## GROUP 54C

# SMART WIRING SYSTEM (SWS) USING SWS MONITOR

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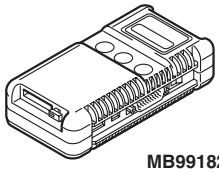
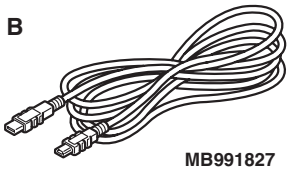
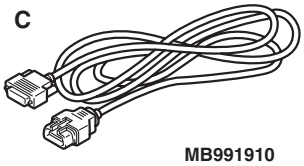
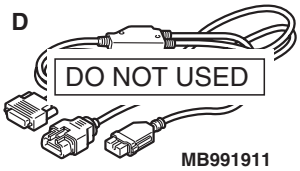
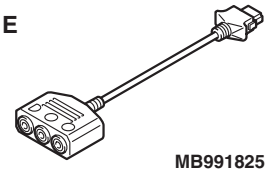
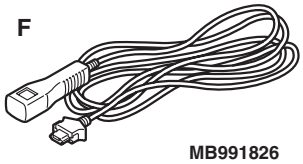
# GENERAL INFORMATION

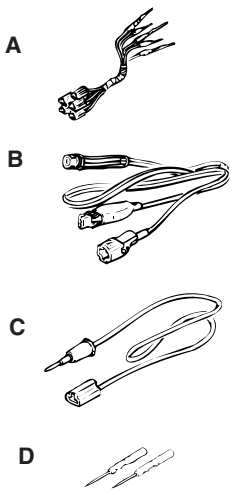
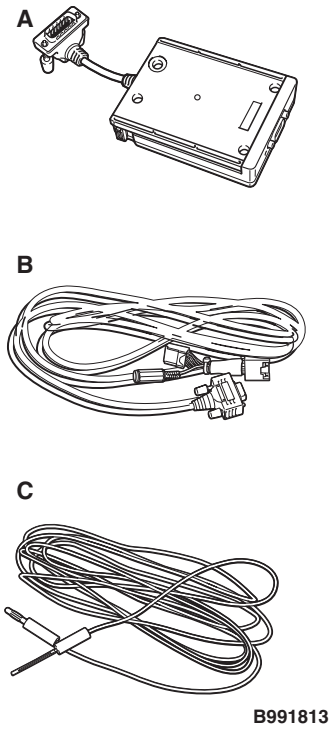
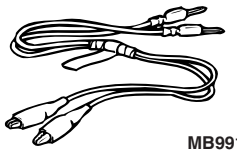
M1549000100533

For the general information regarding the SWS, refer to GROUP 54B – General Information P.54B-5.

# SPECIAL TOOLS

M1549000300764

| Tool | Number | Name | Use |
|---|---|---|---|
| A<br>  <br>MB991824<br>B<br>  <br>MB991827<br>C<br>  <br>MB991910<br>D<br>  <br><br>MB991911<br>E<br>  <br>MB991825<br>F<br>  <br>MB991826<br>MB991955 | MB991955<br>A: MB991824<br>B: MB991827<br>C: MB991910<br>D: MB991911<br>E: MB991825<br>F: MB991826 | MUT-III sub-assembly<br>A: Vehicle Communication Interface (V.C.I.)<br>B: MUT-III USB cable<br>C: MUT-III main harness A (Vehicles with CAN communication system)<br>D: MUT-III main harness B (Vehicles without CAN communication system)<br>E: MUT-III measure adapter<br>F: MUT-III trigger harness | SWS communication line check (ECU check and service data)<br>**⚠ CAUTION**<br>**MUT-III main harness B (MB991911) should be used. MUT-III main harness A should not be used for this vehicle.** |

| Tool | Number | Name | Use |
|---|---|---|---|
|  | MB991223<br>A: MB991219<br>B: MB991220<br>C: MB991221<br>D: MB991222 | Harness set<br>A: Check harness<br>B: LED harness<br>C: LED harness adapter<br>D: Probe | Continuity check and voltage measurement at harness wire or connector<br>A: For checking connector pin contact pressure<br>B: For checking power supply circuit<br>C: For checking power supply circuit<br>D: For connecting a locally sourced tester |
|  | MB991813<br>A: MB991806<br>B: MB991812<br>C: MB991822 | SWS monitor kit<br>A: SWS monitor cartridge<br>B: SWS monitor harness (for column-ECU)<br>C: Probe harness | SWS communication line check (ECU check and service data) |
|  | MB991529 | Diagnosis code check harness | Input signal check by using a voltmeter |

# TROUBLESHOOTING

## PRIOR TO TROUBLESHOOTING

M1549014700486

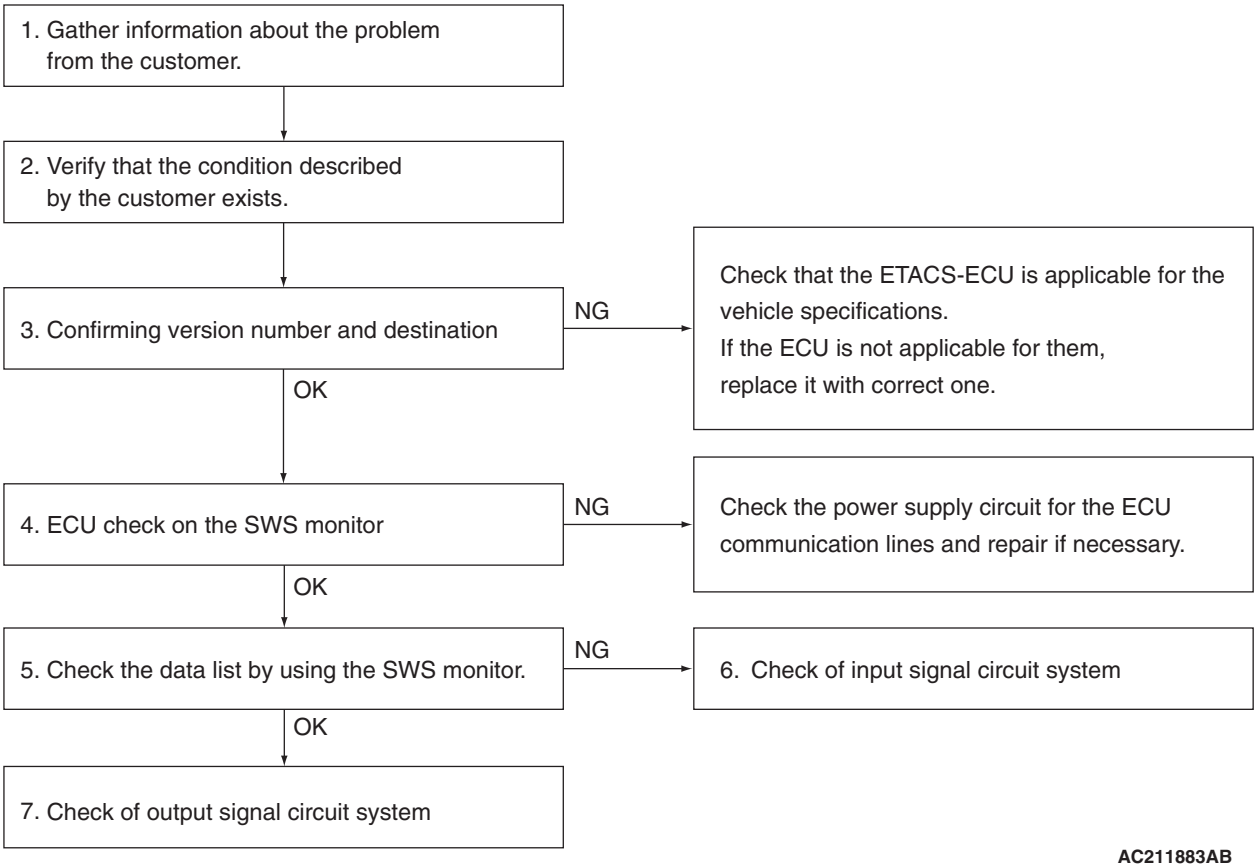
Before carrying out troubleshooting, check the following two items.

- Make sure that the ETACS-ECU, the junction block (J/B), the front-ECU and the engine compartment relay box are connected securely.

- Check that the system fuses and fusible links are not burned out.

## STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1549000500672




AC211883AB

1. Gather information about the problem from the customer.
2. Verify that the condition described by the customer exists.

   *NOTE: If an error occurs in the SWS communication line, the ECU isolated from the communication line performs a fail-safe or backup operation, so the problem may not match the one shown in the Trouble Symptom Chart. However, the cause of the failure can be tracked down by performing the following troubleshooting with the SWS monitor.*
3. Confirming version number and destination

   Check whether the SWS version number (0) and destination (EU W/O DRL) meet the vehicle specifications. If they are different, replace the ETACS-ECU with a correct one.
4. ECU check by using the SWS monitor

   Check whether the communication status of the input- or output-signal-side ECU associated with the defective function is normal.
   - If "OK " is displayed for all related ECUs, they communicate with each other normally and the input or output signal circuit system may be defective. Therefore, check SWS monitor service data.
   - If "NG" is displayed for any of the related ECUs, something may be wrong with the ECU for which "NG" appears, its power supply or earthing system, or a wiring harness or connector between the SWS monitor and the ECU. Check the wiring harness and connectors associated with the ECU and examine the ECU itself.
5. SWS monitor data list

   Select the defective function from the function-specific diagnostic menu, and check the service data that appears for each function item. This allows you to check whether the transmission data is normal or not. You can judge which circuit is the cause of the trouble, input circuit or output circuit.

*NOTE: In addition to the function-specific diagnostic menu, a service data menu is available for SWS monitor service data to check all items for each ECU.*

- The switch condition does not meet the service data display: Input signal system related to defective functions
- The switch condition meets the service data display: Output signal system related to defective functions

6. Check of input signal circuit system

   Check relevant switch, sensor, input signal-side ECU and their wiring harness and connector.

7. Check of output signal circuit system

   Check an output signal-side ECU, electrical load components and their wiring harness and connector.

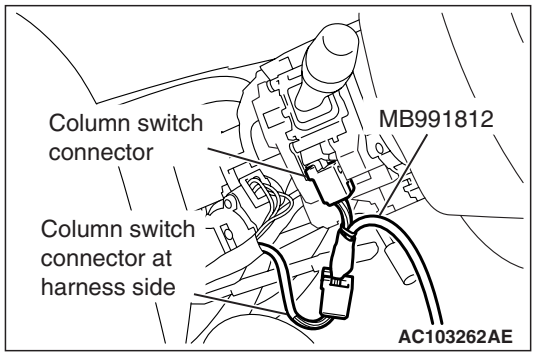
## HOW TO CONNECT THE SWS MONITOR

M1549014800513

**⚠ CAUTION**

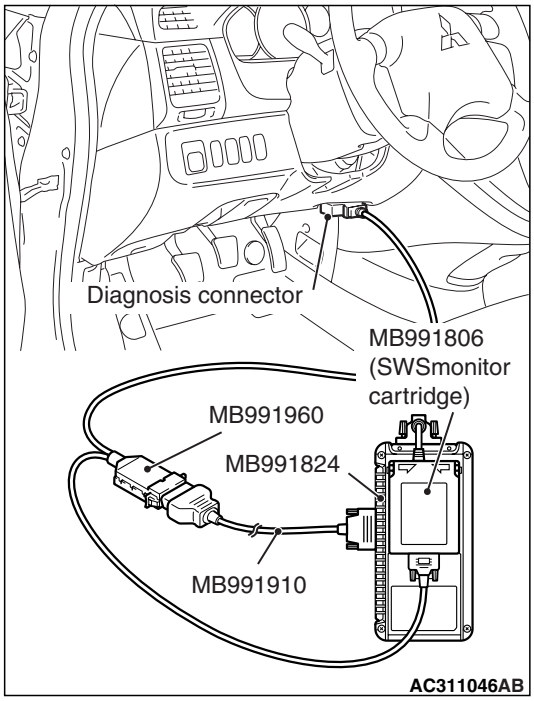
**Always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting the SWS monitor and the MUT-III.**

## HOW TO CONNECT THE SWS COMMUNICATION LINE <SPECIAL TOOL SWS MONITOR HARNESS (FOR COLUMN-ECU) MB991812>




1. Remove the steering column cover.
2. Remove the steering column switch connector.
3. Connect special tool SWS monitor harness (for column-ECU) MB991812.

## <WHEN CONNECTING THE DIAGNOSIS CONNECTOR BY USING THE INTERMEDIATE WIRES FOR SWS MONITOR CUSTOMISATION>

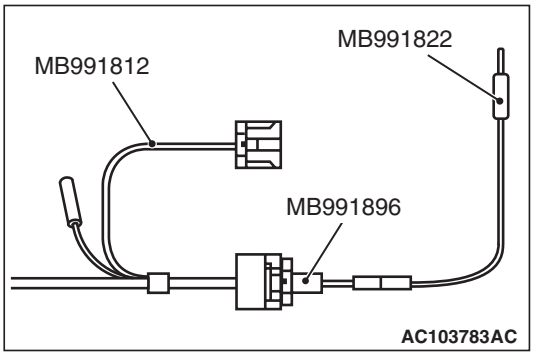



1. Connect the special tool Intermediate wires (MB991960) for SWS monitor customisation to the special tool MUT-III main harness A (MB991910).
2. Connect the MUT-III main harness A (with the intermediate wires) to the special tool V.C.I. (MB991824) .
3. Connect the intermediate wires for SWS monitor customisation to the the diagnosis connector and the SWS monitor cartridge.

## HOW TO ESTABLISH COMMUNICATION BETWEEN DOORS

Connect the MUT-III and the SWS monitor to the SWS communication lines. Refer to .

1. Select "DOOR CNT.COM." on the MUT-III.
2. Disconnect the SWS monitor cartridge from the SWS communication lines without switching off the MUT-III and the V.C.I.




3. Connect special tool SWS monitor harness (for column-ECU) MB991812 to special tool adapter harness for door communication MB991896.
4. Connect special tool Probe harness MB991822 to special tool adapter harness for door communication MB991896 assembled in step 1.
5. Confirm that all the harnesses are connected. Then insert the probe of special probe harness MB991822 to each female connector terminal on special tool adapter harness for door communication MB991896 by backprobing.

   *NOTE: For the connectors and their terminal numbers on the door communication line for the probe to insert, refer to the reference table.*

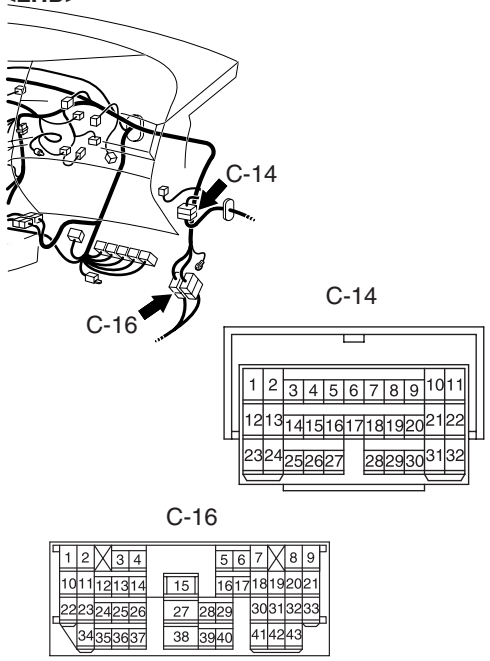
## Reference table of connectors and their terminal numbers on door communication line

Insert the probe of the probe harness to each female connector terminal on the door communication line by backprobing.

**<LH DRIVE VEHICLES>**

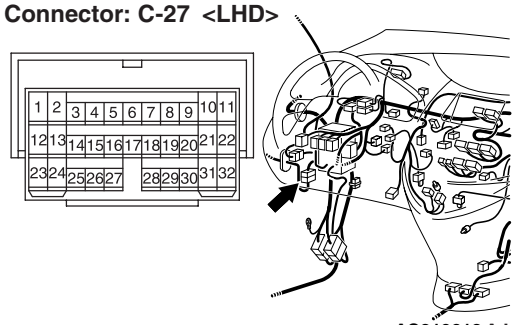
| Connector name | | Connector number | Terminal No. |
|---|---|---|---|
| Intermediate connector | Instrument panel wiring harness and front door wiring harness (RH) combination | C-14 (Front door wiring harness (RH) side) | 5 |
| | Instrument panel wiring harness and floor wiring harness combination | C-16 (Instrument panel wiring harness side) | 29 |
| | Instrument panel wiring harness and front door wiring harness (LH) combination | C-27 (Front door wiring harness (LH) side) | 3 |
| | Floor wiring harness and rear door wiring harness (RH) combination | D-03 (Floor wiring harness side) | 8 |
| | Floor wiring harness and rear door wiring harness (LH) combination | D-16 (Floor wiring harness side) | 8 |
| Power window main switch | | F-05 | 11 |
| Power window sub switch (front RH) | | F-15 | 6 |
| Power window sub switch (rear RH) | | F-18 | 6 |
| Power window sub switch (rear LH) | | F-02 | 6 |

**Connectors: C-14, C-16 <LHD>**



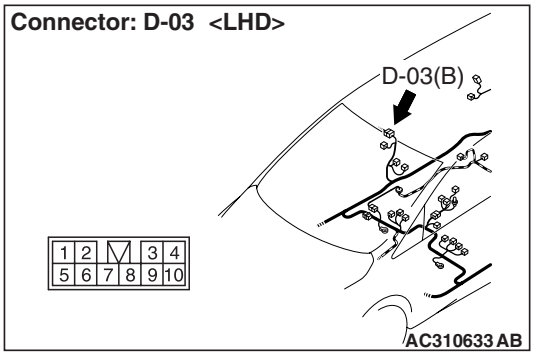

AC310616AE

**Connector: C-27 <LHD>**



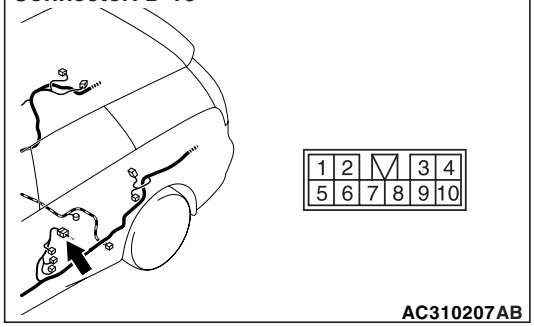

AC310613AJ

**Connector: D-03 <LHD>**



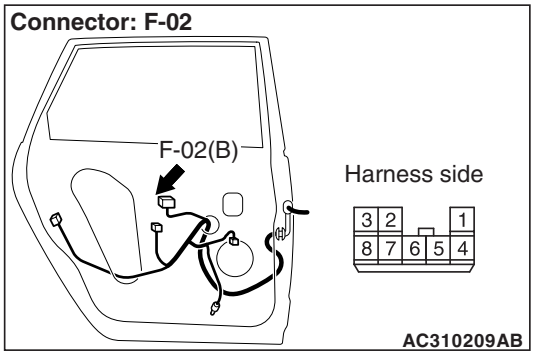

AC310633AB

**Connector: D-16**



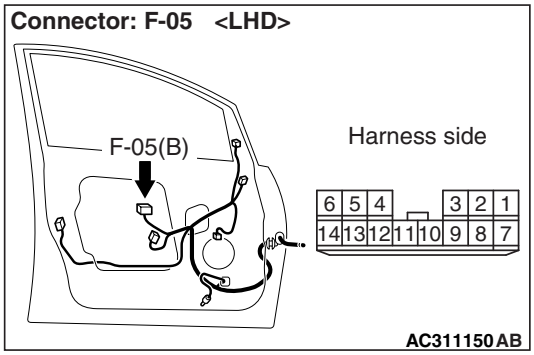

AC310207AB

**Connector: F-02**



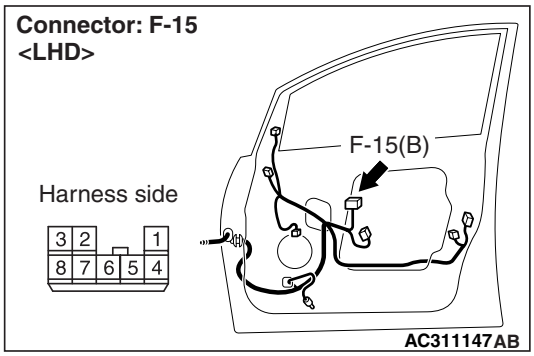

AC310209AB

**Connector: F-05 <LHD>**



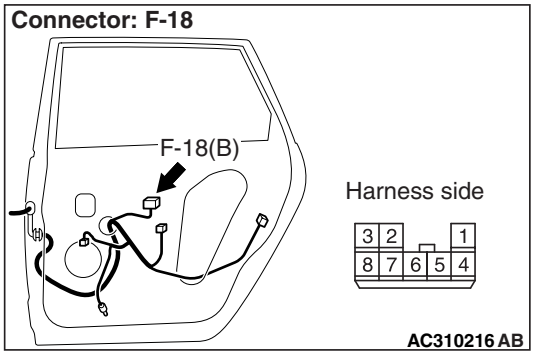

AC311150AB

**Connector: F-15 <LHD>**




AC311147AB

**Connector: F-18**

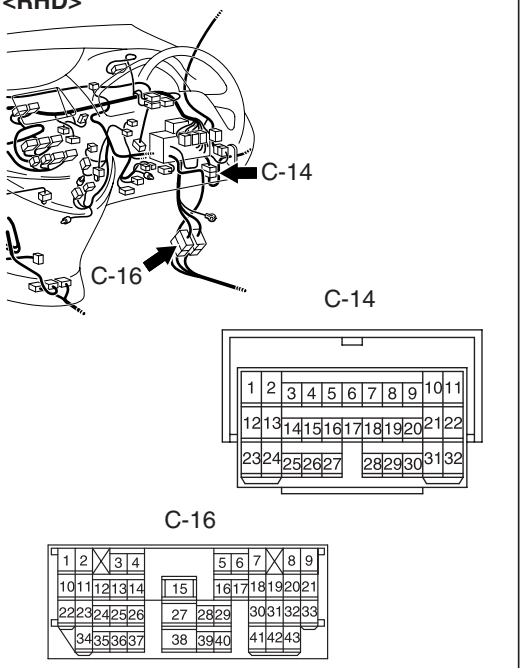



AC310216AB

## <RH DRIVE VEHICLES>

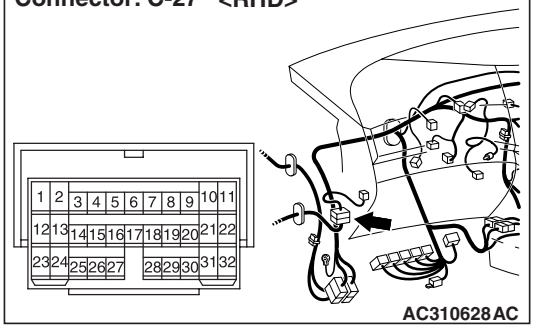
| Connector name | | Connector number | Terminal No. |
|---|---|---|---|
| Intermediate connector | Instrument panel wiring harness and front door wiring harness (RH) combination | C-14 (Front door wiring harness (RH) side) | 3 |
| | Instrument panel wiring harness and floor wiring harness combination | C-16 (Instrument panel wiring harness side) | 29 |
| | Instrument panel wiring harness and front door wiring harness (LH) combination | C-27 (Front door wiring harness (LH) side) | 5 |
| | Floor wiring harness and rear door wiring harness (RH) combination | D-03 (Floor wiring harness side) | 8 |
| | Floor wiring harness and rear door wiring harness (LH) combination | D-16 (Floor wiring harness side) | 8 |
| Power window main switch | | F-05 | 11 |
| Power window sub switch (front LH) | | F-26 | 6 |
| Power window sub switch (rear RH) | | F-18 | 6 |
| Power window sub switch (rear LH) | | F-02 | 6 |

Connectors: C-14, C-16
<RHD>



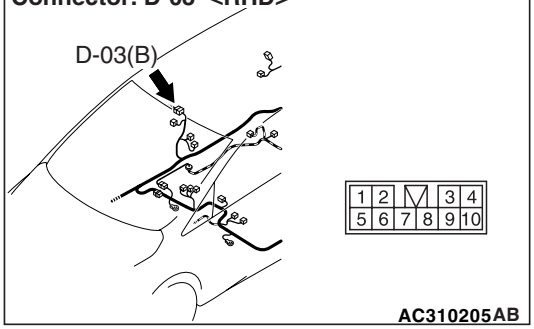

AC310632BA

Connector: C-27 <RHD>



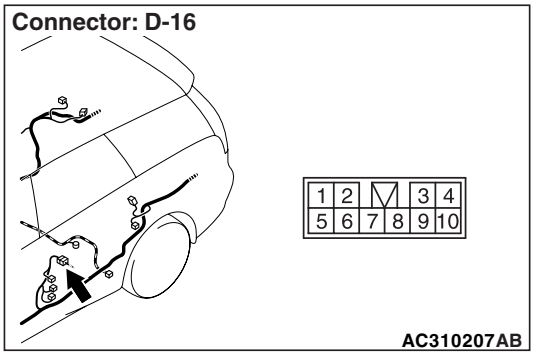
AC310628AC

Connector: D-03 <RHD>



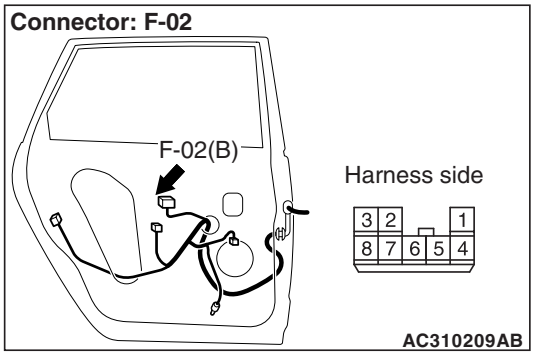

AC310205AB

Connector: D-16



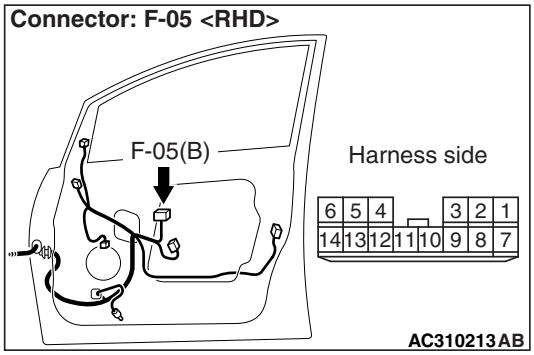
AC310207AB

Connector: F-02



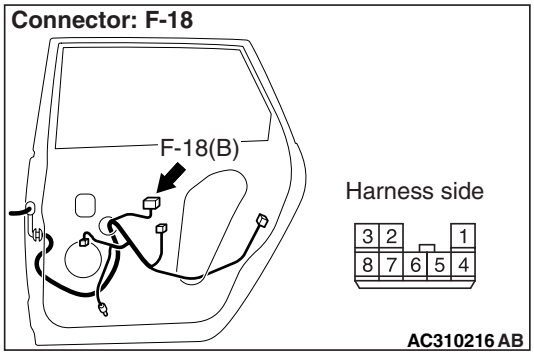

AC310209AB

Connector: F-05 <RHD>



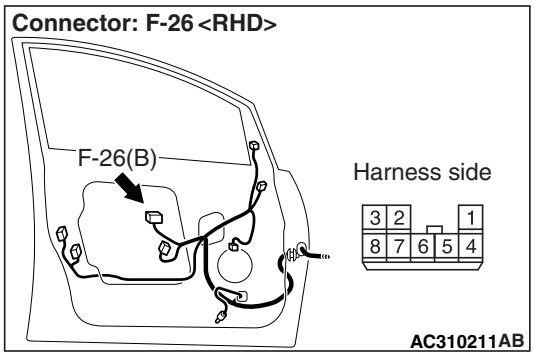

AC310213AB

Connector: F-18




AC310216AB

Connector: F-26 <RHD>




AC310211AB

## ECU CHECK

M1549014900446

1. Use the MUT-III and the SWS monitor to check ECUs.
2. The following ECUs can be checked by using the MUT-III and the SWS monitor.

*NOTE: If a malfunction is found by the "ECU check", proceed "Symptom Procedure" (Refer to P.54C-44).*

SWS monitor-compatible ECUs and their conditions

| Item No. | ECUs to be checked | Display on MUT-III | Normal condition | ECU conditions |
|---|---|---|---|---|
| Item 80 | Column switch (column-ECU) | COLUMN ECU | OK*1 | All of the column switch, power supply, earth and interconnecting communication line are normal |
| Item 81 | Multi-centre display | CENTRE DISP | NG | The MUT-III always displays "NG" due to CAN communication. |
| Item 83 | ETACS-ECU | ETACS ECU | OK | All of the ETACS-ECU switch, power supply, earth and interconnecting communication line are normal |
| Item 84 | Front-ECU | FRONT ECU | OK*2 | All of the front-ECU, power supply, earth and interconnecting communication line are normal |
| Item 85 | Power window main switch (power window module) | P/W MODULE | OK*2 (when the ignition switch is ON) | All of the power window main switch, power supply, earth and interconnecting communication line are normal |
| Item 86 | Sunroof motor assembly (sunroof-ECU) | SUNROOF ECU | OK*2 | All of the sunroof motor assembly, power supply, earth and interconnecting communication line are normal |
| – | Other SWS-related ECUs | Other ECUs | NG | ECUs are not used |

*NOTE:*

- **1: If "NG" is displayed beside the ETACS-ECU while the ignition switch is off, "NG" is also displayed beside the column-ECU.*
- **2: If the MUT-III shows "NG" beside the ETACS-ECU, it also shows "NG" beside the power window main switch (power window module).*

## DATA LIST CHECK

M1549015000479

1. Use the MUT-III and the SWS monitor to check "DATA LIST." This "DATA LIST" check is applicable for signals, which are transmitted and received through the SWS communication line and the communication lines routed from one door to another. For the input signals which are not applicable for the SWS monitor check, refer to pulse check procedure P.54C-48.

*NOTE: If a problem is found in the "DATA LIST" check, refer to the Problems during Input Signal Check <Service data, function diagnosis or pulse check> (Refer to P.54C-48).*

2. The following input signals can be checked by using the MUT-III and the SWS monitor.

## DATA LIST REFERENCE TABLE
## COLUMN SWITCH (COLUMN-ECU)

| Item No. | Check item | Display on MUT-III | Check condition | Normal condition |
|---|---|---|---|---|
| 00 | Headlamp switch | HEADLAMP SW | lighting switch: HEAD | ON |
| | | | lighting switch: Other than HEAD | OFF |
| 01 | Tail lamp switch | TAIL LAMP SW | Lighting switch: TAIL | ON |
| | | | Lighting itch: OFF | OFF |
| 02 | Dimmer switch | DIMMER SW | Dimmer switch: ON | ON |
| | | | Dimmer switch: OFF | OFF |
| 03 | Passing lamp switch | PASSING SW | Passing lamp which: ON | ON |
| | | | Passing lamp which: OFF | OFF |
| 05 | Windshield intermittent wiper switch | INT WIPER SW | Wiper switch: INT | ON |
| | | | Wiper switch: Other than INT | OFF |
| 06 | Windshield low-speed wiper switch | LO WIPER SW | Wiper switch: LO | ON |
| | | | Wiper switch: Other than LO | OFF |
| 07 | Windshield high-speed wiper switch | HI WIPER SW | Wiper switch: HI | ON |
| | | | Wiper switch: Other than HI | OFF |
| 08 | Wind shield mist wiper switch | MIST WIPER SW | Wiper switch: Mist | ON |
| | | | Wiper switch: Other than mist | OFF |
| 09 | Windshield washer switch | FRONT WASH. SW | Windshield washer switch: ON | ON |
| | | | Windshield washer switch: OFF | OFF |
| 10 | Turn-signal lamp switch (RH) | TURN SIG. RH | Turn-signal lamp switch: RH | ON |
| | | | Turn-signal lamp switch: Other than RH | OFF |
| 11 | Turn-signal lamp switch (LH) | TURN SIG. LH | Turn-signal lamp switch: LH | ON |
| | | | Turn-signal lamp switch: Other than LH | OFF |
| 13 | Rear wiper switch | REAR WIPER SW | Rear wiper switch: INT | ON |
| | | | Rear wiper switch: Other than INT | OFF |
| 14 | Rear washer switch | REAR WASH. SW | Rear wiper switch: Washer | ON |
| | | | Rear wiper switch: Other than washer | OFF |
| 15 | With or without windshield intermittent wiper control | INT WIP KNOB | Vehicles with intermittent wiper control | EQUIP |
| | | | Vehicles without intermittent wiper control | NONE |
| 16 | Headlamp washer switch | HD WASHER SW | Headlamp washer switch: ON | ON |
| | | | Headlamp washer switch: OFF | OFF |

## ETACS-ECU

| Item No. | Check item | Display on MUT-III | Check condition | Normal condition |
|---|---|---|---|---|
| 30 | Ignition switch (IG1) | IG SW(IG1) | Ignition switch: ON or START | ON |
| | | | Ignition switch: LOCK (OFF) or ACC | OFF |
| 31 | Ignition switch (ACC) | IG SW(ACC) | Ignition switch: ACC or ON | ON |
| | | | Ignition switch: LOCK (OFF) or START | OFF |
| 32 | Driver's door switch | DR DOOR SW | Driver's door switch ON (The driver's door is open). | ON |
| | | | Driver's door switch OFF (The driver's door is closed). | OFF |
| 33 | Reception of power window switch | P/W SW ACCEPT | Ignition switch: ON or START | PERMIT |
| | | | Ignition switch: from ON or START to LOCK (OFF) or ACC | from PERMIT to PROHIBIT (after approximately 30 seconds) |
| 34 | Multimode keyless entry system | KEYLESS ENTRY | 1. Keyless entry transmitter LOCK switch: ON<br>2. Turn ON the keyless entry transmitter LOCK switch again (For the second switch operation, hold pressing the switch for at least one second within 30 seconds after the switch is turned on at first) | Multi-close (only momentarily when switch is operated) |
| | | | Other than the conditions above | WAITING |
| 35 | Headlamp automatic-shutdown function | HD AUTO-CUT | 1. Lighting switch: Other than OFF<br>2. Ignition switch: from ON or START to LOCK (OFF) or ACC<br>3. Driver's door switch: ON (driver's door open) | OFF to ON (after approximately one second) |
| | | | When requirements for the headlamp automatic-shutdown are not satisfied | OFF |
| 36 | Request of fog lamp illumination | F.FOG LAMP | 1. Lighting switch: "TAIL" or "HEAD"<br>2. Fog lamp switch: ON | ON |
| | | | Other than the conditions above | OFF |
| 37 | Windshield intermittent wiper interval | INT WIPE TIME | 1. Ignition switch: ACC or ON<br>2. Operate the intermittent wiper control, and change the wiper interval | The MUT-III displays intermittent wiper interval in response to the intermittent wiper control positions |
| 41 | Back-up lamp switch | INHIBITOR SW | Back-up lamp switch <M/T> or inhibitor switch <A/T>: ON | ON |
| | | | Back-up lamp switch <M/T> or inhibitor switch <A/T>: OFF | OFF |

| Item No. | Check item | Display on MUT-III | Check condition | Normal condition |
|---|---|---|---|---|
| 42 | Wiper activation command | WIPER ON COM | Set | YES |
| | | | Not set | NO |
| 43 | Buzzer | BUZZER | 1. Ignition switch: LOCK (OFF) position<br>2. Tail lamp or headlamp switch: ON<br>3. Driver's door switch: ON (driver's door open) | ON |
| | | | When requirements for sounding each warning buzzer are not satisfied | OFF |
| 52 | Support for rear sunroof lock | REAR S/R LOCK | Action | SUPPORT |
| | | | Not supported | NON SUPPORT |
| 53 | Headlamp washer operation period | HD WASH TIME | 0.5 seconds | 0.5s Spec |
| | | | 0.8 seconds | 0.8s Spec |
| 54 | Intermittent wiper operation period | INT TIME SPEC | Maximum 32 seconds | MAX.32s Spec |
| | | | Maximum 19 seconds | MAX.19s Spec |
| 56 | Washer-linked wiper | WIP-LINK WASH | Set | EQUIP |
| | | | Not set | NONE |

*NOTE: For item number 43 "BUZZER", the MUT-III also displays "ON" when the lamp reminder buzzer is triggered.*

## FRONT-ECU

| Item No. | Check item | Display on MUT-III | Check condition | Normal condition |
|---|---|---|---|---|
| 70 | Response by the front-ECU | Front ECU response | Lighting switch: Other than OFF (excluding when high-beam is on) or the wiper switch is at position other than OFF | Normal response |
| | | | • Ignition switch: ON or START<br>• Lighting switch: OFF<br>• Lighting switch: OFF | SLEEP RESPONSE |
| | | | • Lighting switch: HEAD<br>• Headlamps: at high beam | HI BEAM RESPONSE |
| | | | – | No response |

*NOTE: For item number 70, the MUT-III also displays "NG" under the "ECU Check" when it displays "No response" under the front-ECU check.*

## POWER WINDOW MAIN SWITCH (POWER WINDOW MODULE)

| Item No. | Check item | Display on MUT-III | Check condition | Normal condition |
|---|---|---|---|---|
| 71 | Response from power window module | P/W ECU ACK | Ignition switch: ON or START | NORMAL ACK |
| | | | 1. Ignition switch: ON or START<br>2. Operate any switch of the power window main switch. | INPUT CHECK (only momentarily when switch is operated) |
| | | | – | NO ACK |

*NOTE: For item number 71, the MUT-III also displays "NG" under the "ECU CHECK" when it displays "NO ACK" under the "P/W ECU ACK" check.*

## Sunroof motor assembly (sunroof-ECU)

| Item No. | Check item | Display on MUT-III | Check condition | Normal condition |
|---|---|---|---|---|
| 72 | Response by the sunroof-ECU | S/R ECU ACK | 1. Ignition switch: from ON to OFF<br>2. While sunroof is off | NORMAL ACK to SLEEP ACK (after approximately 30 seconds) |
| | | | 1. Ignition switch: ON or START<br>2. Sunroof switch: Any button of the switch is on | INPUT CHECK to NORMAL ACK |
| | | | – | NO ACK |

*NOTE: For item number 72 "S/R ECU ACK", the MUT-II also displays "NG" under the "ECU Check" when it displays "NO ACK" under the "S/R ECU ACK" check.*

## COMMUNICATION BETWEEN DOORS

| Item No. | Check item | Display on MUT-III | Check condition | Normal condition |
|---|---|---|---|---|
| C0 | Front passenger's power window UP switch | PASS DOR UP | Front passenger's power window switch: UP | ON |
| | | | Front passenger's power window switch: Other than "UP" | OFF |
| C1 | Front passenger's power window DOWN switch | PASS DOR DOWN | Front passenger's power window switch: DOWN | ON |
| | | | Front passenger's power window switch: Other than "DOWN" | OFF |
| C2 | Front passenger's power window AUTO switch | PASS DOR AUTO | Front passenger's power window switch: AUTO | ON |
| | | | Front passenger's power window switch: Other than "AUTO" | OFF |

| Item No. | Check item | Display on MUT-III | Check condition | Normal condition |
|---|---|---|---|---|
| C4 | Rear right power window UP switch | REAR RH UP | Rear right power window switch: UP | ON |
| | | | Rear right power window switch: Other than "UP" | OFF |
| C5 | Rear right power window DOWN switch | REAR RH DOWN | Rear right power window switch: DOWN | ON |
| | | | Rear right power window switch: Other than "DOWN" | OFF |
| C6 | Rear right power window AUTO switch | REAR RH AUTO | Rear right power window switch: AUTO | ON |
| | | | Rear right power window switch: Other than "AUTO" | OFF |
| C8 | Rear left power window UP switch | REAR LH UP | Rear left power window switch: UP | ON |
| | | | Rear left power window switch: Other than "UP" | OFF |
| C9 | Rear left power window DOWN switch | REAR LH DOWN | Rear left power window switch: DOWN | ON |
| | | | Rear left power window switch: Other than "DOWN" | OFF |
| CA | Rear left power window AUTO switch | REAR LH AUTO | Rear left power window switch: AUTO | ON |
| | | | Rear left power window switch: Other than "AUTO" | OFF |
| CB | Power window lock switch | P/W LOCK SW | Power window lock switch: ON | ON |
| | | | Power window lock switch: OFF | OFF |
| CE | Reception of power window switch | P/W SW RECEPT | Ignition switch: ON or START | PERMIT |
| | | | Ignition switch: from ON or START to LOCK (OFF) or ACC | from PERMIT to PROHIBIT (after approximately 30 seconds) |
| CF | Ignition switch (IG1) | IG1 | Ignition switch: ON or START | ON |
| | | | Ignition switch: LOCK (OFF) or ACC | OFF |

*NOTE: Service data of door communication will be sent from the power window main switch to the door communication line. Therefore, the display will remain "OFF" unless the probe is inserted.*

## FUNCTION DIAGNOSIS

The table below shows the service data and their normal condition, which are displayed during the "FUNCTION DIAG." The row "Normal condition" shows values, which are shown when each operation is made.

## WIPER

| Item | Input signal | Item No. | Display on MUT-III | Normal condition |
|---|---|---|---|---|
| F.WIPER INT (intermittent) | Windshield intermittent wiper switch | 05 | INT WIPER SW | ON |
| | Windshield low-speed wiper switch | 06 | LO WIPER SW | OFF |
| | Windshield high-speed wiper switch | 07 | HI WIPER SW | OFF |
| | Wind shield mist wiper switch | 08 | MIST WIPER SW | OFF |
| | Windshield washer switch | 09 | FRONT WASH. SW | OFF |
| | Ignition switch (ACC) | 31 | IG SW(ACC) | ON |
| | Windshield intermittent wiper interval | 37 | WIPER INT TIME | The MUT-III displays intermittent wiper interval in response to the intermittent wiper control positions |
| | Response by the front-ECU | 70 | FRONT ECU ACK | NORMAL ACK or HI-BEAM ACK |
| F.WIPER LO (low speed) | Windshield intermittent wiper switch | 05 | INT WIPER SW | OFF |
| | Windshield low-speed wiper switch | 06 | LO WIPER SW | ON |
| | Windshield high-speed wiper switch | 07 | HI WIPER SW | OFF |
| | Wind shield mist wiper switch | 08 | MIST WIPER SW | OFF |
| | Windshield washer switch | 09 | FRONT WASH. SW | OFF |
| | Ignition switch (ACC) | 31 | IG SW(ACC) | ON |
| | Response by the front-ECU | 70 | FRONT ECU ACK | NORMAL ACK or HI-BEAM ACK |

| Item | Input signal | Item No. | Display on MUT-III | Normal condition |
|---|---|---|---|---|
| F.WIPER HI (high speed) | Windshield intermittent wiper switch | 05 | INT WIPER SW | OFF |
| | Windshield low-speed wiper switch | 06 | LO WIPER SW | OFF |
| | Windshield high-speed wiper switch | 07 | HI WIPER SW | ON |
| | Wind shield mist wiper switch | 08 | MIST WIPER SW | OFF |
| | Windshield washer switch | 09 | FRONT WASH. SW | OFF |
| | Ignition switch (ACC) | 31 | IG SW(ACC) | ON |
| | Response by the front-ECU | 70 | FRONT ECU ACK | NORMAL ACK or HI-BEAM ACK |
| F.WIPER MIST | Windshield intermittent wiper switch | 05 | INT WIPER SW | OFF |
| | Windshield low-speed wiper switch | 06 | LO WIPER SW | OFF |
| | Windshield high-speed wiper switch | 07 | HI WIPER SW | OFF |
| | Wind shield mist wiper switch | 08 | MIST WIPER SW | ON |
| | Windshield washer switch | 09 | FRONT WASH. SW | OFF |
| | Ignition switch (ACC) | 31 | IG SW(ACC) | ON |
| | Response by the front-ECU | 70 | FRONT ECU ACK | NORMAL ACK or HI-BEAM ACK |
| F.WIPER WASH | Wind shield mist wiper switch | 08 | MIST WIPER SW | OFF |
| | Windshield washer switch | 09 | FRONT WASH. SW | ON |
| | Ignition switch (ACC) | 31 | IG SW(ACC) | ON |
| | Response by the front-ECU | 70 | FRONT ECU ACK | NORMAL ACK or HI-BEAM ACK |

| Item | Input signal | Item No. | Display on MUT-III | Normal condition |
|---|---|---|---|---|
| HD WASHER | Headlamp washer switch | 16 | HD WASHER SW | ON |
| | Ignition switch (ACC) | 31 | IG SW(ACC) | ON |
| | Response by the front-ECU | 70 | FRONT ECU ACK | NORMAL ACK or HI-BEAM ACK |

## REAR WIPER

| Item | Input signal | Item No. | Display on MUT-III | Normal condition |
|---|---|---|---|---|
| REAR WIPER | Rear wiper switch | 13 | REAR WIPER SW | ON |
| | Rear washer switch | 14 | REAR WASH. SW | OFF |
| | Ignition switch (ACC) | 31 | IG SW(ACC) | ON |
| REV. INTERLOCK | Rear wiper switch | 13 | REAR WIPER SW | ON |
| | Ignition switch (ACC) | 31 | IG SW(ACC) | ON |
| | Back-up lamp switch <M/T> or inhibitor switch <A/T> | 41 | INHIBITOR SW | ON |
| REAR WASHER | Rear washer switch | 14 | REAR WASH. SW | ON |
| | Ignition switch (ACC) | 31 | IG SW(ACC) | ON |

## LIGHTING

| Item | Input signal | Item No. | Display on MUT-III | Normal condition |
|---|---|---|---|---|
| OFF | Headlamp switch | 00 | HEADLAMP SW | OFF |
| | Tail lamp switch | 01 | TAIL LAMP SW | OFF |
| | Passing lamp switch | 03 | PASSING SW | OFF |
| | Ignition switch (IG1) | 30 | IG SW(IG1) | ON |
| | Headlamp automatic-shutdown function | 35 | HD AUTO-CUT | OFF |
| | Response by the front-ECU | 70 | FRONT ECU ACK | NORMAL ACK or HI-BEAM ACK |

| Item | Input signal | Item No. | Display on MUT-III | Normal condition |
|---|---|---|---|---|
| TAIL LAMP | Headlamp switch | 00 | HEADLAMP SW | OFF |
| | Tail lamp switch | 01 | TAIL LAMP SW | ON |
| | Passing lamp switch | 03 | PASSING SW | OFF |
| | Ignition switch (IG1) | 30 | IG SW(IG1) | ON |
| | Headlamp automatic-shutdown function | 35 | HD AUTO-CUT | OFF |
| | Response by the front-ECU | 70 | FRONT ECU ACK | NORMAL ACK |
| HEADLAMP LO (low-beam) | Headlamp switch | 00 | HEADLAMP SW | ON |
| | Passing lamp switch | 03 | PASSING SW | OFF |
| | Ignition switch (IG1) | 30 | IG SW(IG1) | ON |
| | Headlamp automatic-shutdown function | 35 | HD AUTO-CUT | OFF |
| | Response by the front-ECU | 70 | FRONT ECU ACK | NORMAL ACK |
| HEADLAMP HI (high-beam) | Headlamp switch | 00 | HEADLAMP SW | ON |
| | Dimmer switch | 02 | DIMMER SW | ON |
| | Ignition switch (IG1) | 30 | IG SW(IG1) | ON |
| | Headlamp automatic-shutdown function | 35 | HD AUTO-CUT | OFF |
| | Response by the front-ECU | 70 | FRONT ECU ACK | HI-BEAM ACK |
| PASSING LAMP | Passing lamp switch | 03 | PASSING SW | ON |
| | Response by the front-ECU | 70 | FRONT ECU ACK | NORMAL ACK or HI-BEAM ACK |
| F.FOG LAMP | Headlamp switch | 00 | HEADLAMP SW | Either of items is ON |
| | Tail lamp switch | 01 | TAIL LAMP SW | |
| | Ignition switch (IG1) | 30 | IG SW(IG1) | ON |
| | Headlamp automatic-shutdown function | 35 | HD AUTO-CUT | OFF |
| | Request of fog lamp illumination | 36 | F.FOG LAMP | ON |
| | Response by the front-ECU | 70 | FRONT ECU ACK | NORMAL ACK |

| Item | Input signal | Item No. | Display on MUT-III | Normal condition |
|---|---|---|---|---|
| REAR FOG LAMP | Headlamp switch | 00 | HEADLAMP SW | ON |
| | Tail lamp switch | 01 | TAIL LAMP SW | ON |
| | Headlamp automatic-shutdown function | 35 | HD AUTO-CUT | OFF |
| | Response by the front-ECU | 70 | FRONT ECU ACK | NORMAL ACK or HI-BEAM ACK |
| HD AUTO-CUT | Headlamp switch | 00 | HEADLAMP SW | Either is on |
| | Tail lamp switch | 01 | TAIL LAMP SW | |
| | Ignition switch (IG1) | 30 | IG SW(IG1) | OFF |
| | Driver's door switch | 32 | DR DOOR SW | ON |
| | Headlamp automatic-shutdown function | 35 | HD AUTO-CUT | ON |
| | Response by the front-ECU | 70 | FRONT ECU ACK | NORMAL ACK or HI-BEAM ACK |

*NOTE:*

1. *When checking the input signals (off, tail, low-beam or high-beam), turn the ignition switch to the "ON" position in order to disable the headlamp automatic-shutdown function. However, the titles on the MUT-III screen will not be highlighted as this has nothing to do with actual lamp operation.*
2. *For checking item "HEADLAMP HI", the MUT-III displays "OFF" on the item No.2 "DIMMER SW" when the headlamps are at high-beam. Therefore, the MUT-III should display "ON" momentarily when the dimmer switch is operated.*

## TURN SIGNAL LAMP

| Item | Input signal | Item No. | Display on MUT-III | Normal condition |
|---|---|---|---|---|
| Turn-signal lamp (RH) | Turn-signal lamp switch (RH) | 10 | TURN SIGNAL RH SW | ON |
| | Turn-signal lamp switch (LH) | 11 | TURN SIGNAL LH SW | OFF |
| | Ignition switch (IG1) | 30 | IGNITION SW IG1 | ON |
| Turn-signal lamp (LH) | Turn-signal lamp switch (RH) | 10 | TURN SIGNAL RH SW | OFF |
| | Turn-signal lamp switch (LH) | 11 | TURN SIGNAL LH SW | ON |
| | Ignition switch (IG1) | 30 | IGNITION SW IG1 | ON |

## BUZZER

| Item | Input signal | Item No. | Display on MUT-III | Normal condition |
|---|---|---|---|---|
| Lighting monitor buzzer | Headlamp switch | 00 | HEADLAMP SW | Either is on |
| | Tail lamp switch | 01 | TAIL LAMP SW | |
| | Ignition switch (IG1) | 30 | IGNITION SW IG1 | OFF |
| | Driver's door switch | 32 | DRIVER DOOR SW | ON |
| | Headlamp automatic-shutdown function | 35 | HD LAMP AUTOCUT | OFF |
| | Buzzer | 43 | Buzzer | ON |

*NOTE: The headlamp automatic-shutdown function works in approximately one second after the lighting monitor buzzer starts sounding, and then the buzzer ceases sounding.*

## Power windows

| Item | Input signal | Item No. | Display on MUT-III | Normal condition |
|---|---|---|---|---|
| Power windows | Ignition switch (IG1) | 30 | IG SW IG1 | ON |
| | Reception of power window switch | 33 | P/W SWACCEPT | PERMIT |
| | Response by power window module | 71 | P/W ECU ACK | INPUT CHECK (only momentarily when switch is operated) |

## Keyless entry system

| Item | Input signal | Item No. | Display on MUT-III | Normal condition |
|---|---|---|---|---|
| Multi-close | Reception of power window switch | 33 | P/W SW ACCEPT | PERMIT |
| | Multimode keyless entry system | 34 | KEYLESS ENTRY | Multi-close (only momentarily when switch is operated) |
| | Response by power window module | 71 | P/W ECU ACK | NORMAL ACK or P/WLOCK ACK |
| | Response by the sunroof-ECU | 72 | S/R ECU ACK | NORMAL ACK to INPUT CHECK (only when the switch is operated) |

## Sunroof

| Item | Input signal | Item No. | Display on MUT-III | Normal condition |
|---|---|---|---|---|
| SUNROOF OPE. | Ignition switch (IG1) | 30 | IG SW (IG1) | ON |
| | Response by power window module | 71 | P/W ECU ACK | NORMAL ACK |
| | Response by the sunroof-ECU | 72 | S/R ECU ACK | INPUT CHECK (only momentarily when switch is operated) |
| REAR S/R LOCK | Ignition switch (IG1) | 30 | IG SW (IG1) | ON |
| | Buzzer | 43 | BUZZER | ON |
| | Response by power window module | 71 | P/W ECU ACK | P/W LOCK ACK |
| | Response by the sunroof-ECU | 72 | S/R ECU ACK | BUZZER ACK |

## ETACS SWITCH DATA CHART

| Item No. | Check items | Display on MUT-III | Check conditions | Normal conditions |
|---|---|---|---|---|
| 01* | Specification switching terminal | SPEC.SW 1 | OFF:Vehicles for Europe | OFF |
| 02* | Specification switching terminal | SPEC.SW 2 | ON: Vehicles for Europe | ON |
| 03 | Key reminder switch | KEY REMIN SW | Key reminder switch: ON (when the ignition key is pulled off) | ON |
| | | | Key reminder switch: OFF (Insert the ignition key) | OFF |
| 04 | Hazard warning lamp switch | HAZARD LMP SW | Hazard warning lamp switch: ON (when the switch is operated) | ON |
| | | | Hazard warning lamp switch: ON (when the switch is not operated) | OFF |
| 05 | Passenger's door switch | PASS DOOR SW | Front passenger's door: open | ON |
| | | | Front passenger's door: Closed | OFF |
| 07 | Tailgate switch | TRK LID LA SW | Tailgate: OPEN | ON |
| | | | Tailgate: CLOSE | OFF |
| 09 | Rear wiper auto-stop switch | R.WIPER A/STOP | When rear wiper is operating | ON |
| | | | When the rear wiper is not working | OFF |
| 10 | Front fog lamp switch | F.FOG LAMP SW | Fog lamp switch: ON (when the switch is operated) | ON |
| | | | Fog lamp switch: ON (when the switch is not operated) | OFF |

| Item No. | Check items | Display on MUT-III | Check conditions | Normal conditions |
|---|---|---|---|---|
| 11 | Rear fog lamp switch | R.FOG LAMP SW | Fog lamp switch: ON (when the switch is operated) | ON |
| | | | Fog lamp switch: ON (when the switch is not operated) | OFF |
| 12 | Driver's seatbelt switch | SEAT BELT SW | Seat belt switch: ON (when the seat belt is unfastened) | ON |
| | | | Seat belt switch: OFF (when the seat belt is fastened) | OFF |
| 14 | Electric remote-controlled door mirror (folding/unfolding ) switch | EL RET MIR SW | Electric remote-controlled door mirror (folding/unfolding ) switch: ON (when the switch is operated) | ON |
| | | | Electric remote-controlled door mirror (folding/unfolding ) switch: ON (when the switch is not operated) | OFF |
| 18 | Tailgate key unlock switch | TRK UNLOCK SW | Tailgate key unlock switch: ON (when the key is turned) | ON |
| | | | Tailgate key unlock switch: OFF | OFF |
| 19 | Tailgate key lock switch | GATE LOCK SW | Tailgate key lock switch: ON (when the key is turned) | ON |
| | | | Tailgate key lock switch: OFF | OFF |
| 21 | Driver's door lock actuator lock switch | DR DOR LCK SW | Driver's door: Locked | ON |
| | | | Driver's door: Other than "locked" | OFF |
| 22 | Driver's door lock actuator unlock switch | DR DOR ULK SW | Driver's door: Unlocked | ON |
| | | | Driver's door: Other than "Unlocked" | OFF |
| 26 | Central door locking | CNTR DOOR LCK | When the central door locking operates | ON |
| | | | When the central door locking does not operate | OFF |
| 27 | Central door unlock | CNTR DOOR ULCK | When the central door unlocking operates | ON |
| | | | When the central door unlocking does not operate | OFF |
| 30 | Tailgate lock release handle switch | GTE OPENER SW | Tailgate lock release handle switch: When being operated | ON |
| | | | Tailgate lock release handle switch: When not being operated | OFF |
| 31 | Room lamp "ON" switch | RM LMP ON SW | Room lamp "ON" switch: ON | ON |
| | | | Room lamp "ON" switch: OFF | OFF |
| 32 | Room lamp "ON/OFF" switch | RM LMP OFF SW | Room lamp "OFF" switch: ON | ON |
| | | | Room lamp "OFF" switch: OFF | OFF |
| 35 | DRL changeover terminal | DRL | When DRL is equipped: ON | ON |
| | | | When DRL is not equipped: OFF | OFF |

| Item No. | Check items | Display on MUT-III | Check conditions | Normal conditions |
|---|---|---|---|---|
| 36 | Diagnosis connector | MUT DIAG CON. | Diagnosis control line: Earthed | ON |
| | | | Diagnosis control line: Not earthed | OFF |
| 41 | Rear door (RH) switch | R.DOOR(RH)SW | Rear door (RH): open | ON |
| | | | Rear door (RH): Closed | OFF |
| 42 | Rear door (LH) switch | R.DOOR(LH)SW | Rear door (LH): open | ON |
| | | | Rear door (LH): Closed | OFF |
| 43 | Front passenger's seat belt switch | As.SeatBeltSW | Front passenger's seat belt switch: ON (when the seat is occupied but the seat belt is unfastened) | ON |
| | | | Front passenger's seat belt switch: OFF (when the seat belt is fastened) | OFF |

*: Market can be changed by combination of item Nos. 01 and 02.

## ETACS ANALOGUE DATA CHART

| Item No. | Check items | Display on MUT-III | How to check |
|---|---|---|---|
| 02 | Windshield intermittent wiper volume | WPR VOL VOLT | Displays the voltage in the windshield wiper intermittent volume.<br>Changes in accordance with the position of the windshield wiper intermittent volume. |
| 03 | Vehicle speed signal | SPEED SENSER | Displays the vehicle speed<br>Changes in accordance with the vehicle speed. |
| 04 | Room lamp timer period | RM LMP TIMER | Displays room lamp timer period. |
| 05 | Headlamp automatic shutdown timer period | H/L A.CUT TMR | Displays headlamp automatic shutdown period (timing). |
| 06 | Power window key-off timer period | P/W KY OF TMR | Displays power window key-off timer period (timing). |
| 08 | Windshield intermittent wiper interval | WPR INT TIME | Displays windshield intermittent wiper interval (with chart)<br>Changes according to the windshield wiper intermittent volume position and the vehicle speed. |

## PULSE CHECK

M1549015100410

**⚠ CAUTION**

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

1. The input signals (signals other than communication line signals), which are compatible with the SWS monitor by using the MUT-III or voltmeter, can be confirmed by the Pulse Check.

*NOTE: If a problem is found in the "Pulse Check", refer to the Problems during Input Signal Check <Service data, function diagnosis or pulse check> (Refer to P.54C-48).*

2. Use the MUT-III or voltmeter to check the following input signals.

## SWITCHES WHICH ARE APPLICABLE TO INPUT SIGNAL CHECK, AND THEIR CHECK CONDITIONS

| Input signal | Requirements for sounding buzzer |
|---|---|
| Inhibitor switch ("R" position) | When the ignition switch is turned ON and the selector lever is moved to the R position. |

## MUT-III DRIVE RECORDER FUNCTION

M1549026000064

1. The SWS monitor cartridge memory can store the ECU check results, the service data, the communication data obtained by the function diagnosis. This communication data can be displayed as a chart or graphical form.
2. If data obtained by the drive recorder function has to be stored for long time, the data can be transferred to the SWS monitor cartridge. By doing this, you can disconnect the MUT-III to prevent excessive battery drain.

   *NOTE: For the details about the MUT-III drive recorder function, refer to MUT-III User's Manual.*

# DIAGNOSIS CODE CHART

M1549000700364

| Diagnosis code No. | Diagnostic item | Reference page |
|---|---|---|
| 01 | Trouble in SWS communication line system or ETACS-ECU | P.54C-31 |
| 02 | Communication error with column switch | P.54C-33 |
| 03 | Communication error with front-ECU | P.54C-34 |
| 04*1 | Communication error with sunroof-ECU | P.54C-35 |
| 05 | Communication error with power window main switch | P.54C-36 |
| 10 | Bus off | P.54C-37 |
| 11 | Engine-A/T-ECU time-out (related to engine) | P.54C-37 |
| 12*2 | Engine-A/T-ECU time-out (related to A/T) | P.54C-39 |
| 13 | A/C-ECU time-out | P.54C-40 |
| 14 | Meter time-out | P.54C-41 |
| 15*3 | Centre display unit time-out | – |
| 21 | Meter failure information | P.54C-42 |

*NOTE:*

- **1: For vehicles without sunroof, diagnosis code No.4 does not mean that there is a problem.*
- **2: For M/T-vehicles, diagnosis code No.12 does not mean that there is a problem.*
- **3: Diagnosis code No.15 does not mean that there is a problem.*

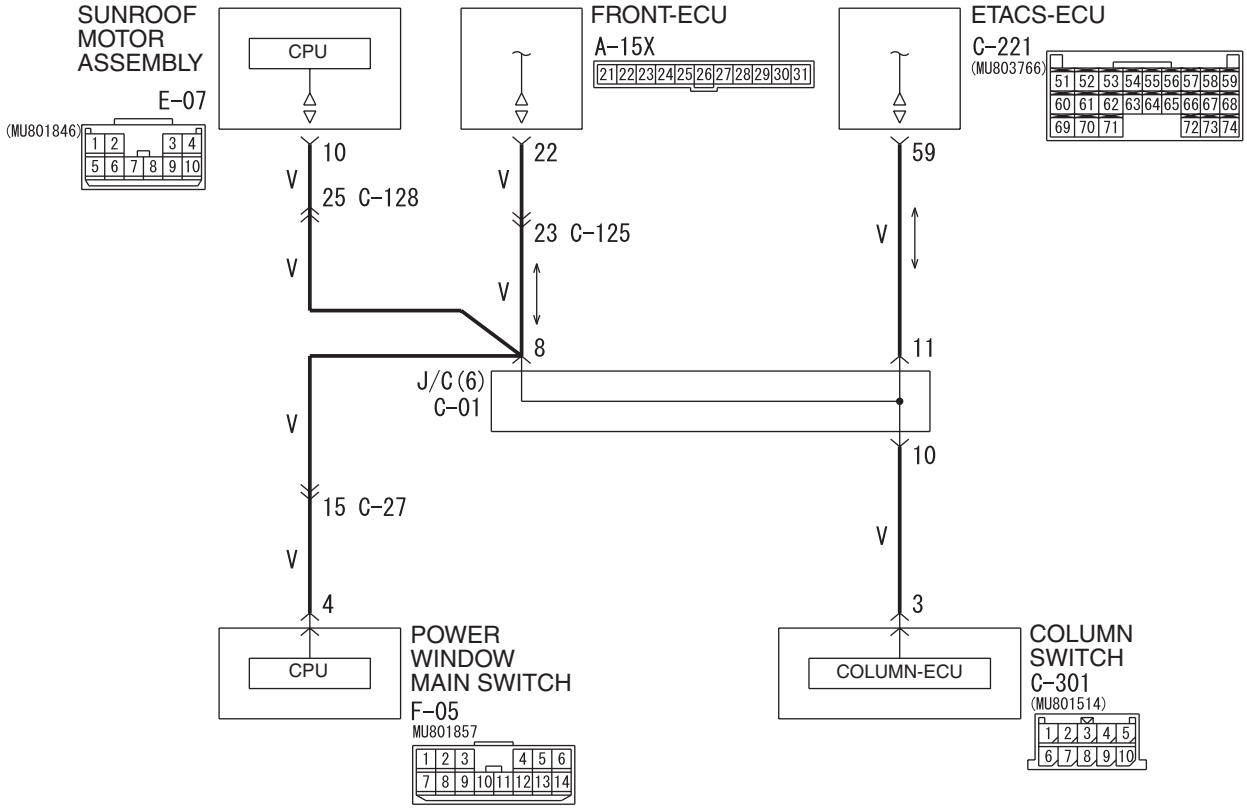
# DIAGNOSTIC TROUBLE CODE PROCEDURES

## Diagnosis code No.01 Trouble in SWS communication line system or ETACS-ECU

**⚠ CAUTION**

**If diagnosis code No.01 is set in the ETACS-ECU, diagnose the CAN bus lines.**

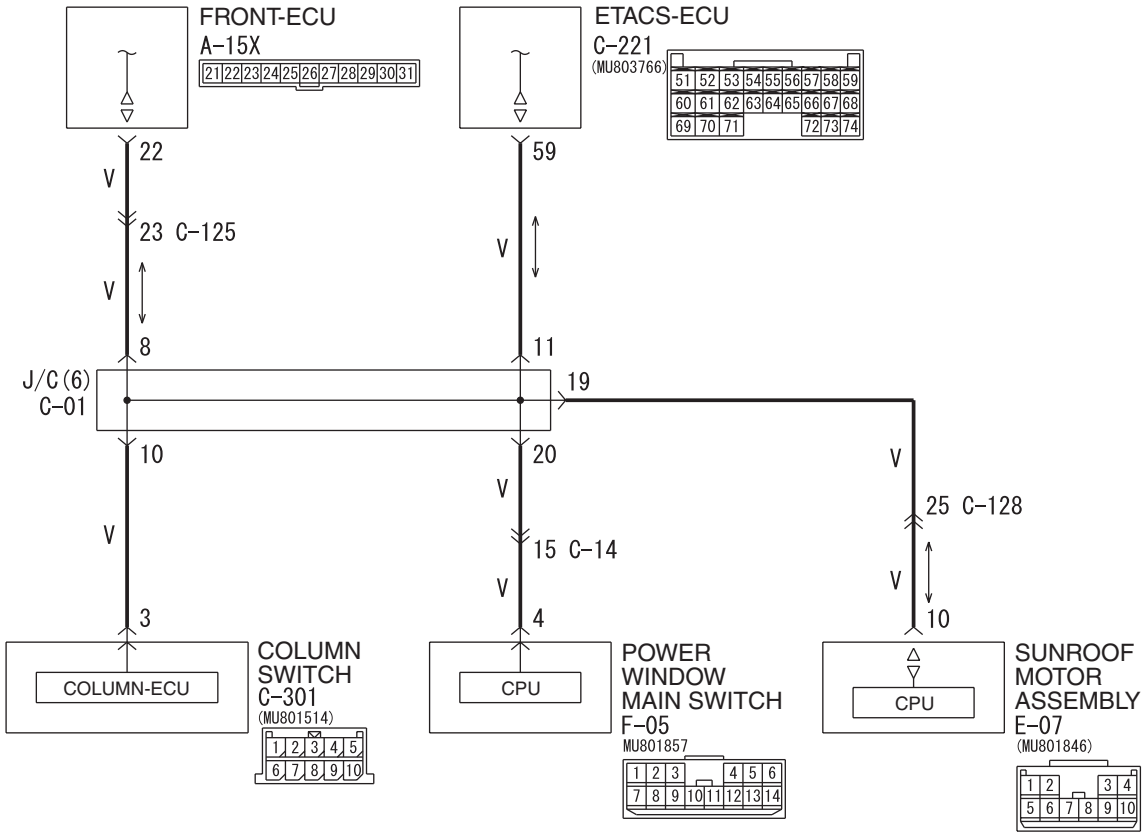
**SWS Communication Line <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E156A

**SWS Communication Line <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E157A

## TROUBLE JUDGMENT

The ETACS-ECU communicates with the column switch, the front-ECU, the sunroof motor assembly and the power window main switch through the SWS communication line. If there is any trouble in the ETACS-ECU or the SWS communication lines, diagnosis code No.01 will be set.

## COMMENT ON TROUBLE SYMPTOM

The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. MUT-III CAN bus diagnostics**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-16).

**Step 2. Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Ignition switch: LOCK (OFF) position to ON
(2) Erase the diagnosis code.
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**

**YES :** If a trouble is solved, it is determined that there is an intermittent malfunction such as poor engaged connector(s) or open circuit (Refer to GROUP 00 – How to use troubleshooting/Inspection Service Points P.00-5).
**NO :** Go to Step 3.

**Step 3. ECU check by using the SWS monitor**
Check that the SWS communication lines are in good condition.
- Ignition switch: ON

**ECUS TO BE CHECKED**
- Column ECU
- ETACS ECU
- Front ECU
- P/W MODULE
- Sunroof-ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**

**Normal conditions are displayed for all the items. :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).
**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."
**"NG" is displayed on the "ETACS ECU" menu. :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."
**"NG" is displayed on the "FRONT ECU" menu. :** Refer to Inspection Procedure A-4 "Communication with the front-ECU is not possible P.54C-70."
**"NG" is displayed on the "P/W MODULE" menu. :** Refer to Inspection Procedure A-5 "Communication with the power window main switch (power window module) is not possible P.54C-77."
**"NG" is displayed on the "Sunroof ECU" menu. :** Refer to Inspection Procedure A-6 "Communication with the sunroof motor assembly (sunroof-ECU) is not possible P.54C-90."

## Diagnosis code No.02 Communication error with column switch

**⚠ CAUTION**
**If diagnosis code No.02 is set in the ETACS-ECU, diagnose the CAN bus lines.**

### TROUBLE JUDGMENT
The ETACS-ECU communicates with the column switch through the SWS communication lines. If there is any trouble in that communication, diagnosis code No.02 will be set.

### COMMENT ON TROUBLE SYMPTOM
The column switch, the ETACS-ECU, connector(s), or wiring harness between the two may be defective.

### POSSIBLE CAUSES
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

### DIAGNOSIS PROCEDURE

**Step 1. MUT-III CAN bus diagnostics**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-16).

**Step 2.Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**

**YES :** If a trouble is solved, it is determined that there is an intermittent malfunction such as poor engaged connector(s) or open circuit (Refer to GROUP 00 – How to use troubleshooting/Inspection Service Points P.00-5).
**NO :** Go to Step 3.

**Step 3. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the column switch (column-ECU) and the SWS communication lines are normal.
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- Column ECU
- ETACS ECU

**OK: "OK" is displayed for all the items**

**Q: Are the check result normal?**

**Normal conditions are displayed for all the items. :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."
**"NG" is displayed on the "ETACS ECU" menu. :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

## Diagnosis code No.03 Communication error with front-ECU

**⚠ CAUTION**
**If diagnosis code No.03 is set in the ETACS-ECU, diagnose the CAN bus lines.**

### TROUBLE JUDGMENT
The ETACS-ECU communicates with the front-ECU through the SWS communication line. If there is any trouble in that communication, diagnosis code No.03 will be set.

### COMMENTS ON TROUBLE SYMPTOM
The front-ECU, the ETACS-ECU, connector(s), or wiring harness between the two may be defective.

### POSSIBLE CAUSES
- Malfunction of the front-ECU
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

### DIAGNOSIS PROCEDURE

**Step 1. MUT-III CAN bus diagnostics**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-16).

**Step 2. Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** If a trouble is solved, it is determined that there is an intermittent malfunction such as poor engaged connector(s) or open circuit (Refer to GROUP 00 – How to use troubleshooting/Inspection Service Points P.00-5).
**NO :** Go to Step 3.

**Step 3. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the front-ECU and the SWS communication lines are normal.
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- Front ECU
- ETACS ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**

**Normal conditions are displayed for all the items. :**
Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).

**"NG" is displayed on the "FRONT ECU" menu. :**
Refer to Inspection Procedure A-4 "Communication with the front-ECU is not possible P.54C-70."

**"NG" is displayed on the "ETACS ECU" menu. :**
Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

## Diagnosis code No.04 Communication error with sunroof-ECU

**⚠ CAUTION**
**If diagnosis code No.04 is set in the ETACS-ECU, diagnose the CAN bus lines.**

### TROUBLE JUDGMENT

The ETACS-ECU communicates with the sunroof motor assembly (sunroof-ECU) through the SWS communication line. If there is any trouble in that communication, diagnosis code No.04 will be set.

*NOTE: For vehicles without sunroof, diagnosis code No.04 does not mean that there is a problem.*

### COMMENTS ON TROUBLE SYMPTOM

The sunroof motor assembly (sunroof-ECU), the ETACS-ECU, connector(s), or wiring harness between the two may be defective.

### POSSIBLE CAUSES

- Malfunction of the sunroof motor assembly (sunroof-ECU)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

### DIAGNOSIS PROCEDURE

**Step 1. MUT-III CAN bus diagnostics**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-16).

**Step 2.Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** If a trouble is solved, it is determined that there is an intermittent malfunction such as poor engaged connector(s) or open circuit (Refer to GROUP 00 – How to use troubleshooting/Inspection Service Points P.00-5).
**NO :** Go to Step 3.

**Step 3. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the sunroof motor assembly (sunroof-ECU) and the SWS communication lines are normal.
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- Sunroof ECU
- ETACS ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**

**Normal conditions are displayed for all the items. :**
Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).

**"NG" is displayed on the "SUNROOF ECU" menu. :**
Refer to Inspection Procedure A-6 "Communication with the sunroof motor assembly (sunroof-ECU) is not possible P.54C-90."

**"NG" is displayed on the "ETACS ECU" menu. :**
Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

## Diagnosis code No.05 Communication error with power window main switch

**⚠ CAUTION**
**If diagnosis code No.05 is set in the ETACS-ECU, diagnose the CAN bus lines.**

### TROUBLE JUDGMENT
The ETACS-ECU communicates with the power window main switch through the SWS communication lines. If there is any trouble in that communication, diagnosis code No.05 will be set.

### COMMENTS ON TROUBLE SYMPTOM
If the power window main switch, the ETACS-ECU or the CAN bus line fails, this diagnosis code will be set.

### POSSIBLE CAUSES
- Malfunction of the power window main switch
- Malfunction of the ETACS-ECU switch
- Malfunction of the CAN bus

### DIAGNOSIS PROCEDURE

**Step 1. MUT-III CAN bus diagnostics**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-16).

**Step 2. Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the diagnosis code set?**
**YES :** Go to Step 3.
**NO :** Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).

**Step 3. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the power window main switch (power window module) and the SWS communication lines are normal.
- Ignition switch: ON

**ECUS TO BE CHECKED**
- P/W MODULE
- ETACS ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**
**Normal conditions are displayed for all the items. :**
Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).

**"NG" is displayed on the "P/W MODULE" menu. :**
Refer to Inspection Procedure A-5 "Communication with the power window main switch (power window module) is not possible P.54C-77."

**"NG" is displayed on the "ETACS ECU" menu. :**
Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

## Diagnosis code No.10 Bus off

**⚠ CAUTION**
**If diagnosis code No.10 is set in the ETACS-ECU, diagnose the CAN bus lines.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

### TROUBLE JUDGMENT
Diagnosis code No.10 will be stored when the ETACS-ECU ceases CAN communication (bus off) and then resumes the communication by turning the ignition switch to the "LOCK" (OFF) position.

### COMMENTS ON TROUBLE SYMPTOM
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the SWS communication lines may be defective.

### POSSIBLE CAUSES
Damaged harness wires and connectors

### DIAGNOSIS PROCEDURE

**Step 1. MUT-III CAN bus diagnostics**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-16). On completion, go to Step 3.

**Step 2. Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** If a trouble is solved, it is determined that there is an intermittent malfunction such as poor engaged connector(s) or open circuit (Refer to GROUP 00 – How to use troubleshooting/Inspection Service Points P.00-5).
**NO :** Replace the ETACS-ECU, and then go to Step 3.

**Step 3. Check whether the diagnosis code is reset.**
Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) Check if the diagnosis code is set.

**Q: Is the check result normal?**
**YES :** The procedure is complete.
**NO :** Return to Step 1.

## Diagnosis code No.11 Engine-A/T-ECU time-out (related to engine)

**⚠ CAUTION**
**If diagnosis code No.11 is set in the ETACS, diagnose the CAN main bus line.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the communication circuit is normal.**

### TROUBLE JUDGMENT
- The ETACS-ECU receives engine and transmission control signals from the engine-A/T-ECU <A/T> or the engine-ECU <M/T> through the CAN bus lines. If the ECU can not receive the engine control system-related signal at all, diagnosis code No.11 will be set.

### COMMENTS ON TROUBLE SYMPTOM
**Current trouble**
- Connector(s) or wiring harness in the CAN bus lines between the ETACS-ECU and the engine-A/T-ECU <A/T> or the engine-ECU <M/T>, the power supply circuits to these ECUs, or the ETACS-ECU itself may be defective.

**Past trouble**
- If diagnosis code No.11 is set as past trouble, carry out diagnosis with particular emphasis on wiring and connector(s) in the CAN bus lines between the ETACS-ECU and the engine-A/T-ECU <A/T> or the engine-ECU <M/T>, or power supply to the engine-A/T-ECU

<A/T> or the engine-ECU <M/T>. For diagnosis procedures, refer to "How to treat past trouble" (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).

*NOTE: For a past trouble, you can not find it by the MUT-III CAN bus diagnostics even if there is any failure in CAN bus lines. In this case, refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points P.00-5 and check the CAN bus lines. You can narrow down the possible cause of the trouble by referring to the diagnosis code, which is set regarding the CAN communication-linked ECUs (Refer to GROUP 54D – CAN Bus Line Diagnostic Flow P.54D-9).*

## POSSIBLE CAUSES

- Malfunction of the engine-A/T-ECU <A/T> or engine-ECU <M/T>
- Malfunction of the ETACS-ECU
- Malfunction of the CAN bus

## DIAGNOSTIC PROCEDURE

**Step 1. MUT-III CAN bus diagnostics**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-16). Repair the CAN bus line and go to Step 6.

**Step 2. Check for engine control diagnosis code.**
Check whether the engine control-related diagnosis code is set.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Engine (Refer to GROUP 13A – Troubleshooting P.13A-11).

**Step 3. MUT-III diagnosis code**
Check if a diagnosis code, which relates to CAN communication-linked systems below, is set.

- Combination meter

U1100: Engine-related time-out diagnosis code

- Multi-display

U1100: Engine-related time-out diagnosis code

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** A poor connection, open circuit or other intermittent malfunction is present in the CAN bus lines between the engine-A/T-ECU <A/T> or the engine-ECU <M/T> and the ETACS-ECU (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).
**NO :** Replace the engine-A/T-ECU, and then go to Step 6.

**Step 5. Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** A poor connection, open circuit or other intermittent malfunction is present in the CAN bus lines between the engine-A/T-ECU <A/T> or the engine-ECU <M/T> and the ETACS-ECU (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).
**NO :** Replace the ETACS-ECU, and then go to Step 6.

**Step 6. Check whether the diagnosis code is reset.**
Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** The procedure is complete.
**NO :** Return to Step 1.

## Diagnosis code No.12 Engine-A/T-ECU time-out (related to A/T)

**⚠ CAUTION**
**If diagnosis code No.12 is set in the ETACS, diagnose the CAN main bus line.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the communication circuit is normal.**

### TROUBLE JUDGMENT

- The ETACS-ECU receives engine and transmission control-related signals from the engine-A/T-ECU via the CAN bus lines. If the ECU cannot receive the transmission control signal at all, diagnosis code No.12 will be set.

*NOTE: For M/T-vehicles, diagnosis code No.12 does not mean that there is a problem.*

### COMMENTS ON TROUBLE SYMPTOM

**Current trouble**

- Connector(s) or wiring harness in the CAN bus lines between the ETACS-ECU and the engine-A/T-ECU, the power supply system to the engine-A/T-ECU, or the ETACS-ECU itself may be defective.

**Past trouble**

- If diagnosis code No.12 is stored as a past trouble, carry out diagnosis with particular emphasis on wiring and connector(s) in the CAN bus line between the ETACS-ECU and the engine-A/T-ECU, and the power supply system to the engine-A/T-ECU. For diagnosis procedures, refer to "How to treat past trouble" (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).

*NOTE: For a past trouble, you can not find it by the MUT-III CAN bus diagnostics even if there is any failure in CAN bus lines. In this case, refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points P.00-5 and check the CAN bus lines. You can narrow down the possible cause of the trouble by referring to the diagnosis code, which is set regarding the CAN communication-linked ECUs (Refer to GROUP 54D – CAN Bus Line Diagnostic Flow P.54D-9).*

### POSSIBLE CAUSES

- Malfunction of the engine-A/T-ECU
- Malfunction of the ETACS-ECU
- Malfunction of the CAN bus

### DIAGNOSTIC PROCEDURE

**Step 1. MUT-III CAN bus diagnostics**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-16). On completion, go to Step 6.

**Step 2. Check for A/T control-related diagnosis code.**
Check if an A/T system diagnosis code is set.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Diagnose the automatic transmission system (Refer to GROUP 23 – Troubleshooting P.23A-17).

**Step 3. MUT-III diagnosis code**
Check if a diagnosis code, which relates to CAN communication-linked systems below, is set.

- Combination meter

U1101: Engine-related time-out diagnosis code

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** A poor connection, open circuit or other intermittent malfunction is present in the CAN bus lines between the engine-A/T-ECU and the ETACS-ECU (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).
**NO :** Replace the engine-A/T-ECU, and then go to Step 6.

**Step 5. Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** A poor connection, open circuit or other intermittent malfunction is present in the CAN bus lines between the engine-A/T-ECU and the ETACS-ECU (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).
**NO :** Replace the ETACS-ECU, and then go to Step 6.

**Step 6. Check whether the diagnosis code is reset.**
Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** The procedure is complete.
**NO :** Return to Step 1.

## Diagnosis code No.13 A/C-ECU time-out

**⚠ CAUTION**
**If diagnosis code No.13 is set in the ETACS-ECU, diagnose the CAN bus lines.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

### TROUBLE JUDGMENT
The ETACS-ECU receives air conditioner system-related signal from the A/C-ECU. If air conditioner control system-related signal can not be received at all, diagnosis code No.13 will be set.

### COMMENT ON TROUBLE SYMPTOM
**Current trouble**
- Connector(s) or wiring harness in the CAN bus lines between the A/C-ECU and the ETACS-ECU, the power supply system to the combination meter, the combination meter itself, or the ETACS-ECU may be defective.

**Past trouble**
- If diagnosis code No.13 is stored as a past trouble, carry out diagnosis with particular emphasis on wiring and connector(s) in the CAN bus line between the ETACS-ECU and the A/C-ECU, and the power supply system to the A/C-ECU. For diagnosis procedures, refer to "How to treat past trouble" (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).

*NOTE: For a past trouble, you can not find it by the MUT-III CAN bus diagnostics even if there is any failure in CAN bus lines. In this case, refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points P.00-5 and check the CAN bus lines. You can narrow down the possible cause of the trouble by referring to the diagnosis code, which is set regarding the CAN communication-linked ECUs (Refer to GROUP 54D – CAN Bus Line Diagnostic Flow P.54D-9).*

### POSSIBLE CAUSES
- Malfunction of the A/C-ECU
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

### DIAGNOSIS PROCEDURE

**Step 1. MUT-III CAN bus diagnostics**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-16). On completion, go to Step 5.

**Step 2. MUT-III diagnosis code**
Check if an A/C-ECU diagnosis code is set.

**Q: Is the diagnosis code set?**

**YES :** Diagnose the A/C-ECU (Refer to GROUP 55 – Troubleshooting P.55-7).
**NO :** Go to Step 3.

**Step 3. Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: ON → LOCK (OFF) → ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** A poor connection, open circuit or other intermittent malfunction is present in the CAN bus lines between the A/C-ECU and the ETACS-ECU (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).
**NO :** Replace the A/C-ECU, and then go to Step 4.

**Step 4. Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: ON → LOCK (OFF) → ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** A poor connection, open circuit or other intermittent malfunction is present in the CAN bus lines between the A/C-ECU and the ETACS-ECU (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).
**NO :** Replace the ETACS-ECU, and then go to Step 5.

**Step 5. Check whether the diagnosis code is reset.**
Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: ON → LOCK (OFF) → ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** The procedure is complete.
**NO :** Return to Step 1.

## Diagnosis code No.14 Meter time-out

**⚠ CAUTION**
**If diagnosis code No.14 is set in the ETACS-ECU, diagnose the CAN bus lines.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

### TROUBLE JUDGMENT

The ETACS-ECU receives combination meter-related signal from the combination meter. If meter-related signal can not be received at all, diagnosis code No.14 will be set.

### COMMENT ON TROUBLE SYMPTOM

**Current trouble**
- Connector(s) or wiring harness in the CAN bus lines between the combination meter and the ETACS-ECU, the power supply system to the combination meter, the combination meter itself, or the ETACS-ECU may be defective.

**Past trouble**
- If diagnosis code No.14 is stored as a past trouble, carry out diagnosis with particular emphasis on wiring and connector(s) in the CAN bus line between the combination meter and the ETACS-ECU, and the power supply system to the combination meter. For diagnosis procedures, refer to "How to treat past trouble" (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).

*NOTE: For a past trouble, you can not find it by the MUT-III CAN bus diagnostics even if there is any failure in CAN bus lines. In this case, refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points P.00-5 and check the CAN bus lines. You can narrow down the possible cause of the trouble by referring to the diagnosis code, which is set regarding the CAN communication-linked ECUs (Refer to GROUP 54D – CAN Bus Line Diagnostic Flow P.54D-9).*

## POSSIBLE CAUSES

- Malfunction of the combination meter
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. MUT-III CAN bus diagnostics**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-16). On completion, go to Step 6.

**Step 2. MUT-III diagnosis code**
Check whether the combination meter-related diagnosis code is set.

**Q: Is the diagnosis code set?**
**YES :** Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-35).
**NO :** Go to Step 3.

**Step 3. MUT-III diagnosis code**
Check if a diagnosis code, which relates to CAN communication-linked systems below, is set.

- Engine

U1108: Combination meter time-out diagnosis code

**Q: Is the diagnosis code set?**
**YES :** Go to Step 4.
**NO :** Go to Step 5.

**Step 4. Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** A poor connection, open circuit or other intermittent malfunction is present in the CAN bus lines between the combination meter and the ETACS-ECU (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).
**NO :** Replace the combination meter, and then go to Step 6.

**Step 5. Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** A poor connection, open circuit or other intermittent malfunction is present in the CAN bus lines between the combination meter and the ETACS-ECU (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).
**NO :** Replace the ETACS-ECU, and then go to Step 6.

**Step 6. Check whether the diagnosis code is reset.**
Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** The procedure is complete.
**NO :** Return to Step 1.

**Diagnosis code No.21 Meter failure information**

**⚠ CAUTION**
**If diagnosis code No.21 is set in the ETACS-ECU, diagnose the CAN bus lines.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

## TROUBLE JUDGMENT

The ETACS-ECU receives vehicle speed-related signal from the combination meter via the CAN bus lines. If failure information is sent to the vehicle speed-related signal, diagnosis code No.21 will be set.

## COMMENT ON TROUBLE SYMPTOM

**Current trouble**

- Connector(s) or wiring harness in the CAN bus lines, the engine-A/T-ECU <A/T> or the engine-ECU <M/T>, the combination meter, the ETACS-ECU or the output shaft speed sensor may be defective.

**Past trouble**

- If diagnosis code No.21 is stored as a past trouble, carry out diagnosis with particular emphasis on wiring and connector(s) between the engine-A/T-ECU <A/T> or the engine-ECU <M/T> and the output shaft speed sensor. For diagnosis procedures, refer to "How to treat past trouble" (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).

## POSSIBLE CAUSES

- Malfunction of the engine-A/T-ECU <A/T> or engine-ECU <M/T>
- Defective combination meter
- Malfunction of the ETACS-ECU

## DIAGNOSIS PROCEDURE

**Step 1. MUT-III CAN bus diagnostics**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-16). On completion, go to Step 6.

**Step 2. MUT-III diagnosis code**
Check whether the combination meter-related diagnosis code is set.

**Q: Is the diagnosis code set?**
**YES :** Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-35).
**NO :** Go to Step 3.

**Step 3. MUT-III diagnosis code**
Check if a diagnosis code, which relates to CAN communication-linked systems below, is set.

- Multi-centre display

U1113: Combination meter failure information diagnosis code

**Q: Is the diagnosis code set?**
**YES :** Go to Step 4.
**NO :** Go to Step 5.

**Step 4. Check whether the diagnosis code is reset.**
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** A poor connection, open circuit or other intermittent malfunction is present in the CAN bus lines between the engine-A/T-ECU <A/T> or the engine-ECU <M/T> and the output shaft speed sensor (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).
**NO :** Then go to Step 6.

**Step 5. Check whether the diagnosis code is reset.**
Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** A poor connection, open circuit or other intermittent malfunction is present in the CAN bus lines between the engine-A/T-ECU <A/T> or the engine-ECU <M/T> and the output shaft speed sensor (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).
**NO :** Replace the ETACS-ECU, and then go to Step 6.

**Step 6. Check whether the diagnosis code is reset.**
Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

**Q: Is the check result normal?**
**YES :** The procedure is complete.
**NO :** Return to Step 1.

# TROUBLE SYMPTOM CHART

M1549000800855

| Symptom | Inspection procedure number | Reference page |
|---|---|---|
| Communication with the SWS monitor is not possible. | A-1 | P.54C-52 |
| Communication with the column switch (column-ECU) is not possible. | A-2 | P.54C-56 |
| Communication with the ETACS-ECU is not possible. | A-3 | P.54C-63 |
| Communication with the front-ECU is not possible. | A-4 | P.54C-70 |
| Communication with the power window main switch (power window module) is not possible. | A-5 | P.54C-77 |
| Communication with the sunroof motor assembly (sunroof-ECU) is not possible. | A-6 | P.54C-90 |

## <FUNCTION SYSTEM>

| Symptom | | Inspection procedure number | Reference page |
|---|---|---|---|
| Alarm Function | Lamp reminder buzzer function does not work normally. | B-1 | P.54C-99 |
| | Seat belt warning buzzer function does not work normally. | B-2 | P.54C-101 |
| | Door-ajar warning buzzer function does not work. | B-3 | P.54C-102 |
| | Turn-signal lamp operation sound function does not work normally. | B-4 | P.54C-104 |
| Central door locking | Central door locking system does not work. | C-1 | P.54C-106 |
| | The central door locking system does not function by using the driver's door lock switch. | C-2 | P.54C-109 |
| | The central door locking system does not function by using the passenger's door key cylinder. | C-3 | P.54C-110 |
| | The central door locking system does not function by using the tailgate key cylinder. | C-4 | P.54C-112 |
| | A door can not be locked or unlocked by the central door locking system. <LH drive vehicles> | C-5 | P.54C-114 |
| | A door can not be locked or unlocked by the central door locking system. <RH drive vehicles> | | P.54C-121 |
| | The tailgate cannot be opened or closed. | C-6 | P.54C-127 |

| Symptom | | Inspection procedure number | Reference page |
|---|---|---|---|
| Power window | Power windows do not work at all. | D-1 | P.54C-131 |
| | Driver's power window does not work by means of the power window main switch. <LH drive vehicles> | D-2 | P.54C-133 |
| | Driver's power window does not work by means of the power window main switch. <RH drive vehicles> | | P.54C-135 |
| | Relevant power window(s) do not work by means of the front and rear power window sub switches. | D-3 | P.54C-137 |
| | Passenger's and/or rear power window(s) do not work by means of the power window main switch. | D-4 | P.54C-156 |
| | The window glass lowers automatically while it is rising. | D-5 | P.54C-173 |
| | Power window anti-trap function does not work normally. | D-6 | P.54C-174 |
| | The power window timer function does not work normally. | D-7 | P.54C-185 |
| Keyless entry system | Keyless entry system does not work. | E-1 | P.54C-186 |
| | Keyless entry hazard lamp answerback function or the room lamp answerback function does not work normally. | E-2 | P.54C-188 |
| | Encrypted code cannot be registered. | E-3 | P.54C-189 |
| | The timer lock function does not work after the doors have been unlocked by the keyless entry system. | E-4 | P.54C-190 |
| | Multimode keyless entry system function does not work at all. | E-5 | P.54C-190 |
| Sunroof | The sunroof does not work at all. | F-1 | P.54C-192 |
| | Any of the sunroof switch positions is defective. | F-2 | P.54C-194 |
| | Sunroof timer function does not work normally. | F-3 | P.54C-196 |
| | The sunroof inhibition function does not work normally (The sunroof operation lock warning buzzer does not sound). | F-4 | P.54C-199 |
| | Sunroof anti-trap function does not work normally. | F-5 | P.54C-202 |

| Symptom | | Inspection procedure number | Reference page |
|---|---|---|---|
| Windshield wiper and washer | The windshield wipers do not work at all. | G-1 | P.54C-203 |
| | The windshield wipers do not work when the wiper switch is at "INT", "Washer" or "Mist" position. However, the wipers work at low speed when the switch is at "Lo" and "Hi" position. | G-2 | P.54C-210 |
| | The windshield wipers do not stop at the specified park position. | G-3 | P.54C-211 |
| | The windshield wipers do not work normally. | G-4 | P.54C-216 |
| | The intermittent wiper interval cannot be adjusted by operating the windshield intermittent wiper volume control. | G-5 | P.54C-220 |
| | The intermittent wiper interval is not changed according to the vehicle speed. | G-6 | P.54C-221 |
| | The windshield washer does not work. | G-7 | P.54C-223 |
| Rear wiper and washer | Rear wiper does no not work at all. | H-1 | P.54C-228 |
| | The rear wiper does not stop at the specified park position. | H-2 | P.54C-232 |
| | When the shift lever is moved to "R" position during the rear wiper operation, the rear wiper does not operate at the continuous mode. <A/T> | H-3 | P.54C-237 |
| | When the shift lever is moved to "R" position during the rear wiper operation, the rear wiper does not operate at the continuous mode. <M/T> | | P.54C-238 |
| | The rear washer does not work. | H-4 | P.54C-240 |
| Headlamp washer | The headlamp washer does not work. | I-1 | P.54C-245 |
| Electric retractable remote controlled door mirror | Electric retractable remote controlled door mirror does not work at all. | J-1 | P.54C-250 |
| | Left or right side electric retractable remote controlled door mirror does not work at all. | J-2 | P.54C-257 |
| | Electric retractable remote controlled door mirror timer function does not at all. | J-3 | P.54C-265 |
| | Vehicle speed-dependent unfolding function does not work normally. | J-4 | P.54C-266 |
| Ignition key cylinder illumination lamp | The ignition key cylinder illumination lamp does not illuminate/extinguish normally. | K-1 | P.54C-267 |
| Seat belt warning lamp | The seat belt warning lamp does not flash normally. | L-1 | P.54C-271 |

| Symptom | | Inspection procedure number | Reference page |
|---|---|---|---|
| Headlamp and tail lamp | The tail lamps do not illuminate normally. | M-1 | P.54C-273 |
| | The low-beam headlamps do not illuminate normally. | M-2 | P.54C-275 |
| | The high-beam headlamps do not illuminate normally. | M-3 | P.54C-278 |
| | The high-beam and low-beam headlamps do not illuminate when the passing switch is operated. | M-4 | P.54C-279 |
| | The headlamp automatic-shutdown function does not work normally. | M-5 | P.54C-280 |
| | Any of tail lamps, position lamps or licence plate lamp does not illuminate. | M-6 | P.54C-283 |
| | The headlamp(s) do not illuminate. | M-7 | P.54C-299 |
| | The high-beam indicator lamps does not illuminate. | M-8 | P.54C-312 |
| | Daytime running lamp function does not work normally. | M-9 | P.54C-314 |
| | The headlamps do not illuminate when the lighting switch is at "TAIL" or "PASSING" position, but illuminate only at low beam when the switch is at "HEAD" position. However, the headlamps do not illuminate at high beam. | M-10 | P.54C-315 |
| Flasher timer | The turn-signal lamps do not illuminate. | N-1 | P.54C-316 |
| | The hazard warning lamps do not illuminate. | N-2 | P.54C-321 |
| | Any of the turn-signal lamps does not illuminate. | N-3 | P.54C-323 |
| | The turn-signal indicator lamp does not illuminate. | N-4 | P.54C-348 |
| Fog lamp | The front fog lamps do not illuminate normally. | O-1 | P.54C-349 |
| | The rear fog lamps do not illuminate normally. | O-2 | P.54C-353 |
| | Any of the front fog lamps does not illuminate normally. | O-3 | P.54C-365 |
| | The front fog lamps indicator does not illuminate normally. | O-4 | P.54C-371 |
| | The rear fog lamps indicator does not illuminate normally. | O-5 | P.54C-372 |

| Symptom | | Inspection procedure number | Reference page |
|---|---|---|---|
| Interior lamp | The interior lamps (room ramp, rear personal lamps, door lamps, luggage compartment lamp, key illumination lamp) does not illuminate or extinguish normally. | P-1 | P.54C-374 |
| | The room lamp does not illuminate normally. <Vehicles with keyless entry system> | P-2 | P.54C-383 |
| | The room lamp does not illuminate normally. <Vehicles without keyless entry system> | | P.54C-392 |
| | The rear personal lamp does not illuminate normally. <Vehicles with keyless entry system> | P-3 | P.54C-400 |
| | The rear personal lamp does not illuminate normally. <Vehicles without keyless entry system> | | P.54C-413 |
| | The luggage compartment lamp does not illuminate normally. <Vehicles with keyless entry system> | P-4 | P.54C-426 |
| | The luggage compartment lamp does not illuminate normally. <Vehicles without keyless entry system> | | P.54C-432 |
| | The door lamp does not illuminate normally. | P-5 | P.54C-438 |
| | Interior lamp automatic shutoff function does not work normally. <Vehicles with keyless entry system> | P-6 | P.54C-451 |
| | The door-ajar warning lamp does not illuminate/extinguish normally. | P-7 | P.54C-453 |

# CHECK TROUBLE BY USING THE INPUT SIGNAL CHECK

M1549024200307

<Data list, function diagnosis or pulse check>
If a problem is found in the Service Data inspection, observe the table below.

| Symptom | Inspection procedure number | Reference page |
|---|---|---|
| The ignition switch (ACC) signal is not received. | Q-1 | P.54C-456 |
| The ignition switch (IG1) signal is not received. | Q-2 | P.54C-460 |
| The back-up lamp switch signal is not received. <M/T> | Q-3 | P.54C-463 |
| The front fog lamp switch signal is not received. | Q-4 | P.54C-470 |
| The driver's door switch signal is not received. <LH drive vehicles> | Q-5 | P.54C-474 |
| The driver's door switch signal is not received. <RH drive vehicles> | | P.54C-476 |

| Symptom | | Inspection procedure number | Reference page |
|---|---|---|---|
| Column switch (lighting and turn-signal lamp and headlamp washer switch) | The tail lamp switch signal is not received. | Q-6 | P.54C-478 |
| | The headlamp switch signal is not received. | | |
| | The dimmer switch signal is not received. | | |
| | The passing switch signal is not received. | | |
| | The turn-signal lamp switch (LH) signal is not received. | | |
| | The turn-signal lamp switch (RH) signal is not received. | | |
| | The headlamp washer switch signal is not received. | | |
| Column switch (windshield wiper/washer and rear wiper washer switch) | The windshield mist wiper switch signal is not received. | Q-7 | P.54C-479 |
| | The windshield intermittent wiper switch signal is not received. | | |
| | The windshield low-speed wiper switch signal is not received. | | |
| | The windshield high-speed wiper switch signal is not received. | | |
| | The windshield washer switch signal is not received. | | |
| | The rear wiper switch signal is not received. | | |
| | The rear washer switch signal is not received. | | |
| | The windshield intermittent wiper volume signal is not received. | Q-8 | P.54C-481 |
| When the power window main switch is operated, the switch signals are not received. | | Q-9 | P.54C-485 |
| When the sunroof switch is operated, the switch signals are not received. | | Q-10 | P.54C-488 |
| The key reminder switch signal is not received. | | Q-11 | P.54C-493 |
| The hazard warning lamp switch signal is not received. | | Q-12 | P.54C-497 |
| The rear fog lamp switch signal is not received. | | Q-13 | P.54C-501 |
| All the door switch signals are not received. | | Q-14 | P.54C-505 |
| The driver's door lock actuator switch signal is not received. <LH drive vehicles> | | Q-15 | P.54C-514 |
| The driver's door lock actuator switch signal is not received. <RH drive vehicles> | | | P.54C-518 |

| Symptom | Inspection procedure number | Reference page |
|---|---|---|
| The passenger's door lock key switch signal is not detected. <LH drive vehicles> | Q-16 | P.54C-521 |
| The passenger's door lock key switch signal is not detected. <RH drive vehicles> | | P.54C-525 |
| The tailgate key switch signal is not detected. | Q-17 | P.54C-528 |
| The tailgate lock release handle signal is not detected. | Q-18 | P.54C-533 |
| The driver's seat belt switch signal is not received <LH drive vehicles> | Q-19 | P.54C-537 |
| The driver's seat belt switch signal is not received <RH drive vehicles> | | P.54C-540 |
| The front passenger's seat belt switch signal is not received <LH drive vehicles> | Q-20 | P.54C-543 |
| The front passenger's seat belt switch signal is not received <RH drive vehicles> | | P.54C-546 |
| Signal is not received from the electric remote controlled mirror switch (folding/unfolding switch). | Q-21 | P.54C-549 |
| The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU. | Q-22 | P.54C-553 |
| Each switch signal of the keyless entry transmitter is not received. | Q-23 | P.54C-562 |
| The interior lamp loaded signal is not detected. | Q-24 | P.54C-563 |
| Vehicle speed signal is not received. | Q-25 | P.54C-568 |

# OPERATION AND FUNCTION QUICK-REFERENCE TABLE FOR INPUT SIGNAL INSPECTION PROCEDURES

M1549020300302

If troubles have occurred in the functions which use the SWS simultaneously, observe the table below to check input signals. (This table shows only the input signals which will cause troubles in at least two functions simultaneously).

| Function | Q-1 | Q-2 | Q-5 | Q-6 | Q-7 | Q-11 | Q-12 | Q-14 | Q-15 | Q-23 | Q-24 | Q-25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lamp reminder function | – | × | × | × | – | – | – | – | – | – | – | – |
| Seat belt warning buzzer function | × | – | – | – | – | – | – | – | – | – | – | × |
| Door-ajar warning buzzer function | × | × | × | – | – | – | – | × | – | – | – | × |
| Turn-signal lamp operation sound function | – | × | – | – | – | – | × | – | – | – | – | – |
| Control of central door locking | – | – | – | – | – | – | – | – | × | – | – | – |
| Power window control | – | × | – | – | – | – | – | – | – | – | – | – |
| Keyless entry system | – | – | × | – | – | × | × | × | – | × | – | – |

| Function | Q-1 | Q-2 | Q-5 | Q-6 | Q-7 | Q-11 | Q-12 | Q-14 | Q-15 | Q-23 | Q-24 | Q-25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Keyless entry hazard warning lamp answerback | – | – | – | – | – | × | × | – | – | × | – | – |
| Multi-mode keyless entry system | – | – | – | – | – | – | – | – | – | × | – | – |
| Sunroof control | × | – | × | – | – | – | – | – | – | – | – | – |
| Control of windshield wiper washer | × | – | – | – | × | – | – | – | – | – | – | × |
| Rear wiper washer control | × | – | – | – | × | – | – | – | – | – | – | – |
| Headlamp washer control | × | – | – | × | × | – | – | – | – | – | – | – |
| Electric retractable remote controlled door mirror | × | – | × | – | – | – | – | – | – | – | – | – |
| Ignition key cylinder illumination lamp function | – | × | × | – | – | × | – | – | – | – | – | – |
| Seat belt indicator lamp | – | × | – | – | – | – | – | – | – | – | – | × |
| Headlamp control | – | × | – | × | – | – | – | – | – | – | – | – |
| Tail lamp control | – | × | – | × | – | – | – | – | – | – | – | – |
| Headlamp automatic-shutdown function | – | × | × | × | – | – | – | – | – | – | – | – |
| Front fog lamp control | – | – | – | × | – | – | – | – | – | – | – | – |
| Rear fog lamp control | – | × | – | × | – | – | – | – | – | – | – | – |
| Turn-signal lamp control | – | × | – | × | – | – | × | – | – | – | – | – |
| Interior lamp control | – | × | × | – | – | × | × | × | × | – | × | – |
| Interior lamp automatic-shutdown function | × | × | × | – | – | – | – | × | – | – | × | – |
| Door-ajar warning lamp | – | – | × | – | – | – | × | × | – | – | – | – |

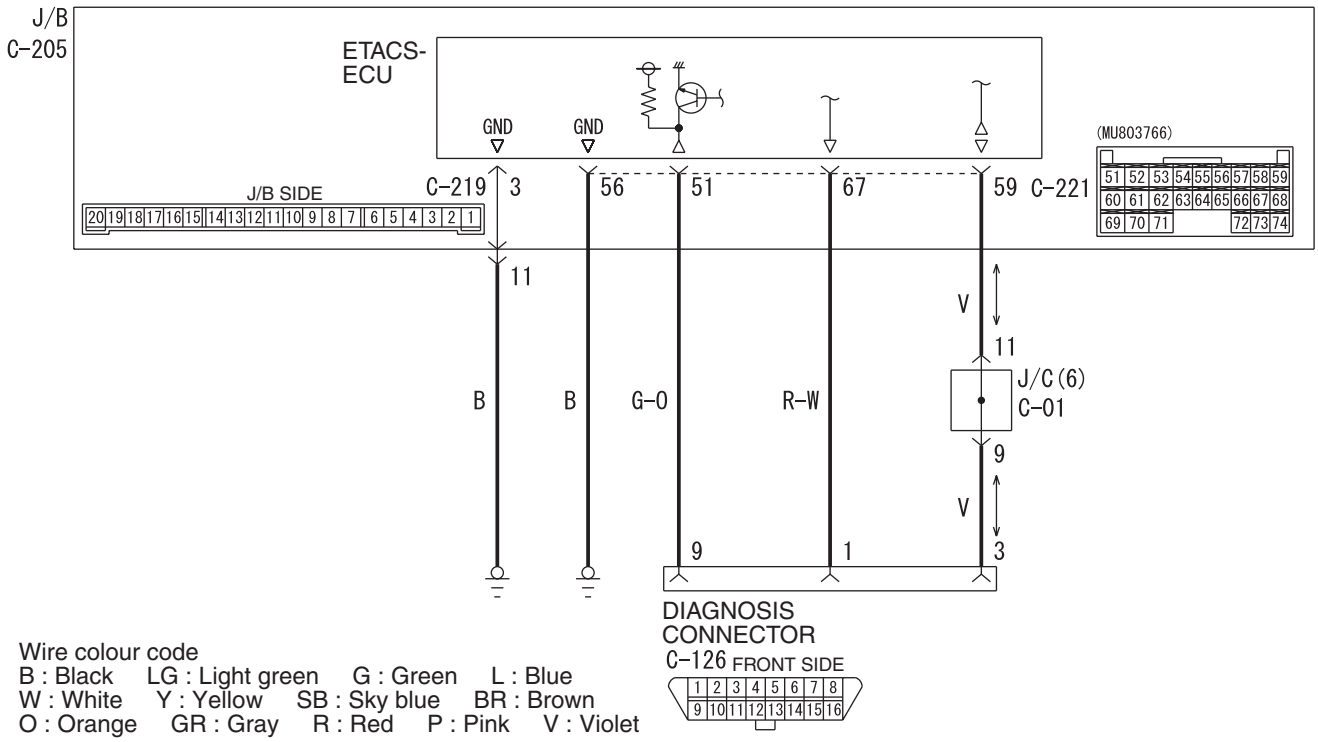
# SYMPTOM PROCEDURES

## Inspection Procedure A-1: Communication with the SWS monitor is not possible.

**⚠ CAUTION**

**Whenever the ECU is replaced, ensure that the power supply circuit, the earthing circuit and the communication circuit are normal.**

**MUT-III Communication and ETACS-ECS Earth Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue
W : White Y : Yellow SB : Sky blue BR : Brown
O : Orange GR : Gray R : Red P : Pink V : Violet

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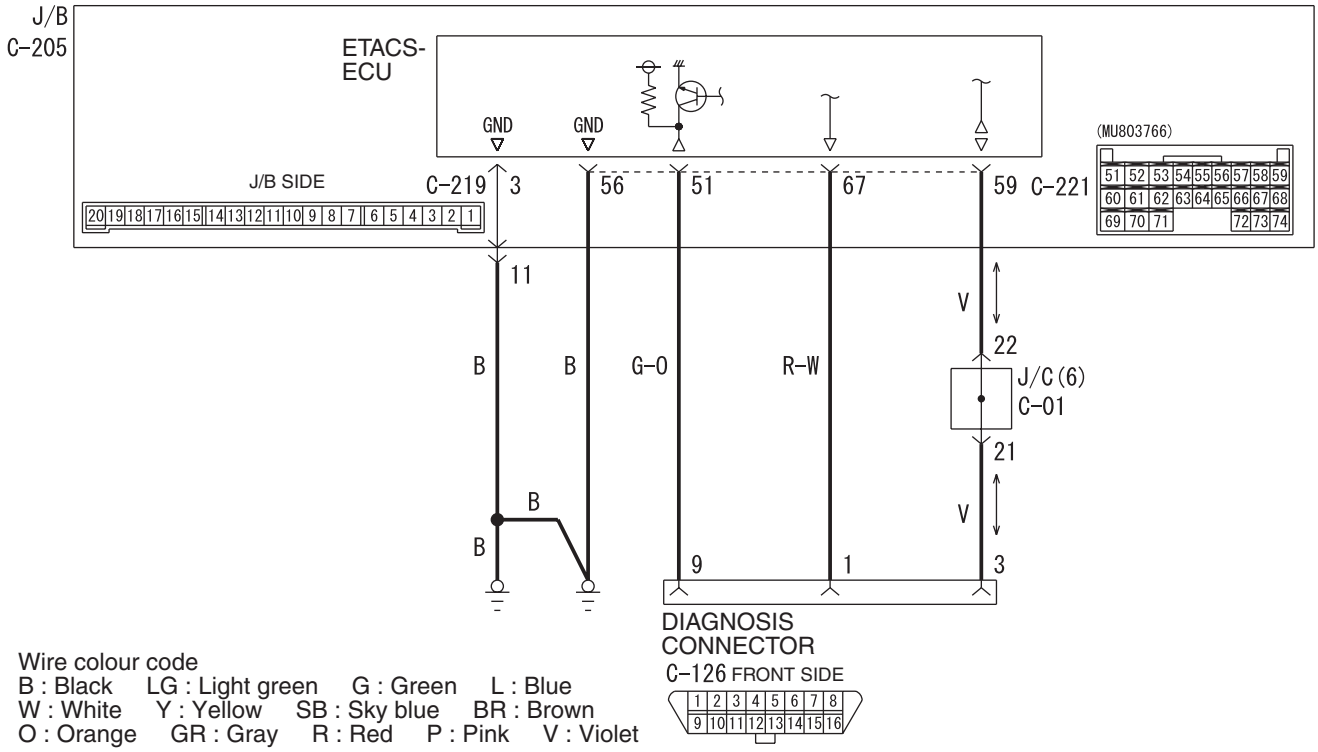
**MUT-III Communication and ETACS-ECS Earth Circuit <RHD>**




W4X54E117A

## COMMENTS ON TROUBLE SYMPTOM

The SWS monitor may be connected improperly.

## POSSIBLE CAUSES

- Malfunction of the SWS monitor body (I/F cartridge)
- Malfunction of the SWS monitor harness
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check that the MUT-III communicates with the other systems.**

Check whether the MUT-III can communicate with the other systems.

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** Diagnose the system, which cannot communicate with the MUT-III.

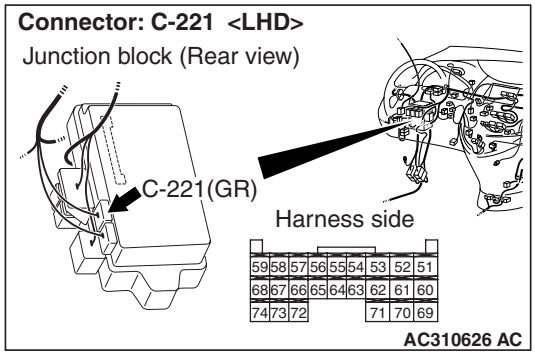
**Step 2. Check that the MUT-III can communicate with the system.**

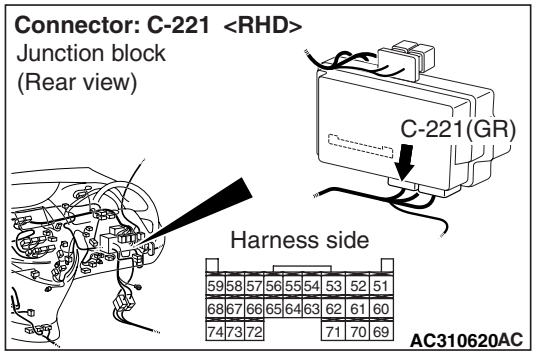
When the ignition switch is turned ON, check if the MUT-III can communicate with the system.

**Q: Is the check result normal?**

**YES :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."
**NO :** Go to Step 3.

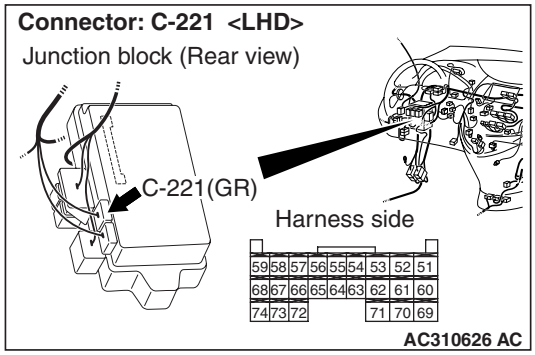
### Step 3. Connector check: C-221 ETACS-ECU connector

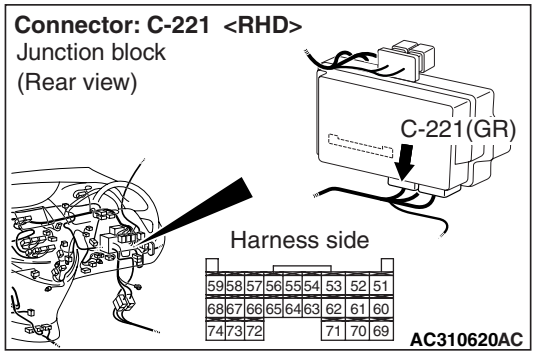


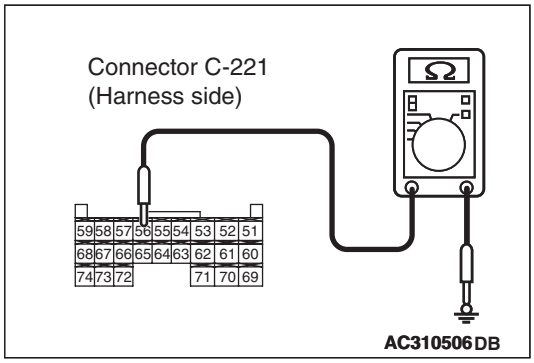

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the defective connector.

### Step 4. Resistance measurement at the C-221 ETACS-ECU connector.



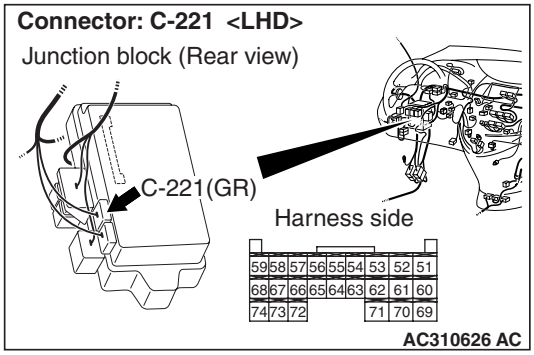

(1) Disconnect the connector, and measure at the wiring harness side.

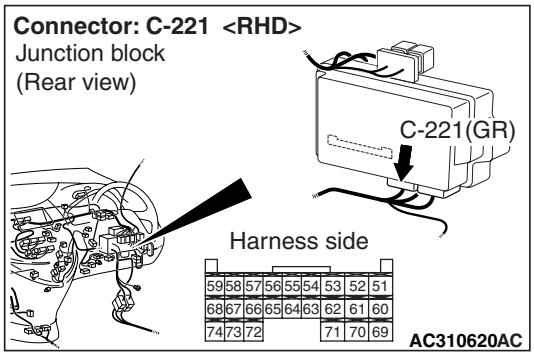



(2) Resistance between C-221 ETACS-ECU connector terminal No.56 and body earth
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Go to Step 5.

### Step 5. Check the wiring harness between C-221 ETACS-ECU connector terminal No.56 and body earth.

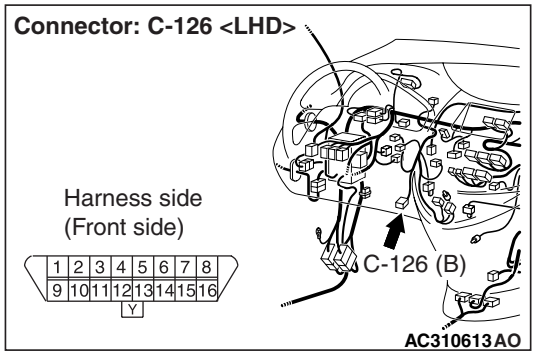


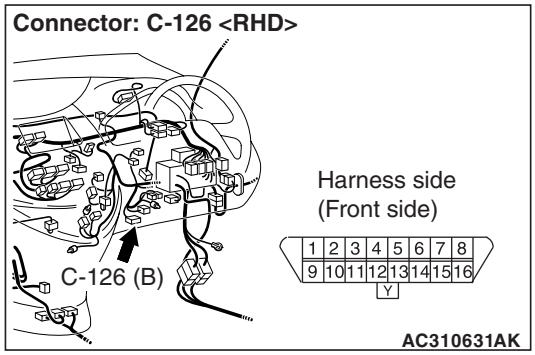




- Check the earth wires for open circuit.

**Q: Are the check results normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

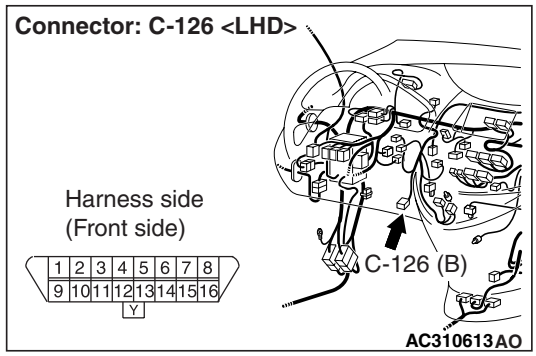
**Step 6. Connector check: C-126 diagnosis connector**

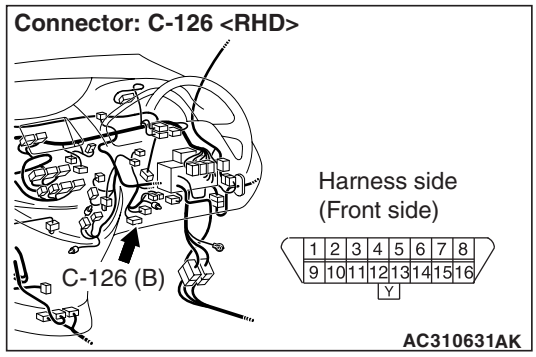


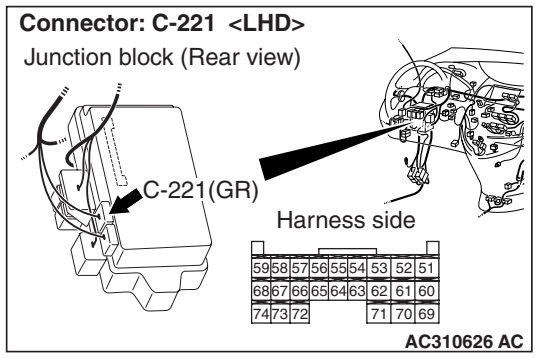



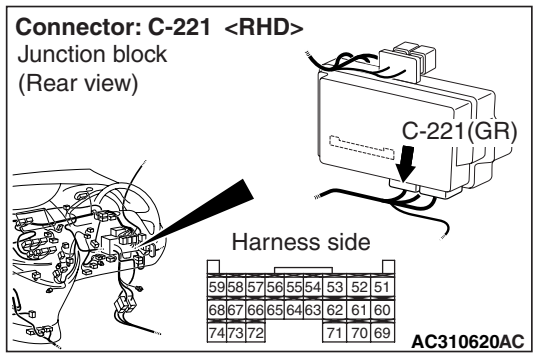

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the defective connector.

**Step 7. Check the wiring harness from C-221 ETACS-ECU connector terminal Nos.51 and 67 to C-126 diagnosis connector terminal Nos.9 and 1.**




- Check the communication lines for open circuit.

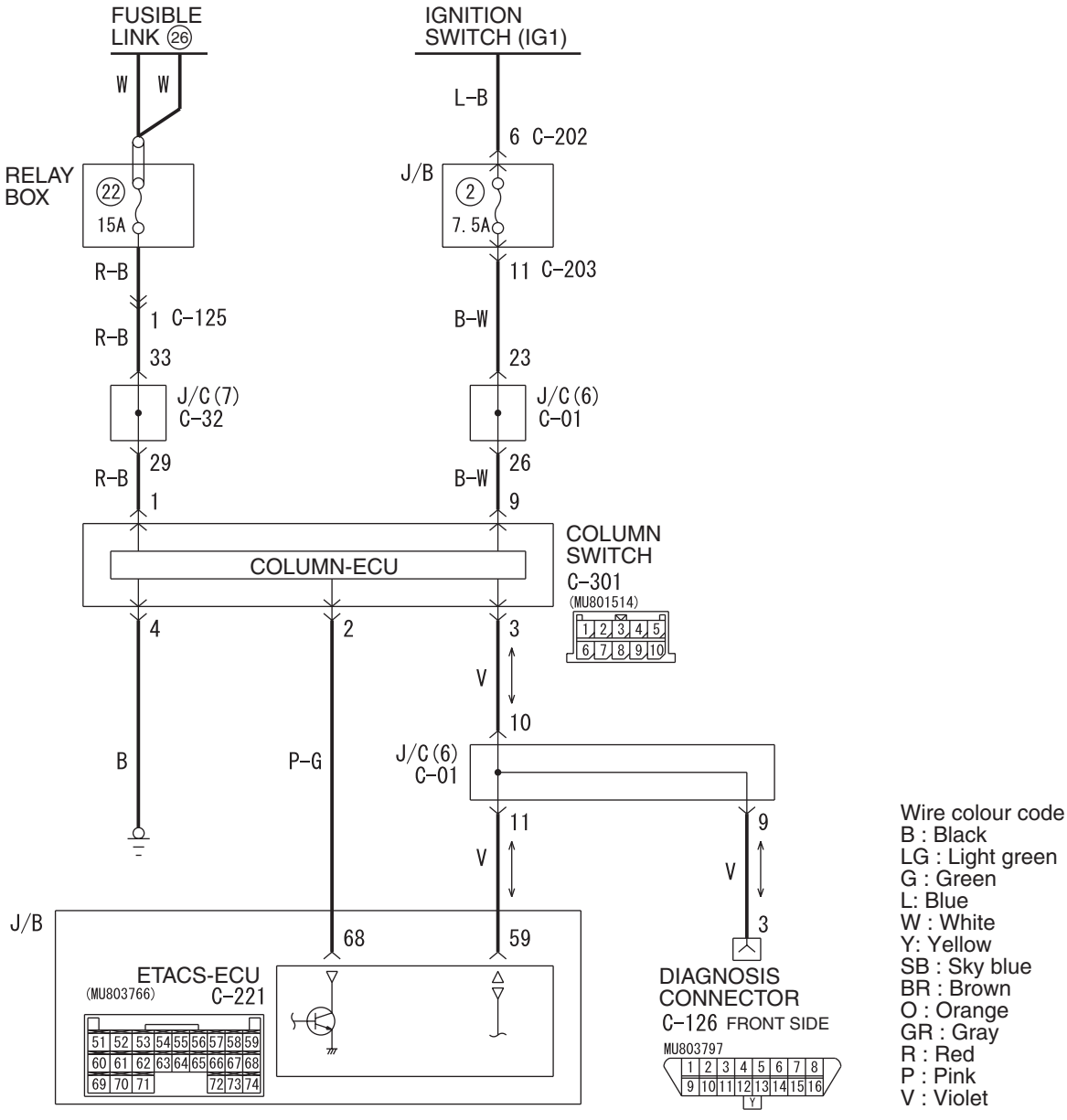
**Q: Are the check results normal?**
**YES :** Replace the ETACS-ECU.
**NO :** Repair the wiring harness.

## Inspection Procedure A-2: Communication with the column switch (column-ECU) is not possible.

**⚠ CAUTION**

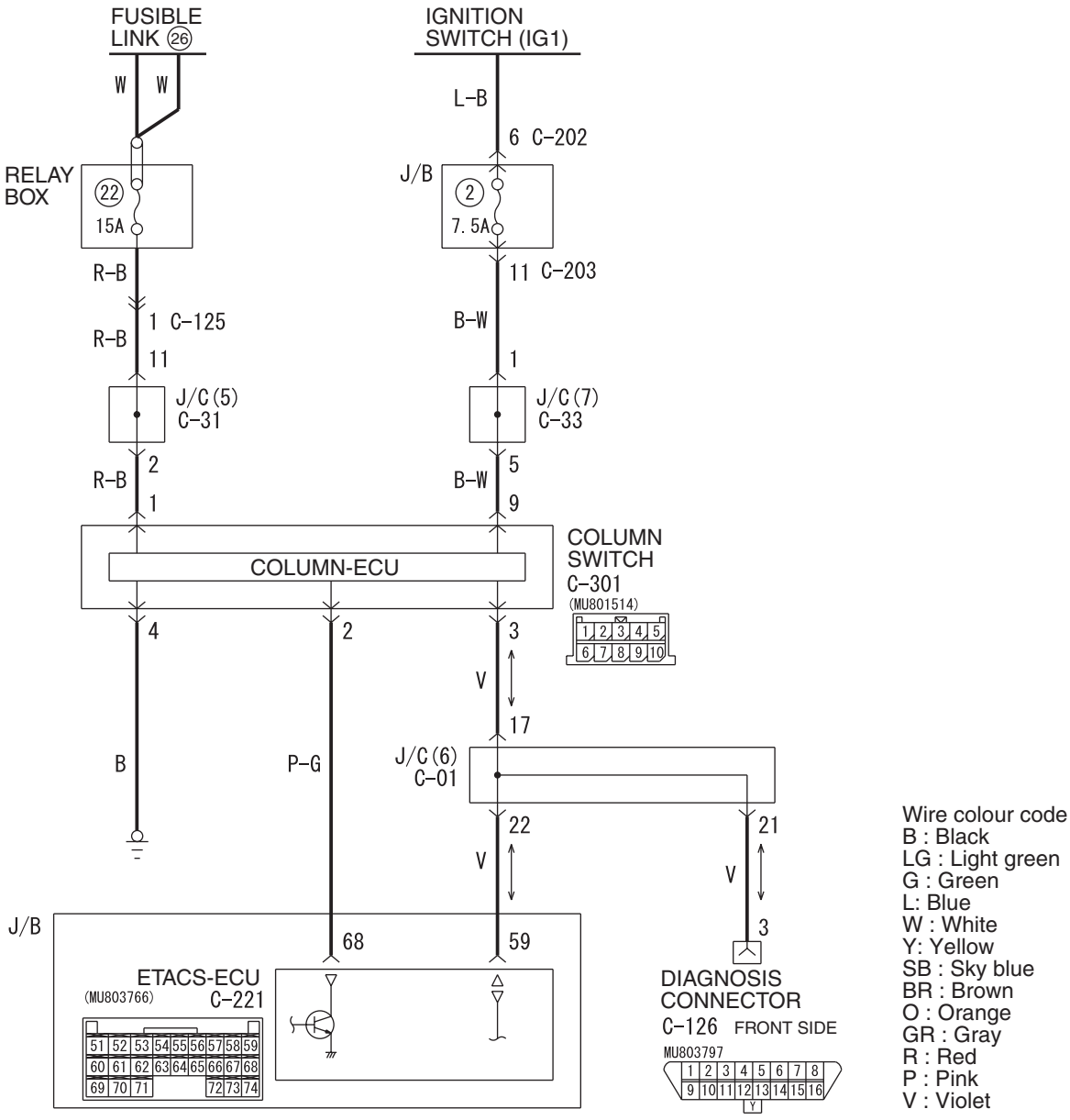
**Whenever the ECU is replaced, ensure that the power supply circuit, the earthing circuit and the communication circuit are normal.**

**Column Switch Power Supply and SWS Communication Circuit <LHD>**




W4X54E119A

**Column Switch Power Supply and SWS Communication Circuit <RHD>**




W4X54E120A

## COMMENTS ON TROUBLE SYMPTOM

The power supply circuit to the column switch (column-ECU) may be defective. If the wiring harness of the battery power supply circuit for the ECU (column switch terminal No.1) is defective, also check the power supply circuit to the ignition switch (IG1) (column switch terminal No.9) and repair if necessary.

## TROUBLESHOOTING HINTS

- Malfunction of the ETACS-ECU
- Malfunction of the column switch
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

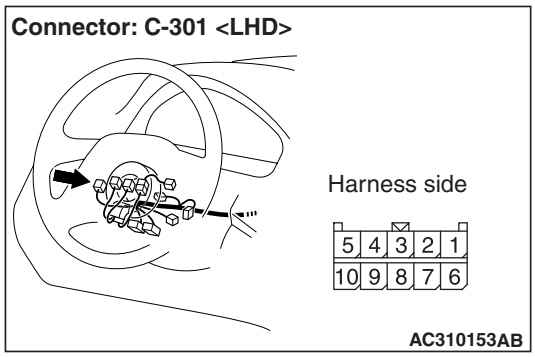
**Step 1. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.
- Ignition switch: OFF

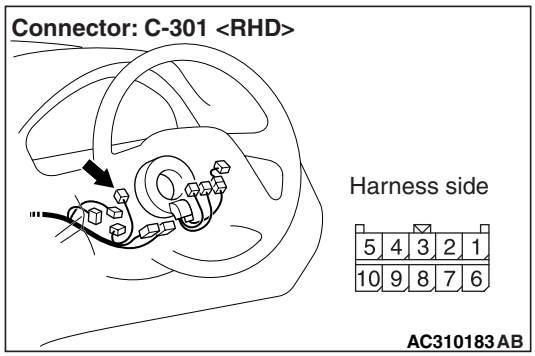
**ECUS TO BE CHECKED**
- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

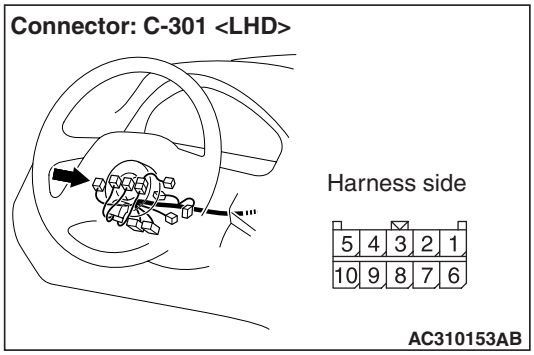
**Step 2. Connector check: C-301 column switch connector**

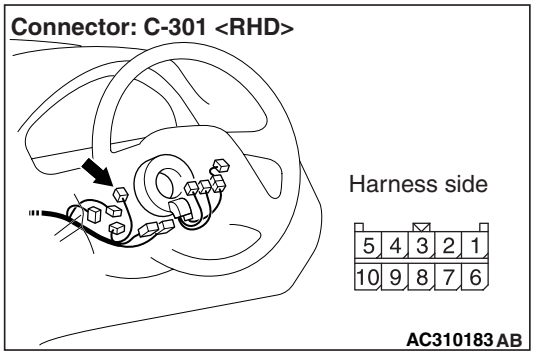


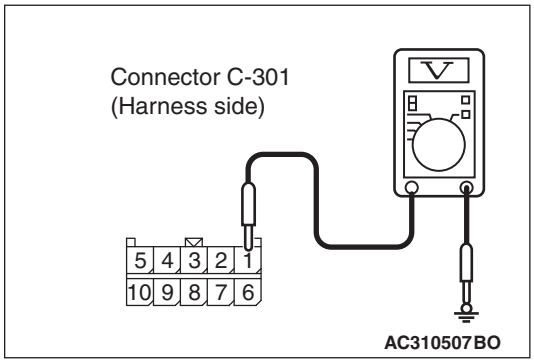

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the defective connector.

**Step 3. Voltage measurement at C-301 column switch connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

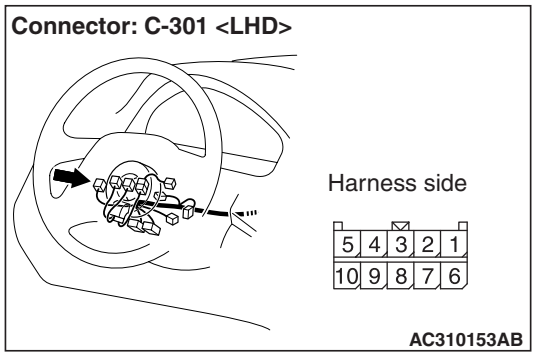


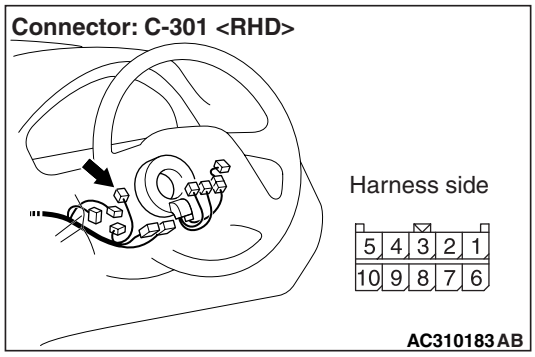

(2) Voltage between C-301 column switch connector No.1 and body earth

**OK: System voltage**

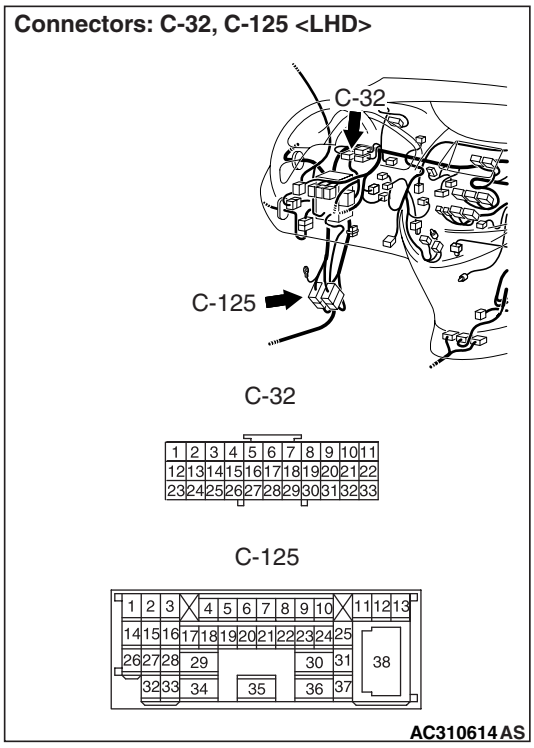
**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

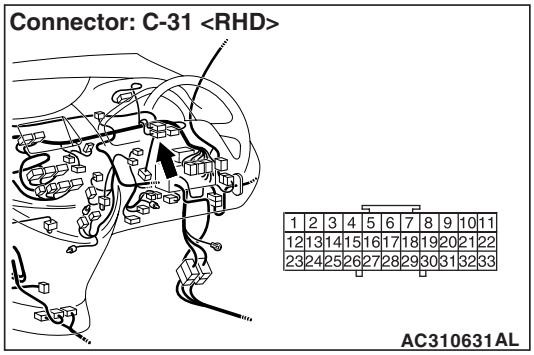
**Step 4. Check the wiring harness between C-301 column switch connector terminal No.1 and fusible link (26).**

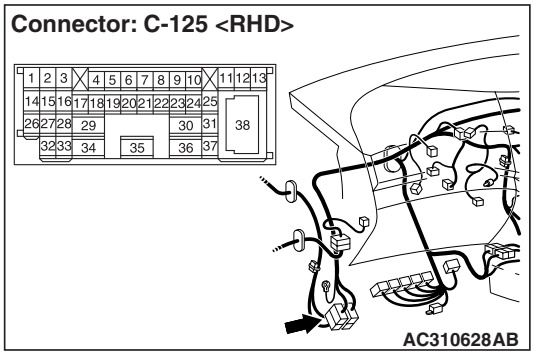



*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-125, joint connectors C-32 <LH drive vehicles> and C-31 <RH drive vehicles>, and repair if necessary.*

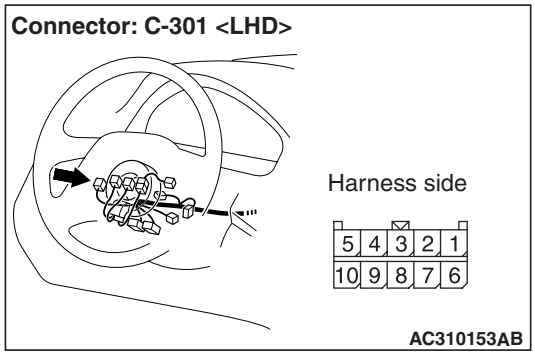
- Check the power supply line for open circuit.

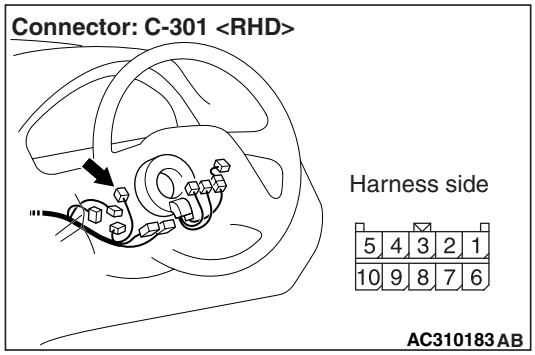
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

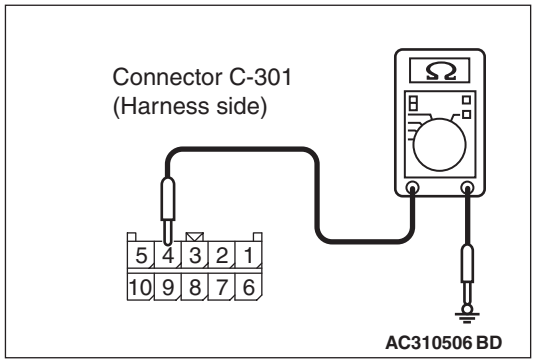
**NO :** Repair the wiring harness.

**Step 5. Resistance measurement at C-301 column switch connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

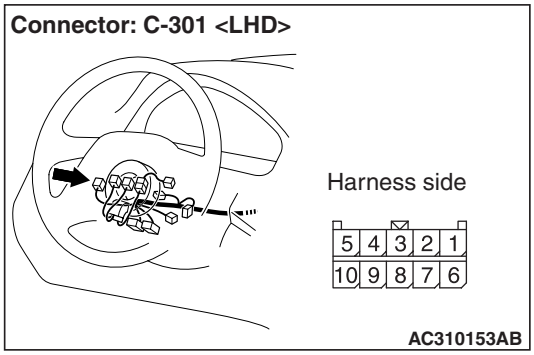


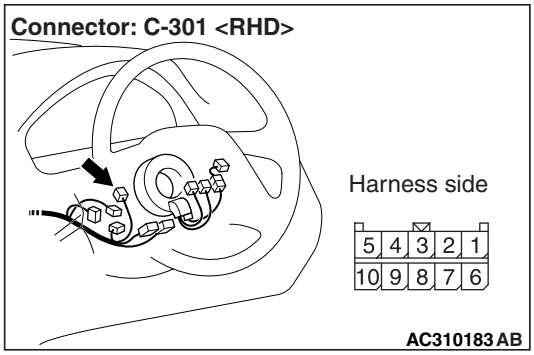

(2) Continuity between C-301 column switch connector No.4 and body earth

**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Go to Step 6.

**Step 6. Check the wiring harness between C-301 column switch connector No.4 and body earth**

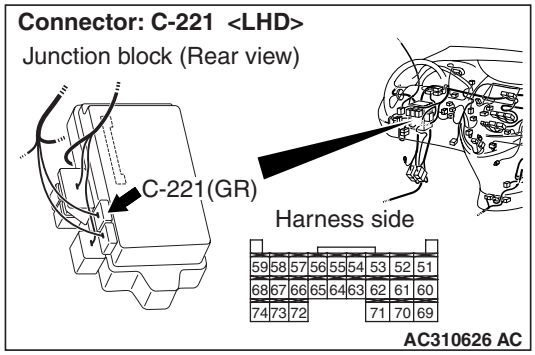


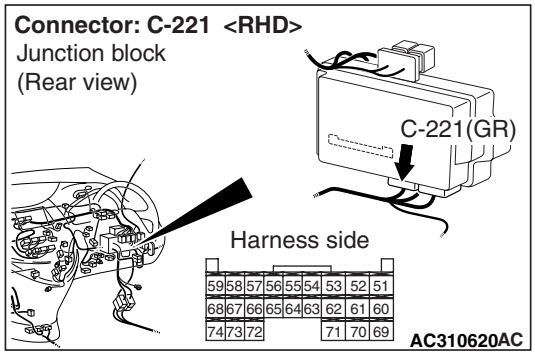




- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

### Step 7. Connector check: C-221 ETACS-ECU connector

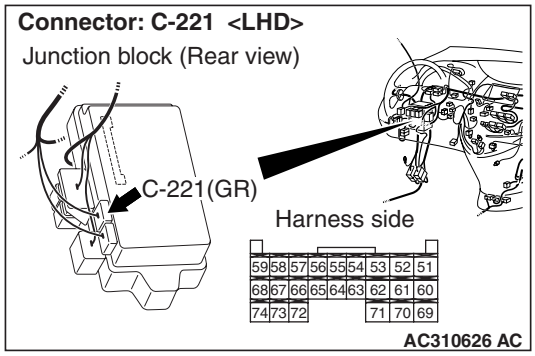


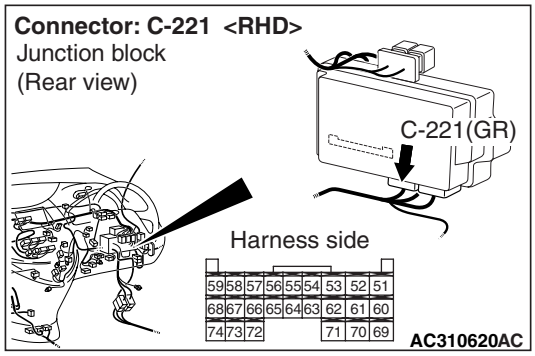



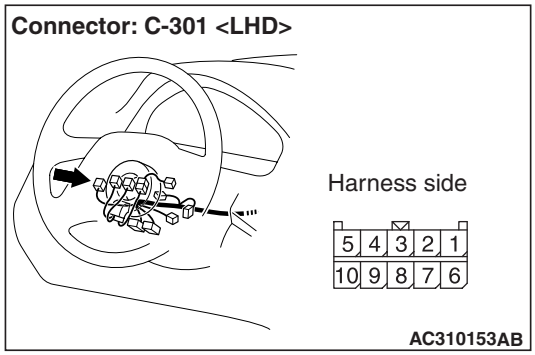

**Q: Is the check result normal?**

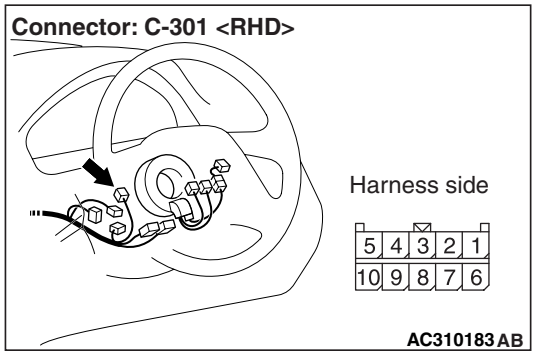
**YES :** Go to Step 8.
**NO :** Repair the defective connector.

**Step 8. Check the wiring harness from C-221 ETACS-ECU connector terminal Nos.59 and 68 to C-301 column switch connector terminal Nos.3 and 2.**

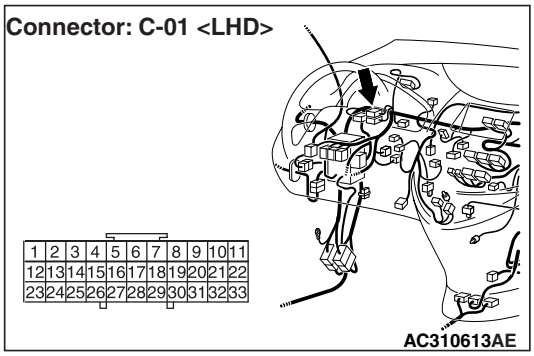


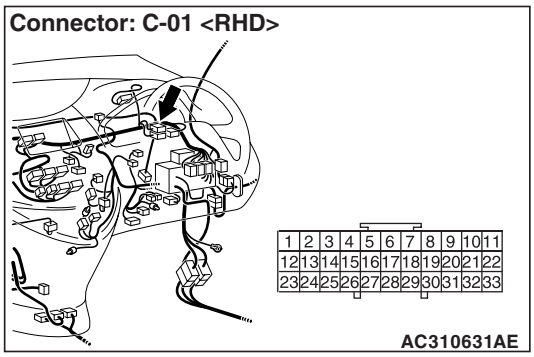




*NOTE:*




*Prior to the wiring harness inspection, check joint connector C-01, and repair if necessary.*

- Check the communication lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the wiring harness.

**Step 9. ECU check by using the SWS monitor**

- Ignition switch: OFF

**ECUS TO BE CHECKED**

- COLUMN ECU

**OK: "OK" is displayed on the "COLUMN ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 10.
**NO :** Replace the column switch.

**Step 10. Retest the system.**
Check that the ETACS-ECU communicates with the column switch.

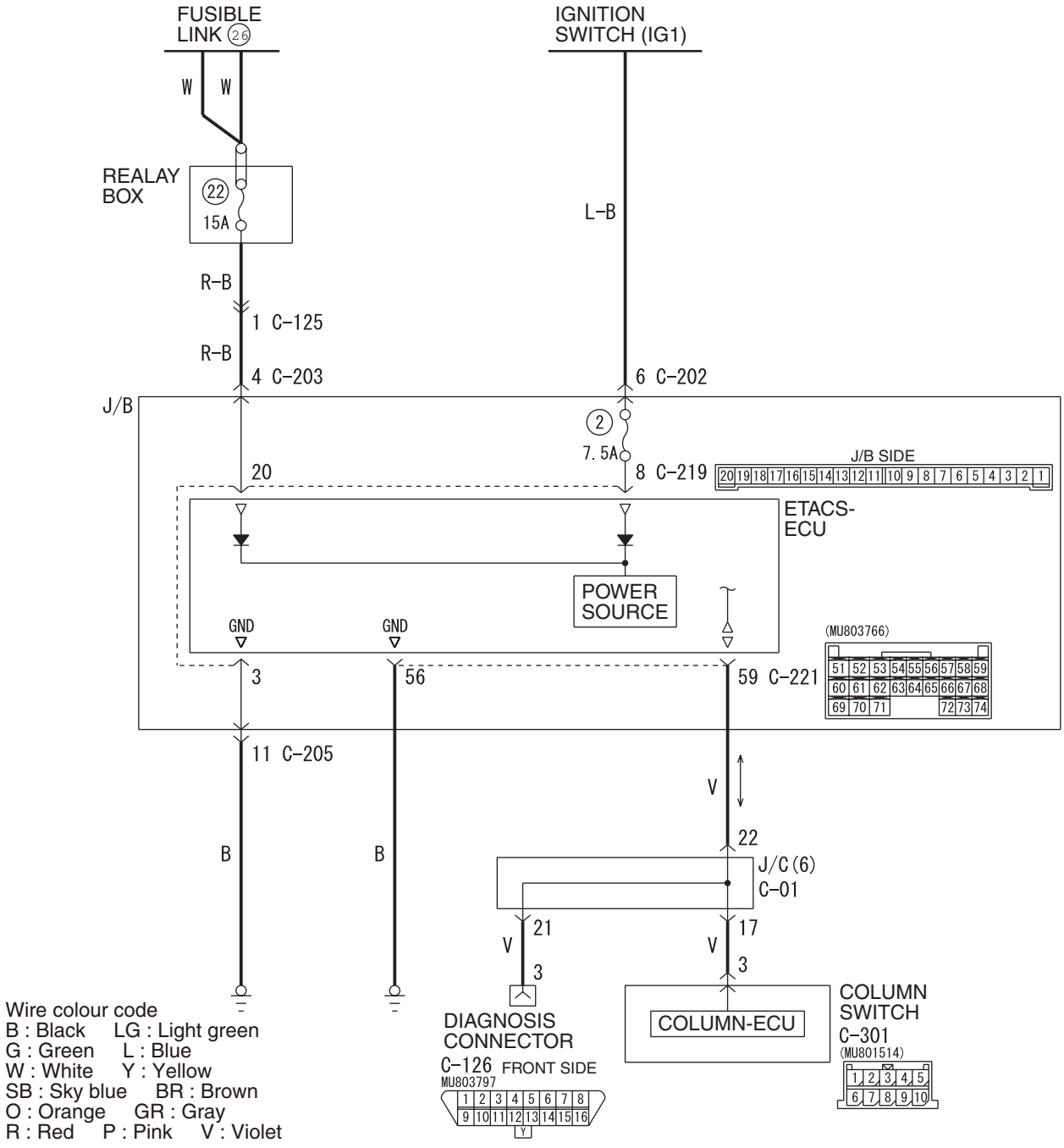
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure A-3: Communication with the ETACS-ECU is not possible.

**⚠ CAUTION**

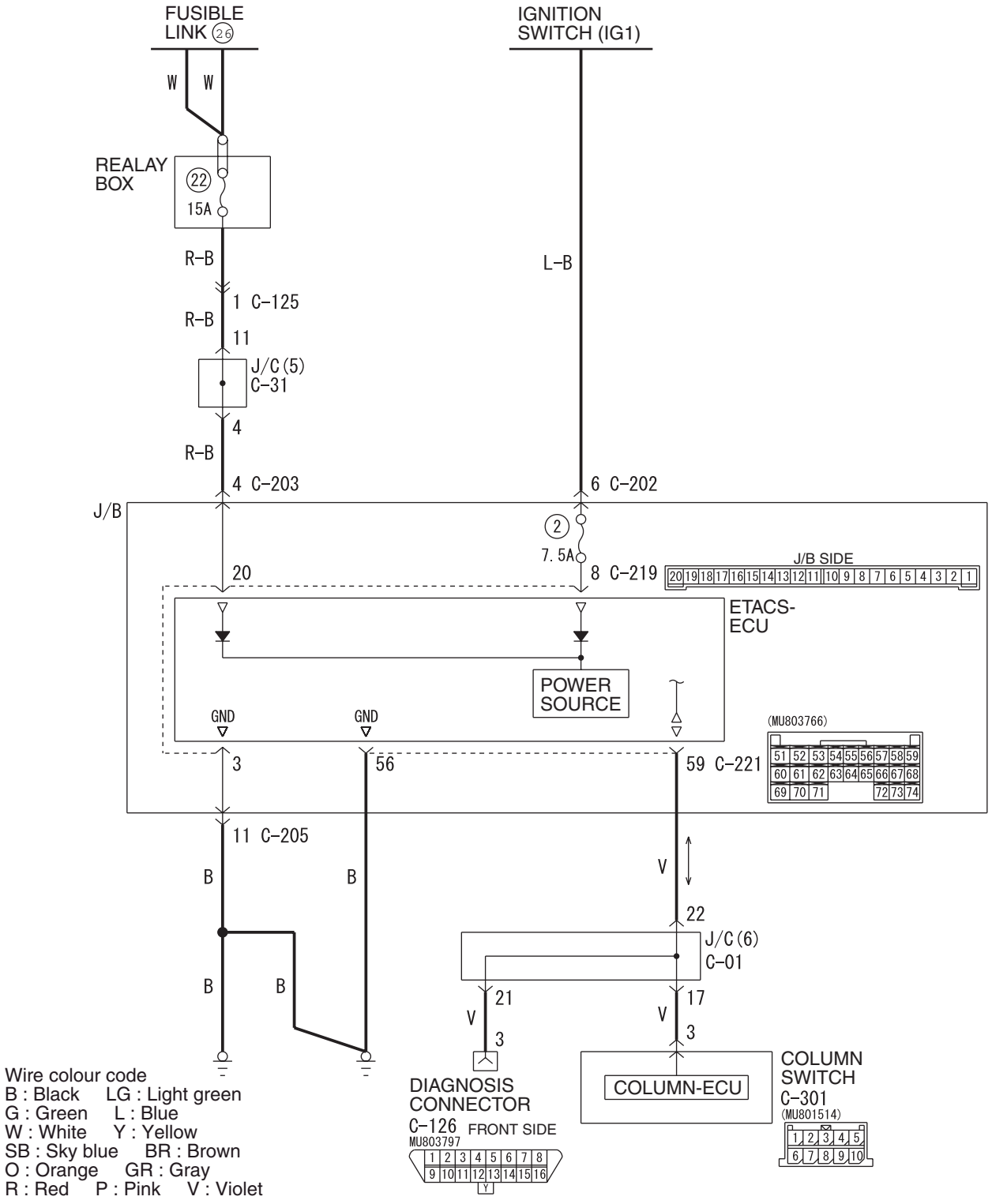
**Whenever the ECU is replaced, ensure that the power supply circuit, the earthing circuit and the communication circuit are normal.**

**ETACS-ECU Power Supply and SWS Communication Circuit <LHD>**




W4X54E179A

**ETACS-ECU Power Supply and SWS Communication Circuit <RHD>**




W4X54E180A

## COMMENTS ON TROUBLE SYMPTOM

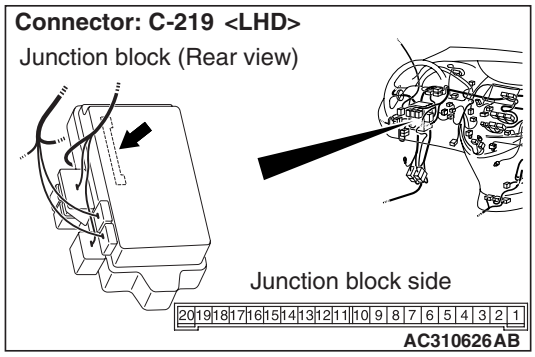
It is suspected that the power supply circuit to the ETACS-ECU is defective, or the wiring harness between the SWS monitor and the ETACS-ECU or their connector(s) is damaged. If the battery power supply circuit to the ECU (terminal No.20 of the ETACS-ECU) is damaged, also check the power supply circuit from the ignition switch (IG1) (terminal No.8 of the ETACS-ECU), and repair if necessary. If the earth circuit to the ECU (terminal No.3 of the ETACS-ECU) is defective, also check the earth circuit to the sensor (terminal No.56 of the ETACS-ECU), and repair if necessary.

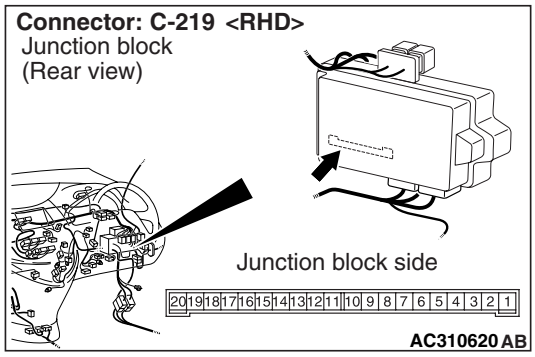
## TROUBLESHOOTING HINTS

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

### Step 1. Connector check: C-219 ETACS-ECU connector

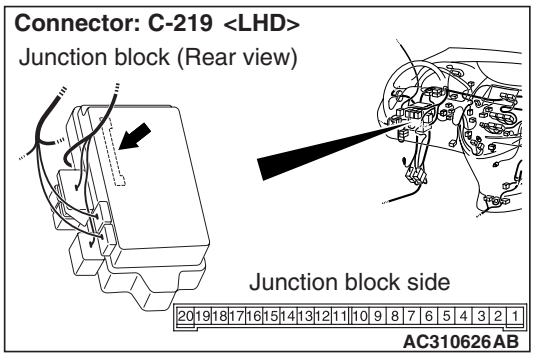


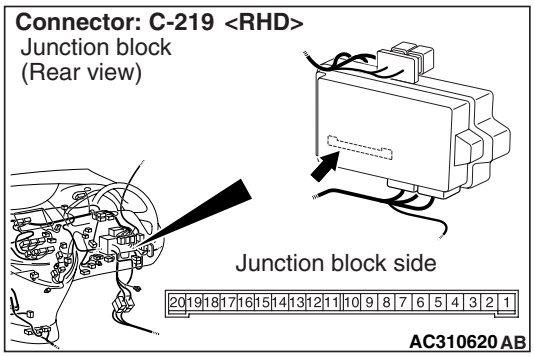




**Q: Is the check result normal?**

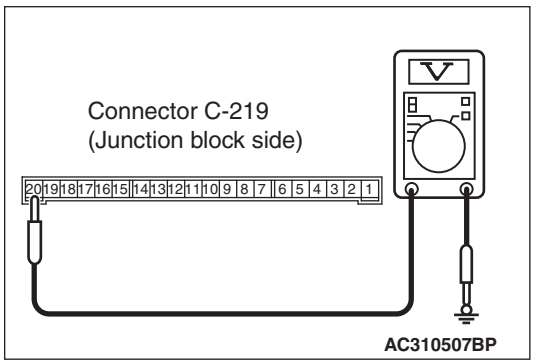
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

### Step 2. Voltage measurement at the C-219 ETACS-ECU connector.




(1) Remove the ETACS-ECU, and measure at the junction block side.



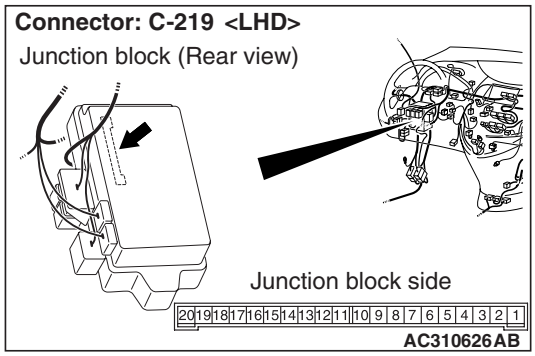

(2) Voltage between C-219 ETACS-ECU connector terminal No.20 and body earth

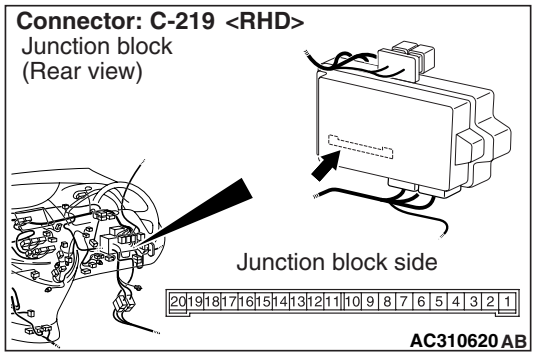
**OK: System voltage**

**Q: Is the check result normal?**

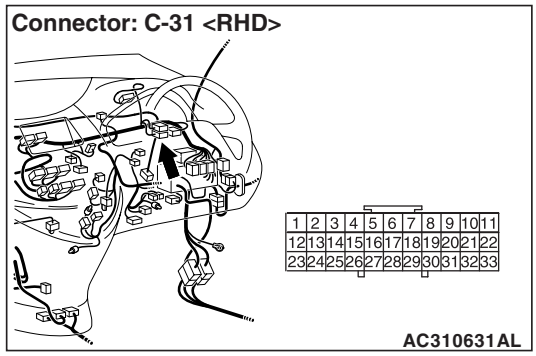
**YES :** Go to Step 4.
**NO :** Go to Step 3.

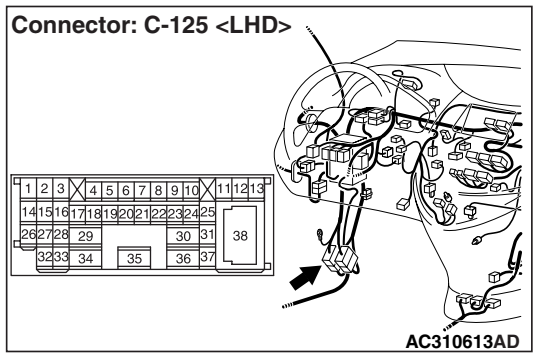
**Step 3. Check the wiring harness between C-219 ETACS-ECU connector terminal No.20 and fusible link (26).**

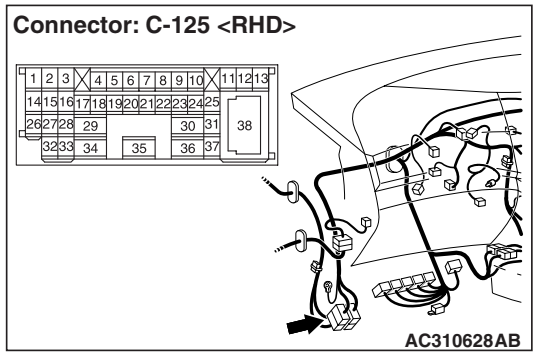


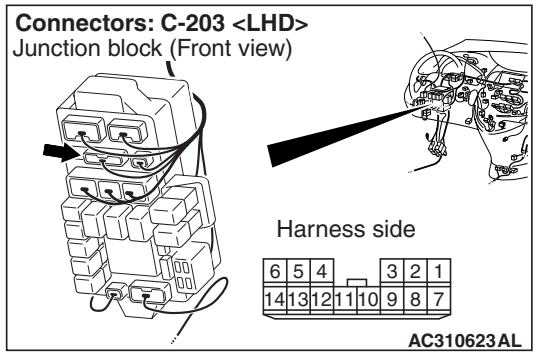



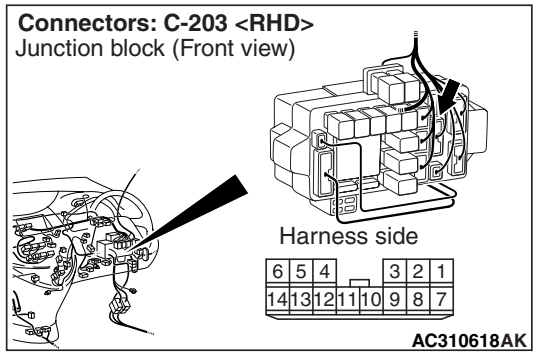

*NOTE:*




*Prior to the wiring harness inspection, check joint*

*connector C-31 <RH drive vehicles>, intermediate connector C-125 and junction block connector C-203, and repair if necessary.*

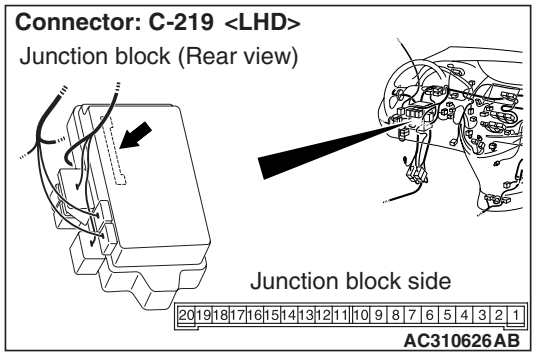
- Check the power supply line for open circuit.

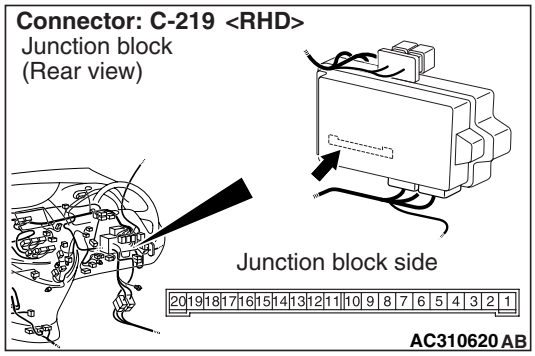
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

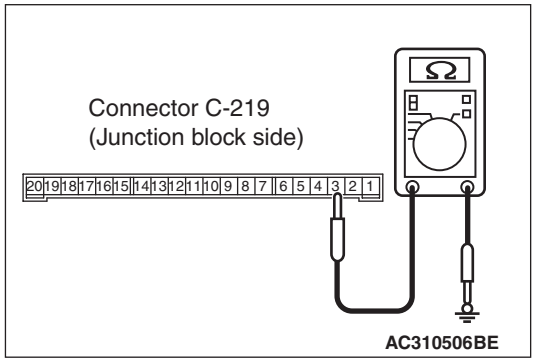
**NO :** Repair the wiring harness.

### Step 4. Resistance measurement at the C-219 ETACS-ECU connector.




(1) Remove the ETACS-ECU, and measure at the junction block side.




(2) Resistance between C-219 ETACS-ECU connector terminal No.3 and body earth

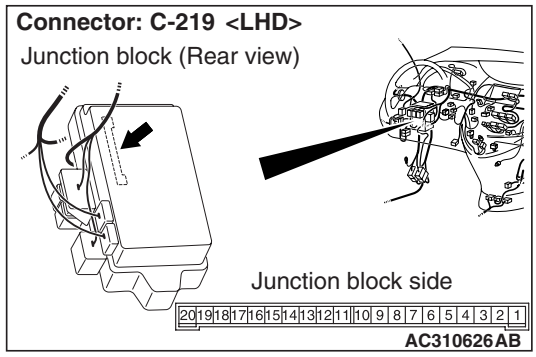
**OK: 2 Ω or less**

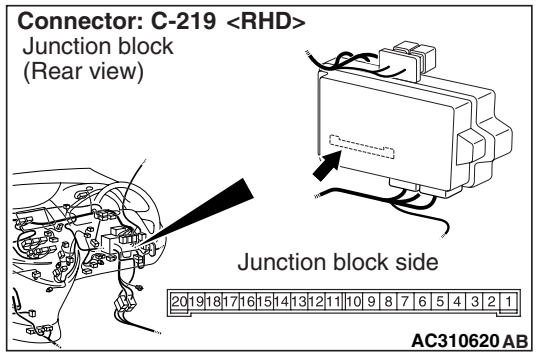
**Q: Is the check result normal?**

**YES :** Go to Step 6.

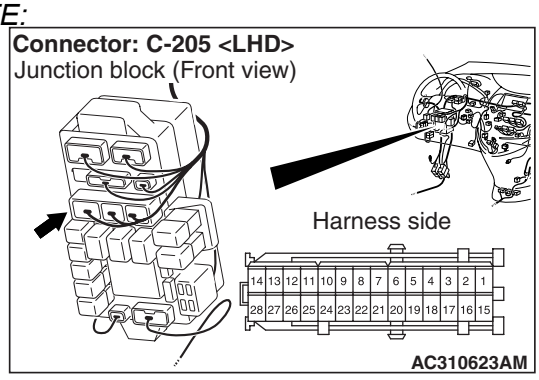
**NO :** Go to Step 5.

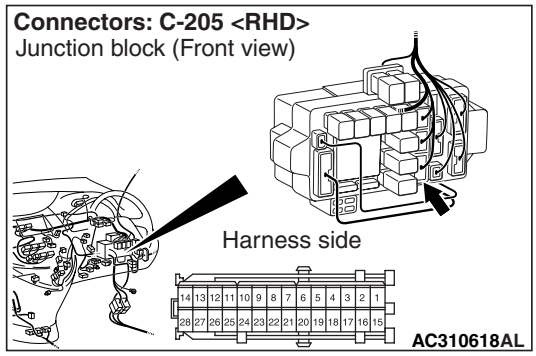
### Step 5. Check the wiring harness between C-219 ETACS-ECU connector terminal No.3 and body earth.




*NOTE:*



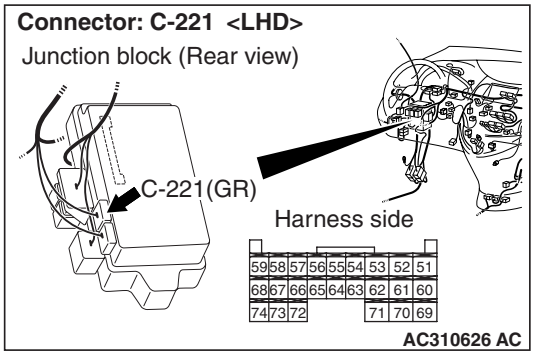

*Prior to the wiring harness inspection, check junction block connector C-205, and repair if necessary.*

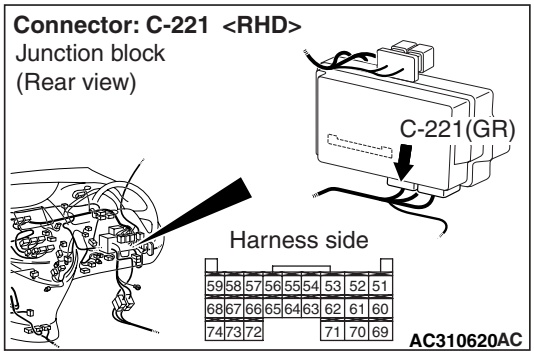
- Check the earth wires for open circuit.

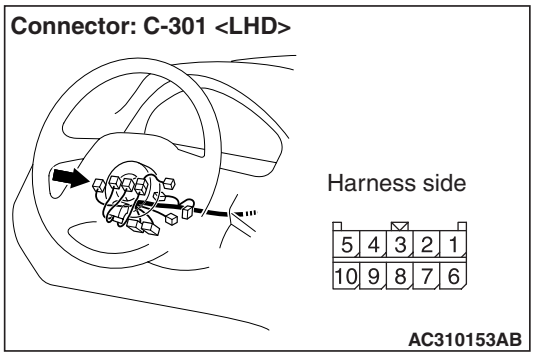
**Q: Is the check result normal?**

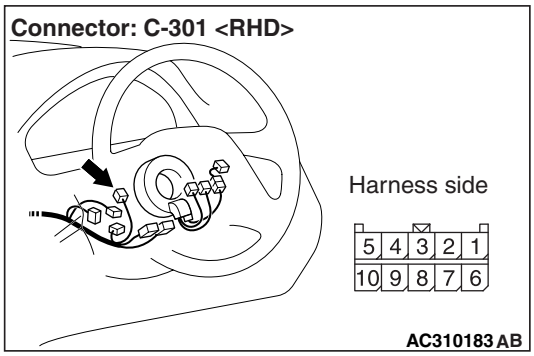
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

### Step 6. Connector check: C-221 ETACS-ECU connector and C-301 column switch connector



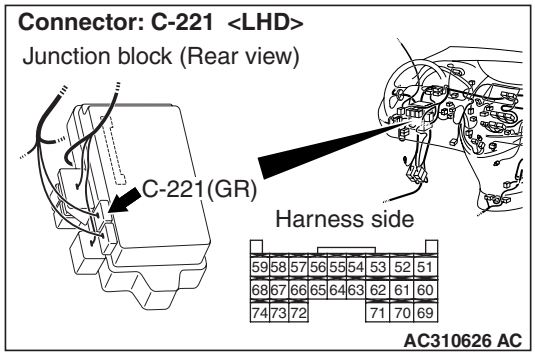



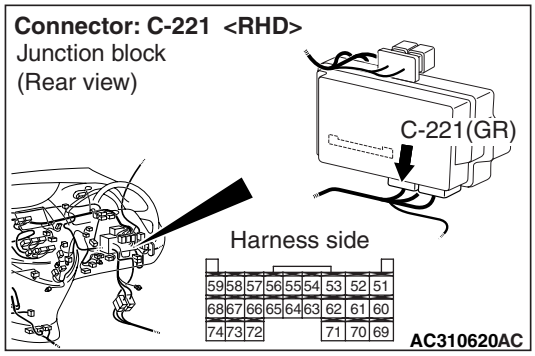



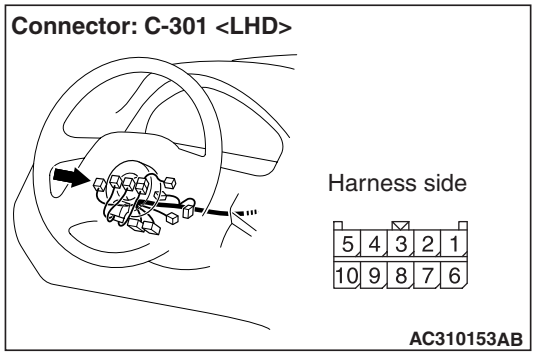



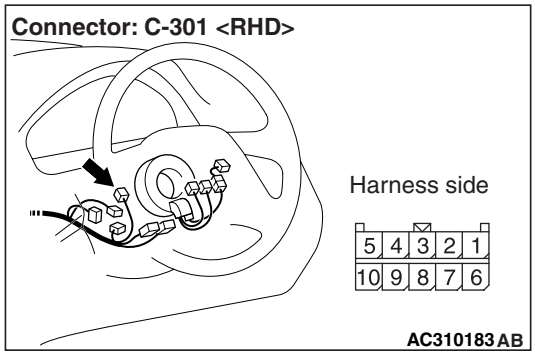

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the defective connector.

**Step 7. Check the wiring harness from C-221 ETACS-ECU connector terminal Nos.59 and 68 to C-301 column switch connector terminal Nos.3 and 2.**



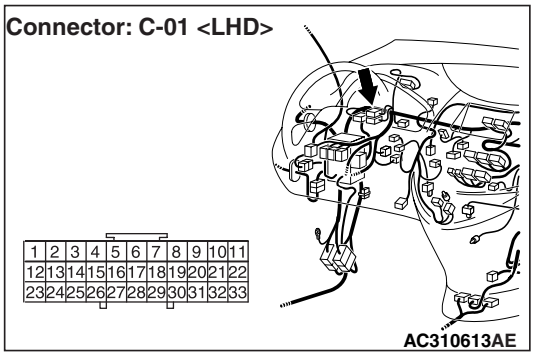



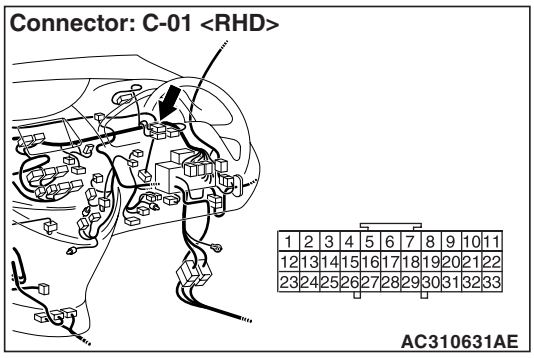




- Check the communication lines for open circuit.

*NOTE:*




*Prior to the wiring harness inspection, check joint connector C-01, and repair if necessary.*

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the wiring harness.

**Step 8. ECU check by using the SWS monitor**
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

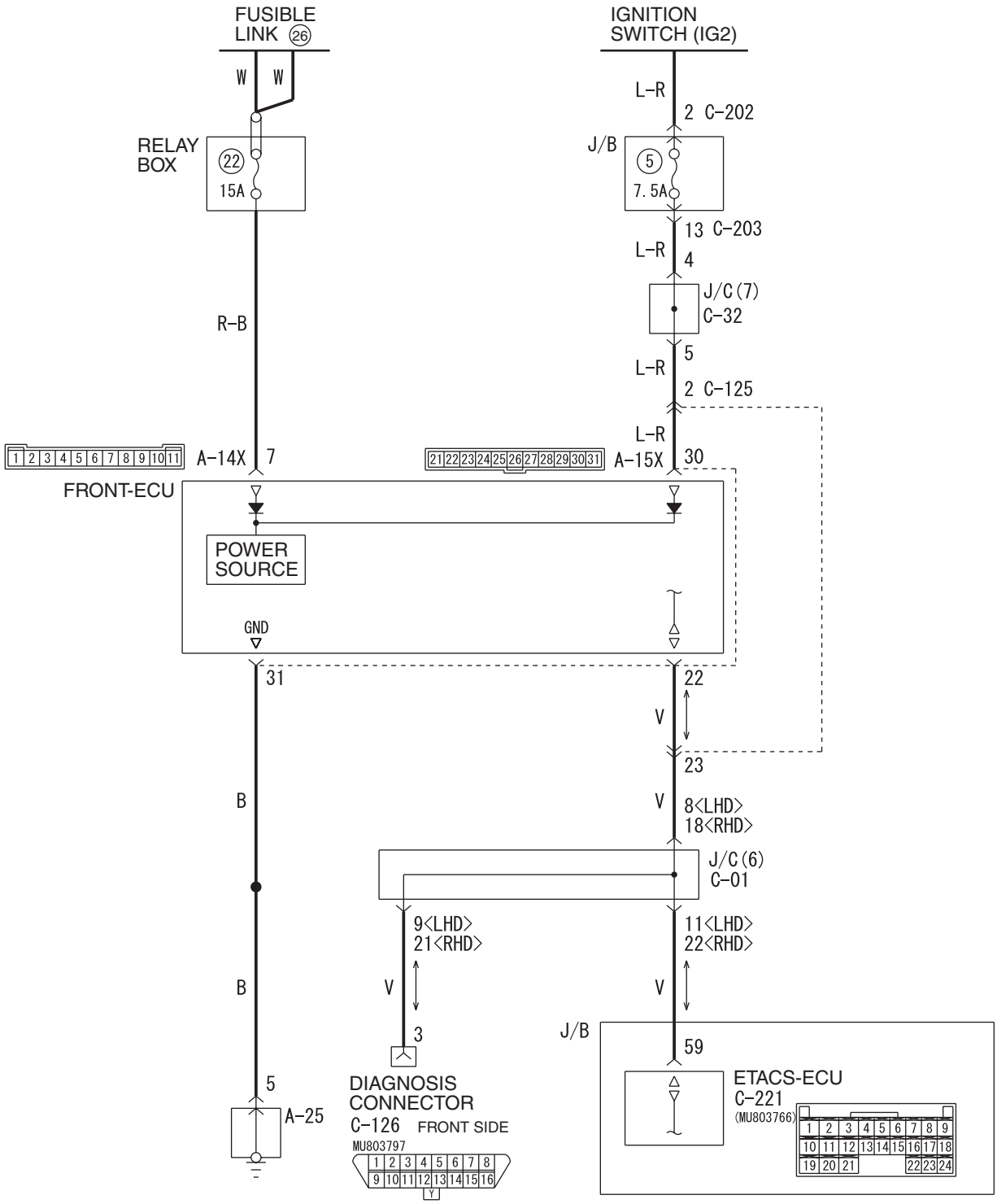
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

**Inspection Procedure A-4: Communication with the front-ECU is not possible.**

**⚠ CAUTION**

**Whenever the ECU is replaced, ensure that the power supply circuit, the earthing circuit and the communication circuit are normal.**

**Front-ECU Power Supply and SWS Communication Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E121A

## COMMENTS ON TROUBLE SYMPTOM

It is suspected that the power supply circuit to the front-ECU is defective, or the wiring harness between the SWS monitor and the front-ECU or their connector(s) is damaged. If the battery power supply circuit to the ECU (terminal No.7 of the front-ECU) is damaged, also check the power supply circuit from the ignition switch (IG2) (terminal No.30 of the front-ECU), and repair if necessary.

## POSSIBLE CAUSES

- Malfunction of the front-ECU
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor**

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

**ECUS TO BE CHECKED**

- ETACS ECU

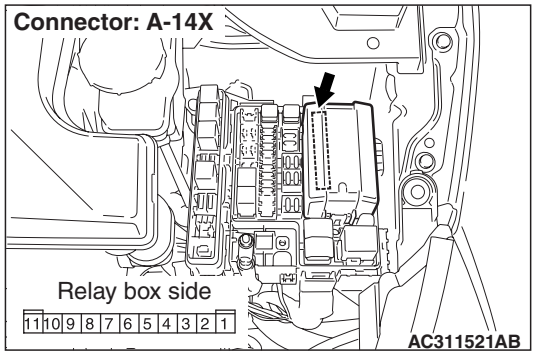
  **OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 2. Connector check: A-14X front-ECU connector**

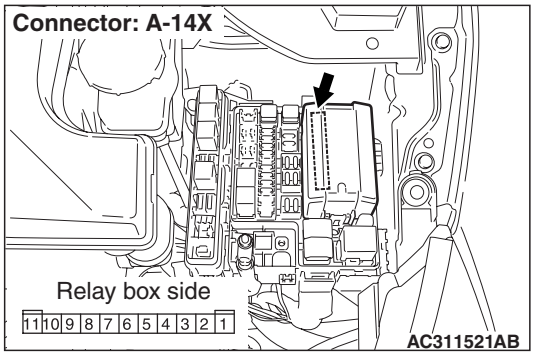



**Q: Is the check result normal?**

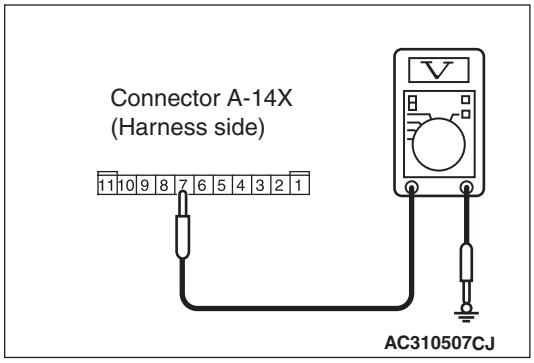
**YES :** Go to Step 3.

**NO :** Repair the defective connector.

**Step 3. Voltage measurement at A-14X front-ECU connector.**




(1) Disconnect the connector, and measure at the relay box side.




(2) Voltage between A-14X front-ECU connector No.7 and body earth

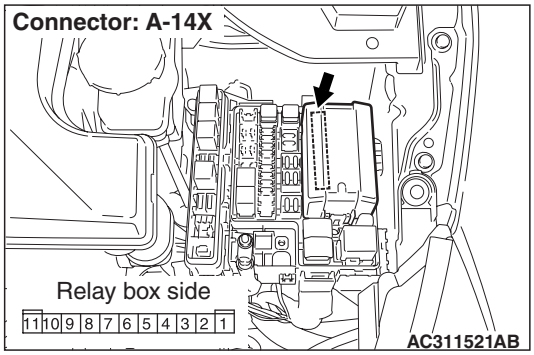
**OK: System voltage**

**Q: Is the check result normal?**

**YES :** Go to Step 6.

**NO :** Go to Step 4.

**Step 4. Check the wiring harness between A-14X front-ECU connector terminal No.7 and the fusible link (26).**



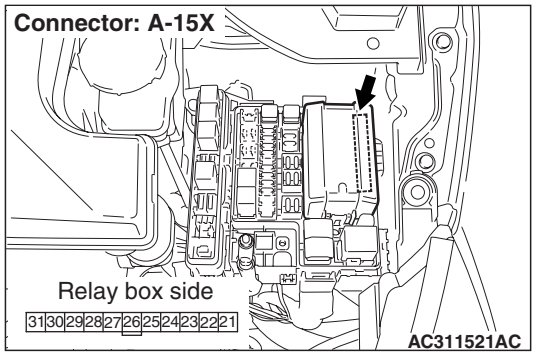

- Check the power supply line for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

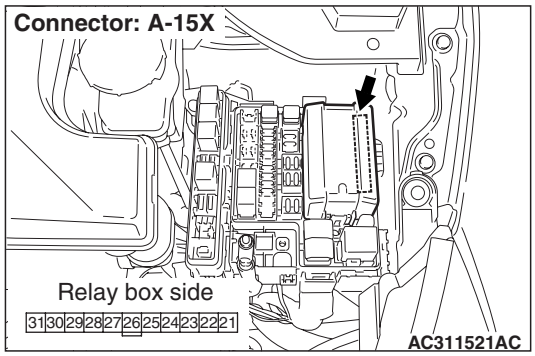
**NO :** Repair the wiring harness.

### Step 5. Connector check: A-15X front-ECU connector

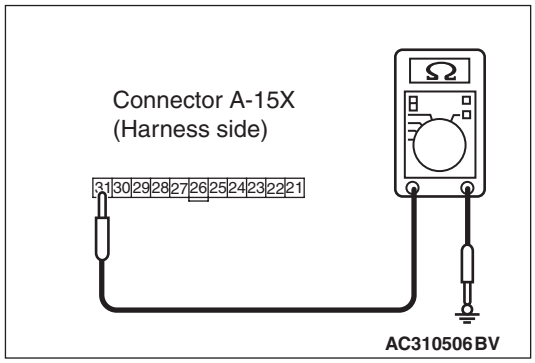



**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

### Step 6. Resistance measurement at A-15X front-ECU connector.



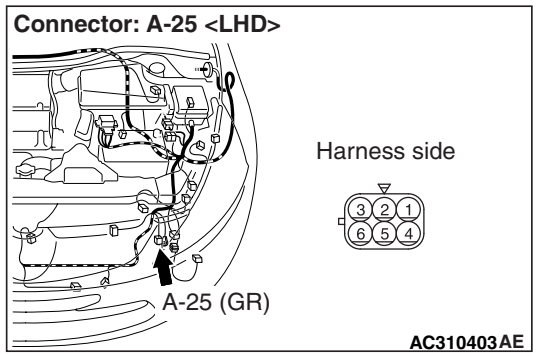

(1) Disconnect the connector, and measure at the relay box side.

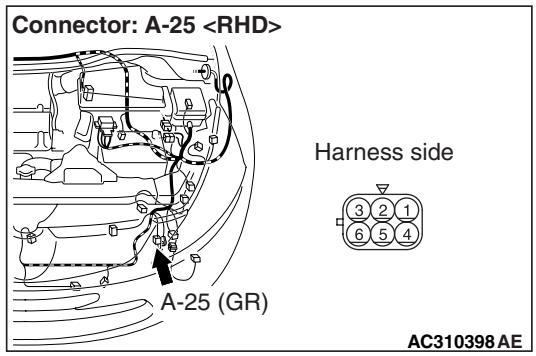



(2) Resistance between A-15X front-ECU connector terminal No.31 and body earth
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Go to Step 7.

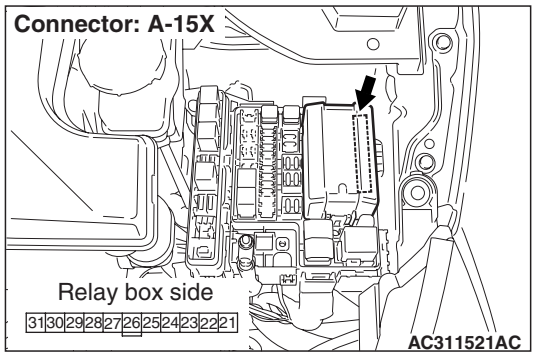
### Step 7. Connector check: A-25 earth connector

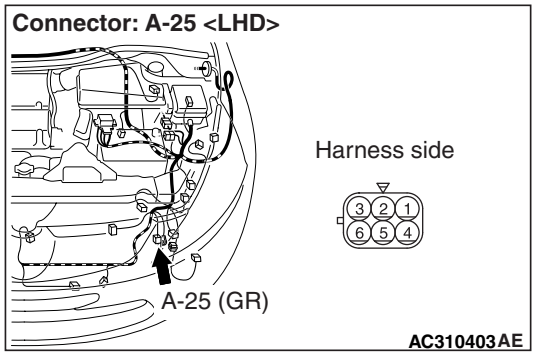


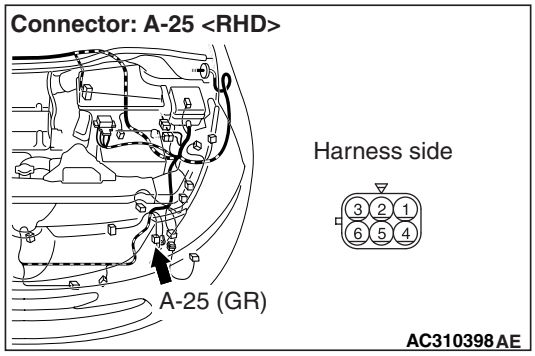




**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the defective connector.

**Step 8. Check the wiring harness between A-15X front-ECU terminal connector terminal No.31 and A-25 earth connector terminal No.5.**



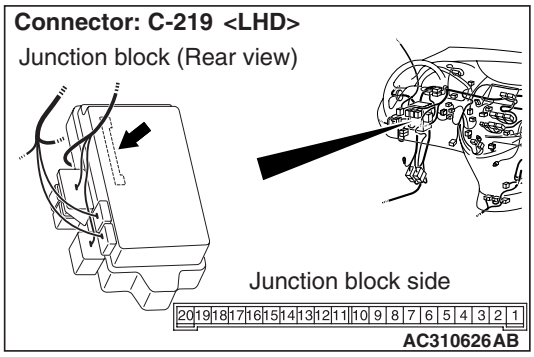



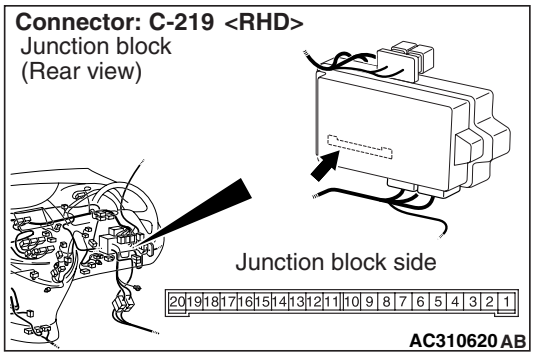

- Check the earth wires for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

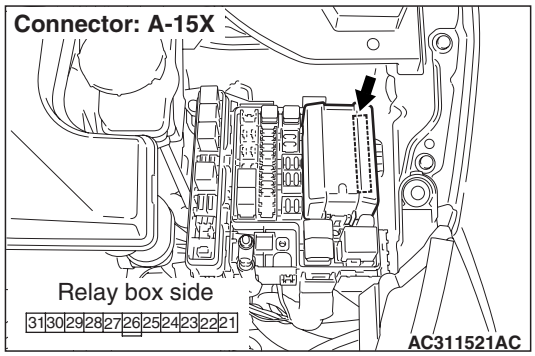
**Step 9. Connector check: C-221 ETACS-ECU connector**

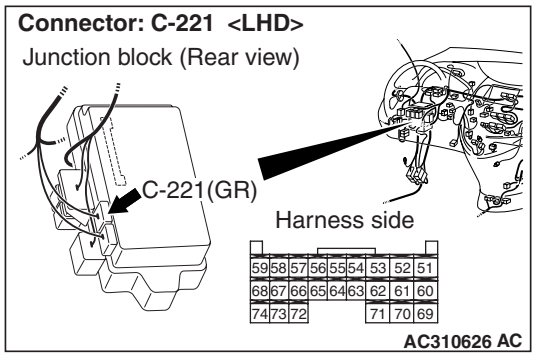


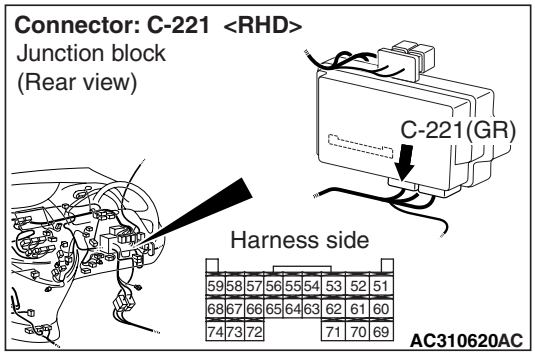




**Q: Is the check result normal?**
**YES :** Go to Step 10.
**NO :** Repair the defective connector.

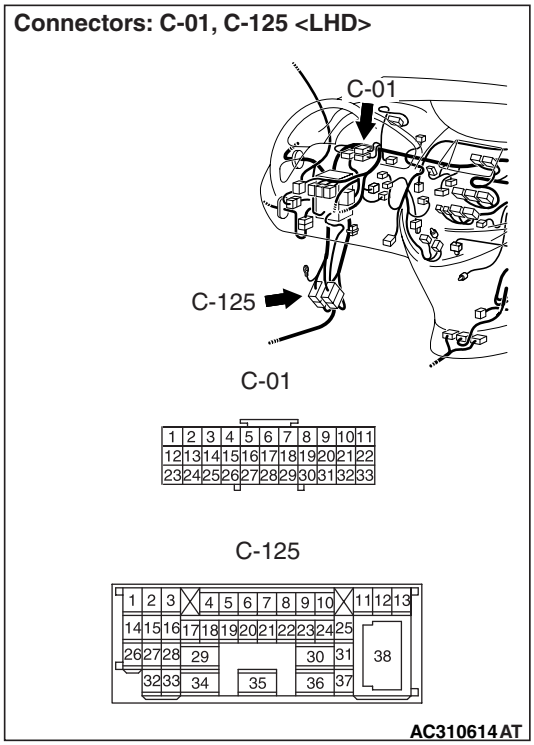
**Step 10. Check the wiring harness between A-15X front-ECU connector terminal No.22 and C-221 ETACS-ECU connector terminal No.59.**

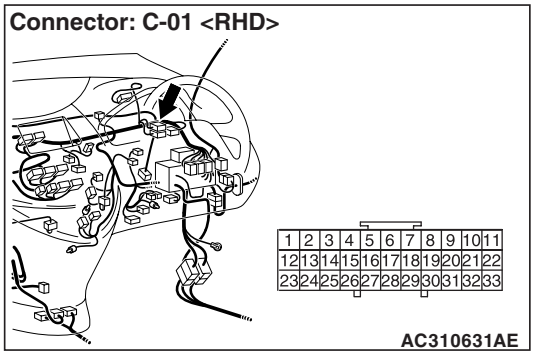


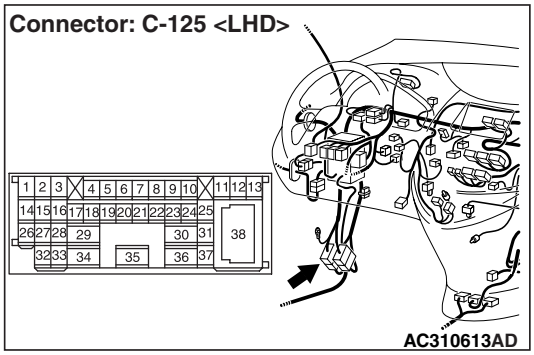




*NOTE:*




*Prior to the wiring harness inspection, check joint connector C-01 and intermediate connector C-125, and repair if necessary.*

- Check the communication lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 11.
**NO :** Repair the wiring harness.

**Step 11. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the front-ECU and the SWS communication lines are normal.

- Ignition switch: ON

**ECUS TO BE CHECKED**

- FRONT ECU

  **OK: "OK" is displayed on the "FRONT ECU" menu.**

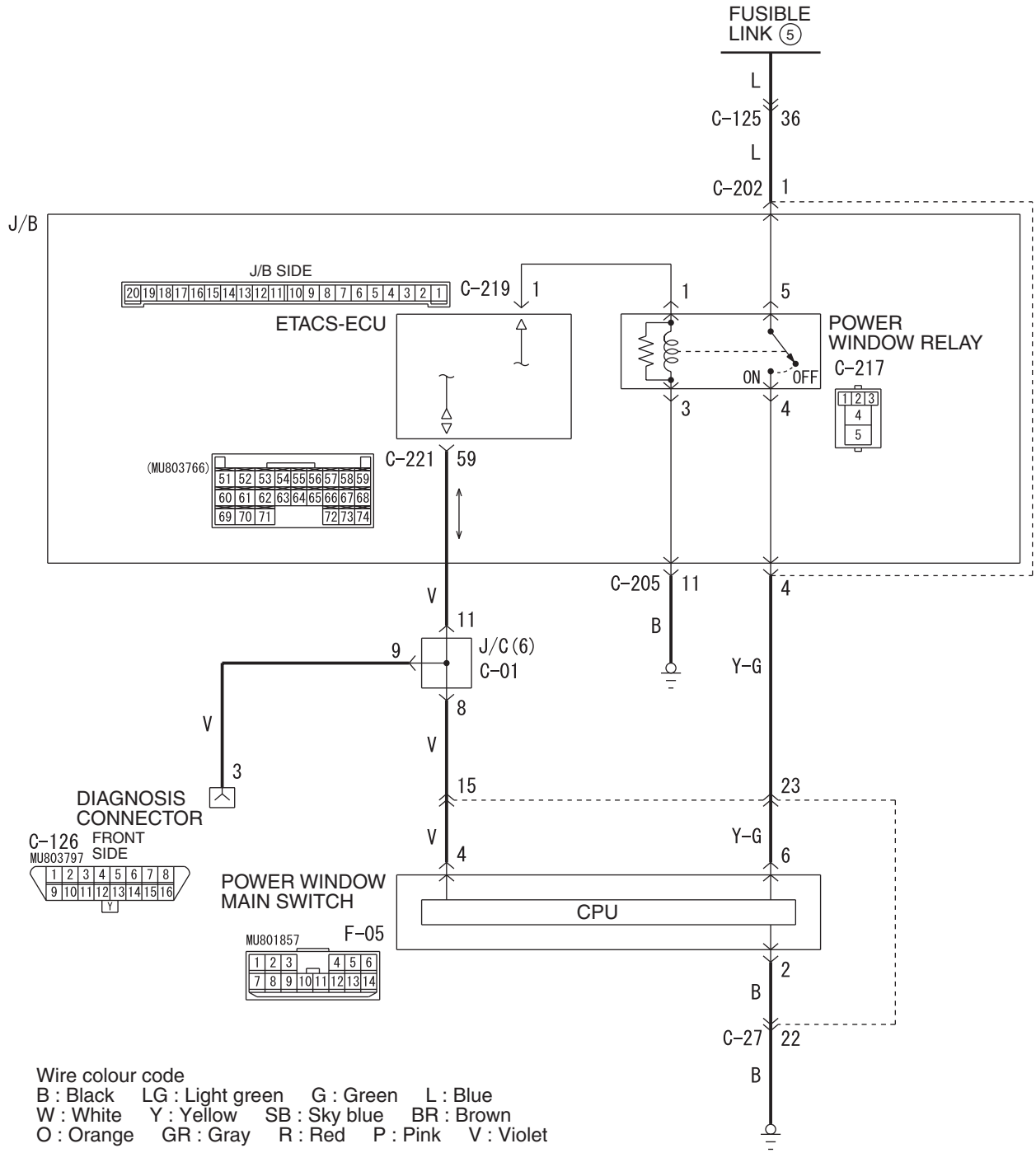
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the front-ECU.

