

---

## GROUP 54A

# CHASSIS ELECTRICAL

### CONTENTS

<b>GENERAL INFORMATION</b> .....	<b>54A-2</b>	HEADLIGHT AIMING .....	<b>54A-11</b>
<b>IGNITION SWITCH</b> .....	<b>54A-3</b>	HEADLIGHT LEVELING SWITCH REMOVAL AND INSTALLATION.....	<b>54A-12</b>
ON-VEHICLE SERVICE.....	<b>54A-3</b>	INSPECTION.....	<b>54A-12</b>
ENCRYPTED CODE REGISTRATION PROCEDURE .....	<b>54A-3</b>		
<b>COMBINATION METER</b> .....	<b>54A-10</b>	<b>REAR FOG LIGHT</b> .....	<b>54A-12</b>
SERVICE SPECIFICATION(S).....	<b>54A-10</b>	REAR FOG LIGHT DIAGNOSIS.....	<b>54A-12</b>
ON-VEHICLE SERVICE.....	<b>54A-10</b>	REAR FOG LIGHT .....	<b>54A-13</b>
SPEEDOMETER CHECK.....	<b>54A-10</b>	REMOVAL AND INSTALLATION .....	<b>54A-13</b>
		INSPECTION.....	<b>54A-13</b>
<b>HEADLIGHT, FRONT SIDE MARKER LIGHT AND POSITION LIGHT ASSEMBLY.</b> <b>54A-11</b>		<b>SIDE TURN-SIGNAL LIGHT</b> .....	<b>54A-14</b>
SPECIAL TOOL .....	<b>54A-11</b>	SPECIAL TOOL.....	<b>54A-14</b>
HEADLIGHT DIAGNOSIS.....	<b>54A-11</b>	REMOVAL AND INSTALLATION .....	<b>54A-15</b>
ON-VEHICLE SERVICE.....	<b>54A-11</b>		
		<b>LICENSE PLATE LIGHT</b> .....	<b>54A-16</b>
		REMOVAL AND INSTALLATION .....	<b>54A-16</b>

# GENERAL INFORMATION

M1540208400030

## OUTLINE OF CHANGES

The service procedures have been established due to the following changes. The other service procedures are the same as before.

- The registration procedure of immobilizer ID (Ignition key) has been changed.
- The service procedure has been added due to the addition of combination meter.
- Service procedure has been established due to the adoption of headlight leveling switch.
- Service procedure has been established due to the adoption of rear fog light.
- Service procedure has been established due to the adoption of side turn-signal light.
- The service procedure has been added due to the addition of license plate light.

## IGNITION SWITCH

## ON-VEHICLE SERVICE

ENCRYPTED CODE REGISTRATION  
PROCEDURE

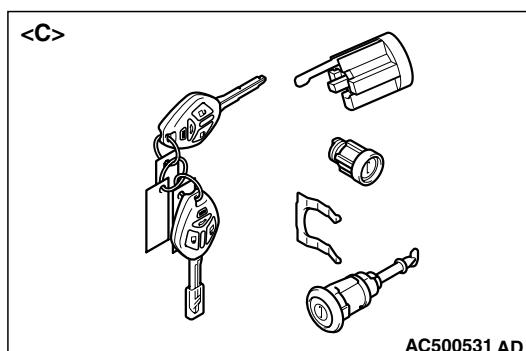
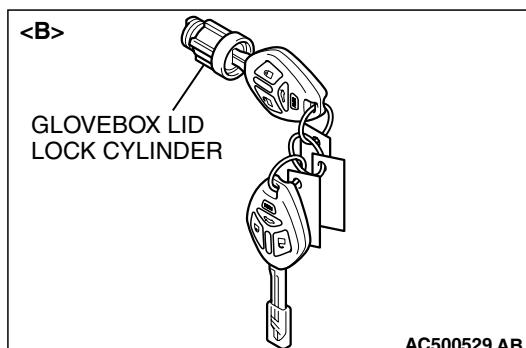
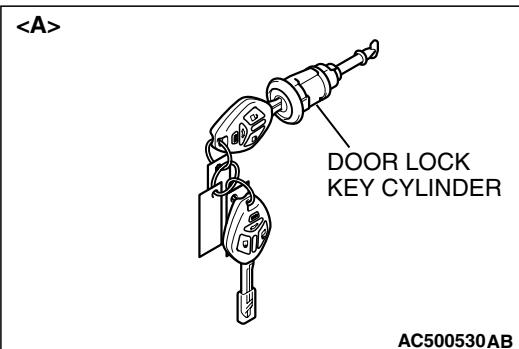
M1543008100982

**CAUTION**

- When registering encrypted codes again, keep all the ignition keys that are already registered. If the encrypted codes are registered again, all the encrypted codes that were registered before will be erased. For this reason, keep all the ignition keys that are already registered.
- Do not register the ignition keys other than the ignition key that starts the engine. (When replacing by the door lock key cylinder of illustration <A> or the glove box lid lock cylinder of illustration <B>, the engine cannot start if the encrypted code is registered with the bar code on the ignition key supplied simultaneously. If the ignition key using for each lock cylinder and starting engine is used as a common ignition key, replace by the key set of illustration <C>.)
- When the transmitter is replaced, the transmitter must be registered after registering the encrypted code. For the registration of the transmitter, refer to GROUP 42, How to Register Secret Code.

