

## GROUP 54B

# SMART WIRING SYSTEM (SWS) NOT USING SWS MONITOR

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..... 54B-498

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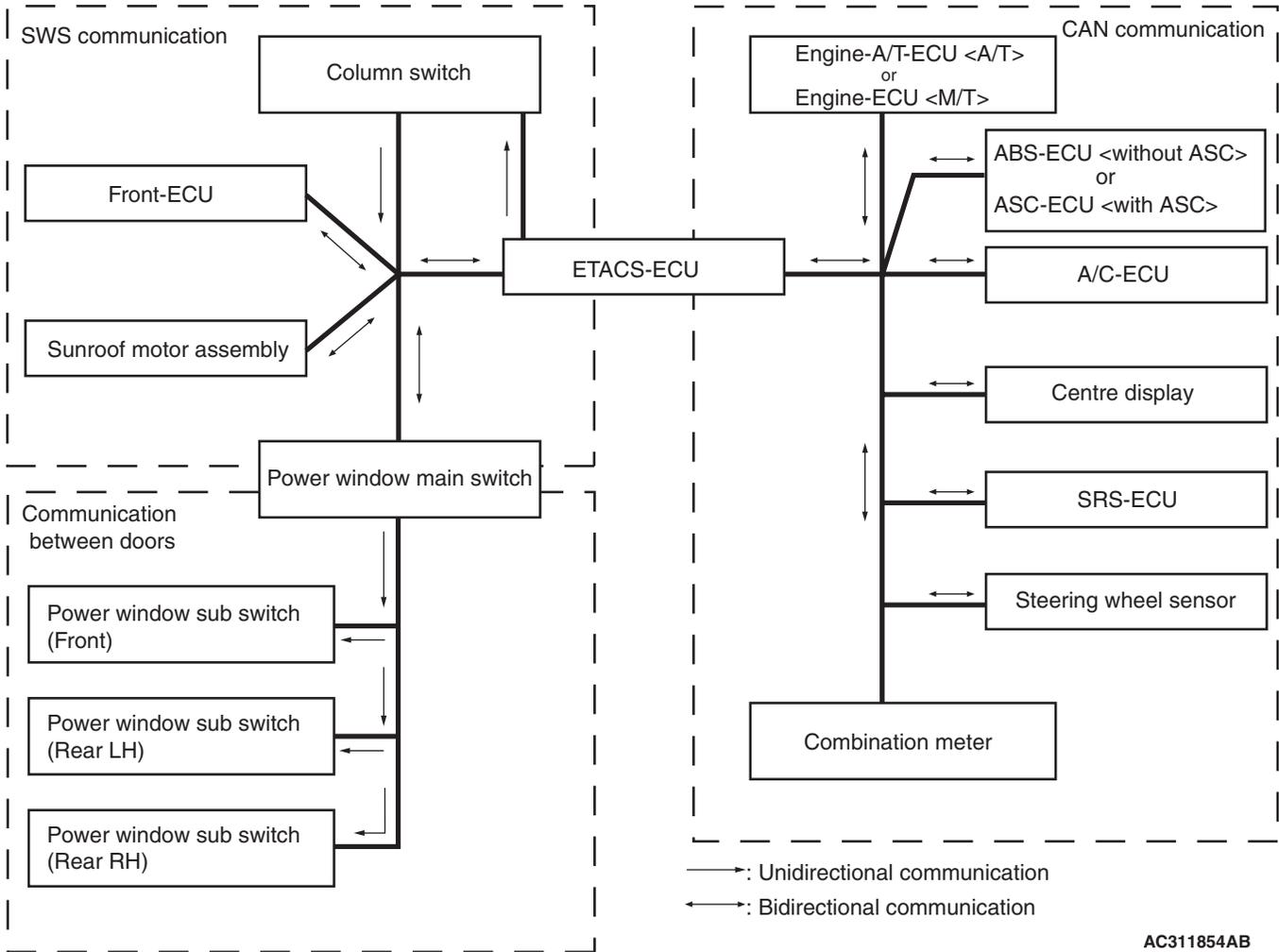
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# GENERAL INFORMATION

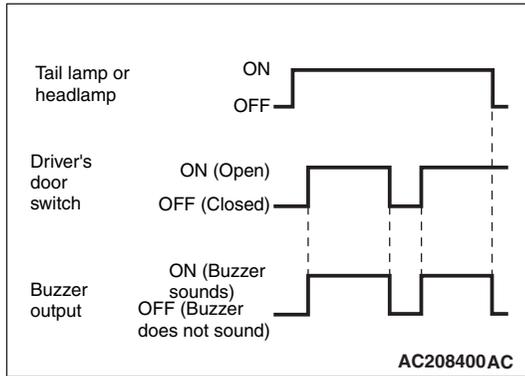
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The exclusive signal lines for transmitting the multi-distribution data are connected as follows between the ETACS-ECU, column switch (incorporated inside the column-ECU), front-ECU, power window main switch (incorporated inside the power window-ECU), power window sub switches (incorporated inside the power window-ECU), and sunroof motor assembly for internal communication.



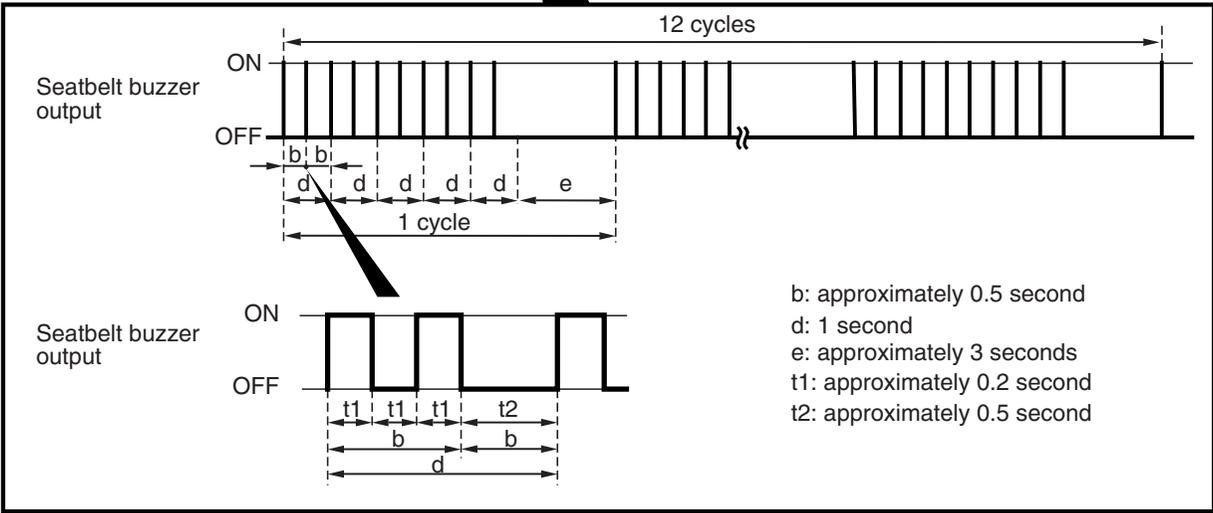
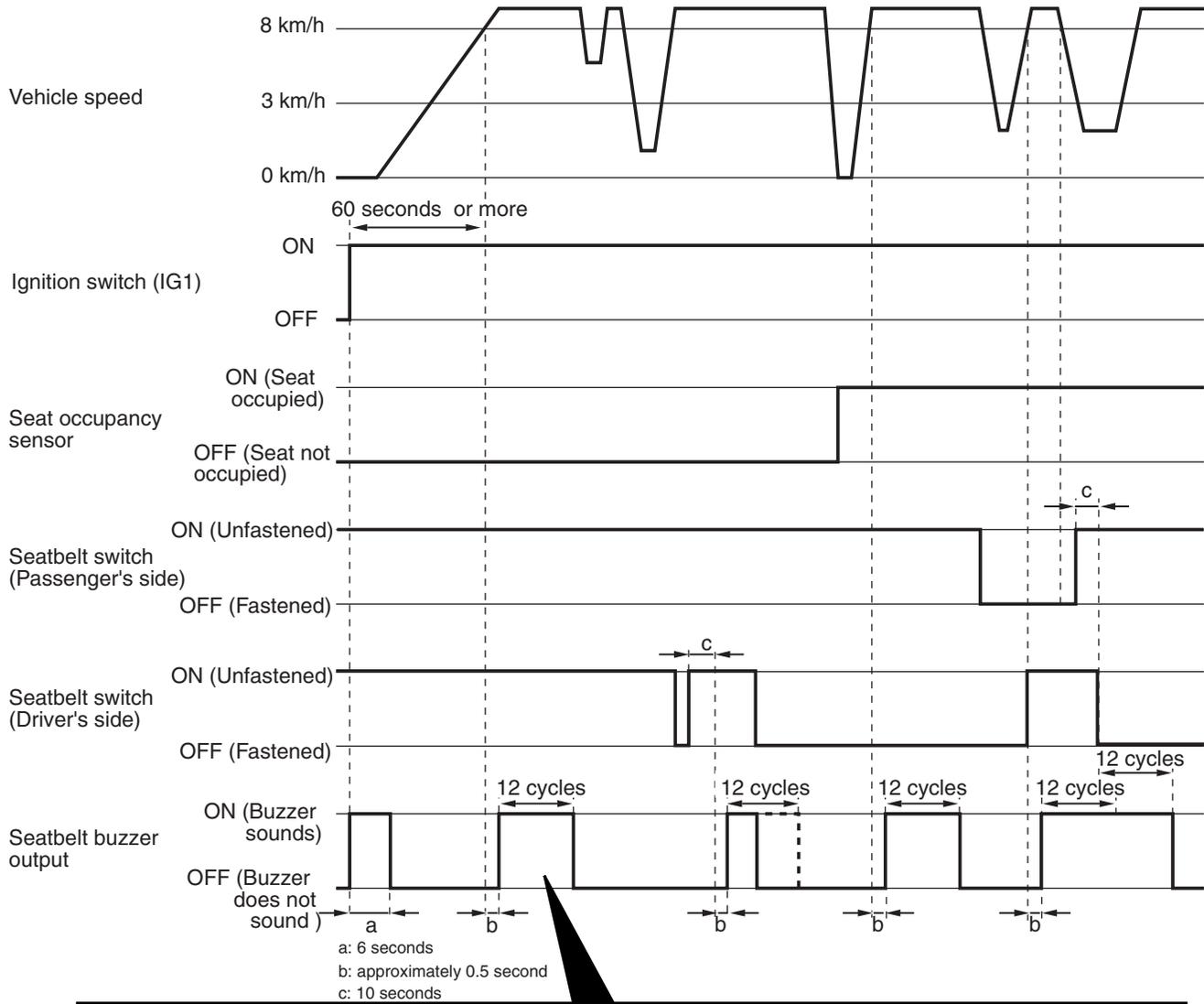
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**BUZZER  
LAMP REMINDER BUZZER FUNCTION**



When the ignition key is removed and then the driver's door is opened with turning ON the tail lamp or the headlamp, the buzzer sounds continuously to alert the driver that the lamp is still ON. However, if the tail lamp or the headlamp is turned off by the headlamp automatic-shutdown off function, the buzzer does not sound.