**Inspection Procedure A-5: Communication with the power window main switch (power window module) is not possible.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the power supply circuit, the earthing circuit and the communication circuit are normal.**

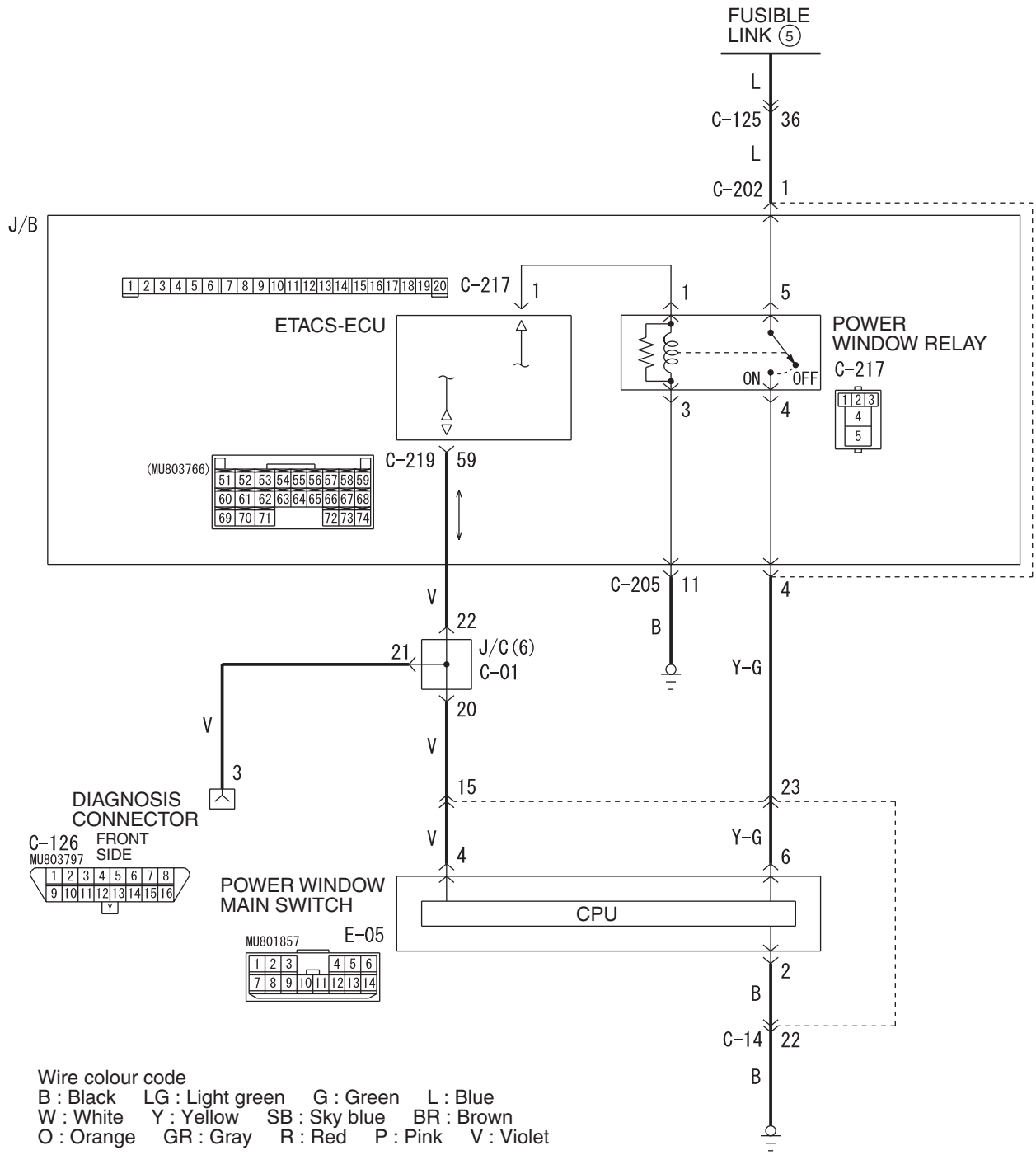
**Power Window Main Switch and SWS Communication Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue
W : White Y : Yellow SB : Sky blue BR : Brown
O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E182A

**Power Window Main Switch and SWS Communication Circuit <RHD>**




W4X54E181A

## COMMENTS ON TROUBLE SYMPTOM

The power window main switch, the power supply circuit (power window relay driving circuit) or communication circuit for that switch may be defective.

## POSSIBLE CAUSES

- Malfunction of the power window main switch
- Malfunction of the power window relay
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 2. SWS monitor data list**

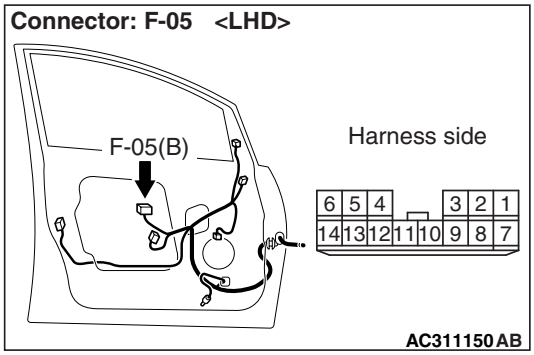
**<Selected item> ETACS ECU**
- Ignition switch: ON

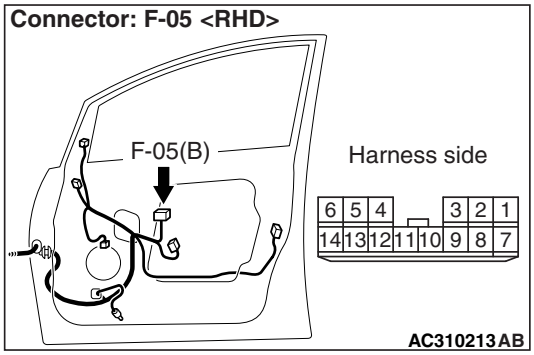
| Item No. | Item name | Normal condition |
|---|---|---|
| Item 30 | IG SW(IG1) | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."

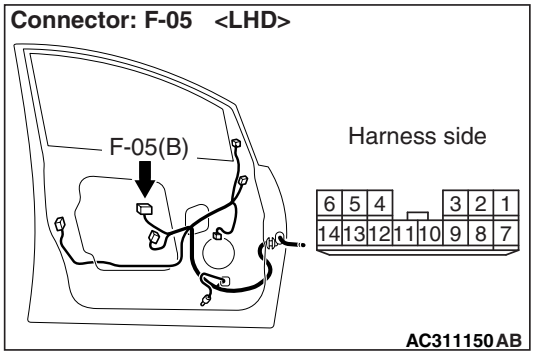
**Step 3. Connector check: F-05 power window main switch connector.**

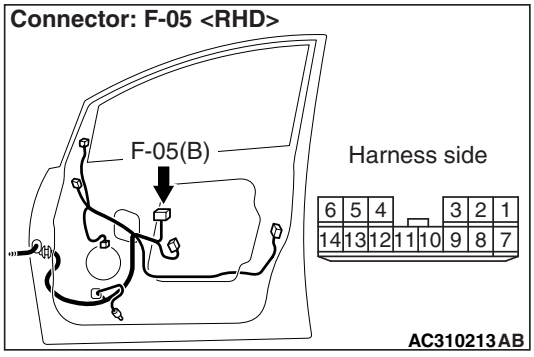



**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the defective connector.

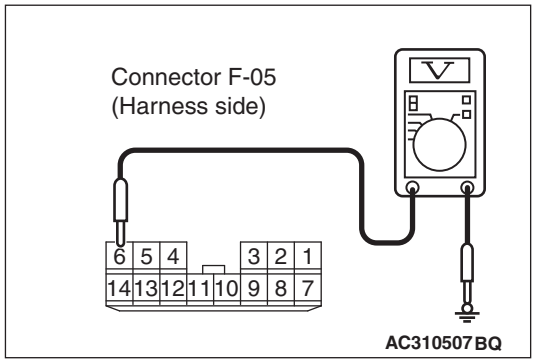
**Step 4. Voltage measurement at the F-05 power window main switch connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

(2) Ignition switch: ON

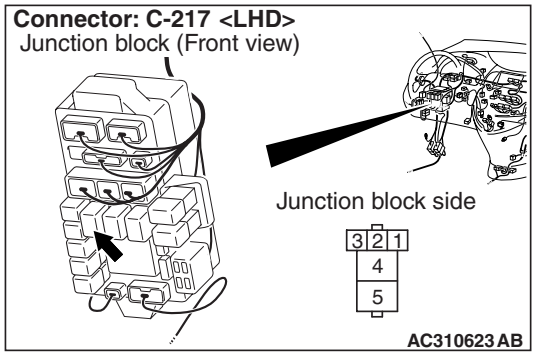


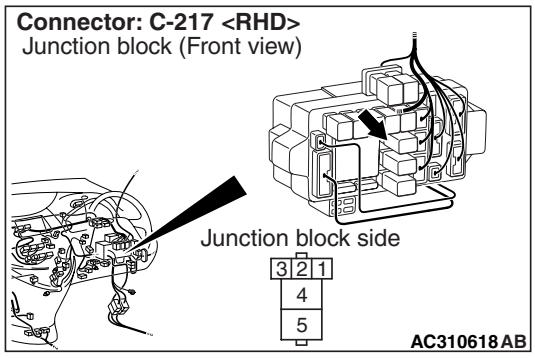

(3) Voltage between F-05 power window main switch connector terminal No.6 and body earth.

**OK: System voltage**

**Q: Is the check result normal?**
**YES :** Go to Step 13.
**NO :** Go to Step 5.

### Step 5. Connector check: C-217 power window relay connector.



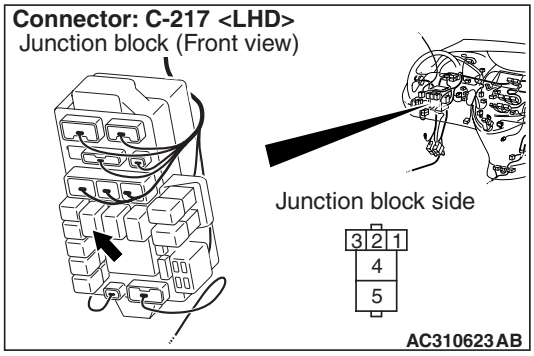

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

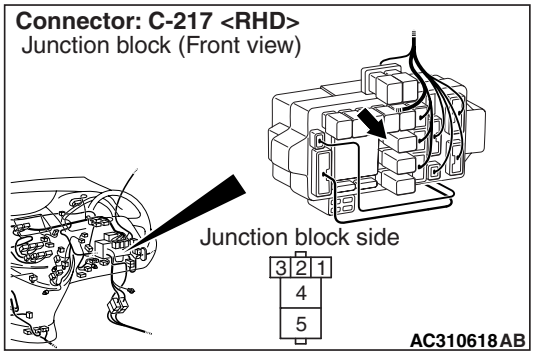
### Step 6. Check the power window relay.

Refer to GROUP 42 – Door P.42-28.

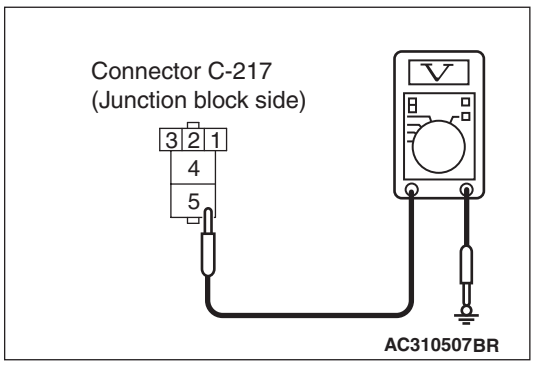
**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Replace the power window relay.

### Step 7. Voltage measurement at C-217 power window relay connector.




(1) Remove the power window relay, and measure at the junction block side.

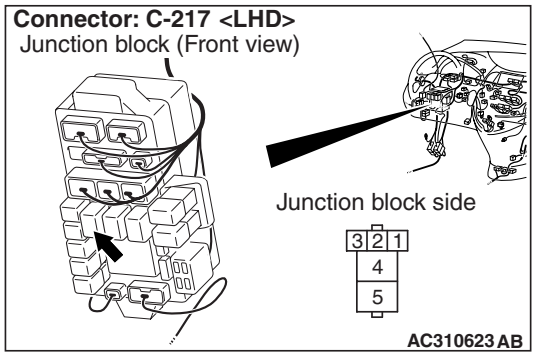


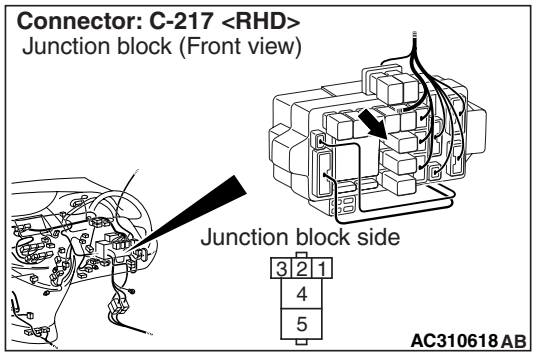

(2) Voltage between C-217 power window relay connector terminal No.5 and body earth.

**OK: System voltage**

**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Go to Step 8.

**Step 8. Check the wiring harness between C-217 power window relay connector terminal No.5 and fusible link (5).**

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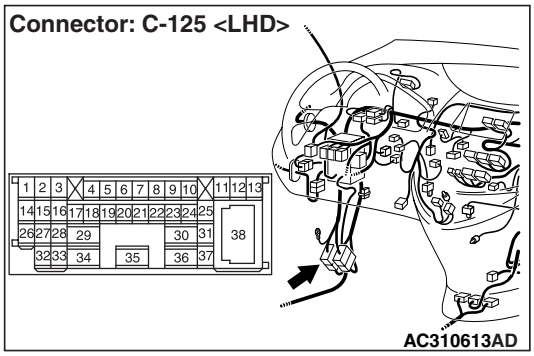
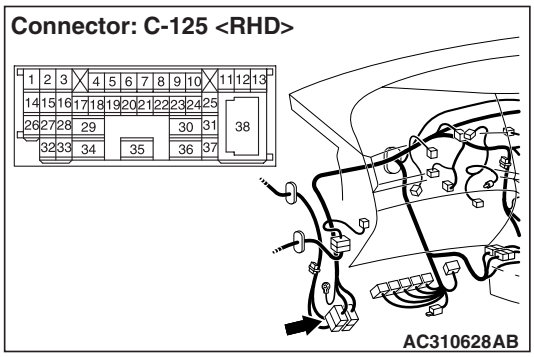
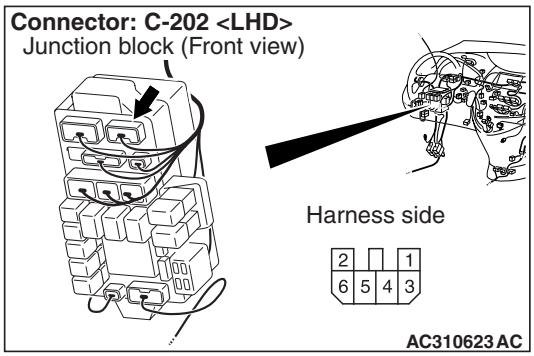
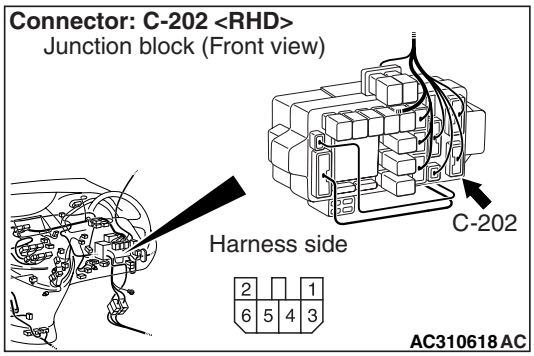



*Prior to the wiring harness inspection, check intermediate connectors C-125 and junction block connector C-202, and repair if necessary.*

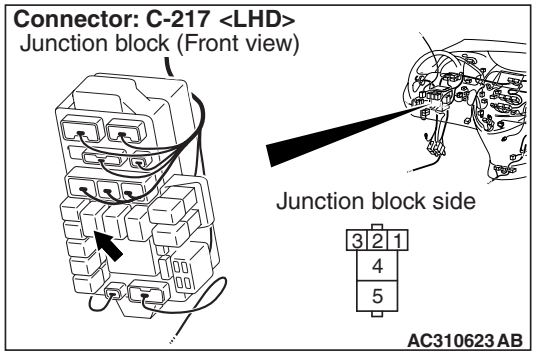
- Check the power supply line for open circuit.

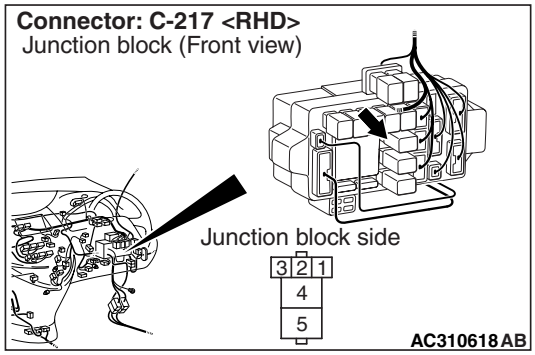
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

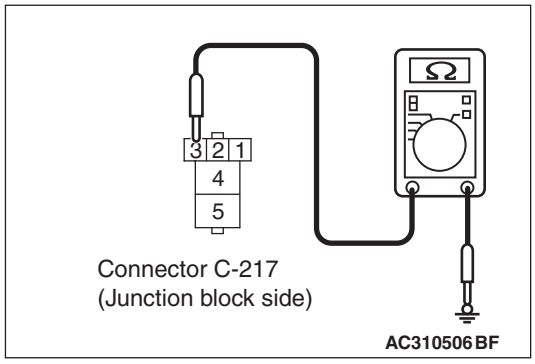
**NO :** Repair the wiring harness.

**Step 9. Resistance measurement at C-217 power window relay connector.**




(1) Remove the power window relay, and measure at the junction block side.




(2) Resistance between C-217 power window relay connector terminal No.3 and body earth.

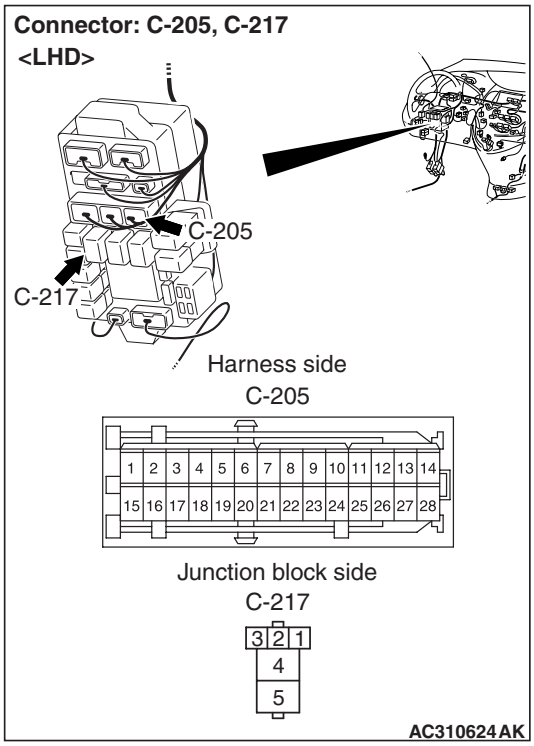
**OK: 2 Ω or less**

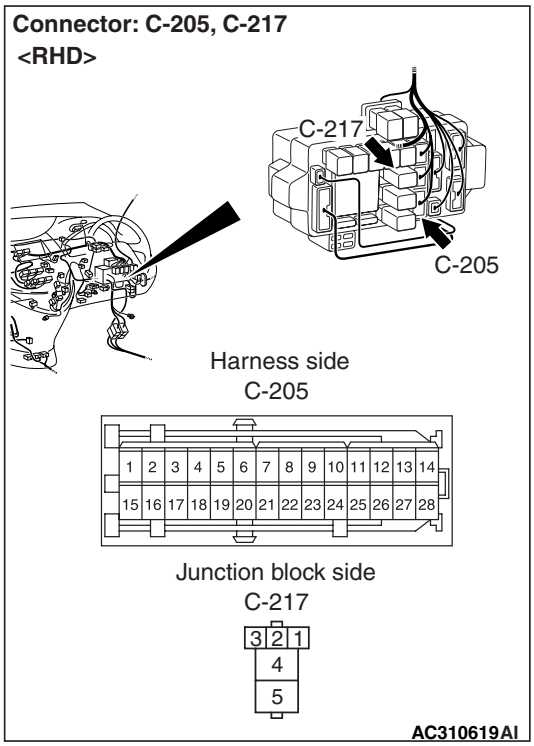
**Q: Is the check result normal?**

**YES :** Go to Step 11.

**NO :** Go to Step 10.

**Step 10. Check the wiring harness between C-217 power window relay connector terminal No.3 and body earth.**



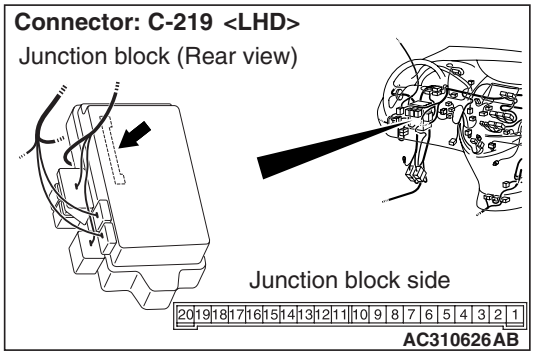

*NOTE: Prior to the wiring harness inspection, check junction block connector C-205, and repair if necessary.*

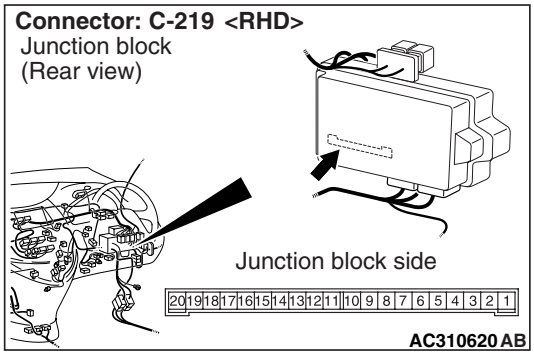
- Check the earth wires for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

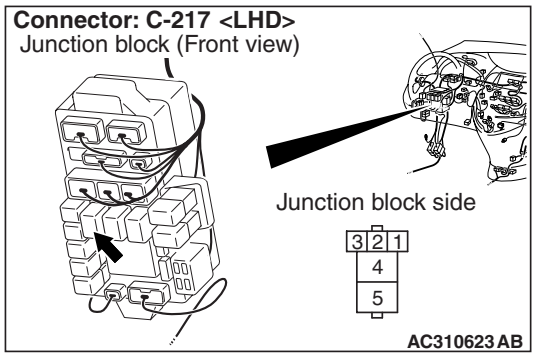
**Step 11. Connector check: C-219 ETACS-ECU connector.**

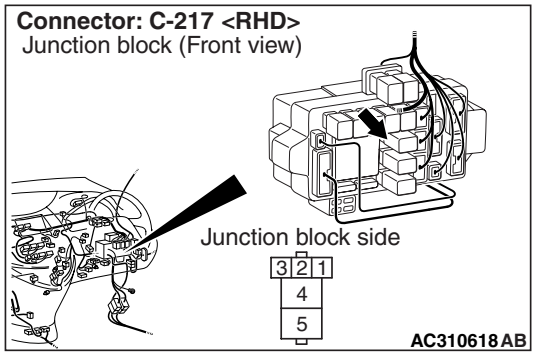


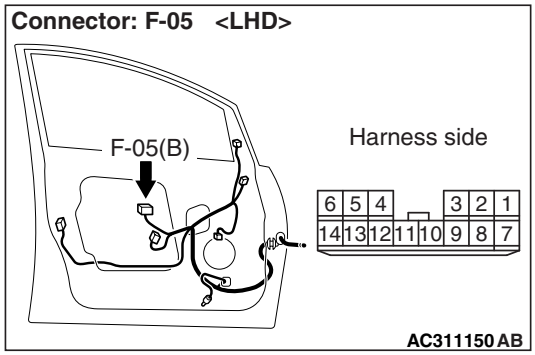



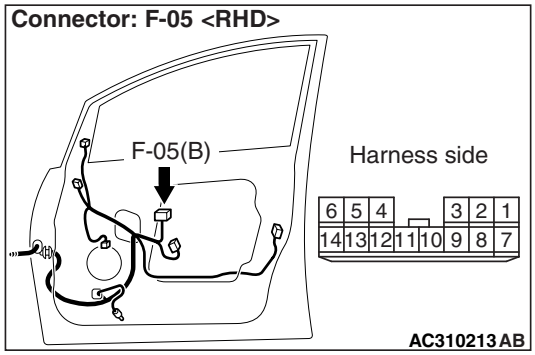

**Q: Is the check result normal?**
**YES :** Go to Step 12.
**NO :** Repair the defective connector.

**Step 12. Check the wiring harness between C-217 power window relay connector terminal No.4 and F-05 power window main switch connector terminal No.6.**

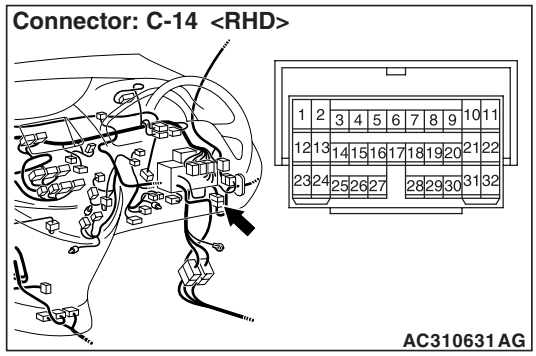


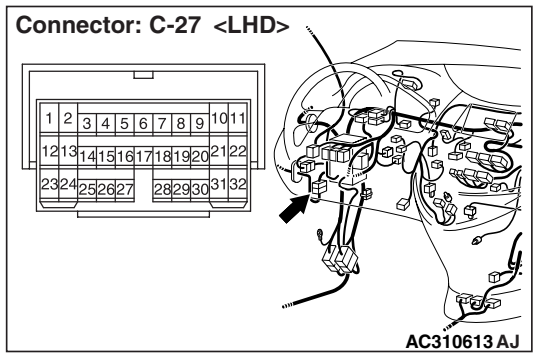



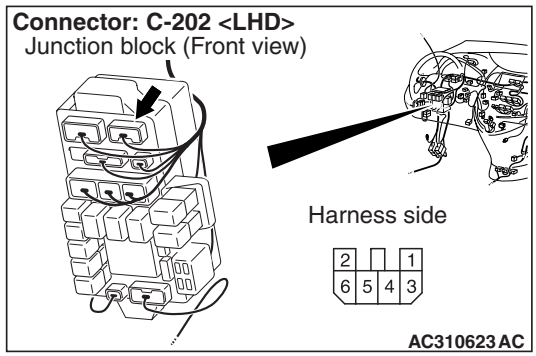



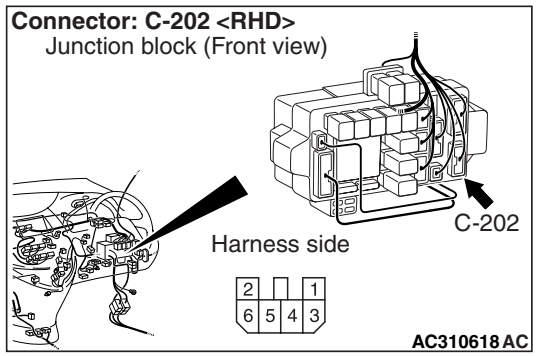




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connectors C-14 <RH drive vehicles>, C-27 <LH drive vehicles> and junction block connector C-202, and repair if necessary.*

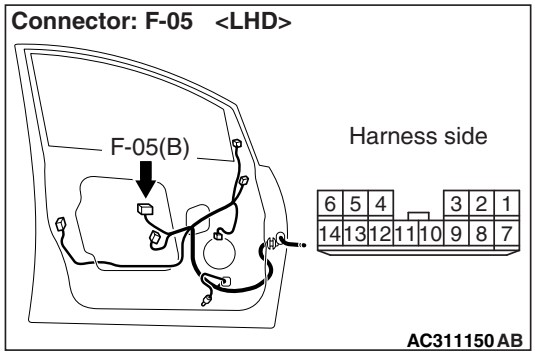
- Check the power supply line for open circuit.

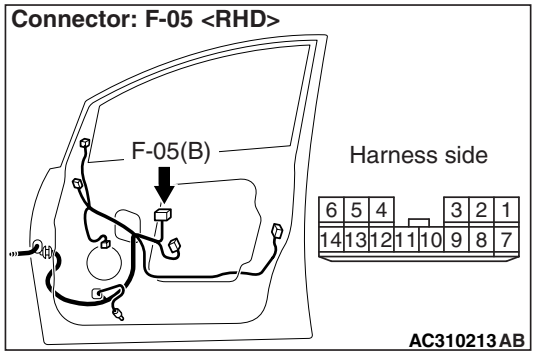
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

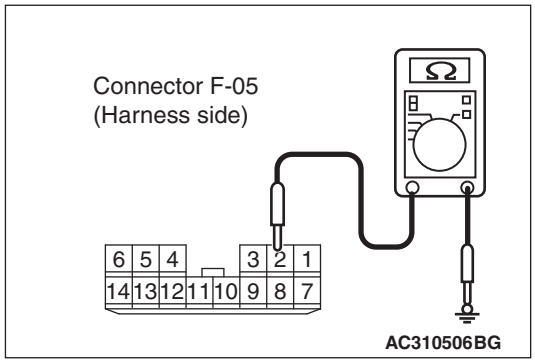
**NO :** Repair the wiring harness.

**Step 13. Resistance measurement at the F-05 power window main switch connector.**




(1) Disconnect the connector, and measure at the wiring harness side.




(2) Resistance between F-05 power window main switch connector terminal No.2 and body earth.

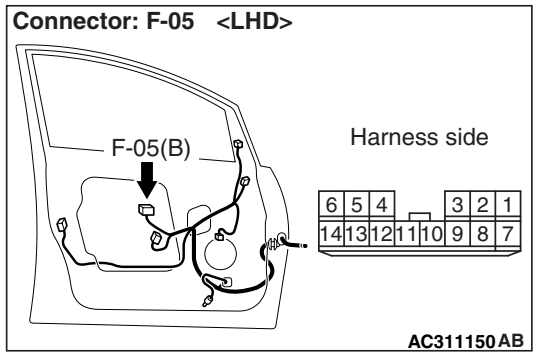
**OK: 2 Ω or less**

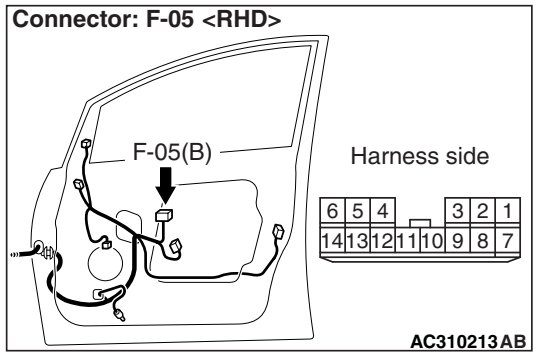
**Q: Is the check result normal?**

**YES :** Go to Step 15.

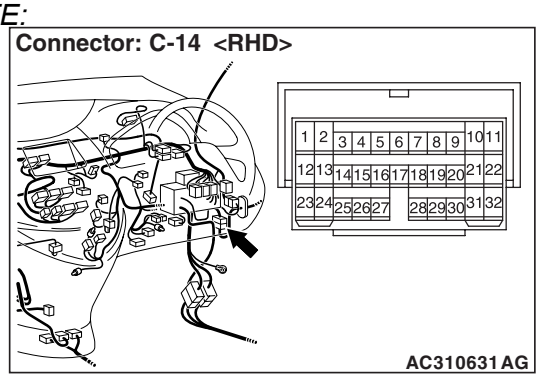
**NO :** Go to Step 14.

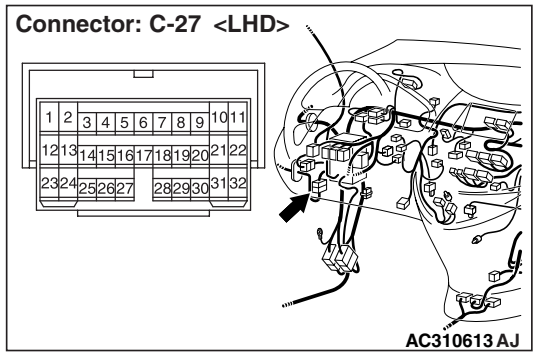
**Step 14. Check the wiring harness between F-05 power window main switch connector terminal No.2 and body earth.**




*NOTE:*



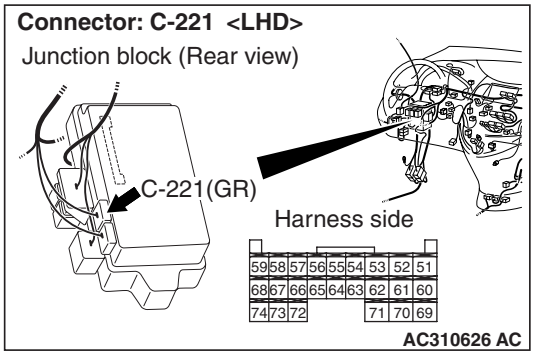

*Prior to the wiring harness inspection, check intermediate connectors C-14 <RH drive vehicles>, C-27 <LH drive vehicles>, and repair if necessary.*

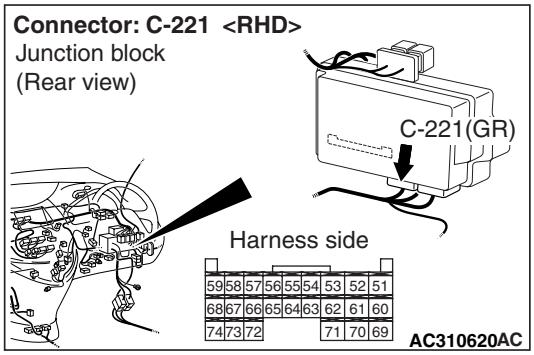
- Check the earth wires for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

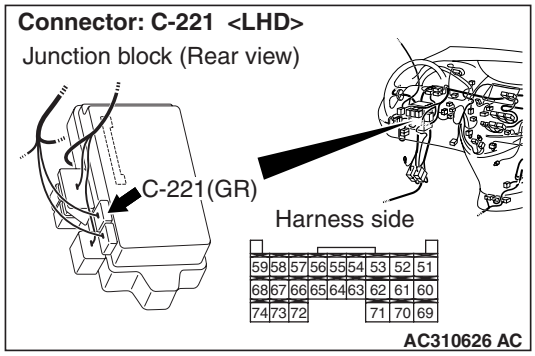
**Step 15. Connector check: C-221 ETACS-ECU connector.**

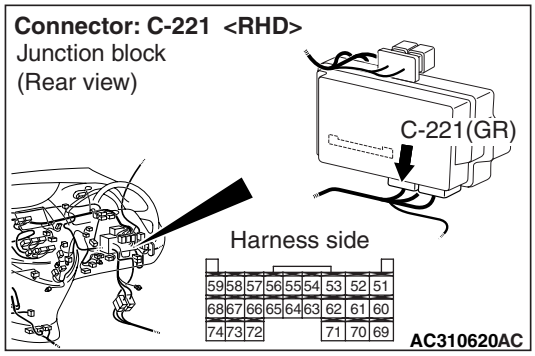


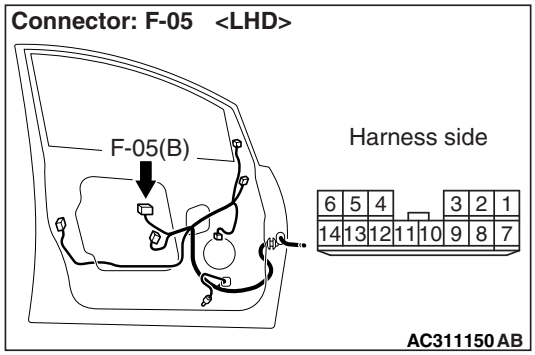



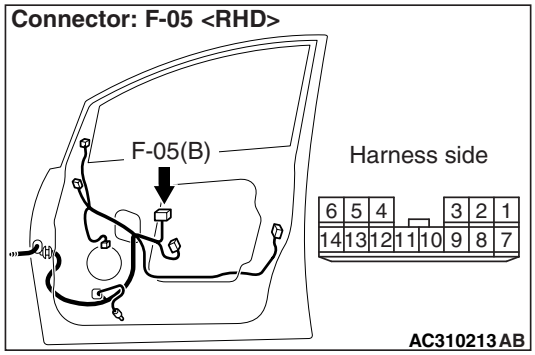

**Q: Is the check result normal?**
**YES :** Go to Step 16.
**NO :** Repair the defective connector.

**Step 16. Check the wiring harness between C-221 ETACS-ECU connector terminal No.59 and F-05 power window main switch connector terminal No.4.**

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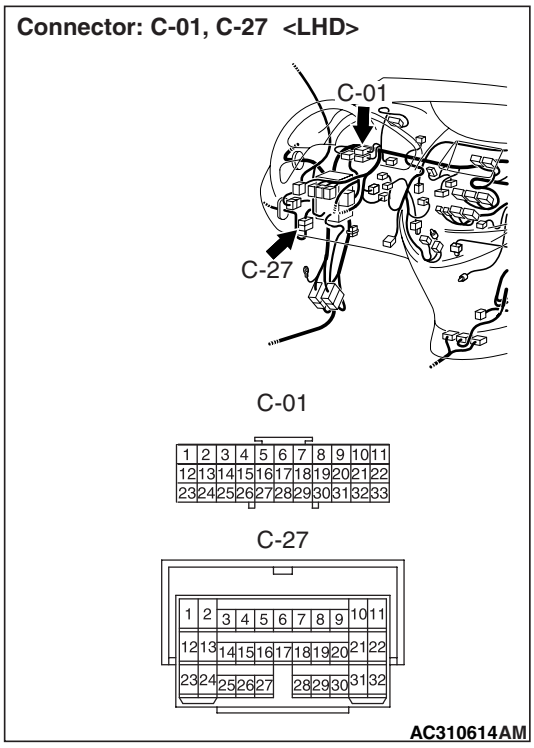
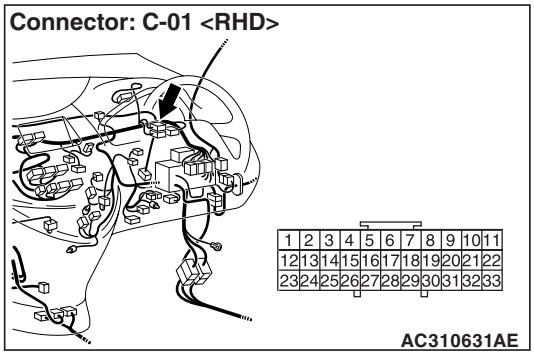
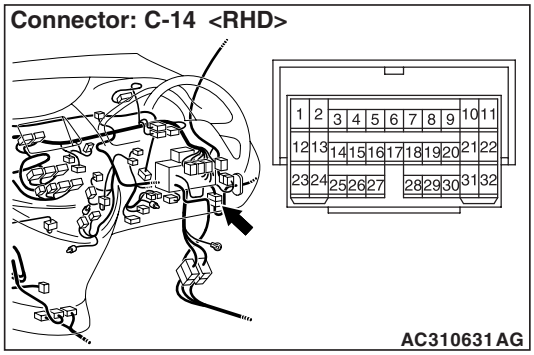



*Prior to the wiring harness inspection, check intermediate connectors C-14 <RH drive vehicles>, C-27 <LH drive vehicles> and joint connector C-01, and repair if necessary.*

- Check the communication lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 17.
**NO :** Repair the wiring harness.

**Step 17. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the power window main switch (power window module) and the SWS communication lines are normal.

- Ignition switch: ON

**ECUS TO BE CHECKED**

- P/W MODULE

**OK: "OK" is displayed on the "P/W MODULE" menu.**

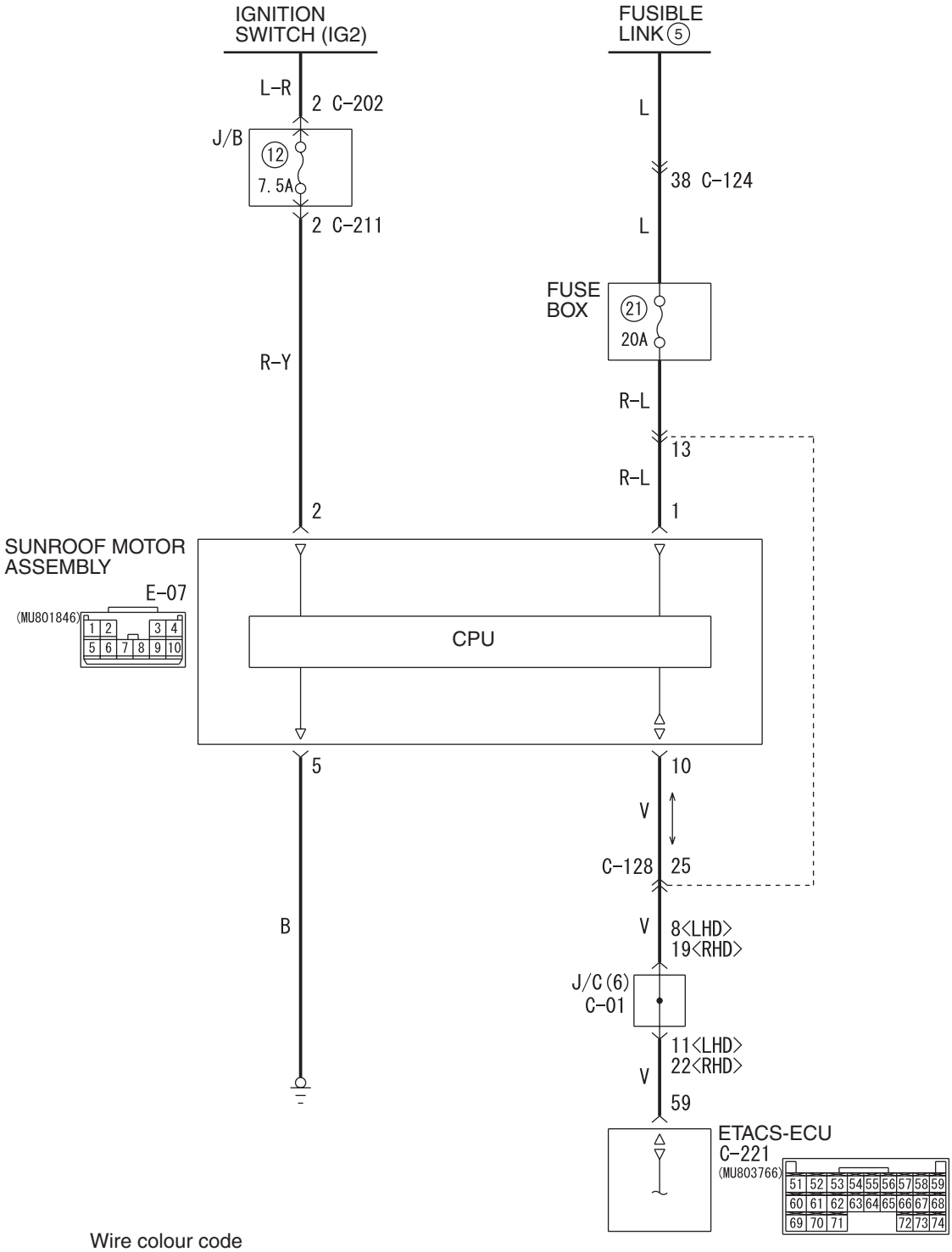
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window main switch.

**Inspection Procedure A-6: Communication with the sunroof motor assembly (sunroof-ECU) is not possible.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the power supply circuit, the grounding circuit and the communication circuit are normal.**

**Sunroof Motor Assembly and SWS Communication Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E122A

## COMMENTS ON TROUBLE SYMPTOM

The sunroof motor assembly, the power supply circuit or the communication circuit for that assembly may be defective.

## POSSIBLE CAUSES

- Malfunction of the sunroof motor assembly
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check on the SWS monitor**

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

**ECUS TO BE CHECKED**

- ETACS ECU

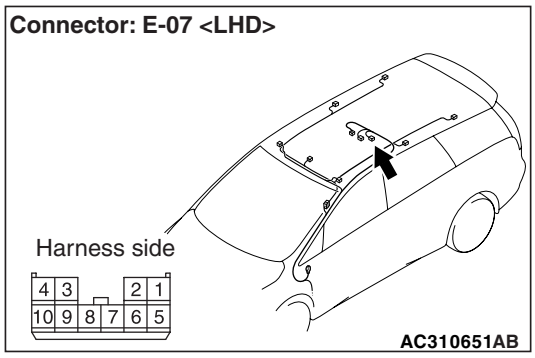
**OK: "OK" is displayed on the "ETACS ECU" menu.**

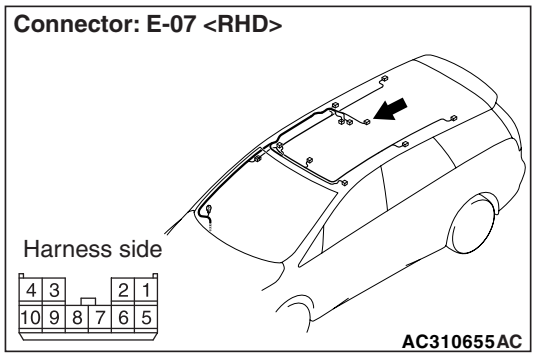
**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible" P.54C-63.

**Step 2. Connector check: E-07 sunroof motor assembly connector**



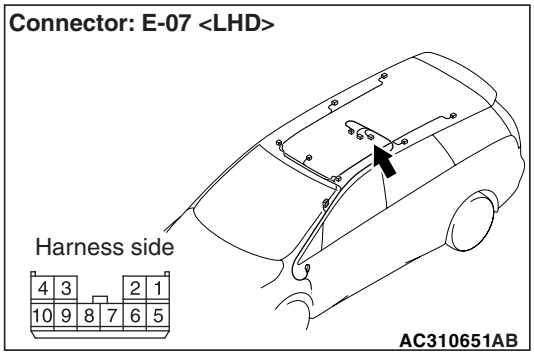



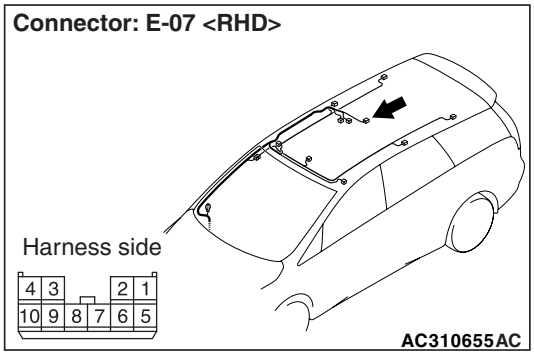

**Q: Is the check result normal?**

**YES :** Go to Step 3.

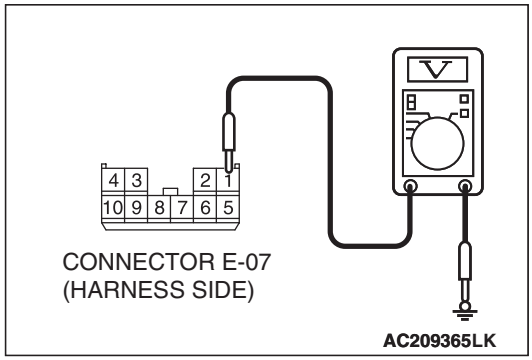
**NO :** Repair the defective connector.

**Step 3. Voltage measurement at E-07 sunroof motor assembly connector.**




(1) Disconnect the connector, and measure at the wiring harness side.




(2) Voltage between E-07 sunroof motor assembly connector terminal No.1 and body earth

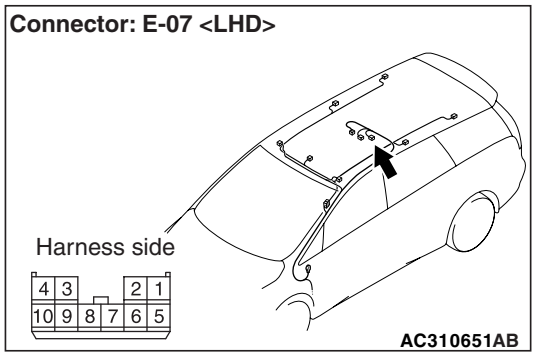
**OK: System voltage**

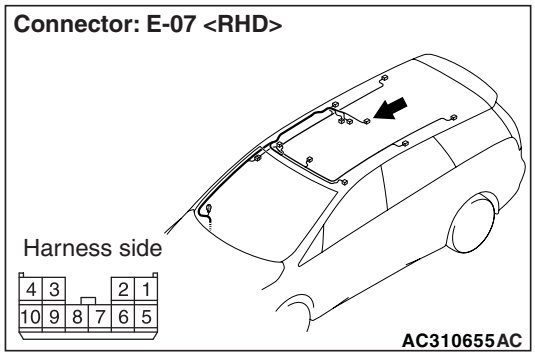
**Q: Is the check result normal?**

**YES :** Go to Step 5.

**NO :** Go to Step 4.

**Step 4. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.1 and fusible link (5).**

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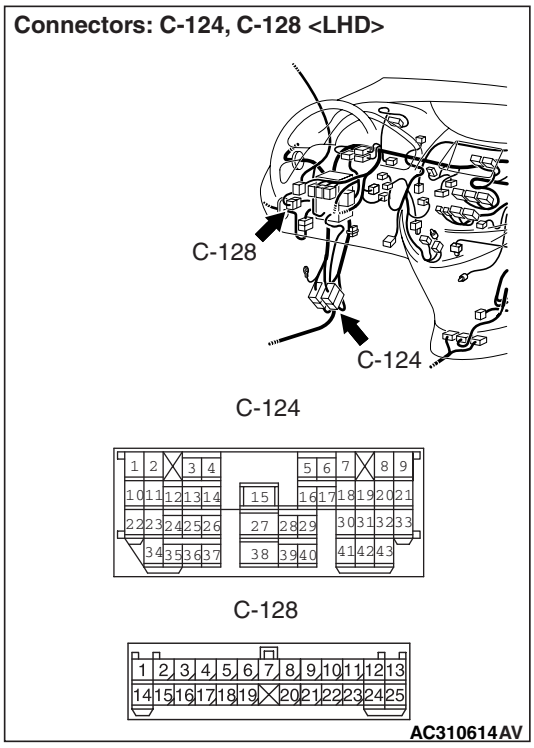
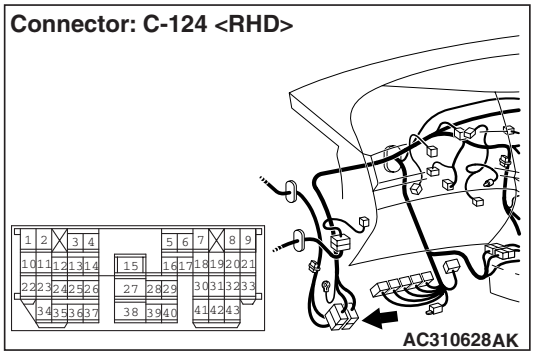
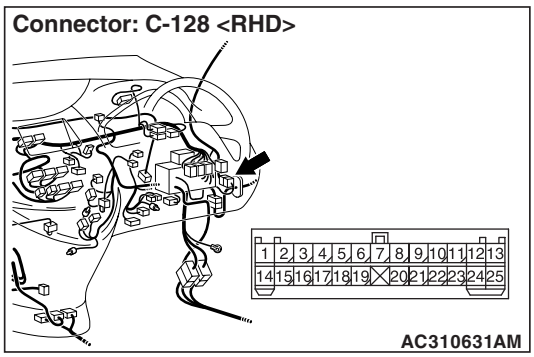



*Prior to the wiring harness inspection, check intermediate connectors C-124, C-128, and repair if necessary.*

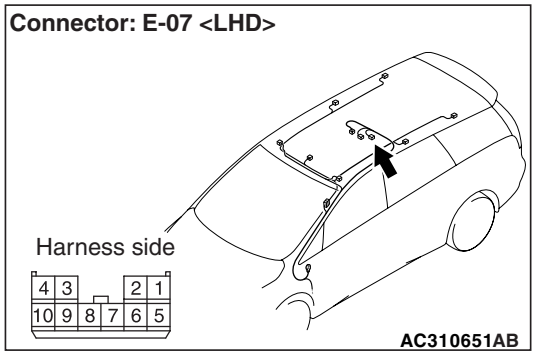
- Check the power supply line for open circuit.

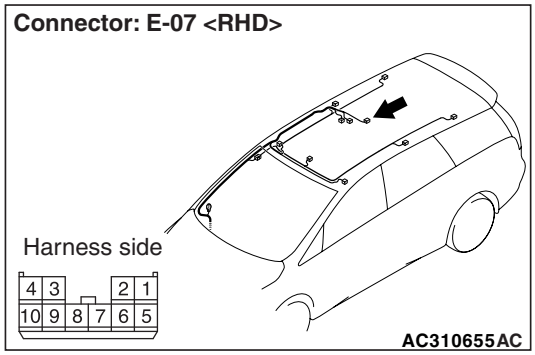
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

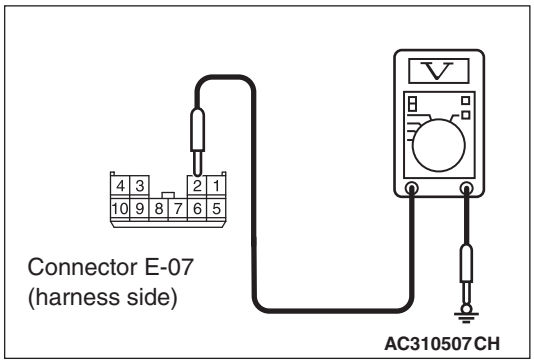
**NO :** Repair the wiring harness.

**Step 5. Voltage measurement at E-07 sunroof motor assembly connector.**



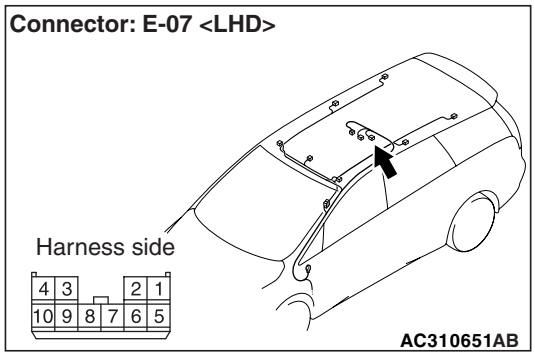

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.

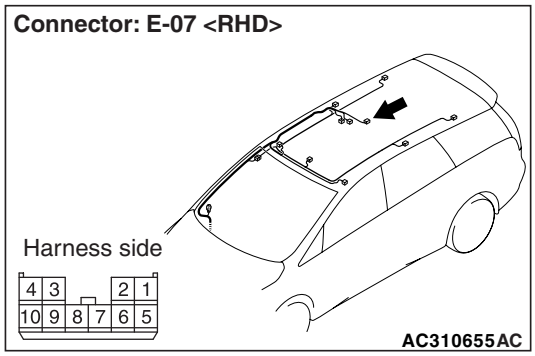



(3) Voltage between E-07 sunroof motor assembly connector terminal No.2 and body earth
**OK: System voltage**

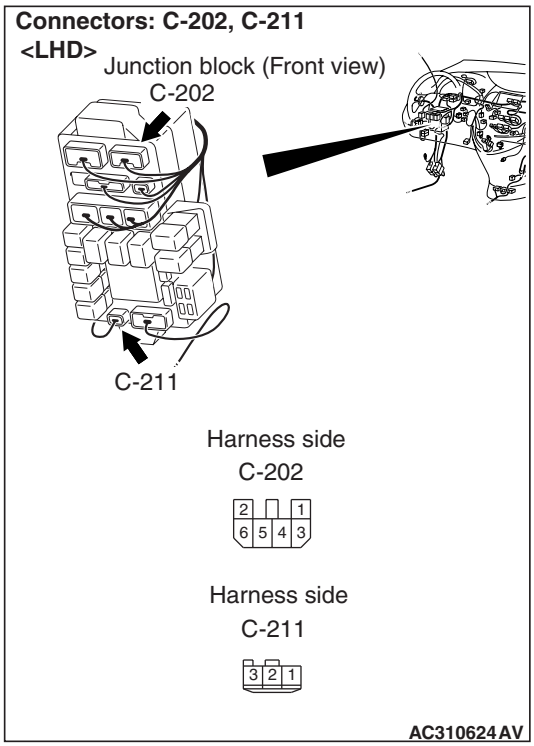
**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Go to Step 6.

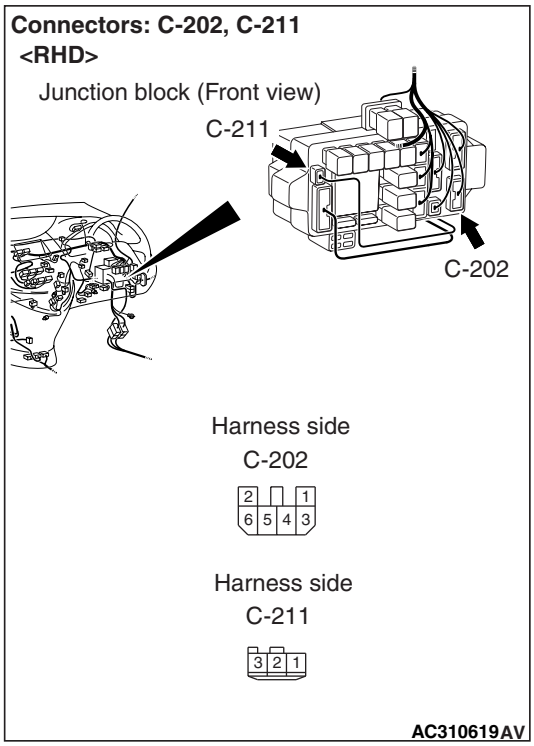
**Step 6. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.2 and ignition switch (IG2).**




*NOTE:*




*Prior to the wiring harness inspection, check junction block connectors C-202 and C-211, and repair if necessary.*

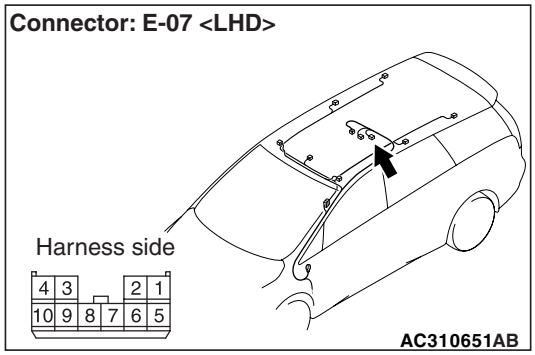
- Check the power supply line to the ignition switch (IG2) for open circuit.

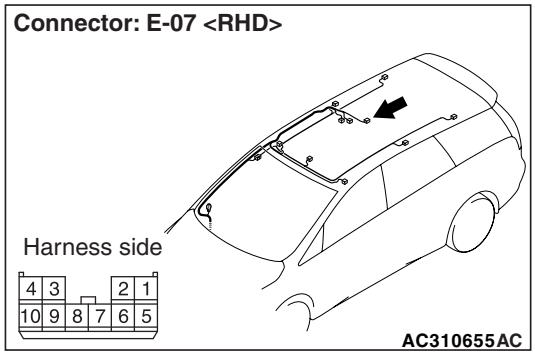
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).

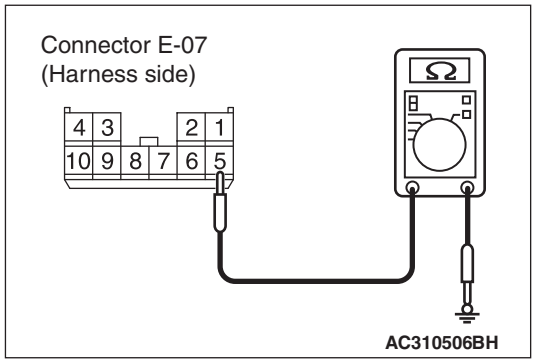
**NO :** Repair the wiring harness.

**Step 7. Resistance measurement at E-07 sunroof motor assembly connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

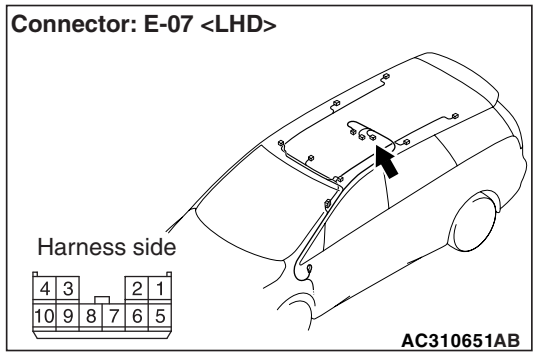


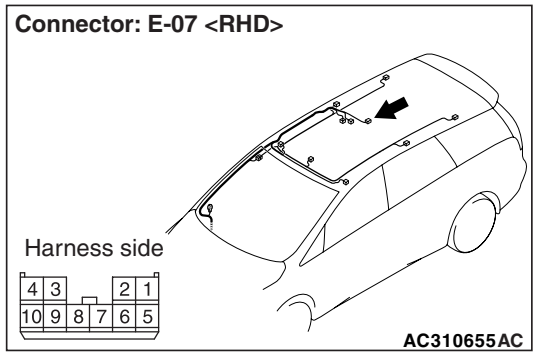

(2) Continuity between E-07 sunroof motor assembly connector terminal No.5 and body earth

**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Go to Step 8.

**Step 8. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.5 and body earth.**

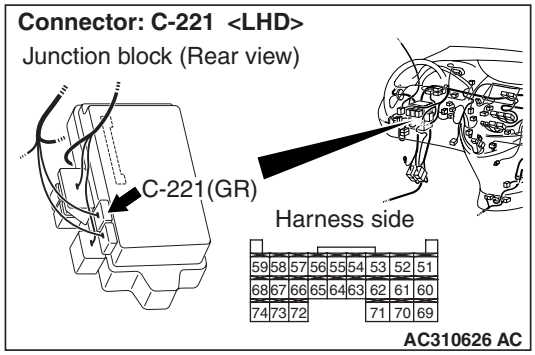


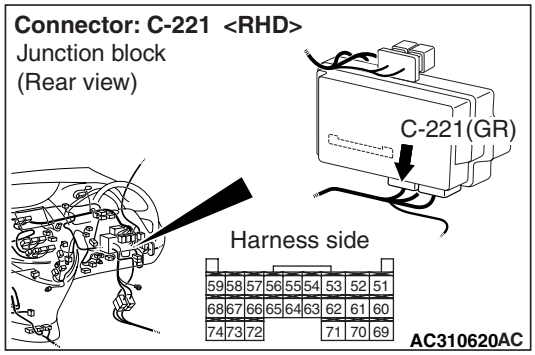




- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

### Step 9. Connector check: C-221 ETACS-ECU connector



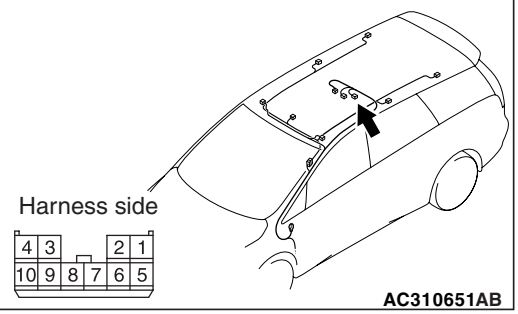




**Q: Is the check result normal?**

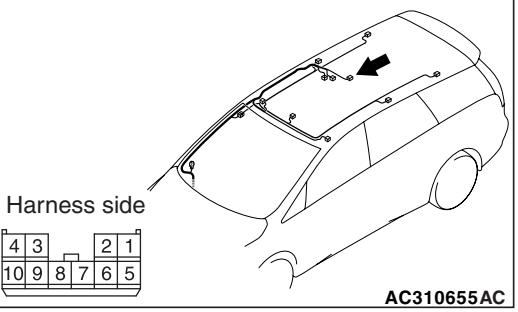
**YES :** Go to Step 10.
**NO :** Repair the defective connector.

**Step 10. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.10 and C-221 ETACS-ECU connector terminal No.59.**

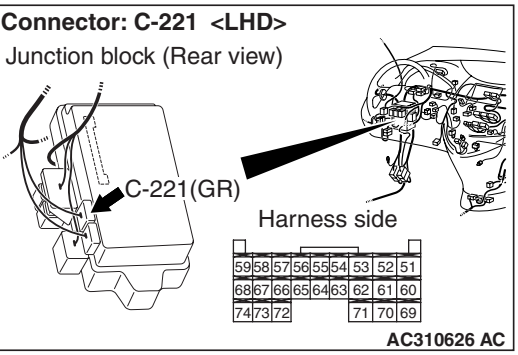
**Connector: E-07 <LHD>**



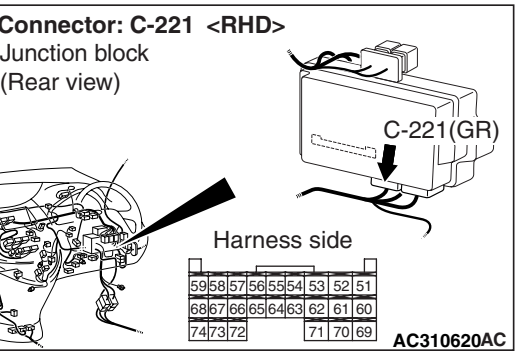

**Connector: E-07 <RHD>**



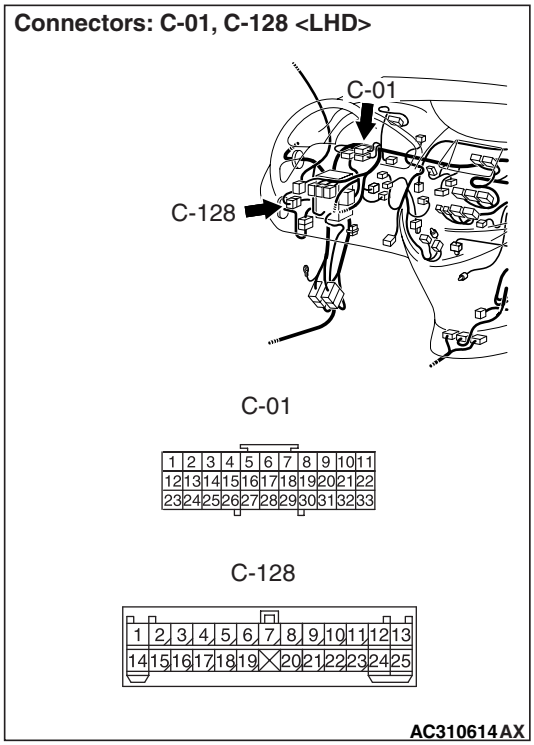

**Connector: C-221 <LHD>**



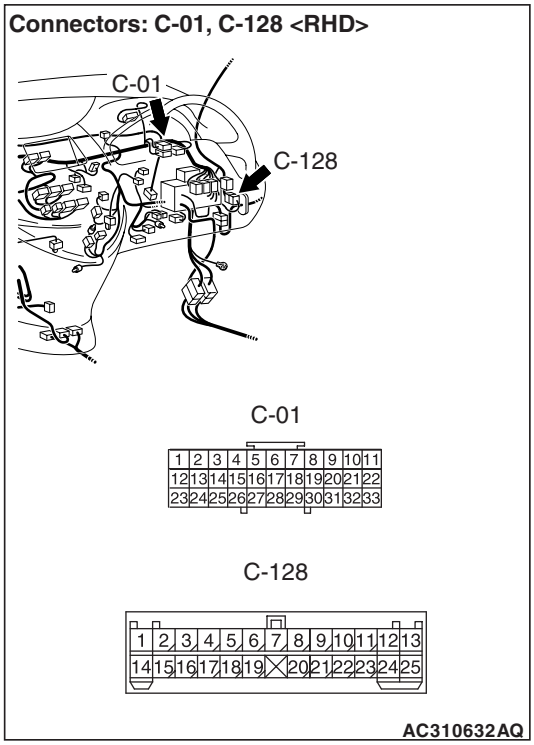

**Connector: C-221 <RHD>**




**Connectors: C-01, C-128 <LHD>**




**Connectors: C-01, C-128 <RHD>**




*NOTE: Prior to the wiring harness inspection, check joint connector C-01 and intermediate connector C-128, and repair if necessary.*

- Check the communication lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 11.
**NO :** Repair the wiring harness.

**Step 11. ECU check on the SWS monitor**
Check that the power supply and earth lines to the sunroof motor assembly and the SWS communication lines are normal.
- Turn the ignition switch to the ON position.

**ECUS TO BE CHECKED**
- SUNROOF ECU

**OK: "OK" is displayed on the "SUNROOF ECU" menu.**

**Q: Is the check result normal?**

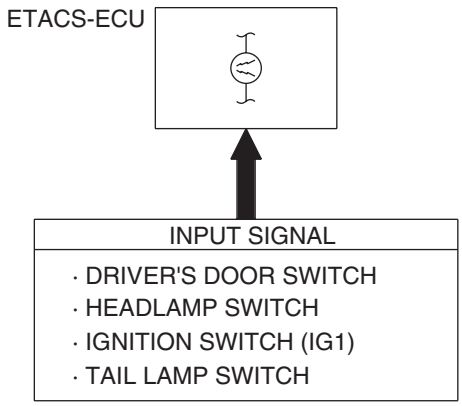
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the sunroof motor assembly.

## TONE ALARM

**Inspection Procedure B-1: Lamp reminder buzzer function does not work normally.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Lamp Reminder Buzzer Function**




W4X54E221A

## COMMENTS ON TROUBLE SYMPTOM
The ETACS-ECU operates this function in accordance with the input signals below.
- Ignition switch (IG1)
- Driver's door switch
- Tail lamp switch

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective.

## POSSIBLE CAUSES
- Malfunction of the driver's door switch
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the column switch (column-ECU) and the SWS communication lines are normal.
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- ETACS ECU
- COLUMN ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**

**"OK" is displayed for all the items :** Go to Step 2.
**"NG" is displayed on the "ETACS ECU" menu. :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."
**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."

**Step 2. Function diagnosis by using the SWS monitor**
Check the SWS communication signal, which are related to the lamp reminder function.

**<Selected item> BUZZER - LGT MONI. ALRM**
- Ignition switch: OFF (key removed)
- lighting switch: HEAD
- Driver's door: open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 00 | HEADLAMP SW | ON when the lighting switch is at HEAD |
| Item 01 | TAIL LAMP SW | ON when the lighting switch is at TAIL |
| Item 30 | IG SW(IG1) | OFF |
| Item 32 | DR DOOR SW | ON |
| Item 43 | BUZZER | ON |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**

**Normal conditions are displayed for all the items :** Go to Step 3.
**Normal condition is not displayed for item No.00 or No.01 :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp switch and headlamp washer switch) signal is not received P.54C-478."
**Normal condition is not displayed for item No.30 :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."
**Normal condition is not displayed for item No.32 :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received P.54C-474 <LH drive vehicles> or P.54C-476 <RH drive vehicles>."
**Normal condition is not displayed for item No.43 :** Replace the ETACS-ECU.

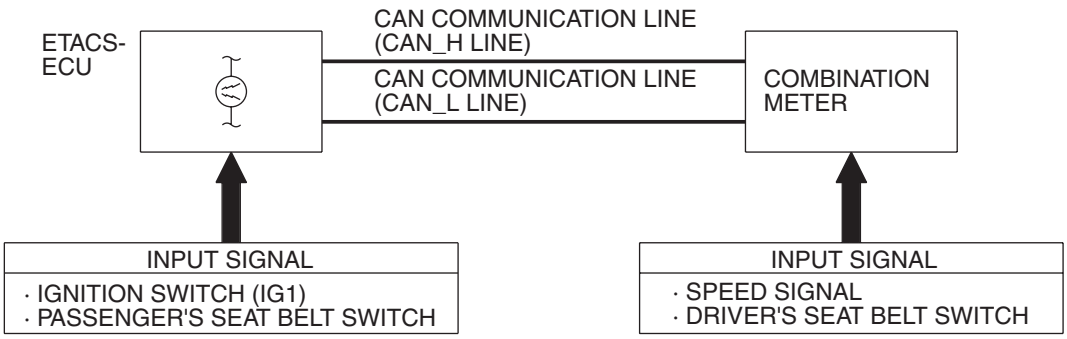
**Step 3. Retest the system.**
The lamp reminder buzzer function should work normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure B-2: Seat belt warning buzzer function does not work normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Seat Belt Warning Buzzer Function**




W4X54E166A

## COMMENTS ON TROUBLE SYMPTOM

If the function does not work normally, the input circuit system from the switches or the ETACS-ECU may be defective (refer to "CIRCUIT OPERATION").

## POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Malfunction of the driver's seat belt switch
- Malfunction of the passenger's seat belt switch
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Turn the ignition switch to the ON position.

**ECU TO BE CHECKED**

- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 2. ETACS switch data by using the SWS monitor**
Check the ETACS-ECU signal related to the seat belt warning buzzer function.

- Ignition switch: ON
- Driver's seat belt switch: ON (Unfastened)
- Passenger's seat belt switch: ON (Unfastened)
- Seat occupancy sensor: ON (Seat occupied)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 12 | SEAT BELT SW | ON |
| Item 30 | IG SW(IG1) | ON |
| Item 43 | As.SeatBeltSW | ON |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**

**Normal conditions are displayed for all the items :**
Go to Step 3.

**Normal condition is not displayed for item No.12. :**
Refer to inspection procedure Q-19 "The driver's seat belt switch signal is not received P.54C-537 <LH drive vehicles> or P.54C-540 <RH drive vehicles>."

**Normal condition is not displayed for item No.30 :**
Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."

**Normal condition is not displayed for item No.43. :**
Refer to inspection procedure Q-20 "The front passenger's seat belt switch signal is not received P.54C-543 <LH drive vehicles> or P.54C-546 <RH drive vehicles>."

**Step 3. ETACS ANALOG data by using the SWS monitor.**
Check the ETACS-ECU signal related to the seat belt warning buzzer function.

- Set the simulated vehicle speed at approximately 10km/h.

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | SPEED SENSOR | 8 – 10 km/h |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Refer to inspection procedure Q-25 "The vehicle speed signal is not received P.54C-568."

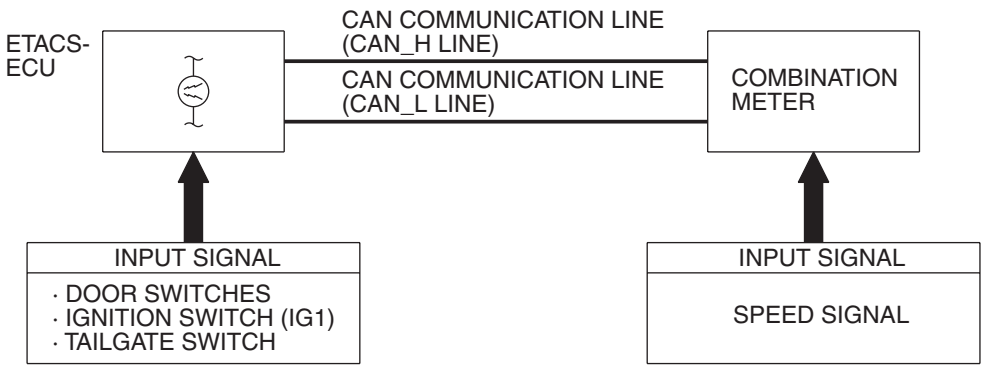
**Step 4. Retest the system.**
Check that the seat belt warning buzzer function work normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure B-3: Door-ajar warning buzzer function does not work.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Door-Ajar Warning Buzzer Function**




W4X54E220A

## COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.

- Ignition switch (IG1)
- All of the door switches
- Vehicle speed signal

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective. Note that this function can be disabled/enabled by the customize function (default setting; enabled). In order to change the setting, the SWS monitor is required.

## POSSIBLE CAUSES

- Malfunction of the door switches
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. Customize function by using the SWS monitor**

Use the SWS monitor customisation function to confirm that "DOOR WARN BUZ" is set to other than "W/O FUNCTION" (one of the settings below).

- W.FUNCTION
- CONTIN ACTION

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Set "DOOR WARN BUZ" to other than "W/O FUNCTION" by using the SWS monitor customisation function (Refer to P.54C-574).

**Step 2. ECU check by using the SWS monitor**

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: ON

**ECU TO BE CHECKED**

- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**

**YES :** Go to Step 3.

**NO :** Refer to Inspection Procedure A-3 "Communication with ETACS-ECU is impossible P.54C-63."

**Step 3. SWS monitor data list**

Check the SWS communication signal, which is related to the door-ajar warning buzzer function.

**<Selected item> ETACS**

- Ignition switch: ON
- Driver's door: Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 30 | Ignition SW(IG1) | ON |
| Item 32 | DR DOOR SW | ON |
| Item 43 | BUZZER | ON |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**

**Normal conditions are displayed for all the items :** Go to Step 4.

**Normal condition is not displayed for item No.30. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."

**Normal condition is not displayed for item No.32. :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received <LH drive vehicles>P.54C-474 or <RH drive vehicles>P.54C-476 ."

**Normal condition is not displayed for item No.43. :** Replace the ETACS-ECU.

**Step 4. ETACS switch data by using the SWS monitor**

Check the ETACS-ECU input signal related to the door-ajar warning buzzer function.

- Doors other than the driver's door (including the tailgate): Closed to open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 05 | PASS DOORSW | from OFF to ON |
| Item 07 | TRK LID LASW | from OFF to ON |
| Item 41 | R.DOOR (RH) SW | from OFF to ON |
| Item 42 | R.DOOR (LH) SW | from OFF to ON |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**

**YES :** Go to Step 5.

**NO :** Refer to inspection procedure Q-14 "The door switch signals are not received P.54C-505."

**Step 5. ETACS ANALOG data by using the SWS monitor.**
Check the ETACS-ECU signal related to the door-ajar warning buzzer function.

- Set the simulated vehicle speed at approximately 10 km/h.

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | SPEED SENSOR | 8 – 10 km/h |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 6.
**NO :** Refer to inspection procedure Q-25 "The vehicle speed signal is not received P.54C-568."

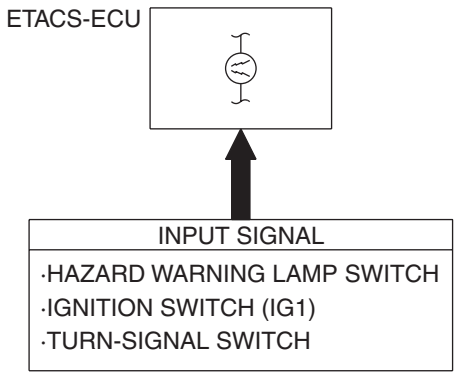
**Step 6. Retest the system.**
Check that the door-ajar warning buzzer function works normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU

## Inspection Procedure B-4: Turn-signal lamp operation sound function does not work normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Turn-Signal Lamp Operation Sound Function**




W4X54E225A

## COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.

- Turn-signal lamp switch
- Hazard warning lamp switch

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective. Note that this function can be disabled/enabled by the customize function (default setting; disabled). In order to change the setting, the SWS monitor is required.

## POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. Check that the turn-signal lamps operate.**
When the turn-signal lamp switch or the hazard warning lamp switch is operated, check that the turn-signal lamps flash.

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** First, repair the turn-signal lamp(s) (Refer to Trouble Symptom Chart P.54C-44).

**Step 2. Customize function by using the SWS monitor**
Use the SWS monitor customisation function to confirm that "T/SIG.BUZZER" is set to "W.FUNCTION".

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Use the SWS monitor customisation function to set "T/SIG.BUZZER" to "W.FUNCTION" (Refer to P.54C-574).

**Step 3. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the column switch (column-ECU) and the SWS communication lines are normal.
- Ignition switch: ON

**ECUS TO BE CHECKED**
- ETACS ECU
- Column ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**
**Normal conditions are displayed for all the items. :** Go to Step 4.
**"NG" is displayed on the "ETACS ECU" menu. :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."
**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."

**Step 4. SWS monitor data list**
Check the SWS communication input signal, which are related to the turn-signal lamp operation sound function.

**<Selected item> ETACS ECU**
- Hazard warning switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 43 | BUZZER | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Replace the ETACS-ECU.

**Step 5. Retest the system.**
Check that the turn-signal lamp operation sound function works normally.

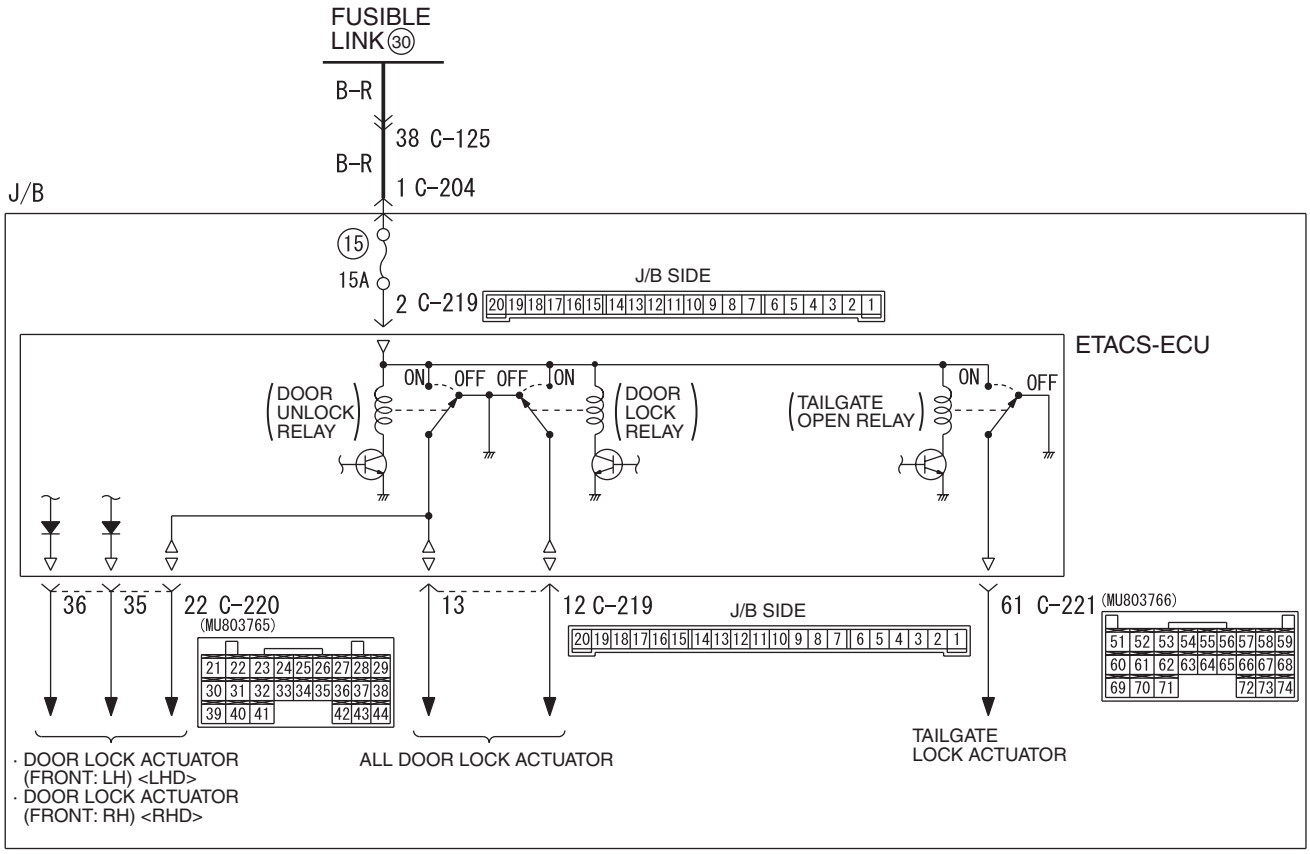
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

# CENTRAL DOOR LOCKING SYSTEM

## Inspection Procedure C-1: Central door locking system does not work.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Central Door Lock Power Supply Circuit**




W4X54E040A

## COMMENT ON TROUBLE SYMPTOM

If the central door locking system does not work at all, the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check that the central door locking system functions by using the front passenger's key cylinder.**

Check that the central door locking system works normally by means of the front passenger's door key cylinder.

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure C-3 "The central door locking system does not function by using the passenger's door key cylinder P.54C-110."

**Step 2. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

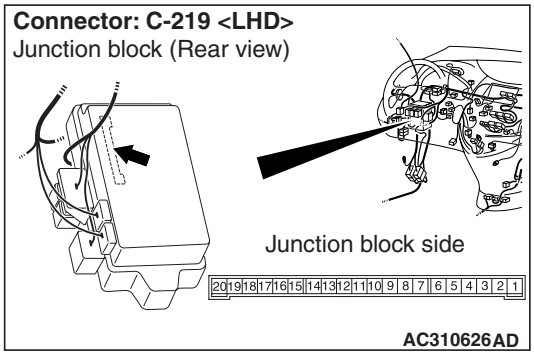
**ECU TO BE CHECKED**

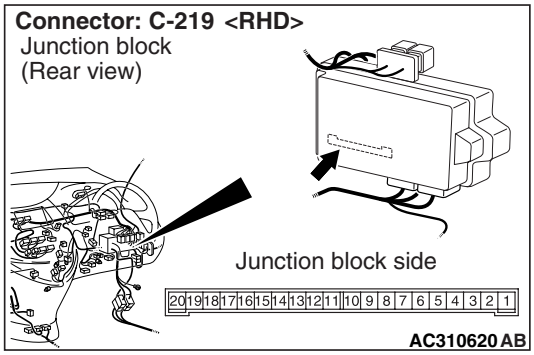
- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

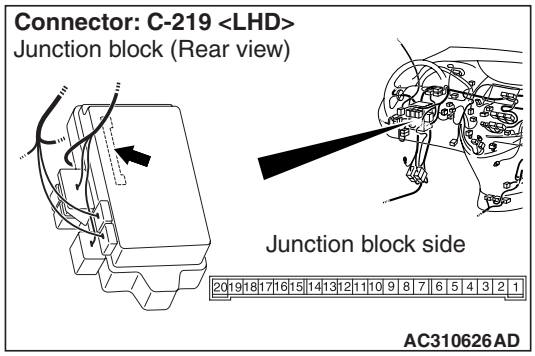
**Step 3. Connector check: C-219 ETACS-ECU connector**

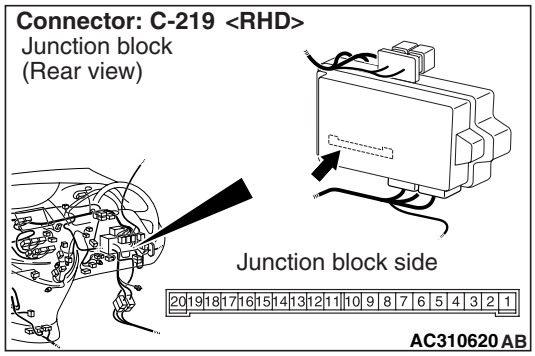


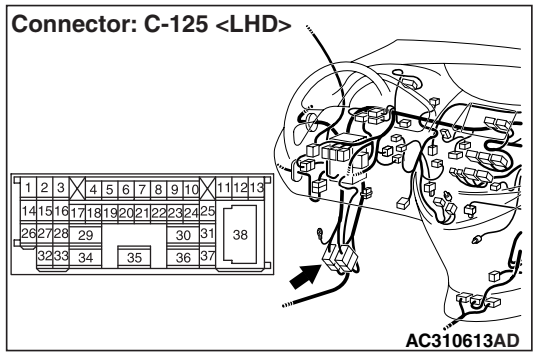

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the defective connector.

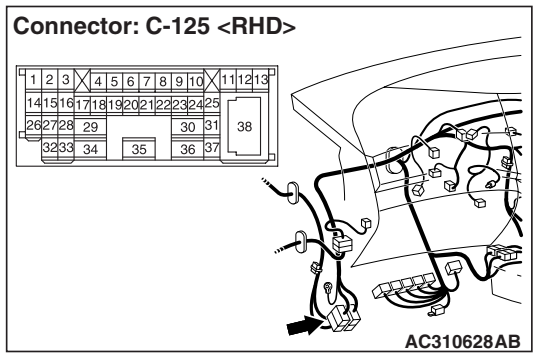
**Step 4. Check the wiring harness between C-219 ETACS-ECU connector terminal No.2 and fusible link (30).**

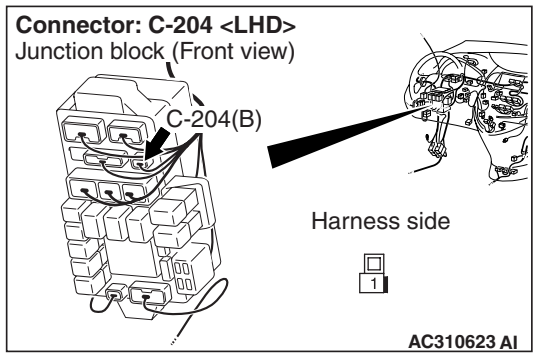


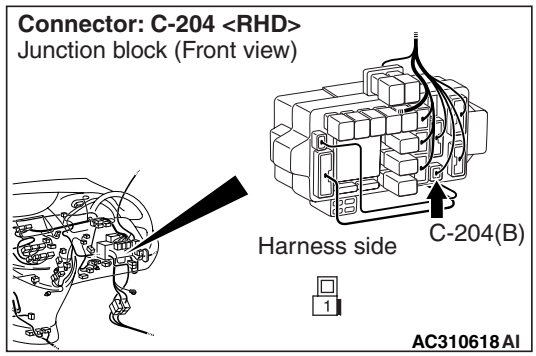




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-125 and junction block connector C-204, and repair if necessary.*

- Check the power supply line for open or short circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the wiring harness.

**Step 5. Retest the system.**
Check that the central door locking system works normally.

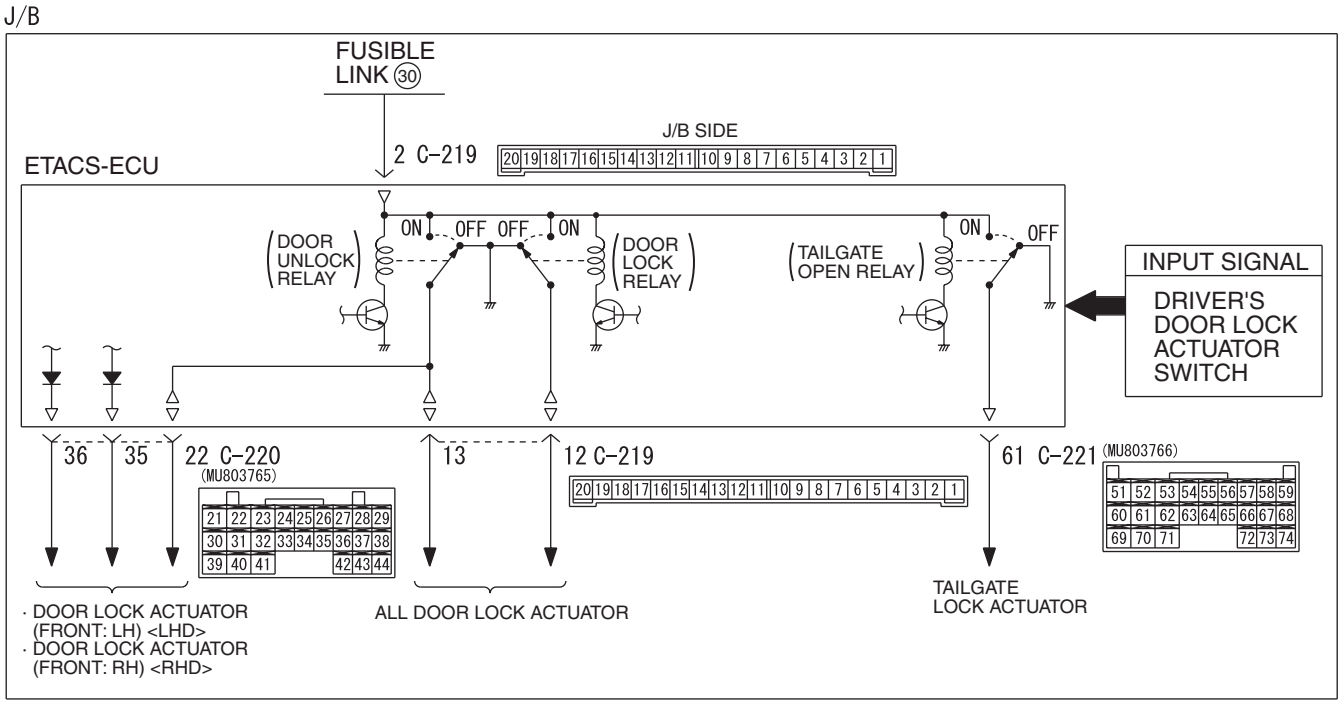
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure C-2: The central door locking system does not function by using the driver's door lock switch.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Central Door Lock (Driver's Door Lock Actuator Switch) Circuit**




W4X54E214A

## COMMENT ON TROUBLE SYMPTOM

If the central door locking system does not work normally only when the driver's door lock switch is operated, the driver's door lock actuator or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the driver’s door lock acutuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ETACS switch data by using the SWS monitor**

Check the ETACS-ECU signal, which is related to the driver's door lock operation.

- Driver's door: Unlock → Lock

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 21 | DR DOR LCK SW | from OFF to ON |
| Item 22 | DR DOR ULK SW | from ON to OFF |

**OK: Normal condition are displayed for all the items.**

**Q: Are the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to inspection procedure Q-15 "The driver's door lock actuator switch signal is not received <LH drive vehicles>P.54C-514 or <RH drive vehicles>P.54C-518."

**Step 2. Retest the system.**

Check that the central door locking system works normally by the driver's door lock operation.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

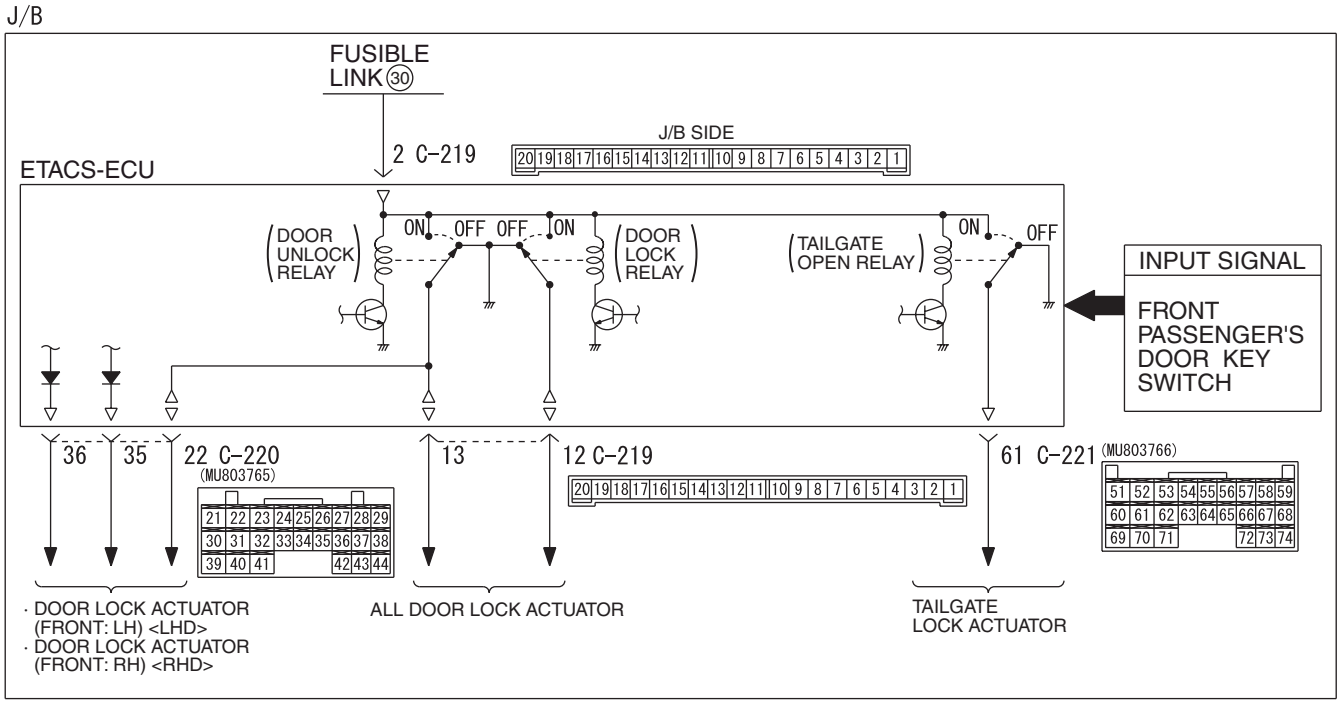
**NO :** Replace the ETACS-ECU.

## Inspection Procedure C-3: The central door locking system does not function by using the passenger's door key cylinder.

**⚠ CAUTION**

**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Central Door Lock (Door Key Switch) Circuit**




W4X54E150A

## COMMENT ON TROUBLE SYMPTOM

If the central door locking system does not work normally only when the front passenger's key cylinder is operated, the front passenger's door key switch or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the front passenger’s door key switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ETACS switch data by using the SWS monitor**

Check the ETACS-ECU signal, which is related to the front passenger's key cylinder operation.

- passenger’s door lock key cylinder: Neutral to lock

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 26 | CNTR DOOR LCK | ON (only when operated to lock) |
| Item 27 | CNTR DOOR ULK | OFF |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to inspection procedure Q-16 "The passenger's door lock key switch signal is not received <LH drive vehicles>P.54C-521 or <RH drive vehicles>P.54C-525."

**Step 2. Retest the system.**

Check that the central door locking system works normally by the front passenger's key cylinder operation.

**Q: Is the check result normal?**

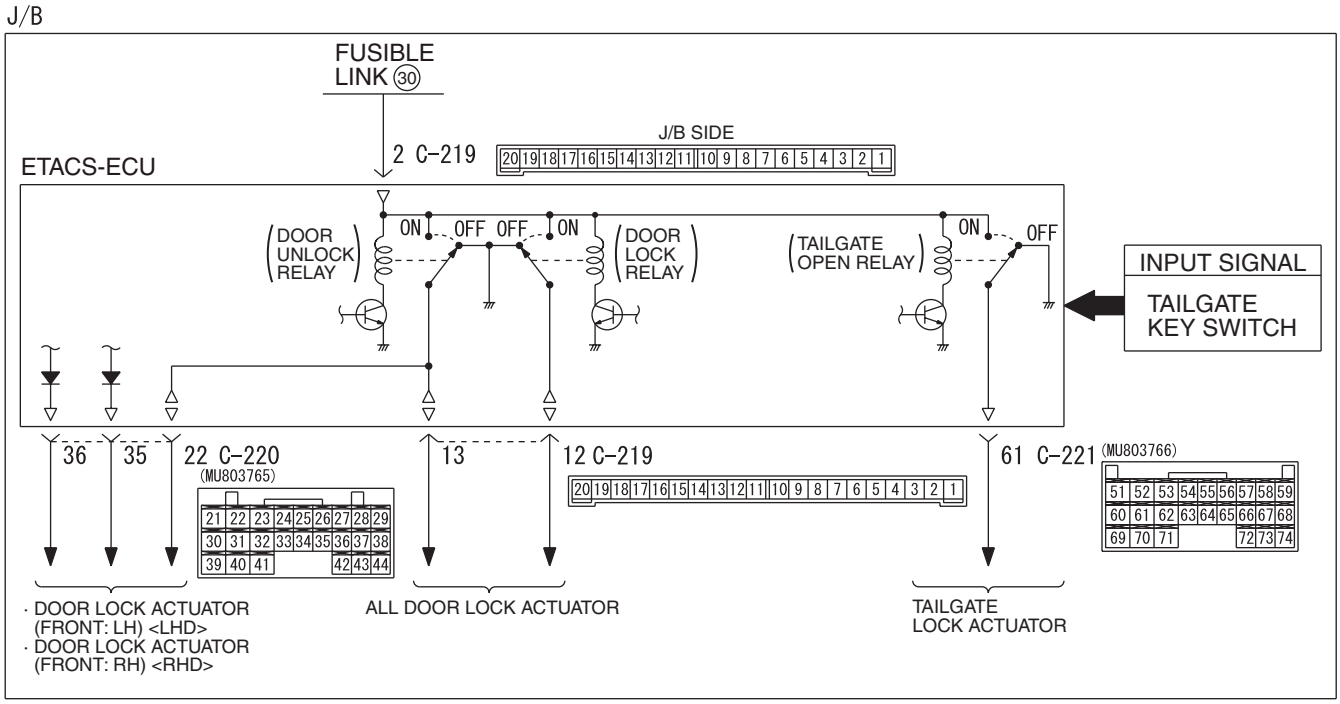
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Replace the ETACS-ECU.

**Inspection Procedure C-4: The central door locking system does not function by using the tailgate key cylinder.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Central Door Lock (Tailgate Key Switch) Circuit**




W4X54E149A

## COMMENT ON TROUBLE SYMPTOM

If the central door locking system does not work normally only when the tailgate key cylinder is operated, the tailgate key switch or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the tailgate key switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ETACS switch data by using the SWS monitor**

Check the ETACS-ECU signal, which is related to the tailgate key cylinder operation.

- Tailgate key switch: Neutral to lock

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 18 | TRK UNLOCK SW | OFF |
| Item 19 | GATE LOCK SW | ON (only when operated to lock) |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**

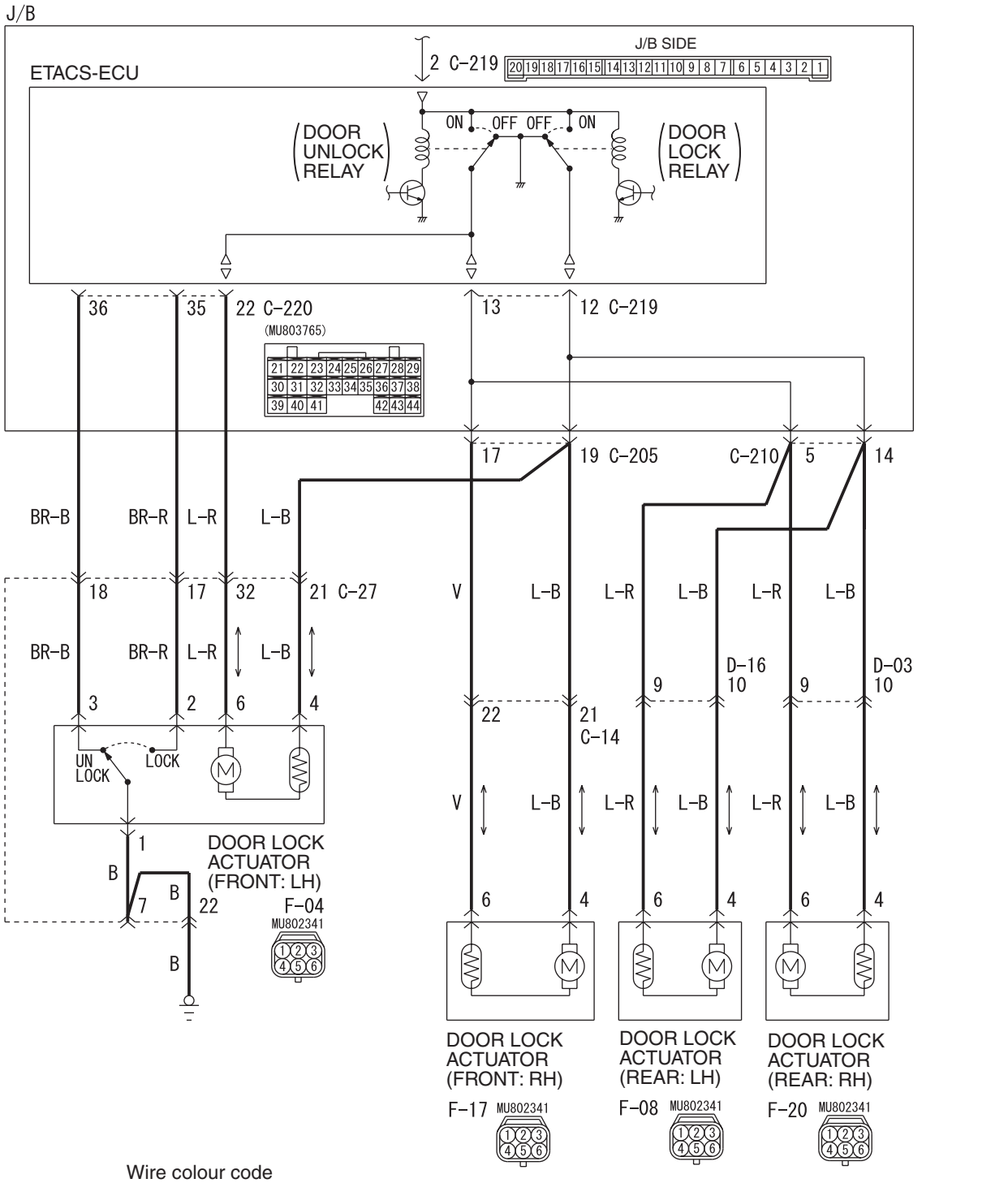
**YES :** Go to Step 2.
**NO :** Refer to inspection procedure Q-17 "The tailgate key switch signal is not received P.54C-528."

**Step 2. Retest the system.**
Check that the central door locking system works normally by the tailgate key cylinder operation.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure C-5: A door can not be locked or unlocked by the central door locking system. <LH drive vehicles>

**Central Door Lock Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E042A

## COMMENT ON TROUBLE SYMPTOM

If a door or the tailgate can not be locked or unlocked by the central door locking system, the door lock actuator or the tailgate lock actuator may be defective.

## POSSIBLE CAUSES

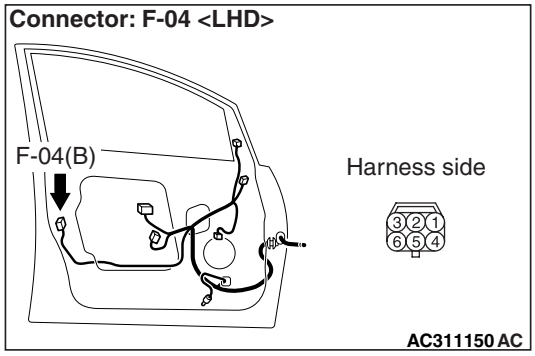
- Malfunction of the door lock actuator
- Malfunction of the tailgate lock actuator
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Confirm which door lock actuator is defective.**

**Q: Which door fails to lock correctly?**
**Driver's door :** Go to Step 2.
**Front passenger's door :** Go to Step 6.
**Rear right door :** Go to Step 10.
**Rear left door :** Go to Step 14.

**Step 2. Connector check: F-04 door lock actuator (front: LH)**



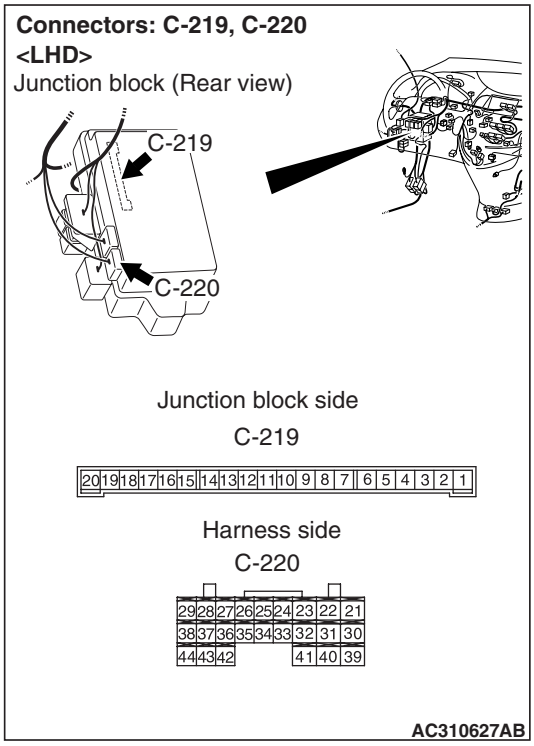

**Q: Is the check result normal?**

**YES :** Go to Step 3.
**NO :** Repair the defective connector.

**Step 3. Check the door lock actuator (front: LH).**
Check that the door lock actuator (front: LH) works normally. Refer to GROUP 42 – Door P.42-38.

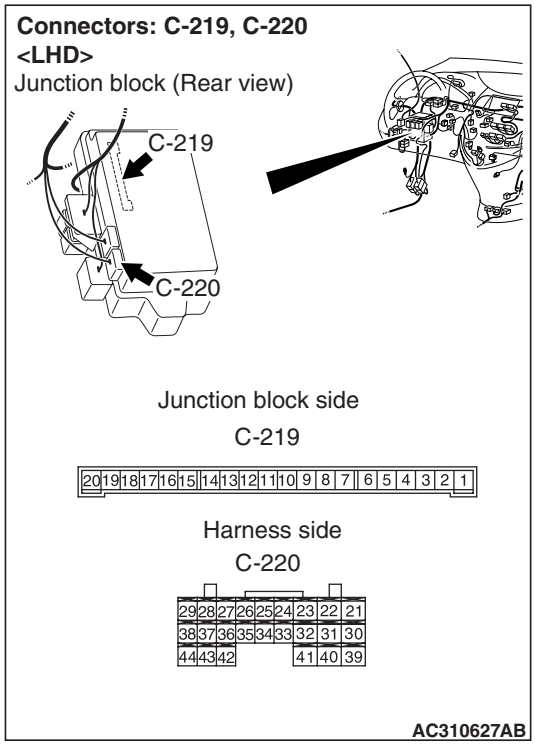
**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Replace the door lock actuator (front: LH).

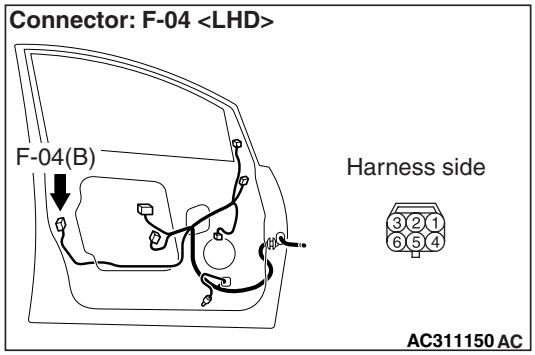
**Step 4. Connector check: C-219, C-220 ETACS-ECU connector**



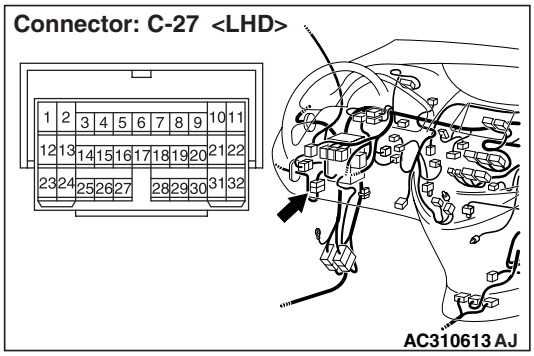

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the defective connector.

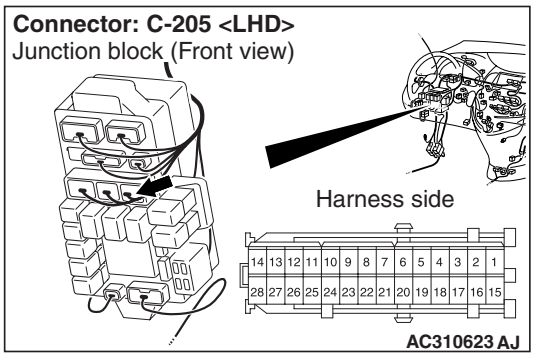
**Step 5. Check the wiring harness from C-219 ETACS-ECU connector terminal No.12 and C-220 ETACS-ECU connector No.22 to F-04 door lock actuator (front: LH) terminal Nos. 4 and 6.**




*NOTE:*



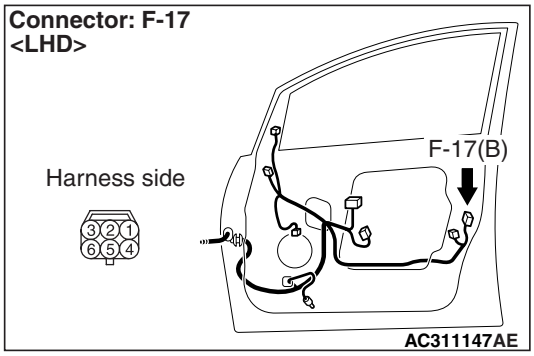




*Prior to the wiring harness inspection, check intermediate connector C-27 and junction block connector C-205, and repair if necessary.*

- Check the input and output lines for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 6. Connector check: F-17 door lock actuator (front: RH) connector**



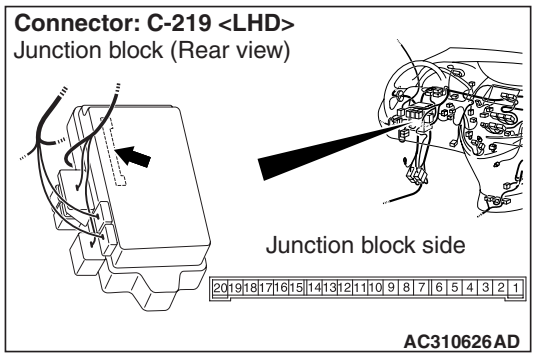

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the defective connector.

**Step 7. Check the door lock actuator (front: RH).**
Check that the door lock actuator (front: RH) works normally. Refer to GROUP 42 – Door P.42-38.

**Q: Is the check result normal?**

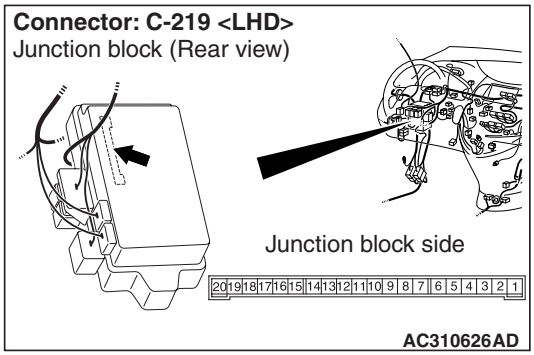
**YES :** Go to Step 8.
**NO :** Replace the door lock actuator (front: RH).

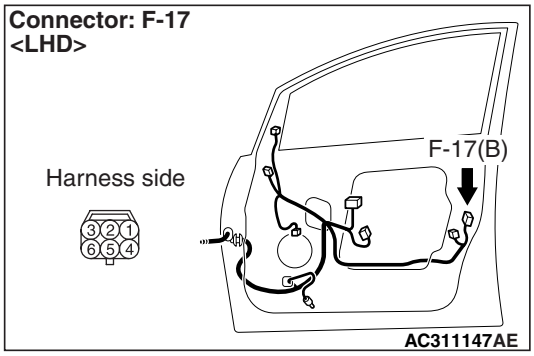
### Step 8. Connector check: C-219 ETACS-ECU connector




**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the defective connector.

### Step 9. Check the wiring harness from C-219 ETACS-ECU connector terminal Nos.12 and 13 to F-17 door lock actuator (front: RH) connector terminal Nos.4 and 6.

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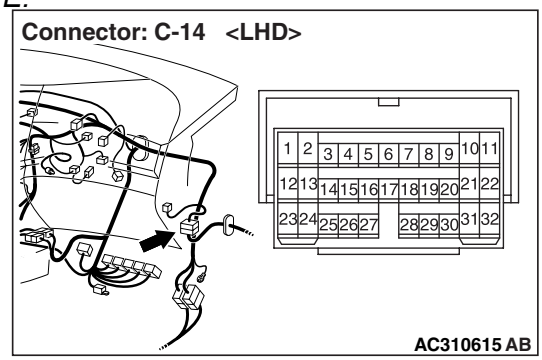
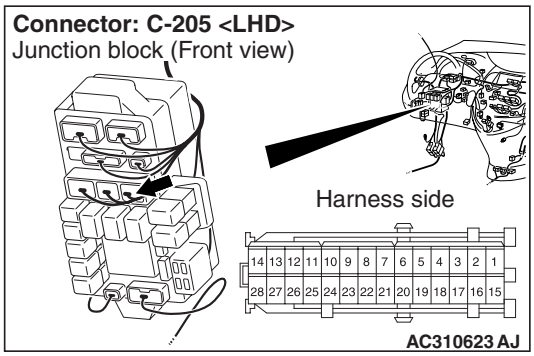


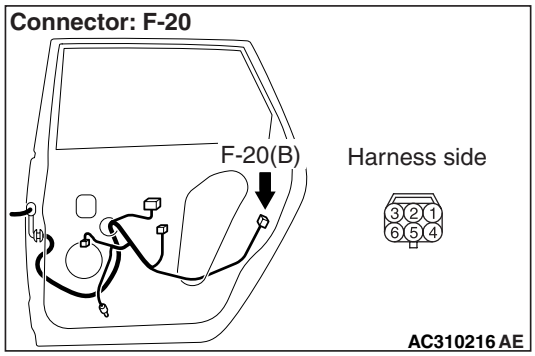

*Prior to the wiring harness inspection, check intermediate connector C-14 and junction block connector C-205, and repair if necessary.*

- Check the input and output lines for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

### Step 10. Connector check: F-20 door lock actuator (rear: RH) connector



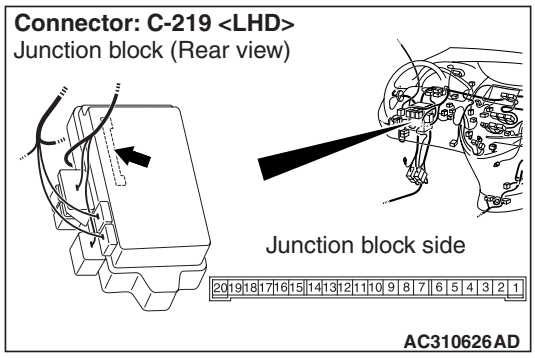

**Q: Is the check result normal?**
**YES :** Go to Step 11.
**NO :** Repair the defective connector.

### Step 11. Check the door lock actuator (rear: RH).

Check that the door lock actuator (rear: RH) is in good condition. Refer to GROUP 42 – Door P.42-38.

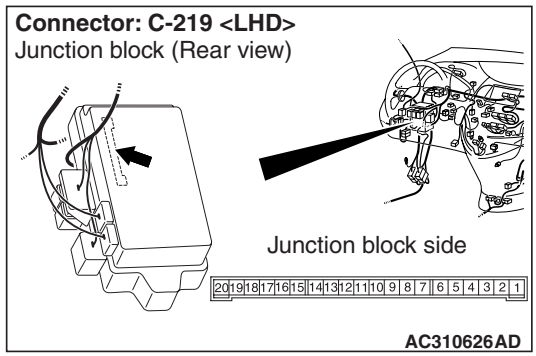
**Q: Is the check result normal?**
**YES :** Go to Step 12.
**NO :** Replace the door lock actuator (rear: RH).

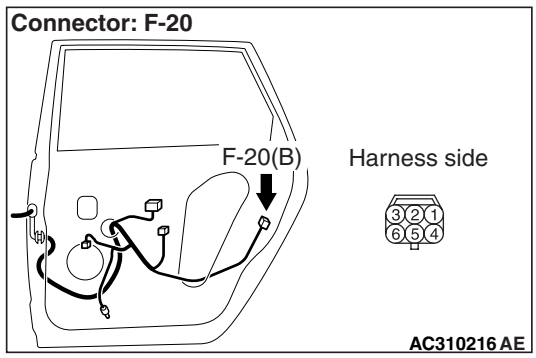
### Step 12. Connector check: C-219 ETACS-ECU connector



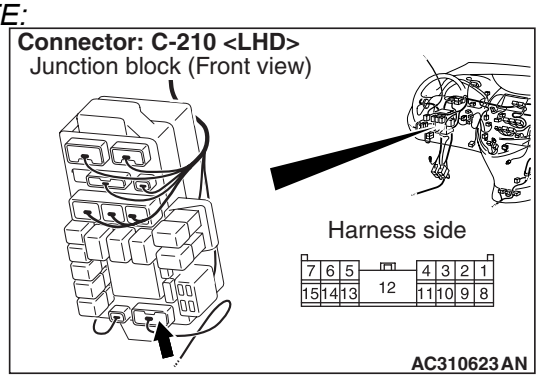

**Q: Is the check result normal?**
**YES :** Go to Step 13.
**NO :** Repair the defective connector.

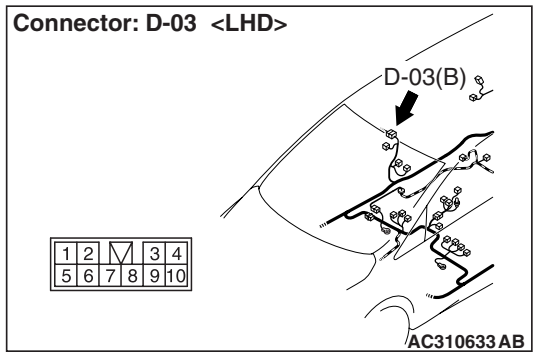
### Step 13. Check the wiring harness from C-219 ETACS-ECU connector terminal Nos.12 and 13 to F-20 door lock actuator (rear: RH) connector terminal Nos.4 and 6.




*NOTE:*



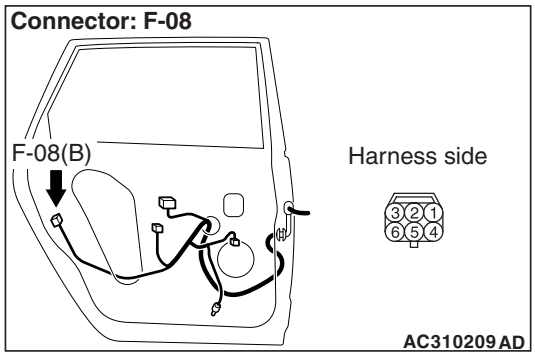

*Prior to the wiring harness inspection, check D-03 intermediate connector and C-210 junction block connector, and repair if necessary.*

- Check the input and output lines for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

### Step 14. Connector check: F-08 door lock actuator (rear: LH) connector



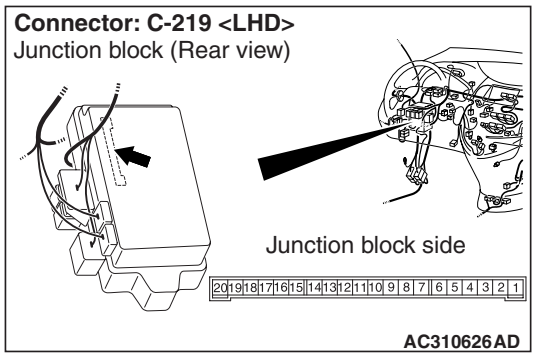

**Q: Is the check result normal?**
**YES :** Go to Step 15.
**NO :** Repair the defective connector.

### Step 15. Check the door lock actuator (rear: LH).

Check that the door lock actuator (rear: LH) is in good condition. Refer to GROUP 42 – Door P.42-38.

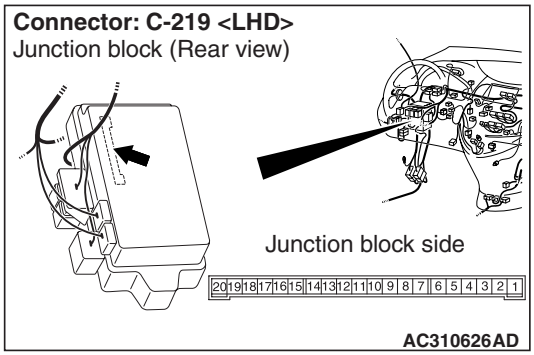
**Q: Is the check result normal?**
**YES :** Go to Step 16.
**NO :** Replace the door lock actuator (rear: LH).

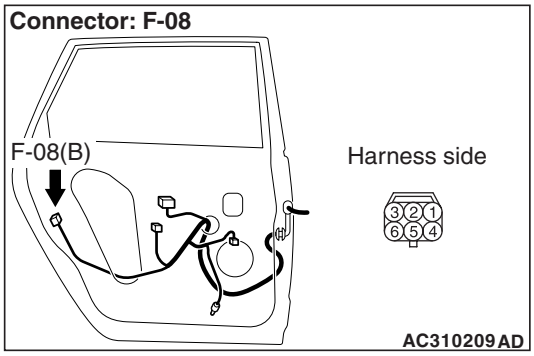
### Step 16. Connector check: C-219 ETACS-ECU connector



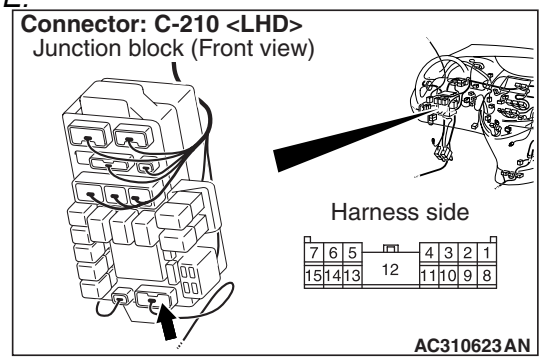

**Q: Is the check result normal?**
**YES :** Go to Step 17.
**NO :** Repair the defective connector.

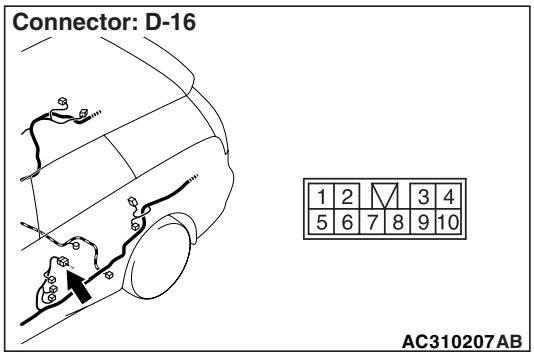
### Step 17. Check the wiring harness from C-219 ETACS-ECU connector terminal Nos.12 and 13 to F-08 door lock actuator (rear: LH) connector terminal Nos.4 and 6.




*NOTE:*




*Prior to the wiring harness inspection, check D-16 intermediate connectors and C-210 junction block connector, and repair if necessary.*

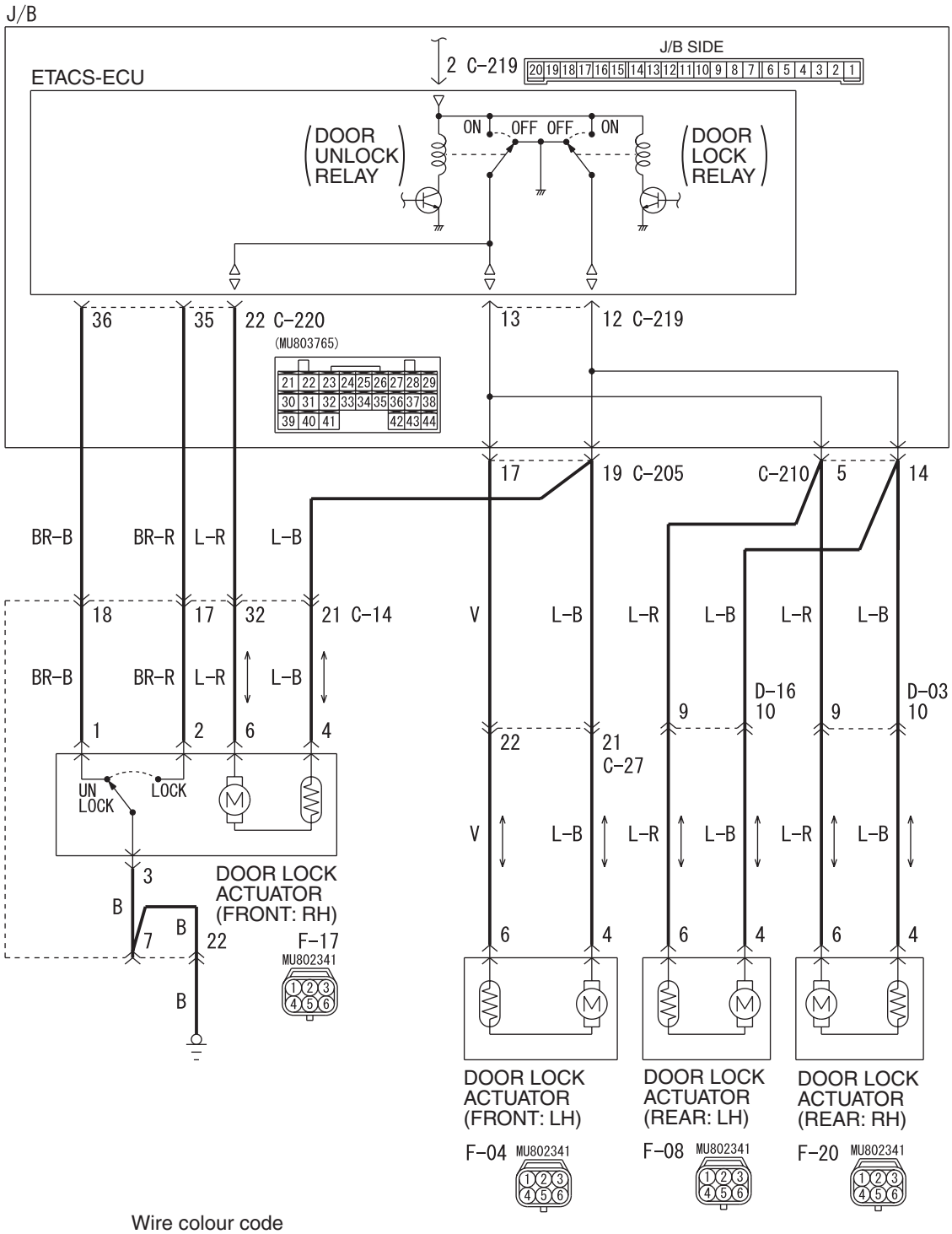
- Check the input and output lines for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

## Inspection Procedure C-5: A door can not be locked or unlocked by the central door locking system. <RH drive vehicles>

**Central Door Lock Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E043A

## COMMENT ON TROUBLE SYMPTOM

If a door or the tailgate can not be locked or unlocked by the central door locking system, the door lock actuator or the tailgate lock actuator may be defective.

## POSSIBLE CAUSES

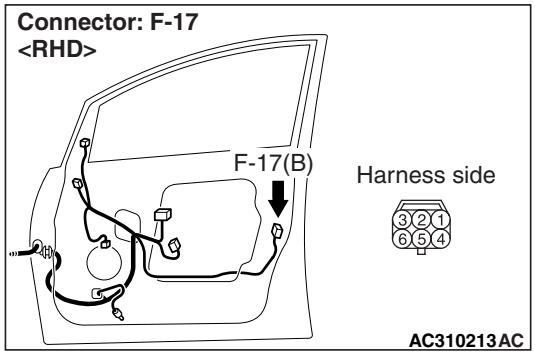
- Malfunction of the door lock actuator
- Malfunction of the tailgate lock actuator
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

### Step 1. Confirm which door lock actuator is defective.

**Q: Which door fails to lock correctly?**
**Driver's door :** Go to Step 2.
**Front passenger's door :** Go to Step 6.
**Rear right door :** Go to Step 10.
**Rear left door :** Go to Step 14.

### Step 2. Connector check: F-17 door lock actuator (front: RH) connector



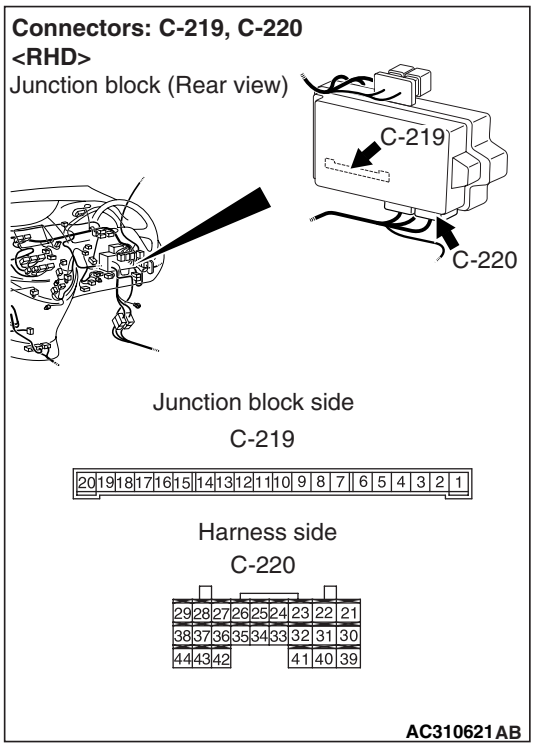

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the defective connector.

### Step 3. Check the door lock actuator (front: RH)

Check that the door lock actuator (front: RH) works normally. Refer to GROUP 42 – Door P.42-38.

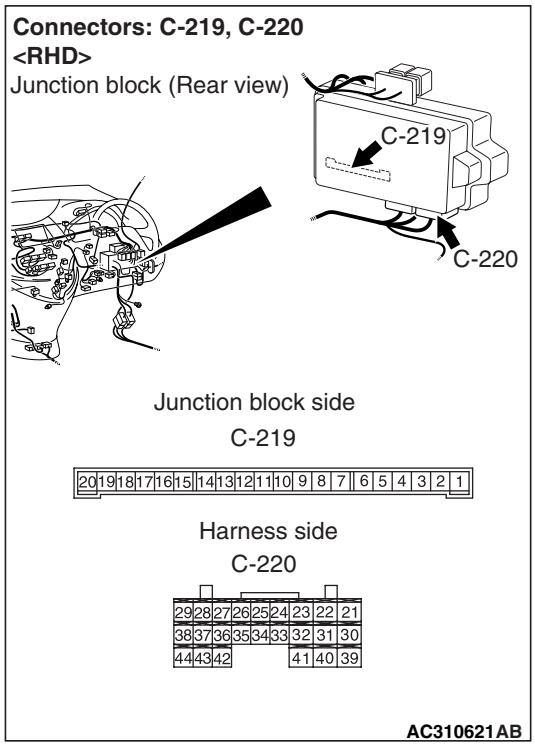
**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Replace the door lock actuator (front: RH).

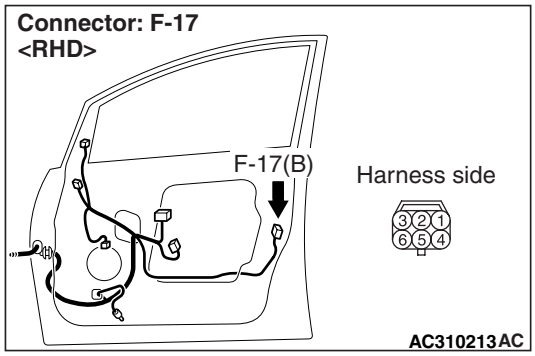
### Step 4. Connector check: C-219, C-220 ETACS-ECU connector



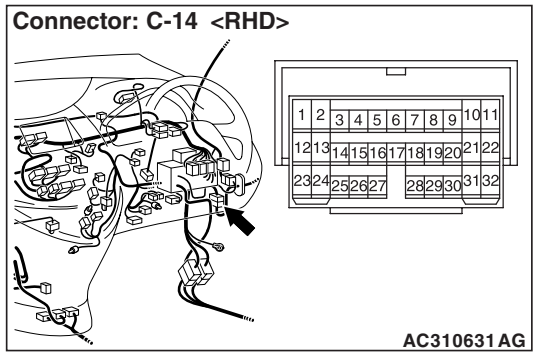

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the defective connector.

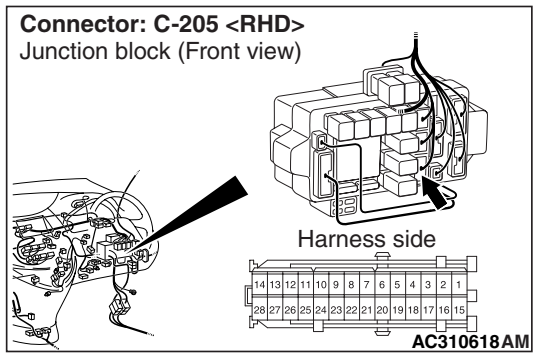
**Step 5. Check the wiring harness from C-219 ETACS-ECU connector terminal No.12 and C-220 ETACS-ECU connector No.22 to F-17 door lock actuator (front: RH) connector terminal Nos.4 and 6.**




*NOTE:*



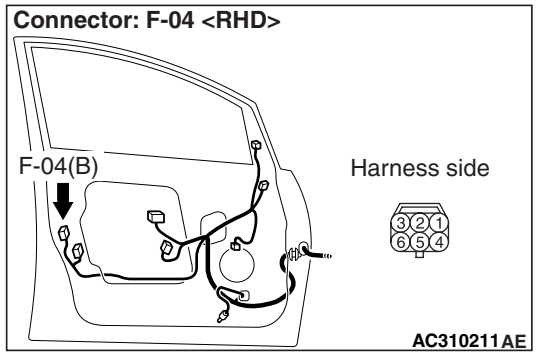




*Prior to the wiring harness inspection, check intermediate connector C-14 and junction block connector C-205, and repair if necessary.*

- Check the input and output lines for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 6. Connector check: F-04 door lock actuator (front: LH) connector**



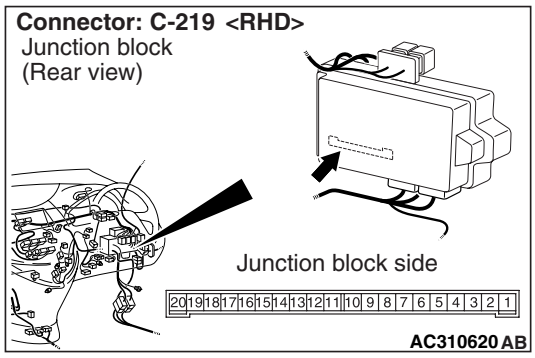

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the defective connector.

**Step 7. Check the door lock actuator (front: LH).**
Check that the door lock actuator (front: LH) works normally. Refer to GROUP 42 – Door P.42-38.

**Q: Is the check result normal?**

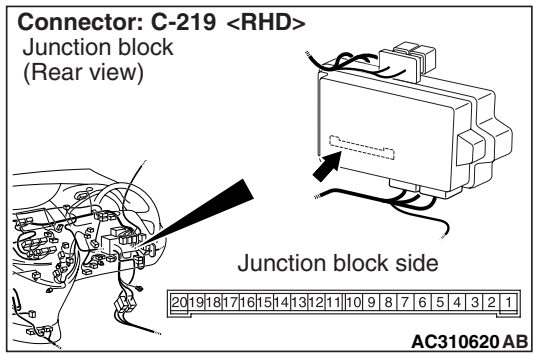
**YES :** Go to Step 8.
**NO :** Replace the door lock actuator (front: LH).

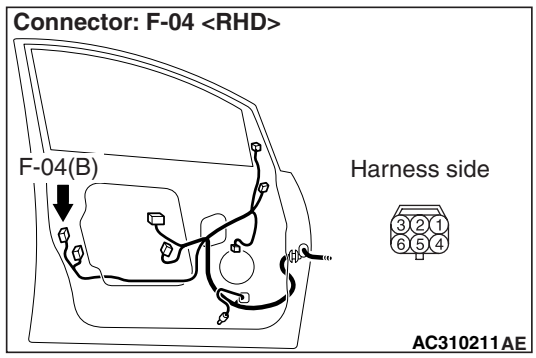
### Step 8. Connector check: C-219 ETACS-ECU connector



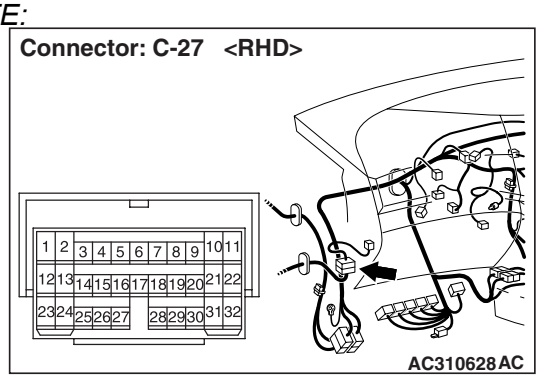

**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the defective connector.

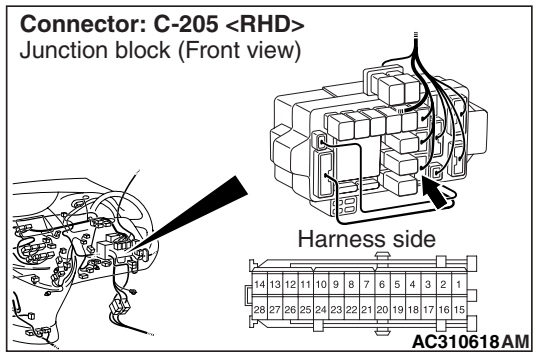
### Step 9. Check the wiring harness from C-219 ETACS-ECU connector terminal Nos.12 and 13 to F-04 door lock actuator (front: LH) connector terminal Nos.4 and 6.




*NOTE:*



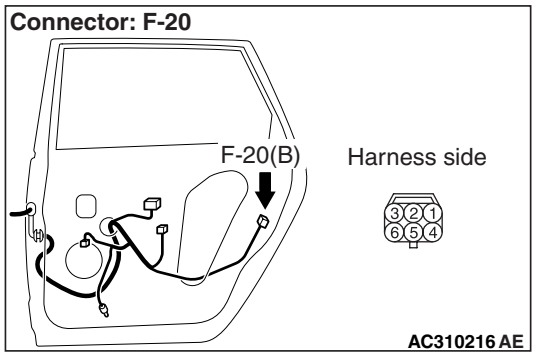

*Prior to the wiring harness inspection, check intermediate connector C-27 and junction block connector C-205, and repair if necessary.*

- Check the input and output lines for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

### Step 10. Connector check: F-20 door lock actuator (rear: RH) connector



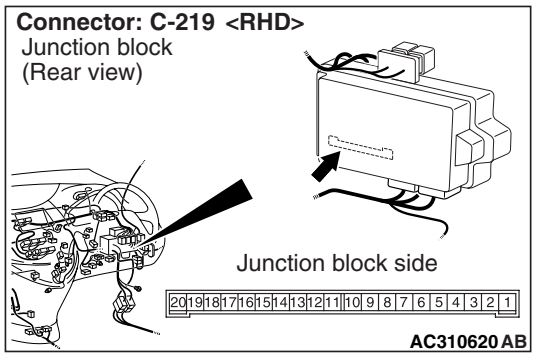

**Q: Is the check result normal?**
**YES :** Go to Step 11.
**NO :** Repair the defective connector.

### Step 11. Check the door lock actuator (rear: RH).

Check that the door lock actuator (rear: RH) is in good condition. Refer to GROUP 42 – Door P.42-38.

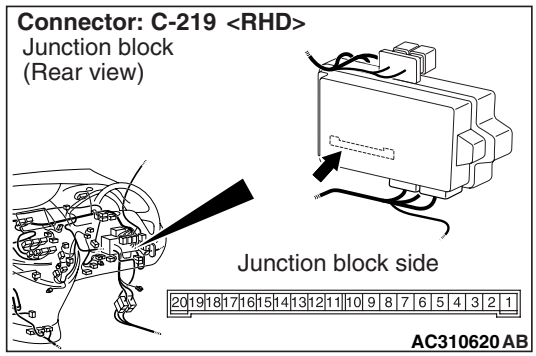
**Q: Is the check result normal?**
**YES :** Go to Step 12.
**NO :** Replace the door lock actuator (rear: RH).

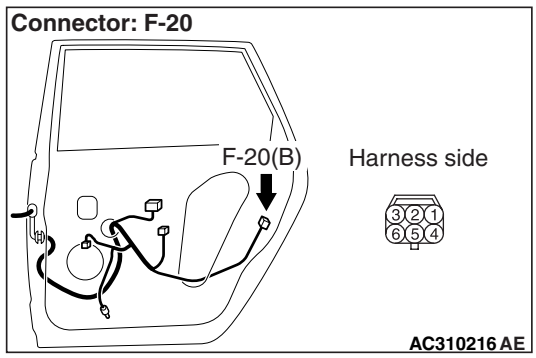
### Step 12. Connector check: C-219 ETACS-ECU connector



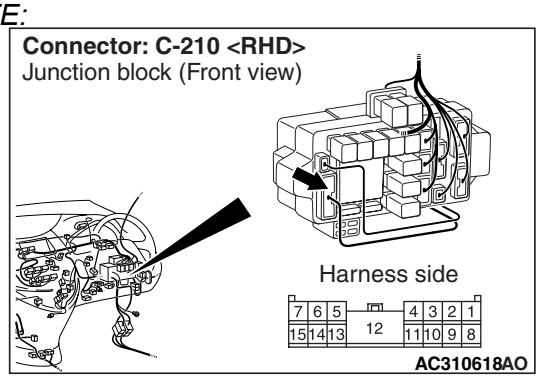

**Q: Is the check result normal?**
**YES :** Go to Step 13.
**NO :** Repair the defective connector.

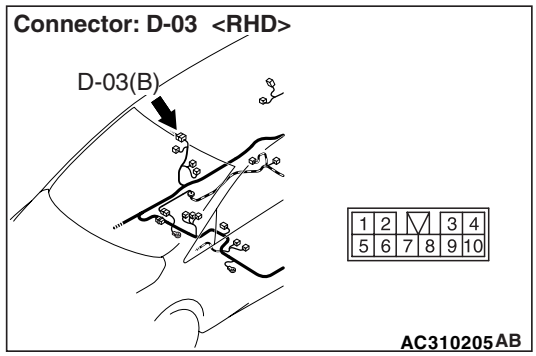
### Step 13. Check the wiring harness from C-219 ETACS-ECU connector terminal Nos.12 and 13 to F-20 door lock actuator (rear: RH) connector terminal Nos.4 and 6.




*NOTE:*



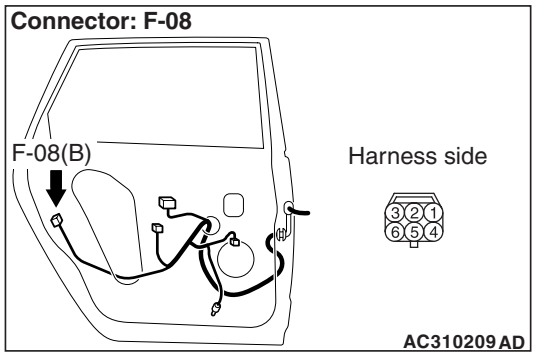

*Prior to the wiring harness inspection, check D-03 intermediate connector and C-210 junction block connector, and repair if necessary.*

- Check the input and output lines for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

### Step 14. Connector check: F-08 door lock actuator (rear: LH) connector



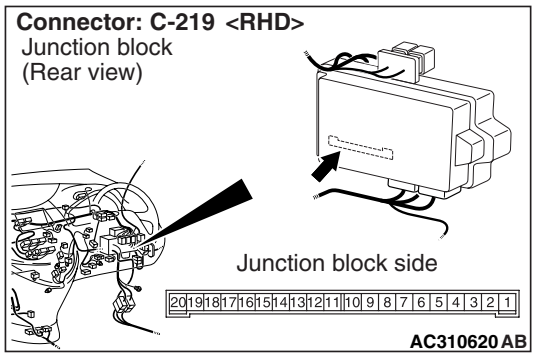

**Q: Is the check result normal?**
**YES :** Go to Step 15.
**NO :** Repair the defective connector.

### Step 15. Check the door lock actuator (rear: LH).

Check that the door lock actuator (rear: LH) is in good condition. Refer to GROUP 42 – Door P.42-38.

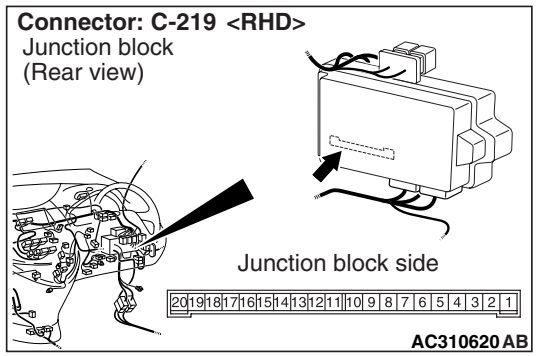
**Q: Is the check result normal?**
**YES :** Go to Step 16.
**NO :** Replace the door lock actuator (rear: LH).

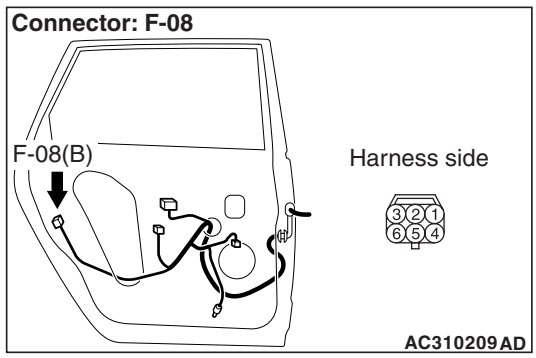
### Step 16. Connector check: C-219 ETACS-ECU connector



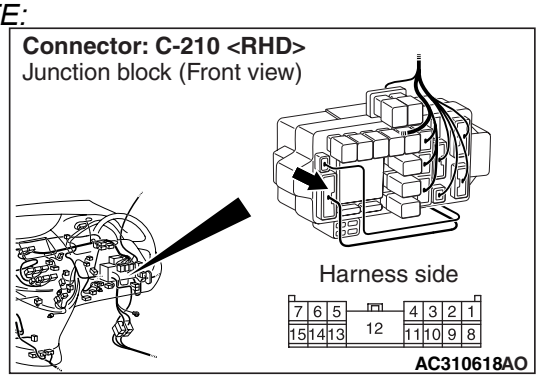

**Q: Is the check result normal?**
**YES :** Go to Step 17.
**NO :** Repair the defective connector.

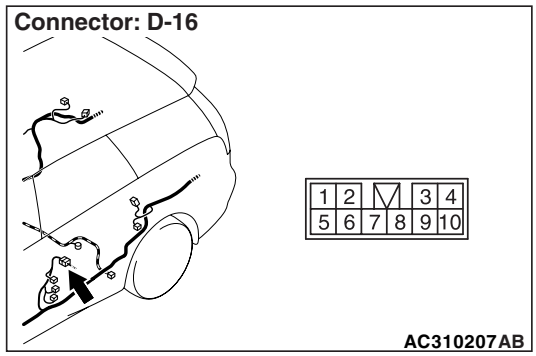
### Step 17. Check the wiring harness from C-219 ETACS-ECU connector terminal Nos.12 and 13 to F-08 door lock actuator (rear: LH) connector terminal Nos.4 and 6.




*NOTE:*




*Prior to the wiring harness inspection, check D-16 intermediate connectors and C-210 junction block connector, and repair if necessary.*

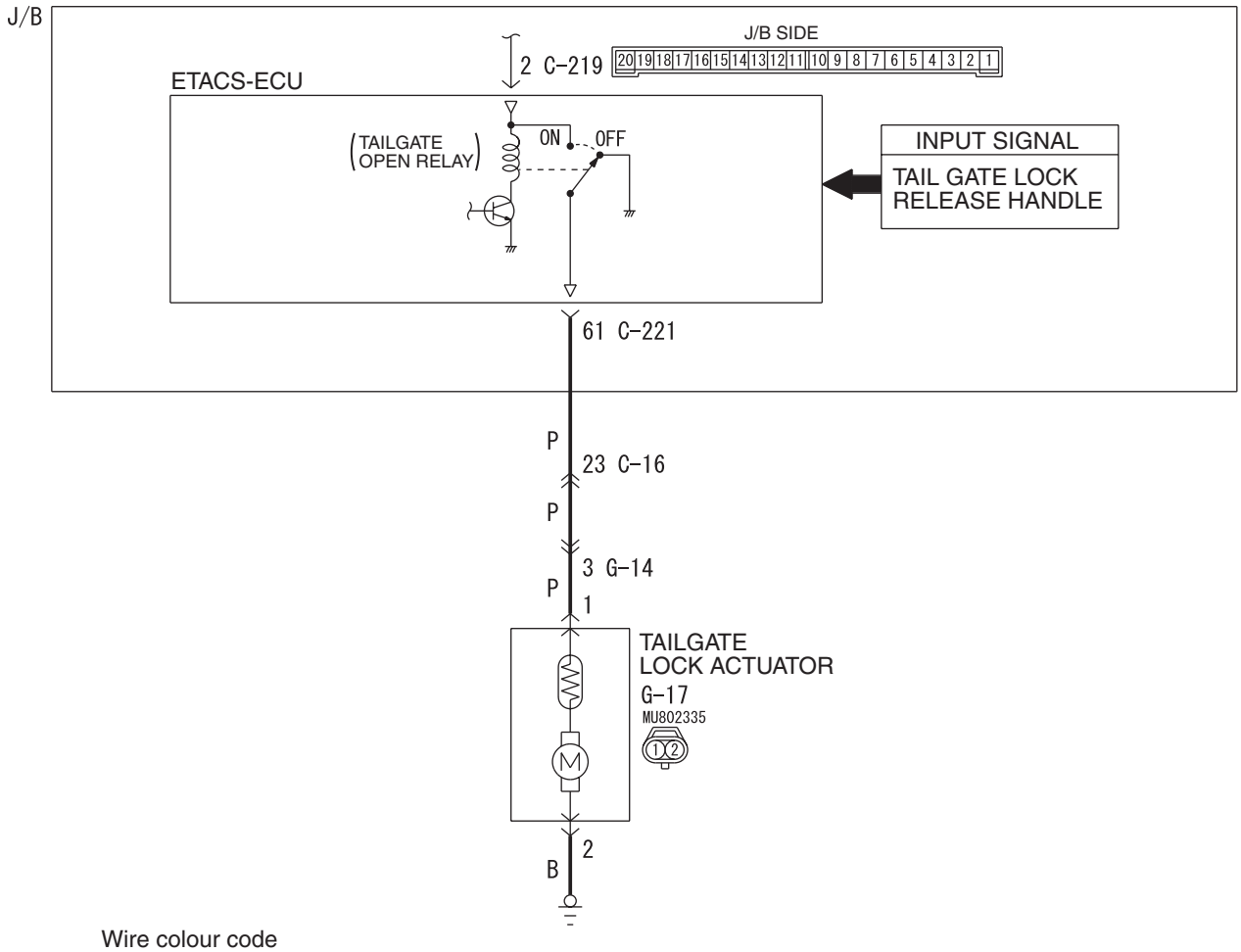
- Check the input and output lines for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

## Inspection Procedure C-6: The tailgate cannot be opened or closed.

**Tailgate Open Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E148A

## COMMENT ON TROUBLE SYMPTOM

If a door or the tailgate can not be locked or unlocked by the central door locking system, the tailgate lock actuator or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the tailgate lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check that the central door locking system and the keyless entry system operate.**
Check that the doors (excluding the tailgate) are locked and unlocked normally when the central door locking and keyless entry systems are operated.

**Q: Is the check result normal?**

**YES <The central door locking and keyless entry systems operate normally> :** Go to Step 2
**NO <The central door locking system does not operate normally> :** Refer to Inspection Procedure C-1 "Central door locking system does not work P.54C-106."
**NO <The keyless entry system does not operate normally> :** Refer to Inspection Procedure E-1 "Keyless entry system does not work P.54C-186."

### Step 2. SWS monitor data list

Check the SWS communication input signal, which are related to the tailgate opening and closing.

**<Selected item> ETACS ECU**

- Ignition switch: from OFF to ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 30 | IG SW(IG1) | from OFF to ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Refer to Inspection Procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."

### Step 3. ETACS switch data by using the SWS monitor

Check the ETACS-ECU signal related to the tailgate opening and closing.

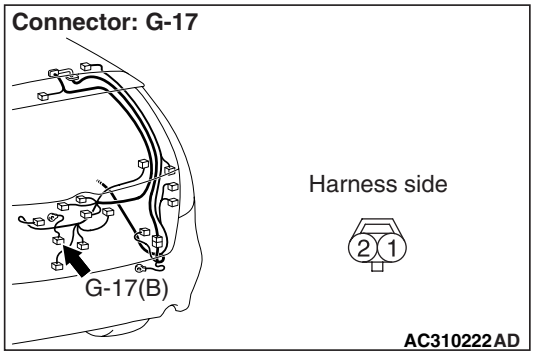
- Tailgate lock release handle: from OFF to ON

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 30 | GTE OPENER SW | OFF to ON (only when switch is operated) |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Replace the ETACS-ECU.

### Step 4. Connector check: G-17 tailgate lock actuator connector



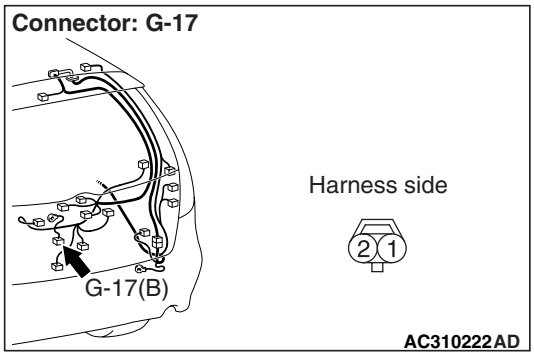

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the defective connector.

### Step 5. Check the tailgate lock actuator.

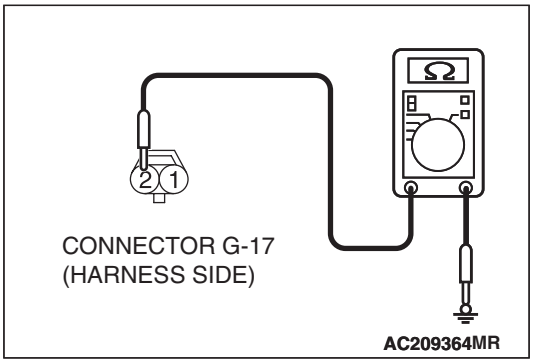
Check that the tailgate lock actuator is in good condition. Refer to GROUP 42 – Tailgate P.42-51.

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Replace the tailgate lock actuator.

### Step 6. Resistance measurement at the G-17 tailgate lock actuator connector.




(1) Disconnect the connector, and measure at the wiring harness side.



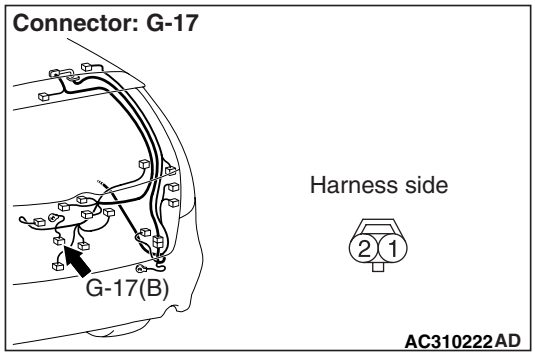

(2) Resistance between G-17 tailgate lock actuator

connector terminal No.2 and body earth

**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Go to Step 7.

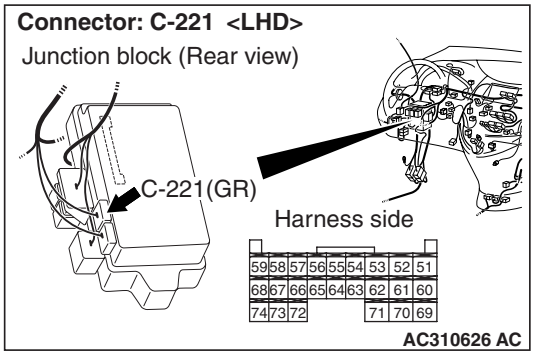
### Step 7. Check the wiring harness between G-17 tailgate lock actuator connector terminal No.2 and the body earth.

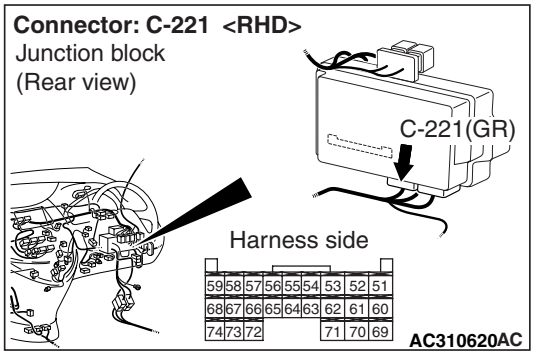



- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

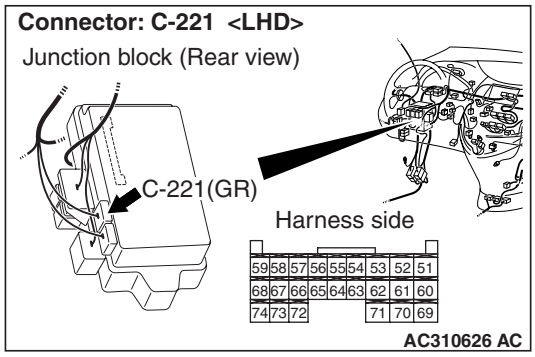
### Step 8. Connector check: C-221 ETACS-ECU connector

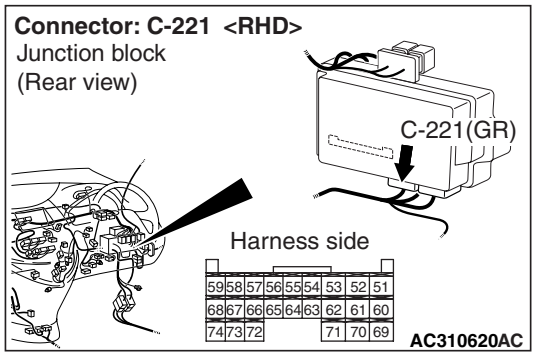


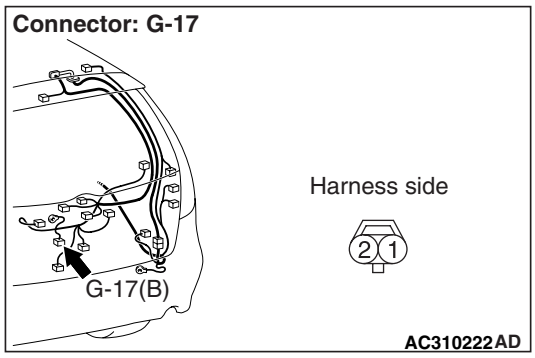




**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the defective connector.

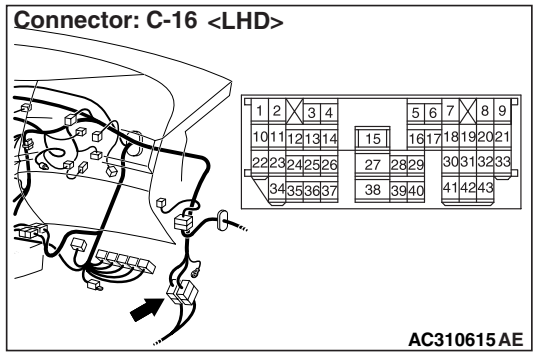
**Step 9. Check the wiring harness from C-221 ETACS-ECU connector terminal No.61 to G-17 tailgate lock actuator connector terminal No.1.**

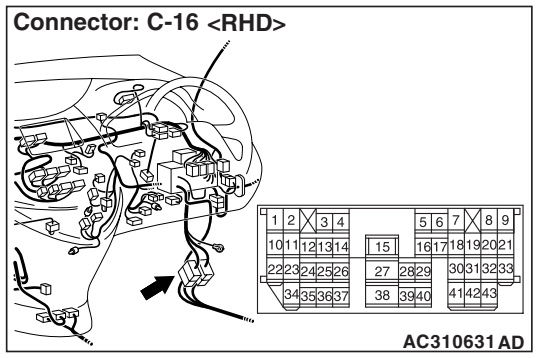


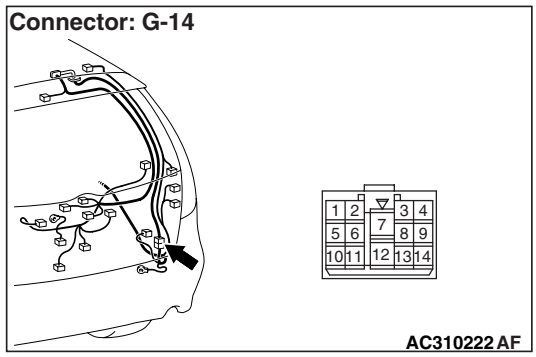




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-16 and G-14, and repair if necessary.*

- Check the input and output lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 10.
**NO :** Repair the wiring harness.

**Step 10. Retest the system.**
Check that the tailgate lock works normally.

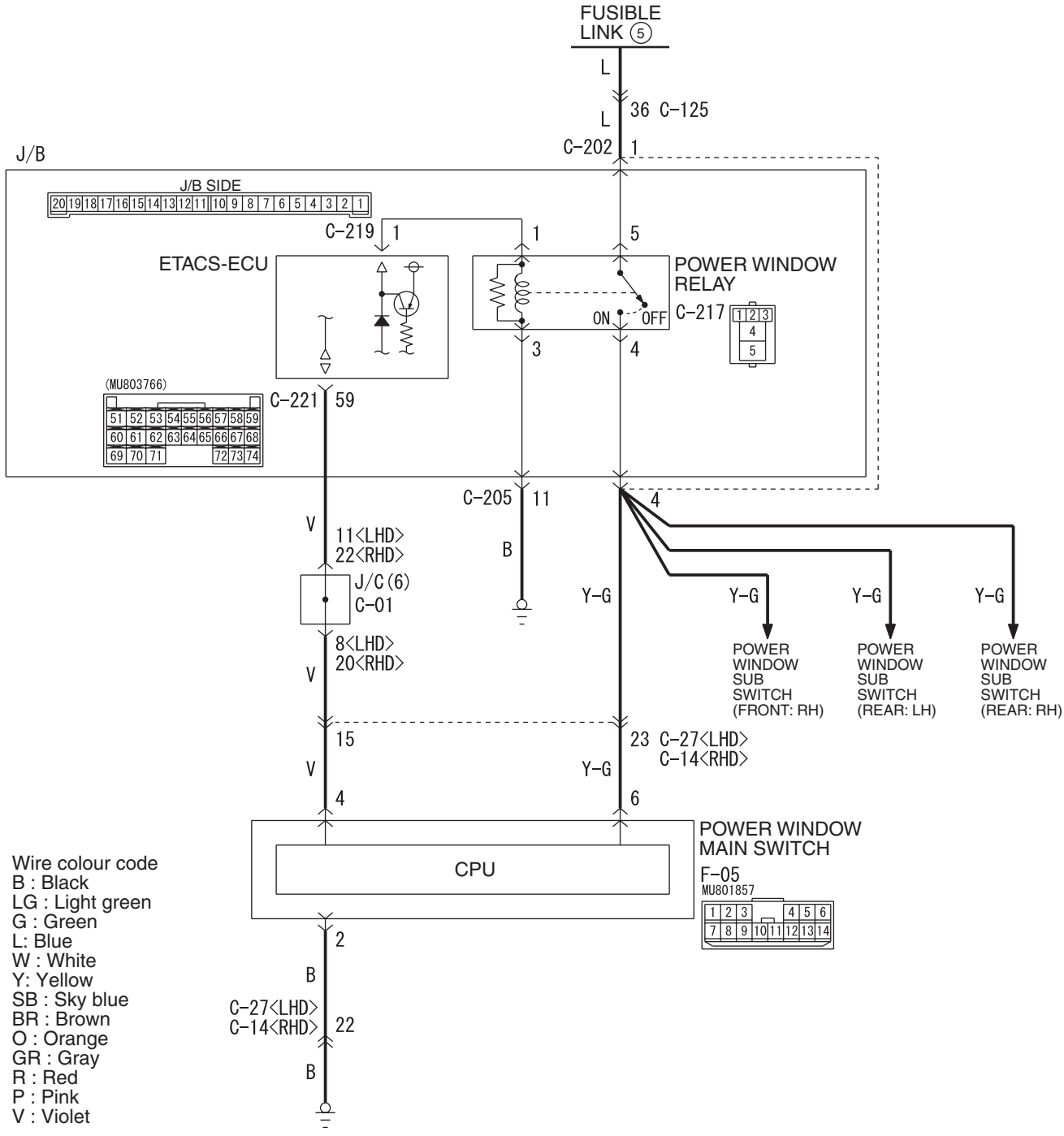
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

# POWER WINDOWS

## Inspection Procedure D-1: Power windows do not work at all.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Power Window Relay Circuit**




Wire colour code
B : Black
LG : Light green
G : Green
L: Blue
W : White
Y: Yellow
SB : Sky blue
BR : Brown
O : Orange
GR : Gray
R : Red
P : Pink
V : Violet

W4X54E068A

## COMMENTS ON TROUBLE SYMPTOM

If the power windows do not work at all, the power window relay, the power window main switch or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the power window relay
- Malfunction of the power window main switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor**

Check that the power supply and earth lines to the ETACS-ECU and the power window main switch (power window module) and the SWS communication lines are normal.

- Turn the ignition switch to the ON position.

**ECUS TO BE CHECKED**

- ETACS ECU
- P/W MODULE

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**

**"OK" are displayed for all the items :** Go to Step 2.

**"NG" is displayed on the "ETACS ECU" menu. :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**"NG" is displayed on the "P/W MODULE" menu. :** Refer to Inspection Procedure A-5 "Communication with the power window main switch (power window module) is not possible P.54C-77."

**Step 2. Function diagnosis by using the SWS monitor**

Check the SWS communication signal, which are related to the power windows.

**<Selected item> POWER WINDOW**

- Turn the ignition switch to the ON position.
- Power window main switch: UP

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 30 | IG SW (IG1) | ON |
| Item 33 | P/W SW ACCEPT | PERMIT |
| Item 71 | P/W ECU ACK | INPUT CHECK (only momentarily when switch is operated) |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**

**Normal conditions are displayed for all the items :** Go to Step 3.

**Normal condition is not displayed for item No.30 :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."

**Normal condition is not displayed for item No.33 :** Replace the ETACS-ECU.

**Normal condition is not displayed for item No.71 :** Replace the power window main switch.

**Step 3. SWS monitor data list**

Check the SWS communication signal, which are related to the power windows.

**<Selected item> DOOR CNT. COM.**

- Insert the probe (For the insertion point, refer to P.54C-10).
- Turn the ignition switch to the ON position.
- Power window main switch: UP

| Item No. | Item name | Normal condition |
|---|---|---|
| Item C0 | PASS DOR UP | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 4.

**NO :** Replace the power window main switch.

**Step 4. Retest the system.**

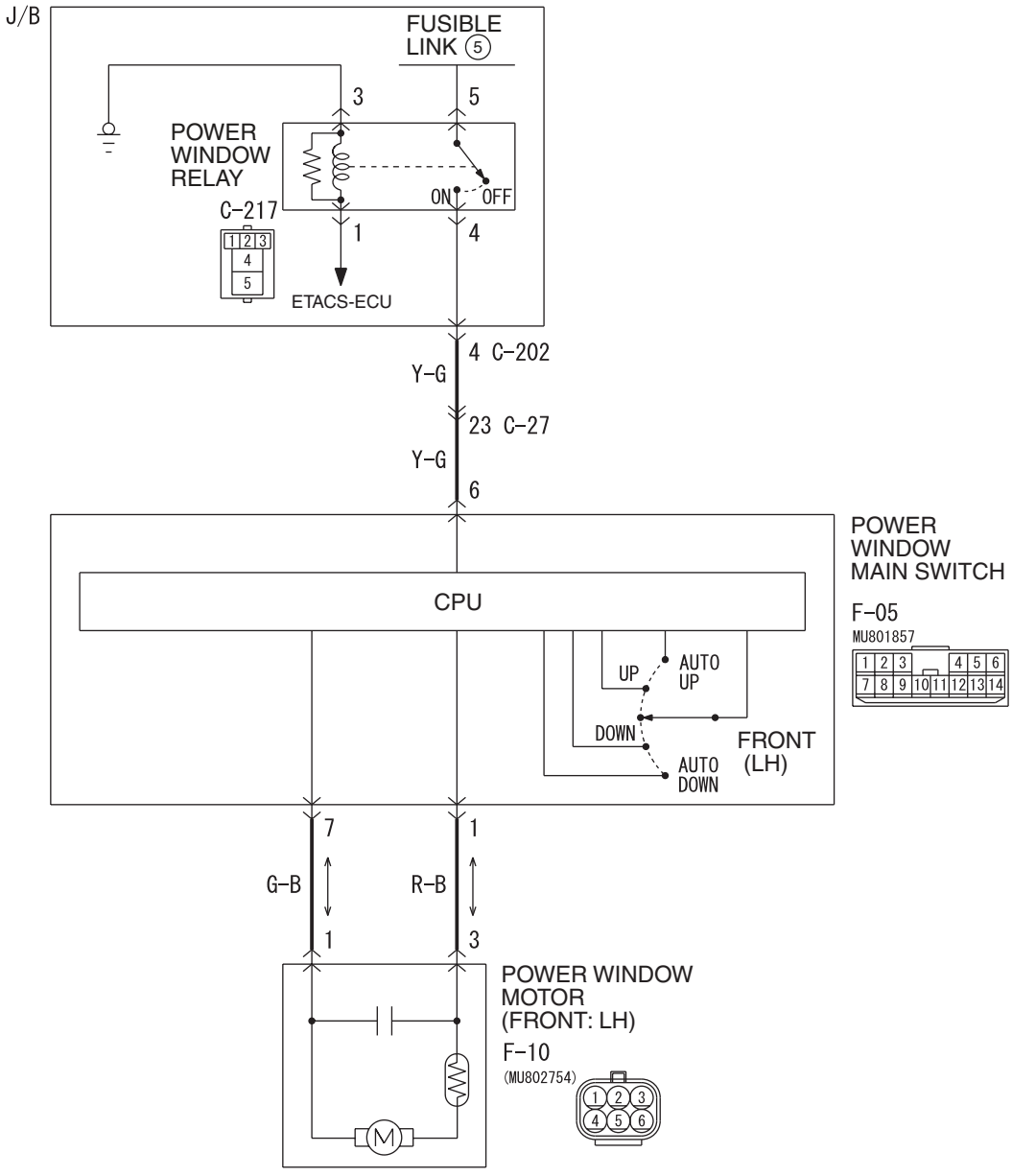
Check that the all the power windows work.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window main switch.

## Inspection Procedure D-2: Driver's power window does not work by means of the power window main switch. <LH drive vehicles>

**Power Window (front: LH) Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E069A

## COMMENTS ON TROUBLE SYMPTOM

If the driver's power window does not work by means of the power window main switch, the power window main switch or the driver's door power window motor may be defective.

## POSSIBLE CAUSES

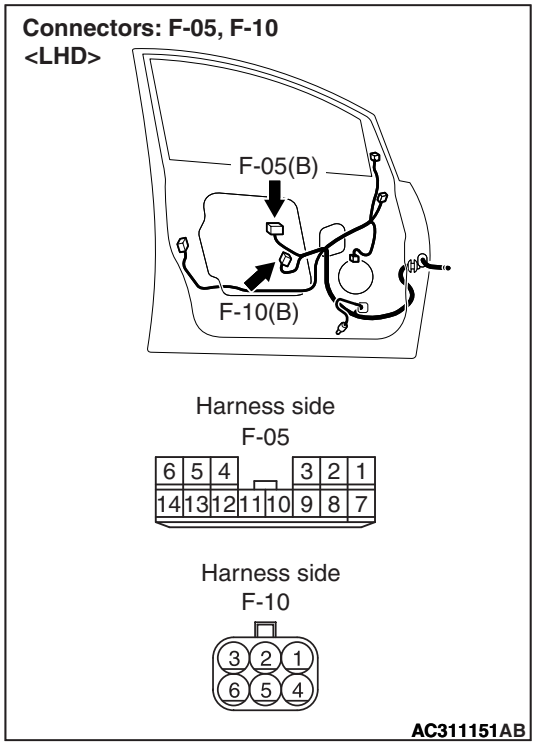
- Malfunction of the power window main switch
- Malfunction of the power window motor (front: LH)
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the power window main switch.**
Check that all of the front passenger's and rear door power windows can operate by means of the power window main switch.

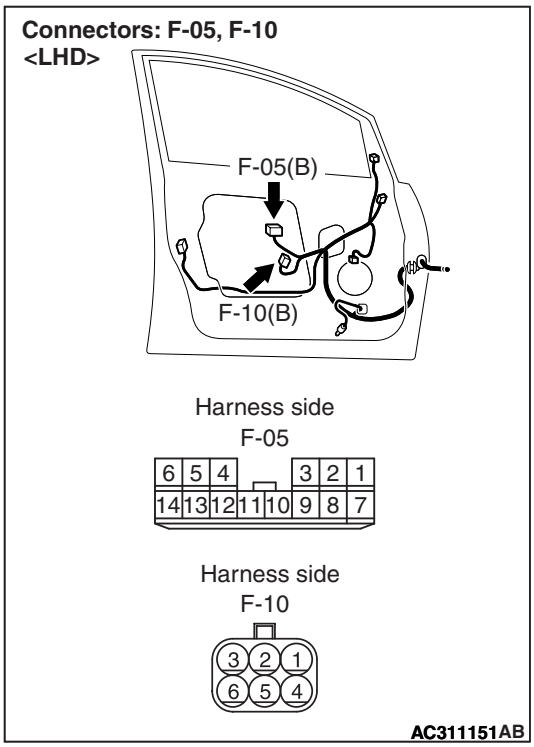
**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure D-1 "Power windows do not work at all P.54C-131."

**Step 2. Connector check: F-05 power window main switch connector and F-10 power window motor (front: LH) connector**




**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the connector.

**Step 3. Check the wiring harness from F-10 power window motor (front: LH) connector terminal Nos.1 and 3 to F-05 power window main switch connector terminal Nos. 7 and 1.**




- Check the input and output lines for open or short circuit.

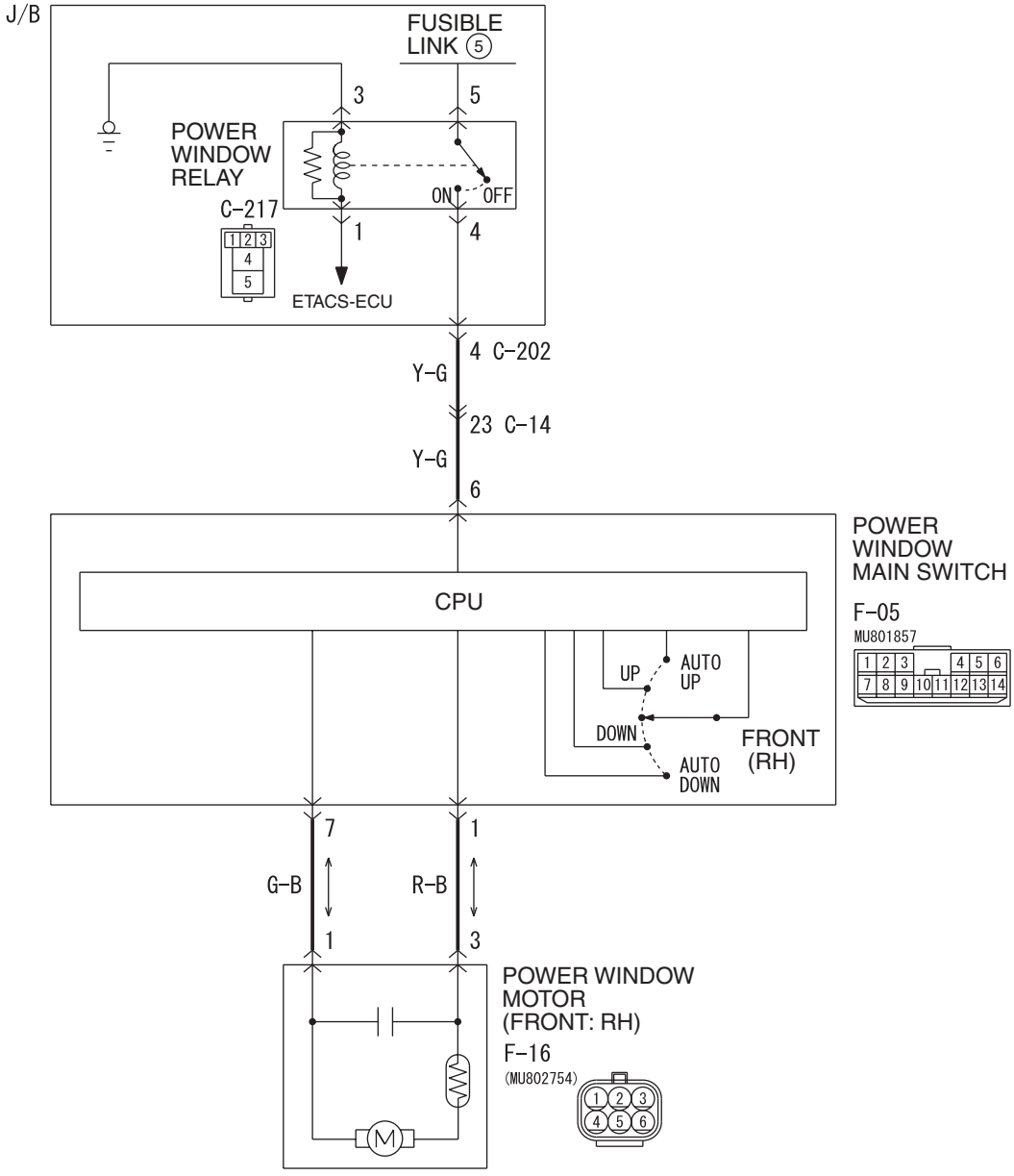
**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the wiring harness.

**Step 4. Retest the system.**
After the power window main switch is replaced, check that the driver's door power window can be operated by the power window main switch.
(1) Replace the power window main switch.
(2) Check that the driver's power window works by means of the power window main switch.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window motor (front: LH).

## Inspection Procedure D-2: Driver's power window does not work by means of the power window main switch. <RH drive vehicles>

**Power Window (front: RH) Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E070A

## COMMENTS ON TROUBLE SYMPTOM

If the driver's power window does not work by means of the power window main switch, the power window main switch or the driver's door power window motor may be defective.

## POSSIBLE CAUSES

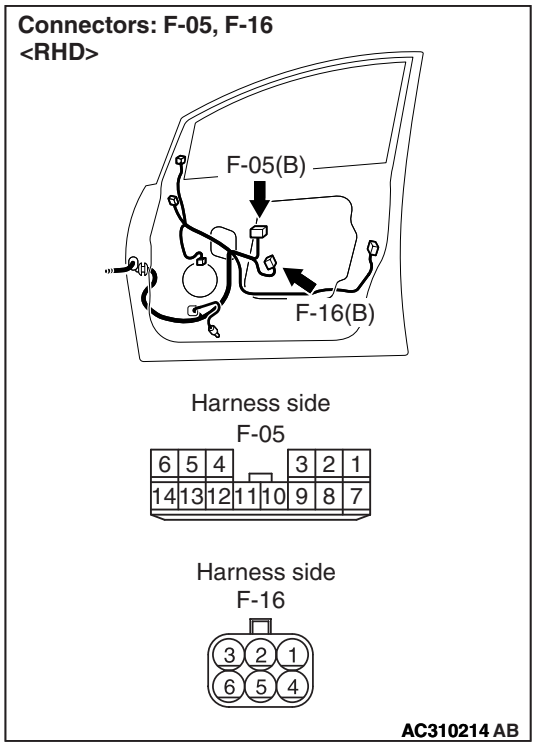
- Malfunction of the power window main switch
- Malfunction of the power window motor (front: RH)
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the power window main switch.**
Check that all of the front passenger's and rear door power windows can operate by means of the power window main switch.

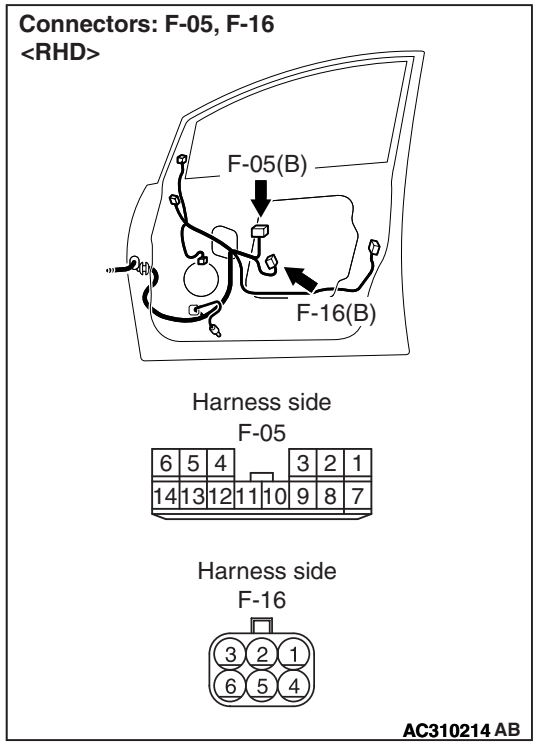
**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure D-1 "Power windows do not work at all P.54C-131."

**Step 2. Connector check: F-05 power window main switch connector and F-16 power window motor (front: RH) connector**




**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the connector.

**Step 3. Check the wiring harness from F-16 power window motor (front: RH) connector terminal Nos.1 and 3 to F-05 power window main switch connector terminal Nos. 7 and 1.**




- Check the input and output lines for open or short circuit.

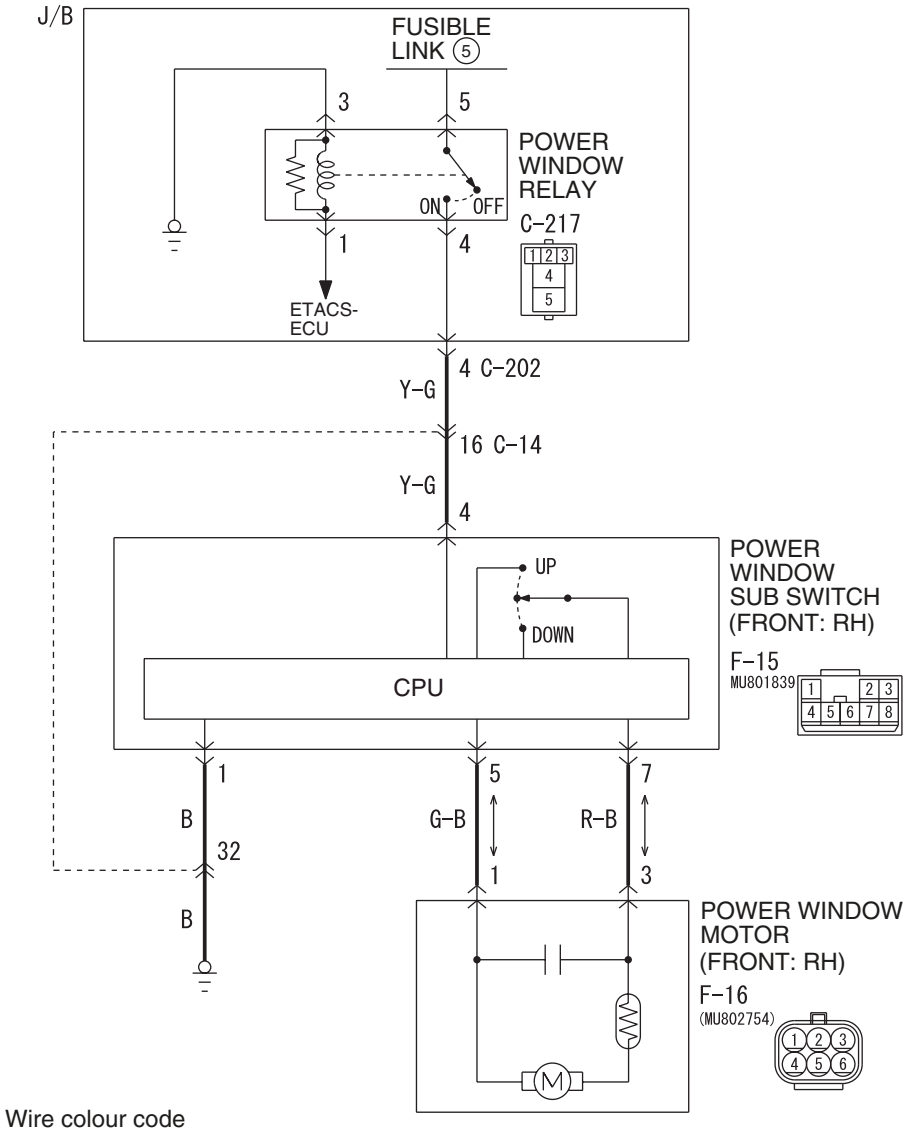
**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the wiring harness.

**Step 4. Retest the system.**
After the power window main switch is replaced, check that the driver's door power window can be operated by the power window main switch.
(1) Replace the power window main switch.
(2) Check that the driver's power window works by means of the power window main switch.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window motor assembly (front: LH).

## Inspection Procedure D-3: Relevant power window(s) do not work by means of the front and rear power window sub switches.

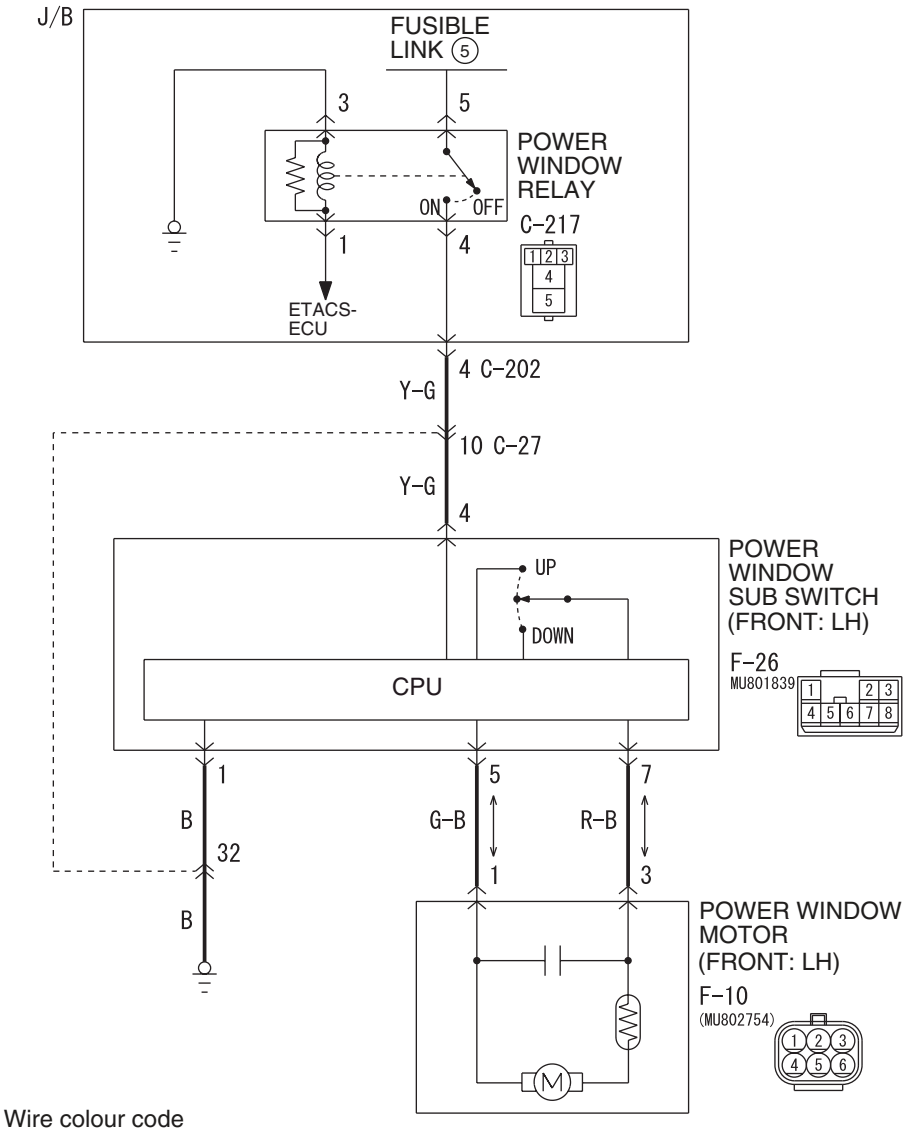
**Power Window (front: RH) Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E071A

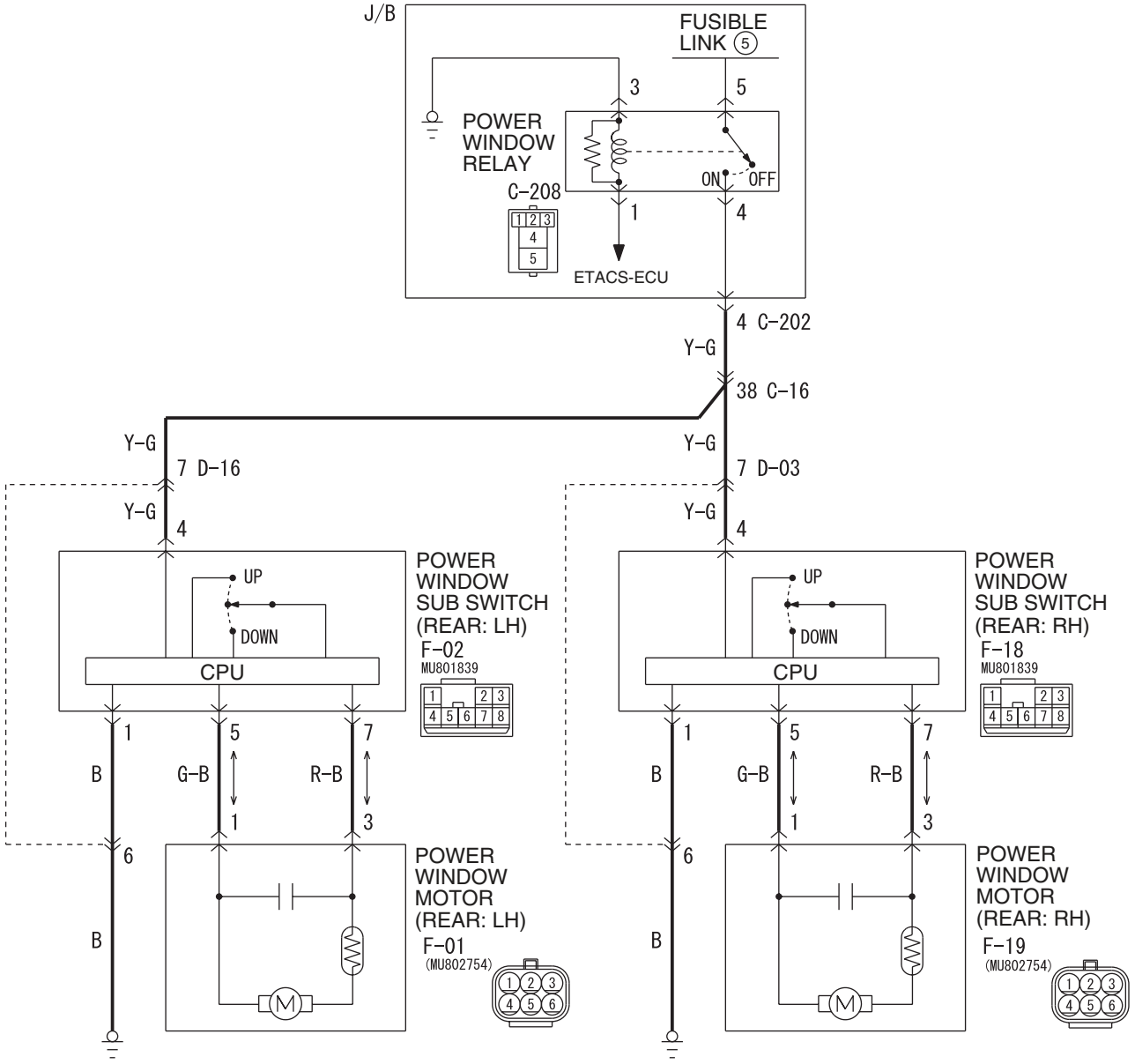
**Power Window (front: LH) Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E072A

**Power Window (rear) Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E073A

## COMMENTS ON TROUBLE SYMPTOM

If the front passenger's or rear power window does not work by means of the respective power window sub switch, the power window sub switch or the power window motor may be defective.

## POSSIBLE CAUSES <LH DRIVE VEHICLES>

- Malfunction of the power window sub switch (front: RH), the power window sub switch (rear: RH) or the power window sub switch (rear: LH)
- Malfunction of the power window motor (front: RH), the power window motor (rear: RH) or the power window motor (rear: LH)
- Damaged harness wires and connectors

## POSSIBLE CAUSES <RH DRIVE VEHICLES>

- Malfunction of the power window sub switch (front: LH), the power window sub switch (rear: RH) or the power window sub switch (rear: LH)

- Malfunction of the power window motor (front: LH), the power window motor (rear: RH) or the power window motor (rear: LH)
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

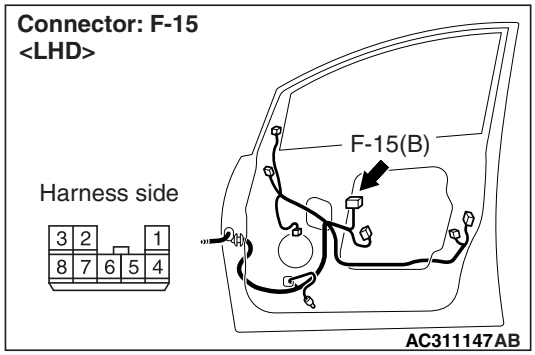
**Step 1. Check the power window main switch.**
Check that the power window lock switch is turned off.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Turn off the power window lock switch.

**Step 2. Determine a trouble spot.**

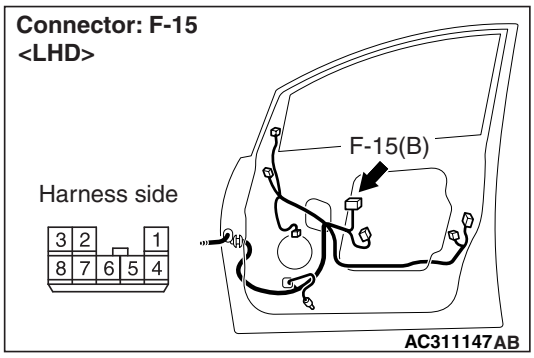
**Q: Which power window does not work?**
**Passenger's door <LH drive vehicles> :** Go to Step 3.
**Passenger's door <RH drive vehicles> :** Go to Step 12.
**Rear right door :** Go to Step 21.
**Rear left door :** Go to Step 30.

**Step 3. Connector check: F-15 power window sub switch (front: RH) connector**

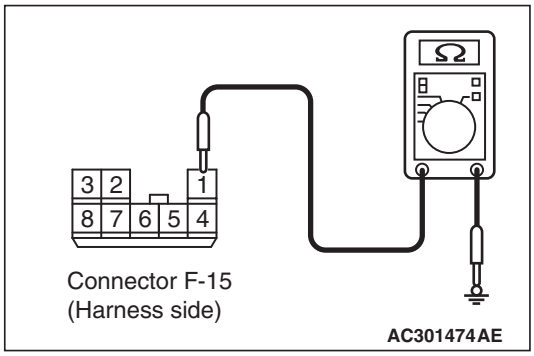



**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the connector.

**Step 4. Resistance measurement at F-15 power window sub switch (front: RH) connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

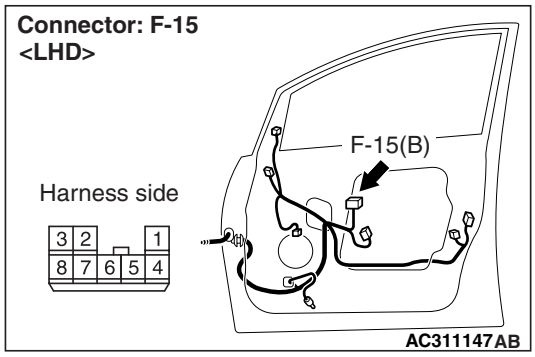



(2) Resistance between terminal No.1 and body earth.

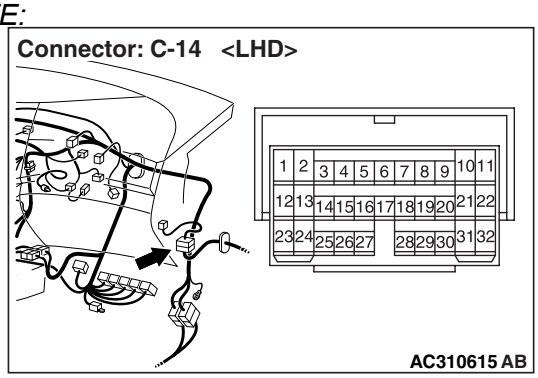
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Go to Step 5.