If the ignition key is replaced or additional keys are requested, the encrypted codes of all ignition keys must be registered. (A maximum of eight ignition keys can be registered.)

*NOTE: The encrypted codes can be registered using the ignition key and barcode No.*



## PRECAUTIONS DURING SERVICE

If all functions do not work, check the diagnostic trouble code, and repair the system. Then, repeat the operation.

If a wrong password is entered consecutively five times by scan tool (M.U.T.-III sub assembly), the immobilizer-ECU judges that the system is operated incorrectly. Then, the engine immobilization mode is set, and the ECU stops the engine and all special functions is stopped. In addition, when the ignition switch is held at the ON position for approximately 20 minutes with engine immobilization mode, "incorrect operation, engine immobilization mode" is cancelled.

### ENCRYPTED CODE REGISTRATION USING IGNITION KEY <REGISTRATION USING SCAN TOOL MB991958 (M.U.T.-III SUB ASSEMBLY)>

When the powertrain control module or the ETACS-ECU is replaced, or the ignition key is lost or additional keys are requested, the ignition key must be used to register encrypted codes.

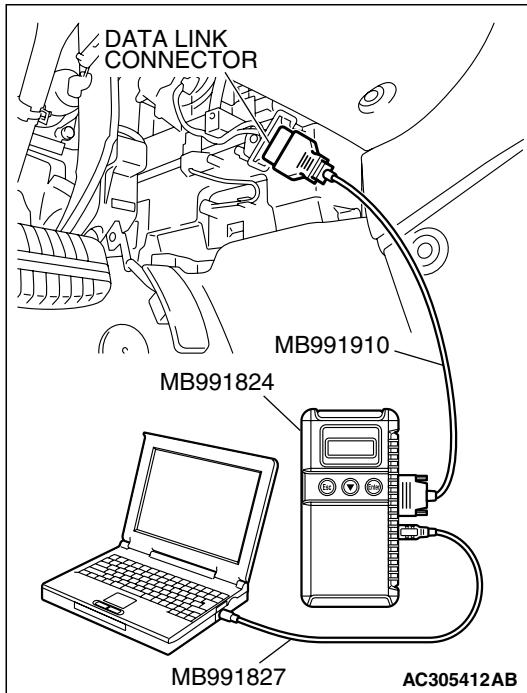
#### Required Special Tools:

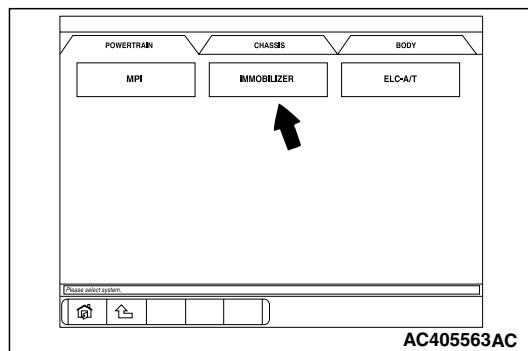
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: V.C.I.
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A

#### CAUTION

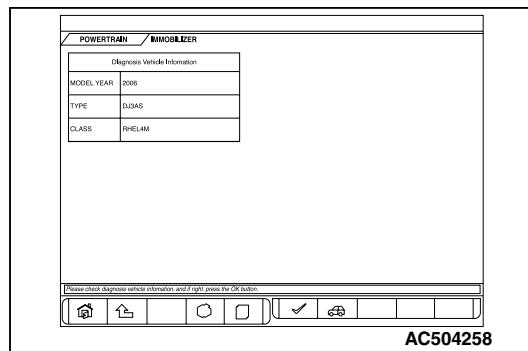
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.

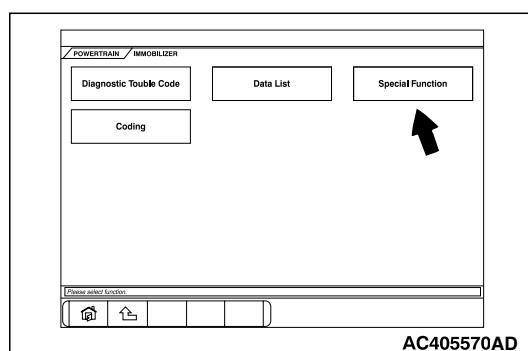
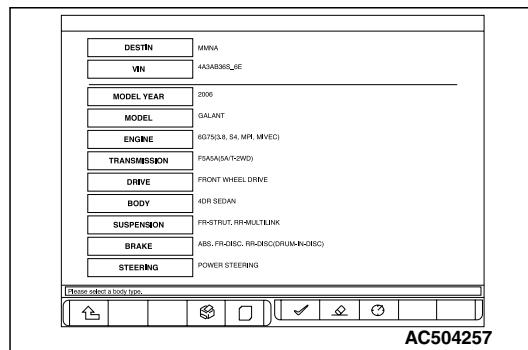




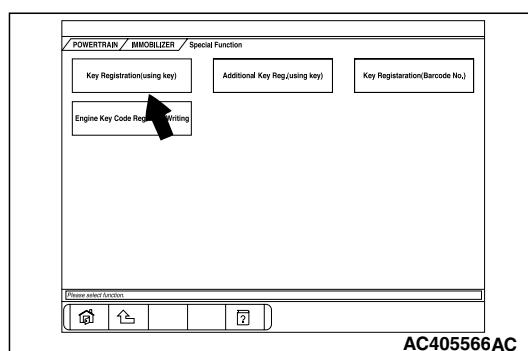
3. Choose "IMMOBILIZER" from the "POWER TRAIN" tab.



