 80°C or more, the warm-up is not needed if the ignition switch is in "ON" position once.
2. Place the ignition switch in "LOCK" (OFF) position and stop the engine.
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.
   - Transmission: "P" range
   - Operation in lamps, fan and attachments: Not to be operated
   - Engine coolant temperature: 80°C or more

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

## INITIALISATION PROCEDURE FOR THROTTLE VALVE CONTROL SERVO

Disconnecting and reconnecting the battery cables causes the throttle valve closed-position value learned to be erased from the memory. This may prevent the idle speed control from being executed properly. When the battery cables have been disconnected and reconnected, initialise the throttle valve control servo in the following manner.

1. Turn the ignition switch to "ON" and then to "LOCK" (OFF).
2. Keep the ignition switch in "LOCK" (OFF) for at least 10 seconds.

## PRE-INSPECTION CONDITION

M1001012100902

"Pre-inspection condition" refers to the condition that the vehicle must be in before proper engine inspection can be carried out. If you see the words "Set the vehicle to the pre-inspection condition". In this manual, it means to set the vehicle to the following condition.

- Engine coolant temperature 80 to 90°C
- Lamps, electric cooling fan and all accessories: OFF
- M/T: Neutral
- CVT: P range

## PRECAUTIONS FOR INSTALLATION OF ON-VEHICLE RADIO TRANSMISSION EQUIPMENT

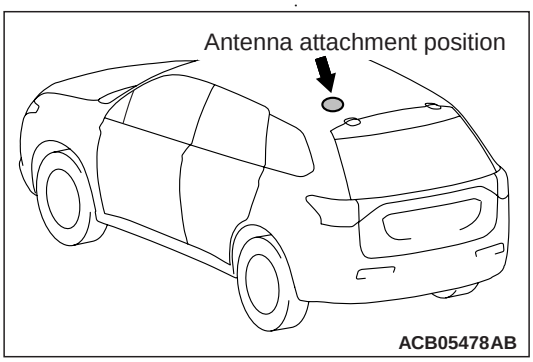
M1001015500158

The computers (control unit) for various on-vehicle electronic equipment are provided with sufficient protective measures against external radio wave interference. However, because the on-vehicle radio transmission equipment may affect adversely the computers (control unit), pay attention to the following precautions for installation.

- Install radio transmission equipment and antenna (including coaxial cables) 200 mm or more away from the computers (control unit) for on-vehicle electronic equipment.
- Because radio wave is radiated from the coaxial cables of the antenna for radio transmission equipment, do not route the cables in parallel with the vehicle wiring harness.
- Install only radio transmission equipment with the frequencies, output, and radio wave types described in the table.

**FREQUENCY, OUTPUT, AND RADIO WAVE TYPE OF THE RADIO TRANSMISSION EQUIPMENT**

| Frequency (MHz) | Maximum output power (W) | Modulation |
|---|---|---|
| 3.5 | 50 | CW, FM, AM, SSB |
| 7 | | |
| 14 | | |
| 21 | | |
| 28 | | |
| 50 | | |
| 144 | | |
| 430 | | |
| 1,260 | 2 | |




Install the antenna for radio transmission equipment only to the position shown in the figure.

## ENGINE OILS

M1001011200230

### HEALTH WARNING

Prolonged and repeated contact with mineral oil will result in the removal of natural fats from the skin, leading to dryness, irritation and dermatitis. In addition, used engine oil contains potentially harmful contaminants which may cause skin cancer. Adequate means of skin protection and washing facilities must be provided.

### RECOMMENDED PRECAUTIONS

The most effective precaution is to adapt working practices which prevent, as far as practicable, the risk of skin contact with mineral oils, for example by using enclosed systems for handling used engine oil and by degreasing components, where practicable, before handling them.
Other precautions:

- Avoid prolonged and repeated contact with oils, particularly used engine oils.
- Wear protective clothing, including impervious gloves where practicable.
- Avoid contaminating clothes, particularly underpants, with oil.
- Do not put oily rags in pockets, the use of overalls without pockets will avoid this.
- Do not wear heavily soiled clothing and oil-impregnated foot-wear. Overalls must be cleaned regularly and kept separately from personal clothing.
- Where there is a risk of eye contact, eye protection should be worn, for example, chemical goggles or face shields; in addition an eye wash facility should be provided.
- Obtain first aid treatment immediately for open cuts and wounds.
- Wash regularly with soap and water to ensure all oil is removed, especially before meals (skin cleansers and nail brushes will help). After cleaning, the application of preparations containing lanolin to replace the natural skin oils is advised.
- Do not use petrol, kerosine, diesel fuel, gas oil, thinners or solvents for cleaning skin.
- Use barrier creams, applying them before each work period, to help the removal of oil from the skin after work.
- If skin disorders develop, obtain medical advice without delay.