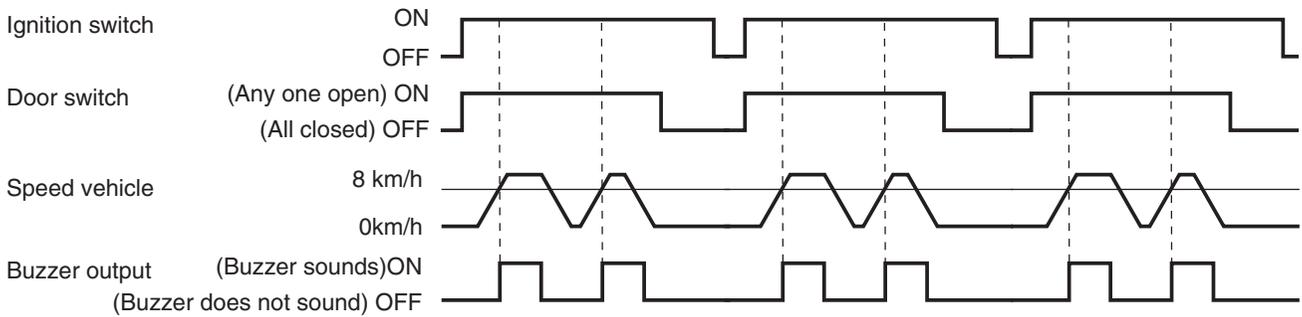
**SEAT BELT WARNING BUZZER  
FUNCTION**



When the ignition switch is turned ON with the driver's seat belt unbuckled, the ETACS-ECU triggers a warning buzzer (repetition of a short beep sound) for 6 seconds to notify the driver that the seat belt is not fastened.

When the ETACS-ECU detects that the vehicle speed signal sent from the combination meter through CAN communication exceeds 8 km/h and the driver's seat belt buckle is not engaged, it will trigger a warning buzzer (repetition of 5-second ON and 2.8-second OFF for 12 cycles). The ETACS-ECU stops the buzzer when the driver's seat belt buckle is engaged while the warning cycle is ON.

**DOOR AJAR WARNING BUZZER  
FUNCTION <THE INITIAL CONDITION:  
WITH FUNCTION>**

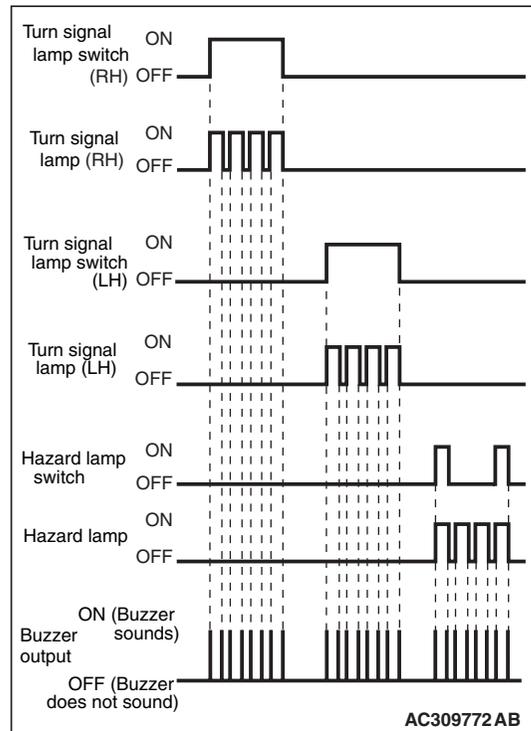


AC309677AB

If the vehicle speed exceeds 8 km/h with the door-ajar, the buzzer sounds (pings eight times) to alert the driver that the door is not properly closed.

*NOTE: Availability of the door-ajar alarm function can be selected by the customize function.*

**Turn-signal lamp buzzer function <the  
initial condition: Without function>**

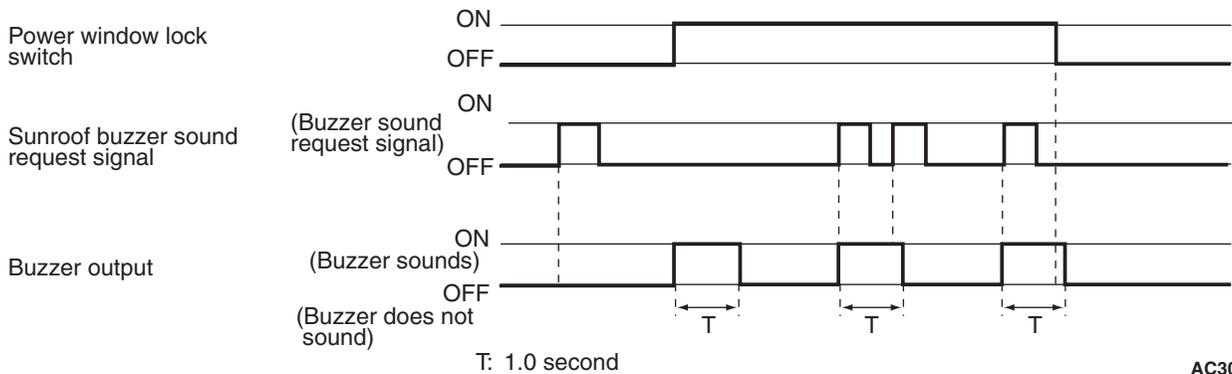


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ETACS-ECU buzzer sounds simultaneously with the blinks of the turn signal lamp and the hazard lamp.

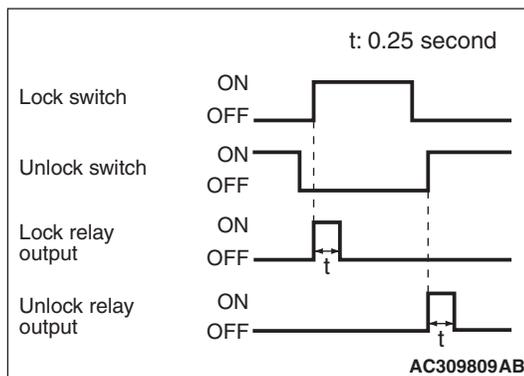
*NOTE: Availability of the turn signal lamp operation tone function can be selected by the customize function.*

## REAR SUNROOF BUZZER FUNCTION



The ETACS-ECU triggers a warning buzzer when it receives a buzzer request signal from the sunroof-ECU. The buzzer keeps sounding for 1 full second if the trigger conditions are eliminated while the buzzer is ON.

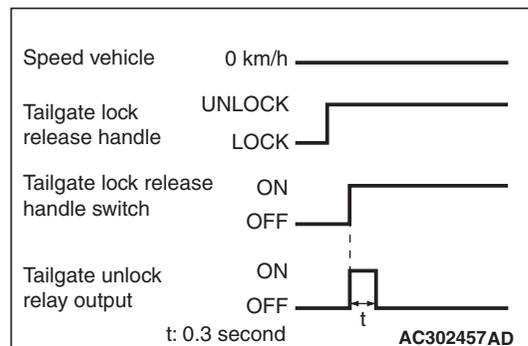
## CENTRAL DOOR LOCKING SYSTEM CENTRAL DOOR LOCKING CONTROL FUNCTION



When the front doors are locked (when the lock switch turns ON after turning OFF the unlock switch in the driver's door lock actuator), ETACS-ECU turns ON the lock relay output for 0.25 second, and locks all doors (including the tailgate).

When the front doors are unlocked (when the unlock switch turns ON after turning OFF the lock switch on the driver's door lock actuator), ETACS-ECU turns ON the unlock relay output for 0.25 second, and unlocks all doors (including the tailgate).

## TAILGATE OPENER CONTROL FUNCTION



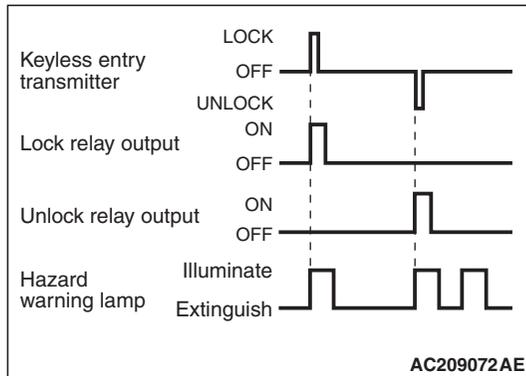
When the tailgate lock release handle is pulled up (tailgate lock release handle switch turns ON) while the vehicle is parked and the tailgate is unlocked, the ETACS-ECU turns ON the unlock relay output for 0.3 second, thus the tailgate can be opened by the tailgate lock release handle.

## KEYLESS ENTRY SYSTEM MULTI-MODE KEYLESS ENTRY FUNCTION

The power door mirrors can be operated by the keyless entry transmitter operation.