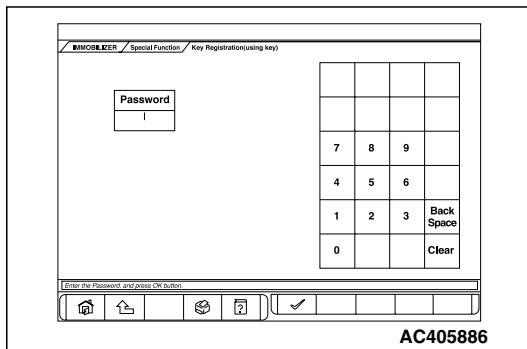
4. Enter the VIN code of the vehicle that is registered. Then, press "OK" button.



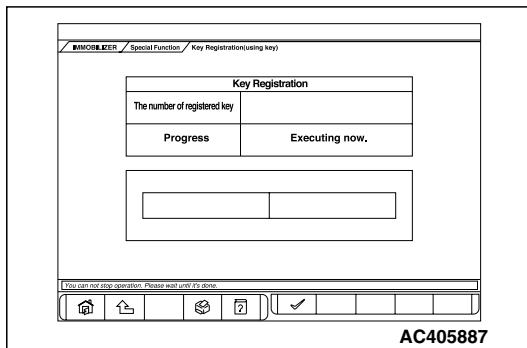
5. Select "Special Function."



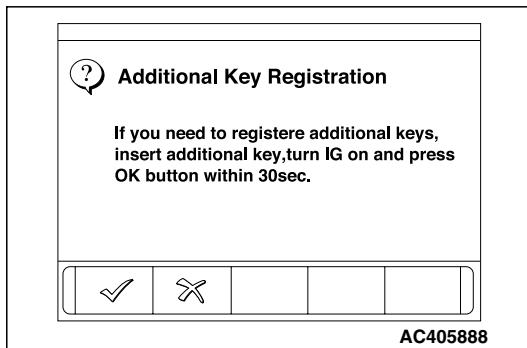
6. Select "Key Registration (using key)."



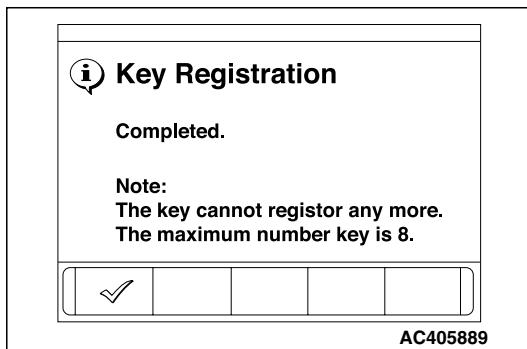
7. Enter the password of the vehicle, and press the OK button.



8. Registration of the ignition key will be started.



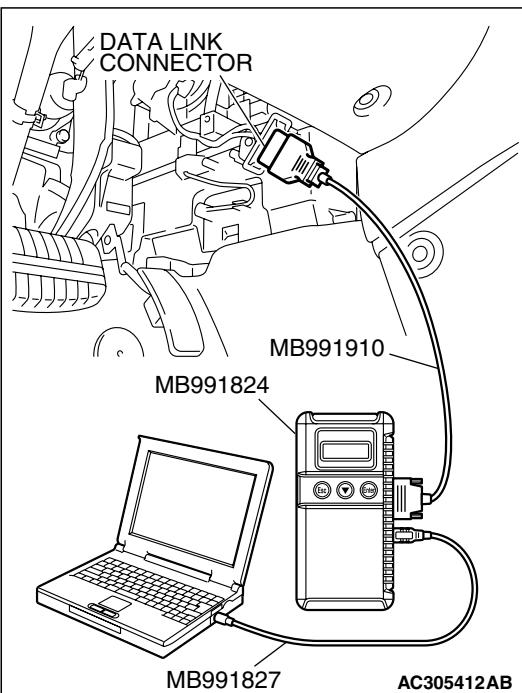
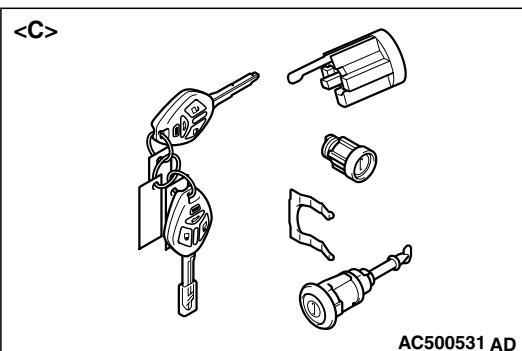
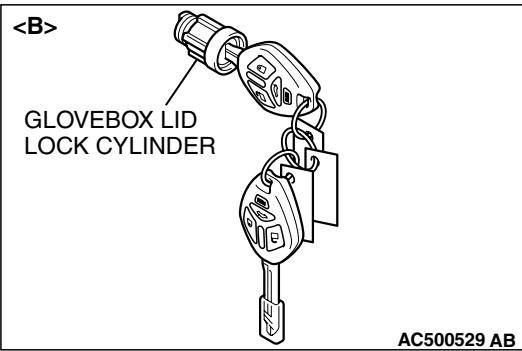
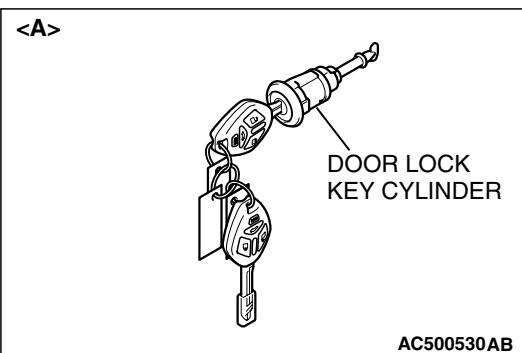
9. When the ignition key registration is finished, the additional key registration menu is displayed. To register the additional key, insert the key and turn the ignition switch to the "ON" position. Then, press the OK button. Press the CANCEL button to terminate the ignition key registration.