**Step 5. Check the wiring harness from F-15 power window sub switch (front: RH) connector terminal No.1 to body earth.**




*NOTE:*

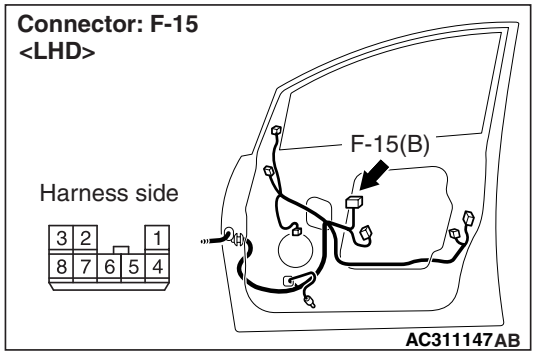



*Prior to the wiring harness inspection, check intermediate connector C-14 and repair if necessary.*

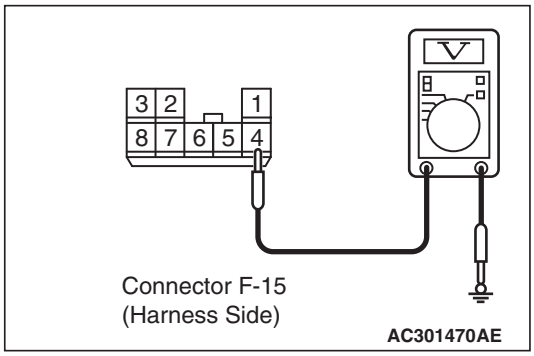
- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 6. Voltage measurement at F-15 power window sub switch (front: RH) connector.**



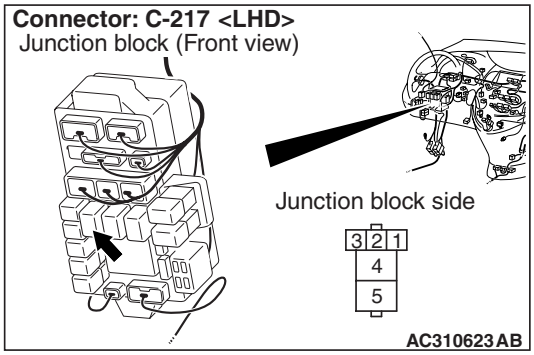

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.




(3) Voltage between terminal No.4 and body earth
**OK: System voltage**

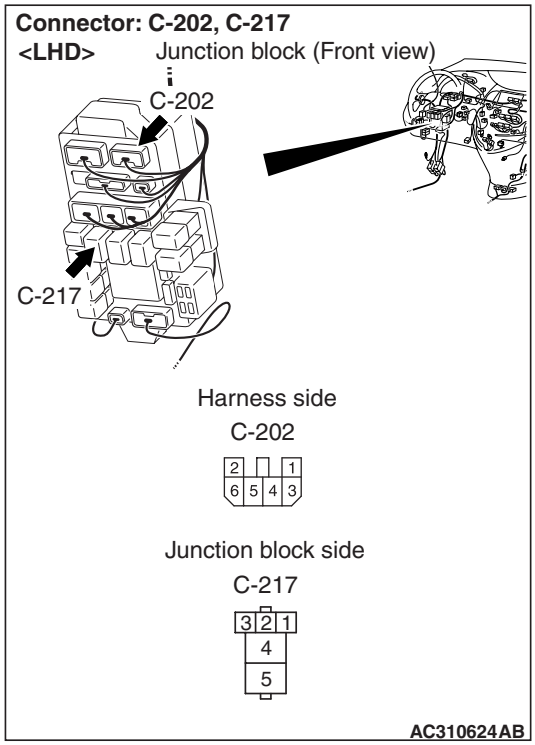
**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Go to Step 7.

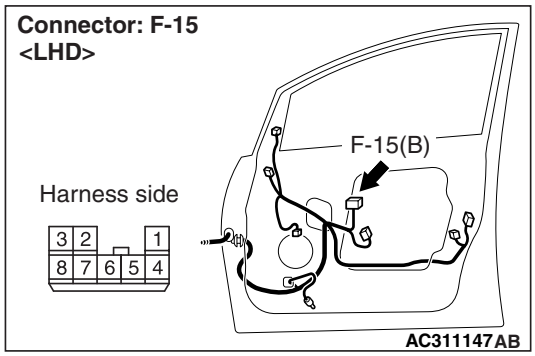
**Step 7. Connector check: C-217 power window relay connector**



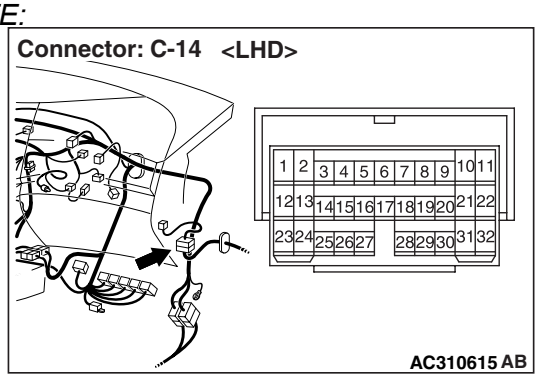

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the connector.

**Step 8. Check the wiring harness from F-15 power window sub switch (front: LH) connector terminal No.4 to C-217 power window connector terminal No.4.**




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connectors C-14 and junction block connector C-202, and repair if necessary.*

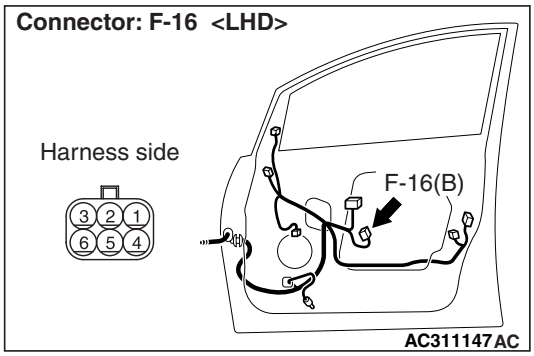
- Check the power supply line for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Repair the wiring harness.

**Step 9. Connector check: F-16 power window motor (front: RH) connector.**

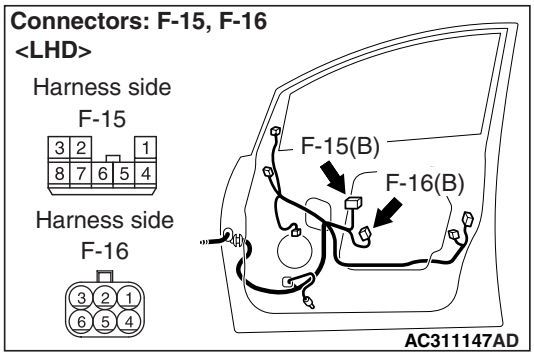



**Q: Is the check result normal?**

**YES :** Go to Step 10.

**NO :** Repair the connector.

**Step 10. Check the wiring harness from F-16 power window motor (front: RH) connector terminal Nos.1 and 3 to F-15 power window sub switch (front: RH) connector terminal Nos.5 and 7.**




- Check the input and output lines for open or short circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 11.

**NO :** Repair the wiring harness.

**Step 11. Retest the system.**

After the power window sub switch (front: RH) is replaced, check that the front passenger's door power window can be operated by the power window sub switch (front: RH).

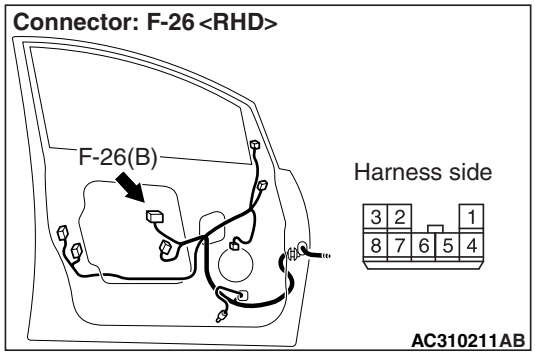
(1) Replace the power window sub switch (front: RH).

(2) Check that the front passenger's door power window can be operated by the power window

sub switch (front: RH).

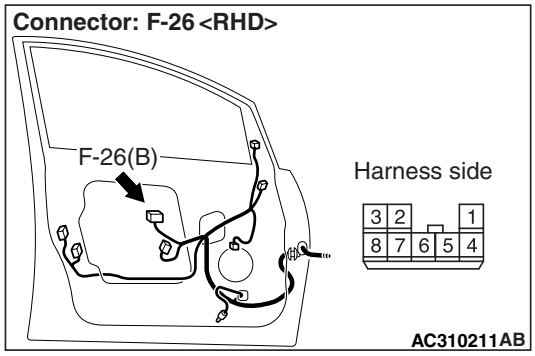
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window motor assembly (front: RH).

### Step 12. Connector check: F-26 power window sub switch (front: LH) connector.

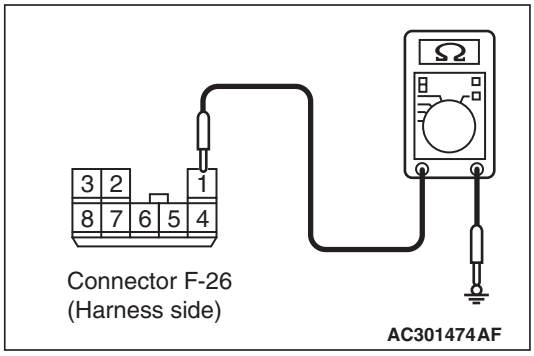



**Q: Is the check result normal?**
**YES :** Go to Step 13.
**NO :** Repair the connector.

### Step 13. Resistance measurement at F-26 power window sub switch (front: LH) connector.



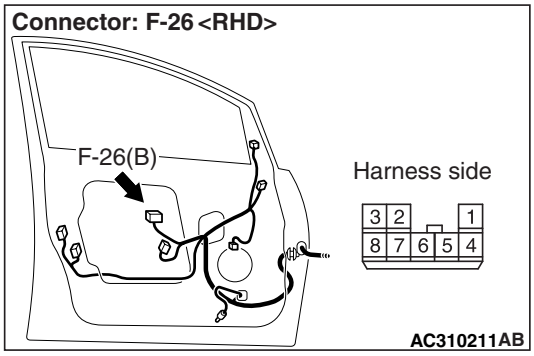

(1) Disconnect the connector, and measure at the wiring harness side.



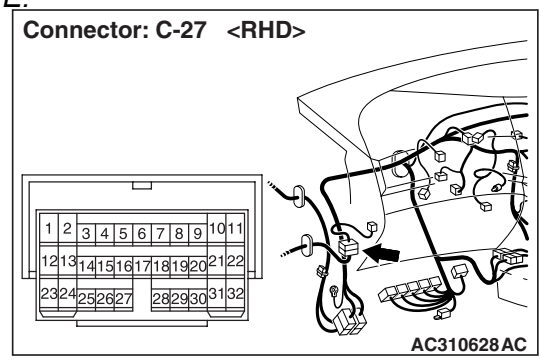

(2) Resistance between terminal 1 and body earth
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 15.
**NO :** Go to Step 14.

### Step 14. Check the wiring harness from F-26 power window sub switch (front: LH) terminal No.1 to body earth.



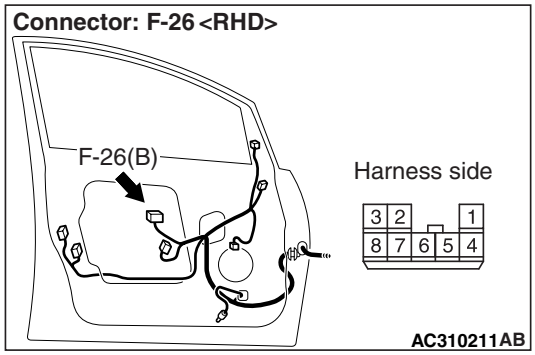

*NOTE:*



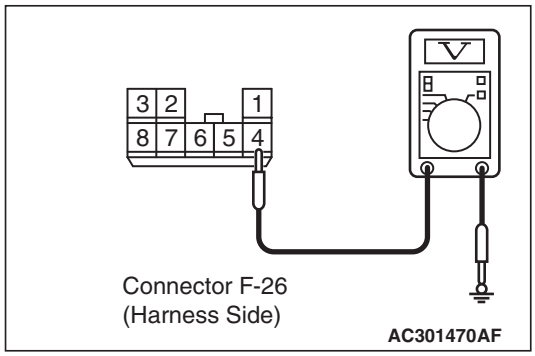

*Prior to the wiring harness inspection, check intermediate connector C-27 and repair if necessary.*
- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 15. Voltage measurement at F-26 power window sub switch (front: LH) connector.**




(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.

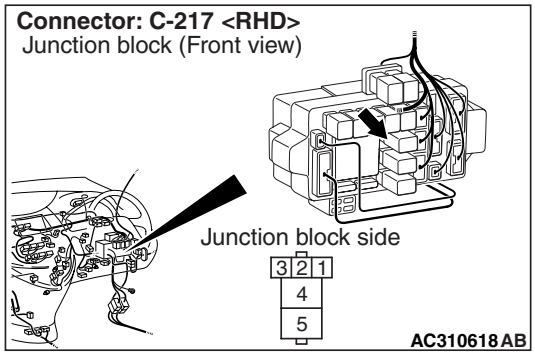



(3) Voltage between terminal 4 and body earth

**OK: System voltage**

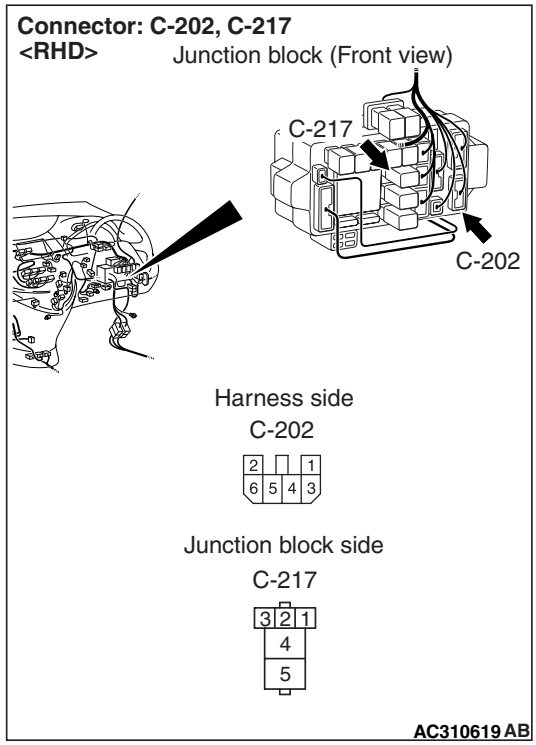
**Q: Is the check result normal?**
**YES :** Go to Step 18.
**NO :** Go to Step 16.

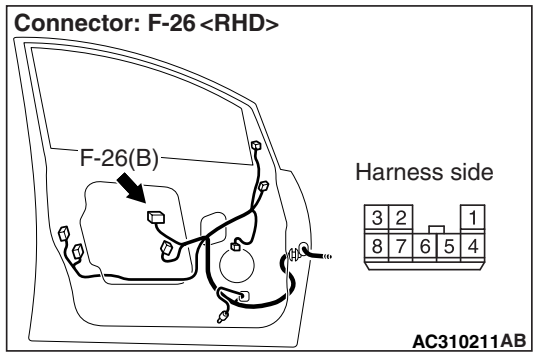
**Step 16. Connector check: C-217 power window relay connector.**



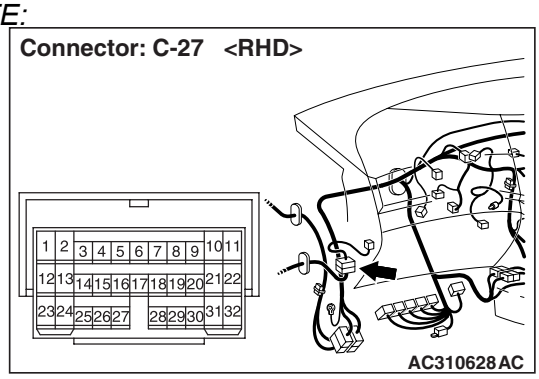

**Q: Is the check result normal?**
**YES :** Go to Step 17.
**NO :** Repair the connector.

**Step 17. Check the wiring harness from F-26 power window sub switch (front: LH) connector terminal No.4 to C-217 power window connector terminal No.4.**




*NOTE:*



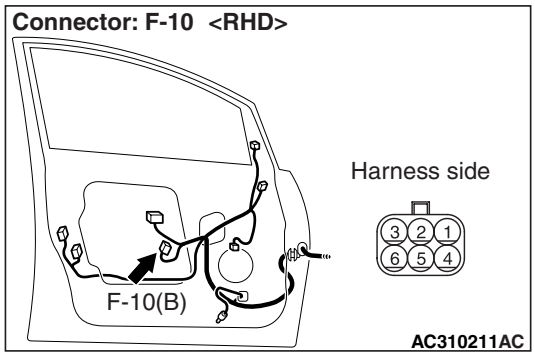

*Prior to the wiring harness inspection, check intermediate connectors C-27 and junction block connector C-202, and repair if necessary.*

- Check the power supply line for open circuit.

**Q: Is the check result normal?**

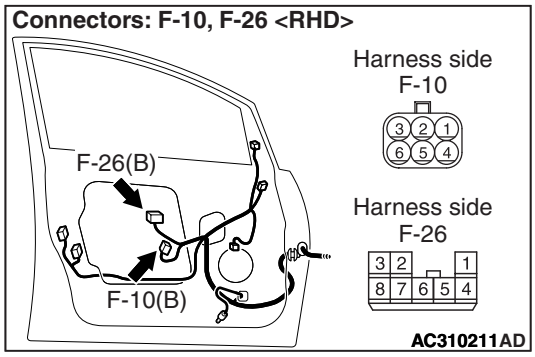
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

### Step 18. Connector check: F-10 power window motor (front: LH) connector




**Q: Is the check result normal?**
**YES :** Go to Step 19.
**NO :** Repair the connector.

### Step 19. Check the wiring harness from F-10 power window motor (front: LH) connector terminal Nos.1 and 3 to F-26 power window sub switch (front: LH) connector terminal Nos.5 and 7.




- Check the input and output lines for open or short circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 20.
**NO :** Repair the wiring harness.

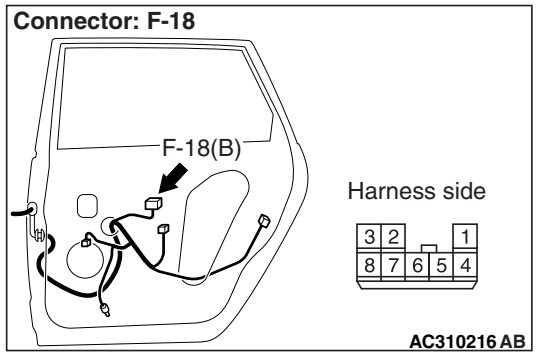
### Step 20. Retest the system.

After the power window sub switch (front: LH) is replaced, check that the front passenger's door power window can be operated by the power window sub switch (front: LH).

(1) Replace the power window sub switch (front: LH).
(2) Check that the front passenger's door power window can be operated by the power window sub switch (front: LH).

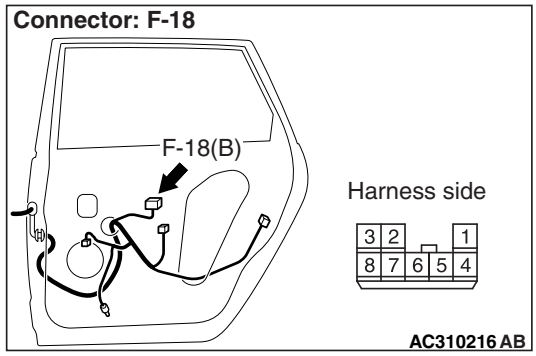
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window motor assembly (front: LH).

### Step 21. Connector check: F-18 power window sub switch (rear: RH) connector.

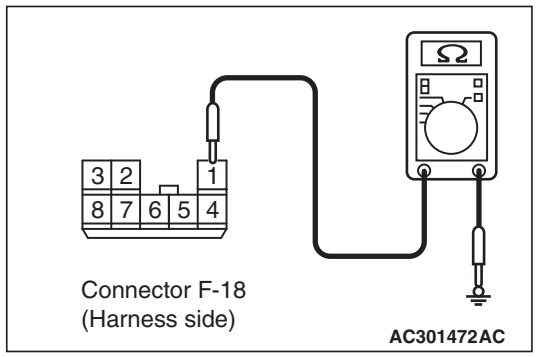



**Q: Is the check result normal?**
**YES :** Go to Step 22.
**NO :** Repair the connector.

### Step 22. Resistance measurement at F-18 power window sub switch (rear: RH) connector.




(1) Disconnect the connector, and measure at the wiring harness side.

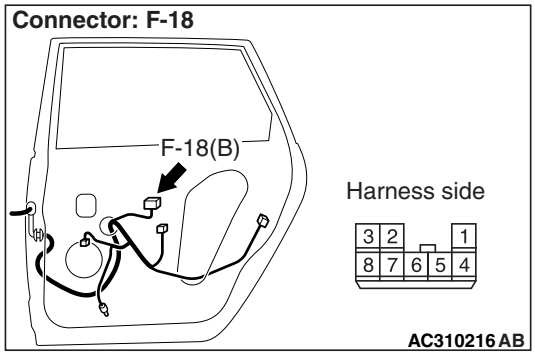



(2) Resistance between terminal 1 and body earth
**OK: 2 Ω or less**

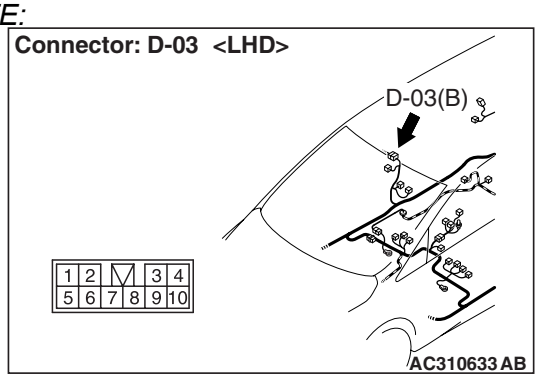
**Q: Is the check result normal?**

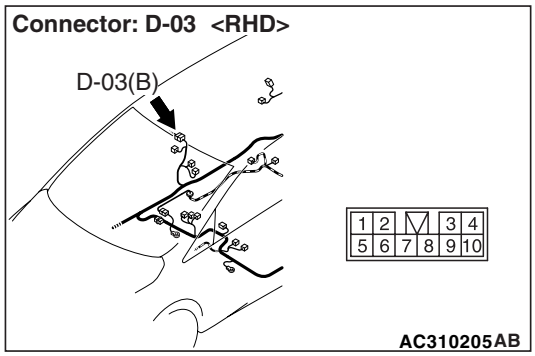
**YES :** Go to Step 24.
**NO :** Go to Step 23.

**Step 23. Check the wiring harness from F-18 power window sub switch (rear: RH) connector terminal No.1 to body earth.**




*NOTE:*



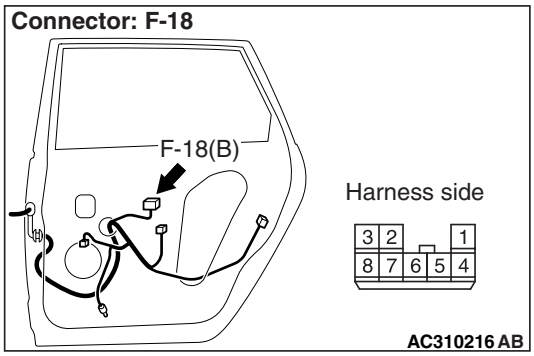




*Prior to the wiring harness inspection, check intermediate connectors D-03, and repair if necessary.*

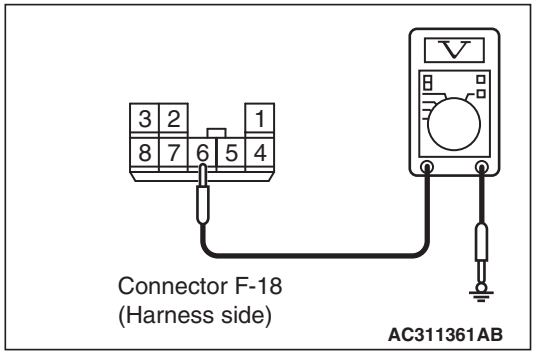
- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 24. Voltage measurement at F-18 power window sub switch (rear: RH) connector.**



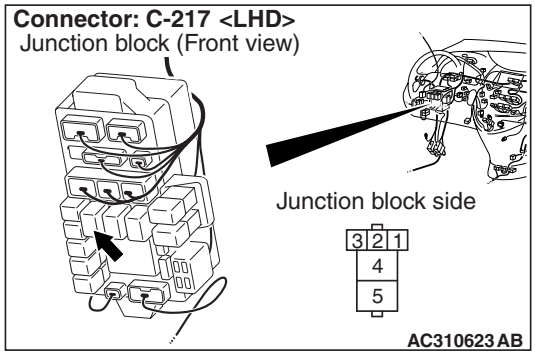

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Turn the ignition switch to the ON position.

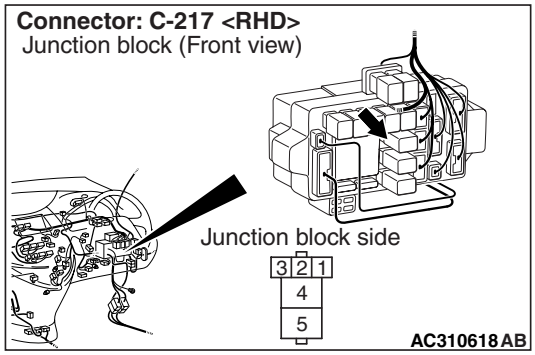



(3) Voltage between terminal 4 and body earth
**OK: System voltage**

**Q: Is the check result normal?**
**YES :** Go to Step 27.
**NO :** Go to Step 25.

**Step 25. Connector check: C-217 power window relay connector.**



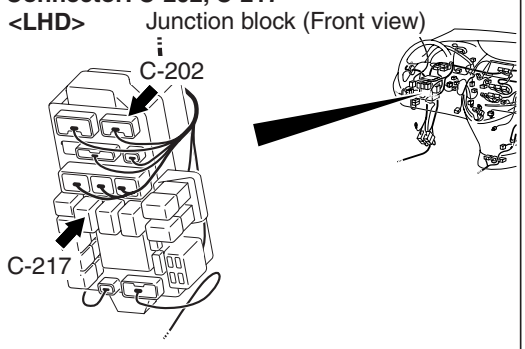




**Q: Is the check result normal?**

**YES :** Go to Step 26.
**NO :** Repair the connector.

**Step 26. Check the wiring harness from F-18 power window sub switch (rear: RH) connector terminal No.4 to C-217 power window relay connector terminal No.4.**

**Connector: C-202, C-217**
**<LHD>**

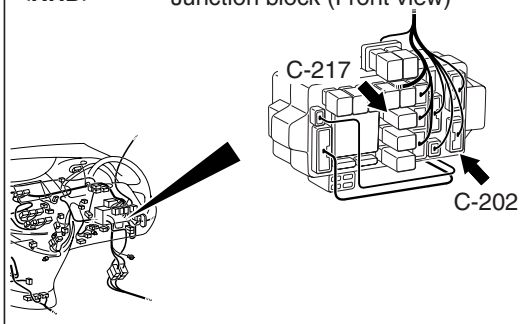



Harness side
C-202

Junction block side
C-217

AC310624AB

**Connector: C-202, C-217**
**<RHD>**

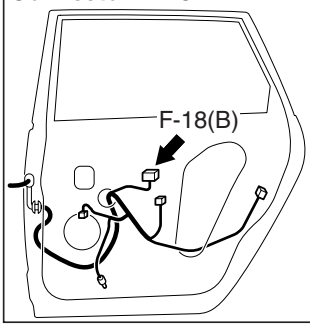



Harness side
C-202

Junction block side
C-217

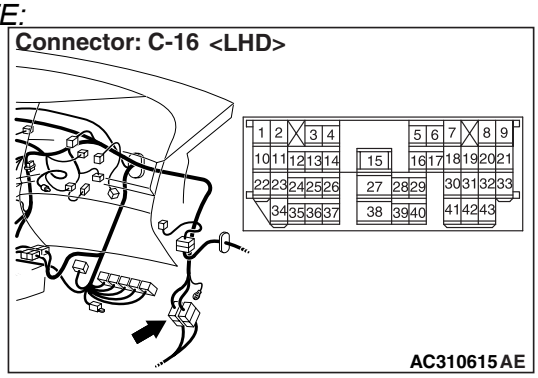
AC310619AB

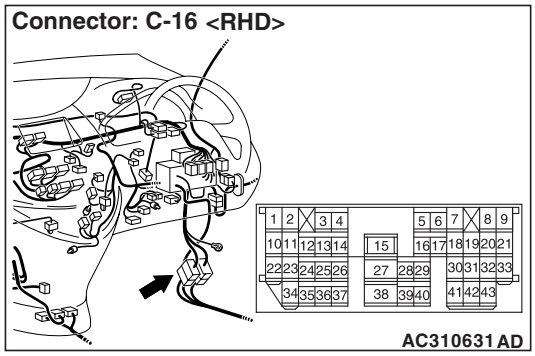
**Connector: F-18**

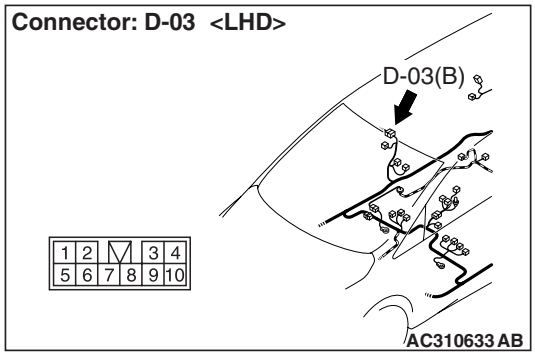


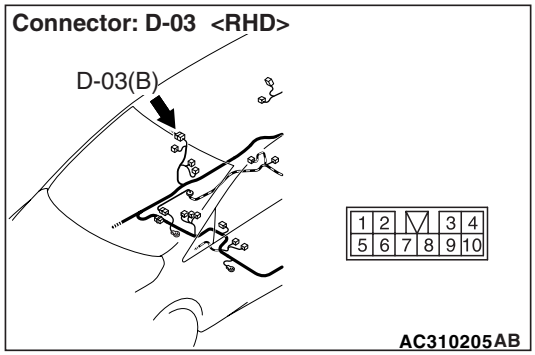

AC310216AB

*NOTE:*



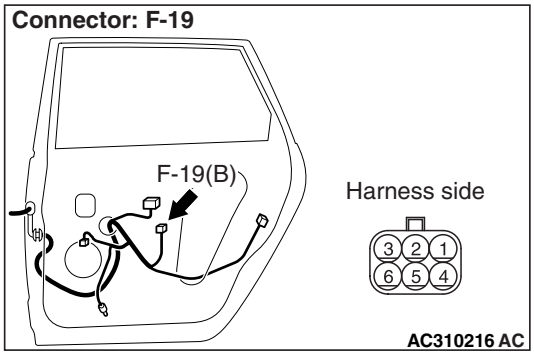




*Prior to the wiring harness inspection, check intermediate connectors C-16, D-03 and junction block connector C-202, and repair if necessary.*

- Check the power supply line for open circuit.

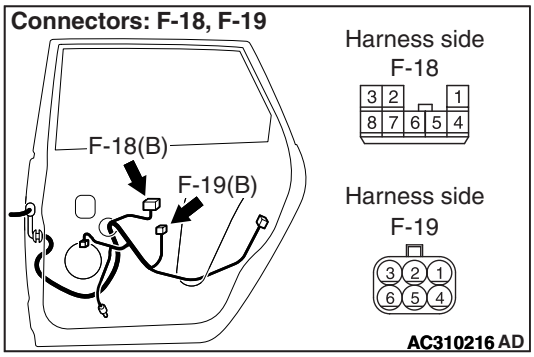
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 27. Connector check: F-19 power window motor (rear: RH) connector.**




**Q: Is the check result normal?**
**YES :** Go to Step 28.
**NO :** Repair the connector.

**Step 28. Check the wiring harness from F-19 power window motor (rear: RH) connector terminal Nos.1 and 3 to F-18 power window sub switch (rear: RH) connector terminal Nos.5 and 7.**




- Check the input and output lines for open or short circuit.

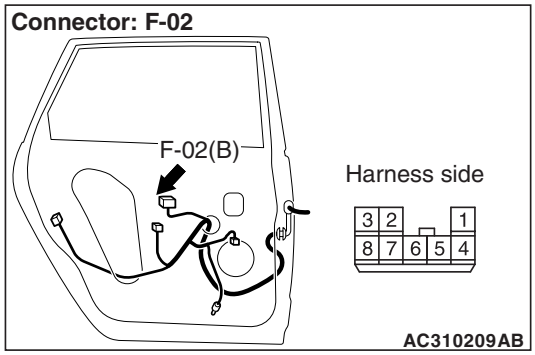
**Q: Is the check result normal?**
**YES :** Go to Step 29.
**NO :** Repair the wiring harness.

**Step 29. Retest the system.**
After the power window sub switch (rear: RH) is replaced, check that the rear right door power window can be operated by the power window sub switch (rear: RH).

(1) Replace the power window sub switch (rear: RH).
(2) Check that the rear right door power window can be operated by the power window sub switch (rear: RH).

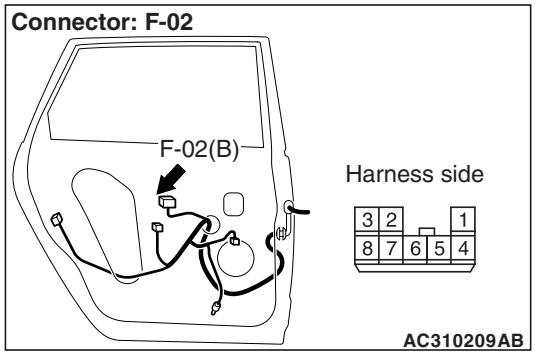
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window motor assembly (rear: RH).

**Step 30. Connector check: F-02 power window sub switch (rear: LH) connector.**

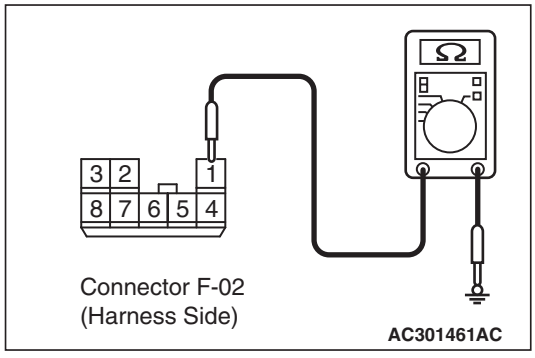



**Q: Is the check result normal?**
**YES :** Go to Step 31.
**NO :** Repair the connector.

**Step 31. Resistance measurement at F-02 power window sub switch (rear: LH) connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

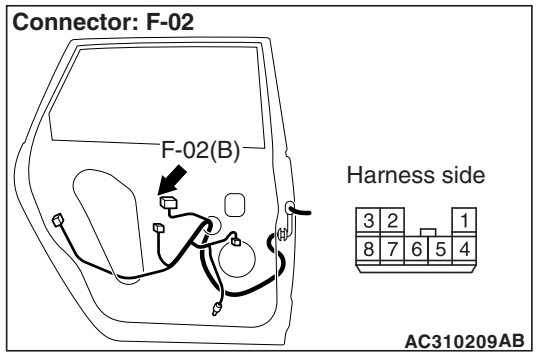



(2) Resistance between terminal 1 and body earth

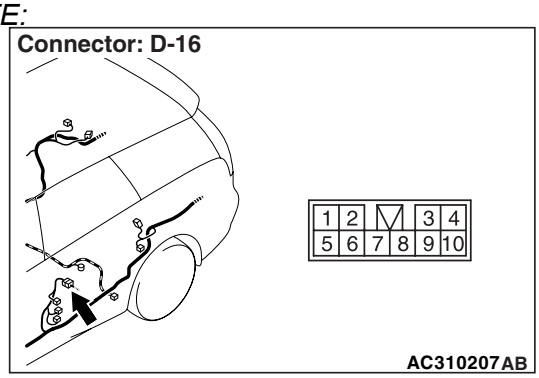
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 33.
**NO :** Go to Step 32.

**Step 32. Check the wiring harness from F-02 power window sub switch (rear: LH) connector terminal No.1 to body earth.**




*NOTE:*

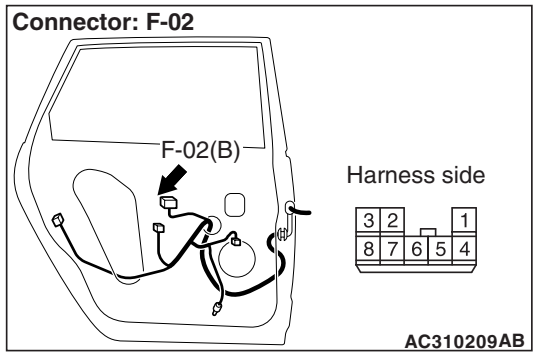



*Prior to the wiring harness inspection, check intermediate connectors D-16, and repair if necessary.*

- Check the earth wires for open circuit.

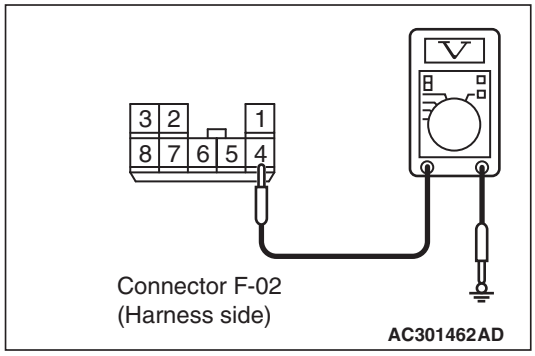
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 33. Voltage measurement at F-02 power window sub switch (rear: LH) connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

(2) Turn the ignition switch to the ON position.

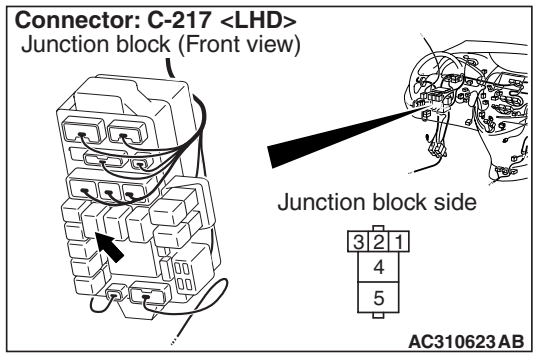


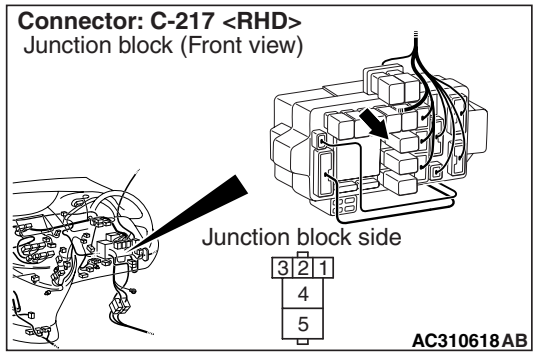

(3) Voltage between terminal 4 and body earth

**OK: System voltage**

**Q: Is the check result normal?**
**YES :** Go to Step 36.
**NO :** Go to Step 34.

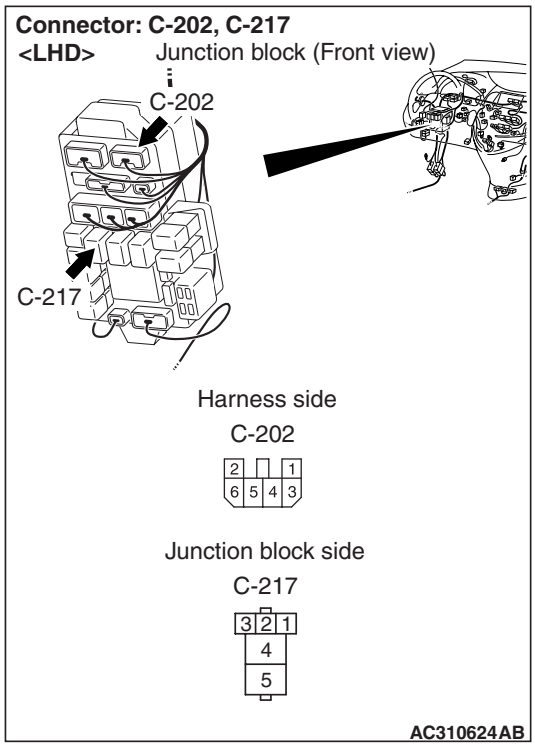
**Step 34. C-217 power window relay connector.**

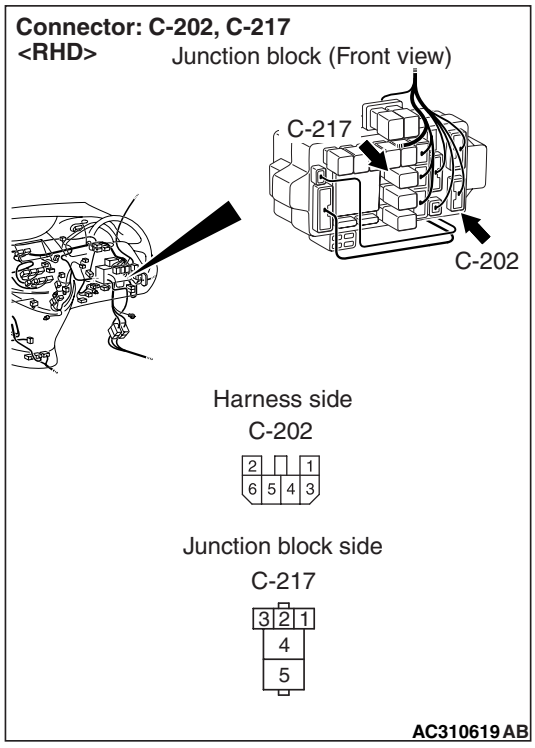


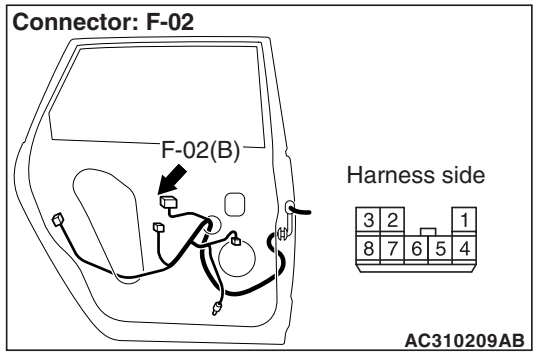




**Q: Is the check result normal?**
**YES :** Go to Step 35.
**NO :** Repair the connector.

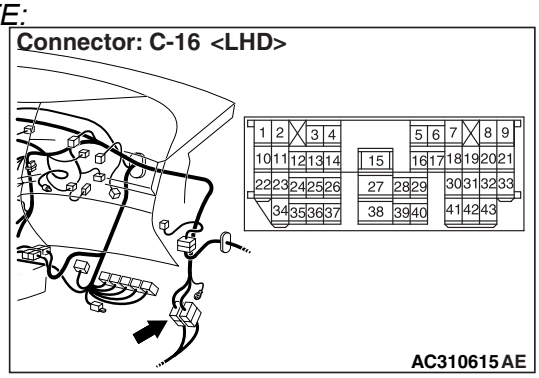
**Step 35. Check the wiring harness from F-02 power window sub switch (rear: LH) connector terminal No.4 to C-217 power window connector terminal No.4.**

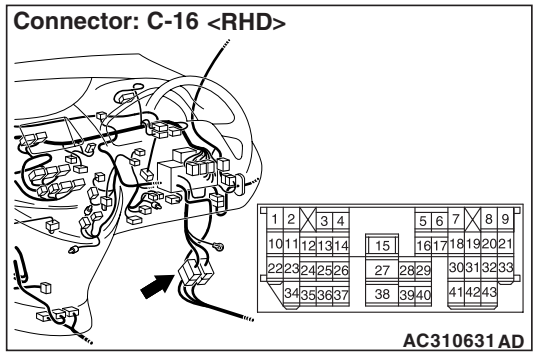


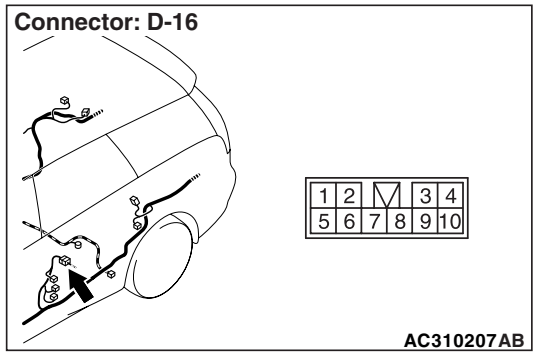




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connectors C-16, D-16 and junction block connector C-202, and repair if necessary.*

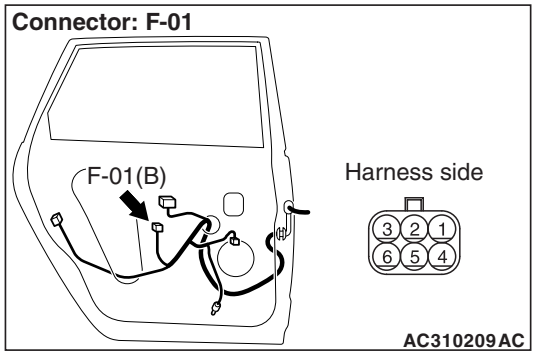
- Check the power supply line for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

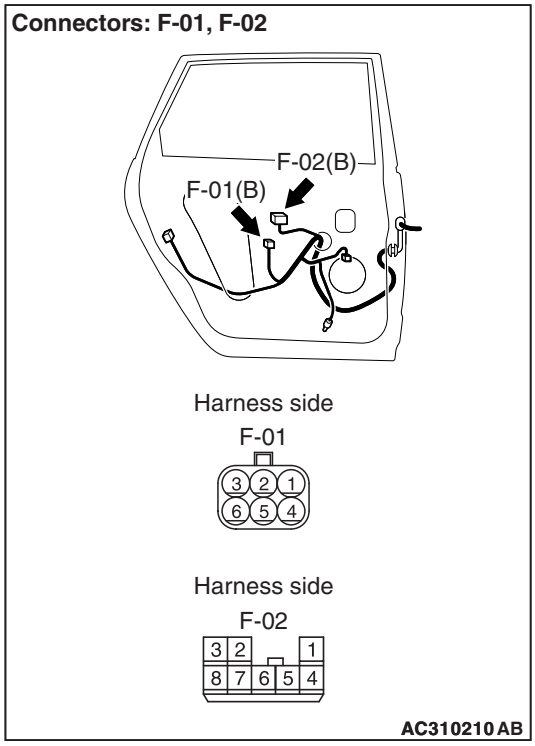
**NO :** Repair the wiring harness.

**Step 36. Connector check: F-01 power window motor (rear: LH) connector.**




**Q: Is the check result normal?**
**YES :** Go to Step 37.
**NO :** Repair the connector.

**Step 37. Check the wiring harness from F-01 power window motor (rear: LH) connector terminal Nos.1 and 3 to F-02 power window sub switch (rear: LH) connector terminal Nos.5 and 7.**




- Check the input and output lines for open or short circuit.

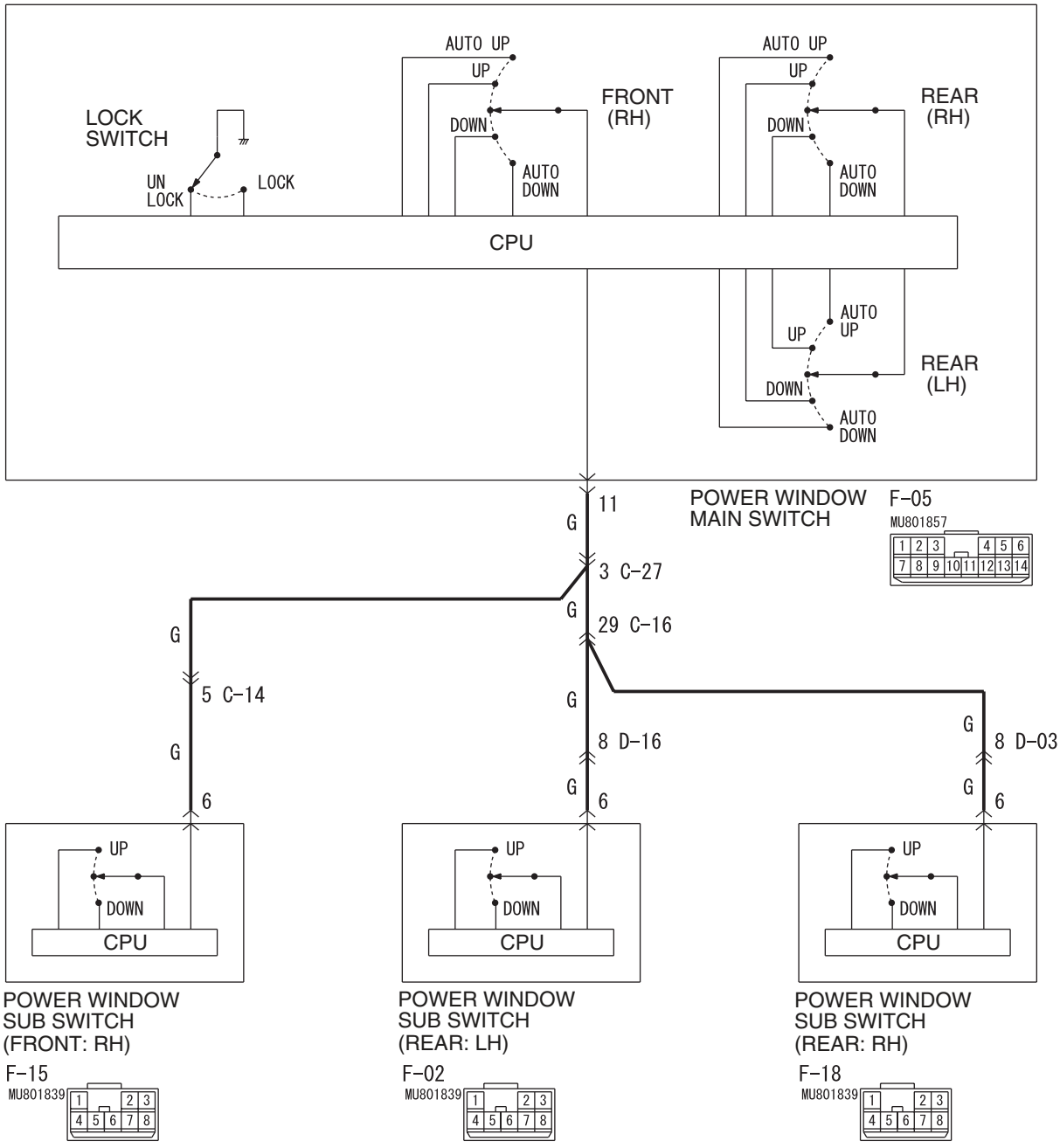
**Q: Is the check result normal?**
**YES :** Go to Step 38.
**NO :** Repair the wiring harness.

**Step 38. Retest the system.**
After the power window sub switch (rear: LH) is replaced, check that the rear left door power window can be operated by the power window sub switch (rear: LH).
(1) Replace the power window sub switch (rear: LH).
(2) Check that the rear left door power window can be operated by the power window sub switch (rear: LH).

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window motor (rear: LH).

## Inspection Procedure D-4: Passenger's and/or rear power window(s) do not work by means of the power window main switch.

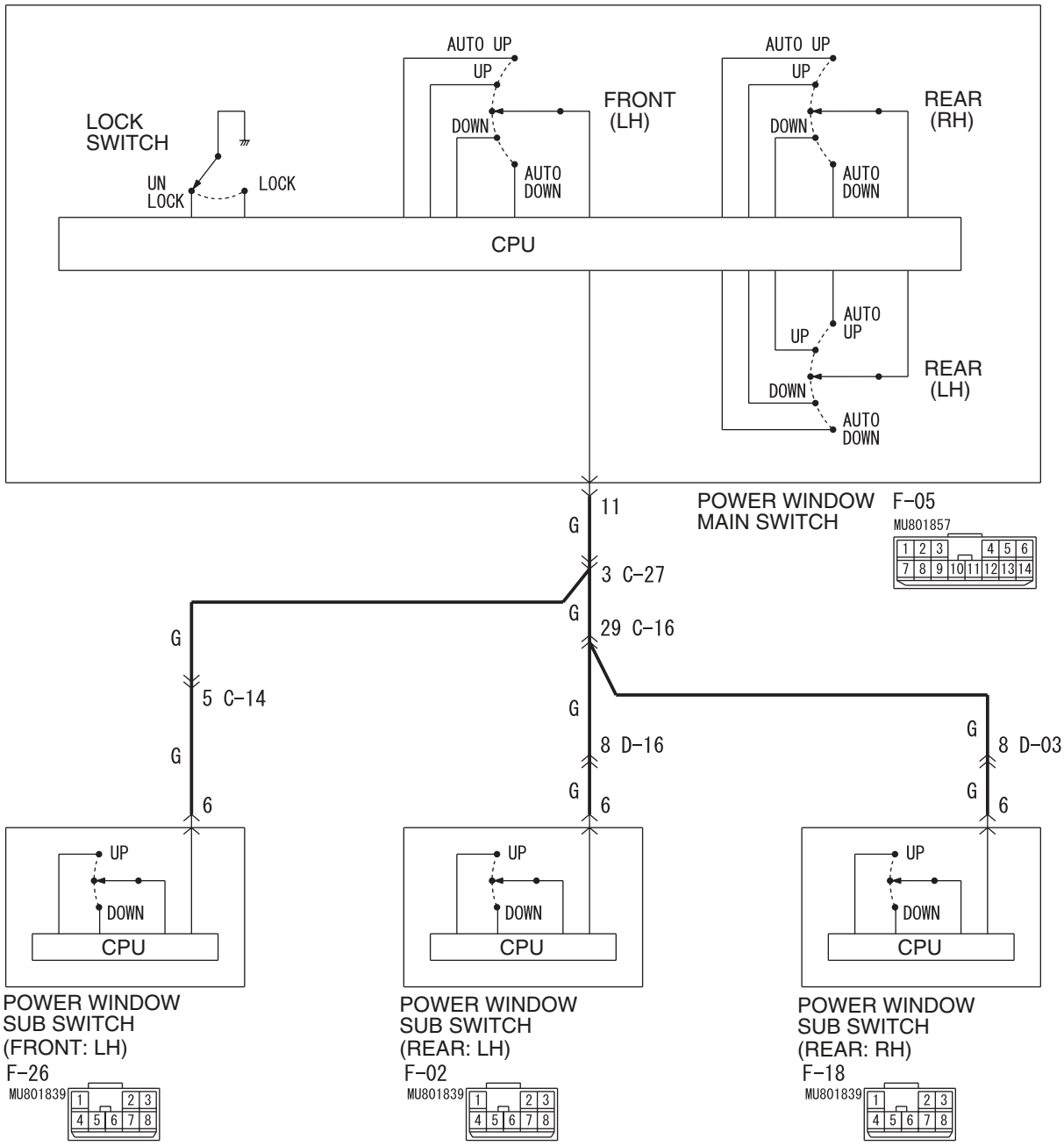
**Power Window Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E074A

**Power Window Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E075A

## COMMENTS ON TROUBLE SYMPTOM

If the passenger's and/or rear power window does not work by means of the power window main switch, the power window main switch or the respective power window sub switch(es) may be defective.

## POSSIBLE CAUSES <LH DRIVE VEHICLES>

- Malfunction of the power window main switch
- Malfunction of the power window sub switch (front: RH), power window sub switch (rear: RH) or power window sub switch (rear: LH)
- Damaged harness wires and connectors

## POSSIBLE CAUSES <RH DRIVE VEHICLES>

- Malfunction of the power window main switch
- Malfunction of the power window sub switch (front: LH), power window sub switch (rear: RH) or power window sub switch (rear: LH)
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the power window main switch (power window module) and the SWS communication lines are normal.

- Turn the ignition switch to the ON position.

**ECUS TO BE CHECKED**

- P/W MODULE

**OK: "OK" is displayed on the "P/W MODULE" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure A-5 "Communication with the power window main switch (power window module) is not possible P.54C-77."

**Step 2. Check the power window sub switch.**
Check that each power window works by means of the respective power window sub switch when the power window lock switch is turned off.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Refer to inspection procedure D-3 "Relevant power window(s) do not work by means of the front and rear passenger's power window sub switches P.54C-137."

**Step 3. Confirm communication data by using the SWS monitor.**
Check the SWS communication signal from the power window lock switch to the ETACS-ECU.

**<Selected item> DOOR CNT. COM.**

- Insert a probe between a power window sub switch of a door of which power window does not work and the power window main switch (For the insertion point, refer to P.54C-10).
- Turn the ignition switch to the ON position.
- Power window lock switch: OFF

| Item No. | Item name | Normal condition |
|---|---|---|
| Item CB | P/W LOCK SW | OFF |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Replace the power window main switch.

**Step 4. Confirm communication data by using the SWS monitor.**

Check the SWS communication signals, which are used when the front and/or rear passenger's door power windows are operated by the power window main switch.

**<Selected item> DOOR CNT. COM.**

- Insert a probe between a power window sub switch of a door of which power window does not work and the power window main switch (For the insertion point, refer to P.54C-10).
- Turn the ignition switch to the ON position.
- Are normal conditions displayed when each switch of the power window main switch is operated?

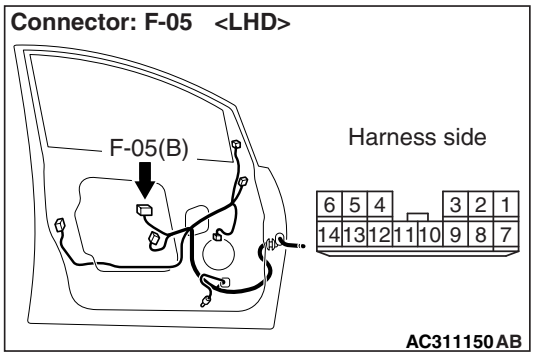
| Item No. | Item name | Normal condition |
|---|---|---|
| Item C0 | PASS DOR UP | ON |
| Item C1 | PASS DOR DOWN | ON |
| Item C2 | PASS DOR AUTO | ON |
| Item C4 | REAR RH UP | ON |
| Item C5 | REAR RH DOWN | ON |
| Item C6 | REAR RH AUTO | ON |
| Item C8 | REAR LH UP | ON |
| Item C9 | REAR LH DOWN | ON |
| Item CA | REAR LH AUTO | ON |

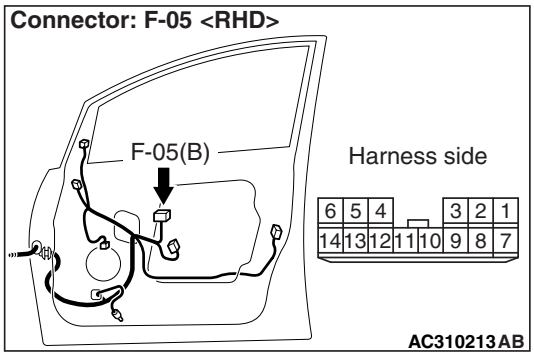
**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**

**Normal conditions are displayed for all of items C0, C1 and C2 when the front passenger's power window does not work. :** Go to Step 7.
**Normal conditions are displayed for none of items C0, C1 and C2 when the front passenger's power window does not work. :** Go to Step 5.
**Normal conditions are displayed for all of items C4, C5 and C6 when the rear right power window does not work. :** Go to Step 13.
**Normal conditions are displayed for none of items C4, C5 and C6 when the rear right power window does not work. :** Go to Step 11.
**Normal conditions are displayed for all of items C8, C9 and CA when the rear left power window does not work. :** Go to Step 19.
**Normal conditions are displayed for none of items C8, C9 and CA when the rear left power window does not work. :** Go to Step 17.
**Normal condition is displayed for any of the items. :** Replace the power window main switch.

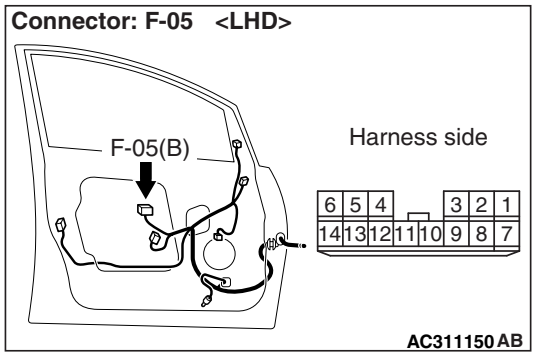
**Step 5. Connector check: F-05 power window main switch connector.**

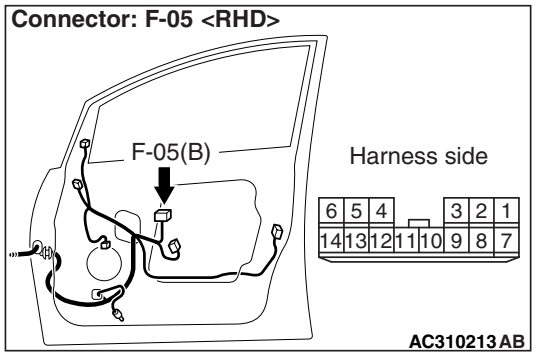


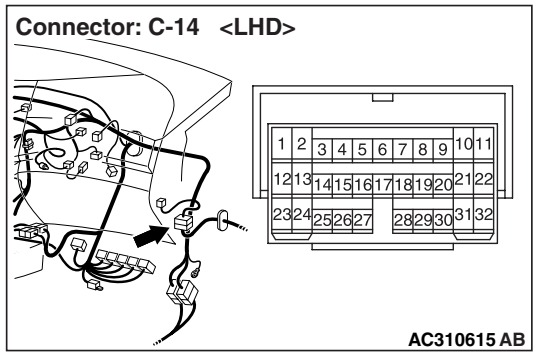

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the connector.

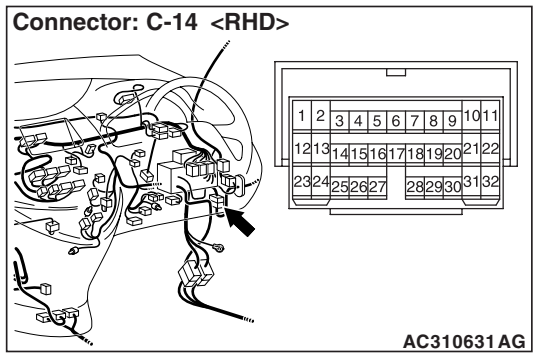
**Step 6. Check the wiring harness from F-05 power window main switch connector terminal No.11 to the inserted probe.**

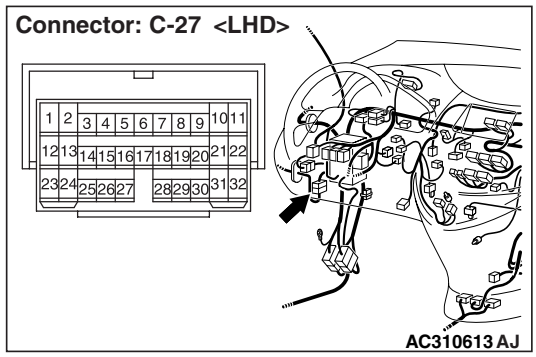


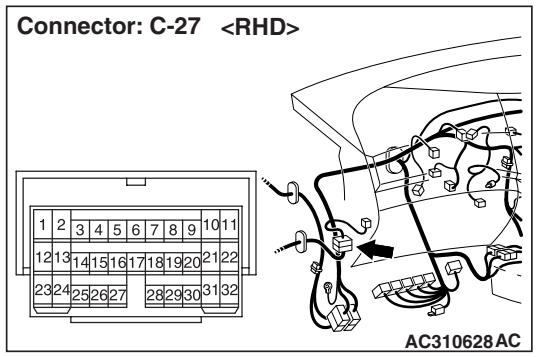




*NOTE:*



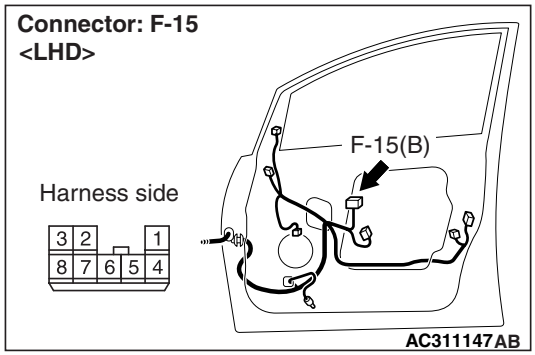



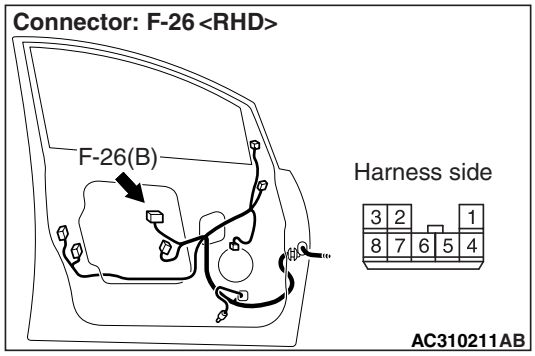

*Prior to the wiring harness inspection, check intermediate connectors C-14, C-27, and repair if necessary.*

- Check the communication lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the wiring harness.

**Step 7. Connector check: F-15 power window sub switch (front: RH) connector <LH drive vehicles> or F-26 power window sub switch (front: LH) connector <RH drive vehicles>.**

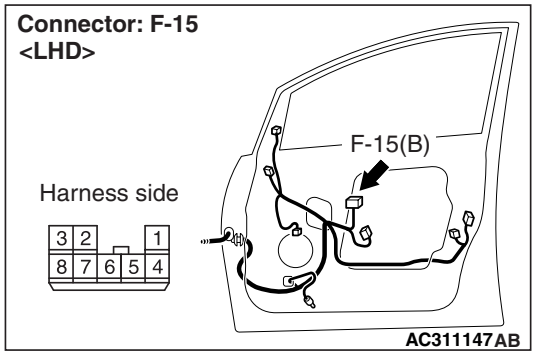


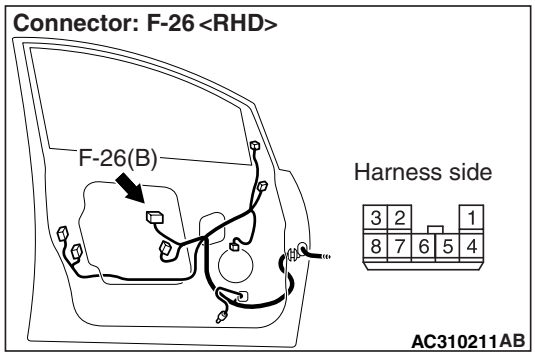




**Q: Is the check result normal?**

**YES :** Go to Step 8.
**NO :** Repair the connector.

**Step 8. Check the wiring harness from F-15 power window sub switch (front: RH) connector <LH drive vehicles> or F-26 power window sub switch (front: LH) connector <RH drive vehicles> terminal No.6 to the inserted probe.**

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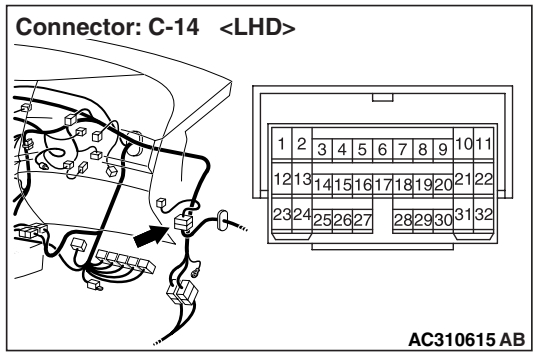
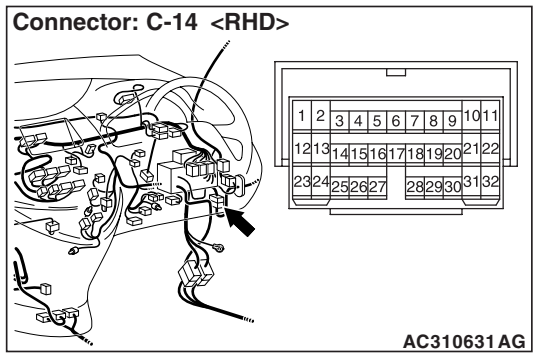
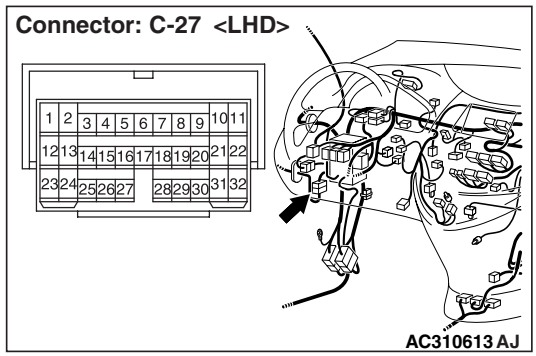
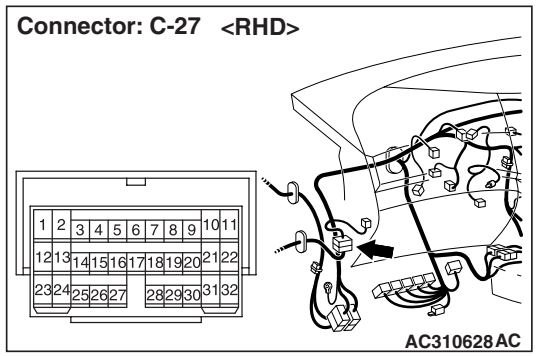



*Prior to the wiring harness inspection, check intermediate connectors C-14, C-27, and repair if necessary.*

- Check the communication lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the wiring harness.

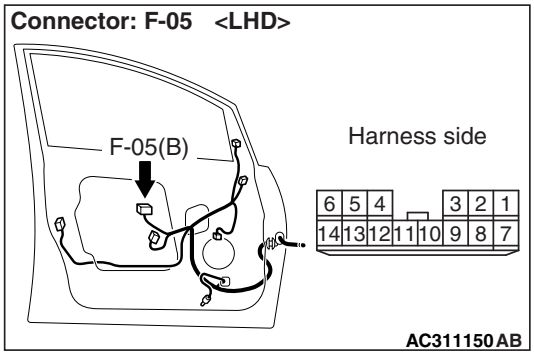
**Step 9. Check the power window sub switch.**
Check that the front passenger's power window works by means of the power window sub switch (front: LH) when the power window lock switch is turned off.

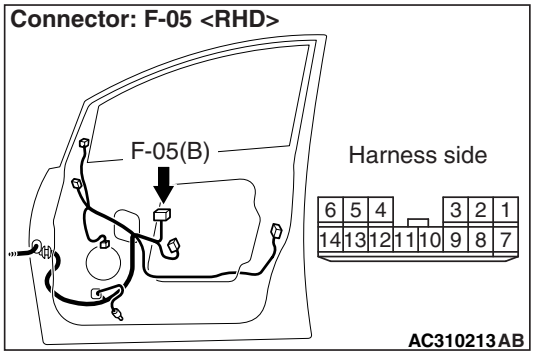
**Q: Is the check result normal?**
**YES :** Go to Step 10.
**NO :** Refer to inspection procedure D-3 "Relevant power window(s) do not work by means of the front and rear power window sub switches P.54C-137."

**Step 10. Retest the system.**
After the power window sub switch (front: LH) is replaced, check that the front passenger's door power window can be operated by the power window sub switch.
(1) Replace the power window sub switch (front: LH).
(2) Check that the front passenger's power window works by means of the power window main switch.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window main switch.

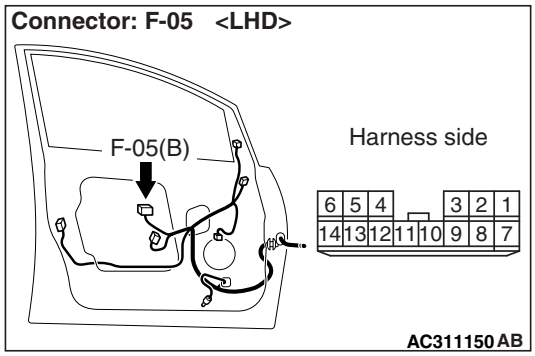
**Step 11. Connector check: F-05 power window main switch connector.**

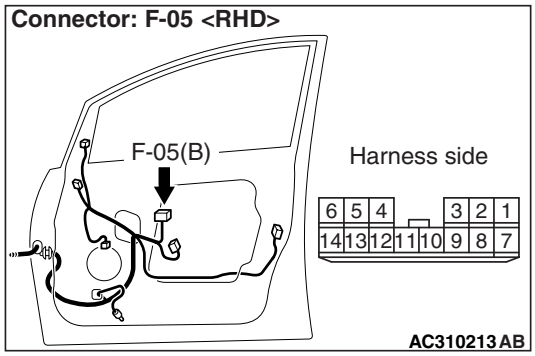


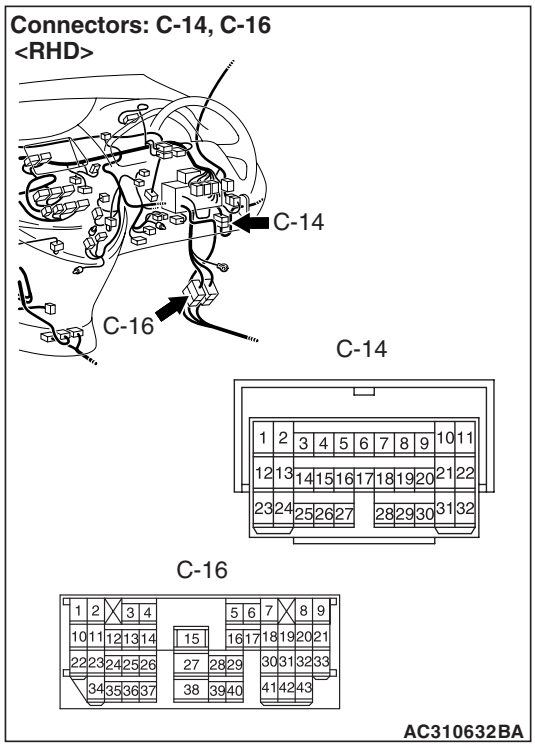

**Q: Is the check result normal?**
**YES :** Go to Step 12.
**NO :** Repair the connector.

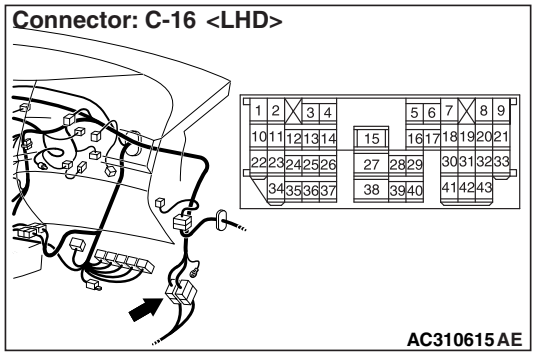
**Step 12. Check the wiring harness from F-05 power window main switch connector terminal No.11 to the inserted probe.**

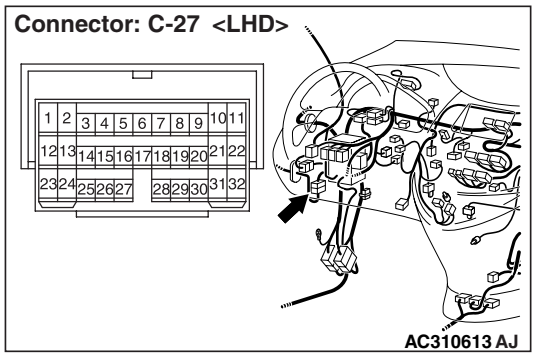


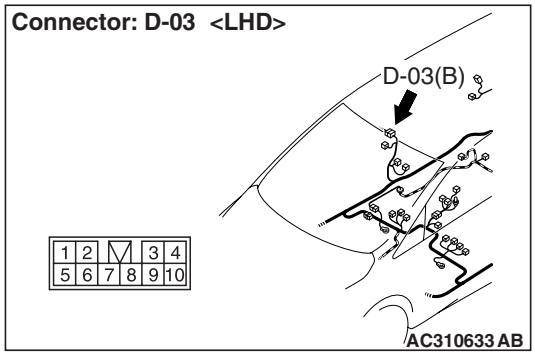



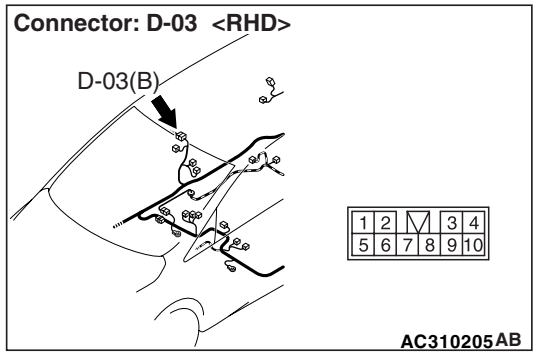

*NOTE:*



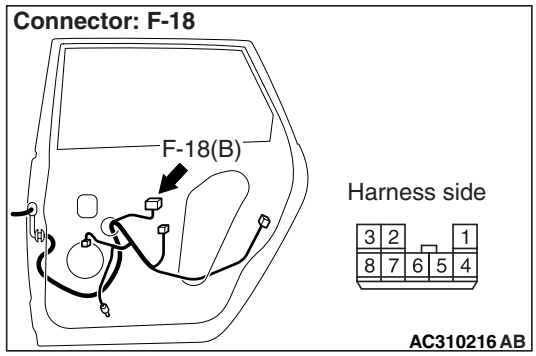

*Prior to the wiring harness inspection, check intermediate connectors C-16, C-14 <RH drive vehicles>, C-27 <LH drive vehicles>, D-03, and repair if necessary.*

- Check the communication lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 15.
**NO :** Repair the wiring harness.

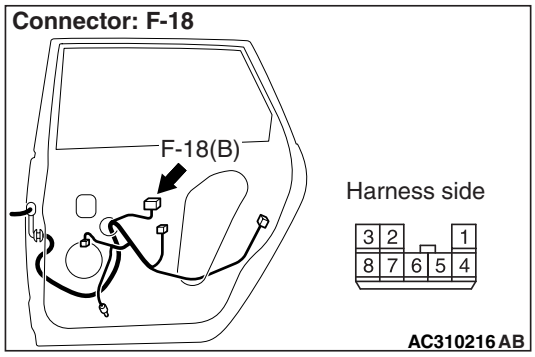
---

**Step 13. Connector check: F-18 power window sub switch (rear RH) connector.**

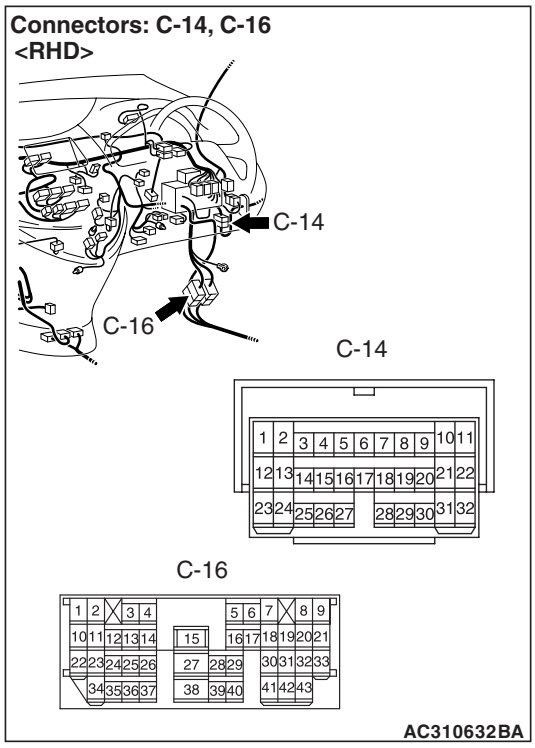


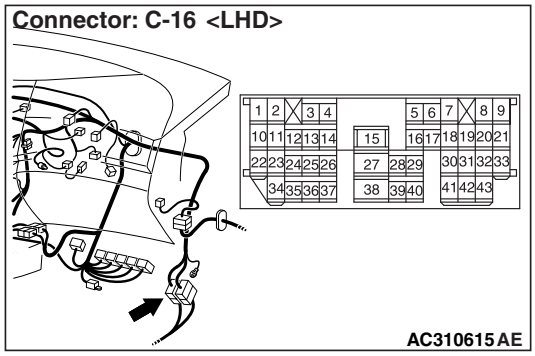

**Q: Is the check result normal?**
**YES :** Go to Step 14.
**NO :** Repair the connector.

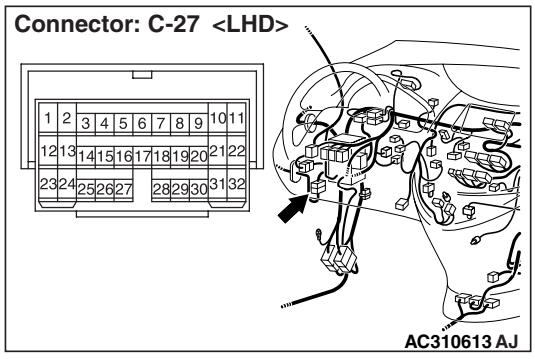
**Step 14. Check the wiring harness from F-18 power window sub switch (rear: RH) connector terminal No.6 to the inserted probe.**

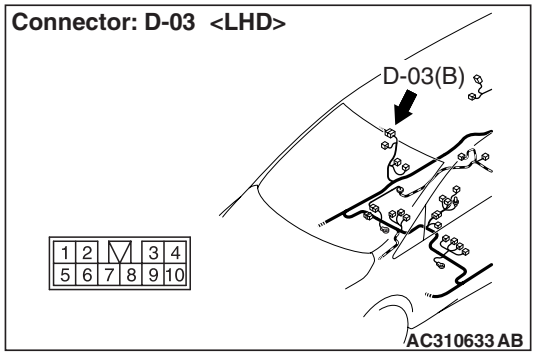


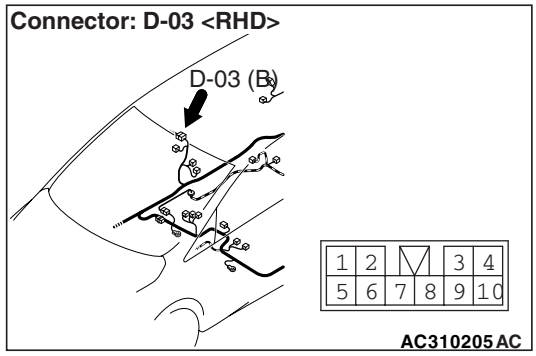

*NOTE:*




*Prior to the wiring harness inspection, check intermediate connectors C-16, C-14 <RH drive vehicles>, C-27 <LH drive vehicles>, D-03, and repair if necessary.*

- Check the communication lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 15.
**NO :** Repair the wiring harness.

---

**Step 15. Check the power window sub switch.**
Check that the rear right power window works by means of the power window sub switch (rear: RH) when the power window lock switch is turned off.

**Q: Is the check result normal?**
**YES :** Go to Step 16.
**NO :** Refer to inspection procedure D-3 "Relevant power window(s) do not work by means of the front and rear passenger's power window sub switches P.54C-137."

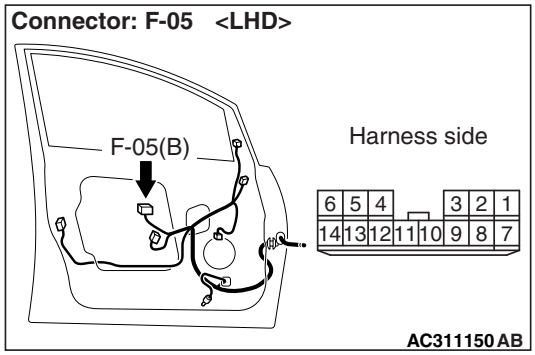
---

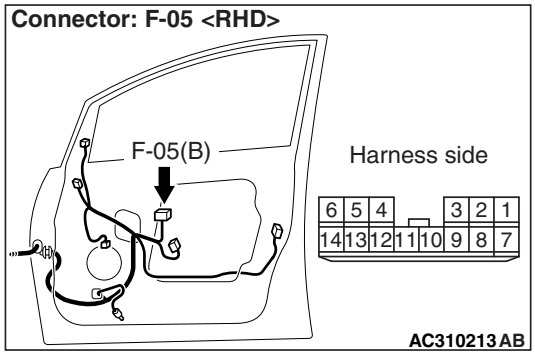
**Step 16. Retest the system.**
After the power window sub switch (rear: RH) is replaced, check that the rear right door power window can be operated by the power window sub switch.

(1) Replace the power window sub switch (rear: RH).
(2) Check that the rear right power window works by means of the power window main switch.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window main switch.

**Step 17. Connector check: F-05 power window main switch connector.**

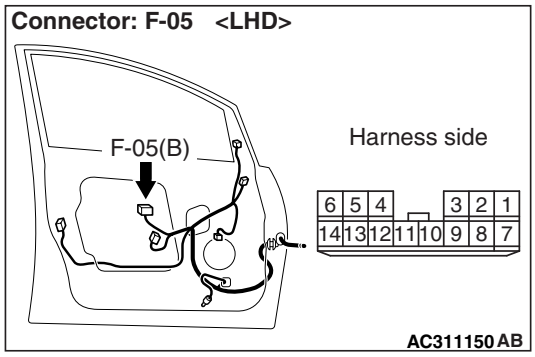


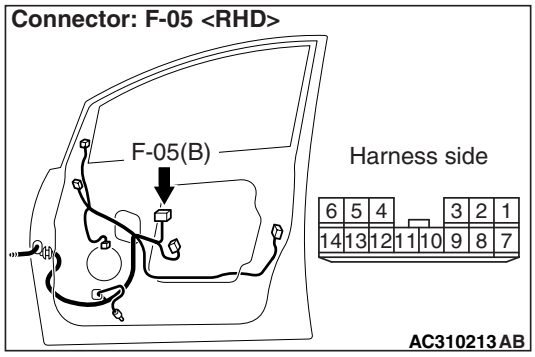




**Q: Is the check result normal?**

**YES :** Go to Step 18.
**NO :** Repair the connector.

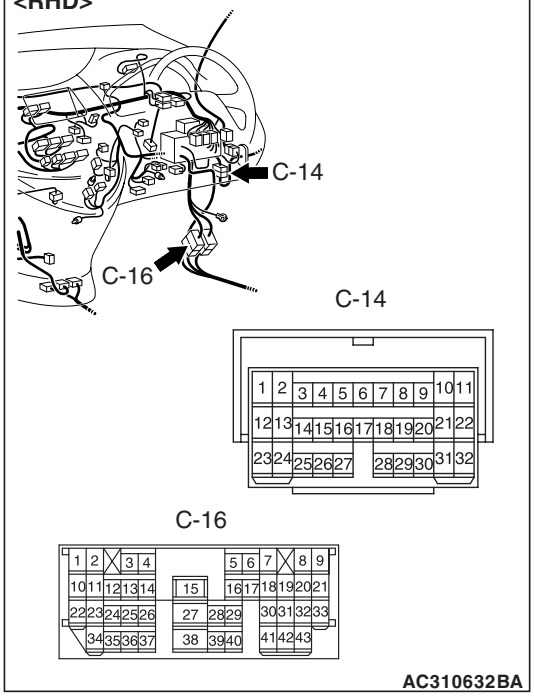
**Step 18. Check the wiring harness from F-05 power window main switch connector terminal No.11 to the inserted probe.**



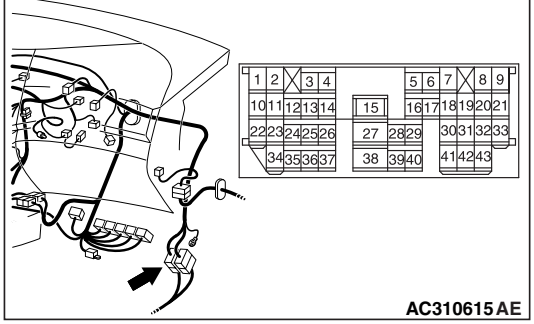




*NOTE:*

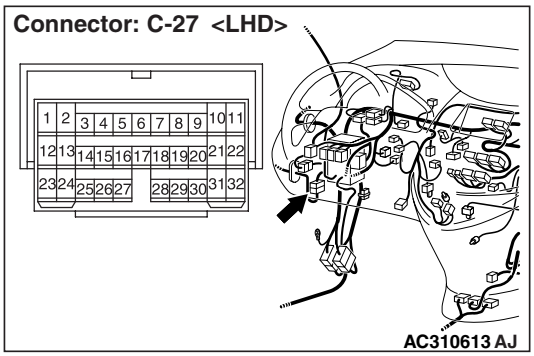
Connectors: C-14, C-16 <RHD>



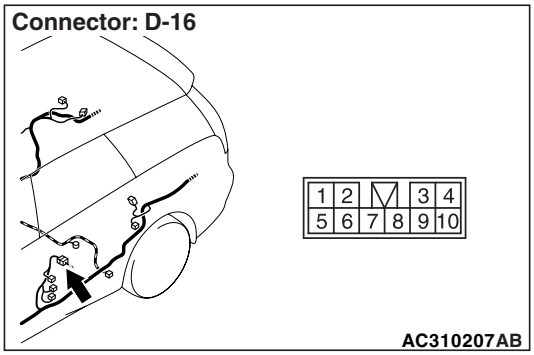

Connector: C-16 <LHD>



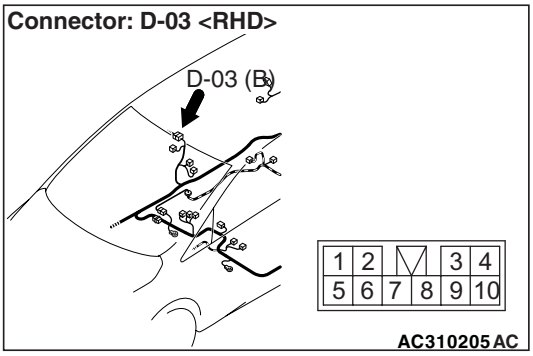

Connector: C-27 <LHD>




Connector: D-16




Connector: D-03 <RHD>




*Prior to the wiring harness inspection, check intermediate connectors C-16, C-14 <RH drive vehicles>, C-27 <LH drive vehicles>, D-16, and repair if necessary.*

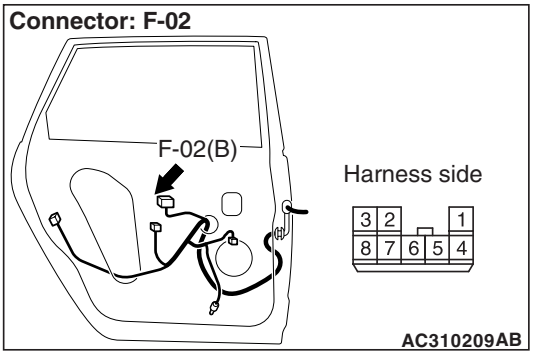
- Check the communication lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 21.
**NO :** Repair the wiring harness.

---

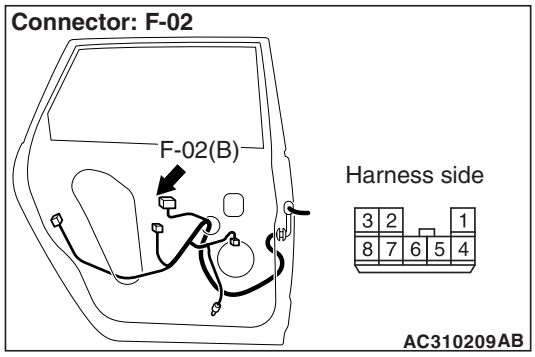
**Step 19. Connector check: F-02 power window sub switch (rear: LH) connector.**

Connector: F-02



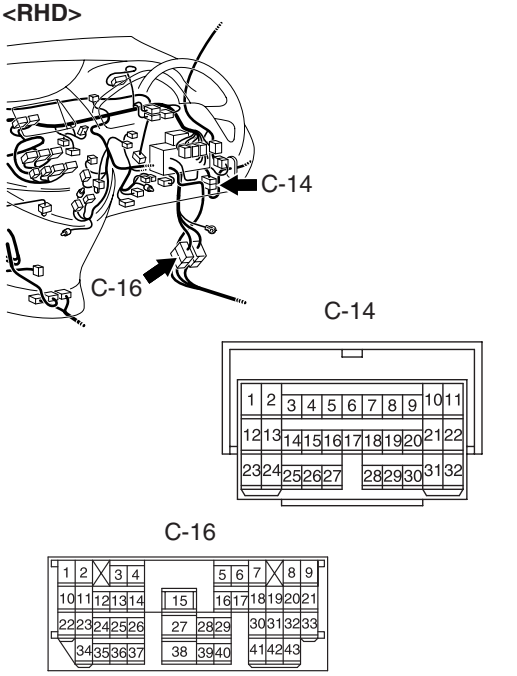

**Q: Is the check result normal?**
**YES :** Go to Step 20.
**NO :** Repair the connector.

**Step 20. Check the wiring harness from F-02 power window sub switch (rear: LH) connector terminal No.6 to the inserted probe.**

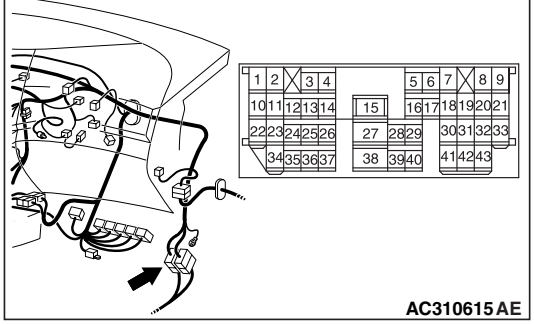



*NOTE:*

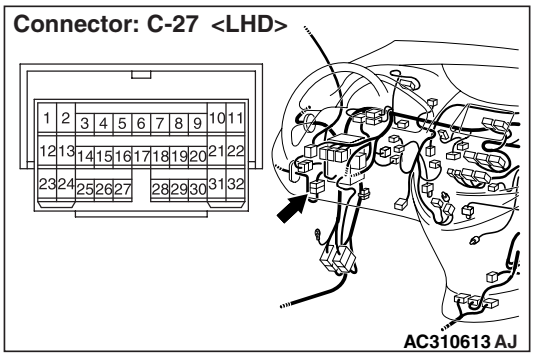
Connectors: C-14, C-16 <RHD>



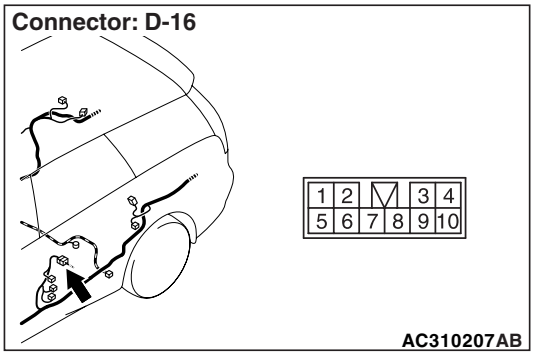

Connector: C-16 <LHD>



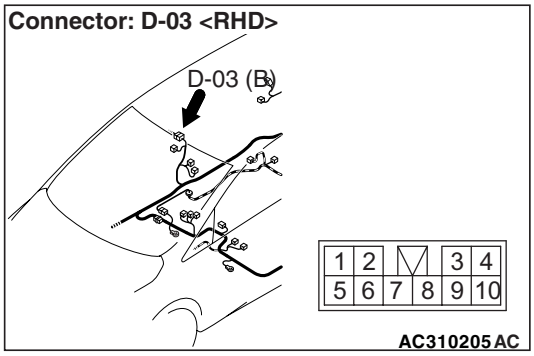

Connector: C-27 <LHD>




Connector: D-16




Connector: D-03 <RHD>




*Prior to the wiring harness inspection, check intermediate connectors C-16, C-14 <RH drive vehicles>, C-27 <LH drive vehicles>, D-16, and repair if necessary.*

- Check the communication lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 21.
**NO :** Repair the wiring harness.

---

**Step 21. Check the power window sub switch.**
Check that the rear left power window works by means of the power window sub switch (rear: LH) when the power window lock switch is turned off.

**Q: Is the check result normal?**
**YES :** Go to Step 22.
**NO :** Refer to inspection procedure D-3 "Relevant power window(s) do not work by means of the front and rear passenger's power window sub switches P.54C-137."

---

**Step 22. Retest the system.**
After the power window sub switch (rear: LH) is replaced, check that the rear left door power window can be operated by the power window sub switch.

(1) Replace the power window sub switch (rear: LH).
(2) Check that the rear left power window works by means of the power window main switch.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window main switch.

**Inspection Procedure D-5: The window glass lowers automatically while it is rising.**

## COMMENTS ON TROUBLE SYMPTOM

If the sliding resistance is too great when the window is being raised or the window glass encounters an object, the window glass will lower by approximately 150 mm.

## POSSIBLE CAUSES

- Improper adjusted door window glass
- Incorrectly installed or warped glass slider
- Malfunction of the power window motor
- Malfunction of the window regulator

## DIAGNOSIS PROCEDURE

**Step 1. Check the power window anti-trap function.**

Check that the power window anti-trap function works. Refer to GROUP 42 – Door – On-vehicle Service P.42-27.

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to Inspection Procedure D-6 "Power window anti-trap function does not work normally P.54C-174."

**Step 2. Check the power window operating current.**

Check that the power window operating current is normal (Refer to GROUP 42 – Door – On-vehicle service P.42-29).

**Q: Is the check result normal?**

**YES :** Adjust the door window glass (Refer to GROUP 42 – Door – On-vehicle service P.42-25), and then go to Step 3.

**NO :** Replace the defective power window motor assembly which operating current are abnormal.

**Step 3. Check that the door window glasses are installed correctly.**

Check that the door window glasses are installed correctly. Refer to GROUP 42 – Door – On-vehicle Service P.42-25.

**Q: Is the check result normal?**

**YES :** Go to Step 4.

**NO :** Adjust the door window glass (Refer to GROUP 42 – Door – On-vehicle service P.42-25).

**Step 4. Retest the system.**

Check that the power window does not lower automatically while it is being raised.

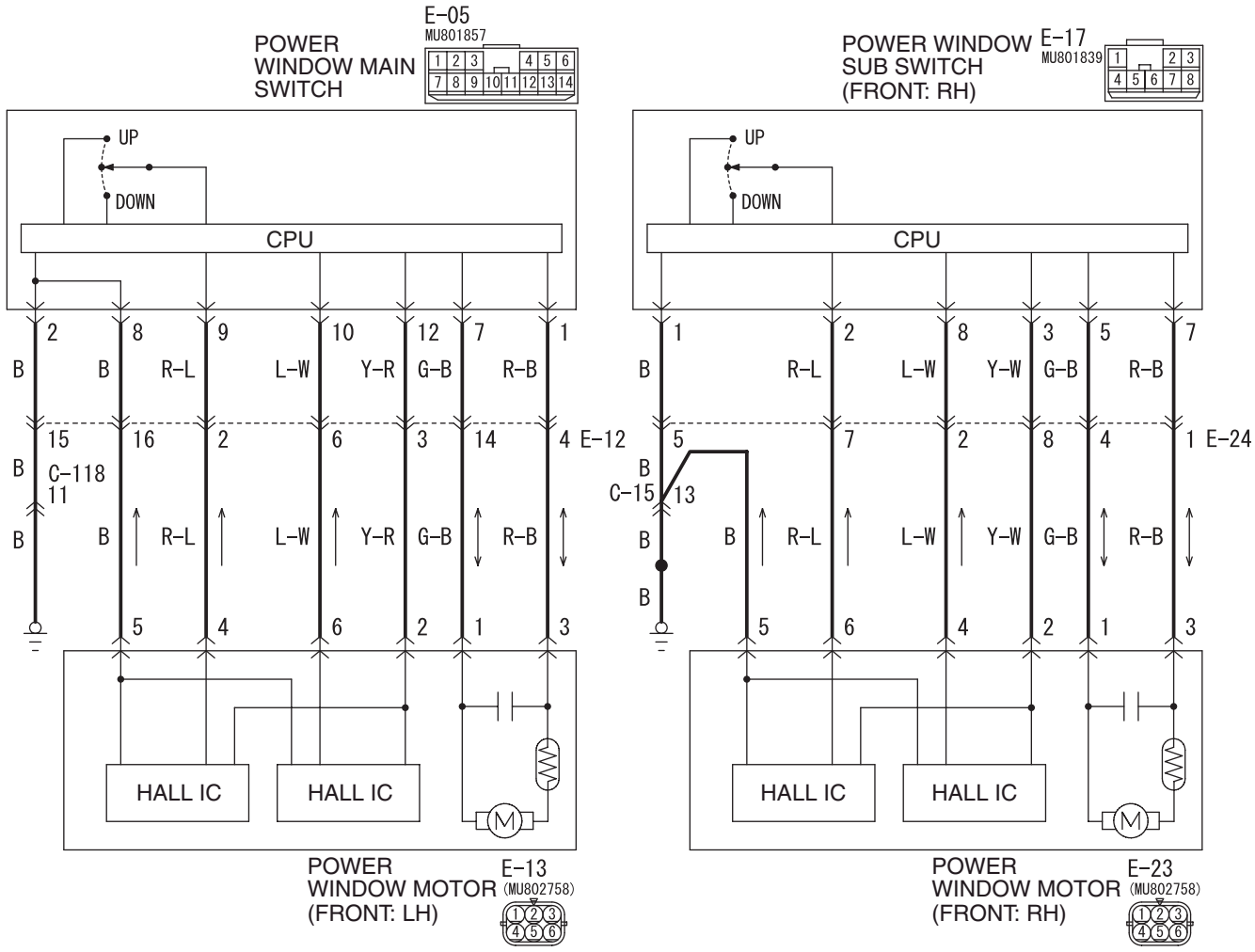
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Replace the power window motor assembly of the defective window.

## Inspection Procedure D-6: Power window anti-trap function does not work normally.

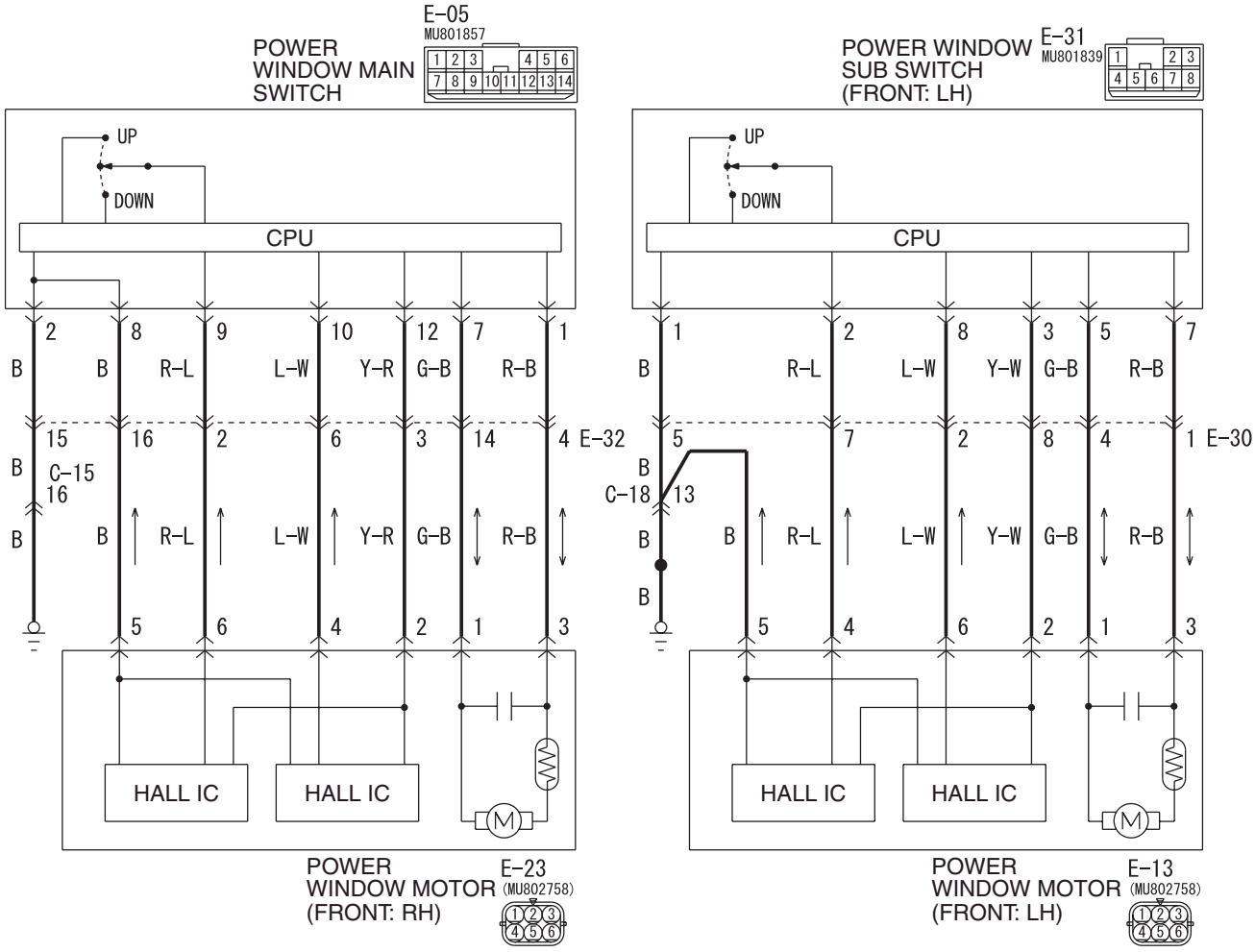
**Power Window (front) Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W3Z17E03AB

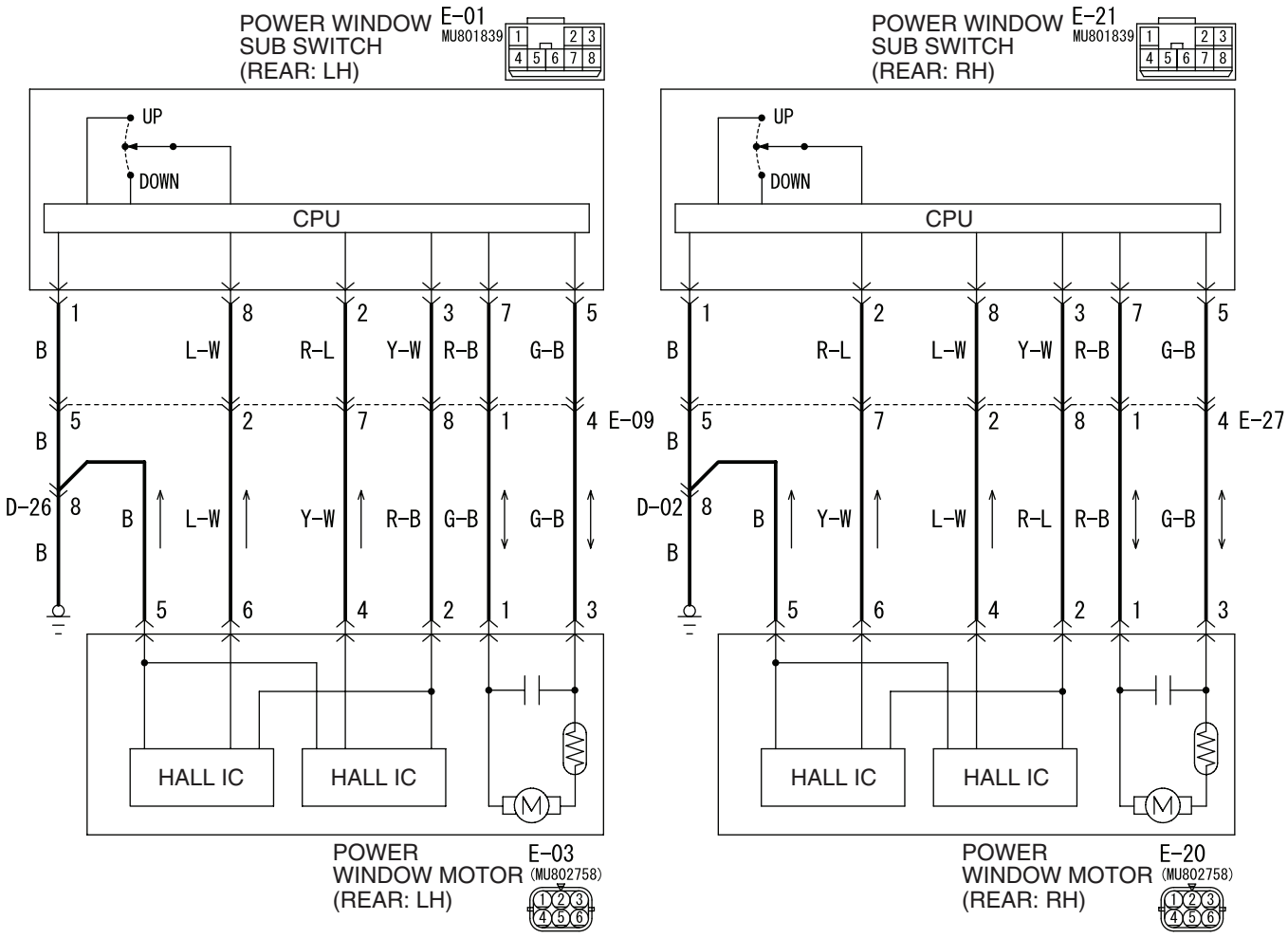
**Power Window (front) Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4Z54E16AA

**Power Window (rear) Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W3Z17E04AA

## COMMENTS ON TROUBLE SYMPTOM

The revolution detection sensor, which is incorporated in the power window motor, may be defective.

## POSSIBLE CAUSES

- Malfunction of the power window motor

## DIAGNOSIS PROCEDURE

**Step 1. Check the power window operating current.**

Check that the power window operating current is normal (Refer to GROUP 42 – Door – On-vehicle Service P.42-29).

**Q: Is the check result normal?**

**YES :** Adjust the door window glass (Refer to GROUP 42 – Door – On-vehicle service P.42-25), and then go to Step 2.

**NO :** Replace the defective power window motor assembly which operating current are abnormal.

**Step 2. Confirm the power window learning function.**

Check that the power window switch has learned the fully closed position of the windows (Refer to GROUP 42 – Door P.42-35).

**Q: Is the check result normal?**

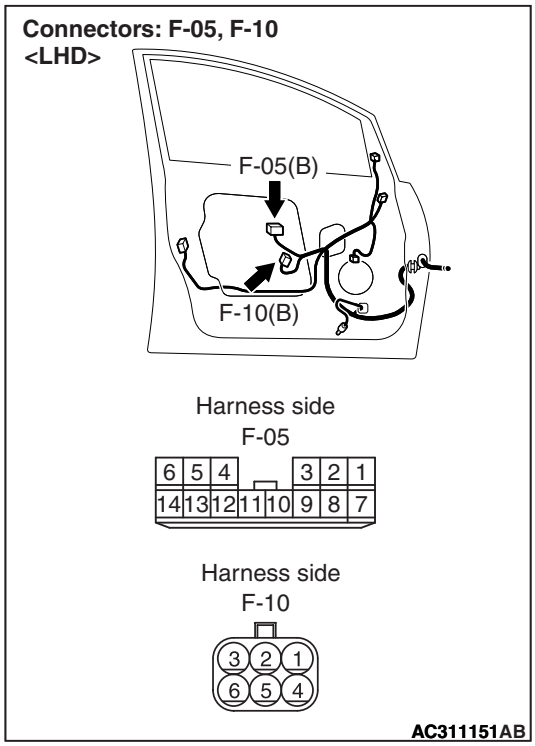
**YES :** Go to Step 3.

**NO :** Make the power window switch learn the fully closed position of the windows (Refer to GROUP 42 – Door P.42-35).

**Step 3. Determine a trouble spot.**

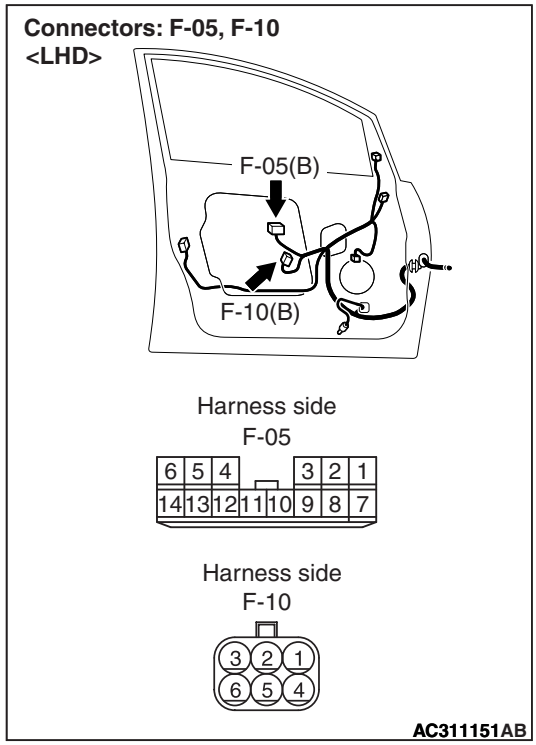
**Q: Which door does the power window anti-trap function fail on?**
**Driver's door <LH drive vehicles> :** Go to Step 4.
**Driver's door <RH drive vehicles> :** Go to Step 7.
**Front passenger's door <LH drive vehicles> :** Go to Step 10.
**Front passenger's door <RH drive vehicles> :** Go to Step 16.
**Rear right door :** Go to Step 22.
**Rear left door :** Go to Step 28.

**Step 4. Connector check: F-05 power window main switch connector and F-10 power window motor (front: LH) connector.**




**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the defective connector.

**Step 5. Check the wiring harness from F-05 power window main switch connector terminal Nos.8, 9, 10 and 12 to F-10 power window motor (front: LH) connector terminal Nos.6, 2, 4 and 5.**



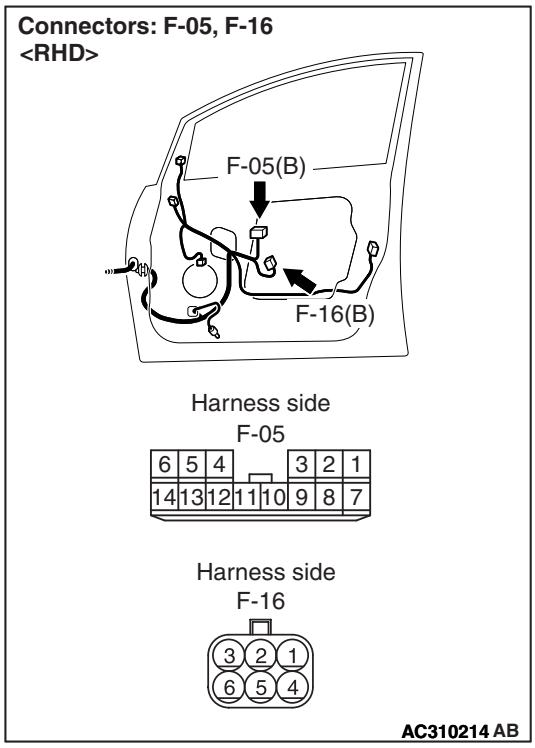

- Check the input and output lines to the revolution detection sensor for open or short circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the wiring harness.

**Step 6. Retest the system.**
After the power window main switch is replaced, check that the driver's power window anti-trap function works.
(1) Replace the power window main switch.
(2) Check that the driver's power window anti-trap function works.

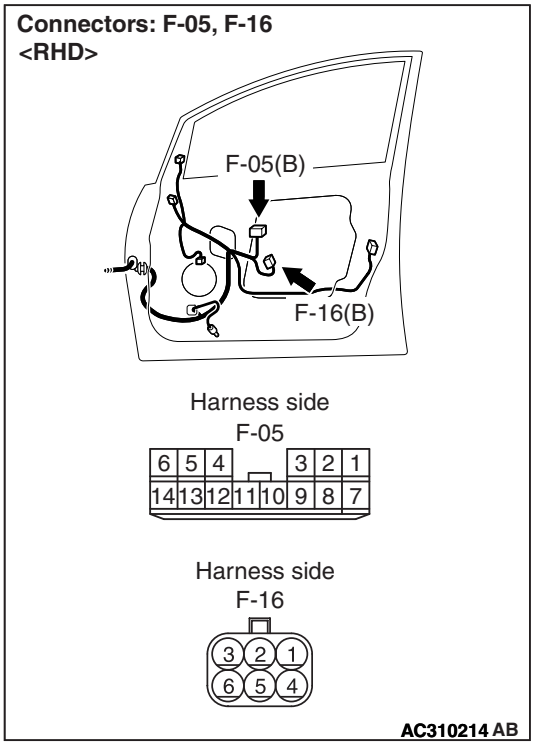
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window motor (front: LH).

**Step 7. Connector check: F-05 power window main switch connector and F-16 power window motor (front: RH) connector.**




**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the defective connector.

**Step 8. Check the wiring harness from F-05 power window main switch connector terminal Nos.8, 9, 10 and 12 to F-16 power window motor (front: RH) connector terminal Nos.6, 2, 4 and 5.**




- Check the input and output lines to the revolution detection sensor for open or short circuit.

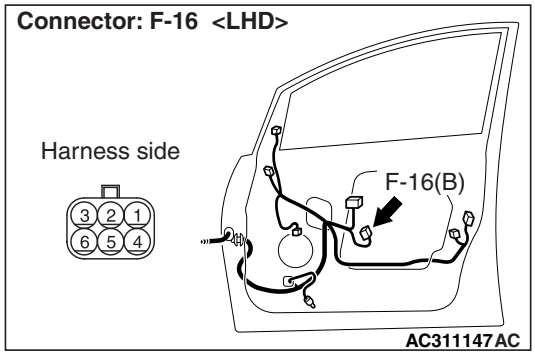
**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the wiring harness.

**Step 9. Retest the system.**
After the power window main switch is replaced, check that the driver's power window anti-trap function works.

(1) Replace the power window main switch.
(2) Check that the driver's power window anti-trap function works.

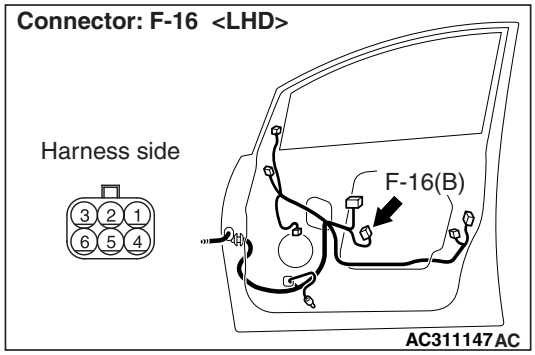
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window motor (front: LH).

**Step 10. Connector check: F-16 power window motor (front: RH) connector.**

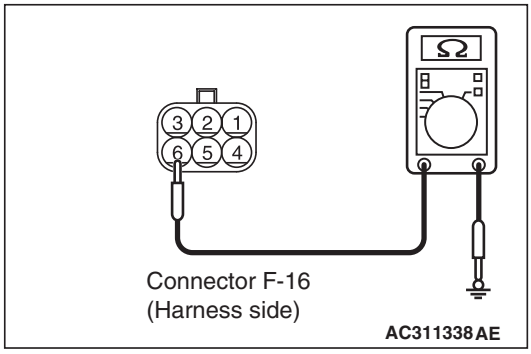



**Q: Is the check result normal?**
**YES :** Go to Step 11.
**NO :** Repair the defective connector.

**Step 11. Resistance measurement at F-16 power window motor (front: RH) connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

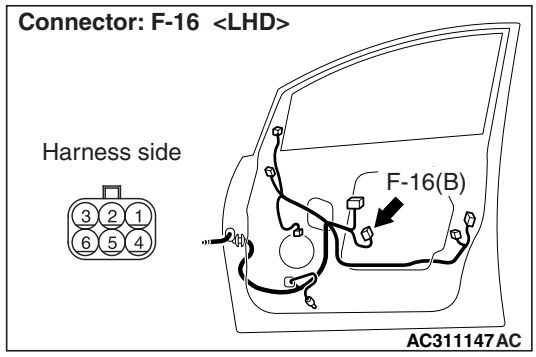



(2) Resistance between F-16 power window motor (front RH) connector terminal No.6 and body earth.

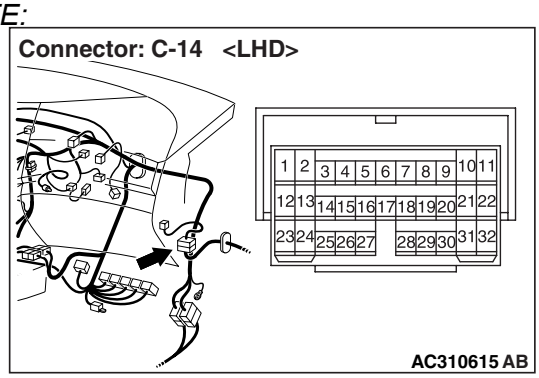
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 13.
**NO :** Go to Step 12.

**Step 12. Check the wiring harness F-16 power window motor (front: RH) connector terminal No.6 to body earth.**




*NOTE:*

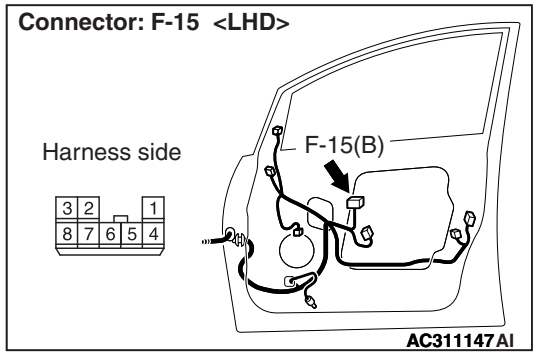



*Prior to the wiring harness inspection, check intermediate connector C-14 and repair if necessary.*

- Check the input and output lines to the revolution detection sensor for open or short circuit.

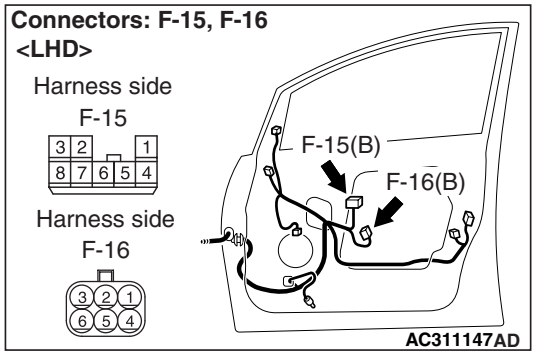
**Q: Is the check result normal?**
**YES :** Go to Step 13.
**NO :** Repair the wiring harness.

**Step 13. Connector check: F-15 power window sub switch (front: RH) connector.**




**Q: Is the check result normal?**
**YES :** Go to Step 14.
**NO :** Repair the defective connector.

**Step 14. Check the wiring harness from F-15 power window sub switch (front: RH) connector terminal Nos.2, 8 and 3 to F-16 power window motor (front: RH) connector terminal Nos.2, 4 and 5.**




- Check the input and output lines to the revolution detection sensor for open or short circuit.

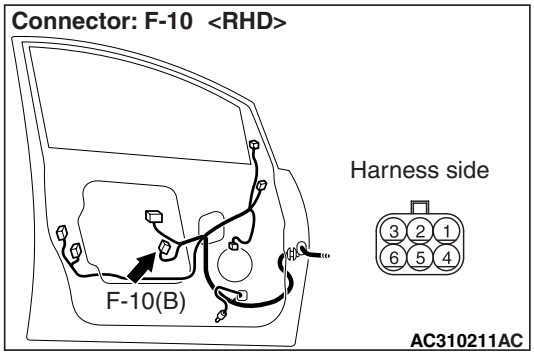
**Q: Is the check result normal?**
**YES :** Go to Step 15.
**NO :** Repair the wiring harness.

**Step 15. Retest the system.**
After the power window sub switch (front: RH) is replaced, check that the front passenger's anti-trap function can be operated by the power window sub switch.

(1) Replace the power window sub switch (front: RH).
(2) Check that the front passenger's power window anti-trap function works.

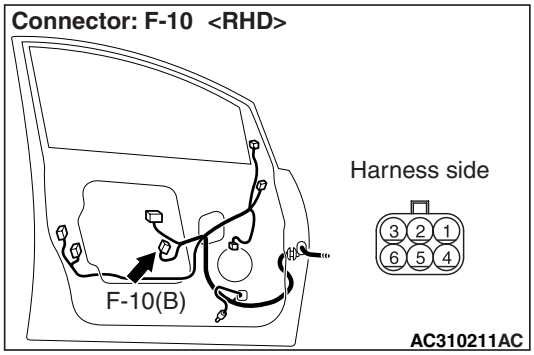
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window motor (front: RH).

**Step 16. Connector check: F-10 power window motor (front: LH) connector.**

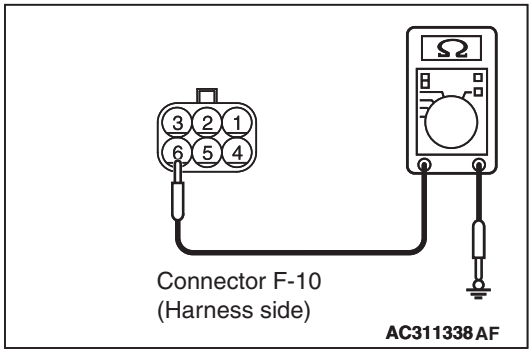



**Q: Is the check result normal?**
**YES :** Go to Step 17.
**NO :** Repair the defective connector.

**Step 17. Resistance measurement at F-10 power window motor (front: LH) connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

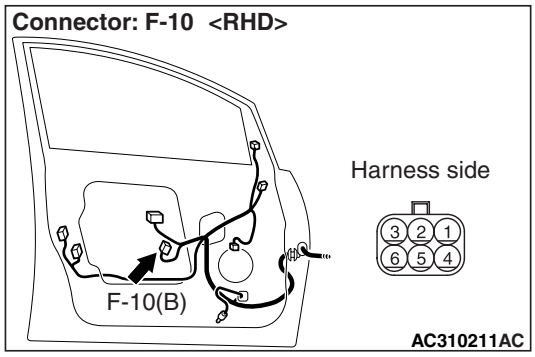



(2) Resistance between F-10 power window motor (front: LH) connector terminal No.6 and body earth.

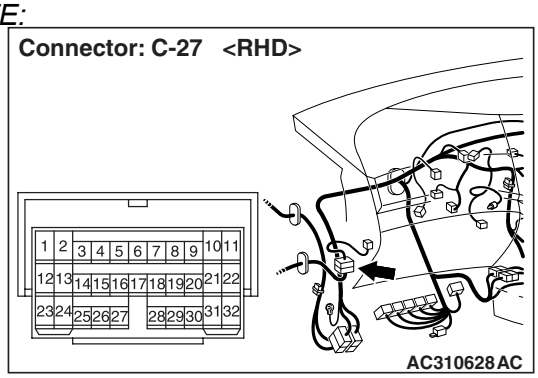
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 19.
**NO :** Go to Step 18.

**Step 18. Check the wiring harness F-10 power window motor (front: LH) connector terminal No.6 to body earth.**




*NOTE:*

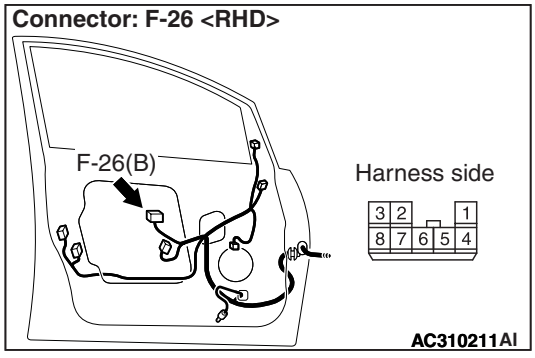



*Prior to the wiring harness inspection, check intermediate connector C-27 and repair if necessary.*

- Check the input and output lines to the revolution detection sensor for open or short circuit.

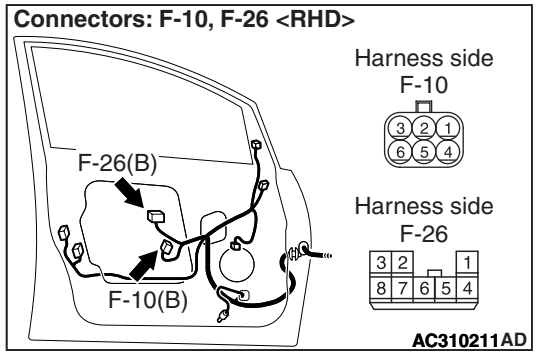
**Q: Is the check result normal?**
**YES :** Go to Step 19.
**NO :** Repair the wiring harness.

**Step 19. Connector check: F-26 power window sub switch (front: LH) connector power window sub switch (front: RH) connector.**




**Q: Is the check result normal?**
**YES :** Go to Step 20.
**NO :** Repair the defective connector.

**Step 20. Check the wiring harness from F-26 power window sub switch (front: LH) connector terminal Nos.2, 8 and 3 to F-10 power window motor (front: LH) connector terminal Nos.2, 4 and 5.**



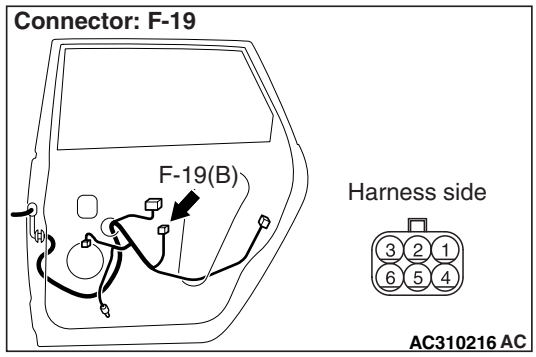

- Check the input and output lines to the revolution detection sensor for open or short circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 21.
**NO :** Repair the wiring harness.

**Step 21. Retest the system.**
After the power window sub switch (front: LH) is replaced, check that the front passenger's anti-trap function can be operated by the power window sub switch.
(1) Replace the power window sub switch (front: LH).
(2) Check that the front passenger's power window anti-trap function works.

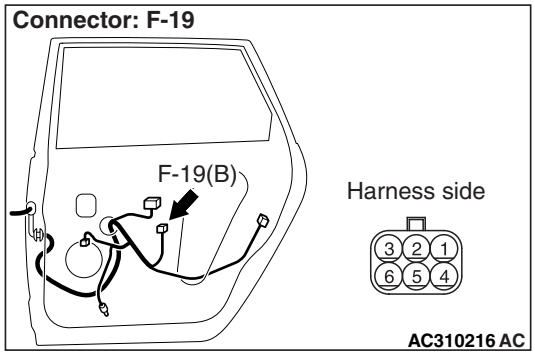
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window motor (front: LH).

**Step 22. Connector check: F-19 power window motor (rear: RH) connector.**

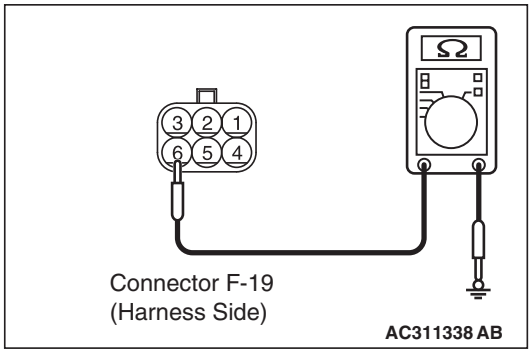



**Q: Is the check result normal?**
**YES :** Go to Step 23.
**NO :** Repair the defective connector.

**Step 23. Resistance measurement at F-19 power window motor (rear: RH) connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

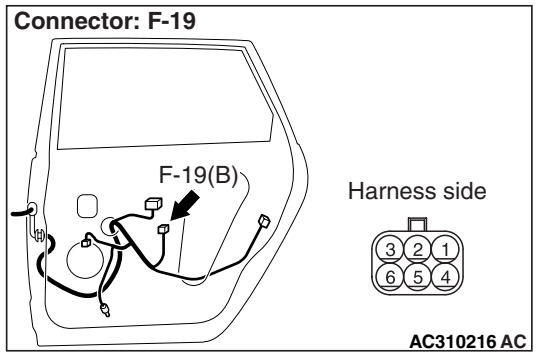



(2) Resistance between F-19 power window motor (rear: RH) connector terminal No.6 and body earth.

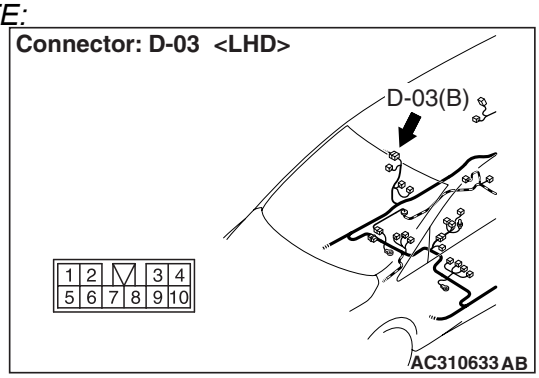
**OK: 2 Ω or less**

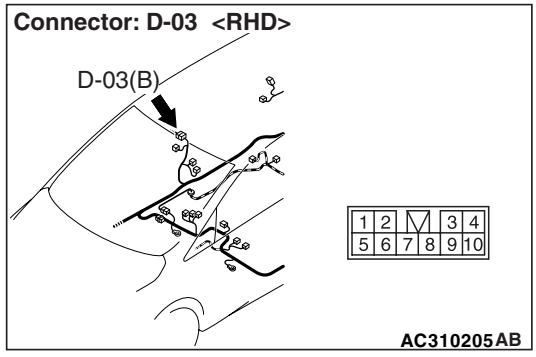
**Q: Is the check result normal?**
**YES :** Go to Step 25.
**NO :** Go to Step 24.

**Step 24. Check the wiring harness from F-19 power window motor (rear: RH) connector terminal No.6 to body earth.**




*NOTE:*



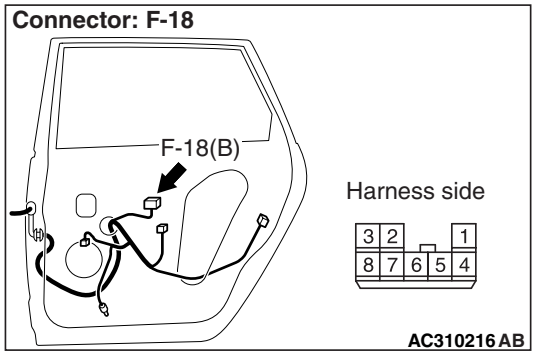




*Prior to the wiring harness inspection, check intermediate connector D-03, and repair if necessary.*

- Check the input and output lines to the revolution detection sensor for open or short circuit.

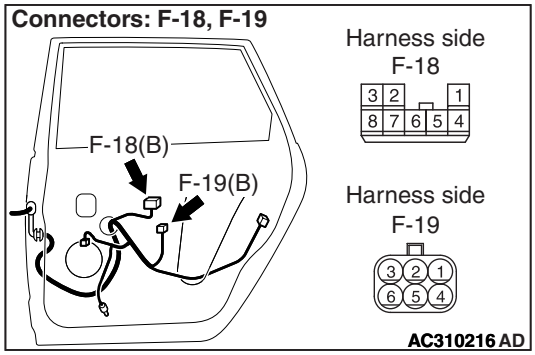
**Q: Is the check result normal?**
**YES :** Go to Step 25.
**NO :** Repair the wiring harness.

**Step 25. Connector check: F-18 power window sub switch (rear: RH) connector.**




**Q: Is the check result normal?**
**YES :** Go to Step 26.
**NO :** Repair the defective connector.

**Step 26. Check the wiring harness from F-18 power window sub switch (rear: RH) connector terminal Nos.2, 8 and 3 to F-19 power window motor (rear: RH) connector terminal Nos.2, 4 and 5.**



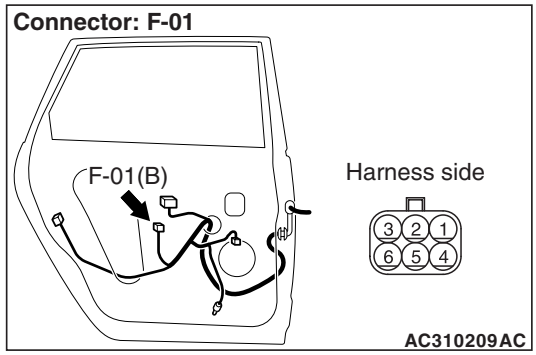

- Check the input and output lines to the revolution detection sensor for open or short circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 27.
**NO :** Repair the wiring harness.

**Step 27. Retest the system.**
After the power window sub switch (rear: RH) is replaced, check that the rear right door anti-trap function can be operated by the power window sub switch.
(1) Replace the power window sub switch (rear: RH).
(2) Check that the rear right power window anti-trap function works.

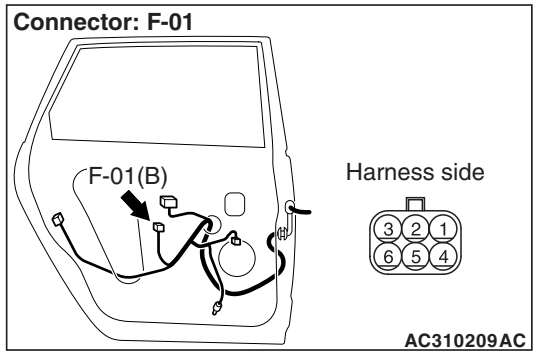
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window motor (rear: RH).

**Step 28. Connector check: F-01 power window motor (rear: LH) connector.**

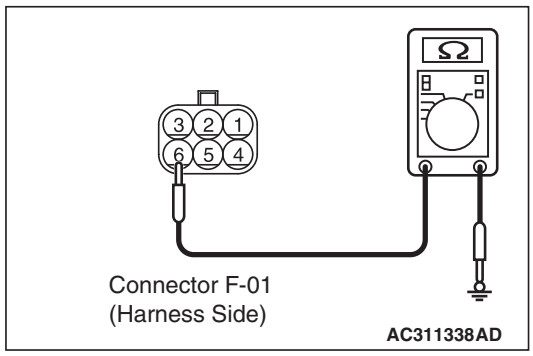



**Q: Is the check result normal?**
**YES :** Go to Step 29.
**NO :** Repair the defective connector.

**Step 29. Resistance measurement at F-01 power window motor (rear: LH) connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

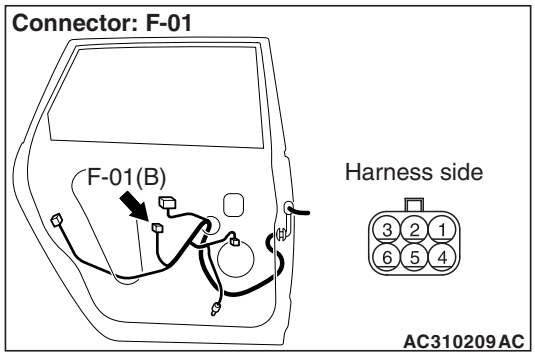



(2) Resistance between F-01 power window motor (rear: LH) connector terminal No.6 and body earth.

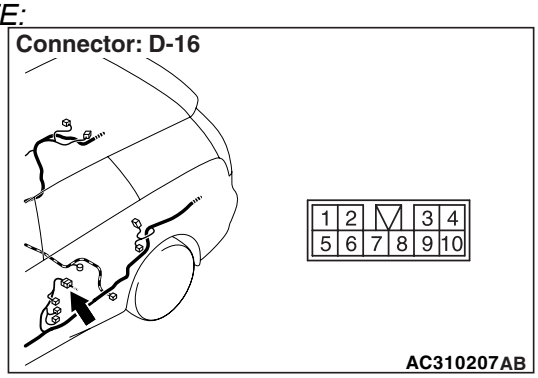
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 31.
**NO :** Go to Step 30.

**Step 30. Check the wiring harness from F-01 power window motor (rear: LH) connector terminal No.6 to body earth.**




*NOTE:*

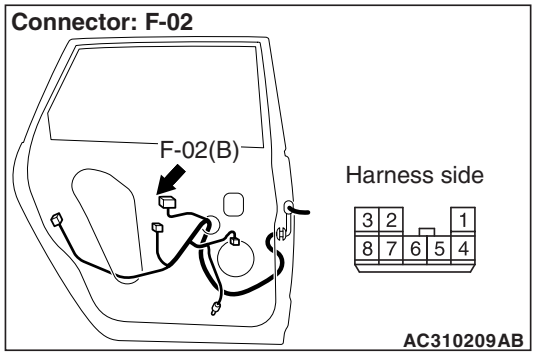



*Prior to the wiring harness inspection, check intermediate connector D-16, and repair if necessary.*

- Check the input and output lines to the revolution detection sensor for open or short circuit.

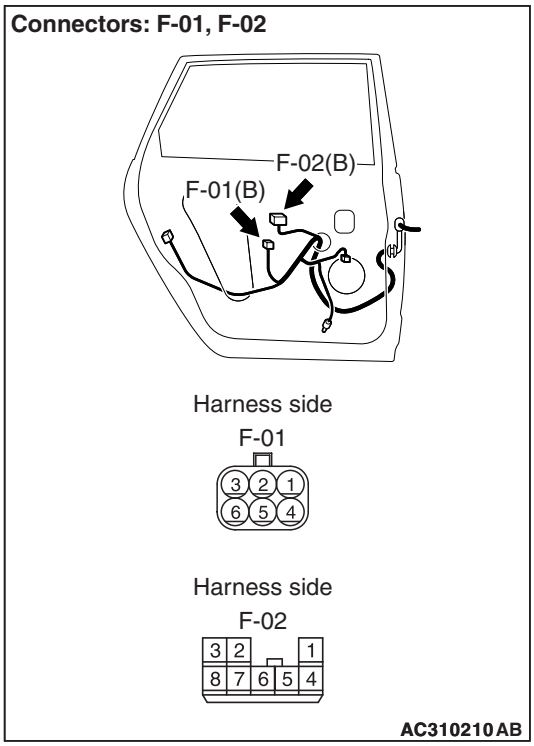
**Q: Is the check result normal?**
**YES :** Go to Step 31.
**NO :** Repair the wiring harness.

**Step 31. Connector check: F-02 power window sub switch (rear: LH) connector.**




**Q: Is the check result normal?**
**YES :** Go to Step 32.
**NO :** Repair the defective connector.

**Step 32. Check the wiring harness from F-02 power window sub switch (rear: LH) connector terminal Nos.8, 2 and 3 to F-01 power window motor (rear: LH) connector terminal Nos.4, 2 and 5.**




- Check the input and output lines to the revolution detection sensor for open or short circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 33.
**NO :** Repair the wiring harness.

**Step 33. Retest the system.**
After the power window sub switch (rear: LH) is replaced, check that the rear left door anti-trap function can be operated by the power window sub switch.
(1) Replace the power window sub switch (rear: LH).
(2) Check that the rear left power window anti-trap function works.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window motor (rear: LH).

## Inspection Procedure D-7: The power window timer function does not work normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

## COMMENTS ON TROUBLE SYMPTOM

If the power window timer function does not work normally, these input signal circuit(s), the power window main switch or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the driver's door switch
- Malfunction of the power window main switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the power window main switch (power window module) and the SWS communication lines are normal.

- Turn the ignition switch from the ON to the OFF position.

**ECUS TO BE CHECKED**

- ETACS ECU
- P/W MODULE

**OK: "OK" are displayed for all the items**

*NOTE: "OK" is displayed for the power window switch (power window module) for approximately one minute, and then changed to "NG". However, only "OK" is displayed for the ETACS-ECU.*

**Q: Are the check result normal?**
**"OK" are displayed for all the items :** Go to Step 2.
**"NG" is displayed on the "ETACS ECU" menu. :**
Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."
**"NG" is displayed on the "P/W MODULE" menu. :**
Refer to Inspection Procedure A-5 "Communication with the power window main switch (power window module) is not possible P.54C-77."

**Step 2. Function diagnosis by using the SWS monitor**
Check the SWS communication signal, which are related to the power window timer function.

**<Selected item> POWER WINDOW**

- Turn the ignition switch from the ON to the OFF position.

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 30 | IG SW IG1 | OFF |
| Item 33 | P/W SW ACCEPT | PERMIT |
| Item 71 | P/W ECU ACK | NORMAL ACK |

*NOTE: For item No.33 "P/W SW ACCEPT", "PERMIT" is displayed for approximately 30 seconds after the ignition switch is turned off, and then change to "PROHIBIT". In addition, on item No.71 "P/W MODULE", "NORMAL ACK" is changed to "INPUT CHECK" momentarily, when the power window main switch is operated for approximately 30 seconds after the ignition switch is turned off.*

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**
**Normal conditions are displayed for all the items. :**
Go to Step 3.
**Normal condition is not displayed for item No.30 :**
Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."
**Normal condition is not displayed for item No.33 :**
Replace the ETACS-ECU.
**Normal condition is not displayed for item No.71 :**
Replace the power window main switch.

**Step 3. SWS monitor data list**
Check the SWS communication signal, which are related to the power window timer function.

**<Selected item> ETACS ECU**

- Driver's door: open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | DR DOOR SW | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 4.
**NO :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received P.54C-474 <LH drive vehicles> or P.54C-476 <RH drive vehicles>."

**Step 4. Retest the system.**
Check that the power window timer function works normally.

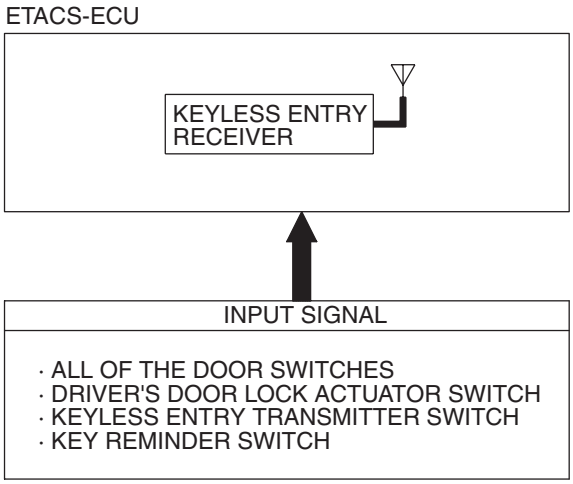
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window main switch.

# KEYLESS ENTRY SYSTEM

## Inspection Procedure E-1: Keyless entry system does not work.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Keyless Entry System Function Circuit**

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## COMMENTS ON TROUBLE SYMPTOM
If the keyless entry system does not work normally, the input signal circuits to the components below or the ETACS-ECU may be defective.
- Key reminder switch
- All of the door switches
- Keyless entry transmitter
- Driver's door lock actuator

## POSSIBLE CAUSES
- Malfunction of the key reminder switch
- Malfunction of the door switches
- Malfunction of the keyless entry transmitter
- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the operation of the central door locking system.**
Check that the central door locking system works normally.

**Q: Is the check result normal?**
**YES :** Go to Step 2
**NO :** Refer to Inspection Procedure C-1 "central door locking system does not work P.54C-106."

**Step 2. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 3. Use the SWS monitor to examine the keyless entry system for signal reception.**
Check the condition of the keyless entry transmitter.

| Operation switch | Normal conditions (received signal) |
|---|---|
| LOCK | LOCK |
| UNLOCK | UNLOCK |

**OK: By operating the switch as shown in the table above, relevant normal conditions are displayed.**

**Q: Are normal condition displayed?**
**YES :** Go to Step 4.
**NO :** Refer to Inspection Procedure Q-23 "Each switch signal of the keyless entry transmitter is not received P.54C-562."

**Step 4. SWS monitor data list.**
Check the SWS communication input signal, which are related to the keyless entry system.

**<Selected item> ETACS**
- Driver's door: Lock → Unlock

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | DR DOR SW | from OFF to ON |

**OK: Normal condition is displayed.**

**Q: Is normal condition displayed?**
**YES :** Go to Step 5.
**NO :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received <LH drive vehicles>P.54C-474 or <RH drive vehicles>P.54C-476."

**Step 5. ETACS switch data by using the SWS monitor.**
Check the ETACS-ECU signal related to the keyless entry system.
- Ignition switch: OFF (key inserted)
- Open the doors other than the driver's door (including the tailgate).

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | KEY REMINSW | OFF |
| Item 05 | PASS DOORSW | from OFF to ON |
| Item 07 | TRK LID LASW | from OFF to ON |
| Item 41 | R.DOOR (RH) SW | from OFF to ON |
| Item 42 | R.DOOR (LH) SW | from OFF to ON |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**
**Normal conditions displayed for all the items :** Go to Step 6.
**Normal condition is not displayed for item No.03. :** Refer to inspection procedure Q-11 "The key reminder switch signal is not received P.54C-493."
**Normal condition is not displayed for item 05, 07, 41 or 42. :** Refer to inspection procedure Q-14 "All the door switch signals are not received P.54C-505."

**Step 6. Retest the system.**
Check the keyless entry system works normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## INSPECTION PROCEDURE E-2: Keyless Entry hazard lamp answerback function or the Room Lamp Answerback Function does not Work Normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

### COMMENTS ON TROUBLE SYMPTOM

If the hazard warning lamp and the room lamp work normally, the ETACS-ECU may be defective. Alternatively, it is possible that the keyless entry hazard lamp answerback function was disabled by the customize function.

### POSSIBLE CAUSES

- Defective turn-signal lamp
- Malfunction of the room lamp
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

### DIAGNOSIS PROCEDURE

**Step 1. Check the operation of the hazard warning lamp.**
Check that the hazard warning lamps illuminate normally.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to inspection procedure N-2 "The hazard warning lamps do not illuminate P.54C-321".

**Step 2. Check the operation of the room lamps.**
Check that the room lamps illuminate normally.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Refer to inspection procedure P-2 "The room lamp does not illuminate normally <Vehicles with keyless entry>P.54C-383."

**Step 3. Check the operation of the keyless entry system.**
If the keyless entry system is operated, check that the doors can be locked and unlocked normally.

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Refer to inspection procedure E-1 "Keyless entry system does not work P.54C-186."

**Step 4. Customize function by using the SWS monitor.**
Check that "KEYLESS HAZARD" is set to other than "NO BLINK" by using the SWS monitor customisation function.

- LOCK1, UNLOCK2
- LOCK1, UNLOCK0
- LOCK0, UNLOCK2
- LOCK2, UNLOCK1
- LOCK2, UNLOCK0
- LOCK0, UNLOCK1

**Q: Is the check result normal?**
**YES :** Go to Step 5 .
**NO :** Set "KEYLESS HAZARD" to other than "NO BLINK" by using the SWS monitor customisation function (Refer to P.54C-574).

**Step 5. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

**ECU TO BE CHECKED**

- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

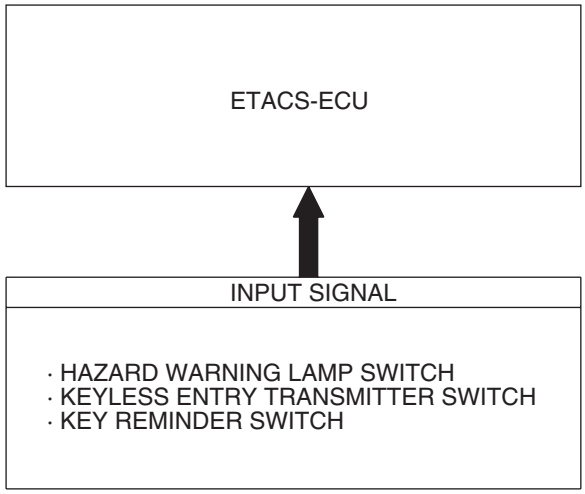
**Step 6. Retest the system.**
Check that the keyless entry hazard lamp answerback function or the room lamp answerback function work normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## INSPECTION PROCEDURE E-3: Encrypted Code cannot be Registered.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Encrypted Transmitter Code Register Mode**




W4X54E164A

## COMMENTS ON TROUBLE SYMPTOM

If the encrypted code registration mode is not entered, the key reminder switch, the hazard warning lamp switch or the ETACS-ECU may be defective.
If the registration is not possible although the registration mode is entered, the keyless entry transmitter or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the keyless entry transmitter
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the encrypted code registration mode.**
Check that the encrypted code registration mode is entered.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Go to Step 2.

**Step 2. ETACS switch data by using the SWS monitor.**
Check the relevant ETACS-ECU signal before entering the encrypted code registration mode.

- Ignition switch: OFF (key inserted)
- Hazard lamp switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | KEY REMIN SW | OFF |
| Item 04 | HAZARD LMP SW | ON (only when switch is operated) |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**
**Normal conditions displayed for all the items :** Go to Step 3.
**Normal condition is not displayed for item No.03. :** Refer to inspection procedure Q-11 "The key reminder switch signal is not received P.54C-493."
**Normal condition is not displayed for item No.04. :** Refer to inspection procedure Q-12 "The hazard warning lamp switch signal is not received P.54C-497."

**Step 3. Use the SWS monitor to examine the keyless entry system for signal reception.**
Check the condition of the keyless entry transmitter.

| Operation switch | Normal conditions (received signal) |
|---|---|
| LOCK | LOCK |
| UNLOCK | UNLOCK |

**OK: By operating the switch as shown in the table above, relevant normal conditions are displayed.**

**Q: Are the check result normal?**

**YES :** Go to Step 4.
**NO :** Refer to Inspection Procedure Q-23 "Each switch signal of the keyless entry transmitter is not received P.54C-562."

**Step 4. Retest the system.**
Check that the encrypted code can be registered.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## INSPECTION PROCEDURE E-4: The Timer Lock Function does not Work after the Doors have been Unlocked by the Keyless Entry System.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

### COMMENT ON TROUBLE SYMPTOM

If the keyless entry timer lock does not work normally, the input signal circuit(s) to the keyless entry transmitter or the ETACS-ECU may be defective.

### POSSIBLE CAUSES

- Malfunction of the keyless entry transmitter
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

### DIAGNOSIS PROCEDURE

**Step 1. Check the operation of the keyless entry system.**
Check that the keyless entry system works normally.

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** Refer to inspection procedure E-1 "Keyless entry system does not work P.54C-186."

**Step 2. Customize function by using the SWS monitor.**
"KEYLESS LOCK T" is set to one of the followings by using SWS monitor customization function. Check that the timer lock is activated according to the setting.

- 30s
- 60s
- 120s
- 180s

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## INSPECTION PROCEDURE E-5: Multimode keyless entry system function does not work at all.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

### COMMENTS ON TROUBLE SYMPTOM

If the electric-folding door mirrors work normally, the ETACS-ECU may be defective.

### POSSIBLE CAUSES

- Malfunction of the keyless entry transmitter
- Malfunction of the ETACS-ECU

## DIAGNOSIS PROCEDURE

**Step 1. Check the operation of the electric folding outside rear-view mirrors.**
Check that the electric folding outside rear-view mirrors operate normally by using the remote controlled mirror switch (folding/unfolding switch).

**Q: Is the check result normal?**
**YES :** Go to Step 2
**NO :** Refer to Inspection Procedure J-1 "Electric retractable remote controlled door mirror does not work at all. P.54C-250."

**Step 2. Check the keyless entry transmitter.**
Check that the keyless entry system works normally.

**Q: Is the check result normal?**
**YES :** Go to Step 3
**NO :** Refer to Inspection Procedure E-1 "Keyless Entry System does not Work. P.54C-186."

**Step 3. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.
- Ignition switch: OFF
- Operate the multimode function with the keyless entry transmitter.

**ECU TO BE CHECKED**
- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 4. Use the SWS monitor to examine the keyless entry system for signal reception.**
Check the condition of the keyless entry transmitter.

| Operation switch | Normal conditions (received signal) |
|---|---|
| LOCK (1 second or more) | LOCK |
| | LCK LNG PUSH |
| UNLOCK (1 second or more) | UNLOCK |
| | ULCK LNG PUSH |

**OK: By operating the switch as shown in the table above, relevant normal conditions are displayed.**

**Q: Are the check result normal?**
**YES :** Go to Step 5.
**NO :** Refer to inspection procedure Q-23 "Each switch signal of the keyless entry transmitter is not received P.54C-562."

**Step 5. SWS monitor data list.**
Check the SWS communication signal, which is related to the multi-mode keyless entry system.

**<Selected item> ETACS**
- Ignition switch: OFF
- Operate the multi-mode function with the keyless entry transmitter.

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 30 | IGNITION SW IG1 | OFF |
| Item 34 | KEYLESS ENTRY | MULTI CLOSE, MULTI OPEN or MULTI STOP |

**OK: Normal conditions displayed for all the items**

**Q: Are the check result normal?**
**Normal conditions are displayed for all the items. :** Go to Step 6.
**Normal condition is not displayed for item No.30 :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."
**Normal condition is not displayed for item No.34 :** Replace the ETACS-ECU.

**Step 6. Retest the system.**
Check that the multi-mode keyless entry system works normally.

**Q: Is the check result normal?**

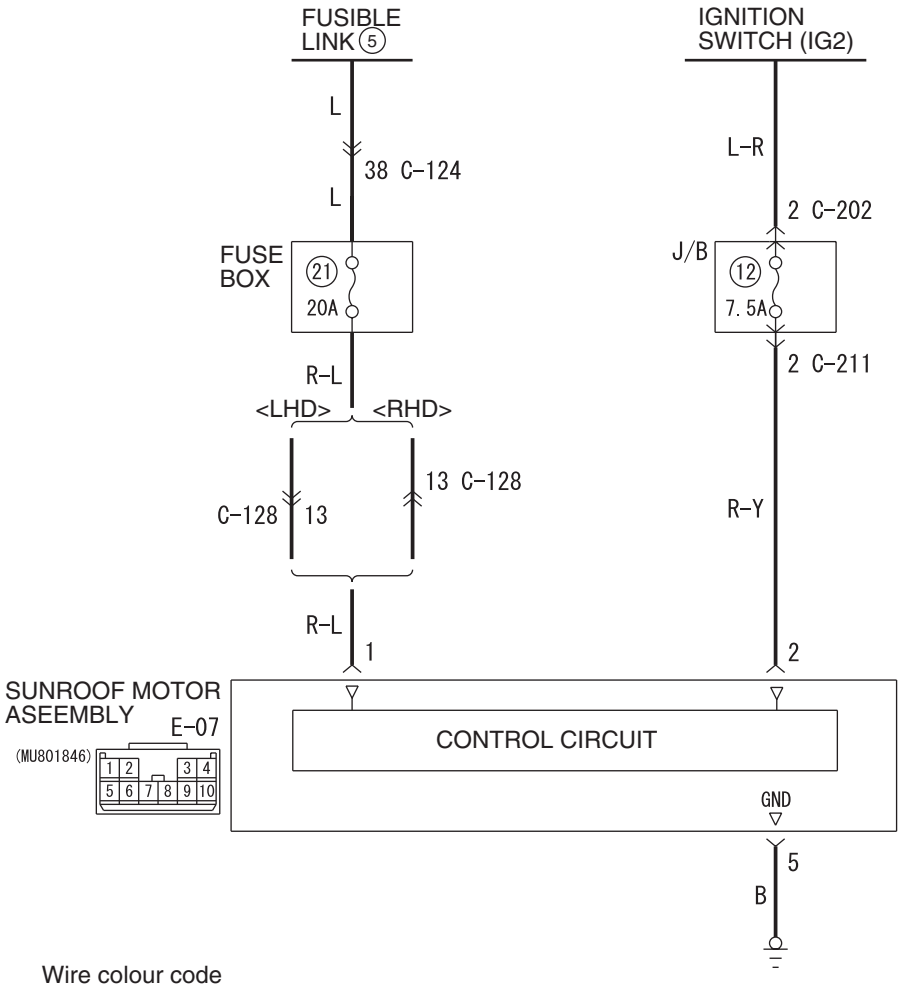
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the power window main switch.

## SUNROOF

### Inspection Procedure F-1: The sunroof does not work at all.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Sunroof Motor Assembly Power Supply Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E107A

## COMMENTS ON TROUBLE SYMPTOM

If the sunroof does not work at all, these power supply circuit(s), these earth circuit(s), sunroof switch or the sunroof motor assembly (sunroof ECU) may be defective.

## POSSIBLE CAUSES

- Malfunction of the sunroof switch
- Malfunction of the sunroof motor assembly (sunroof ECU)
- Malfunction of the power window main switch
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. Check the power window main switch.**
Check that the power window lock switch is turned off.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Turn off the power window lock switch.

**Step 2. ECU check on the SWS monitor.**
Check that the power supply and earth lines to the sunroof motor assembly (sunroof-ECU) and the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: ON
- Operate the sunroof switch.

**ECUS TO BE CHECKED**

- ETACS ECU
- SUNROOF ECU

**OK: "OK" are displayed for all the items.**

**Q: Are the check result normal?**
**"OK" are displayed for all the items :** Go to Step 3.
**"NG" is displayed on the "ETACS ECU" menu. :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."
**"NG" is displayed on the "SUNROOF ECU" menu. :** Refer to Inspection Procedure A-6 "Communication with the sunroof motor assembly (sunroof-ECU) is not possible P.54C-90."

**Step 3. Check the power window main switch.**
Check that all of the front passenger's and rear door power windows can operate by means of the power window main switch.

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Refer to Inspection Procedure D-1 "Power windows do not work at all P.54C-131."

**Step 4. Function diagnosis by using the SWS monitor**
Check the SWS communication signal, which are related to the sunroof.

**<Selected item> SUNROOF OPE**

- Ignition switch: ON

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 30 | IG SW(IG1) | ON |
| Item 72 | S/R ECU ACK | INPUT CHECK (only momentarily when switch is operated) |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**
**Normal conditions are displayed for all the items. :** Go to Step 5.
**Normal condition is not displayed for item No.30 :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."
**Normal condition is not displayed for item No.72 :** Refer to inspection procedure Q-10 When the sunroof switch is operated, the switch signal are not received P.54C-488."

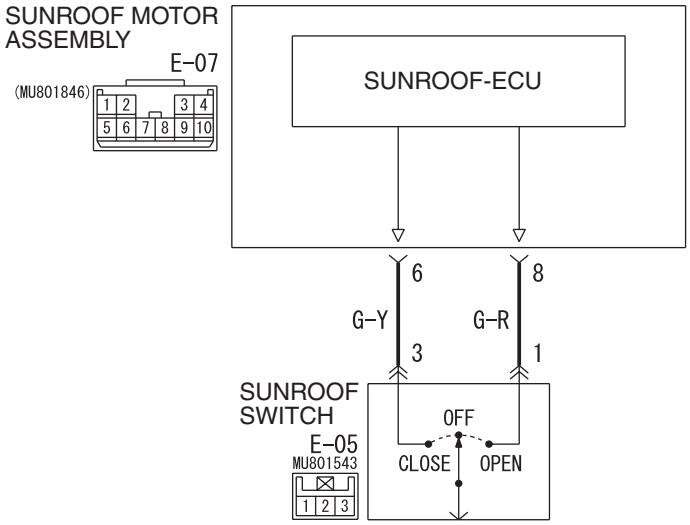
**Step 5. Retest the system.**
The sunroof assembly should now work normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the sunroof motor assembly.

## INSPECTION PROCEDURE F-2: Any of the sunroof switch positions is defective.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Sunroof Switch Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E106A

## COMMENTS ON TROUBLE SYMPTOM

If any of the sunroof switch positions is defective, the communication line between the sunroof switch and the sunroof motor assembly (sunroof-ECU) may be defective.

## POSSIBLE CAUSES

- Malfunction of the sunroof switch
- Malfunction of the sunroof motor assembly (sunroof-ECU)
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**SWS monitor data list.**
Check the SWS communication signal, which are related to the sunroof.

**<Selected item> Front ECU•P/W•S/R**

- Ignition switch: ON
- Operate the sunroof switch.

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 72 | S/R ECU ACK | INPUT CHECK (only momentarily when switch is operated) |

**OK: Normal condition is displayed.**

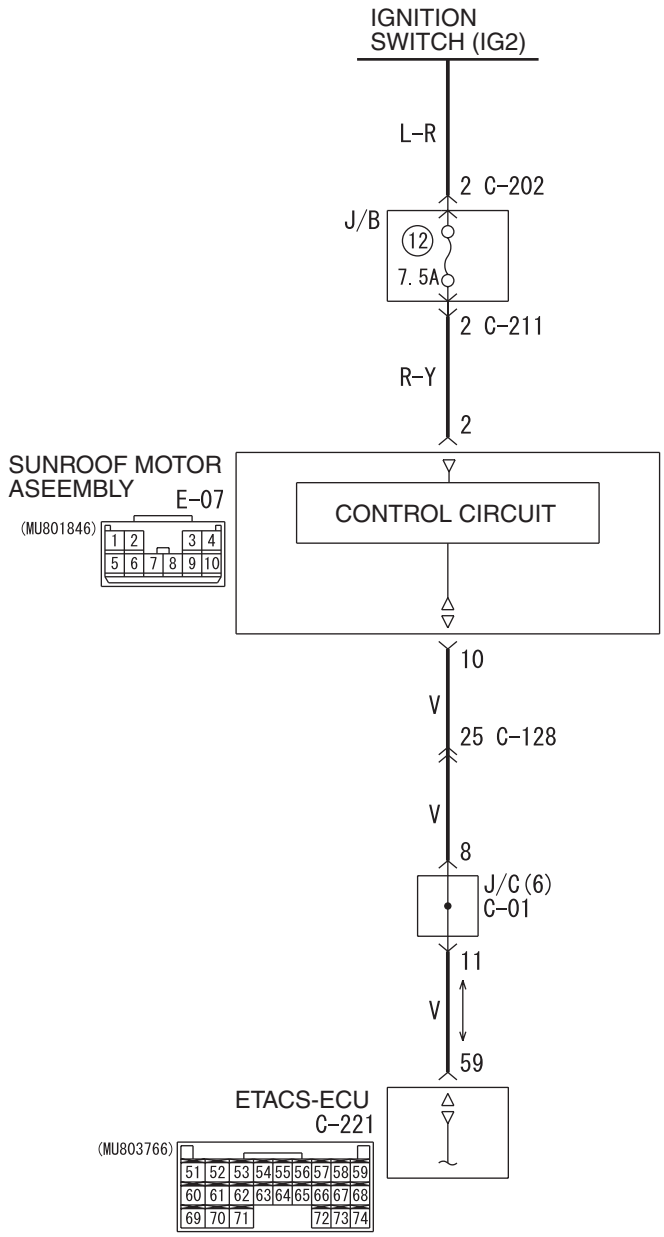
**Q: Is the check result normal?**

**YES :** Replace the sunroof motor assembly.
**NO :** Refer to inspection procedure Q-10 When the sunroof switch is operated, the switch signal are not received P.54C-488."

## INSPECTION PROCEDURE F-3: Sunroof timer function does not work normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

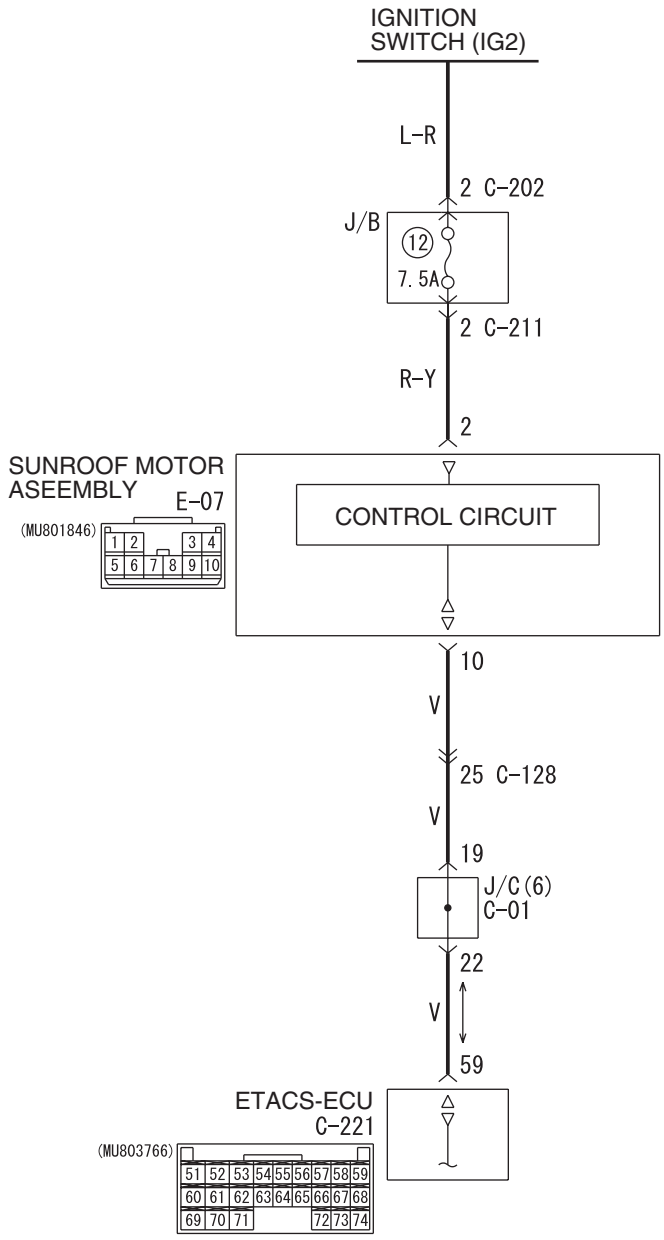
**Sunroof Timer Function <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E174A

**Sunroof Timer Function <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E175A

## COMMENTS ON TROUBLE SYMPTOM

If the sunroof timer function does not work, the input circuit from the ignition switch (IG1) or the driver's door switch, the communication lines between the ETACS-ECU and the sunroof motor assembly (sunroof-ECU), the sunroof motor assembly (sunroof-ECU) or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the driver's door switch
- Malfunction of ETACS-ECU
- Malfunction of the sunroof motor assembly (sunroof-ECU)
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. Check the SWS monitor customized function.**
Use the SWS monitor customize function to confirm that "KEY-OFF TMR T" is set to "W/O FUNCTION".
- 30s
- 3min.
- 10min.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Use the SWS monitor customize function to set the "KEY-OFF TMR T" to "W/O FUNCTION" (Refer to P.54C-574).

**Step 2. ECU check on the SWS monitor.**
Check that the power supply and earth lines to the sunroof motor assembly (sunroof-ECU) and the ETACS-ECU and the SWS communication lines are normal.
- Ignition switch: OFF
- Operate the sunroof switch.

*NOTE: Operate within the period set by using the customisation function after the ignition switch is turned off.*

**ECUS TO BE CHECKED**
- ETACS ECU
- SUNROOF ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**
**"OK" are displayed for all the items :** Go to Step 3.
**"NG" is displayed on the "ETACS ECU" menu. :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."
**"NG" is displayed on the "SUNROOF ECU" menu. :** Refer to Inspection Procedure A-6 "Communication with the sunroof motor assembly (sunroof-ECU) is not possible P.54C-90."

**Step 3. Function diagnosis by using the SWS monitor.**
Check the SWS communication signal, which are related to the sunroof.

**<Selected item> SUNROOF OPE**
- Ignition switch: ON

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 72 | S/R ECU ACK | INPUT CHECK (only momentarily when switch is operated) |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Replace the sunroof motor assembly.

**Step 4. SWS monitor data list.**
Check the SWS communication signal, which are related to the sunroof timer function.

**<Selected item> ETACS-ECU**
- Driver's door switch: CLOSE to OPEN

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 32 | DR DOOR SW | From OFF to ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received <LH drive vehicles>P.54C-474 or <RH drive vehicles>P.54C-476 ."

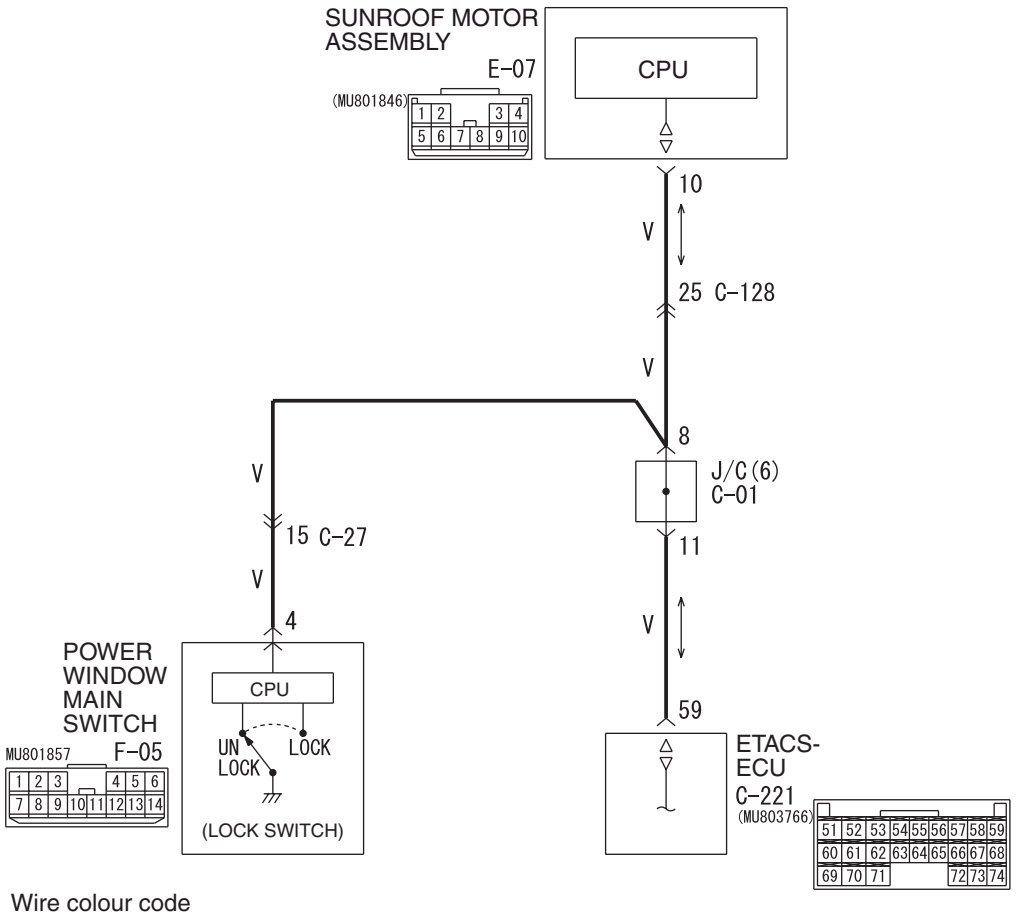
**Step 5. Retest the system.**
Check that the sunroof timer function work normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the sunroof motor assembly.

**Inspection Procedure F-4: The sunroof inhibition function does not work normally (The sunroof operation lock warning buzzer does not sound).**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

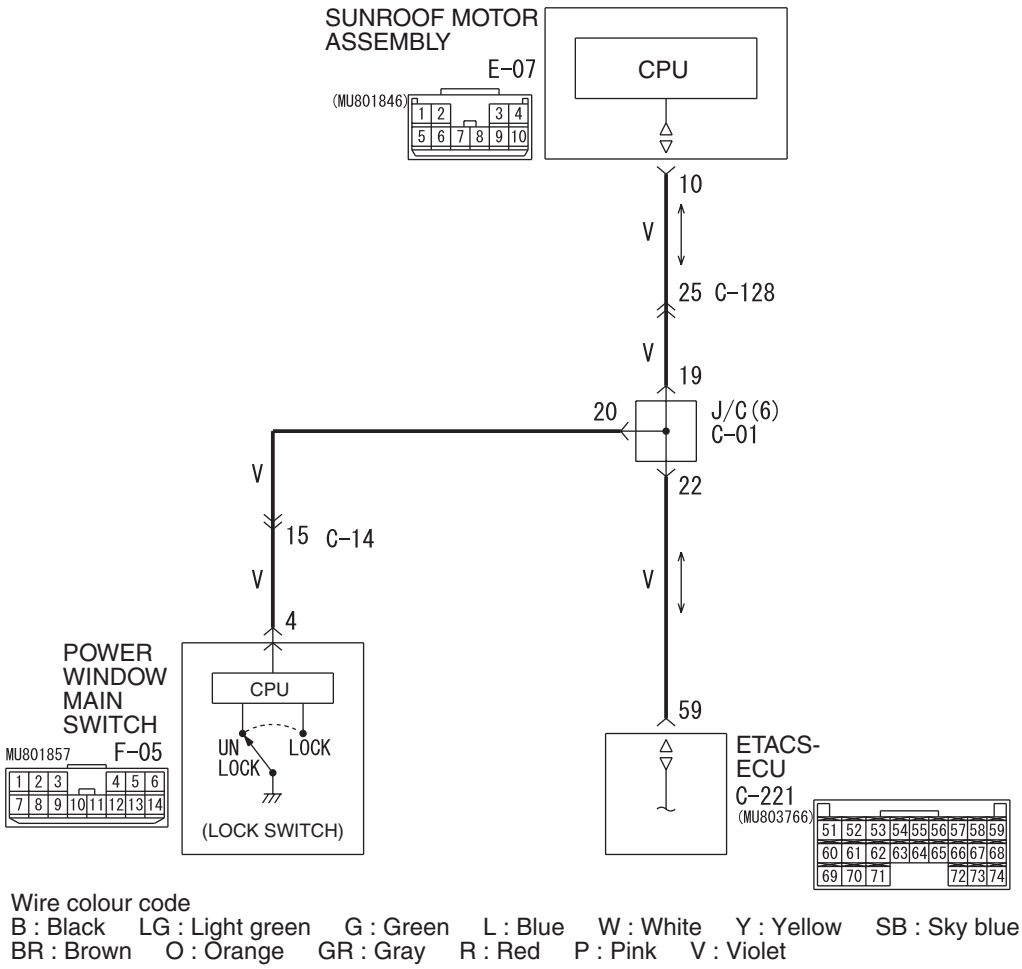
**Sunroof Lock Function <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E223A

**Sunroof Lock Function <RHD>**




W4X54E222A

## COMMENTS ON TROUBLE SYMPTOM

If the sunroof inhibition function does not work normally, the communication circuit, the power window lock switch input circuit, the sunroof motor assembly or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the power window main switch
- Malfunction of the sunroof motor assembly (sunroof ECU)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

**Step 1. Which does not operate normally, the sunroof inhibition or the sunroof operation lock buzzer?**

**Q: Which does not operate normally, the sunroof inhibition or the sunroof operation lock buzzer?**

**The sunroof inhibition does not work normally. :** Go to Step 2.
**The sunroof operation lock buzzer does not work normally. :** Go to Step 4.
**Neither operates normally. :** Go to Step 6.

**Step 2. Check the operation condition of the sunroof.**

Check that the sunroof works normally.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Refer to Inspection Procedure F-1 "The sunroof does not work at all P.54C-192."

**Step 3. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the ETACS-ECU and the sunroof motor assembly (incorporating sunroof-ECU) and the SWS communication lines are normal.
- Ignition switch: ON
- Operate the sunroof switch.

**ECUS TO BE CHECKED**
- Sunroof ECU

**"OK" is displayed on the "SUNROOF ECU" menu.**

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Refer to Inspection Procedure A-6 "Communication with the sunroof motor assembly (sunroof-ECU) is not possible P.54C-90."

**Step 4. ECU check on the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU the SWS communication lines is normal.
- Ignition switch: ON

**ECUS TO BE CHECKED**
- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 5. SWS monitor data list**
Check the SWS communication signal, which are related to the sunroof operation lock buzzer.

**<Selected item> S/R- REAR S/R LOCK**
- Ignition switch: ON
- Power window lock switch :ON
- Operate the sunroof switch

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 30 | IG SW(IG1) | ON |
| Item 43 | BUZZER | ON |
| Item 72 | S/R ECU ACK | BUZZER ACK |

**OK: Normal conditions is displayed.**

**Q: Is the check result normal?**
**NO :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS.

**Step 6. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU, the sunroof motor assembly (incorporating sunroof-ECU) and the power window main switch (power window module), and the SWS communication lines are normal.
- Ignition switch: ON
- Operate the sunroof switch.

**ECUS TO BE CHECKED**
- ETACS ECU
- P/W MODULE
- Sunroof ECU

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**

**"OK" are displayed for all the items :** Go to Step 7.
**"NG" is displayed on the "ETACS ECU" menu. :**
Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."
**"NG" is displayed on the "P/W MODULE" menu. :**
Refer to Inspection Procedure A-5 "Communication with the power window main switch (power window module) is not possible P.54C-77."
**"NG" is displayed on the "SUNROOF ECU" menu. :**
Refer to Inspection Procedure A-6 "Communication with the sunroof motor assembly (sunroof-ECU) is not possible P.54C-90."

**Step 7. SWS monitor data list.**
Check the SWS communication signal, which are related to the sunroof inhibition function.

**<Selected item> S/R- REAR S/R LOCK**
- Ignition switch: ON
- Power window lock switch :ON
- Operate the sunroof switch

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 30 | IG SW(IG1) | ON |
| Item 43 | BUZZER | ON |
| Item 71 | P/W ECU ACK | P/W LOCK ACK |
| Item 72 | S/R ECU ACK | BUZZER ACK |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**
**Normal conditions are displayed for all the items :**
The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**Normal condition is not displayed for item No.30 :**
Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."
**Normal condition is not displayed for item No.43 :**
Replace the ETACS.
**Normal condition is not displayed for item No.71 :**
Replace the power window main switch.
**Normal condition is not displayed for item No.72 :**
Replace the sunroof motor assembly.

## Inspection Procedure F-5: Sunroof anti-trap function does not work normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

### COMMENTS ON TROUBLE SYMPTOM
If the sunroof anti-trap function does not work, the sunroof motor assembly (sunroof-ECU) may be defective.

### POSSIBLE CAUSES
- Malfunction of the sunroof motor assembly (sunroof-ECU)

### DIAGNOSTIC PROCEDURE

**Retest the system.**
Check that the sunroof anti-trap function work normally.

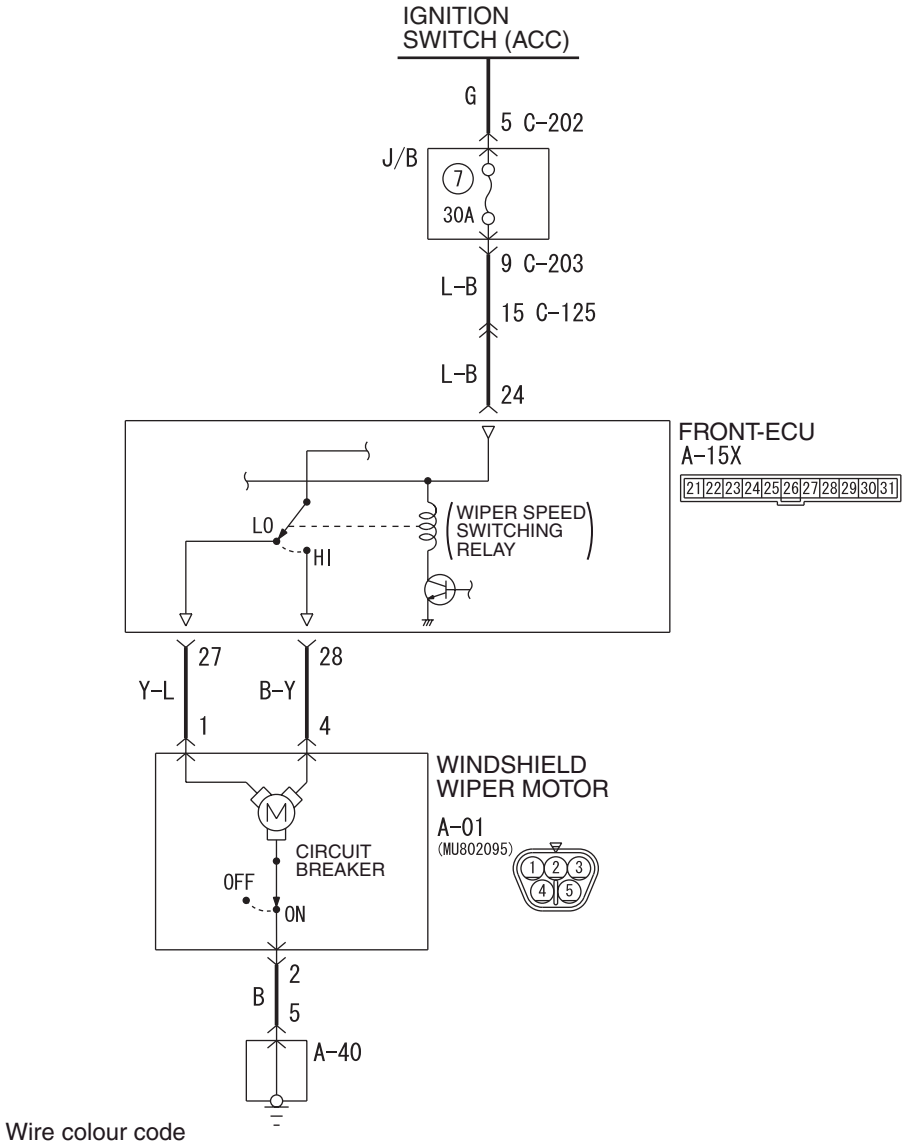
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the sunroof motor assembly.

# WINDSHIELD WIPER AND WASHER

## Inspection Procedure G-1: The windshield wipers does not work at all.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Windshield Wiper Power Supply Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E151A

## COMMENTS ON TROUBLE SYMPTOM

The windshield wiper motor, the column switch or the front-ECU may be defective. If a problem is found in the ECU check by using the SWS monitor, also check the wiper backup circuit (between C-301 column switch connector terminal No.8 and A-15X front-ECU connector terminal No.26) and repair if necessary.

## POSSIBLE CAUSES

- Malfunction of the windshield wiper motor
- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor.**

Check that the power supply and earth lines to the column switch (column-ECU) and the front-ECU and the SWS communication lines are normal.

- Turn the ignition switch to the ON position.

**ECUS TO BE CHECKED**

- COLUMN ECU
- FRONT-ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**

**"OK" is displayed for all the items :** Go to Step 2.

**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."

**"NG" is displayed on the "FRONT ECU" menu. :** Refer to Inspection Procedure A-4 "Communication with the front-ECU is not possible P.54C-70."

**Step 2. Function diagnosis by using the SWS monitor.**

Check the SWS communication signal, which are related to the windshield wiper function.

**<Selected item> F.WIPER INT**

- Turn the ignition switch to the ACC position.
- Windshield wiper switch: INT

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 05 | INT WIPER SW | ON |
| Item 31 | IGNITION SW ACC | ON |
| Item 70 | FRONT ECU ACK | NORMAL ACK or HI-BEAM ACK |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**

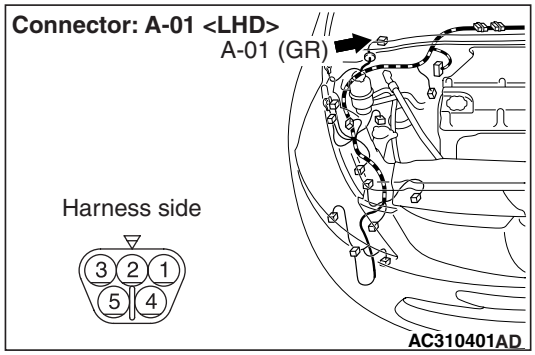
**Normal conditions displayed for all the items :** Go to Step 3.

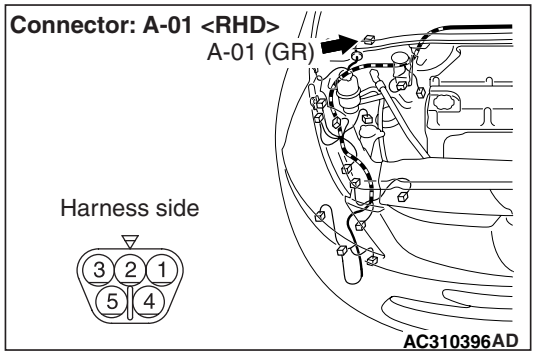
**Normal condition is not displayed for item No.05 :** Replace the column switch.

**Normal condition is not displayed for item No.31 :** Refer to inspection procedure Q-1 "The ignition switch (ACC) signal is not received P.54C-456."

**Normal condition is not displayed for item No.70 :** Replace the front-ECU.

**Step 3. Connector check: A-01 windshield wiper motor connector.**



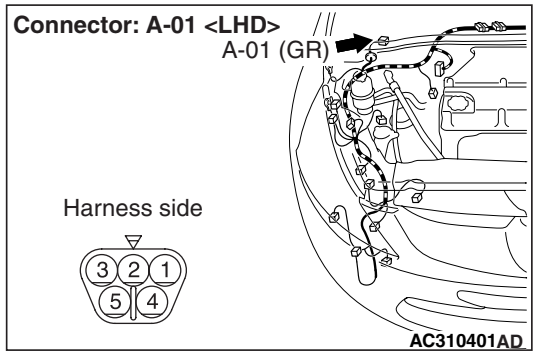



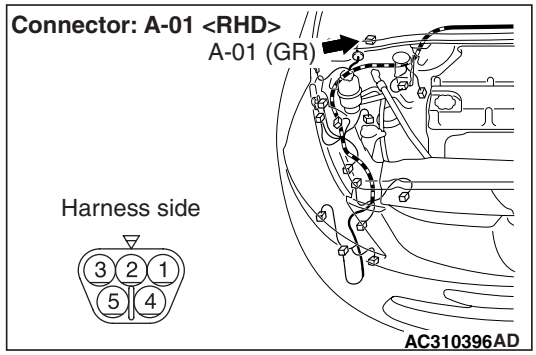

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the connector.

**Step 4. Check the windshield wiper motor assembly.**
Refer to GROUP 51 – Windshield wiper P.51-25.

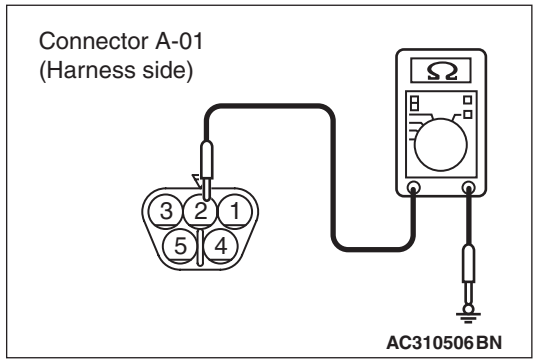
**Q: Is the check result normal?**
**YES :** Go to Step 5
**NO :** Replace the windshield wiper motor assembly.

**Step 5. Resistance measurement at the A-01 windshield wiper motor connector.**



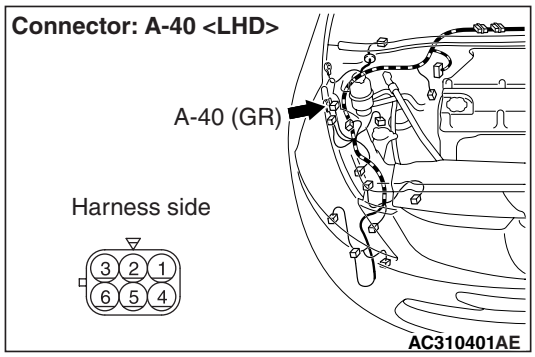

(1) Disconnect the connector, and measure at the wiring harness side.

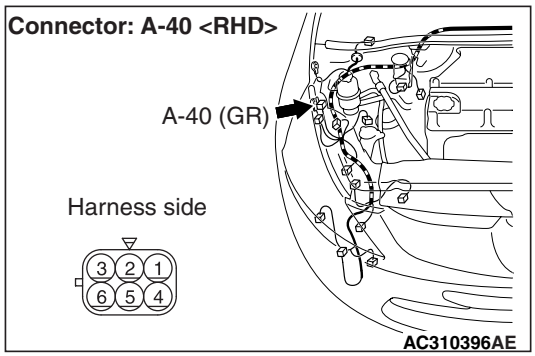



(2) Continuity between A-01 windshield wiper motor connector terminal No.2, and body earth
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Go to Step 6.

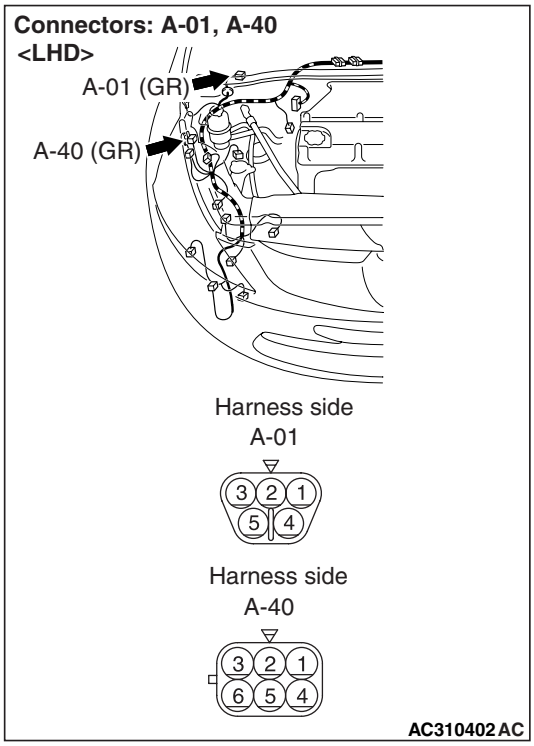
### Step 6. Connector check: A-40 earth connector.

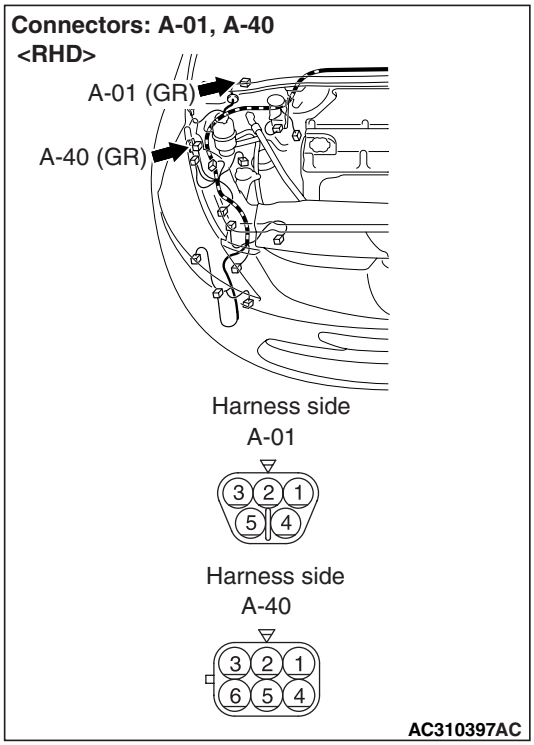



**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the connector.

### Step 7. Check the wiring harness between A-01 windshield wiper motor connector terminal No.2 and A-40 earth connector terminal No.5.

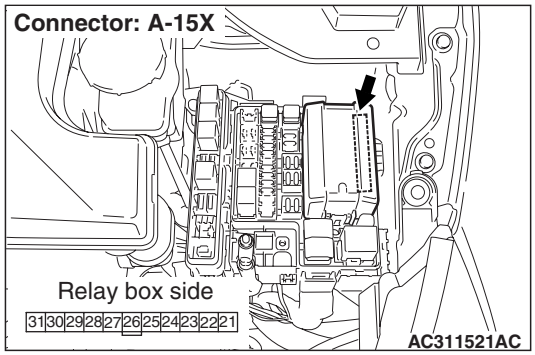



- Check the earth wires for open circuit.

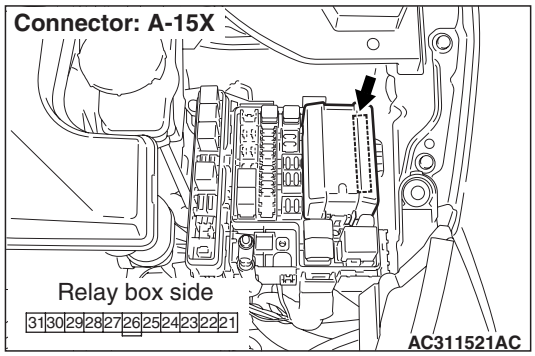
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 8. Connector check: A-15X front-ECU connector.**

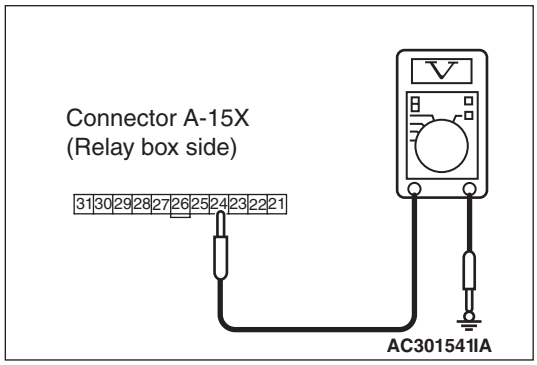



**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the connector.

**Step 9. Voltage measurement at the A-15X front-ECU connector.**



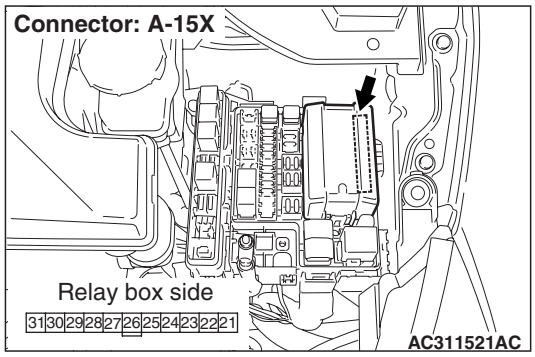

(1) Remove the front-ECU, and measure at the relay box side.
(2) Ignition switch: ACC



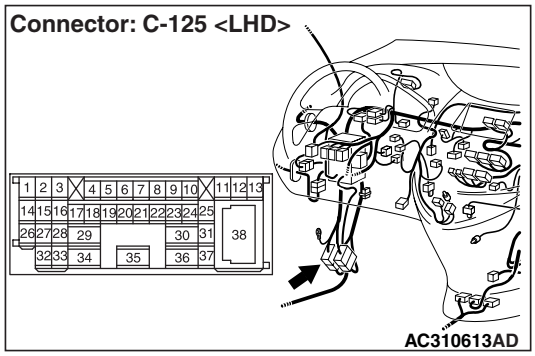

(3) Check the voltage between the A-15X front-ECU connector terminal No.24 and body earth.
**OK: System voltage**

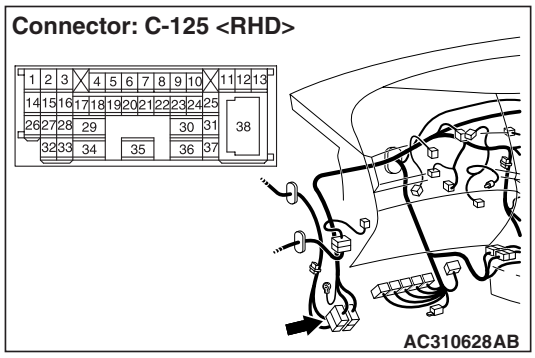
**Q: Is the check result normal?**
**YES :** Go to Step 11.
**NO :** Go to Step 10.

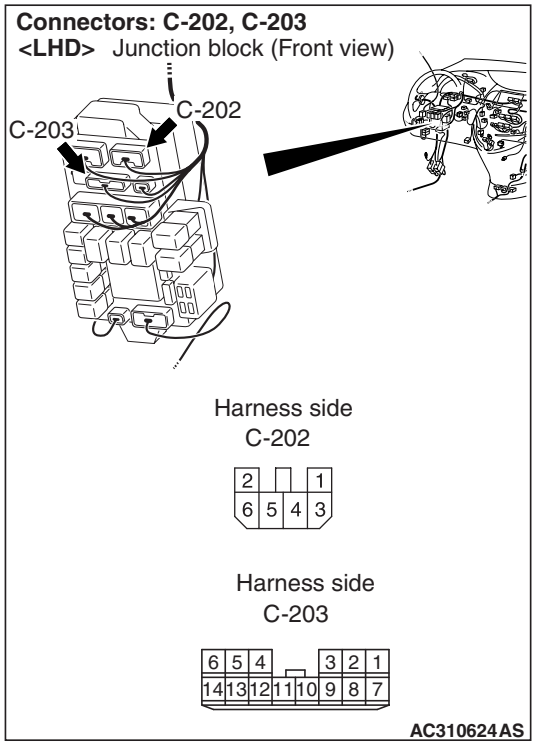
**Step 10. Check the wiring harness between A-15X front-ECU connector terminal No.24 and the ignition switch (ACC).**

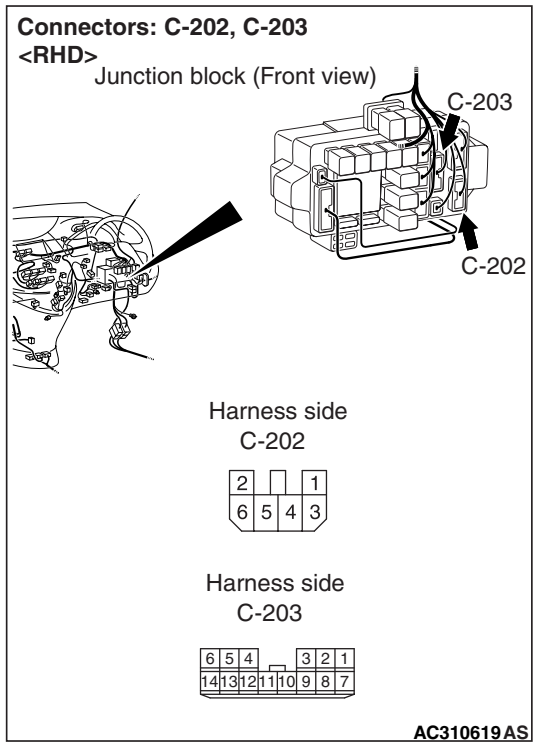



*NOTE:*




*Prior to the wiring harness inspection, check the junction block connectors C-202, C-203 and intermediate connector C-125 and repair if necessary.*

- Check the power supply line to the ignition switch (ACC) for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 11.
**NO :** Repair the wiring harness.