*NOTE: Availability of the door mirrors operation can be adjusted with the customize function.*

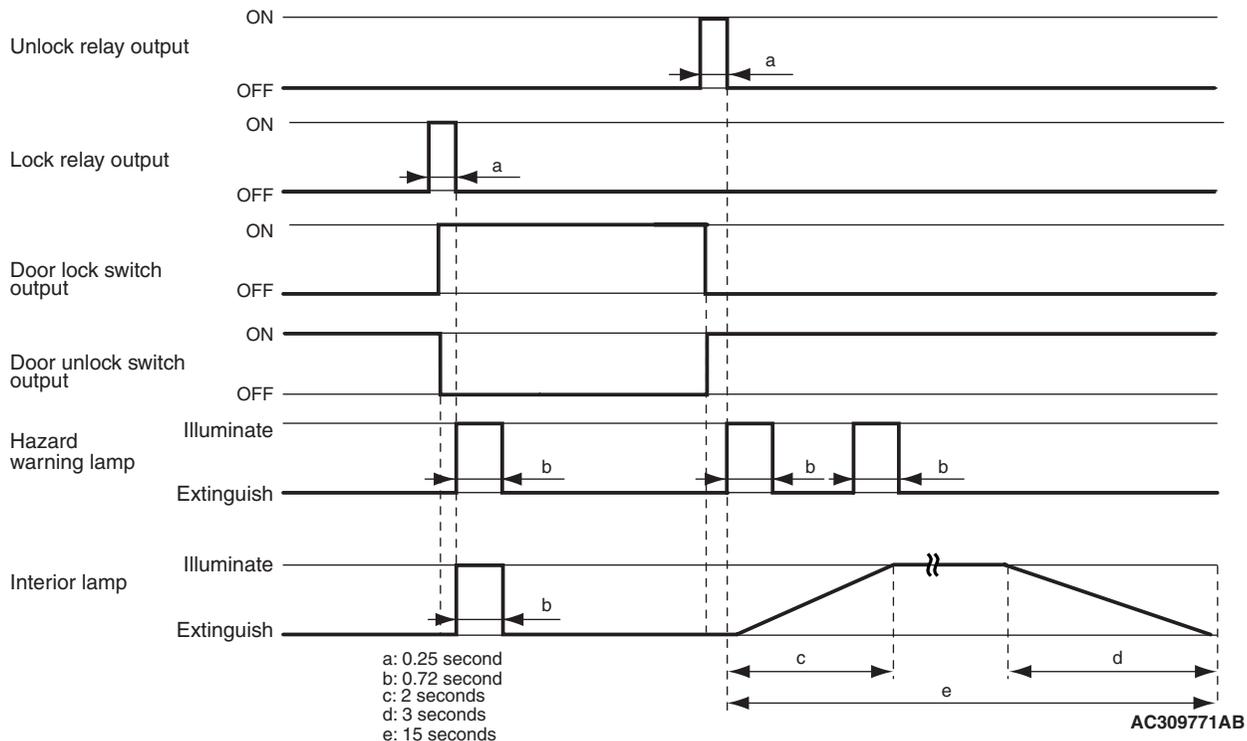
**KEYLESS ENTRY HAZARD ANSWER-BACK FUNCTION <INITIAL SETTING: LOCK, FLASH ONCE, UNLOCK, FLASH TWICE>**



The hazard answerback function that allows checking the lock/unlock state of the door easily even in the daytime is installed. When the lock signal from the keyless entry transmitter is received into ETACS-ECU, all doors (including the tailgate) are LOCK, and the turn signal lamp blinks once. When the unlock signal is received, all doors (including the tailgate) are UNLOCK, and the turn signal lamp blinks twice.

*NOTE: The answerback blink time can be adjusted by the customize function.*

**ROOM LAMP ANSWER-BACK FUNCTION <INITIAL SETTING: LOCK, FLASH ONCE, UNLOCK, ILLUMINATES FOR 15 SECONDS>**



When the ETACS-ECU receives the lock signal from the keyless entry transmitter, all doors (including tailgate) is locked and the interior lamp flashes once in synchronization with the hazard lamp operation. When the ETACS-ECU receives the unlock signal, all doors (including tailgate) is unlocked. The interior lamp fades in, keeps on, and fades out in 15 seconds after the door unlock relay is operated. (15 seconds including fading period)

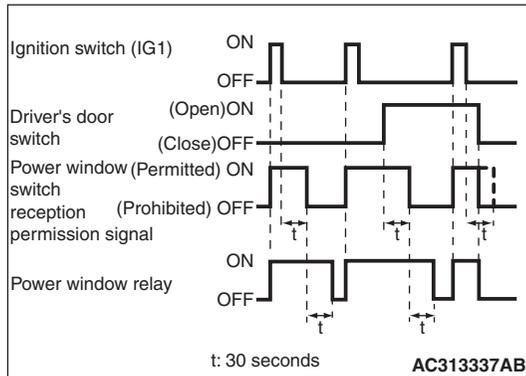
*NOTE: The answerback blink time can be adjusted by the customize function.*

**TIMER LOCK FUNCTION <THE INITIAL CONDITION: 30 SECONDS>**

After unlocking the doors with the keyless entry transmitter, if no doors are opened and if the ignition key is not inserted or if the locking function is not operated, the ETACS-ECU automatically locks the doors in 30 seconds.

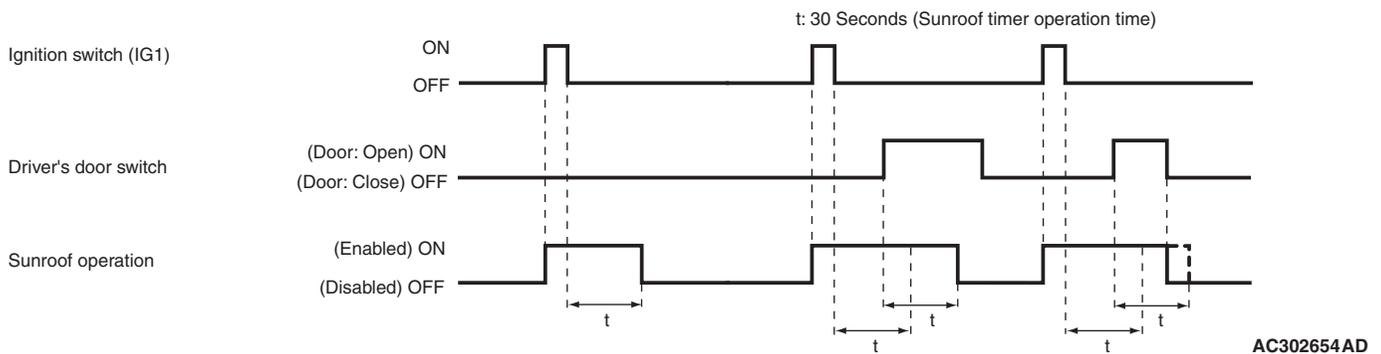
*NOTE: The timer lock time can be adjusted by the customize function.*

## POWER WINDOW POWER WINDOW TIMER FUNCTION



When the power window relay and the power window switch reception permit signal (SWS signals from ETACS) are turned ON with the ignition switch ON and the ignition switch is turned OFF, the power window switch reception permit signal is kept ON for approximately 30 seconds to enable the door window operation by the power window switch. The power window relay will be turned OFF 30 seconds after terminating the reception permit signal. If the driver's door is opened during the timer operation, the reception permit signal is kept ON for 30 seconds from that time. However, when the driver's door is closed, the reception permit signal is turned OFF at the same time. The power window relay will be turned OFF 30 seconds after terminating the reception permit signal.

## SUNROOF Sunroof timer function



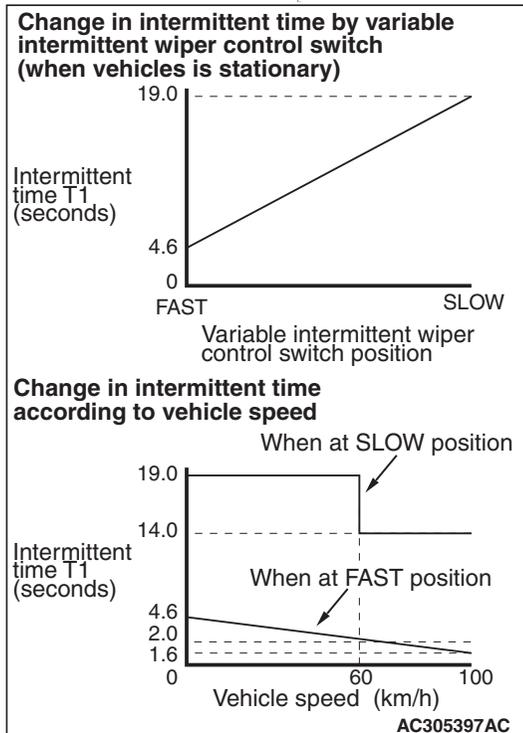
After turning OFF the ignition switch, the sunroof can be operated by the sunroof switch for approximately 30 seconds.

When the driver's door is opened during the sunroof timer operation, the sunroof timer operation will be extended for sunroof timer operation time at that time.

If the driver's door is closed during sunroof timer operation, the sunroof operation is cancelled at the same time.

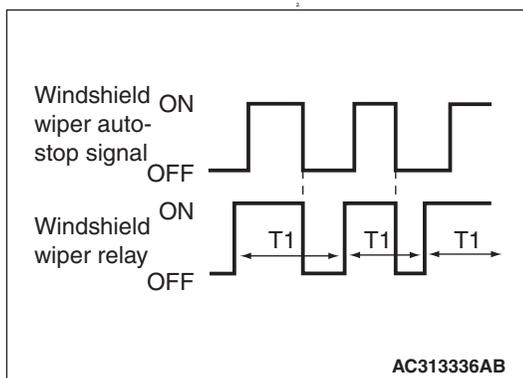
**WINDSHIELD WIPER AND WASHER**

**Intermittent control (Vehicle speed-depended variable type) <the initial condition: with function>**



The ETACS-ECU calculates the intermittent time "T1" based on the position of the windshield intermittent wiper control on the column switch and the vehicle speed signal, which is transmitted from the combination meter to the ETACS-ECU through CAN communication, and constantly transmits it to the front-ECU.