## FORM–IN–PLACE GASKET (FIPG)

M1001014200132

The engine has several parts to which the form-in-place gasket (FIPG) is used. To sufficiently achieve the aims of this gasket, it is necessary to pay attention to the application amount, procedure, and surface status.
If the application amount is too small, a leakage will occur. If the application amount is excessive, the FIPG will overflow and cause a clogging or narrowing of water and oil paths. Therefore, to eliminate the leak from the joint, it is indispensable that the FIPG be applied with a correct amount and without any gap.
Because the FIPG used for the engine parts becomes hardened by the reaction with the atmospheric moisture, it is normally used for the metal flange section.

**⚠ CAUTION**

**Reapply the FIPG with care to the followings.**

1. **Completely remove the old FIPG including the residue in gaps of parts.**
2. **Using Mitsubishi genuine parts cleaner (MZ100387) or equivalent, degrease the FIPG application surface carefully.**
3. **According to the FIPG application procedures, apply it accurately.**

### DISASSEMBLY

The parts installed with the FIPG can be disassembled easily without using any special method. However, in some cases, it is necessary to tear the sealant in between the mating surfaces by tapping the parts with a wooden hammer or similar tools. It is acceptable to lightly hit in a smooth, thin gasket scraper into the mating surface, but, in this case, a sufficient caution is required not to damage the mating surface. The oil pan FIPG cutter (Special tool: MD998727) is provided. Thus, use this special tool.

## GASKET SURFACE CLEANING

Use a gasket scraper or wire brush to completely remove all the foreign materials adhering to the gasket surface. Check that the FIPG application surface is smooth. There must be no grease or foreign material adhesion to the gasket surface. Do not forget to remove the old FIPG remaining in the mounting hole and tapped hole.

## APPLICATION PROCEDURE

Apply the FIPG with a specified diameter and without any gap. Completely enclose around the mounting hole. When the FIPG is not hardened, it can be wiped off. Install the parts immediately after applying the FIPG. At the time of installation, prevent the FIPG from adhering to locations other than it is necessary. After the installation, until a sufficient period of time (one hour or more) elapses, do not contact the oil or water to the application area. Also, do not start the engine. Because the FIPG application procedure may differ depending on the application area, apply the FIPG according to the procedure described in the text.

## BOLTS AND NUTS WITH STABILIZER FOR COEFFICIENT OF FRICTION

M1001014800060

The bolts and nuts with stabilizer for coefficient of friction have been used for the connections such as the suspension arm and crossmember in order to stabilize the axial force and to ensure the high axial force at bolt/nut connections, resulting in improved reliability.

*NOTE: The bolts and nuts with stabilizer for coefficient of friction mean that the bolts and nuts with surface treatment to stabilize and reduce the coefficient of friction, allowing to achieve the stable axial force and to secure the high axial force with low tightening torque.*

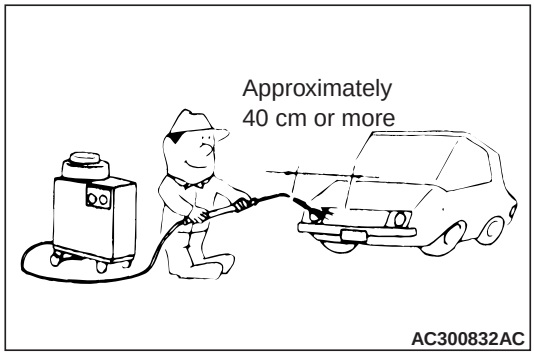
## APPLICATION OF ANTI-CORROSION AGENTS AND UNDERCOATS

M1001011000258

If oil or grease gets onto the oxygen sensor, it will cause a drop in the performance of the sensor. Cover the oxygen sensor with a protective cover when applying anti-corrosion agents and undercoats.

## VEHICLE WASHING

M1001012000433




If high-pressure car-washing equipment or steam car-washing equipment is used to wash the vehicle, be sure to note the following information in order to avoid damage to plastic components, etc.

- Spray nozzle distance: Approx. 40 cm or more
- Spray pressure: 3,900 kPa or less
- Spray temperature: 82°C or less
- Time of concentrated spray to one point: within 30 sec.

# SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

M1001009801186

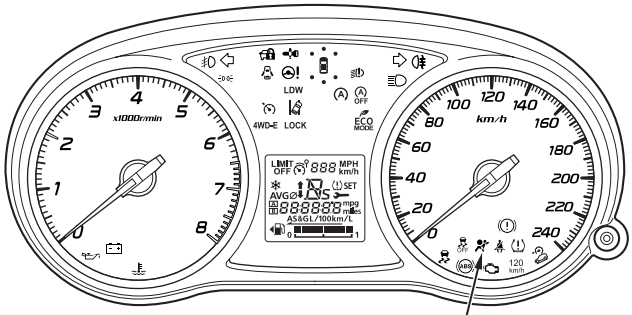
The Supplemental Restraint System (SRS) and seat belt with pre-tensioner is designed to supplement the driver's and front passenger's seat belts to help reduce the risk or severity of injury to the driver and front passenger by activating and deploying both front air bags in certain frontal collisions. The side-air bag and the curtain air bag are activated when an impact exceeds the threshold upon a side collision, and inflates to protect the heads of the occupants in the front and rear seats.