---

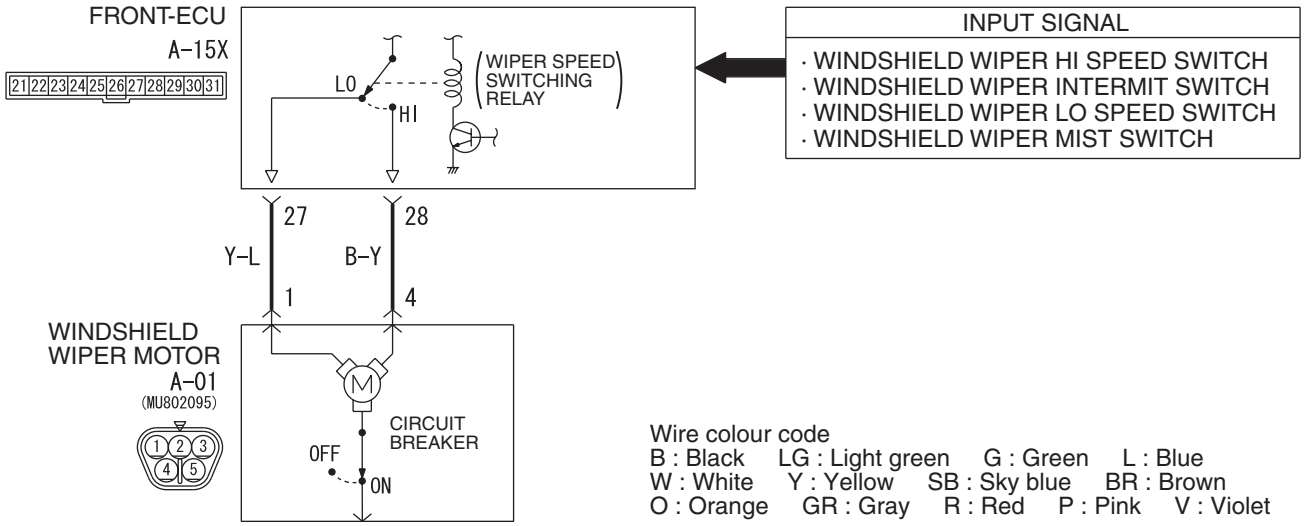
**Step 11. Retest the system.**
The windshield wiper should now work normally at all.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the front-ECU.

**Inspection Procedure G-2: The windshield wipers does not work when the wiper switch is at "INT", "WASHER" or "MIST" position. However, the wipers work at low speed when the switch is at "LO" and "HI" position.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Windshield Wiper Motor Drive Circuit**




W4X54E152A

## COMMENTS ON TROUBLE SYMPTOM

The system may be at fail-safe mode as the SWS communication line is defective. If the ETACS-ECU does not receive the ignition switch (ACC) signal due to an open circuit in the SWS communication lines or other reasons when the ignition switch is at the ACC position, the system will enter the fail-safe mode.

## POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the column switch (column-ECU) and the front-ECU and the SWS communication lines are normal.

- Turn the ignition switch to the ACC position.

**ECUS TO BE CHECKED**

- COLUMN ECU
- FRONT ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**
**"OK" are displayed for all the items :** Go to Step 2.
**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."
**"NG" is displayed on the "FRONT ECU" menu. :** Refer to Inspection Procedure A-4 "Communication with the front-ECU is not possible P.54C-70."

**Step 2. Retest the system.**
The windshield wiper should now work normally.

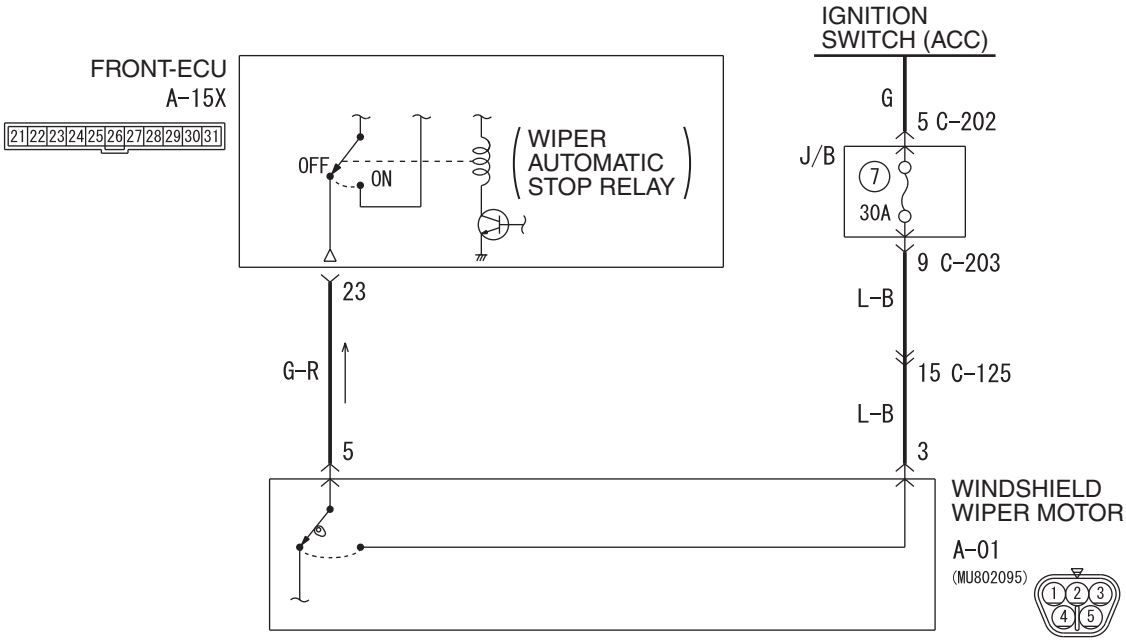
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the front-ECU.

## Inspection Procedure G-3: The windshield wipers do not stop at the specified park position

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Windshield Wiper Automatic Stop Relay Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E153A

## COMMENTS ON TROUBLE SYMPTOM

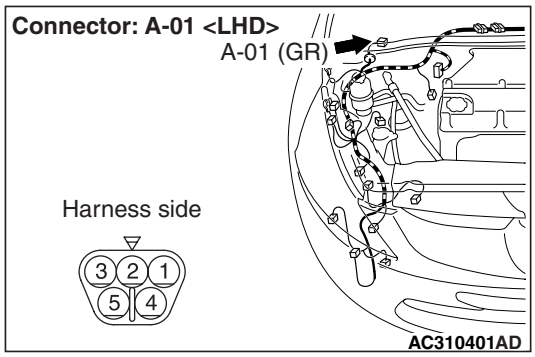
The windshield wiper motor or the front-ECU may be defective.

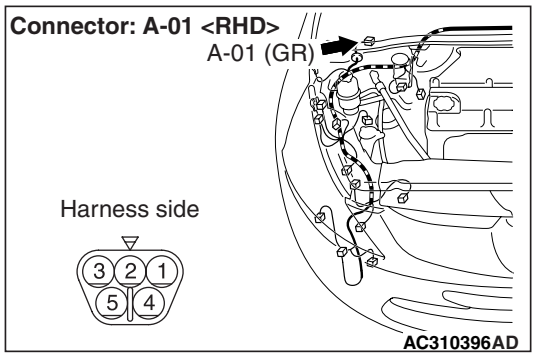
## POSSIBLE CAUSES

- Malfunction of the windshield wiper motor
- Malfunction of the front-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

### Step 1. Connector check: A-01 windshield wiper motor connector.



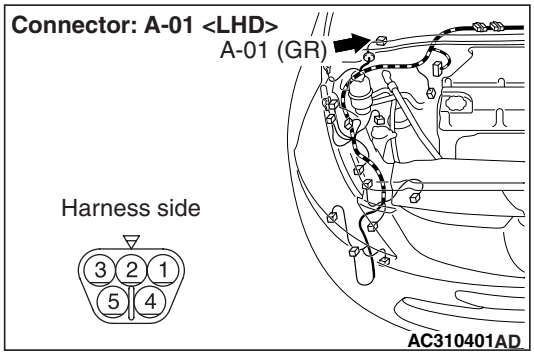

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the connector.

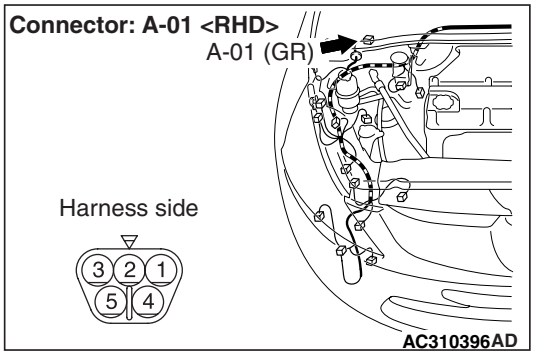
### Step 2. Check the windshield wiper motor assembly.

Refer to GROUP 51 – Windshield wiper P.51-25.

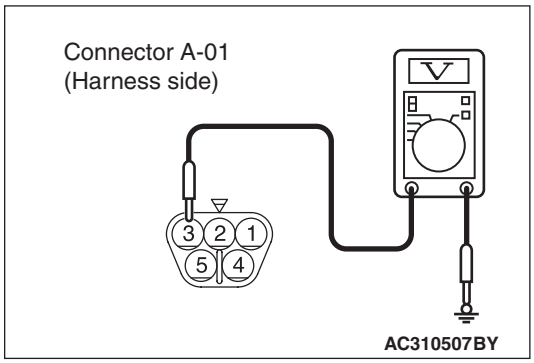
**Q: Is the check result normal?**
**YES :** Go to Step 3
**NO :** Replace the windshield wiper motor assembly.

### Step 3. Voltage measurement at the A-01 windshield wiper motor connector.




(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: ACC

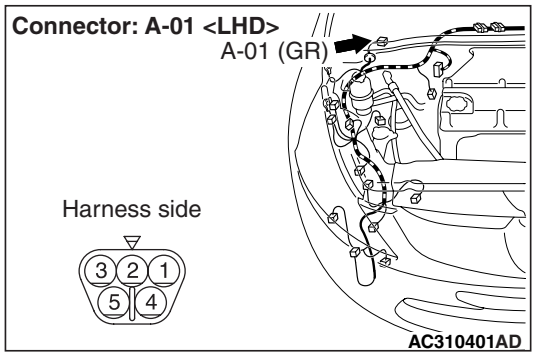


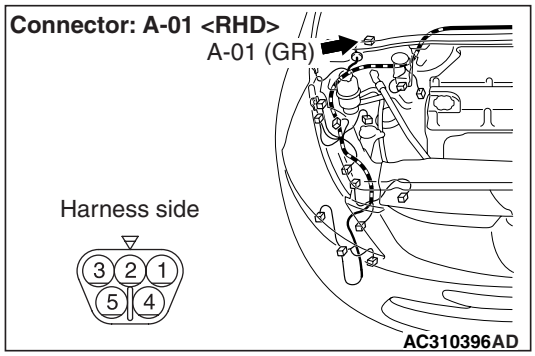

(3) Check the voltage between the A-01 windshield wiper motor connector terminal No.3 and body earth.

**OK: System voltage**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check the wiring harness between A-01 windshield wiper motor connector terminal No.3 and ignition switch (ACC).**

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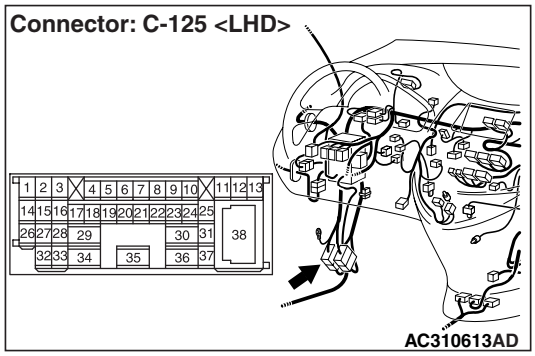
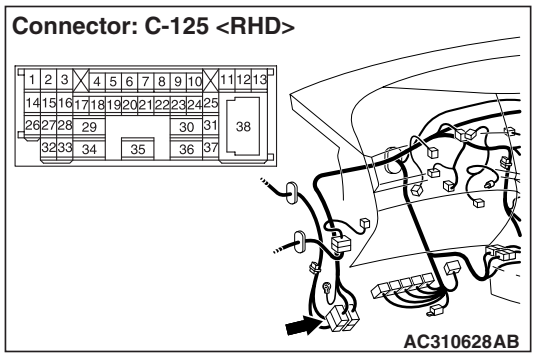
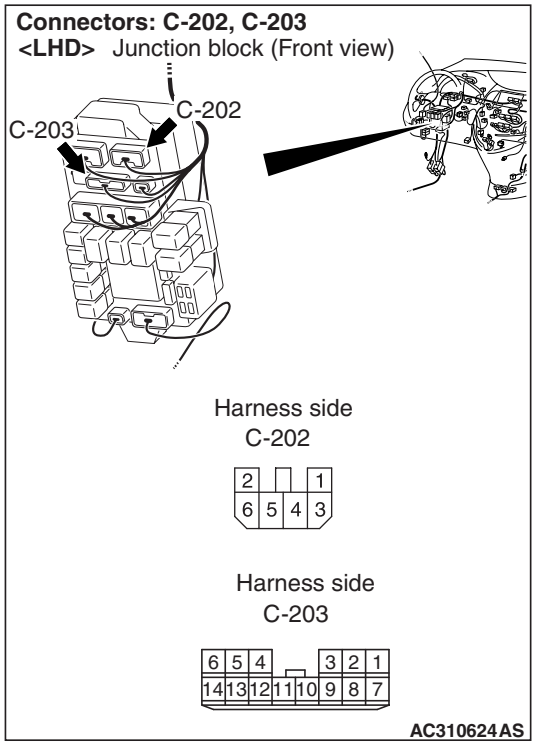
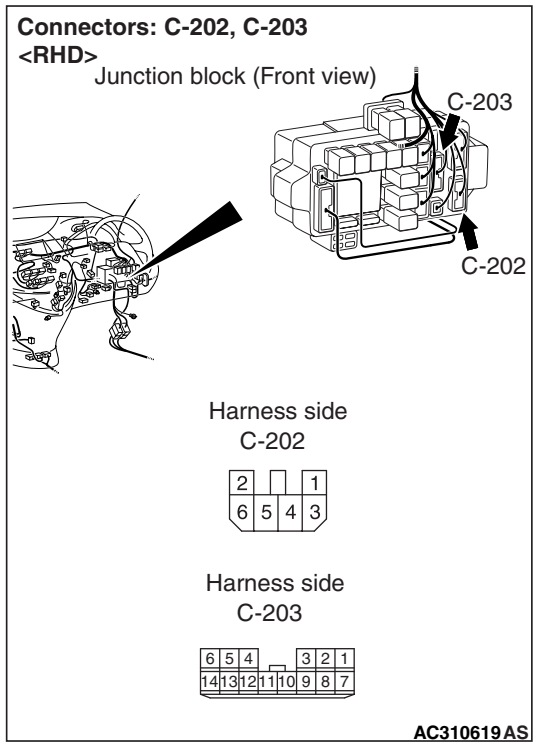


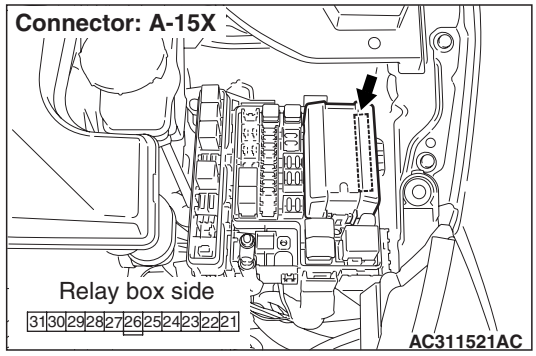




*Prior to the wiring harness inspection, check the junction connectors C-202, C-203, the intermediate connectors C-125, and repair if necessary.*

- Check the power supply line to ignition switch (ACC) for open circuit.

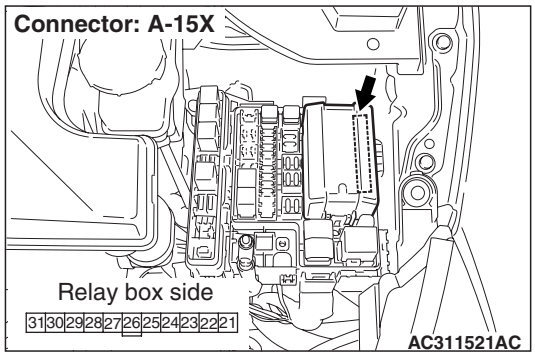
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

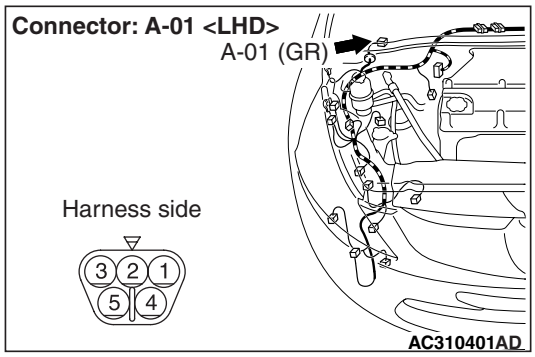
## Step 5. Connector check: A-15X front-ECU connector.

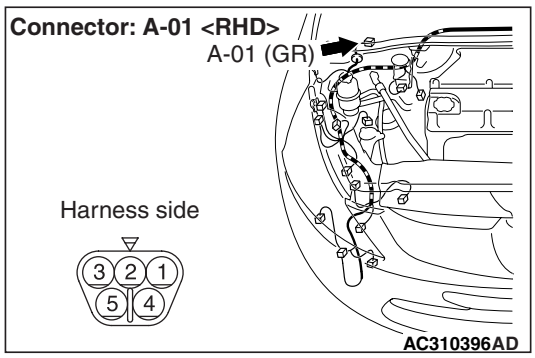



**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the connector.

**Step 6. Check the wiring harness between A-01 windshield wiper motor connector terminal No.5 and A-15X front-ECU connector terminal No.23.**




- Check the input signal lines.

**Q: Is the check result normal?**

**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

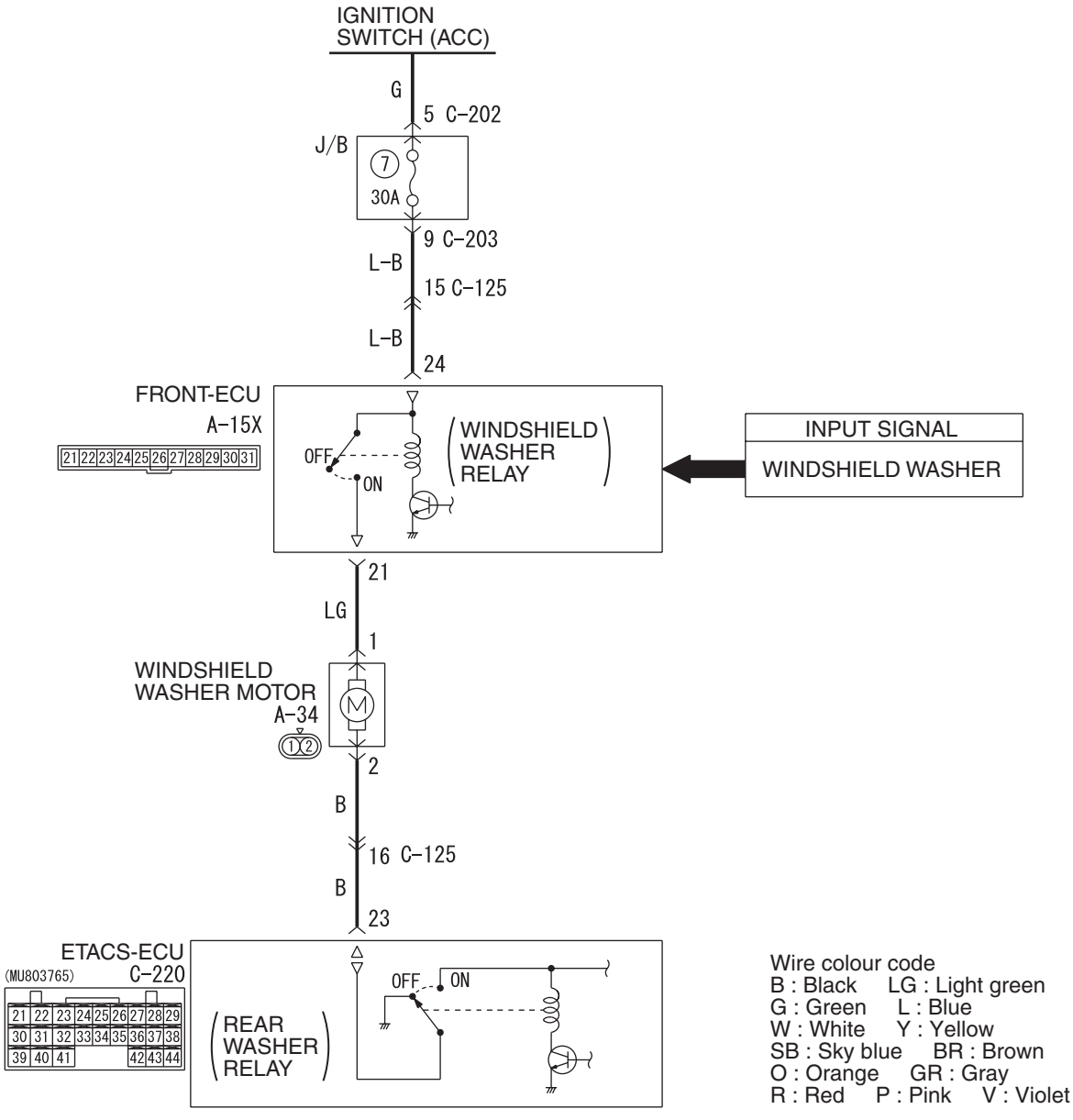
**Step 7. Retest the system.**
Check that the windshield wipers stop at the specified park position.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the front-ECU.

## Inspection Procedure G-4: The windshield wipers does not work normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Windshield Washer Motor Circuit**




W4X54E154A

## COMMENTS ON TROUBLE SYMPTOM

The windshield wiper motor, the column switch or the front-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the windshield wiper motor
- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

**Step 1. SWS monitor data list**
Check the SWS communication signal, which are related to the windshield wipers.

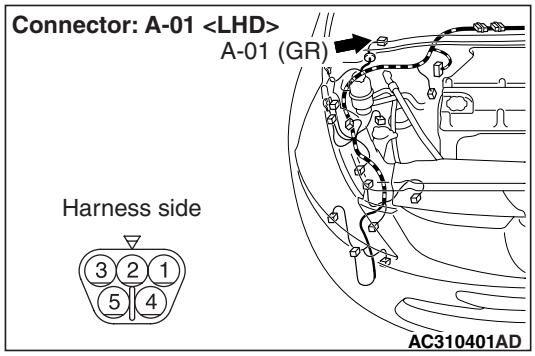
**<Selected item> Column switch (column-ECU)**
- Ignition switch: ON
- Move the windshield wiper switch to each position.

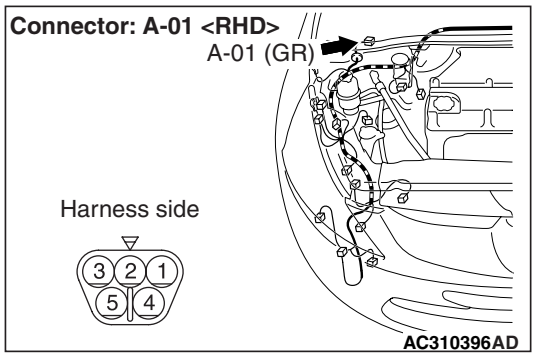
| Item No. | Item name | Normal condition |
|---|---|---|
| Item 31 | IG SW(ACC) | ON |
| Item 05 | INT WIPER SW | ON |
| Item 06 | LO WIPER SW | ON |
| Item 07 | HI WIPER SW | ON |
| Item 08 | MIST WIPER SW | ON |

**OK: Normal conditions are displayed for all the functions of the switch.**

**Q: Are the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure Q-7 "The column switch (wind shield wiper/washer and rear wiper washer switch) signal is not received P.54C-479."

**Step 2. Connector check: A-01 windshield wiper motor connector.**




**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the defective connector.

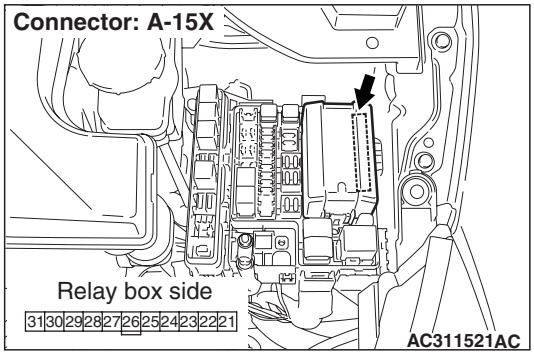
**Step 3. Check the windshield wiper motor assembly.**
Refer to GROUP 51 – Windshield wiper P.51-25.

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Replace the windshield wiper motor assembly.

**Step 4. Retest the system.**
Check that the windshield wipers work normally by moving the switch to HI or MIST position.

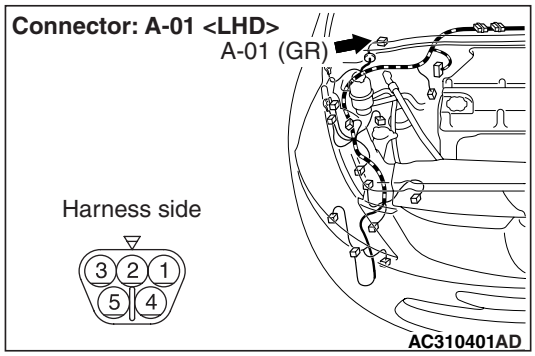
**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 8.

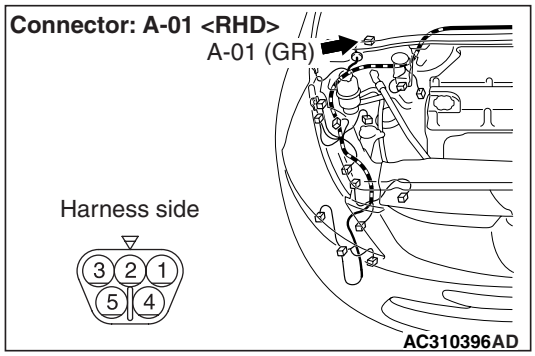
**Step 5. Connector check: A-15X front-ECU connector.**

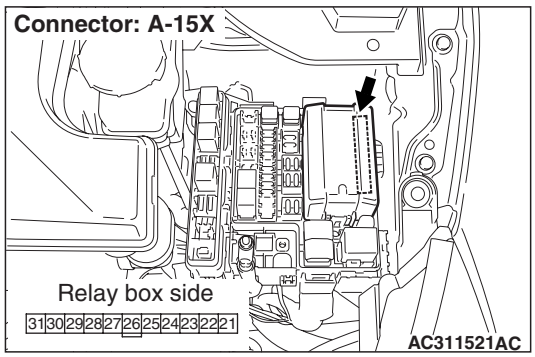



**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

**Step 6. Check the wiring harness between A-15X front-ECU connector terminal No.27 and A-01 windshield wiper motor connector terminal No.1.**




- Check the output lines for open circuit.

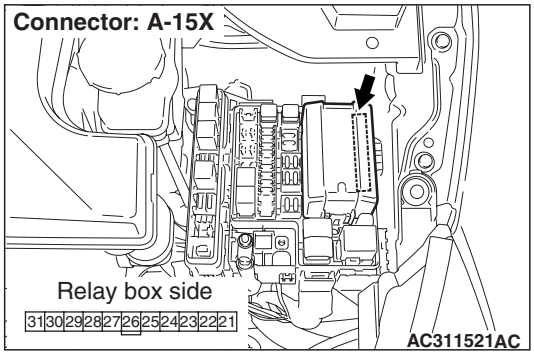
**Q: Is the check result normal?**

**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

**Step 7. Retest the system.**
Check that the windshield wipers work normally by moving the switch to each position.

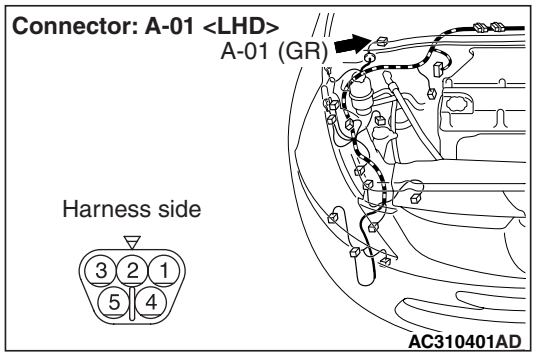
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the front-ECU.

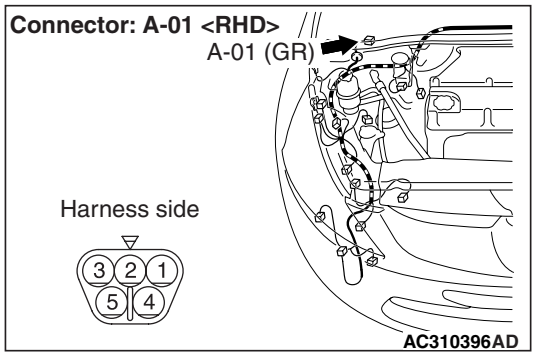
**Step 8. Connector check: A-15X front-ECU connector.**

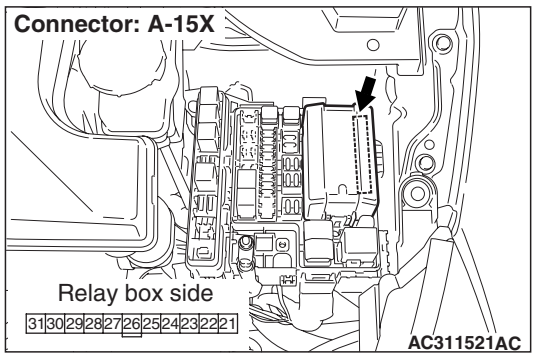



**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the defective connector.

**Step 9. Check the wiring harness between A-15X front-ECU connector terminal No.28 and A-01 windshield wiper motor connector terminal No.4.**




- Check the output lines for open circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 10.
**NO :** Repair the wiring harness.

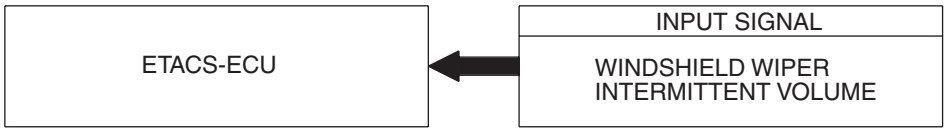
**Step 10. Retest the system.**
Check that the windshield wipers work normally by moving the switch to each position.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the front-ECU.

**Inspection Procedure G-5: The intermittent wiper interval can not be adjusted by operating the windshield intermittent wiper volume control.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Windshield Wiper Intermittent Volume Input Signal**




W4X54E165A

## COMMENTS ON TROUBLE SYMPTOM
The column switch or the front-ECU may be defective.

## POSSIBLE CAUSES
- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. SWS monitor data list**
- Rotate the windshield intermittent wiper volume when the vehicle is stopped.

*NOTE: Also check that the windshield wiper interval changes smoothly when the windshield intermittent wiper interval adjusting knob is rotated from "SLOW" to "FAST" positions.*

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 37 | INT WIPER TIME | 4.6 – 32.0 s |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure Q-8 "The intermittent wiper volume signal is not received P.54C-481."

**Step 2. Retest the system.**
Check that the windshield intermittent wiper interval can be adjusted by operating the windshield intermittent wiper volume control.

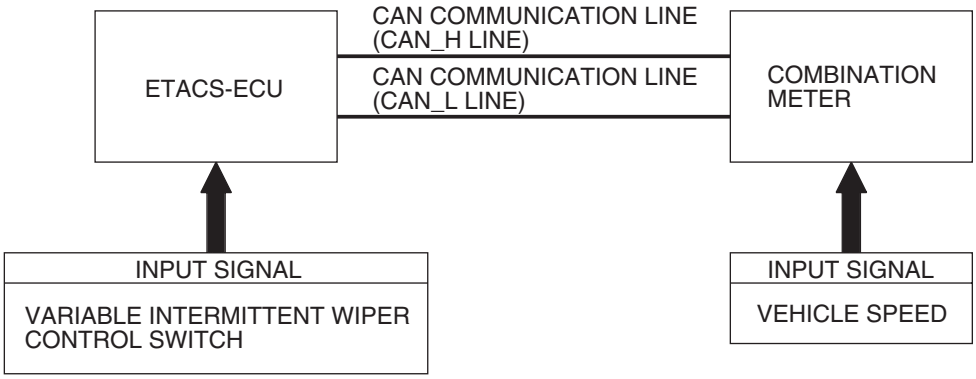
**OK: The intermittent wiper interval is changed as the intermittent wiper volume is rotated.**

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the front-ECU.

**Inspection Procedure G-6: The intermittent wiper interval is not changed according to the vehicle speed.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Variable Intermittent Wiper Control Circuit**




W4X54E155A

## COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU calculates the intermittent wiper interval according to the vehicle speed signal which is sent by the engine-ECU <M/T> or engine-A/T-ECU <A/T>.
If the intermittent wiper interval does not depend on the vehicle speed, the input circuit of the vehicle speed signal and the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the operation by operating the intermittent wiper volume.**
Check that the windshield intermittent wiper interval can be adjusted by operating the windshield intermittent wiper volume control.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure G-5 "The intermittent wiper interval can not be adjusted by operating the windshield intermittent wiper volume control P.54C-220."

**Step 2. Check the SWS monitor customized function.**
Use the SWS monitor customize function to confirm that "SPEED SEN WIP" is set to "W.FUNCTION".

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Use the SWS monitor customize function to set the "SPEED SEN WIP" to "W.FUNCTION" (Refer to P.54C-574).

**Step 3. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: ON

**ECU TO BE CHECKED**

- ETACS ECU

**OK: "OK" is displayed on the "ETACS-ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 4. ETACS ANALOG data by using the SWS monitor.**

Check the ETACS-ECU input signal related to the vehicle speed-dependent intermittent wiper interval.

- Set the simulated vehicle speed at approximately 10km/h.

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | SPEED SENSOR | 8 – 10 km/h |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 5.

**NO :** Refer to inspection procedure Q-25 "The vehicle speed signal is not received P.54C-568."

**Step 5. Retest the system.**

(1) Replace the ETACS-ECU.

(2) Check that the vehicle speed-dependent intermittent wiper system should work normally.

**Q: Is the check result normal?**

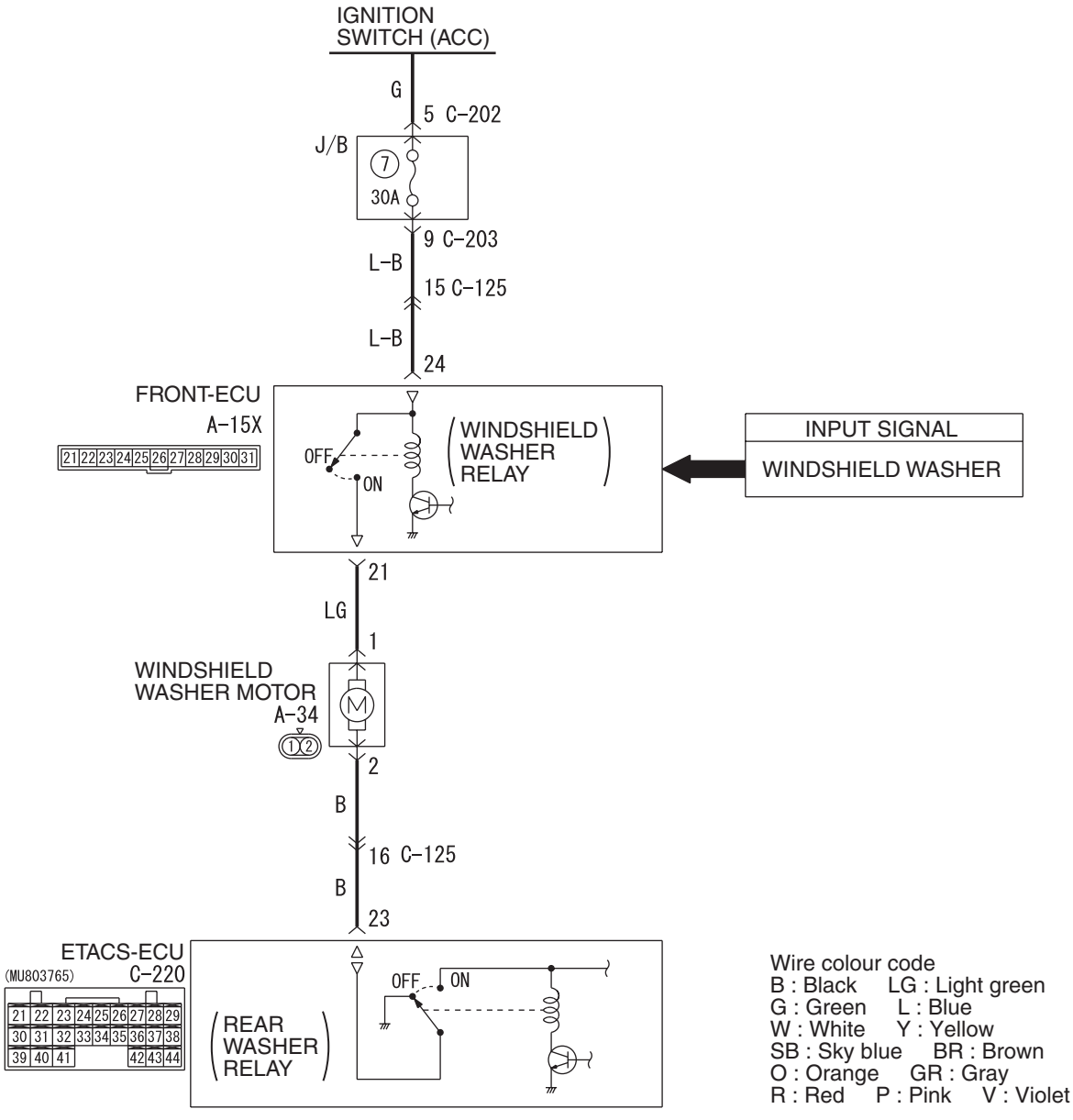
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Replace the combination meter.

## Inspection Procedure G-7: The windshield washer does not work.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Windshield Washer Motor Circuit**




W4X54E154A

## COMMENTS ON TROUBLE SYMPTOM

The windshield washer motor, the column switch or the front-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the windshield washer motor
- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the operation of the windshield wipers.**
Check that the windshield wipers work normally.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure G-1 "The windshield wipers does not work at all P.54C-203."

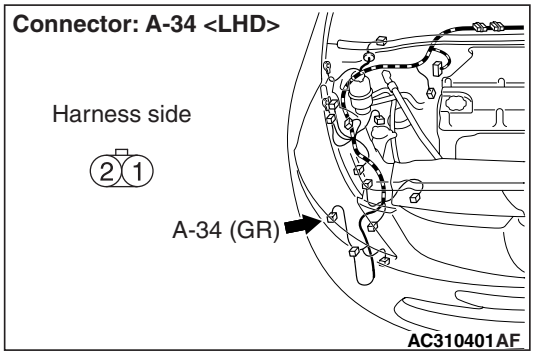
**Step 2. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the column switch (column-ECU) and the front-ECU and the SWS communication lines are normal.
- Turn the ignition switch to the ACC position.

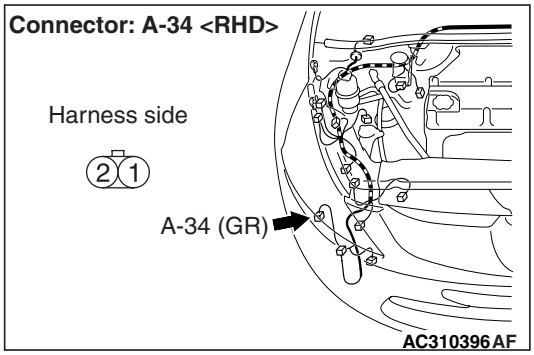
**ECUS TO BE CHECKED**
- COLUMN ECU
- FRONT ECU
- ETACS ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**
**"OK" are displayed for all the items :** Go to Step 3.
**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."
**"NG" is displayed on the "FRONT ECU" menu. :** Refer to Inspection Procedure A-4 "Communication with the front-ECU is not possible P.54C-70."
**"NG" is displayed on the "ETACS ECU" menu. :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 3. Connector check: A-34 windshield washer motor connector.**




**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the connector.

**Step 4. Check the windshield washer motor assembly.**
Refer to GROUP 51 – Windshield washer P.51-21.

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Replace the windshield washer motor.

**Step 5. Check the operation of the rear washer.**
Check that the rear washer work normally.

**Q: Is the check result normal?**
**YES :** Replace the front-ECU.
**NO :** Go to step 6.

**Step 6. Function diagnosis by using the SWS monitor.**

Check the SWS communication signal, which are related to the windshield washer function.

**<Selected item> F.WIPER WASH**

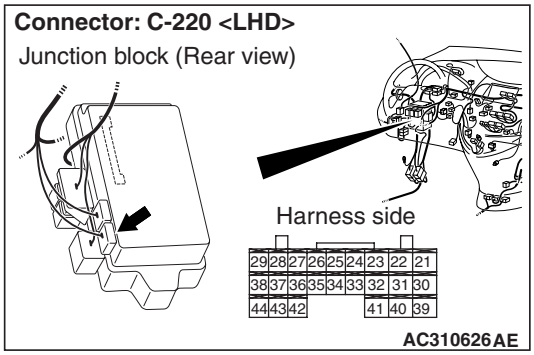
- Turn the ignition switch to the ACC position.
- Windshield washer switch: ON

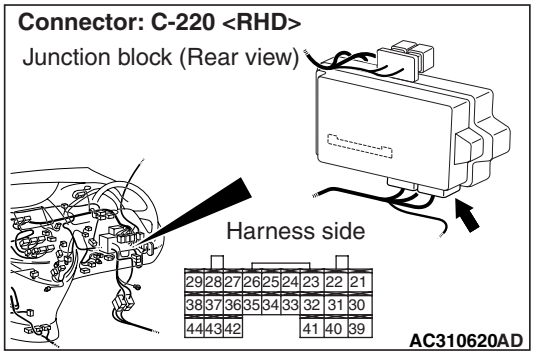
| Item No. | Item name | Normal condition |
|---|---|---|
| Item 09 | FRONT WASH. SW | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Replace the column switch.

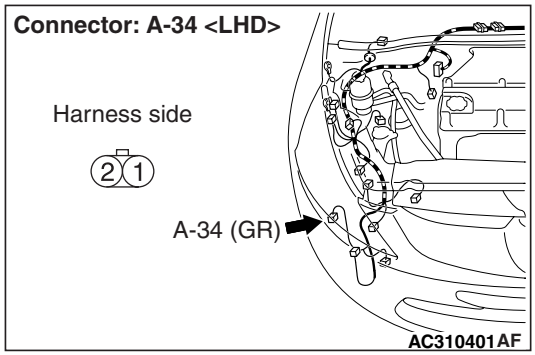
**Step 7. Connector check: C-220 ETACS-ECU connector.**

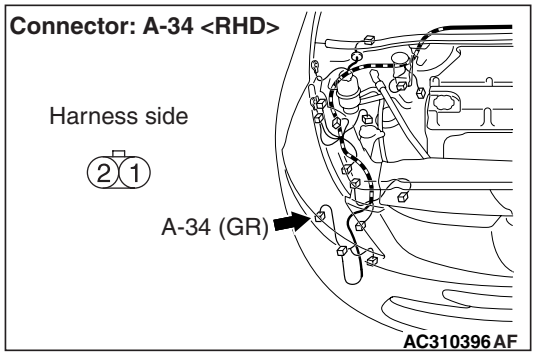


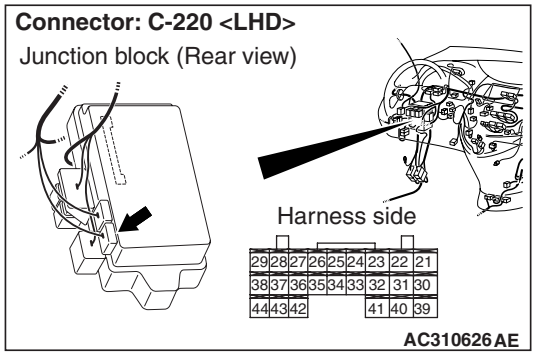



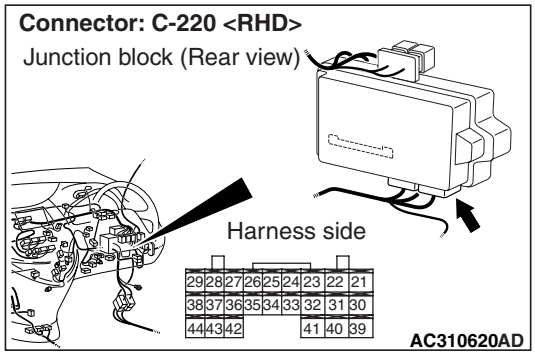

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the connector.

**Step 8. Check the wiring harness between A-34 windshield washer motor connector terminal No.2 and C-220 ETACS-ECU connector terminal No.23.**

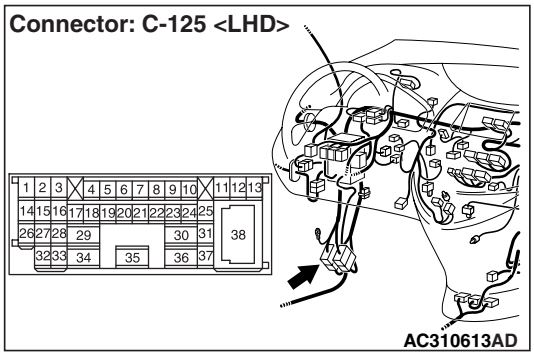


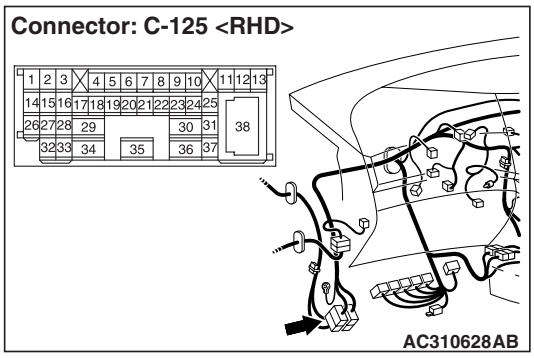




*NOTE:*



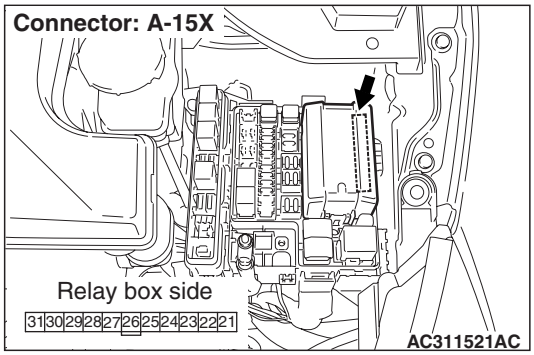




*Prior to the wiring harness inspection, check the intermediate connector C-125 and repair if necessary.*

- Check the earth wires for open circuit.

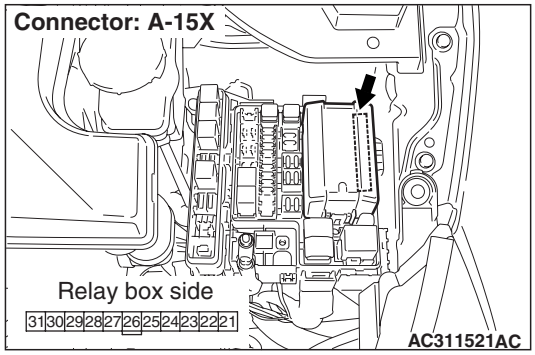
**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the wiring harness.

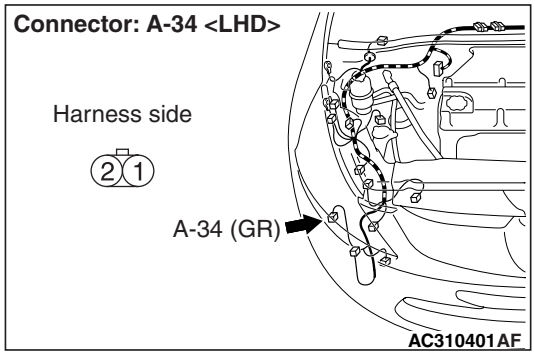
**Step 9. Connector check: A-15X front-ECU connector.**

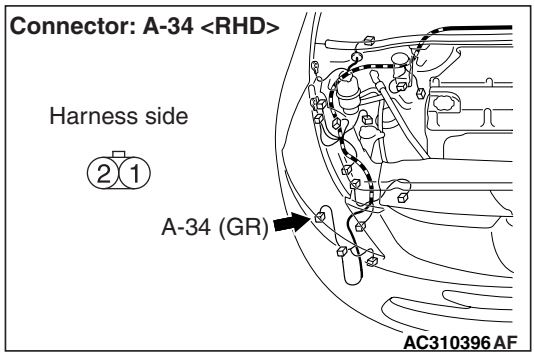



**Q: Is the check result normal?**
**YES :** Go to Step 10.
**NO :** Repair the connector.

**Step 10. Check the wiring harness between A-34 windshield washer motor connector terminal No.1 and A-15X front-ECU connector terminal No.21.**




- Check the power supply line for open circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 11.
**NO :** Repair the wiring harness.

**Step 11. Retest the system.**
The windshield washer should now work normally.

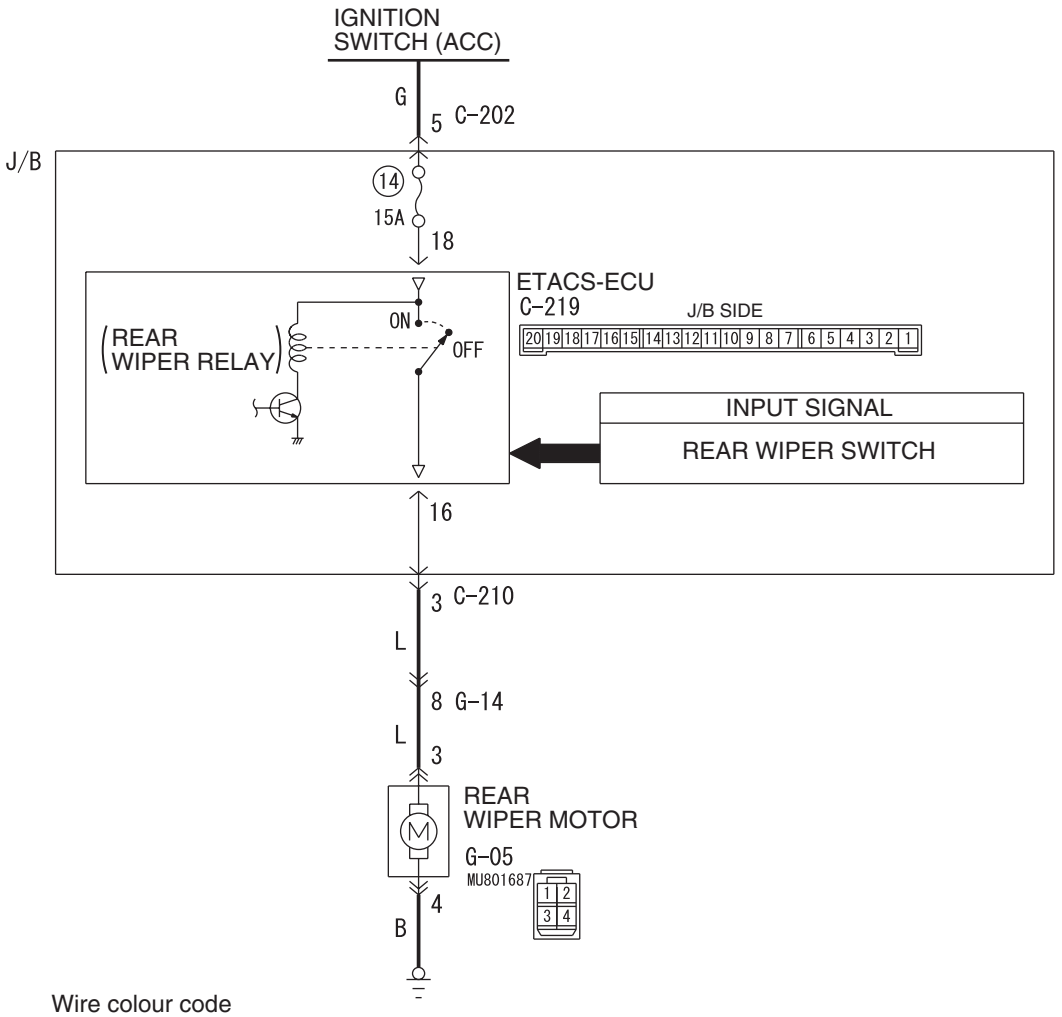
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the front-ECU.

# REAR WIPER AND WASHER

## Inspection Procedure H-1: The rear wiper does not work at all.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Rear Wiper Drive Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E087A

## COMMENTS ON TROUBLE SYMPTOM

If the rear wiper does not work normally, the input signal circuits to the components below, the rear wiper motor or the ETACS-ECU may be defective.

- Ignition switch (ACC)
- Rear wiper switch

## POSSIBLE CAUSES

- Malfunction of the rear wiper motor
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the column switch (column-ECU) and the ETACS-ECU and the SWS communication lines are normal.
- Ignition switch: ACC

**ECUS TO BE CHECKED**
- COLUMN ECU
- ETACS ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**
**"OK" are displayed for all the items :** Go to Step 2.
**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."
**"NG" is displayed on the "ETACS ECU" menu. :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 2. Function diagnosis by using the SWS monitor**
Check the SWS communication signal, which are related to the rear wiper function.

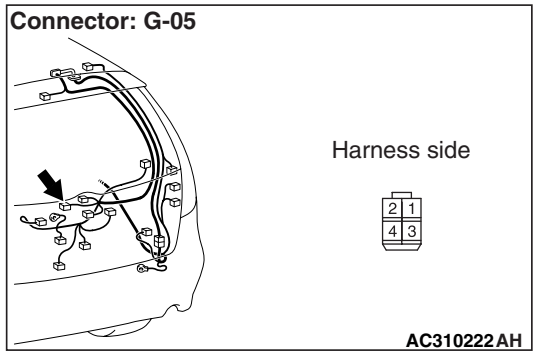
**<Selected item> REAR WIPER**
- Ignition switch: ACC
- Rear wiper switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 13 | REAR WIPER SW | ON |
| Item 31 | IG SW (ACC) | ON |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**
**Normal conditions are displayed for all the items :** Go to Step 3.
**Normal condition is not displayed for item No.13 :** Replace the column switch.
**Normal condition is not displayed for item No.31 :** Refer to inspection procedure Q-1 "The ignition switch (ACC) signal is not received P.54C-456."

**Step 3. Connector check: G-05 rear wiper motor connector.**

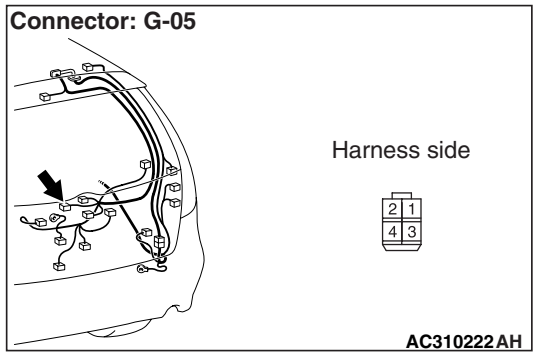



**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the connector.

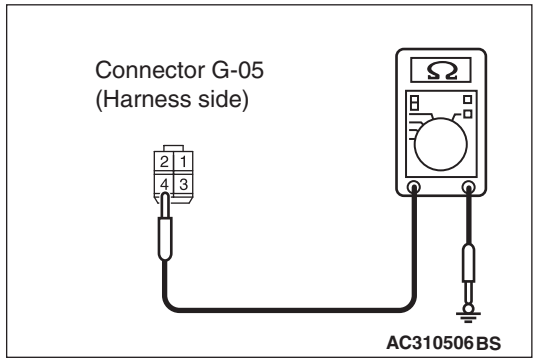
**Step 4. Check the rear wiper motor.**
Refer to GROUP 51 – Rear wiper and washer P.51-32.

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Replace the rear wiper motor.

**Step 5. Resistance measurement at the G-05 rear wiper motor connector.**




(1) Disconnect the connector, and measure at the wiring harness side.



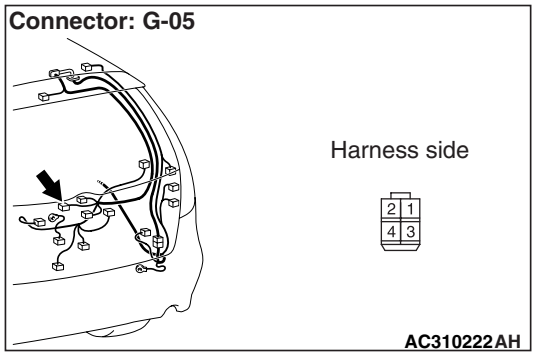

(2) Resistance between G-05 rear wiper motor

connector terminal No.4 and body earth

**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Go to Step 6.

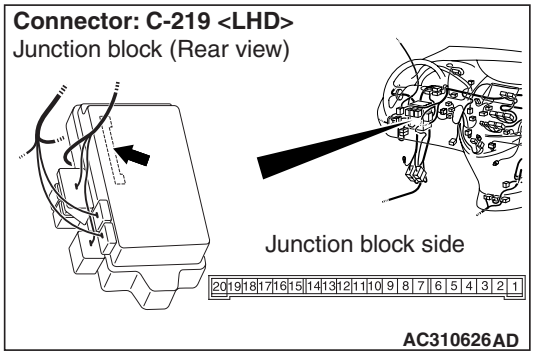
### Step 6. Check the wiring harness between G-05 rear wiper motor connector terminal No.4 and body earth.

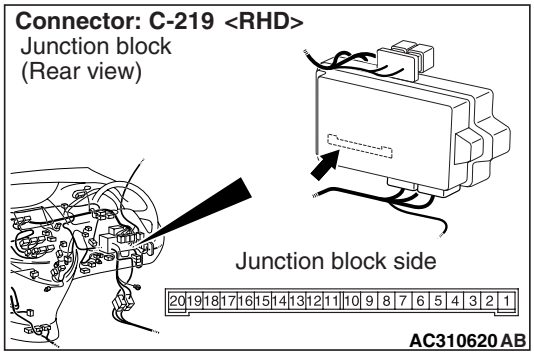



- Check the earth line for open or short circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

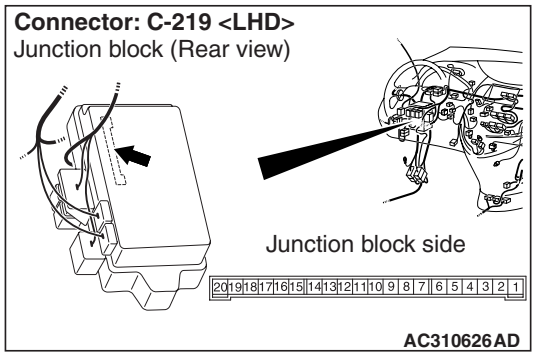
### Step 7. Connector check: C-219 ETACS-ECU connector.

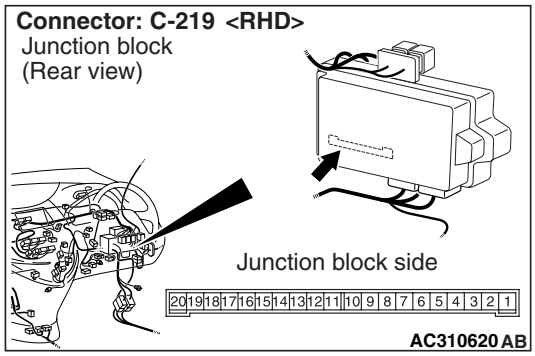


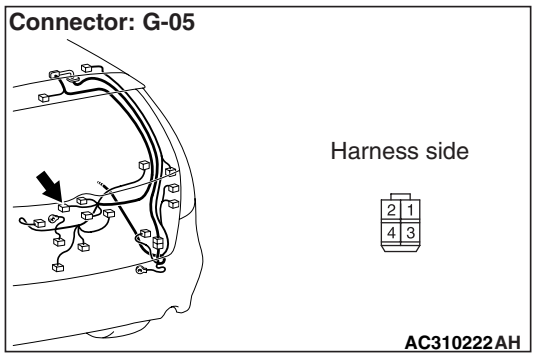




**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the connector.

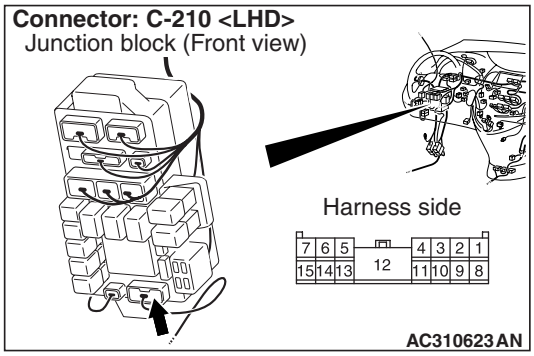
**Step 8. Check the wiring harness between C-219 ETACS-ECU connector terminal No.16 and G-05 rear wiper motor connector terminal No.3.**

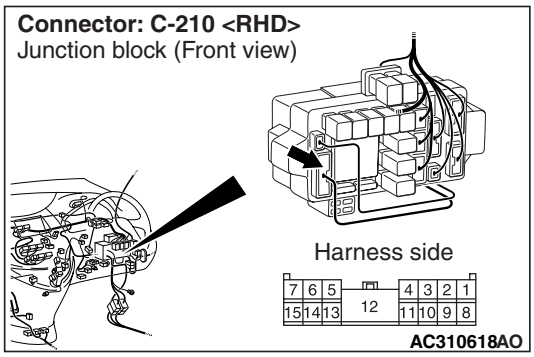


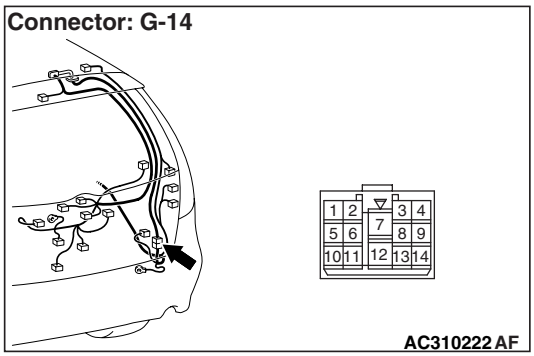




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector G-14 and junction block connectors C-210, and repair if necessary.*

- Check the output line.

**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the wiring harness.

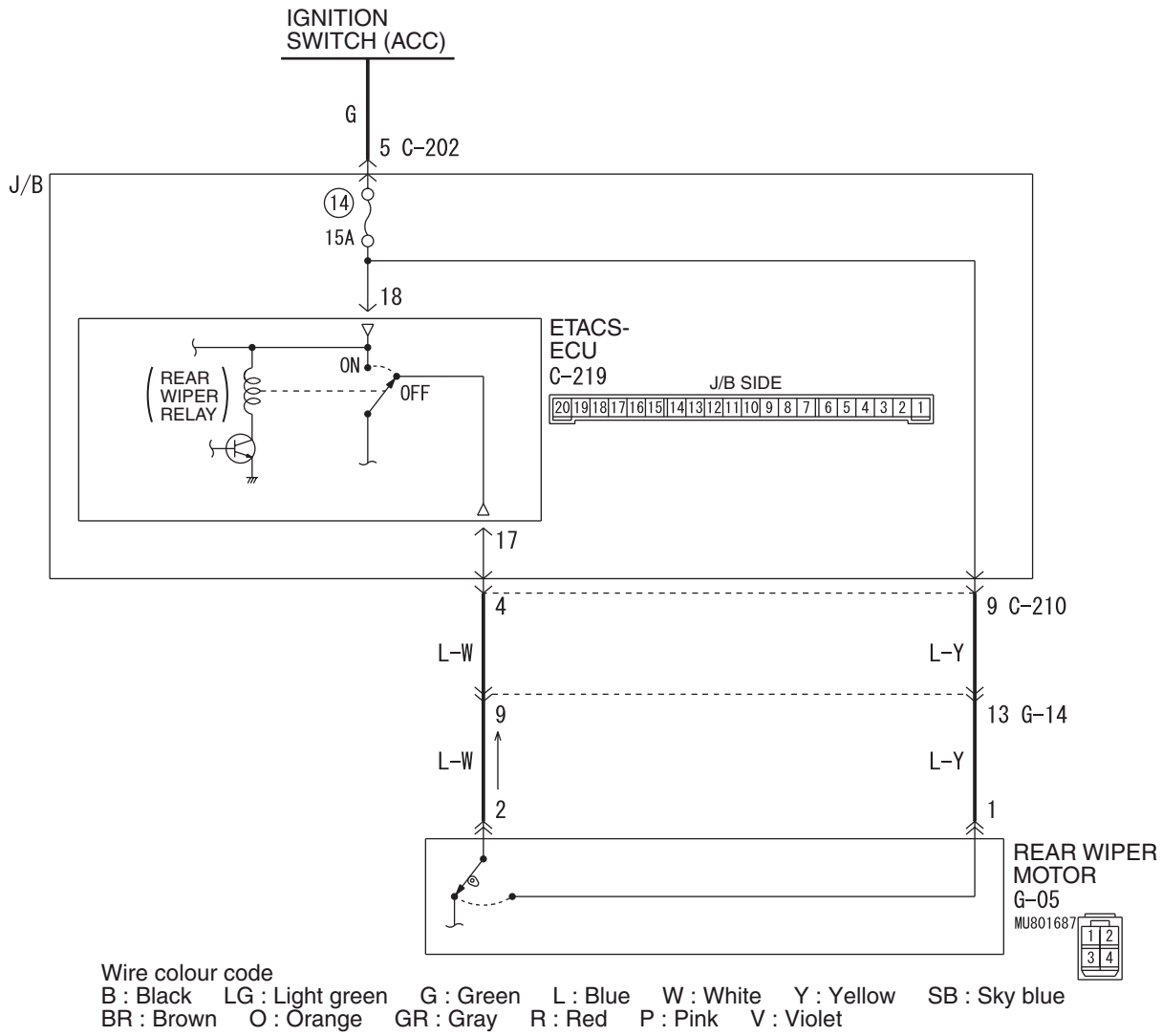
**Step 9. Retest the system.**
Check that the rear wiper works normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

**Inspection Procedure H-2: The rear wiper does not stop at the specified park position.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Rear Wiper Auto-stop Signal Input**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E088A

## COMMENTS ON TROUBLE SYMPTOM

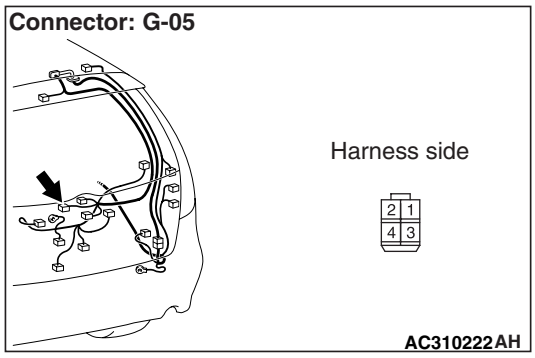
If the rear wiper does not stop normally within the predetermined range, the rear wiper motor or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the rear wiper motor
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Connector check: G-05 rear wiper motor connector.**

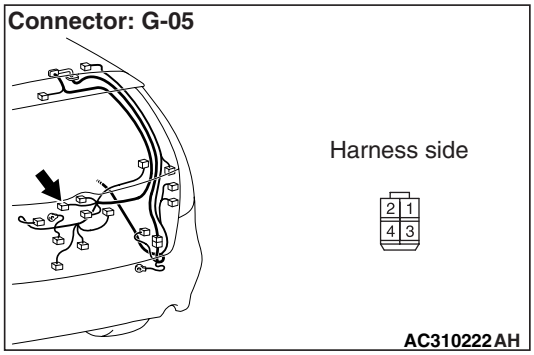



**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the connector.

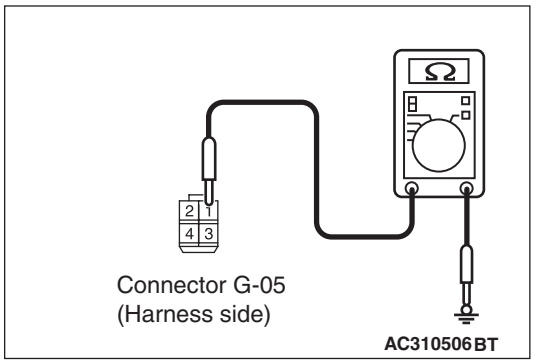
**Step 2. Check the rear wiper motor.**
Refer to GROUP 51 – Rear wiper and washer P.51-32.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the rear wiper motor.

**Step 3. Voltage measurement at the G-05 rear wiper motor connector.**



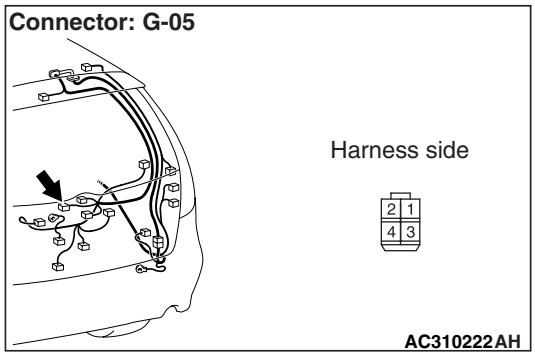

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: ACC




(3) Check the voltage between G-05 rear wiper motor connector terminal No.1 and body earth
**OK: System voltage**

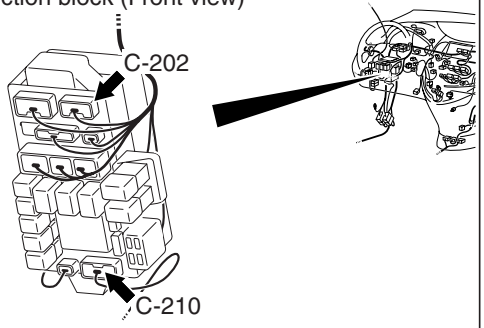
**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check the wiring harness between ignition switch (ACC) and G-05 rear wiper motor connector terminal No.1.**

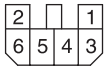



*NOTE:*

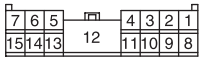
**Connectors: C-202, C-210 <LHD>**
Junction block (Front view)




Harness side
C-202

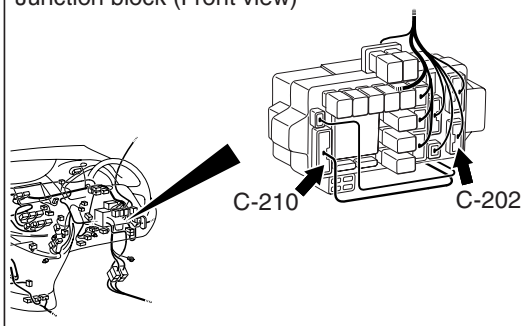



Harness side
C-210

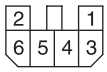



AC310624AT

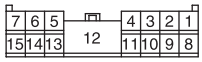
**Connectors: C-202, C-210 <RHD>**
Junction block (Front view)




Harness side
C-202

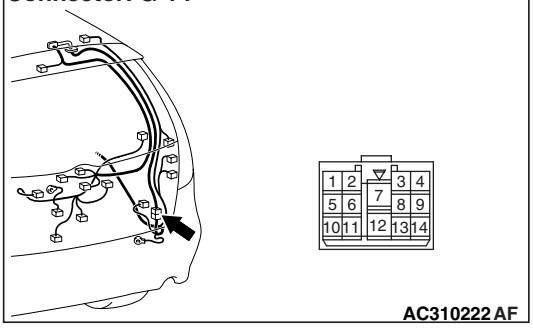



Harness side
C-210




AC310619AT

**Connector: G-14**




AC310222AF

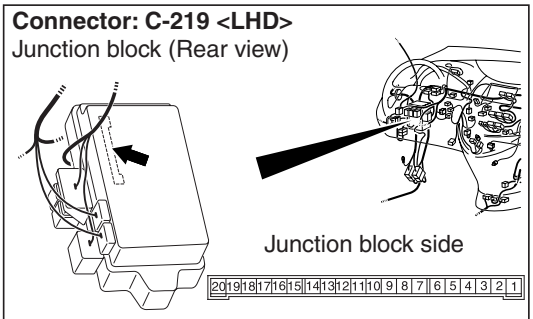
*Prior to the wiring harness inspection, check intermediate connector G-14 and junction block connectors C-202, C-210, and repair if necessary.*

- Check the power supply line for open or short circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

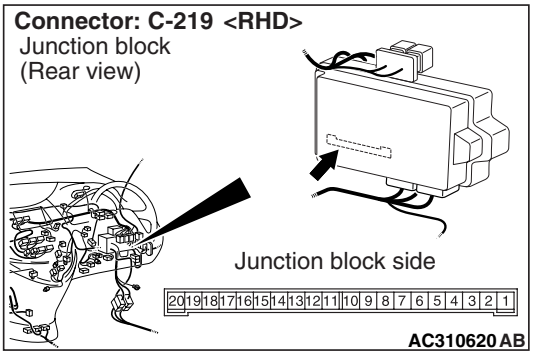
## Step 5. Connector check: C-219 ETACS-ECU connector.

**Connector: C-219 <LHD>**
Junction block (Rear view)




AC310626AD

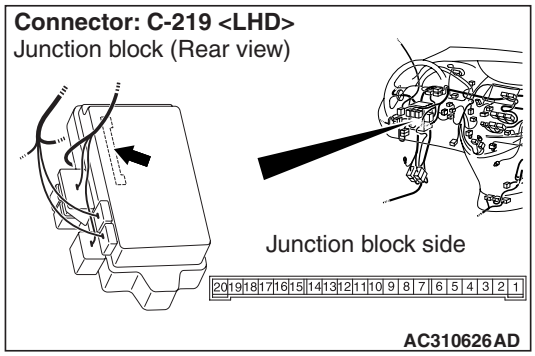
**Connector: C-219 <RHD>**
Junction block
(Rear view)

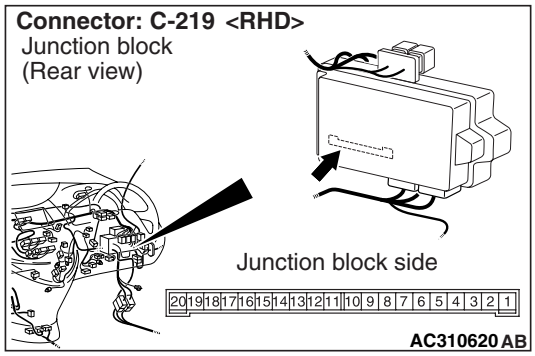


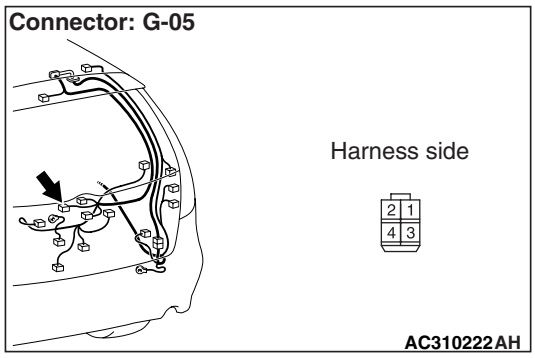

AC310620AB

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the connector.

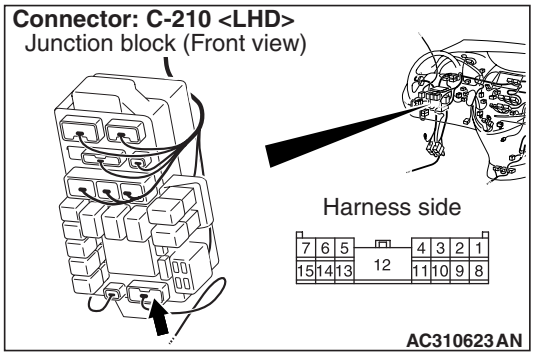
**Step 6. Check the wiring harness between C-219 ETACS-ECU connector terminal No.17 and G-05 rear wiper motor connector terminal No.2.**

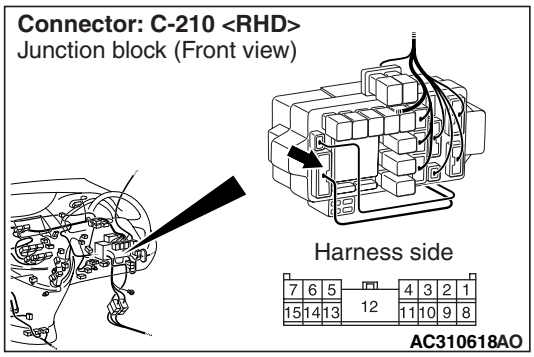


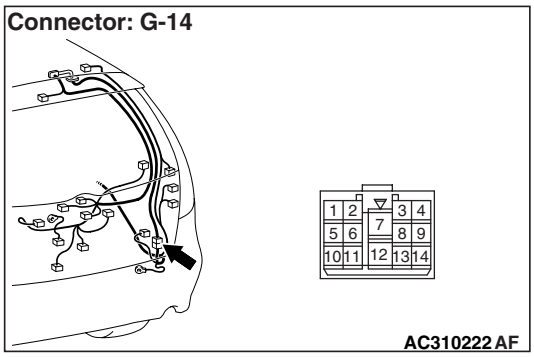




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector G-14, junction block connectors C-210, and repair if necessary.*

- Check the power supply line for open or short circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

**Step 7. ETACS switch data by using the SWS monitor.**

- Ignition switch: ACC or ON
- Operate the rear wiper

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 09 | R.WIPER A/STOP | ON |

*NOTE: Confirm that the MUT-III displays from "ON" to "OFF" when rear wiper stops at the predetermined park position.*

**OK: Normal conditions is displayed for all the items.**

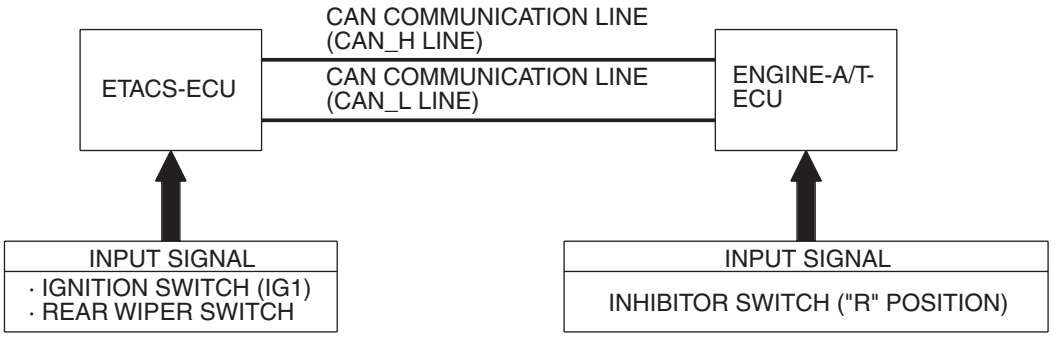
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure H-3: When the selector lever is moved to "R" position during the rear wiper operation, the rear wiper does not operate at the continuous mode. <A/T>

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**"R" Position During Wiper Operation Circuit <A/T>**




W4X54E176A

## COMMENTS ON TROUBLE SYMPTOM

If the rear wiper does not operate consecutively when the selector lever is moved to the R position during the rear wiper operation, the shift position input signal circuit or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the engine-A/T-ECU
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the operation of the rear wiper.**
Check that the rear wiper system should work normally by operating the rear wiper switch.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure H-1 "Rear wiper does not work at all P.54C-228."

**Step 2. Pulse check.**
Check the input signal, which are related to the R (reverse) gear-linked rear wiper operation.

| System switch | Check condition |
|---|---|
| Inhibitor switch (reverse position) | When the ignition switch is turned ON and the selector lever is moved to the R position. |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

**Q: Is the check result normal?**

**YES :** Go to Step 3.
**NO :** Refer to diagnosis code No.11 inspection procedure "Engine-A/T-ECU time-out (related to engine) P.54C-37 ."

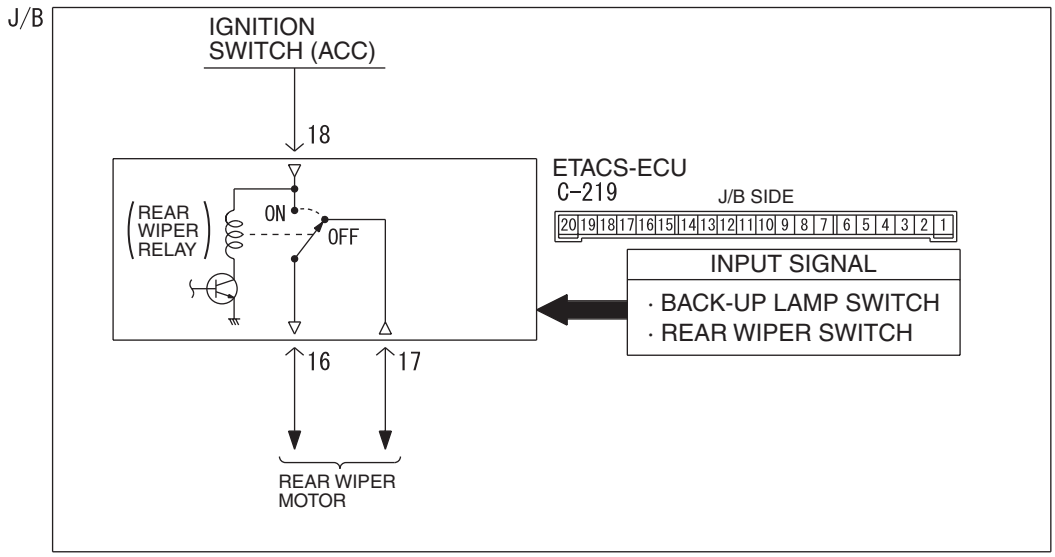
**Step 3. Retest the system.**
Check that the rear wiper operates consecutively when the selector lever is moved to the R position during the rear wiper operation.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## INSPECTION PROCEDURE H-3: When the shift lever is moved to "R" position during the rear wiper operation, the rear wiper does not operate at the continuous mode. <M/T>

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**"R" Position During Rear Wiper Operation Circuit <M/T>**




W4X54E089A

## COMMENTS ON TROUBLE SYMPTOM
If the rear wiper does not operate consecutively when the selector lever is moved to the R position during the rear wiper operation, the input signal circuit to the back-up lamp switch ("R" position) or the ETACS-ECU may be defective.

## POSSIBLE CAUSES
- Malfunction of the back-up lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

**Step 1. SWS monitor data list.**
Check the SWS communication signal, which are related to the R (reverse) gear-linked rear wiper operation.

**<Selected item> REAR WIPER-REV. INTERLOCK**
- Ignition switch: ON
- Rear wiper switch: ON
- Shift position: R position

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 41 | INHIBITOR SW | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** Refer to inspection procedure Q-3 "The back-up lamp switch <M/T> signal is not received P.54C-463"

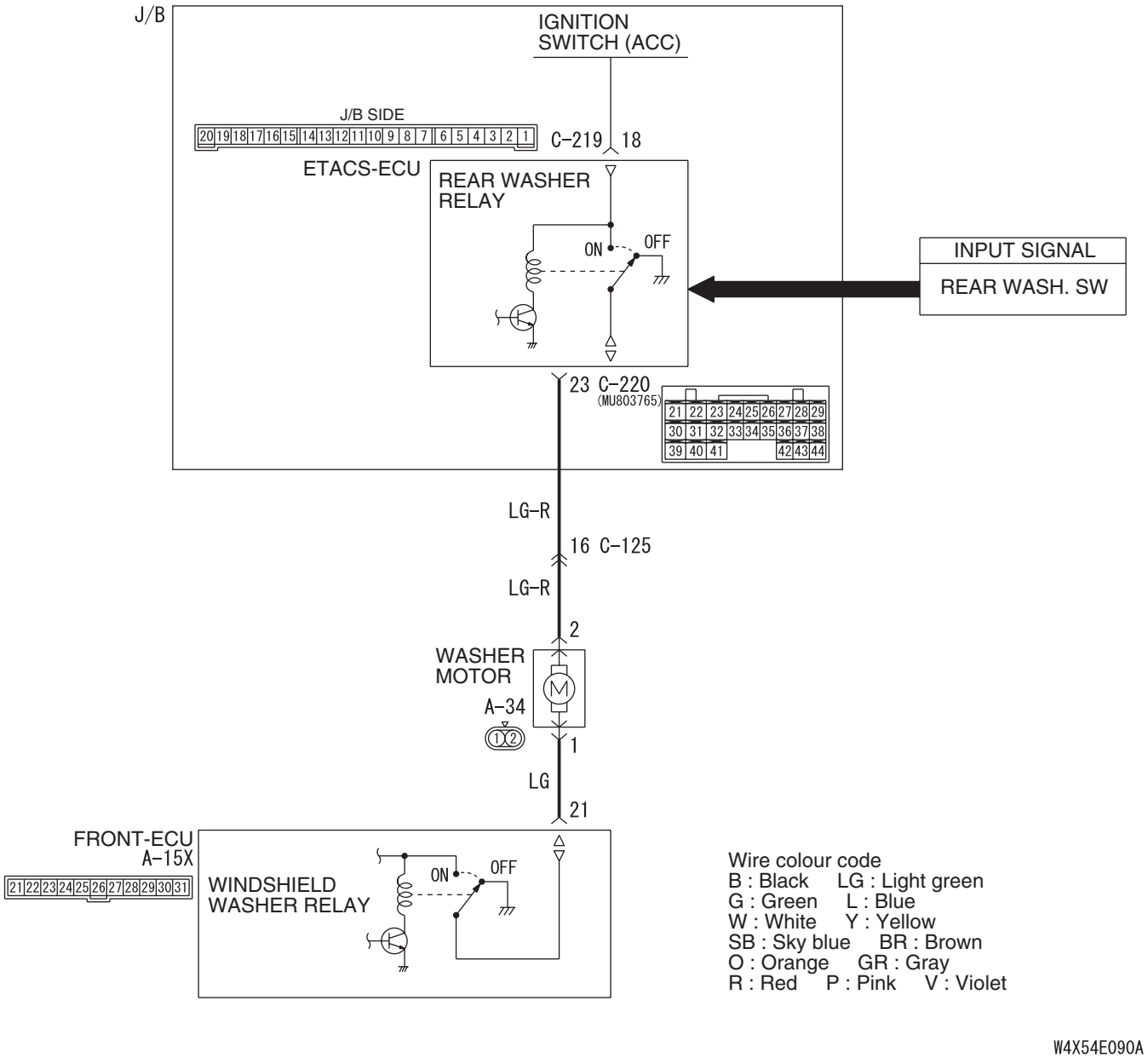
**Step 2. Retest the system.**
Check that the rear wiper operates consecutively when the shift lever is moved to the R position during the rear wiper operation.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure H-4: The rear washer does not work.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Rear Washer Drive Circuit**




W4X54E090A

## COMMENTS ON TROUBLE SYMPTOM

If the rear washer does not work normally, the input signal circuits to the rear washer switch, rear washer motor or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the rear washer motor
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Malfunction of the front-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Confirm the operation of the rear wiper.**
Check that the rear wiper work normally.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure H-1 "The rear wiper does not work at all P.54C-228."

**Step 2. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the column switch (column-ECU) and the front-ECU and the SWS communication lines are normal.
- Turn the ignition switch to the ACC position.

**ECUS TO BE CHECKED**
- Column ECU
- ETACS ECU
- Front ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**
**"OK" are displayed for all the items :** Go to Step 3.
**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."
**"NG" is displayed on the "ETACS ECU" menu. :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."
**"NG" is displayed on the "FRONT ECU" menu. :** Refer to Inspection Procedure A-4 "Communication with the front-ECU is not possible P.54C-70."

**Step 3. Function diagnosis by using the SWS monitor**
Check the SWS communication signal, which are related to the rear washer function.

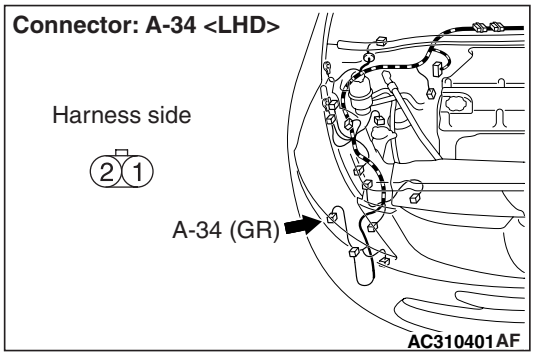
**<Selected item> REAR WIPER-REAR WASHER**
- Ignition switch: ACC
- Rear washer switch: ON

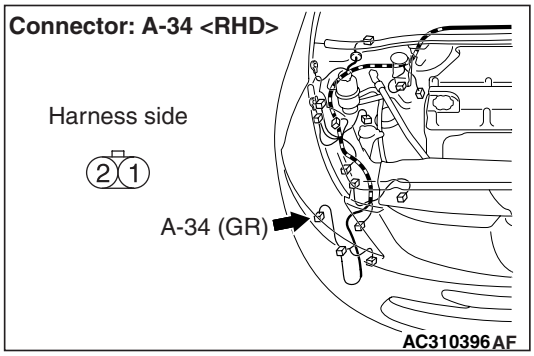
| Item No. | Item name | Normal condition |
|---|---|---|
| Item 14 | REAR WASH. SW | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Refer to inspection procedure Q-7 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received P.54C-479."

**Step 4. Connector check: A-34 washer motor connector.**




**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the connector.

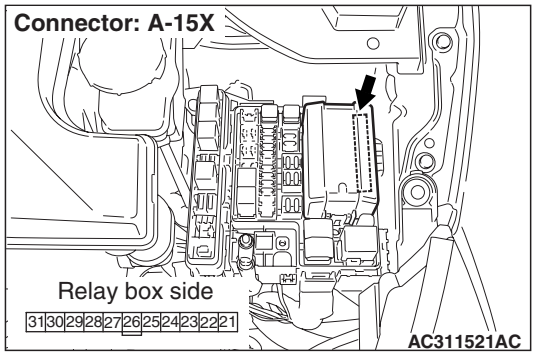
**Step 5. Check the washer motor.**
Refer to GROUP 51 – Rear wiper and washer P.51-29.

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Replace the rear washer motor.

**Step 6. Confirm the operation of the windshield washer.**
Check that the windshield washer work normally.

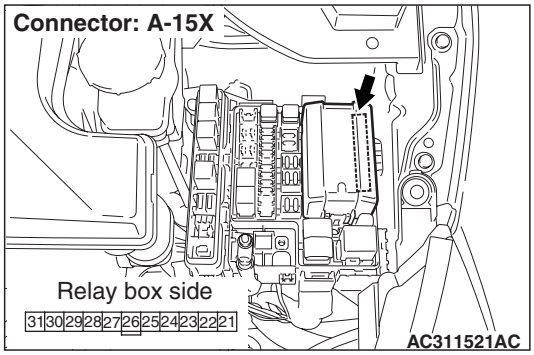
**Q: Is the check result normal?**
**YES :** Replace the ETACS-ECU.
**NO :** Go to Step 7.

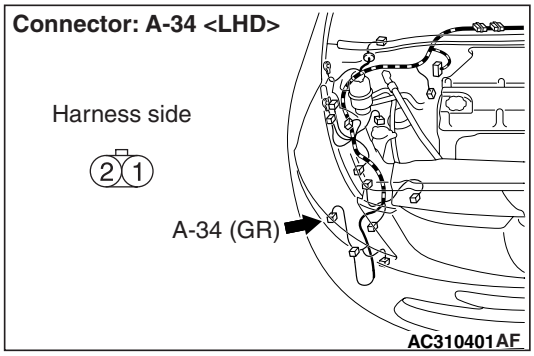
**Step 7. Connector check: A-15X front-ECU connector.**

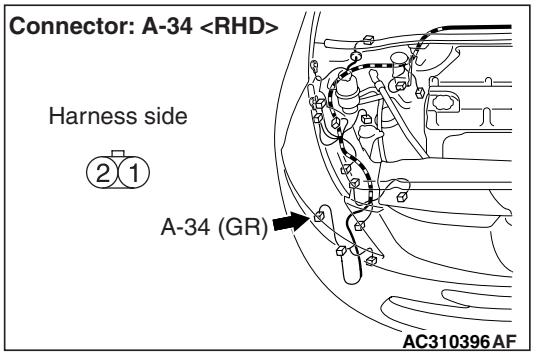



**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the connector.

**Step 8. Check the wiring harness between A-34 rear washer motor connector terminal No.1 and A-15X front-ECU connector terminal No.21.**



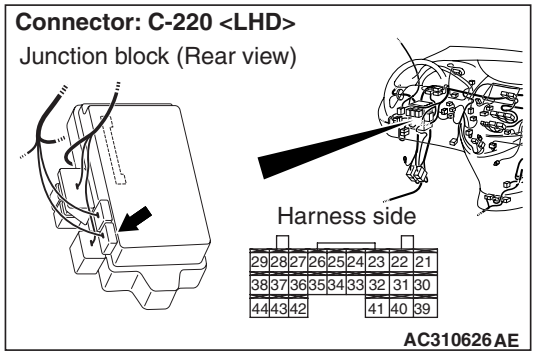



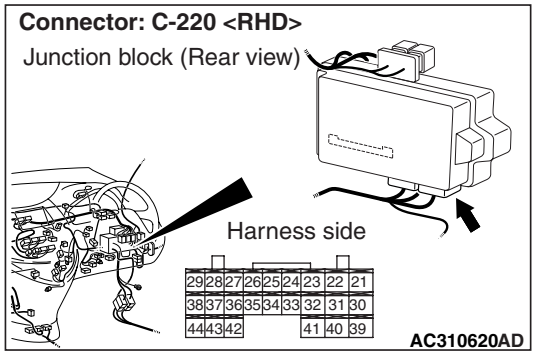




- Check the earth line for open or short circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the wiring harness.

**Step 9. Connector check: C-220 ETACS-ECU connector.**

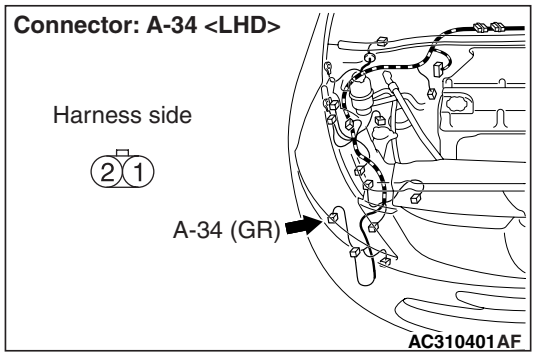


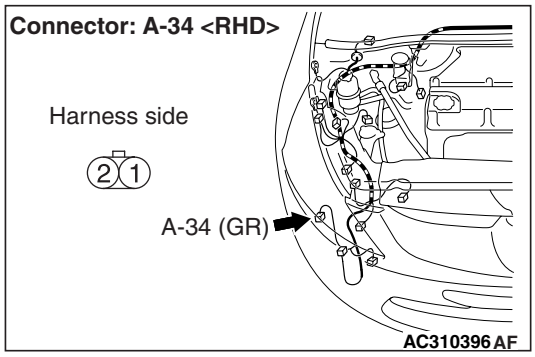



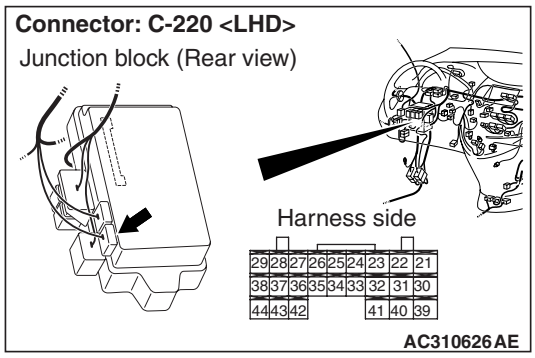

**Q: Is the check result normal?**

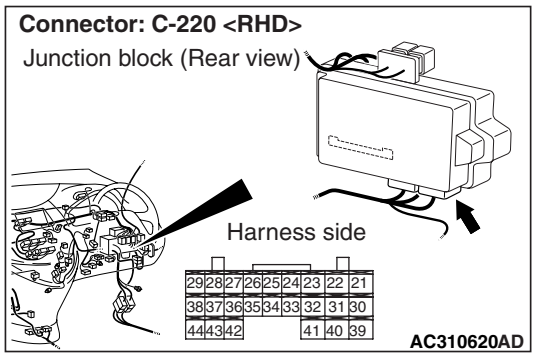
**YES :** Go to Step 10.
**NO :** Repair the connector.

**Step 10. Check the wiring harness between C-220 ETACS-ECU connector terminal No.23 and A-34 washer motor connector terminal No.2.**

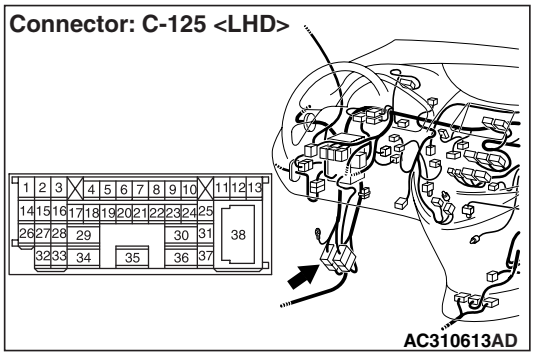


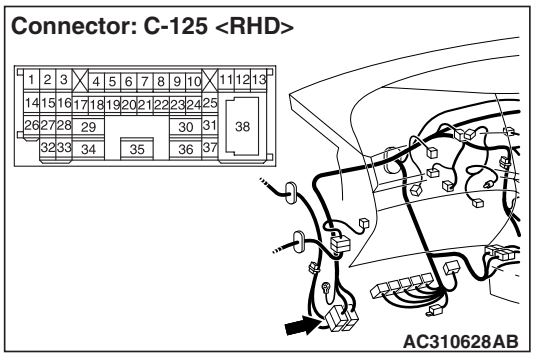




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-125, and repair if necessary.*

- Check the output signal line.

**Q: Is the check result normal?**
**YES :** Go to Step 11.
**NO :** Repair the wiring harness.

**Step 11. Retest the system.**
Check that the rear washer works normally.

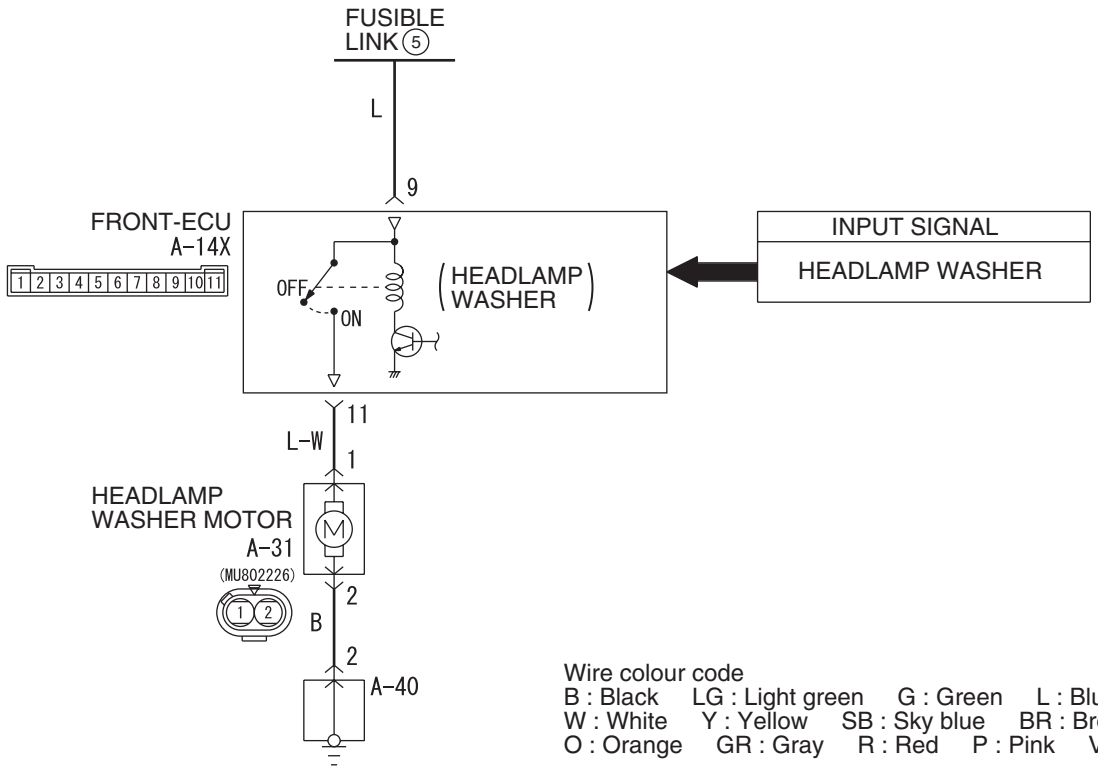
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

# HEADLAMP WASHER

**Inspection Procedure I-1: The headlamp washer does not work.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Headlamp Washer Motor Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue
W : White Y : Yellow SB : Sky blue BR : Brown
O : Orange GR : Gray R : Red P : Pink V : Violet

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## COMMENTS ON TROUBLE SYMPTOM

The headlamp washer motor, the column switch or the front-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the headlamp washer motor
- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the column switch (column-ECU) and the front-ECU and the SWS communication lines are normal.

- Turn the ignition switch to the ON position.

**ECUS TO BE CHECKED**

- COLUMN ECU
- FRONT ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**

**"OK" is displayed for all the items :** Go to Step 2.
**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."
**"NG" is displayed on the "FRONT ECU" menu. :** Refer to Inspection Procedure A-4 "Communication with the front-ECU is not possible P.54C-70."

**Step 2. SWS monitor data list.**
Check the SWS communication signal, which are related to the headlamp washer function.

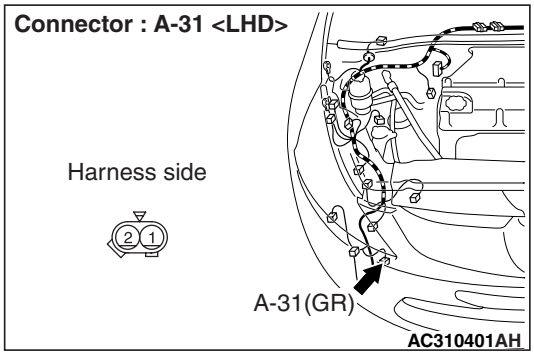
**<Selected item> HD WASHER**
- Turn the ignition switch to the ACC position.
- Headlamp washer switch: ON

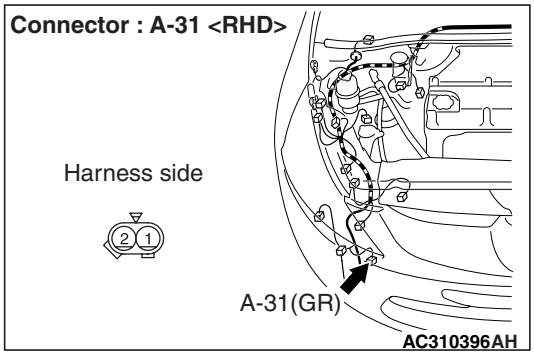
| Item No. | Item name | Normal condition |
|---|---|---|
| Item 16 | HD WASHER SW | ON |
| Item 31 | IG SW (ACC) | ON |
| Item 70 | FRONT ECU ACK | NORMAL ACK or HI-BEAM ACK |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**
**Normal conditions are displayed for all the items :** Go to Step 3.
**Normal condition is not displayed for item No.16 :** Replace the column switch.
**Normal condition is not displayed for item No.31 :** Refer to inspection procedure Q-1 "The ignition switch (ACC) signal is not received P.54C-456."
**Normal condition is not displayed for item No.70 :** Replace the front-ECU.

**Step 3. Connector check: A-31 headlamp washer motor connector.**



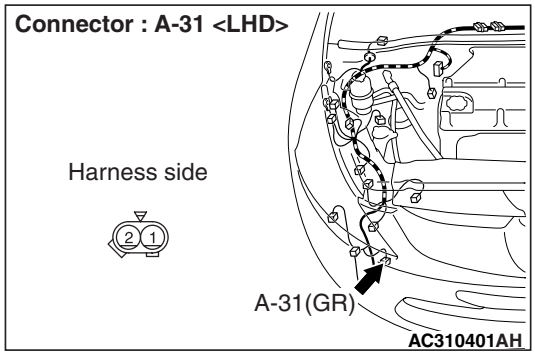



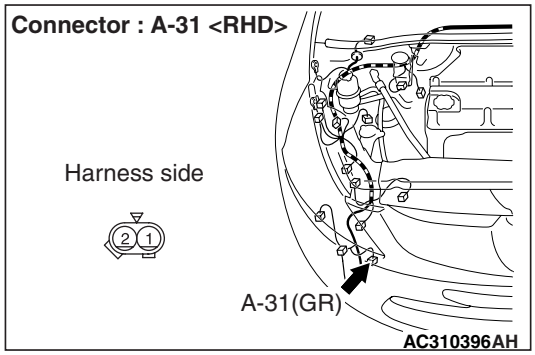

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the connector.

**Step 4. Check the headlamp washer motor assembly.**
Refer to GROUP 51 – Headlamp washer P.51-35.

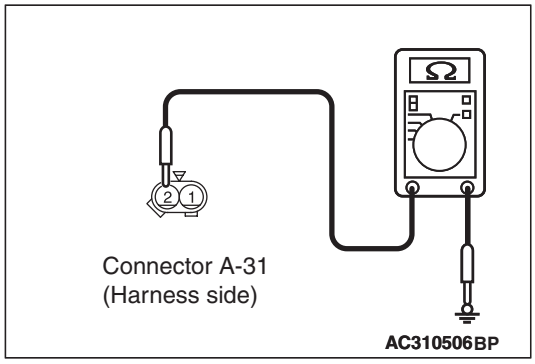
**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Replace the headlamp washer motor.

**Step 5. Resistance measurement at the A-31 headlamp washer motor connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

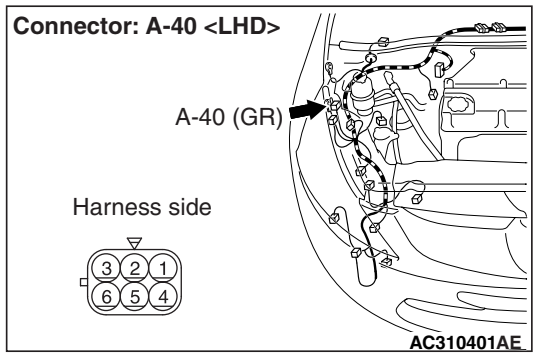


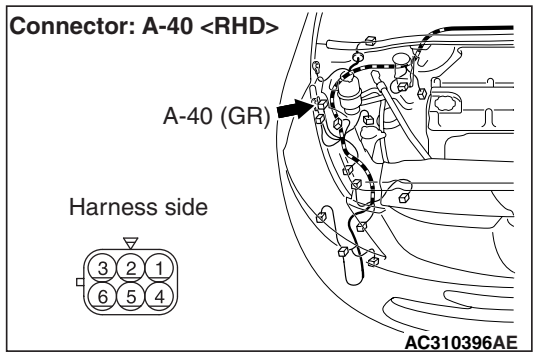

(2) Continuity between A-31 headlamp washer motor connector terminal No.2 and body earth.

**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Go to Step 6.

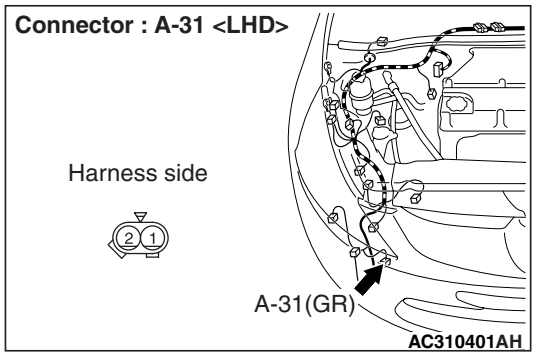
**Step 6. Connector check: A-40 earth connector.**

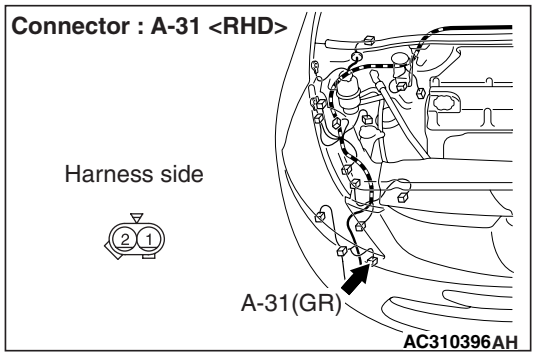


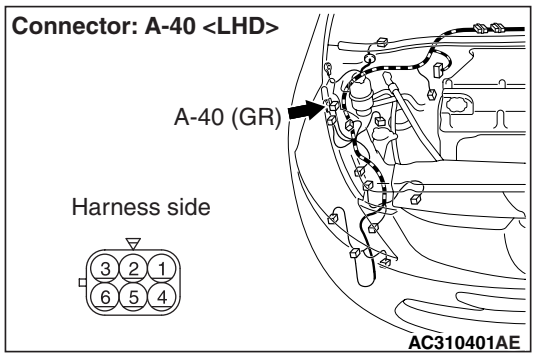



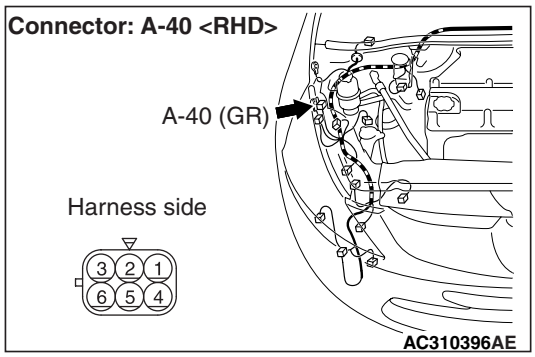

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the connector.

**Step 7. Check the wiring harness between A-31 headlamp washer motor connector terminal No.2 and A-40 earth connector terminal No.2.**



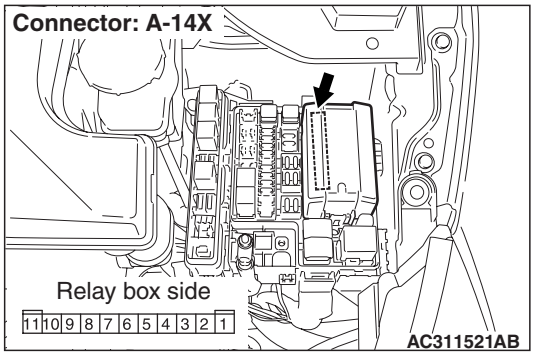




- Check the earth wires for open circuit.

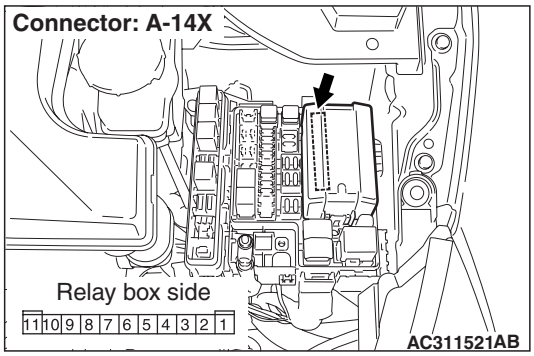
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 8. Connector check: A-14X front-ECU connector.**

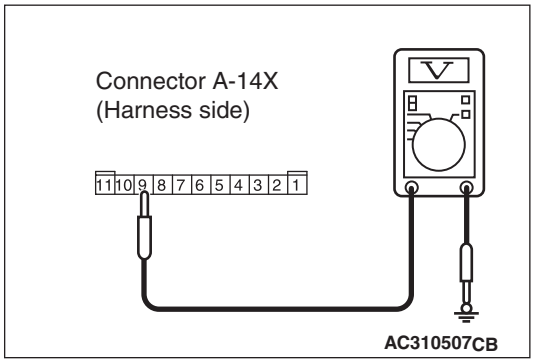



**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the connector.

**Step 9. Voltage measurement at the A-14X front-ECU connector.**



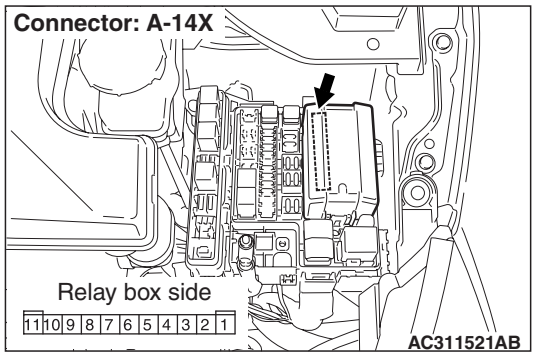

(1) Remove the front-ECU, and measure at the junction block side.
(2) Ignition switch: ACC




(3) Check the voltage between the A-14X front-ECU connector terminal No.9 and body earth.
**OK: System voltage**

**Q: Is the check result normal?**
**YES :** Go to Step 11.
**NO :** Go to Step 10.

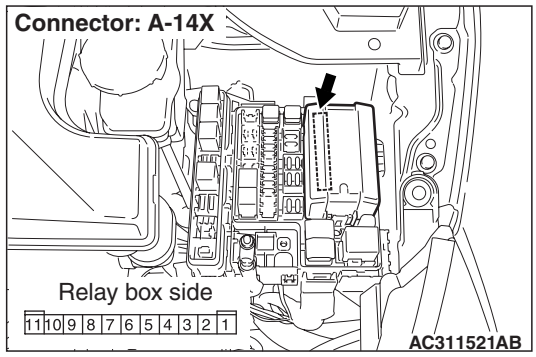
**Step 10. Check the wiring harness between A-14X front-ECU connector terminal No.9 and the fusible link (5).**

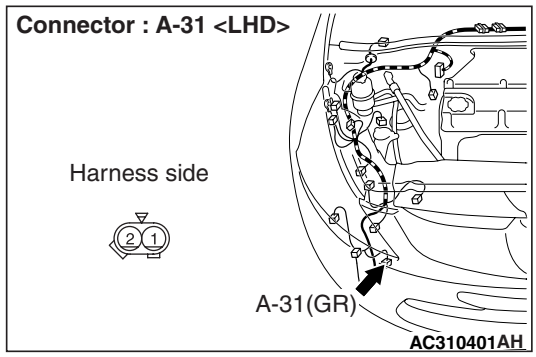


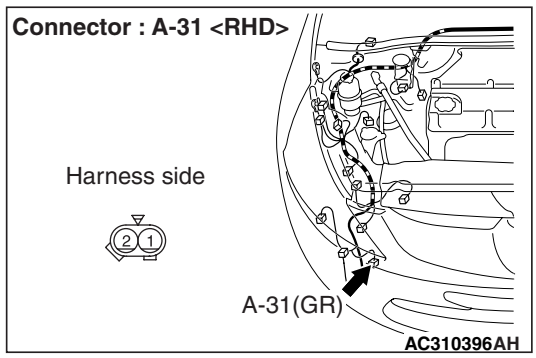

- Check the power supply line for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 11. Check the wiring harness between A-31 headlamp washer motor connector terminal No.1 and A-14X front-ECU connector terminal No.11.**




- Check the output line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 12.
**NO :** Repair the wiring harness.

**Step 12. Retest the system.**
The headlamp washer should now work normally.

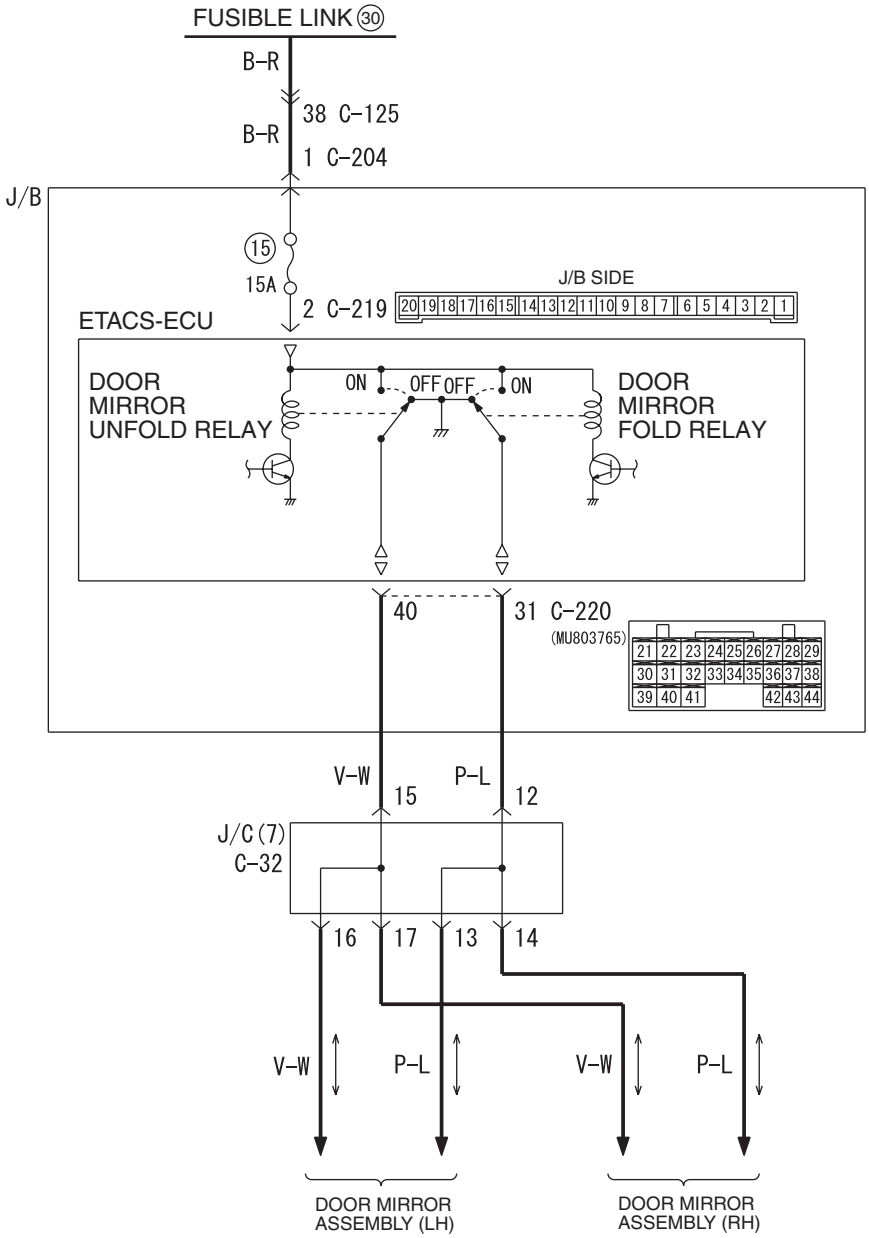
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the front-ECU.

# ELECTRIC RETRACTABLE REMOTE CONTROLLED DOOR MIRROR

**Inspection Procedure J-1: Electric retractable remote controlled door mirror does not work at all.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

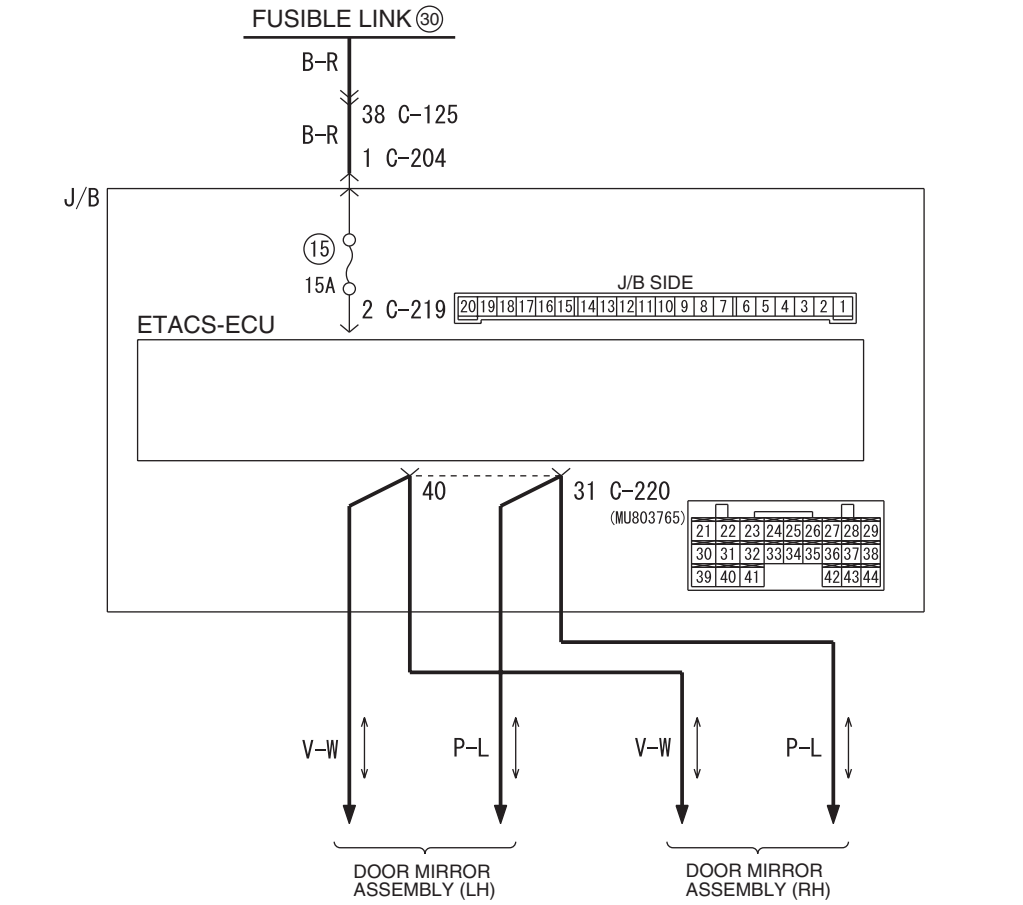
**Door Mirror Relay Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E098A

**Door Mirror Relay Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E099A

## COMMENTS ON TROUBLE SYMPTOM

If the electric retractable remote controlled door mirror does not work at all, these power supply circuit(s), these earth circuit(s), remote controlled mirror switch or ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the remote controlled mirror switch
- Malfunction of ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. ECU check on the SWS monitor.**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: ACC

**ECU TO BE CHECKED**

- ETACS ECU

  **OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 2. SWS monitor data list.**

Check the SWS communication signal, which are related to the electric retractable remote controlled mirror.

**<Selected item> ETACS ECU**

- Ignition switch: ACC

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 31 | IG SW (ACC) | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 3.

**NO :** Refer to inspection procedure Q-1 "The ignition switch (ACC) signal is not received P.54C-456."

**Step 3. ETACS switch data by using the SWS monitor**

Check the ETACS-ECU signal, which is related to the electric retractable remote controlled mirror.

- Remote controlled mirror switch (folding/unfolding switch): ON

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 14 | EL RET MIR SW | ON |

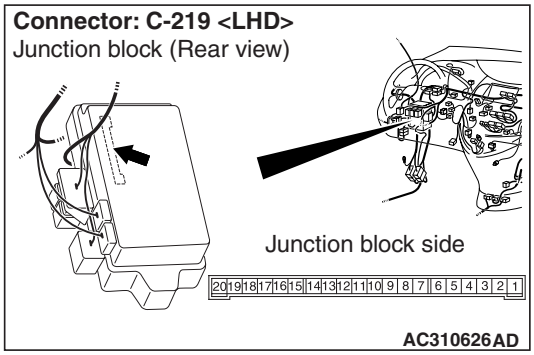
**OK: Normal condition is displayed**

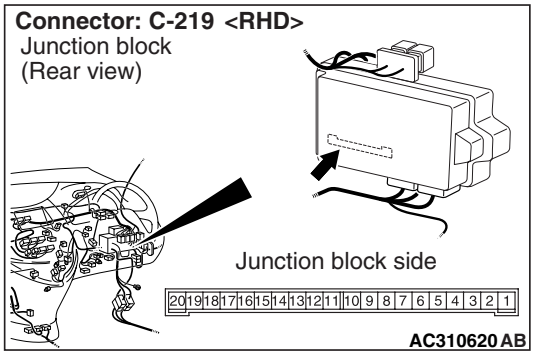
**Q: Is the check result normal?**

**YES :** Go to Step 4.

**NO :** Refer to inspection procedure Q-21 "Signal is not received from the remote controlled mirror switch (folding/unfolding switch) P.54C-549."

**Step 4. Connector check: C-219 ETACS-ECU connector.**



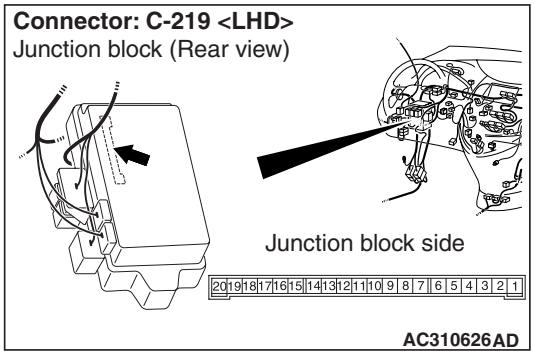



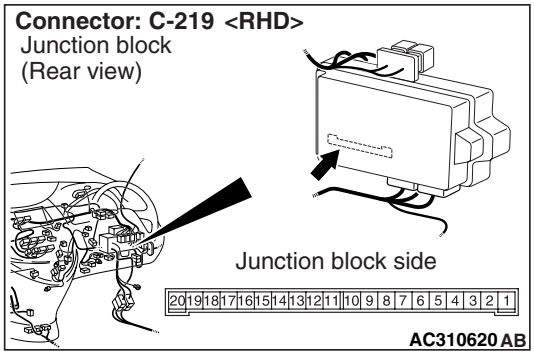

**Q: Is the check result normal?**

**YES :** Go to Step 5.

**NO :** Repair the connector.

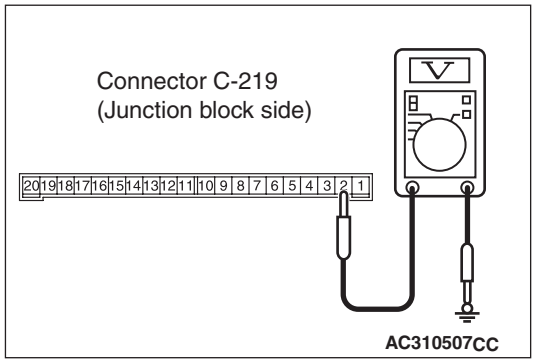
**Step 5. Voltage measurement at the C-219 ETACS-ECU connector.**




(1) Remove the ETACS-ECU, and measure at the

junction block side.

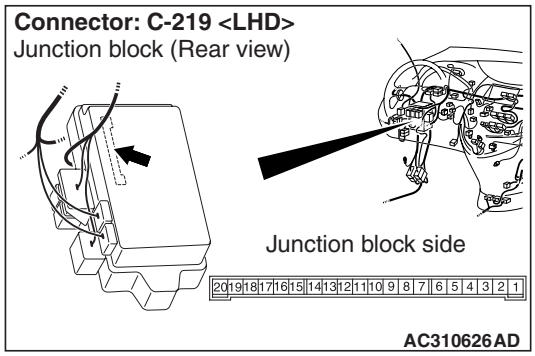


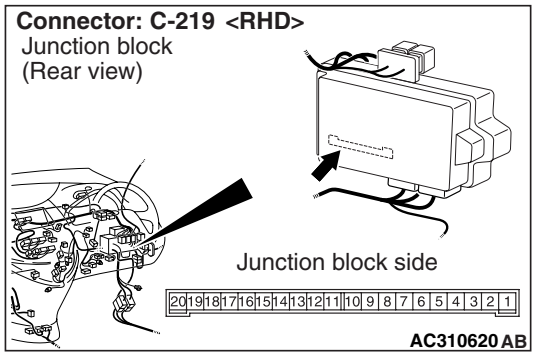

(2) Check the voltage between the C-219 ETACS-ECU connector terminal No.2 and body earth.

**OK: Battery positive voltage**

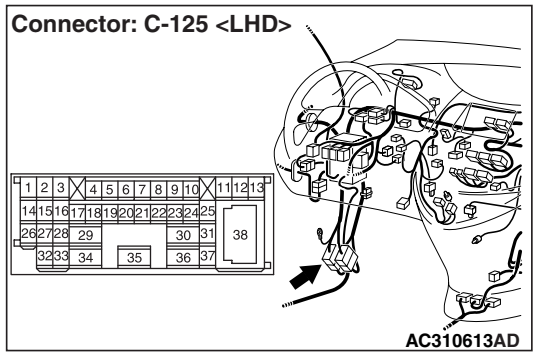
**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Go to Step 6.

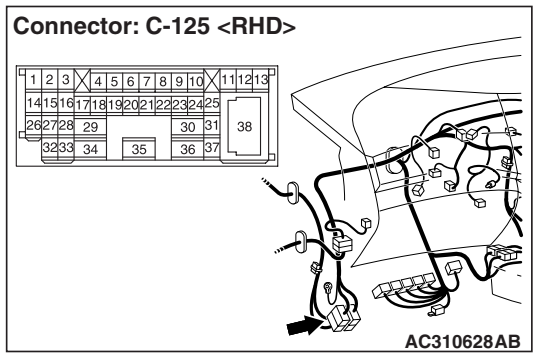
**Step 6. Check the wiring harness between C-219 ETACS-ECU connector terminal No.2 and the fusible link (30).**

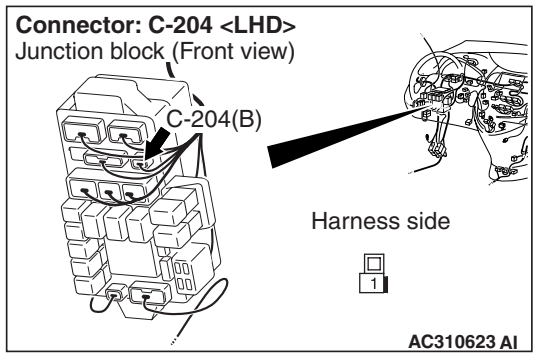


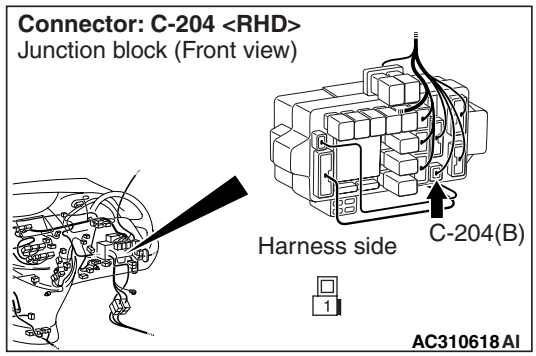




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connectors C-125 and junction block connector C-204, and repair if necessary.*

- Check the power supply line to the battery for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Repair the wiring harness.

**Step 7. Retest the system.**
Check that the electric retractable remote controlled mirror works normally.

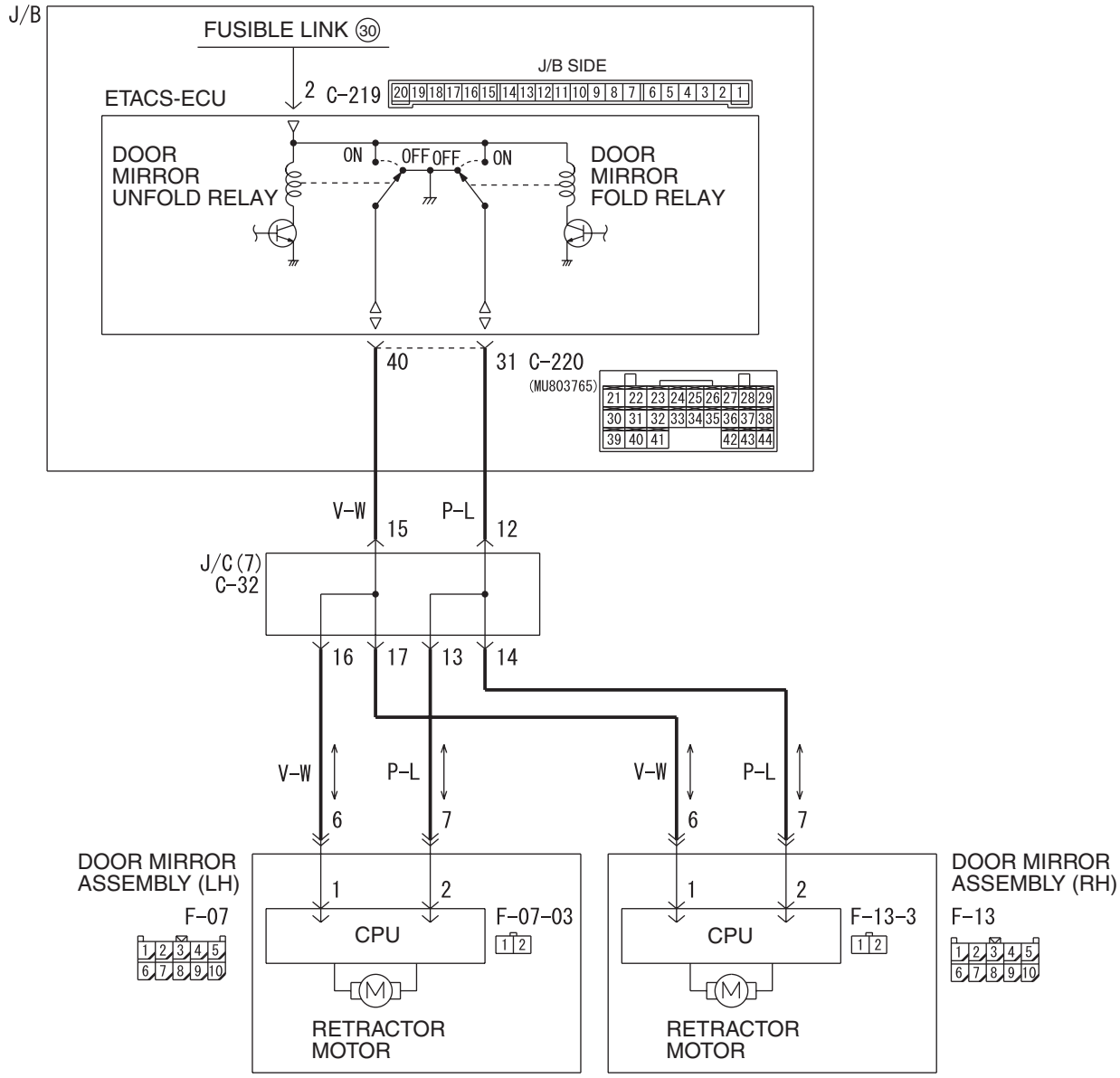
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

**Inspection Procedure J-2: Left or right side electric retractable remote controlled door mirror does not work at all.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

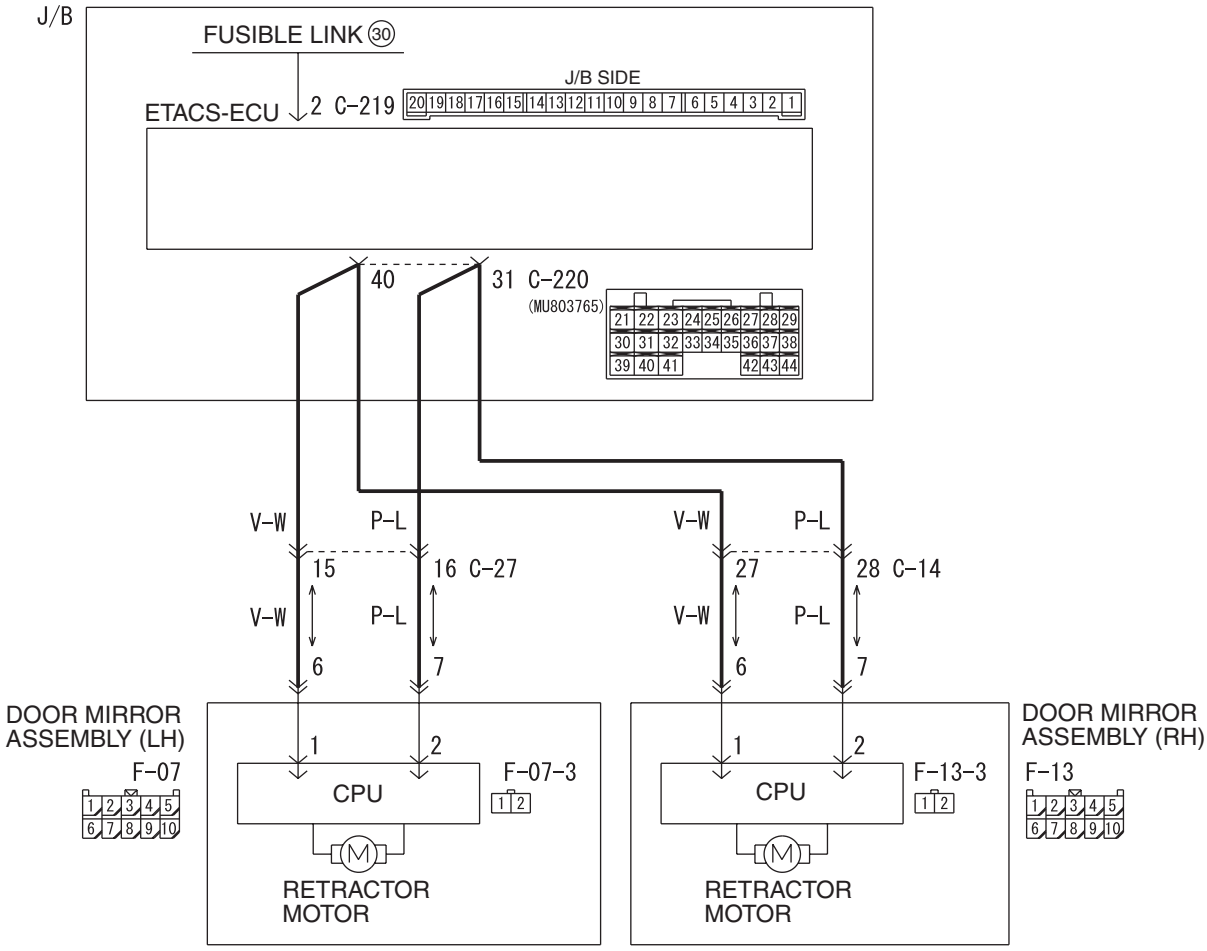
**Electric Retractable Remote Controlled Mirror Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E100A

**Electric Retractable Remote Controlled Mirror Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E101A

## COMMENTS ON TROUBLE SYMPTOM

If left or right side electric retractable remote controlled door mirror does not work at all, electric retractable remote controlled door mirror may be defective.

## POSSIBLE CAUSES

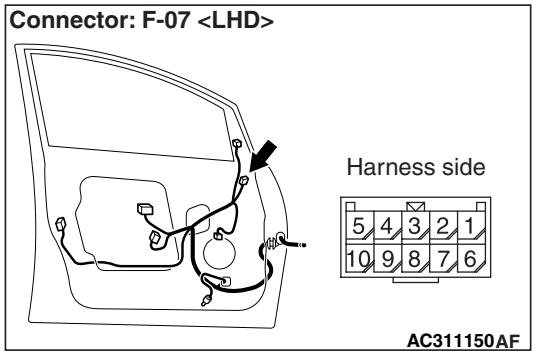
- Malfunction of the door mirror assembly
- Malfunction of the retractor motor
- Damaged harness wires and connectors

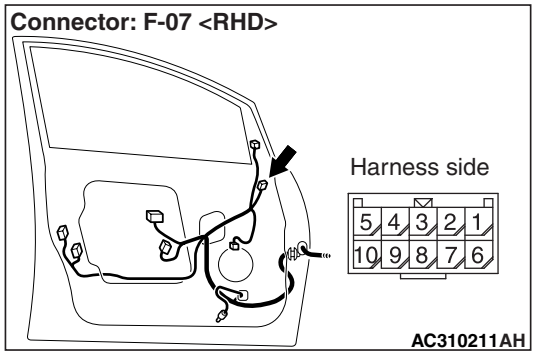
## DIAGNOSTIC PROCEDURE

**Step 1. Confirm which door mirror is defective.**

**Q: Confirm which door mirror is defective.**
**LH :** Go to Step 2.
**RH :** Go to Step 9.

**Step 2. Connectors check: F-07 door mirror assembly (LH) connectors.**



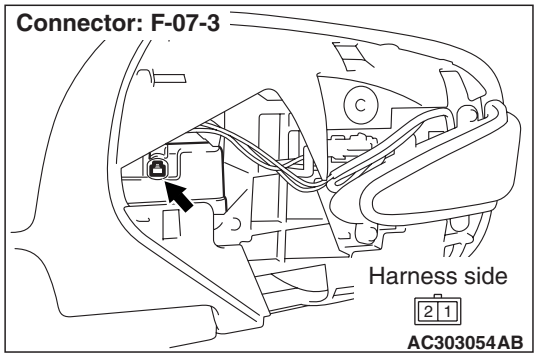




**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the connector.

**Step 3. Check the door mirror assembly (LH).**
Check that the electric folding outside rear-view mirror (LH) works normally. Refer to GROUP 51 – Door mirror P.51-39.

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Go to Step 4.

**Step 4. Connectors check: F-07-3 retractor motor (LH) connectors.**

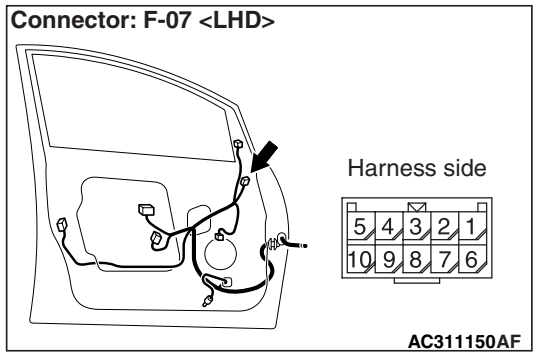


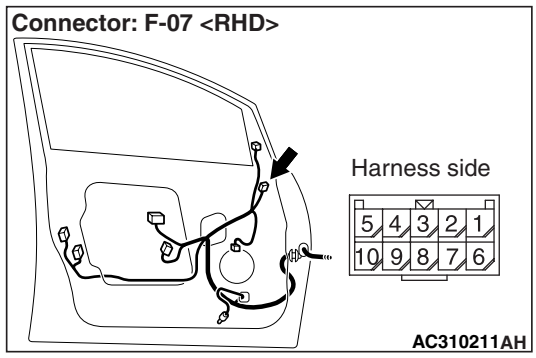

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the connector.

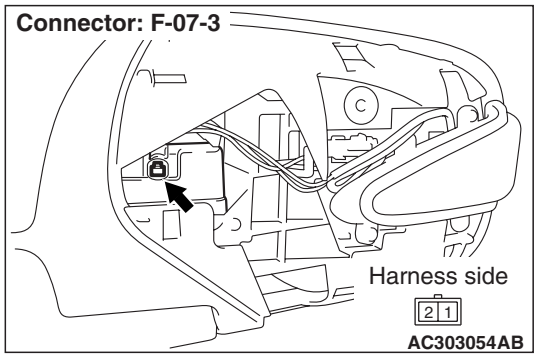
**Step 5. Check the retractor motor (LH).**
Check that the electric folding outside rear-view mirror (LH) works normally. Refer to GROUP 51 – Door mirror P.51-39.

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Replace the retractor motor (LH).

**Step 6. Check the wiring harness between F-07-3 retractor motor (LH) connector terminal Nos.1, 2 and F-07 door mirror assembly (LH) connector terminal Nos.7, 6.**



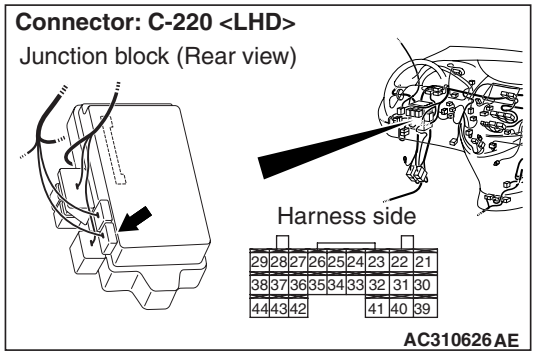



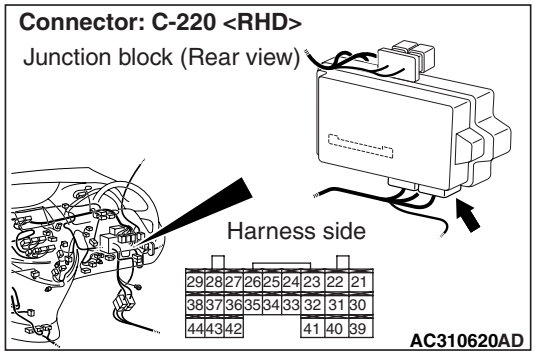




- Check the input and output signal line for open circuit.

**Q: Is the check result normal?**
**YES :** Replace the door mirror assembly (LH).
**NO :** Repair the wiring harness.

**Step 7. Connector check: C-220 ETACS-ECU connector.**

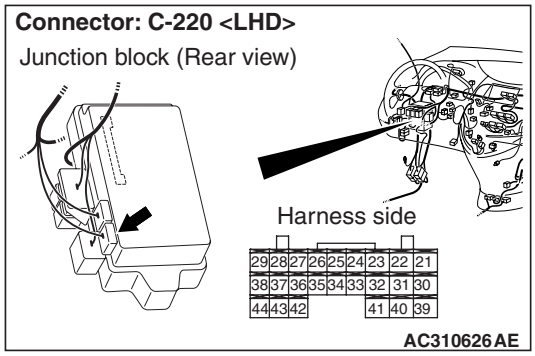


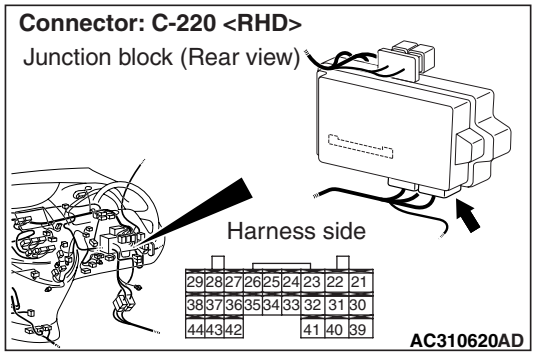



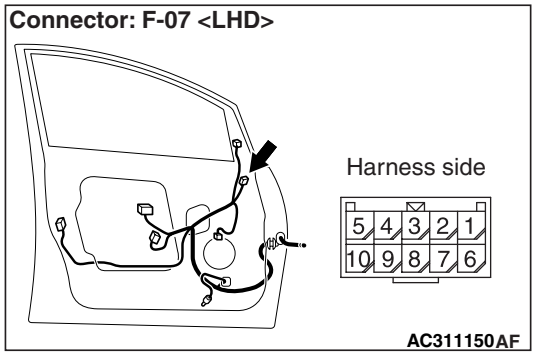

**Q: Is the check result normal?**

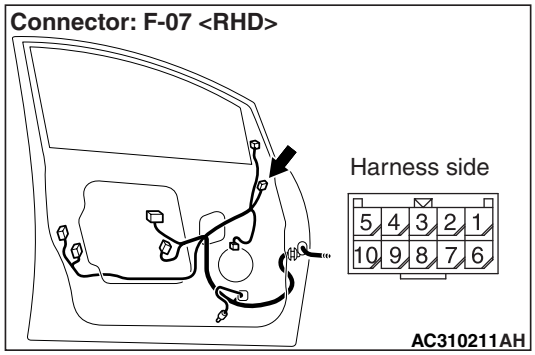
**YES :** Go to Step 8.
**NO :** Repair the connector.

**Step 8. Check the wiring harness between C-220 ETACS-ECU connector terminal Nos.31, 40 and F-07 door mirror assembly (LH) connector terminal Nos.7, 6.**

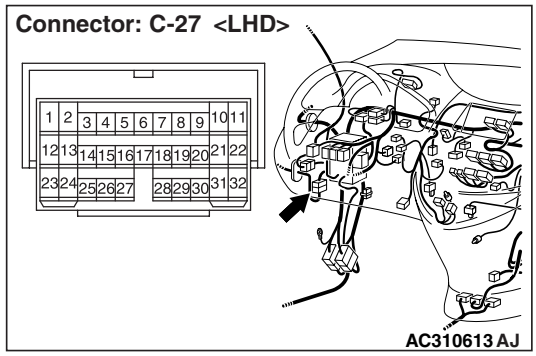


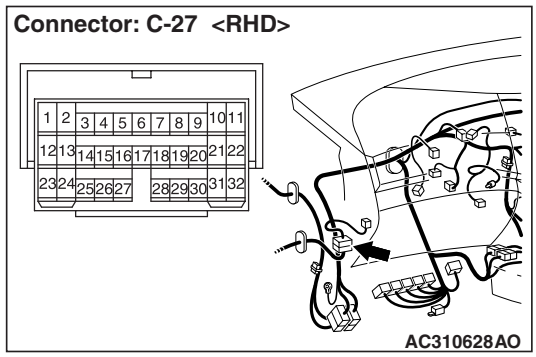



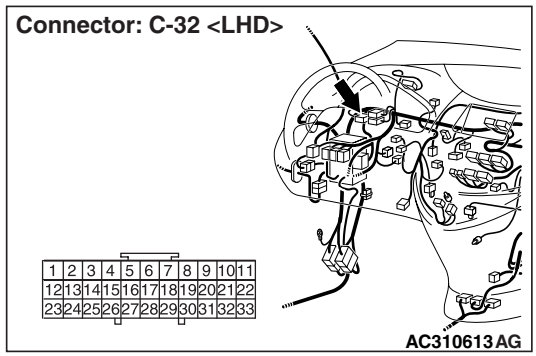




*NOTE:*



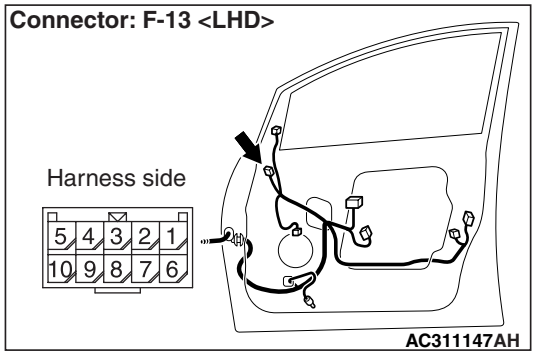



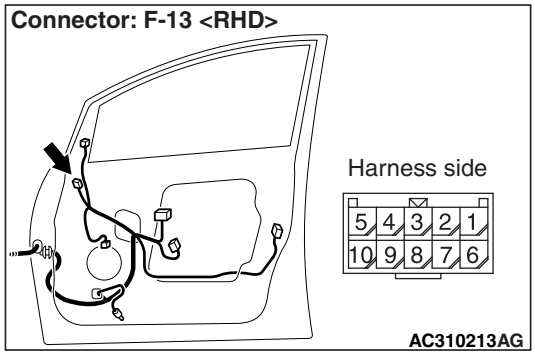

*Prior to the wiring harness inspection, check intermediate connector C-27 and junction block connector C-32 <L.H drive vehicles>, and repair if necessary.*

- Check the input and output signal line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 16.
**NO :** Repair the wiring harness.

**Step 9. Connectors check: F-13 door mirror assembly (RH) connectors.**



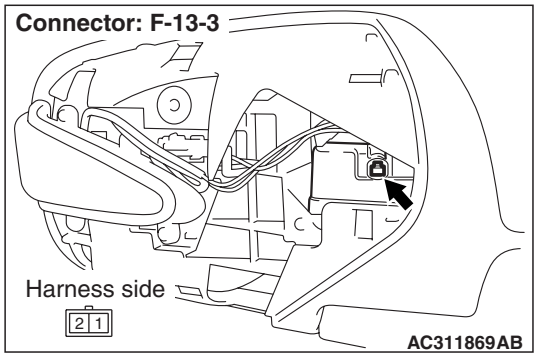




**Q: Is the check result normal?**
**YES :** Go to Step 10.
**NO :** Repair the connector.

**Step 10. Check the door mirror assembly (RH).**
Check that the electric folding outside rear-view mirror (RH) works normally. Refer to GROUP 51 – Door mirror P.51-39.

**Q: Is the check result normal?**
**YES :** Go to Step 14.
**NO :** Go to Step 11.

**Step 11. Connectors check: F-13-3 retractor motor (RH) connectors.**

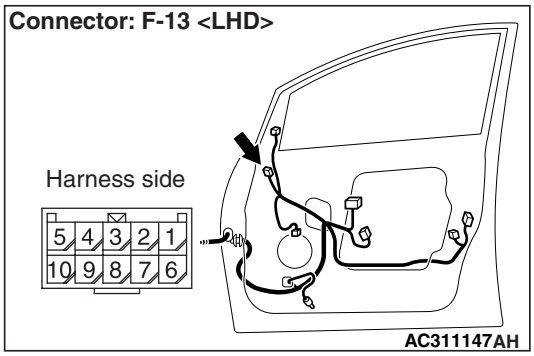


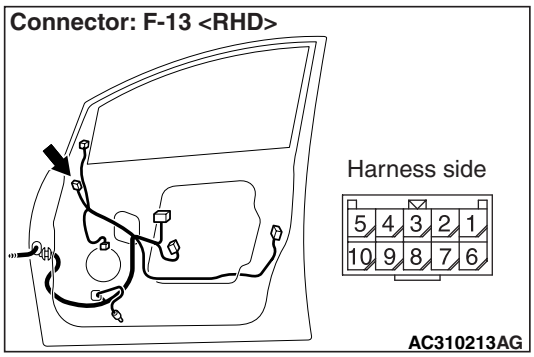

**Q: Is the check result normal?**
**YES :** Go to Step 12.
**NO :** Repair the connector.

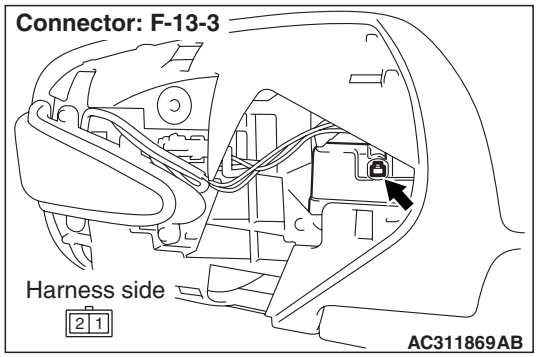
**Step 12. Check the retractor motor (RH).**
Check that the electric folding outside rear-view mirror (RH) works normally. Refer to GROUP 51 – Door mirror P.51-39.

**Q: Is the check result normal?**
**YES :** Go to Step 13.
**NO :** Replace the retractor motor (RH).

**Step 13. Check the wiring harness between F-13-3 retractor motor (RH) connector terminal Nos.1, 2 and F-13 door mirror assembly (RH) connector terminal Nos.7, 6.**



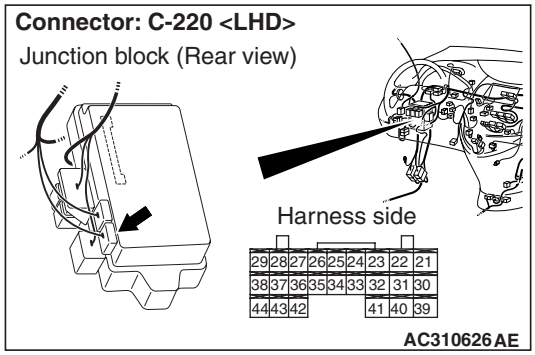



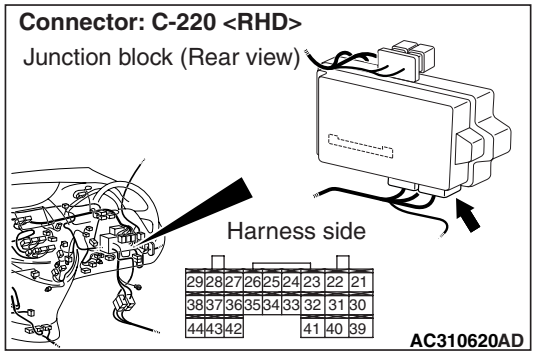




- Check the input and output signal line for open circuit.

**Q: Is the check result normal?**
**YES :** Replace the door mirror assembly (RH).
**NO :** Repair the wiring harness.

**Step 14. Connector check: C-220 ETACS-ECU connector.**

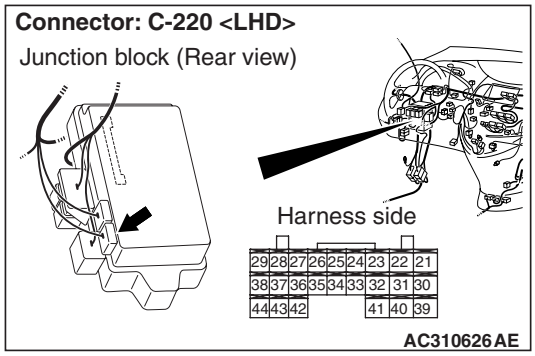


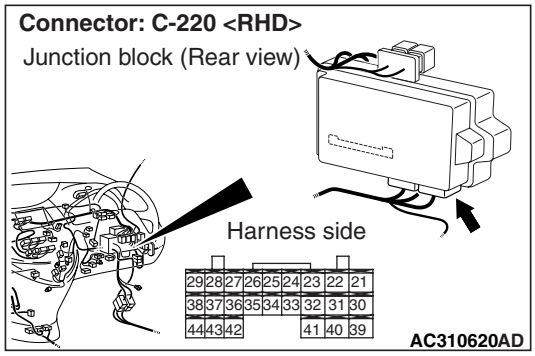



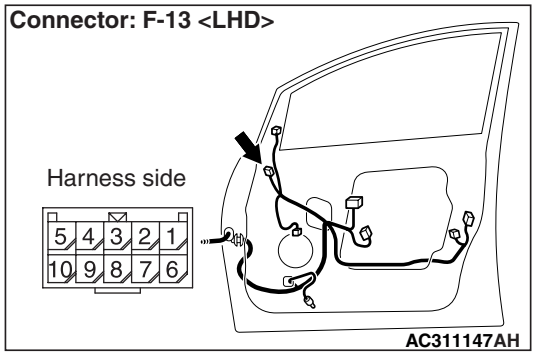

**Q: Is the check result normal?**

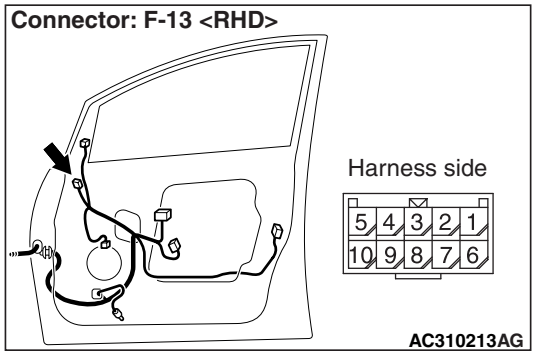
**YES :** Go to Step 15.
**NO :** Repair the connector.

**Step 15. Check the wiring harness between C-220 ETACS-ECU connector terminal Nos.31, 40 and E-13 door mirror assembly (RH) connector terminal Nos.7, 6.**

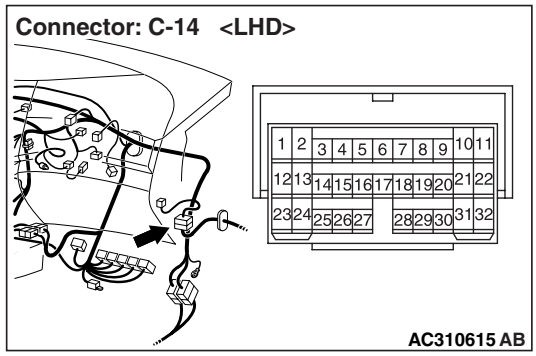


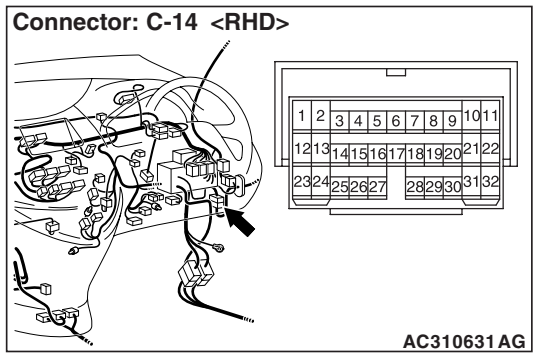



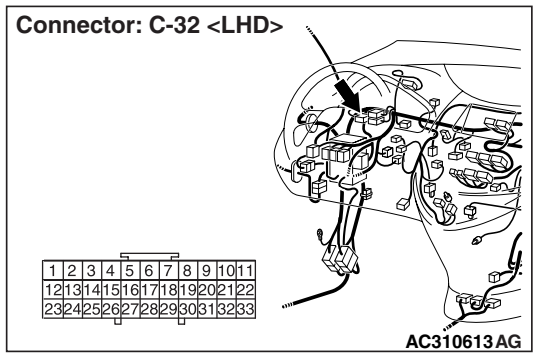




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-14 and junction block connector C-32 <L.H drive vehicles>, and repair if necessary.*

- Check the input and output signal line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 16.
**NO :** Repair the wiring harness.

**Step16. Retest the system.**
Check that the electric retractable remote controlled mirror works normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

**Inspection Procedure J-3: Electric retractable remote controlled door mirror timer function does not at all.**

⚠ CAUTION
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

## COMMENTS ON TROUBLE SYMPTOM

If the door mirror can be folded and unfolded with the remote controlled mirror switch (fold/unfold switch), the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. Check the electric retractable door mirrors operation.**
Check that the door mirror is folded and unfolded with the remote controlled mirror switch when the ignition switch is at ACC position.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to inspection procedure J-1 "The electric retractable remote controlled door mirrors does not work at all P.54C-250."

**Step 2. ECU check on the SWS monitor.**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

**ECU TO BE CHECKED**

- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 3. SWS monitor data list.**
Check the SWS communication signal, which are related to the electric retractable door mirror timer function.

**<Selected item> ETACS ECU**

- Ignition switch: IG1

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 30 | IG SW (IG1) | ON |

**OK: Normal conditions is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."

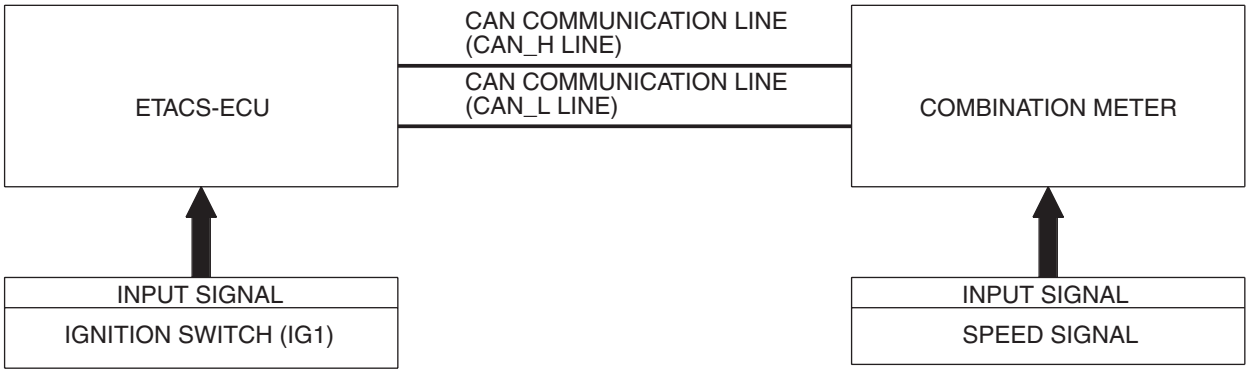
**Step 4. Retest the system.**
Check that the electric retractable door mirror timer function works normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure J-4: Vehicle speed-dependent unfolding function does not work normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Vehicle Speed-Dependent Unfolding Function**

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## COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.

- Ignition switch (IG1)
- Vehicle speed signal

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective. In addition, it is possible that the function except the vehicle speed-dependent unfolding function has been set by using the customized function.

## POSSIBLE CAUSES

- Malfunction of ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. Check the SWS monitor customized function.**
Check that "WING MIRROR" is set to "SPEED SEN FUN" by using the customized function.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Set "WING MIRROR" to "SPEED SEN FUN" by using the customized function. (Refer to P.54C-574).

**Step 2. Check the electric folding door mirrors operation.**
Check that the door mirror is folded and unfolded with the remote controlled mirror switch when the ignition switch is at ACC position.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Refer to inspection procedure J-1 "The electric retractable remote controlled door mirrors does not work at all P.54C-250."

**Step 3. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: ON

**ECUS TO BE CHECKED**

- ETACS ECU

  **OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 4. ETACS ANALOG data by using the SWS monitor.**
Check the ETACS-ECU signal related to the vehicle speed-dependent unfolding function.

- Set the simulated vehicle speed at approximately 10 km/h.

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | SPEED SENSOR | 8 – 10 km/h |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Refer to inspection procedure Q-25 "The vehicle speed signal is not received P.54C-568."

**STEP 5. Retest the system.**
Check that the vehicle speed-dependent unfolding function works normally.

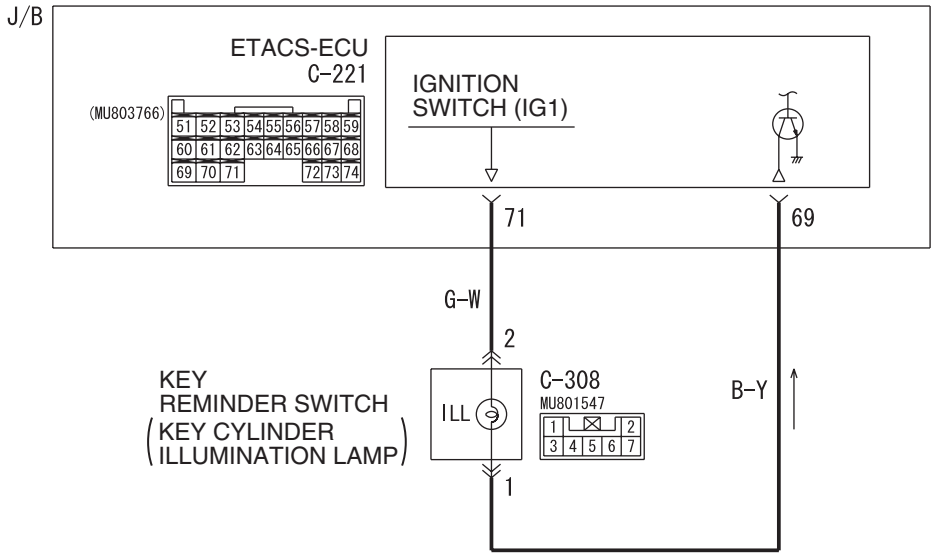
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

# IGNITION KEY CYLINDER ILLUMINATION LAMP

**Inspection Procedure K-1: The ignition key cylinder illumination lamp does not illuminate/extinguish normally.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Ignition Key Cylinder Illumination Lamp Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

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## COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.

**<Vehicles without keyless entry system>**
- Ignition switch (IG1)
- Driver's door switch

**<Vehicles with keyless entry system>**
- Ignition switch (IG1)
- Key reminder switch
- Driver's door switch

- Interior lamp loaded signal

If this function does not work normally, these input signal circuit(s), the ignition key cylinder illumination lamp or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the driver's door switch
- Malfunction of the ignition key cylinder illumination lamp
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the operation of the interior lamp.**
Check that the interior lamps illuminate and extinguish normally.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to inspection procedure P-1 "The interior lamps (room ramp, rear personal lamps, door lamps, luggage compartment lamp, key illumination lamp) does not illuminate or extinguish normally P.54C-374."

**Step 2. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

**ECU TO BE CHECKED**

- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 3. SWS monitor data list**
Check the SWS communication signal, which are related to the ignition key cylinder illumination lamp.

**<Selected item> ETACS ECU**

- Ignition switch: OFF
- Driver's door: open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 30 | IG SW(IG1) | OFF |
| Item 32 | DR DOOR SW | ON |

**OK: Normal conditions are displayed for all the items**

**Q: Are the check result normal?**
**Normal conditions are displayed for all the items. <Vehicles without keyless entry system> :** Go to Step 4.
**Normal conditions are displayed for all the items. <Vehicles with keyless entry system> :** Go to Step 5.
**Normal condition is not displayed for item No.30. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."
**Normal condition is not displayed for item No.32. :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received P.54C-474 <LH drive vehicles> or P.54C-476 <RH drive vehicles>."

**Step 4. ETACS switch data by using the SWS monitor**
Check the ETACS-ECU communication signal, which is related to the ignition key cylinder illumination lamp.

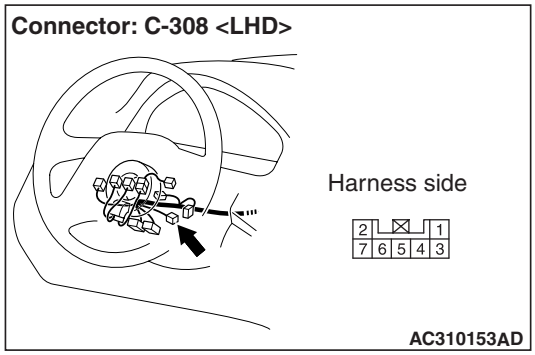
- Ignition switch: OFF (key inserted)

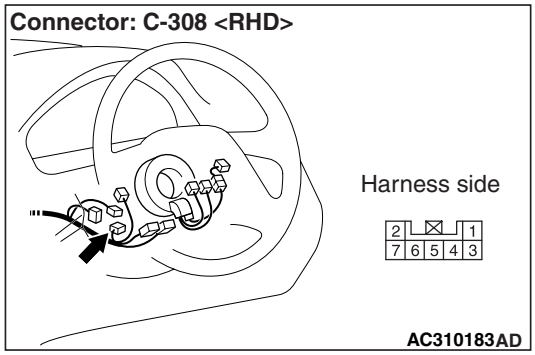
| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | KEY REMIN SW | OFF |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Refer to inspection procedure Q-11 "The key reminder switch signal is not received P.54C-493."

**Step 5. Connector check: C-308 key reminder switch connector.**



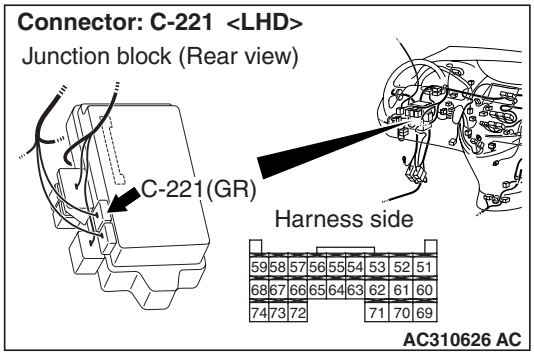



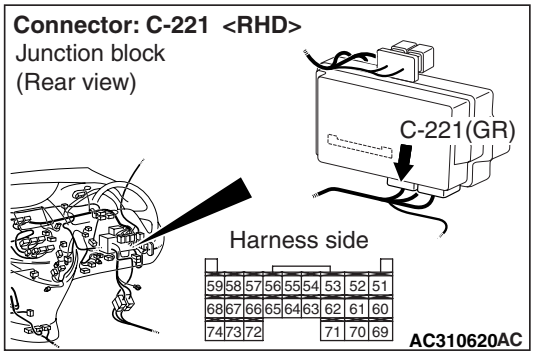

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

**Step 6. Check the bulb of the ignition key cylinder illumination lamp.**
Check the bulb of the ignition key cylinder illumination lamp.

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Replace the bulb of the ignition key cylinder illumination lamp.

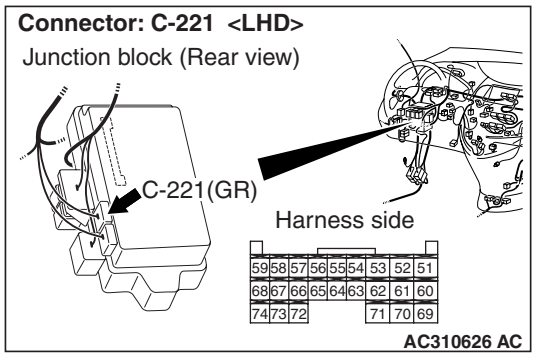
**Step 7. Connector check: C-221 ETACS-ECU connector.**

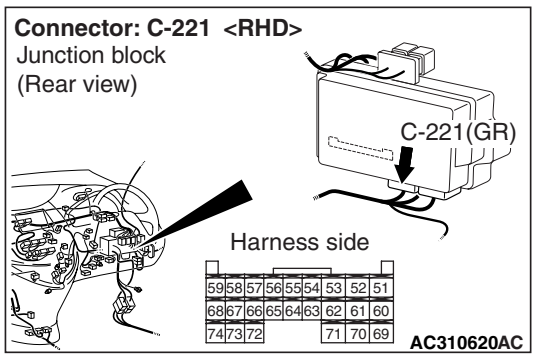


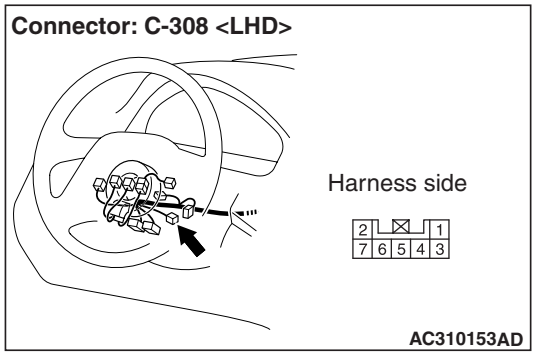



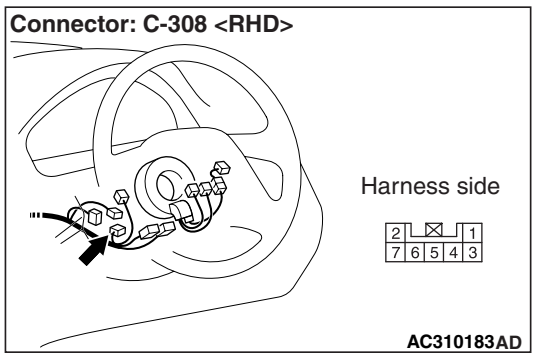

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the defective connector.

**Step 8. Check the wiring harness from C-221 ETACS-ECU connector terminal Nos.69 and 71 to C-308 key cylinder illumination lamp connector terminal Nos.1 and 2.**




- Check the input and output lines for open circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 9.
**NO :** Repair the wiring harness.

**Step 9. Retest the system.**
Check that the ignition key cylinder illumination lamp illuminates/extinguishes normally.

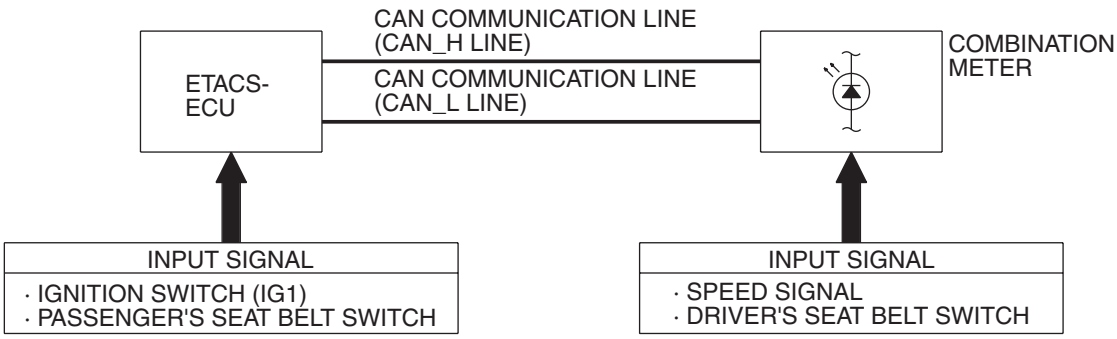
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

# SEAT BELT WARNING LAMP

## Inspection Procedure L-1: The seat belt warning lamp does not flash normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Seat Belt Warning Lamp Function**

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## COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU flashes the seat belt warning lamp in accordance with the input signal from the ignition switch (IG1).
If it does not flash normally, these input signal circuit(s) or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. SWS monitor data list.**
Check the SWS communication signal, which are related to the seat belt warning lamp.

**<Selected item> ETACS ECU**

- Ignition switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 30 | IG SW(IG1) | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."

**Step 2. ETACS switch data by using the SWS monitor**
Check the ETACS-ECU input signal related to the seat belt warning lamp function.

- Ignition switch: ON
- Driver's seat belt switch: ON (Unfastened)
- Passenger's seat belt switch: ON (Unfastened)
- Seat occupancy sensor: ON (Seat occupied)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 12 | SEAT BELT SW | ON |
| Item 43 | As.SeatBeltSW | ON |

**OK: Normal conditions are displayed for all the items**

**Q: Are the check result normal?**

**Normal conditions are displayed for all the items :**
Go to Step 3.

**Normal condition is not displayed for item No.12. :**
Refer to inspection procedure Q-19 "The driver's seat belt switch signal is not received P.54C-537 <LH drive vehicles> or P.54C-540 <RH drive vehicles>."

**Normal condition is not displayed for item No.43. :**
Refer to inspection procedure Q-20 "The front passenger's seat belt switch signal is not received P.54C-546 <LH drive vehicles> or P.54C-543 <RH drive vehicles>."

**Step 3. ETACS ANALOG data by using the SWS monitor.**

Check the ETACS-ECU input signal related to the seat belt warning lamp function.

- Set the simulated vehicle speed at approximately 10km/h.

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | SPEED SENSOR | 8 – 10 km/h |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 4.

**NO :** Refer to inspection procedure Q-25 "The vehicle speed signal is not received P.54C-568."

**Step 4. Retest the system.**

Check that the seat belt warning lamp flashes normally.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

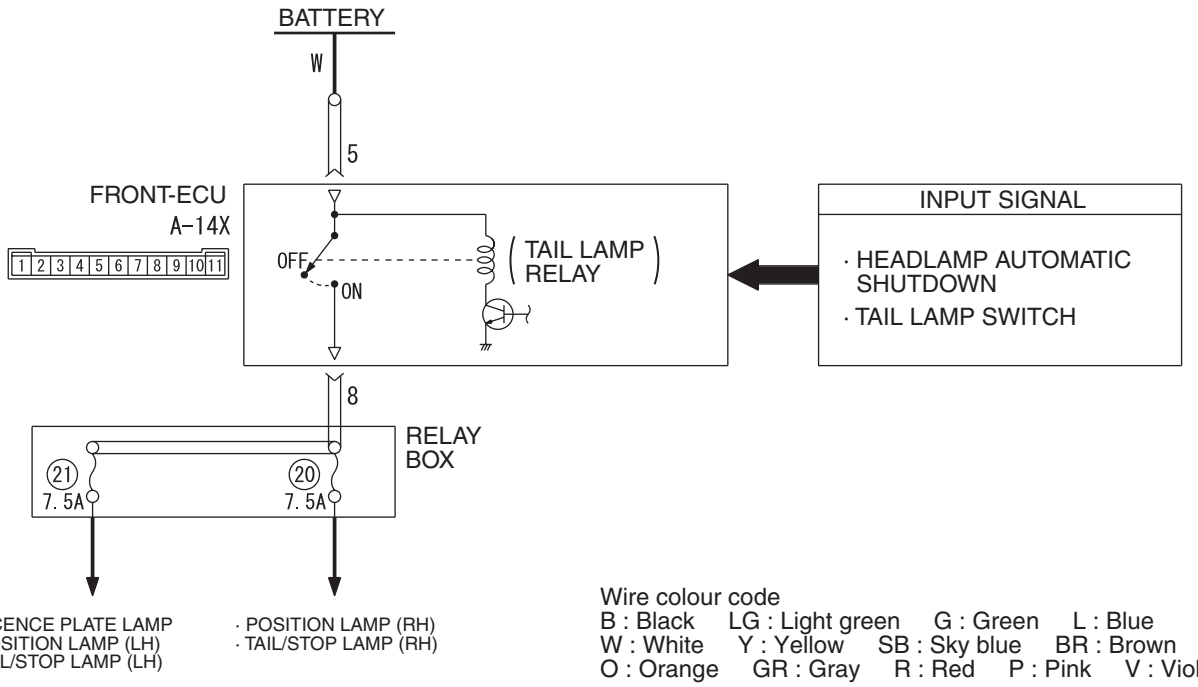
**NO :** Replace the ETACS-ECU.

# HEADLAMP AND TAIL LAMP

## Inspection Procedure M-1: The tail/stop lamps do not illuminate normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Tail Lamp Relay Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue
W : White Y : Yellow SB : Sky blue BR : Brown
O : Orange GR : Gray R : Red P : Pink V : Violet

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## COMMENTS ON TROUBLE SYMPTOM

If all the tail/stop lamps do not illuminate, the tail lamp switch input circuit or the front-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the column switch (column-ECU) and the front-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

**ECUS TO BE CHECKED**

- COLUMN ECU
- FRONT ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**

**"OK" are displayed for all the items :** Go to Step 2.
**"NG" is displayed on the "COLUMN ECU" menu. :**
Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."
**"NG" is displayed on the "FRONT ECU" menu. :**
Refer to Inspection Procedure A-4 "Communication with the front-ECU is not possible P.54C-70."

**Step 2. Function diagnosis by using the SWS monitor.**
Check the SWS communication signal, which are related to the tail lamps.

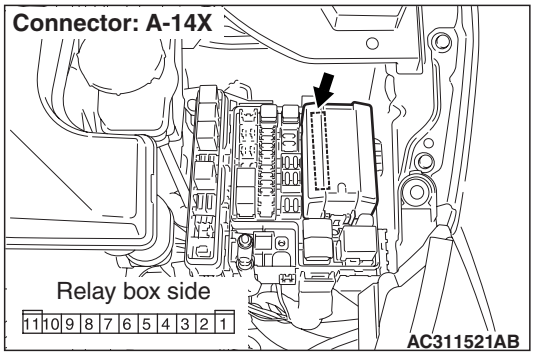
**<Selected item> LIGHTING - TAIL LAMP**
- Ignition switch: ON
- Lighting switch: TAIL

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 00 | HEADLAMP SW | ON when the lighting switch is at HEAD |
| Item 01 | TAIL LAMP SW | ON when the lighting switch is at TAIL |
| Item 03 | PASSING SW | OFF |
| Item 30 | IG SW(IG1) | ON |
| Item 35 | HD AUTO-CUT | OFF |
| Item 70 | FRONT ECU ACK | NORMAL ACK |

**OK: Normal conditions are displayed for all the items**

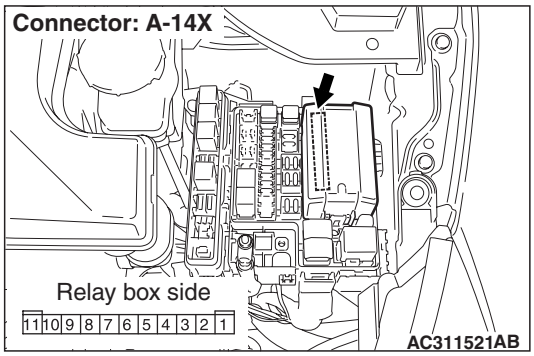
**Q: Are the check result normal?**
**Normal conditions are displayed for all the items. :**
Go to Step 3.
**Normal condition is not displayed for item 00, 01 or 03. :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54C-478."
**Normal condition is not displayed for item No.30. :**
Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."
**Normal condition is not displayed for item No.35. :**
Refer to Inspection Procedure M-5 "The headlamp automatic-shutdown function does not work normally P.54C-280."
**Normal condition is not displayed for item No.70. :**
Replace the front-ECU.

**Step 3. Connector check: A-14X front-ECU connector.**

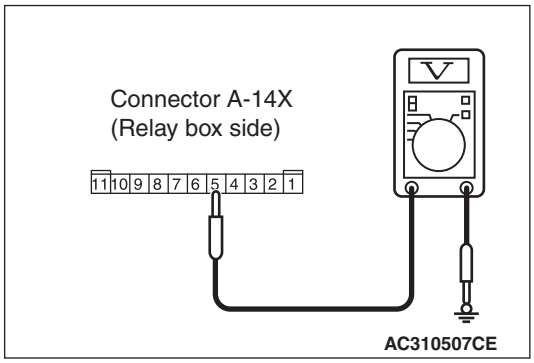



**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the defective connector.

**Step 4. Voltage measurement at A-14X front-ECU connector.**




(1) Remove the front-ECU, and measure at the relay box side.

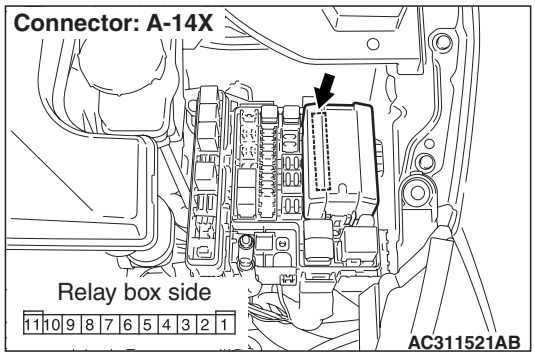



(2) Voltage between A-14X front-ECU connector terminal No.5 and body earth

**OK: System voltage**

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Go to Step 5.

**Step 5. Check the wiring harness between A-14X front-ECU connector terminal No.5 and the fusible link (26).**




- Check the power supply line for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

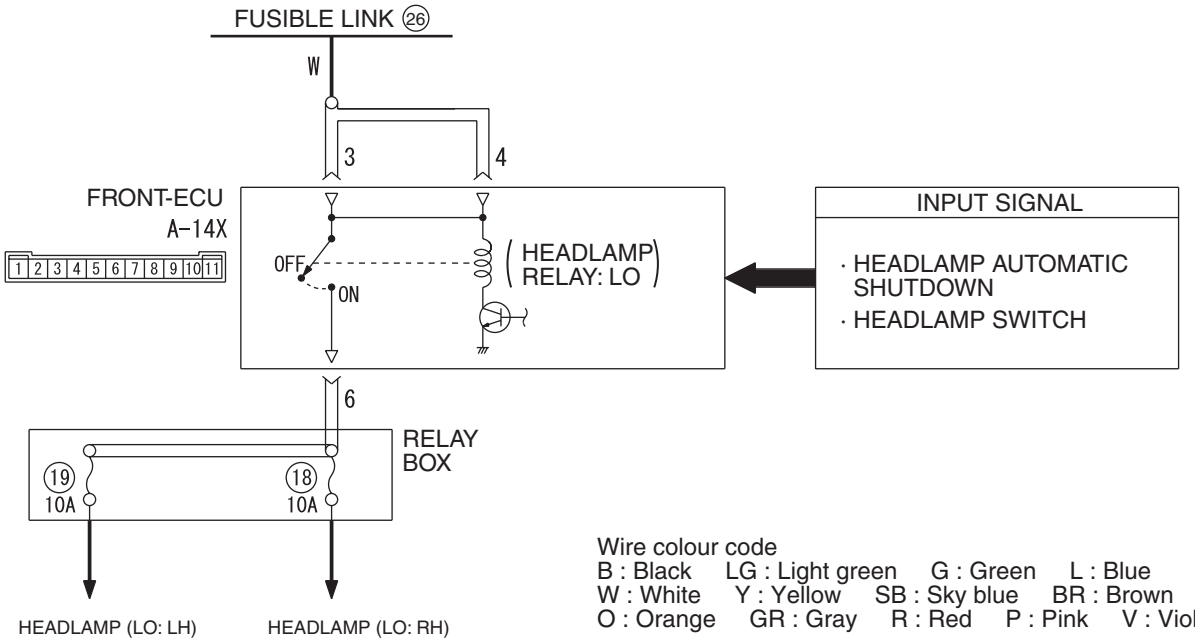
**Step 6. Retest the system.**
Check that the tail/stop lamps illuminate normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the front-ECU.

## Inspection Procedure M-2: The low-beam headlamps do not illuminate normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Headlamp Relay (Low-Beam) Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue
W : White Y : Yellow SB : Sky blue BR : Brown
O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E27AA

## COMMENTS ON TROUBLE SYMPTOM

If the low-beam headlamps do not illuminate, the headlamp switch input circuit or the front-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the column switch (column-ECU) and the front-ECU and the SWS communication lines are normal.
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- COLUMN ECU
- FRONT ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**
**"OK" are displayed for all the items :** Go to Step 2.
**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."
**"NG" is displayed on the "FRONT ECU" menu. :** Refer to Inspection Procedure A-4 "Communication with the front-ECU is not possible P.54C-70."

**Step 2. Function diagnosis by using the SWS monitor.**
Check the SWS communication signal, which are related to the low-beam headlamps.

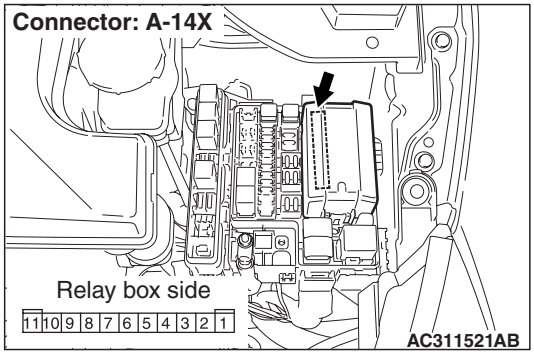
**<Selected item> LIGHTING - HEADLAMP LO**
- Ignition switch: ON
- Lighting switch: HEAD

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 00 | HEADLAMP SW | ON |
| Item 03 | PASSING SW | OFF |
| Item 30 | IG SW(IG1) | ON |
| Item 35 | HD AUTO-CUT | OFF |
| Item 70 | FRONT ECU ACK | NORMAL ACK |

**OK: Normal conditions are displayed for all the items**

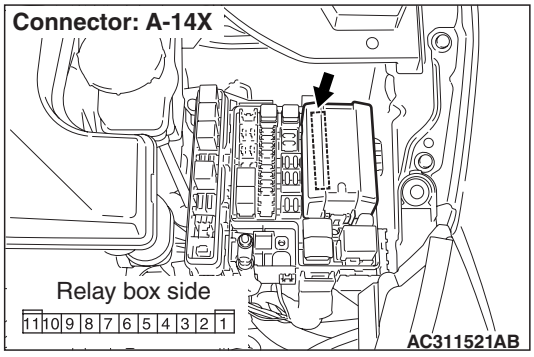
**Q: Are the check result normal?**
**Normal conditions are displayed for all the items. :** Go to Step 3.
**Normal condition is not displayed for item No.00 or 03. :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54C-478."
**Normal condition is not displayed for item No.30. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."
**Normal condition is not displayed for item No.35. :** Refer to Inspection Procedure M-5 "The headlamp automatic-shutdown function does not work normally P.54C-280."
**Normal condition is not displayed for item No.70. :** Replace the front-ECU.

**Step 3. Connector check: A-14X front-ECU connector.**



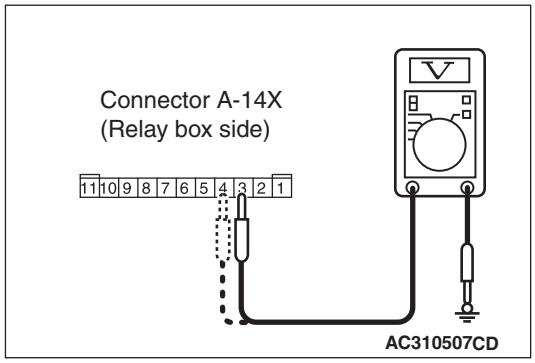

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the defective connector.

**Step 4. Voltage measurement at A-14X front-ECU connector.**




(1) Remove the front-ECU, and measure at the relay

box side.

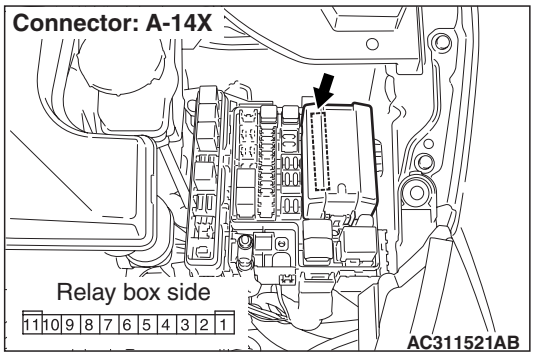



(2) Voltage between A-14X front-ECU connector terminal Nos.3, 4 and body earth

**OK: System voltage**

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Go to Step 5.

**Step 5. Check the wiring harness between A-14X front-ECU connector terminal Nos.3, 4 and the fusible link (26).**




- Check the power supply line for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

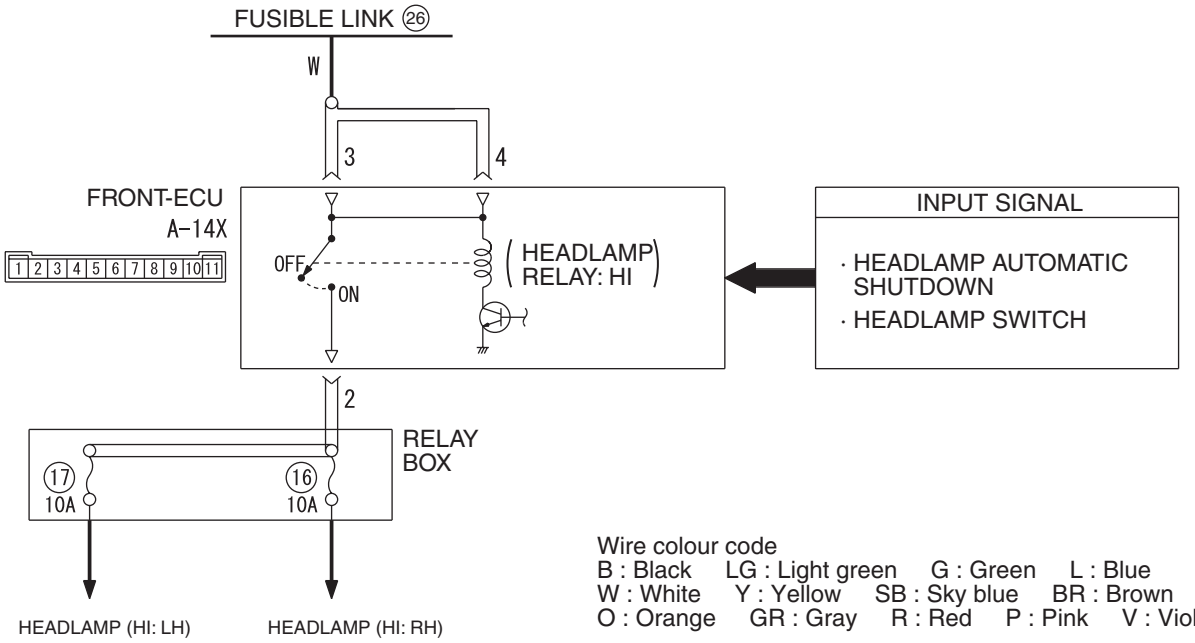
**Step 6. Retest the system.**
Check that the low-beam headlamps illuminate normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the front-ECU.

## Inspection Procedure M-3: The high-beam headlamps do not illuminate normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Headlamp Relay (High-Beam) Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue
W : White Y : Yellow SB : Sky blue BR : Brown
O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E28AA

## COMMENTS ON TROUBLE SYMPTOM

If the high-beam headlamps do not illuminate, the dimmer switch input circuit or the front-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the column switch (column-ECU) and the front-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

**ECUS TO BE CHECKED**

- COLUMN ECU
- FRONT ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**
**"OK" are displayed for all the items :** Go to Step 2.
**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."
**"NG" is displayed on the "FRONT ECU" menu. :** Refer to Inspection Procedure A-4 "Communication with the front-ECU is not possible P.54C-70."

**Step 2. Function diagnosis by using the SWS monitor.**
Check the SWS communication signal, which are related to the high-beam headlamps.

**<Selected item> LIGHTING - HEADLAMP HI**
- Ignition switch: ON
- Lighting switch: HEAD
- Dimmer switch: from OFF to ON, and then to OFF again

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 00 | HEADLAMP SW | ON |
| Item 02 | DIMMER SW | from OFF to ON, and then to OFF again ("ON" should be displayed when the dimmer switch is operated) |
| Item 03 | PASSING SW | OFF |
| Item 30 | IG SW(IG1) | ON |
| Item 35 | HD AUTO-CUT | OFF |
| Item 70 | FRONT ECU ACK | NORMAL ACK |

**OK: Normal conditions are displayed for all the items**

**Q: Are the check result normal?**

**Normal conditions are displayed for all the items. :** Go to Step 3.
**Normal condition is not displayed for item Nos.00, 02 or 03. :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp and headlamp washer switch) signal is not received P.54C-478."
**Normal condition is not displayed for item No.30. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."
**Normal condition is not displayed for item No.35. :** Refer to Inspection Procedure M-5 "The headlamp automatic-shutdown function does not work normally P.54C-280."
**Normal condition is not displayed for item No.70. :** Replace the front-ECU.

**Step 3. Retest the system.**
Check that the high-beam headlamps illuminate normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the front-ECU.

## Inspection Procedure M-4: The high-beam and low-beam headlamps do not illuminate when the passing switch is operated.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

## COMMENTS ON TROUBLE SYMPTOM
If the low-beam and high-beam headlamps are normal, the passing switch input signal circuit or the front-ECU may be defective.

## POSSIBLE CAUSES
- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the operation of the headlamps.**
Check that the low-beam and high-beam headlamps illuminate normally.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the headlamps. Refer to trouble symptom chart P.54C-44.

**Step 2. SWS monitor data list.**
Check the ETACS-ECU signals which are related to the headlamps.

**<Selected item> COLUMN ECU**
- Passing lamp switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | PASSING SW | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 3.
**NO :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp and headlamp washer switch) signal is not received P.54C-478."