10. A maximum of eight ignition keys can be registered. When the registration of the eighth ignition key is finished, key registration completion menu is displayed. Press the OK button and finish the ignition key registration.

## ENCRYPTED CODE REGISTRATION USING BARCODE NO.

When the ignition key that starts the engine is replaced due to the replacement of the ignition key set, the ignition key cylinder, etc., the barcode No. must be used to register encrypted codes.

**CAUTION**

- Do not register the ignition keys other than the ignition key that starts the engine. (When replacing by the door lock key cylinder of illustration <A> or the glove box lid lock cylinder of illustration <B>, the engine cannot start if the encrypted code is registered with the bar code on the ignition key supplied simultaneously. If the ignition key using for each lock cylinder and starting engine is used as a common ignition key, replace by the key set of illustration <C>.)
- After the ignition key registration is finished, discard the barcode plate correctly at Mitsubishi dealer. The barcode plate has important information of the immobilizer system. Therefore, improper disposal of the barcode plate may decrease the security level.
- When the transmitter is replaced, the transmitter must be registered after registering the encrypted code. For the registration of the transmitter, refer to GROUP 42, How to Register Secret Code.

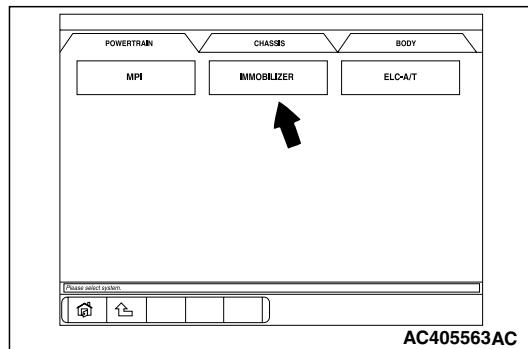
**Required Special Tools:**

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

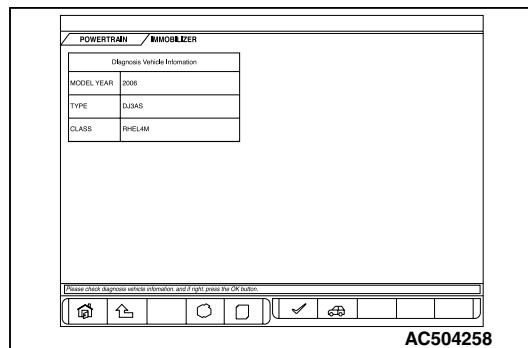
**CAUTION**

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

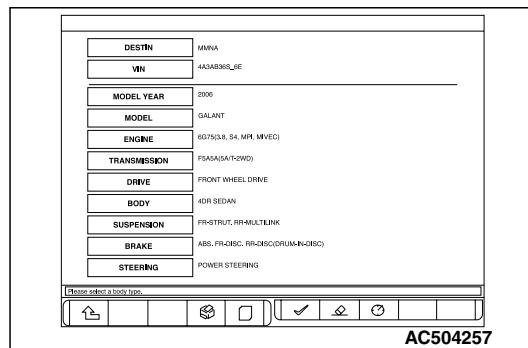
1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.



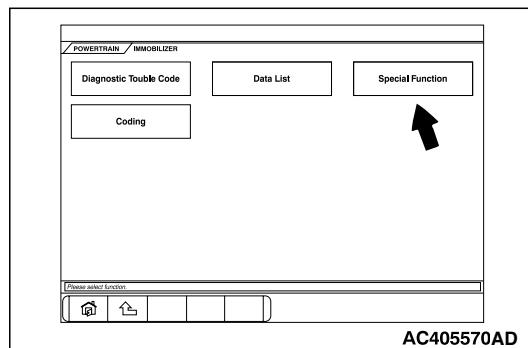
3. Choose "IMMOBILIZER" from the "POWER TRAIN" tab.