*NOTE: Using a customize function, driver can enable or disable the vehicle speed-sensitive function. For more information about the customisation feature.*

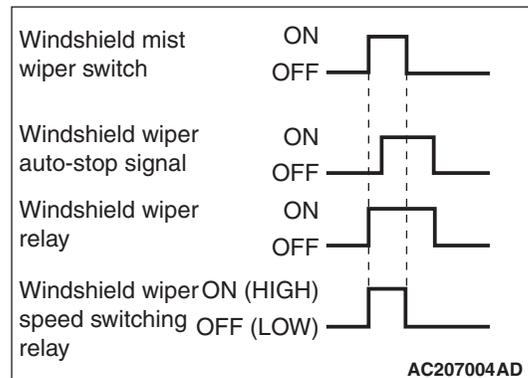


When the front-ECU receives the windshield intermittent wiper switch ON signal from the column switch while the ignition switch is in the ACC or ON position, it turns the windshield wiper relay on to operate the windshield wiper at low speed.

- When the windshield wiper comes to the stop position, the windshield wiper auto stop signal turns OFF. Then the windshield wiper relay will turn OFF, and the windshield wiper stops operating.
- After the intermittent time (T1 second) sent from the ETACS-ECU has elapsed after the windshield wiper relay is turned ON, the windshield wiper relay turns ON again, and the above procedure is repeated.

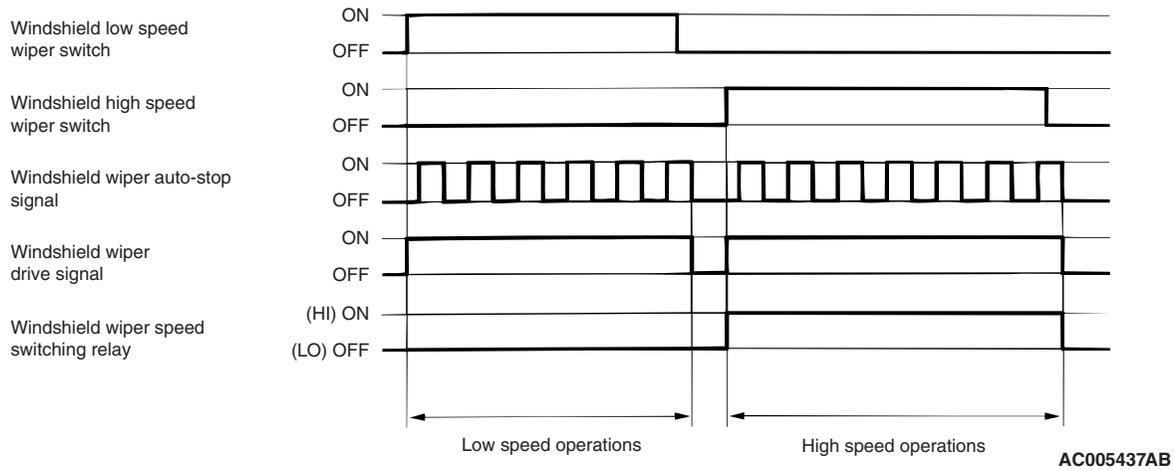
*NOTE: If the intermittent time "T1" is 2 seconds or longer, the front-ECU operates the windshield wiper at low speed.*

**MIST WIPER CONTROL**



When the windshield wiper mist switch of the column switch is turned ON while the ignition switch is ACC or ON, the column switch turns ON the windshield wiper drive signal. At the same time, the wiper speed switch relay turns to ON (HI). When the windshield mist wiper switch is ON, the windshield wiper operates at the high speed. When the windshield mist wiper switch is turned OFF while the windshield wiper is operating in the mist mode, the windshield wiper operates at low speed and then stops at the auto stop position.

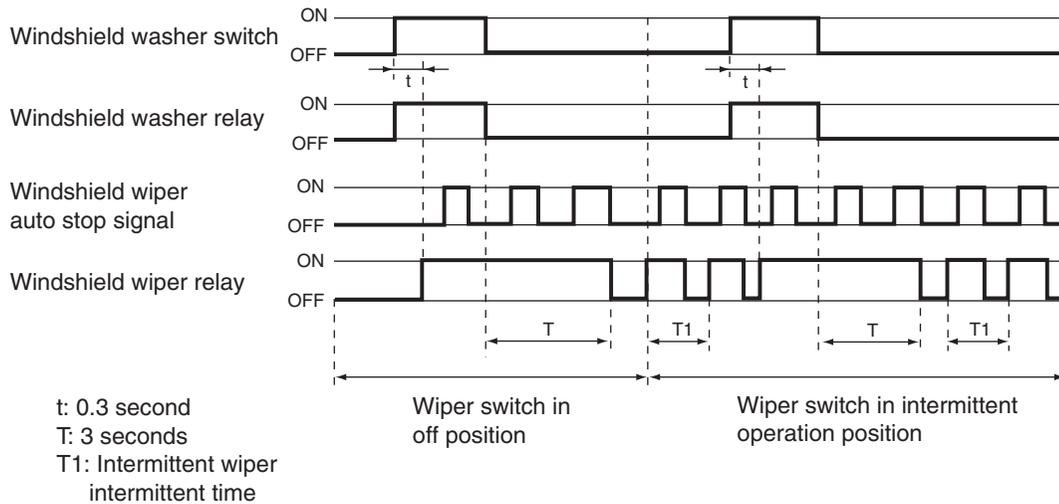
## Low speed wiper and high speed wiper control



When the windshield low speed wiper switch of the column switch is turned ON while the ignition switch is ACC or ON, the column switch turns ON the windshield wiper drive signal. Also, the wiper speed switching relay turns to OFF (LO), and the windshield wiper operates at the low speed.

When the windshield high speed wiper switch is turned ON, the windshield wiper drive signal turns ON. Also, the wiper speed switching relay turns ON (HI), and the windshield wiper operates at the high speed.

### Windshield wiper linked with washer function <the initial condition: with function>



| Wiper switch          | OFF position       |                   |                   |                    | Intermittent operation position |                   |                   |                    | Low-speed or high-speed operation position |
|-----------------------|--------------------|-------------------|-------------------|--------------------|---------------------------------|-------------------|-------------------|--------------------|--|
|                       | 0.3 second or less | 0.3 to 0.5 second | 0.5 to 0.7 second | 0.7 second or more | 0.2 second or less              | 0.2 to 0.5 second | 0.5 to 0.7 second | 0.7 second or more |  |
| Washer switch ON time | 0.3 second or less | 0.3 to 0.5 second | 0.5 to 0.7 second | 0.7 second or more | 0.2 second or less              | 0.2 to 0.5 second | 0.5 to 0.7 second | 0.7 second or more | —  |
| T1                    | 0 second           | 1 second          | 2 seconds         | 3 seconds          | 0 second                        | 1 second          | 2 seconds         | 3 seconds          | 3 seconds                                  |

- When the front-ECU receives a windshield washer switch signal from the column switch with the ignition switch in the ACC or the ON position, the ECU turns on the windshield washer relay. When the windshield washer relay becomes ON, the windshield washer motor starts to run to spray the washer fluid in the washer tank onto the windshield through the washer nozzles. When the windshield washer switch signal remains on for 0.3 seconds or more, the signal turns on the windshield wiper relay (The wiper interval depends on the condition. For details, see the list) to operate the windshield wiper at high speed. Turning off the windshield washer switch causes the front-ECU to turn off the windshield wiper relay "T" seconds later, thus operating the wiper to the auto stop position at low speed.
- When the windshield washer switch is turned ON during the intermittent operation of the windshield wiper, the windshield wiper switches to continuous operation and then resumes intermittent operation.

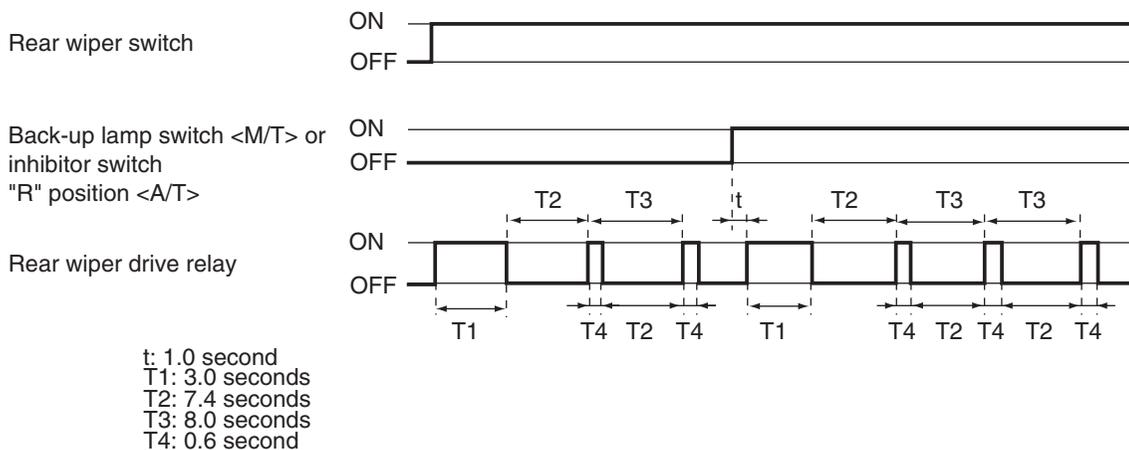
- If the ignition switch is turned to ACC while the windshield washer switch is being turned ON, the windshield washer relay becomes ON, but the windshield wiper does not activate linking with it. When the windshield washer switch is turned OFF and then ON, the windshield wiper makes the linking operation.

**NOTE:**

- Using a customize function, the driver can enable or disable the windshield wiper linked with washer function. For more information about the customisation feature.
- When the windshield wiper linked with washer function is disabled by the customisation feature, the windshield wiper does not operate in synchronization with the windshield washer. However, the windshield washer can be activated. It is useful to melt down the ices of the frozen windshield.