The SRS consists of air bag modules, SRS air bag control unit (SRS-ECU), two front impact sensors, two side impact sensors, SRS warning lamp, clock spring, passenger’s air bag cut off switch, passenger’s air bag OFF indicator lamp and seat belt pre-tensioner. Front air bags are located in the centre of the steering wheel and above the glove box. Each air bag is made up of a folded air bag and an inflator unit. Side-airbags are located inside the front seatback assemblies. The curtain air bag module consists of an air bag, an inflator, and the fixing gear relating to those parts, and is installed in the roof side sections (from the driver's and the passenger's front

pillars to the rear pillars).The SRS-ECU under the front floor console monitors the system and has a front air bag analogue G-sensor, front air bag analogue G-sensor and a side (curtain) air bag analogue G-sensor. The front impact sensor is installed on the front end upper bar in the engine room and contains an analogue G-sensor. The side impact sensor is installed in the lower parts of the centre pillars, and contains an analogue G-sensor. The warning lamp on the instrument panel indicates the operational status of the SRS. The clock spring is installed in the steering column. The passenger’s air bag cut off switch is outside the instrument panel side. The passenger’s air bag OFF indicator lamp is installed in centre panel assembly. The seat belt pre-tensioner is built into the driver's and passenger's front seat belt retractor.

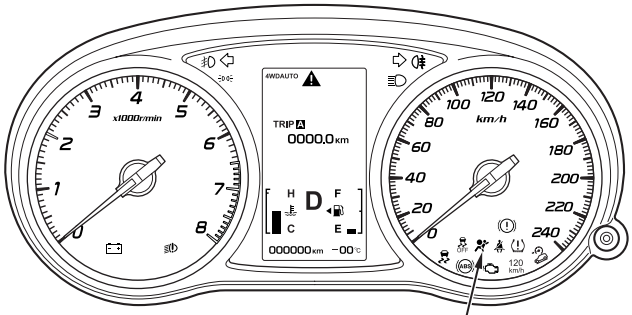
Only authorized service personnel should do work on or around the SRS components. Those service personnel should read this manual carefully before starting any such work.