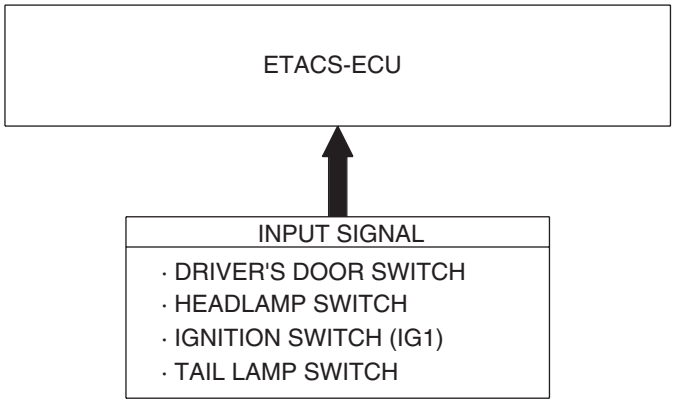
**Step 3. Retest the system.**
When the passing switch is turned on, check if the headlamps illuminate normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the front-ECU.

## Inspection Procedure M-5: The headlamp automatic-shutdown function does not work normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Headlamp Automatic Shutdown Function**




W4X54E162A

## COMMENTS ON TROUBLE SYMPTOM
The ETACS-ECU operates this function in accordance with the input signals below.
- Ignition switch (IG1)
- Driver's door switch
- Tail lamp switch
- Headlamp switch

If this function does not work normally, these input signal circuit(s), the front-ECU or the ETACS-ECU may be defective. On vehicles with keyless entry system, note that this function can be disabled/enabled by the customize function (default setting; enabled).

## POSSIBLE CAUSES
- Malfunction of the driver's door switch
- Malfunction of the front-ECU
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the SWS monitor Customize function function.**
Check that "H/L AUTO CUT" is set to "W.FUNCTION (A)" or "W.FUNCTION (D)" by using the adjustment function.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Set "H/L AUTO CUT" to "W.FUNCTION (A)" or "W.FUNCTION (D)" by using the adjustment function. (Refer to P.54C-574).

**Step 2. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the column switch (column-ECU), the ETACS-ECU and the front-ECU and the SWS communication lines are normal.
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- COLUMN ECU
- ETACS ECU
- FRONT ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**
**"OK" are displayed for all the items :** Go to Step 3.
**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."
**"NG" is displayed on the "ETACS ECU" menu. :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."
**"NG" is displayed on the "FRONT ECU" menu. :** Refer to Inspection Procedure A-4 "Communication with the front-ECU is not possible P.54C-70."

**Step 3. SWS monitor data list.**
Check the SWS communication signal, which are related to the headlamp automatic-shutdown function.

**<Selected item> LIGHTING - HD AUTO-CUT**
- Ignition switch: from ON to OFF
- Lighting switch: "TAIL" or "HEAD"

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 00 | HEADLAMP SW | ON when the lighting switch is at HEAD |
| Item 01 | TAIL LAMP SW | ON when the lighting switch is at TAIL |
| Item 30 | IG SW(IG1) | from ON to OFF |
| Item 70 | FRONT ECU ACK | SLEEP ACK or NORMAL ACK |

Check that the MUT-III displays normal condition when the condition above is changed to the condition below.
- Driver's door: open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | DR DOOR SW | ON |
| Item 35 | HD AUTO-CUT | OFF |

**OK: Normal conditions are displayed for all the items**

**Q: Are the check result normal?**
**Normal conditions are displayed for all the items :** Go to Step 4.
**Normal condition is not displayed for item Nos.00 or 01. :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54C-478."
**Normal condition is not displayed for item No.30. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."
**Normal condition is not displayed for item No.32. :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received P.54C-474 <LH drive vehicles> or P.54C-476 <RH drive vehicles>."
**Normal condition is not displayed for item Nos.35 or 70. :** Replace the front-ECU.

**Step 4. Retest the system.**
Check that the headlamp automatic-shutdown function works normally.

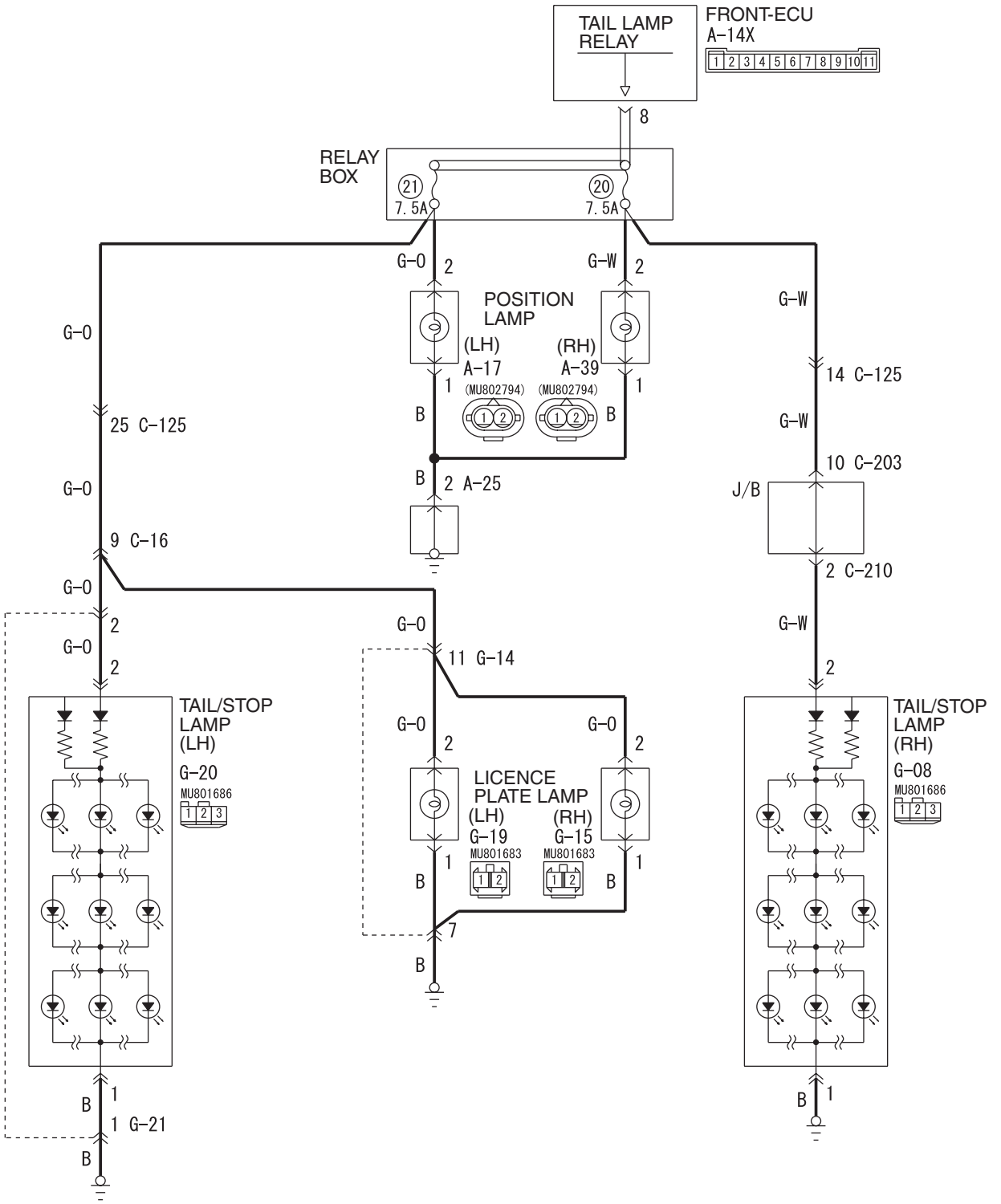
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

**Inspection Procedure M-6: Any of tail lamps, position lamps or licence plate lamp does not illuminate.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

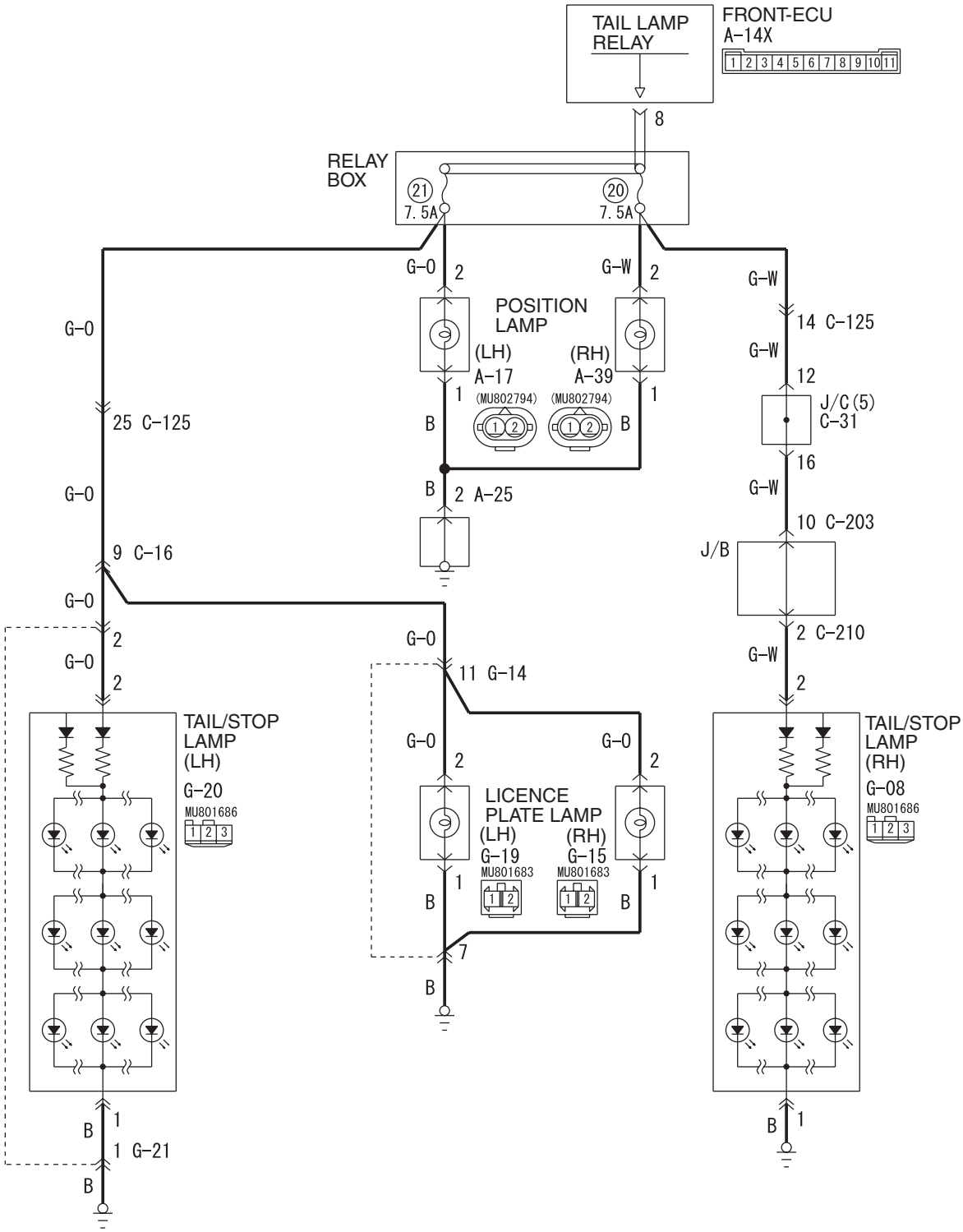
**Tail lamps, Position Lamps and License Plate Lamps Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E29AA

**Tail lamps, Position Lamps and License Plate Lamps Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E30AA

## COMMENTS ON TROUBLE SYMPTOM

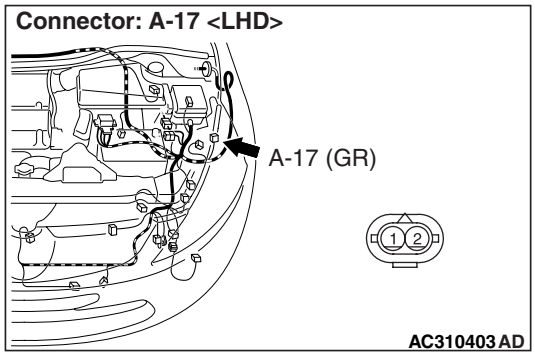
If the tail lamps, the position lamps or the licence plate lamps do not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

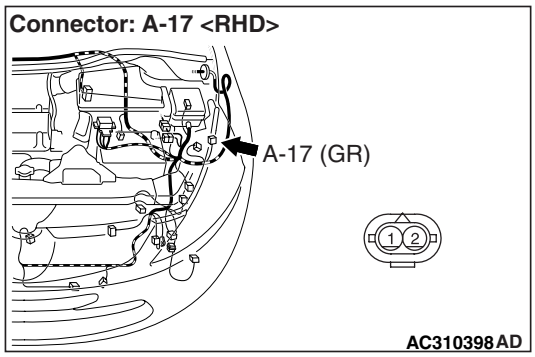
## POSSIBLE CAUSES

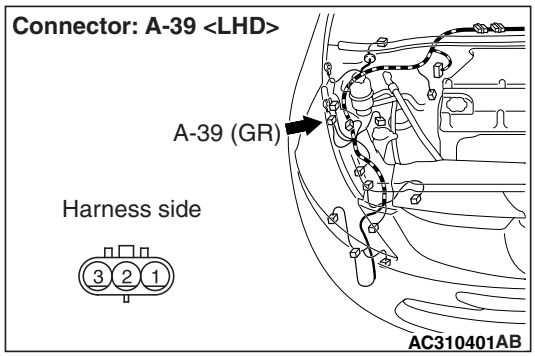
- Burned-out bulb
- Damaged harness wires and connectors

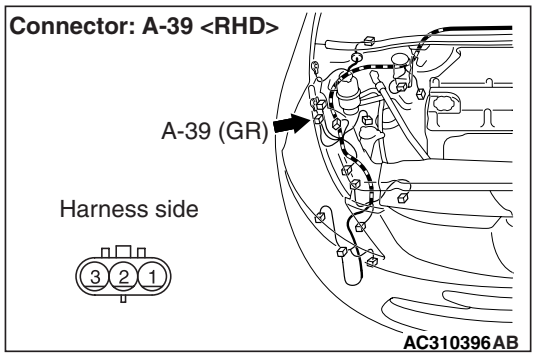
## DIAGNOSIS PROCEDURE

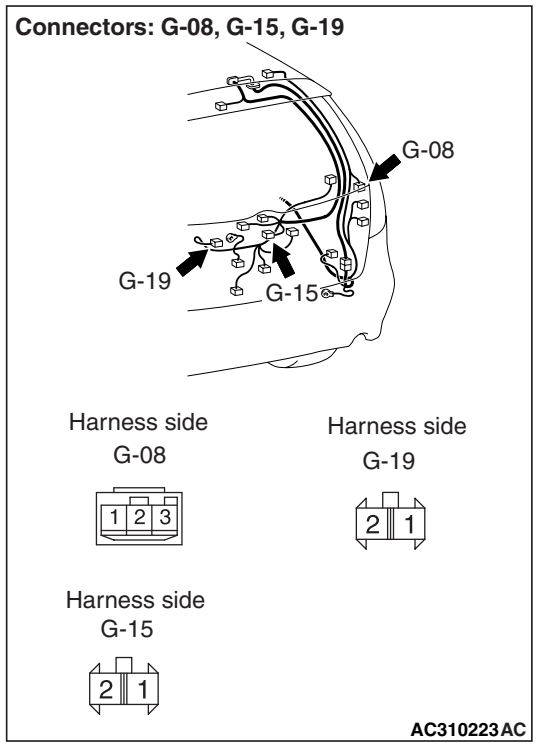
**Step 1. Connector check: G-08 tail/stop lamp (RH) connector or G-20 tail/stop lamp (LH) connector, A-39 position lamp (RH) connector or A-17 position lamp (LH) connector, G-15 licence plate lamp (RH) connector or G-19 licence plate lamp (LH) connector.**

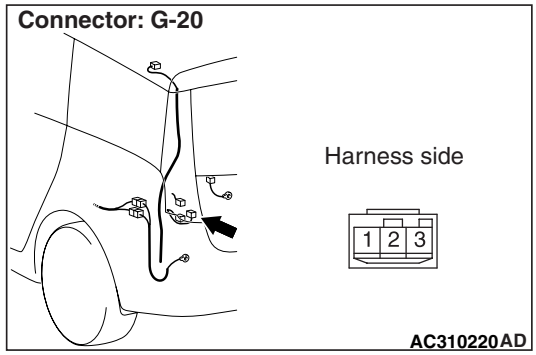


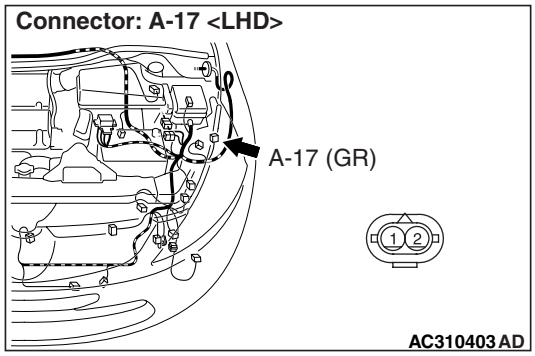

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

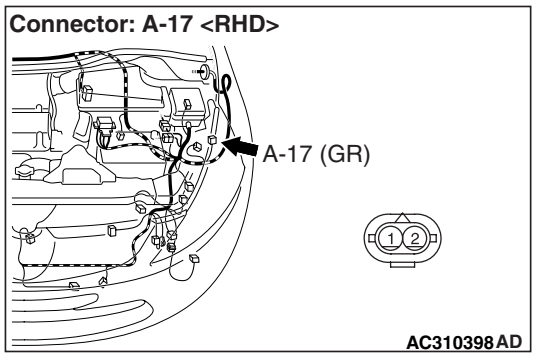
---

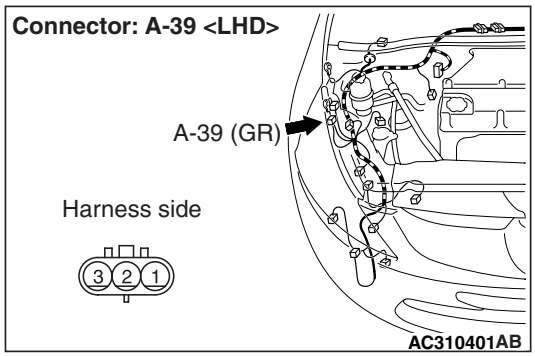
**Step 2. Check the bulbs of the position lamp or the licence plate lamp.**
Check the bulb of the lamp which does not illuminate.

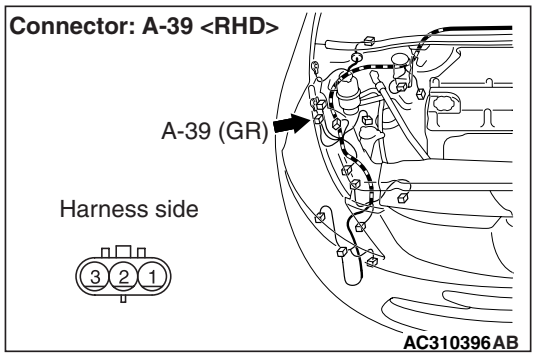
**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the bulb of the lamp which does not illuminate.

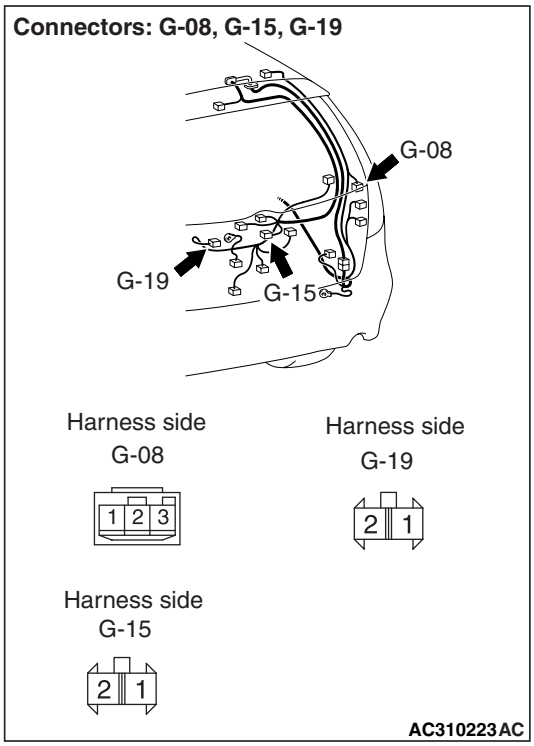
**Step 3. Resistance measurement at the G-08 tail/stop lamp (RH) connector or G-20 tail/stop lamp (LH) connector, the A-39 position lamp (RH) connector or A-17 position lamp (LH) connector, the G-15 licence plate lamp (RH) connector or G-19 licence plate lamp (LH) connector.**

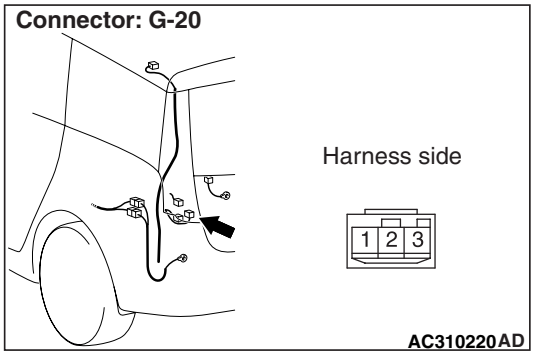


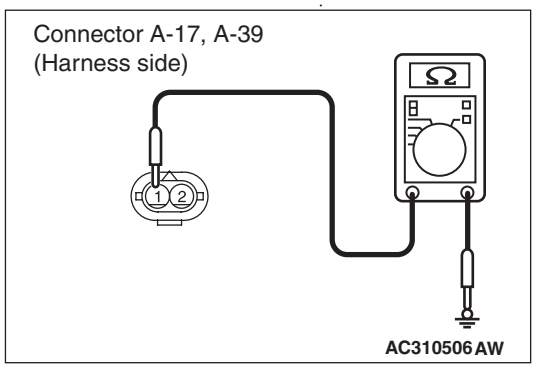



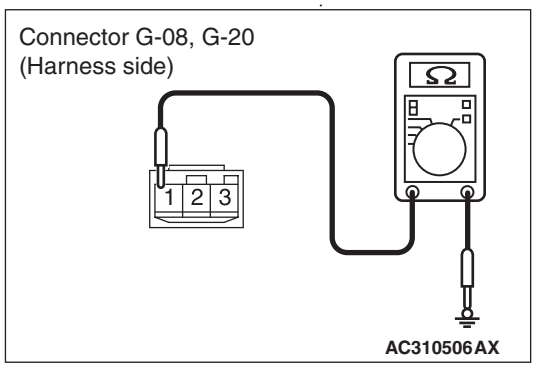

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Check the resistance between the lamp

connector and body earth.



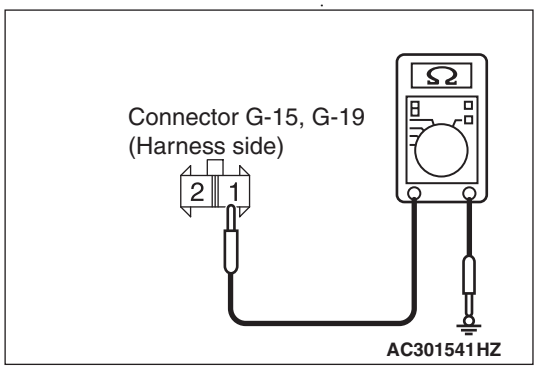

Resistance between A-39 position lamp (RH) connector terminal No.1 and body earth

- Resistance between A-17 position lamp (LH) connector terminal No.1 and body earth




Resistance between G-08 tail/stop lamp (RH) connector terminal No.1 and body earth

- Resistance between G-20 tail/stop lamp (LH) connector terminal No.1 and body earth




Resistance between G-15 licence plate lamp (RH) connector terminal No.1 and body earth

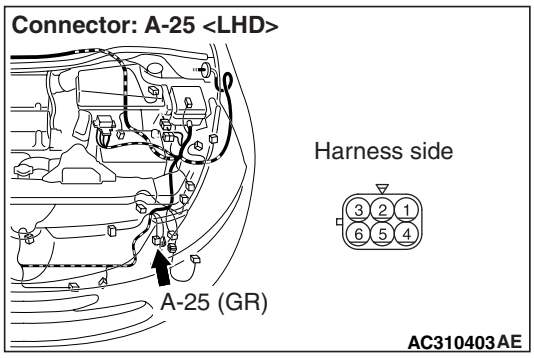
- Resistance between G-19 licence plate lamp (LH) connector terminal No.1 and body earth

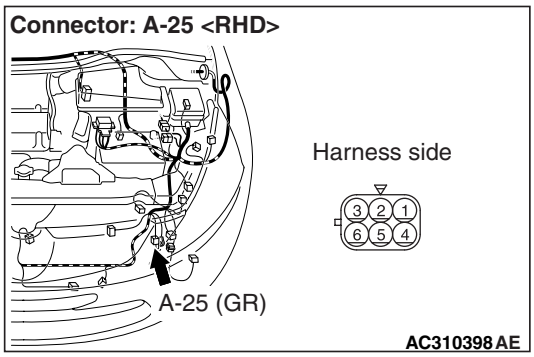
**OK: 2 Ω or less**

**Q: Is the check result normal?**

**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Connector check: A-25 earth connector <position lamp>.**



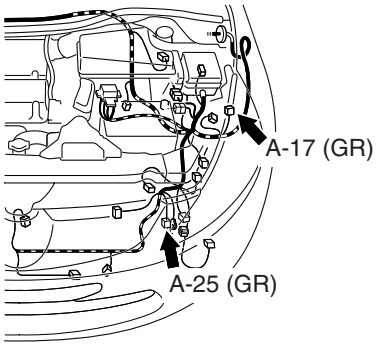




**Q: Is the check result normal?**

**YES :** Go to Step 5.
**NO :** Repair the defective connector.

**Step 5. Check the wiring harness from G-08 tail/stop lamp (RH) connector terminal No.1 or G-20 tail/stop lamp (LH) connector terminal No.1 or G-15 licence plate lamp (RH) connector terminal No.1 or G-19 licence plate lamp (LH) connector terminal No.1 to body earth, or A-39 position lamp (RH) connector terminal No.1 or A-17 position lamp (LH) connector terminal No.1to A-25 earth connector terminal No.2.**

**Connectors: A-17, A-25 <LHD>**

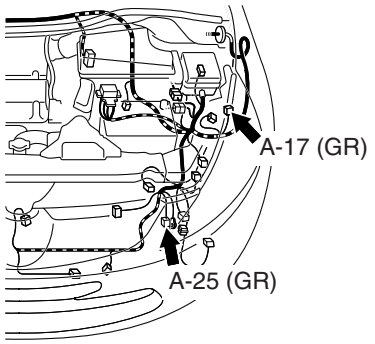



A-17

Harness side
A-25

AC310404AE

**Connectors: A-17, A-25 <RHD>**

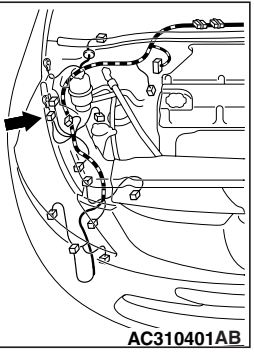



A-17

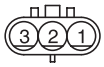
Harness side
A-25

AC310399AE

**Connector: A-39 <LHD>**

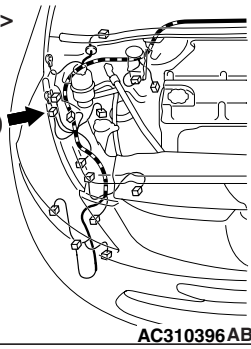



Harness side

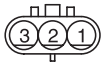



AC310401AB

**Connector: A-39 <RHD>**

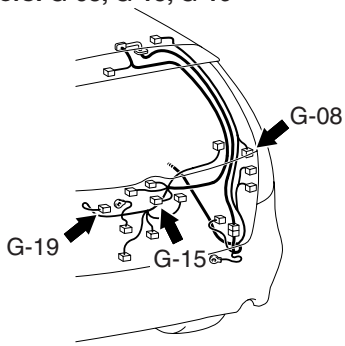



Harness side




AC310396AB

**Connectors: G-08, G-15, G-19**



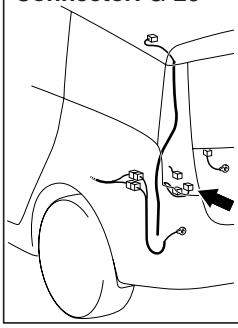

Harness side
G-08

Harness side
G-19

Harness side
G-15

AC310223AC

**Connector: G-20**



Harness side

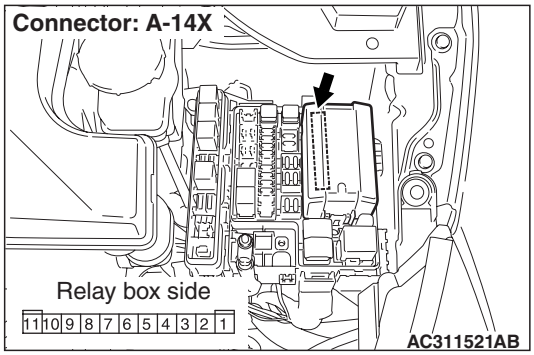
AC310220AD

*NOTE: Prior to the wiring harness inspection, check intermediate connector G-14 <licence plate lamp>, G-21 <tail/stop lamp (LH) >, and repair if necessary.*

- Check the earth wires for open circuit.

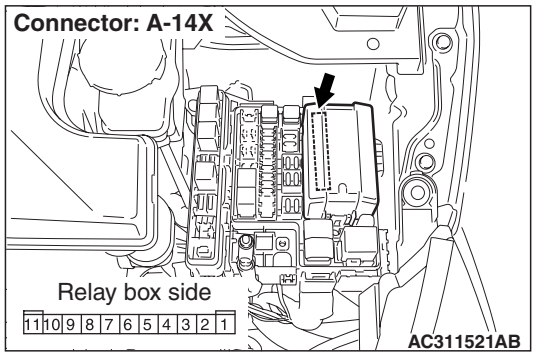
**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the wiring harness.

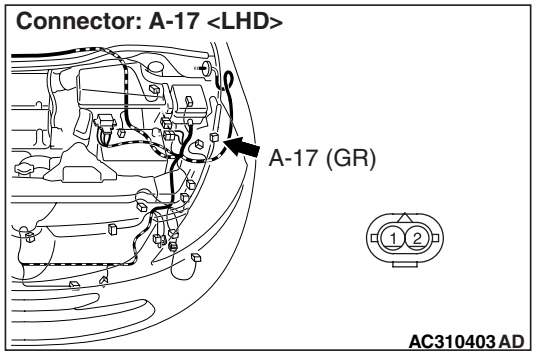
**Step 6. Connector check: A-14X front-ECU connector.**

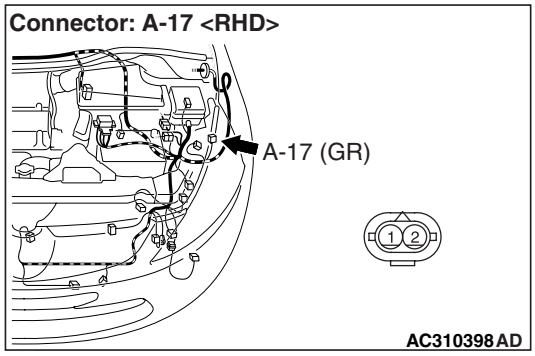


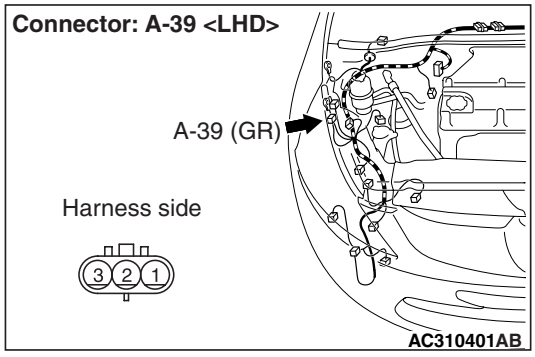

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the defective connector.

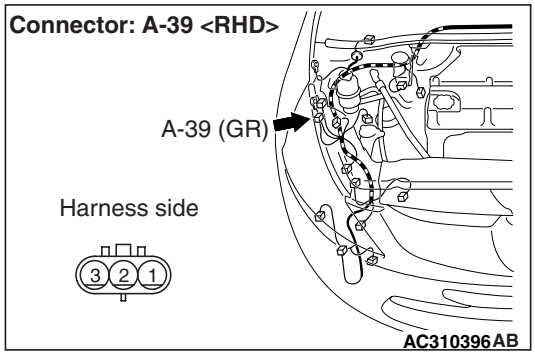
**Step 7. Check the wiring harness from G-08 tail/stop lamp (RH) connector terminal No.2 or G-20 tail/stop lamp (LH) connector terminal No.2, A-39 position lamp (RH) connector terminal No.2 or A-17 position lamp (LH) connector terminal No.2 or G-15 licence plate lamp (RH) connector terminal No.2 or G-19 licence plate lamp (LH) connector terminal No.2 to A-14X front-ECU connector terminal No.8.**

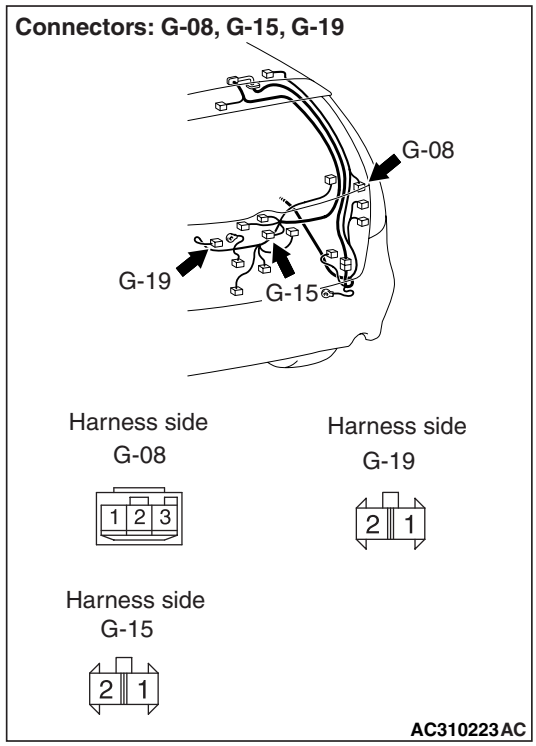

Connector: A-14X
Relay box side
11 10 9 8 7 6 5 4 3 2 1
AC311521AB

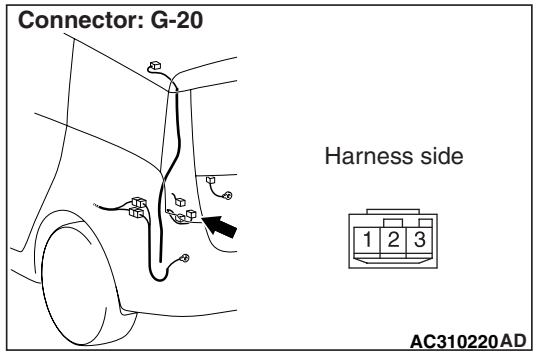

Connector: A-17 <LHD>
A-17 (GR)
1 2
AC310403AD


Connector: A-17 <RHD>
A-17 (GR)
1 2
AC310398AD


Connector: A-39 <LHD>
A-39 (GR)
Harness side
3 2 1
AC310401AB

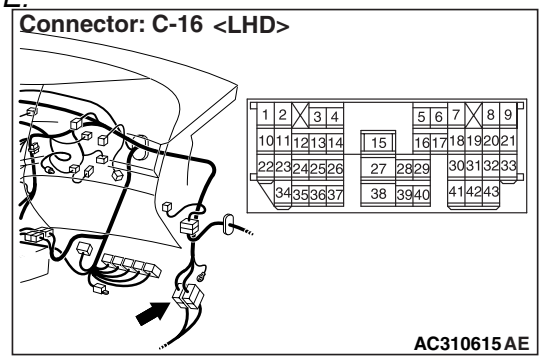

Connector: A-39 <RHD>
A-39 (GR)
Harness side
3 2 1
AC310396AB


Connectors: G-08, G-15, G-19
G-08
G-19
G-15
Harness side
G-08
1 2 3
Harness side
G-19
2 1
Harness side
G-15
2 1
AC310223AC


Connector: G-20
Harness side
1 2 3
AC310220AD

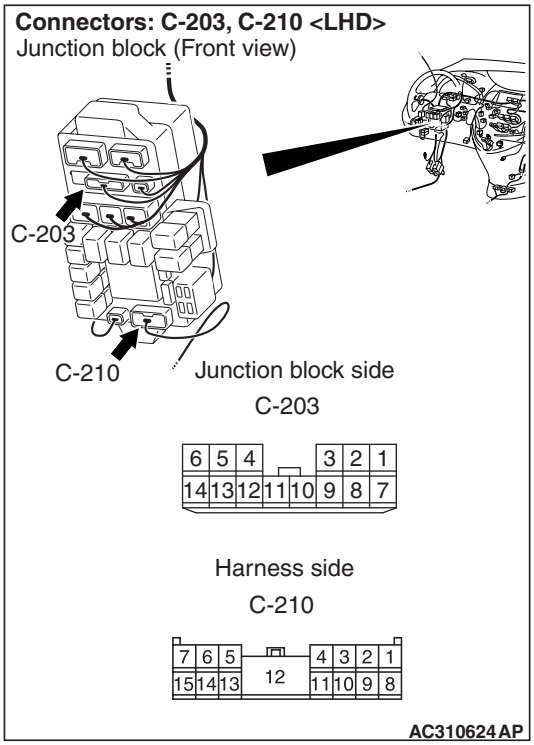
*NOTE:*

**Connector: C-16 <LHD>**



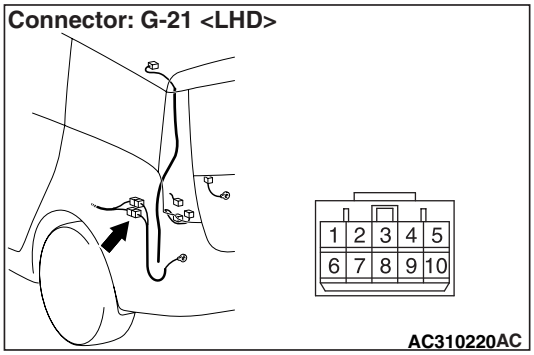

AC310615AE

**Connectors: C-203, C-210 <LHD>**




AC310624AP

**Connector: G-21 <LHD>**

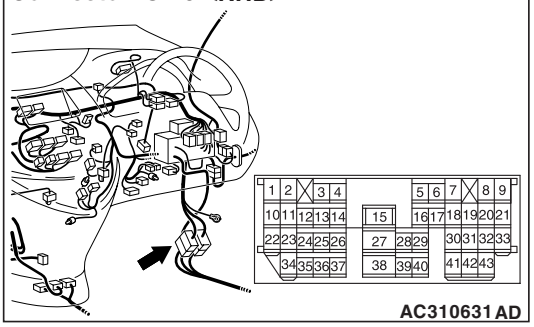



AC310220AC

*<LH drive vehicles> Prior to the wiring harness inspection, check intermediate connector C-16 <tail/stop lamp (LH) and licence plate lamp>, C-125 <tail/stop lamp and licence plate lamp>, G-14 <licence plate lamp>, G-21 <tail/stop lamp (LH)>, junction block connector C-203 <tail/stop lamp (LH)> and C-210 <tail/stop lamp (LH)>, and repair if necessary.*

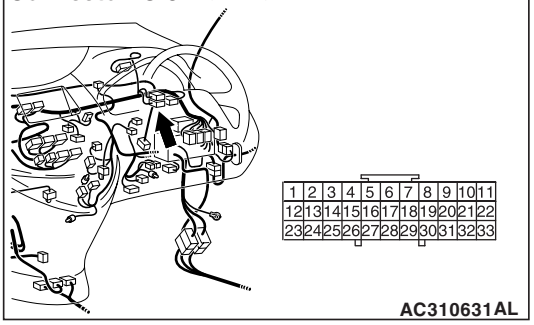
*NOTE:*

**Connector: C-16 <RHD>**




AC310631AD

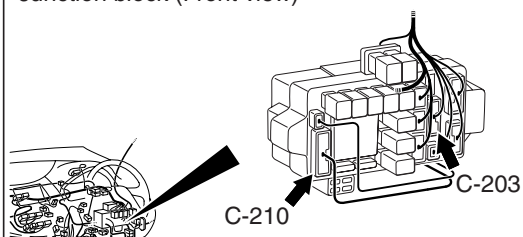
**Connector: C-31 <RHD>**




AC310631AL

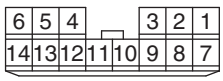
**Connectors: C-203, C-210 <RHD>**

Junction block (Front view)



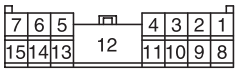

Junction block side

C-203



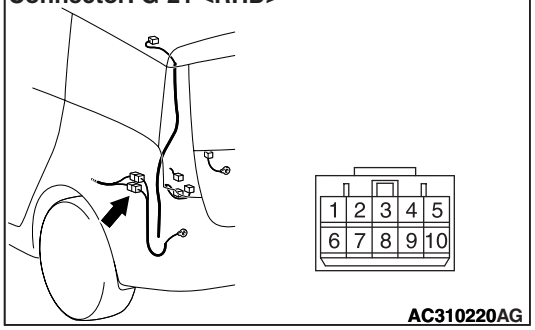

Harness side

C-210




AC310619AP

**Connector: G-21 <RHD>**




AC310220AG

*<RH drive vehicles> Prior to the wiring harness inspection, check intermediate connector C-16 <tail/stop lamp (LH) and licence plate lamp>, C-125 <tail/stop lamp and licence plate lamp>, G-14 <licence plate lamp>, G-21 <tail/stop lamp (LH)>, joint connector C-31 <tail/stop lamp (RH)>, junction block connector C-203 <tail/stop lamp (LH)> and C-210 <tail/stop lamp (LH)>, and repair if necessary.*

- Check the output lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the wiring harness.

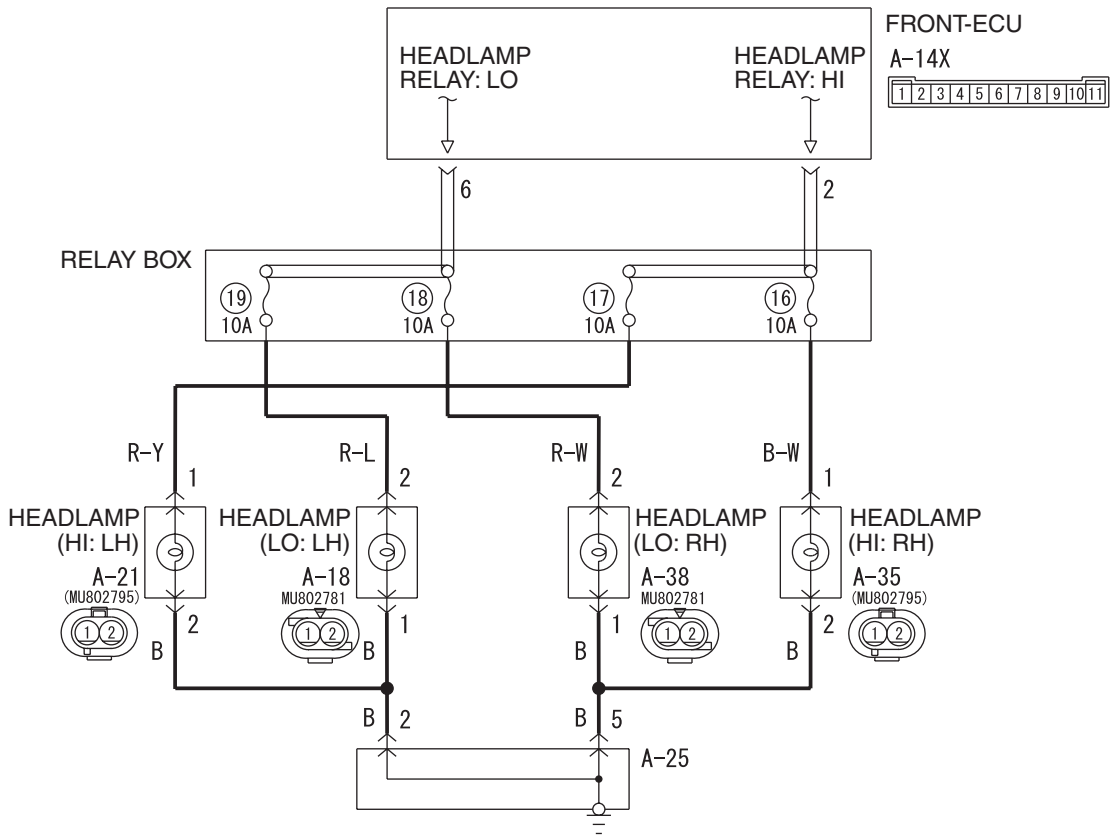
**Step 8. Retest the system.**
Check that the tail lamps, the position lamps and the licence plate lamps illuminate normally.

**Q: Is the check result normal?**
**The lamps illuminate normally at both high and low beams. :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**When the tail/stop lamps do not illuminate :**
Replace the tail/stop lamp socket assembly.
**When the position lamps do not illuminate :**
Replace the position lamp socket.
**When the licence plate lamps do not illuminate :**
Replace the licence plate lamp socket.

## Inspection Procedure M-7: The headlamp(s) do not illuminate.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Headlamps Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E187A

## COMMENTS ON TROUBLE SYMPTOM

If any of the headlamps does not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

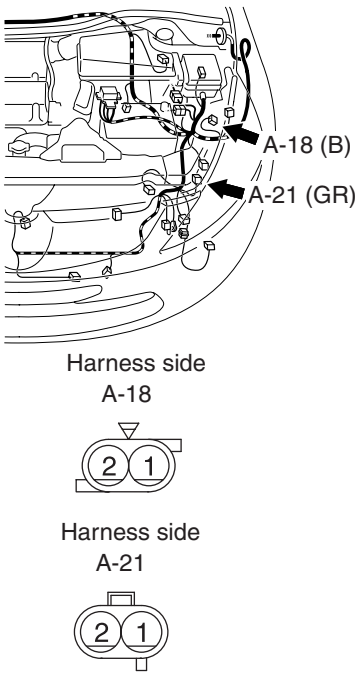
## POSSIBLE CAUSES

- Malfunction of the headlamp bulbs
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

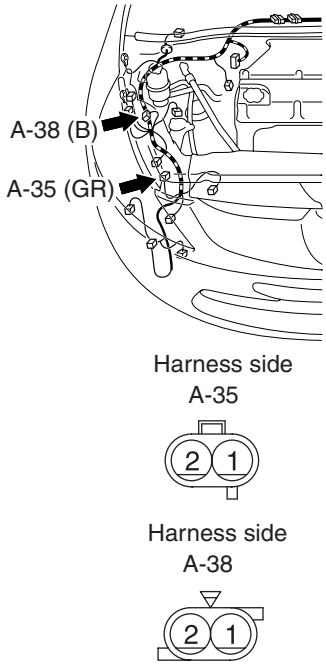
**Step 1. Connector check: A-35 headlamp (HI: RH) connector or A-21 headlamp (HI: LH) connector, A-38 headlamp (LO: RH) connector or A-18 headlamp (LO: LH) connector.**

**Connectors: A-18, A-21 <LHD>**



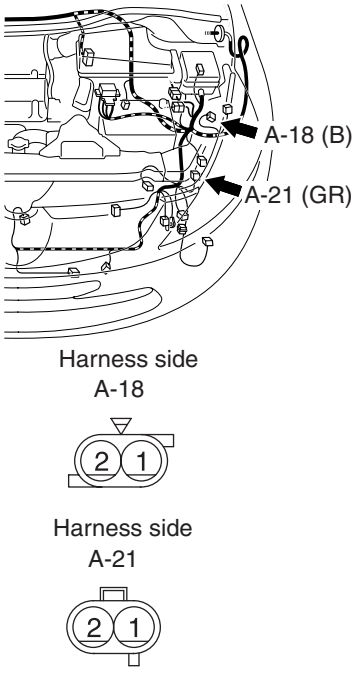

AC310404AB

**Connectors: A-35, A-38 <LHD>**



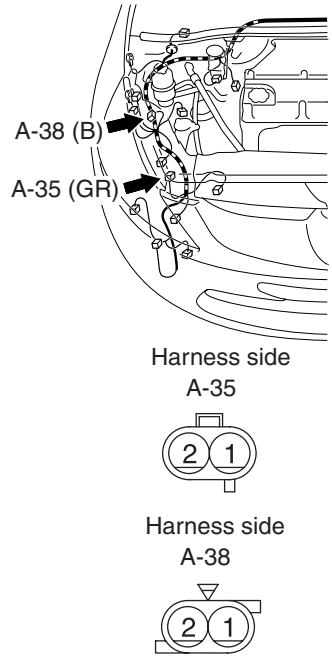

AC310402AB

**Connectors: A-18, A-21 <RHD>**




AC310399AB

**Connectors: A-35, A-38 <RHD>**




AC310397AB

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

---

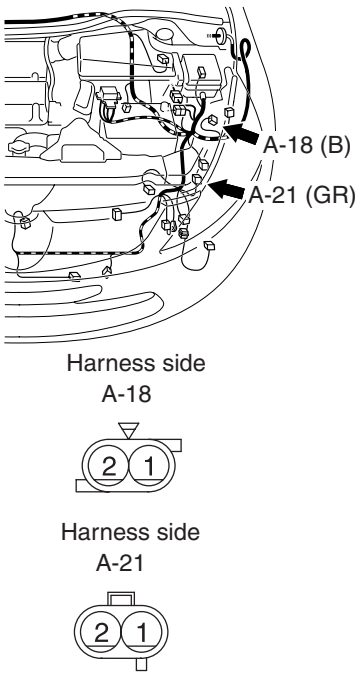
**Step 2. Check the bulbs of the headlamp.**
Check the bulb of the lamp which does not illuminate.

**Q: Is the check result normal?**

**YES :** Go to Step 3.
**NO :** Replace the bulb of the lamp which does not illuminate.

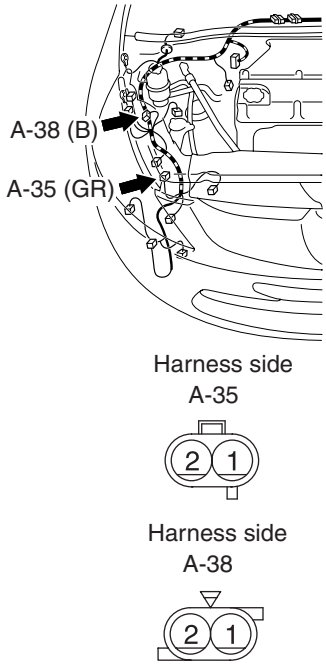
**Step 3. Resistance measurement at the A-35 headlamp (HI: RH) connector or A-21 headlamp (HI: LH) connector, A-38 headlamp (LO: RH) connector or A-18 headlamp (LO: LH) connector.**

**Connectors: A-18, A-21 <LHD>**



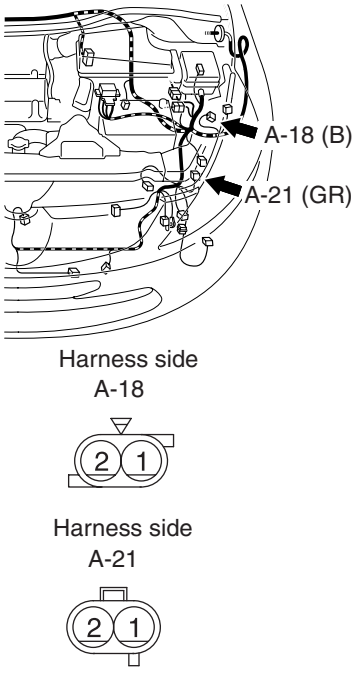

AC310404AB

**Connectors: A-35, A-38 <LHD>**



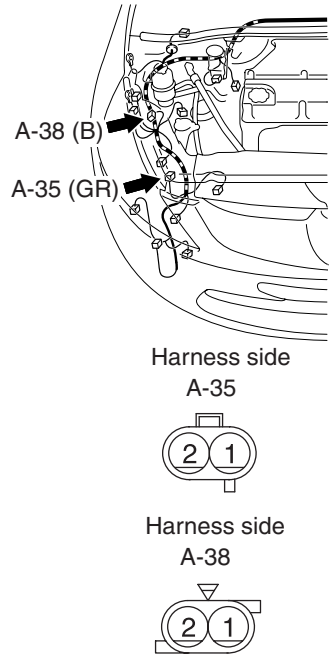

AC310402AB

**Connectors: A-18, A-21 <RHD>**




AC310399AB

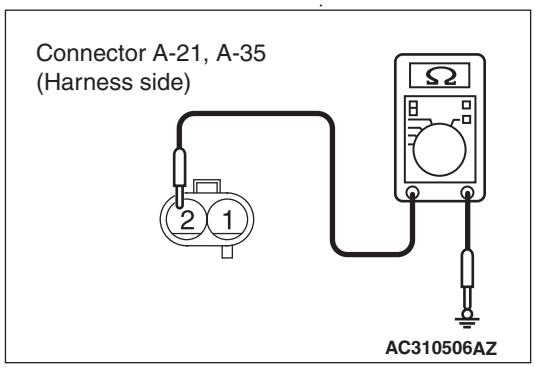
**Connectors: A-35, A-38 <RHD>**




AC310397AB

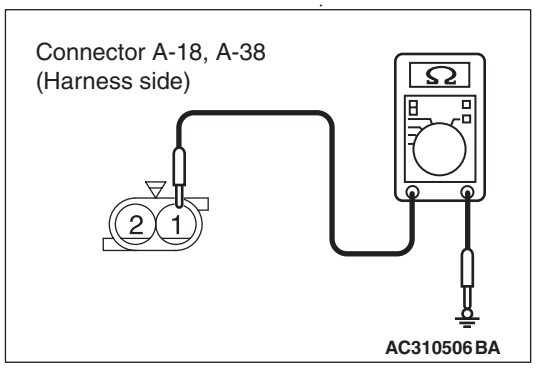
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Check the resistance between the lamp

connector and body earth.




Resistance between A-35 headlamp (HI: RH) connector terminal No.2 and body earth

- Resistance between A-21 headlamp (HI: LH) connector terminal No.2 and body earth




Resistance between A-38 headlamp (LO: RH) connector terminal No.1 and body earth

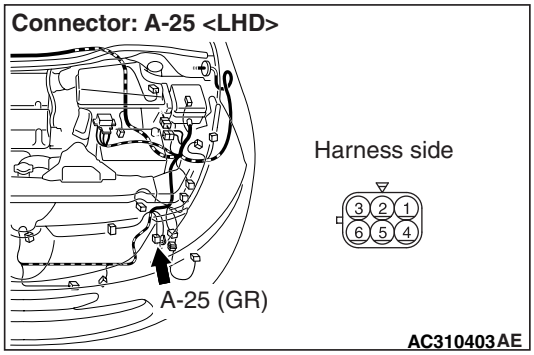
- Resistance between A-18 headlamp (LO: LH) connector terminal No.1 and body earth

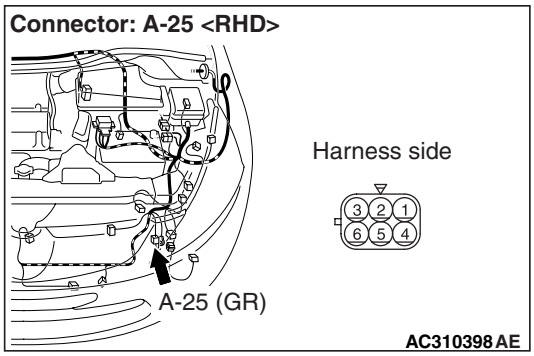
**OK: 2 Ω or less**

**Q: Is the check result normal?**

**YES :** Go to Step 6.
**NO :** Go to Step 4.

**Step 4. Connector check: A-25 earth connector.**

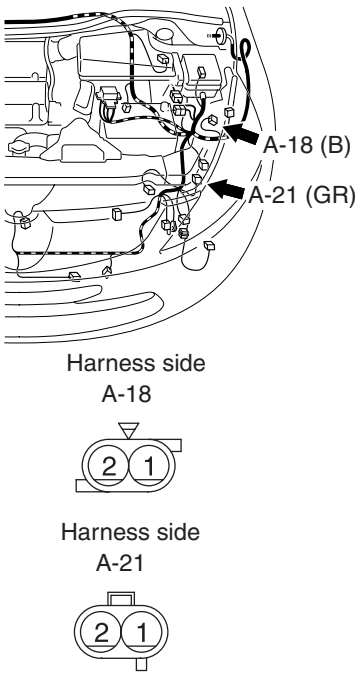



**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the defective connector.

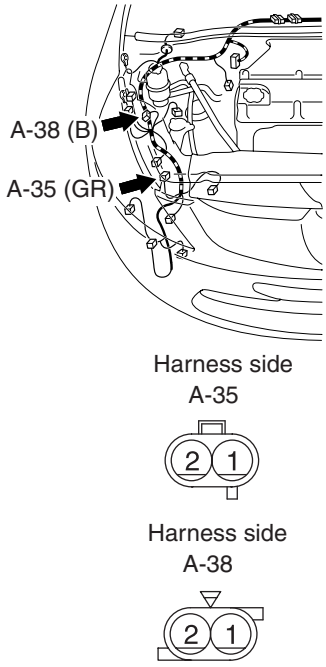
**Step 5. Check the wiring harness from A-35 headlamp (HI: RH) connector terminal No.2 or A-21 headlamp (HI: LH) connector terminal No.2, A-38 headlamp (LO: RH) connector terminal No.1 or A-18 headlamp (LO: LH) connector terminal No.1 to earth connector terminal No.5 (HI and LO: RH), No.2 (HI and LO: LH).**

**Connectors: A-18, A-21 <LHD>**



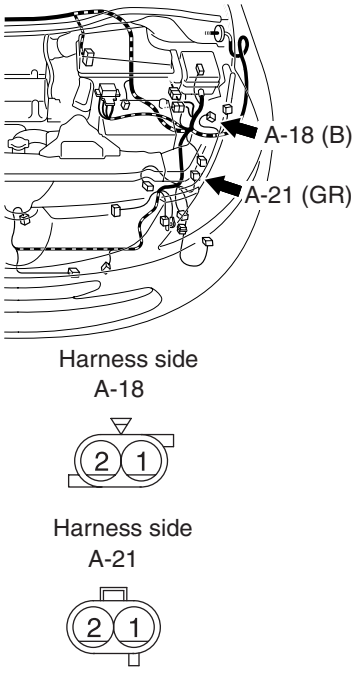

AC310404AB

**Connectors: A-35, A-38 <LHD>**



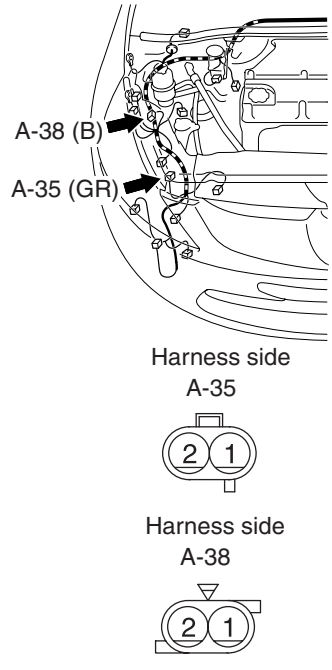

AC310402AB

**Connectors: A-18, A-21 <RHD>**




AC310399AB

**Connectors: A-35, A-38 <RHD>**

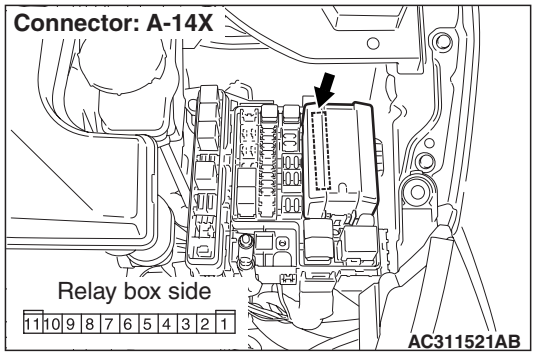



AC310397AB

- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the wiring harness.

**Step 6. Connector check: A-14X front-ECU connector.**

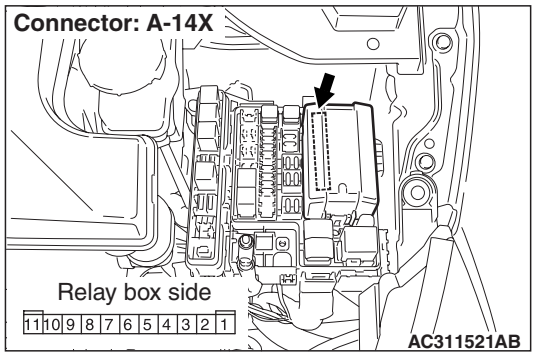



**Q: Is the check result normal?**

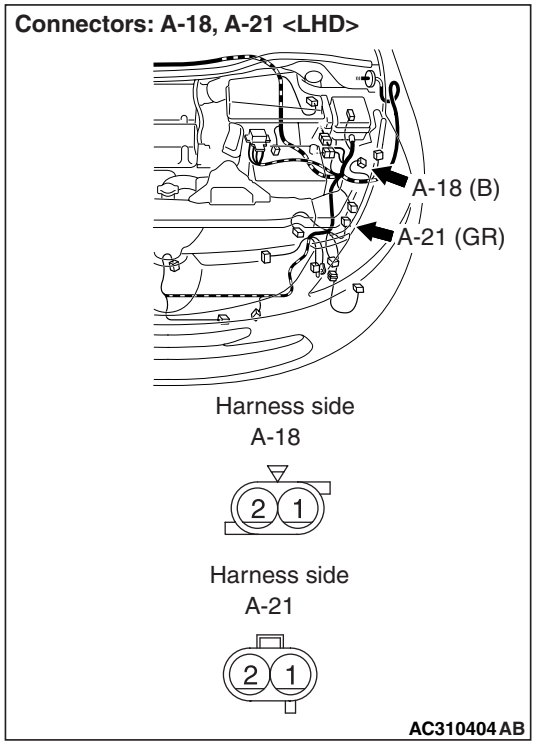
**YES :** Go to Step 7.
**NO :** Repair the defective connector.

**Step 7. Check the wiring harness from A-35 headlamp (HI: RH) connector terminal No.1 or A-21 headlamp (HI: LH) connector terminal No.1, A-38 headlamp (LO: RH) connector terminal No.2 or A-18 headlamp (LO: LH) connector terminal No.2 to A-14X front-ECU connector terminal Nos.2 and 6.**

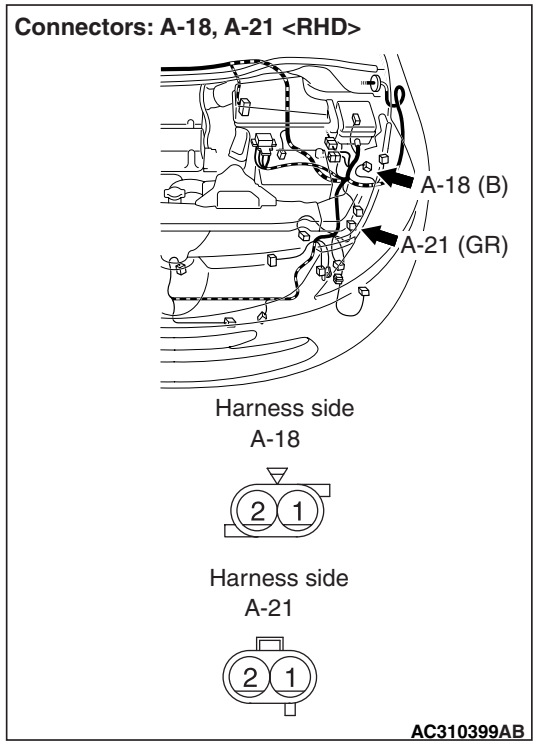
**Connector: A-14X**



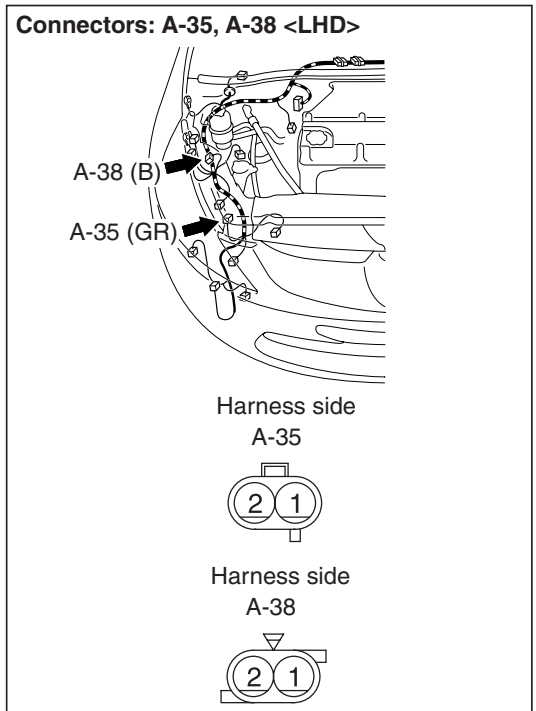

**Connectors: A-18, A-21 <LHD>**

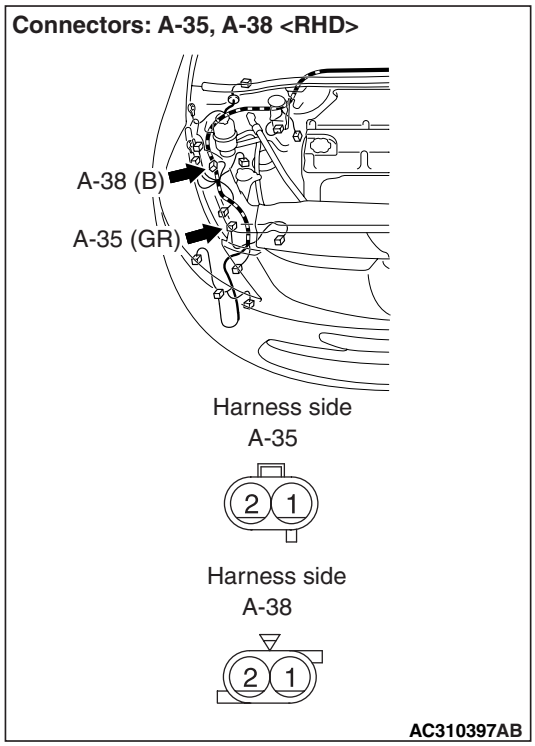



**Connectors: A-18, A-21 <RHD>**




**Connectors: A-35, A-38 <LHD>**






- Check the output lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the wiring harness.

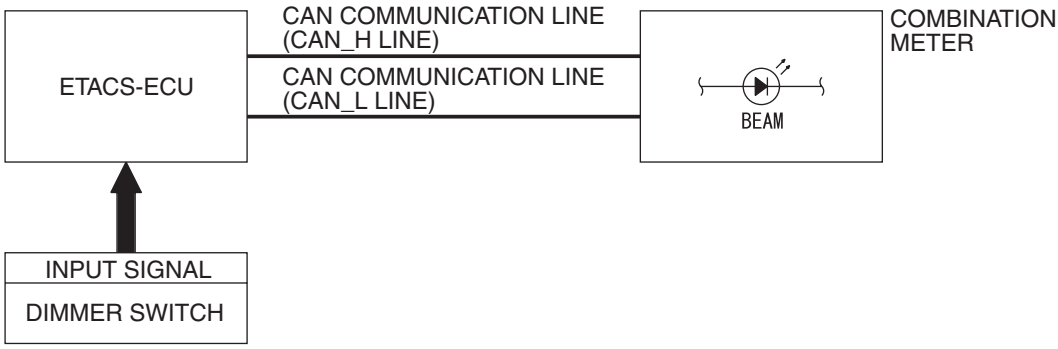
**Step 8. Retest the system.**
(1) Replace the socket of the defective headlamp.
(2) Check that the headlamps operate normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the headlamp assembly.

## Inspection Procedure M-8: The high-beam indicator lamp does not illuminate.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**High-Beam Indicator Lamp Circuit**




W4X54E031A

## COMMENTS ON TROUBLE SYMPTOM

If the high beam indicator does not illuminate normally, connector(s), wiring harness in the CAN bus lines, the ETACS-ECU or the combination meter may be defective.

## POSSIBLE CAUSES

- The combination meter may be defective
- The ETACS-ECU may be defective
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the headlamps.**
When the lighting switch is operated, check that the headlamps illuminate/go off normally.

**Q: Are the headlamps in good condition?**
**YES :** Go to Step 2.
**NO :** First, repair the headlamps. Refer to Inspection Procedure M-3 "The high-beam headlamps do not illuminate normally P.54C-278."

**Step 2. MUT-III CAN bus diagnostics.**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the CAN bus line (Refer to GROUP 54D, Diagnosis P.54D-16).

**Step 3. Check for combination meter diagnosis code.**
Check whether the combination meter-related diagnosis code is set.

**Q: Is the diagnosis code set?**
**YES :** Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-35).
**NO :** Go to Step 4.

**Step 4. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.
- Ignition switch: OFF

**ECU TO BE CHECKED**
- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

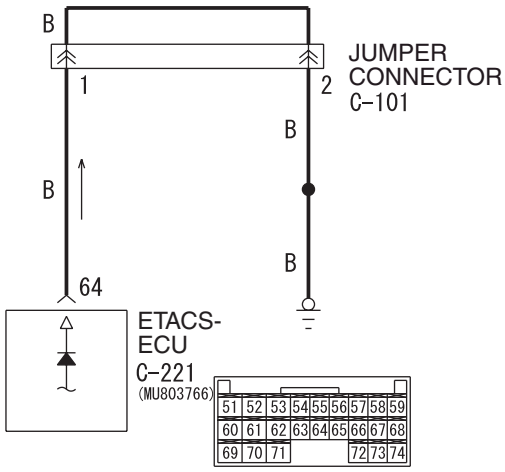
**Step 5. MUT-III actuator test**
Perform the actuator test for the combination meter, and check that the high-beam indicator illuminates (Refer to GROUP 54A – Combination Meter P.54A-78).

**Q: Is the check result normal?**
**YES :** Replace the ETACS-ECU.
**NO :** Replace the combination meter.

## Inspection Procedure M-9:Daytime running lamp function does not work normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Daytime Running Lamp Input Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E217A

## COMMENTS ON TROUBLE SYMPTOM

If the daytime running lamp function is not operating normally the ETACS-ECU power circuit may be defective or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- The ETACS-ECU may be defective
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check that the headlamps operate.**
Do the low-beam headlamps illuminate when the lighting switch is turned to the HEAD position?

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** First, repair the headlamps. Refer to Inspection Procedure M-2 "The low-beam headlamps do not illuminate normally P.54C-275."

**Step 2. SWS monitor data list.**
Check the input signals below, which are related to the interior lamp automatic-shutdown function.

**<Selected item> ETACS ECU**
- Ignition switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 30 | IG SW(IG1) | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."

**Step 3. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 4. ETACS switch data by using the SWS monitor**
Check the ETACS-ECU signal related to the daytime running lamp operation.

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 35 | DRL | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Replace the ETACS-ECU.
**NO :** Go to Step 5.

**Step 5. Connector check: C-221 ETACS-ECU connector.**

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

**Step 6. Resistance measurement at the C-221 ETACS-ECU connector.**
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Check the resistance between the ETACS-ECU connector and body earth.
- Resistance between C-221 ETACS-ECU connector terminal No.64 and body earth

**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Go to Step 7.

**Step 7. Check the wiring harness from C-221 ETACS-ECU connector terminal No.64 to body earth.**
*NOTE: Prior to the wiring harness inspection, check jumper connector C-101, and repair if necessary.*
- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** Replace the ETACS-ECU.
**NO :** Repair the wiring harness.

## INSPECTION PROCEDURE M-10: The headlamps do not illuminate when the lamping switch is at "TAIL" or "PASSING" position, but illuminate only at low beam when the switch is at "HEAD" position. However, the headlamps do not illuminate at high beam.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

### COMMENTS ON TROUBLE SYMPTOM
If the headlamps illuminate only at low beam regardless of the lighting switch position, the headlamp fail-safe function may be activated.

### POSSIBLE CAUSES
- Malfunction of the column switch
- Malfunction of the front-ECU
- Damaged harness wires and connectors

### DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor.**
Check that the power supply and earth lines to the column switch (column-ECU) and the front-ECU and the SWS communication lines are normal.
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- COLUMN ECU
- FRONT ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**

**"OK" are displayed for all the items :** Go to Step 2.
**"NG" is displayed on the "COLUMN ECU" menu. :**
Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."
**"NG" is displayed on the "FRONT ECU" menu. :**
Refer to Inspection Procedure A-4 "Communication with the front-ECU is not possible P.54C-70."

**Step 2. Retest the system.**
Check that the headlamps illuminate normally.

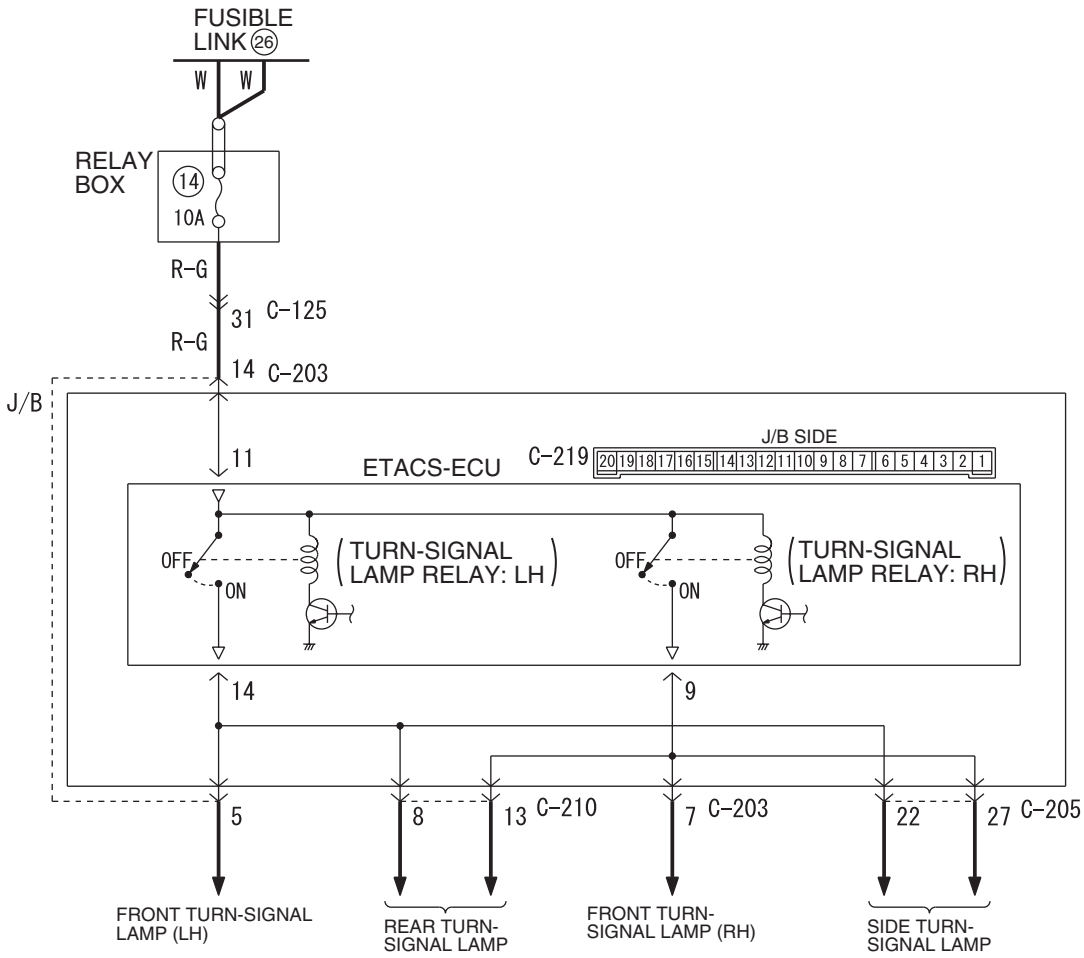
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the column switch.

## FLASHER TIMER

### Inspection Procedure N-1: The turn-signal lamps do not illuminate.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Turn-Signal Lamp Power Supply Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E092A

## COMMENTS ON TROUBLE SYMPTOM

If all the turn-signal lamps do not illuminate, the ignition switch (IG1), the turn-signal lamp switch input circuit or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor.**

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

**ECU TO BE CHECKED**

- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 2. Check that the hazard warning lamps operate.**

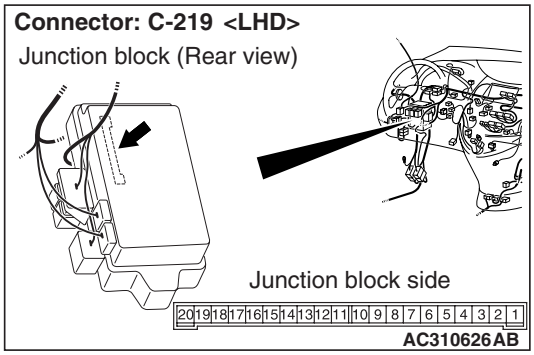
Check that the hazard warning lamps illuminate normally.

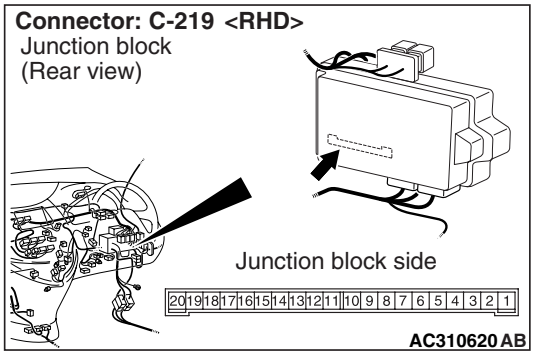
**Q: Is the check result normal?**

**YES :** Go to Step 6.

**NO :** Go to Step 3.

**Step 3. Connector check: C-219 ETACS-ECU connector.**



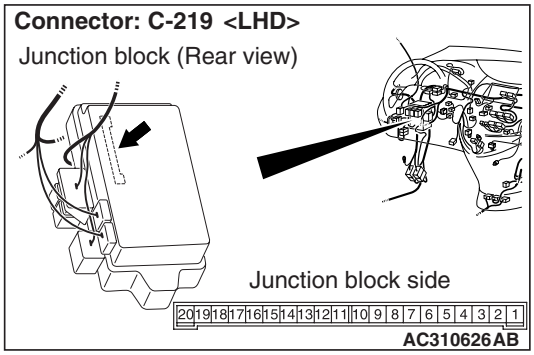



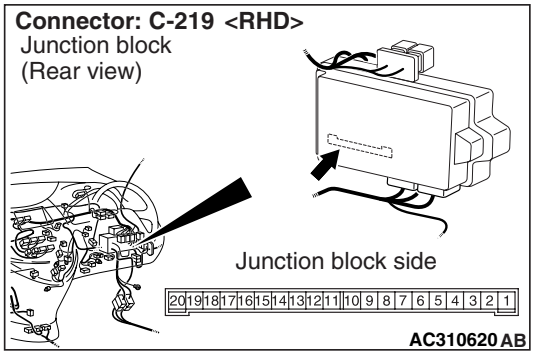

**Q: Is the check result normal?**

**YES :** Go to Step 4.

**NO :** Repair the defective connector.

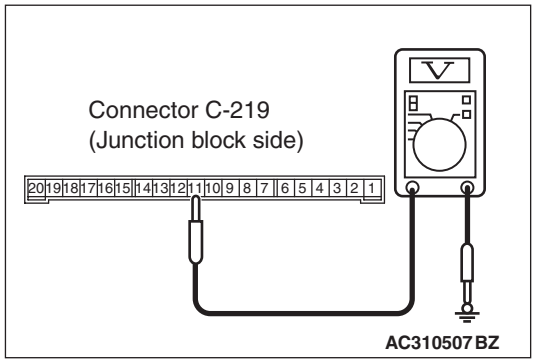
**Step 4. Voltage measurement at the C-219 ETACS-ECU connector.**




(1) Remove the ETACS-ECU, and measure at the

junction block side.

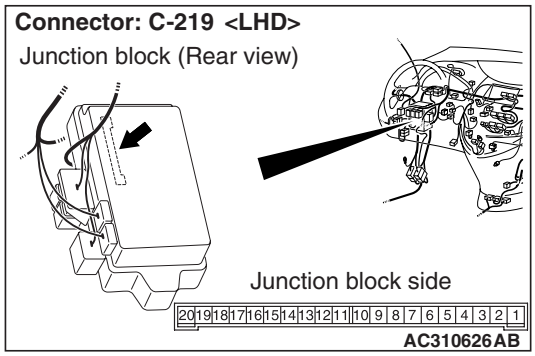


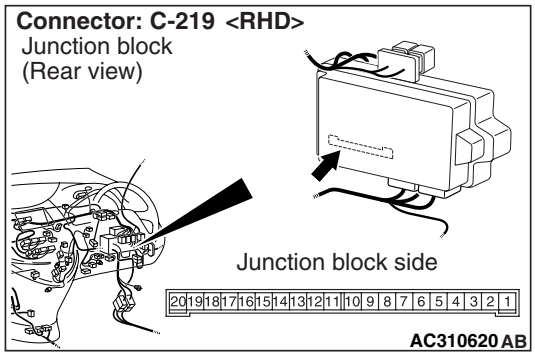

(2) Voltage between C-219 ETACS-ECU connector terminal No.11 and body earth

**OK: System voltage**

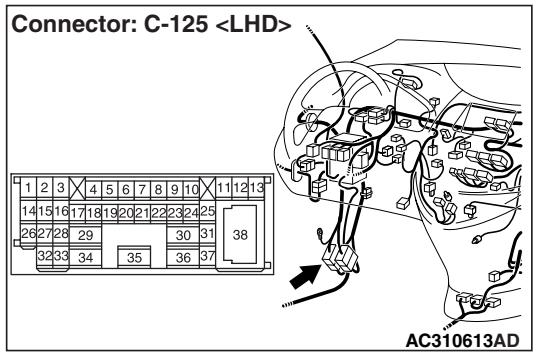
**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Go to Step 5.

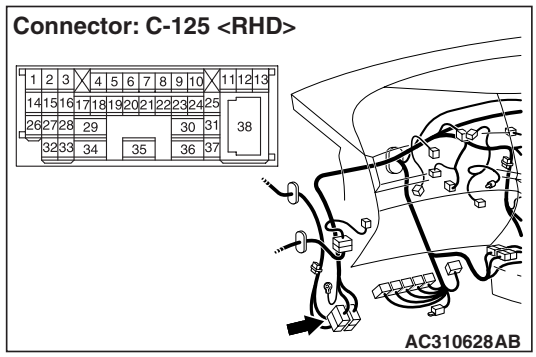
**Step 5. Check the wiring harness between C-219 ETACS-ECU connector terminal No.11 and the fusible link (26).**

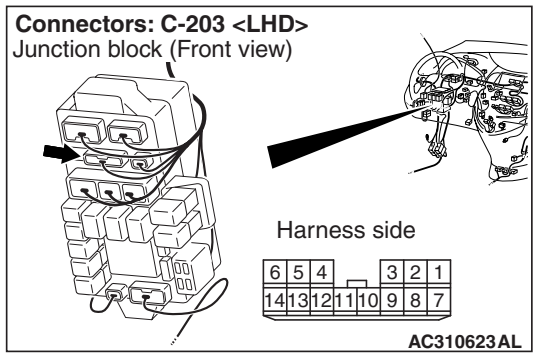


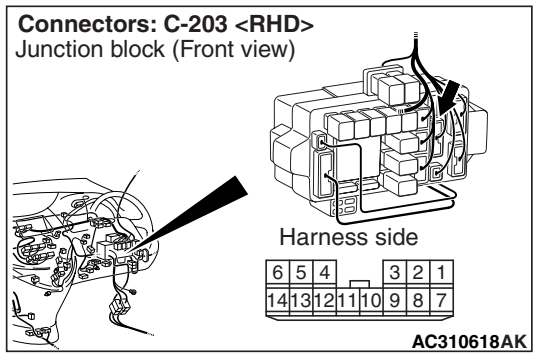




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-125 and junction block connector C-203, and repair if necessary.*

- Check the power supply line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the wiring harness.

**Step 6. Function diagnosis by using the SWS monitor.**
Check the SWS communication signal, which are related to the right turn-signal lamps.

**<Selected item> TURN SIGNAL - TURN-SIG. RH**
- Turn-signal lamp switch: RH
- Ignition switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 10 | TURN SIG.RH | ON |
| Item 11 | TURN SIG.LH | OFF |
| Item 30 | IG SW(IG1) | ON |

**OK: Normal conditions are displayed for all the items**

**Q: Is the check result normal?**
**Normal conditions are displayed for all the items. :** Go to Step 7.
**Normal condition is not displayed for item 10 or 11. :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54C-478."
**Normal condition is not displayed for item No.30. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."

**Step 7. SWS monitor data list.**
Check the SWS communication signal, which are related to the left turn-signal lamps.

**<Selected item> TURN SIGNAL - TURN-SIG. LH**
- Turn-signal lamp switch: LH
- Ignition switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 10 | TURN SIG.RH | OFF |
| Item 11 | TURN SIG.LH | ON |

**OK: Normal conditions are displayed for all the items.**

**Q: Is the check result normal?**
**Normal conditions are displayed for all the items. :** Go to Step 8.
**Normal condition is not displayed for item 10 or 11. :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54C-478."

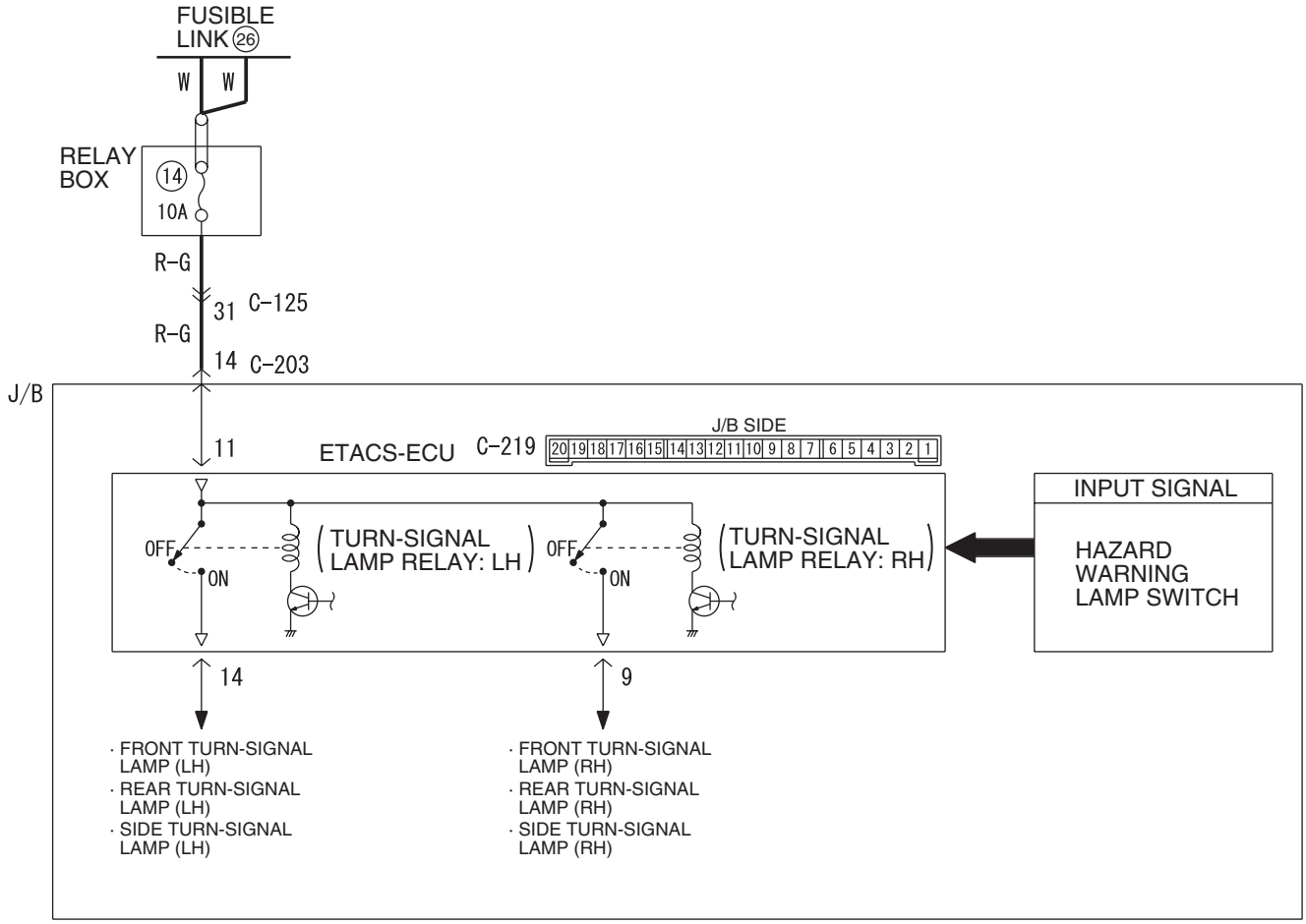
**Step 8. Retest the system.**
Check that the turn-signal lamps illuminate.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure N-2: The hazard warning lamps do not illuminate.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Hazard Warning Lamp Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E093A

## COMMENTS ON TROUBLE SYMPTOM

If the hazard warning lamps do not illuminate, the hazard warning lamp input signal circuit or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the hazard warning lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check that the turn-signal lamps operate.**
Check that the turn-signal lamps illuminate normally.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to inspection procedure N-1 "The-turn signal lamps do not illuminate P.54C-316."

**Step 2. ETACS switch data by using the SWS monitor.**
Check the ETACS-ECU signals which are related to the hazard warning lights.

- Hazard lamp switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 04 | HAZARD LMP SW | ON (only when switch is operated) |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 3.
**NO :** Refer to inspection procedure Q-12 "The hazard warning lamp switch signal is not received P.54C-497."

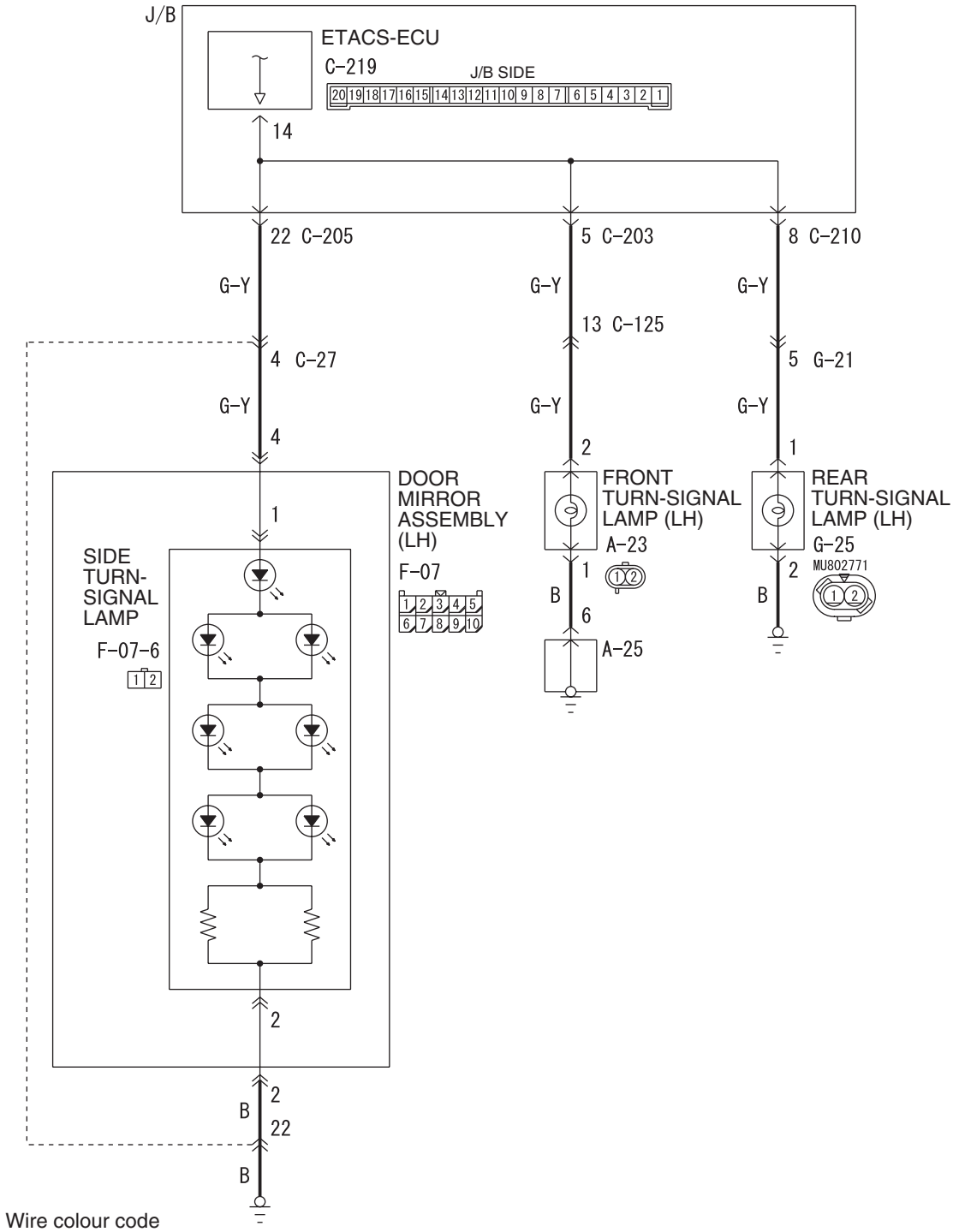
**Step 3. Retest the system.**
Check that the hazard warning lamps illuminate.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

**Inspection Procedure N-3: Any of the turn-signal lamps does not illuminate.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

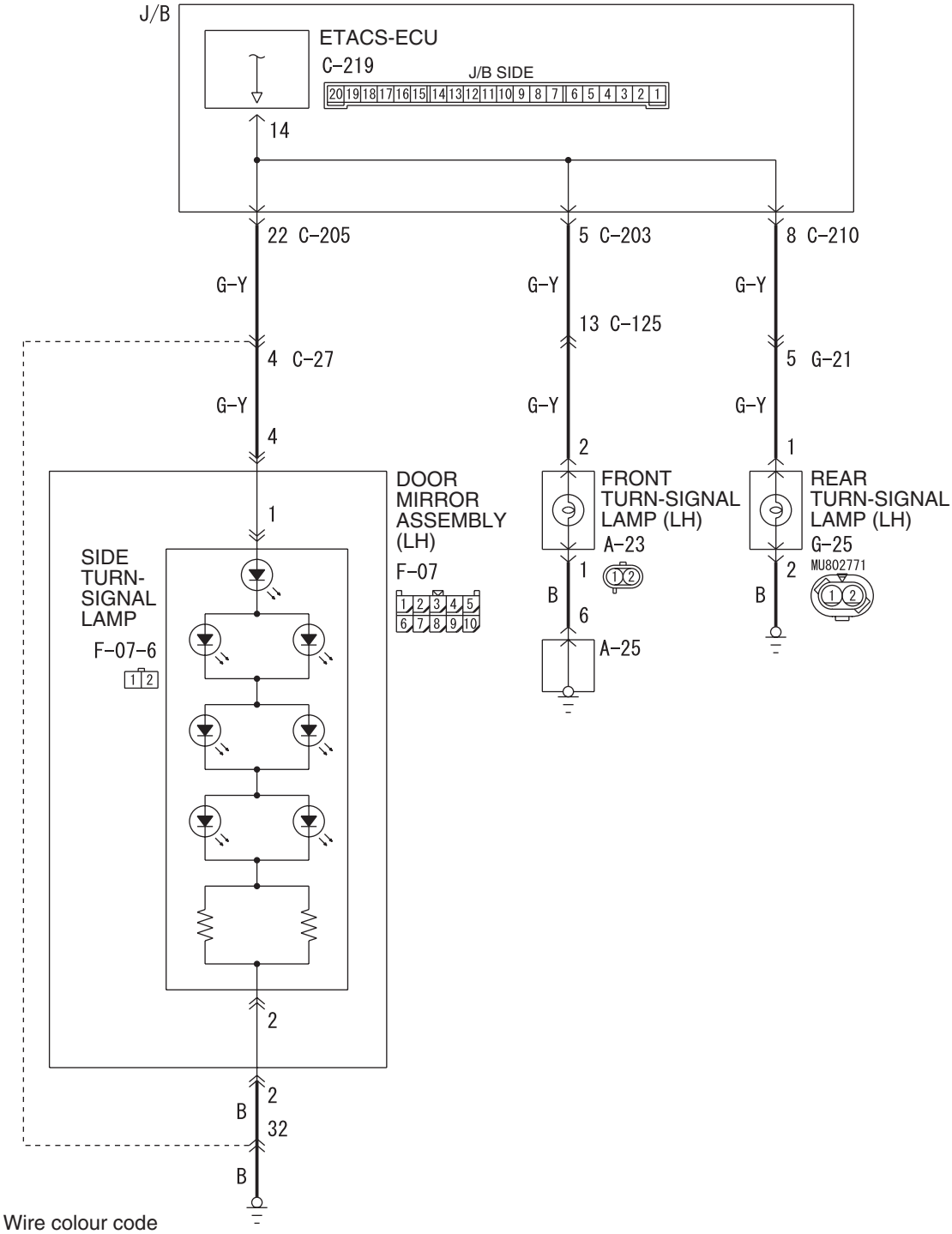
**Left Turn-Signal Lamps Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E096A

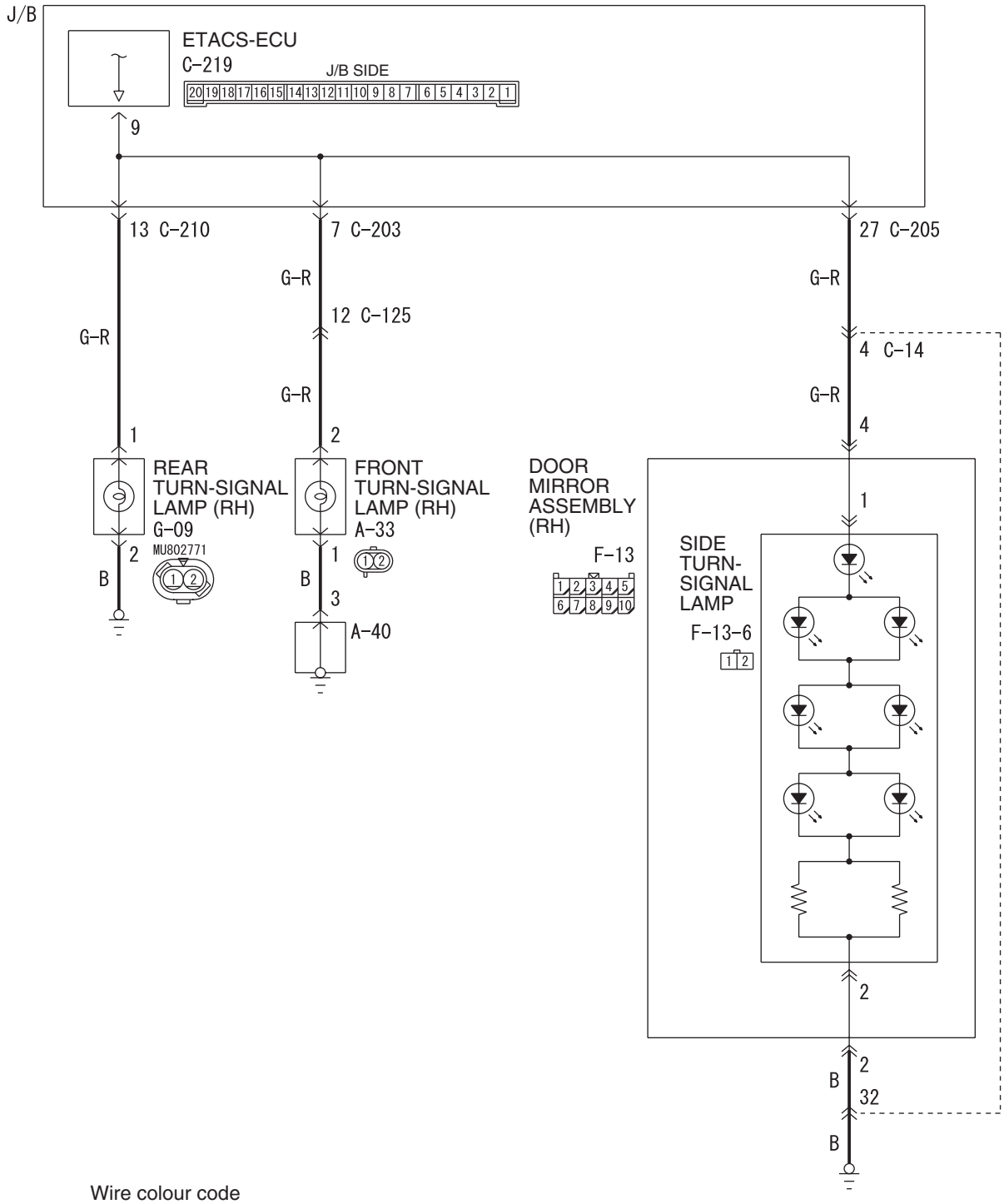
**Left Turn-Signal Lamps Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E097A

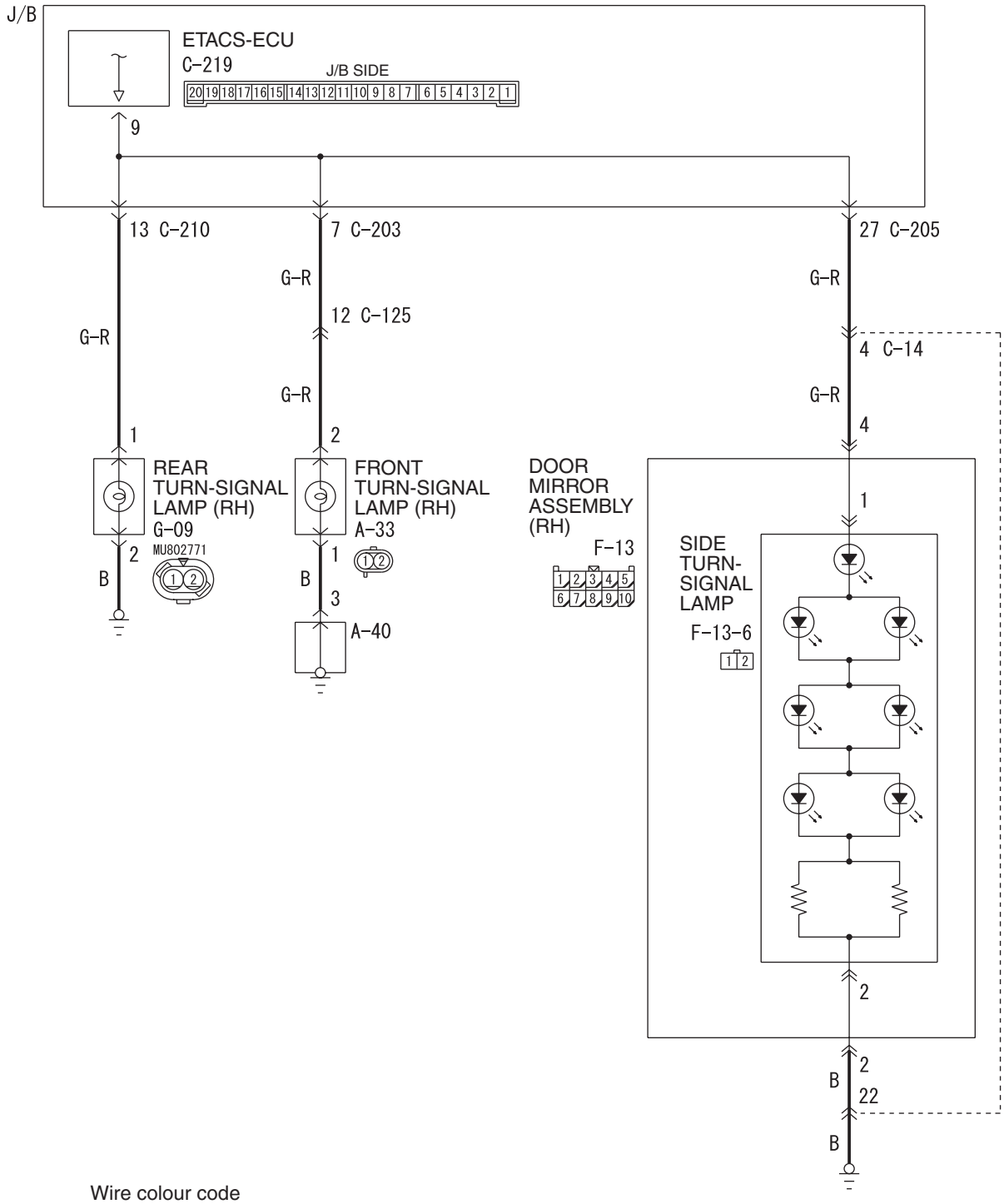
**Right Turn-Signal Lamps Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E094A

**Right Turn-Signal Lamps Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E095A

## COMMENTS ON TROUBLE SYMPTOM

If any of the turn-signal lamp does not illuminate normally, wiring harness connector(s) or the bulb may be defective.

## POSSIBLE CAUSES

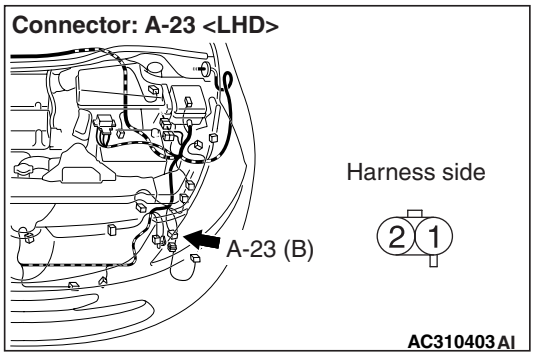
- Defective front turn-signal lamp bulb
- Defective side turn-signal lamp
- Defective rear turn-signal lamp bulb
- Damaged harness wires and connectors

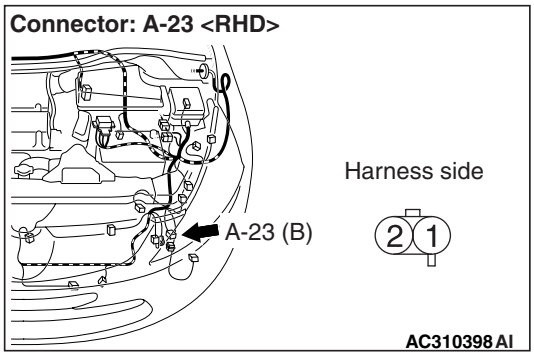
## DIAGNOSIS PROCEDURE

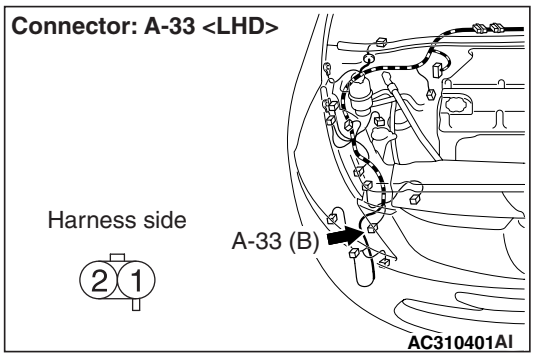
**Step 1. Confirm which turn-signal lamp is defective.**

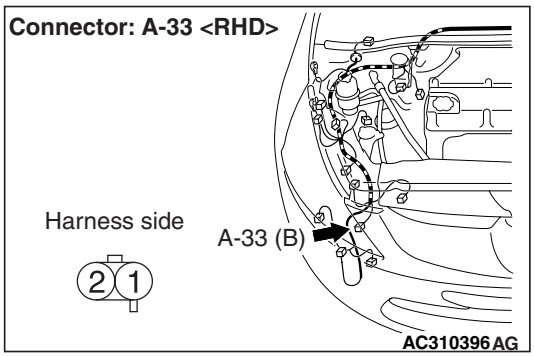
**Q: Which turn-signal lamp fails to illuminate correctly?**
**Front turn-signal lamp :** Go to Step 2.
**Side turn-signal lamp :** Go to Step 7.
**Rear turn-signal lamp :** Go to Step 12.

**Step 2. Connector check: A-33 front turn-signal lamp (RH) or A-23 front turn-signal lamp (LH) connector.**



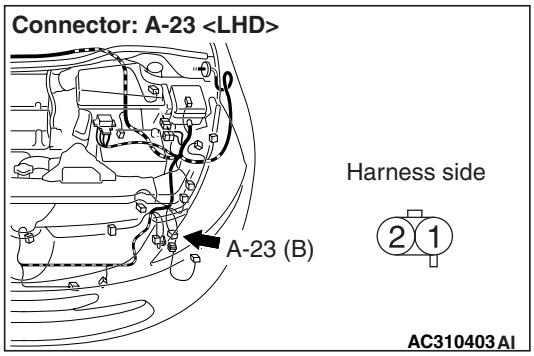



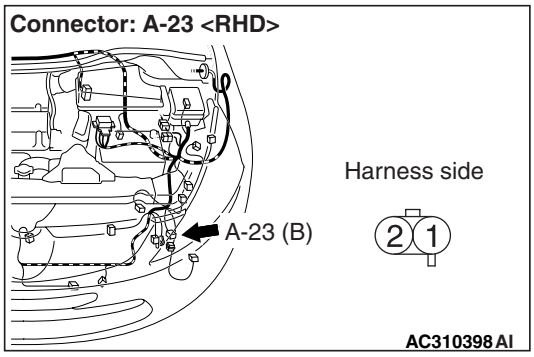

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the defective connector.

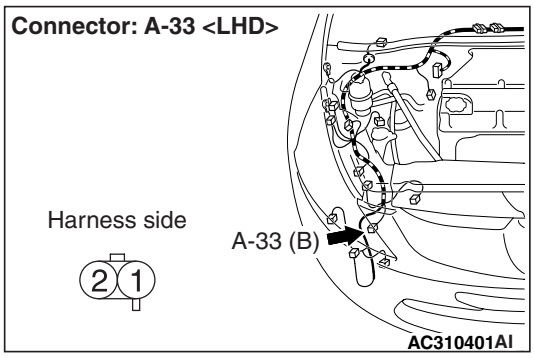
**Step 3. Check the bulb(s) of the turn-signal lamps.**
Check the bulb(s) of the defective lamp.

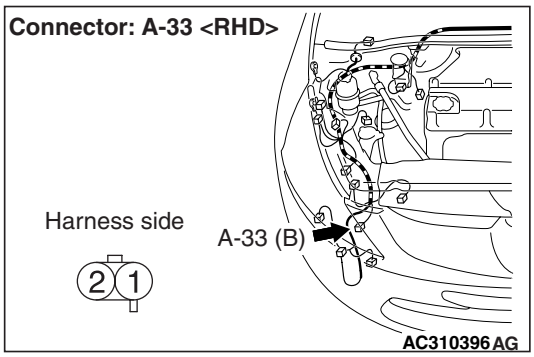
**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Replace the bulb(s) of the defective lamp.

**Step 4. Resistance measurement at the A-33 front turn-signal lamp (RH) or A-23 front turn-signal lamp (LH) connector.**



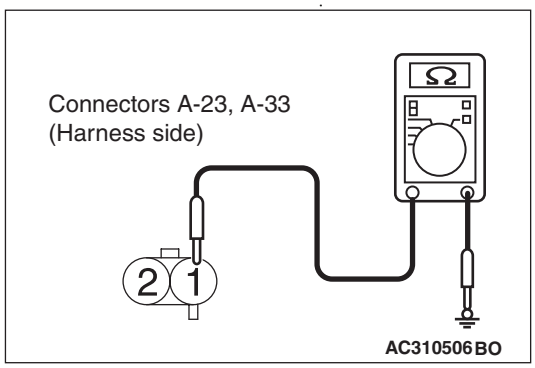




(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance measurement between the defective

lamp connector terminal and body earth.



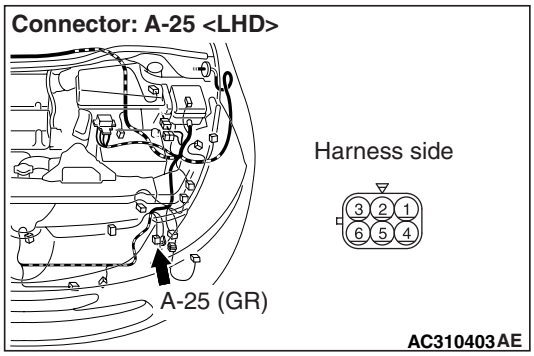

Resistance between A-33 front turn-signal lamp (RH) connector terminal No.1 and body earth

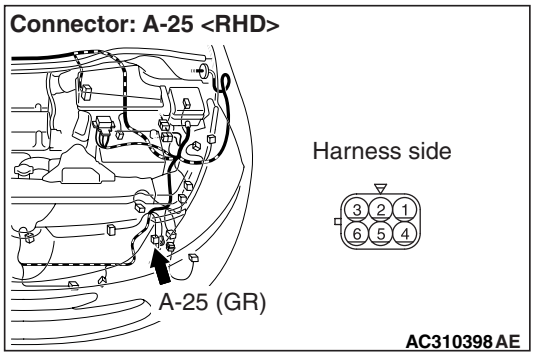
- Resistance between A-23 front turn-signal lamp (LH) connector terminal No.1 and body earth

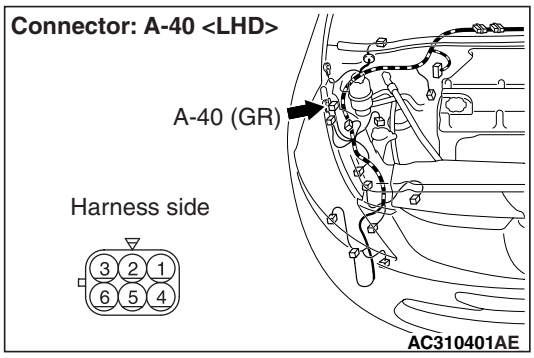
**OK: 2 Ω or less**

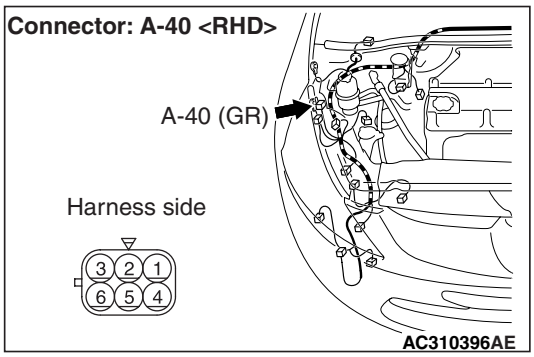
**Q: Is the check result normal?**
**YES :** Go to Step 16.
**NO :** Go to Step 5.

**Step 5. Connector check: A-40 earth connector <front turn-signal lamp (RH)> and A-25 earth connector <front turn-signal lamp (LH)>.**



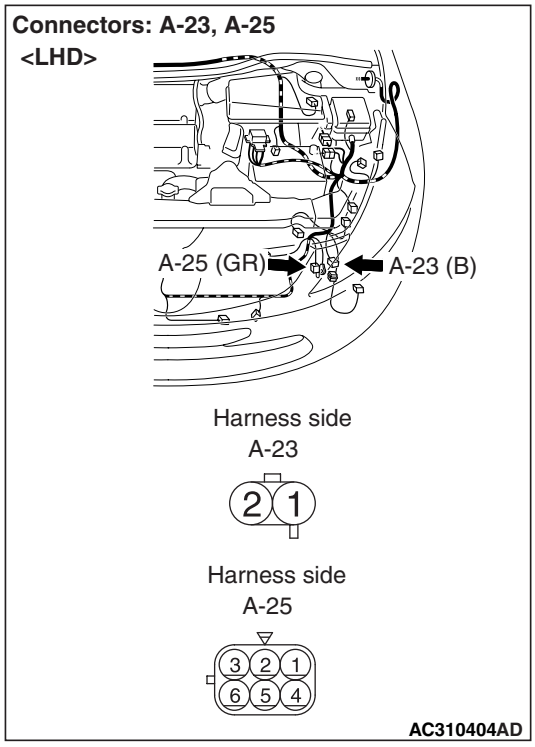



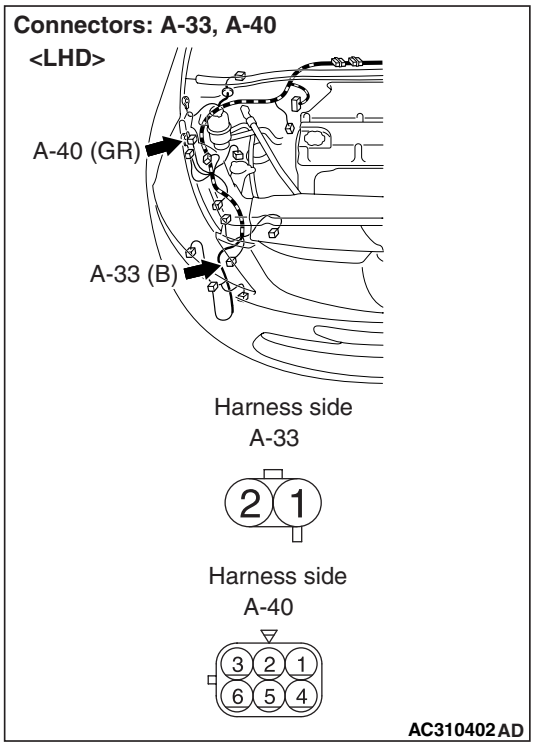



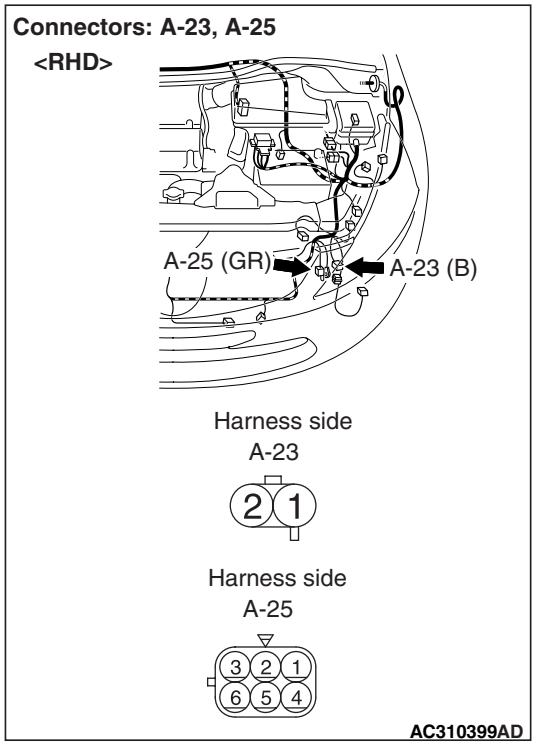



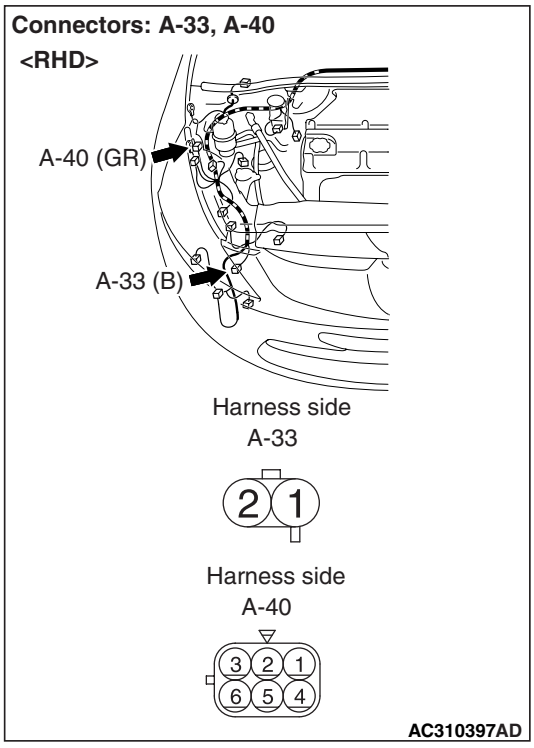

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the connector.

**Step 6. Check the wiring harness from A-33 front turn-signal lamp (RH) connector terminal No.1 and A-40 earth connector terminal No.3 or A-23 front turn-signal lamp (LH) connector terminal No.1 and A-25 earth connector terminal No.6.**



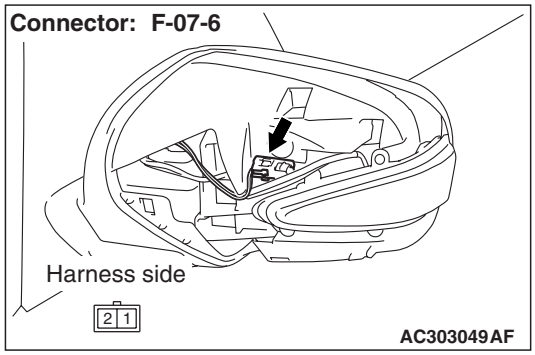



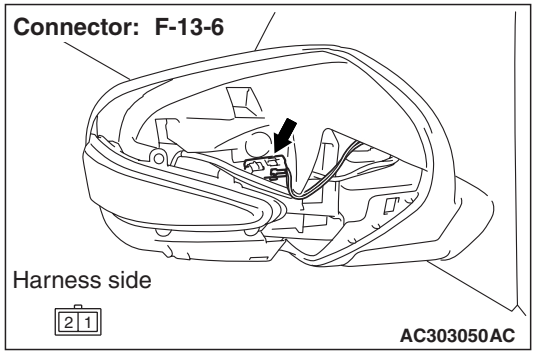




- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

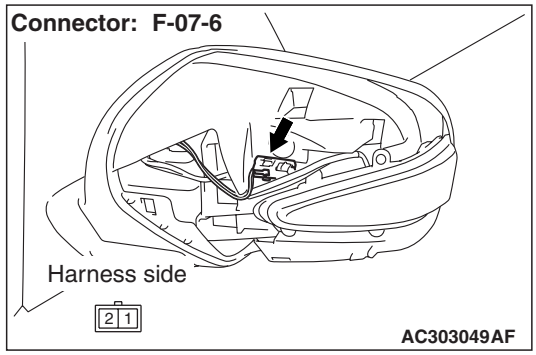
**Step 7. Connector check: F-13-6 side turn-signal lamp (RH) or F-07-6 side turn-signal lamp (LH) connector.**

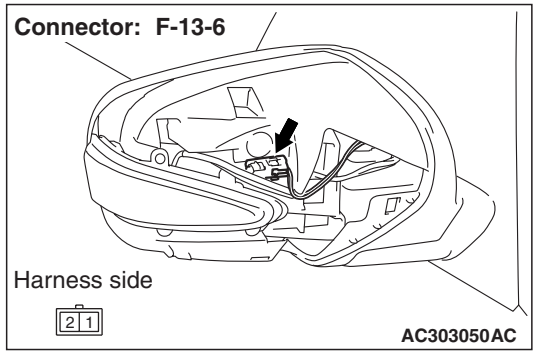


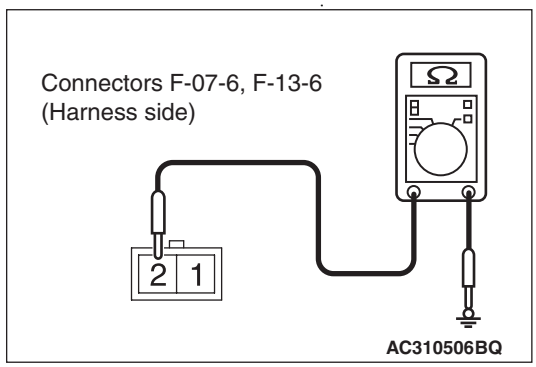

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the defective connector.

**Step 8. Resistance measurement at the F-13-6 side turn-signal lamp (RH) or F-07-6 side turn-signal lamp (LH) connector.**




(1) Disconnect the connector, and measure at the wiring harness side.
(2) Resistance measurement between the defective lamp connector terminal and body earth.

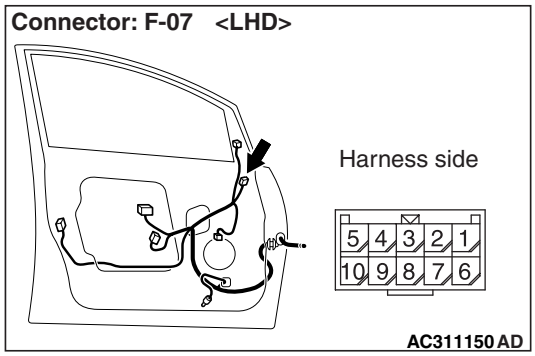


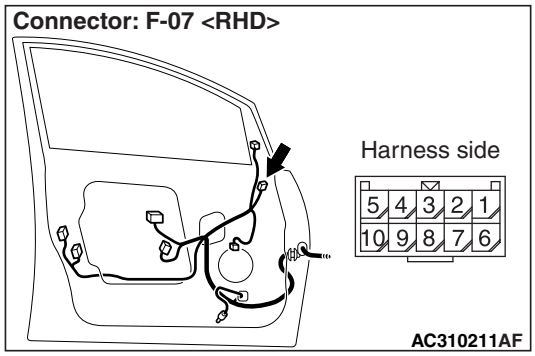

Resistance between F-13-6 side turn-signal lamp (RH) connector terminal No.2 and body earth
- Resistance between F-07-6 side turn-signal lamp (LH) connector terminal No.2 and body earth

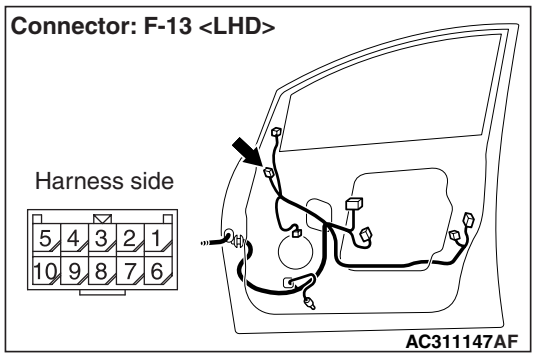
**OK: 2 Ω or less**

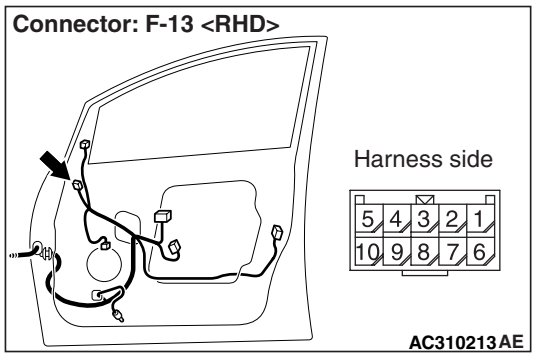
**Q: Is the check result normal?**
**YES :** Go to Step 19.
**NO :** Go to Step 9.

**Step 9. Connector check: F-13 door mirror assembly (RH) or F-07 door mirror assembly (LH) connector.**



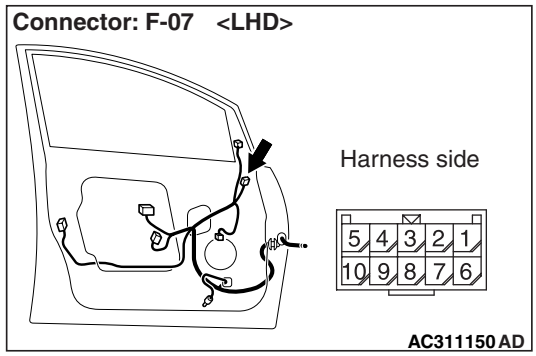



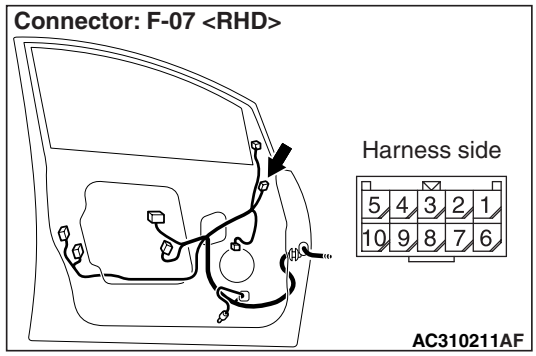



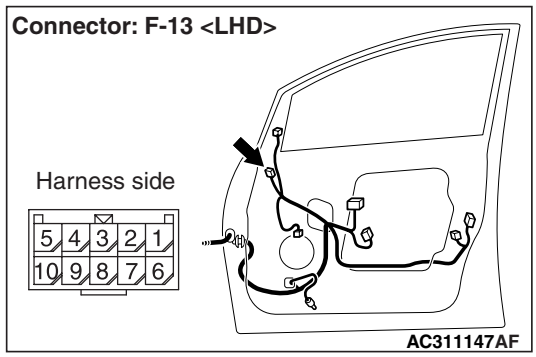



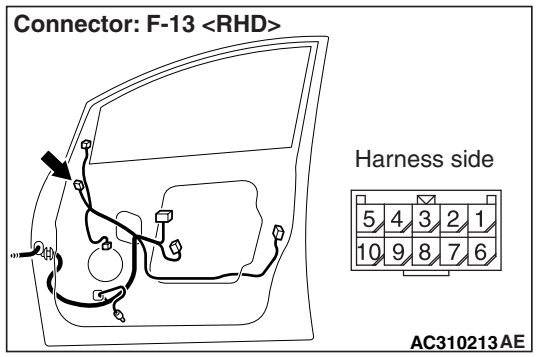

**Q: Is the check result normal?**
**YES :** Go to Step 10.
**NO :** Repair the defective connector.

**Step 10. Resistance measurement at the F-13 door mirror assembly (RH) or F-07 door mirror assembly (LH) connector.**



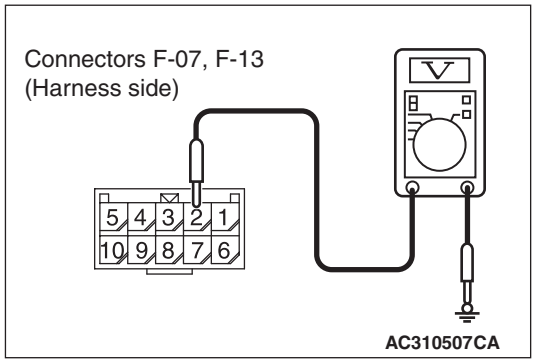




(1) Disconnect the connector, and measure at the

wiring harness side.

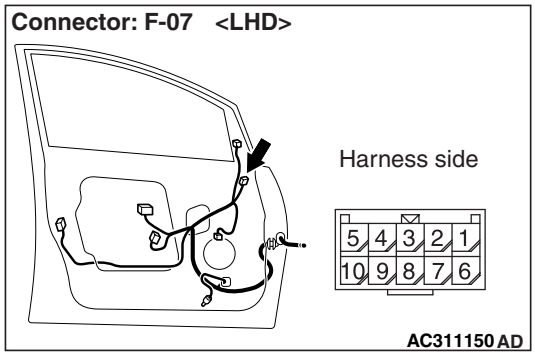


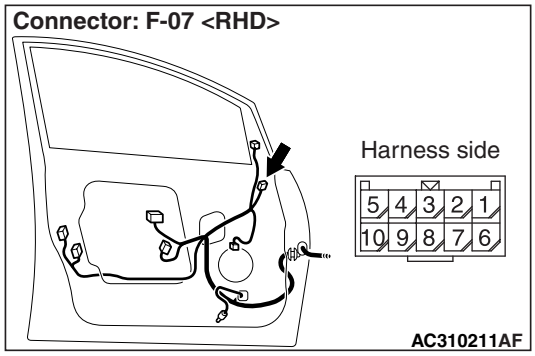

(2) Resistance measurement between the defective lamp connector terminal and body earth.
- Resistance between F-13 door mirror assembly (RH) connector terminal No.2 and body earth
- Resistance between F-07 door mirror assembly (LH) connector terminal No.2 and body earth

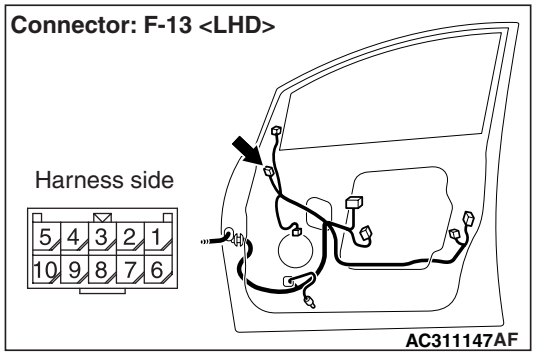
**OK: 2 Ω or less**

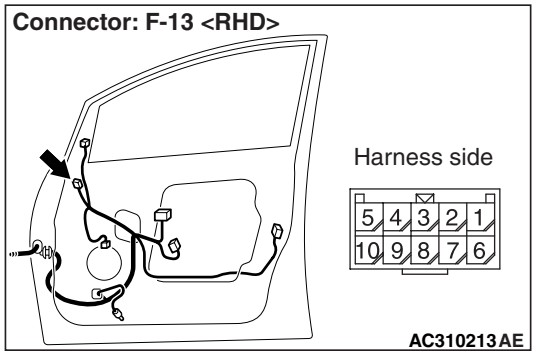
**Q: Is the check result normal?**
**YES :** Repair the wiring harness in the door mirror assembly.
**NO :** Go to Step 11.

**Step 11. Check the wiring harness from F-13 door mirror assembly (RH) or F-07 door mirror assembly (LH) connector terminal No.2 and body earth.**

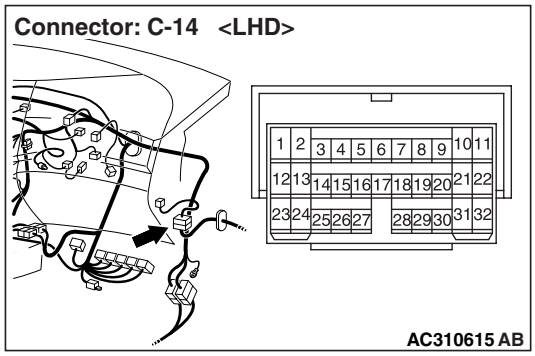


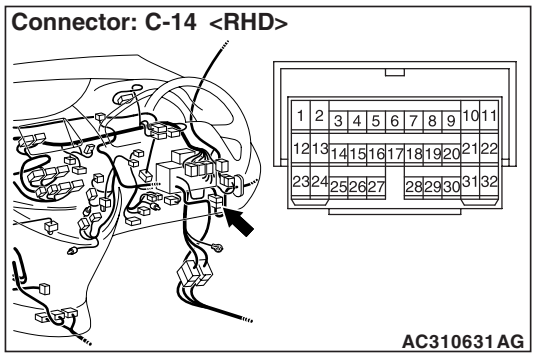



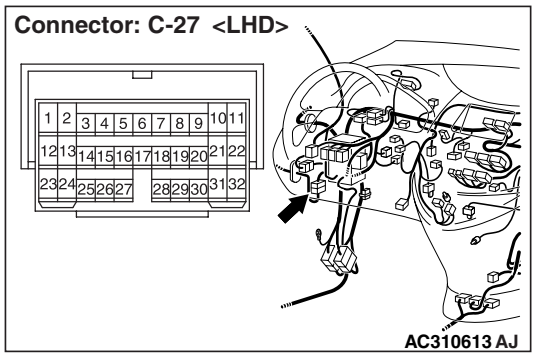



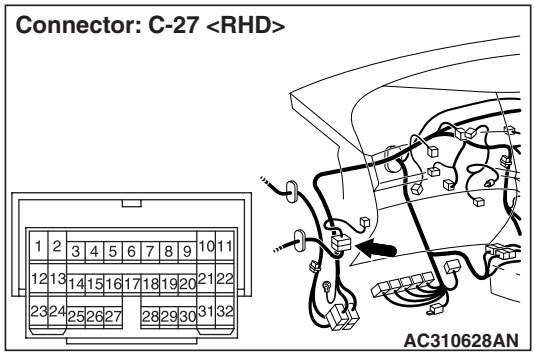



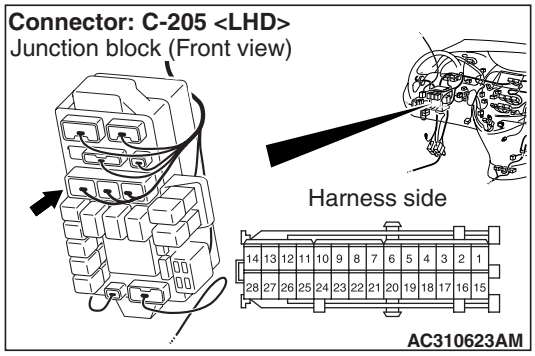

*NOTE:*

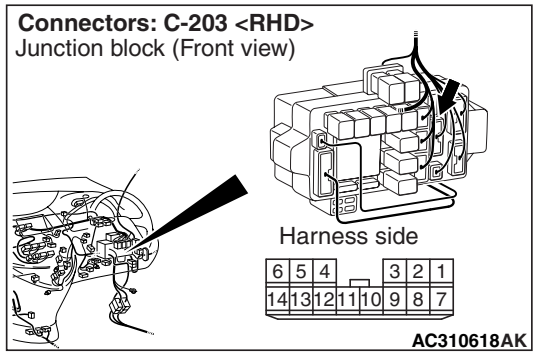


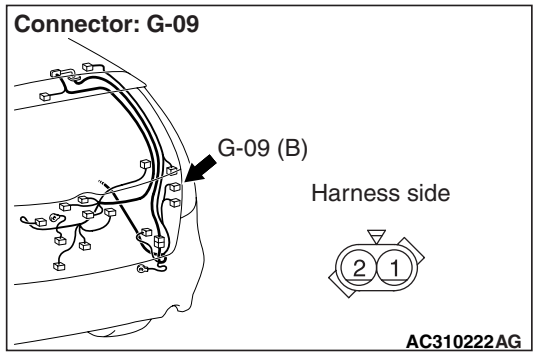



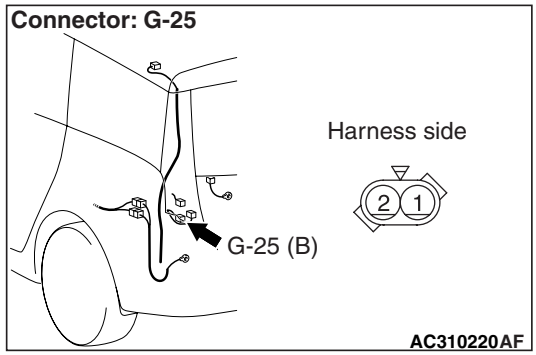

*Prior to the wiring harness inspection, check intermediate connector C-14 <side turn-signal lamp (RH)>, C-27 <side turn-signal lamp (LH)> and junction block connector C-205, and repair if necessary.*

- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

## Step 12. Connector check: G-09 rear turn-signal lamp (RH) or G-25 rear turn-signal lamp (LH) connector.



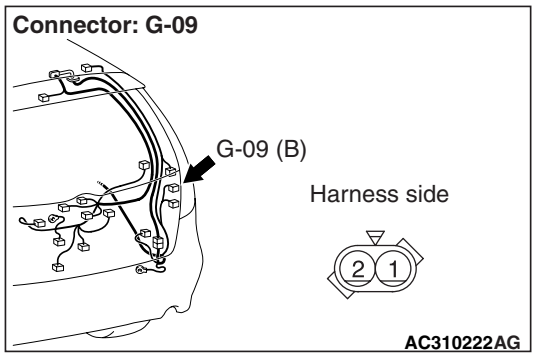



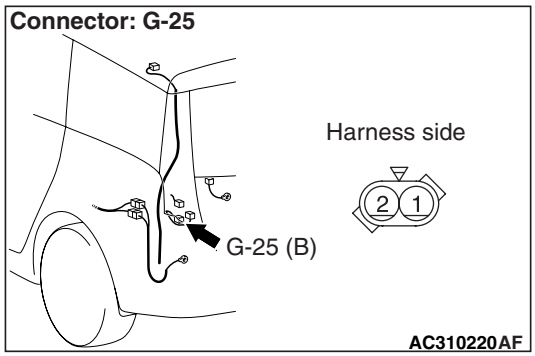

**Q: Is the check result normal?**
**YES :** Go to Step 13.
**NO :** Repair the defective connector.

**Step 13. Check the bulb(s) of the turn-signal lamps.**
Check the bulb(s) of the defective lamp.

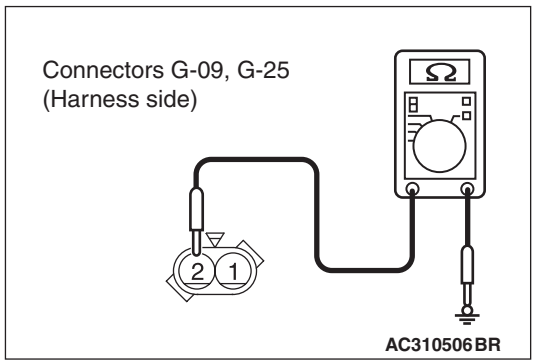
**Q: Is the check result normal?**
**YES :** Go to Step 14.
**NO :** Replace the bulb(s) of the defective lamp.

**Step 14. Resistance measurement at the G-09 rear turn-signal lamp (RH) or G-25 rear turn-signal lamp (LH) connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

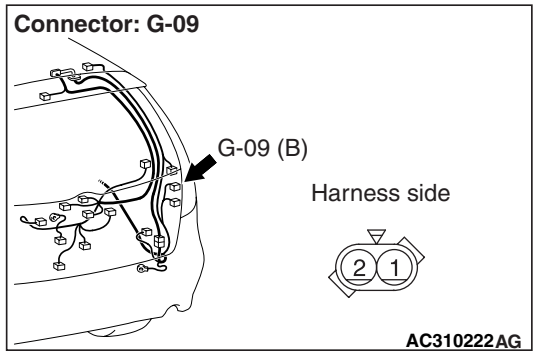


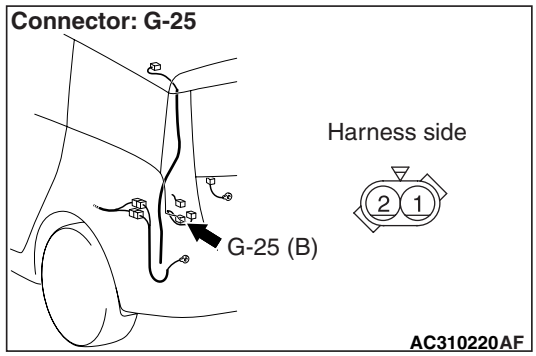

(2) Resistance measurement between the defective lamp connector terminal and body earth.
- Resistance between G-09 rear turn-signal lamp (RH) connector terminal No.2 and body earth
- Resistance between G-25 rear turn-signal lamp (LH) connector terminal No.2 and body earth

**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 23.
**NO :** Go to Step 15.

**Step 15. Check the wiring harness from G-09 rear turn-signal lamp (RH) or G-25 rear turn-signal lamp (LH) connector terminal No.2 and body earth.**

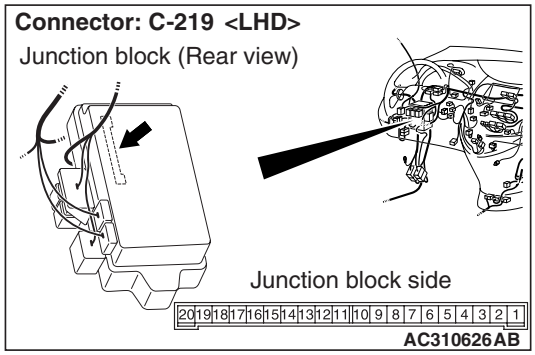


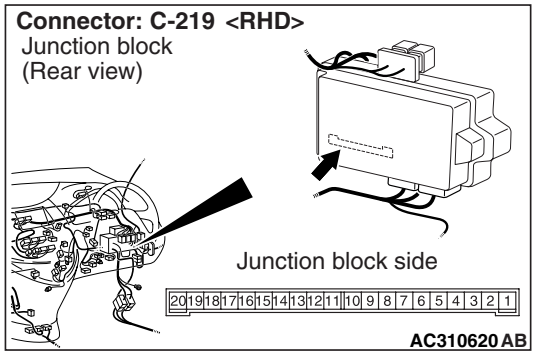




- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

### Step 16. Connector check: C-219 ETACS-ECU connector



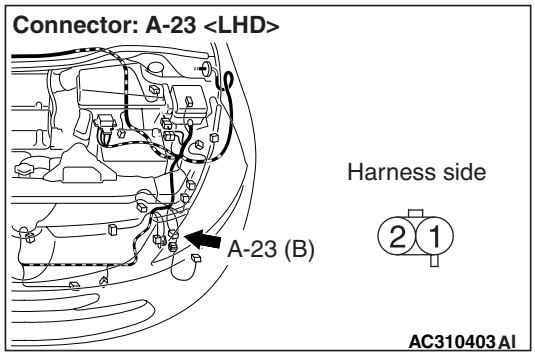




**Q: Is the check result normal?**

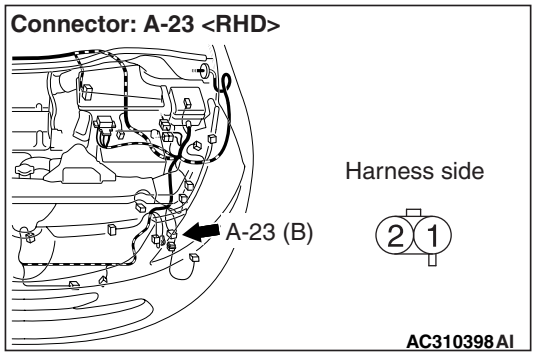
**YES :** Go to Step 17.
**NO :** Repair the defective connector.

**Step 17. Check the wiring harness from the A-33 front turn-signal lamp (RH) connector terminal No.2 to C-219 ETACS-ECU connector terminal No.9 or A-23 front turn-signal lamp (LH) connector terminal No.2 to C-219 ETACS-ECU connector terminal No.14.**

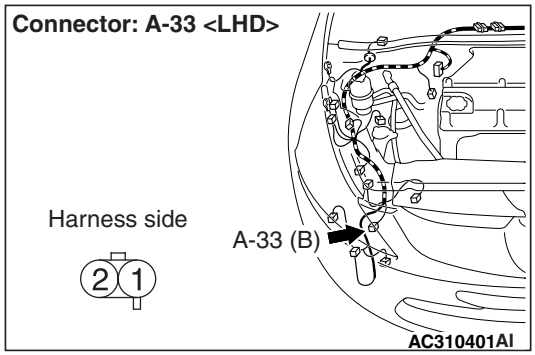
**Connector: A-23 <LHD>**



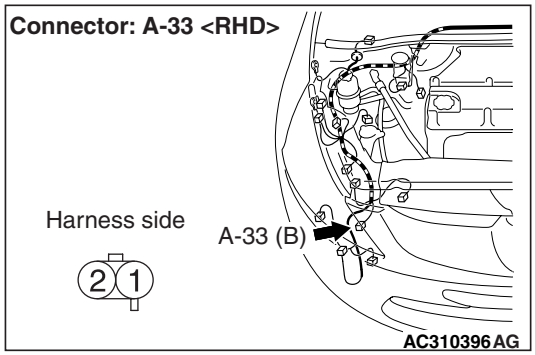

**Connector: A-23 <RHD>**



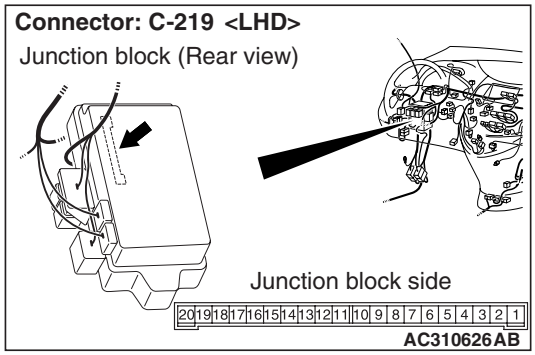

**Connector: A-33 <LHD>**



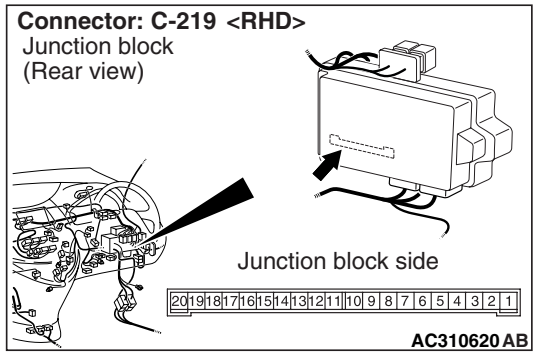

**Connector: A-33 <RHD>**




**Connector: C-219 <LHD>**




**Connector: C-219 <RHD>**



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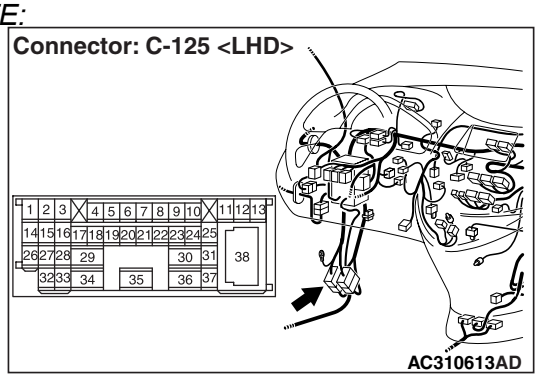
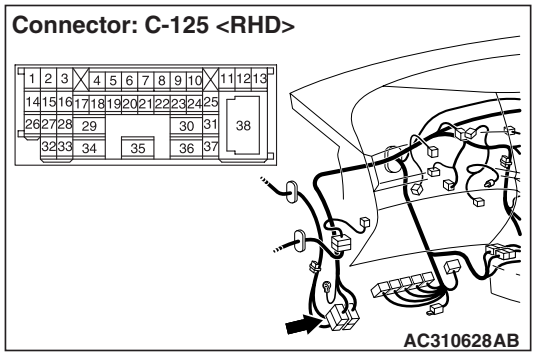
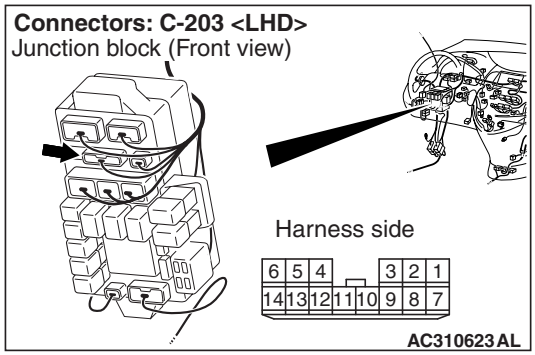
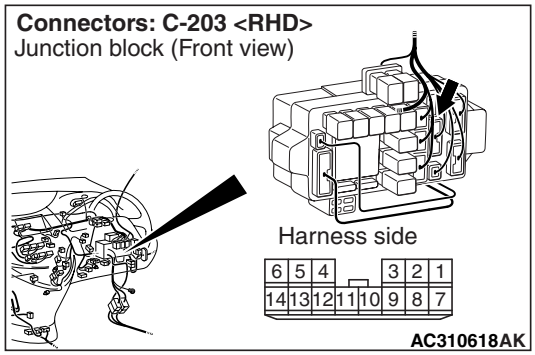



*Prior to the wiring harness inspection, check intermediate connector C-125 and junction block connector C-203, and repair if necessary.*

- Check the output lines for open circuit.

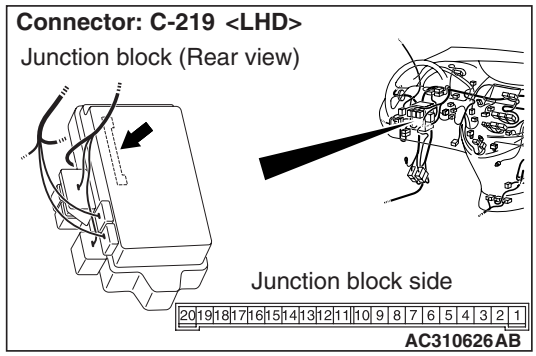
**Q: Is the check result normal?**

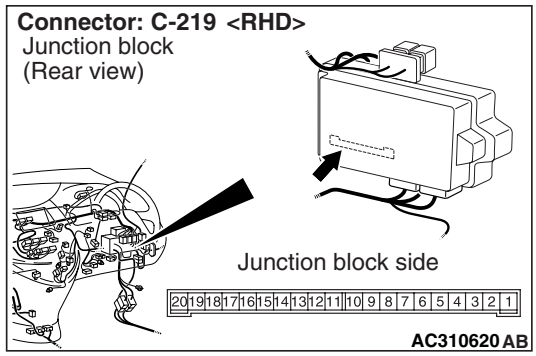
**YES :** Go to Step 18.
**NO :** Repair the wiring harness.

**Step 18. Retest the system.**
Check that the turn-signal lamps illuminate normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the headlamp assembly.

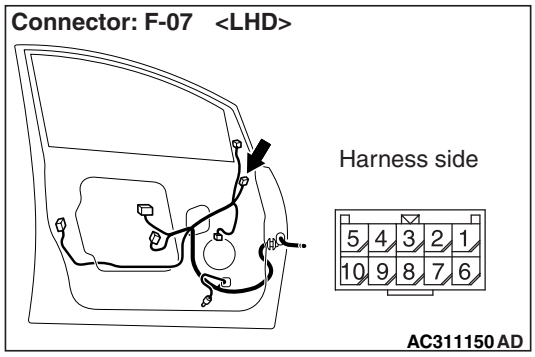
**Step 19. Connector check: C-219 ETACS-ECU connector.**

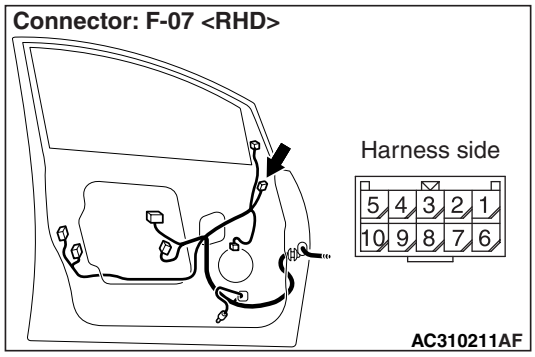


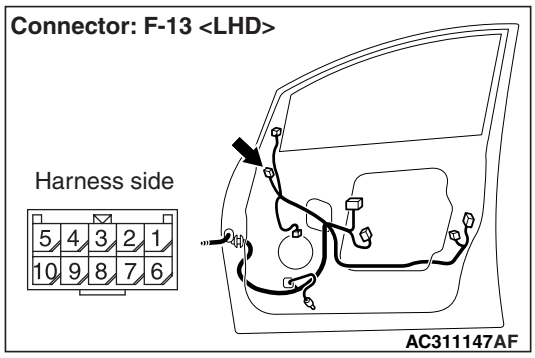



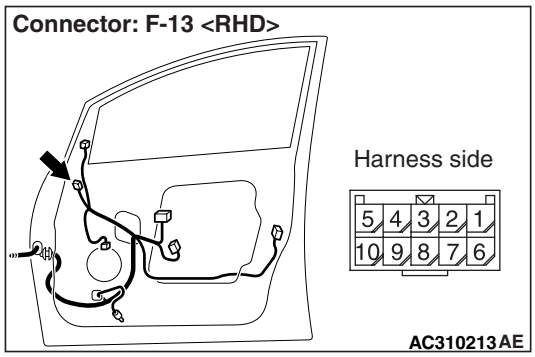

**Q: Is the check result normal?**
**YES :** Go to Step 20.
**NO :** Repair the defective connector.

**Step 20. Connector check: F-13 door mirror assembly (RH) or F-07 door mirror assembly (LH) connector.**



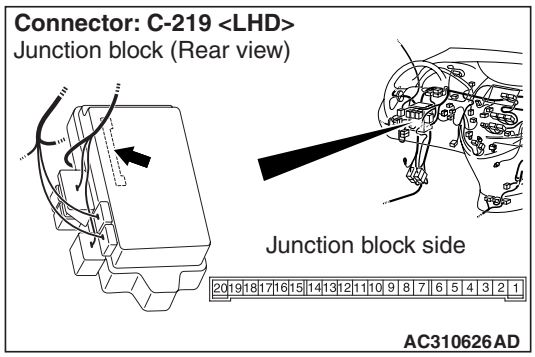



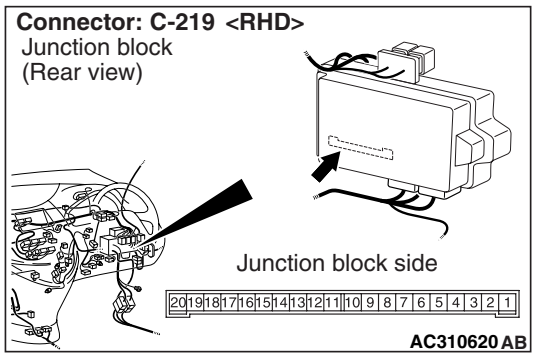



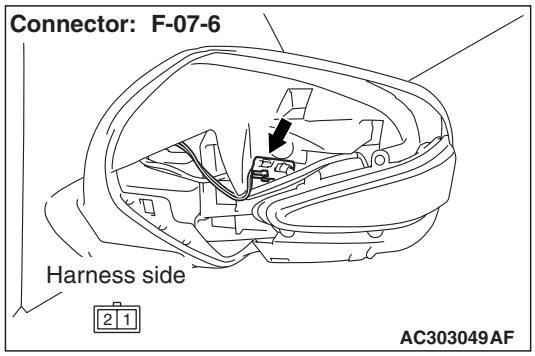

**Q: Is the check result normal?**

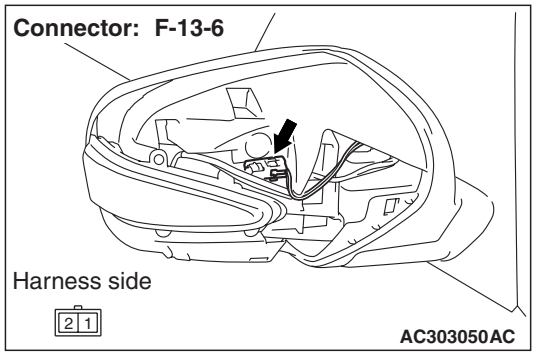
**YES :** Go to Step 21.
**NO :** Repair the defective connector.

**Step 21. Check the wiring harness from the F-13-6 side turn-signal lamp (RH) connector terminal No.1 to C-219 ETACS-ECU connector terminal No.9 or F-07-6 side turn-signal lamp (LH) connector terminal No.1 to C-219 ETACS-ECU connector terminal No.14.**

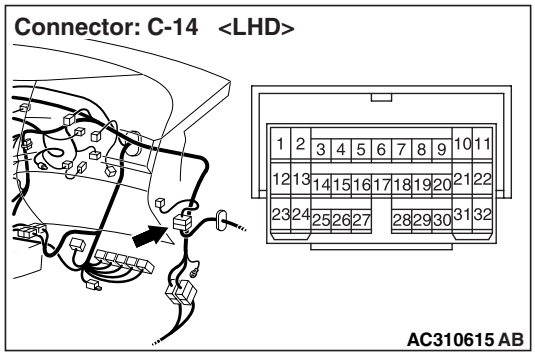


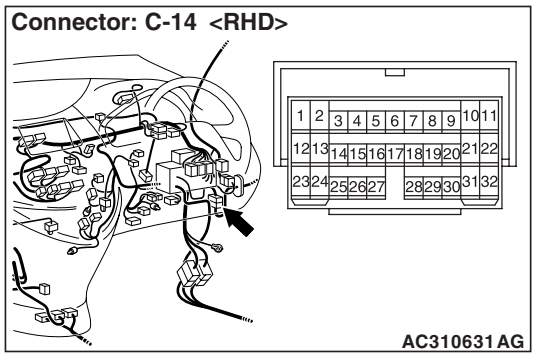



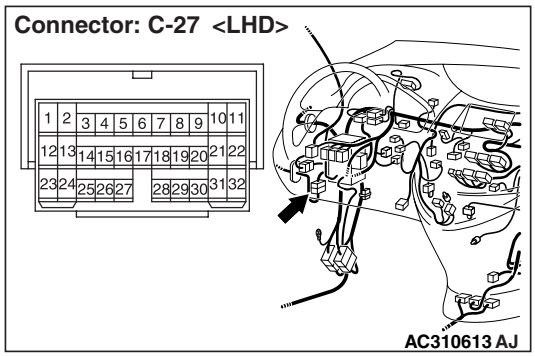



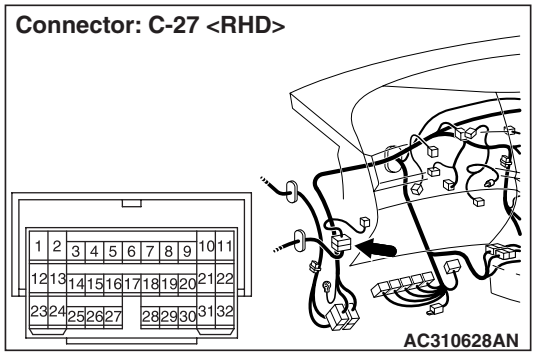



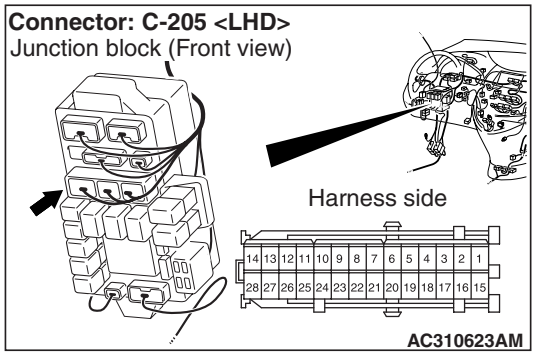

*NOTE:*

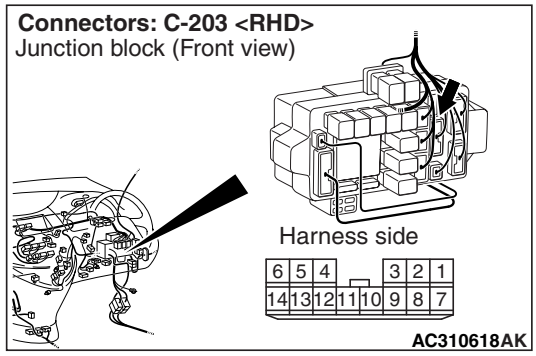



*Prior to the wiring harness inspection, check intermediate connector C-14 <side turn-signal lamp (RH)>, C-27 <side turn-signal lamp (LH)> and junction block connector C-205, and repair if necessary.*

- Check the output lines for open circuit.

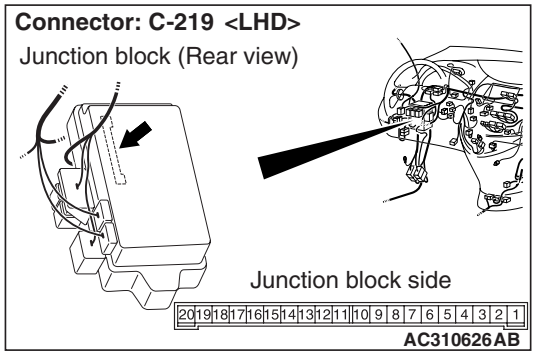
**Q: Is the check result normal?**
**YES :** Go to Step 22.
**NO :** Repair the wiring harness.

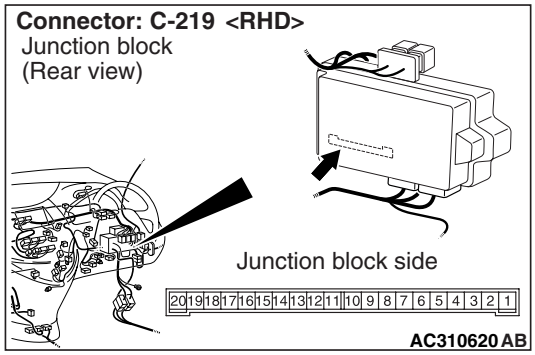
---

**Step 22. Retest the system.**
Check that the side turn-signal lamps illuminate normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the side turn-signal lamp.

**Step 23. Connector check: C-219 ETACS-ECU connector.**

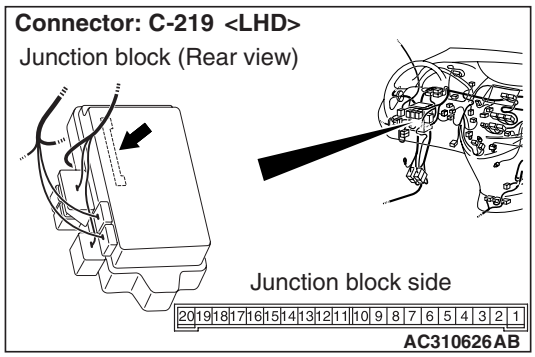


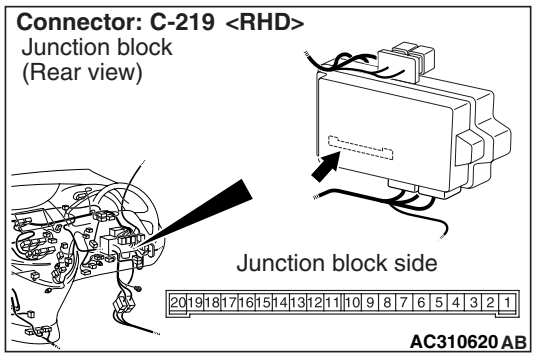



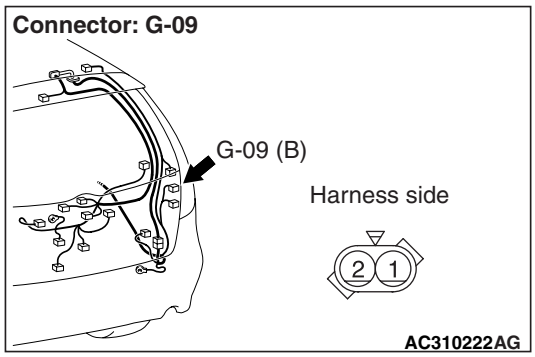

**Q: Is the check result normal?**

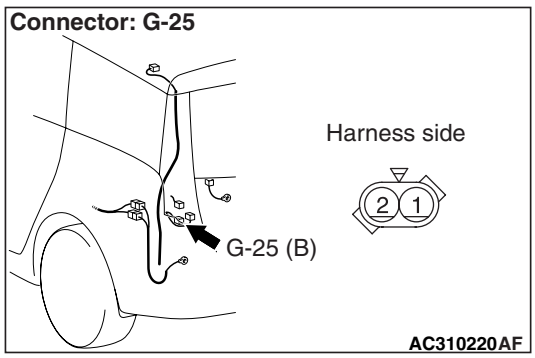
**YES :** Go to Step 24.
**NO :** Repair the defective connector.

**Step 24. Check the wiring harness from the G-09 rear turn-signal lamp (RH) connector terminal No.1 to C-219 ETACS-ECU connector terminal No.9 or G-25 rear turn-signal lamp (LH) connector terminal No.1 to C-219 ETACS-ECU connector terminal or No.14.**

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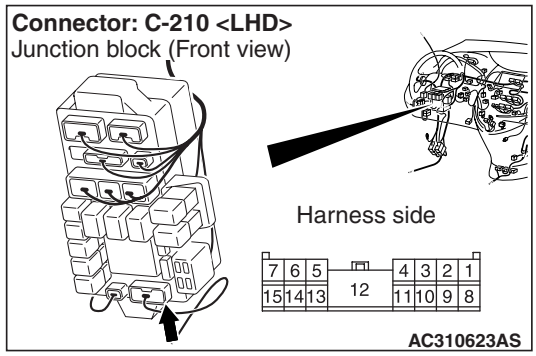
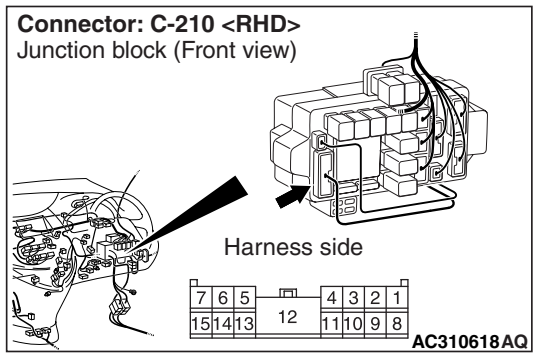
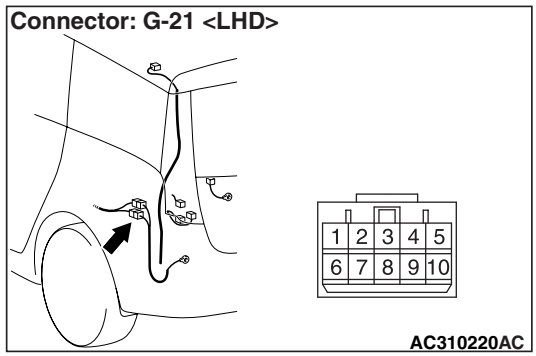



*Prior to the wiring harness inspection, check intermediate connector G-21 and junction block connector C-210, and repair if necessary.*

- Check the output lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 25.
**NO :** Repair the wiring harness.

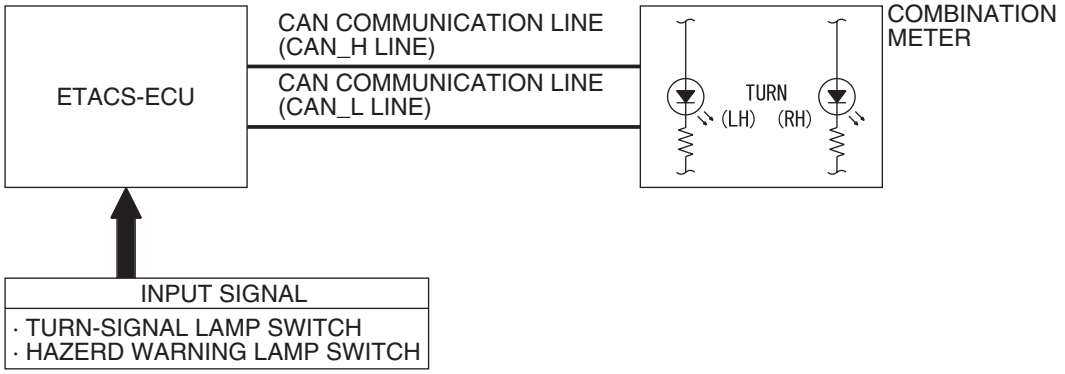
**Step 25. Retest the system.**
Check that the turn-signal lamps.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the rear turn-signal lamp assembly.

## Inspection Procedure N-4: The turn-signal indicator lamp does not illuminate.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Turn-Signal Indicator Lamp Circuit**




W4X54E190A

## COMMENTS ON TROUBLE SYMPTOM

If the turn-signal indicator lamp does not illuminate normally, connector(s), wiring harness in the CAN bus lines, the ETACS-ECU or the combination meter may be defective.

## POSSIBLE CAUSES

- The combination meter may be defective
- The ETACS-ECU may be defective
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check that the hazard warning lamps operate.**
Check that the hazard warning lamps illuminate normally.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** First, repair the headlamps. Refer to Inspection Procedure N-2 "The hazard warning lamps do not illuminate normally P.54C-321."

**Step 2. MUT-III CAN bus diagnostics.**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the CAN bus line (Refer to GROUP 54D, Diagnosis P.54D-16).

**Step 3. Check for combination meter diagnosis code.**
Check whether the combination meter-related diagnosis code is set.

**Q: Is the diagnosis code set?**
**YES :** Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-35).
**NO :** Go to Step 4.

**Step 4. MUT-III actuator test**
Perform the actuator test for the combination meter, and check that the turn-signal indicator lamps illuminate (Refer to GROUP 54A – Combination Meter P.54A-78).

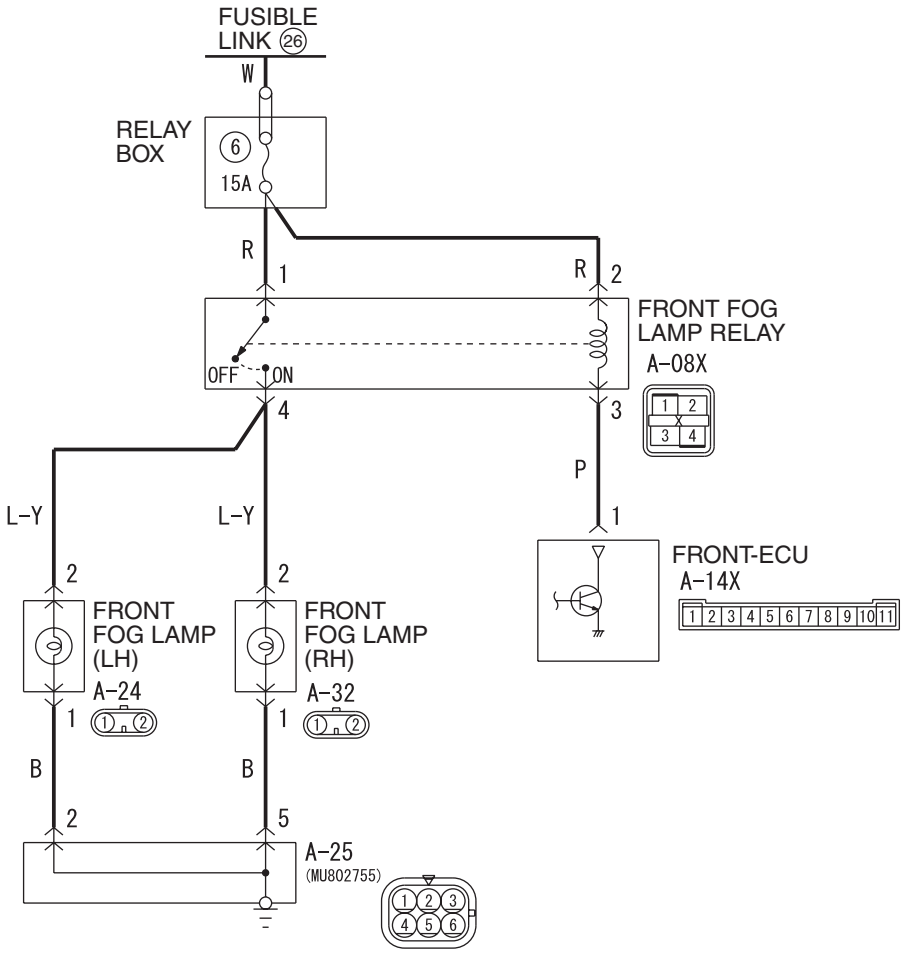
**Q: Is the check result normal?**
**YES :** Replace the ETACS-ECU.
**NO :** Replace the combination meter.

# FOG LAMP

## Inspection Procedure O-1: The front fog lamps do not illuminate normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Front Fog Lamp Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E032A

## POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the front fog lamp switch
- Malfunction of the front-ECU
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check that the tail/stop lamps and headlamps operate.**
Check that the tail/stop lamps and headlamps illuminate normally.

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** Repair the tail/stop lamp(s) and headlamp(s). Refer to trouble symptom chart P.54C-44.

**Step 2. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the column switch (column-ECU), the ETACS-ECU and the front-ECU and the SWS communication lines are normal.
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- COLUMN ECU
- ETACS ECU
- FRONT ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**
**"OK" are displayed for all the items :** Go to Step 3.
**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."
**"NG" is displayed on the "ETACS ECU" menu. :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."
**"NG" is displayed on the "FRONT ECU" menu. :** Refer to Inspection Procedure A-4 "Communication with the front-ECU is not possible P.54C-70."

**Step 3. Function diagnosis by using the SWS monitor**
Check the SWS communication signal, which are related to the front fog lamps.

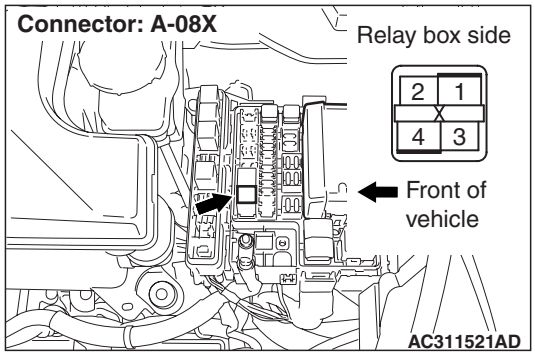
**<Selected item> LIGHTING - F.FOG LAMP**
- Ignition switch: ON
- Lighting switch: "TAIL" or "HEAD"
- Front fog lamp switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 00 | HEADLAMP SW | ON when the lighting switch is at HEAD |
| Item 01 | TAIL LAMP SW | ON when the lighting switch is at TAIL or HEAD |
| Item 30 | IG SW(IG1) | ON |
| Item 36 | F.FOG LAMP | ON |
| Item 70 | FRONT ECU ACK | NORMAL ACK or HI-BEAM ACK |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**
**Normal conditions are displayed for all the items. :** Go to Step 4.
**Normal condition is not displayed for item 00 or 01. :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp and headlamp washer switch) signal is not received P.54C-478."
**Normal condition is not displayed for item No.30. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."
**Normal condition is not displayed for item No.36. :** Refer to inspection procedure Q-4 "The front fog lamp switch signal is not received P.54C-470."
**Normal condition is not displayed for item No.70. :** Replace the front-ECU.

**Step 4. Connector check: A-08X front fog lamp relay connector**

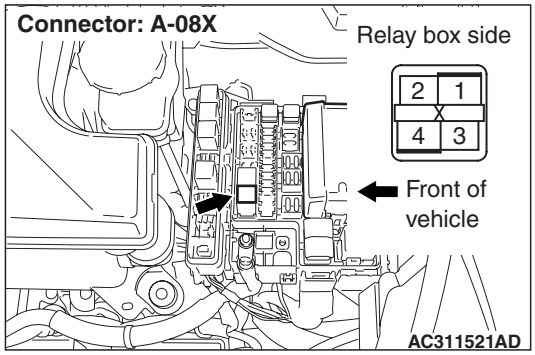



**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the defective connector.

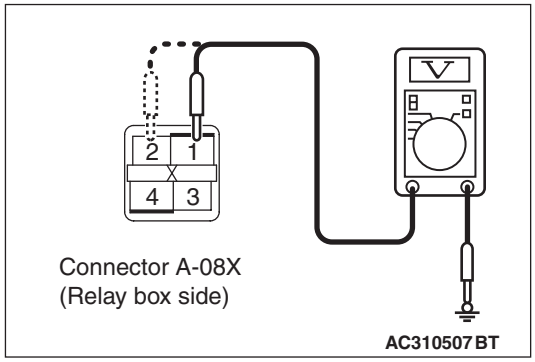
**Step 5. Check the front fog lamp relay.**
Refer to GROUP 54A – Fog lamp P.54A-93.

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Replace the front fog lamp relay.

**Step 6. Voltage measurement at the A-08X front fog lamp relay connector.**




(1) Remove the front fog lamp relay, and measure at the relay box side.

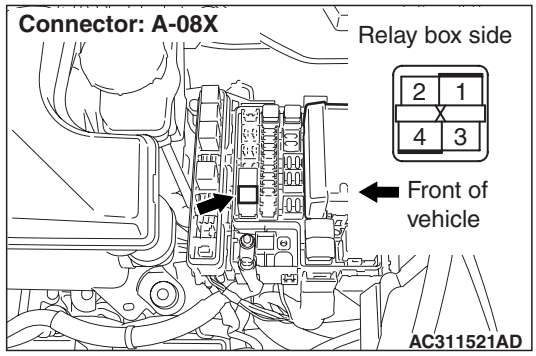



(2) Check the voltage between the front fog lamp relay connector and body earth.
- Voltage between A-08X front fog lamp relay connector terminal No.1 and body earth
- Voltage between A-08X front fog lamp relay connector terminal No.2 and body earth

**OK: System voltage**

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Go to Step 7.

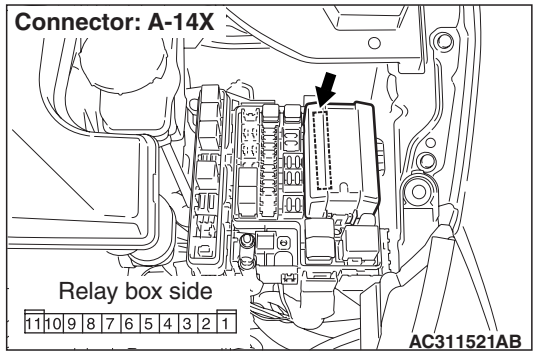
**Step 7. Check the wiring harness between A-08X front fog lamp relay connector (terminal Nos.1and 2) and the fusible link (26).**




- Check the power supply line for open circuit.

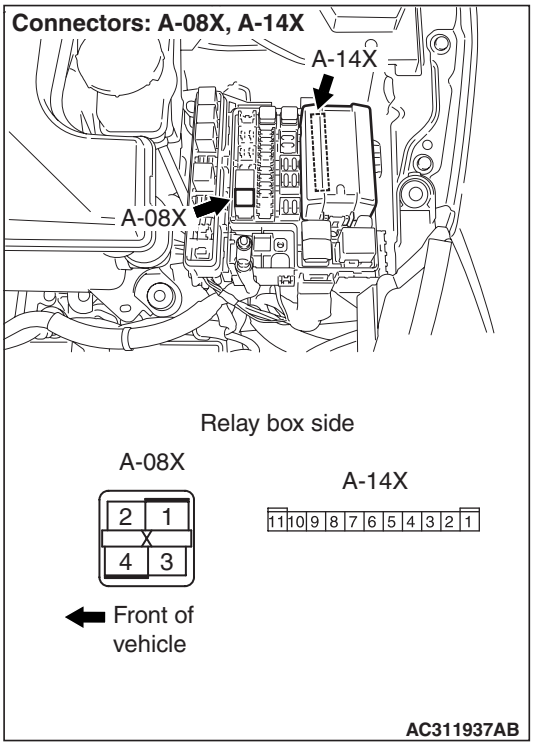
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 8. Connector check: A-14X front-ECU connector**




**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the defective connector.

**Step 9. Check the wiring harness between A-08X front fog lamp relay connector terminal No.3 and A-14X front-ECU connector terminal No.1.**




- Check the output lines for open circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 10.
**NO :** Repair the wiring harness.

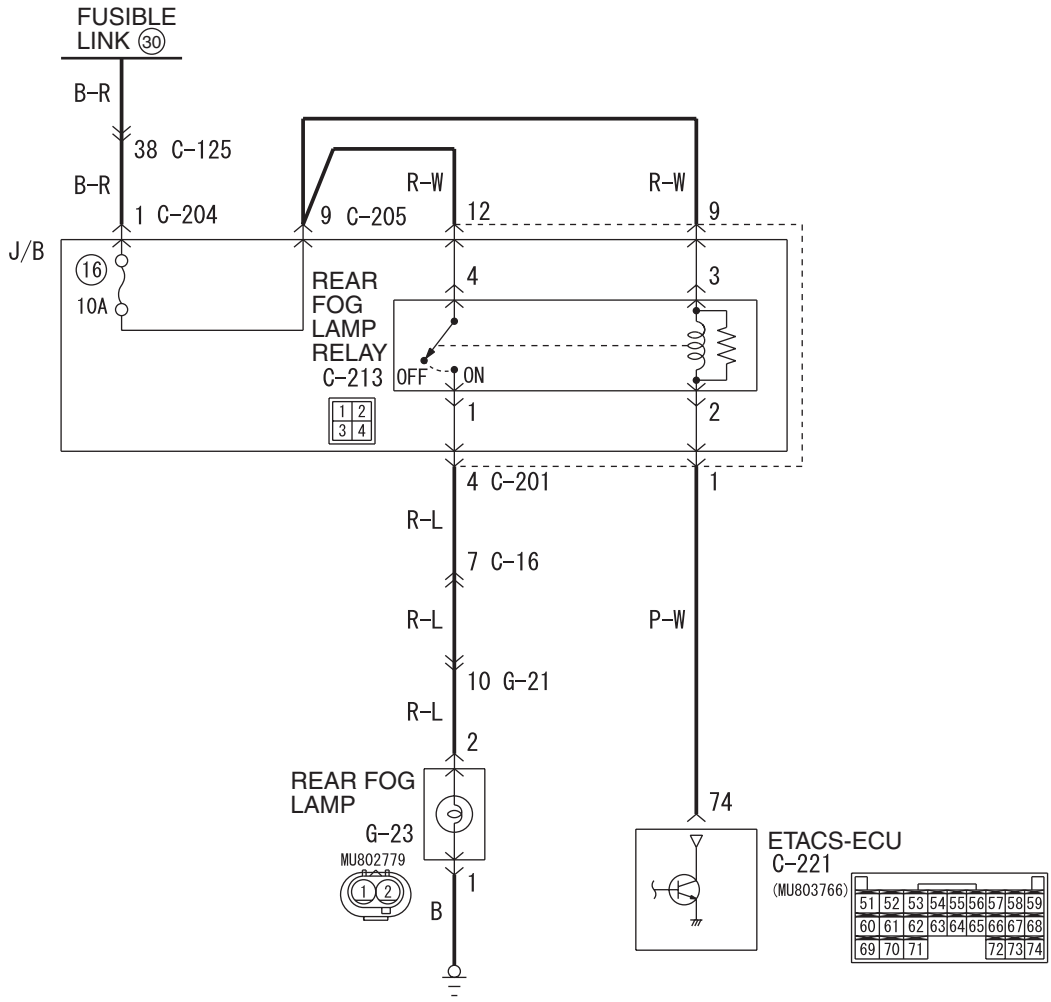
**Step 10. Retest the system.**
Check that the front fog lamps illuminate normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure O-2: The rear fog lamp do not illuminate normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

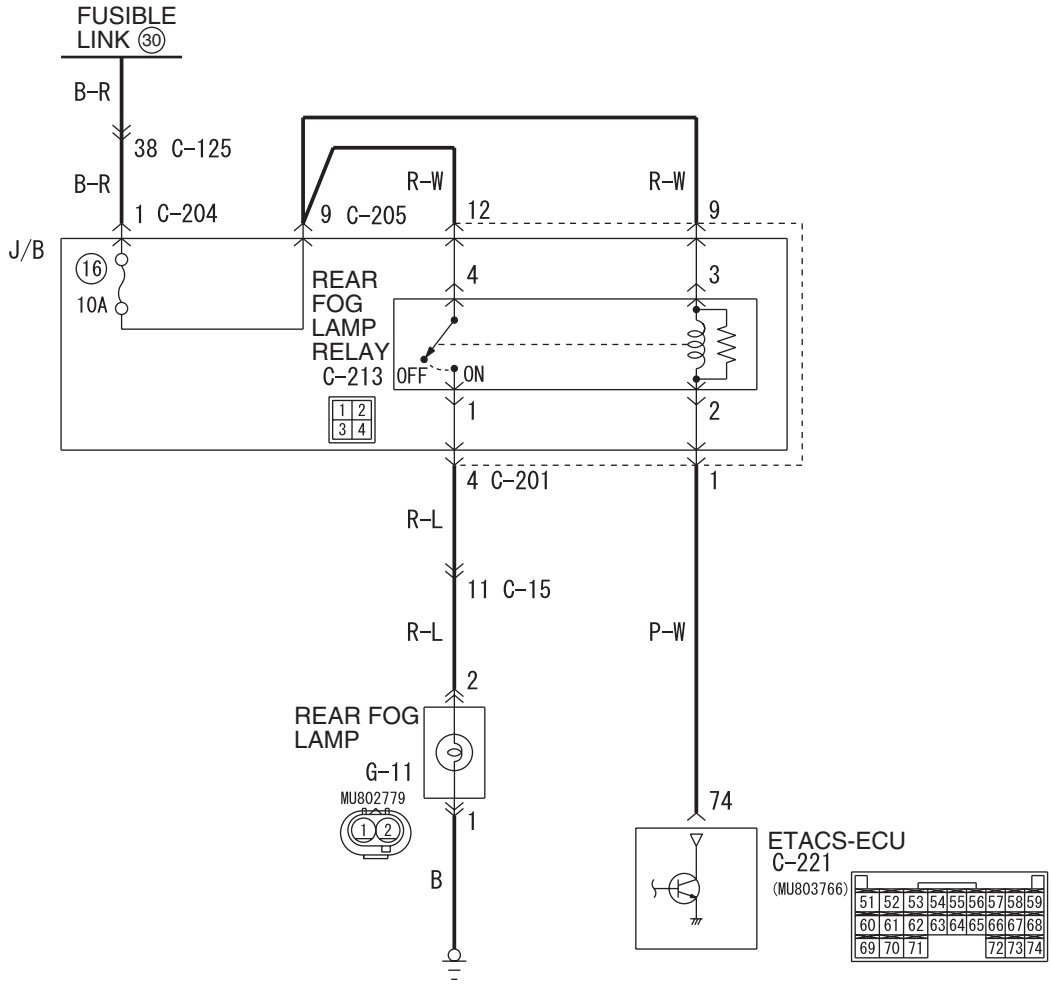
**Rear Fog Lamp Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E033A

**Rear Fog Lamp Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E034A

## POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the rear fog lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check that the tail/stop lamps and headlamps operate.**
Check that the tail/stop lamps and headlamps illuminate normally.

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** Check the tail/stop lamps and the headlamps (Refer to trouble symptom chart P.54C-44).

**Step 2. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the column switch (column-ECU) and the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

**ECUS TO BE CHECKED**

- COLUMN ECU
- ETACS ECU

**OK: "OK" are displayed for all the items**

**Q: Are the check result normal?**

**"OK" are displayed for all the items :** Go to Step 3.
**"NG" is displayed on the "COLUMN ECU" menu. :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."
**"NG" is displayed on the "ETACS ECU" menu. :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

### Step 3. Function diagnosis by using the SWS monitor

Check the SWS communication signal, which are related to the fog lamps.

**<Selected item> LIGHTING - REAR FOG LAMP**

- Ignition switch: ON
- Lighting switch: "TAIL" or "HEAD"
- Rear fog lamp switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 00 | HEADLAMP SW | ON when the lighting switch is at HEAD |
| Item 01 | TAIL LAMP SW | ON when the lighting switch is at TAIL |

**OK: Normal conditions are displayed for all the items.**

**Q: Are the check result normal?**
**Normal conditions are displayed for all the items. :** Go to Step 4.
**Normal condition is not displayed for item 00 or 01. :** Refer to inspection procedure Q-6 "The column switch (Lighting and turn-signal lamp and headlamp washer switch) signal is not received P.54C-478."

### Step 4. ETACS switch data by using the SWS monitor

Check the input signals below, which are related to the rear fog lamp.

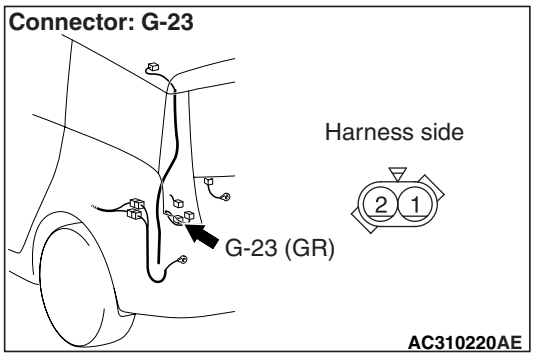
- Rear fog lamp switch: from OFF to ON

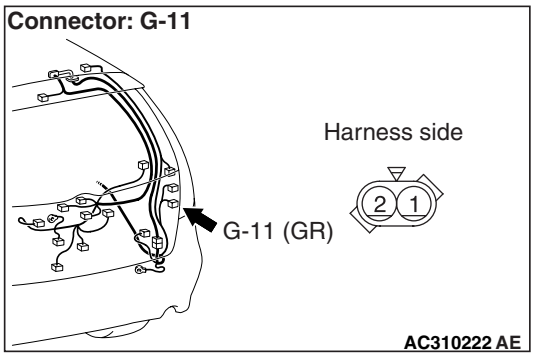
| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 11 | R.FOG LAMP SW | OFF to ON (only when switch is operated) |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Refer to inspection procedure Q-13 "The rear fog lamp switch signal is not received P.54C-501."

### Step 5. Connector check: G-23 rear fog lamp connector <LH drive vehicles> or G-11 rear fog lamp connector <RH drive vehicles>



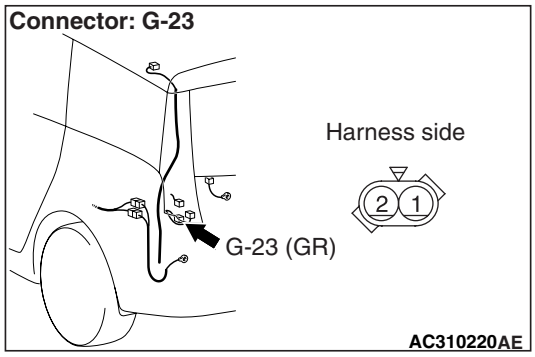

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

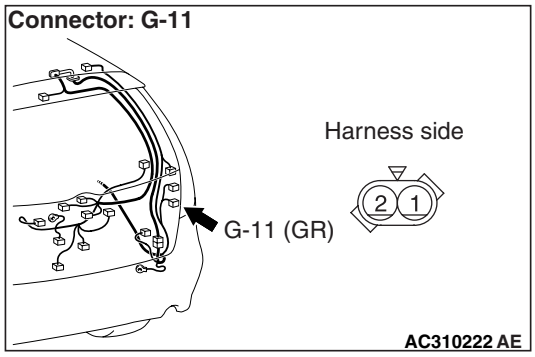
### Step 6. Check the bulbs of the rear fog lamps.

Check the bulb(s) of the defective lamp.

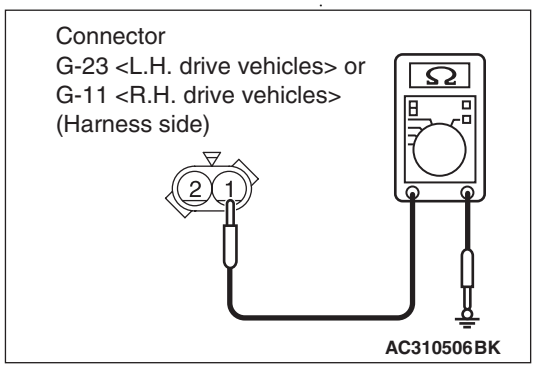
**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Replace the bulb(s) of the defective lamp.

**Step 7. Resistance measurement at the G-23 rear fog lamp connector <LH drive vehicles> or G-11 rear fog lamp connector <RH drive vehicles>.**




(1) Disconnect the connector, and measure at the wiring harness side.
(2) Check the resistance between the lamp connector and body earth.



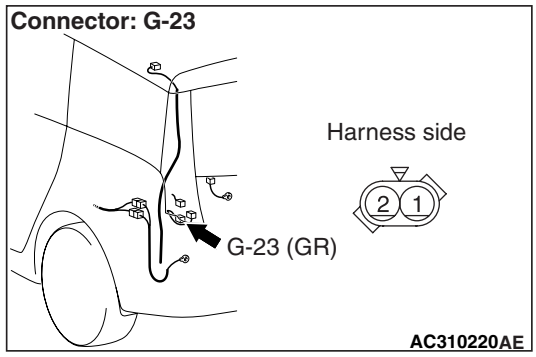

Resistance between G-23 rear fog lamp relay connector <LH drive vehicles> or G-11 rear fog lamp relay connector <RH drive vehicles> connector terminal No.1 and body earth

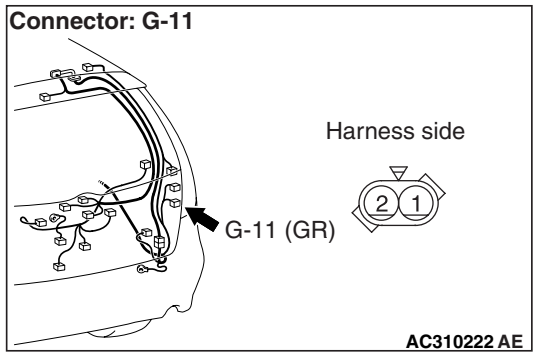
**OK: 2 Ω or less**

**Q: Is the check result normal?**

**YES :** Go to Step 9.
**NO :** Go to Step 8.

**Step 8. Check the wiring harness from G-23 rear fog lamp connector <LH drive vehicles> or G-11 rear fog lamp connector <RH drive vehicles> terminal No.1 to body earth.**

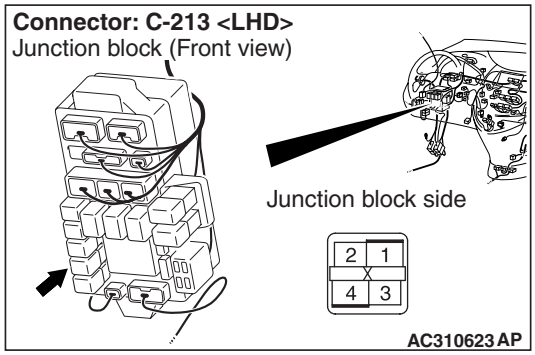


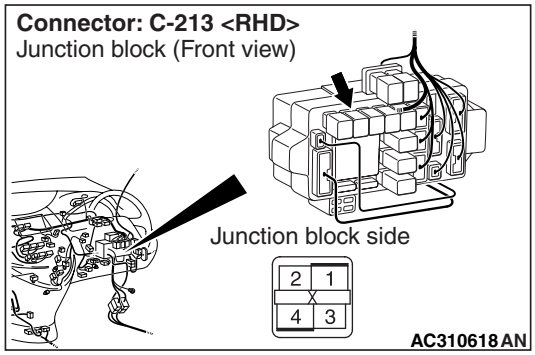




- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 9. Connector check: C-213 rear fog lamp relay connector**



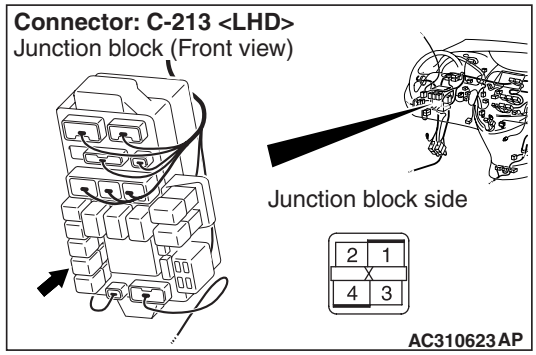



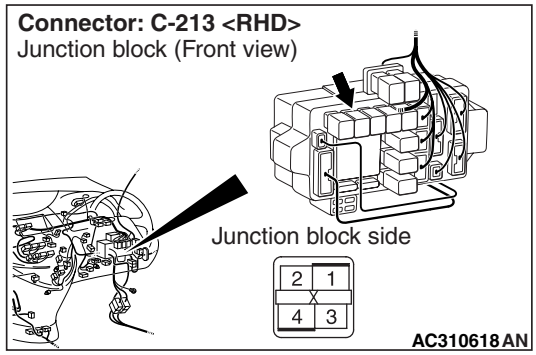

**Q: Is the check result normal?**
**YES :** Go to Step 10.
**NO :** Repair the defective connector.

**Step 10. Check the rear fog lamp relay.**
Refer to GROUP 54A – Rear fog lamp P.54A-94.

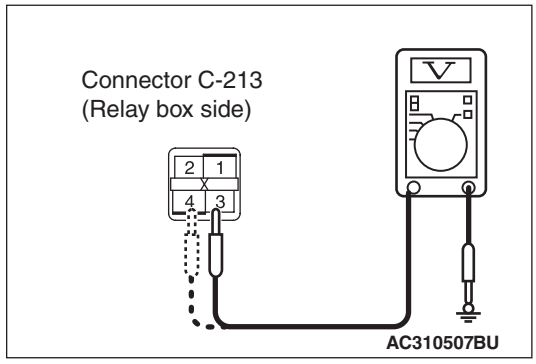
**Q: Is the check result normal?**
**YES :** Go to Step 11.
**NO :** Replace the rear fog lamp relay.