**REAR WIPER AND WASHER**

**Rear wiper control [the initial condition: 8 seconds (without successive operations)]**



AC207474 AD

- When the rear wiper switch on the column switch is turned ON with the ignition switch at the ACC or ON position, ETACS-ECU turns ON the rear

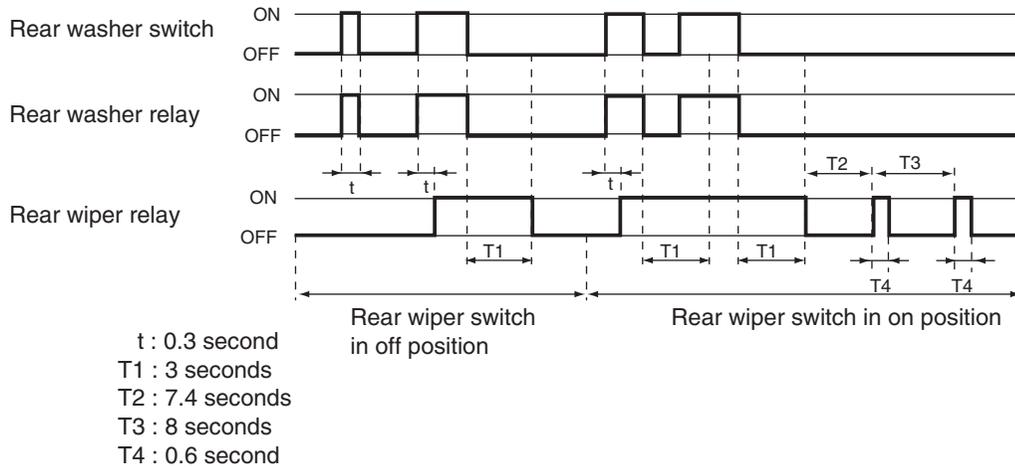
wiper drive signal for 3 seconds (approximately 2 operations) and performs the intermittent action at 8-second intervals.

When the shift lever <M/T> or selector lever <A/T> is moved to R position during the rear wiper operation, the back-up lamp switch <M/T> or inhibitor switch R position <A/T> turns ON one second after that, ETACS-ECU sends the rear wiper drive signal for 3 seconds (approximately 2 operations), and operates the intermittent action in 8 seconds interval.

- By the special operation of the rear wiper switch on the column switch (successive 2-time operations), the rear wiper operates continuously regardless of the set intermittent time.

*NOTE: The rear wiper intermittent time can be adjusted or cancelled for continuous operation by the customize function.*

### Rear wiper linked with washer function <the initial condition: with function>



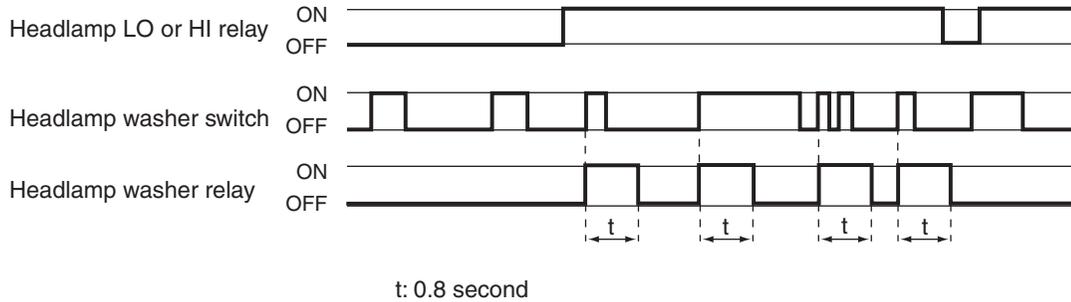
AC207003AE

- When the rear washer switch on the column switch is turned ON with the ignition switch ACC or ON, ETACS-ECU turns ON the rear washer relay. When the rear washer switch signal from the column switch remains ON for 0.3 seconds or more, ETACS-ECU turns ON the rear wiper relay to operate the rear wiper continuously. When the rear washer switch is turned OFF, the ETACS-ECU turns OFF the rear wiper relay 3 seconds later. Then the rear wiper stops at the auto stop position.
- Even turning ON the rear washer switch during rear wiper operation causes the rear wiper relay to switch the operation to continuous operation, and then the rear wiper resumes intermittent operation at intervals of eight seconds, 7.4 seconds after the completion of the continuous operation.

*NOTE: Using a customize function, a driver can enable or disable the rear wiper linked with washer function. For more information about the customisation feature.*

**HEADLAMP WASHER**

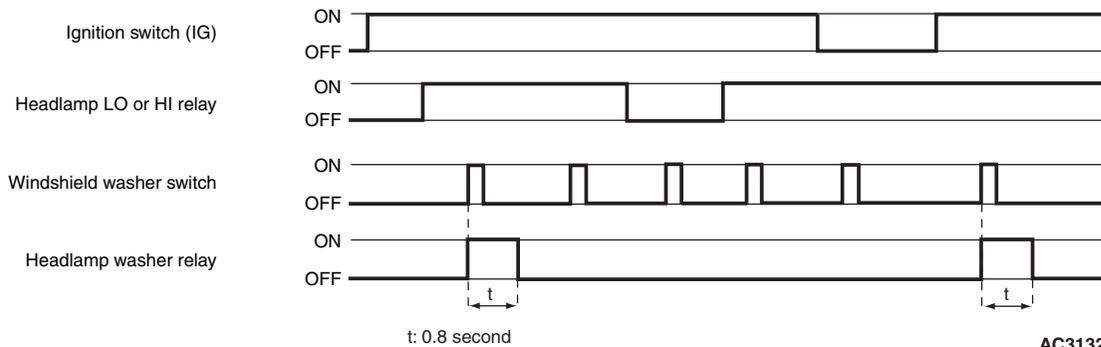
**Headlamp washer control (Normal control)**



AC313338AB

When the headlamp relay (LO or HI) is ON with the ignition switch in the ACC or the ON position, turning on the headlamp washer switch on the column switch causes the front-ECU to turn on the headlamp washer relay for 0.8 seconds. When the headlamp washer relay becomes on, the headlamp washer motor operates to spray washer fluid onto the headlamps.

**Headlamp washer control (Automatic control)**



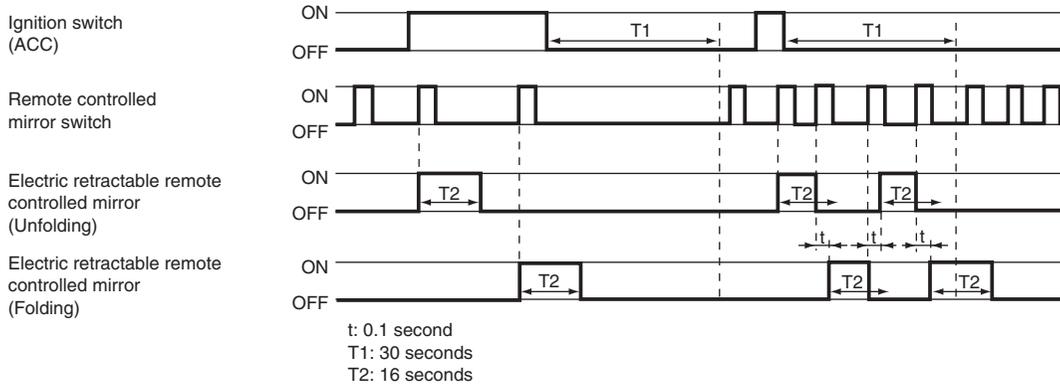
AC313284AB

When the headlamp relay (LO or HI) is ON with the ignition switch in the IG ON position, turning on the windshield washer switch causes the front-ECU to turn on the headlamp washer relay for 0.8 seconds once only. When the headlamp washer relay becomes on, the headlamp washer motor operates to spray washer fluid onto the headlamps.

*NOTE: After the automatic control operated, turn the ignition switch OFF once to operate the automatic control again.*

## ELECTRIC RETRACTABLE REMOTE CONTROLLED MIRROR

### Electric retractable remote controlled mirror timer function



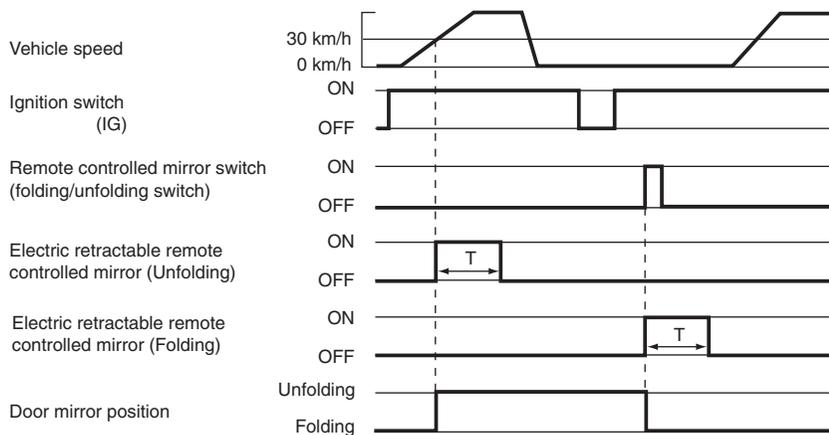
AC309810AB

When the unfolding/folding switch on the remote controlled mirror switch is turned ON with the ignition switch at the ACC or ON position, the retraction mirror relay is turned on for 16 seconds (unfolding/folding) to unfold or fold the door mirrors. Even after the ignition switch is turned OFF, the door mirrors remain operable for 30 seconds.

If the unfolding/folding switch on the remote controlled mirror switch is turned ON while one of the retraction mirror relay is in operation (unfolding or folding), the other relay for the opposite motion is turned ON after 0.1 second.

**NOTE:** Whether the door mirrors are at the unfolding or folding position is determined according to the memory of the retraction mirror relay operated previously. For this reason, if the mirrors are manually retracted, they may not move when the unfolding/folding switch is pressed next time.