**<Standard meter>**

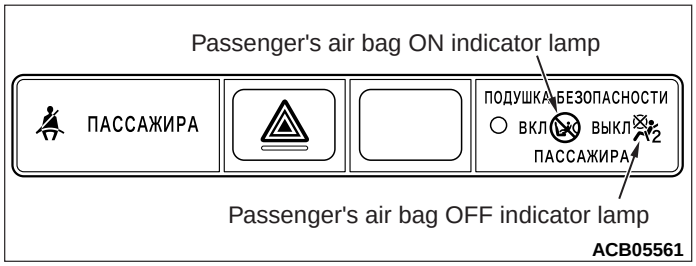



ACB05440

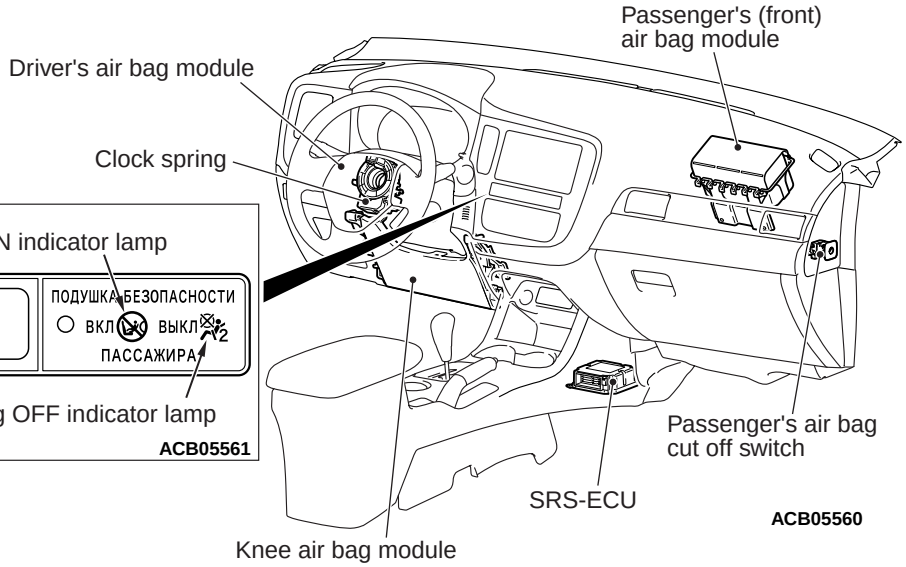
**<High contrast meter>**



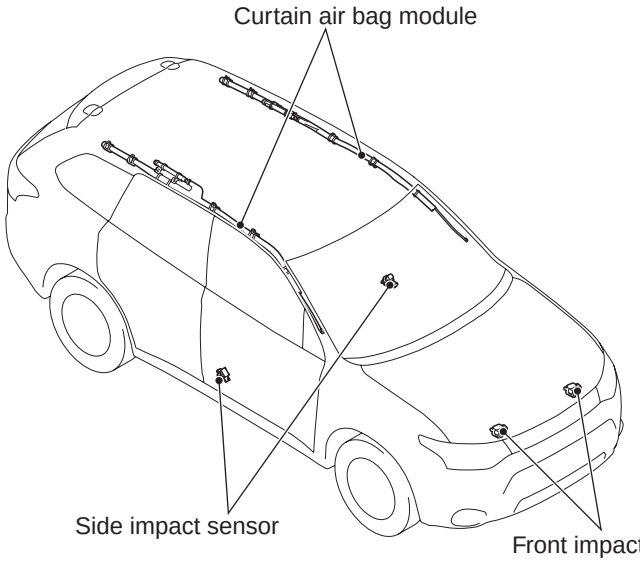

ACB05441



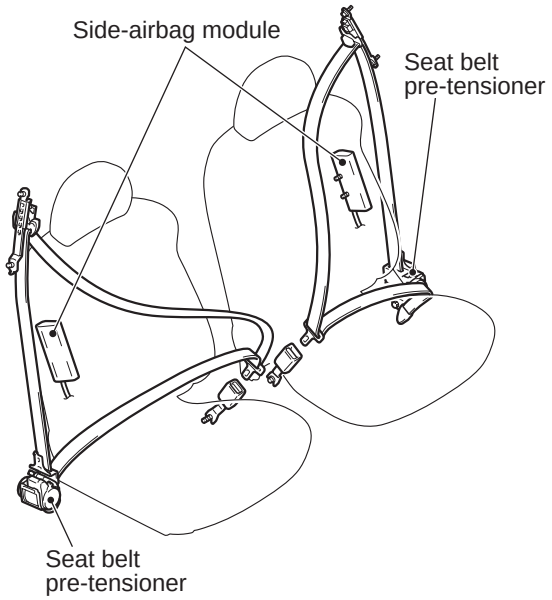

ACB05561




ACB05560




ACB05423

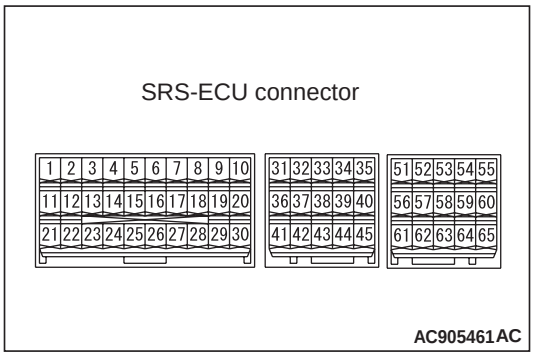



ACC00250AB

# SRS SERVICE PRECAUTIONS

M1001006001095

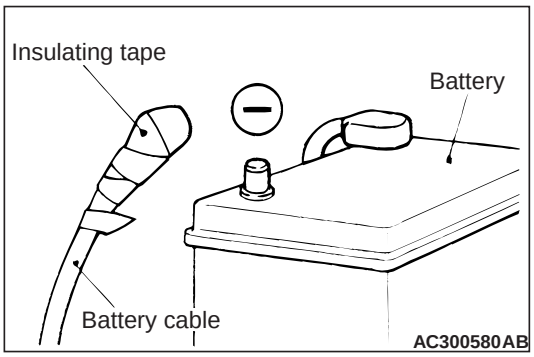
1. **In order to avoid injury to yourself or others from accidental deployment of the SRS air bag during servicing, read and carefully follow all the precautions and procedures described in this manual.**
2. **Be sure to use the tester and special tools specified in this manual (Special tool: refer to , tester: refer to ).**
3. **Never attempt to repair the following components:**
   - **SRS-ECU**
   - **Driver's air bag module**
   - **Clock spring**
   - **Passenger's (front) air bag module**
   - **Curtain air bag module**
   - **Knee air bag module**
   - **Front seat assembly incorporating side-air-bag module**
   - **Seat belt with pre-tensioner**
   - **Front impact sensor**
   - **Side impact sensor**