**Step 11. Voltage measurement at the C-213 rear fog lamp relay connector.**




(1) Remove the rear fog lamp relay, and measure at the relay box side.

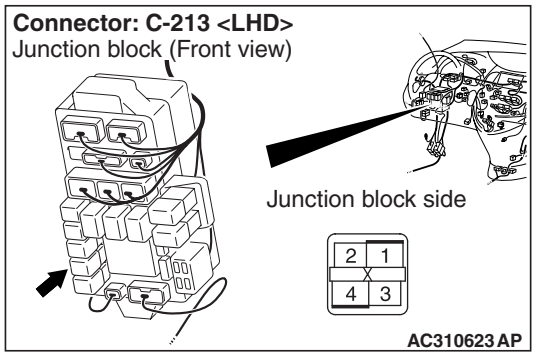


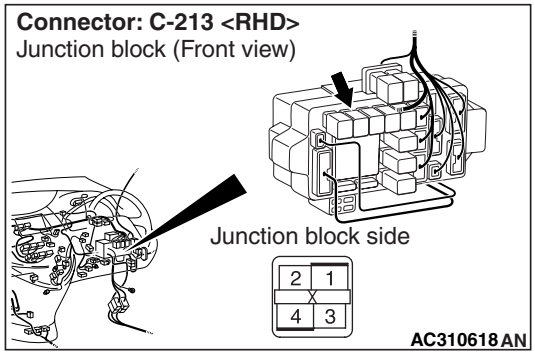

(2) Check the voltage between the rear fog lamp relay connector and body earth.
- Voltage between C-213 rear fog lamp relay connector terminal No.3 and body earth
- Voltage between C-213 rear fog lamp relay connector terminal No.4 and body earth

**OK: System voltage**

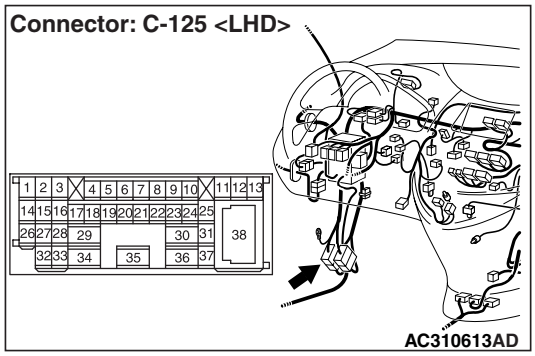
**Q: Is the check result normal?**
**YES :** Go to Step 13.
**NO :** Go to Step 12.

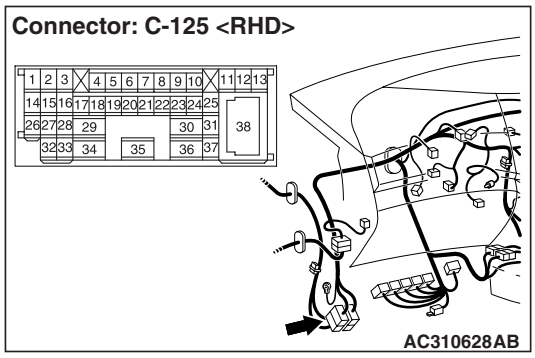
**Step 12. Check the wiring harness between C-213 rear fog lamp relay connector (terminal Nos.3 and 4) and the fusible link (30).**

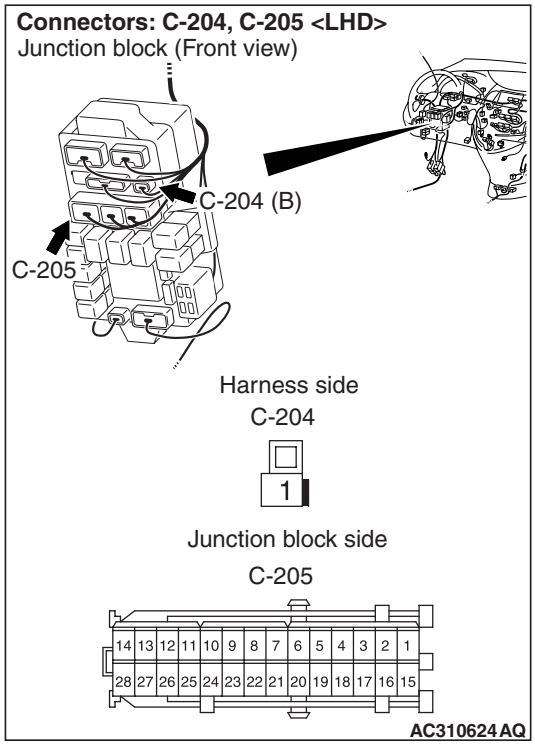


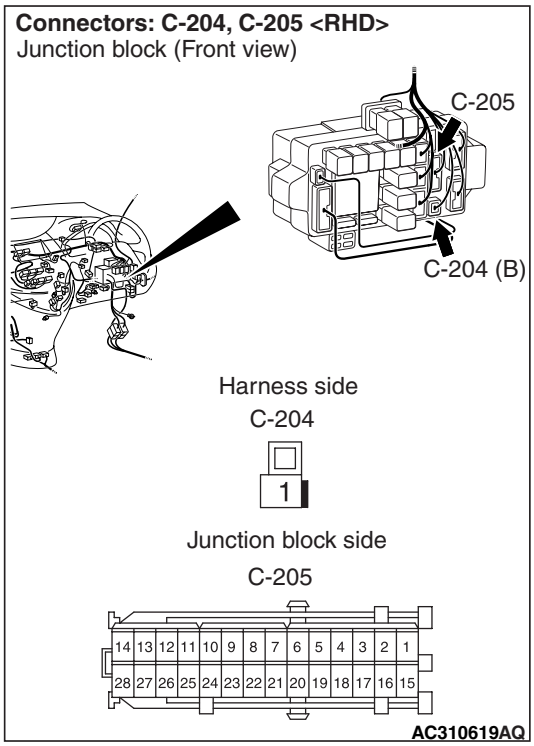




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-125 and junction block connectors C-204 and C-205, and repair if necessary.*

- Check the power supply line for open circuit.

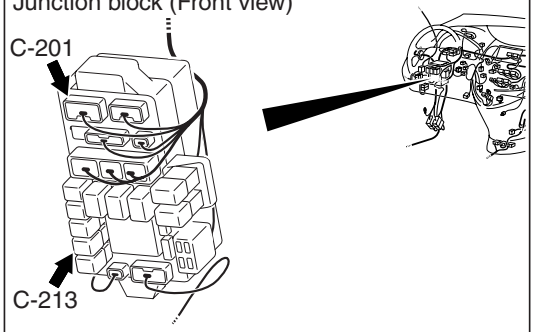
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

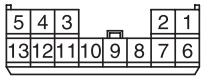
**NO :** Repair the wiring harness.

**Step 13. Check the wiring harness from G-23 rear fog lamp connector <LH drive vehicles> or G-11 rear fog lamp connector <RH drive vehicles> terminal No.2 to C-213 rear fog lamp relay connector terminal No.1.**

**Connectors: C-201, C-213 <LHD>**
Junction block (Front view)



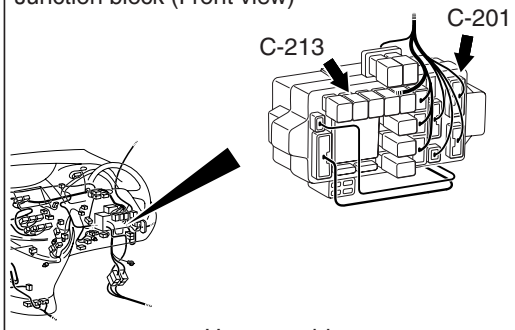

Harness side
C-201



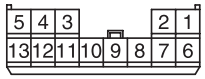

Junction block side
C-213

AC310624AR

**Connectors: C-201, C-213 <RHD>**
Junction block (Front view)



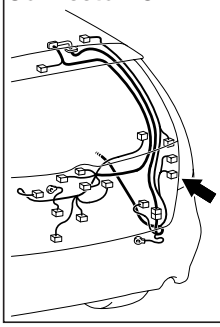

Harness side
C-201




Junction block side
C-213

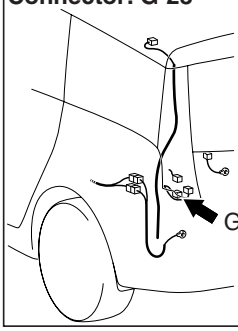
AC310619AR

**Connector: G-11**



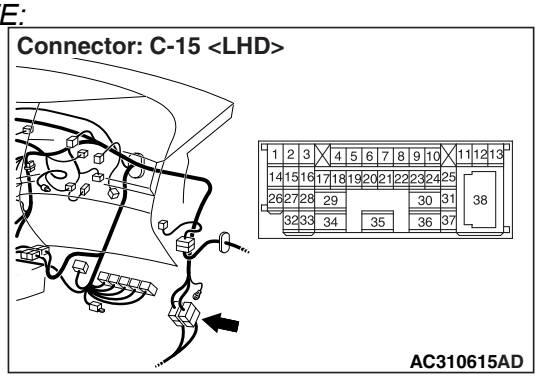

AC310222 AE

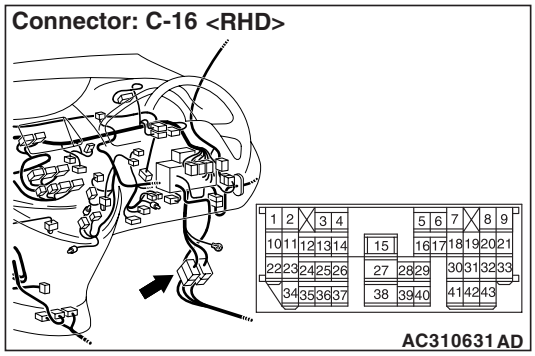
**Connector: G-23**

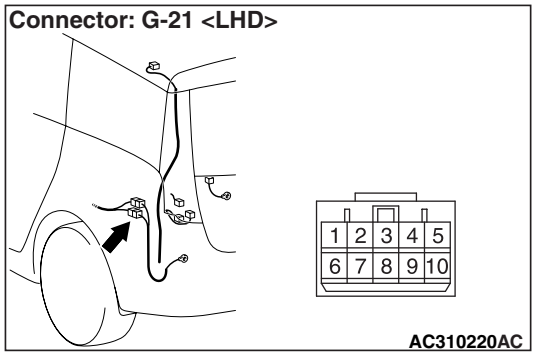



AC310220AE

*NOTE:*



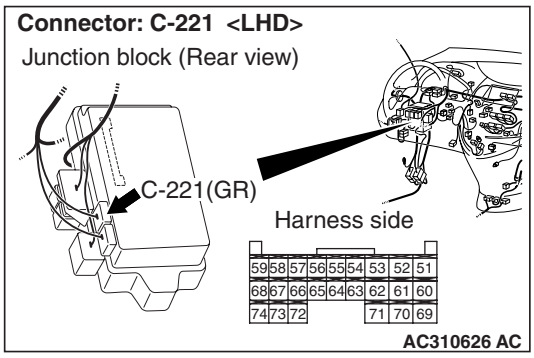

*Prior to the wiring harness inspection, check intermediate connector C-15 <RH drive vehicles>, C-16 <LH drive vehicles>, G-21 <LH drive vehicles> and junction block connector C-201, and repair if necessary.*

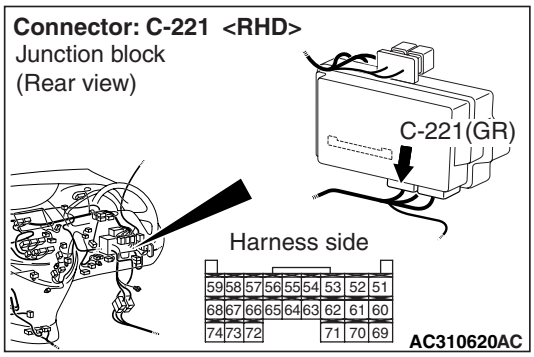
- Check the output lines for open circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 14.
**NO :** Repair the wiring harness.

### Step 14. Connector check: C-221 ETACS-ECU connector

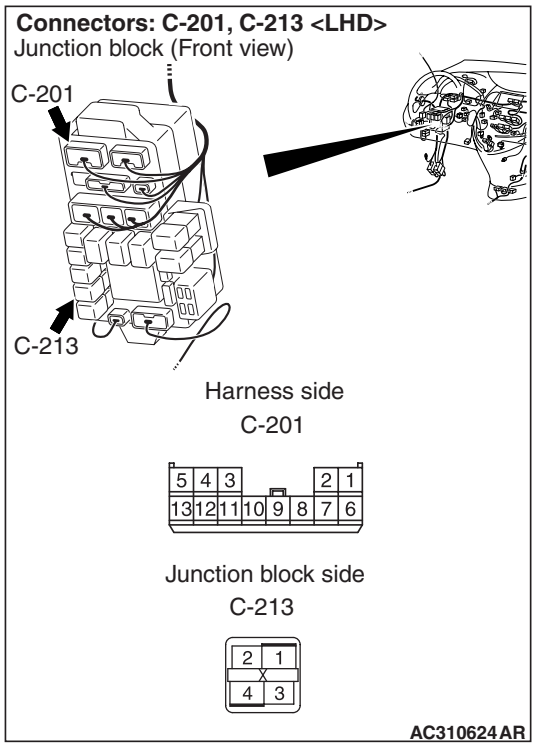


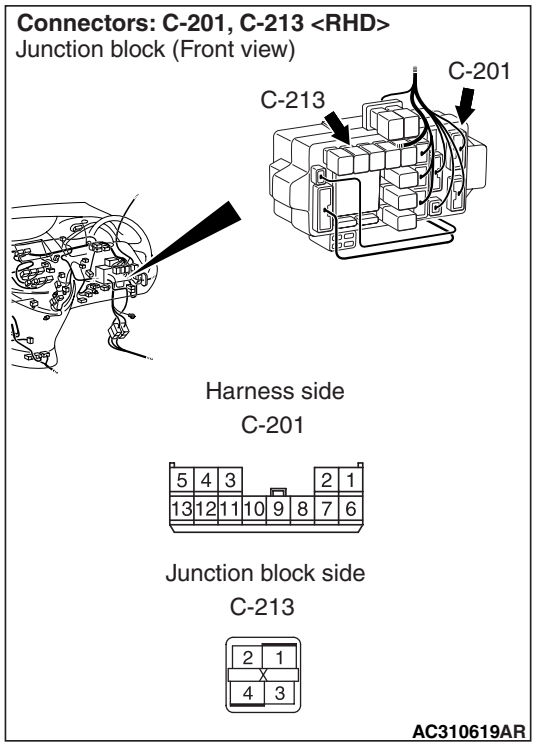



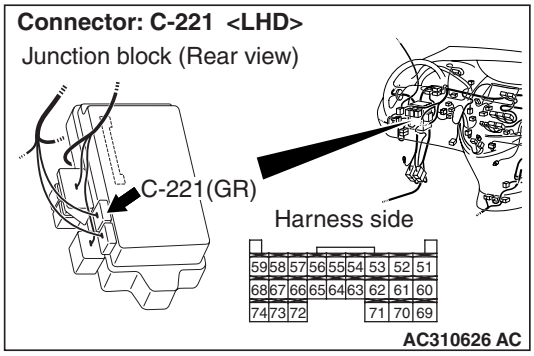

**Q: Is the check result normal?**

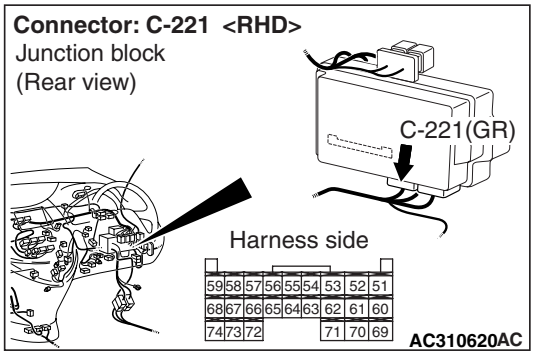
**YES :** Go to Step 15.
**NO :** Repair the defective connector.

**Step 15. Check the wiring harness between C-213 rear fog lamp relay connector terminal No.2 and C-221 ETACS-ECU connector terminal No.74.**




*NOTE: Prior to the wiring harness inspection, check junction block connector C-201, and repair if necessary.*

- Check the output lines for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 16.
**NO :** Repair the wiring harness.

---

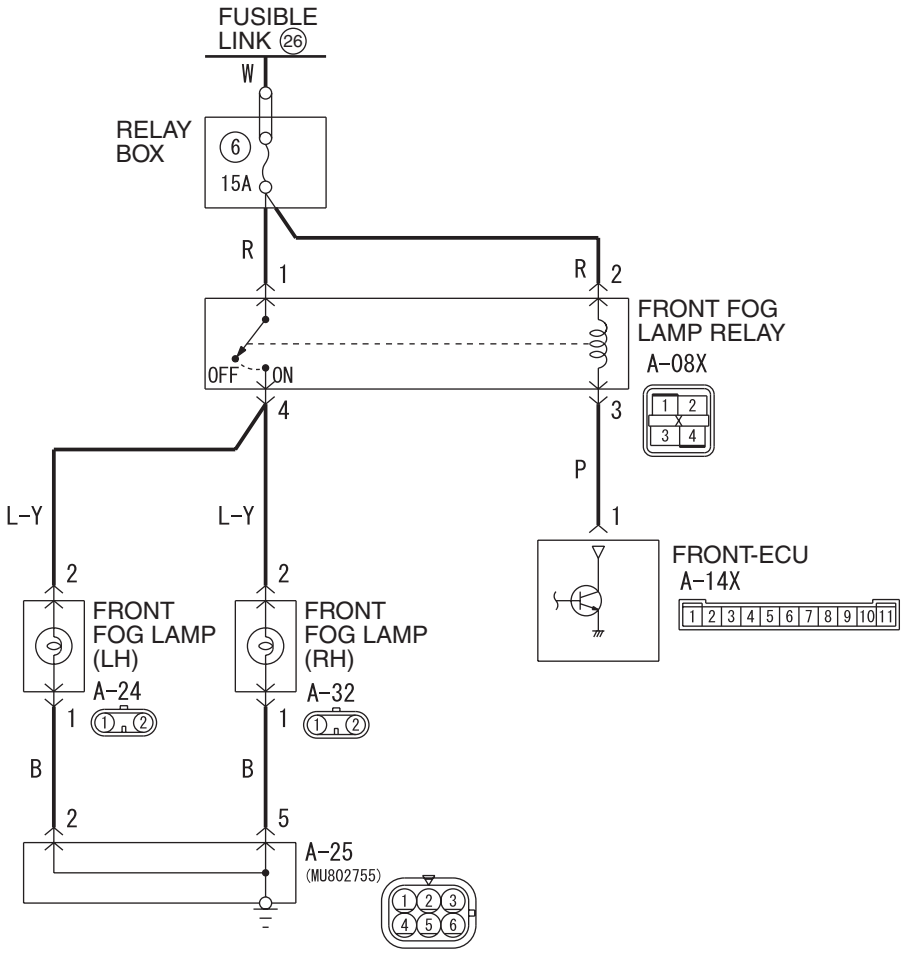
**Step 16. Retest the system.**
Check that the rear fog lamps illuminate normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

**Inspection Procedure O-3: Any of the front fog lamps does not illuminate.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Front Fog Lamp Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E032A

## COMMENTS ON TROUBLE SYMPTOM

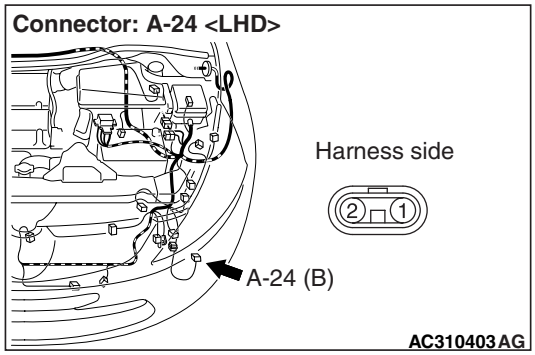
If any of the front fog lamps do not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

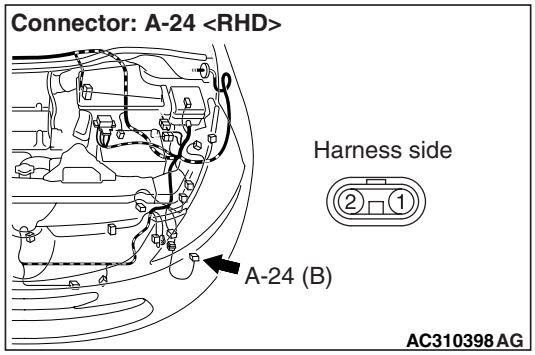
## POSSIBLE CAUSES

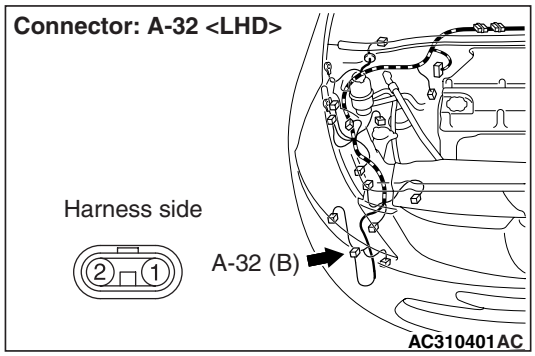
- Burned-out front fog lamp bulb
- Damaged harness wires and connectors

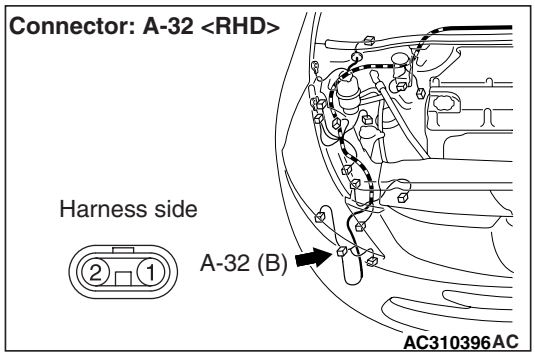
## DIAGNOSIS PROCEDURE

**Step 1. Connector check: A-32 front fog lamp (RH) connector or A-24 front fog lamp (LH) connector**



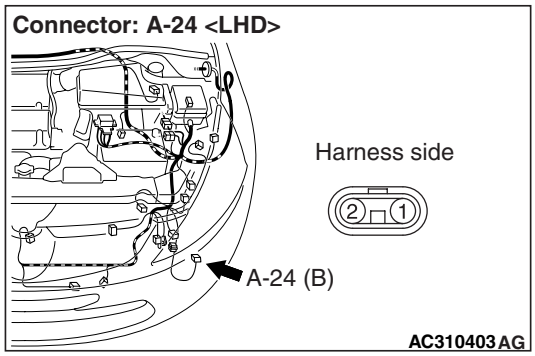

**Q: Is the check result normal?**

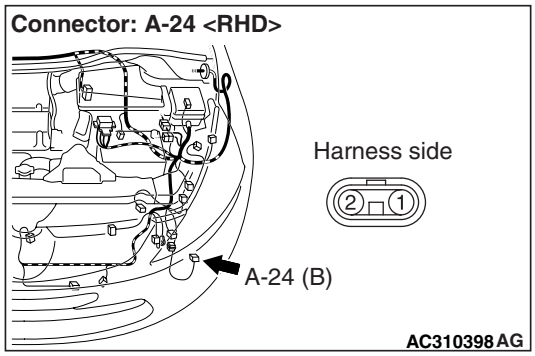
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

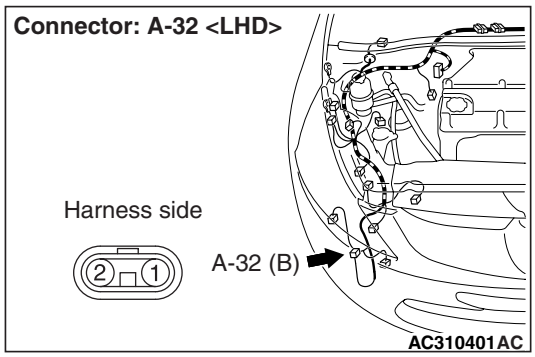
**Step 2. Check the bulbs of the front fog lamps lamp.**
Check the bulb(s) of the defective lamp.

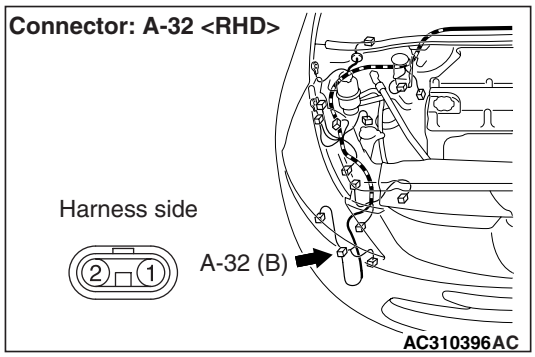
**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the bulb(s) of the defective lamp.

**Step 3. Resistance measurement at A-32 front fog lamp (RH) connector or A-24 front fog lamp (LH) connector.**

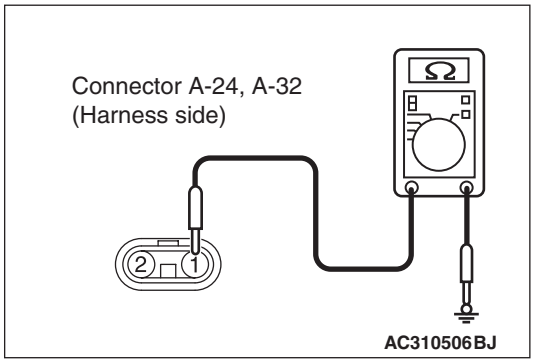



(1) Disconnect the connector, and measure at the wiring harness side.

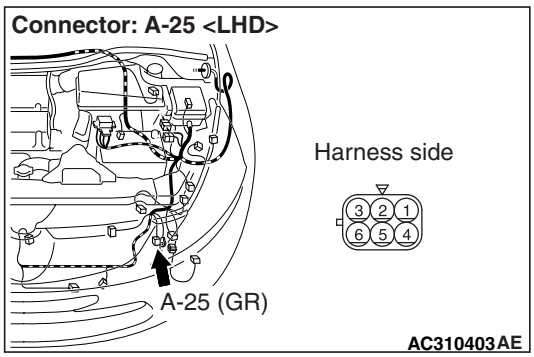


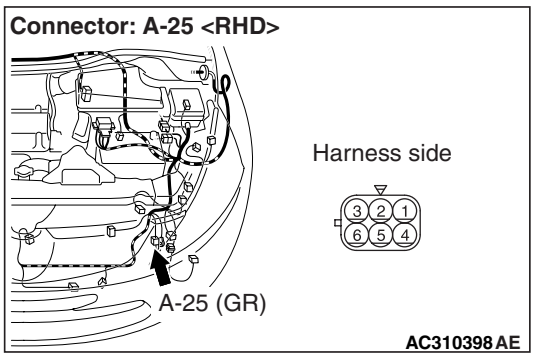

(2) Check the resistance between the lamp connector and body earth.
- Resistance between A-32 front fog lamp (RH) connector terminal No.1 and body earth
- Resistance between A-24 front fog lamp (LH) connector terminal No.1 and body earth

**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Go to Step 4.

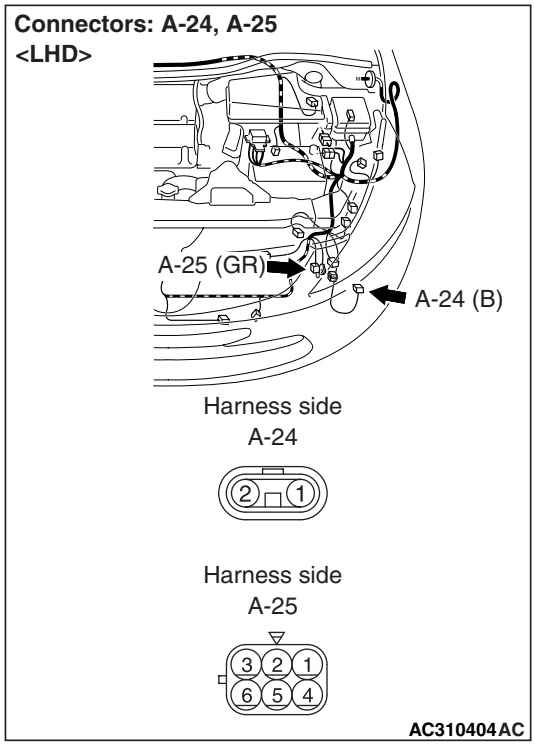
**Step 4. Connector check: A-25 earth connector**

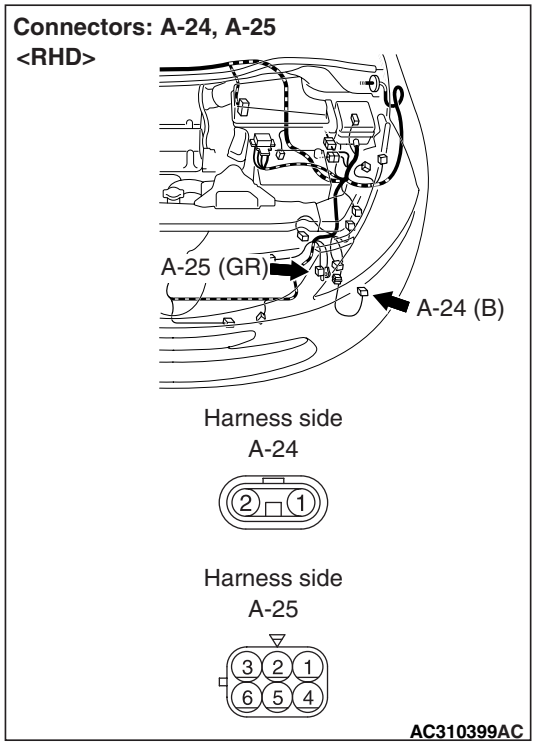


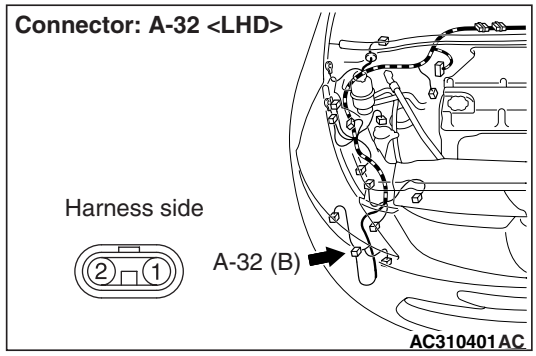



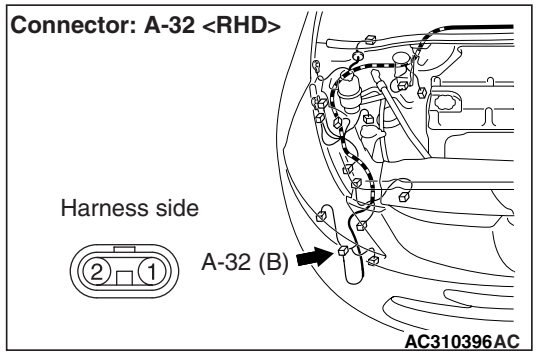

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the defective connector.

**Step 5. Check the wiring harness from A-32 front fog lamp (RH) connector or A-24 front fog lamp (LH) connector terminal No.1 to A-25 earth connector terminal No.5 or No.2.**



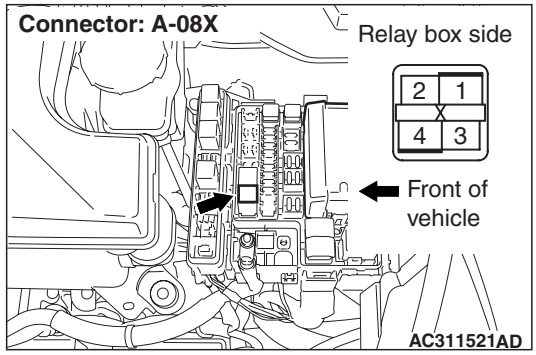




- Check the earth wires for open circuit.

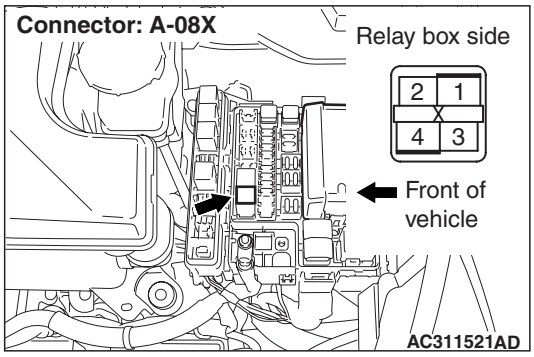
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

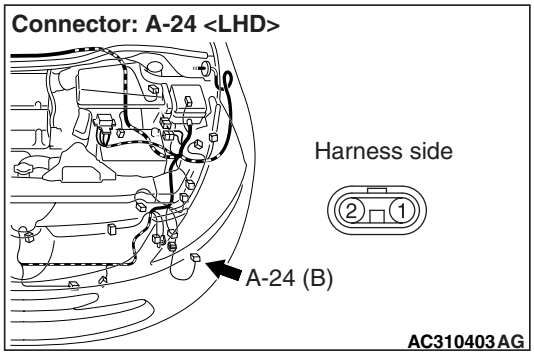
### Step 6. Connector check: A-08X front fog lamp relay connector

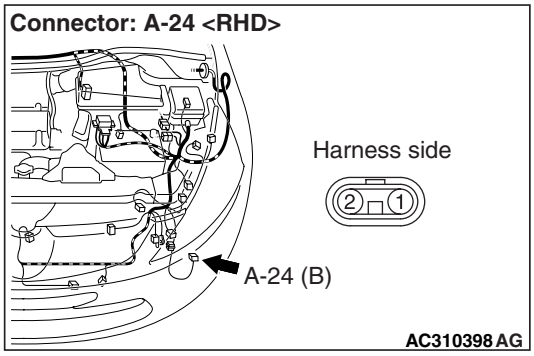


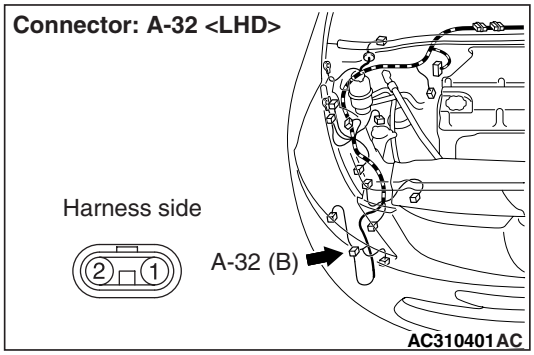

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the defective connector.

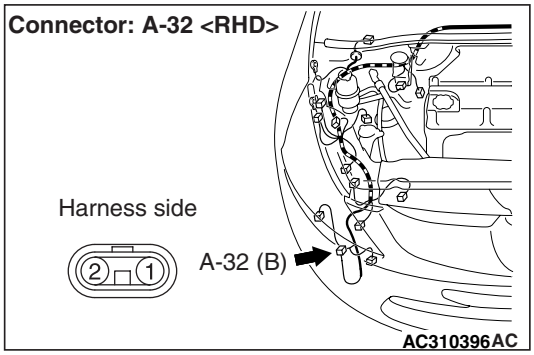
**Step 7. Check the wiring harness from A-32 front fog lamp (RH) connector or A-24 front fog lamp (LH) connector terminal No.2 to A-08X front fog lamp relay connector terminal No.4.**



- Check the power supply line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the wiring harness.

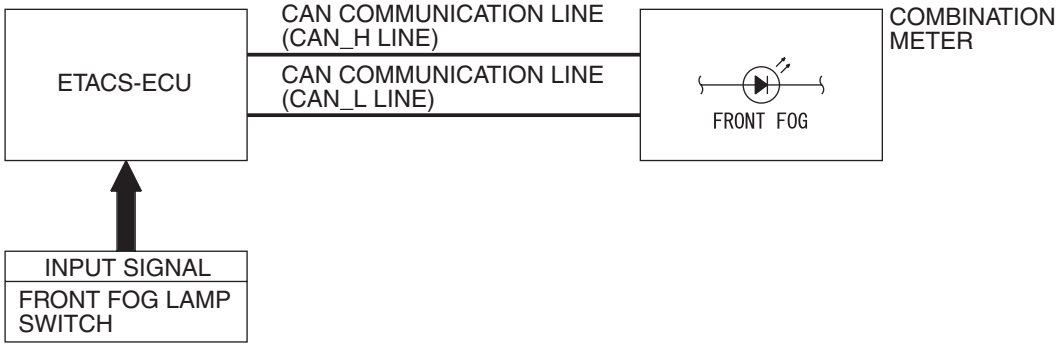
**Step 8. Retest the system.**
Check that the front fog lamp illuminate normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the front fog lamp(s).

## Inspection Procedure O-4: The front fog lamp indicator does not illuminate normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Front Fog Lamp Indicator Lamp Circuit**

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### COMMENTS ON TROUBLE SYMPTOM
If the front fog lamp indicator does not illuminate normally, connector(s), wiring harness in the CAN bus lines, the ETACS-ECU or the combination meter may be defective.

### POSSIBLE CAUSES
- The combination meter may be defective
- The ETACS-ECU may be defective
- Damaged harness wires and connectors

### DIAGNOSIS PROCEDURE

**Step 1. Check the front fog lamps.**
When the front fog lamp switch is operated, check that the front fog lamps illuminate/go off normally.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure O-3 "Any of the front fog lamps does not illuminate P.54C-365."

**Step 2. MUT-III CAN bus diagnostics.**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the CAN bus line (Refer to GROUP 54D, Diagnosis P.54D-16).

**Step 3. Check for combination meter diagnosis code.**
Check whether the combination meter-related diagnosis code is set.

**Q: Is the diagnosis code set?**
**YES :** Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-35).
**NO :** Go to Step 4.

**Step 4. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**

**YES :** Go to Step 5.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

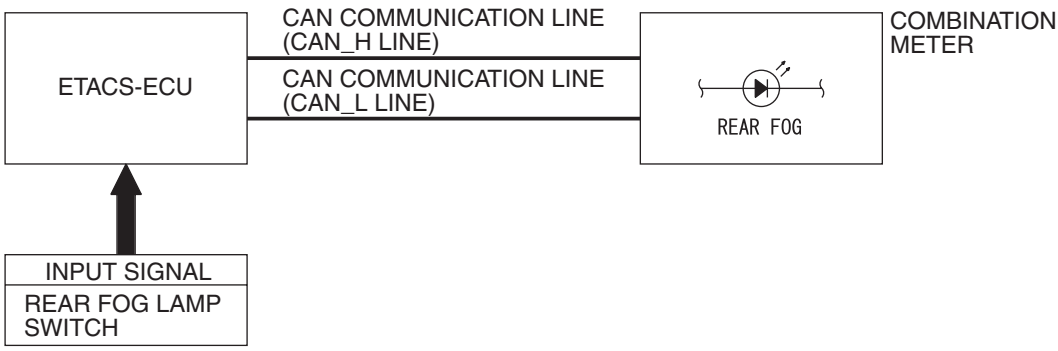
**Step 5. MUT-III actuator test**
Perform the actuator test for the combination meter, and check that the front fog lamp indicator illuminates (Refer to GROUP 54A – Combination Meter P.54A-78).

**Q: Is the check result normal?**
**YES :** Replace the ETACS-ECU.
**NO :** Replace the combination meter.

## Inspection Procedure O-5: The rear fog lamp indicator does not illuminate normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Rear Fog Lamp Indicator Lamp Circuit**




W4X54E186A

## COMMENTS ON TROUBLE SYMPTOM
If the rear fog lamp indicator does not illuminate normally, connector(s), wiring harness in the CAN bus lines, the ETACS-ECU or the combination meter may be defective.

## POSSIBLE CAUSES
- The combination meter may be defective
- The ETACS-ECU may be defective
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the rear fog lamps.**
When the rear fog lamp switch is operated, check that the rear fog lamps illuminate/go off normally.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure O-2 "The rear fog lamp do not illuminate normally P.54C-353."

**Step 2. MUT-III CAN bus diagnostics.**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**

**YES :** Go to Step 3.
**NO :** Repair the CAN bus line (Refer to GROUP 54D, Diagnosis P.54D-16).

**Step 3. Check for combination meter diagnosis code.**
Check whether the combination meter-related diagnosis code is set.

**Q: Is the diagnosis code set?**
**YES :** Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-35).
**NO :** Go to Step 4.

**Step 4. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

**Step 5. MUT-III actuator test**
Perform the actuator test for the combination meter, and check that the rear fog lamp indicator illuminates (Refer to GROUP 54A – Combination Meter P.54A-78).

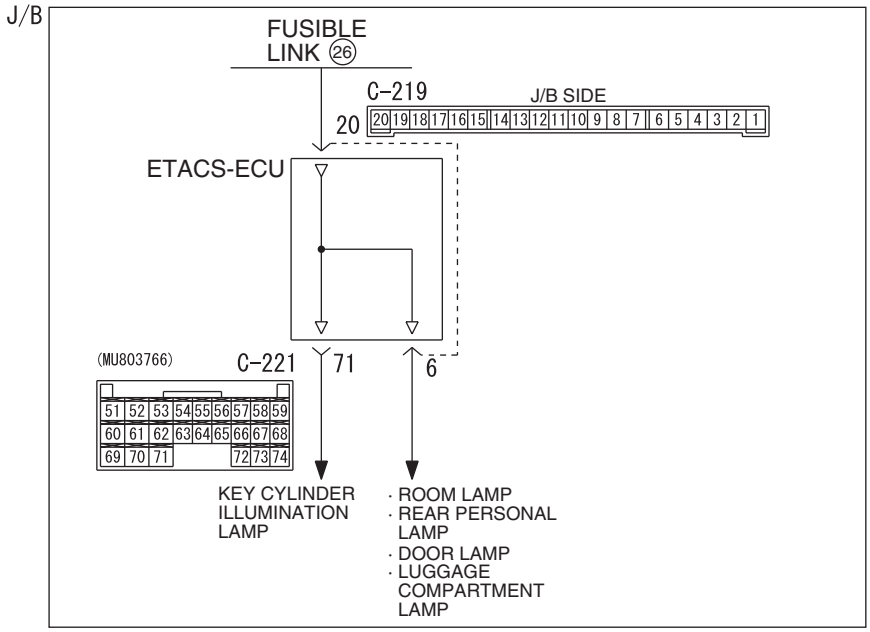
**Q: Is the check result normal?**
**YES :** Replace the ETACS-ECU.
**NO :** Replace the combination meter.

# ROOM LAMP

**Inspection Procedure P-1: The interior lamps (room ramp, rear personal lamps, door lamps, luggage compartment lamp, key illumination lamp) does not illuminate or extinguish normally.**

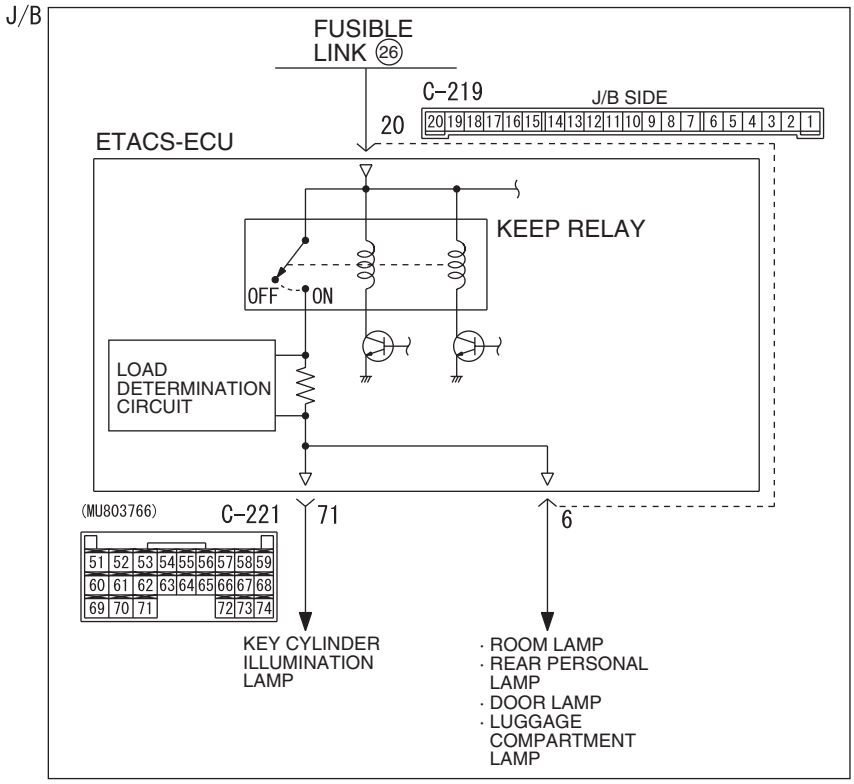
**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Interior Lamp Circuit <without keyless entry system>**




W4X54E211A

**Interior Lamp Circuit <with keyless entry system>**




W4X54E210A

## COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU activates the interior lamps (room lamp, rear personal lamp, luggage compartment lamp, door lamps, key cylinder illumination lamp) according to the input signals below.

- Ignition switch (IG1)
- Door switches
- Tailgate switch
- Door key switch
- Tailgate key switch
- Driver's door lock actuator
- Interior lamp switch
- Multi-purpose fuse No.18
- Key reminder switch <vehicles with keyless entry system>
- Interior lamp loaded signal <vehicles with keyless entry system>

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective.

## POSSIBLE CAUSES

- Malfunction of the door switches
- Malfunction of the room lamp switches
- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Malfunction of the key reminder switch
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. Customize function by using the SWS monitor**

Use the SWS monitor customisation function to confirm that "RM LMP TN OFF" is set to other than "0 second" (one of the settings below).

- 30 seconds
- 15 seconds
- 7.5 seconds

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Use the SWS monitor customisation function to confirm that "RM LMP TN OFF" is set to other than "0 second" (Refer to P.54C-574).

**Step 2. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

**ECUS TO BE CHECKED**

- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

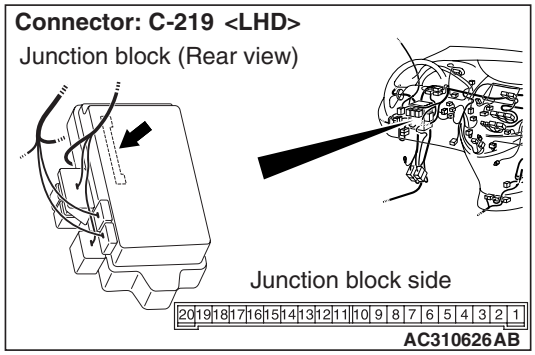
**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Refer to Inspection Procedure A-3 "Communication with ETACS-ECU is not possible P.54C-63."

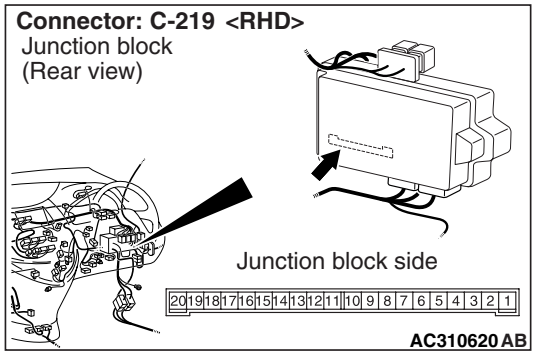
**Step 3. Check the illumination of the interior lamps.**
Check that the interior lamps illuminate and extinguish.

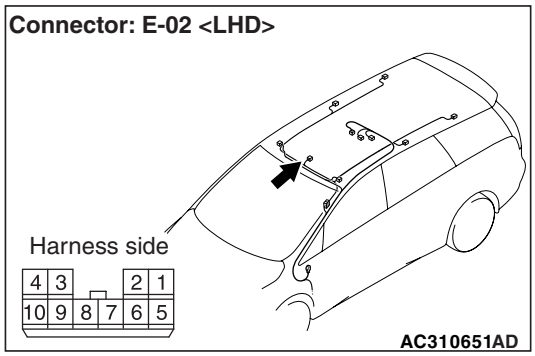
*NOTE: Check that the interior lamps illuminate or extinguish when the interior lamp switches are operated. For the room lamp and the rear personal lamps, check they illuminate when the lamp switches are turned to the ON or DOOR position.*

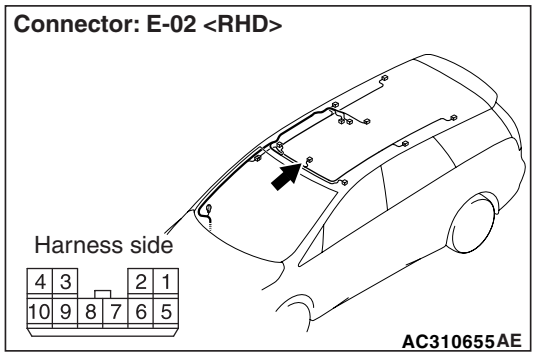
**Q: Which of the interior lamp does no illuminate or extinguish?**
**All of the interior lamps illuminate and extinguish normally. :** The procedure is complete.
**No lamps illuminate at all. :** Replace the ETACS-ECU.
**When the interior lamp switches are turned to the ON position, no lamps illuminate at all. Alternatively, when the interior lamp switches are turned to the OFF position, all the interior lamps illuminate. :** Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54C-553."
**If the interior lamp switches are turned to the ON position, none of the room lamp and the rear personal lamps illuminate at all. :** Go to Step 4.
**The room lamp and the rear personal lamps do not illuminate or extinguish normally when the switches are at the DOOR position. :** Go to Step 6.
**Only the room lamp does not illuminate or extinguish normally. :** Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54C-553."
**Only right or left rear personal lamp does not illuminate or extinguish normally. :** Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54C-553."
**Only the luggage compartment lamp does not illuminate or extinguish normally. :** Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54C-553."
**Only the door lamps do not illuminate or extinguish normally. :** Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54C-553."
**Only the key cylinder illumination lamp does not illuminate or extinguish normally. :** Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54C-553."

### Step 4. Connector check: C-219 ETACS-ECU connector and E-02 room lamp connector



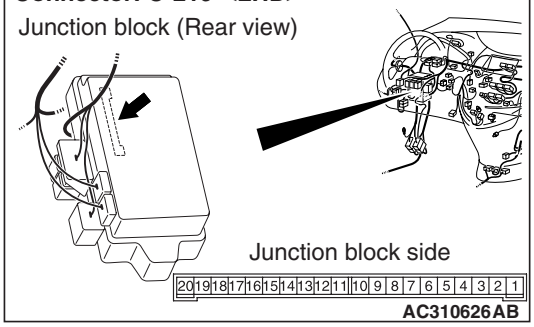

**Q: Is the check result normal?**

**YES :** Go to Step 5.
**NO :** Repair the defective connector.

**Step 5. Check the wiring harness from C-219 ETACS-ECU connector terminal No.6 to E-02 room lamp connector terminal No.10.**

**Connector: C-219 <LHD>**

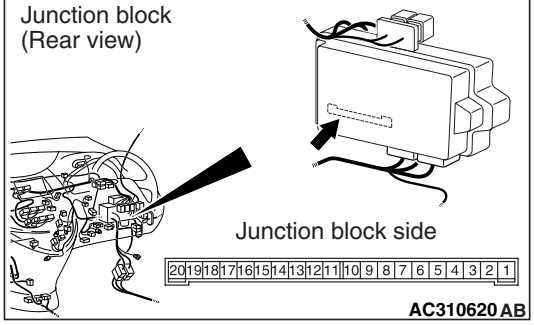
Junction block (Rear view)




AC310626AB

**Connector: C-219 <RHD>**

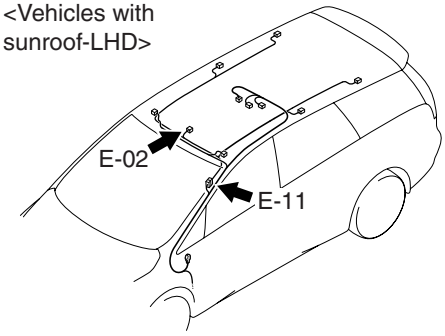
Junction block
(Rear view)




AC310620AB

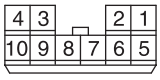
**Connectors: E-02, E-11**

<Vehicles with
sunroof-LHD>

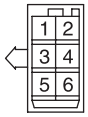



Harness side

E-02



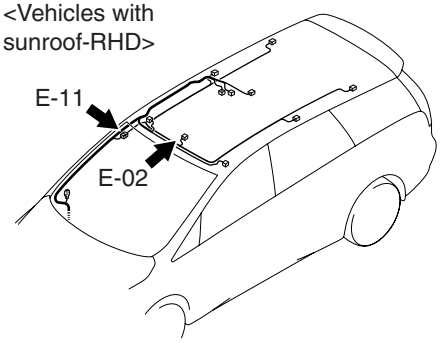

E-11




AC310652AB

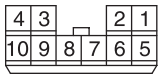
**Connectors: E-02, E-11**

<Vehicles with
sunroof-RHD>

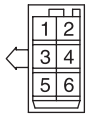



Harness side

E-02




E-11

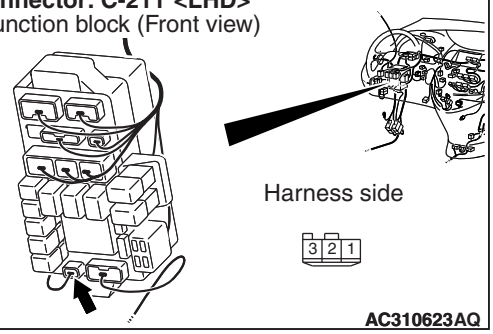



AC310656AB

*NOTE:*

**Connector: C-211 <LHD>**

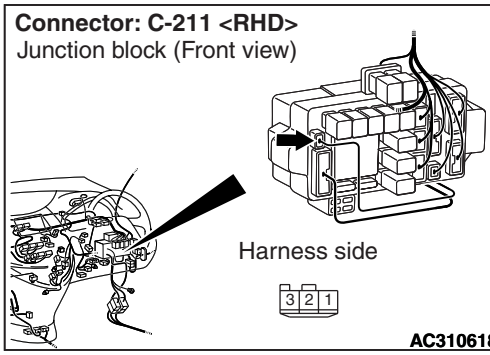
Junction block (Front view)




AC310623AQ

**Connector: C-211 <RHD>**

Junction block (Front view)




AC310618AS

*Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.*

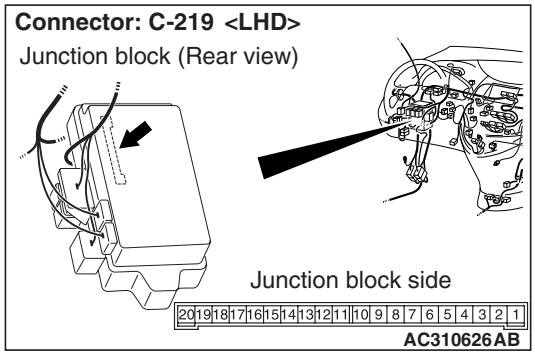
- Check the power supply line for open circuit.

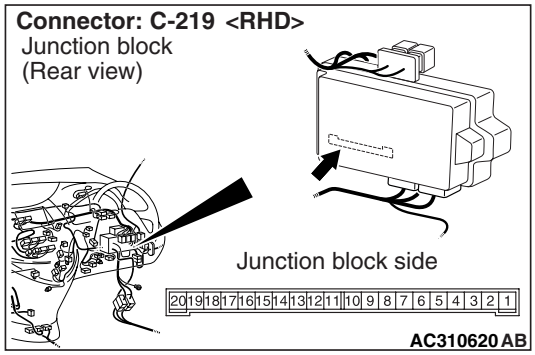
**Q: Is the check result normal?**

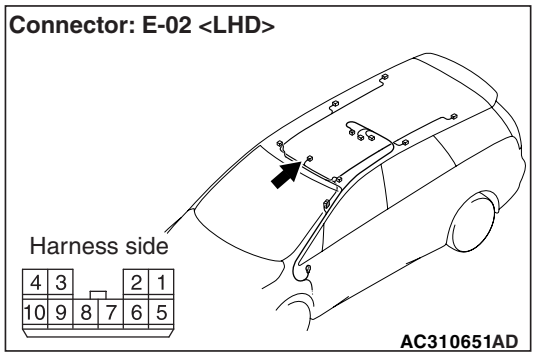
**YES :** Replace the ETACS-ECU.

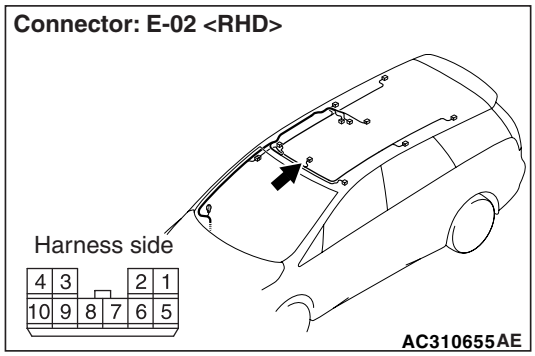
**NO :** Repair the wiring harness.

### Step 6. Connector check: C-219 ETACS-ECU connector and E-02 room lamp connector



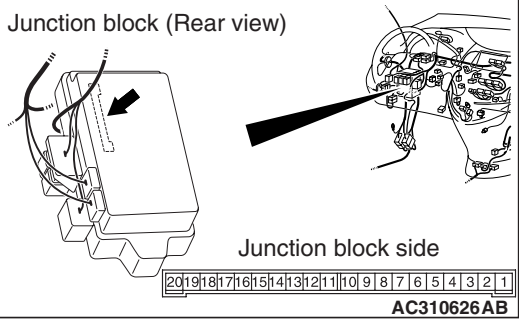

**Q: Is the check result normal?**

**YES :** Go to Step 7.
**NO :** Repair the defective connector.

**Step 7. Check the wiring harness from C-219 ETACS-ECU connector terminal No.5 to E-02 room lamp connector terminal No.8.**

**Connector: C-219 <LHD>**

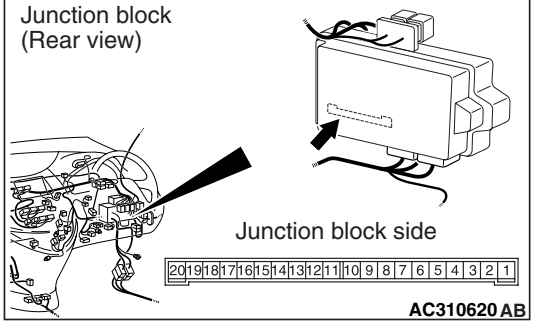
Junction block (Rear view)




AC310626AB

**Connector: C-219 <RHD>**

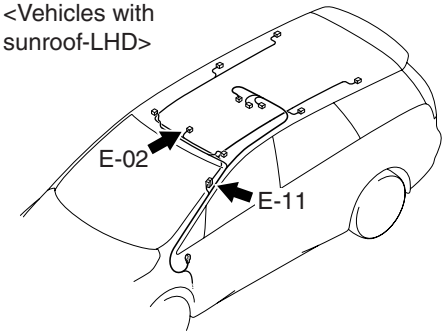
Junction block (Rear view)




AC310620AB

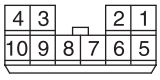
**Connectors: E-02, E-11**

<Vehicles with sunroof-LHD>

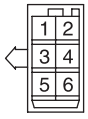



Harness side

E-02



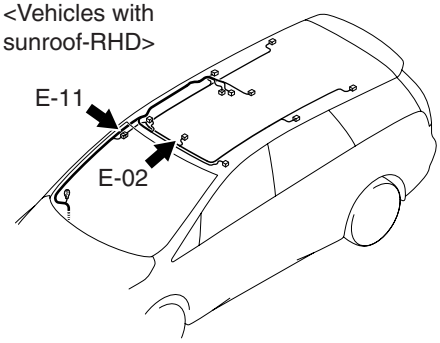

E-11




AC310652AB

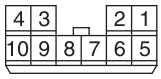
**Connectors: E-02, E-11**

<Vehicles with sunroof-RHD>

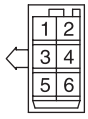



Harness side

E-02




E-11

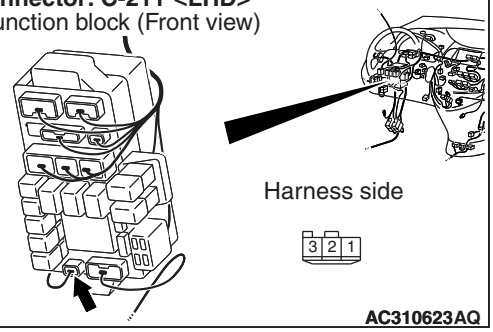



AC310656AB

*NOTE:*

**Connector: C-211 <LHD>**

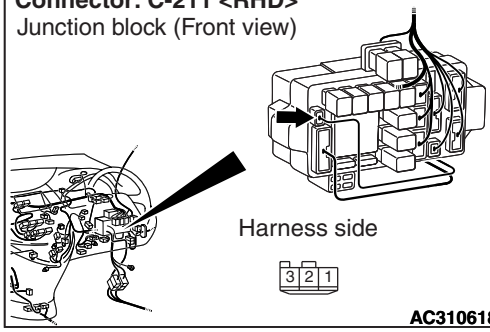
Junction block (Front view)




AC310623AQ

**Connector: C-211 <RHD>**

Junction block (Front view)




AC310618AS

*Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.*

- Check the power supply line for open circuit.

**Q: Is the check result normal?**

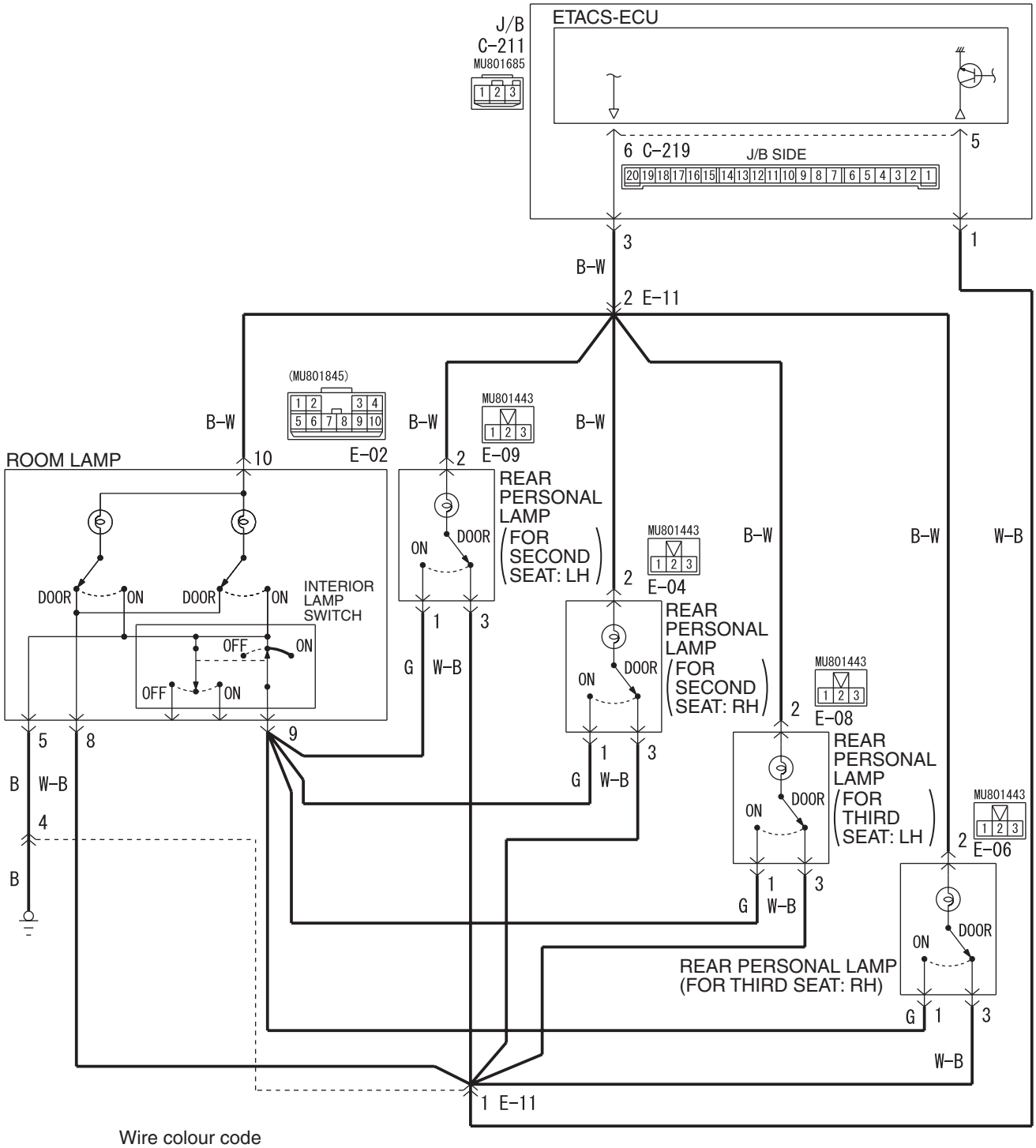
**YES :** Replace the ETACS-ECU.

**NO :** Repair the wiring harness.

**Inspection Procedure P-2: The room lamp does not illuminate normally. <Vehicles with keyless entry>**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Room Lamp and Rear Personal Lamp Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E036A

## COMMENTS ON TROUBLE SYMPTOM

If the room lamp does not illuminate or extinguish normally, wiring harness connector(s) or the bulb may be defective.

## POSSIBLE CAUSES

- Malfunction of the interior lamp switches
- Malfunction of the room lamp bulbs
- Malfunction of the rear personal lamp bulbs
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. SWS monitor data list**

**<Selected item> ETACS ECU**

- Driver's door is open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | DR DOOR SW | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received <LH drive vehicles>P.54C-474 or <RH drive vehicles>P.54C-476 ."

**Step 2. ETACS switch data by using the SWS monitor**

Check the ETACS-ECU signal related to the room lamp illumination.

- Ignition switch: OFF (key inserted)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | KEY REMINSW | OFF |

- Passenger's door: Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 05 | PASS DOOR SW | from OFF to ON |

- Tailgate: Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 07 | TRK LID LA SW | from OFF to ON |

- Rear door (RH): Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 41 | R.DOOR(RH) SW | from OFF to ON |

- Rear door (LH): Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 42 | R.DOOR(LH) SW | from OFF to ON |

- Driver's door: Unlock → Lock

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 21 | DR DOR LOK SW | from OFF to ON |
| Item 22 | DR DOR ULOK SW | from ON to OFF |

- Room lamp on switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 31 | RM LMP ON SW | ON |

- Room lamp off switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | RM LMP OFF SW | ON |

**OK: Normal conditions displayed for all the items.**

**Q: Is the check result normal?**

**Normal conditions are displayed for all the items. :** Go to Step 3.

**Normal condition is not displayed for item No.03 :** Refer to inspection procedure Q-11 "The key reminder switch signal is not received P.54C-493."

**Normal condition is not displayed for item No.05, 07, 41 or 42 :** Refer to inspection procedure Q-14 "All the door switch signals are not received P.54C-505."

**Normal condition is not displayed for item No.21 and 22 :** Refer to inspection procedure Q-15 "The driver's door lock actuator switch signal is not received <LH drive vehicles>P.54C-514 or <RH drive vehicles>P.54C-518 ."

**Normal condition is not displayed for item No.31 or 32 :** Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54C-553."

## Step 3. Retest the system.

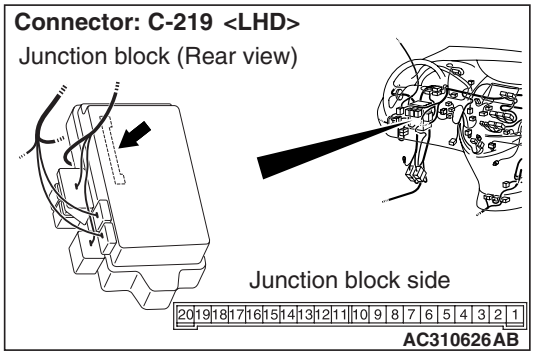
Check that the right or left room lamp illuminates when the interior lamp switch is operated.

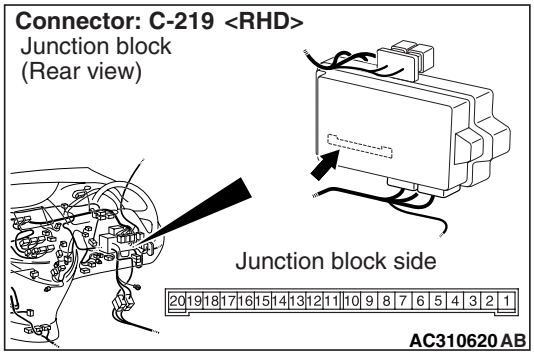
**Q: Is the check result normal?**

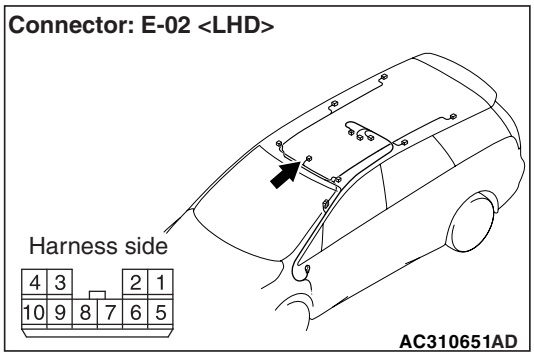
**YES :** Go to Step 6.

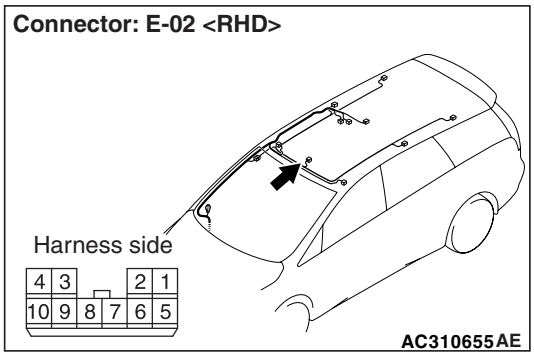
**NO :** Go to Step 4.

## Step 4. Connector check: C-219 ETACS-ECU connector, E-02 room lamp connector



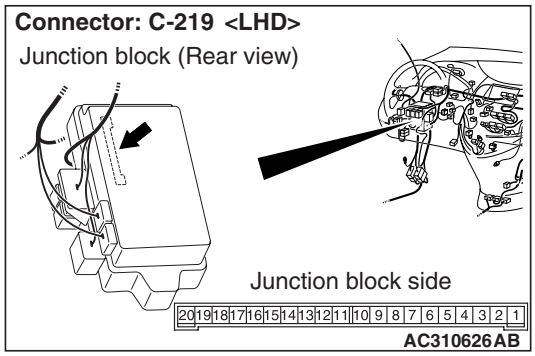



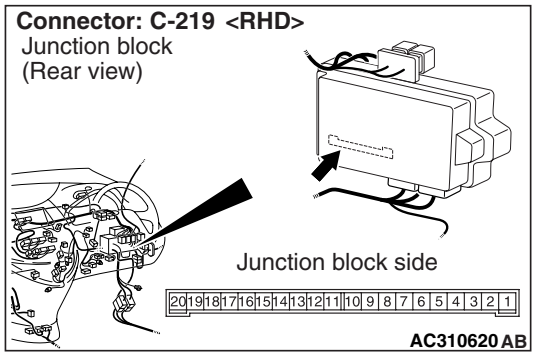

**Q: Is the check result normal?**

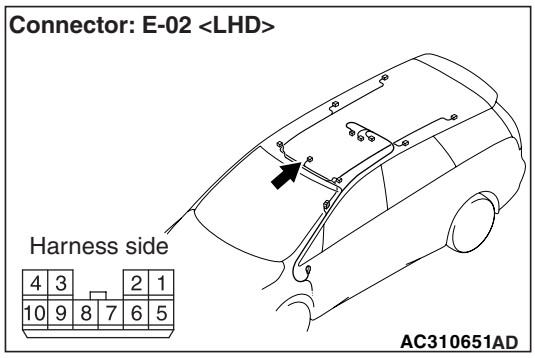
**YES :** Go to Step 5.

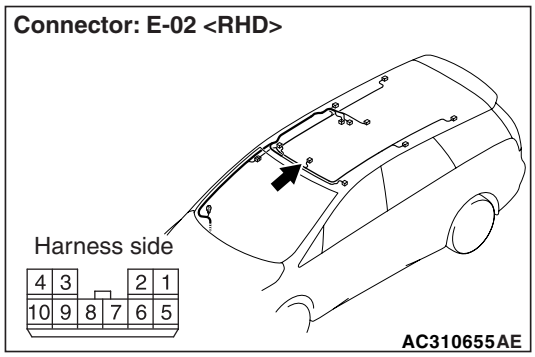
**NO :** Repair the defective connector.

**Step 5. Check the wiring harness from C-219 ETACS-ECU connector terminal No.6 to E-02 room lamp connector terminal No.10.**

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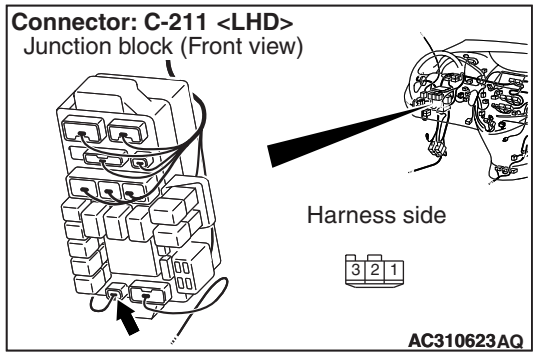
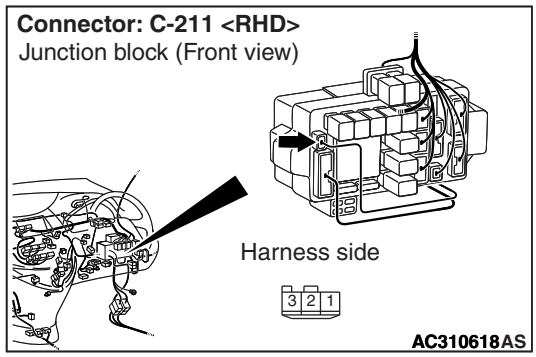



*Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.*

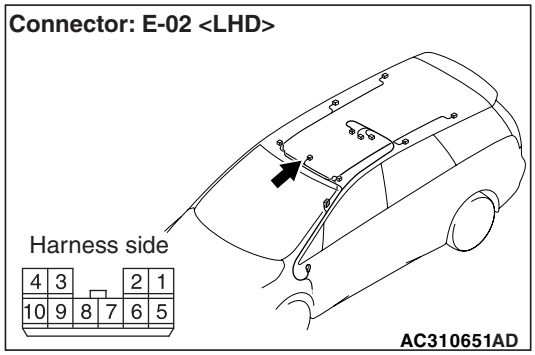
- Check the power supply line for open circuit.

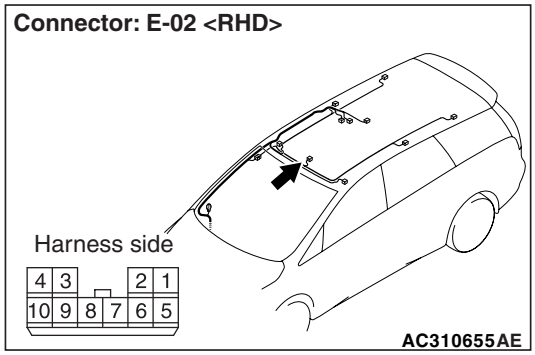
**Q: Is the check result normal?**
**YES :** Replace the room lamp.
**NO :** Repair the wiring harness.

**Step 6. Check the room lamp switch.**
Check which position (ON or DOOR) of the room lamp switch does not activate the room lamp.

**Q: Which switch position does not activate the lamp?**
**The lamp illuminates at neither the ON nor DOOR position. :** Go to Step 7.
**The lamp does not illuminate at the ON position. :** Go to Step 7.
**The lamp does not illuminate at the DOOR position. :** Go to Step 9.

### Step 7. Connector check: E-02 room lamp connector



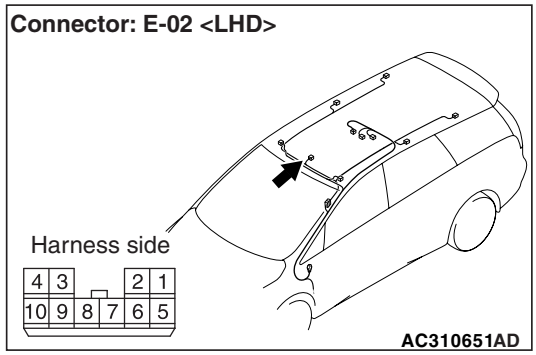

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the defective connector.

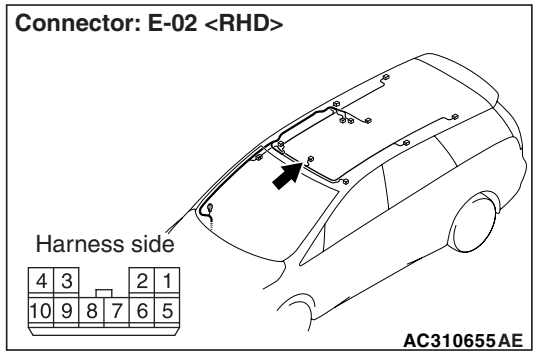
### Step 8. Check the bulbs of the room lamp.

Check that the room lamp bulbs are not burned out.

**Q: Is the check result normal?**
**YES :** Replace the room lamp.
**NO :** Replace the room lamp bulb.

### Step 9. Connector check: E-02 room lamp connector



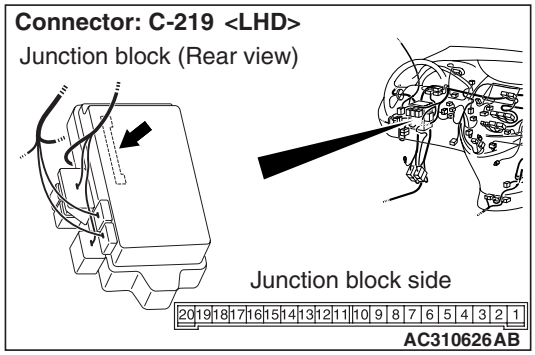

**Q: Is the check result normal?**
**YES :** Go to Step 10.
**NO :** Repair the defective connector.

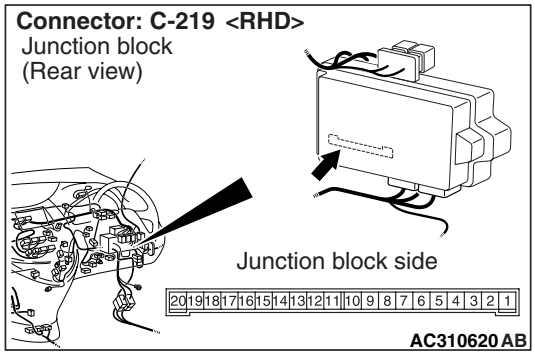
### Step 10. Check the bulbs of the room lamp.

Check that the room lamp bulbs are not burned out.

**Q: Is the check result normal?**
**YES :** Go to Step 11.
**NO :** Replace the room lamp bulb.

### Step 11. Connector check: C-219 ETACS-ECU connector



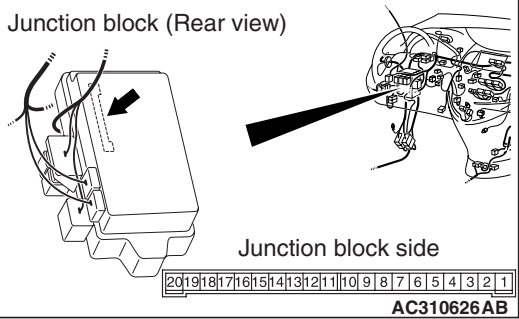

**Q: Is the check result normal?**

**YES :** Go to Step 12.
**NO :** Repair the defective connector.

**Step 12. Check the wiring harness from C-219 ETACS-ECU connector terminal No.5 to E-02 room lamp connector terminal No.8.**

**Connector: C-219 <LHD>**

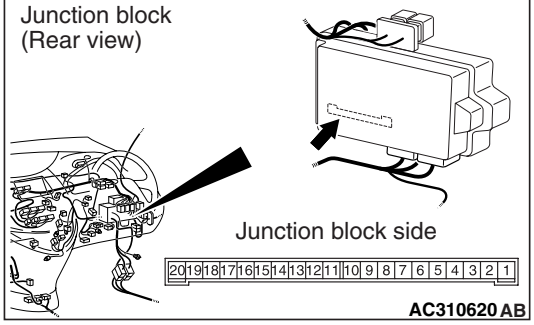
Junction block (Rear view)




AC310626AB

**Connector: C-219 <RHD>**

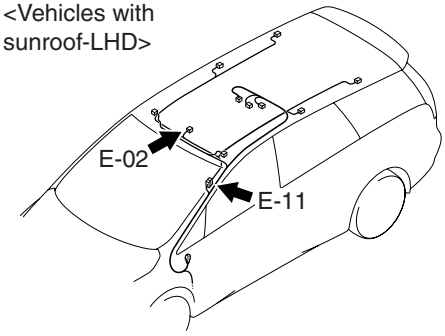
Junction block
(Rear view)




AC310620AB

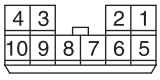
**Connectors: E-02, E-11**

<Vehicles with
sunroof-LHD>

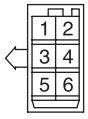



Harness side

E-02



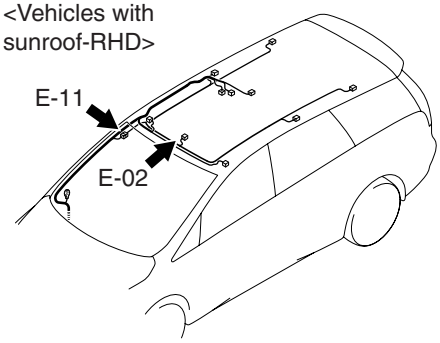

E-11




AC310652AB

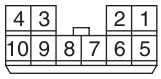
**Connectors: E-02, E-11**

<Vehicles with
sunroof-RHD>

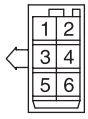



Harness side

E-02




E-11

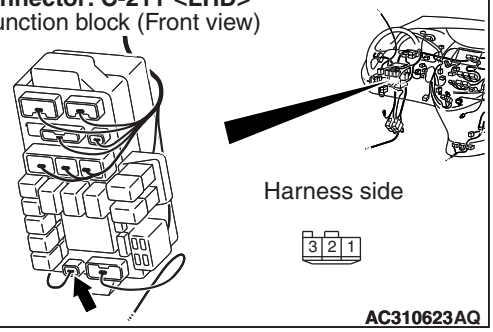



AC310656AB

*NOTE:*

**Connector: C-211 <LHD>**

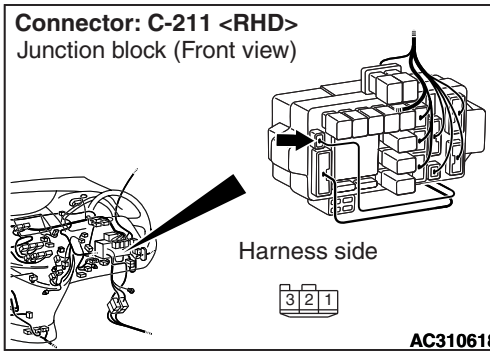
Junction block (Front view)




AC310623AQ

**Connector: C-211 <RHD>**

Junction block (Front view)




AC310618AS

*Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.*

- Check the earth wires for open circuit.

**Q: Is the check result normal?**

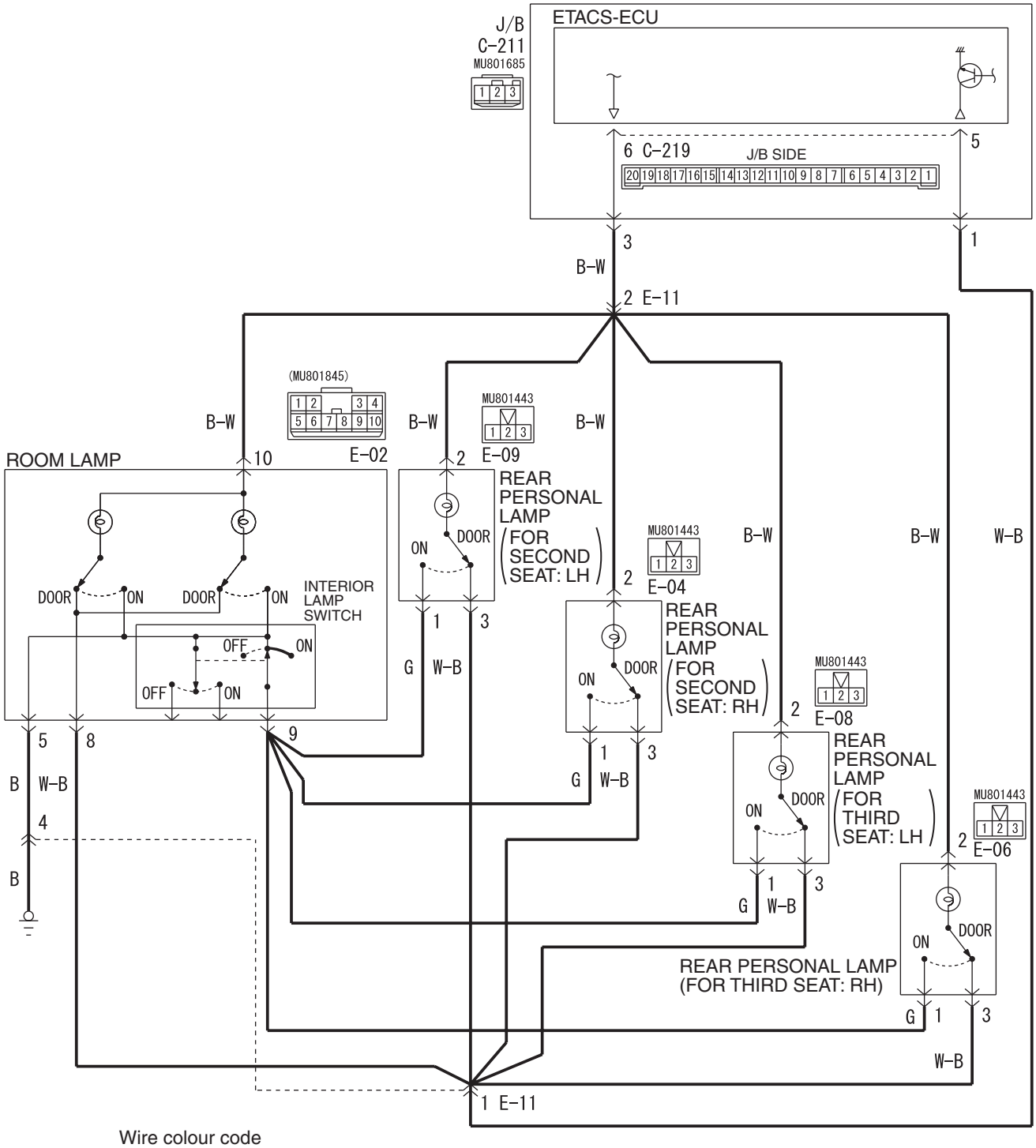
**YES :** Replace the room lamp.

**NO :** Repair the wiring harness.

**Inspection Procedure P-2: The room lamp does not illuminate normally. <Vehicles without keyless entry system>**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Room Lamp and Rear Personal Lamp Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E036A

## COMMENTS ON TROUBLE SYMPTOM

If the room lamp does not illuminate or extinguish normally, wiring harness connector(s) or the bulb may be defective.

## POSSIBLE CAUSES

- Malfunction of the interior lamp switches
- Malfunction of the room lamp bulbs
- Malfunction of the rear personal lamp bulbs
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. SWS monitor data list**

**<Selected item> ETACS ECU**

- Driver's door is open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | DR DOOR SW | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received <LH drive vehicles>P.54C-474 or <RH drive vehicles>P.54C-476 ."

**Step 2. ETACS switch data by using the SWS monitor**

Check the ETACS-ECU signal related to the room lamp illumination.

- Ignition switch: OFF (key inserted)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | KEY REMINSW | OFF |

- Passenger's door: Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 05 | PASS DOOR SW | from OFF to ON |

- Tailgate: Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 07 | TRK LID LA SW | from OFF to ON |

- Rear door (RH): Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 41 | R.DOOR(RH) SW | from OFF to ON |

- Rear door (LH): Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 42 | R.DOOR(LH) SW | from OFF to ON |

- Driver's door: Unlock → Lock

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 21 | DR DOR LOK SW | from OFF to ON |
| Item 22 | DR DOR ULOK SW | from ON to OFF |

- Room lamp on switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 31 | RM LMP ON SW | ON |

- Room lamp off switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | RM LMP OFF SW | ON |

**OK: Normal conditions displayed for all the items.**

**Q: Is the check result normal?**

**Normal conditions are displayed for all the items. :**
Go to Step 3.

**Normal condition is not displayed for item No.03 :**
Refer to inspection procedure Q-11 "The key reminder switch signal is not received P.54C-493."

**Normal condition is not displayed for item No.05, 07, 41 or 42 :** Refer to inspection procedure Q-14 "All the door switch signals are not received P.54C-505."

**Normal condition is not displayed for item No.21 and 22 :** Refer to inspection procedure Q-15 "The driver's door lock actuator switch signal is not received <LH drive vehicles>P.54C-514 or <RH drive vehicles>P.54C-518 ."

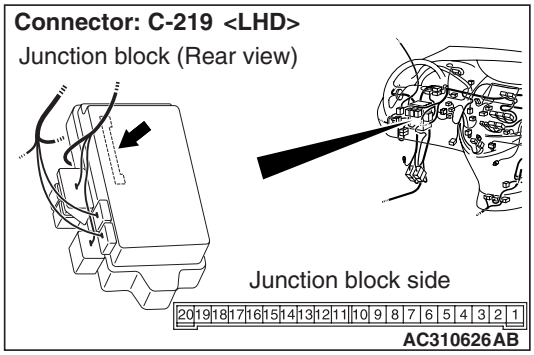
**Normal condition is not displayed for item No.31 or 32 :** Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54C-553."

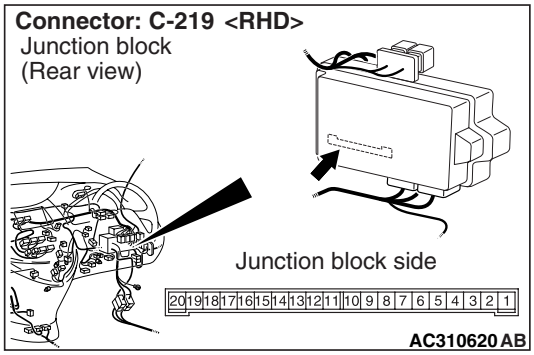
### Step 3. Retest the system.

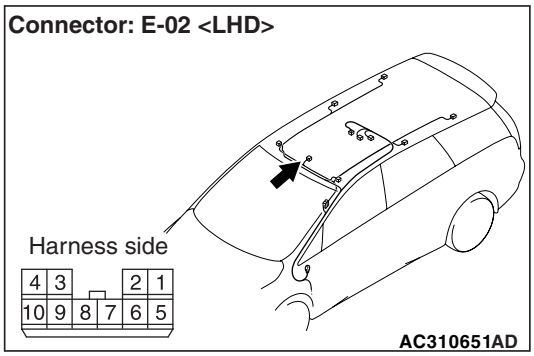
Check that the right or left room lamp illuminates when the interior lamp switch is operated.

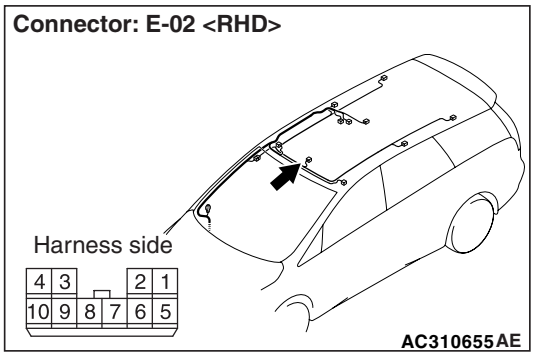
**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Go to Step 4.

### Step 4. Connector check: C-219 ETACS-ECU connector and E-02 room lamp connector



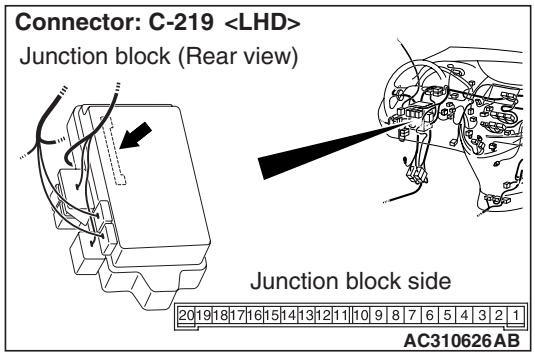



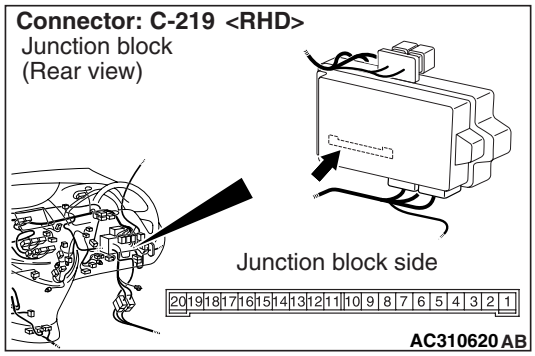



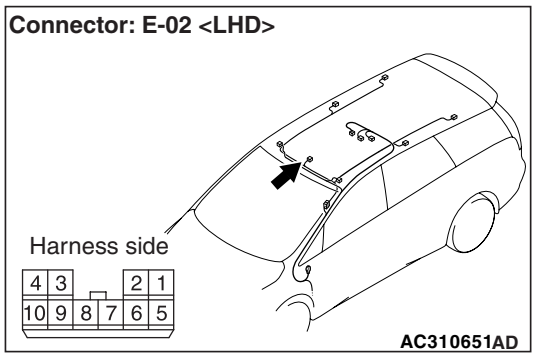



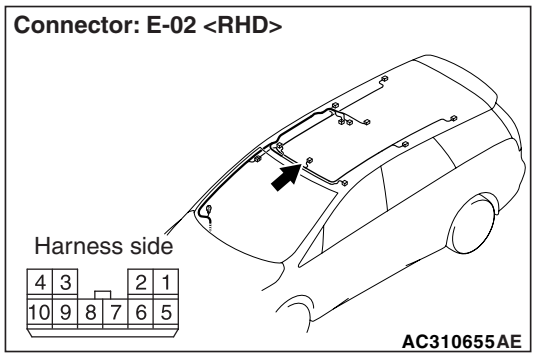

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the defective connector.

**Step 5. Check the wiring harness from C-219 ETACS-ECU connector terminal No.6 to E-02 room lamp connector terminal No.10.**

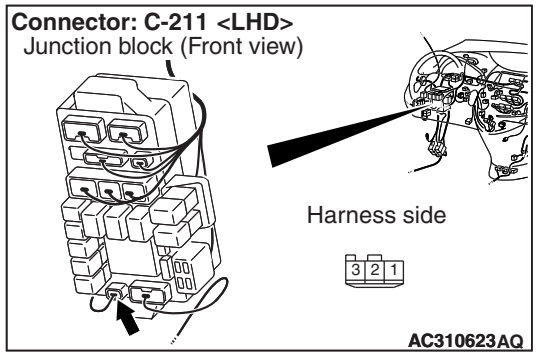


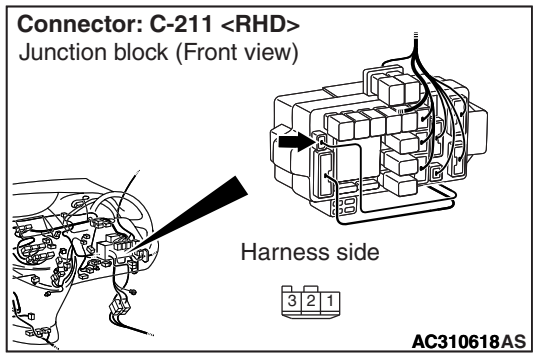



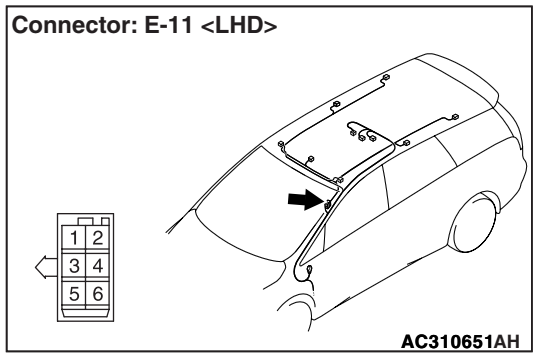



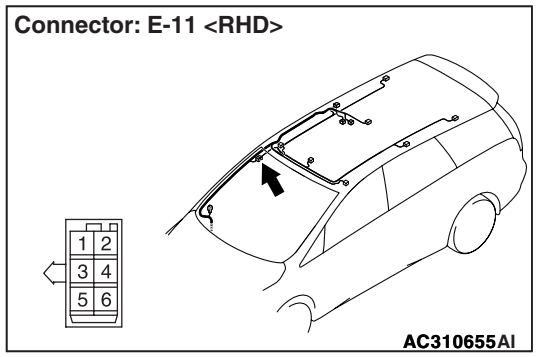




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.*

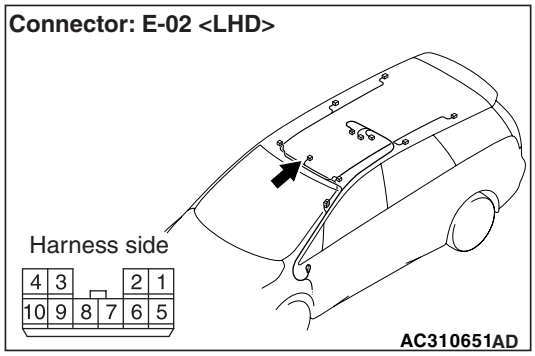
- Check the power supply line for open circuit.

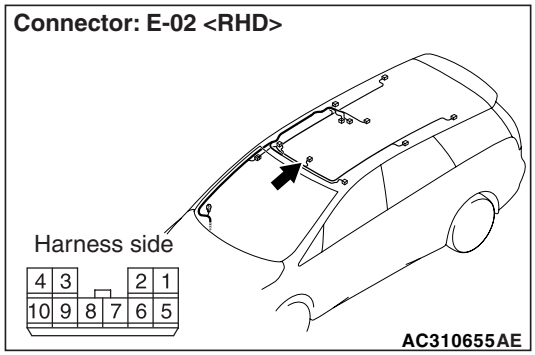
**Q: Is the check result normal?**
**YES :** Replace the room lamp.
**NO :** Repair the wiring harness.

**Step 6. Check the room lamp switch.**
Check which position (ON or DOOR) of the room lamp switch does not activate the room lamp.

**Q: Which switch position does not activate the lamp?**
**The lamp illuminates at neither the ON nor DOOR position. :** Go to Step 7.
**The lamp does not illuminate at the ON position. :** Go to Step 7.
**The lamp does not illuminate at the DOOR position. :** Go to Step 9.

**Step 7. Connector check: E-02 room lamp connector**



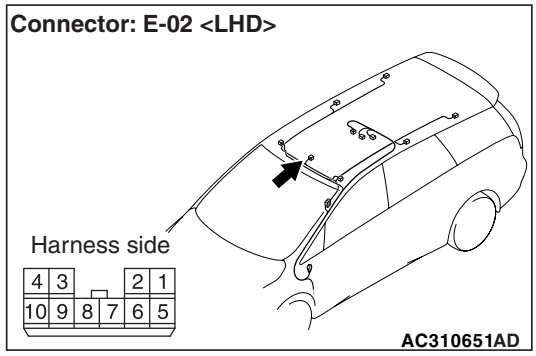



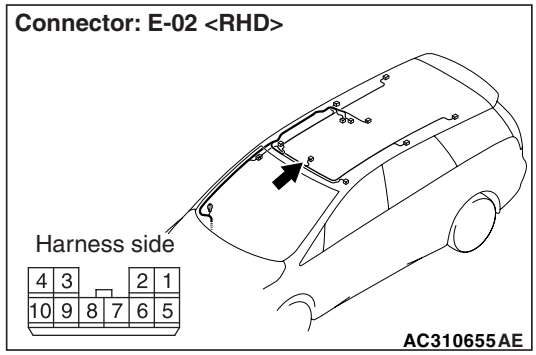

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the defective connector.

**Step 8. Check the bulbs of the room lamp.**
Check that the room lamp bulbs are not burned out.

**Q: Is the check result normal?**
**YES :** Replace the room lamp.
**NO :** Replace the room lamp bulb.

**Step 9. Connector check: E-02 room lamp connector**



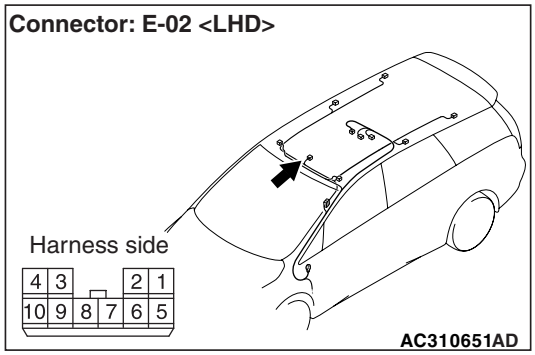



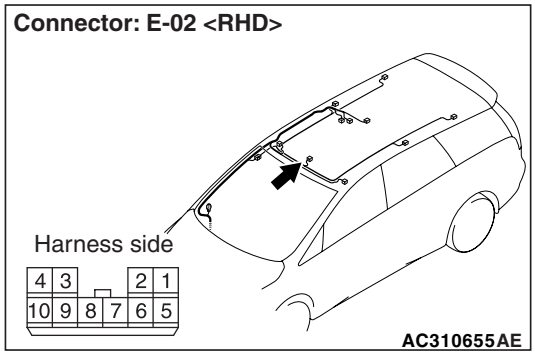

**Q: Is the check result normal?**
**YES :** Go to Step 10.
**NO :** Repair the defective connector.

**Step 10. Check the bulbs of the room lamp.**
Check that the room lamp bulbs are not burned out.

**Q: Is the check result normal?**
**YES :** Go to Step 11.
**NO :** Replace the room lamp bulb.

**Step 11. Connector check: C-219 ETACS-ECU connector**

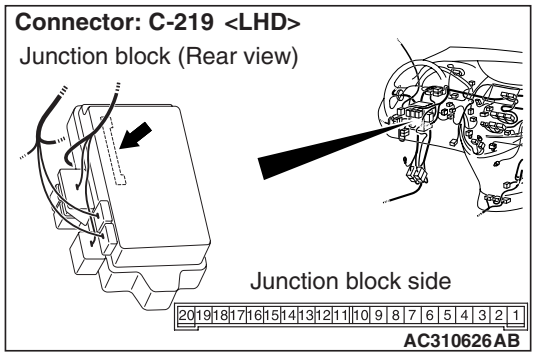


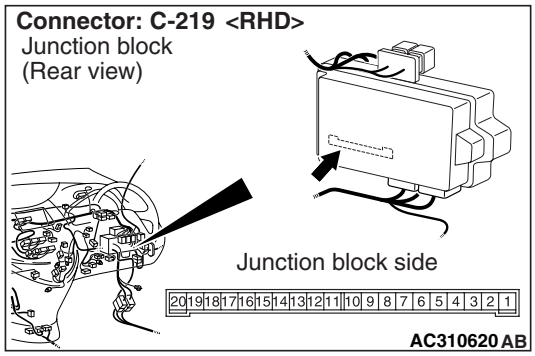



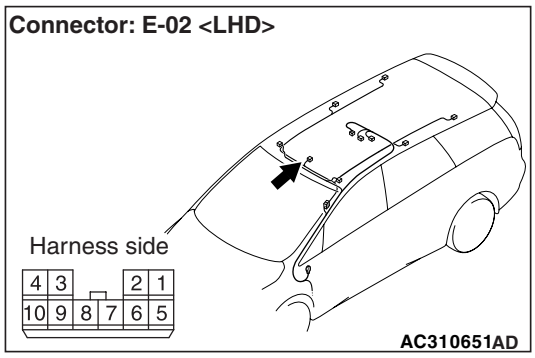

**Q: Is the check result normal?**

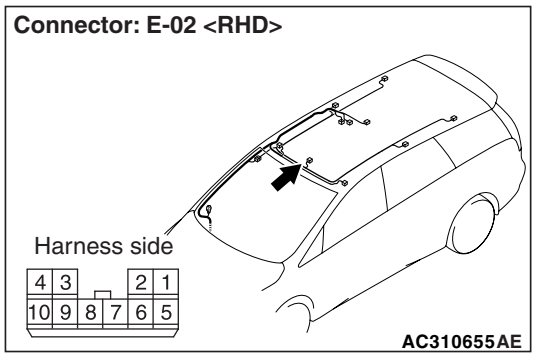
**YES :** Go to Step 12.
**NO :** Repair the defective connector.

**Step 12. Check the wiring harness from C-219 ETACS-ECU connector terminal No.5 to E-02 room lamp connector terminal No.8.**

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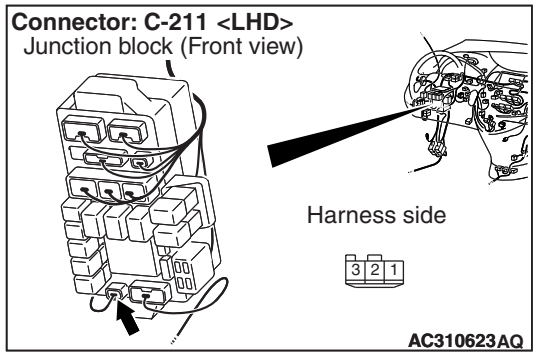
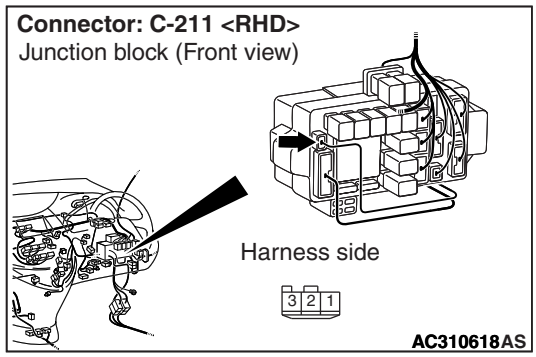
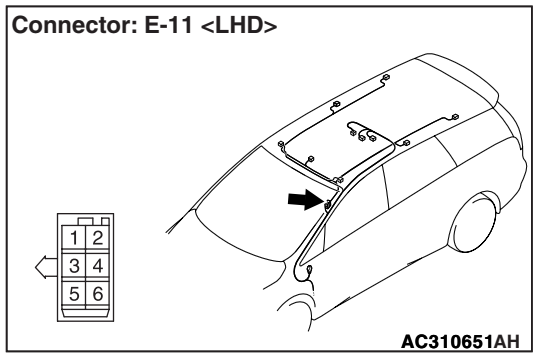
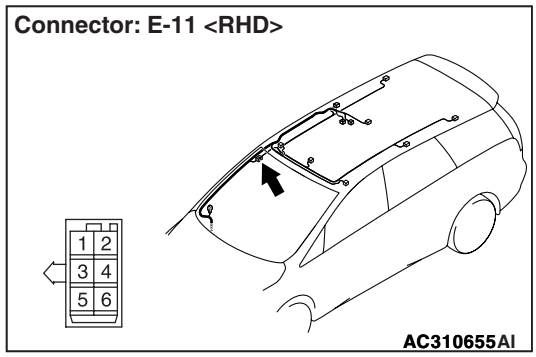



*Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.*

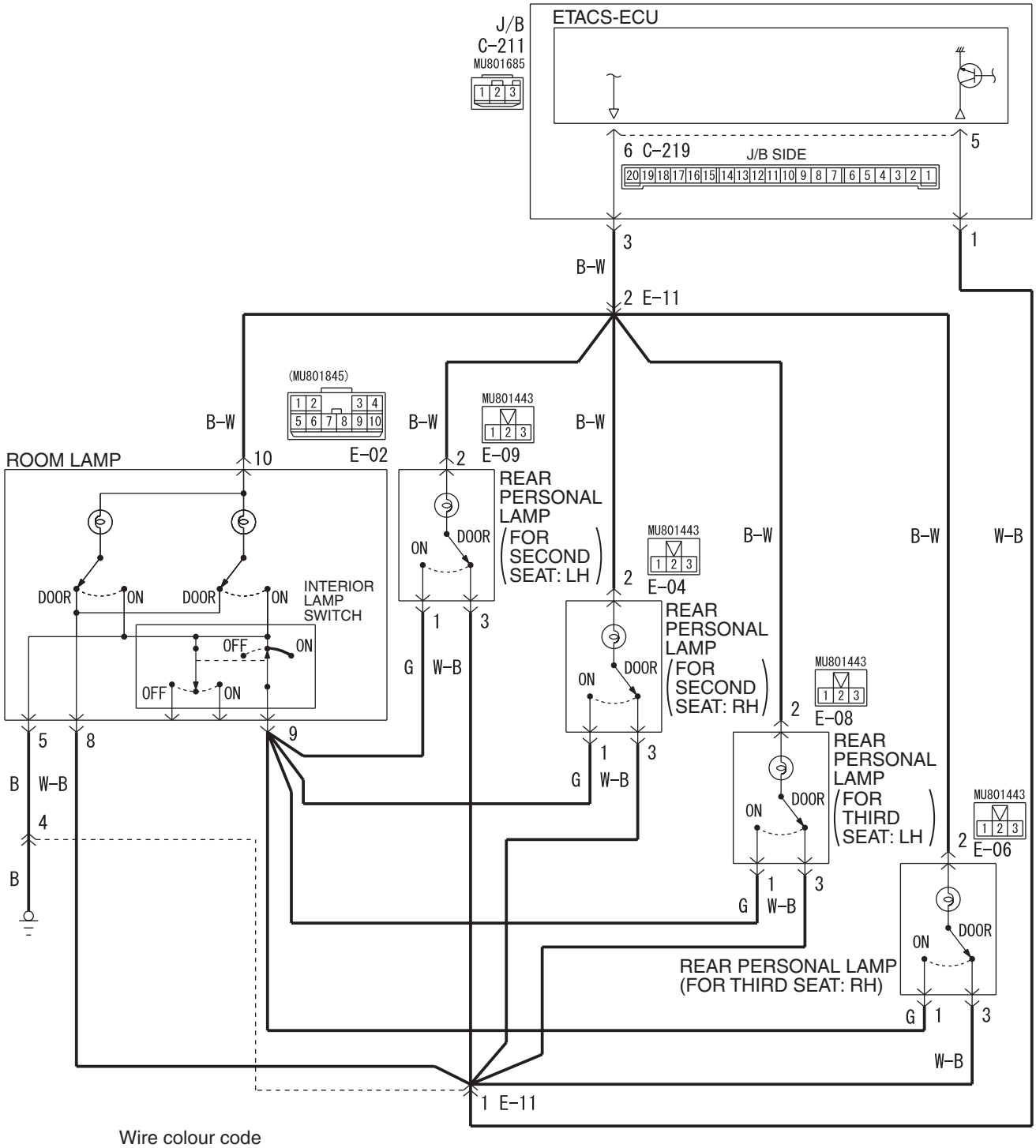
- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** Replace the room lamp.
**NO :** Repair the wiring harness.

**Inspection Procedure P-3: The rear personal lamp does not illuminate normally. <Vehicles with keyless entry system>**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Room Lamp and Rear Personal Lamp Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E036A

## COMMENTS ON TROUBLE SYMPTOM

If the rear personal lamps do not illuminate or extinguish normally, wiring harness connector(s) or the bulb may be defective.

## POSSIBLE CAUSES

- Malfunction of the interior lamp switches
- Malfunction of the room lamp bulbs
- Malfunction of the rear personal lamp bulbs
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. Check the operation of the interior lamps.**
Check that the interior lamps illuminate and extinguish normally.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to inspection procedure P-1 " The interior lamps (room ramp, rear personal lamps, door lamps, luggage compartment lamp, key illumination lamp) does not illuminate or extinguish normally P.54C-374."

**Step 2. SWS monitor data list**

**<Selected item> ETACS ECU**

- Driver's door is open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | DR DOOR SW | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received <LH drive vehicles>P.54C-474 or <RH drive vehicles>P.54C-476 ."

**Step 3. ETACS switch data by using the SWS monitor**
Check the ETACS-ECU signal related to the rear personal lamp illumination.

- Ignition switch: OFF (key inserted)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | KEY REMINSW | OFF |

- Passenger's door: Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 05 | PASS DOOR SW | from OFF to ON |

- Tailgate: Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 07 | TRK LID LA SW | from OFF to ON |

- Rear door (RH): Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 41 | R.DOOR(RH) SW | from OFF to ON |

- Rear door (LH): Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 42 | R.DOOR(LH) SW | from OFF to ON |

- Driver's door: Unlock → Lock

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 21 | DR DOR LOK SW | from OFF to ON |
| Item 22 | DR DOR ULOK SW | from ON to OFF |

- Room lamp on switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 31 | RM LMP ON SW | ON |

- Room lamp off switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 31 | RM LMP OFF SW | ON |

**OK: Normal conditions displayed for all the items.**

**Q: Is the check result normal?**

**Normal conditions are displayed for all the items. :**
Go to Step 4.

**Normal condition is not displayed for item No.03 :**
Refer to inspection procedure Q-11 "The key reminder switch signal is not received P.54C-493."

**Normal condition is not displayed for item No.05, 07, 41or 42 :** Refer to inspection procedure Q-14 "All the door switch signals are not received P.54C-505."

**Normal condition is not displayed for item No.21 and 32 :** Refer to inspection procedure Q-15 "The driver's door lock actuator switch signal is not received <LH drive vehicles>P.54C-514 or <RH drive vehicles>P.54C-518 ."

**Normal condition is not displayed for item No.31or 42 :** Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54C-553."

### Step 4. Retest the system.

Check which lamp does not illuminate when the lamp switches are operated.

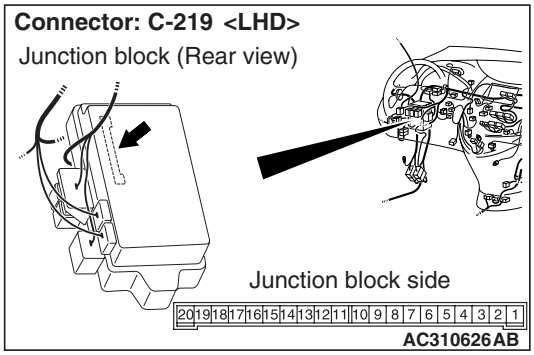
**Q: Which lamp does not illuminate?**
**No lamps illuminate :** Go to Step 5.
**One of the second seat lamps (RH or LH) or the third seat lamps (RH or LH) does not illuminate. :**
Go to Step 9.

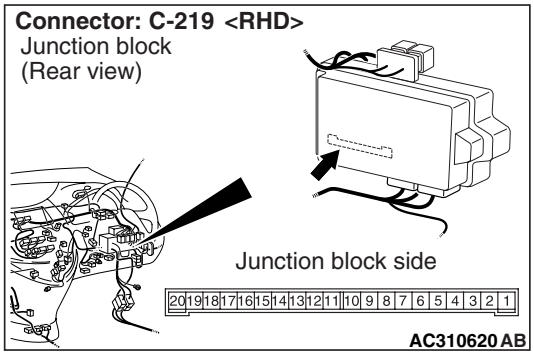
### Step 5. Check the rear personal lamp switches.

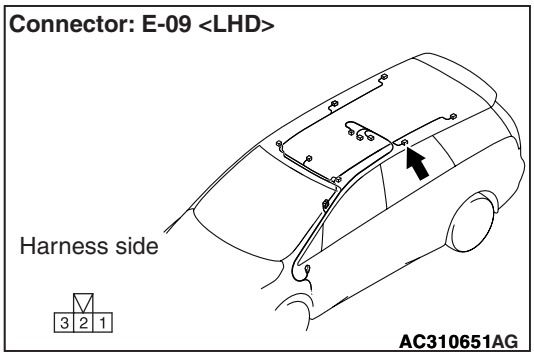
Check which position (ON or DOOR) of the rear personal lamp switch does not activate the relevant lamp.

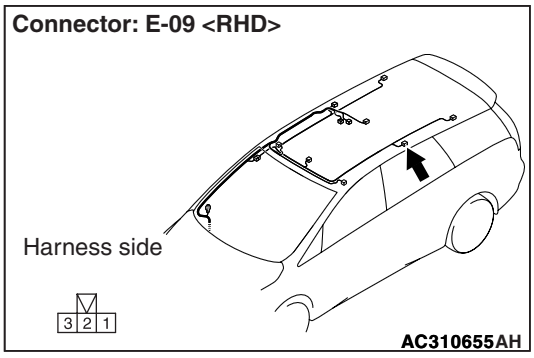
**Q: Which switch position does not activate the lamp?**
**The lamp illuminates at neither the ON nor DOOR position. :** Go to Step 6.
**The lamp does not illuminate at the DOOR position. :** Go to Step 8.
**The lamp does not illuminate at the ON position. :**
Replace the room lamp.

### Step 6. Connector check: C-219 ETACS-ECU connector, E-09 rear personal lamp connector



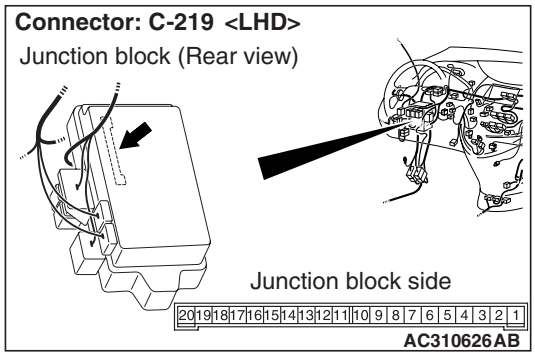



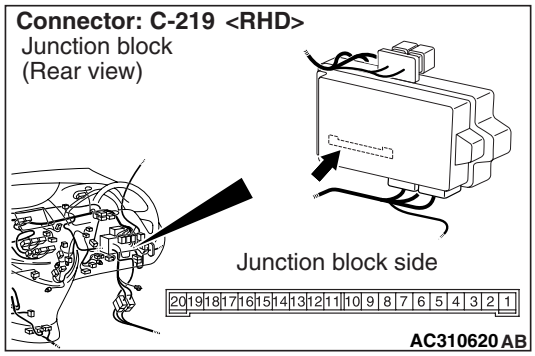



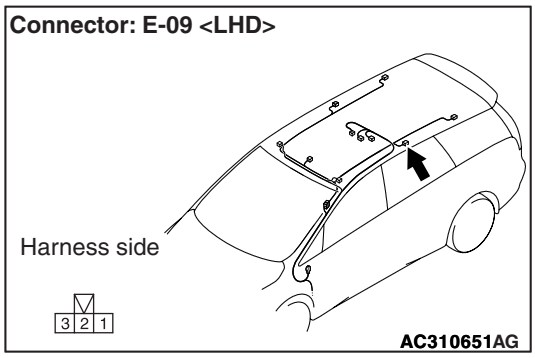



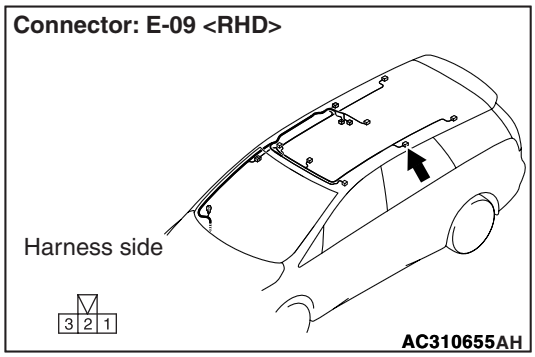

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the defective connector.

**Step 7. Check the wiring harness from C-219 ETACS-ECU connector terminal No.6 to E-09 rear personal lamp connector terminal No.2.**

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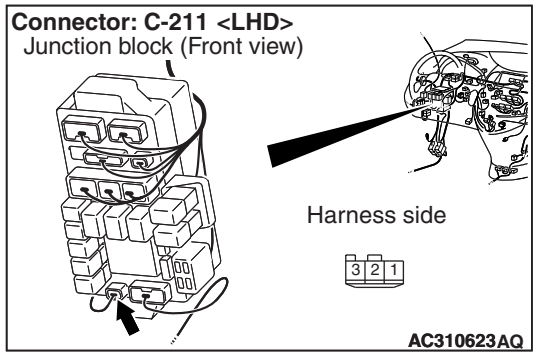
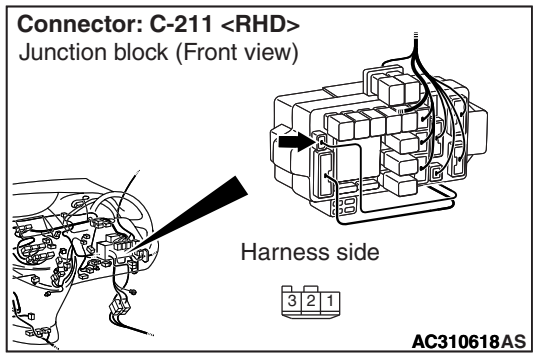
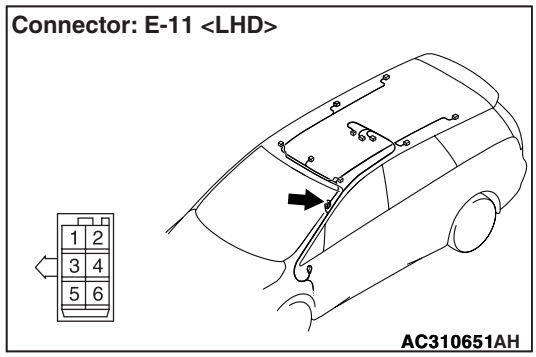
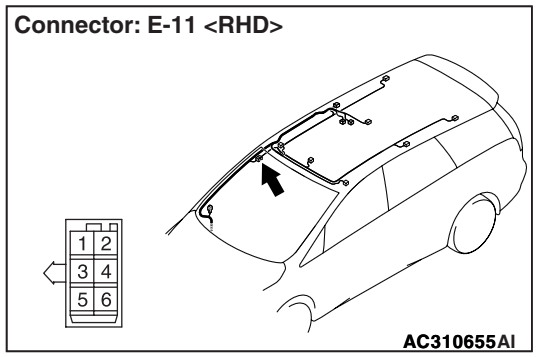



*Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.*

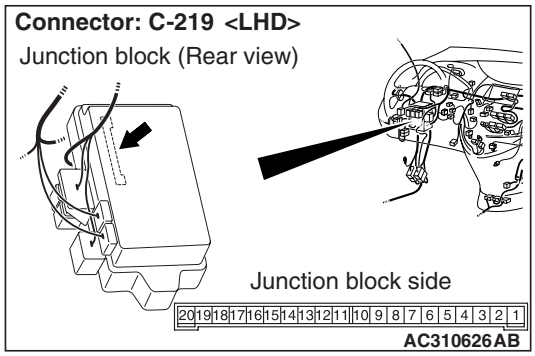
- Check the earth wires for open circuit.

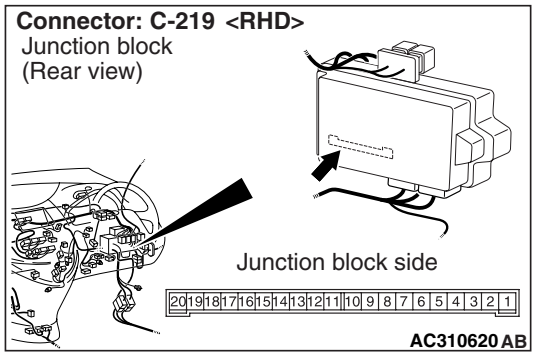
**Q: Is the check result normal?**

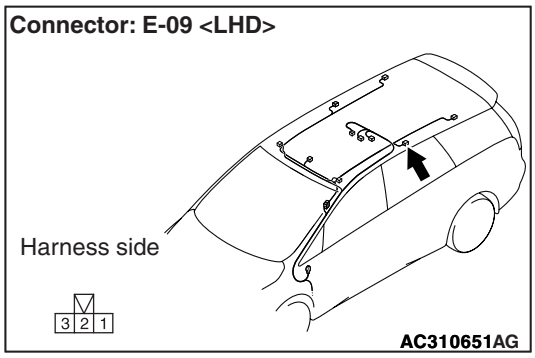
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

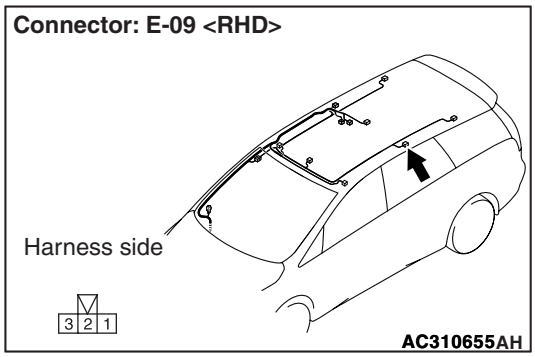
**NO :** Repair the wiring harness.

**Step 8. Check the wiring harness from C-219 ETACS-ECU connector terminal No.5 to E-09 rear personal lamp connector terminal No.3.**

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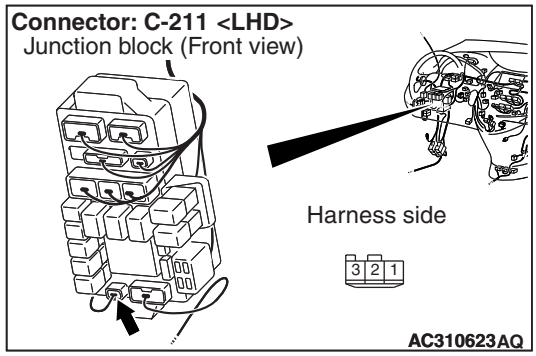
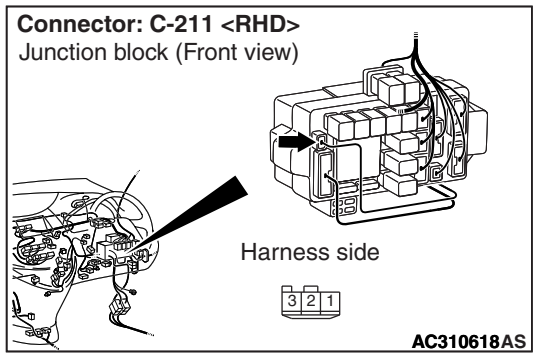
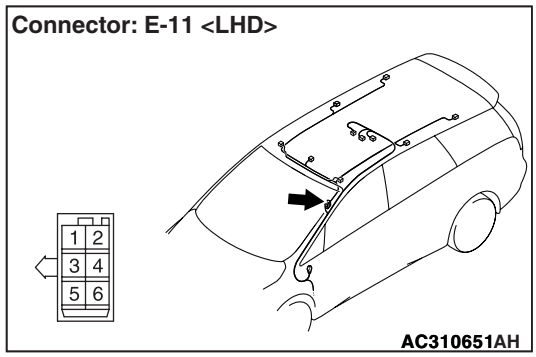
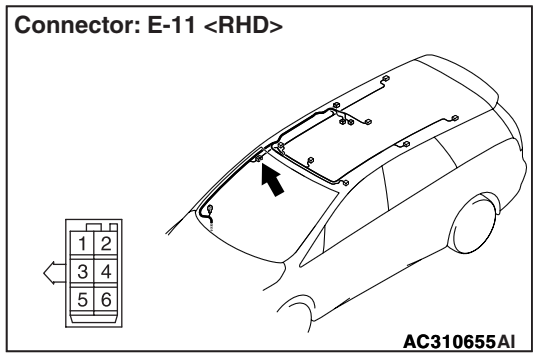



*Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.*

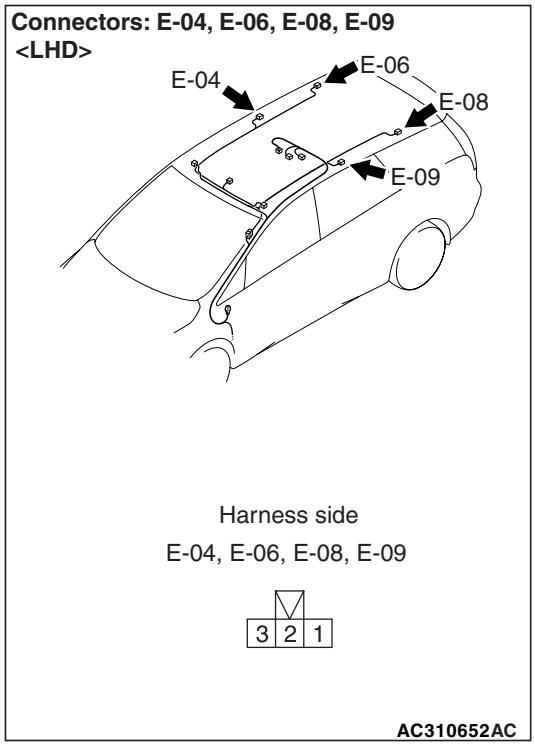
- Check the earth wires for open circuit.

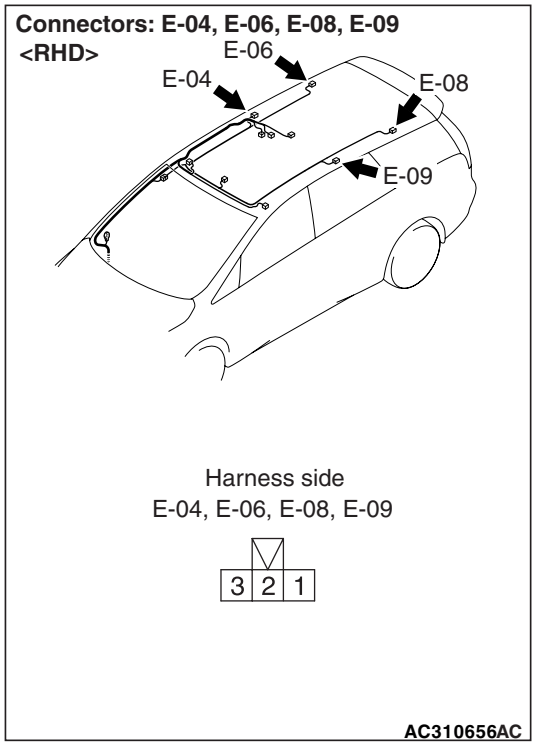
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Repair the wiring harness.

**Step 9. Connector check: E-09 rear personal lamp connector (for second seat: LH), E-04 rear personal lamp connector (for second seat: RH), E-08 rear personal lamp connector (for third seat: LH), E-06 rear personal lamp connector (for third seat: RH)**




**Q: Is the check result normal?**
**YES :** Go to Step 10.
**NO :** Repair the defective connector.

**Step 10. Check the bulbs of the rear personal lamp.**
Check that the rear personal lamp bulbs are not burned out.

**Q: Is the check result normal?**
**YES :** Go to Step 11.
**NO :** Replace the rear personal lamp bulb.

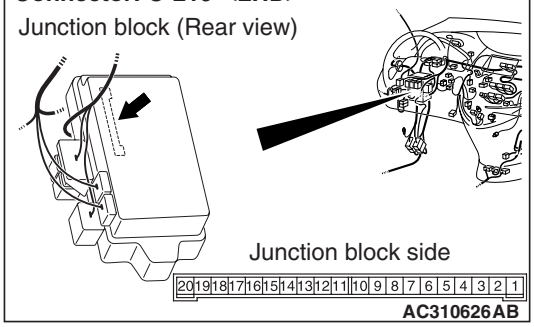
**Step 11. Check the rear personal lamp switches.**
Check which switch position (ON or DOOR) does not activate the rear personal lamp.

**Q: Which switch position does not activate the lamp?**
**The lamp illuminates at neither the ON nor DOOR position. :** Go to Step 12.
**The lamp does not illuminate at the DOOR position. :** Go to Step 13.
**The lamp does not illuminate at the ON position. :** Go to Step 15.

**Step 12. Check the wiring harness from C-219 ETACS-ECU connector terminal No.6 to E-09 rear personal lamp (for second seat: RH) connector terminal No.2, E-04 rear personal lamp (for second seat: LH) connector terminal No.2, E-08 rear personal lamp (for third seat: LH) connector terminal No.2, E-06 rear personal lamp (for third seat: RH) connector terminal No.2.**

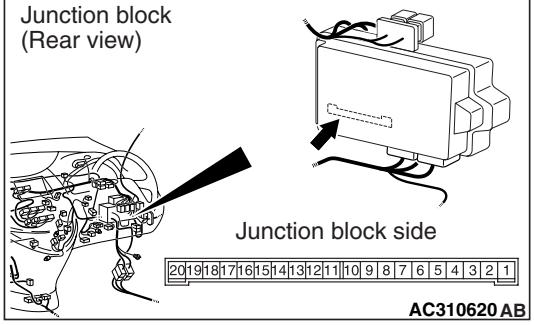
**Connector: C-219 <LHD>**

Junction block (Rear view)

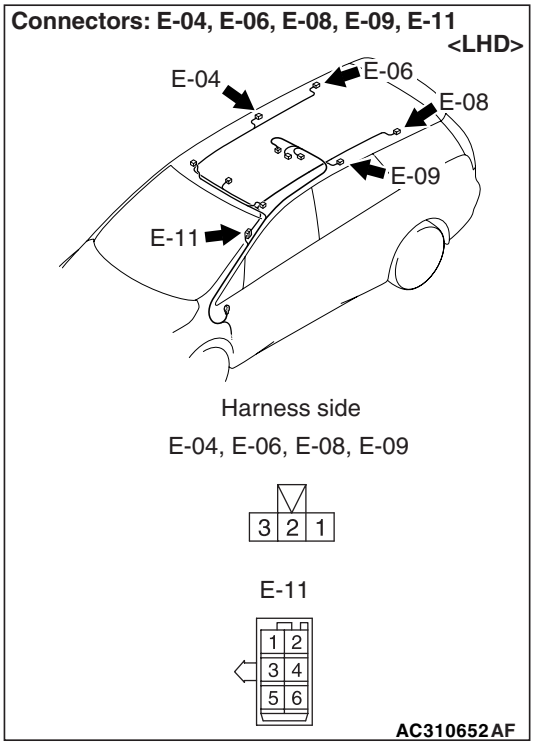



**Connector: C-219 <RHD>**

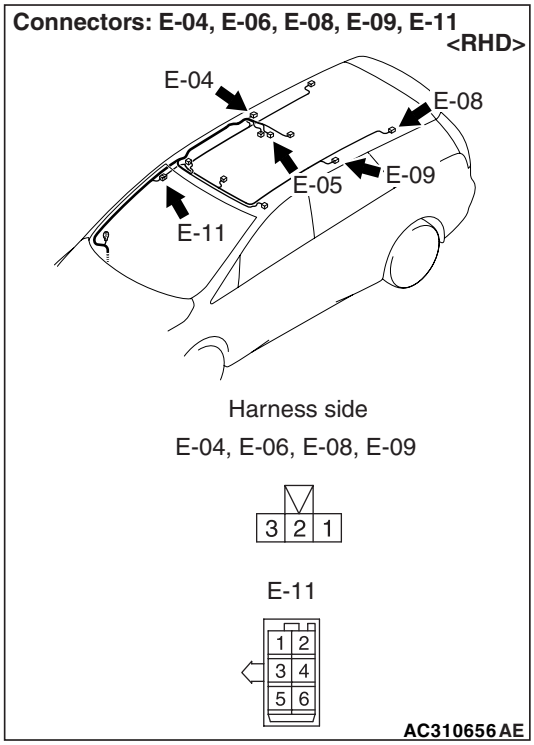
Junction block
(Rear view)




**Connectors: E-04, E-06, E-08, E-09, E-11 <LHD>**



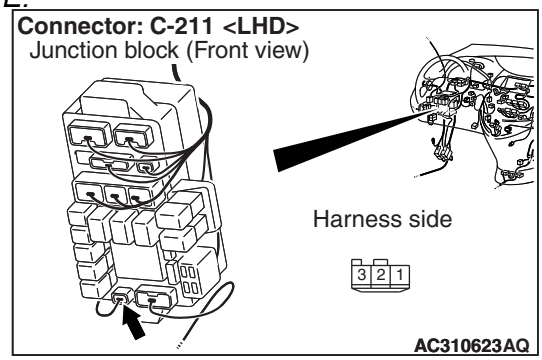

**Connectors: E-04, E-06, E-08, E-09, E-11 <RHD>**




*NOTE:*

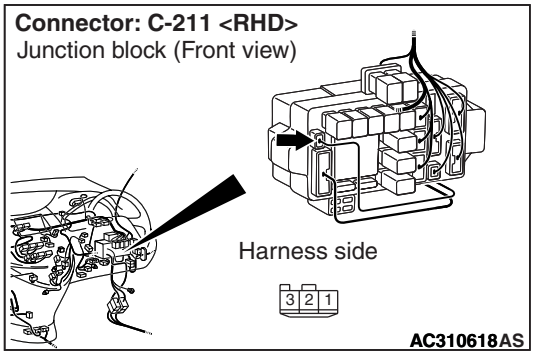
**Connector: C-211 <LHD>**

Junction block (Front view)




**Connector: C-211 <RHD>**

Junction block (Front view)




*Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.*

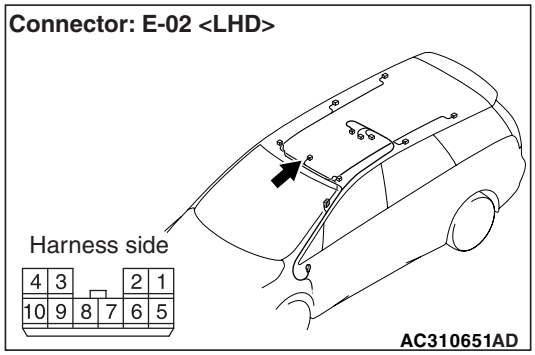
- Check the power supply line for open circuit.

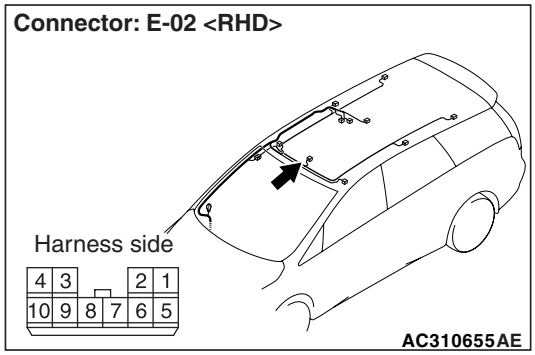
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Repair the wiring harness.

**Step 13. Connector check: E-02 room lamp connector**

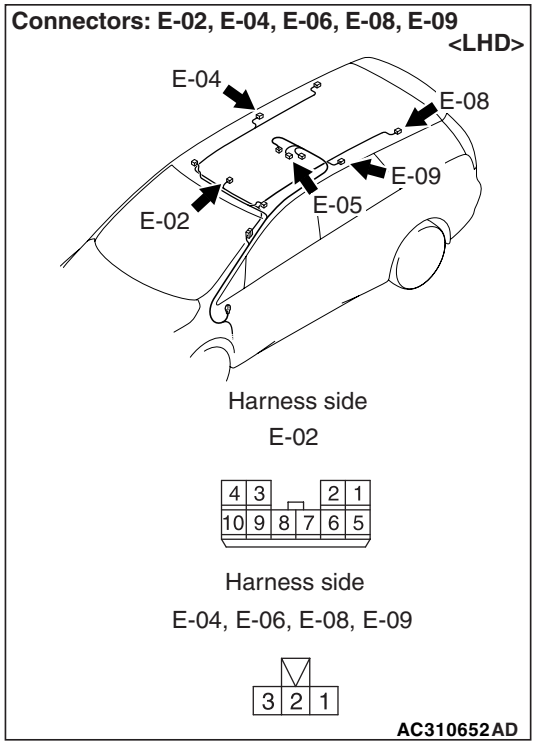


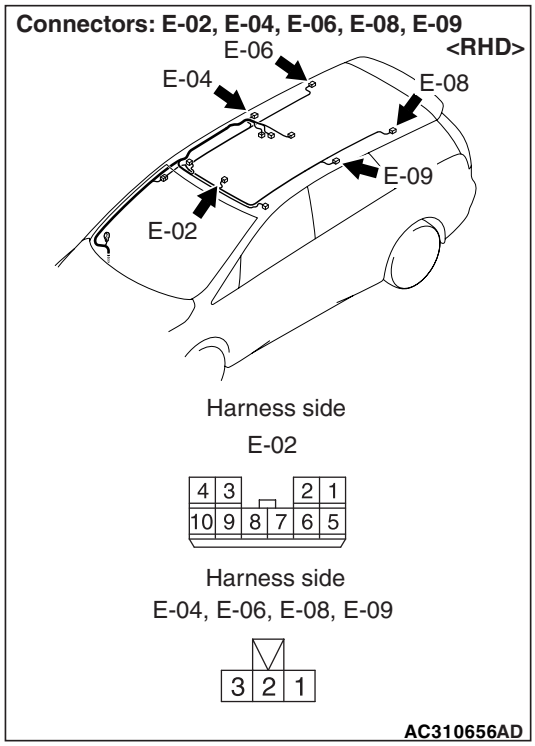




**Q: Is the check result normal?**

**YES :** Go to Step 14.
**NO :** Repair the defective connector.

**Step 14. Check the wiring harness from E-02 room lamp connector terminal No.9 to E-09 rear personal lamp (for second seat: RH) connector terminal No.1, E-04 rear personal lamp (for second seat: LH) connector terminal No.1, E-08 rear personal lamp (for third seat: LH) connector terminal No.1, E-06 rear personal lamp (for third seat: RH) connector terminal No.1.**



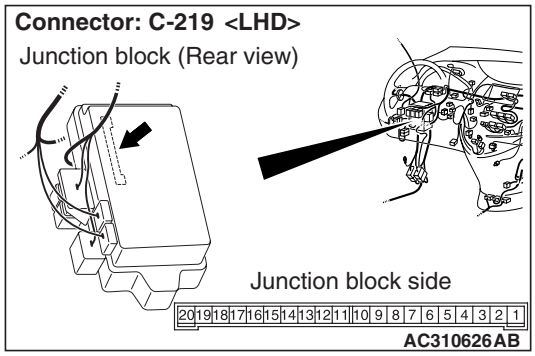

- Check the earth wires for open circuit.

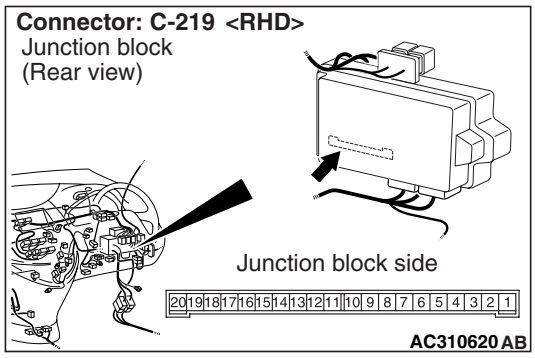
**Q: Is the check result normal?**

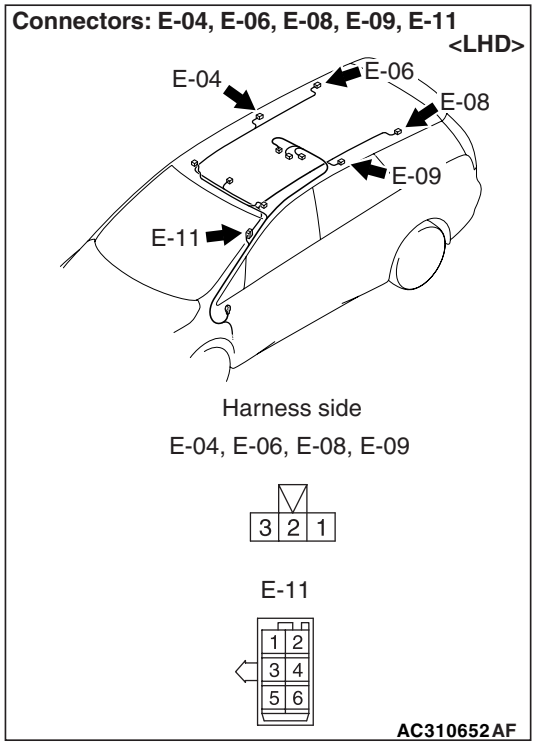
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

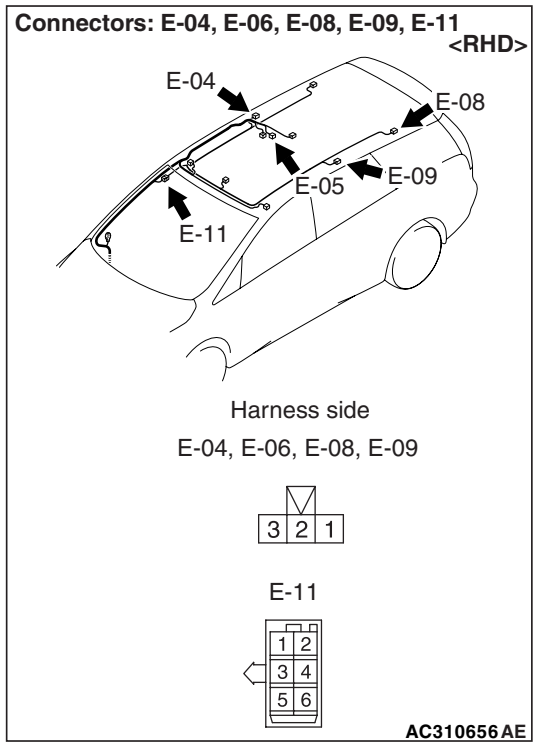
**NO :** Repair the wiring harness.

**Step 15. Check the wiring harness from C-219 ETACS-ECU connector terminal No.5 to E-09 rear personal lamp (for second seat: RH) connector terminal No.3, E-04 rear personal lamp (for second seat: LH) connector terminal No.3, E-08 rear personal lamp (for third seat: LH) connector terminal No.3, E-06 rear personal lamp (for third seat: RH) connector terminal No.3.**

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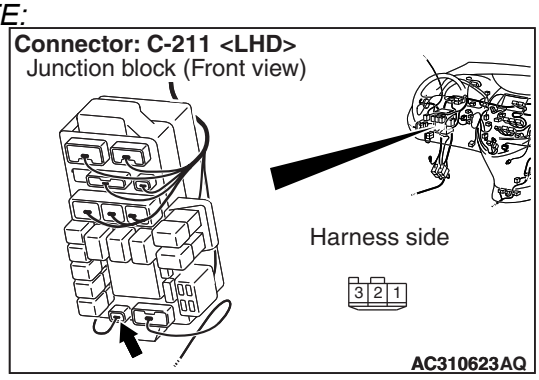
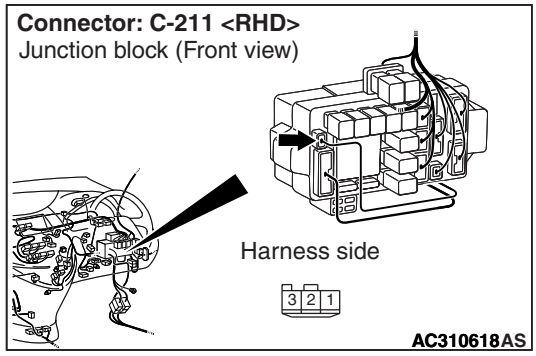



*Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.*

- Check the earth wires for open circuit.

**Q: Is the check result normal?**

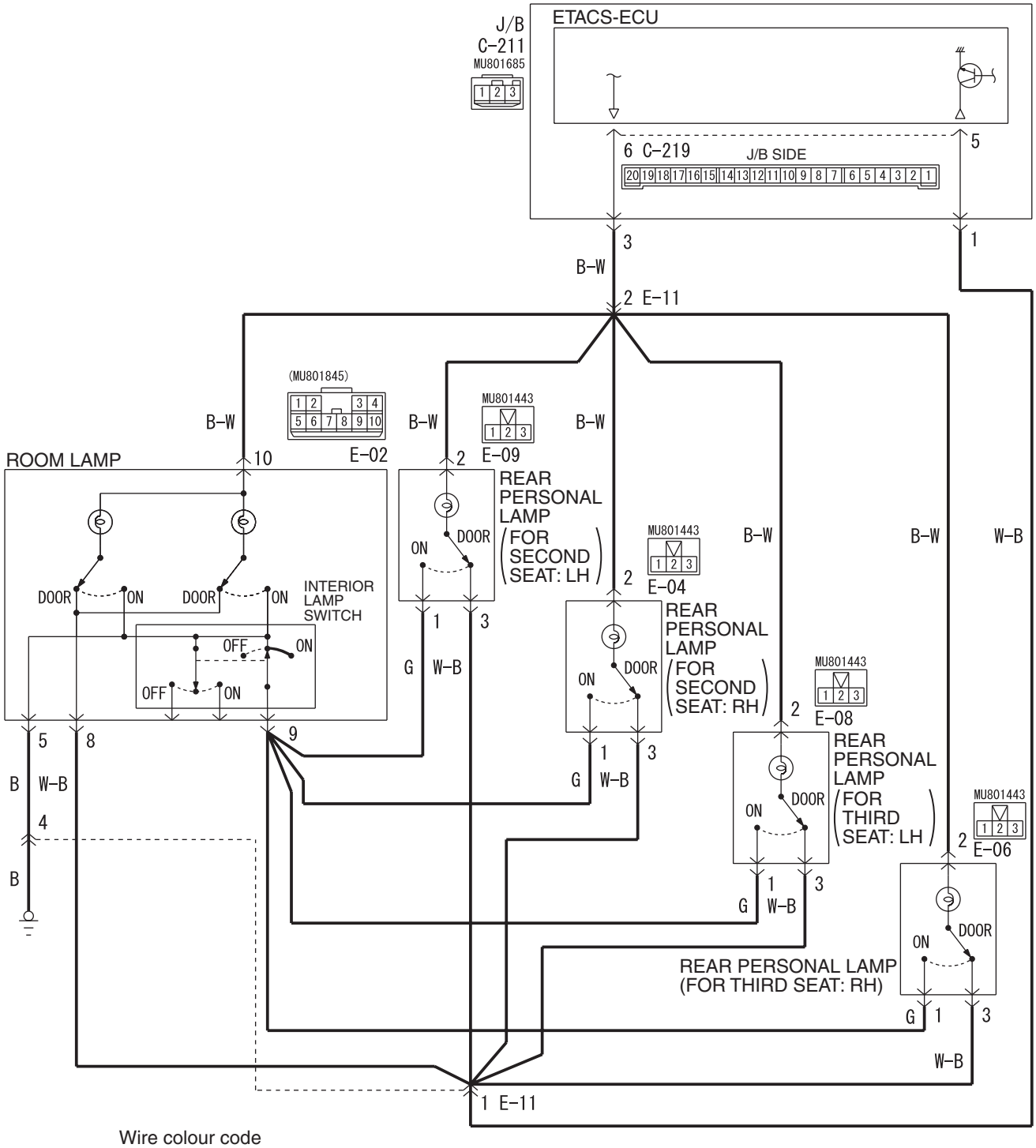
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Repair the wiring harness.

**Inspection Procedure P-3: The rear personal lamp does not illuminate normally. <Vehicles without keyless entry system>**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Room Lamp and Rear Personal Lamp Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E036A

## COMMENTS ON TROUBLE SYMPTOM

If the rear personal lamps do not illuminate or extinguish normally, wiring harness connector(s) or the bulb may be defective.

## POSSIBLE CAUSES

- Malfunction of the interior lamp switches
- Malfunction of the room lamp bulbs
- Malfunction of the rear personal lamp bulbs
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. SWS monitor data list**

**<Selected item> ETACS ECU**

- Driver's door is open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | DR DOOR SW | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received <LH drive vehicles>P.54C-474 or <RH drive vehicles>P.54C-476."

**Step 2. ETACS switch data by using the SWS monitor**

Check the ETACS-ECU signal related to the rear personal lamp illumination.

- Ignition switch: OFF (key inserted)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | KEY REMINSW | OFF |

- Passenger's door: Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 05 | PASS DOOR SW | from OFF to ON |

- Tailgate: Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 07 | TRK LID LA SW | from OFF to ON |

- Rear door (RH): Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 41 | R.DOOR(RH) SW | from OFF to ON |

- Rear door (LH): Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 42 | R.DOOR(LH) SW | from OFF to ON |

- Driver's door: Unlock → Lock

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 21 | DR DOR LOK SW | from OFF to ON |
| Item 22 | DR DOR ULOK SW | from ON to OFF |

- Room lamp on switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 31 | RM LMP ON SW | ON |

- Room lamp off switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | RM LMP OFF SW | ON |

**OK: Normal conditions displayed for all the items.**

**Q: Is the check result normal?**

**Normal conditions are displayed for all the items. :** Go to Step 3.
**Normal condition is not displayed for item No.03 :** Refer to inspection procedure Q-11 "The key reminder switch signal is not received P.54C-493."
**Normal condition is not displayed for item No.05, 07, 41or 42 :** Refer to inspection procedure Q-14 "All the door switch signals are not received P.54C-505."
**Normal condition is not displayed for item No.21 and 32 :** Refer to inspection procedure Q-15 "The driver's door lock actuator switch signal is not received <LH drive vehicles>P.54C-514 or <RH drive vehicles>P.54C-518."
**Normal condition is not displayed for item No.31 or 32 :** Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54C-553."

## Step 3. Retest the system.

Check which lamp does not illuminate when the lamp switches are operated.

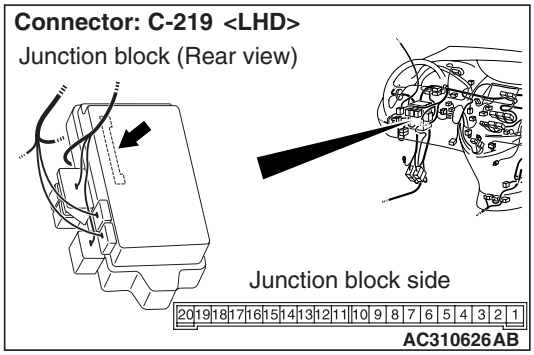
**Q: Which lamp does not illuminate?**
**No lamps illuminate :** Go to Step 4.
**One of the second seat lamps (RH or LH) or the third seat lamps (RH or LH) does not illuminate. :** Go to Step 8.

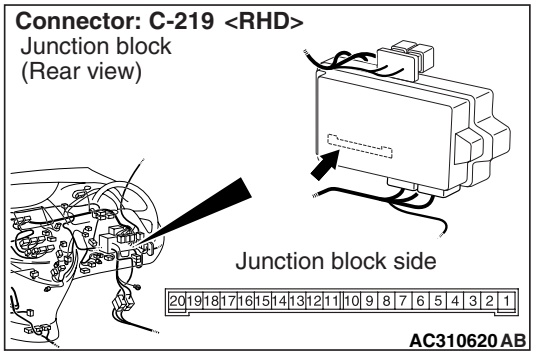
## Step 4. Check the rear personal lamp switches.

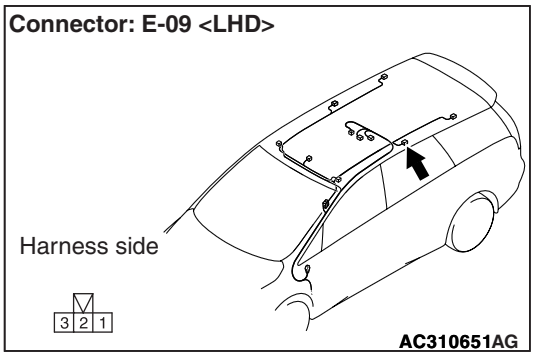
Check which position (ON or DOOR) of the rear personal lamp switch does not activate the relevant lamp.

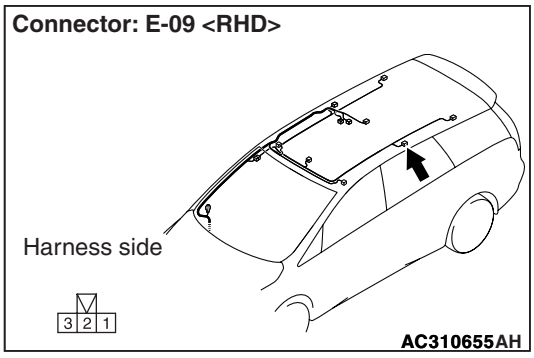
**Q: Which switch position does not activate the lamp?**
**The lamp illuminates at neither the ON nor DOOR position. :** Go to Step 5.
**The lamp does not illuminate at the DOOR position. :** Go to Step 7.
**The lamp does not illuminate at the ON position. :** Replace the rear personal lamp.

## Step 5. Connector check: C-219 ETACS-ECU connector, E-09 rear personal lamp connector



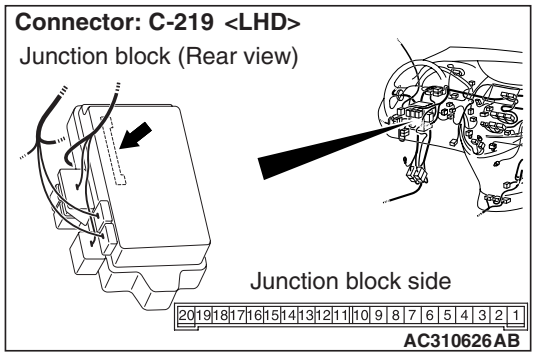



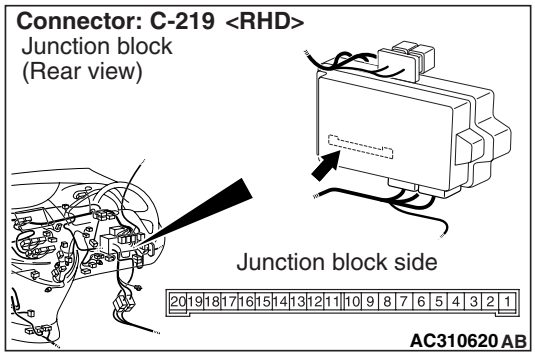



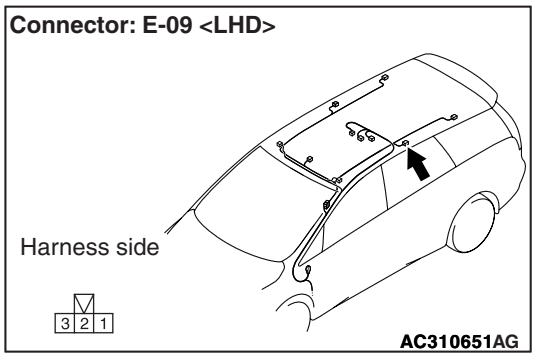



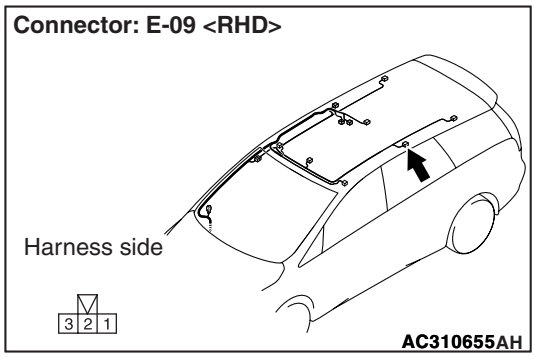

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

**Step 6. Check the wiring harness from C-219 ETACS-ECU connector terminal No.6 to E-09 rear personal lamp connector terminal No.2.**

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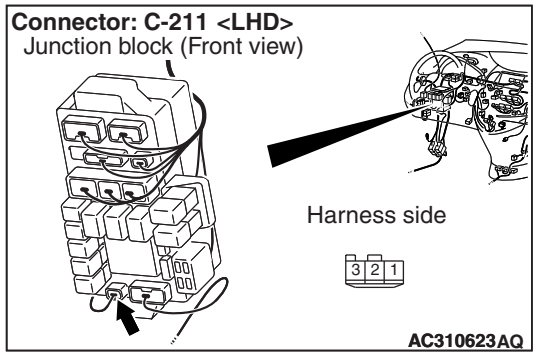
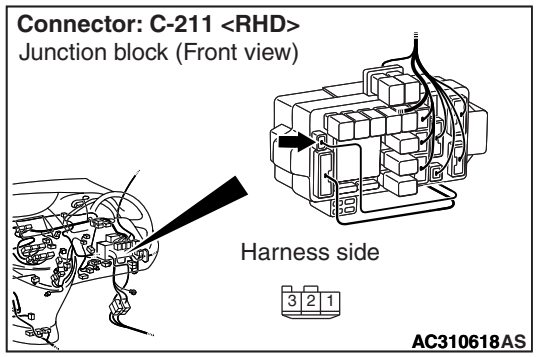
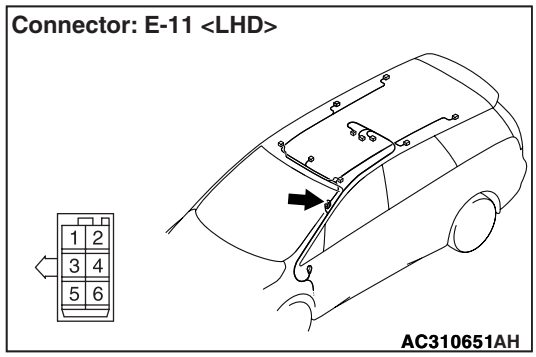
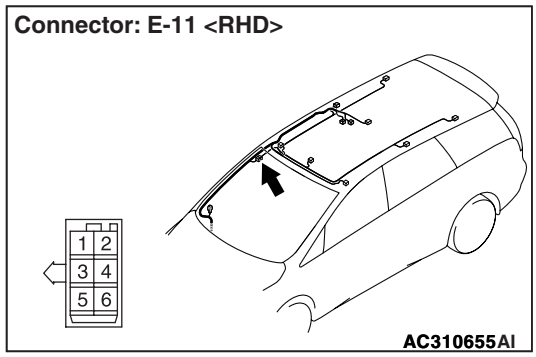


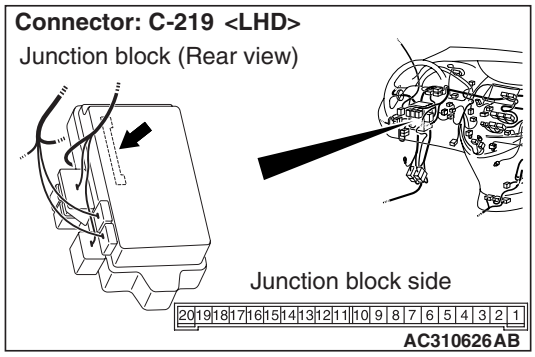



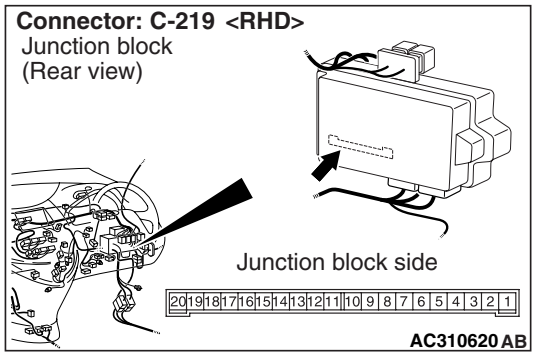

*Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.*

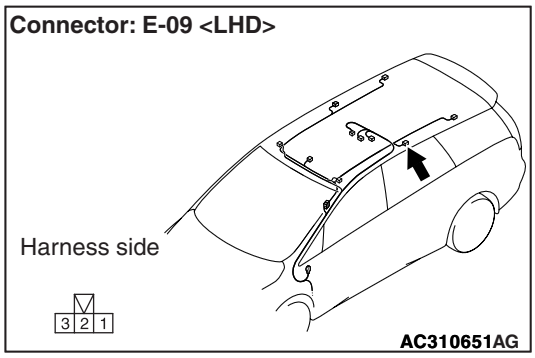
- Check the earth wires for open circuit.

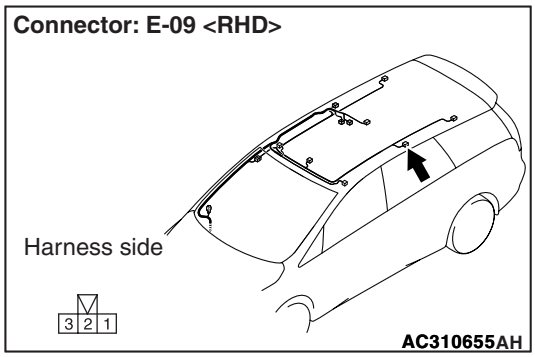
**Q: Is the check result normal?**
**YES :** Replace the rear personal lamp.
**NO :** Repair the wiring harness.

**Step 7. Check the wiring harness from C-219 ETACS-ECU connector terminal No.5 to E-09 rear personal lamp connector terminal No.3.**

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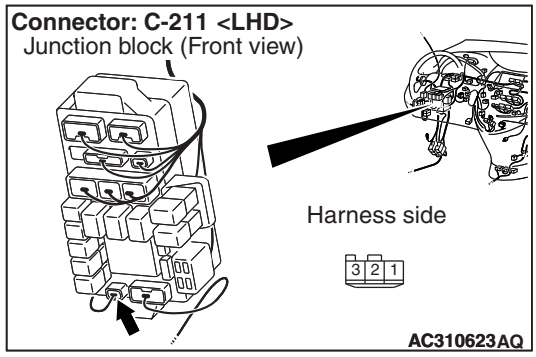
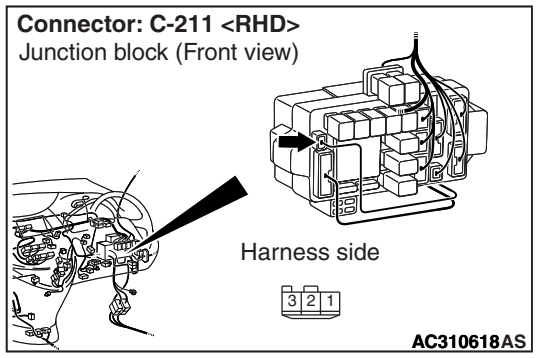
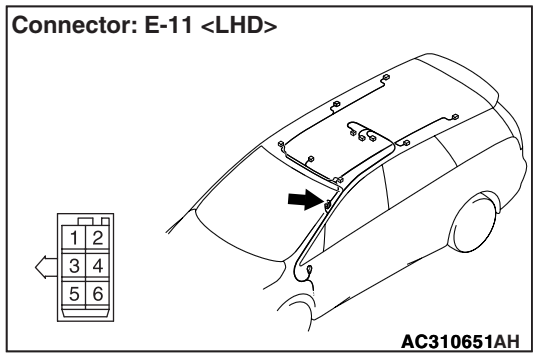
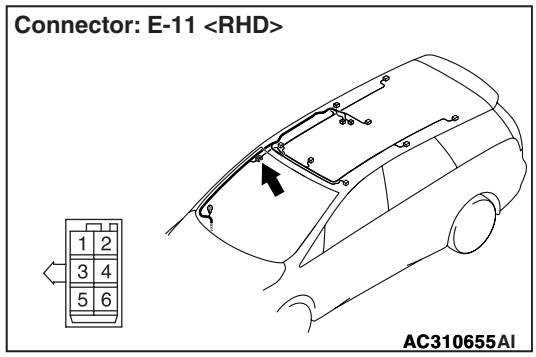


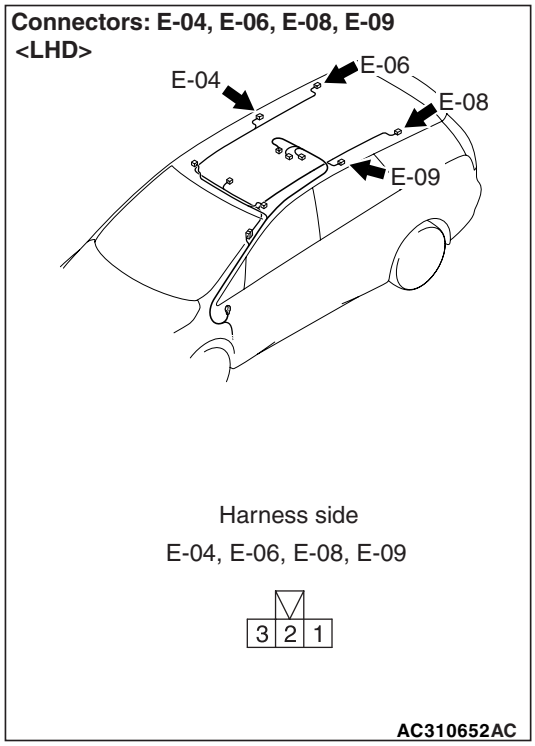



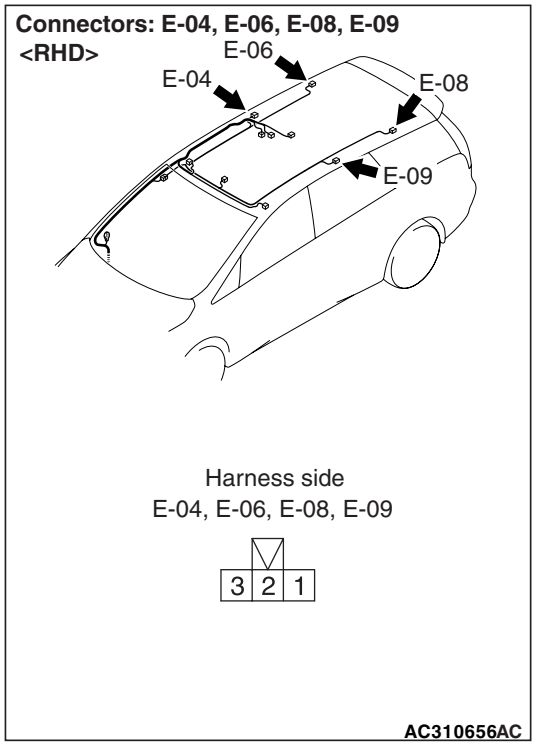

*Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.*

- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** Replace the rear personal lamp.
**NO :** Repair the wiring harness.

**Step 8. Connector check: E-09 rear personal lamp connector (for second seat: LH), E-04 rear personal lamp connector (for second seat: RH), E-08 rear personal lamp connector (for third seat: LH), E-06 rear personal lamp connector (for third seat: RH)**




**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the defective connector.

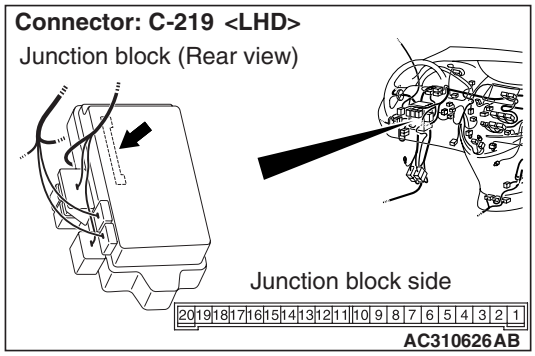
**Step 9. Check the bulbs of the rear personal lamp.**
Check that the rear personal lamp bulbs are not burned out.

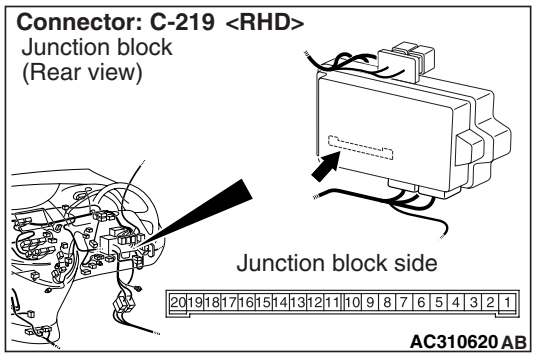
**Q: Is the check result normal?**
**YES :** Go to Step 10.
**NO :** Replace the rear personal lamp bulb.

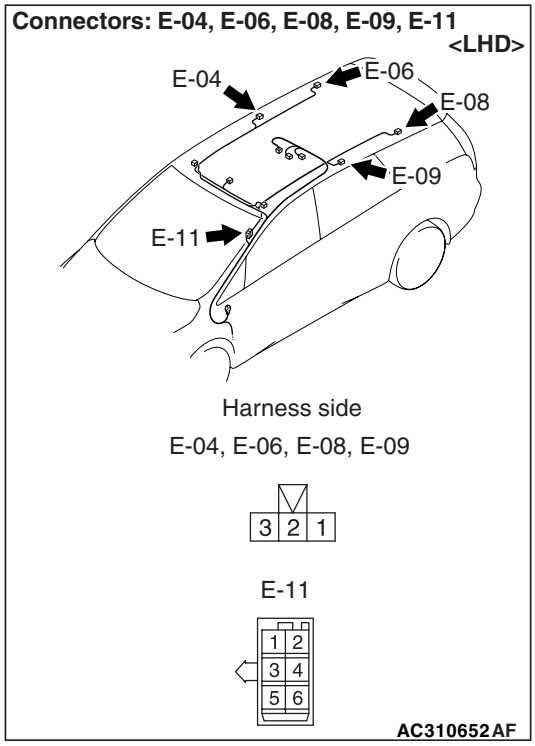
**Step 10. Check the rear personal lamp switches.**
Check which switch position (ON or DOOR) does not activate the rear personal lamp.

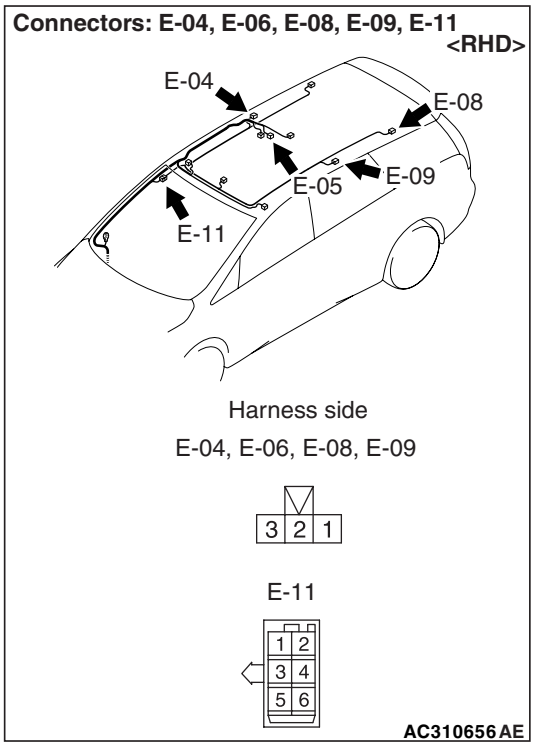
**Q: Which switch position does not activate the lamp?**
**The lamp illuminates at neither the ON nor DOOR position. :** Go to Step 11.
**The lamp does not illuminate at the DOOR position. :** Go to Step 12.
**The lamp does not illuminate at the ON position. :** Go to Step 14.

**Step 11. Check the wiring harness from C-219 ETACS-ECU connector terminal No.6 to E-09 rear personal lamp (for second seat: RH) connector terminal No.2, E-04 rear personal lamp (for second seat: LH) connector terminal No.2, E-08 rear personal lamp (for third seat: LH) connector terminal No.2, E-06 rear personal lamp (for third seat: RH) connector terminal No.2.**

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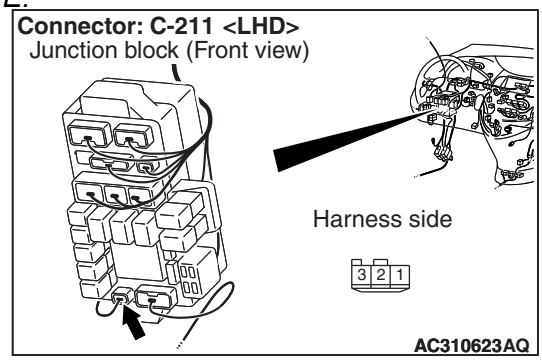
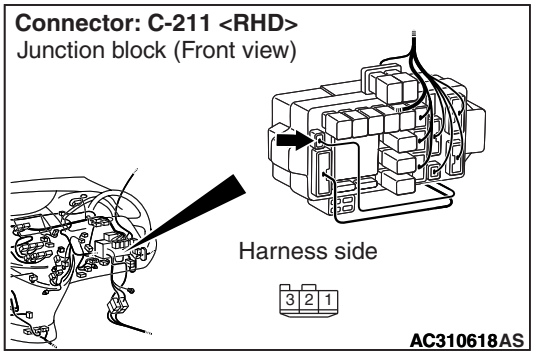



*Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.*

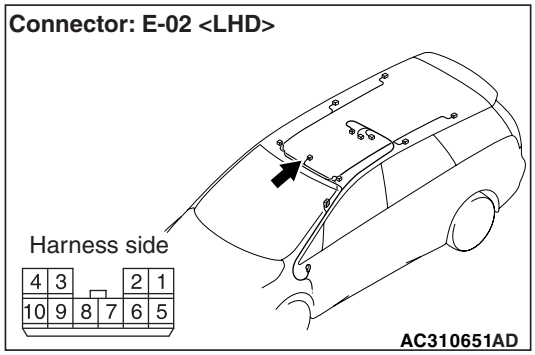
- Check the power supply line for open circuit.

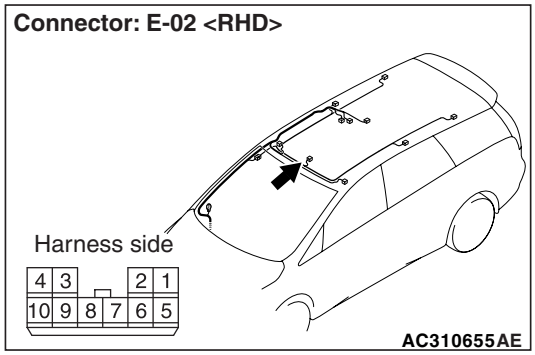
**Q: Is the check result normal?**

**YES :** Replace the rear personal lamp.

**NO :** Repair the wiring harness.

**Step 12. Connector check: E-02 room lamp connector**

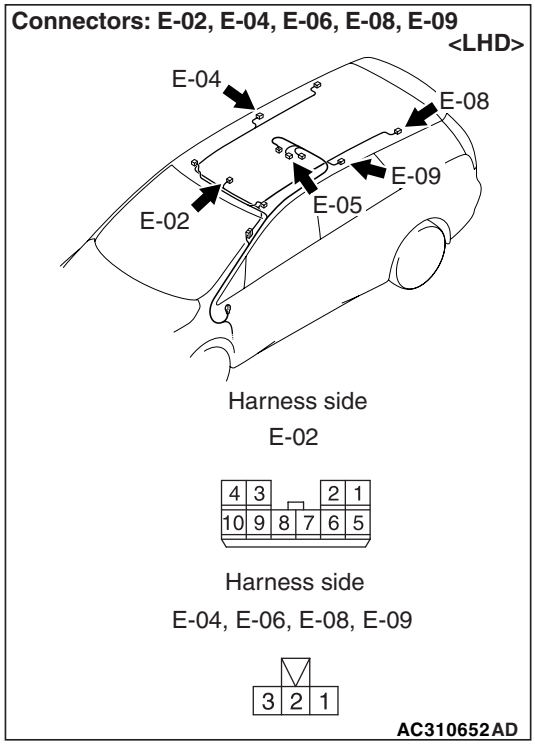


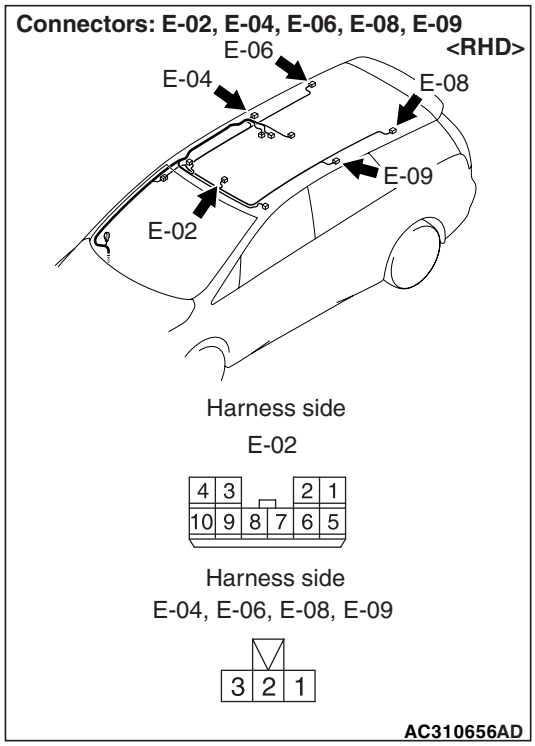




**Q: Is the check result normal?**

**YES :** Go to Step 13.
**NO :** Repair the defective connector.

**Step 13. Check the wiring harness from E-02 room lamp connector terminal No.9 to E-09 rear personal lamp (for second seat: RH) connector terminal No.1, E-04 rear personal lamp (for second seat: LH) connector terminal No.1, E-08 rear personal lamp (for third seat: LH) connector terminal No.1, E-06 rear personal lamp (for third seat: RH) connector terminal No.1.**

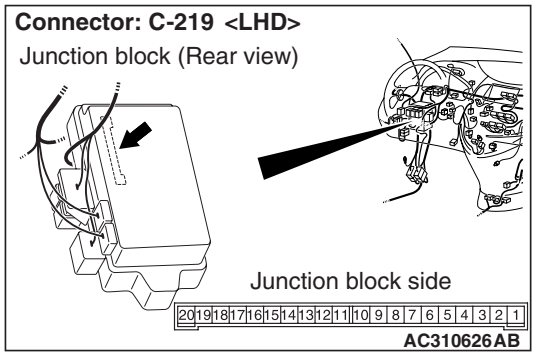


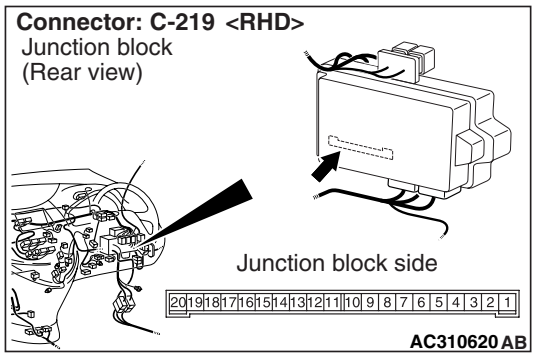



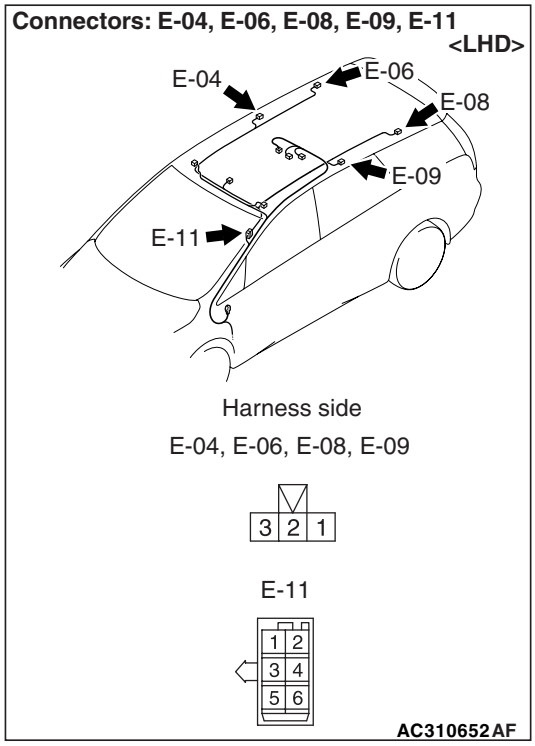

- Check the earth wires for open circuit.

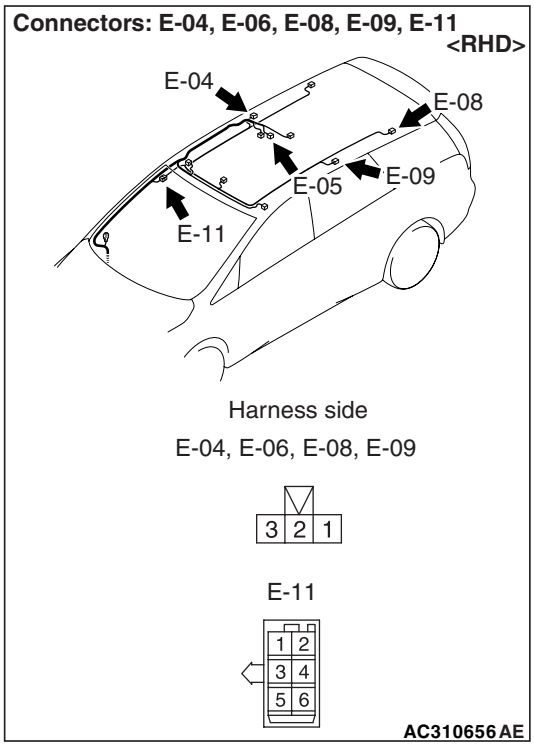
**Q: Is the check result normal?**
**YES :** Replace the rear personal lamp.
**NO :** Repair the wiring harness.

**Step 14. Check the wiring harness from C-219 ETACS-ECU connector terminal No.5 to E-09 rear personal lamp (for second seat: RH) connector terminal No.3, E-04 rear personal lamp (for second seat: LH) connector terminal No.3, E-08 rear personal lamp (for third seat: LH) connector terminal No.3, E-06 rear personal lamp (for third seat: RH) connector terminal No.3.**

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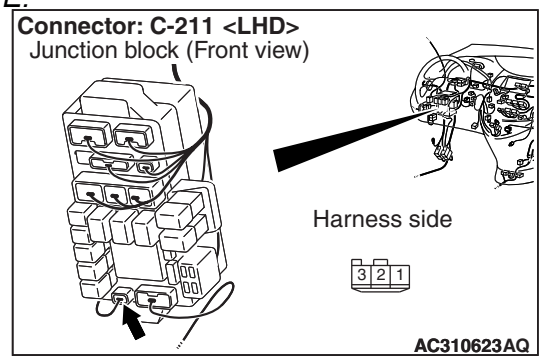
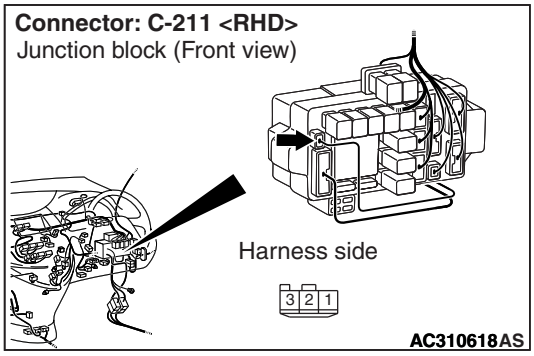



*Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.*

- Check the earth wires for open circuit.

**Q: Is the check result normal?**

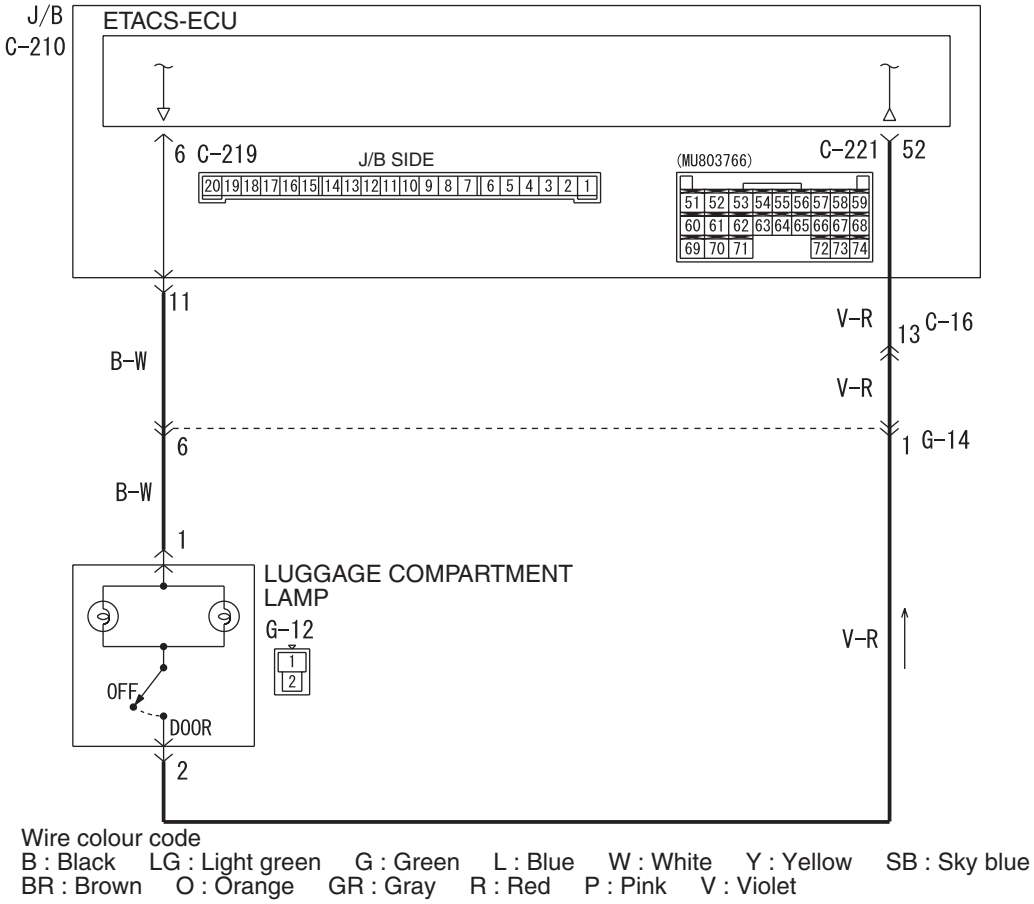
**YES :** Replace the rear personal lamp.

**NO :** Repair the wiring harness.

**Inspection Procedure P-4: The luggage compartment lamp does not illuminate normally. <Vehicles with keyless entry system>**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Luggage Room Lamp Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E173A

## COMMENTS ON TROUBLE SYMPTOM

If the luggage compartment lamp does not illuminate or extinguish normally, wiring harness connector(s) or the bulb may be defective.

## POSSIBLE CAUSES

- Malfunction of the luggage compartment lamp bulbs
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. SWS monitor data list**

**<Selected item> ETACS ECU**

- Driver's door is open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | DR DOOR SW | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received <LH drive vehicles>P.54C-474 or <RH drive vehicles>P.54C-476."

**Step 2. ETACS switch data by using the SWS monitor**

Check the ETACS-ECU signal related to the rear personal lamp illumination.

- Ignition switch: OFF (key inserted)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | KEY REMINSW | OFF |

- Passenger's door: Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 05 | PASS DOOR SW | from OFF to ON |

- Tailgate: Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 07 | TRK LID LA SW | from OFF to ON |

- Rear door (RH): Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 41 | R.DOOR(RH) SW | from OFF to ON |

- Rear door (LH): Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 42 | R.DOOR(LH) SW | from OFF to ON |

- Driver's door: Unlock → Lock

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 21 | DR DOR LOK SW | from OFF to ON |
| Item 22 | DR DOR ULOK SW | from ON to OFF |

- Room lamp on switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 31 | RM LMP ON SW | ON |

- Room lamp off switch: ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 31 | RM LMP OFF SW | ON |

**OK: Normal conditions displayed for all the items.**

**Q: Is the check result normal?**

**Normal conditions are displayed for all the items. :** Go to Step 3.

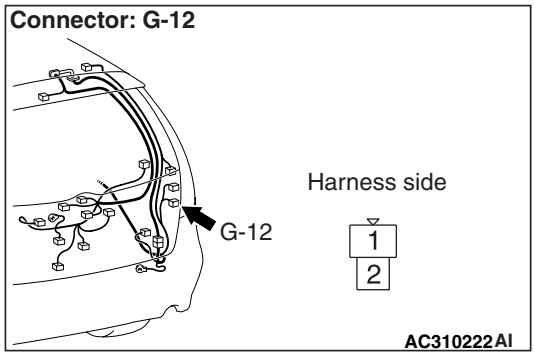
**Normal condition is not displayed for item No.03 :** Refer to inspection procedure Q-11 "The key reminder switch signal is not received P.54C-493."

**Normal condition is not displayed for item No.05, 07,41or 42 :** Refer to inspection procedure Q-14 "All the door switch signals are not received P.54C-505."

**Normal condition is not displayed for item No.21 and 32 :** Refer to inspection procedure Q-15 "The driver's door lock actuator switch signal is not received <LH drive vehicles>P.54C-514 or <RH drive vehicles>P.54C-518."

**Normal condition is not displayed for item No.31or 42 :** Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54C-553."

### Step 3. Connector check: G-12 luggage compartment lamp connector



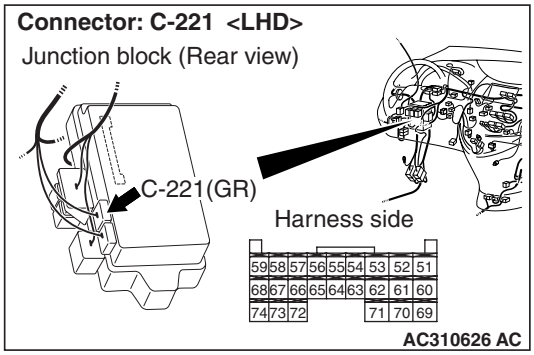

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the defective connector.

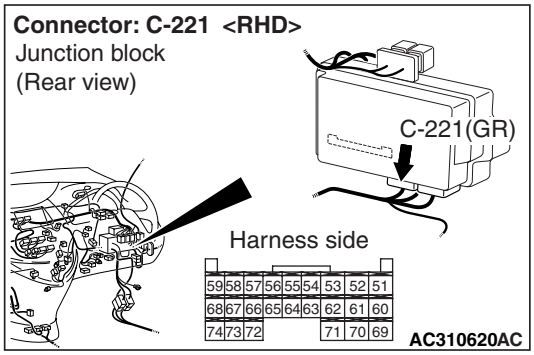
### Step 4. Check the bulbs of the luggage compartment lamp.

Check that the luggage compartment lamp bulbs are not burned out.

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Replace the luggage compartment lamp bulb.

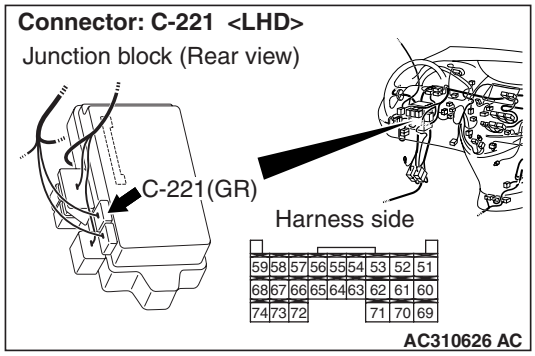
### Step 5. Connector check: C-221 ETACS-ECU connector

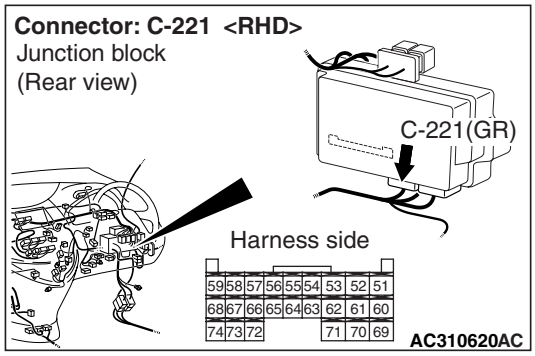


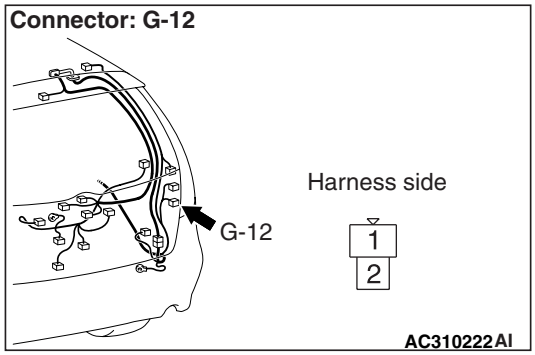




**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

**Step 6. Check the wiring harness from C-221 ETACS-ECU connector terminal No.52 to G-12 luggage compartment lamp connector terminal No.2.**

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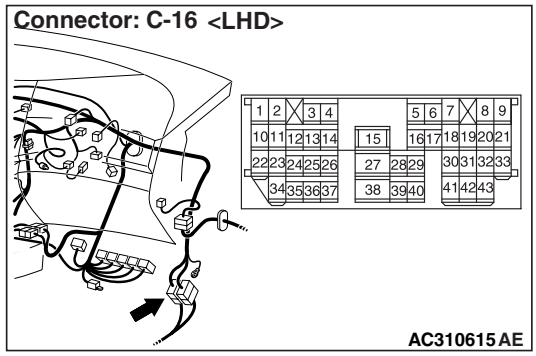
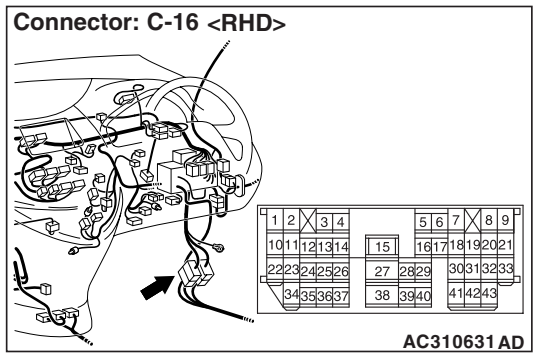
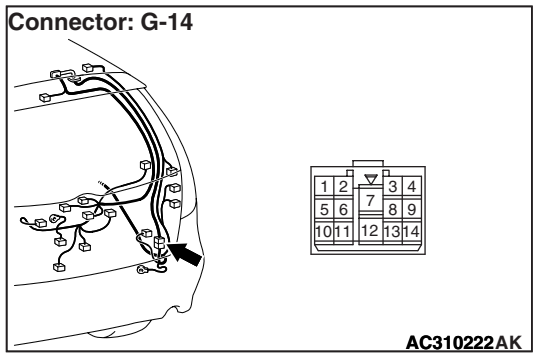


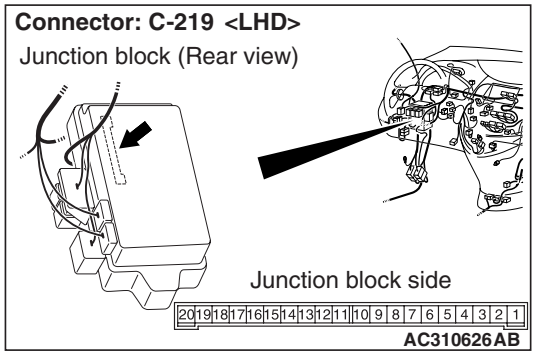



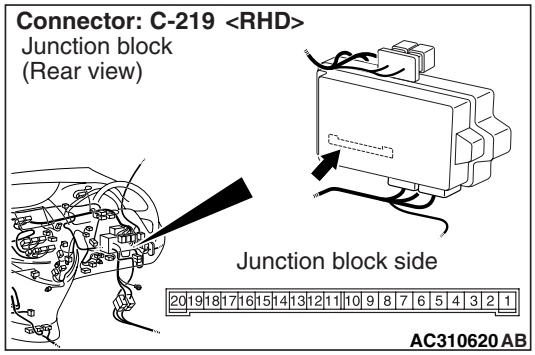

*Prior to the wiring harness inspection, check intermediate connector C-16, G-14, and repair if necessary.*

- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

### Step 7. Connector check: C-219 ETACS-ECU connector

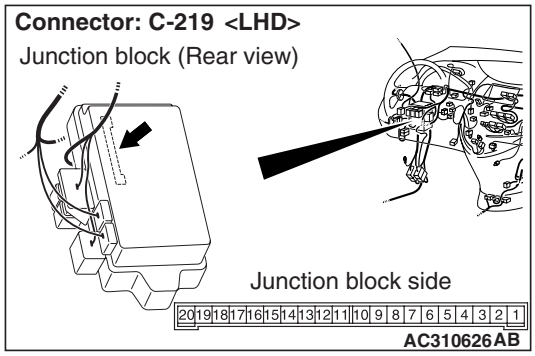


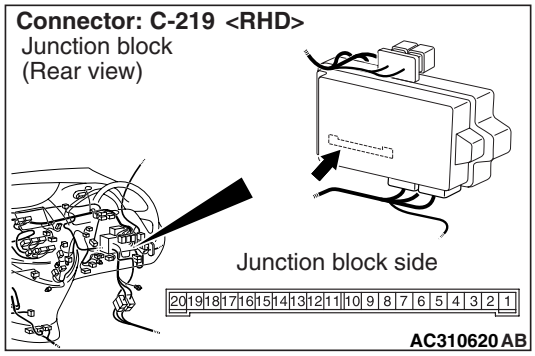



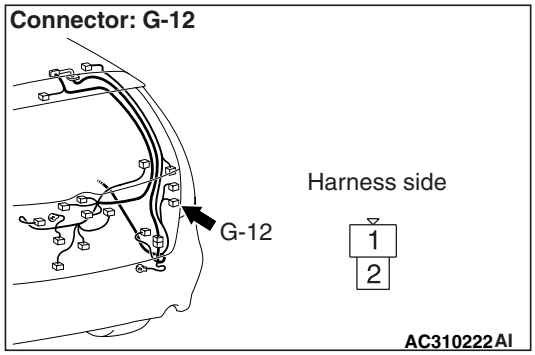

**Q: Is the check result normal?**

**YES :** Go to Step 8.
**NO :** Repair the defective connector.

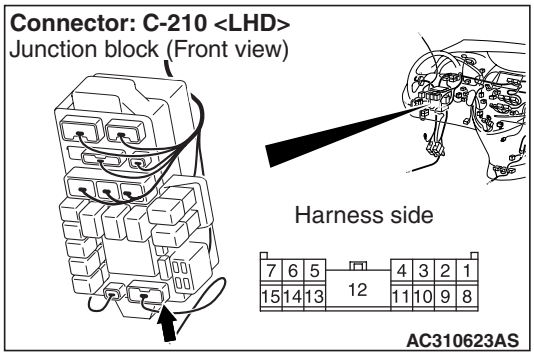
**Step 8. Check the wiring harness from C-219 ETACS-ECU connector terminal No.6 to G-12 luggage compartment lamp connector terminal No.1.**

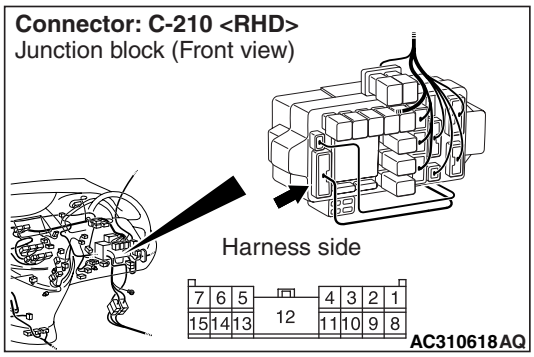


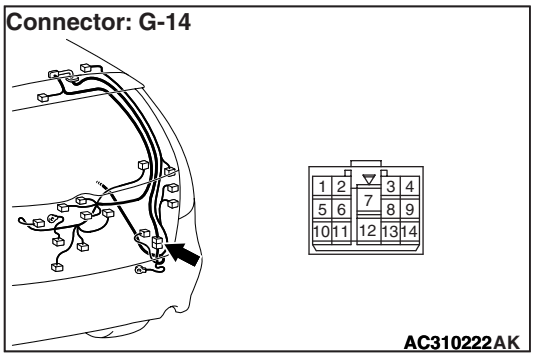




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector G-14, junction block connector C-210, and repair if necessary.*

- Check the power supply line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the wiring harness.