### AUTOMATIC UNFOLDING FUNCTION

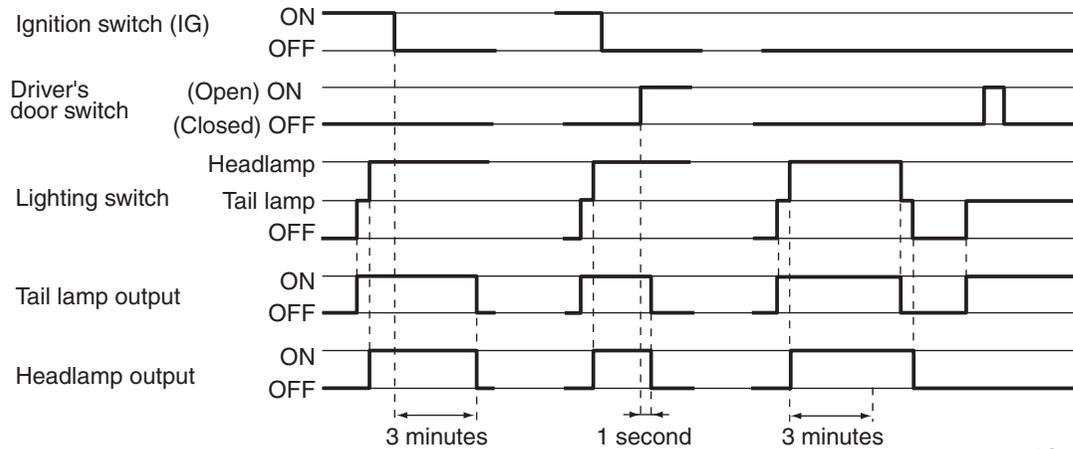


AC207002AC

When the vehicle speed reaches 30 km/h, with the ignition switch ON and the mirrors retracted, ETACS-ECU turns on the retraction mirror relay (unfolding) for 16 seconds to return the door mirrors. However, the door mirrors do not return to their normal positions automatically if the ignition switch is turned from OFF to ON, and then the unfolding/folding switch on the remote controlled

mirror switch is operated.

**NOTE:** Whether the door mirrors are at the unfolding or folding position is determined according to the memory of the retraction mirror relay operated previously. For this reason, if the mirrors are manually retracted, they may not move when the unfolding/folding switch is pressed next time.

**HEADLAMP****Headlamp automatic-shutdown function  
(the initial condition: with function)**

AC311847AB

Even when the lighting switch (tail lamp switch or headlamp switch) is ON, the headlamp (including the tail lamps) turns off automatically with any of the following conditions to prevent the battery discharge caused by unattended operation.

- If the ignition switch is turned OFF with the lighting switch ON, the lamp turns off automatically after 3 minutes. If the driver's door is opened during the 3 minutes, the lamp turns off after one second (One second before turning off, the lamp remainder buzzer sounds. However, if the driver's door is opened with the ignition key inserted, the key remainder alarm buzzer operates in the first priority).
- When the lighting switch is turned to the headlamp position (the headlamp switch is ON) from OFF with the ignition switch OFF, the headlamps and the tail lamps turn off 3 minutes after getting off (open/close of the driver's door).

- If the lighting switch is turned to the tail lamp position from OFF with the ignition switch OFF, the lamps do not turn off automatically.

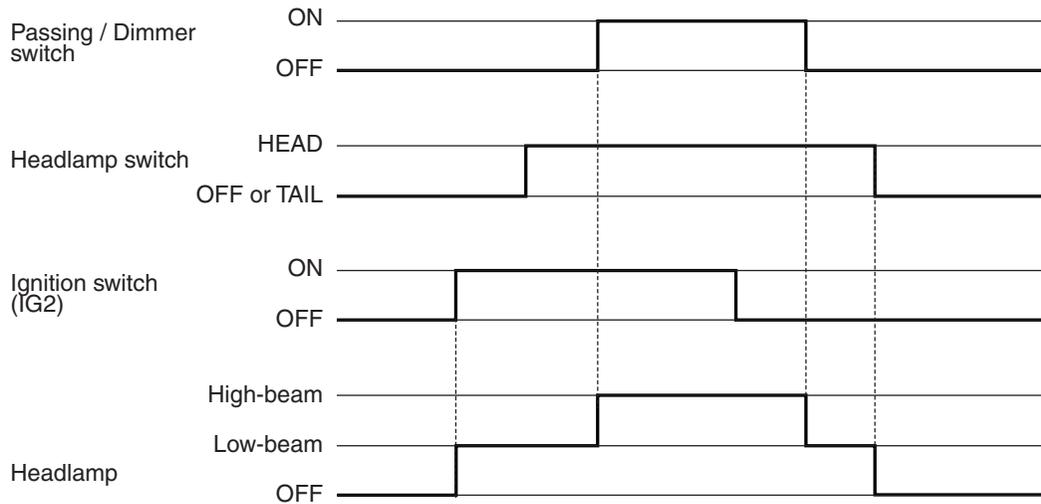
*NOTE: The auto-turn off can be made by the customize function.*

After the headlamp automatic-shutdown function, when the lighting switch is turned OFF and then ON or, the ignition switch is turned ON, the headlamp turns on again.

**HIGH-BEAM INDICATOR**

The ETACS-ECU outputs the high beam indicator ON signal to the combination meter through CAN communication in synchronization with the high beam headlamp operation. The combination meter receives the transmitted signal and turns ON or OFF the high beam indicator.

## Daytime running light function

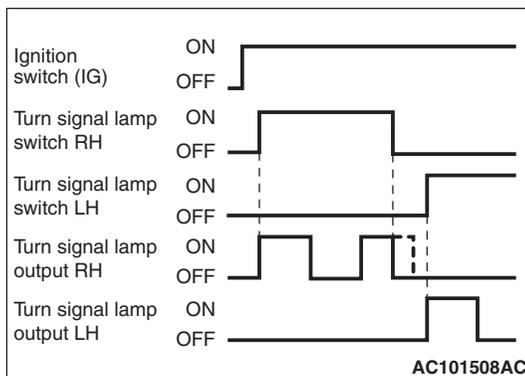


AC311848AB

The front-ECU illuminates the low-beam headlamps when the ignition switch is turned "ON" with the headlamp switch is at the "OFF" or "TAIL" position. It illuminates the low-beam headlamps at a normal brightness when the headlamps are turned on with the daytime running light on.

## FLASHER TIMER FUNCTION

**TURN-SIGNAL LAMP <INITIAL SETTING: TURN SIGNAL LAMP CAN BE OPERATED WHEN THE IGNITION SWITCH IS IN THE ON POSITION>**



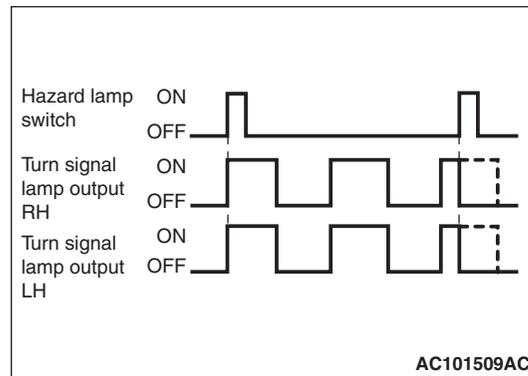
AC101508AC

When the turn-signal lamp switch is ON (LH or RH) with the ignition switch is ON, the turn-signal lamp output (flash signal) is turned ON.

If the lamp bulb of the front or rear turn-signal lamp has burned out, the flashing speed becomes faster to alert the driver that the lamp bulb has burned out.

*NOTE: Using a customize function, this function becomes available even when the ignition switch is in the ACC position. For more information about the customisation feature.*

## HAZARD WARNING LAMP



AC101509AC

When the hazard lamp switch input signal turning from OFF to ON is detected, the flashing states turns over by the signal (When the hazard lamp is not blinking, it blinks. If it is blinking, it turns off).

**NOTE:**

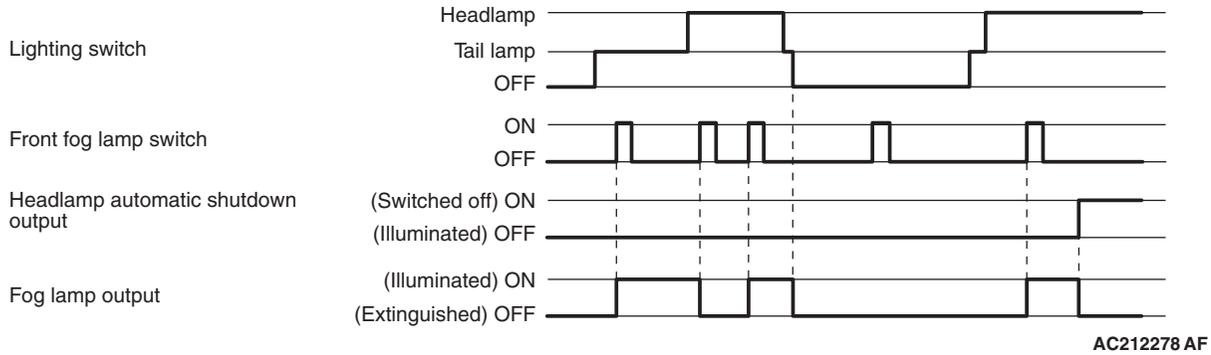
1. The push-return switch is adopted for the hazard lamp switch.
2. Even if the lamp bulb has burned out, the flashing speed of the hazard lamp is not changed.

## TURN-SIGNAL LAMP INDICATOR

The ETACS-ECU outputs the turn-signal lamp indicator ON signal to the combination meter through CAN communication in synchronization with the turn-signal lamp operation. The combination meter receives the transmitted signal and turns ON or OFF the turn-signal lamp indicator.

**FOG LAMP**

**Front fog lamp control**



When the fog lamp switch is turned to ON with the tail lamp or the headlamp lit (the tail lamp switch or the headlamp switch is ON), the fog lamp relay turns ON, and the fog lamps turn on.