4. **Never attempt to repair the wiring harness connectors of the SRS. If a defective wiring harness is found, repair or replace it by referring to the table follows.**

| SRS-ECU terminal No. | Destination of wiring harness | Measures |
|---|---|---|
| 1, 2 | Instrument panel wiring harness → knee air bag module | Repair or replace the instrument panel wiring harness. |
| 5, 6 | Instrument panel wiring harness → clock spring → driver's air bag module (squib) | Replace the clock spring, or repair or replace the instrument panel wiring harness. |
| 7, 8 | Instrument panel wiring harness → passenger's (front) air bag module (squib) | Repair or replace the instrument panel wiring harness. |
| 13 | Instrument panel wiring harness → hazard indicator assembly [air bag OFF indicator lamp (passenger's side)] | Repair or replace the instrument panel wiring harness. |
| 15 | Instrument panel wiring harness → hazard indicator assembly [air bag ON indicator lamp (passenger's side)] | Repair or replace the instrument panel wiring harness. |
| 17, 27 | Instrument panel wiring harness → front wiring harness → front impact sensor (LH) | Repair or replace the wiring harnesses. |
| 18, 28 | Instrument panel wiring harness → front wiring harness → front impact sensor (RH) | |
| 22 | Floor wiring harness → ETACS-ECU (fuse No. 16) | Repair or replace the floor wiring harness. |
| 23 | Instrument panel wiring harness → diagnosis connector | Repair or replace the instrument panel wiring harness. |
| 24 | Instrument panel wiring harness → earth | |
| 25,26 | Instrument panel wiring harness → passenger's air bag cut OFF switch | |
| 29, 30 | Instrument panel wiring harness → CAN bus line | |

| SRS-ECU terminal No. | Destination of wiring harness | Measures |
|---|---|---|
| 31, 32 | Floor wiring harness → front passenger's seat belt pre-tensioner | Repair or replace the floor wiring harness. |
| 36, 37 | Floor wiring harness → curtain air bag module (LH) | |
| 39, 40 | Floor wiring harness → side-airbag module (LH) | |
| 41, 42 | Floor wiring harness → side impact sensor (LH) | |
| 54, 55 | Floor wiring harness → driver's seat belt pre-tensioner | |
| 56, 57 | Floor wiring harness → side-airbag module (RH) | |
| 59, 60 | Floor wiring harness → curtain air bag module (RH) | |
| 64, 65 | Floor wiring harness → side impact sensor (RH) | |




5. **Before maintenance, wait for 60 seconds or more after the disconnection of the battery (–) terminal. Wrap the disconnected (–) terminal with tape for insulation. The condenser inside SRS-ECU keeps a voltage necessary to expand the air bag for a certain period even after the IG power is turned OFF. Therefore, if any operation is performed before the period elapses, it may cause serious damage.**
6. **If the influence of heat is suspected during painting work, remove the following parts:**
   - **93°C or higher SRS-ECU, air bag module, clock spring, front impact sensor, side impact sensor**
   - **90 °C or higher Seat belt with pre-tensioner**
7. **After the maintenance of the SRS air bag and seat belt with pre-tensioner is completed, be sure to delete the diagnosis code and check whether the SRS warning lamp lights up (refer to ).**

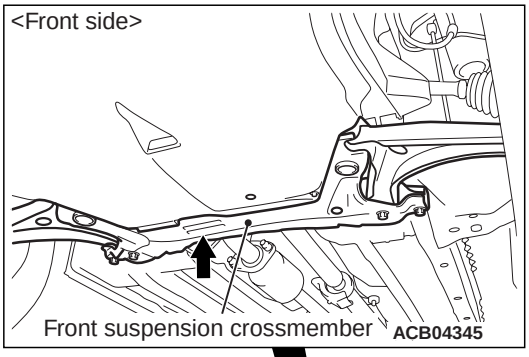
# SUPPORT LOCATIONS FOR LIFTING AND JACKING