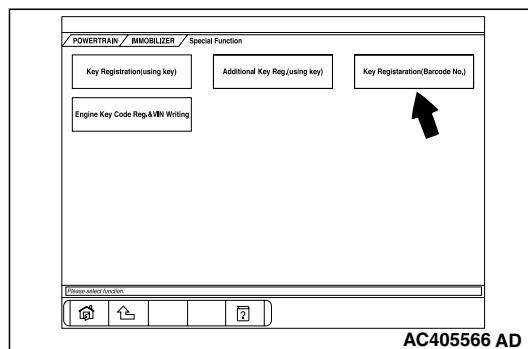
4. Enter the VIN code of the vehicle that is registered. Then, press "OK" button.

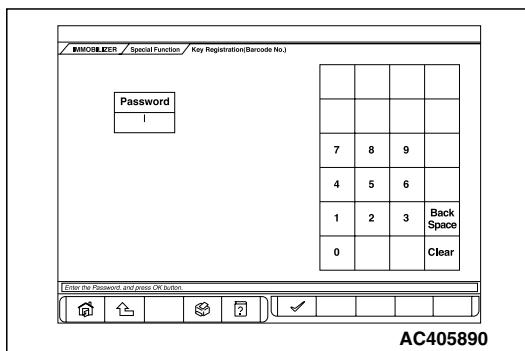


5. Select "Special Function."

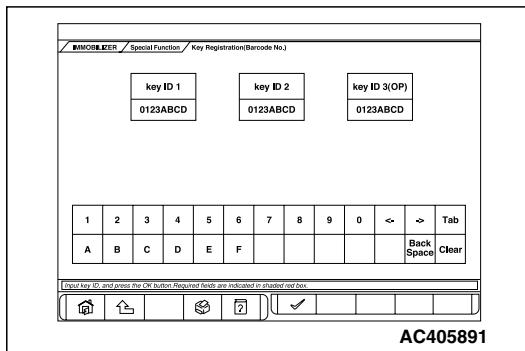


6. Select "Key Registration (Barcode No.)."

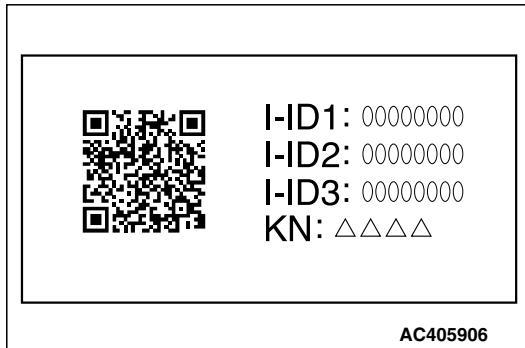




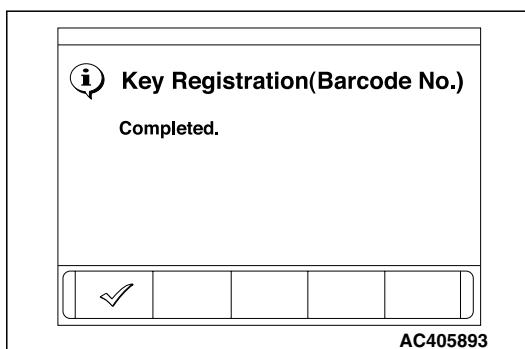
7. Enter the password of the vehicle, and press the OK button.



8. Enter the ID on the bar code plate which is attached to the ignition key, and press the OK button.



9. When the execution confirmation menu of the key registration (Barcode No.) is displayed, press the OK button.



10. When the key registration completion menu is displayed, press the OK button.

## COMBINATION METER

## SERVICE SPECIFICATION(S)

## &lt;COMBINATION METER&gt;

M1540200200087

Item	Standard value	
Speedometer indication allowance range km/h	(20)	(20 – 24)
	40	40 – 44
	80	80.5 – 85.5
	120	121.5 – 127.5
	160	162.5 – 169.5
	200	203.5 – 211.5

## ON-VEHICLE SERVICE

## SPEEDOMETER CHECK

M1540201400062

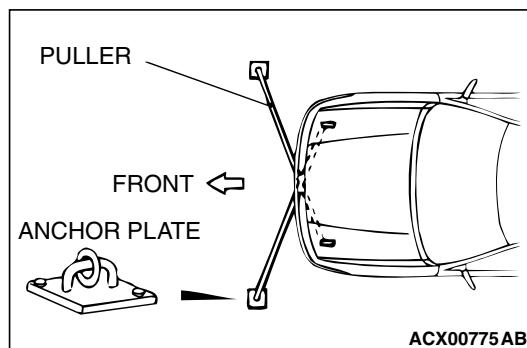
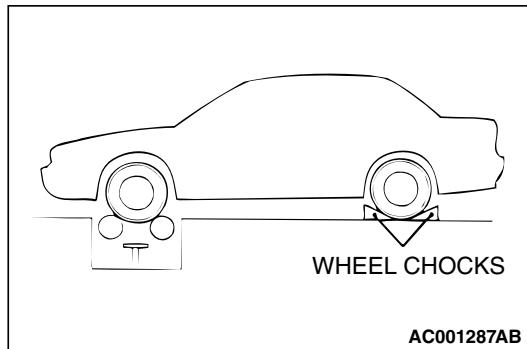
## ⚠ CAUTION

Since the diagnosis code may be stored in the ABS-ECU when checking the speedometer with speedometer tester, erase the diagnosis code.