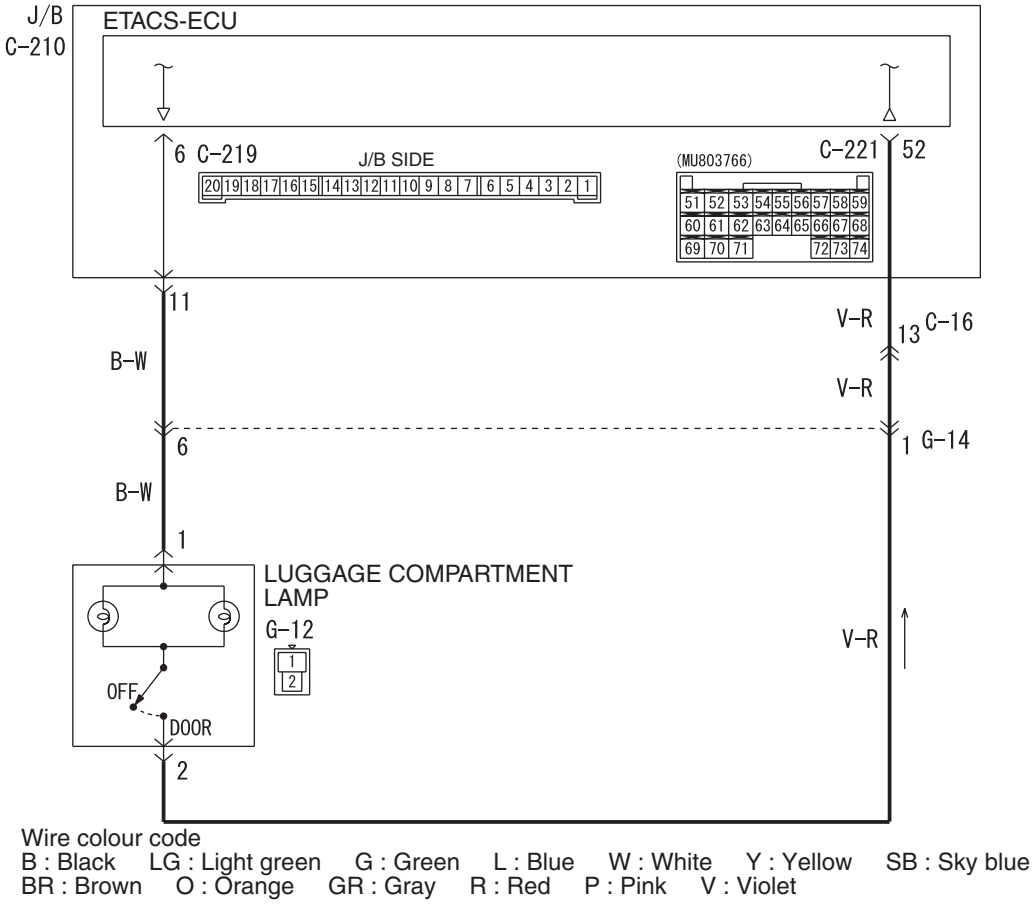
**Step 9. Retest the system.**
Check that the luggage compartment lamp illuminates and extinguishes normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the luggage compartment lamp.

## Inspection Procedure P-4: The luggage compartment lamp does not illuminate normally. <Vehicles without keyless entry system>

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Luggage Room Lamp Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E173A

## COMMENTS ON TROUBLE SYMPTOM

If the luggage compartment lamp does not illuminate or extinguish normally, wiring harness connector(s) or the bulb may be defective.

## POSSIBLE CAUSES

- Malfunction of the luggage compartment lamp bulbs
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. SWS monitor data list**

**<Selected item> ETACS ECU**

- Driver's door is open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | DR DOOR SW | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received <LH drive vehicles>P.54C-474 or <RH drive vehicles>P.54C-476."

**Step 2. ETACS switch data by using the SWS monitor**

Check the ETACS-ECU signal related to the rear personal lamp illumination.

- Ignition switch: OFF (key inserted)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | KEY REMINSW | OFF |

- Passenger's door: Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 05 | PASS DOOR SW | from OFF to ON |

- Tailgate: Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 07 | TRK LID LA SW | from OFF to ON |

- Rear door (RH): Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 41 | R.DOOR(RH) SW | from OFF to ON |

- Rear door (LH): Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 42 | R.DOOR(LH) SW | from OFF to ON |

- Driver's door: Unlock → Lock

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 21 | DR DOR LOK SW | from OFF to ON |
| Item 22 | DR DOR ULOK SW | from ON to OFF |

**OK: Normal conditions displayed for all the items.**

**Q: Is the check result normal?**

**Normal conditions are displayed for all the items. :** Go to Step 3.
**Normal condition is not displayed for item No.03 :** Refer to inspection procedure Q-11 "The key reminder switch signal is not received P.54C-493."
**Normal condition is not displayed for item No.05, 07, 41or 42 :** Refer to inspection procedure Q-14 "All the door switch signals are not received P.54C-505."
**Normal condition is not displayed for item No.21 and 32 :** Refer to inspection procedure Q-15 "The driver's door lock actuator switch signal is not received <LH drive vehicles>P.54C-514 or <RH drive vehicles>P.54C-518."

**Step 3. Pulse check**

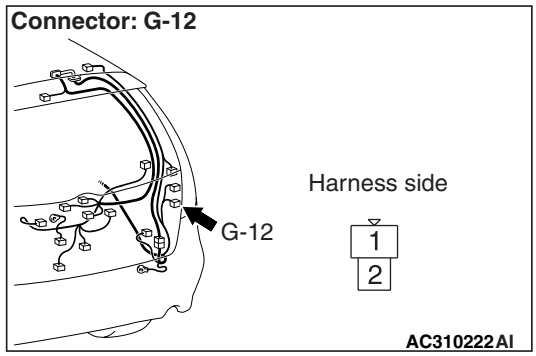
Check the input signals below, which is related to the luggage compartment lamp.

| System switch | Check condition |
|---|---|
| Interior lamp ON switch | When turned from OFF to ON |
| Interior lamp OFF switch | When turned from ON to OFF |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54C-553."

**Step 4. Connector check: G-12 luggage compartment lamp connector**




**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the defective connector.

**Step 5. Check the bulbs of the luggage compartment lamp.**

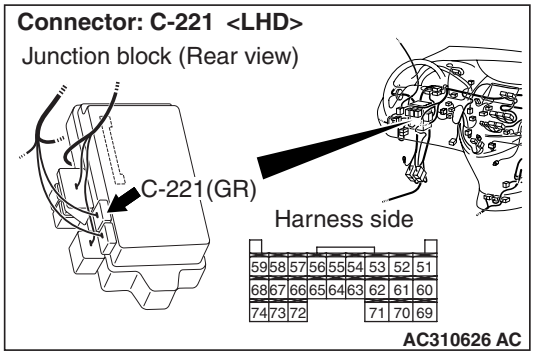
Check that the luggage compartment lamp bulbs are not burned out.

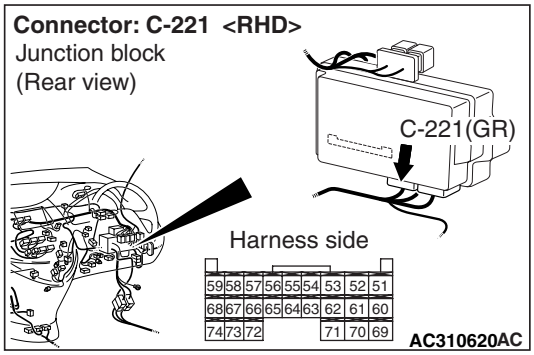
**Q: Is the check result normal?**

**YES :** Go to Step 6.

**NO :** Replace the luggage compartment lamp bulb.

**Step 6. Connector check: C-221 ETACS-ECU connector**



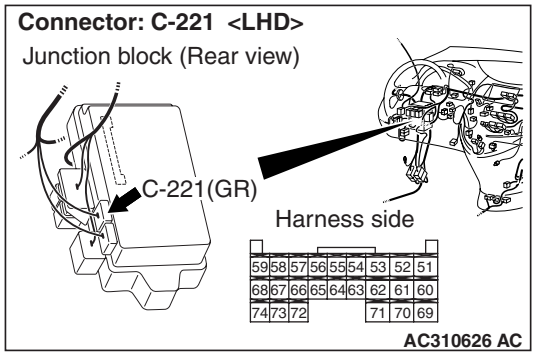



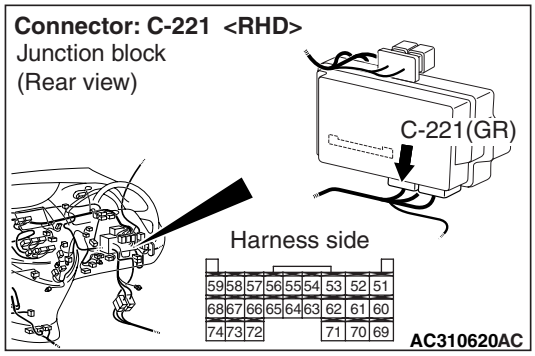

**Q: Is the check result normal?**

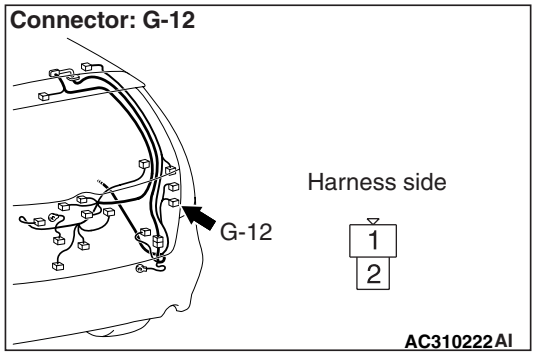
**YES :** Go to Step 7.

**NO :** Repair the defective connector.

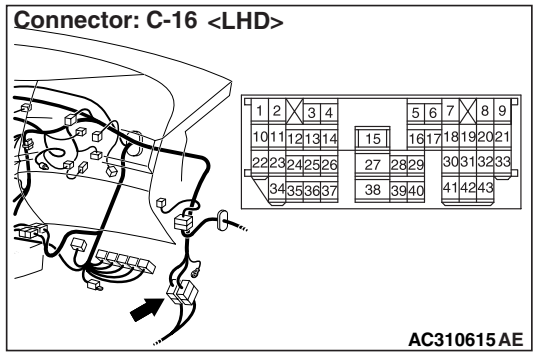
**Step 7. Check the wiring harness from C-221 ETACS-ECU connector terminal No.52 to G-12 luggage compartment lamp connector terminal No.2.**

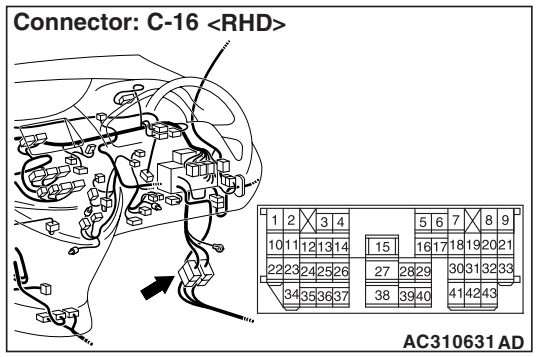


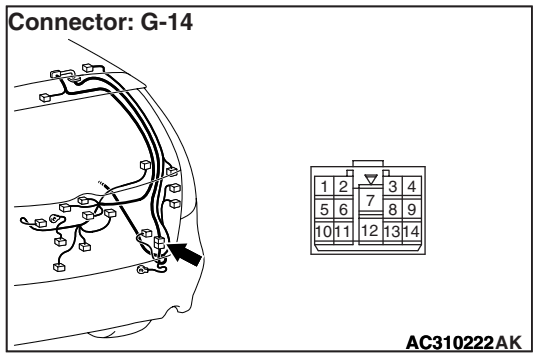




*NOTE:*



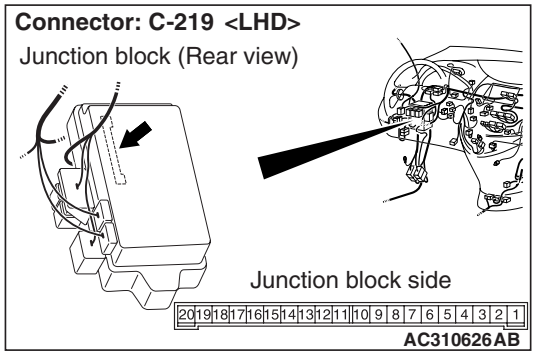



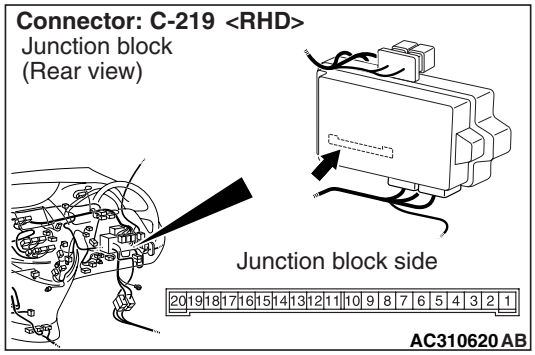

*Prior to the wiring harness inspection, check intermediate connector C-16, G-14, and repair if necessary.*

- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the wiring harness.

### Step 8. Connector check: C-219 ETACS-ECU connector

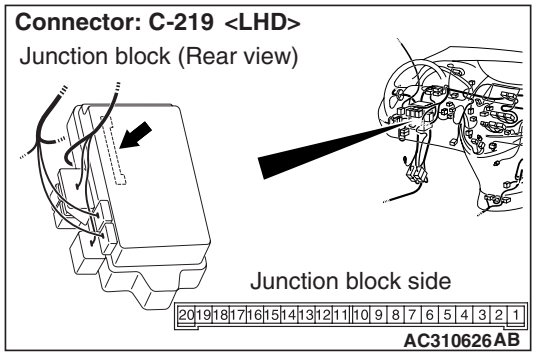


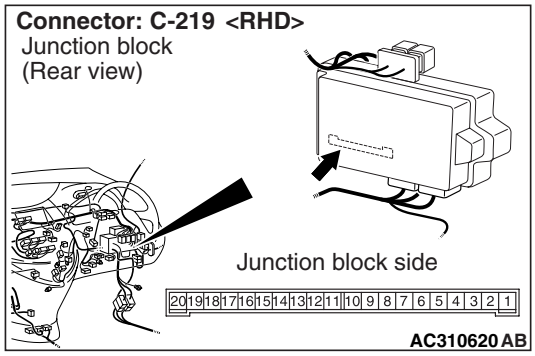



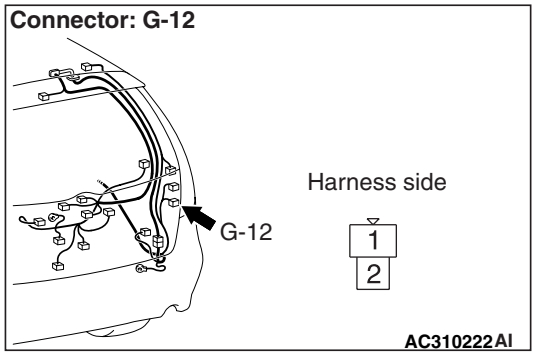

**Q: Is the check result normal?**

**YES :** Go to Step 9.
**NO :** Repair the defective connector.

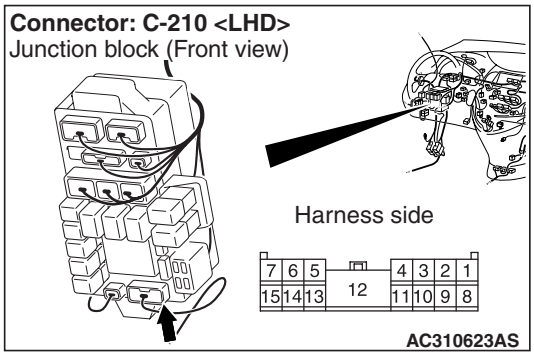
**Step 9. Check the wiring harness from C-219 ETACS-ECU connector terminal No.6 to G-12 luggage compartment lamp connector terminal No.1.**

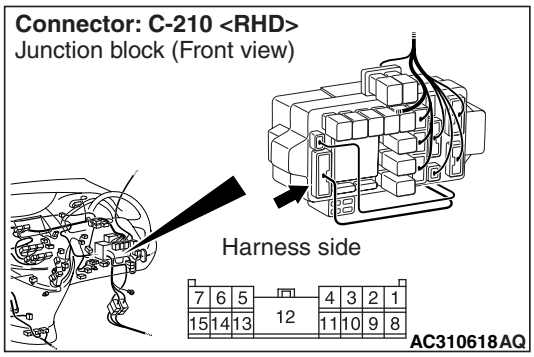


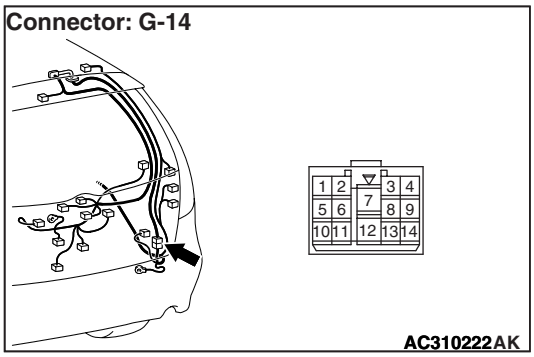




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector G-14, junction block connector C-210, and repair if necessary.*

- Check the power supply line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 10.
**NO :** Repair the wiring harness.

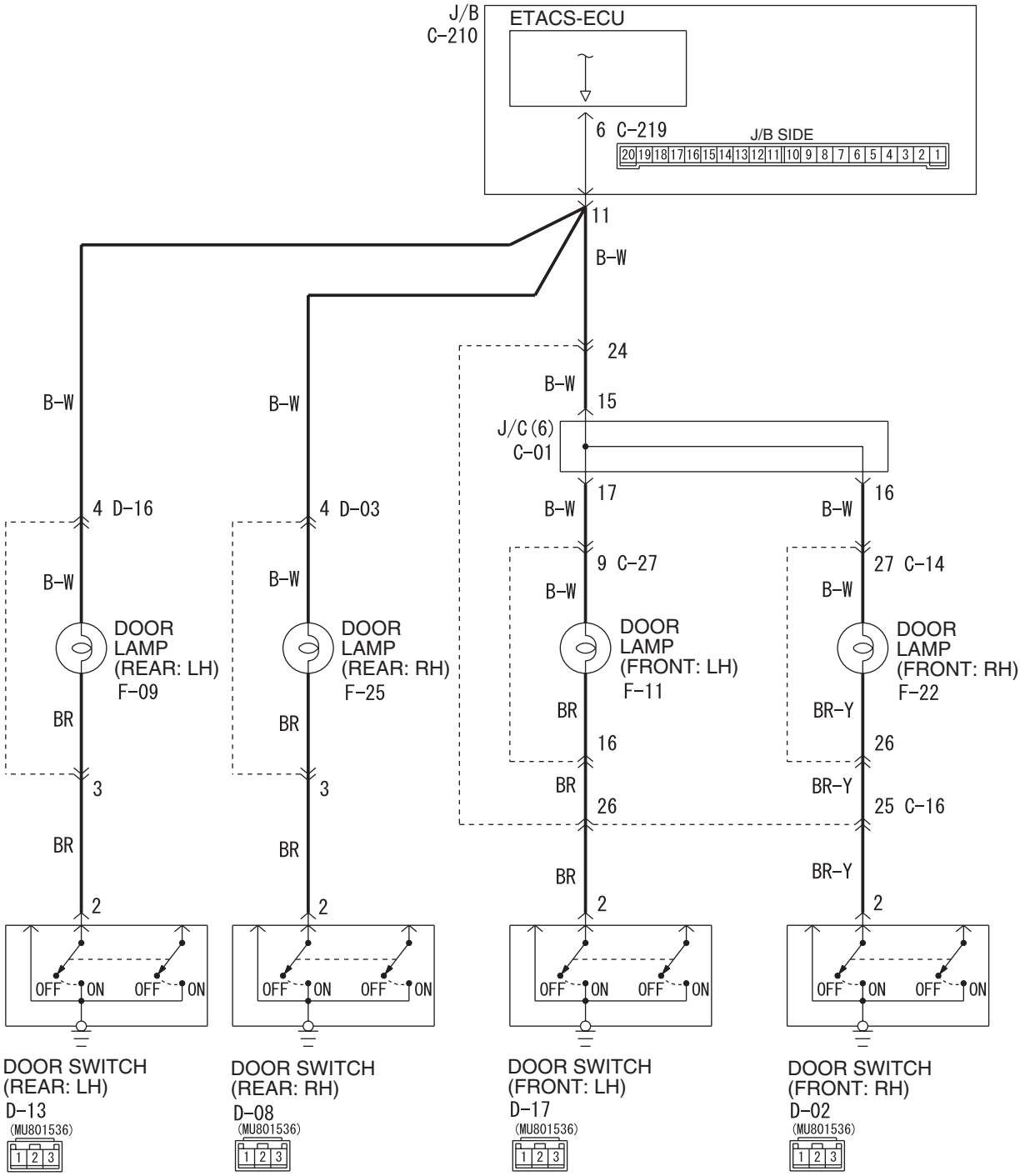
**Step 10. Retest the system.**
Check that the luggage compartment lamp illuminates and extinguishes normally.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the luggage compartment lamp.

## Inspection Procedure P-5: The door lamp does not illuminate normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

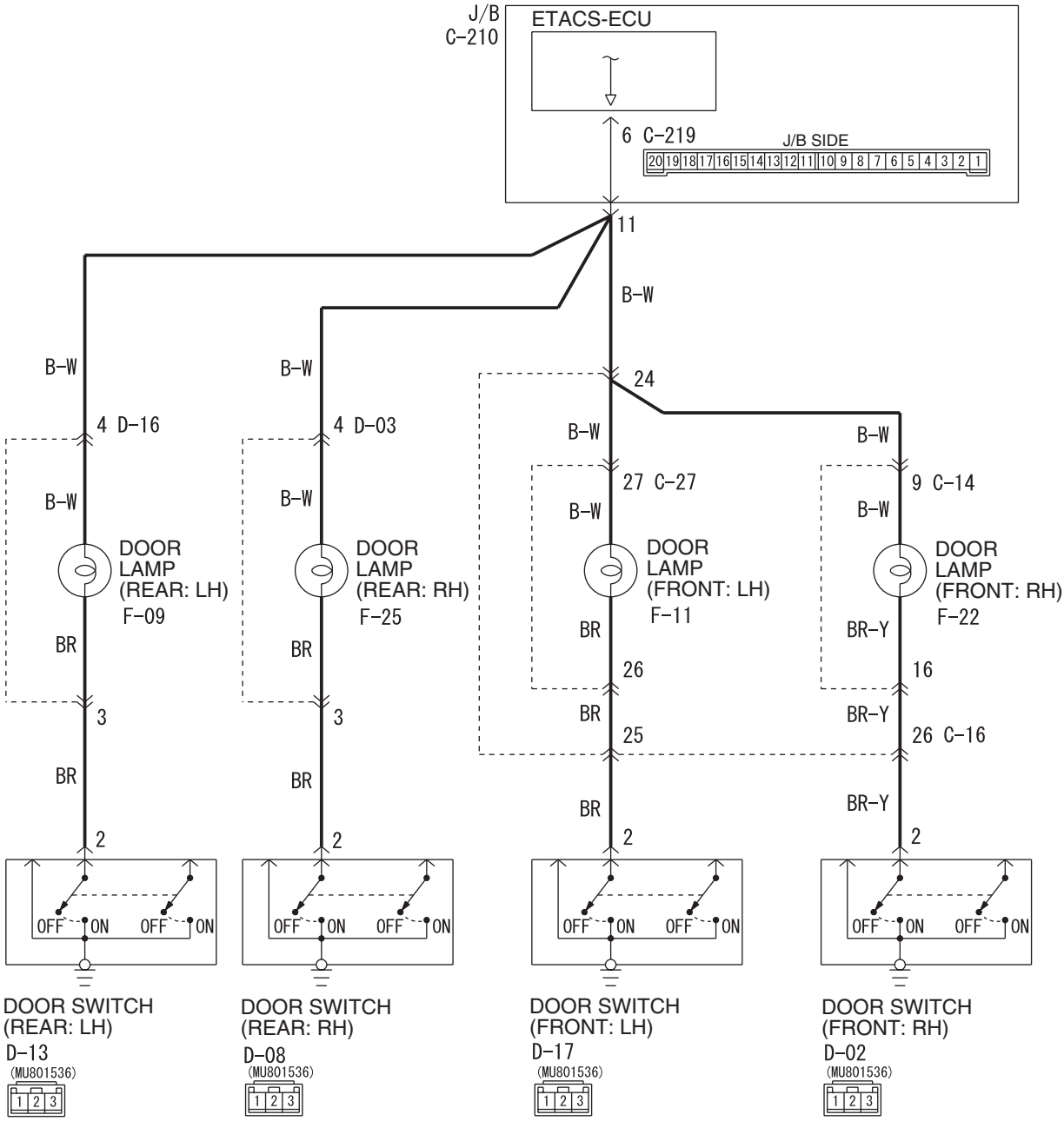
**Door Lamp Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E207A

**Door Lamp Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E172A

## COMMENTS ON TROUBLE SYMPTOM

The door lamps are energised through the ETACS-ECU. If a door is opened, the relevant door lamp will illuminate.
If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective.

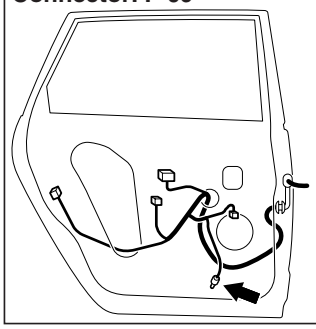
## POSSIBLE CAUSES

- Malfunction of the door lamp bulbs
- Malfunction of the door switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

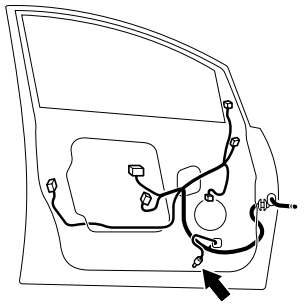
**Step 1. Connector check: F-11 door lamp (front: LH), F-22 door lamp (front: RH) connector, F-09 door lamp (rear: LH), F-25 door lamp (rear: RH)**

Connector: F-09



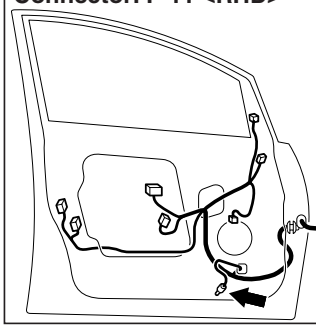
AC310209AE

Connector: F-11 <LHD>



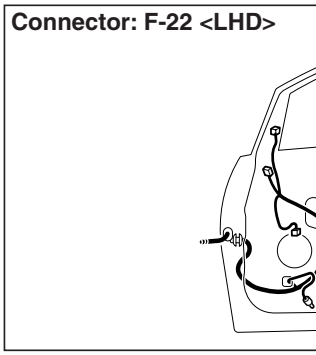
AC311150AE

Connector: F-11 <RHD>



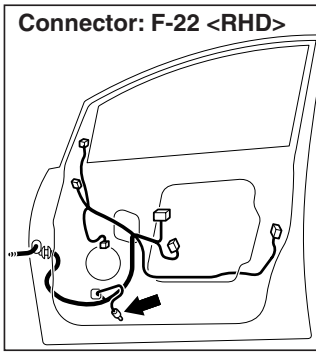
AC310211AG

Connector: F-22 <LHD>



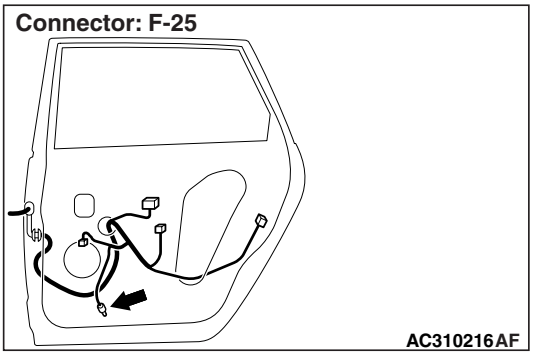
AC311147AG

Connector: F-22 <RHD>



AC310213AF

Connector: F-25



AC310216AF

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

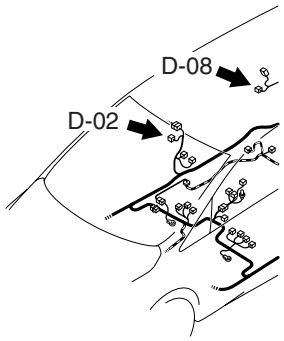
---

**Step 2. Check the bulbs of the door lamp.**
Check that the door lamp bulbs are not burned out.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the door lamp bulb.

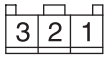
**Step 3. Connector check: D-17 door switch (front: LH), D-02 door switch (front: RH) connector, D-13 door switch (rear: LH) connector, D-08 door switch (rear: RH) connector**

**Connectors: D-02, D-08 <LHD>**



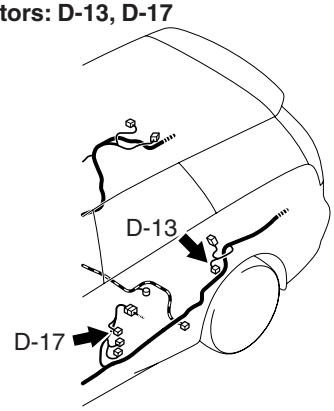

Harness side

D-02, D-08



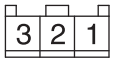

AC310634AB

**Connectors: D-13, D-17**



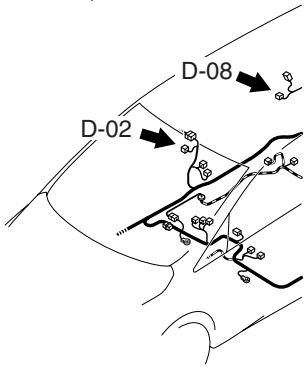

Harness side

D-13, D-17



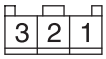

AC310208AC

**Connectors: D-02, D-08 <RHD>**




Harness side

D-02, D-08



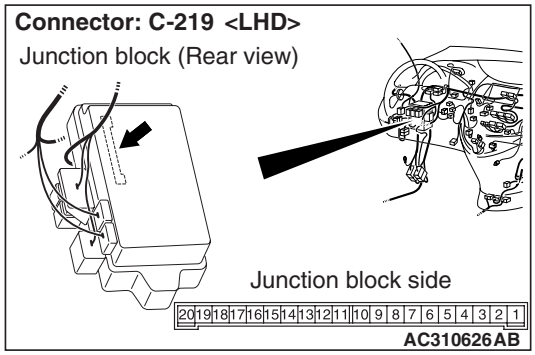

AC310206AB

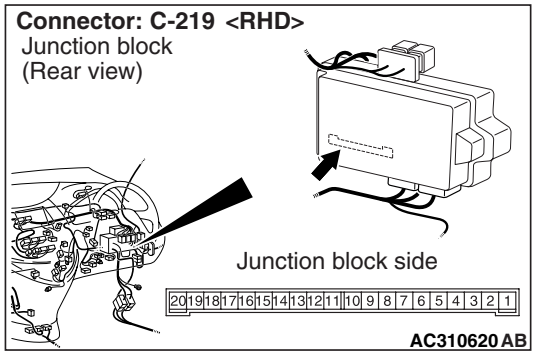
**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the defective connector.

**Step 4. Check the door switch.**
Check the door switch, which corresponds to the defective door lamp (Refer to GROUP 42 – Door P.42-38).

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Replace the door lamp bulb.

### Step 5. Connector check: C-219 ETACS-ECU connector



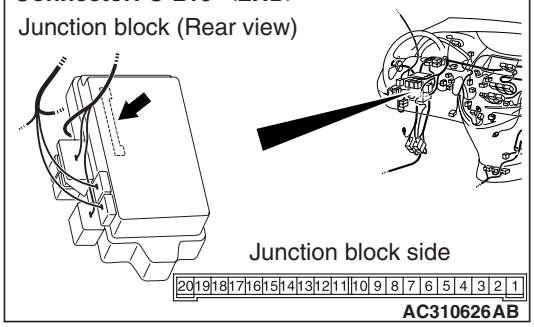

**Q: Is the check result normal?**

**YES :** Go to Step 6.
**NO :** Repair the defective connector.

**Step 6. Check the wiring harness from C-219 ETACS-ECU connector terminal No.6 to D-17 door switch (front: LH) or D-02 door switch (front: RH) connector, D-13 door switch (rear: LH) connector, D-08 door switch (rear: RH) connector terminal No.2.**

**Connector: C-219 <LHD>**

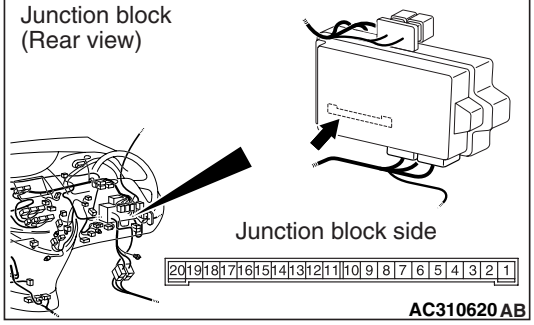
Junction block (Rear view)




AC310626AB

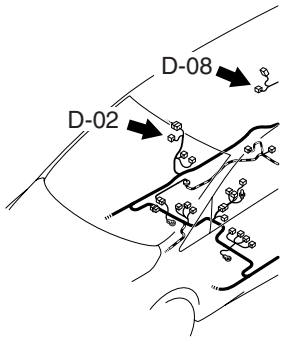
**Connector: C-219 <RHD>**

Junction block
(Rear view)



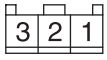

AC310620AB

**Connectors: D-02, D-08 <LHD>**



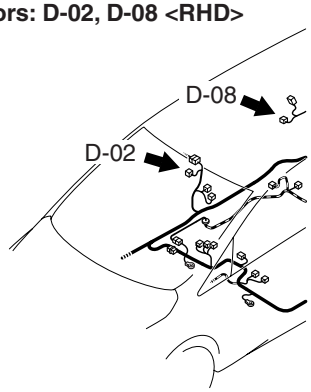

Harness side

D-02, D-08



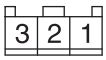

AC310634AB

**Connectors: D-02, D-08 <RHD>**



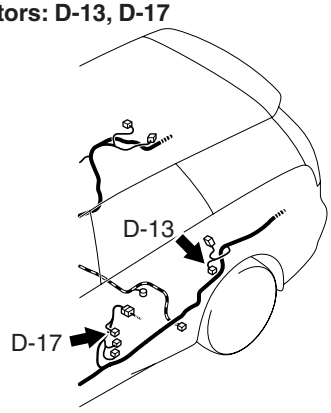

Harness side

D-02, D-08



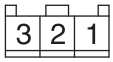

AC310206AB

**Connectors: D-13, D-17**




Harness side

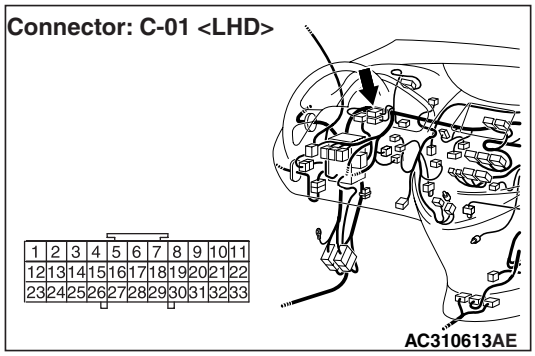
D-13, D-17



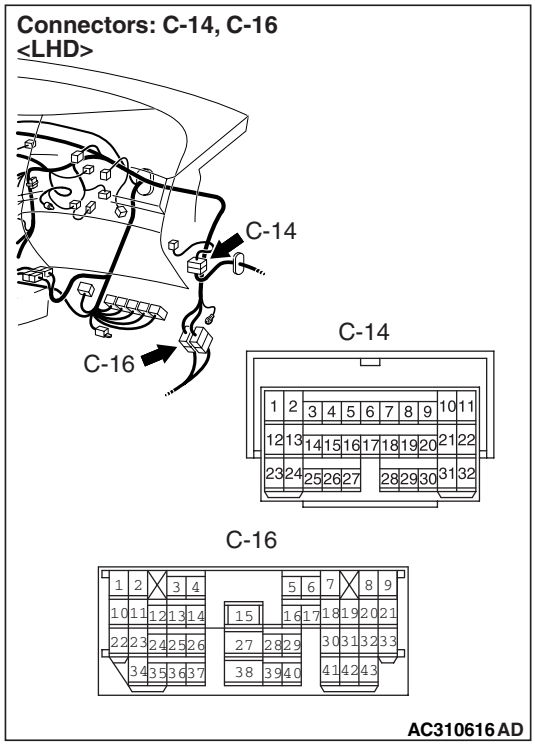

AC310208AC

*NOTE:*

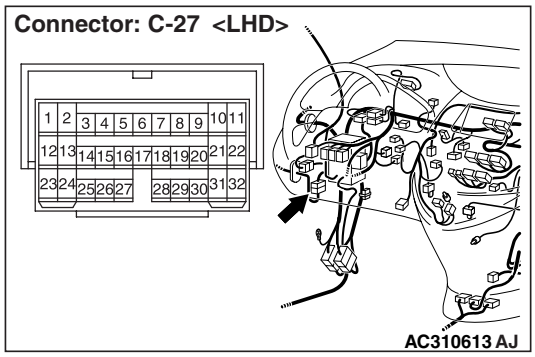
**Connector: C-01 <LHD>**



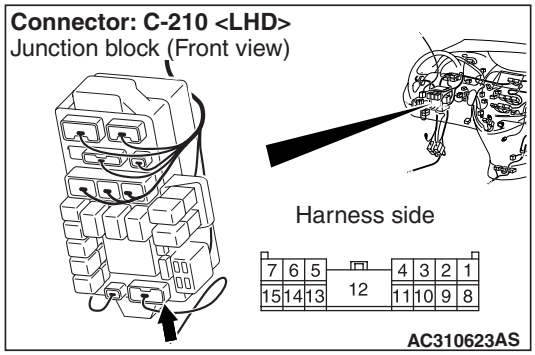

**Connectors: C-14, C-16 <LHD>**



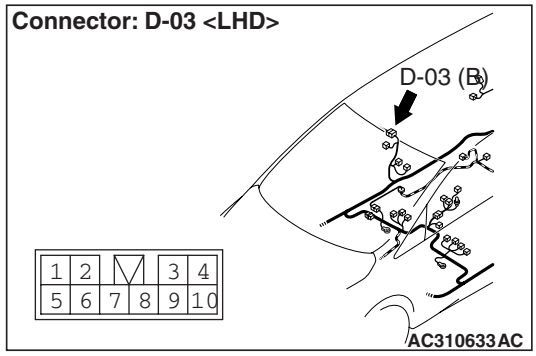

**Connector: C-27 <LHD>**



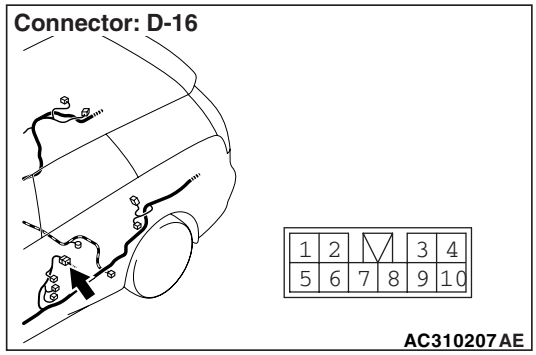

**Connector: C-210 <LHD>**
Junction block (Front view)




**Connector: D-03 <LHD>**

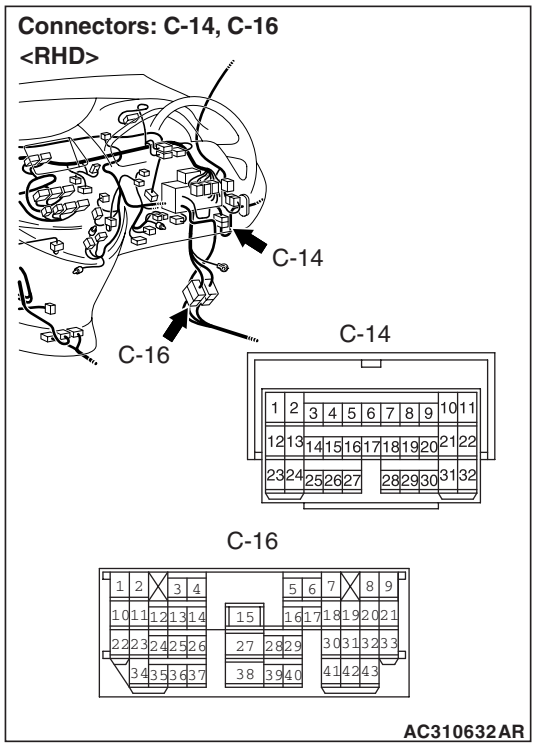


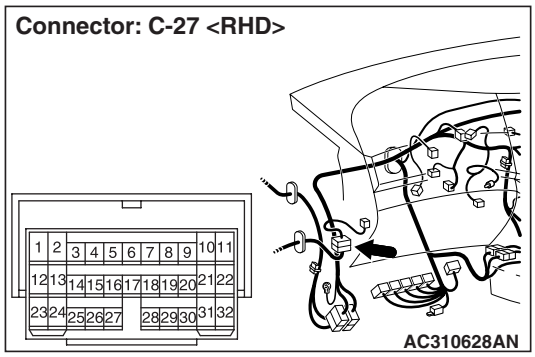

**Connector: D-16**

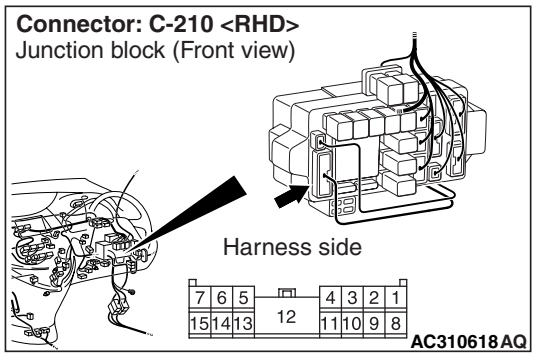


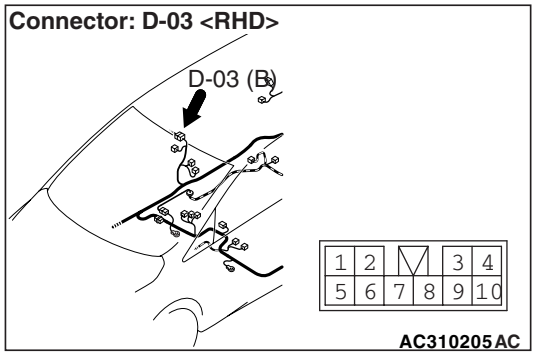

*<LH drive vehicles> Prior to the wiring harness inspection, check intermediate connector C-14 <door switch (front: RH)>, C-16 <door switch (front: RH) and door switch (front: LH)>, C-27 <door switch (front: LH)>, D-03 <door switch (rear: RH)>, D-16 <door switch (rear: LH)>, joint connector C-01 <door switch (front: RH) and door switch (front: LH)>, junction block connector C-210, and repair if necessary.*

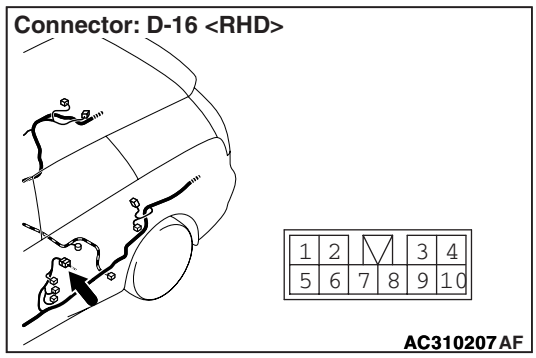
*NOTE:*




*<RH drive vehicles> Prior to the wiring harness inspection, check intermediate connector C-14 <door switch (front: RH)>, C-16 <door switch (front: RH) and door switch (front: LH)>, C-27 <door switch (front: LH)>, D-03 <door switch (rear: RH)>, D-16 <door switch (rear: LH)>, junction block connector C-210, and repair if necessary.*

**Q: Is the check result normal?**

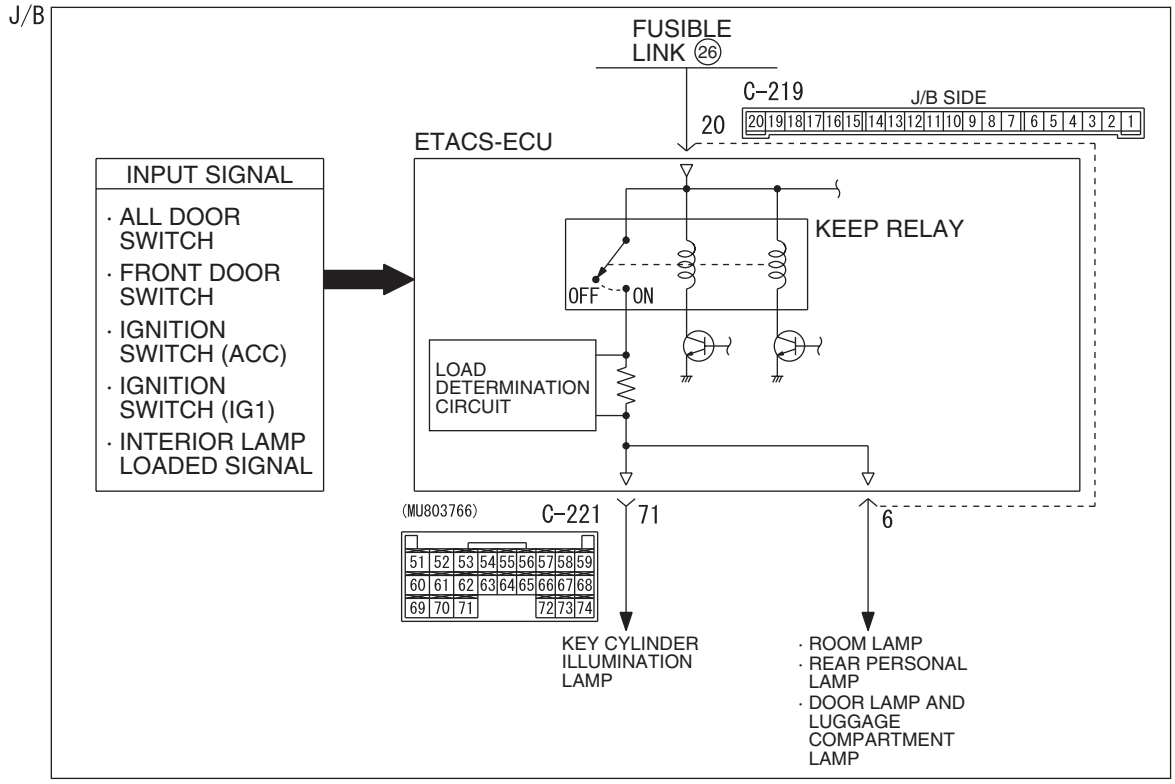
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Repair the wiring harness.

## Inspection Procedure P-6: Interior lamp automatic shutoff function does not work normally. <Vehicles with keyless entry system>

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Interior Lamp Automatic Shut-off Function Circuit**




W4X54E037A

## COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates the interior lamp automatic-shutdown function in accordance with the input signals below.

- Ignition switch (ACC)
- Ignition switch (IG1)
- Driver's door switch
- Tailgate switch
- All of the door switches
- Interior lamp loaded signal

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective. Note that this function can be disabled/enabled by the adjustment function (default setting; enabled).

## POSSIBLE CAUSES

- Malfunction of the door switches
- Malfunction of the tailgate switch
- Malfunction of the interior lamp
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the SWS monitor customized function.**

Check that the interior lamp automatic-shutdown function has been enabled by using the SWS monitor customize function.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Enable the interior lamp automatic-shutdown function by using the SWS monitor customize function (Refer to P.54C-574).

**Step 2. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.
- Ignition switch: OFF

**ECU TO BE CHECKED**
- ETACS

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Refer to Inspection Procedure A-3 "Communication with ETACS-ECU is impossible P.54C-63."

**Step 3. SWS monitor data list.**
Check the input signals below, which are related to the interior lamp automatic-shutdown function.

**<Selected item> ETACS ECU**
- Ignition switch: OFF
- Driver's door: open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 30 | IG SW(IG1) | OFF |
| Item 31 | IG SW(ACC) | OFF |
| Item 32 | DR DOOR SW | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**Normal conditions are displayed for all the items. :** Go to Step 4.
**Normal condition is not displayed for item No.30. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54C-460."
**Normal condition is not displayed for item No.31. :** Refer to inspection procedure Q-1 "The ignition switch (ACC) signal is not received P.54C-456."
**Normal condition is not displayed for item No.32. :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received P.54C-474 <LH drive vehicles> or P.54C-476 <RH drive vehicles."

**Step 4. ETACS switch data by using the SWS monitor**
Check the ETACS-ECU signal related to the interior lamp automatic shut-down function.
- Passenger's door: Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 05 | PASS DOOR SW | from OFF to ON |

- Tailgate: Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 07 | TRK LID LA SW | from OFF to ON |

- Rear door (RH): Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 41 | R.DOOR(RH) SW | from OFF to ON |

- Rear door (LH): Close → Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 42 | R.DOOR(LH) SW | from OFF to ON |

**OK: Normal conditions displayed for all the items.**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Refer to inspection procedure Q-14 "All the door switch signals are not received P.54C-505."

**Step 5. Pulse check**
Check the input signals below, which are related to the interior lamp automatic-shutdown function.

| System switch | Check condition |
|---|---|
| Interior lamp loaded signal | When a load is applied through multi-purpose fuse No.18 |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Refer to inspection procedure Q-24 "Interior lamp loaded signal is not detected P.54C-563."

**Step 6. Retest the system.**
Check that the interior lamp automatic-shutdown function works normally.

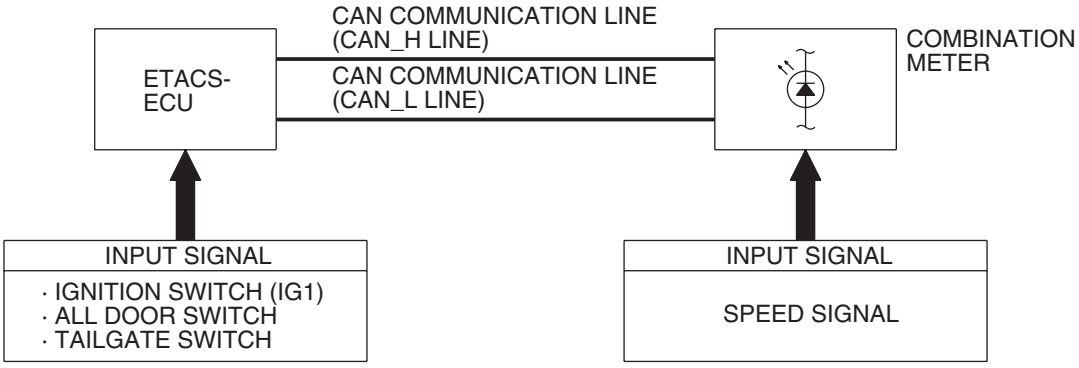
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure P-7: The door-ajar warning lamp does not illuminate/extinguish normally.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

**Door-Ajar Warning Lamp Function**




W4X54E219A

### COMMENTS ON TROUBLE SYMPTOM
If the door-ajar warning lamp does not work normally, the input signal circuit or the ETACS-ECU may be defective.

### POSSIBLE CAUSES
- The combination meter may be defective
- The CAN bus line is defective.
- The ETACS-ECU may be defective
- Damaged harness wires and connectors

### DIAGNOSIS PROCEDURE

**Step 1. Check the door lamp.**
When the door is opened or closed, check that the door lamp illuminate/go off normally.

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure P-5 "The door lamp does not illuminate normally P.54C-438."

**Step 2. MUT-III CAN bus diagnostics.**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the CAN bus line (Refer to GROUP 54D, Diagnosis P.54D-16).

**Step 3. Check for combination meter diagnosis code.**
Check whether the combination meter-related diagnosis code is set.

**Q: Is the diagnosis code set?**
**YES :** Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-35).
**NO :** Go to Step 4.

**Step 4. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.
- Ignition switch: OFF

**ECUS TO BE CHECKED**
- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Refer to Inspection Procedure A-3 "Communication with ETACS-ECU is not possible P.54C-63."

**Step 5. SWS monitor data list**

**<Selected item> ETACS ECU**
- Driver's door is open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | DR DOOR SW | ON |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received <LH drive vehicles>P.54C-474 or <RH drive vehicles>P.54C-476."

**Step 6. ETACS switch data by using the SWS monitor**
Check the SWS communication signal, which is related to the door-ajar warning lamp.
- Passenger's door: Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 05 | PASS DOOR SW | ON |

- Tailgate: Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 07 | TRK LID LA SW | ON |

- Rear door (RH): Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 41 | R.DOOR(RH) SW | ON |

- Rear door (LH): Open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 42 | R.DOOR(LH) SW | ON |

**OK: Normal conditions displayed for all the items.**

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Refer to inspection procedure Q-14 "All the door switch signals are not received P.54C-505."

**Step 7. ETACS ANALOG data by using the SWS monitor.**
Check the ETACS-ECU signal related to the door-ajar warning lamp.
- Set the simulated vehicle speed at approximately 10km/h.

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | SPEED SENSOR | 8 – 10 km/h |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Refer to inspection procedure Q-25 "The vehicle speed signal is not received P.54C-568."

**Step 8. MUT-III actuator test**

Perform the actuator test for the combination meter, and check that the door-ajar warning lamp illuminate (Refer to GROUP 54A – Combination Meter P.54A-78).

**Q: Is the check result normal?**

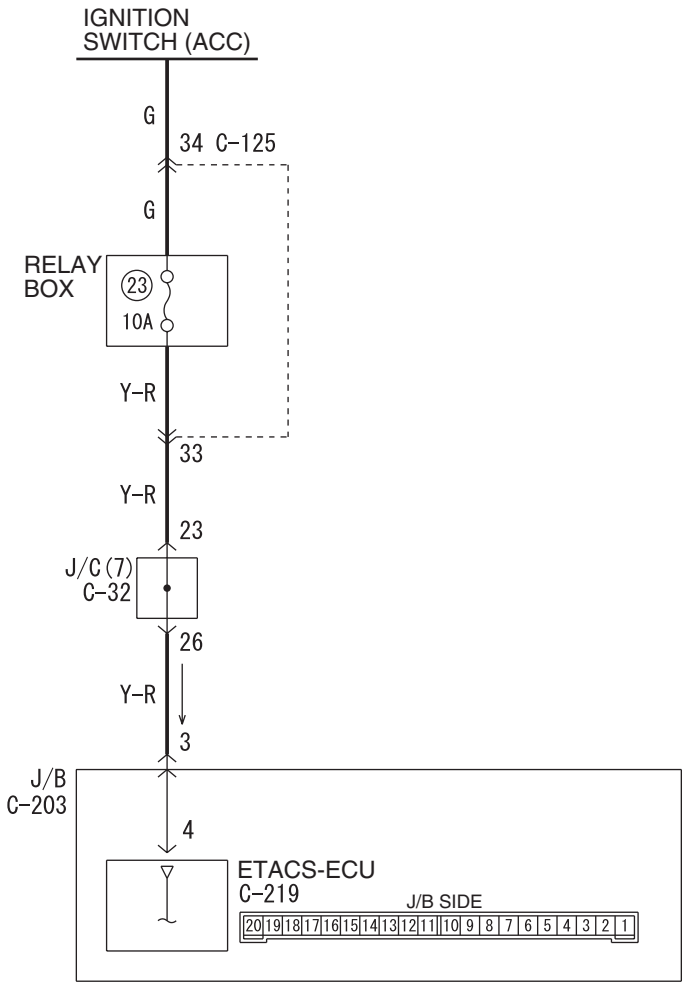
**YES :** Replace the ETACS-ECU.
**NO :** Replace the combination meter.

# INPUT SIGNAL PROCEDURES

## Inspection Procedure Q-1: The ignition switch (ACC) signal is not received.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

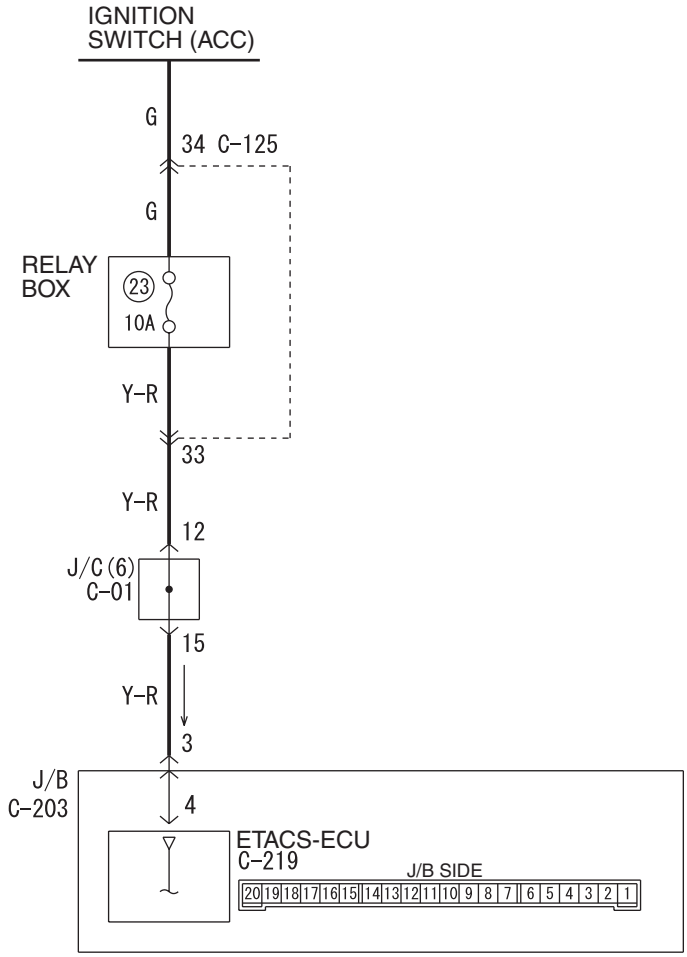
**Ignition Switch (ACC) Input Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E108A

**Ignition Switch (ACC) Input Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E109A

## COMMENTS ON TROUBLE SYMPTOM

Input signal from the ignition switch (ACC) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

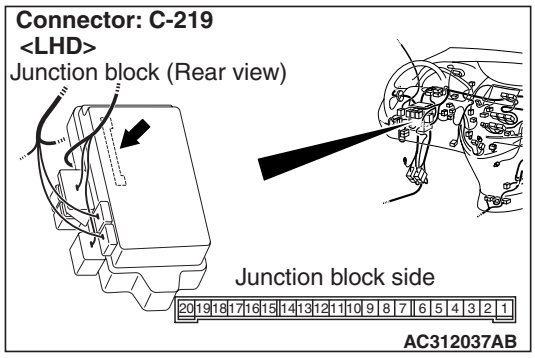
- Sunroof
- Windshield wiper and washer
- Rear wiper and washer
- Headlamp washer
- Electric retractable remote controlled door mirror
- Interior lamp automatic-shutdown

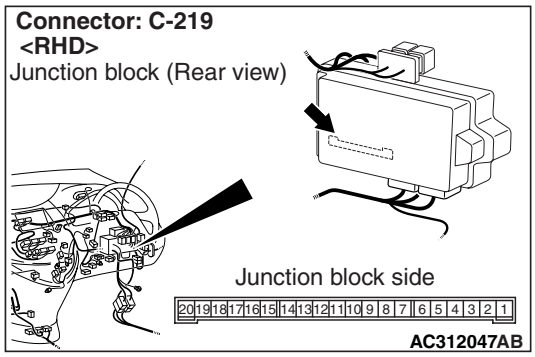
## POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

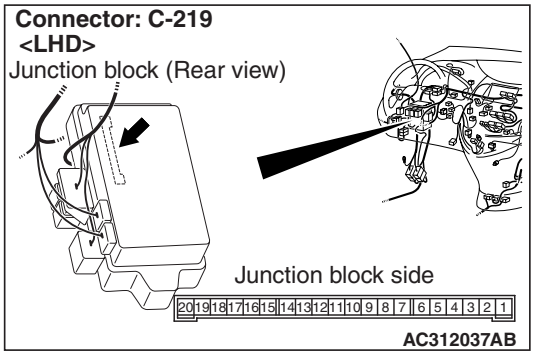
### Step 1. Connector check: C-219 ETACS-ECU connector

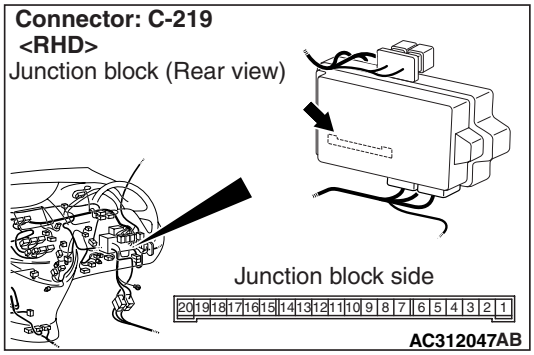


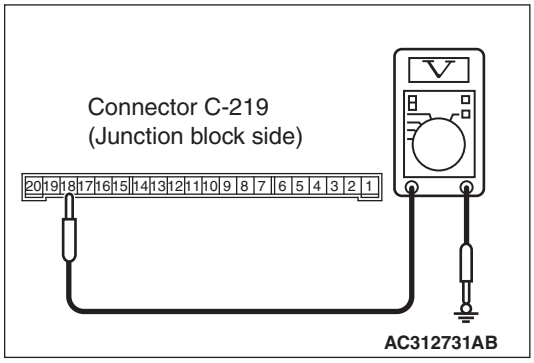

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

### Step 2. Voltage measurement at the C-219 ETACS-ECU connector.



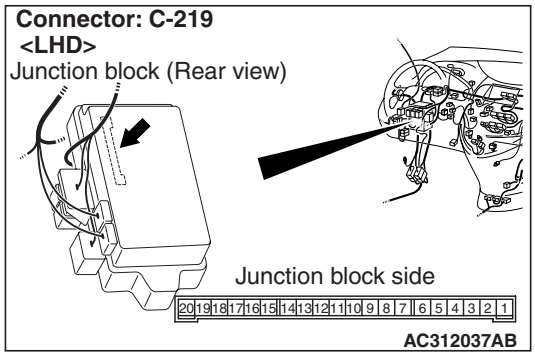

(1) Remove the ETACS-ECU, and measure at the junction block side.
(2) Ignition switch: ACC position

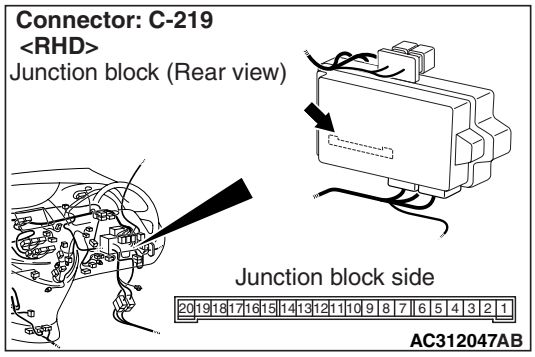



(3) Voltage between C-219 ETACS-ECU connector terminal No.18 and body earth
**OK: System voltage**

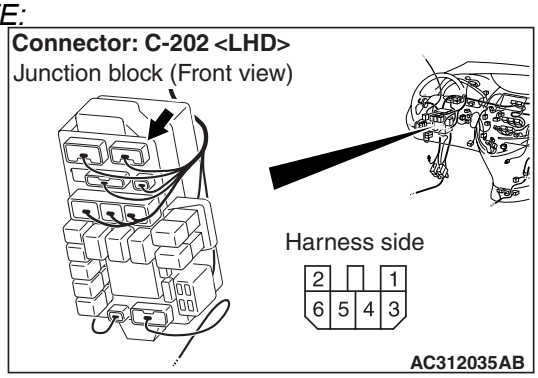
**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Go to Step 3.

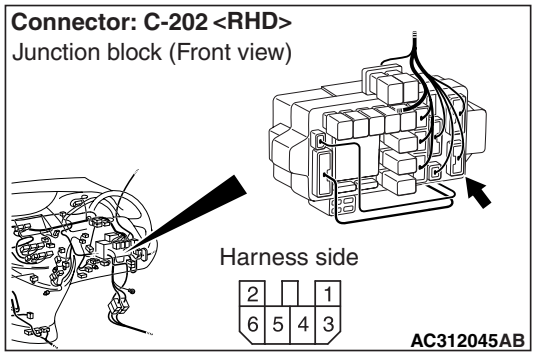
**Step 3. Check the wiring harness between C-219 ETACS-ECU connector terminal No.18 and the ignition switch (ACC).**




*NOTE:*




*Prior to the wiring harness inspection, check junction block connector C-202, and repair if necessary.*

- Check the power supply line for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 4. SWS monitor data list.**

**<Selected item> ETACS ECU**

- Ignition switch: OFF (LOCK) → ACC

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 31 | IG SW(ACC) | OFF → ON |

**OK: Normal condition is displayed.**

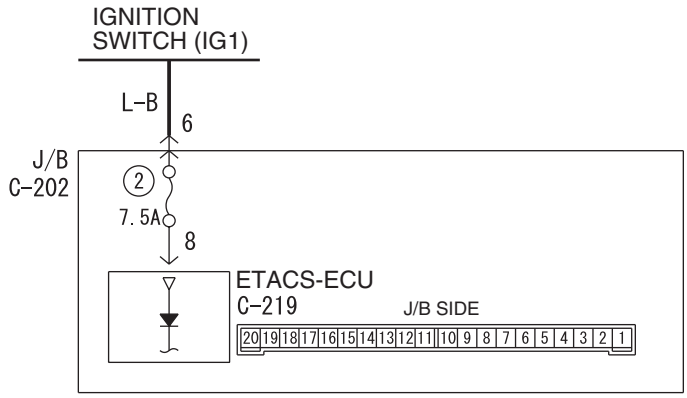
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-2: The ignition switch (IG1) signal is not received.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Ignition Switch (IG1) Input Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E110A

## COMMENTS ON TROUBLE SYMPTOM

Input signal from the ignition switch (IG1) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

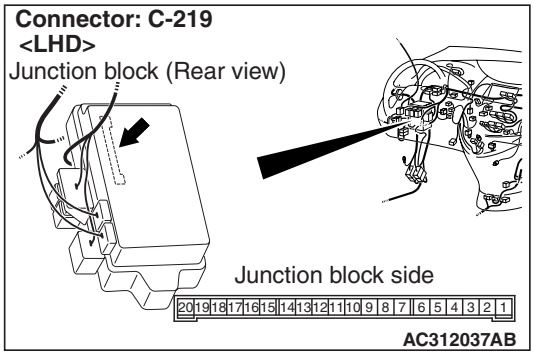
- Lamp reminder function
- Door-ajar warning buzzer
- Turn-signal lamp operation sound
- Power window
- Ignition key cylinder illumination lamp
- Seat belt indicator lamp
- Headlamp and tail lamp
- Headlamp automatic-shutdown function
- Rear fog lamp
- Turn signal lamp
- Interior lamps

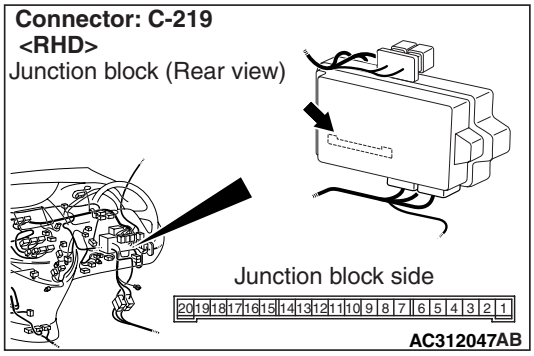
## POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

### Step 1. Connector check: C-219 ETACS-ECU connector

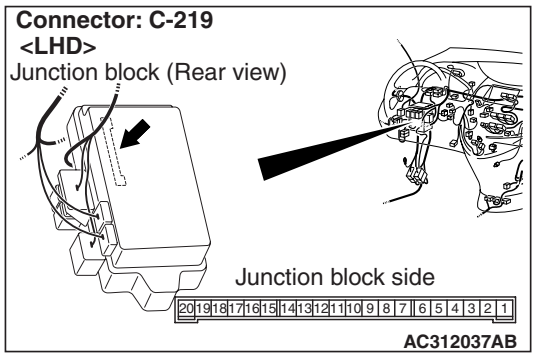


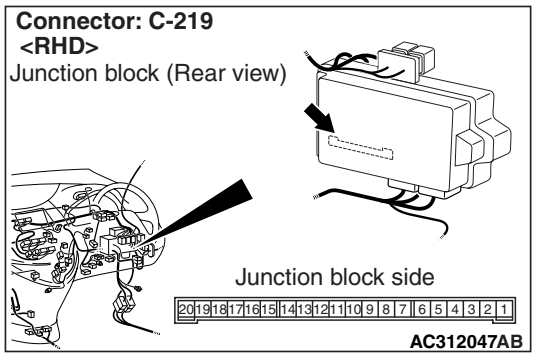




**Q: Is the check result normal?**

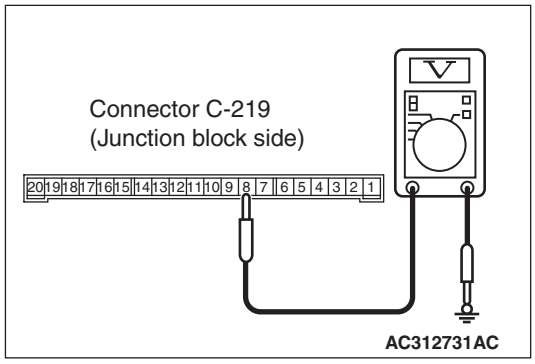
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

### Step 2. Voltage measurement at the C-219 ETACS-ECU connector.




(1) Remove the ETACS-ECU, and measure at the junction block side.
(2) Ignition switch: ON position

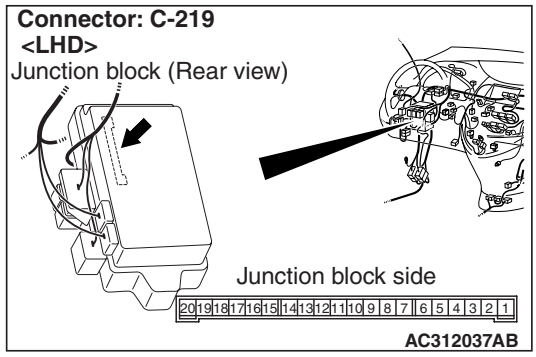


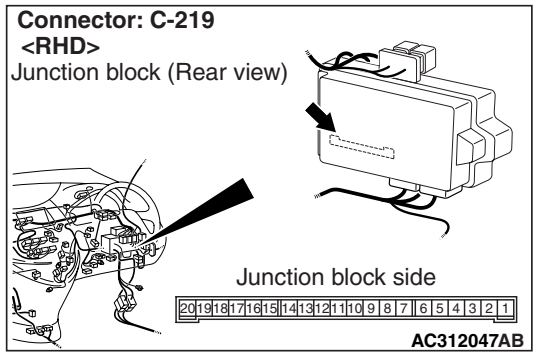

(3) Voltage between C-219 ETACS-ECU connector terminal No.8 and body earth

**OK: System voltage**

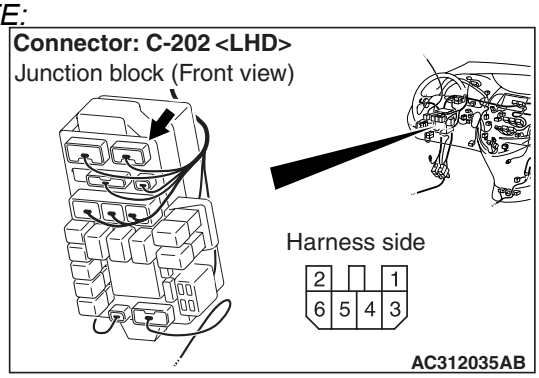
**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Go to Step 3.

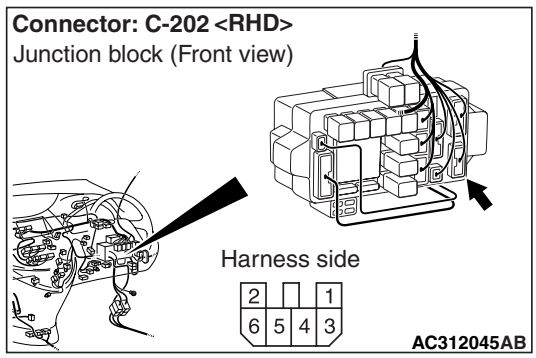
### Step 3. Check the wiring harness between C-219 ETACS-ECU connector terminal No.8 and the ignition switch (IG1).




*NOTE:*




*Prior to the wiring harness inspection, check junction block connector C-202, and repair if necessary.*

- Check the power supply line for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 4. SWS monitor data list.**

**<Selected item> ETACS ECU**

- Ignition switch: ACC → ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 30 | IG SW(IG1) | OFF → ON |

**OK: Normal condition is displayed.**

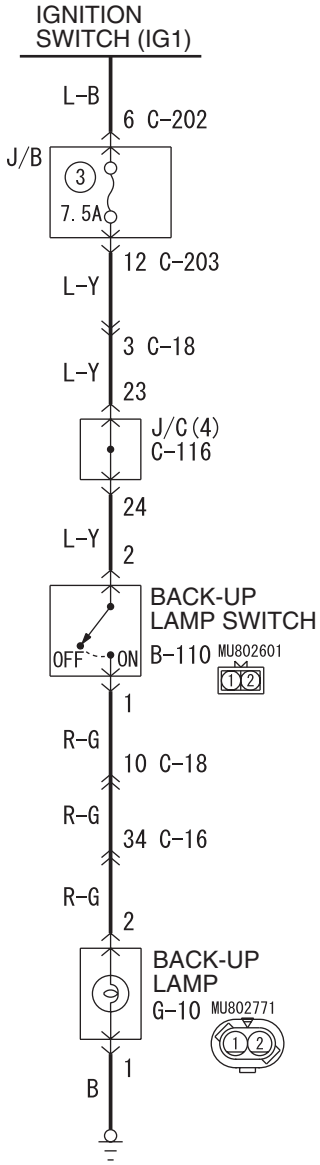
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-3: The back-up lamp switch signal is not received. <M/T>

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

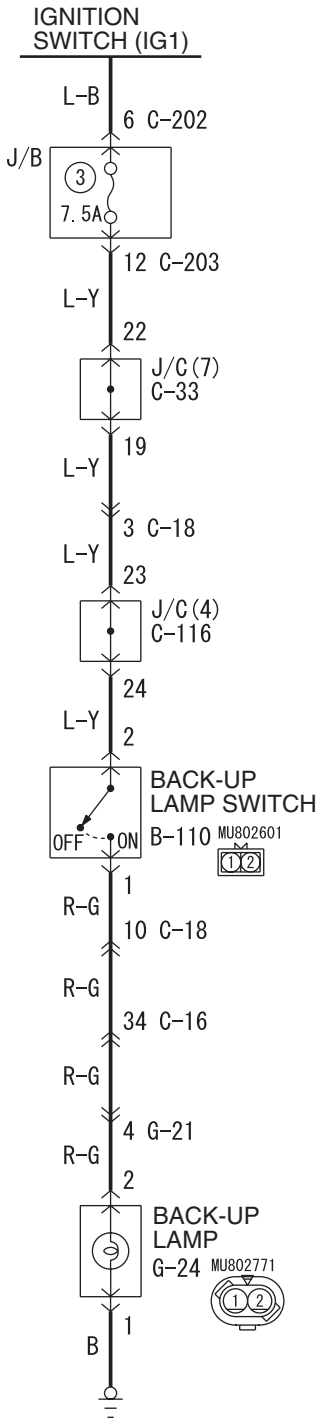
**Back-up Lamp Switch Input Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E111A

**Back-up Lamp Switch Input Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E112A

## COMMENTS ON TROUBLE SYMPTOM

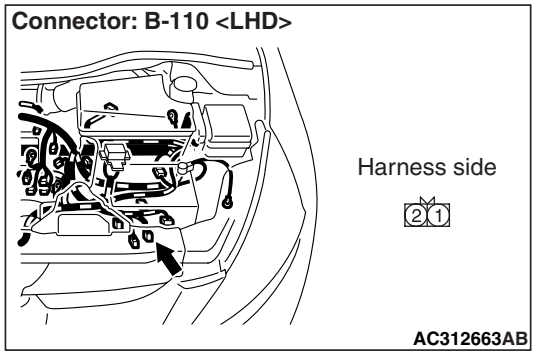
Input signal from the back-up lamp switch is used to operate the rear wiper. If the signal is abnormal, the rear wiper will not work normally.

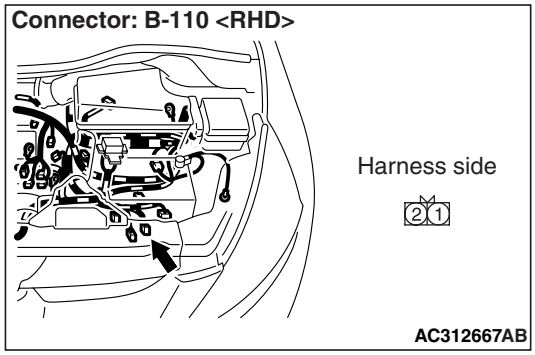
## POSSIBLE CAUSES

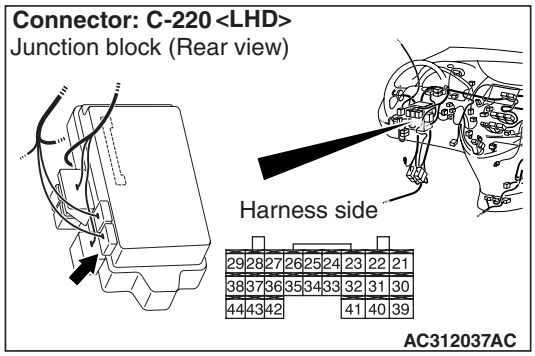
- Malfunction of the back-up lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

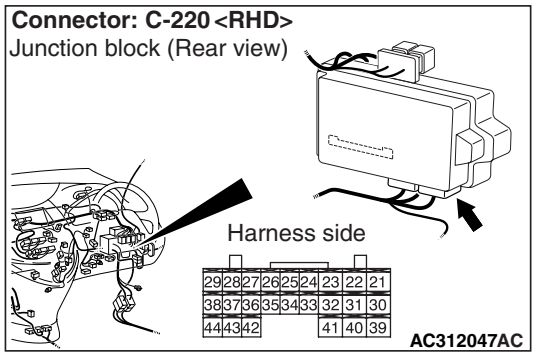
## DIAGNOSIS PROCEDURE

**Step 1. Connector check: B-110 back-up lamp switch connector and C-220 ETACS-ECU connector**



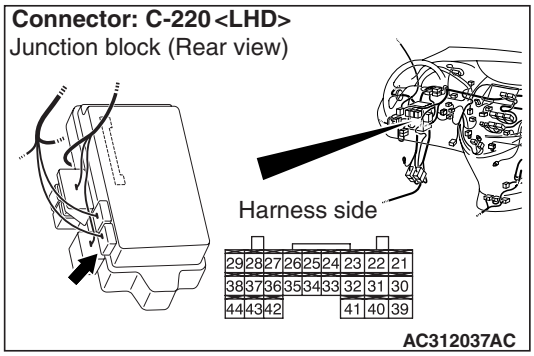



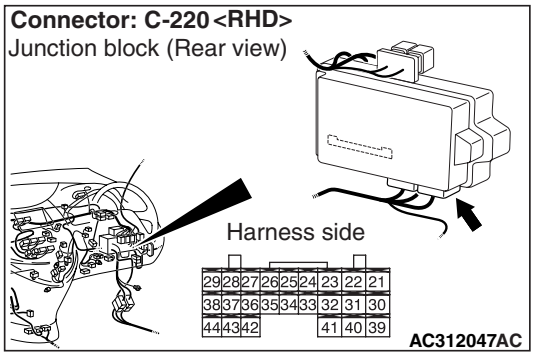

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

**Step 2. Check the back-up lamp switch**
Check the back-up lamp switch (Refer to GROUP 22B – Transmission P.22B-17).

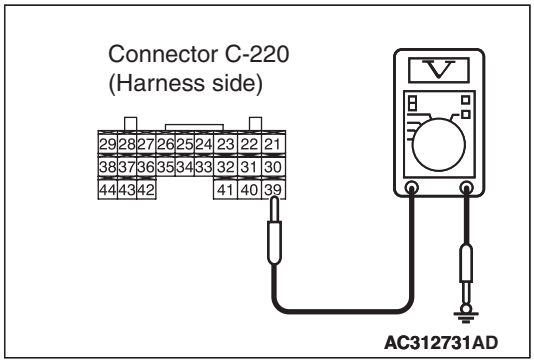
**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the inhibitor switch.

**Step 3. Voltage measurement at the C-220 ETACS-ECU connector.**




(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: ON
(3) Shift position: R position

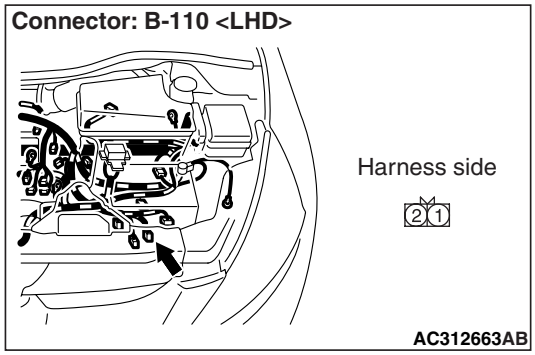


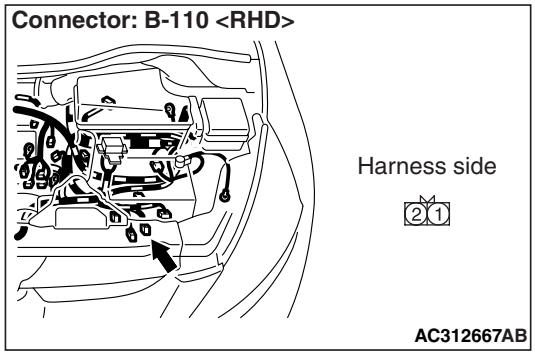

(4) Voltage between C-220 ETACS-ECU connector terminal No.39 and body earth

**OK: System voltage**

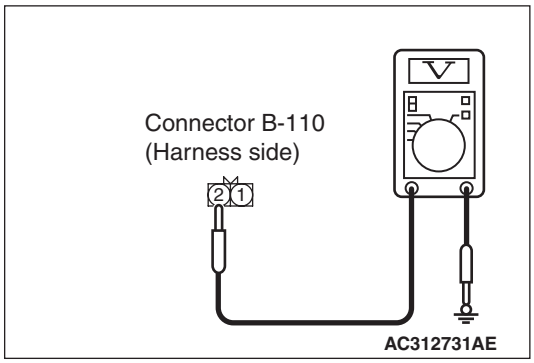
**Q: Is the check result normal?**
**YES :** Replace the ETACS-ECU.
**NO :** Go to Step 4.

**Step 4. Voltage measurement at the B-110 back-up lamp switch connector.**



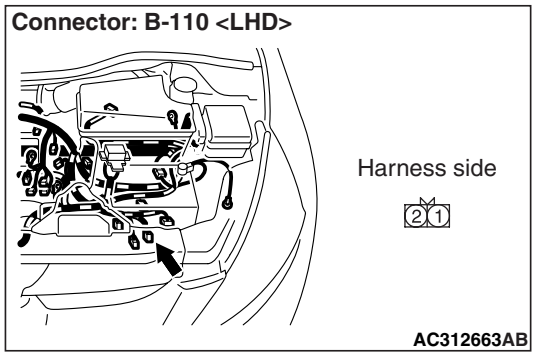

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: ON

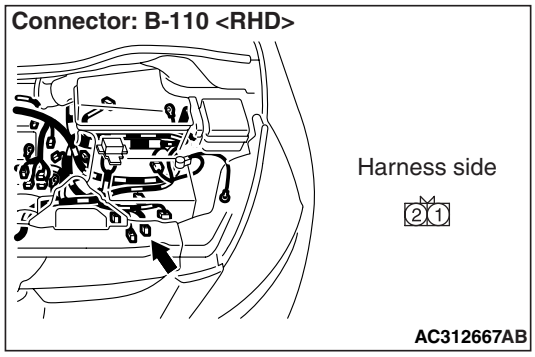


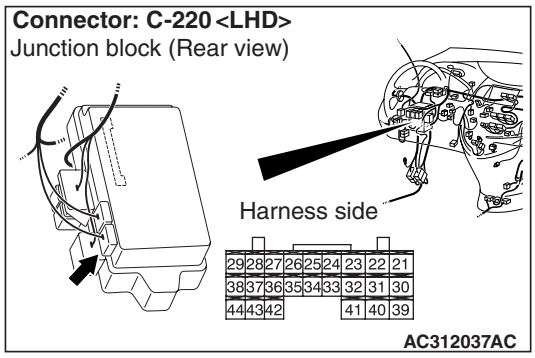

(3) Voltage between B-110 back-up lamp switch connector terminal No.2 and body earth
**OK: System voltage**

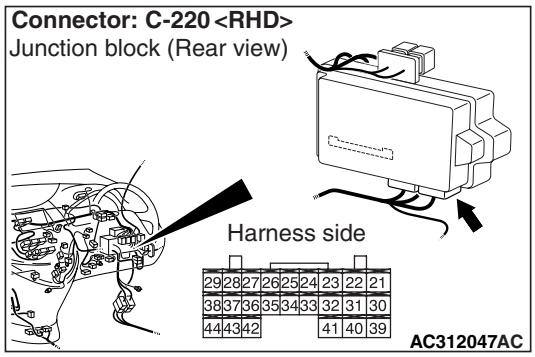
**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 6.

**Step 5. Check the wiring harness between B-110 back-up lamp switch connector terminal No.1 and C-220 ETACS-ECU connector terminal No.39.**

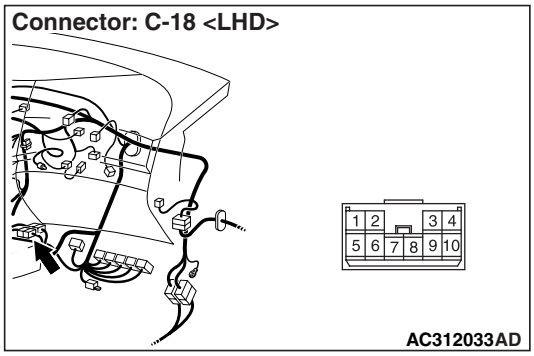


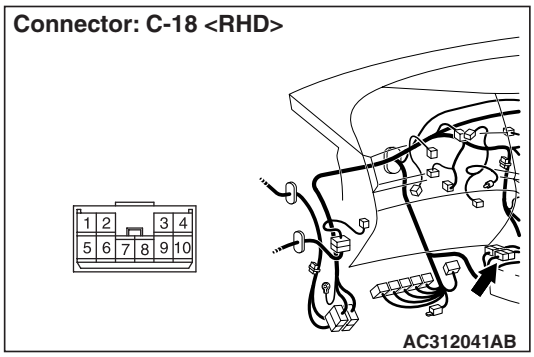




*NOTE:*



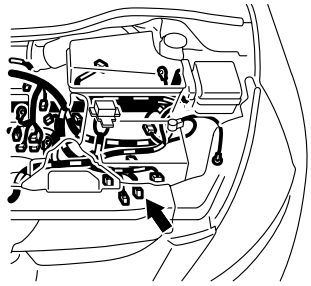

*Prior to the wiring harness inspection, check intermediate connector C-18, and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

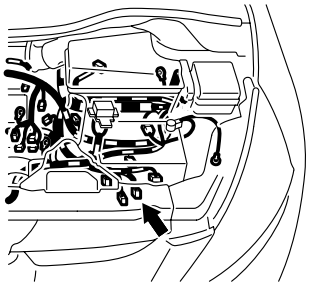
**Step 6. Check the wiring harness between B-110 back-up lamp switch connector terminal No.2 and the ignition switch (IG1).**

**Connector: B-110 <LHD>**




AC312663AB

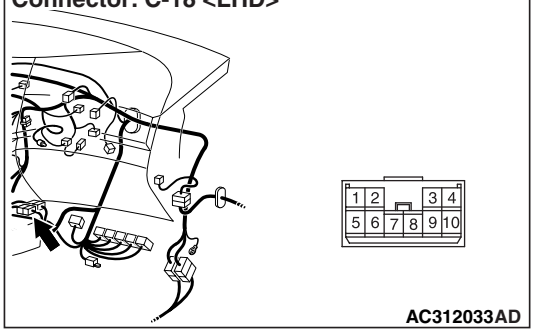
**Connector: B-110 <RHD>**




AC312667AB

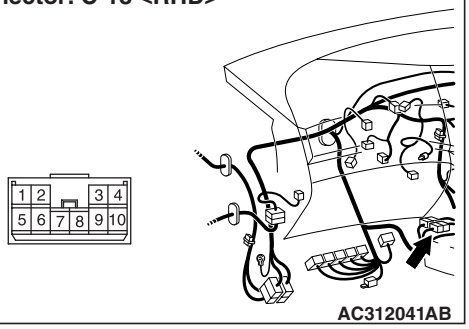
*NOTE:*

**Connector: C-18 <LHD>**



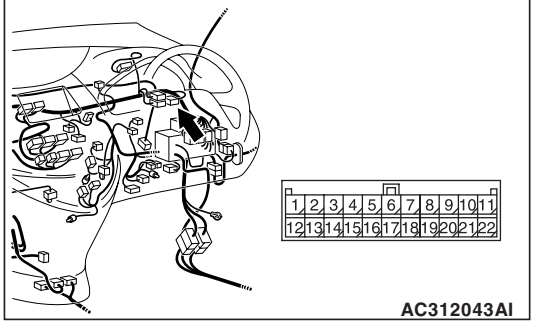

AC312033AD

**Connector: C-18 <RHD>**



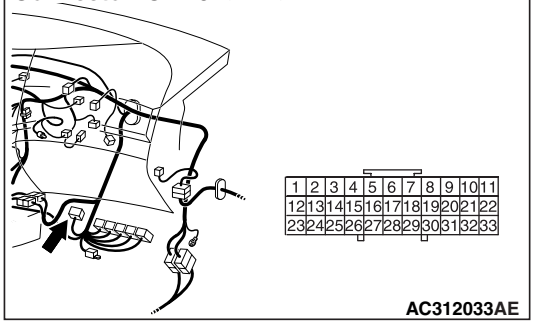

AC312041AB

**Connector: C-33 <RHD>**



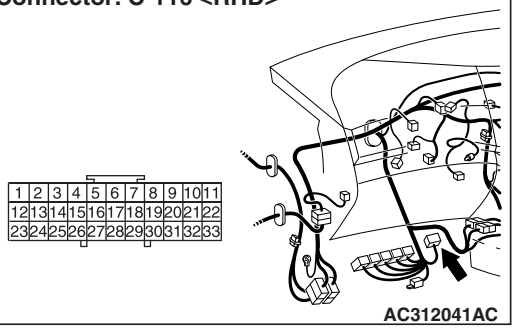

AC312043AI

**Connector: C-116 <LHD>**




AC312033AE

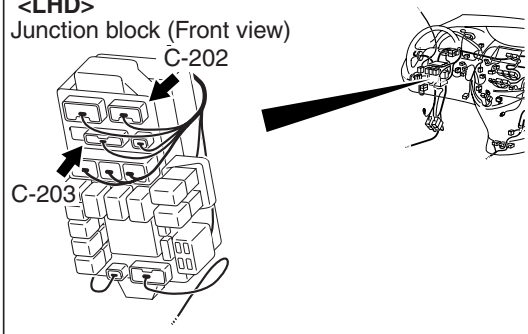
**Connector: C-116 <RHD>**




AC312041AC

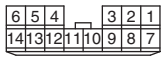
**Connectors: C-202, C-203 <LHD>**

Junction block (Front view)




Harness side
C-202

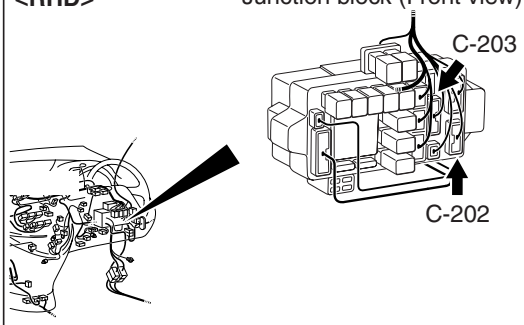
Harness side
C-203




AC312036AB

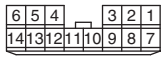
**Connectors: C-202, C-203 <RHD>**

Junction block (Front view)




Harness side
C-202

Harness side
C-203




AC312046AB

*Prior to the wiring harness inspection, check joint connector C-116 and C-33 <RH drive vehicles>, intermediate connector C-18, junction block connectors C-202 and C-203, and repair if necessary.*

- Check the power supply line to the ignition switch (IG1) for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 7. SWS monitor data list.**

**<Selected item> ETACS ECU**

- Ignition switch: ON
- Shift lever: N position → R position

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 41 | INHIBITOR SW | ON |

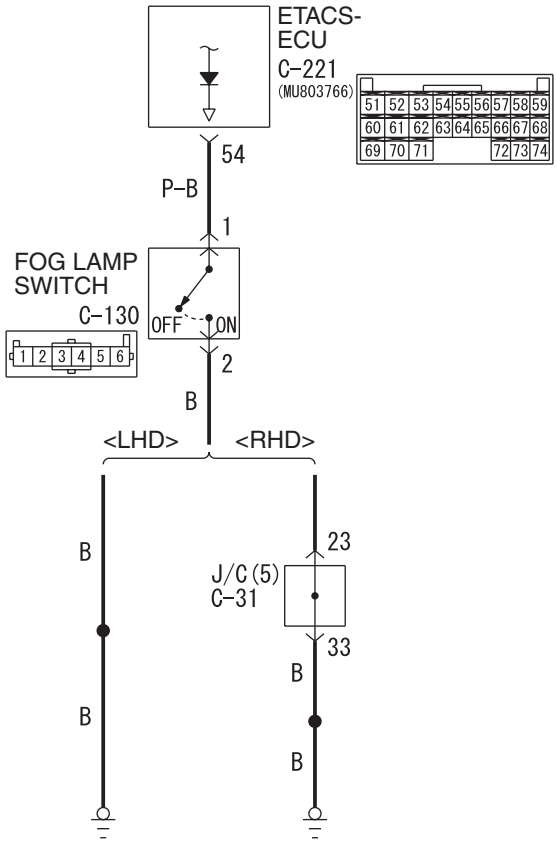
**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-4: The front fog lamp switch signal is not received.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Front Fog Lamp Switch Input Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E141A

## COMMENTS ON TROUBLE SYMPTOM

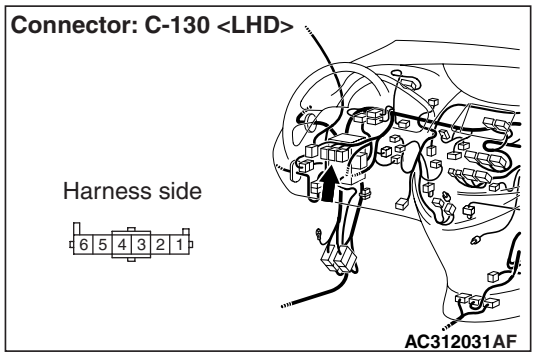
Input signal from the front fog lamp switch is used to operate the front fog lamps. If the signal is abnormal, the front fog lamps will not illuminate and extinguish normally.

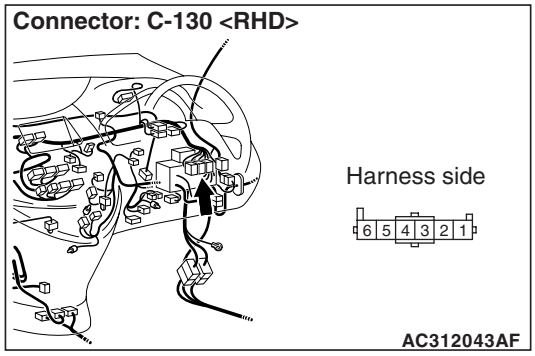
## POSSIBLE CAUSES

- Malfunction of the front fog lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Connector check: C-130 fog lamp switch connector**



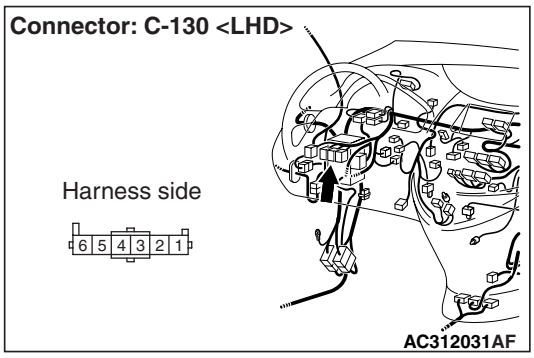



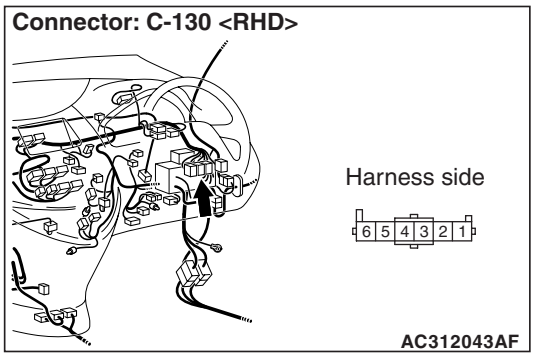

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

**Step 2. Check the front fog lamp switch.**
Refer to GROUP 54A – Front fog lamp P.54A-93.

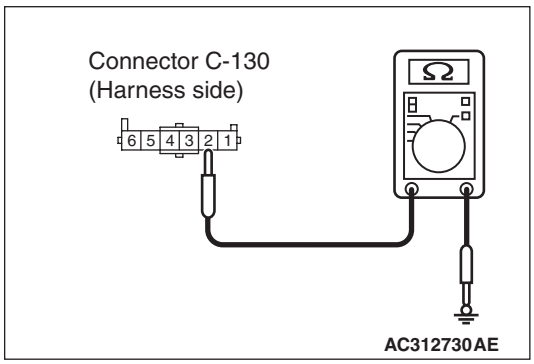
**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the fog lamp switch.

**Step 3. Resistance measurement at the C-130 fog lamp switch connector.**




(1) Remove the fog lamp switch, and measure at the wiring harness side.

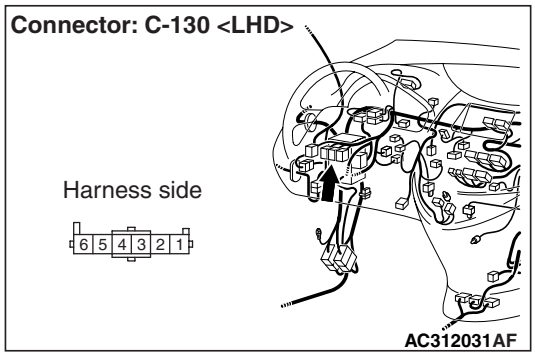


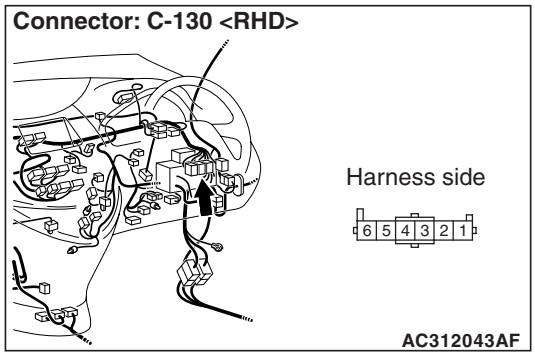

(2) Resistance between C-130 fog lamp switch connector terminal No.2 and body earth

**OK: 2 Ω or less**

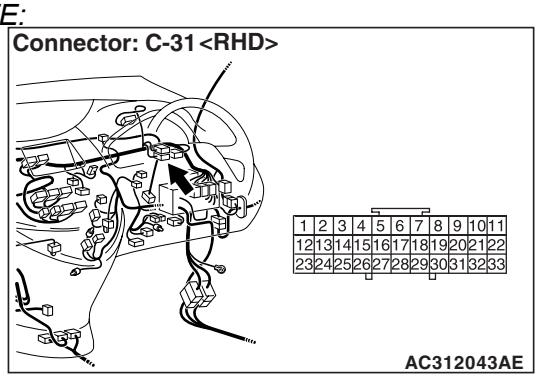
**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check the wiring harness from C-130 fog lamp switch connector terminal No.2 to body earth.**




*NOTE:*



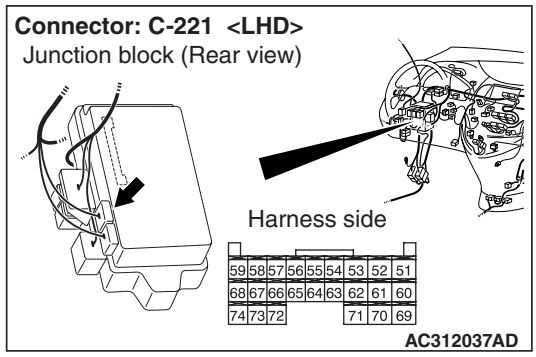

*Prior to the wiring harness inspection, check joint connector C-31 <RH drive vehicles>, and repair if necessary.*

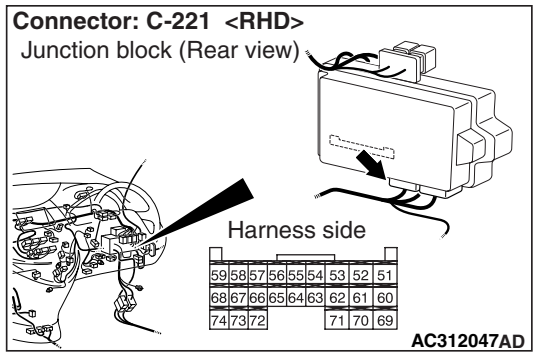
- Check the earth wires for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

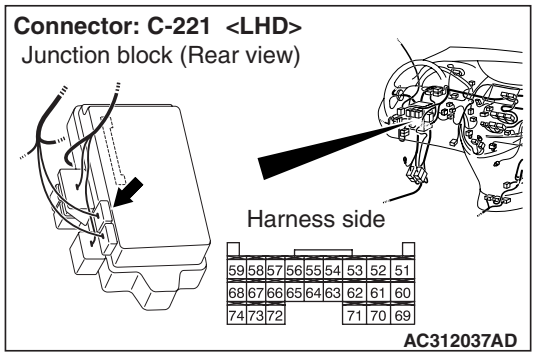
**Step 5. Connector check: C-221 ETACS-ECU connector**

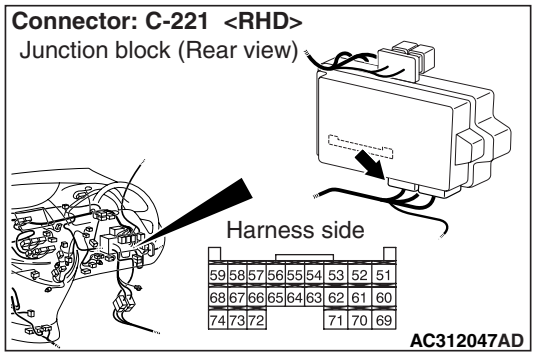


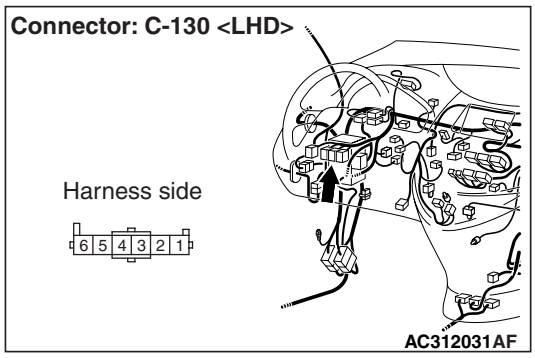



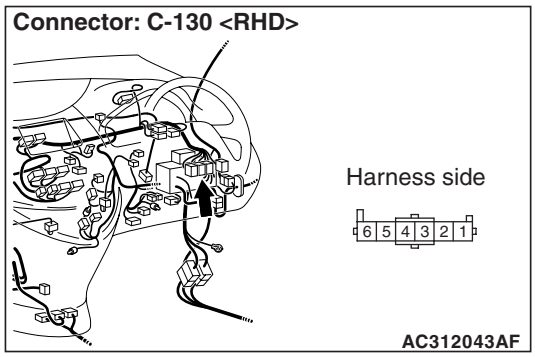

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

**Step 6. Check the wiring harness from C-221 ETACS-ECU connector No.54 to C-130 fog lamp switch connector terminal No.1.**




- Check the input line for open circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

**Step 7. SWS monitor data list**

**<Selected item> ETACS ECU**

- Ignition switch: ON
- Lighting switch: "TAIL" or "HEAD"
- Front fog lamp switch: OFF → ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 36 | F.FOG LAMP | OFF → ON |

**OK: Normal condition is displayed.**

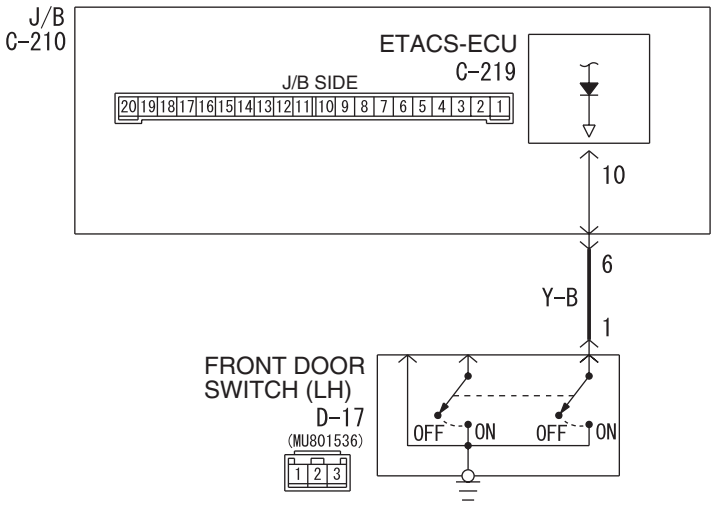
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-5: The driver's door switch signal is not received. <LH drive vehicles>

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Driver's Door Switch Input Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E115A

## COMMENTS ON TROUBLE SYMPTOM

Input signal from the driver's door switch is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Lamp reminder function
- Door-ajar warning buzzer
- Keyless entry system
- Sunroof timer
- Electric retractable remote controlled door mirror
- Ignition key cylinder illumination lamp
- Headlamp automatic-shutdown
- Interior lamp
- Interior lamp automatic-shutdown
- Door-ajar warning lamp

## POSSIBLE CAUSES

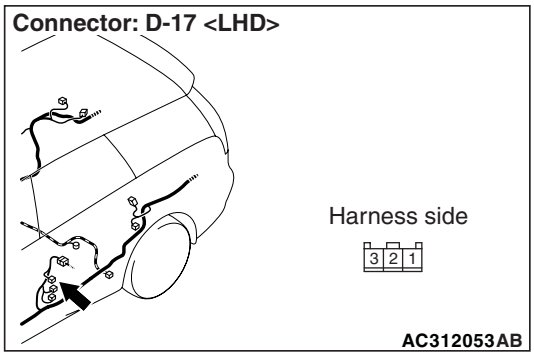
- Malfunction of the driver's door switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the installation condition.**
Check that the front door switch (LH) is installed on the body correctly.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Correct the installation condition.

**Step 2. Connector check: D-17 front door switch (LH) connector**



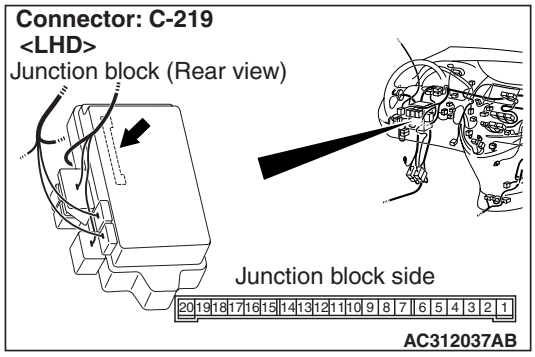

**Q: Is the check result normal?**

**YES :** Go to Step 3.
**NO :** Repair the defective connector.

**Step 3. Check the front door switch (LH).**
Refer to GROUP 42 – Door P.42-32.

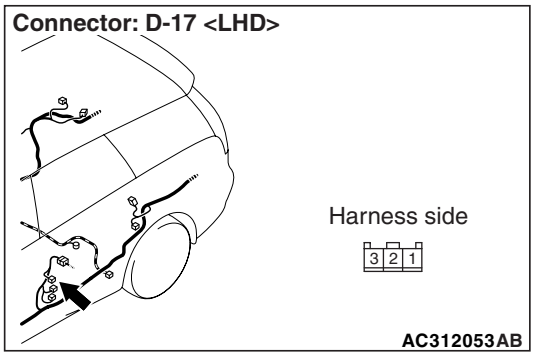
**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Replace the front door switch (LH).

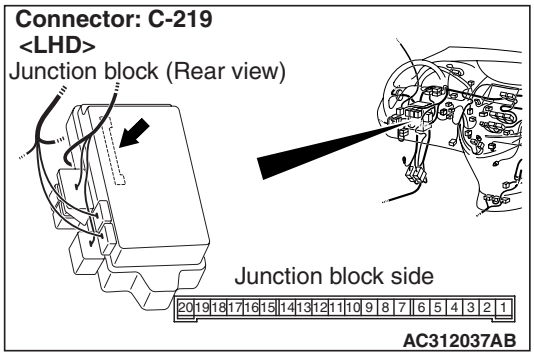
**Step 4. Connector check: C-219 ETACS-ECU connector**



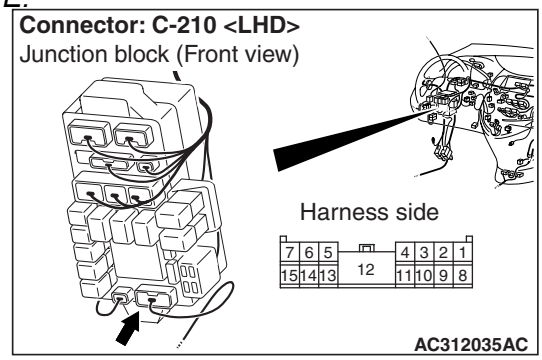

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the defective connector.

**Step 5. Check the wiring harness between D-17 front door switch (LH) connector terminal No.1 and C-219 ETACS-ECU connector terminal No.10.**




*NOTE:*




*Prior to the wiring harness inspection, check joint connector C-210, and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the wiring harness.

**Step 6. SWS monitor data list.**

**<Selected item> ETACS ECU**

- Driver's door: close → open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | DR DOOR SW | OFF → ON |

**OK: Normal condition is displayed.**

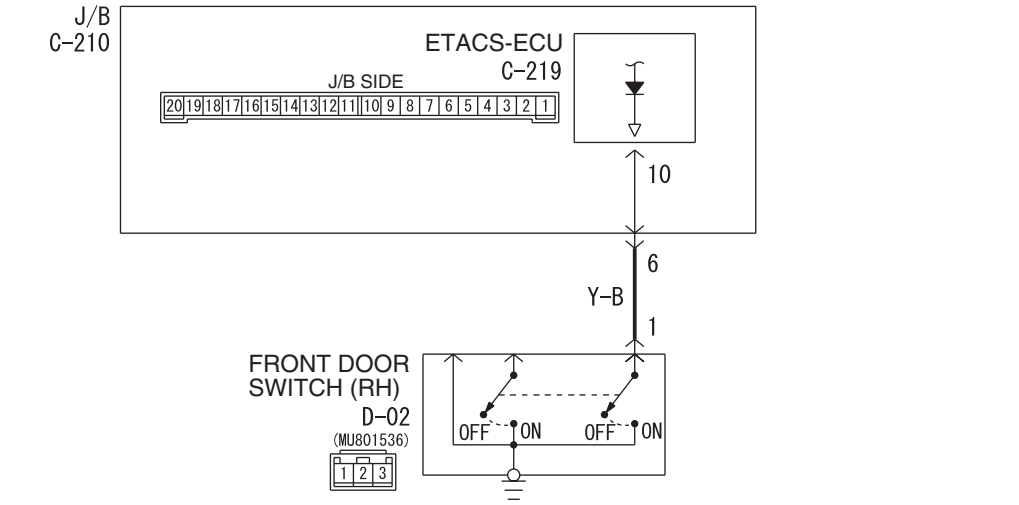
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-5: The driver's door switch signal is not received. <RH drive vehicles>

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Driver's Door Switch Input Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E116A

## COMMENTS ON TROUBLE SYMPTOM

Input signal from the driver's door switch is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Lamp reminder function
- Door-ajar warning buzzer
- Keyless entry system
- Sunroof timer
- Electric retractable remote controlled door mirror
- Ignition key cylinder illumination lamp
- Headlamp automatic-shutdown
- Interior lamp
- Interior lamp automatic-shutdown
- Door-ajar warning lamp

## POSSIBLE CAUSES

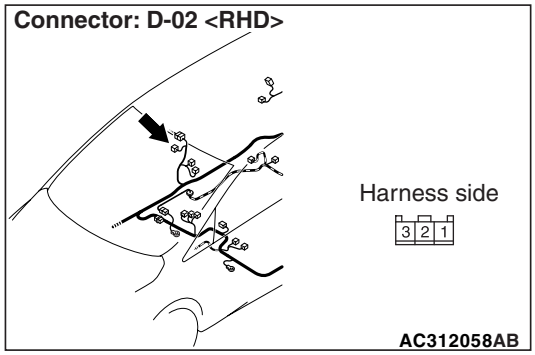
- Malfunction of the driver's door switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the installation condition.**
Check that the front door switch (RH) is installed on the body correctly.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Correct the installation condition.

**Step 2. Connector check: D-02 front door switch (RH) connector**

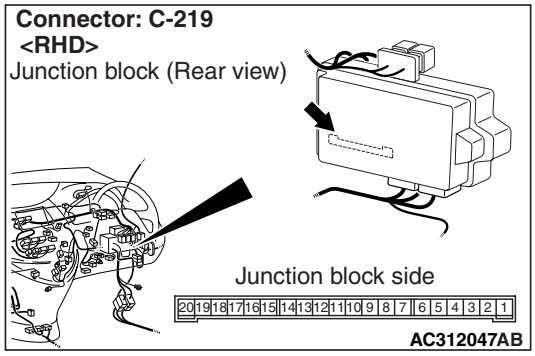



**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the defective connector.

**Step 3. Check the front door switch (RH).**
Refer to GROUP 42 – Door P.42-32.

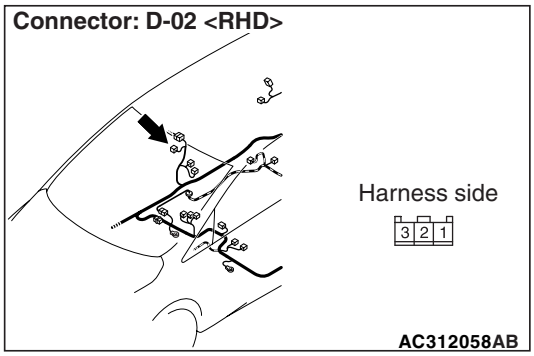
**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Replace the front door switch (RH).

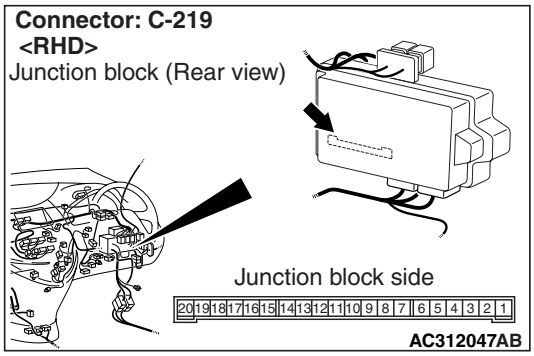
**Step 4. Connector check: C-219 ETACS-ECU connector**



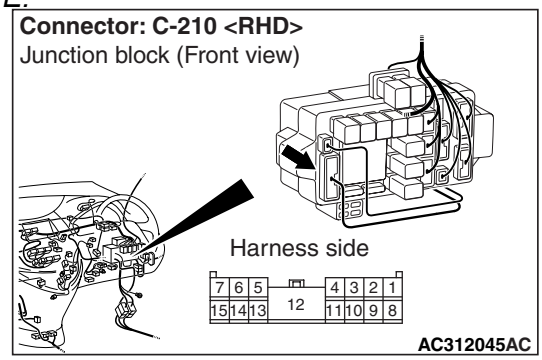

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the defective connector.

**Step 5. Check the wiring harness between D-02 front door switch (RH) connector terminal No.1 and C-219 ETACS-ECU connector terminal No.10.**




*NOTE:*




*Prior to the wiring harness inspection, check joint connector C-210, and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the wiring harness.

**Step 6. SWS monitor data list.**

**<Selected item> ETACS ECU**

- Driver's door: close → open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | DR DOOR SW | OFF → ON |

**OK: Normal condition is displayed.**

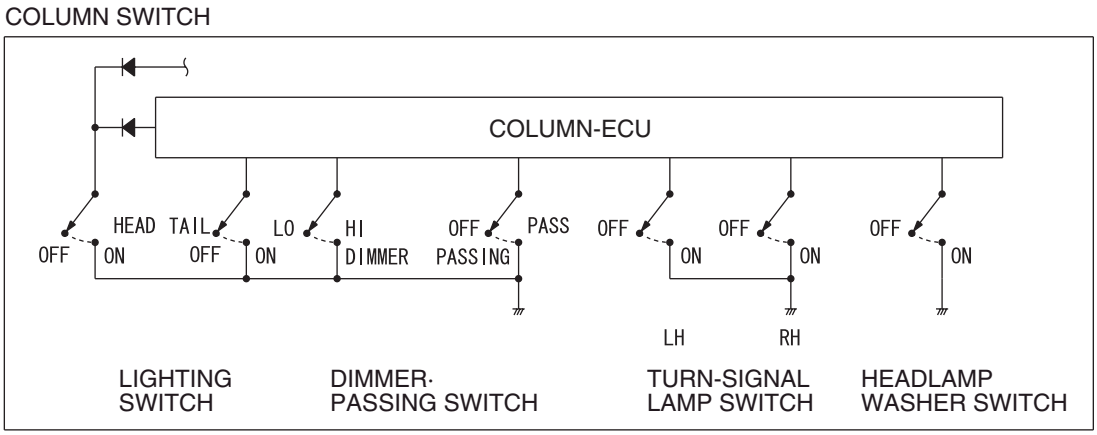
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

**Inspection Procedure Q-6: The column switch (lighting, turn-signal lamp and headlamp washer switch) signal is not received.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Lighting Switch Input Circuit**




W4X54E123A

## COMMENTS ON TROUBLE SYMPTOM

Input signal from the column switch (lighting, turn-signal lamp and headlamp washer switch) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Lamp reminder function
- Headlamp washer
- Headlamp and tail lamp
- Headlamp automatic-shutdown function
- Front and rear fog lamp
- Turn signal lamp
- Headlamp washer

## POSSIBLE CAUSES

- Malfunction of the column switch
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Check the column switch connector.**
Check that the wiper and washer switch connector, the lighting switch connector and the switch body connector are in good condition.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

**Step 2. Check the column switch (lighting switch and switch body).**
Refer to GROUP 54A – Column switch P.54A-103.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the column switch.

**Step 3. ECU check by using the SWS monitor**

Check that the power supply and earth lines to the column switch (column-ECU) and the SWS communication lines are normal.

- Ignition switch: OFF

**ECUS TO BE CHECKED**

- COLUMN ECU

**OK: "OK" is displayed on the "COLUMN ECU" menu.**

**Q: Is the check result normal?**

**YES :** Go to Step 4.

**NO :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."

**Step 4. SWS monitor data list**

**<Selected item> COLUMN ECU**

- Operate each function of the switch.

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 00 | HEADLAMP SW | ON |
| Item 01 | TAIL LAMP SW | ON |
| Item 02 | DIMMER SW | ON |
| Item 03 | PASSING SW | ON |
| Item 10 | TURN SIG.RH | ON |
| Item 11 | TURN SIG.LH | ON |
| Item 16 | HD WASHER SW | ON |

**OK: Normal conditions are displayed for all the functions of the switch.**

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

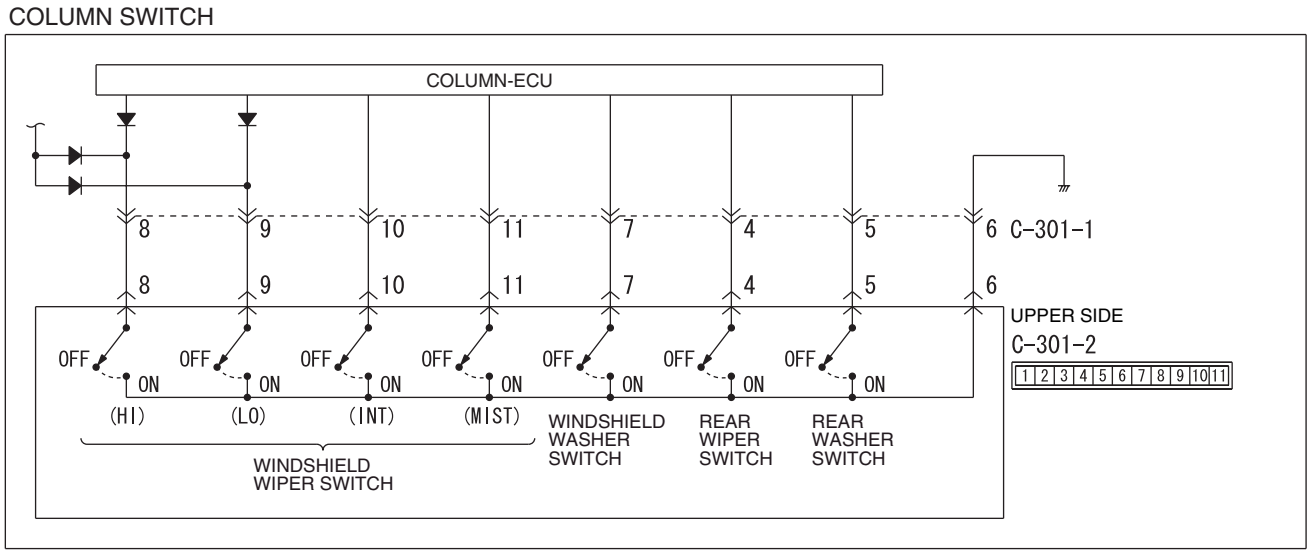
**NO :** Replace the column switch.

## Inspection Procedure Q-7: The column switch (windshield wiper washer and rear wiper washer switch) signal is not received.

**⚠ CAUTION**

**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Windshield Wiper and Washer Switch Input Circuit**




W4X54E215A

## COMMENTS ON TROUBLE SYMPTOM

Input signal from the column switch (wiper switch) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Windshield wiper and washer
- Rear wiper and washer
- Headlamp washer

## POSSIBLE CAUSES

- Malfunction of the column switch
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor**

Check that the power supply and earth lines to the column switch (column-ECU) and the SWS communication lines are normal.

- Ignition switch: OFF

**ECUS TO BE CHECKED**

- COLUMN ECU

**OK: "OK" is displayed on the "COLUMN ECU" menu.**

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-56."

**Step 2. SWS monitor data list.**

**<Selected item> COLUMN ECU**

Operate each function of the switch.

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 05 | INT WIPER SW | ON |
| Item 06 | LO WIPER SW | ON |
| Item 07 | HI WIPER SW | ON |
| Item 08 | MIST WIPER SW | ON |
| Item 09 | FRONT WASH.SW | ON |
| Item 13 | REAR WIPER SW | ON |
| Item 14 | REAR WASH.SW | ON |

**OK: Normal conditions are displayed for all the functions of the switch.**

**Q: Is the check result normal?**

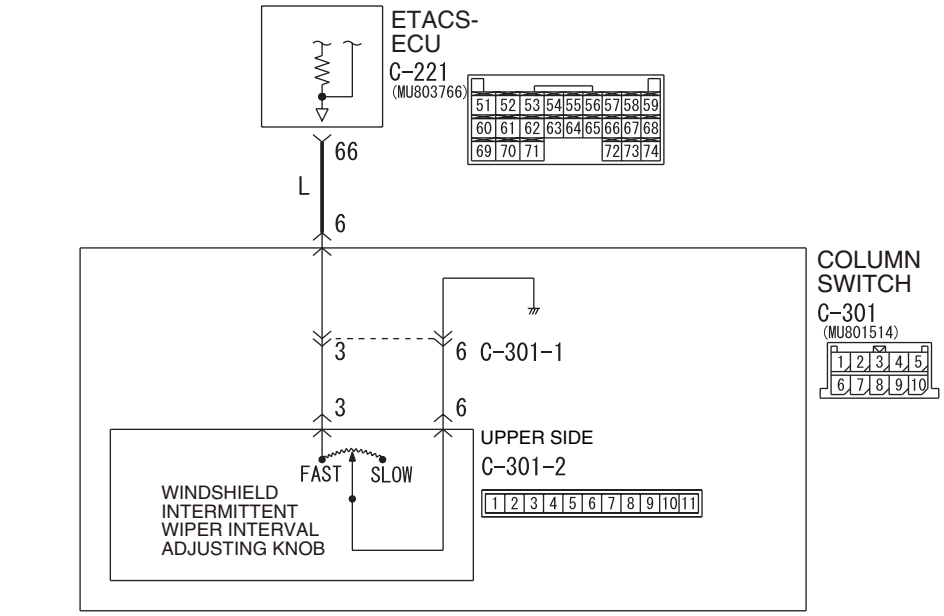
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Replace the column switch.

**Inspection Procedure Q-8: The windshield intermittent wiper volume signal is not received.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Windshield Intermittent Wiper Interval Adjusting Knob Input Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E216A

## COMMENTS ON TROUBLE SYMPTOM

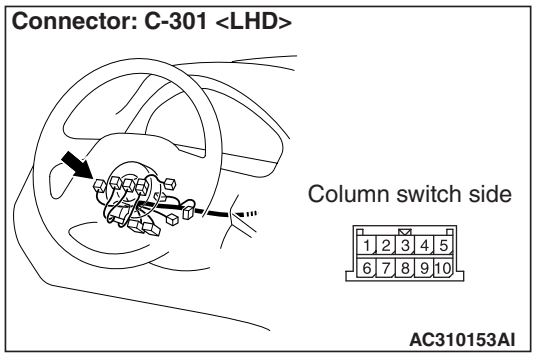
The intermittent wiper interval is calculated in accordance with the input signal from the windshield intermittent wiper volume. If this signal is abnormal, the wiper interval can not be adjusted.

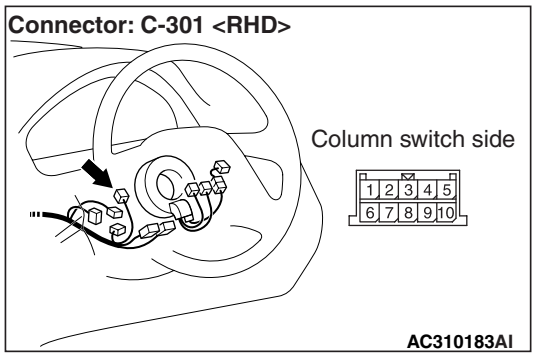
## POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

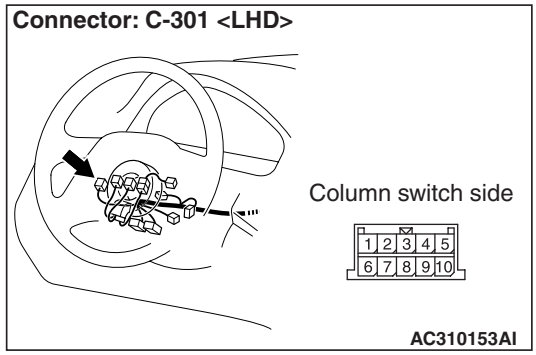
**Step 1. Connector check: C-301 column switch connector.**

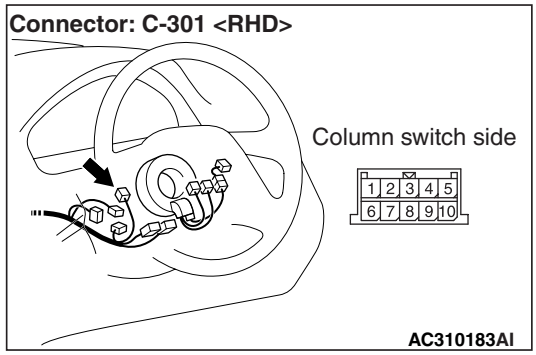


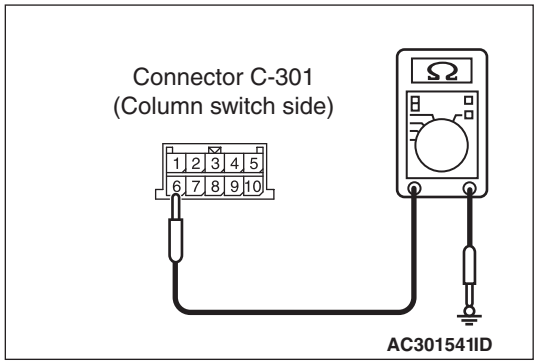

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

**Step 2. Resistance measurement at the C-301 column switch connector.**




(1) Disconnect the connector, and measure at the column switch side.

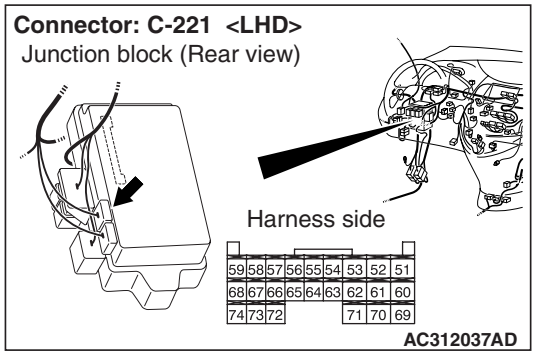


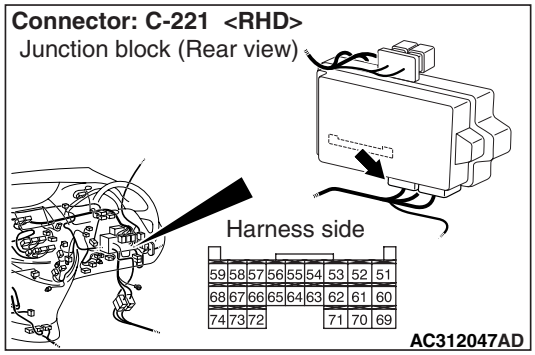

(2) Resistance between C-301 column switch connector terminal No.6 and body earth

**OK: The resistance should rise from 0 to 1 kΩ when the windshield intermittent wiper volume is rotated from "Fast" to "Slow".**

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the column switch.

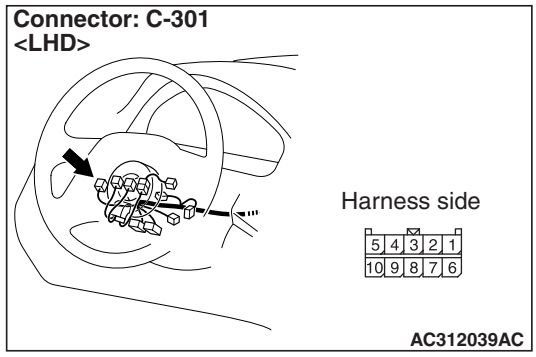
**Step 3. Connector check: C-221 ETACS-ECU connector.**

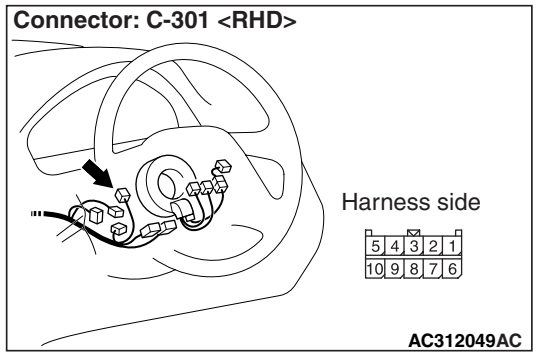


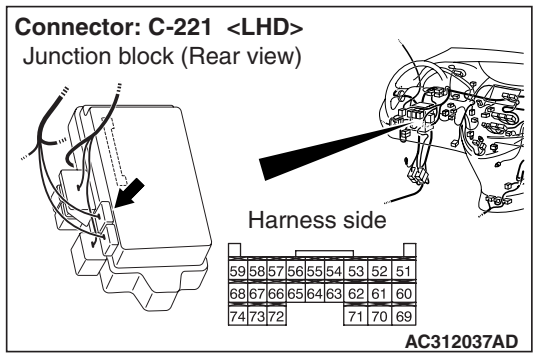



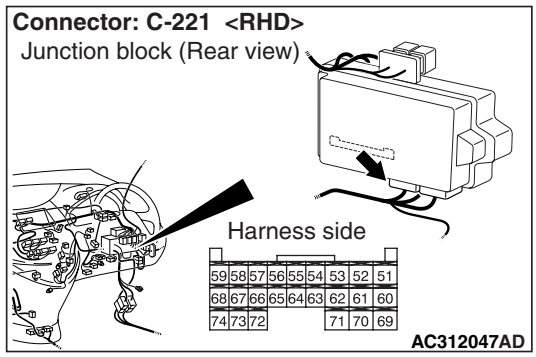

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the defective connector.

**Step 4. Check the wiring harness between C-301 column switch connector terminal No.6 and C-221 ETACS-ECU connector terminal No.66.**




- Check the input line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Repair the wiring harness.

**Step 5. SWS monitor data list.**

**<Selected item> ETACS ECU**

- Ignition switch: ACC
- Wiper switch: INT

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 37 | INT WIPE TIME | 2.4 to 18.0 s |

**OK: The display will be changed as the intermittent wiper volume is rotated.**

**Q: Is the check result normal?**

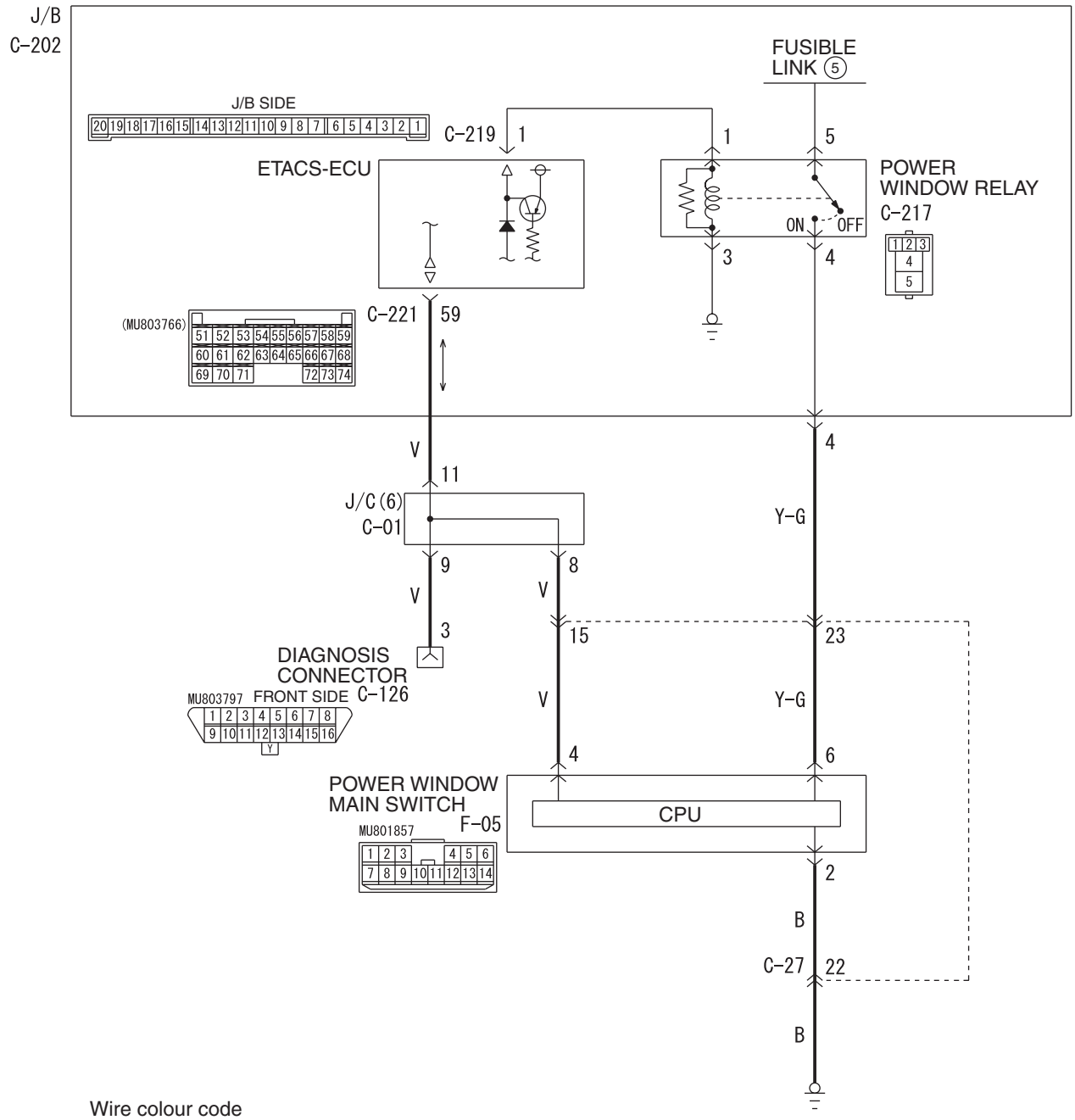
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Replace the ETACS-ECU.

**Inspection Procedure Q-9: When the power window main switch is operated, the switch signals are not received.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

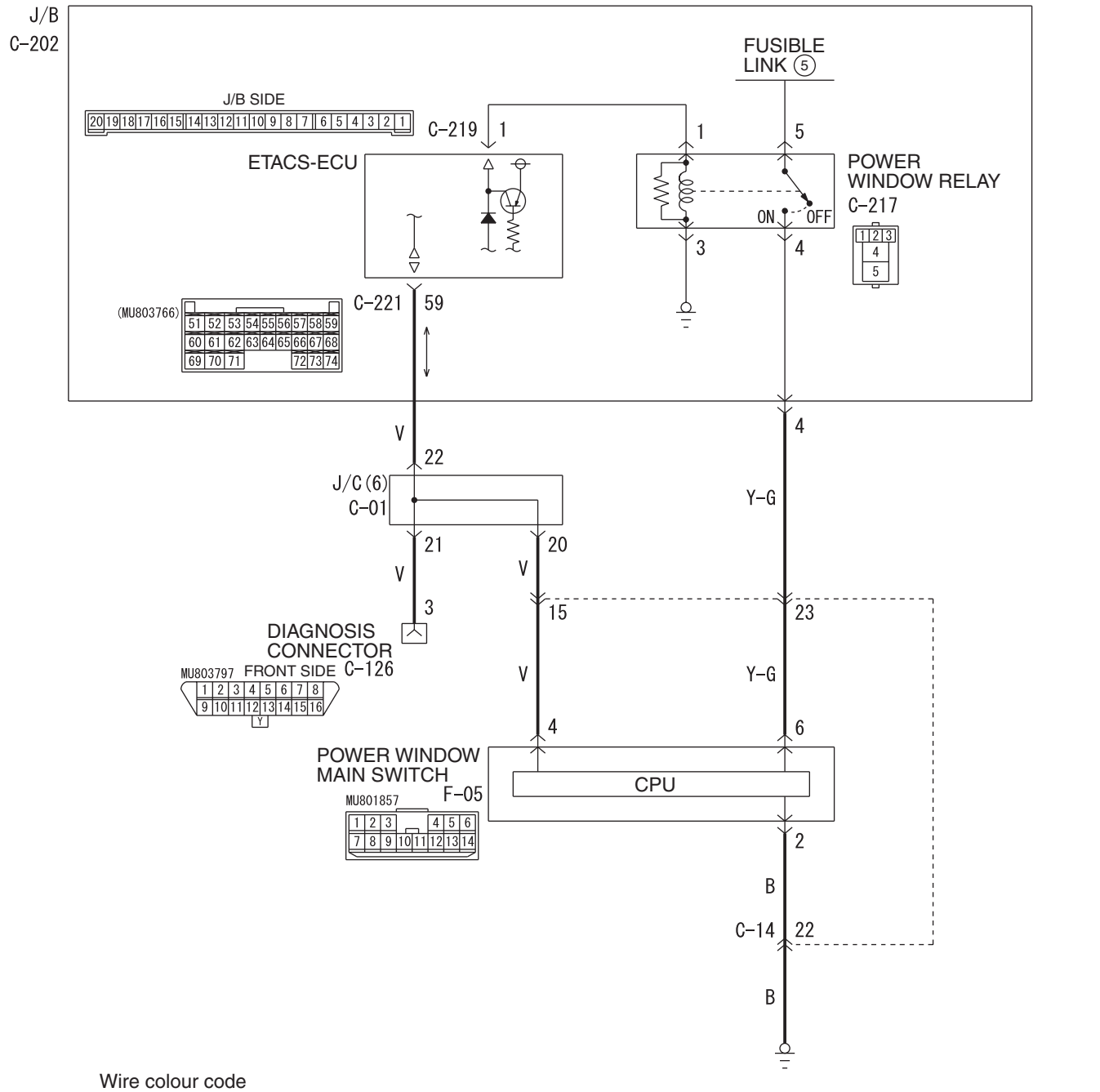
**Power Window Main Switch Input Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E124A

**Power Window Main Switch Input Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E125A

## COMMENTS ON TROUBLE SYMPTOM

Input signal from the power window main switch is used in order to check the power window main switch and confirm how the system is communicating with the ETACS-ECU. If the communication line is defective, the power windows will not work normally.

## POSSIBLE CAUSES

- Malfunction of the power window main switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check on the SWS monitor**

Check that the power supply and earth lines to the power window main switch (power window module) and the SWS communication lines are normal.

- Turn the ignition switch to the ON position.

**ECUS TO BE CHECKED**

- P/W MODULE

**OK: "OK" is displayed on the "P/W MODULE" menu.**

**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to Inspection Procedure A-5 "Communication with the power window main switch (power window module) is not possible P.54C-77."

**Step 2. Function diagnosis by using the SWS monitor**

**<Selected item> POWER WINDOW**

- Turn the ignition switch to the ON position.
- Power window main switch: UP

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 71 | P/W ECU ACK | INPUT CHECK (only momentarily when switch is operated) |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

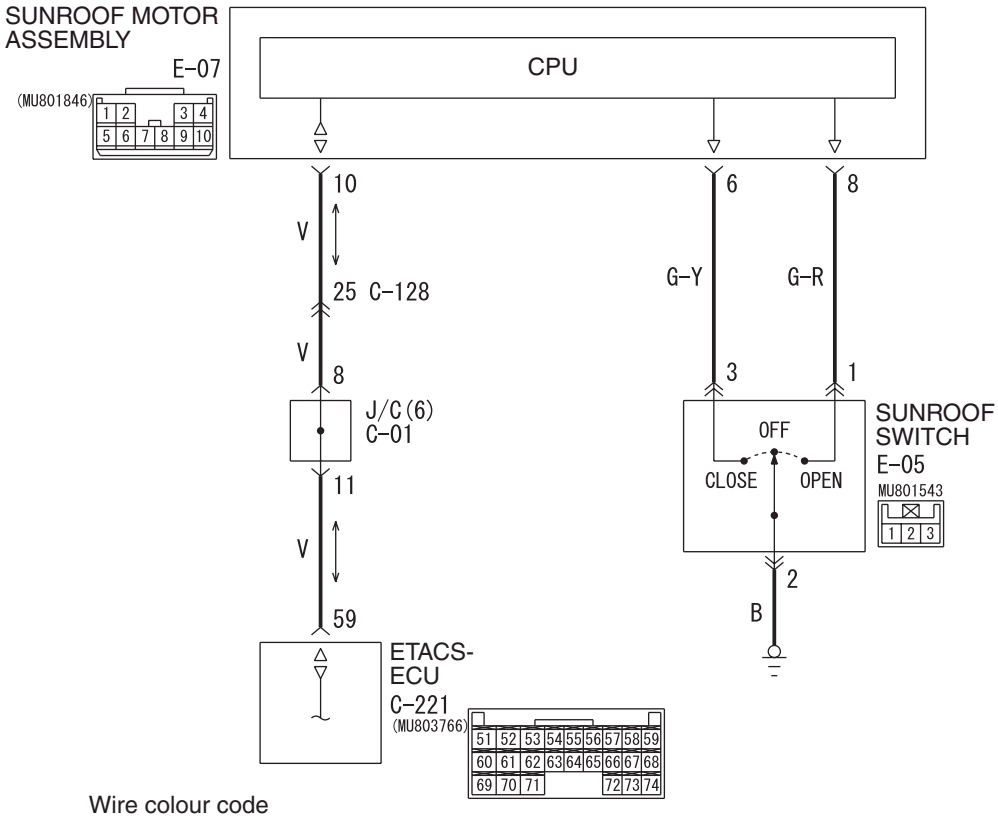
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-10: When the sunroof switch is operated, the switch signals are not received.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

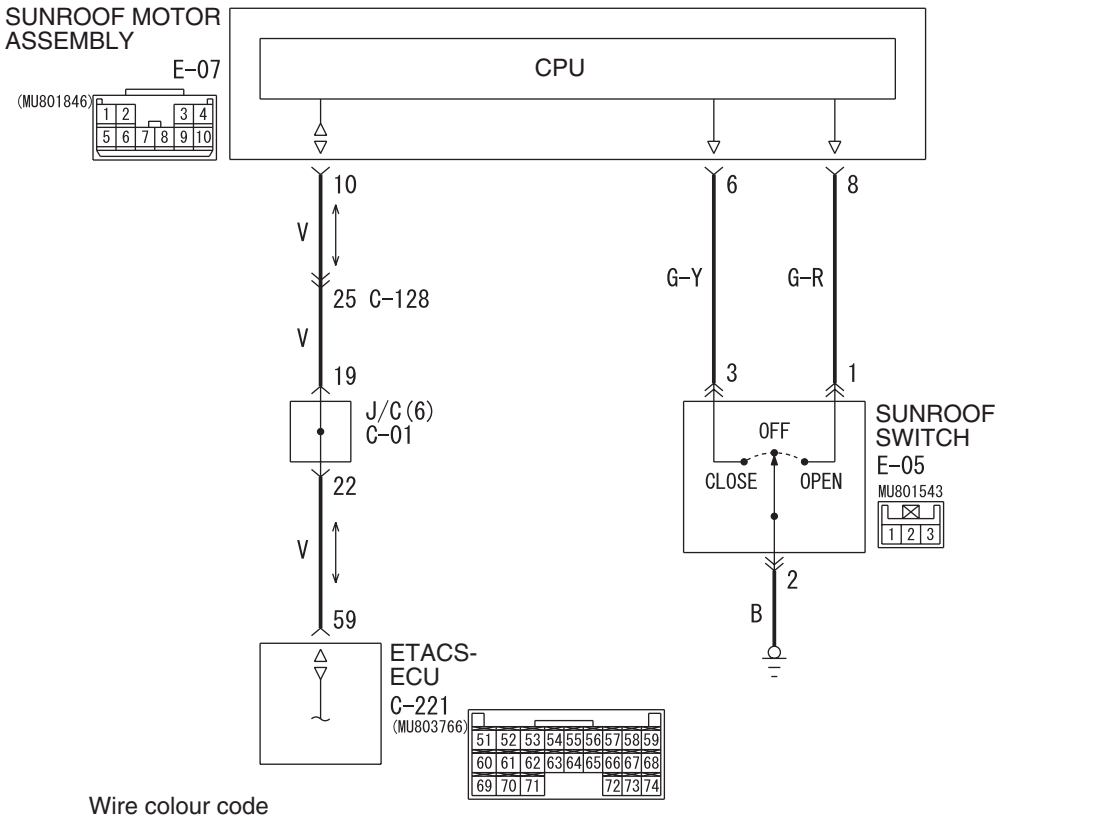
**Sunroof Switch Input Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E126A

**Sunroof Switch Input Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E127A

## COMMENTS ON TROUBLE SYMPTOM

If the input signal from the sunroof switch is abnormal, the sunroof input check response signal will not be sent to the SWS communication line.

## POSSIBLE CAUSES

- Malfunction of the sunroof assembly
- Malfunction of the sunroof switch
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. ECU check on the SWS monitor**

Check that the power supply and earth lines to the sunroof-ECU and the SWS communication lines are normal.

- Ignition switch: ON

**ECUS TO BE CHECKED**

- Sunroof-ECU

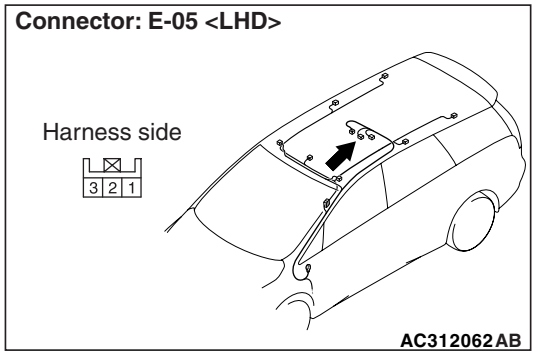
  **OK: "OK" is displayed on the "sunroof-ECU" menu.**

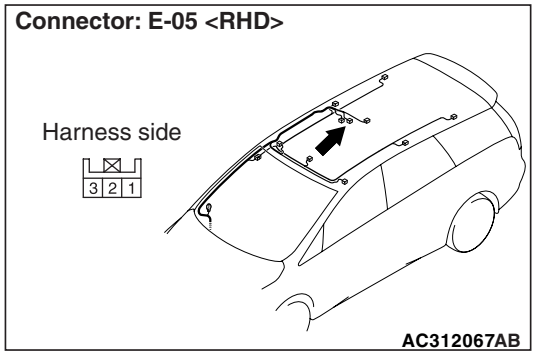
**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to Inspection Procedure A-6 "Communication with the sunroof-ECU is not possible" P.54C-90.

### Step 2. Connector check: E-05 sunroof switch connector



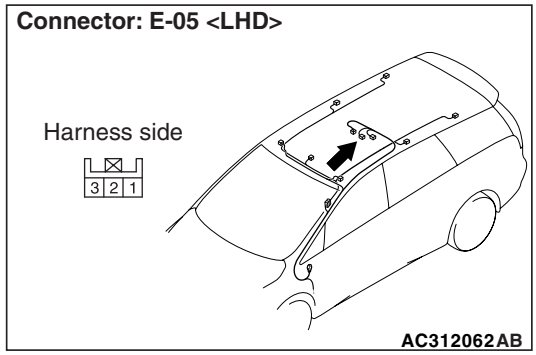

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the defective connector.

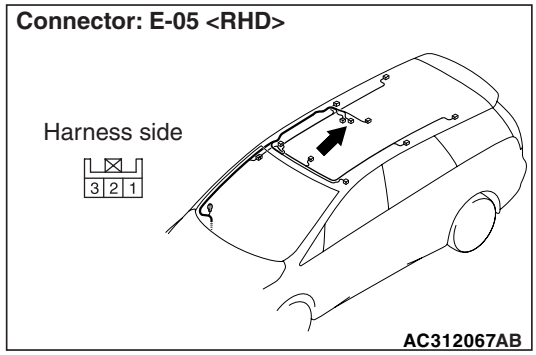
### Step 3. Check the sunroof switch.

Refer to GROUP 42 – Sunroof P.42-66.

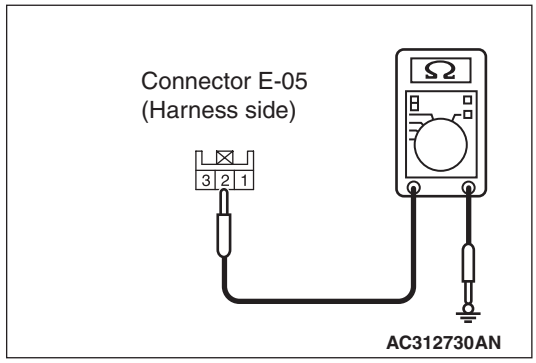
**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Replace the sunroof switch.

### Step 4. Resistance measurement at the E-05 sunroof switch connector.




(1) Disconnect the connector, and measure at the wiring harness side.

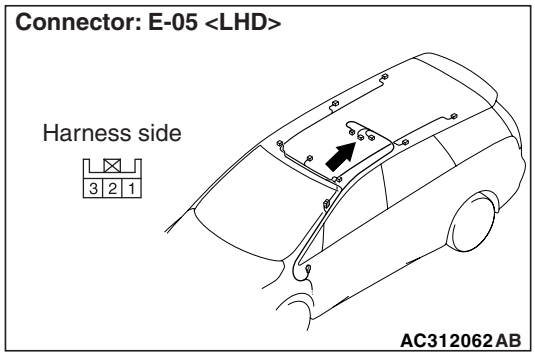


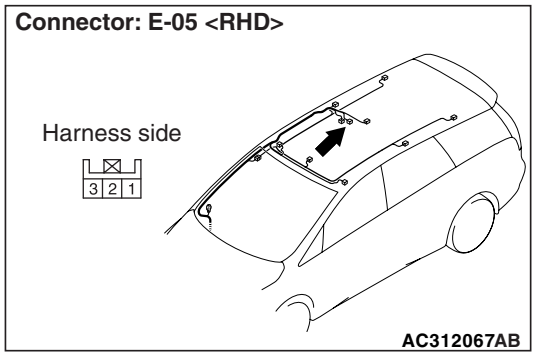

(2) Continuity between E-05 sunroof switch connector terminal No.2 and body earth

**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Go to Step 5.

**Step 5. Check the wiring harness between E-05 sunroof motor switch connector terminal No.2 and body earth.**

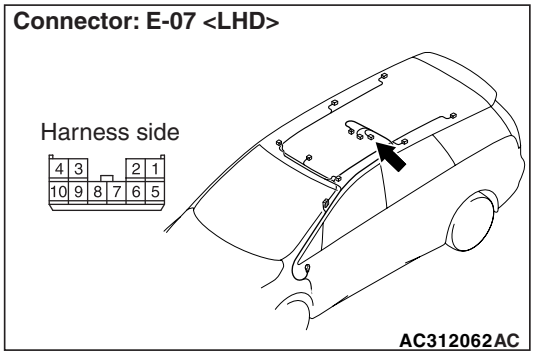


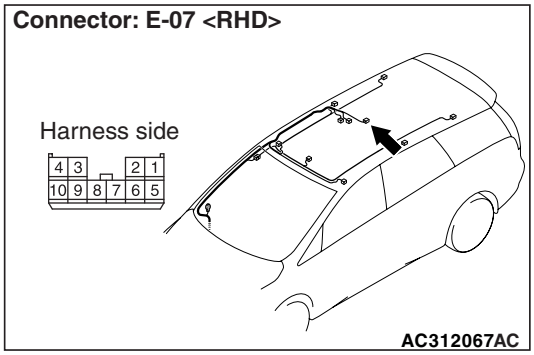




- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

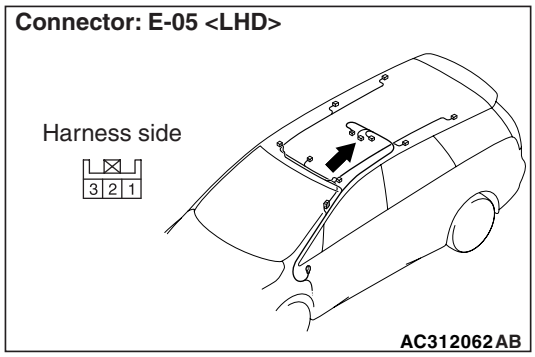
**Step 6. Connector check: E-07 sunroof motor assembly connector**

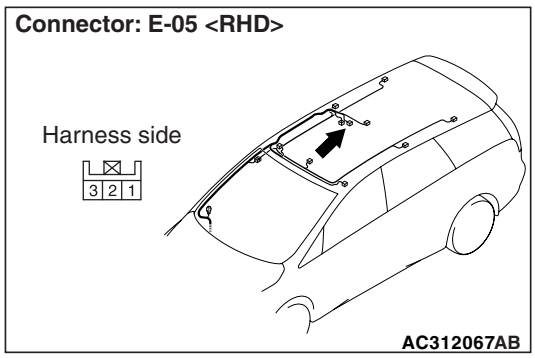


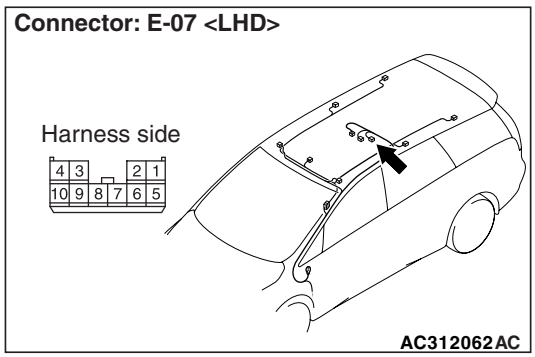



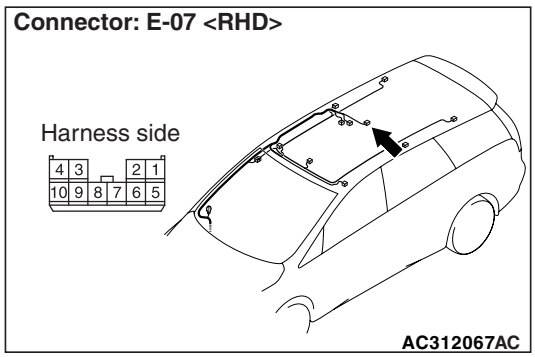

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the defective connector.

**Step 7. Check the wiring harness from E-07 sunroof motor assembly connector terminal Nos.6 and 8 to E-05 sunroof switch connector terminal Nos.3 and 1.**




- Check the input line for open circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 8.
**NO :** Repair the wiring harness.

**Step 8. Confirm communication data by using the SWS monitor.**

**<Selected item> SUNROOF ECU**

- Operate the sunroof switch.

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 72 | S/R ECU ACK | INPUT CHECK (only momentarily when switch is operated) |

**OK: Normal condition is displayed.**

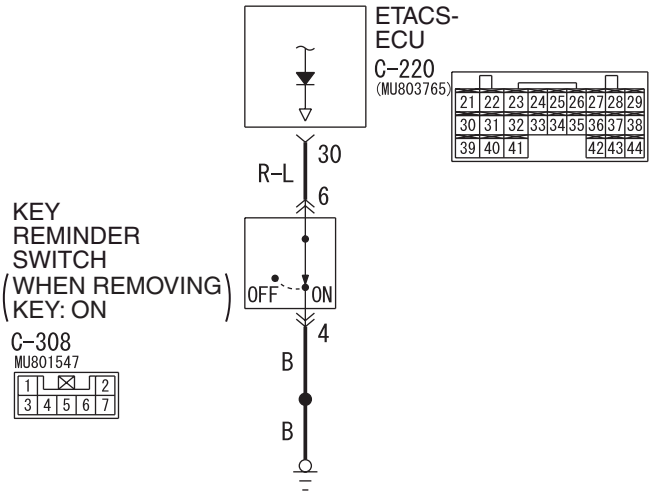
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the sunroof motor assembly.

**Inspection Procedure Q-11: The key reminder switch signal is not received.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Key Reminder Switch Input Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E129A

## COMMENTS ON TROUBLE SYMPTOM

Input signal from the key reminder switch is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

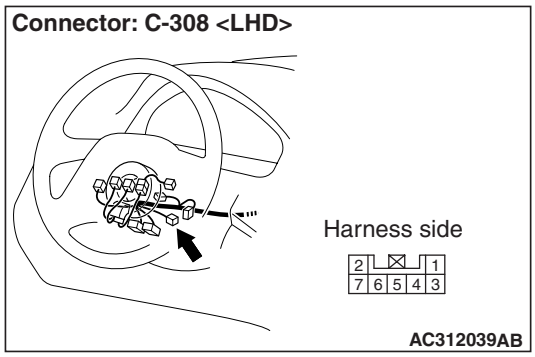
- Keyless entry system
- Keyless entry hazard answerback
- Ignition key cylinder illumination lamp
- Interior lamps

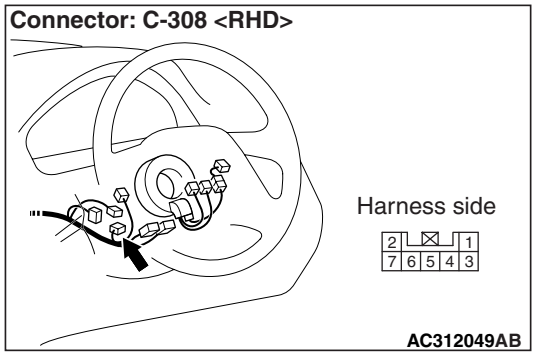
## POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Connector check: C-308 key reminder switch connector**



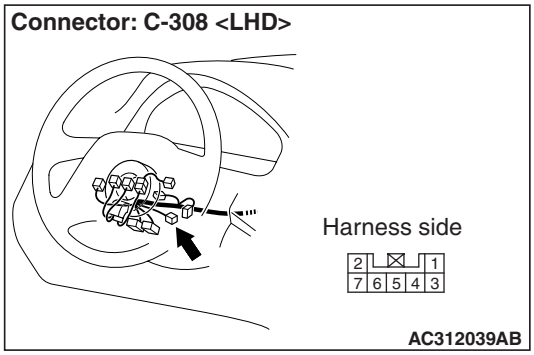



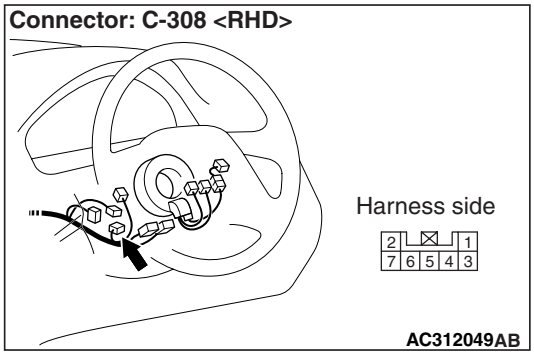

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

**Step 2. Check the key reminder switch.**
Refer to GROUP 54A – Ignition switch P.54A-31.

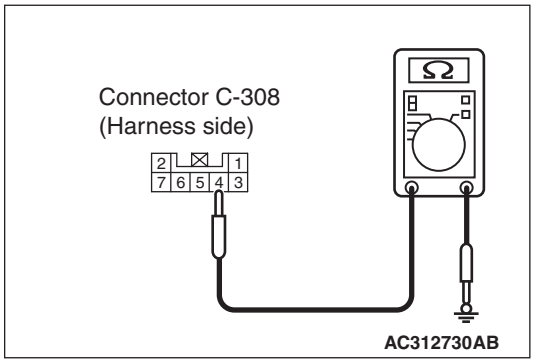
**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the key reminder switch.

**Step 3. Resistance measurement at the C-308 key reminder switch connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

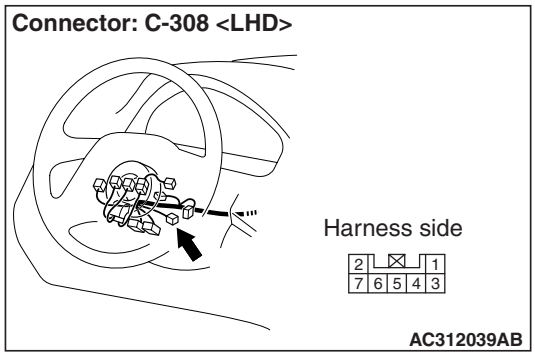


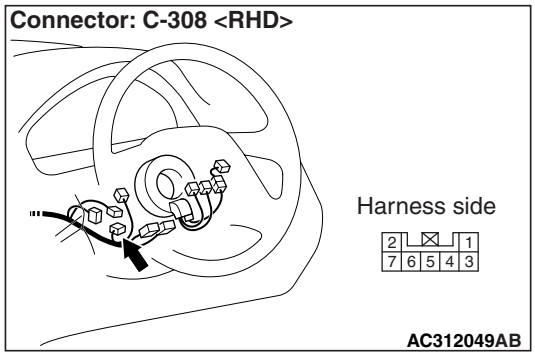

(2) Resistance between C-308 key reminder switch connector terminal No.4 and body earth

**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check the wiring harness between C-308 key reminder switch connector terminal No.4 and the body earth.**

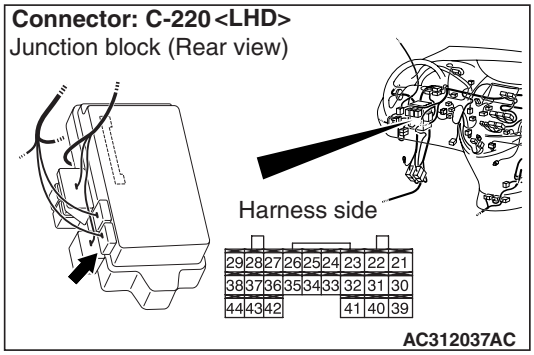


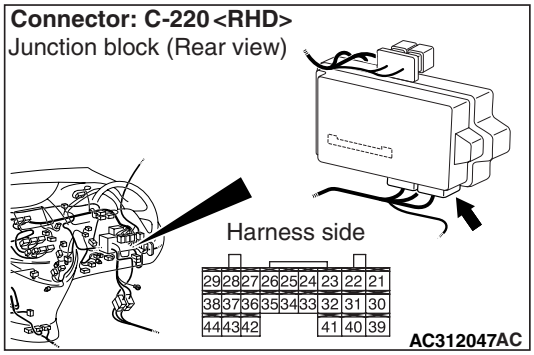




- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

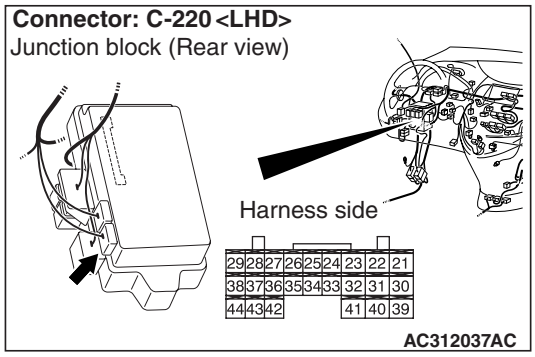
**Step 5. Connector check: C-220 ETACS-ECU connector**

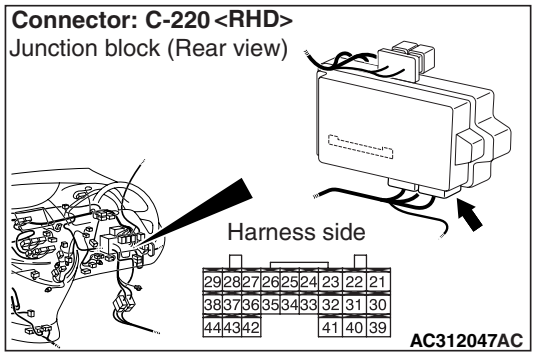


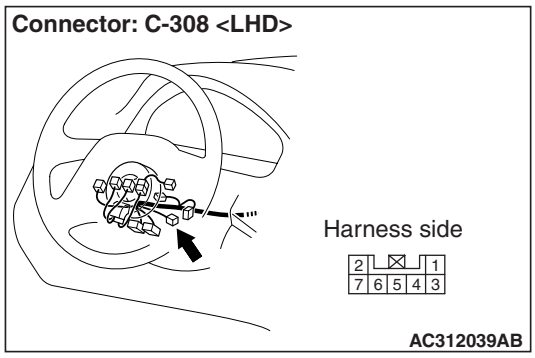



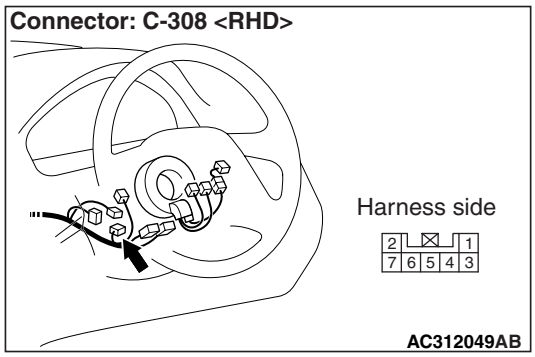

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

**Step 6. Check the wiring harness between C-308 key reminder switch connector terminal No.6 and C-220 ETACS-ECU connector terminal No.30.**




- Check the input line for open circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

**Step 7. ETACS switch data by using the SWS monitor**

Check the input signal from the key reminder switch.

- key reminder switch: OFF (key inserted) to ON (key removed)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 03 | KEY REMIN SW | from OFF to ON |

**OK: Normal condition is displayed.**

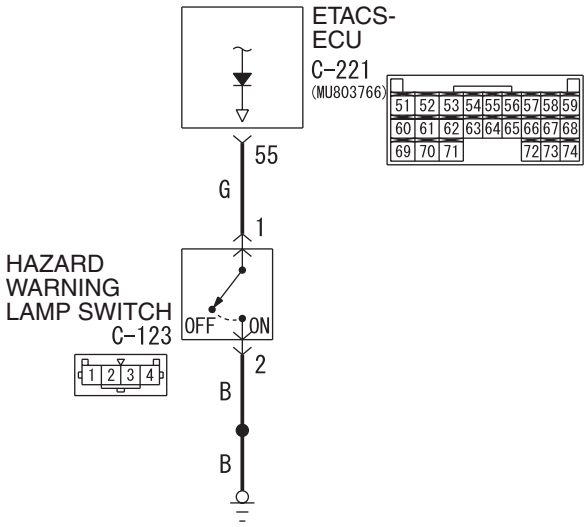
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-12: The hazard warning lamp switch signal is not received.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

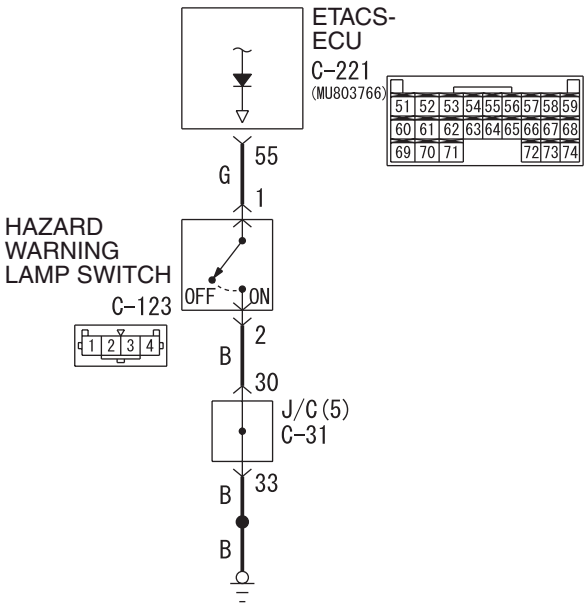
**Hazard Warning Lamp Switch Input Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E130A

**Hazard Warning Lamp Switch Input Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E131A

## COMMENTS ON TROUBLE SYMPTOM

Input signal from the hazard warning lamp switch is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

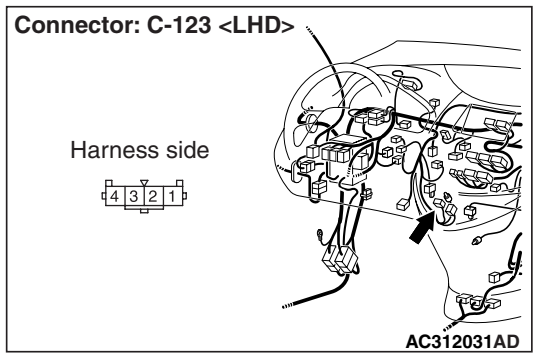
- Turn-signal lamp operation sound
- Keyless entry system (encrypted code registration)
- Keyless entry hazard answerback
- Hazard warning lamp

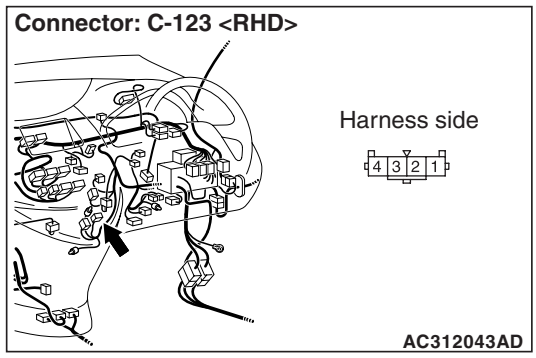
## POSSIBLE CAUSES

- Malfunction of the hazard warning lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Connector check: C-123 hazard warning lamp switch connector**



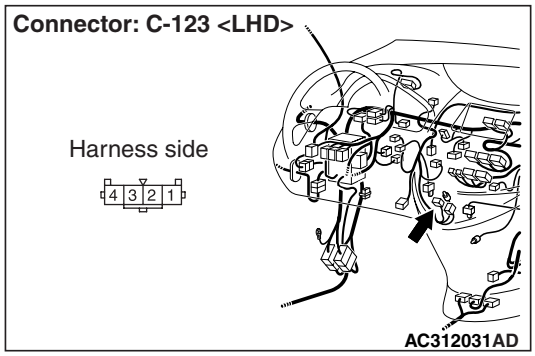



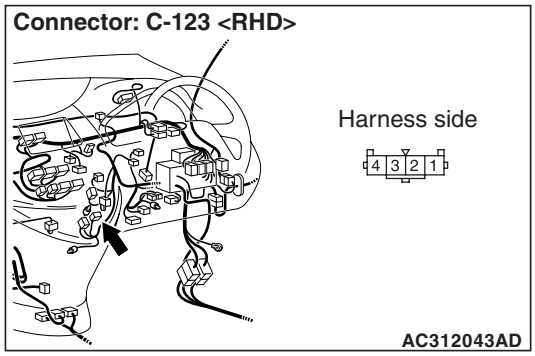

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

**Step 2. Check the hazard warning lamp switch.**
Refer to GROUP 54A – Hazard warning lamp switch P.54A-101.

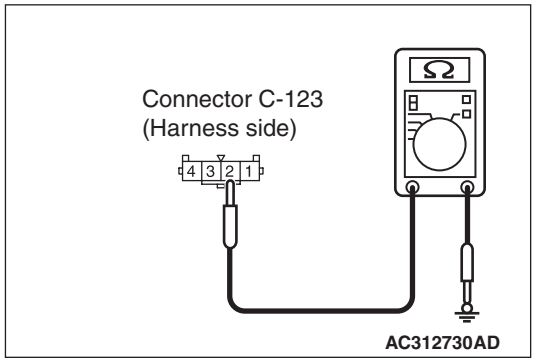
**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the hazard warning lamp switch.

**Step 3. Resistance measurement at the C-123 hazard warning lamp switch connector.**



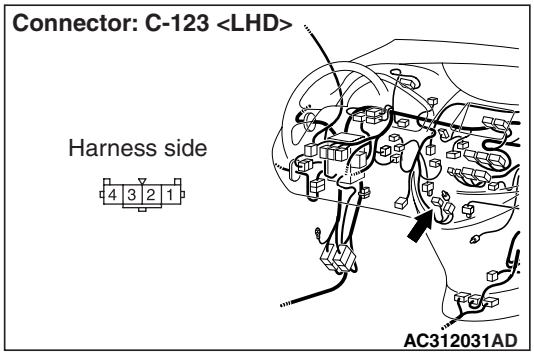

(1) Disconnect the connector, and measure at the wiring harness side.

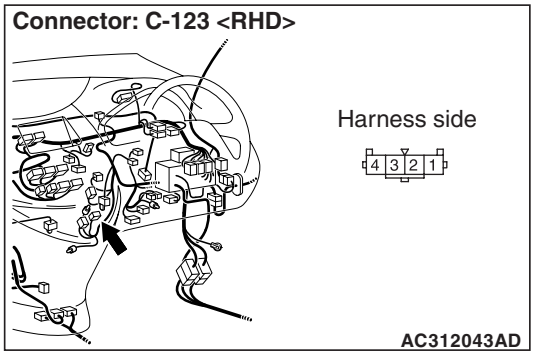



(2) Resistance between C-123 hazard warning lamp switch connector terminal No.2 and body earth
**OK: 2 Ω or less**

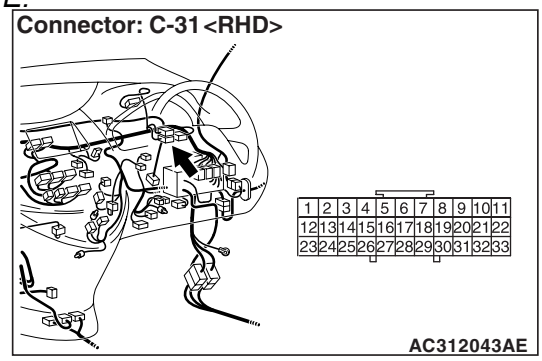
**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check the wiring harness between C-123 hazard warning lamp switch connector terminal No.2 and the body earth.**




*NOTE:*

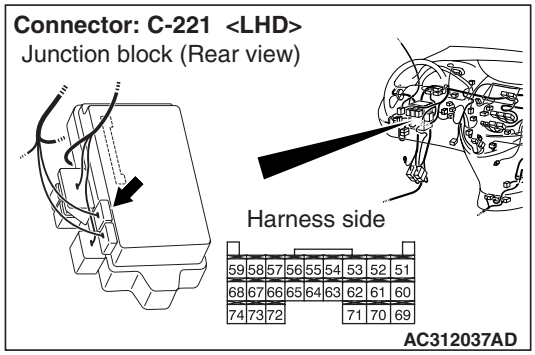


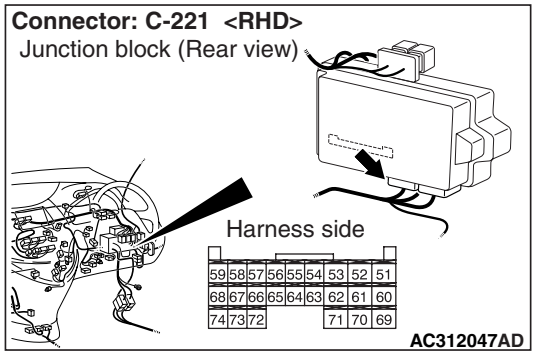

*Prior to the wiring harness inspection, check joint connector C-31 <RH drive vehicles>, and repair if necessary.*

- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

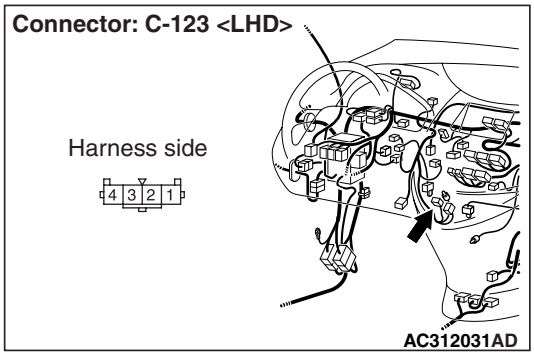
### Step 5. Connector check: C-221 ETACS-ECU connector

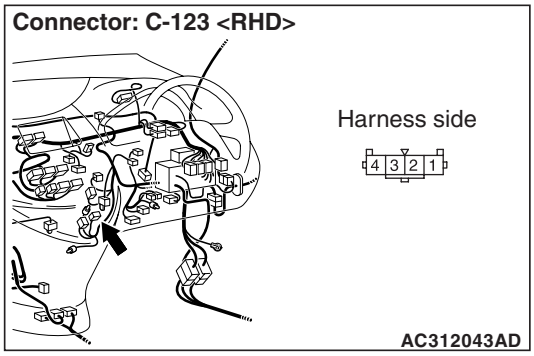


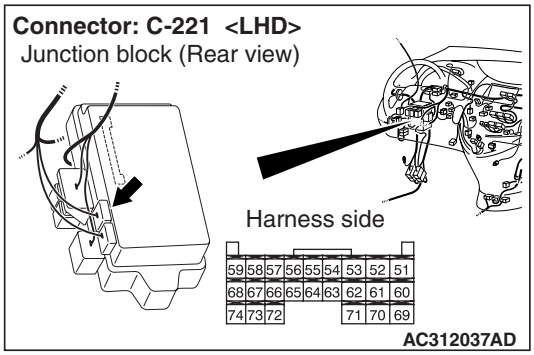



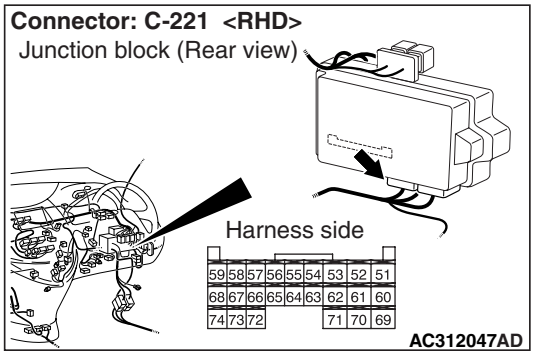

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

### Step 6. Check the wiring harness between C-221 ETACS-ECU connector terminal No.55 and C-123 hazard warning lamp switch connector terminal No.1.




- Check the input line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

**Step 7. ETACS switch data by using the SWS monitor**

Check the input signal from the hazard warning lamp switch.

- hazard warning lamp switch: from OFF to ON

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 04 | HAZARD LMP SW | OFF to ON (only when switch is operated) |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

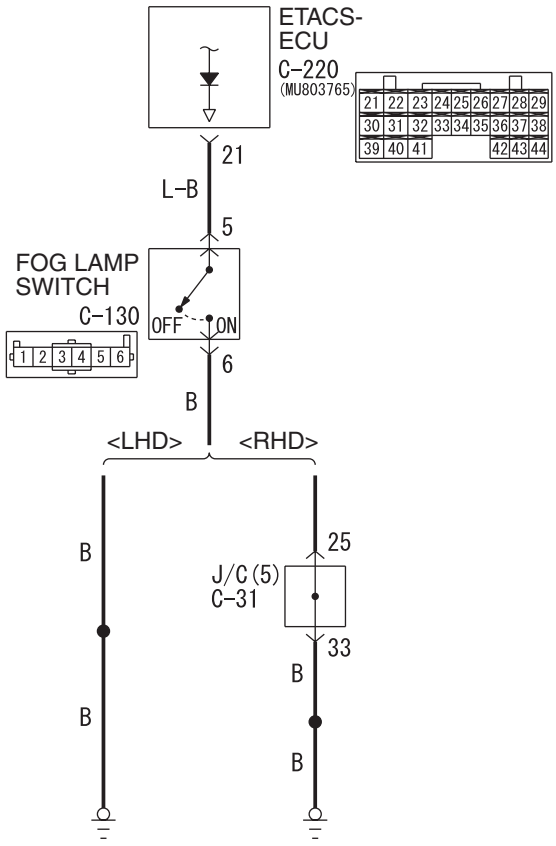
**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-13: The rear fog lamp switch signal is not received.

**⚠ CAUTION**

**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Rear Fog Lamp Switch Input Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E142A

## COMMENTS ON TROUBLE SYMPTOM

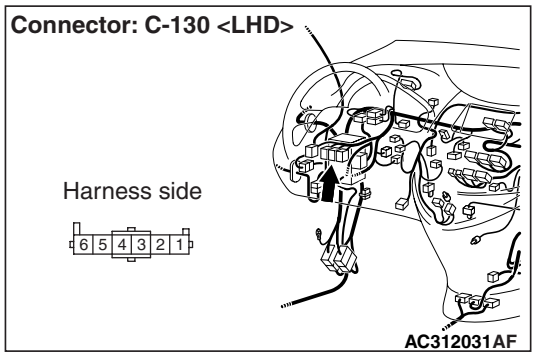
Input signal from the rear fog lamp switch is used to operate the rear fog lamps. If the signal is abnormal, the rear fog lamps will not illuminate and extinguish normally.

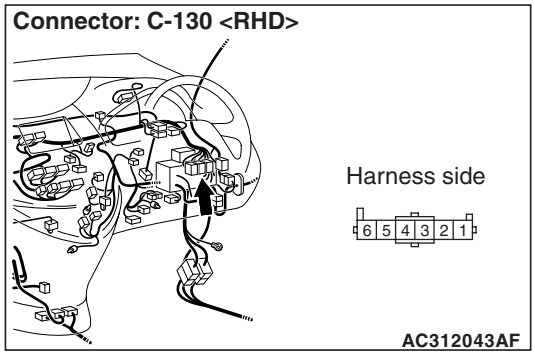
## POSSIBLE CAUSES

- Malfunction of the fog lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Connector check: C-130 fog lamp switch connector**



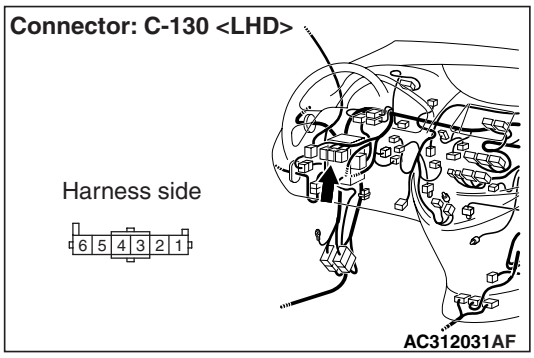



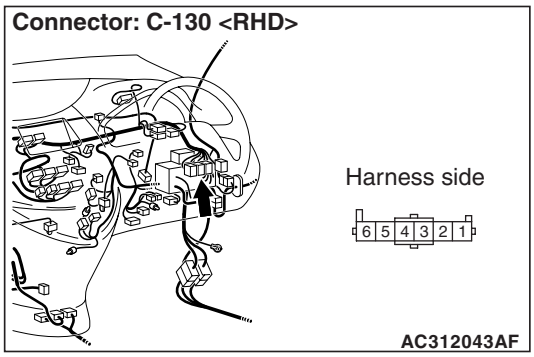

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

**Step 2. Check the rear fog lamp switch.**
Refer to GROUP 54A – Rear fog lamp P.54A-94.

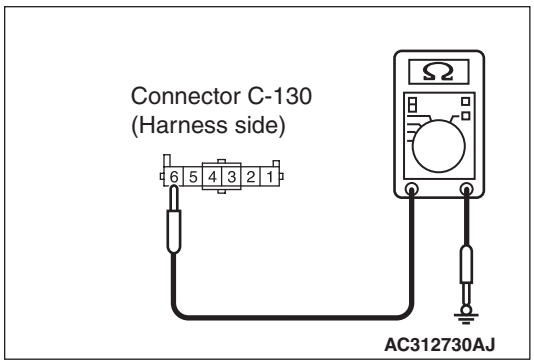
**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the fog lamp switch.

**Step 3. Resistance measurement at the C-130 fog lamp switch connector.**




(1) Remove the fog lamp switch, and measure at the wiring harness side.

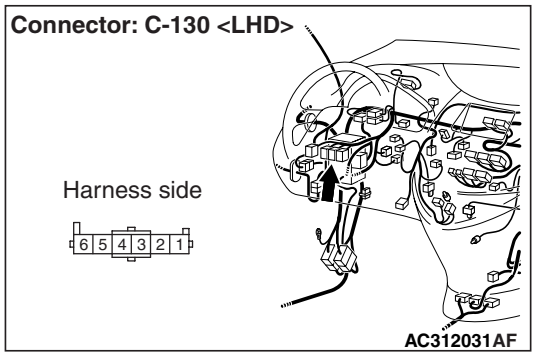


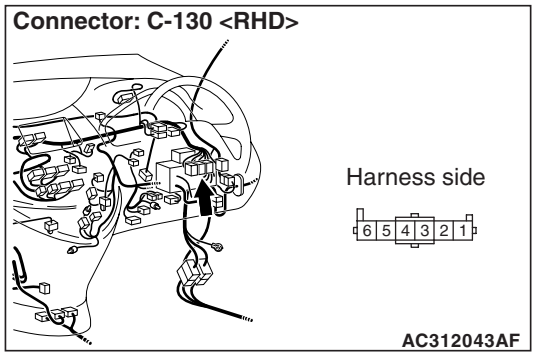

(2) Continuity between C-130 fog lamp switch connector terminal No.6 and body earth

**OK: 2 Ω or less**

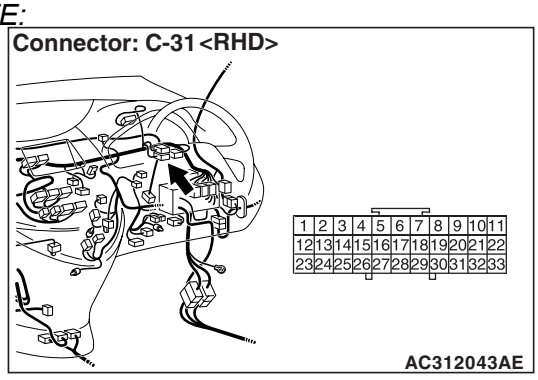
**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check the wiring harness between C-130 fog lamp switch connector terminal No.6 and body earth.**




*NOTE:*



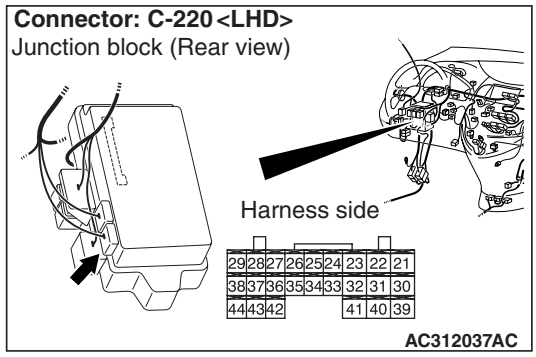

*Prior to the wiring harness inspection, check joint connector C-31 <RH drive vehicles>, and repair if necessary.*

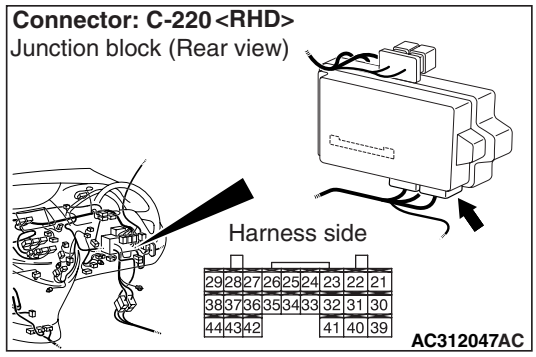
- Check the earth wires for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

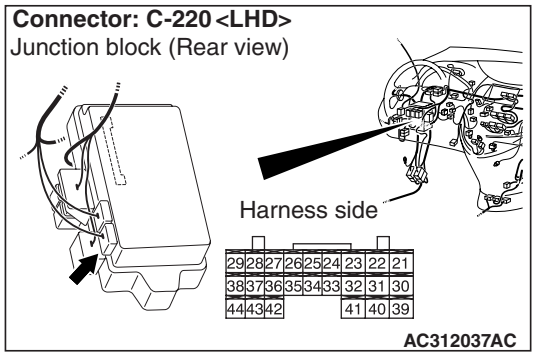
**Step 5. Connector check: C-220 ETACS-ECU connector**

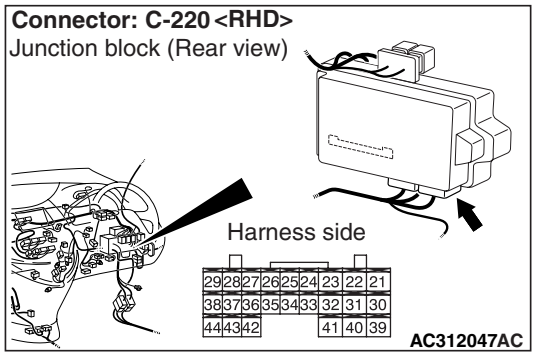


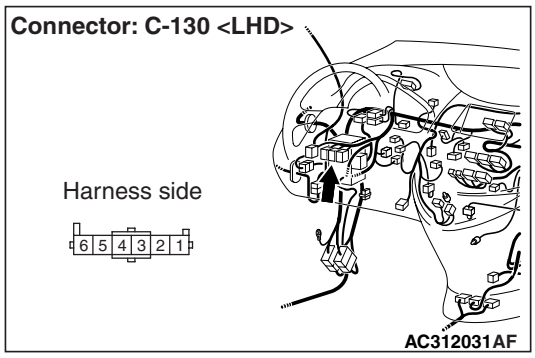



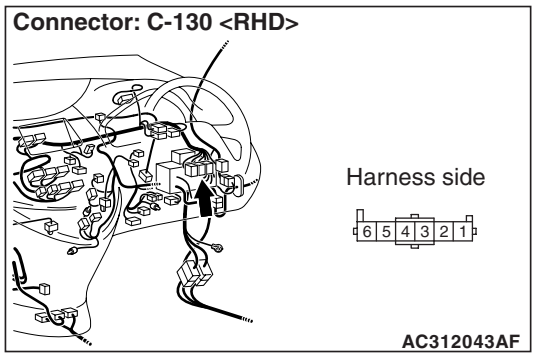

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

**Step 6. Check the wiring harness between C-220 ETACS-ECU connector terminal No.21 and C-130 fog lamp switch connector terminal No.5.**




- Check the input line for open circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

**Step 7. ETACS switch data by using the SWS monitor**

Check the input signal from the rear fog lamp switch.