M1001000701256

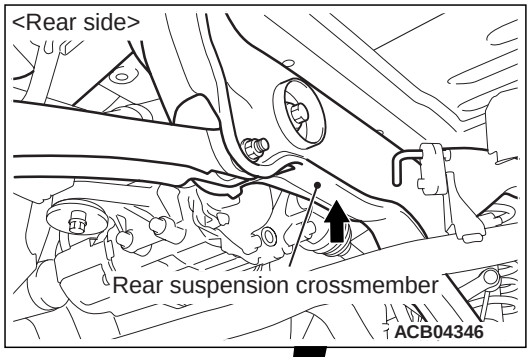
## SUPPORT POSITIONS FOR A GARAGE JACK

**⚠ CAUTION**

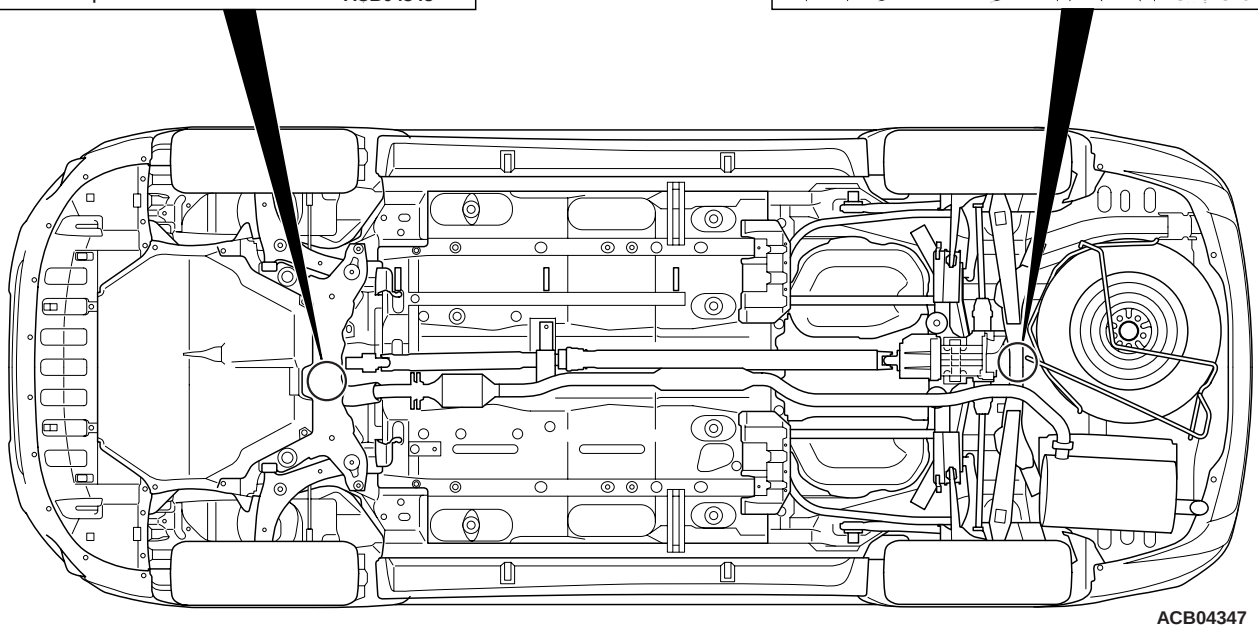
- **Be sure to support the specified locations only. Otherwise, deformation of vehicle may occur.**
- **Be careful to avoid damage to the front under cover or rear differential carrier assembly.**