## ⚠ CAUTION

Do not accelerate or decelerate suddenly during servicing work.

1. Adjust the pressure of tires to the specified level.
2. Set the vehicle onto a speedometer tester and use wheel chocks to hold the rear wheels.



3. To prevent the front wheel from moving from side to side, attach tension bars to the tie-down hook, and secure both ends to anchor plates.
4. To prevent the vehicle from moving, attach a chain or wire to the rear retraction hook, and make sure the end of the chain or wire is secured.
5. Check if the speedometer indicator range is within the standard values.

Standard indication km/h	Indicating tolerance km/h
(20)	(20 – 24)
40	40 – 44
80	80.5 – 85.5

Standard indication km/h	Indicating tolerance km/h
120	121.5 – 127.5
160	162.5 – 169.5
200	203.5 – 211.5

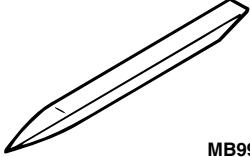
6. If not within the standard value, check the tire size. If an incorrect size of tire is used, replace it and check again. If the tire size is correct, a defect may be present in components and circuit between the output shaft speed sensor and the combination meter. Check the following items.

- Output shaft speed sensor.
- Combination meter.

## HEADLIGHT, FRONT SIDE MARKER LIGHT AND POSITION LIGHT ASSEMBLY

### SPECIAL TOOL

M1542000602492

Tool	Tool number and name	Supersession	Application
 MB990784	MB990784 Ornament remover	General service tool	Removal of instrument panel garnish and headlight leveling switch

### HEADLIGHT DIAGNOSIS

M1542011800483

The headlights are controlled by the Simplified Wiring System (SWS). For troubleshooting, refer to GROUP 54B, SWS General Information.

### ON-VEHICLE SERVICE

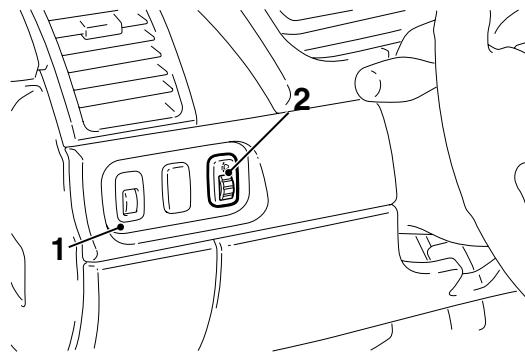
### HEADLIGHT AIMING

M1540100500069

Turn the headlight leveling switch to "0" and perform the headlight aiming.

## HEADLIGHT LEVELING SWITCH REMOVAL AND INSTALLATION

M1540101000056



AC602400AB

## Removal steps

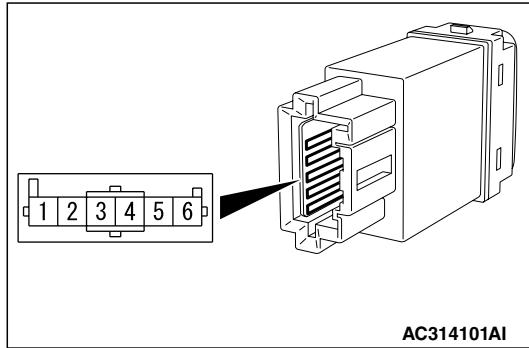
- Instrument panel garnish

## Removal steps (Continued)

- Switch panel assembly
- Headlight leveling switch

## INSPECTION

M1540101100042

HEADLIGHT LEVELING SWITCH CONTINUITY  
CHECK

Tester connection	Switch position	Resistance value $\Omega$
4 – 6	0	750
	1	1, 050
	2	1, 410
	3	1, 710
	4	2, 010
5 – 6	0, 1, 2, 3, 4	2, 830

## REAR FOG LIGHT

## REAR FOG LIGHT DIAGNOSIS

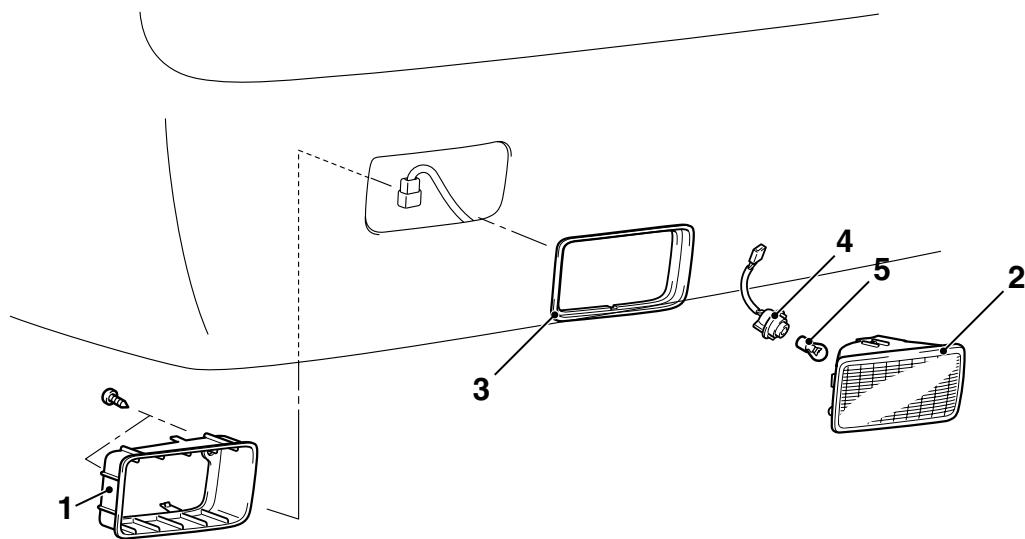
M1542600600023

The rear fog light is controlled by the Simplified Wiring System (SWS). For troubleshooting, refer to GROUP 54B, SWS General Information.