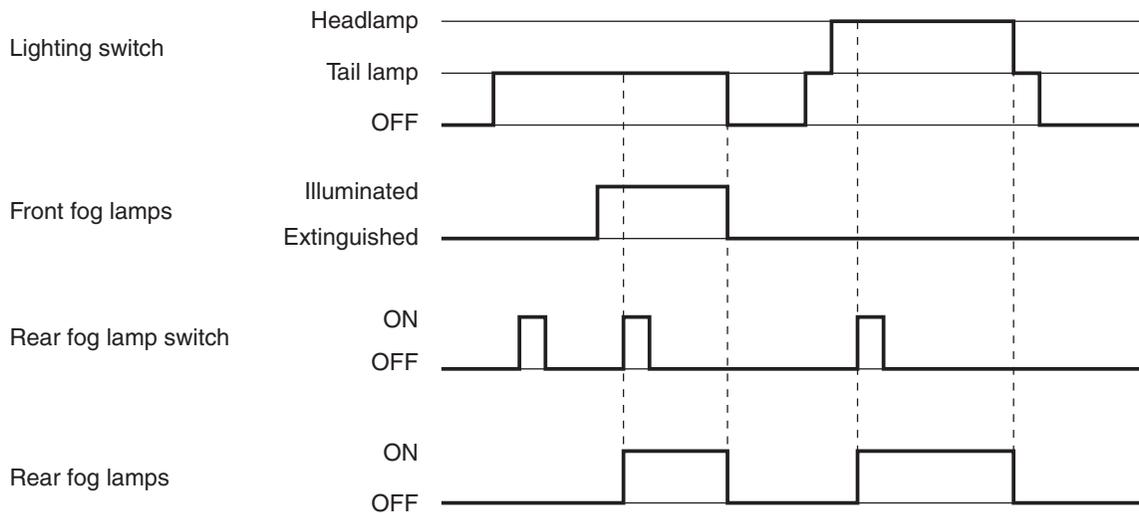
If the tail lamp or the headlamp is turned off with the lighting switch OFF while the fog lamps lit, the fog lamps turn off the same time to prevent unattended operation.

If the tail lamp is turned off by the headlamp automatic-shutdown function, the fog lamps turn off at the same time. However, if the tail lamps turn on again, the fog lamps do not.

**FRONT FOG LAMP INDICATOR**

The ETACS-ECU outputs the front fog lamp indicator ON signal to the combination meter through CAN communication in synchronization with the front fog lamp operation. The combination meter receives the transmitted signal and turns ON or OFF the front fog lamp indicator.

**Rear fog lamp control**

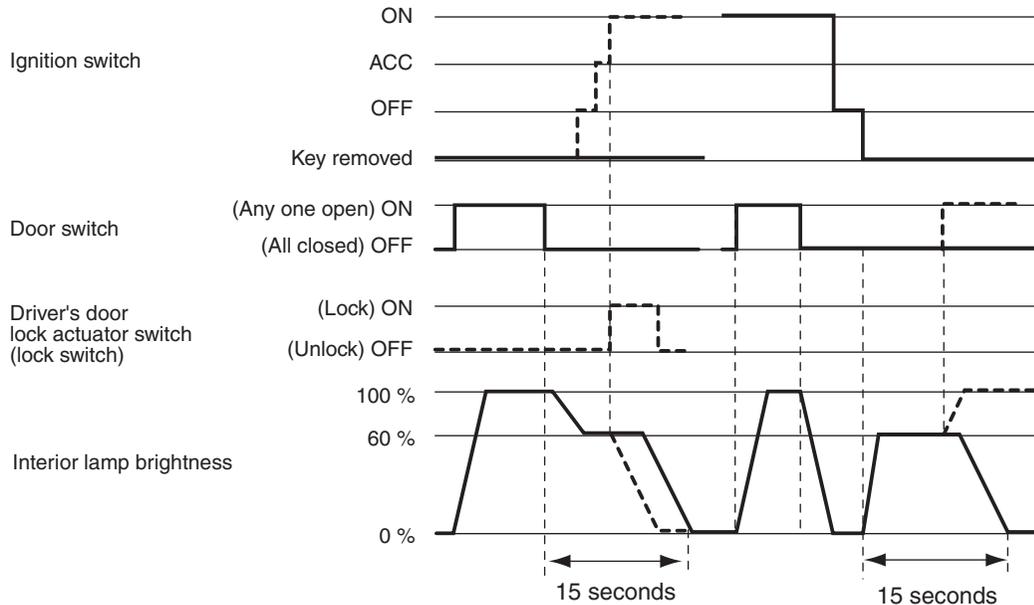


If the rear fog lamp switch is turned ON when the headlamp or the front fog lamp is turned ON, the rear fog lamp is switched ON and OFF alternatively. If the headlamp and the front fog lamp are turned OFF, the rear fog lamp is turned OFF at the same time.

**REAR FOG LAMP INDICATOR**

The ETACS-ECU outputs the rear fog lamp indicator ON signal to the combination meter through CAN communication in synchronization with the rear fog lamp operation. The combination meter receives the transmitted signal and turns ON or OFF the fog lamp indicator.

**INTERIOR LAMP  
INTERIOR LAMP DIMMER CONTROL  
FUNCTION (THE INITIAL CONDITION: 15  
SECONDS)**



AC310305AB

When the interior lamp switch is on the door position, ETACS-ECU controls the interior lamp lamps as follows.

1. When the ignition switch is OFF:

By opening any door or tailgate, the lamp turns ON (100%), and dims (60%) when the door or tailgate is closed, then and turns off after 15 seconds.

However, when the ignition switch is turned ON or the driver's door lock actuator switch is turned ON, the lamps turn off at that time.

2. When the ignition switch is ON:

By opening any door or tailgate, the lamp (100%) turns ON and OFF when the door or tailgate is closed.

3. When all doors and the tailgate are closed, and the ignition key is removed <Vehicles with keyless entry system>:

By removing the ignition key with all doors and the tailgate closed, the lamp turns ON 60%, and turns off after 15 seconds.

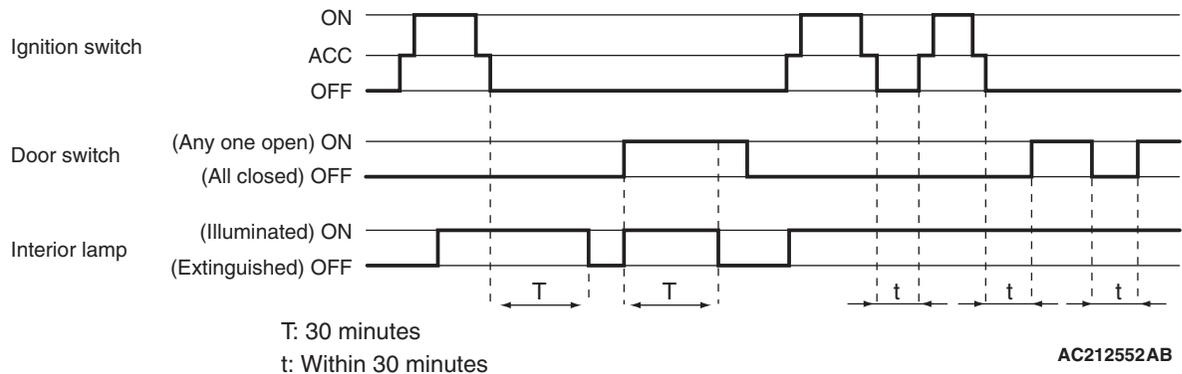
By inserting the ignition key again or operating the door lock with the lamp lit, the lamps turns off.

*NOTE: For the vehicles with the keyless entry system, the delayed interior lamp turning off duration and the operation times of the keyless entry interior lamp answer back can be changed by the customize function.*

## Interior lamp automatic-shutoff function

### <Vehicles with keyless entry system>

#### (the initial condition: with function)



When the interior lamp [all interior lamps connecting to the room lamp fuse (the room lamp, the rear personal lamps, the luggage compartment lamp, the door lamp, the ignition key cylinder illumination lamps and the door-ajar warning lamp)] is lit, but either one of the following conditions is met, the interior lamp is turned off automatically for preventing the battery discharge caused by the unattended operation or the door-ajar.

- After 30 minutes with the interior lamp lit while the ignition switch is OFF, the lamp turns off automatically.

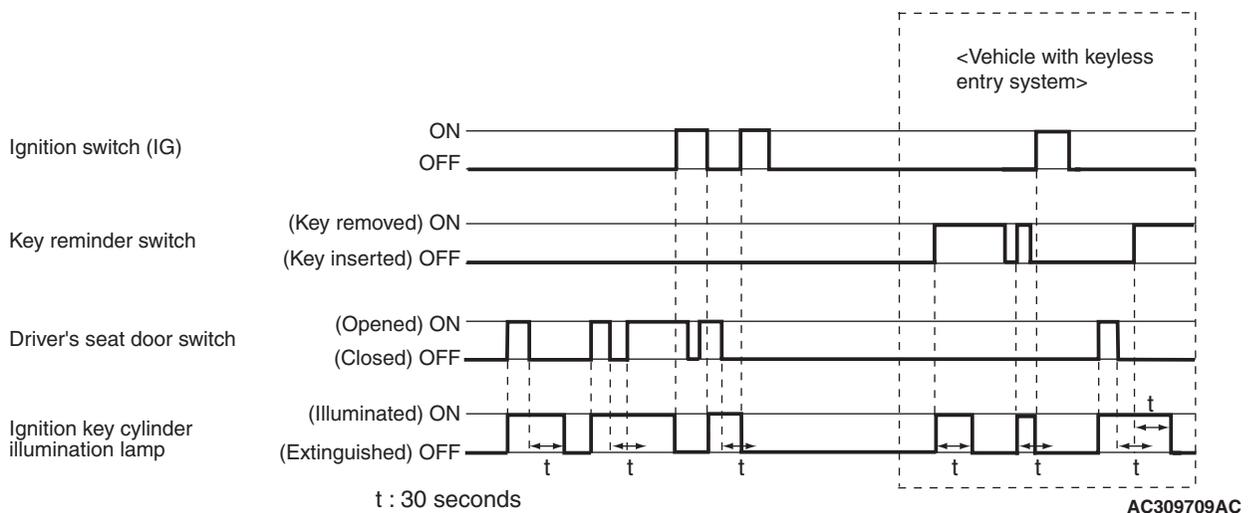
- After 30 minutes with any door opened while the ignition switch is OFF, the lamp turns off automatically.

After automatic-shutoff function, the interior lamp turns ON when any of the following condition is met.

- Open and close doors.
- Operate the keyless entry transmitter.
- Turn the ignition switch to ACC or ON.