- Rear fog lamp switch: from OFF to ON

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 11 | R.FOG LAMP SW | OFF to ON (only when switch is operated) |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

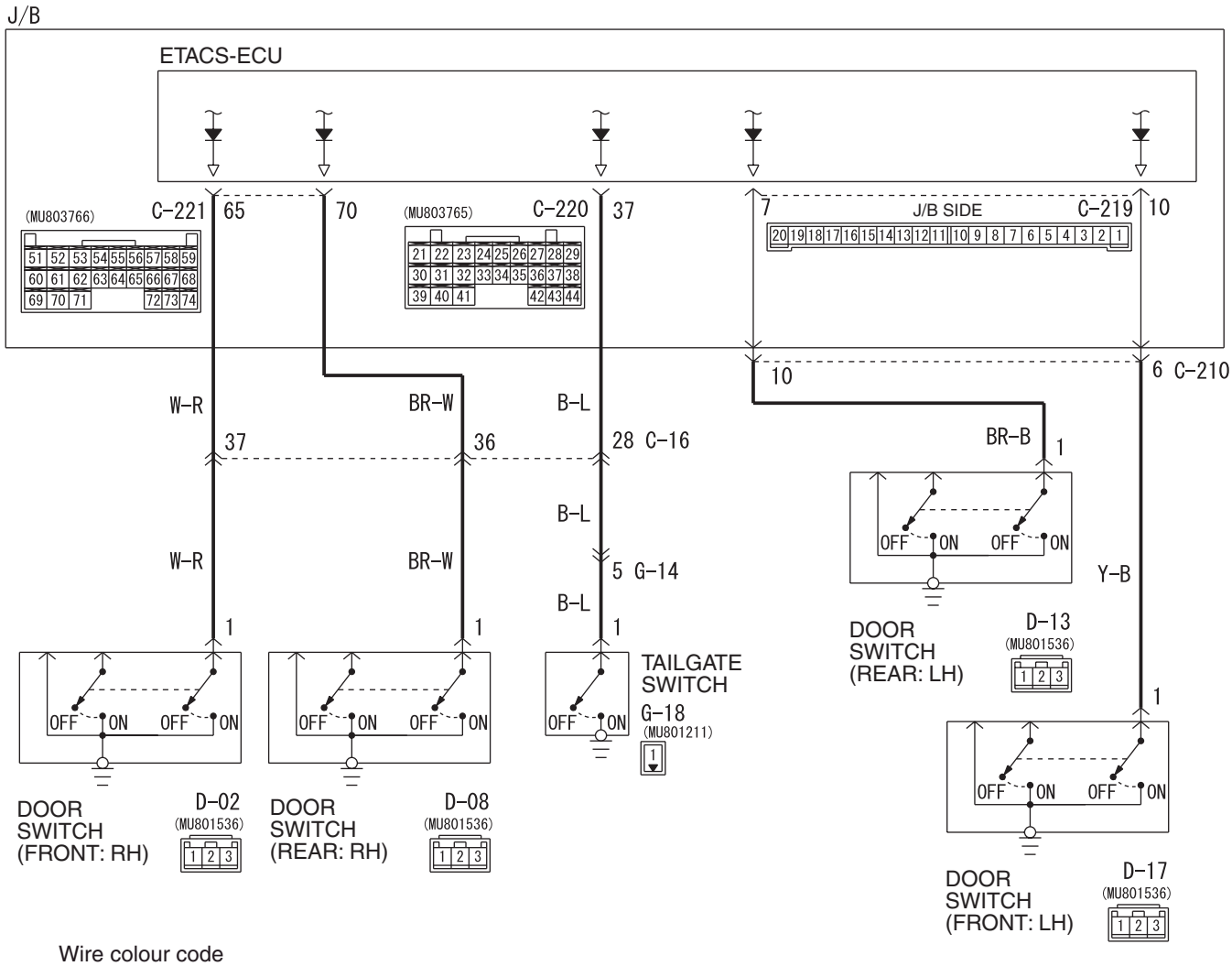
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-14: All the door switch signals are not received.

**⚠ CAUTION**

**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

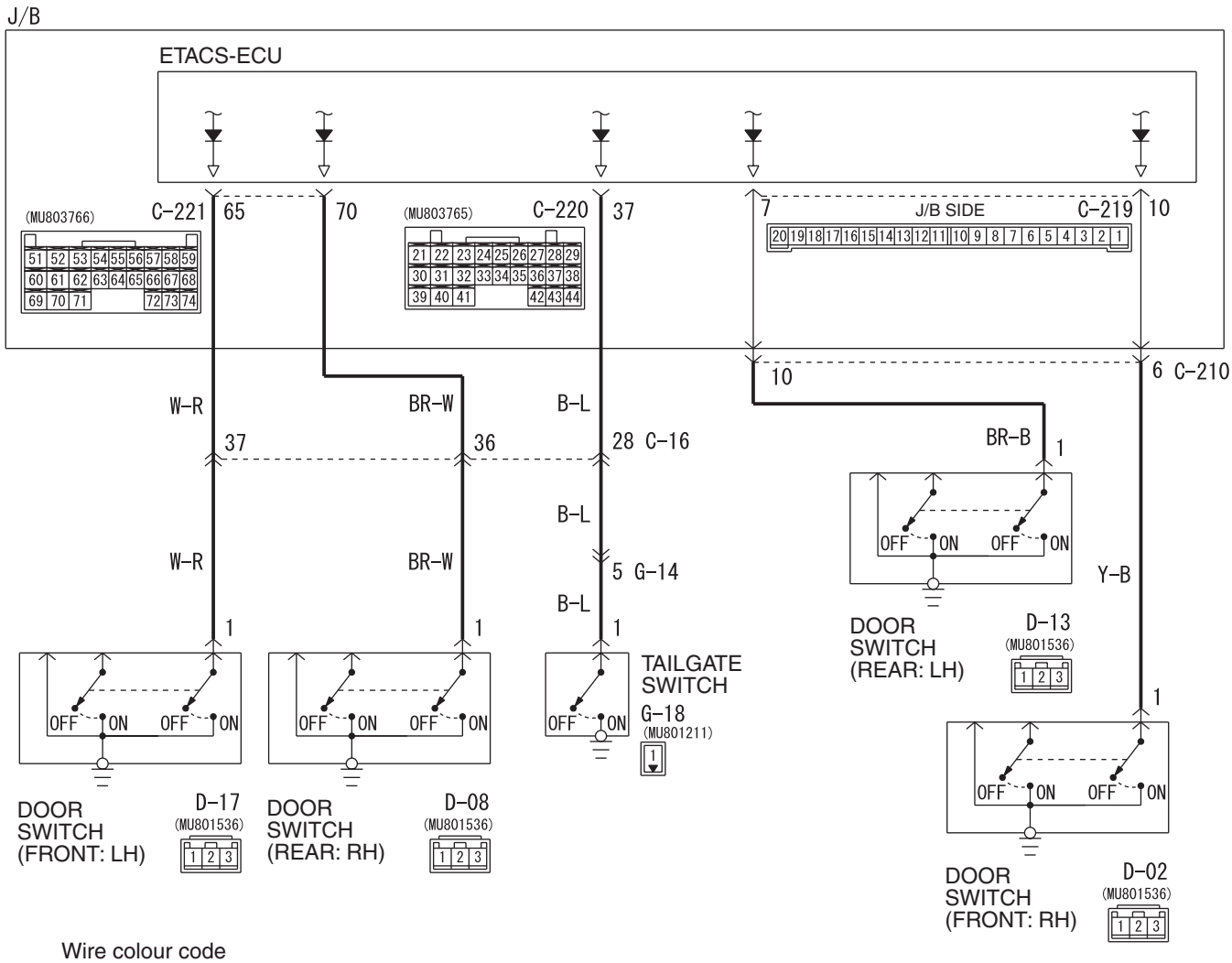
**Door Switches Input Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E137A

**Door Switches Input Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E138A

## COMMENTS ON TROUBLE SYMPTOM

Input signals from all the door switches are used to operate the functions below. If the signal(s) are abnormal, these functions will not work normally.

- Door-ajar warning buzzer
- Keyless entry system
- Interior lamps
- Interior lamp automatic-shutdown
- Door-ajar warning lamp

## POSSIBLE CAUSES

- Malfunction of the door switches
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. SWS monitor data list**

**<Selected item> ETACS ECU**

- Driver's door is open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 32 | DR DOOR SW | ON |

**OK: Normal condition is displayed.**

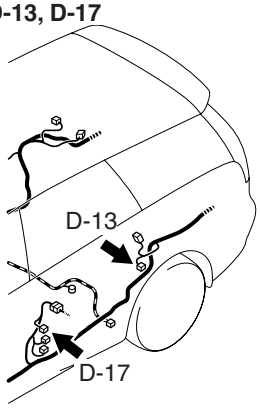
**Q: Is the check result normal?**

**YES :** Go to Step 2.

**NO :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received <LH drive vehicles>P.54C-474 or <RH drive vehicles>P.54C-476 ."

**Step 2. Connector check: D-17 (front: LH), D-02 (front: RH), D-08 (rear: RH) or D-13 (rear: LH) door switch connectors or G-18 tailgate switch connector, and C-219, C-220 and C-221 ETACS-ECU connector**

**Connectors: D-13, D-17**
**<LHD>**

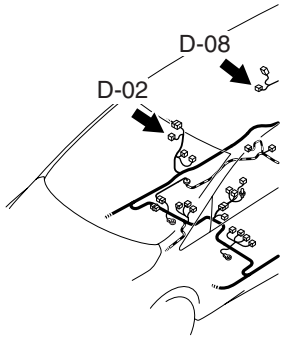



Harness side

D-13 D-17

AC312054AB

**Connectors: D-02, D-08**
**<LHD>**

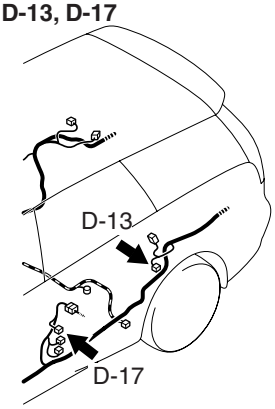



Harness side

D-02 D-08

AC312052AB

**Connectors: D-13, D-17**
**<RHD>**

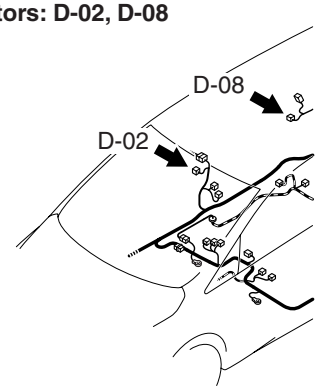



Harness side

D-13 D-17

AC312054AC

**Connectors: D-02, D-08**
**<RHD>**

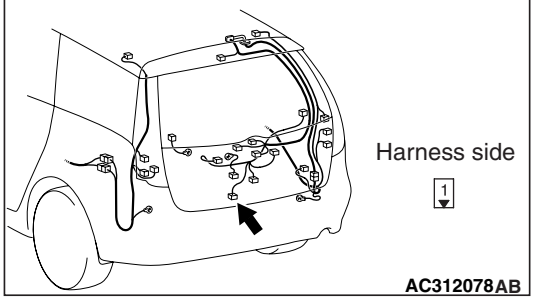



Harness side

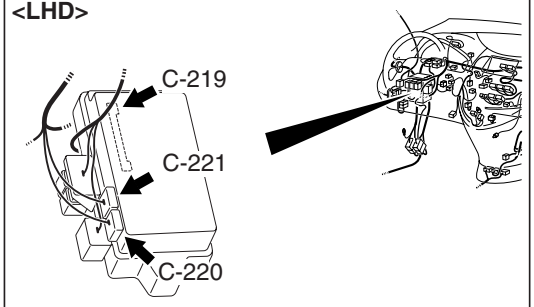
D-02 D-08

AC312059AB

**Connector: G-18**




**Connectors: C-219, C-220, C-221**
**<LHD>**




Junction block side
C-219

| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Junction block side
C-220

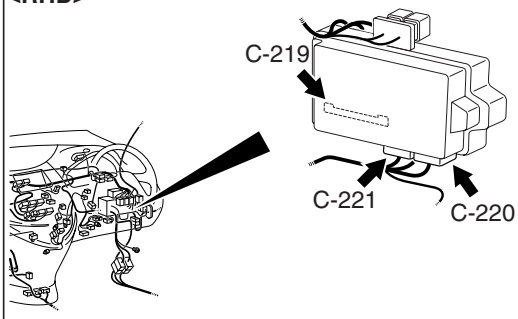
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
|---|---|---|---|---|---|---|---|---|
| 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 |
| 39 | 40 | 41 | | | | 42 | 43 | 44 |

Junction block side
C-221

| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 |
|---|---|---|---|---|---|---|---|---|
| 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 |
| 69 | 70 | 71 | | | | 72 | 73 | 74 |

AC312038AB

**Connectors: C-219, C-220, C-221**
**<RHD>**




Junction block side
C-219

| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Junction block side
C-220

| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
|---|---|---|---|---|---|---|---|---|
| 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 |
| 39 | 40 | 41 | | | | 42 | 43 | 44 |

Junction block side
C-221

| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 |
|---|---|---|---|---|---|---|---|---|
| 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 |
| 69 | 70 | 71 | | | | 72 | 73 | 74 |

AC312048AB

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the defective connector.

---

**Step 3. Check the installation condition.**
Check that the door switch is installed on the body correctly.

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Correct the installation condition.

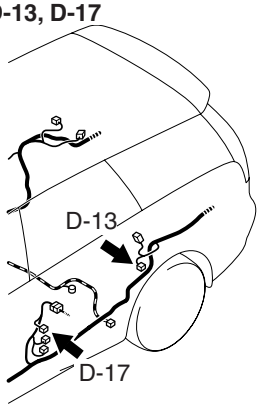
---

**Step 4. Check the door switch.**
Refer to GROUP 42 – Door P.42-32.

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Replace the door switch.

**Step 5. Check the wiring harness from terminal No.1 of the D-17 (front: LH), D-02 (front: RH), D-08 (rear: RH) or D-13 (rear: LH) door switch connector or terminal No.1 of the G-18 tailgate switch connector to terminal No.65 (front: LH and RH), No.70 (rear: RH), No.7 (rear: LH) or No.37 (tailgate) of the C-219, C-220 and C-221 ETACS-ECU connector.**

**Connectors: D-13, D-17**
**<LHD>**

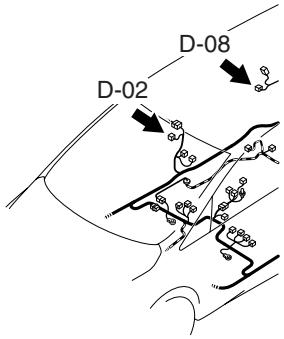



Harness side

D-13 D-17

AC312054AB

**Connectors: D-02, D-08**
**<LHD>**

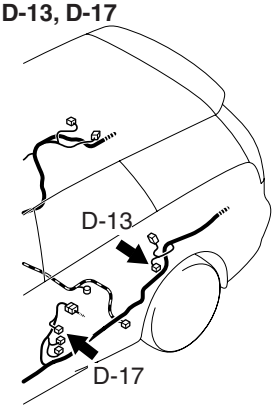



Harness side

D-02 D-08

AC312052AB

**Connectors: D-13, D-17**
**<RHD>**

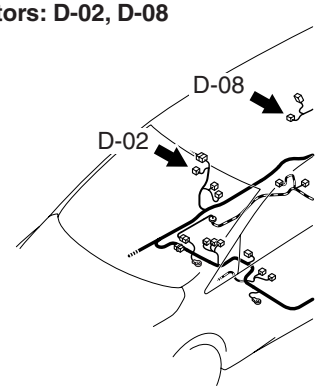



Harness side

D-13 D-17

AC312054AC

**Connectors: D-02, D-08**
**<RHD>**

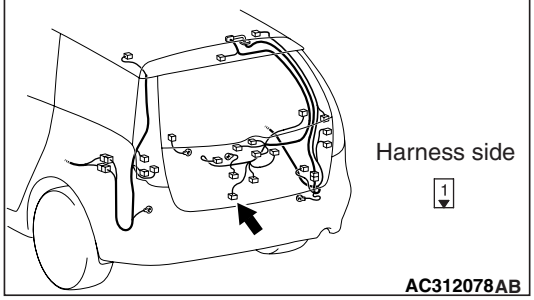



Harness side

D-02 D-08

AC312059AB

**Connector: G-18**

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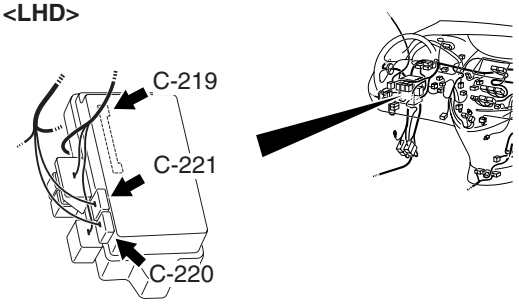
**Connectors: C-219, C-220, C-221 <LHD>**




Junction block side
C-219

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

Junction block side
C-220

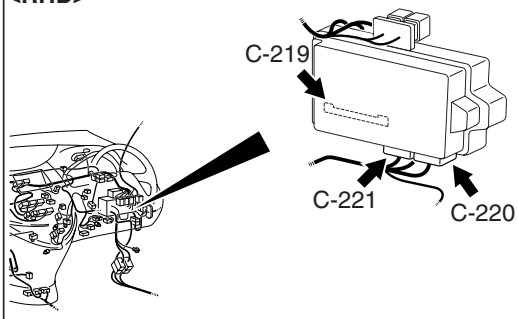
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | |
| 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | |
| 39 | 40 | 41 | | | | 42 | 43 | 44 | |

Junction block side
C-221

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | |
| 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | |
| 69 | 70 | 71 | | | | 72 | 73 | 74 | |

AC312038AB

**Connectors: C-219, C-220, C-221 <RHD>**




Junction block side
C-219

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

Junction block side
C-220

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | |
| 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | |
| 39 | 40 | 41 | | | | 42 | 43 | 44 | |

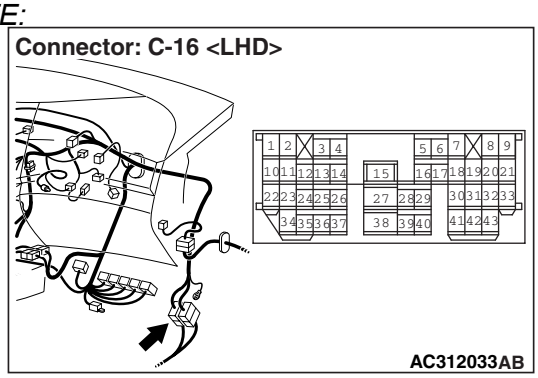
Junction block side
C-221

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | |
| 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | |
| 69 | 70 | 71 | | | | 72 | 73 | 74 | |

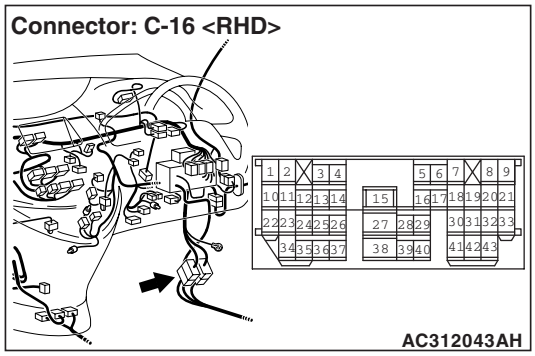
AC312048AB

*NOTE:*

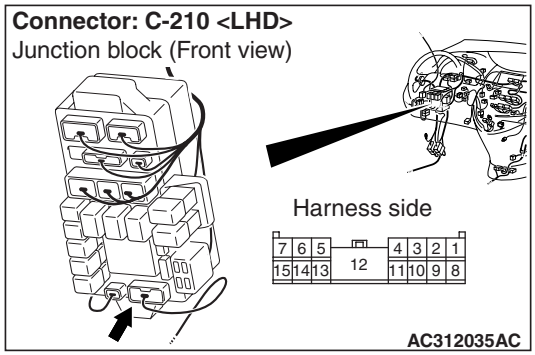
**Connector: C-16 <LHD>**



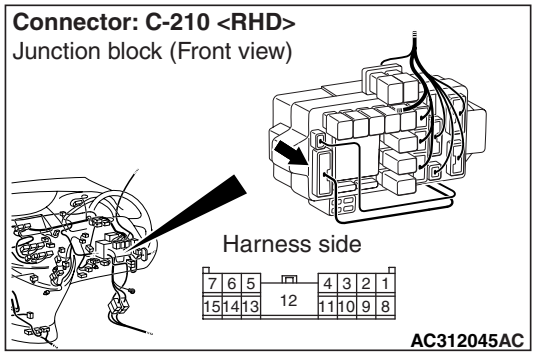

**Connector: C-16 <RHD>**



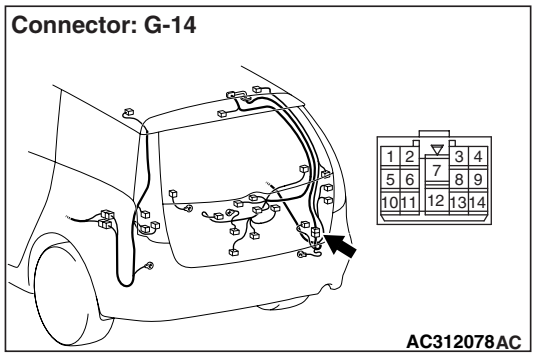

**Connector: C-210 <LHD>**
Junction block (Front view)




**Connector: C-210 <RHD>**
Junction block (Front view)




**Connector: G-14**




*Prior to the wiring harness inspection, check intermediate connector C-16 (front: RH <LH drive vehicles>, front: LH <RH drive vehicles>, rear: RH and tailgate) or G-14 (tailgate) and junction block connector C-210 (rear: LH) and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the wiring harness between each of the door switches and the ETACS-ECU.

---

**Step 6. ETACS switch data by using the SWS monitor**

Check the input signals from the door switches.

- Doors other than the driver's door: Closed to open

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 05 | PASS DOORSW | from OFF to ON |
| Item 41 | R.DOOR (RH) SW | from OFF to ON |
| Item 42 | R.DOOR (LH) SW | from OFF to ON |

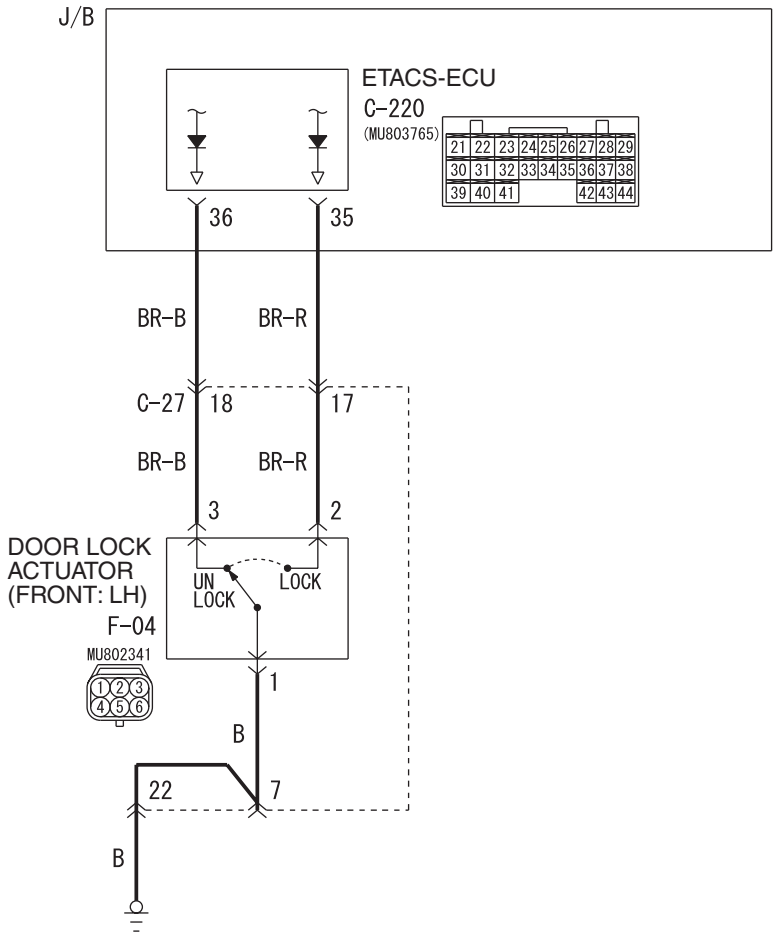
**OK: Normal conditions are displayed for all the items.**

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-15: The driver's door lock actuator switch signal is not received. <LH drive vehicles>

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Door Lock Actuator Input Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E140A

## COMMENTS ON TROUBLE SYMPTOM

Input signal from the driver's door lock actuator is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

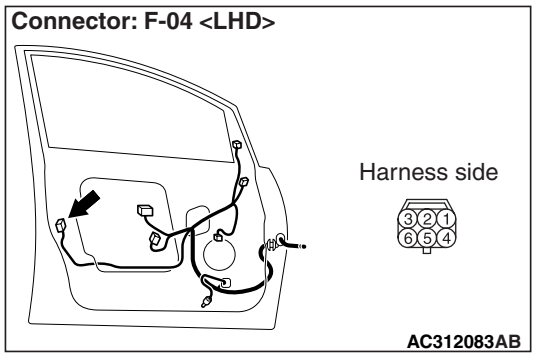
- Central door locking
- Interior lamps

## POSSIBLE CAUSES

- Malfunction of the front door lock actuator (LH)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Connector check: F-04 front door lock actuator (LH) connector**

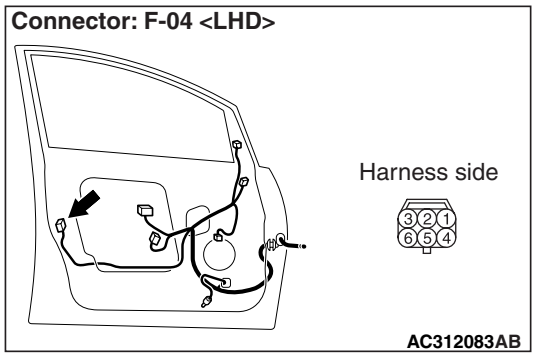



**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

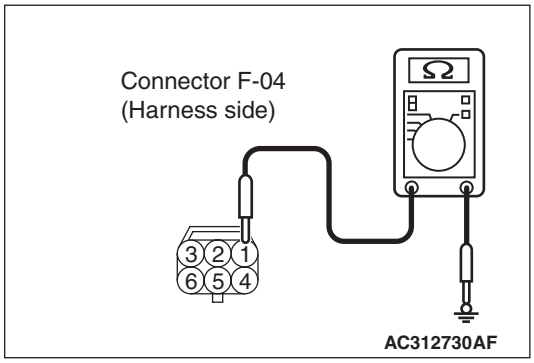
**Step 2. Check the front door lock actuator (LH).**
Refer to GROUP 42 – Door P.42-38.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the front door lock actuator (RH).

**Step 3. Resistance measurement at the F-04 front door lock actuator (LH) connector.**



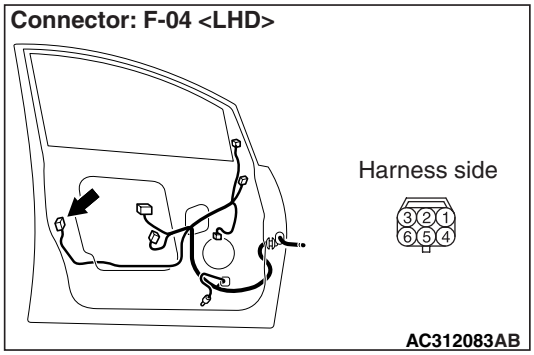

(1) Disconnect the connector, and measure at the wiring harness side.



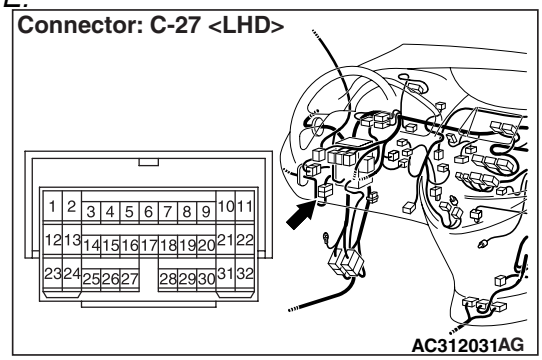

(2) Resistance between F-04 front door lock actuator (LH) connector terminal No.1 and body earth
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check the wiring harness between F-04 front door lock actuator (LH) connector terminal No.1 and body earth**




*NOTE:*

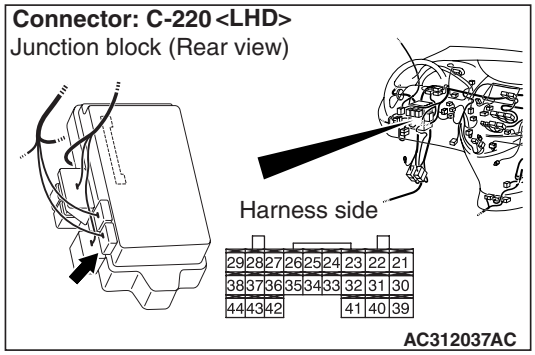



*Prior to the wiring harness inspection, check intermediate connector C-27, and repair if necessary.*

- Check the earth wires for open circuit.

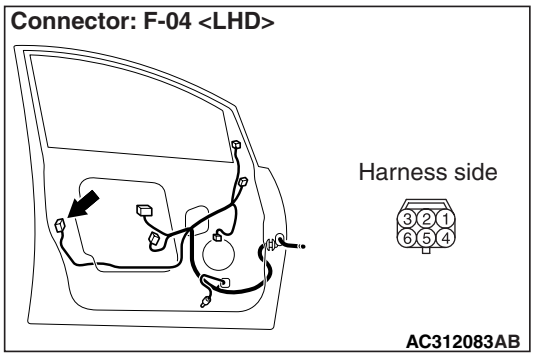
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

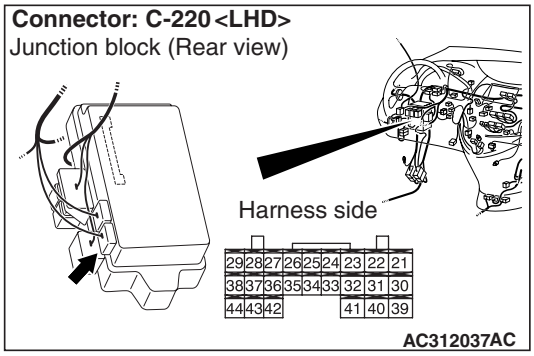
**Step 5. Connector check: C-220 ETACS-ECU connector**



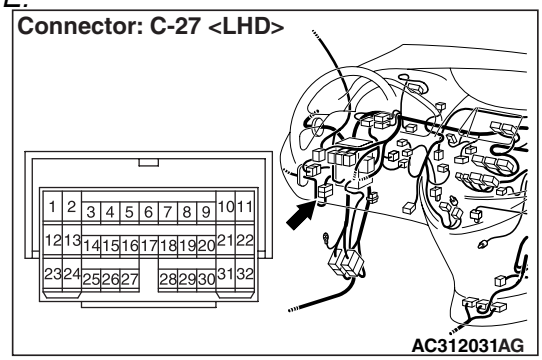

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

**Step 6. Check the wiring harness from F-04 front door lock actuator (LH) connector terminal Nos.2 and 3 to C-220 ETACS-ECU connector terminal Nos.35 and 36.**




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-27, and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

**Step 7. ETACS switch data by using the SWS monitor**

Check the input signal from the driver's door lock actuator switch.

- Driver's door lock actuator switch: LOCK → UNLOCK

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 21 | DR DOR LCK SW | ON → OFF |
| Item 22 | DR DOR ULK SW | OFF → ON |

**OK: Normal conditions are displayed for all the items.**

**Q: Is the check result normal?**

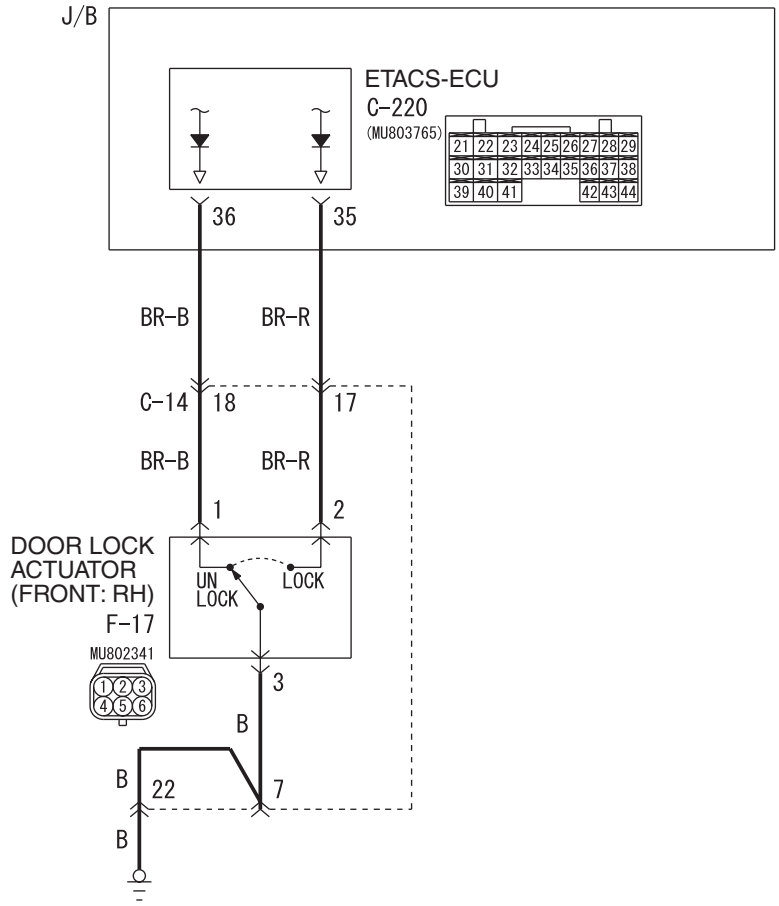
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-15: The driver's door lock actuator switch signal is not received. <RH drive vehicles>

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Door Lock Actuator Input Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E146A

## COMMENTS ON TROUBLE SYMPTOM

Input signal from the driver's door lock actuator is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

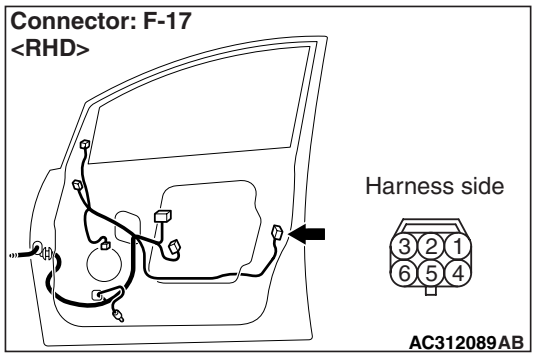
- Central door locking
- Interior lamps

## POSSIBLE CAUSES

- Malfunction of the front door lock actuator (RH)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Connector check: F-17 front door lock actuator (RH) connector**

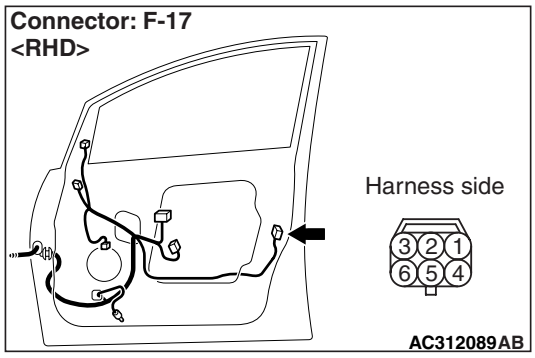



**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

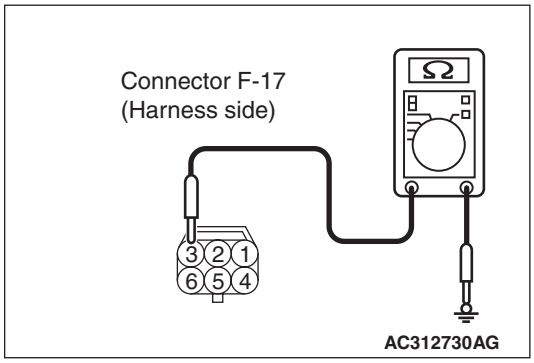
**Step 2. Check the front door lock actuator (RH).**
Refer to GROUP 42 – Door P.42-38.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the front door lock actuator (RH).

**Step 3. Resistance measurement at the F-17 front door lock actuator (RH) connector**



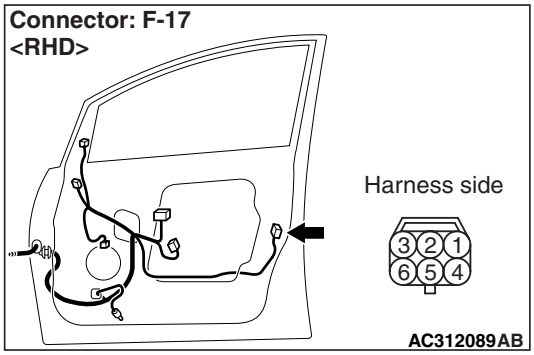

(1) Disconnect the connector, and measure at the wiring harness side.



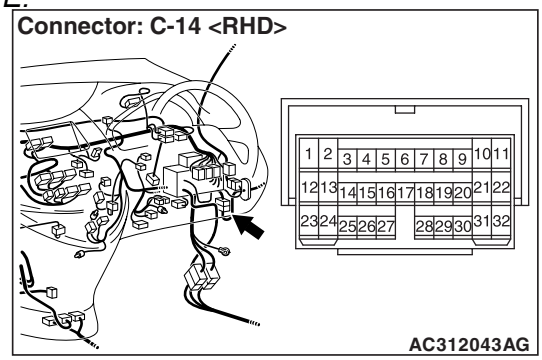

(2) Resistance between F-17 front door lock actuator (RH) connector terminal No.3 and body earth
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check the wiring harness between F-17 front door lock actuator (RH) connector terminal No.3 and body earth**




*NOTE:*

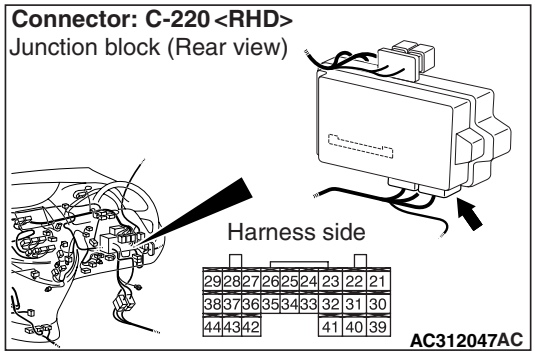



*Prior to the wiring harness inspection, check intermediate connector C-14, and repair if necessary.*

- Check the earth wires for open circuit.

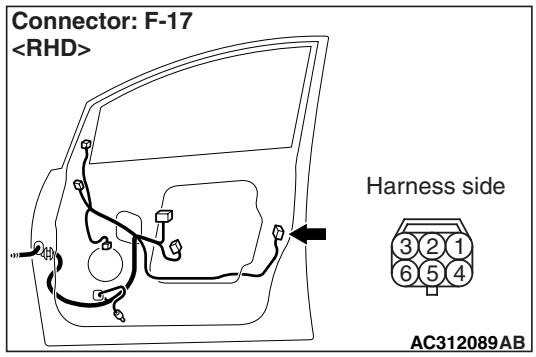
**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

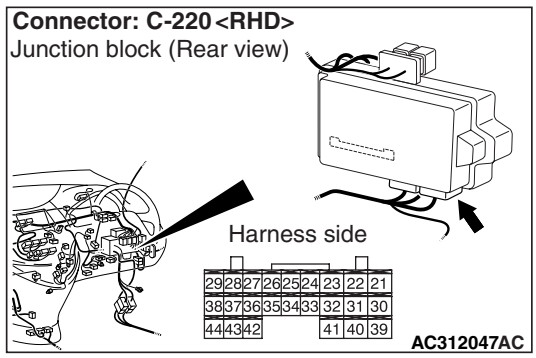
**Step 5. Connector check: C-220 ETACS-ECU connector**



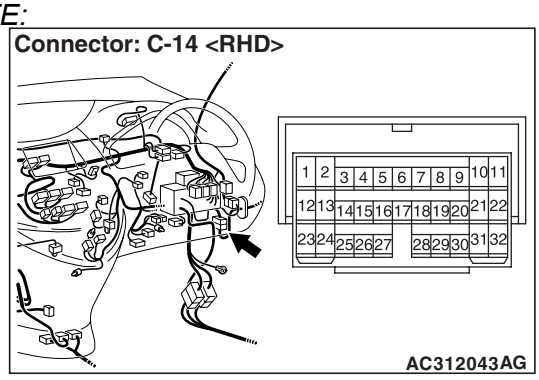

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

**Step 6. Check the wiring harness from F-17 front door lock actuator (RH) connector terminal Nos.1 and 2 to C-220 ETACS-ECU connector terminal Nos.35 and 36.**




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-14, and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

**Step 7. ETACS switch data by using the SWS monitor**

Check the input signal from the driver's door lock actuator switch.

- Driver's door lock actuator switch: LOCK → UNLOCK

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 21 | DR DOR LCK SW | ON → OFF |
| Item 22 | DR DOR ULK SW | OFF → ON |

**OK: Normal conditions are displayed for all the items.**

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

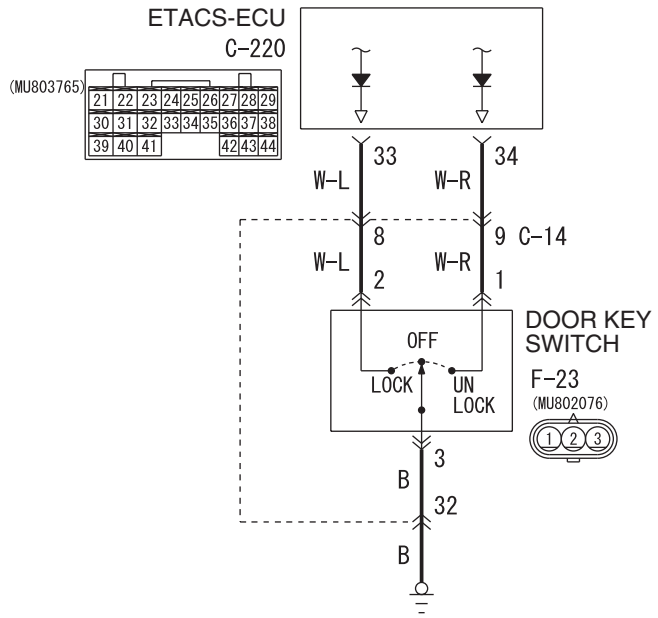
**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-16: The passenger's door lock key switch signal is not detected. <LH drive vehicles>

**⚠ CAUTION**

**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Door Lock Key Cylinder Switch Input Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E144A

## COMMENTS ON TROUBLE SYMPTOM

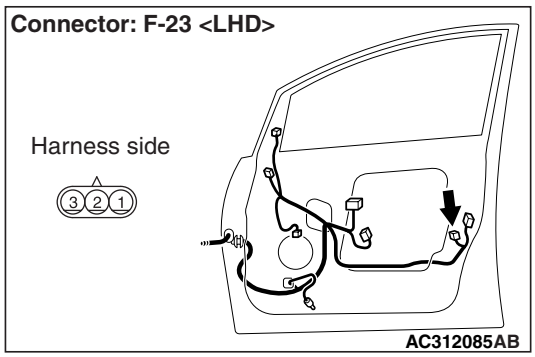
Input signal from the front passenger's door lock key switch is used to operate the central door locking function. If the signal is abnormal, the central door locking function will not work normally.

## POSSIBLE CAUSES

- Malfunction of the front passenger's door lock key switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

### Step 1. Connector check: F-23 door key switch connector



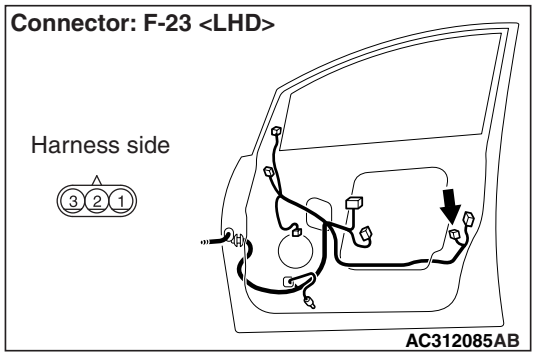

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

### Step 2. Check the door key switch.

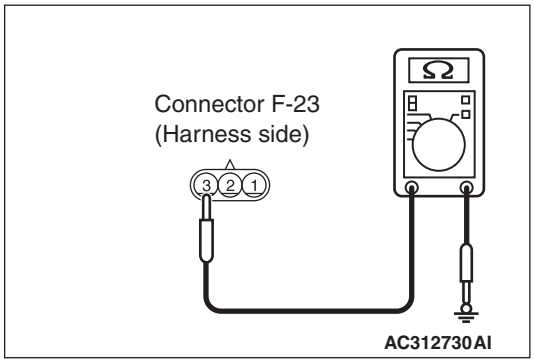
Refer to GROUP 42 – Door P.42-38.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the door key switch.

### Step 3. Resistance measurement at the F-23 door key switch connector.




(1) Disconnect the connector, and measure at the wiring harness side.

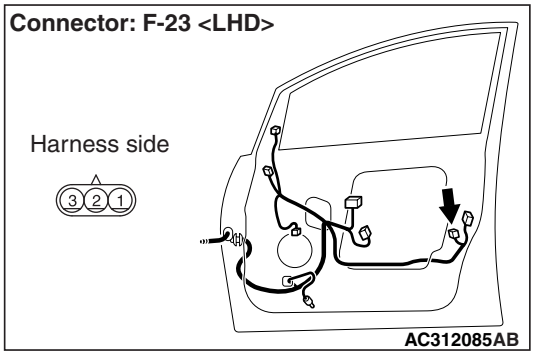



(2) Resistance between F-23 door key switch connector terminal No.3 and body earth

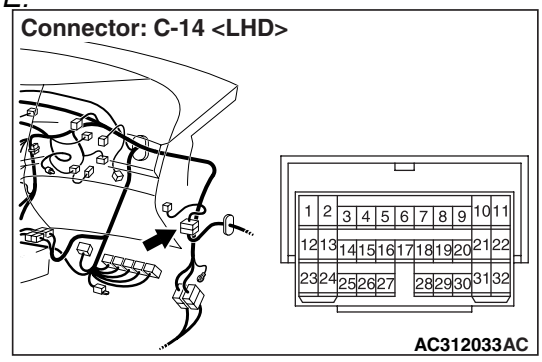
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

### Step 4. Check the wiring harness between F-23 door key switch connector terminal No.3 and body earth.




*NOTE:*

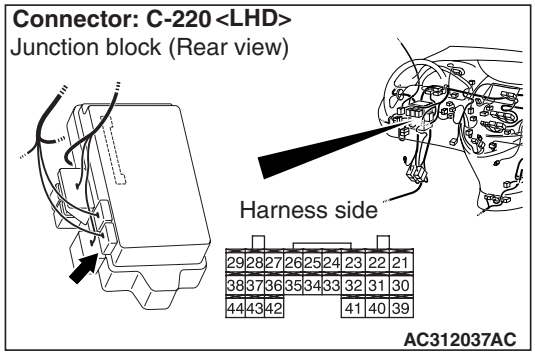



*Prior to the wiring harness inspection, check intermediate connector C-14, and repair if necessary.*

- Check the earth wires for open circuit.

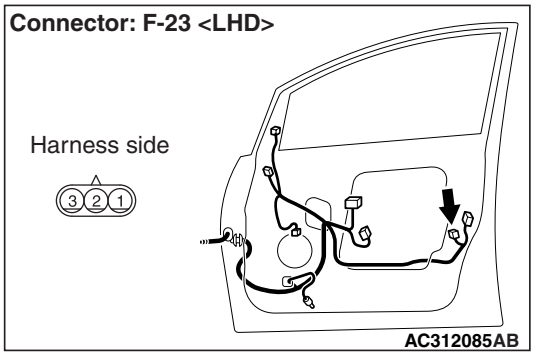
**Q: Is the check result normal?**
**YES :** Intermittent malfunction. (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

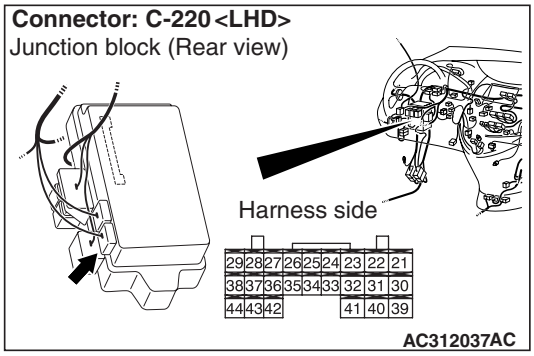
**Step 5. Connector check: C-220 ETACS-ECU connector**



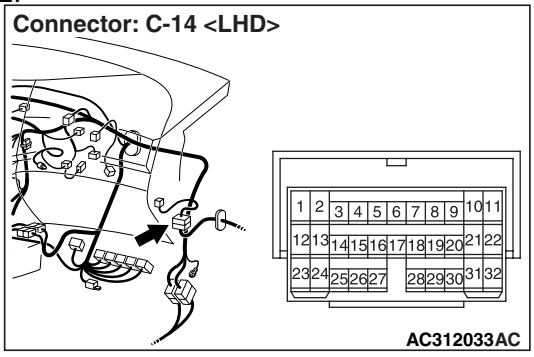

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

**Step 6. Check the wiring harness from F-23 door key switch connector terminal Nos.1 and 2 to C-220 ETACS-ECU connector terminal Nos.34 and 33.**




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-14, and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

**Step 7. ETACS switch data by using the SWS monitor**

Check the input signal from the passenger's door lock key switch.

- passenger's door lock key cylinder: Neutral to lock

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 26 | CNTR DOOR LCK | ON (only when operated to lock) |
| Item 27 | CNTR DOOR ULCK | OFF |

- Passenger's door lock key cylinder: Neutral to unlock

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 26 | CNTR DOOR LCK | OFF |
| Item 27 | CNTR DOOR ULCK | ON (only when operated to unlock) |

**OK: Normal conditions are displayed for all the items.**

**Q: Is the check result normal?**

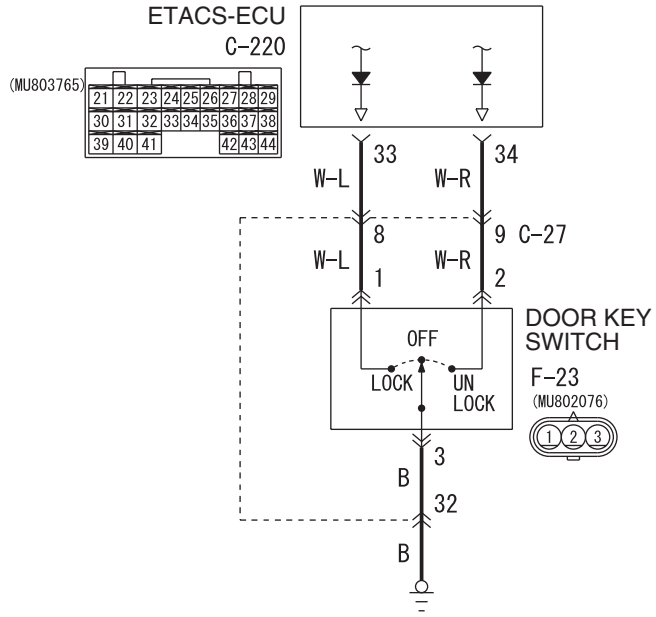
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Replace the ETACS-ECU.

**Inspection Procedure Q-16: The passenger's door lock key switch signal is not detected. <RH drive vehicles>**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Door Lock Key Cylinder Switch Input Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E145A

## COMMENTS ON TROUBLE SYMPTOM

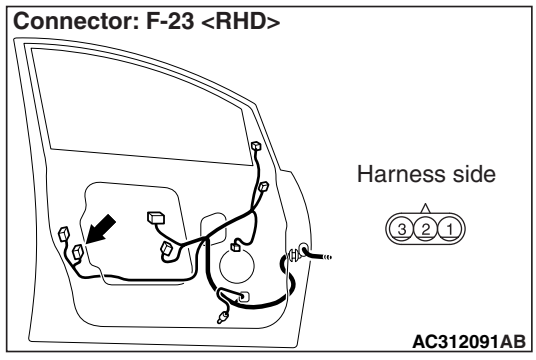
Input signal from the front passenger's door lock key switch is used to operate the central door locking function. If the signal is abnormal, the central door locking function will not work normally.

## POSSIBLE CAUSES

- Malfunction of the front passenger's door lock key switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Connector check: F-23 door key switch connector**

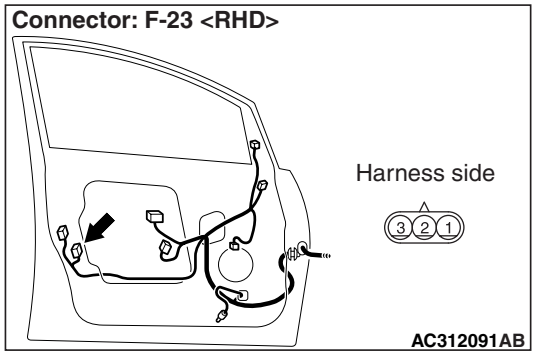



**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

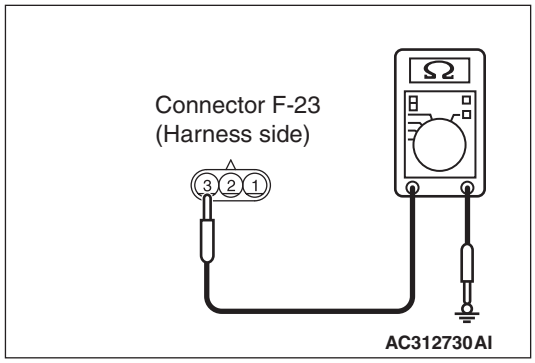
**Step 2. Check the door key switch.**
Refer to GROUP 42 – Door P.42-38.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the door key switch.

**Step 3. Resistance measurement at the F-23 door key switch connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

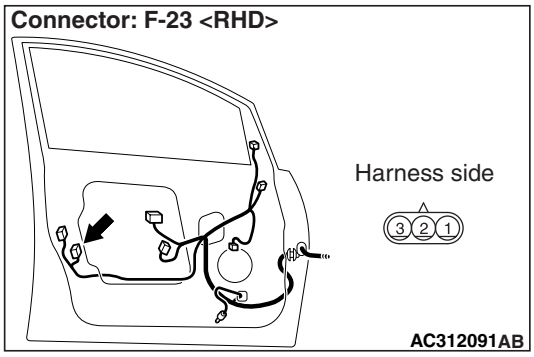



(2) Resistance between F-23 door key switch connector terminal No.3 and body earth

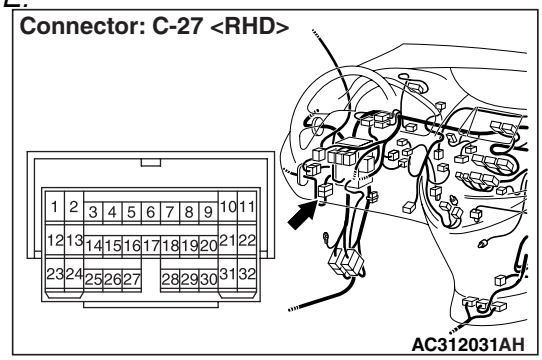
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check the wiring harness between F-23 door key switch connector terminal No.3 and body earth.**




*NOTE:*

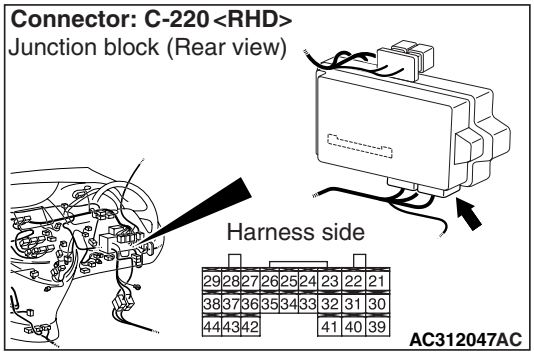



*Prior to the wiring harness inspection, check intermediate connector C-27, and repair if necessary.*

- Check the earth wires for open circuit.

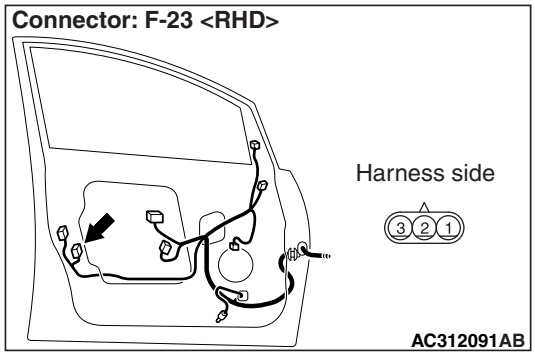
**Q: Is the check result normal?**
**YES :** Intermittent malfunction. (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

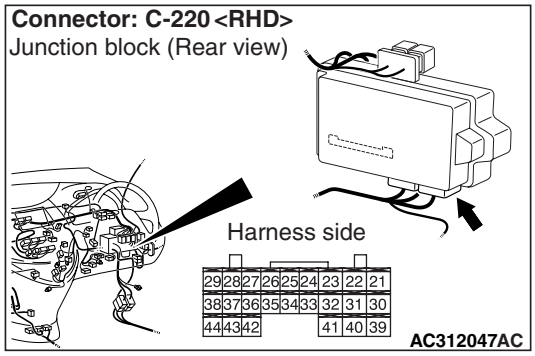
**Step 5. Connector check: C-220 ETACS-ECU connector**



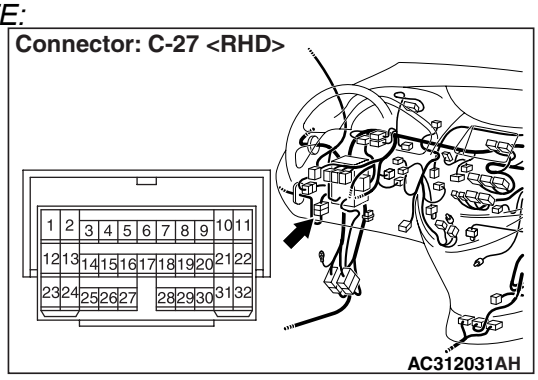

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the defective connector.

**Step 6. Check the wiring harness from F-23 door key switch connector terminal Nos.1 and 2 to C-220 ETACS-ECU connector terminal Nos.33 and 34.**




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-27, and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

**Step 7. ETACS switch data by using the SWS monitor**

Check the input signal from the passenger's door lock key switch.

- Passenger's door lock key cylinder: Neutral to lock

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 26 | CNTR DOOR LCK | ON (only when operated to lock) |
| Item 27 | CNTR DOOR ULCK | OFF |

- Passenger's door lock key cylinder: Neutral to unlock

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 26 | CNTR DOOR LCK | OFF |
| Item 27 | CNTR DOOR ULCK | ON (only when operated to unlock) |

**OK: Normal conditions are displayed for all the items.**

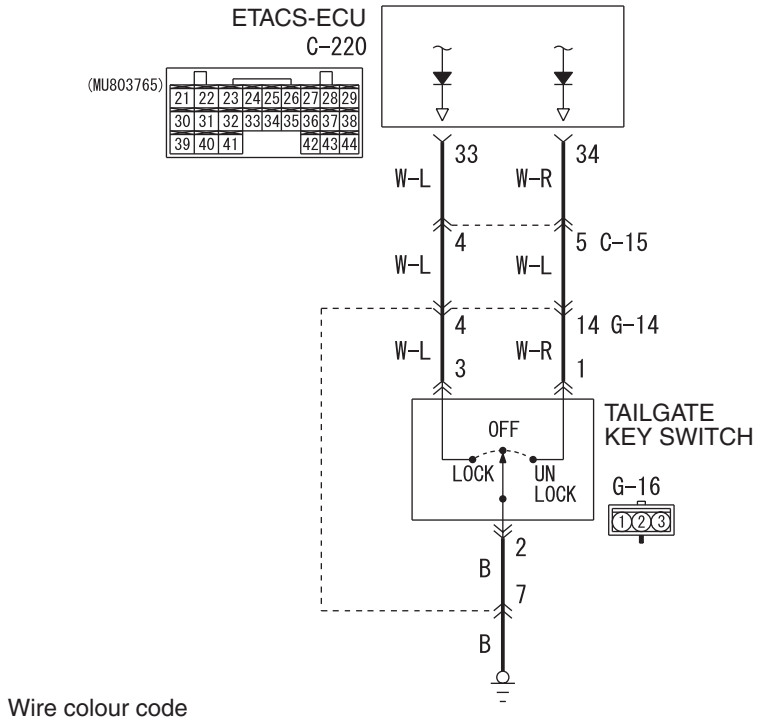
**Q: Are the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

**Inspection Procedure Q-17: The tailgate key switch signal is not detected.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Tailgate Key Switch Input Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E147A

## COMMENTS ON TROUBLE SYMPTOM

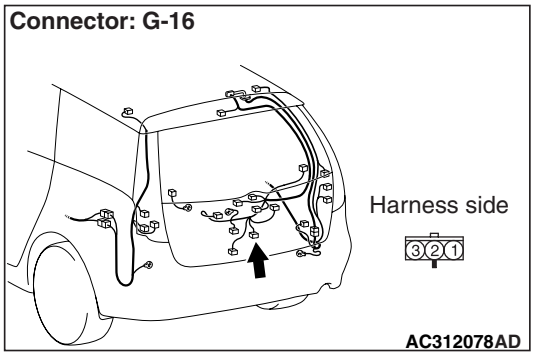
Input signal from the tailgate key switch is used to operate the central door locking function. If the signal is abnormal, the central door locking function will not work normally.

## POSSIBLE CAUSES

- Malfunction of the tailgate key switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Connector check: G-16 tailgate key switch connector**

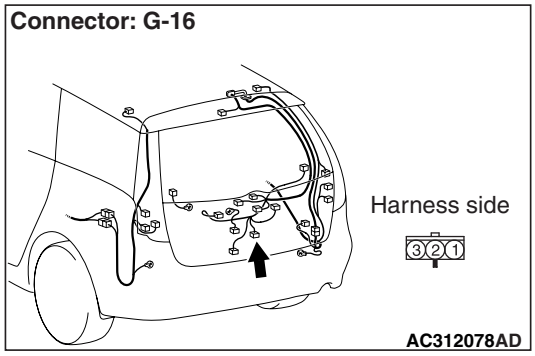



**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

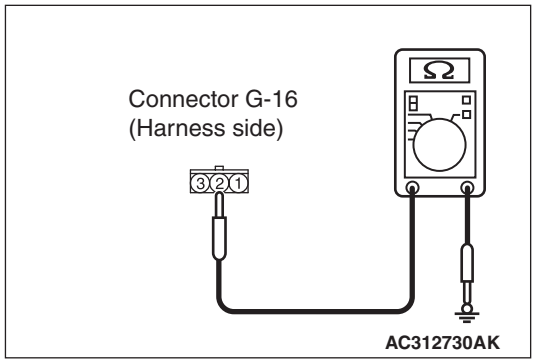
**Step 2. Check the tailgate key switch.**
Refer to GROUP 42 – Door P.42-38.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the tailgate lock key switch.

**Step 3. Resistance measurement at the G-16 tailgate key switch connector.**




(1) Disconnect the connector, and measure at the wiring harness side.

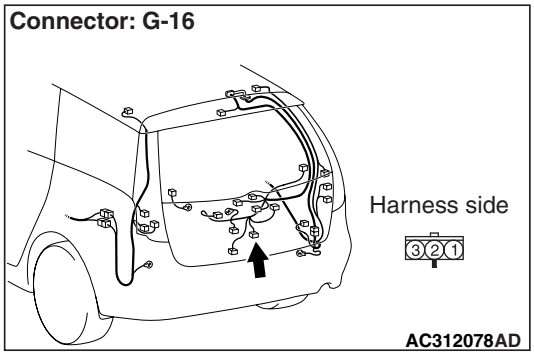



(2) Resistance between G-16 tailgate key switch connector terminal No.2 and body earth

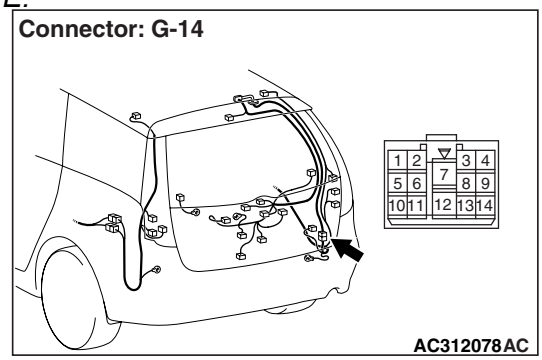
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check the wiring harness between G-16 tailgate key switch connector terminal No.2 and body earth.**




*NOTE:*

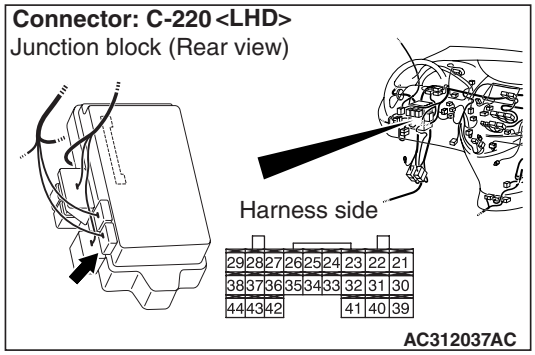


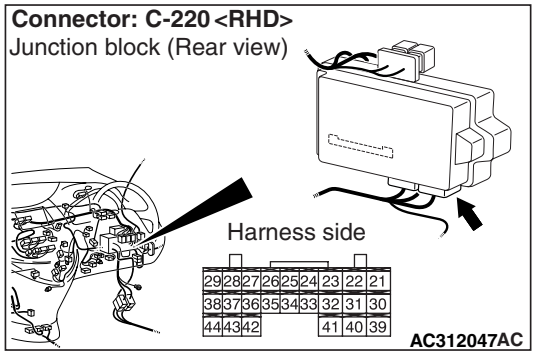

*Prior to the wiring harness inspection, check intermediate connector G-14, and repair if necessary.*

- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** Intermittent malfunction. (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5)).
**NO :** Repair the wiring harness.

### Step 5. Connector check: C-220 ETACS-ECU connector

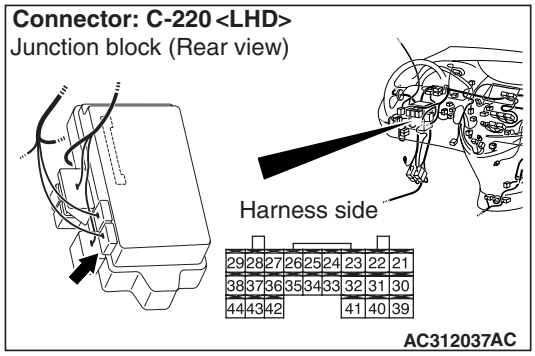


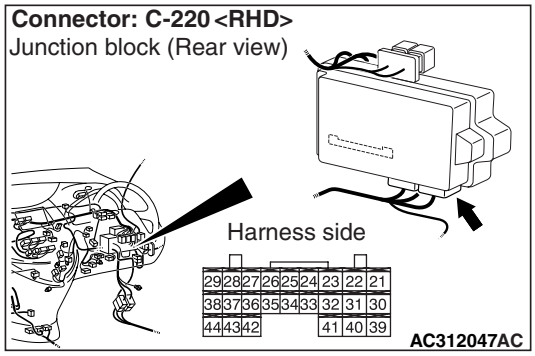



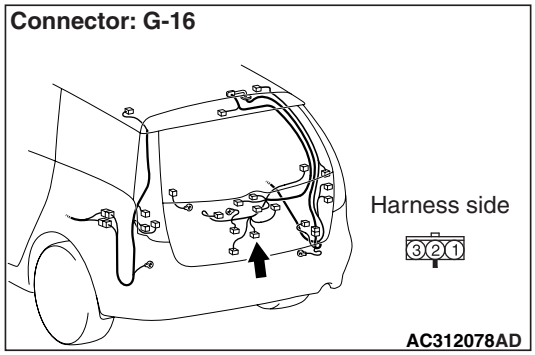

**Q: Is the check result normal?**

**YES :** Go to Step 6.
**NO :** Repair the defective connector.

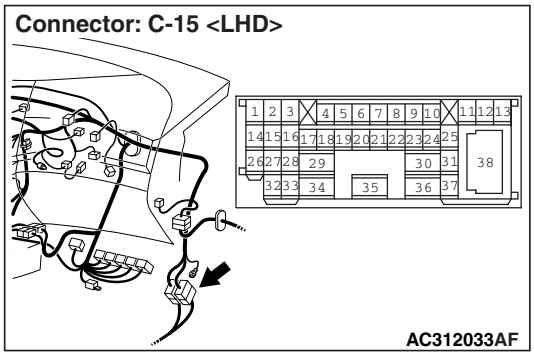
**Step 6. Check the wiring harness from G-16 tailgate key switch connector terminal Nos.1 and 3 to C-220 ETACS-ECU connector terminal Nos.33 and 34.**

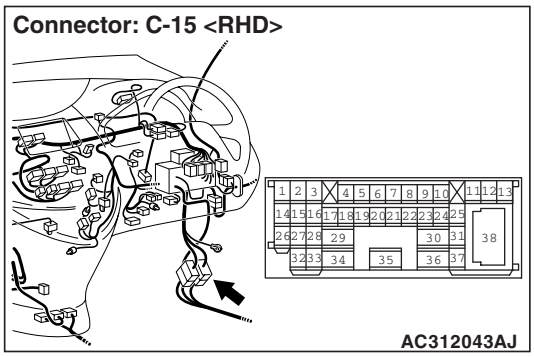


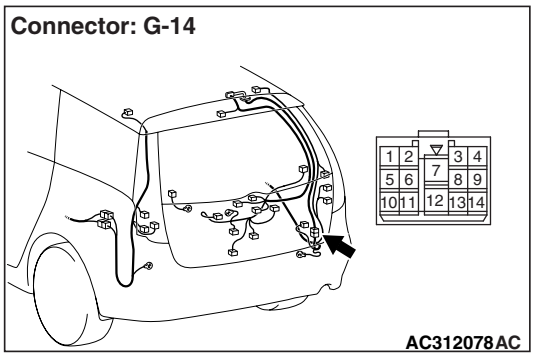




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-15 and G-14, and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

**Step 7. ETACS switch data by using the SWS monitor**

Check the input signal from the tailgate key switch.

- Tailgate key switch: Neutral to lock

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 18 | TRK UNLOCK SW | OFF |
| Item 19 | GATE LOCK SW | ON (only when operated to lock) |

- Tailgate key switch: Neutral to unlock

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 18 | TRK UNLOCK SW | ON (only when operated to unlock) |
| Item 19 | GATE LOCK SW | OFF |

**OK: Normal conditions are displayed for all the items.**

**Q: Is the check result normal?**

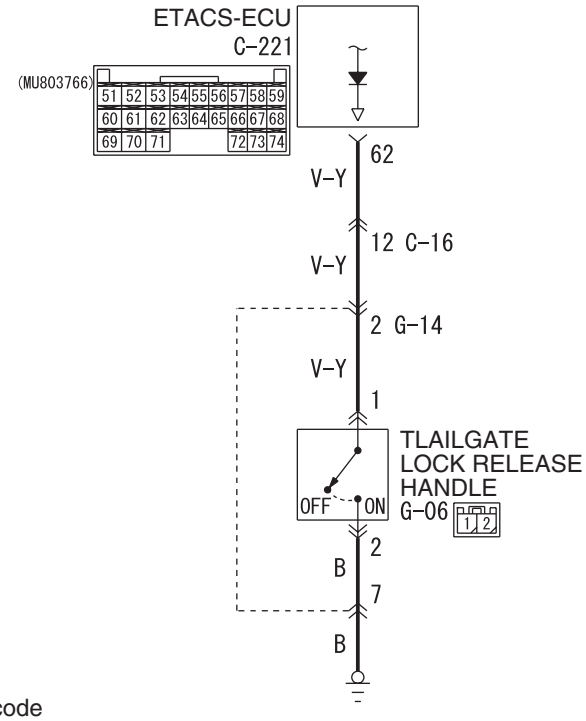
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Replace the ETACS-ECU.

**Inspection Procedure Q-18: The tailgate lock release handle signal is not received.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Tailgate Lock Release Handle Input Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E188A

## COMMENTS ON TROUBLE SYMPTOM

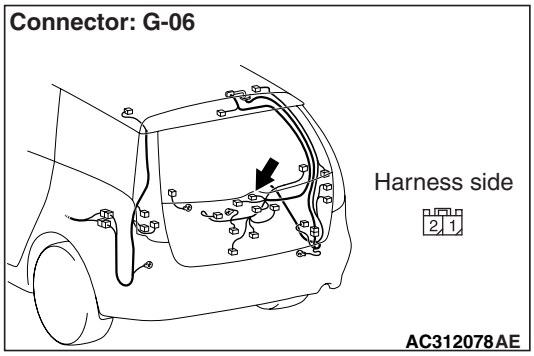
Input signal from the tailgate lock release handle is used to operate the central door locking function. If the signal is abnormal, the central door locking function will not work normally.

## POSSIBLE CAUSES

- Malfunction of the tailgate lock release handle
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

**Step 1. Connector check: G-06 tailgate lock release handle connector**

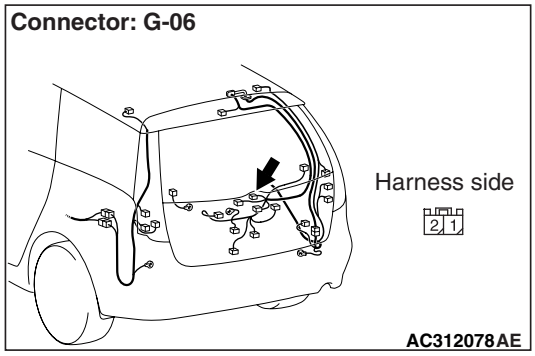



**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

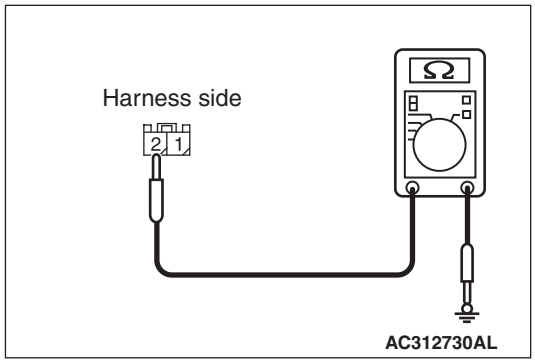
**Step 2. Check the tailgate lock release handle.**
Refer to GROUP 42 – Tailgate P.42-51.

**Q: Is the check result normal?**
**YES :** Go to Step 3
**NO :** Replace the tailgate lock release handle.

**Step 3. Resistance measurement at the G-06 tailgate lock release handle connector**




(1) Disconnect the connector, and measure at the wiring harness side.

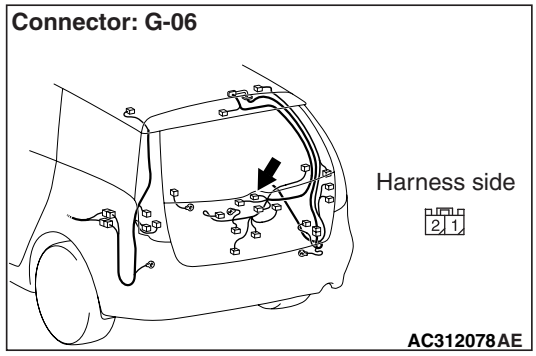



(2) Resistance between G-06 tailgate lock release handle connector terminal No.2 and body earth

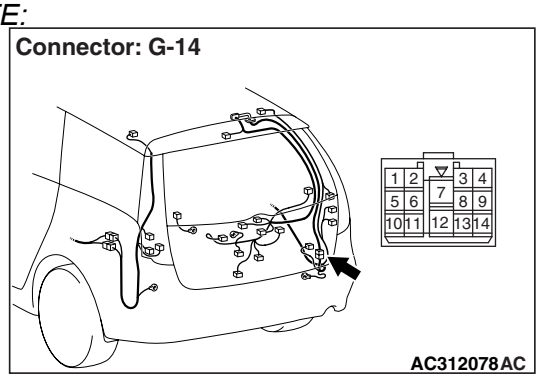
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check the wiring harness between G-06 tailgate lock release handle connector terminal No.2 and body earth**




*NOTE:*

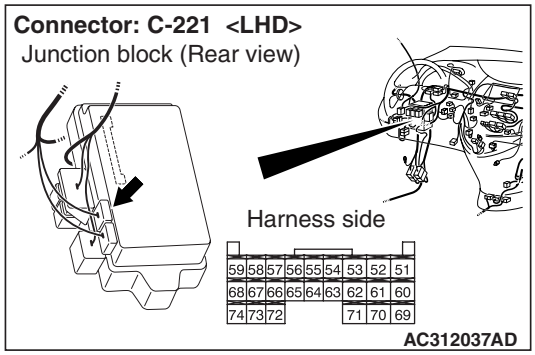


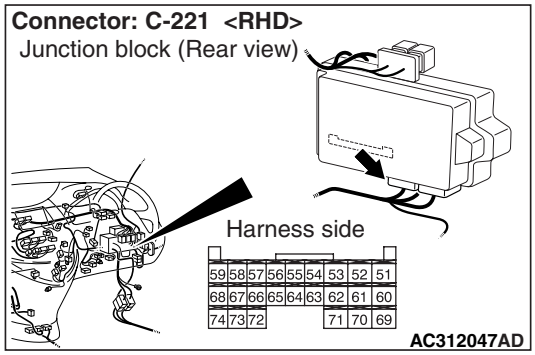

*Prior to the wiring harness inspection, check intermediate connector G-14, and repair if necessary.*

- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

### Step 5. Connector check: C-221 ETACS-ECU connector

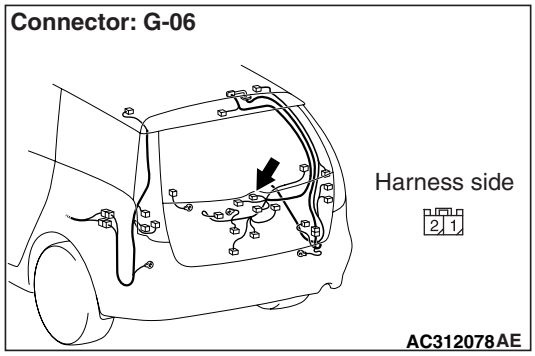


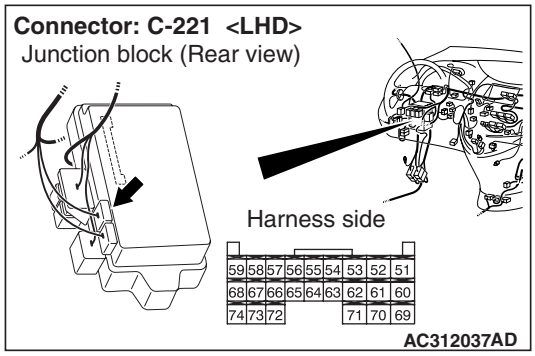



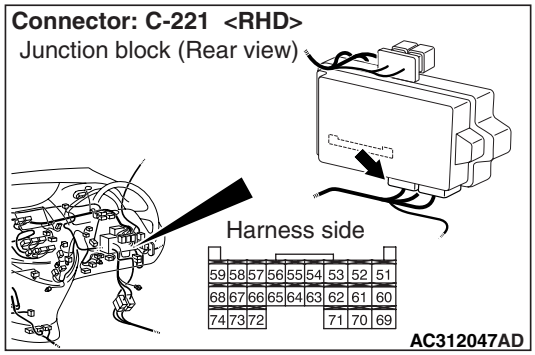

**Q: Is the check result normal?**

**YES :** Go to Step 6.
**NO :** Repair the defective connector.

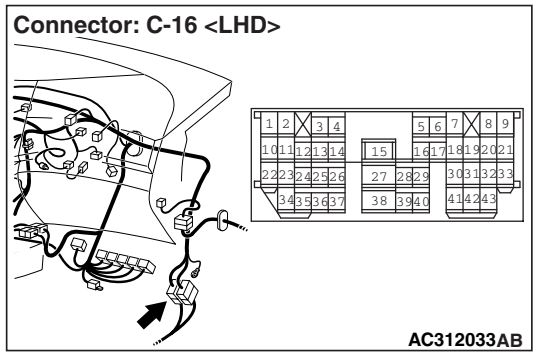
**Step 6. Check the wiring harness from G-06 tailgate lock release handle connector terminal No.1 to C-221 ETACS-ECU connector terminal No.62.**

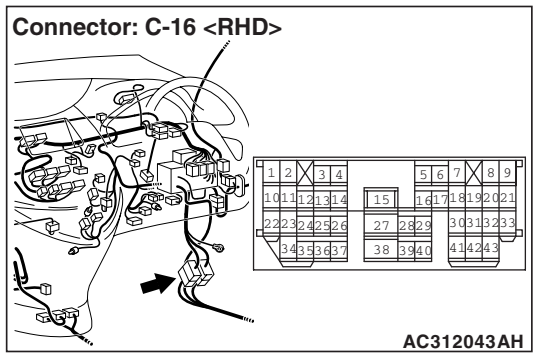


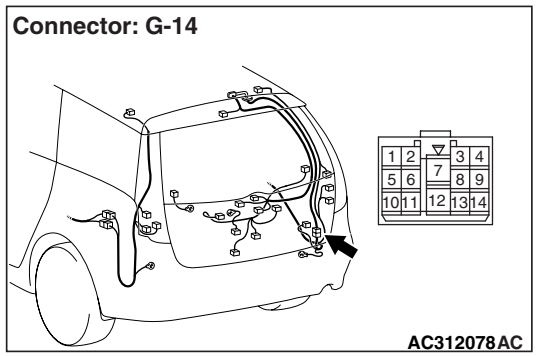




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-16, G-14 and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

**Step 7. ETACS switch data by using the SWS monitor**

Check the input signal from the Tailgate lock release handle.

- Tailgate lock release handle: from OFF to ON

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 30 | GTE OPENER SW | OFF to ON (only when switch is operated) |

**OK: Normal condition is displayed.**

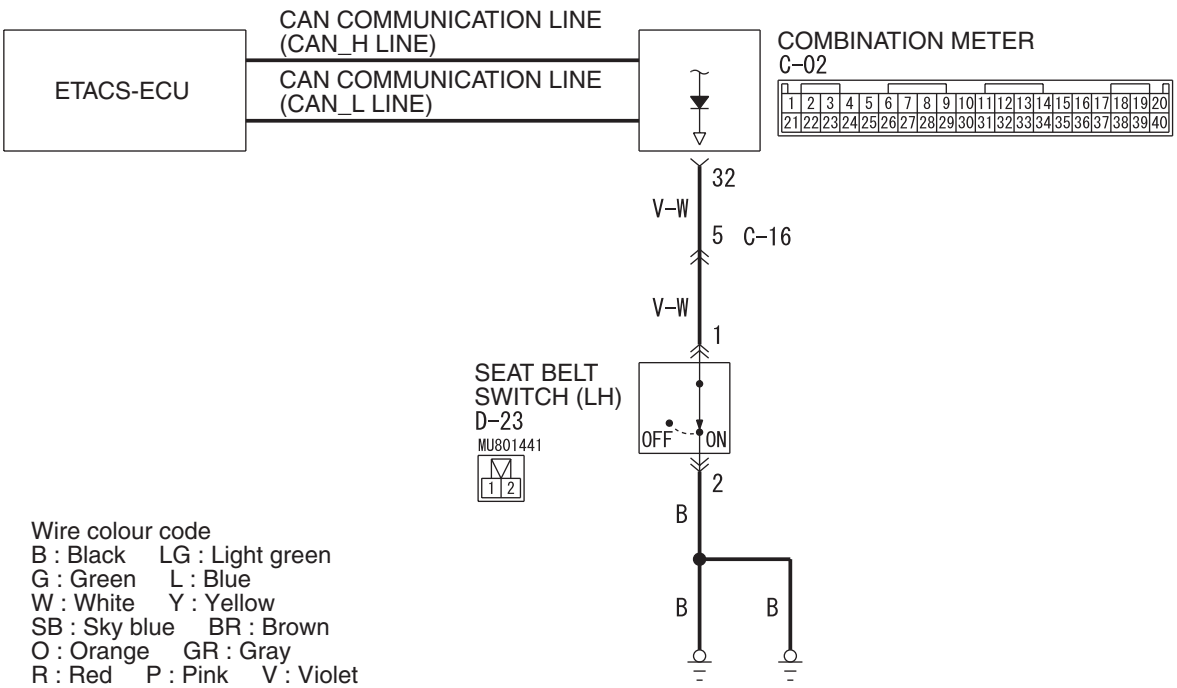
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-19: The driver's seat belt switch signal is not received. <LH drive vehicles>

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Driver's Seat Belt Switch Input Circuit <LHD>**




W4X54E212A

## COMMENTS ON TROUBLE SYMPTOM

Input signal from the driver's seat belt switch signal is used to operate the central door locking function. If the signal is abnormal, the central door locking function will not work normally.

## POSSIBLE CAUSES

- Malfunction of the driver's seat belt switch
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

### Step 1. MUT-III CAN bus diagnostics

Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-16).

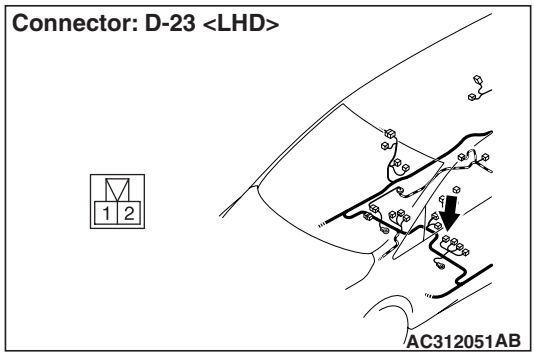
### Step 2. MUT-III diagnosis code

Check whether the combination meter-related diagnosis code is set.

**Q: Is the diagnosis code set?**

**YES :** Diagnose the combination meter (Refer to GROUP 54A – Combination meter P.54A-35).
**NO :** Go to Step 3.

### Step 3. Connector check: D-23 seat belt switch (LH) connector



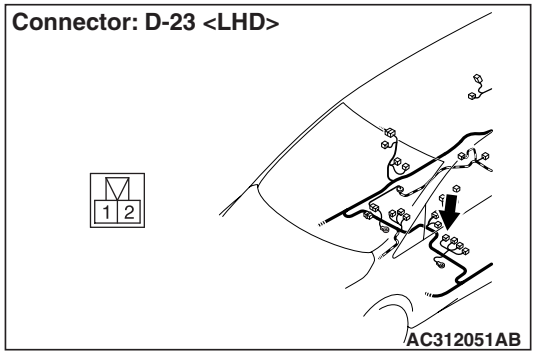

**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the defective connector.

### Step 4. Check the seat belt switch (LH).

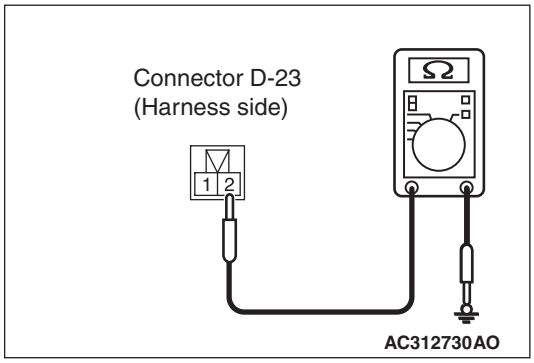
Refer to GROUP 52A – Front seat belt P.52A-36.

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Replace the inner seat belt (driver's side).

### Step 5. Resistance measurement at the D-23 seat belt switch (LH) connector.




(1) Disconnect the connector, and measure at the wiring harness side.

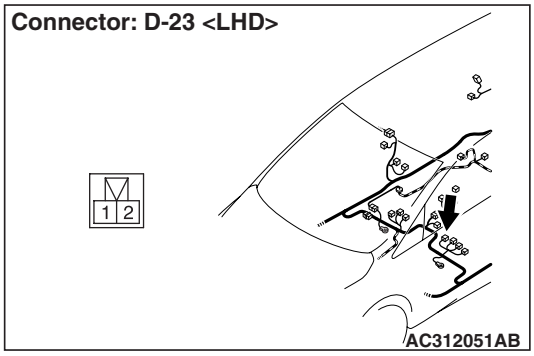



(2) Resistance between D-23 seat belt switch (LH) connector terminal No.2 and body earth

**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Go to Step 6.

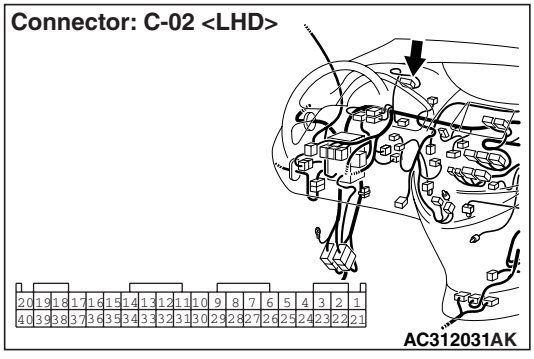
### Step 6. Check the wiring harness between D-23 seat belt switch (LH) connector terminal No.2 and body earth.




- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** Replace the inner seat belt (driver's side).
**NO :** Repair the wiring harness.

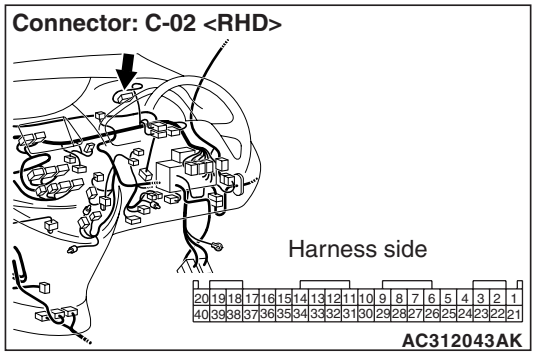
### Step 7. Connector check: C-02 combination meter connector

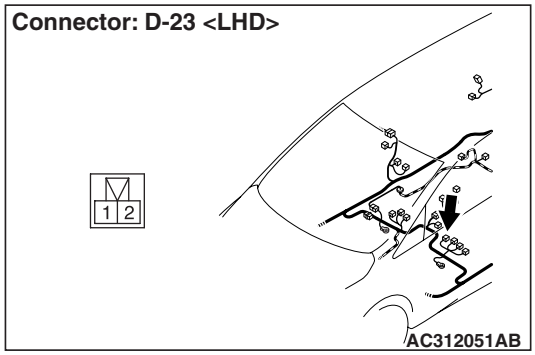



**Q: Is the check result normal?**

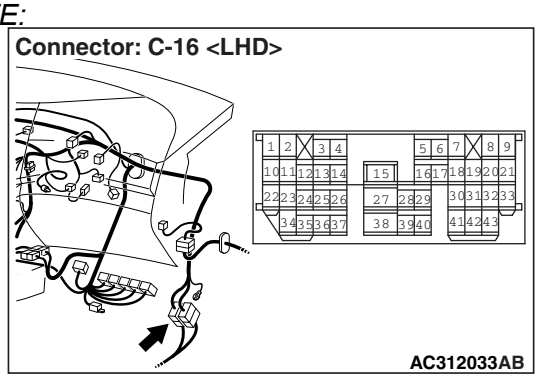
**YES :** Go to Step 8.
**NO :** Repair the defective connector.

**Step 8. Check the wiring harness from D-23 seat belt switch (LH) terminal No.1 to C-02 combination meter connector terminal No.32.**




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-16, and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 9.
**NO :** Repair the wiring harness.

**Step 9. ETACS switch data by using the SWS monitor**

Check the input signal from the driver's seat belt switch.

- Ignition switch: ON
- Driver's seat belt switch: ON (Unfastened) → OFF (Fastened)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 12 | SEAT BELT SW | from ON to OFF |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Go to Step 10.

**Step 10. Retest the system.**

After the ETACS-ECU is replaced, check that the driver's seat belt switch signal is received.

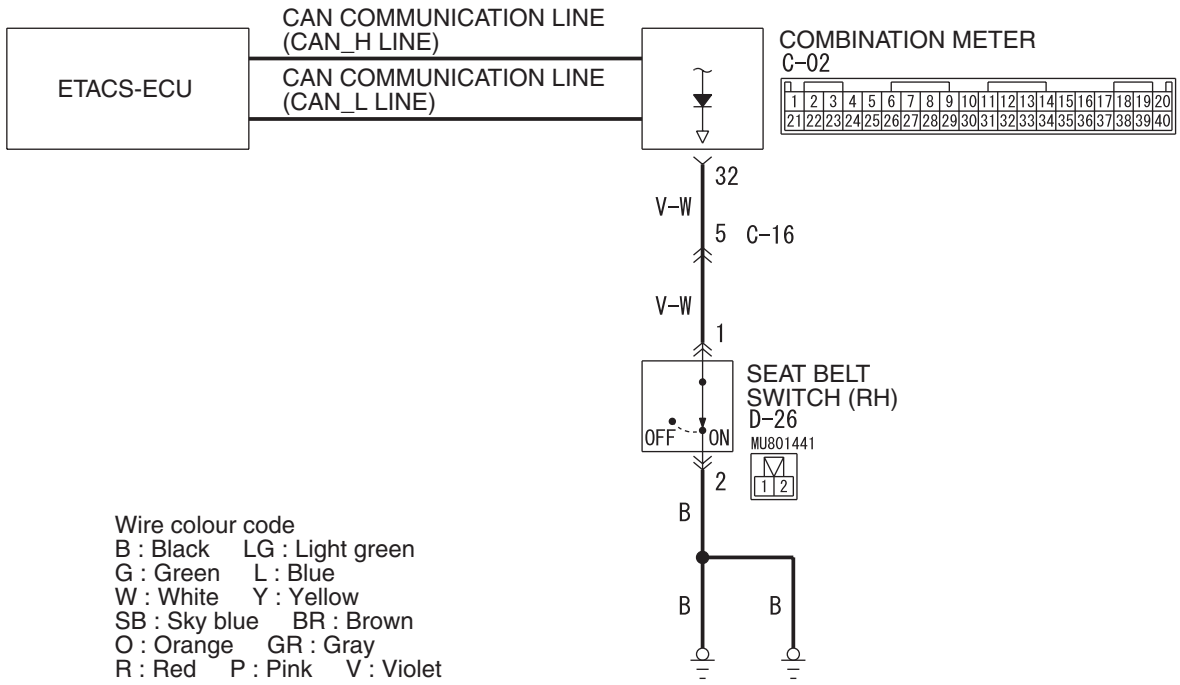
(1) Replace the ETACS-ECU.
(2) Check that the driver's seat belt switch signal is received.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the combination meter.

## Inspection Procedure Q-19: The driver's seat belt switch signal is not received. <RH drive vehicles>

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Driver's Seat Belt Switch Input Circuit <RHD>**

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## COMMENTS ON TROUBLE SYMPTOM

Input signal from the driver's seat belt switch signal is used to operate the central door locking function. If the signal is abnormal, the central door locking function will not work normally.

## POSSIBLE CAUSES

- Malfunction of the driver's seat belt switch
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. MUT-III CAN bus diagnostics**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**

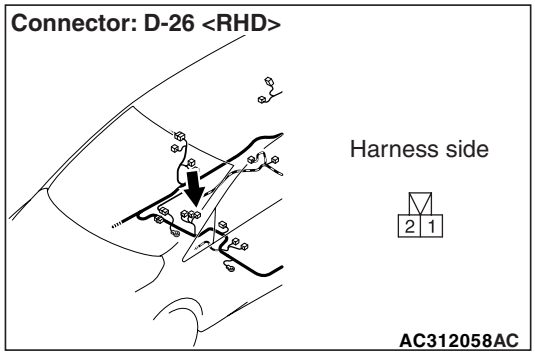
**YES :** Go to Step 2.
**NO :** Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-16).

**Step 2. MUT-III diagnosis code**
Check whether the combination meter-related diagnosis code is set.

**Q: Is the diagnosis code set?**

**YES :** Diagnose the combination meter (Refer to GROUP 54A – Combination meter P.54A-35).
**NO :** Go to Step 3.

**Step 3. Connector check: D-26 seat belt switch (RH) connector**

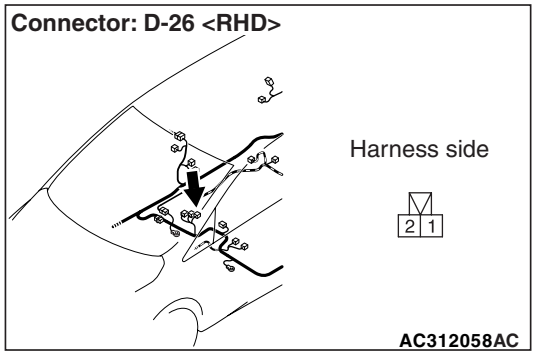



**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the defective connector.

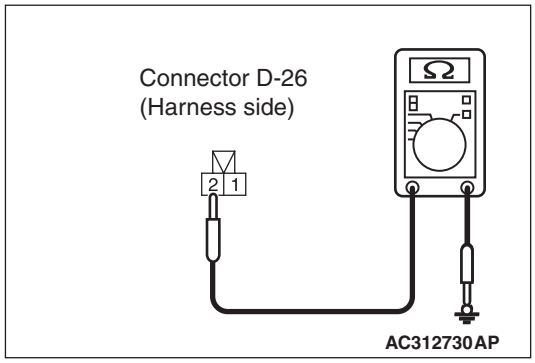
**Step 4. Check the seat belt switch (RH).**
Refer to GROUP 52A – Front seat belt P.52A-36.

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Replace the inner seat belt (driver's side).

**Step 5. Resistance measurement at the D-26 seat belt switch (RH) connector.**



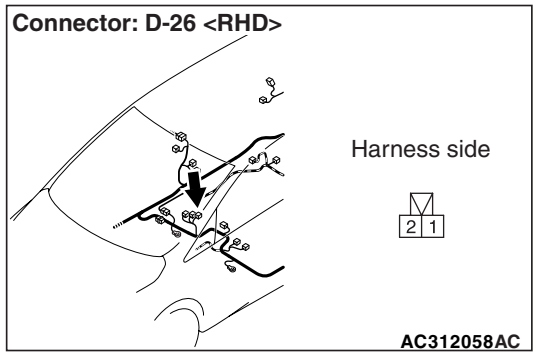

(1) Disconnect the connector, and measure at the wiring harness side.




(2) Resistance between D-26 seat belt switch (LH) connector terminal No.2 and body earth
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Go to Step 6.

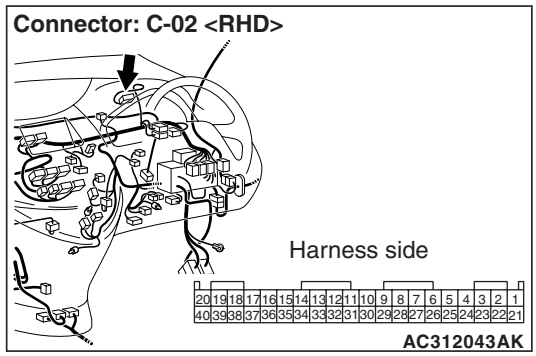
**Step 6. Check the wiring harness between D-26 seat belt switch (RH) connector terminal No.2 and body earth.**




- Check the earth wires for open circuit.

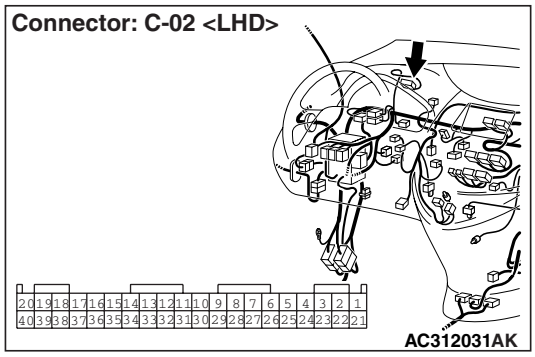
**Q: Is the check result normal?**
**YES :** Replace the inner seat belt (driver's side).
**NO :** Repair the wiring harness.

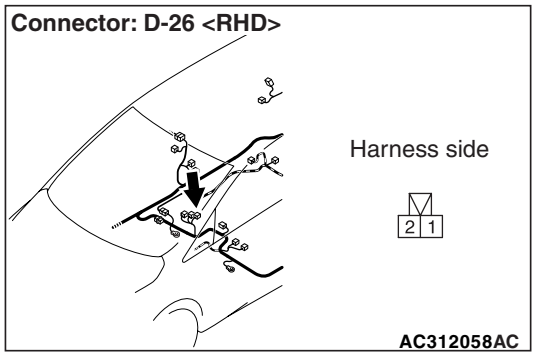
**Step 7. Connector check: C-02 combination meter connector**



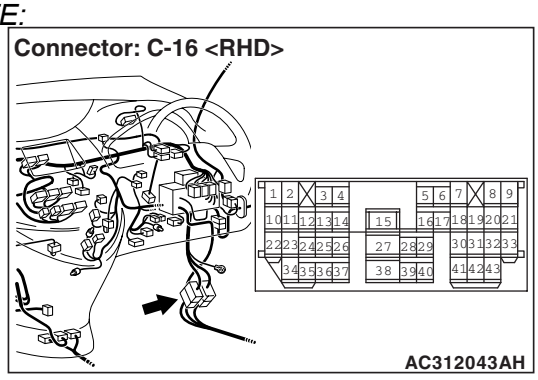

**Q: Is the check result normal?**
**YES :** Go to Step 8.
**NO :** Repair the defective connector.

**Step 8. Check the wiring harness from D-26 seat belt switch (RH) terminal No.1 to C-02 combination meter connector terminal No.32.**




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-16, and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 9.
**NO :** Repair the wiring harness.

**Step 9. ETACS switch data by using the SWS monitor**

Check the input signal from the driver's seat belt switch.

- Ignition switch: ON
- Driver's seat belt switch: ON (Unfastened) → OFF (Fastened)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 12 | SEAT BELT SW | from ON to OFF |

**OK: Normal condition is displayed.**

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Go to Step 10.

**Step 10. Retest the system.**

After the ETACS-ECU is replaced, check that the driver's seat belt switch signal is received.

(1) Replace the ETACS-ECU.
(2) Check that the driver's seat belt switch signal is received.

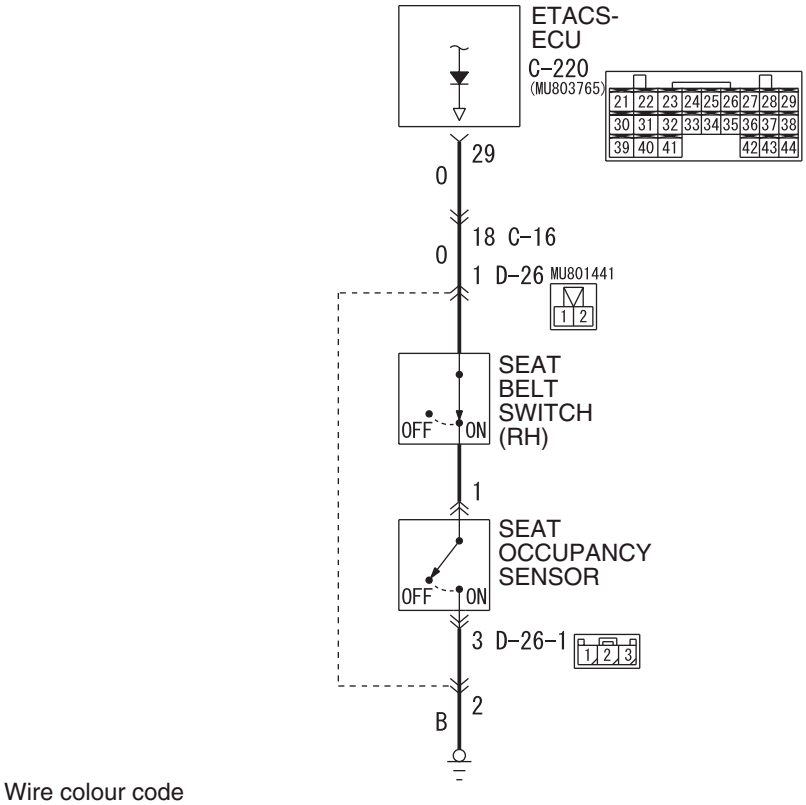
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the combination meter.

**Inspection Procedure Q-20: The front passenger's seat belt switch signal is not received. <LH drive vehicles>**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Passenger's Seat Belt Switch Input Circuit <LHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

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## COMMENTS ON TROUBLE SYMPTOM

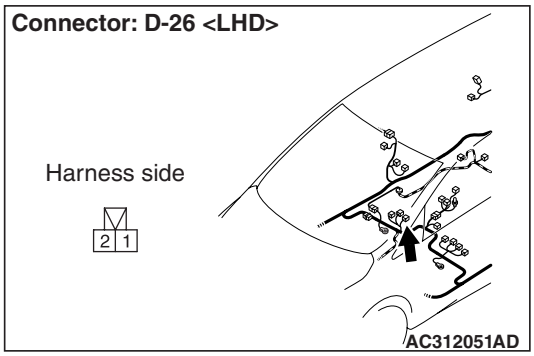
Input signal from the passenger's seat belt switch is used to operate the central door locking function. If the signal is abnormal, the central door locking function will not work normally.

## POSSIBLE CAUSES

- Malfunction of the passenger's seat belt switch
- Malfunction of the seat occupancy sensor
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. Connector check: D-26 seat belt switch (RH) connector**



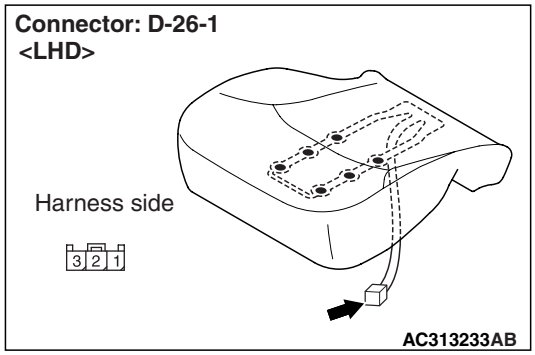

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** Repair the defective connector.

**Step 2. Check the seat belt switch (RH).**
Refer to GROUP 52A – Front seat belt P.52A-36.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the inner seat belt (front passenger's side).

**Step 3. Connector check: D-26-1 seat occupancy sensor connector**

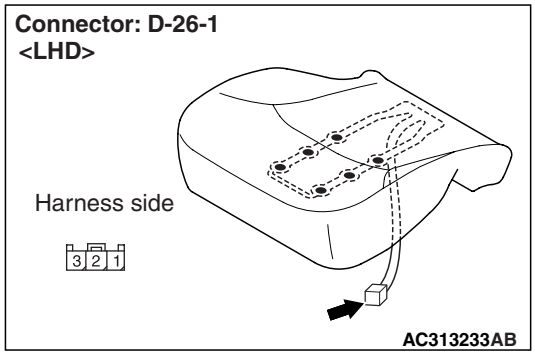



**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the defective connector.

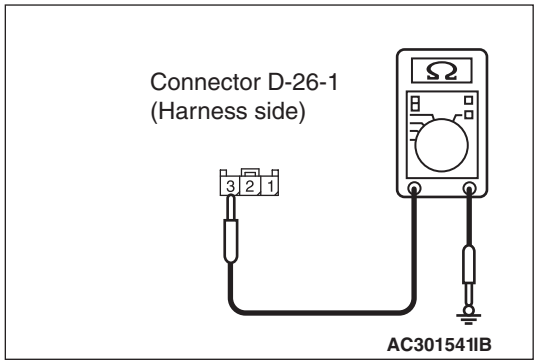
**Step 4. Check the seat occupancy sensor.**
Refer to GROUP 52A – Front seat P.52A-22.

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Replace the seat occupancy sensor.

**Step 5. Resistance measurement at the D-26-1 seat occupancy sensor connector.**



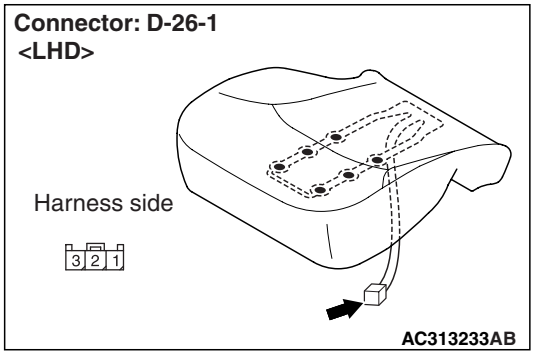

(1) Disconnect the connector, and measure at the wiring harness side.




(2) Resistance between D-26-1 seat occupancy sensor connector terminal No.3 and body earth
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Go to Step 6.

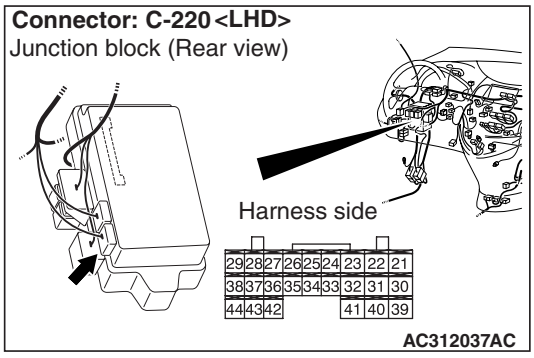
**Step 6. Check the wiring harness between D-26-1 seat occupancy sensor connector terminal No.3 and body earth.**




- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** Replace the inner seat belt (front passenger's side).
**NO :** Repair the wiring harness.

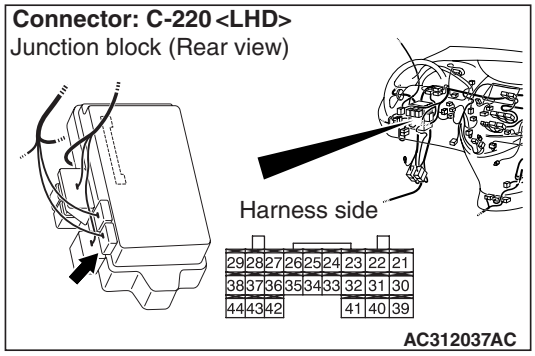
**Step 7. Connector check: C-220 ETACS-ECU connector**

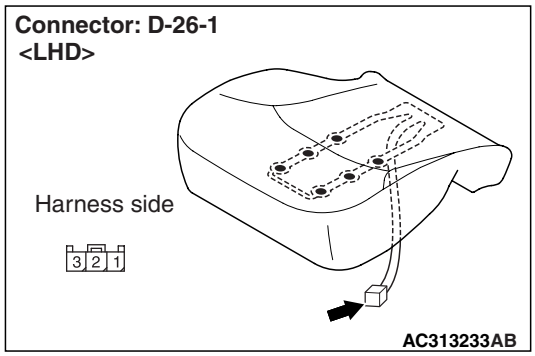



**Q: Is the check result normal?**

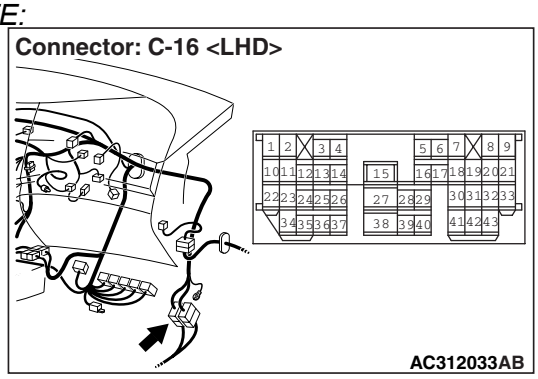
**YES :** Go to Step 8.
**NO :** Repair the defective connector.

**Step 8. Check the wiring harness from D-26-1 seat occupancy sensor connector terminal No.1 to C-220 ETACS-ECU connector terminal No.29.**




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-16, and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 9.
**NO :** Repair the wiring harness or replace the inner seat belt (front passenger's side).

**Step 9. ETACS switch data by using the SWS monitor**

Check the input signal from the front passenger's seat belt switch.

- Ignition switch: ON
- Passenger's seat belt switch: ON (Unfastened)
- Seat occupancy sensor: ON (Seat occupied)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 43 | As.SeatBeltSW | ON |

Check that the MUT-III displays normal condition when the condition above is changed to the condition below.

- Passenger's seat belt switch: OFF (seat belt fastened) or seat occupancy sensor: OFF (seat not occupied)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 43 | As.SeatBeltSW | OFF |

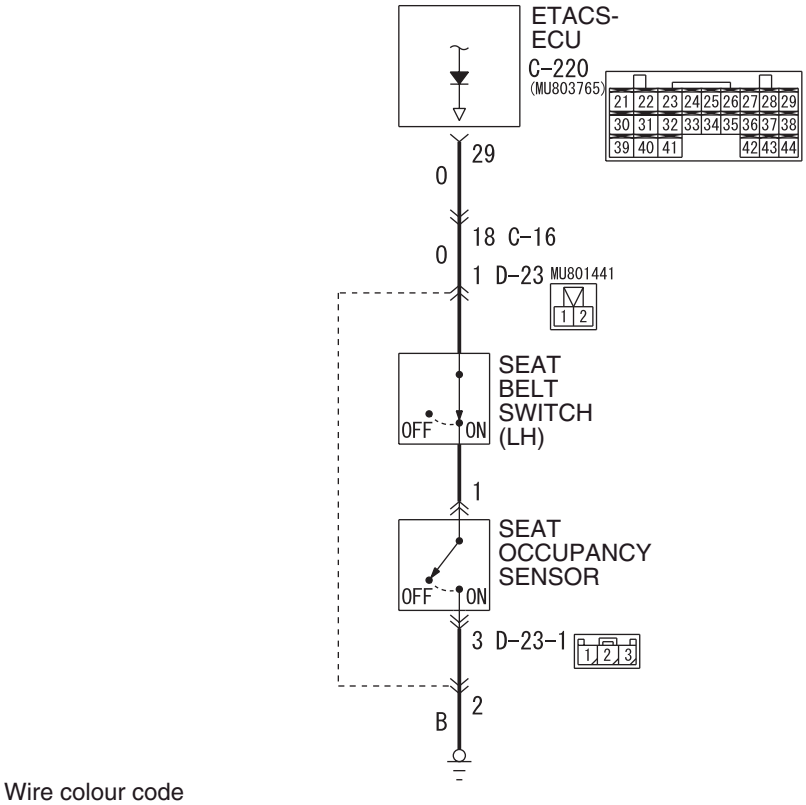
**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

**Inspection Procedure Q-20: The front passenger's seat belt switch signal is not received. <RH drive vehicles>**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Passenger's Seat Belt Switch Input Circuit <RHD>**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E185A

## COMMENTS ON TROUBLE SYMPTOM

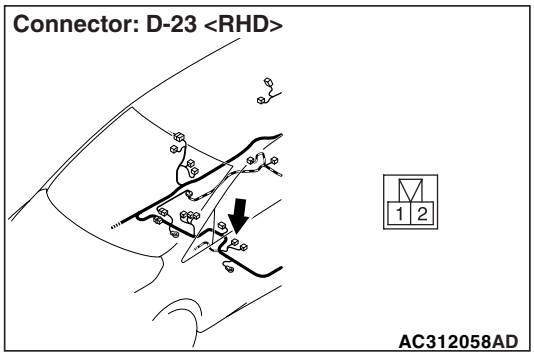
Input signal from the passenger's seat belt switch is used to operate the central door locking function. If the signal is abnormal, the central door locking function will not work normally.

## POSSIBLE CAUSES

- Malfunction of the passenger's seat belt switch
- Malfunction of the seat occupancy sensor
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. Connector check: D-23 seat belt switch (LH) connector**



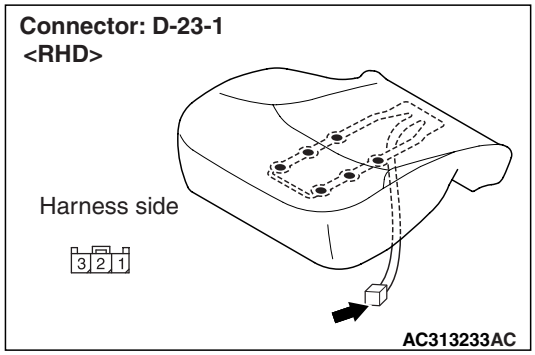

**Q: Is the check result normal?**

**YES :** Go to Step 2.
**NO :** Repair the defective connector.

**Step 2. Check the seat belt switch (LH).**
Refer to GROUP 52A – Front seat belt P.52A-36.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the inner seat belt (front passenger's side).

**Step 3. Connector check: D-23-1 seat occupancy sensor connector**

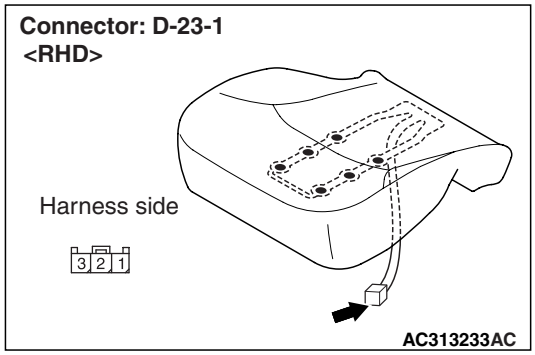



**Q: Is the check result normal?**
**YES :** Go to Step 4.
**NO :** Repair the defective connector.

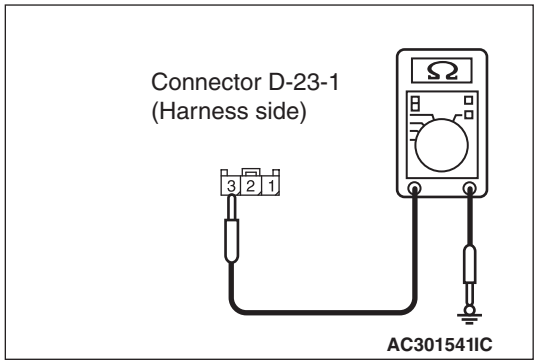
**Step 4. Check the seat occupancy sensor.**
Refer to GROUP 52A – Front seat P.52A-22.

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Replace the seat occupancy sensor.

**Step 5. Resistance measurement at the D-23-1 seat occupancy sensor connector.**



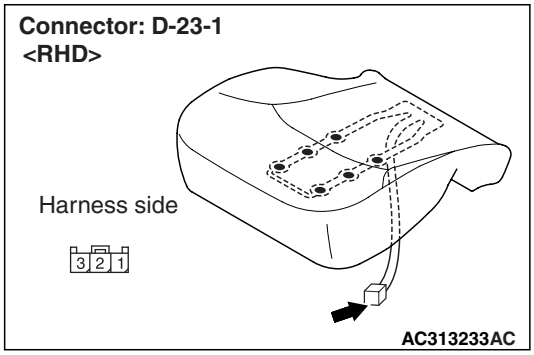

(1) Disconnect the connector, and measure at the wiring harness side.




(2) Resistance between D-23-1 seat occupancy sensor connector terminal No.3 and body earth
**OK: 2 Ω or less**

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Go to Step 6.

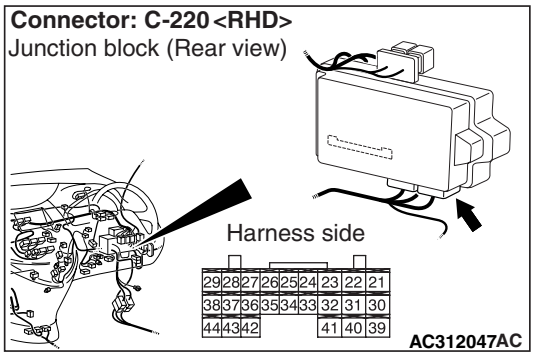
**Step 6. Check the wiring harness between D-23-1 seat occupancy sensor connector terminal No.3 and body earth.**




- Check the earth wires for open circuit.

**Q: Is the check result normal?**
**YES :** Replace the inner seat belt (front passenger's side).
**NO :** Repair the wiring harness.

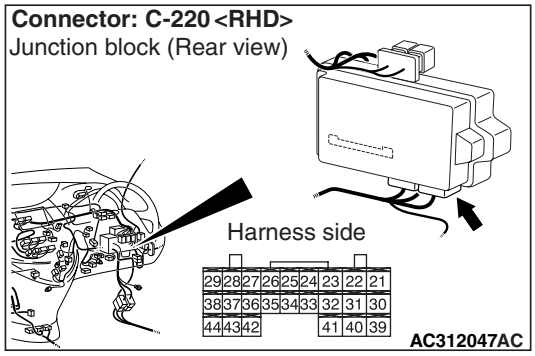
**Step 7. Connector check: C-220 ETACS-ECU connector**

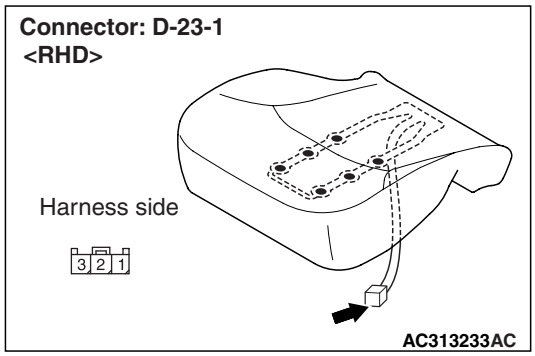



**Q: Is the check result normal?**

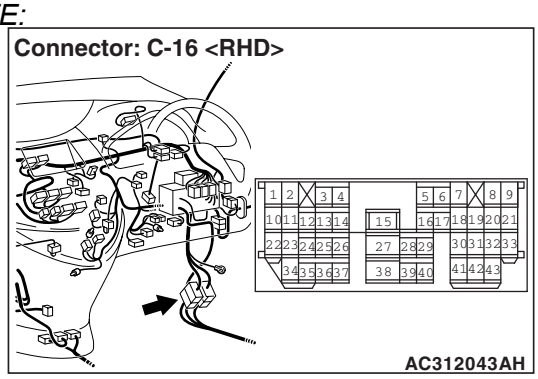
**YES :** Go to Step 8.
**NO :** Repair the defective connector.

**Step 8. Check the wiring harness from D-23-1 seat occupancy sensor connector terminal No.1 to C-220 ETACS-ECU connector terminal No.29.**




*NOTE:*




*Prior to the wiring harness inspection, check intermediate connector C-16, and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 9.
**NO :** Repair the wiring harness or replace the inner seat belt (front passenger's side).

**Step 9. ETACS switch data by using the SWS monitor**

Check the input signal from the front passenger's seat belt switch.

- Ignition switch: ON
- Passenger's seat belt switch: ON (Unfastened)
- Seat occupancy sensor: ON (Seat occupied)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 43 | As.SeatBeltSW | ON |

Check that the MUT-III displays normal condition when the condition above is changed to the condition below.

- Passenger's seat belt switch: OFF (seat belt fastened) or seat occupancy sensor: OFF (seat not occupied)

| Item No. | Item name | Normal condition |
|---|---|---|
| Item 43 | As.SeatBeltSW | OFF |

**OK: Normal condition is displayed.**

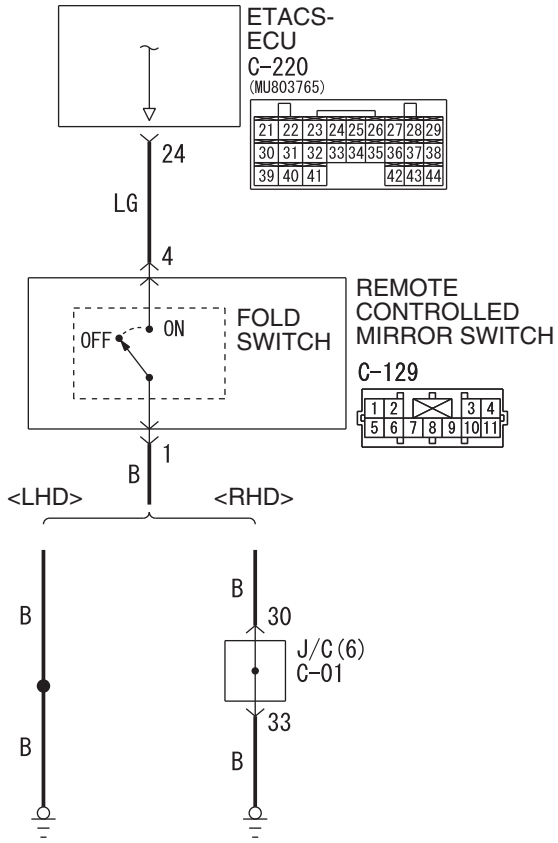
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

**Inspection Procedure Q-21: Signal is not received from the remote controlled mirror switch (folding/unfolding switch).**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Remote Controlled Mirror Switch Input Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E183A

## COMMENTS ON TROUBLE SYMPTOM

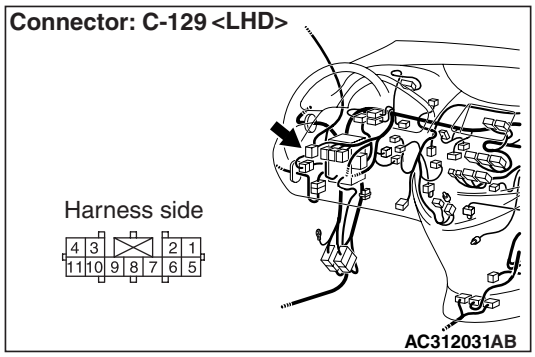
The electric-folding door mirrors work in accordance with the input signal from the remote controlled mirror switch. If the input signal is abnormal, the door mirrors will not work normally.

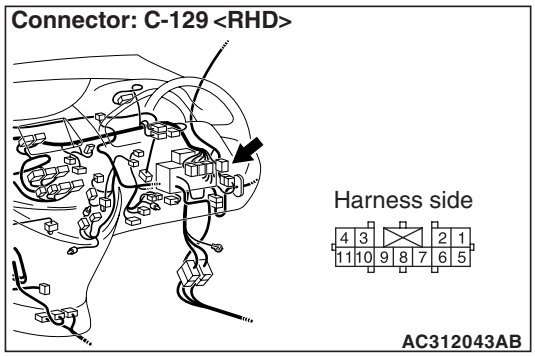
## POSSIBLE CAUSES

- Malfunction of the remote controlled mirror switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSIS PROCEDURE

### Step 1. Connector check: C-129 remote controlled mirror switch connector



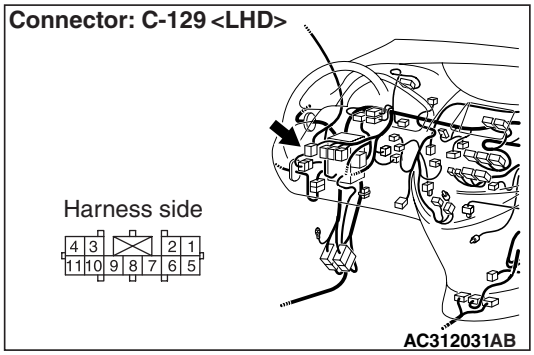

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the connector.

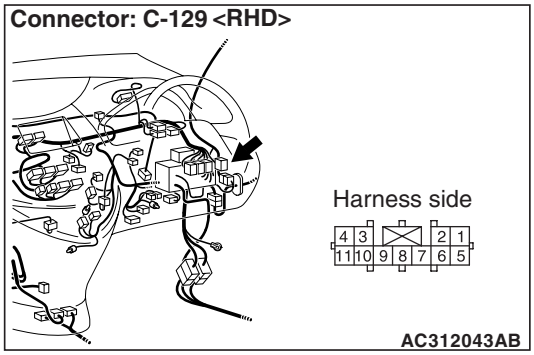
### Step 2. Check the remote controlled mirror switch.

Refer to GROUP 51 – Door mirror P.51-51.

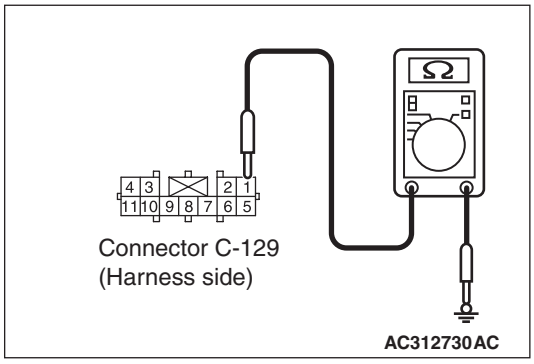
**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the remote controlled mirror switch.

### Step 3. Resistance measurement at the C-129 remote controlled mirror switch connector.




(1) Disconnect the connector, and measure at the wiring harness side.

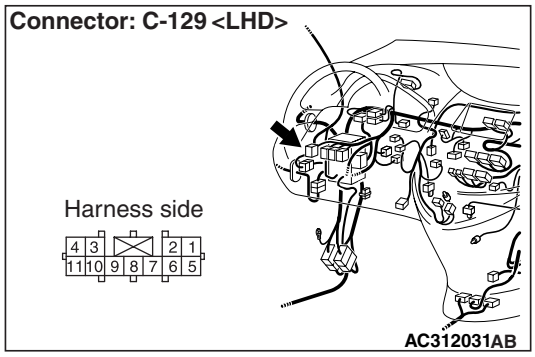


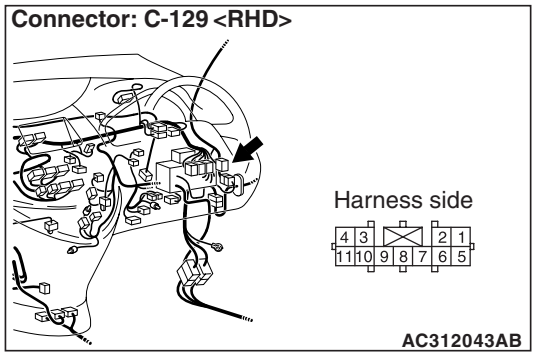

(2) Continuity between C-129 remote controlled mirror switch connector terminal No.1 and body earth

**OK: 2 Ω or less**

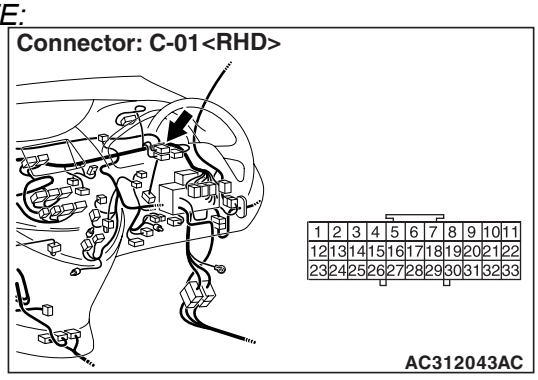
**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check the wiring harness between C-129 remote controlled mirror switch connector terminal No.1 and body earth.**




*NOTE:*



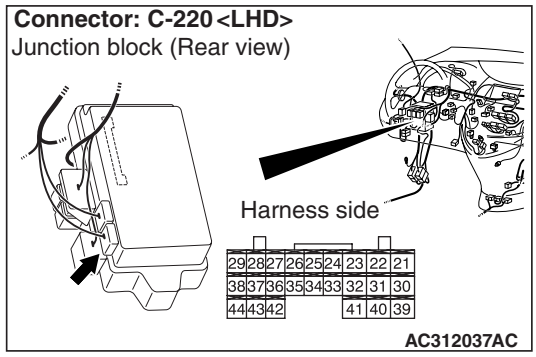

*Prior to the wiring harness inspection, check joint connector C-01 <RH drive vehicles>, and repair if necessary.*

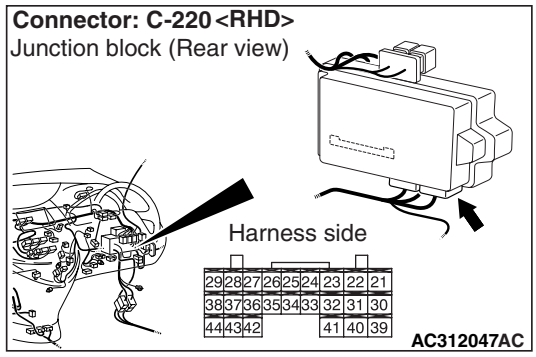
- Check the earth wires for open circuit.

**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

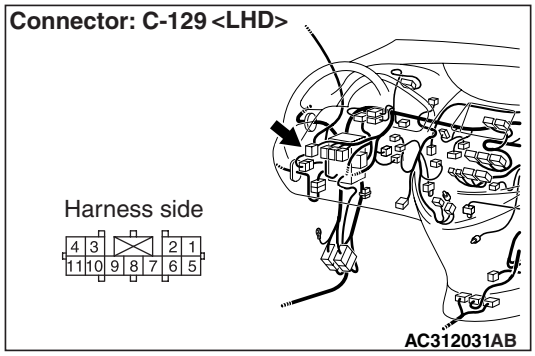
**Step 5. Connector check: C-220 ETACS-ECU connector**

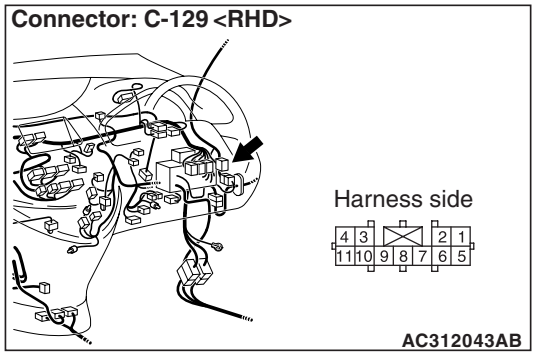


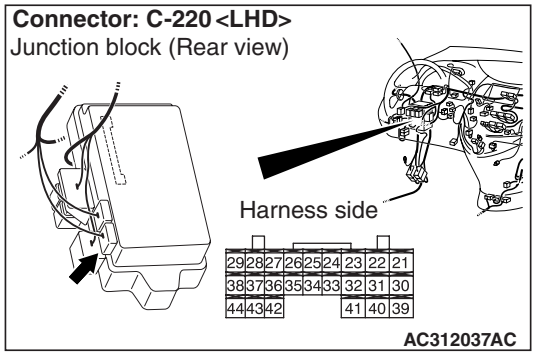



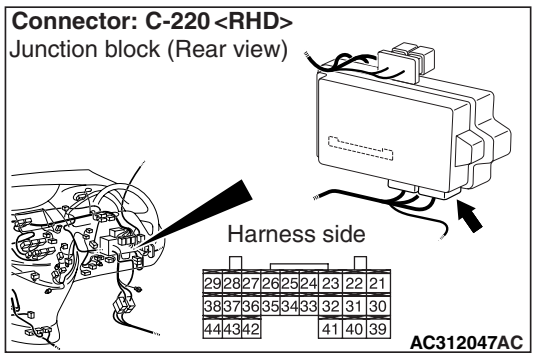

**Q: Is the check result normal?**
**YES :** Go to Step 6.
**NO :** Repair the connector.

**Step 6. Check the wiring harness between C-129 remote controlled mirror switch connector terminal No.4 and C-220 ETACS-ECU connector terminal No.24.**




- Check the input line for open circuit.

**Q: Is the check result normal?**

**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

**Step 7. ETACS switch data by using the SWS monitor**

Check the input signal from the remote controlled mirror switch.

- Ignition switch: ON
- Remote controlled mirror (folding/unfolding) switch: from OFF to ON

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 14 | EL RET MIR SW | OFF to ON (only when switch is operated) |

**OK: Normal condition is displayed.**

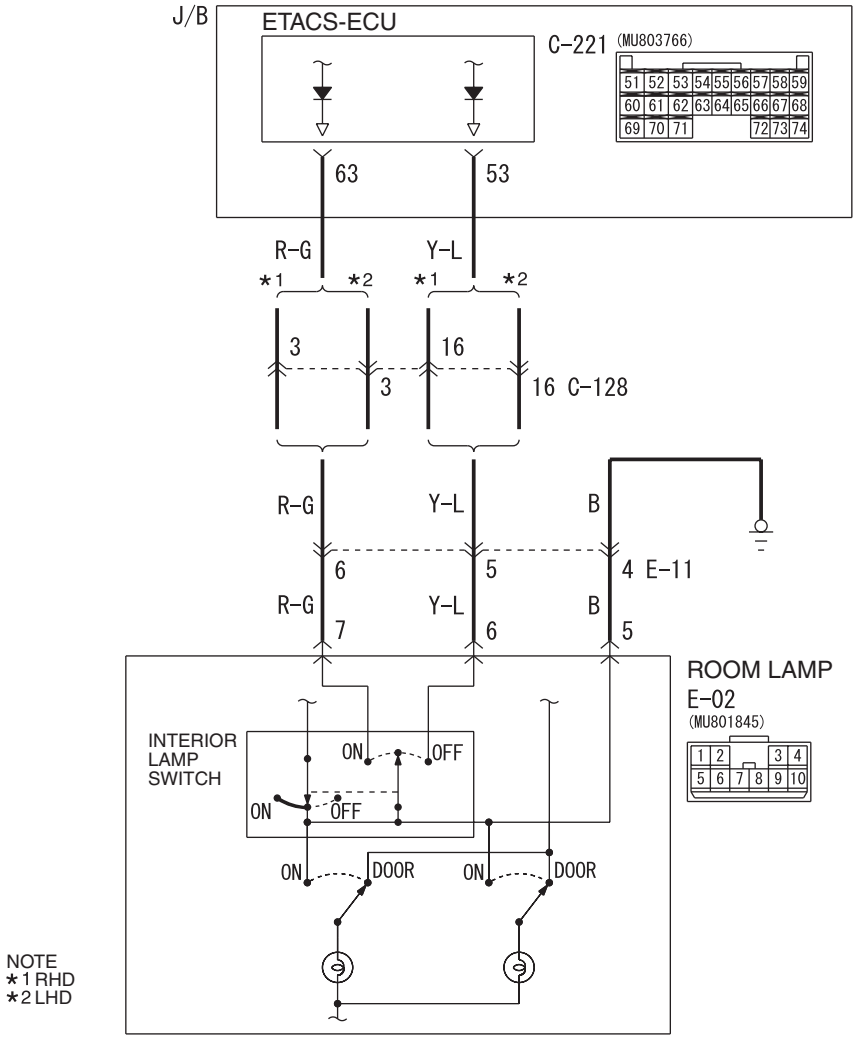
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

**Inspection Procedure Q-22: The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Interior Lamp Input Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E169A

## COMMENTS ON TROUBLE SYMPTOM

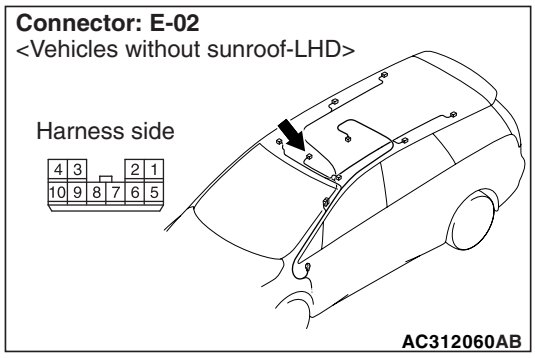
Input signals from the interior lamp switches are used to operate the interior lamps. If the signals are abnormal, the interior lamps will not illuminate and extinguish normally.

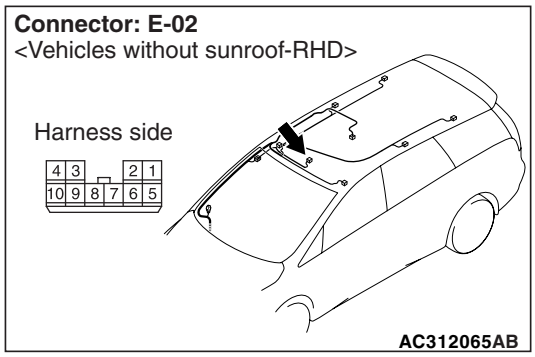
## POSSIBLE CAUSES

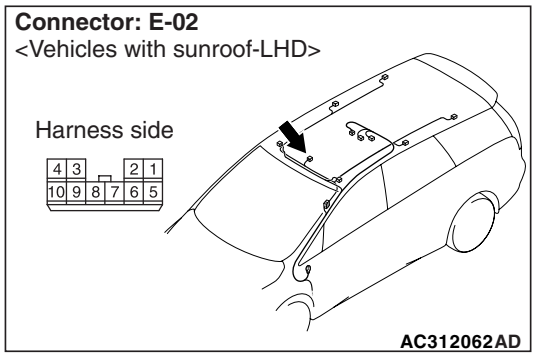
- Malfunction of the interior lamp
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

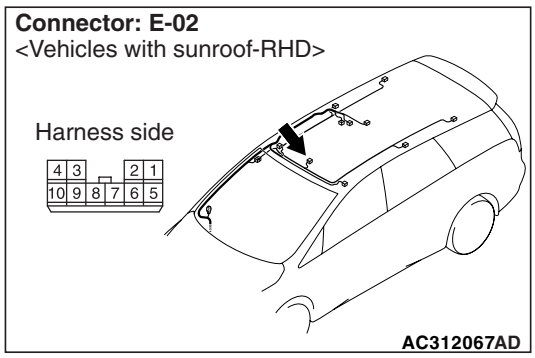
## DIAGNOSIS PROCEDURE

### Step 1. Connector check: E-02 interior lamp connector



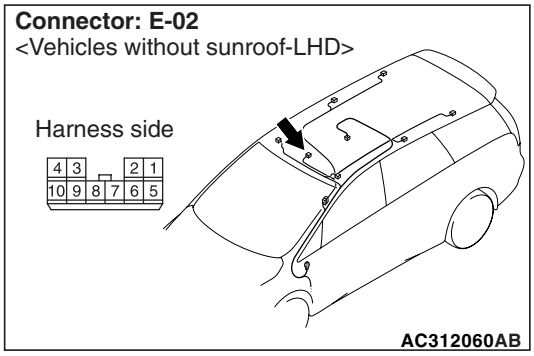

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the defective connector.

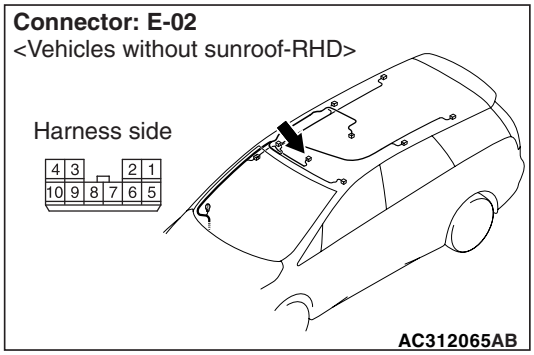
### Step 2. Check the interior lamp.

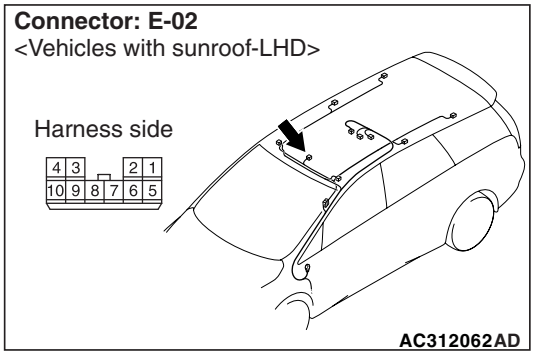
Refer to GROUP 54A – Interior lamp P.54A-95.

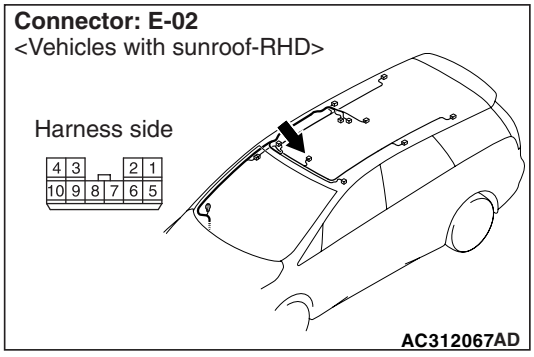
**Q: Is the check result normal?**
**YES :** Go to Step 3
**NO :** Replace the interior lamp.

### Step 3. Resistance measurement at the E-02 interior lamp connector



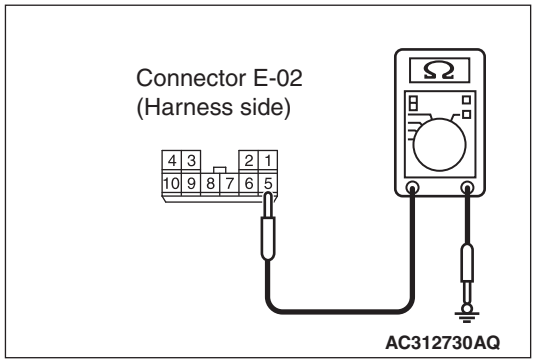




(1) Disconnect the connector, and measure at the

wiring harness side.

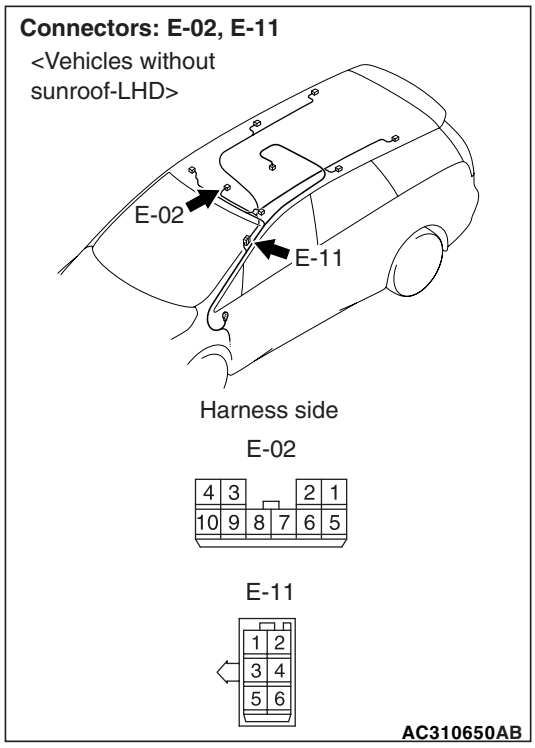


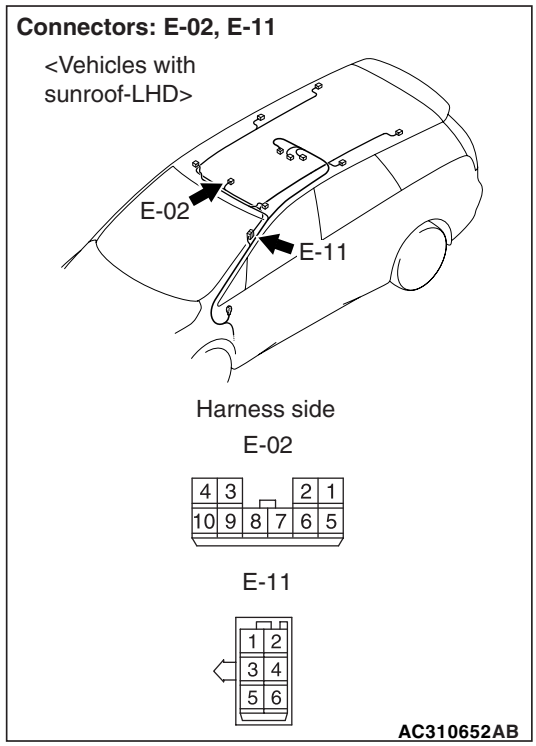

(2) Resistance between E-02 interior lamp connector terminal No.5 and body earth

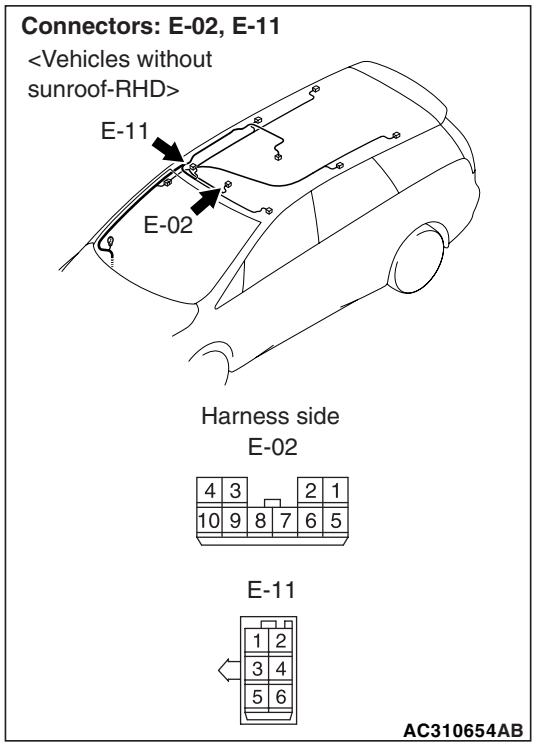
**OK: 2 Ω or less**

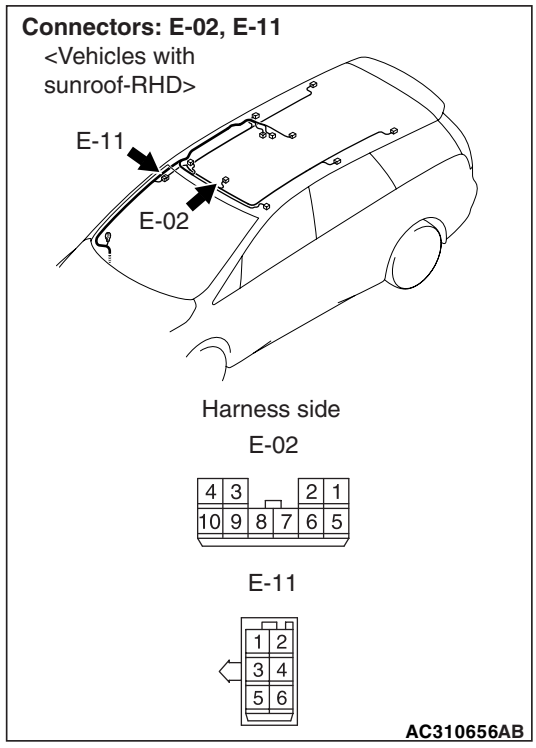
**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check the wiring harness between E-02 interior lamp connector terminal No.5 and body earth**




*NOTE: Prior to the wiring harness inspection, check intermediate connector E-11, and repair if necessary.*

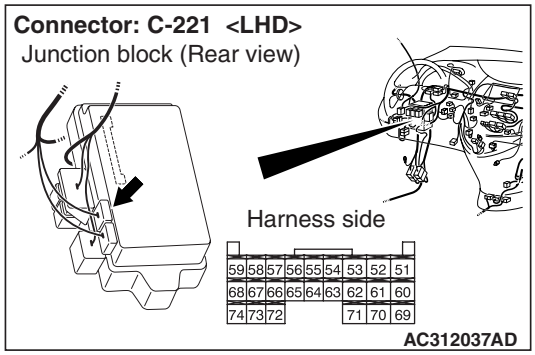
- Check the earth wires for open circuit.

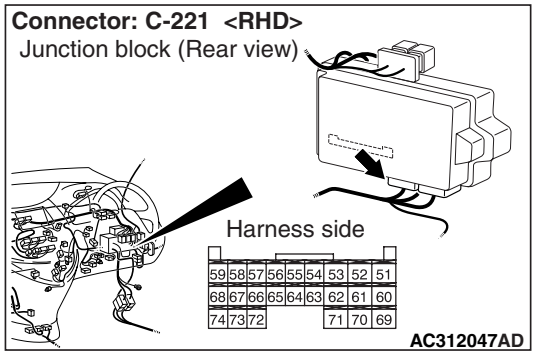
**Q: Is the check result normal?**

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Repair the wiring harness.

### Step 5. Connector check: C-221 ETACS-ECU connector



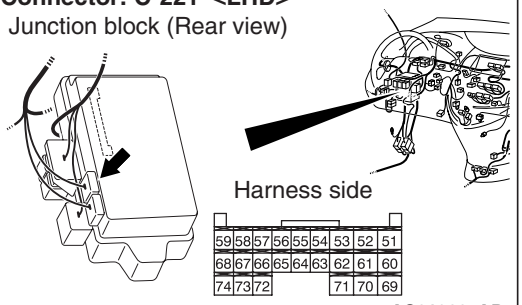

**Q: Is the check result normal?**

**YES :** Go to Step 6.
**NO :** Repair the defective connector.

**Step 6. Check the wiring harness from E-02 interior lamp connector terminal Nos.6 and 7 to C-221 ETACS-ECU connector terminal Nos.53 and 63.**

**Connector: C-221 <LHD>**

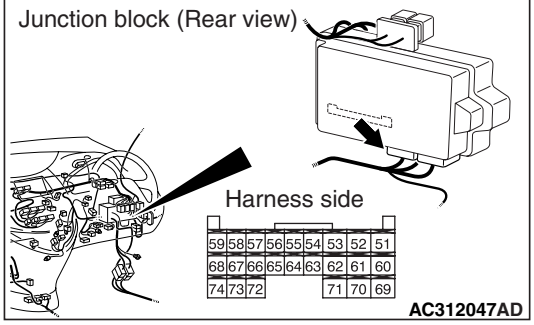
Junction block (Rear view)




AC312037AD

**Connector: C-221 <RHD>**

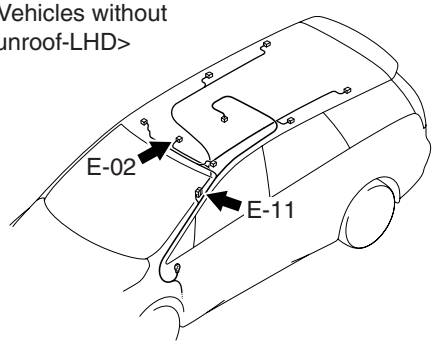
Junction block (Rear view)




AC312047AD

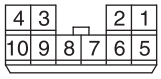
**Connectors: E-02, E-11**

<Vehicles without sunroof-LHD>

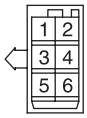



Harness side

E-02




E-11

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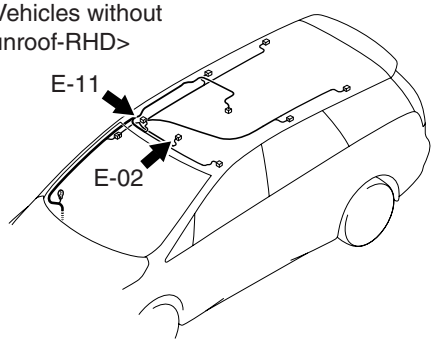
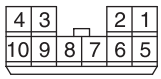
**Connectors: E-02, E-11**

<Vehicles without sunroof-RHD>

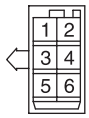



Harness side

E-02




E-11

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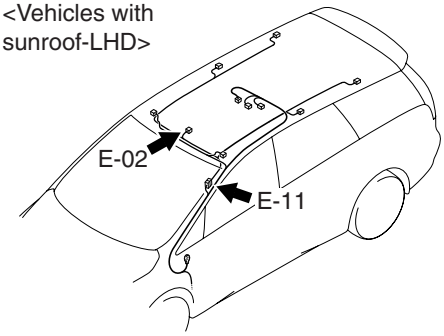
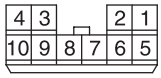
**Connectors: E-02, E-11**

<Vehicles with sunroof-LHD>

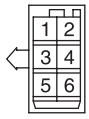



Harness side

E-02




E-11

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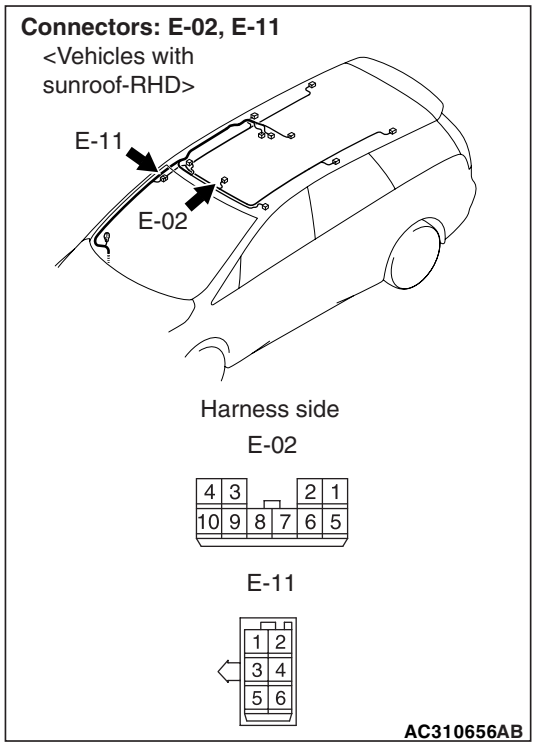


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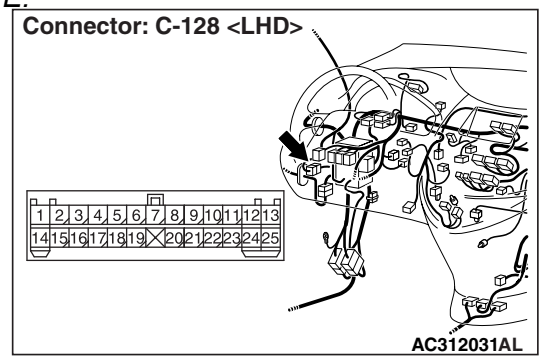
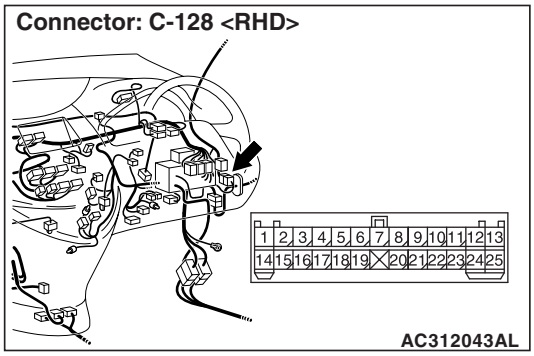



*Prior to the wiring harness inspection, check intermediate connector E-11 and C-128, and repair if necessary.*

- Check the input line for open circuit.

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Repair the wiring harness.

---

**Step 7. ETACS switch data by using the SWS monitor**

Check the input signal from the interior lamp switch.

- Interior lamp switch: from ON to OFF

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 31 | RM LMP ON SW | from ON to OFF |
| Item 32 | RM LMP OFF SW | from OFF to ON |

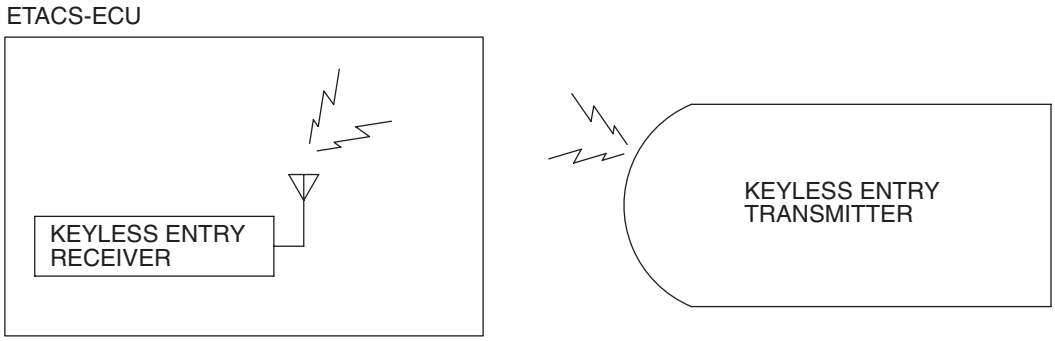
**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

**Inspection Procedure Q-23: Each switch signal of the keyless entry transmitter is not received.**

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Transmitter Input Circuit**

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## COMMENTS ON TROUBLE SYMPTOM

Input signal from the keyless entry transmitter is used to operate the keyless entry system. If the signal is abnormal, the keyless entry system will not work normally.

- Keyless entry system
- Keyless entry hazard answerback
- Multimode keyless entry system

## POSSIBLE CAUSES

- Malfunction of the keyless entry transmitter
- Defective battery of the keyless entry transmitter
- Malfunction of the ETACS-ECU

## DIAGNOSIS PROCEDURE

**Step 1. Pulse check**
Check whether the ETACS-ECU receives signal from a transmitter or not. For this check, you should use the 2-button-type transmitter (integrated with a key), which cover screw is silver and has already been registered.

*NOTE: For how to register the keyless entry transmitter encrypted code, refer to GROUP 42 – On-vehicle Service P.42-57.*

| System switch | Check condition |
|---|---|
| Keyless entry transmitter "LOCK/UNLOCK" switch | When the switch is turned from off to on |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Go to Step 4.

**Step 2. Check the transmitter battery.**
Refer to GROUP 42 – Keyless entry system P.42-60.

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Replace the keyless entry transmitter battery.

**Step 3. Register the encrypted code, and then retest the system.**
(1) Register the keyless entry transmitter again.
(2) Check that each signal is received from the keyless entry transmitter.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the keyless entry transmitter.

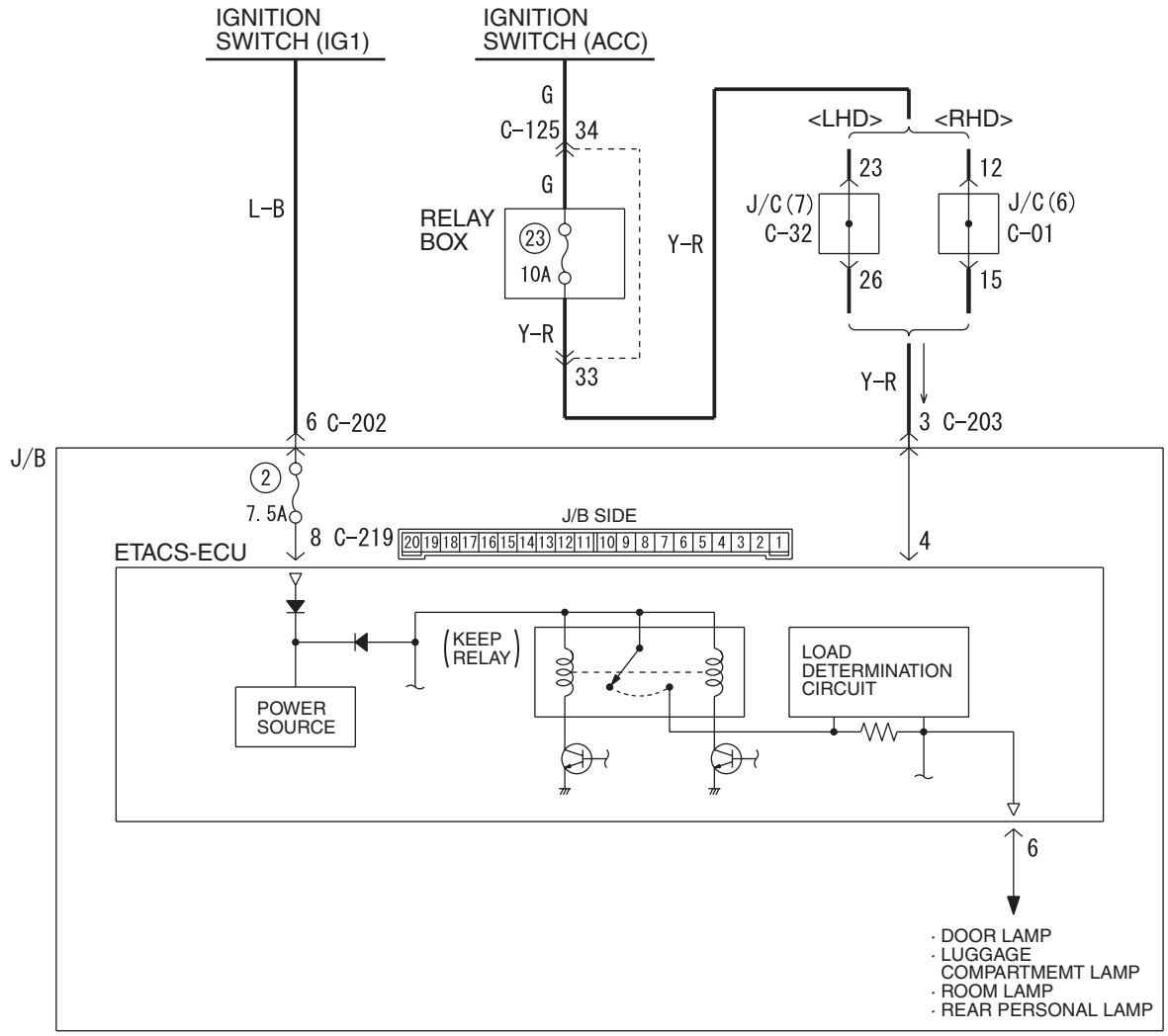
**Step 4. Retest the system.**
Check that each signal is received from the keyless entry transmitter.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-24: Interior lamp loaded signal is not detected.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Interior Lamp Automatic Shut-off Function Circuit**




Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

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## COMMENTS ON TROUBLE SYMPTOM

The interior lamp automatic-shutdown function operates in accordance with the interior lamp loaded signal. If this signal is abnormal, the functions below will not work normally.

- Interior lamps
- Interior lamp automatic-shutdown function

## POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged wiring harness or connector(s)

## DIAGNOSIS PROCEDURE

**Step 1. ECU check by using the SWS monitor**
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

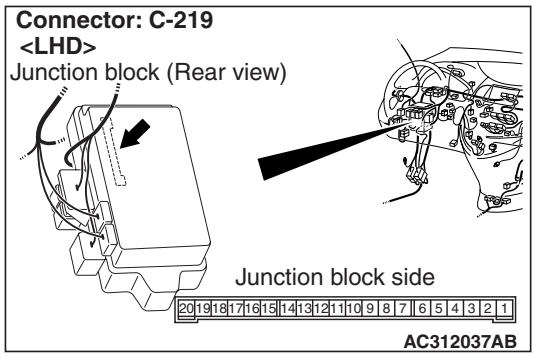
**ECUS TO BE CHECKED**

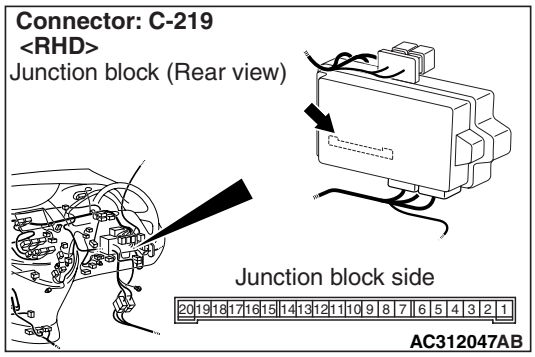
- ETACS ECU

**OK: "OK" is displayed on the "ETACS ECU" menu.**

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-63."

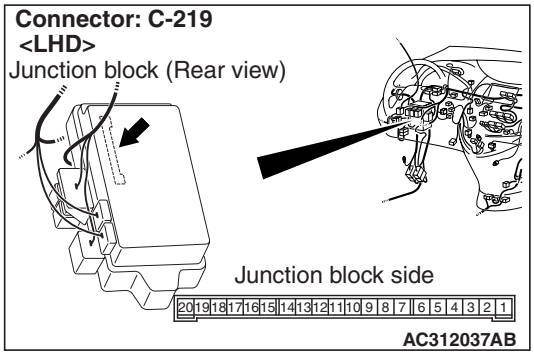
**Step 2. Connector check: C-219 ETACS-ECU connector**

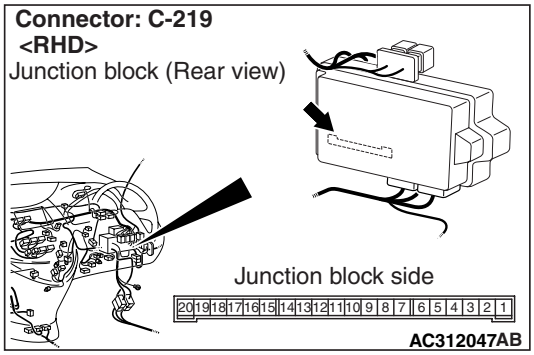


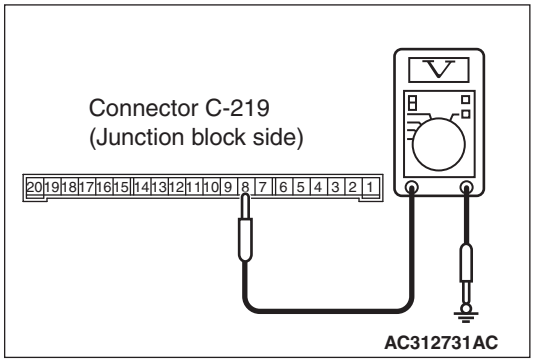

**Q: Is the check result normal?**
**YES :** Go to Step 3.
**NO :** Repair the defective connector.

**Step 3. Voltage measurement at the C-219 ETACS-ECU connector.**




(1) Remove the ETACS-ECU, and measure at the junction block side.
(2) Turn the ignition switch to the ON position.

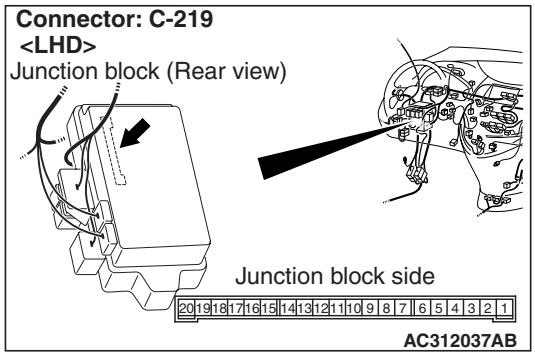


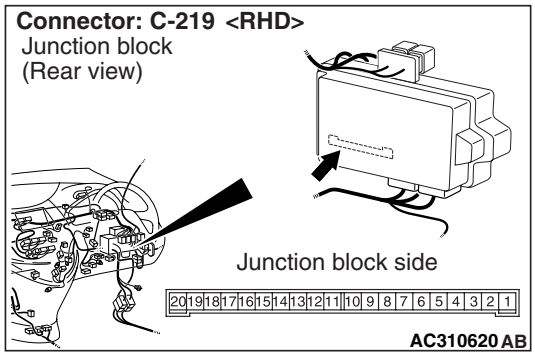

(3) Voltage between C-219 ETACS-ECU connector terminal No.8 and body earth

**OK: System voltage**

**Q: Is the check result normal?**
**YES :** Go to Step 5.
**NO :** Go to Step 4.

**Step 4. Check the wiring harness between C-219 ETACS-ECU connector terminal No.8 and the ignition switch (IG1).**

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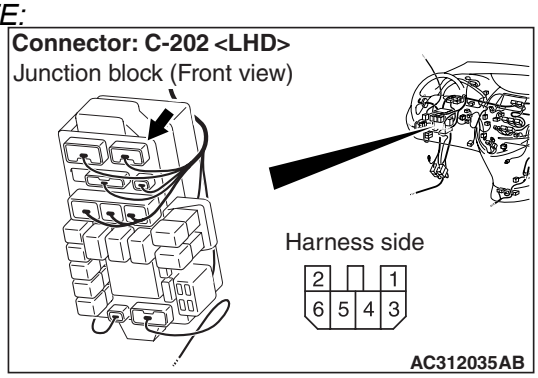
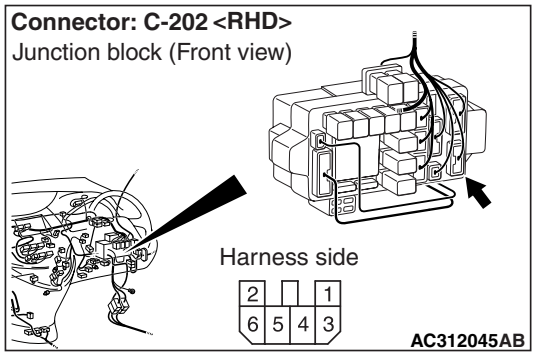


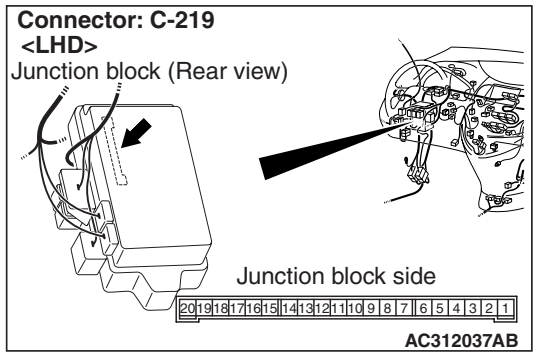

*Prior to the wiring harness inspection, check junction block connector C-202, and repair if necessary.*

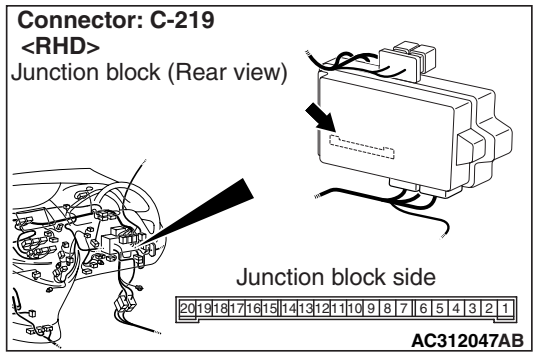
- Check the power supply line to the ignition switch (IG1) for open circuit.

**Q: Is the check result normal?**

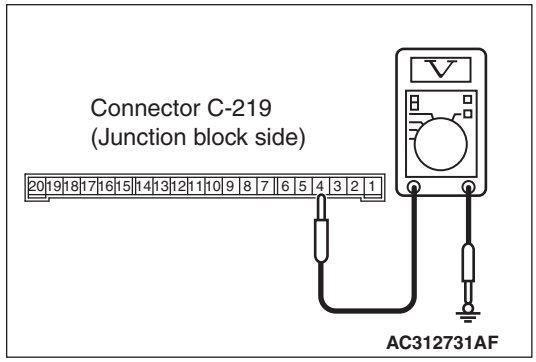
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

**Step 5. Voltage measurement at the C-219 ETACS-ECU connector.**



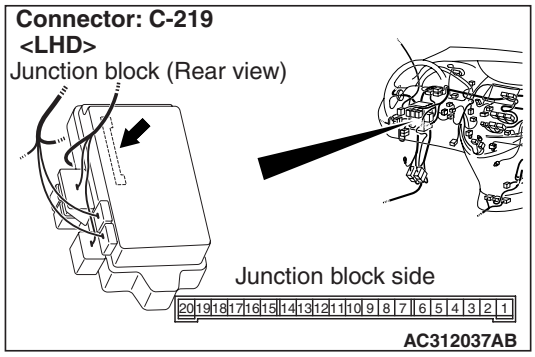

(1) Remove the ETACS-ECU, and measure at the junction block side.
(2) Turn the ignition switch to the ACC position.

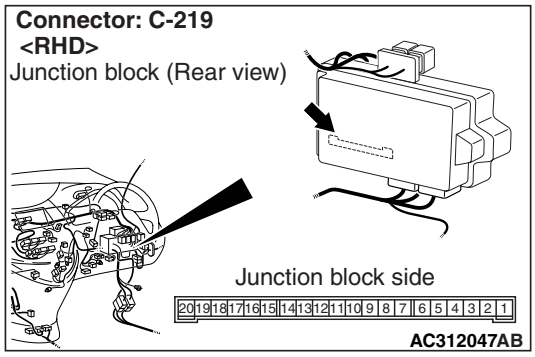



(3) Voltage between terminal 4 and body earth
**OK: System voltage**

**Q: Is the check result normal?**
**YES :** Go to Step 7.
**NO :** Go to Step 6.

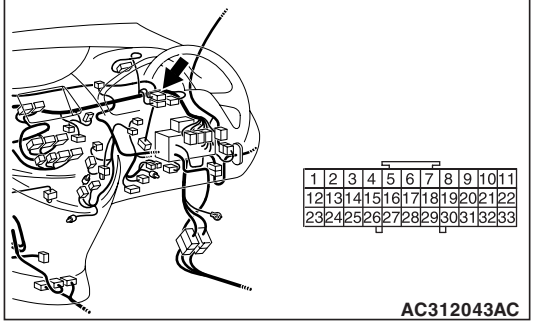
**Step 6. Check the wiring harness between C-219 ETACS-ECU connector terminal No.4 and the ignition switch (ACC).**



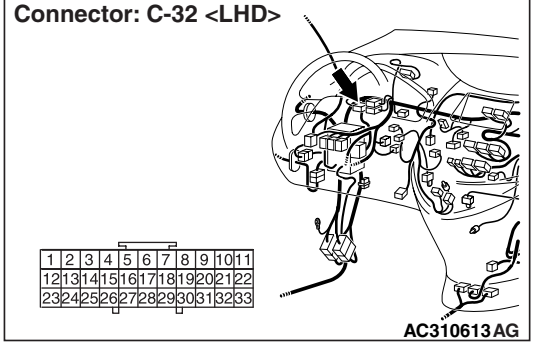




*NOTE:*

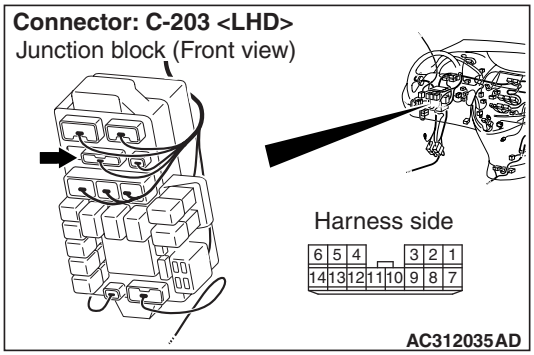
Connector: C-01<RHD>



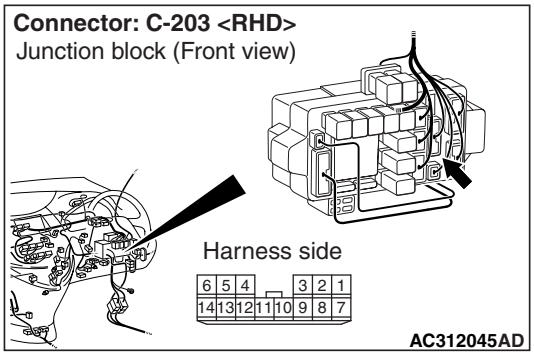

Connector: C-32 <LHD>



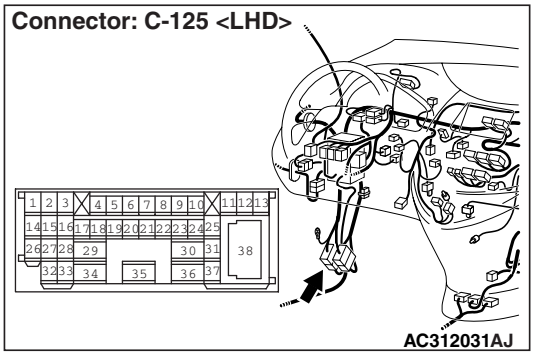

Connector: C-203 <LHD>
Junction block (Front view)



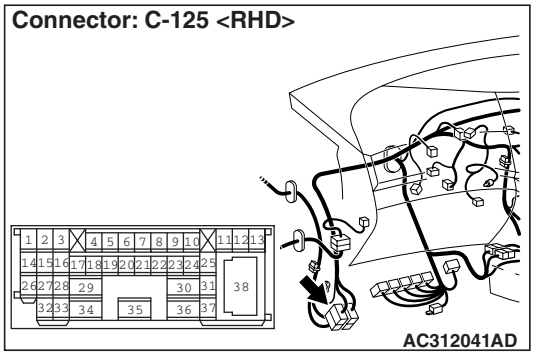

Connector: C-203 <RHD>
Junction block (Front view)




Connector: C-125 <LHD>




Connector: C-125 <RHD>




*Prior to the wiring harness inspection, check joint connector C-32 <LH drive vehicles>, C-01 <RH drive vehicles> junction block connector C-203 or intermediate connector C-125, and repair if necessary.*

- Check the power supply line to the ignition switch (ACC) for open circuit.

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Repair the wiring harness.

---

**Step 7. Pulse check**
Check the input of the interior lamp loaded signal.

| System switch | Check condition |
|---|---|
| Interior lamp loaded signal | When a load is applied through multi-purpose fuse No.18 |

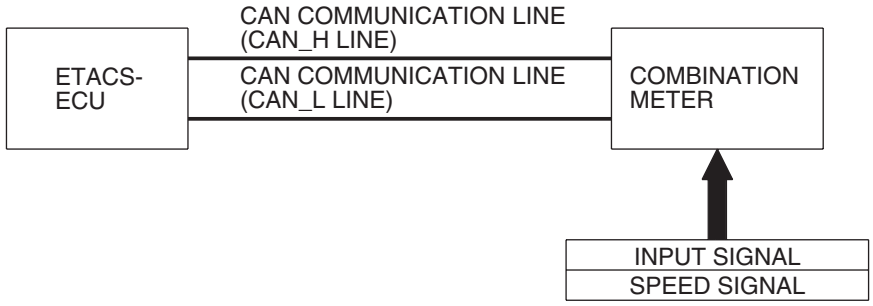
**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-25: The vehicle speed signal is not received.

**⚠ CAUTION**
**Whenever the ECU is replaced, ensure that the input signal circuit is normal.**

**Speed Signal Input Circuit**

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## COMMENTS ON TROUBLE SYMPTOM

The vehicle speed signal is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Windshield wiper and washer (vehicle speed-dependent wiper function)
- Seat belt warning buzzer function
- Door ajar warning buzzer function
- Seat belt indicator lamp
- Door ajar indicator lamp

## POSSIBLE CAUSES

- Malfunction of the vehicles speed sensor
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. MUT-III CAN bus diagnostics**
Use the MUT-III to diagnose the CAN bus lines.

**Q: Is the check result normal?**
**YES :** Go to Step 2.
**NO :** Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-16).

**Step 2. Check for combination meter diagnosis code.**
Check whether the combination meter-related diagnosis code is set.

**Q: Is the diagnosis code set?**
**YES :** Diagnose the combination meter (Refer to GROUP 54A – Combination meter P.54A-35).
**NO :** Go to Step 3.

**Step 3. ETACS ANALOG data by using the SWS monitor.**

- Enter a simulated vehicle speed.

| Item No. | Item name | Normal conditions |
|---|---|---|
| Item 03 | SPEED SENSOR | Displays the speed which fluctuates within ± 2 km/h from the entered vehicle speed. |

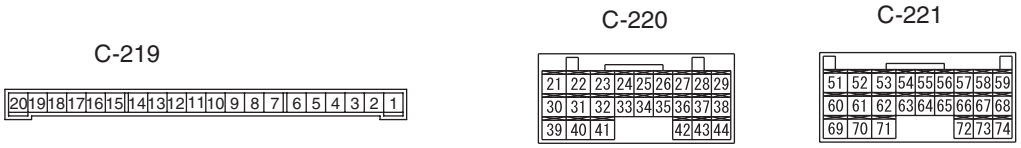
**OK: Normal condition is displayed.**

**Q: Is the check result normal?**
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
**NO :** Replace the ETACS-ECU.

# CHECK AT ECU TERMINAL

M1549001200812

## ETACS-ECU




AC312902 AB

*NOTE: Terminal numbers 1 to 20 can not be measured as the ETACS-ECU is mounted on the junction block directly. The values are for reference only.*

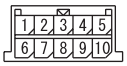
| Terminal No. | Check item | Check condition | Normal condition |
|---|---|---|---|
| 1 | Output to the power window relay | When the power windows are operative | System voltage |
| 2 | Power supply to the central door locking system (battery positive voltage) | Always | System voltage |
| 3 | Earth (for ECU) | Always | 0 V |
| 4 | Ignition switch (ACC) | Ignition switch: ACC | System voltage |
| 5 | Output to room lamp | When the room lamp is on | 2 V or less |
| 6 | Power supply to interior lamp (battery positive voltage) | Always (when the interior lamp off function is off) | System voltage |
| 7 | Input from left rear door switch | Left rear door switches: ON (left rear door open) | 0 V |
| 8 | Power supply from ignition switch (IG1) | Ignition switch: ON | System voltage |
| 9 | Output to right turn-signal lamps | When right turn-signal lamps are on | System voltage |
| 10 | Input from driver's door switch | Driver's door switch: ON (door open) | 0 V |
| 11 | Power supply to hazard warning lamp (battery positive voltage) | Always | System voltage |
| 12 | Output to central door locking (for locking the doors) | When the door lock actuators lock the doors | System voltage |
| 13 | Output to central door locking (for unlocking the doors other than the driver's door) | When the door lock actuators unlock the doors | System voltage |
| 14 | Output to left turn-signal lamps | When the left turn-signal lamps are on | System voltage |
| 15 | – | – | – |
| 16 | Output to rear wiper | When rear wiper is operating | System voltage |
| 17 | Input of rear wiper automatic stop signal | When rear wiper is operating | System voltage |
| 18 | Power supply from ignition switch (ACC) | Ignition switch: ACC | System voltage |

| Terminal No. | Check item | Check condition | Normal condition |
|---|---|---|---|
| 19 | – | – | – |
| 20 | Battery power supply (for ECU) | Always | System voltage |
| 21 | Input from rear fog lamp switch | Rear fog lamp switch: ON | 0 V |
| 22 | Output to central door locking (for unlocking the driver's door) | When the door lock actuators unlock the doors | System voltage |
| 23 | Rear washer output | When rear washer is operating | System voltage |
| 24 | Input from remote controlled mirror switch (fold switch) | Remote controlled mirror switch (fold switch): ON | 0 V |
| 29 | Input from passenger's seat belt switch | When passenger's seat belt switch is on | – |
| 30 | Input to key reminder switch | Key reminder switch: ON (ignition key removed) | 0 V |
| 31 | Output to electric retractable remote controlled mirror (unfold) | When the door mirrors are folding | System voltage |
| 33 | Input to door key switch or tailgate key switch (lock switch) | All doors and tailgate: Locked | 0 V |
| 34 | Input to door key switch or tailgate key switch (unlock switch) | All doors and tailgate: Unlocked | 0 V |
| 35 | Input to driver's door lock actuator (lock switch) | Driver's door lock: Locked | 0 V |
| 36 | Input to driver's door lock actuator (unlock switch) | Driver's door lock: Unlocked | 0 V |
| 37 | Input from tailgate switch | Tailgate switch: ON (tailgate open) | 0 V |
| 39 | Input to back-up lamp switch | Sift lever: R position<br>Ignition switch: ON | System voltage |
| 40 | Output to electric retractable remote controlled mirror (unfold) | When the door mirrors are unfolding | System voltage |
| 51 | Setting diagnosis code or sending input check signal | When diagnosis code is set (the MUT-II/III is connected or the diagnosis connector No.1 is earthed) | 0 to 12 V (pulse signal) |
| | | When input check signal is sent | 0 V, 12 V (input signal is fluctuating) |
| 52 | Input from luggage room lamp switch | Luggage room lamp switch: ON | 0 V |
| 53 | Input from interior lamp off switch | Interior lamp switch: OFF | 0 V |
| 54 | Input from front fog lamp switch | Front fog lamp switch: ON | 0 V |
| 55 | Input from hazard warning lamp switch | Hazard warning lamp switch: ON | 0 V |
| 56 | Earth (for sensor) | Always | 0 V |
| 57, 58 | – | – | – |
| 59 | SWS communication line | Always | 0 to 12 V (pulse signal) |

| Terminal No. | Check item | Check condition | Normal condition |
|---|---|---|---|
| 60 | Power supply to automatic air conditioner control (A/C-ECU) illumination and radio illumination (battery positive voltage) | Always | System voltage |
| 61 | Input to tailgate lock actuator | Tailgate lock: Locked | 0 V |
| 62 | Input to tailgate lock release handle | Tailgate lock release handle: ON | 0 V |
| 63 | Input from interior lamp on switch | Interior lamp switch: ON | 0 V |
| 64 | Earth (for daytime running lamp function) | Always | 0 V |
| 65 | Input from passenger's door switch | Passenger's door switch: ON (door open) | 0 V |
| 66 | Input from windshield intermittent wiper volume | Turn the ignition switch to the ACC position, and move the wiper volume from "Fast" to "Slow." | 0 to 2.5 V |
| 67 | Input from diagnosis control | When MUT-III is connected | 0 V |
| 68 | Input of SWS request signal | Always | 0 to 12 V (pulse signal) |
| 69 | Output to ignition key cylinder illumination lamp | When ignition key cylinder illumination is on | 2 V or less |
| 70 | Input from right rear door switch | Right rear door switches: ON (right rear door open) | 0 V |
| 71 | Power supply to interior lamp | Always (when the interior lamp off function is off) | System voltage |
| 72 | – | – | – |
| 73 | – | – | – |
| 74 | Output to rear fog lamp | When rear fog lamp is on | System voltage |

## COLUMN SWITCH

C-301

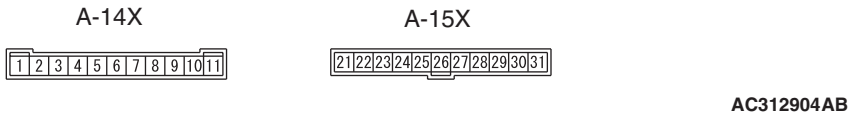



AC312903 AB

| Terminal No. | Check item | Check condition | Normal condition |
|---|---|---|---|
| 1 | System voltage | Always | System voltage |
| 2 | Input of SWS request signal | Always | 0 to 12 V (pulse signal) |
| 3 | SWS communication line | Always | 0 to 12 V (pulse signal) |
| 4 | Earth | Always | 0 V |
| 5 | – | – | – |
| 6 | Output to windshield intermittent wiper volume | Ignition switch: ACC<br>Move the wiper volume from "Fast" to "Slow." | 0 to 2.5 V |
| 7 | – | – | – |

| Terminal No. | Check item | Check condition | Normal condition |
|---|---|---|---|
| 8 | Back-up output to windshield wiper switch | Windshield low-speed wiper switch or windshield high-speed wiper switch: ON | 0 V |
| 9 | Power supply from ignition switch (IG1) | Ignition switch: ON | System voltage |
| 10 | Back-up output to headlamp switch | Headlamp switch: ON | 0 V |

## FRONT-ECU



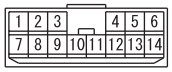

*NOTE: Measurement is not possible as the front-ECU is mounted on the relay box directly. The values are for reference only.*

| Terminal No. | Check item | Check condition | Normal condition |
|---|---|---|---|
| 1 | Output to headlamp washer | When headlamp washer is operating | System voltage |
| 2 | – | – | – |
| 3 | Battery power supply (for headlamp washer) | Always | System voltage |
| 4 | Output to tail lamps | When the tail lamps are on | System voltage |
| 5 | Battery power supply (for ECU) | Always | System voltage |
| 6 | Output to low-beam headlamps | When low-beam headlamps are on | System voltage |
| 7 | Battery power supply (for tail lamps) | Always | System voltage |
| 8, 9 | Battery power supply (for headlamps) | Always | System voltage |
| 10 | Output to high-beam headlamps | When high-beam headlamps are on | System voltage |
| 11 | Output to front fog lamps | When front fog lamps are on | System voltage |
| 21 | Earth | Always | 0 V |
| 22 | Power supply to the ignition switch (IG2) | Ignition switch: ON | System voltage |
| 23 | – | – | – |
| 24 | Output to windshield wiper (high speed operation) | When windshield wipers are operating at high speed | System voltage |
| 25 | Output to windshield wiper (low speed operation) | When windshield wipers are operating at low speed | System voltage |
| 26 | Back-up input from windshield wiper switch | Windshield low-speed wiper switch or windshield high-speed wiper switch: ON | 0 V |
| 27 | Back-up input from headlamp switch | Headlamp switch: ON | 0 V |

| Terminal No. | Check item | Check condition | Normal condition |
|---|---|---|---|
| 28 | Power supply from ignition switch (ACC) | Ignition switch: ACC | System voltage |
| 29 | Input of windshield wiper automatic stop signal | When windshield wipers are operating | System voltage |
| 30 | SWS communication line | Always | 0 to 12 V (pulse signal) |
| 31 | Output to windshield washer | When windshield washer is operating | System voltage |

## POWER WINDOW MAIN SWITCH

F-05

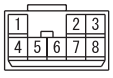



AC312905 AB

| Terminal No. | Check item | Check condition | Normal condition |
|---|---|---|---|
| 1 | Output to power window motor | – | – |
| 2 | Earth | Always | 0 V |
| 3 | – | – | – |
| 4 | SWS communication line (to ETACS-ECU) | Always | 0 to 12 V (pulse signal) |
| 5 | – | – | – |
| 6 | Power supply | Power window relay: ON | System voltage |
| 7 | Output to power window motor | – | – |
| 8 | Input from power window motor (pulse sensor earth) | – | 0 V |
| 9 | Input from power window motor (pulse sensor signal) | When the power windows are operating | 0 to 5 V (pulse signal) |
| 10 | Input from power window motor (pulse sensor signal) | When the power windows are operating | 0 to 5 V (pulse signal) |
| 11 | SWS communication line (power window sub switch) | Power window relay: ON | 0 to 12 V (pulse signal) |
| 12 | Input from power window motor (power supply to pulse sensor) | When the power windows are operating | 5 V |
| 13, 14 | – | – | – |

## POWER WINDOW SUB SWITCH

F-15 (front: RH), F-02 (rear: LH), F-18 (rear: RH) <LHD>
F-26 (front: LH), F-02 (rear: LH), F-18 (rear: RH) <RHD>




AC312906 AB

| Terminal No. | Check item | Check condition | Normal condition |
|---|---|---|---|
| 1 | Earth | Always | 0 V |
| 2 | Input from power window motor | – | – |
| 3 | Input from power window motor | – | – |
| 4 | Power supply | Power window relay: ON | System voltage |
| 5 | Output to power window motor | – | – |
| 6 | SWS communication line | Power window relay: ON | 0 to 12 V (pulse signal) |
| 7 | Output to power window motor | – | – |
| 8 | Input from power window motor | – | – |

## SUNROOF MOTOR ASSEMBLY

AC312932AB

| Terminal No. | Check item | Check condition | Normal condition |
|---|---|---|---|
| 1 | System voltage (for motor) | Always | System voltage |
| 2 | Power supply from ignition switch (IG2) | Ignition switch: ON | System voltage |
| 3, 4 | – | – | – |
| 5 | Earth | Always | 0 V |
| 6 | Input from sunroof switch (close) | Sunroof switch: Close | 0 V |
| 7 | – | – | – |
| 8 | Input from sunroof switch (open) | Sunroof switch: Open | 0 V |
| 9 | – | – | – |
| 10 | SWS communication line (to ETACS-ECU) | Always | 0 to 12 V (pulse signal) |

# ON-VEHICLE SERVICE

## CUSTOMIZE FUNCTION

M1549002500623

Using MUT-III adjusts the following function. The programmed information is held even when the battery is disconnected.

- Headlamp automatic-shutdown function

To prevent the headlamp from being left illuminated, the headlamp is turned off automatically when opening the driver's door, if the ignition switch is turned to the LOCK (OFF) position with the lighting switch in the TAIL or HEAD position.

- Vehicle speed-dependent wiper function

With the windshield wiper switch in the intermittent position, the intermittent duration changes depending on the intermittent adjusting knob position and the vehicle speed.

- Turn-signal lamp operation sound function

Synchronized with the hazard lamp and the turn signal lamp, the buzzer sounds.

- Dimmer interior lamp control duration

When the door is closed with the ignition switch LOCK (OFF), the interior lamp is turned OFF automatically in the specified time.

- Power window timer function duration

Even after turning LOCK (OFF) the ignition switch, the power window can be operated for the specified time.

- Power window main switch operation control during power window timer activation

During power window timer activation, only the driver's power window can be operated, using the power window main switch.

- Timer lock time after executing the keyless entry unlock

If any door including a tailgate is not opened after being unlocked with the keyless transmitter, doors are locked automatically within the specified time.

- Door-ajar warning function

Driving with any door, including a tailgate, not properly closed sounds the buzzer to let the driver know the door-ajar state.

- Rear wiper intermittent duration

When the rear wiper switch is turned ON, the rear wiper operates in the intermittent action. When the rear wiper switch is turned from OFF to ON two cycles, the rear wiper makes continuous operation regardless of the intermittent operation duration setting.

- Operation duration of interior lamp automatic-shutdown function

This function automatically turns OFF the interior lamp after a specified time has elapsed, if the interior lamp is ON with the ignition switch in the LOCK (OFF) position.

- Power window lock operation on the driver's seat

This function enables the driver to control the power windows other than the driver's door power window with the power window main switch, when the power window lock switch incorporated in the power window main switch is pressed.

- Wiper linked with washer function

When this function is active, the windshield wiper operates if the washer switch is turned ON.

- Initialising all functions (Returning to the initial condition)

All adjusting functions are returned to the settings at the time of factory shipment.

*NOTE: If item No.6 and 8 are both shown, they are deleted by initialising all the functions. The adjustment function item is displayed when the smart entry system is reactivated after initialisation of all the functions.*

| Item No. | Items shown on MUT-III screen | Item | Adjustment items shown on MUT-III screen | Adjusting contents |
|---|---|---|---|---|
| 2 | H/L AUTO-CUT | Headlamp automatic-shutdown function | W.FUNCTION(A) | With function: The automatic tail lamp turn-off function with the ignition switch OFF (LOCK) is available. |
| | | | W.FUNCTION(D) | With function: The automatic tail lamp turn-off function with the ignition switch OFF (LOCK) is not available. (Initial setting) |
| | | | W/O FUNCTION | Without function |
| 4 | SPEED SEN WIP | Vehicle speed-dependent wiper function | W.FUNCTION | With function (Initial setting) |
| | | | W/O FUNCTION | Without function |
| 15 | T/SIG.BUZZER | Turn-signal lamp operation sound function | W.FUNCTION | With function |
| | | | W/O FUNCTION | Without function (the initial condition) |
| 16 | RM LMP TN OFF | Dimmer interior lamp control duration | 30s | 30 seconds |
| | | | 15s | 15 seconds (the initial condition) |
| | | | 7.5s | 7.5 seconds |
| | | | W/O FUNCTION | 0 second (no delay action) |

| Item No. | Items shown on MUT-III screen | Item | Adjustment items shown on MUT-III screen | Adjusting contents |
|---|---|---|---|---|
| 24 | KEYLES LOCK T | Timer lock time after executing the keyless entry unlock | 30s | 30 seconds (the initial condition) |
| | | | 60s | 1 minute |
| | | | 120s | 2 minutes |
| | | | 180s | 3 minutes |
| 26 | DOOR WARN BUZ | Door-ajar warning function | W.FUNCTION | With function (Initial setting) |
| | | | W/O FUNCTION | Without function |
| | | | CONTIN ACTION | Continuous operation |
| 28 | R.INT WIPER T | Rear wiper intermittent duration | 8s | 8 seconds: Without continuous operation (Initial setting) |
| | | | 4s(W SUCSSON) | 4 seconds: With continuous operation |
| | | | 8s(W SUCSSON) | 8 seconds: With continuous operation |
| | | | 16s(W SUCSSON) | 16 seconds: With continuous operation |
| | | | CONTIN ACTION | Continuous operation (without the intermittence) |
| | | | 4s | 4 seconds: Without continuous operation |
| | | | 16s | 16 seconds: Without continuous operation |
| 30 | RM/L AUTO-CUT | Operation duration of interior lamp automatic-shutdown function | 3min. | 3 minutes |
| | | | 30min. | 30 minutes (the initial condition) |
| | | | 60min. | 60 minutes |
| | | | W/O FUNCTION | Without function |
| 31 | P/W LOCK MODE | Power window lock operation on the driver's seat | ALL SEATS OPE | Driver can operate power windows on all doors even when the power window lock is ON (Initial setting). |
| | | | ONLY DR SEAT | Operating seats other than the driver's seat is prohibited when lock is ON. |
| 37 | WIP SYCR WASH | Wiper linked with washer function | W.FUNCTION | With function (Initial setting) |
| | | | W/O FUNCTION | Without function |
| 39 | TURN-SIGNAL | Turn signal lamp operation condition adjustment function | IG-ON | Turn signal lamp can be operated when the ignition switch is turned ON (Initial setting). |
| | | | IG-ACC | Turn signal lamp can be operated when the ignition switch 1 is in ACC or ON position. |

| Item No. | Items shown on MUT-III screen | Item | Adjustment items shown on MUT-III screen | Adjusting contents |
|---|---|---|---|---|
| 40 | KEYLES HAZARD | Keyless entry hazard answer-back flashing pattern adjustment function | LOCK1,UNLOCK2 | LOCK: Flash once, UNLOCK: Flash twice (Initial setting) |
| | | | LOCK1, UNLOCK0 | LOCK: Flash once, UNLOCK: No flash |
| | | | LOCK0, UNLOCK2 | LOCK: No flash, UNLOCK: Flash twice |
| | | | LOCK2, UNLOCK1 | LOCK: Flash twice, UNLOCK: Flash once |
| | | | LOCK2, UNLOCK0 | LOCK: Flash twice, UNLOCK: No flash |
| | | | LOCK0, UNLOCK1 | LOCK: No flash, UNLOCK: Flash once |
| | | | NO BLINK | No flashing |

*NOTE:*

- *Adjustment items other than the above will also be shown on MUT-III screen. However, they cannot be reconfigured.*