## REAR FOG LIGHT

## REMOVAL AND INSTALLATION

M1542009800152



AC602397AB

## Removal steps

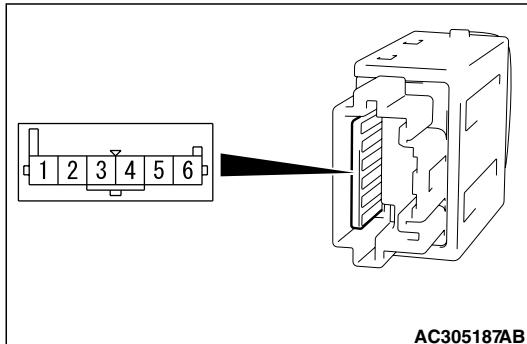
1. Bracket
2. Rear fog light assembly
3. Bezel

## Removal steps (Continued)

4. Socket <LH>
5. Bulb <LH>

## INSPECTION

M1542011202807

FOG light SWITCH CONTINUITY CHECK  
<Front fog light>

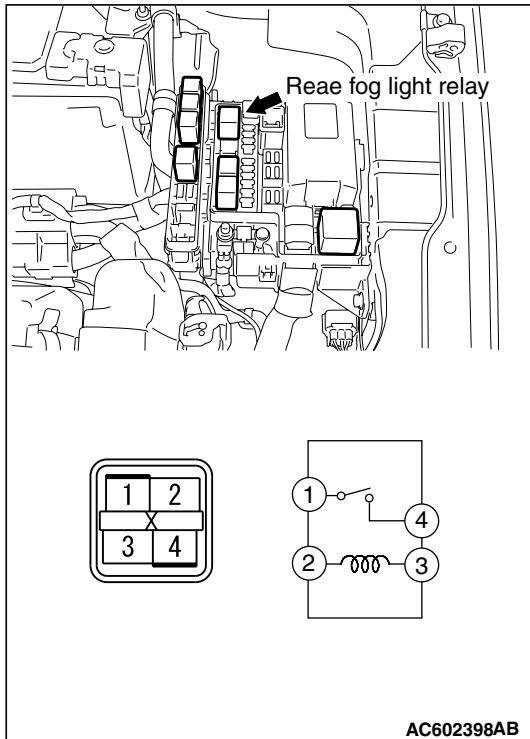
AC305187AB

Switch position	Tester connection	Specified condition
Pressed	1 – 2	Continuity exists (2 $\Omega$ or less)
Released	1 – 2	Open circuit

## &lt;Rear fog light&gt;

Switch position	Tester connection	Specified condition
Pressed	5 – 6	Continuity exists (2 $\Omega$ or less)
Released	5 – 6	Open circuit

## REAR FOG LIGHT RELAY CHECK

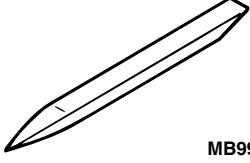


Battery voltage	Tester connection	Specified condition
Not supplied	1 – 4	Open circuit
	<ul style="list-style-type: none"> <li>• Connect terminal 2 to the positive battery terminal</li> <li>• Connect terminal 3 to the negative battery terminal</li> </ul>	Continuity exists (2 $\Omega$ or less)

## SIDE TURN-SIGNAL LIGHT

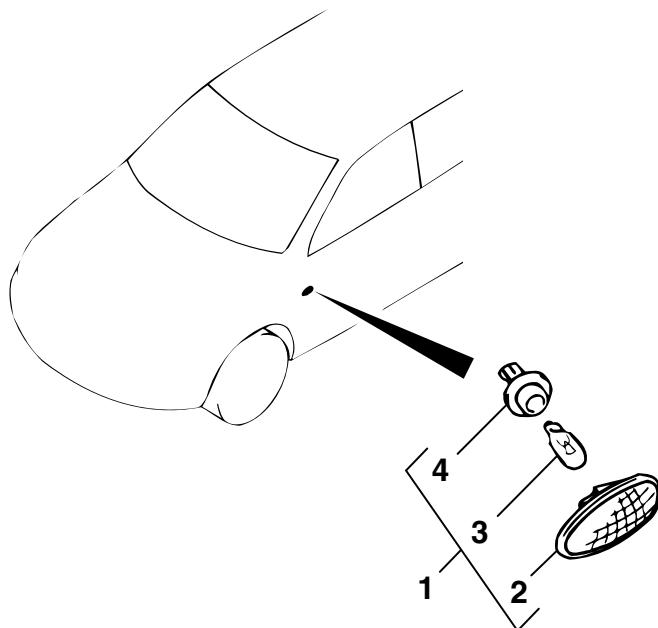
## SPECIAL TOOL

M1543000603380

Tool	Tool number and name	Supersession	Application
	MB990784 Ornament remover	General service tool	Removal of side turn-signal light