ACB04345




ACB04346



ACB04347

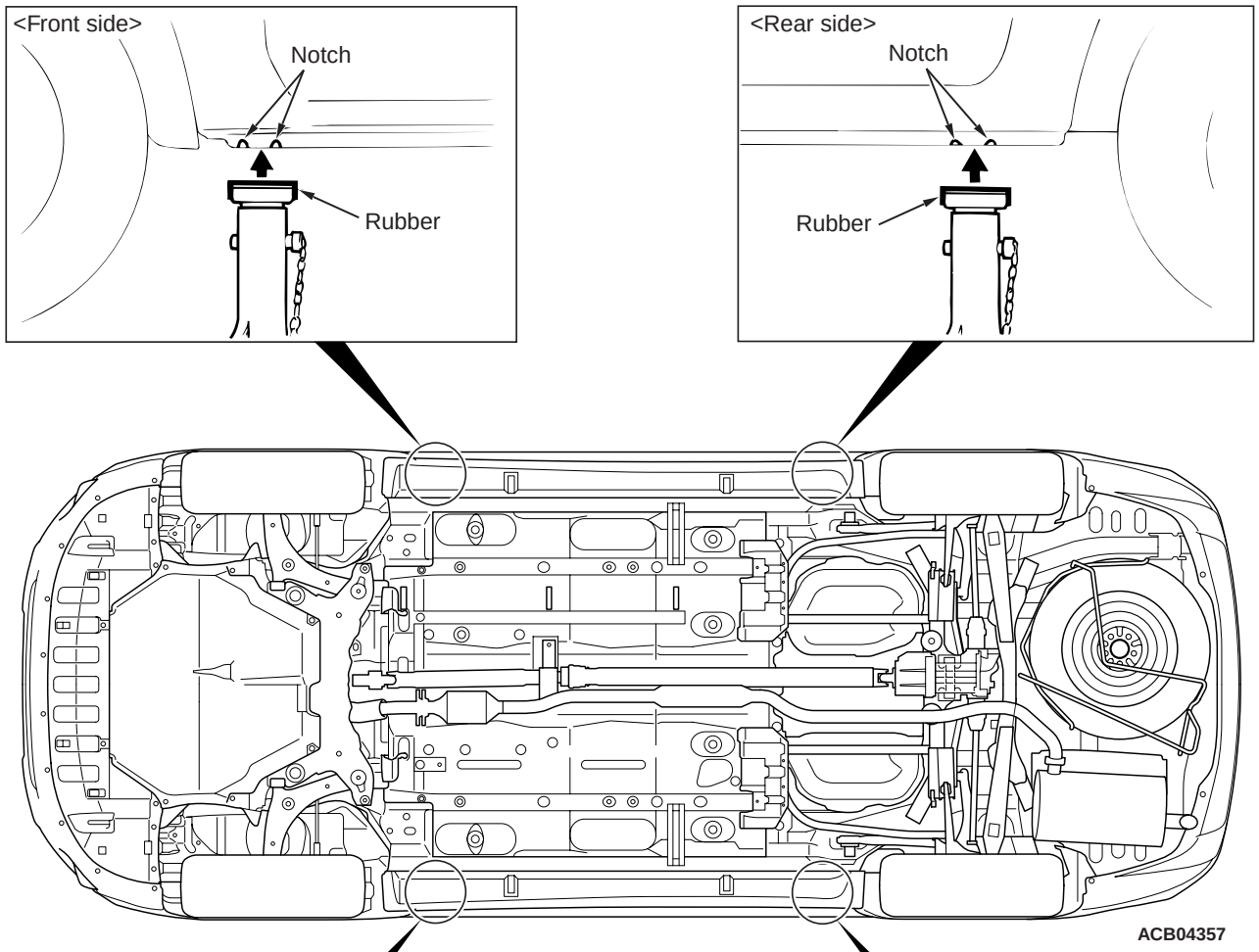
ACB04348AB

## SUPPORT POSITIONS FOR AXLE STANDS, SINGLE-POST LIFT OR DOUBLE-POST LIFT

**⚠ CAUTION**

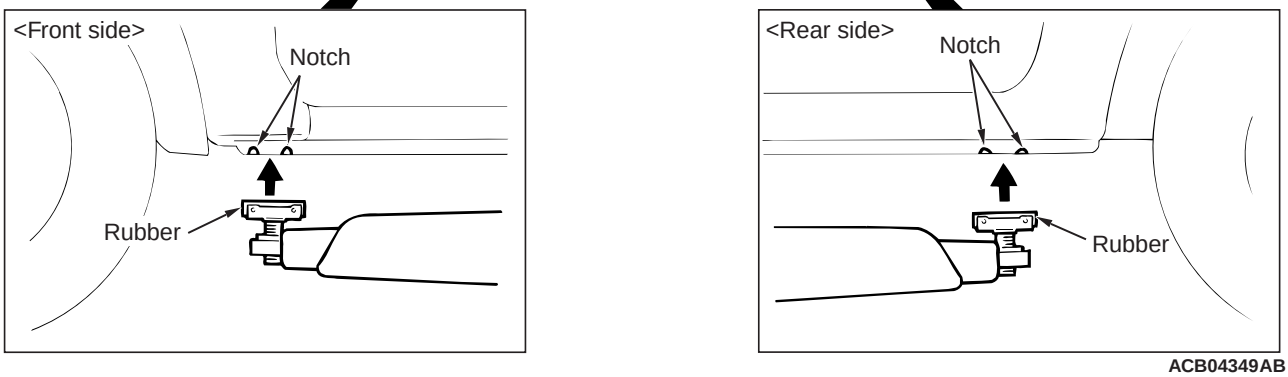
- **If rubber attachments with grooves that are too thick are used at the front support positions, the front fender may become bent, so be sure to use rubber attachments with groove thicknesses of 18 mm or less.**
- **If attachments which are not high enough are used, they may damage areas such as the side step. Be sure to use attachments which are high enough, or remove the side step if not using attachments.**

**AXLE STANDS**



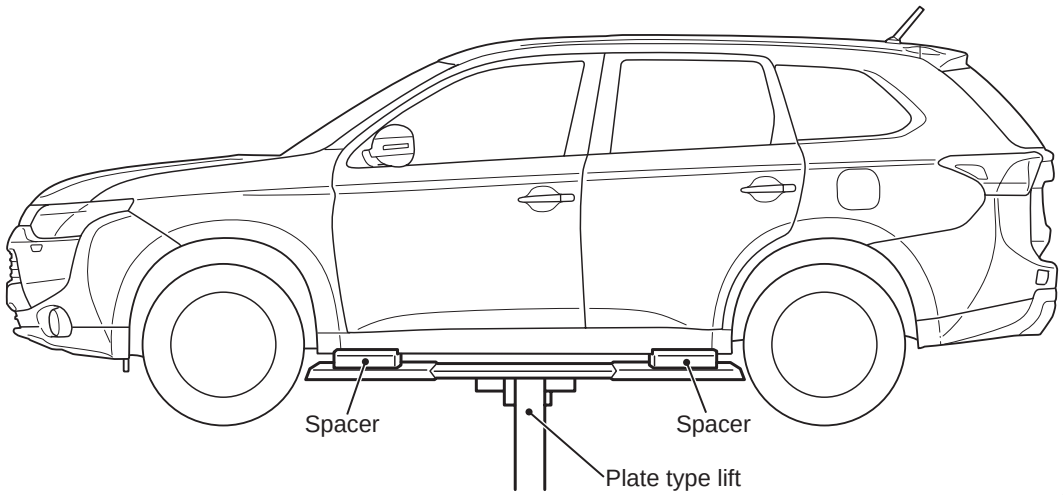

ACB04357

**SINGLE-POST LIFT**
**OR DOUBLE-POST LIFT**




ACB04349AB

### SUPPORT POSITIONS FOR A PLATE TYPE LIFT




ACB04350AB

Support the notch with a spacer (100-mm width, 100-mm height and 200-mm depth).