## REMOVAL AND INSTALLATION

M1542012000242



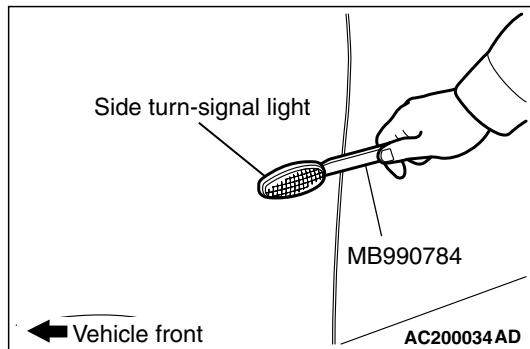
AC203309AE

**Removal steps**

<<A>> >>A<< 1. Side turn-signal light assembly  
2. Side turn-signal light  
3. Bulb  
4. Socket

**REMOVAL SERVICE POINT****<<A>> SIDE TURN-SIGNAL LIGHT REMOVAL**

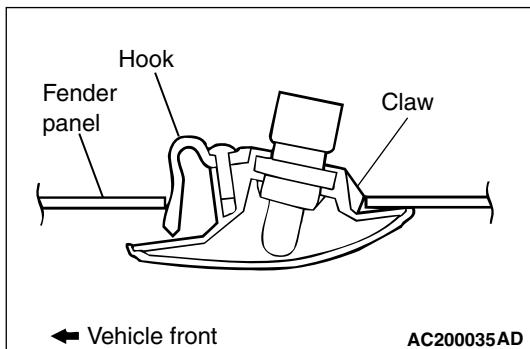
Use a special tool, etc. to remove the side turn-signal light by pushing the fender forward, bending the hook, and then unclamping the thumb.



## INSTALLATION SERVICE POINT

## &gt;&gt;A&lt;&lt; SIDE TURN-SIGNAL LIGHT INSTALLATION

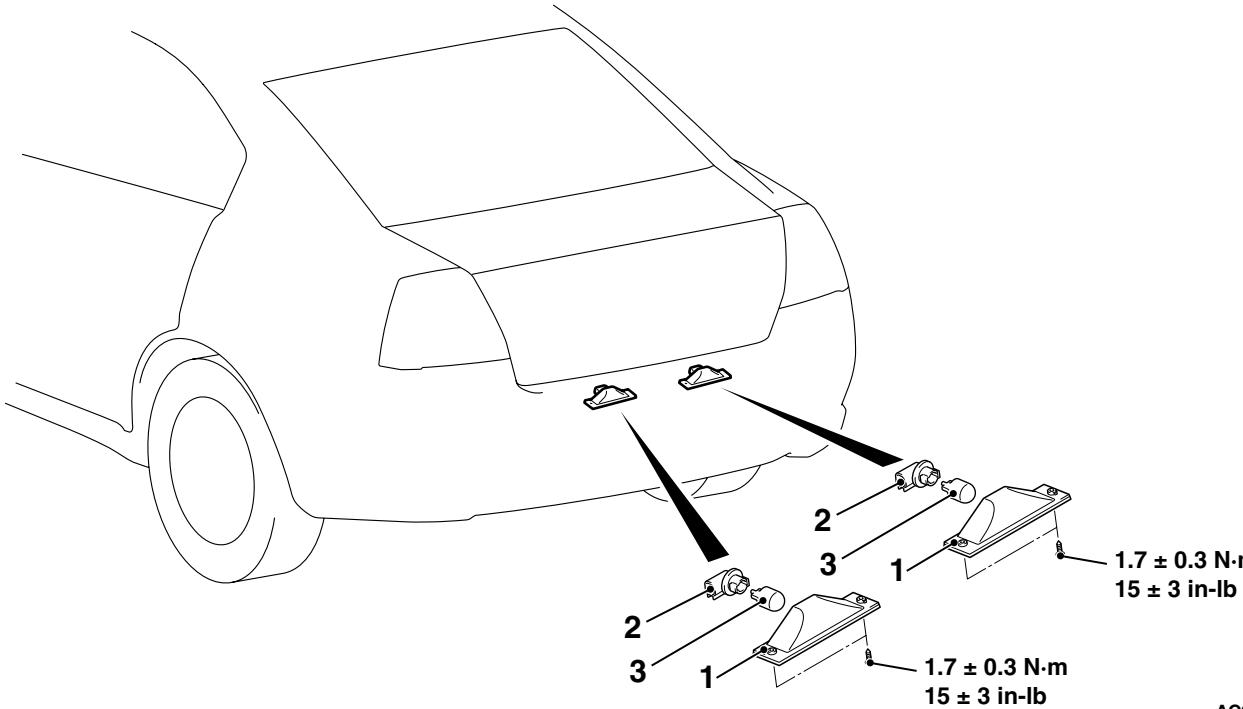
Clamp the thumb on the fender panel the assemble the side turn-signal light.



## LICENSE PLATE LIGHT

## REMOVAL AND INSTALLATION

M1541900200089



## REMOVAL STEPS

1. Licenseplatelight assembly
2. Socket
3. Bulb