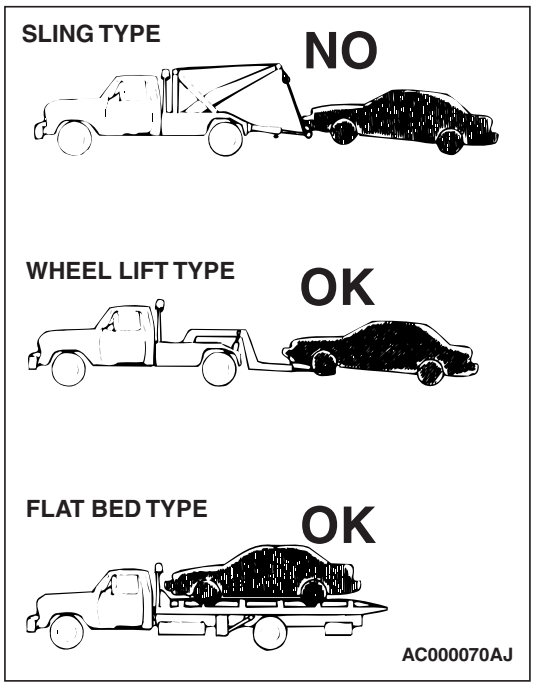
## TOWING AND HOISTING

M1001000800948

### WRECKER TOWING RECOMMENDATION

### FRONT TOWING PICKUP <2WD>

**⚠ CAUTION**

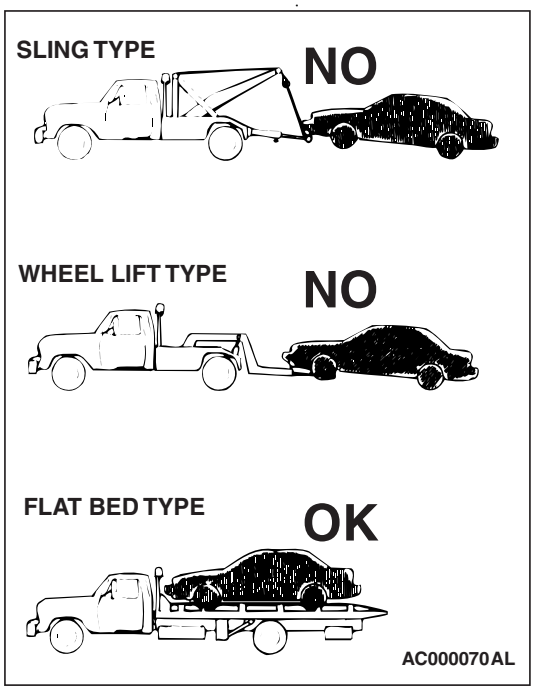



**This vehicle cannot be towed by a wrecker using sling-type equipment; as the bumper may become deformed. If this vehicle is towed, use wheel lift or flat bed equipment.**

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 <4WD>

**⚠ CAUTION**



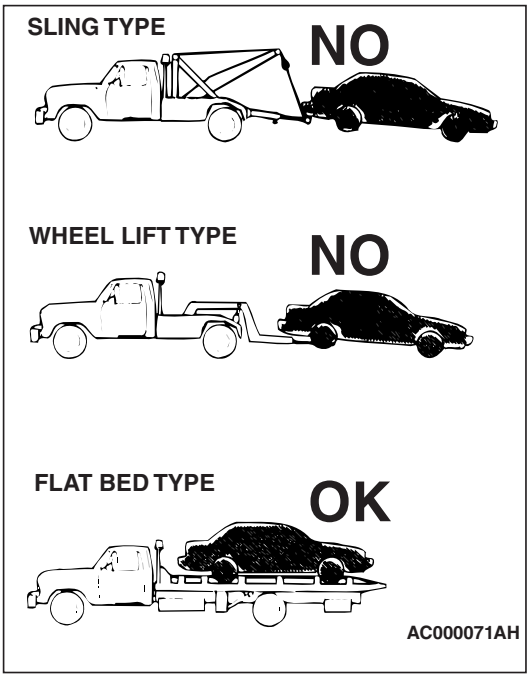

**If only the front wheels or only the rear wheels are lifted for towing, the bumper will be damaged.**
**In addition, lifting of the rear wheels causes the transfer case oil to flow forward, and may result in heat damage to the rear bushing of the transfer.**

- **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

**⚠ CAUTION**




**Never lift the rear wheels, otherwise the vehicle becomes unstable while driving.**

## 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. Local rules and regulations must be followed when towing a vehicle.