*NOTE: The interior lamp automatic-shutoff off time can be customize by the customize function.*

## Ignition key cylinder illumination lamp control function



The ETACS-ECU controls the ignition key cylinder illumination lamp as described below.

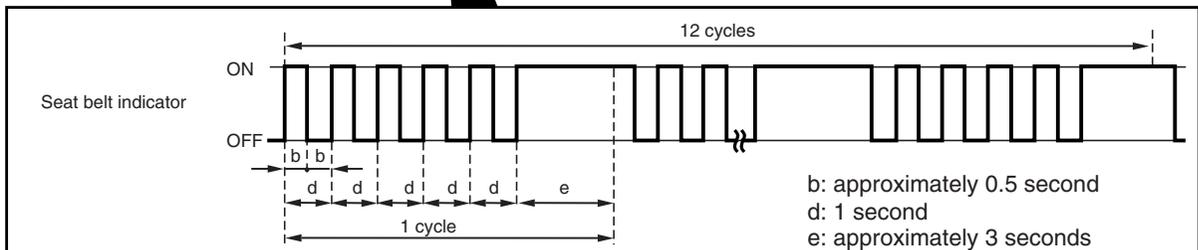
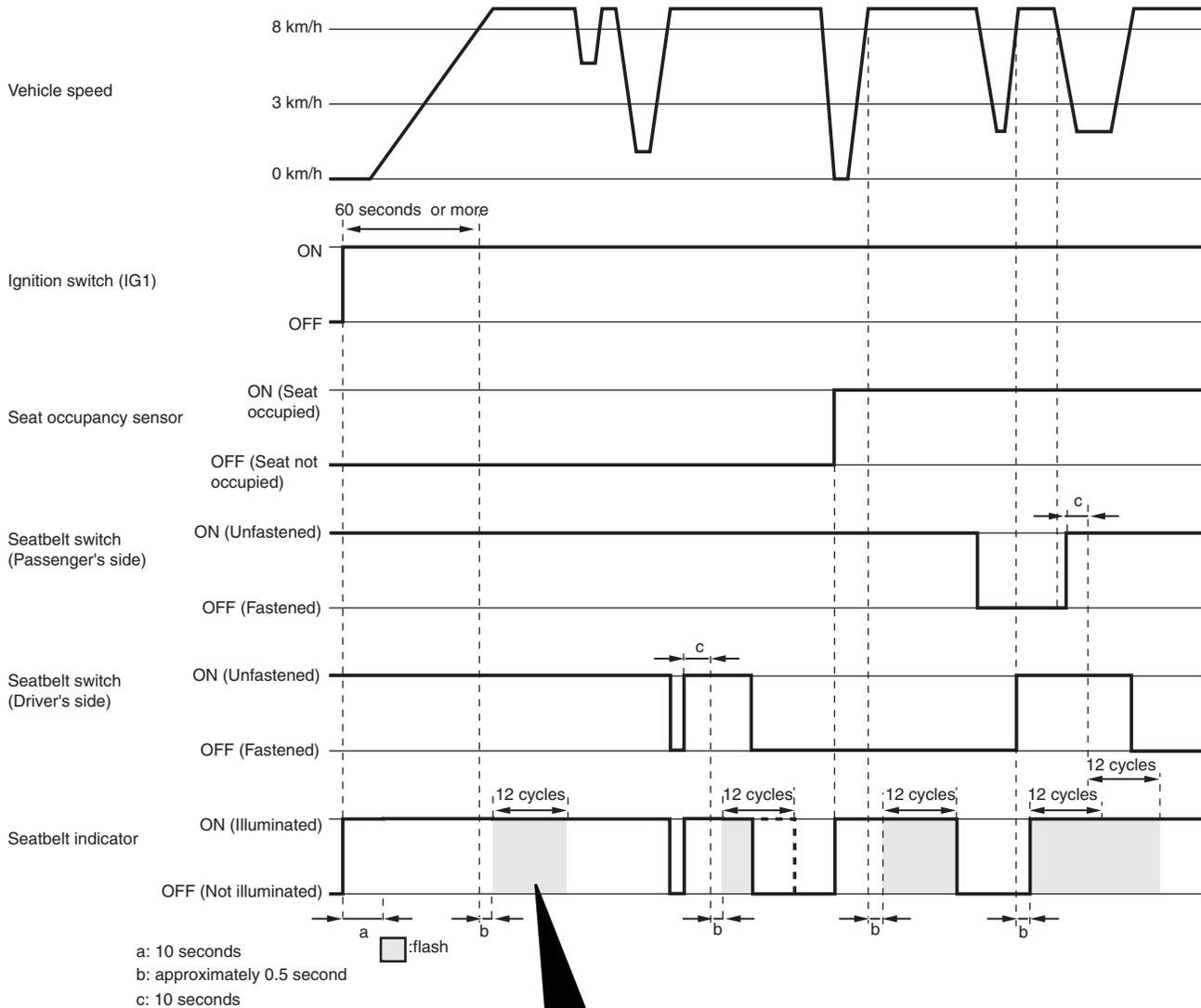
1. The ignition key cylinder illumination lamp lights for 30 seconds when the driver's door is opened/closed with the ignition switch OFF.

2. When the ignition key is removed from the ignition key cylinder, the ignition key cylinder illumination lamp lights for 30 seconds (Vehicles with keyless entry system).
3. When the ignition key cylinder illumination lamp is operating with the doors closed, it goes out if the ignition switch is turned ON.

**DOOR AJAR INDICATOR**

The ETACS-ECU outputs the open/close status of each door to the combination meter through CAN communication. The combination meter receives the transmitted signal and turns ON and OFF the door-ajar indicator. The door-ajar indicator flashes when the door-ajar warning function is activated while the door-ajar indicator is ON (For more information about the door-ajar warning function, refer to ).

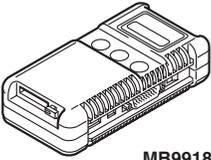
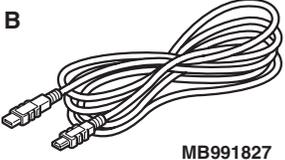
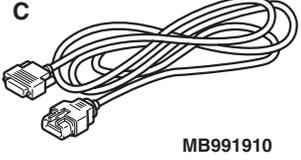
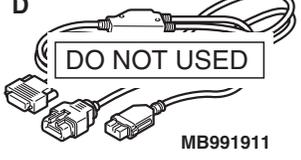
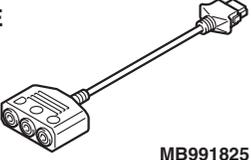
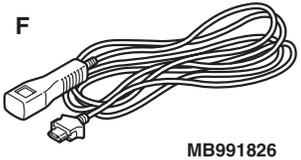
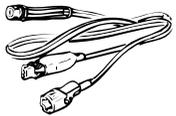
**SEAT BELT INDICATOR**

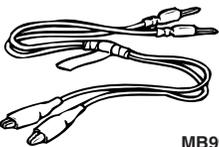


The ETACS-ECU outputs the seat belt buckle engagement status to the combination meter through CAN communication. The combination meter receives the transmitted signal and turns ON and OFF the seat belt indicator. The seat belt indicator flashes when the seat belt warning function is activated while the seat belt indicator is ON (For more information about the seat belt warning function, refer to ).

# SPECIAL TOOLS

M1549000300753

| Tool   | Number  | Name  | Use  |
|--|---|---|--|
| <p>A</p>  <p>MB991824</p> <p>B</p>  <p>MB991827</p> <p>C</p>  <p>MB991910</p> <p>D</p>  <p>MB991911</p> <p>E</p>  <p>MB991825</p> <p>F</p>  <p>MB991826</p> <p>MB991955</p> | <p>MB991955</p> <p>A: MB991824</p> <p>B: MB991827</p> <p>C: MB991910</p> <p>D: MB991911</p> <p>E: MB991825</p> <p>F: MB991826</p> | <p>MUT-III sub-assembly</p> <p>A: Vehicle Communication Interface (V.C.I.)</p> <p>B: MUT-III USB cable</p> <p>C: MUT-III main harness A (Vehicles with CAN communication system)</p> <p>D: MUT-III main harness B (Vehicles without CAN communication system)</p> <p>E: MUT-III measure adapter</p> <p>F: MUT-III trigger harness</p> | <p>SWS communication line check (ECU check and service data)</p> <p><b>⚠ CAUTION</b></p> <p><b>MUT-III main harness B (MB991911) should be used. MUT-III main harness A should not be used for this vehicle.</b></p>   |
| <p>A</p>  <p>B</p>  <p>C</p>  <p>D</p>  <p>MB991223AC</p>  | <p>MB991223</p> <p>A: MB991219</p> <p>B: MB991220</p> <p>C: MB991221</p> <p>D: MB991222</p>                                       | <p>Harness set</p> <p>A: Check harness</p> <p>B: LED harness</p> <p>C: LED harness adapter</p> <p>D: Probe</p>  | <p>Continuity check and voltage measurement at harness wire or connector</p> <p>A: For checking connector pin contact pressure</p> <p>B: For checking power supply circuit</p> <p>C: For checking power supply circuit</p> <p>D: For connecting a locally sourced tester</p> |

| Tool  | Number   | Name                         | Use                                     |
|---|----------|------------------------------|---|
|  <p>MB991529</p> | MB991529 | Diagnosis code check harness | Input signal check by using a voltmeter |

## TROUBLESHOOTING

### PRIOR TO TROUBLESHOOTING

M1549014700475

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

M1549000500661

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points [P.00-5](#).

### DIAGNOSTIC FUNCTION

M1549028900137

#### HOW TO READ DIAGNOSIS CODE

Use the MUT-III to read diagnosis code (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points [P.00-5](#)).

*NOTE: Connect the MUT-III to the 16-pin diagnosis connector (black).*

*NOTE: A diagnosis code can not be read when the ETACS-ECU is defective or the power supply voltage has risen. In this case, refer to inspection procedure A-1 "Communication with the MUT-III is not possible [P.54B-83](#)."*

### HOW TO CHECK INPUT SIGNALS

1. Use the MUT-III or a voltmeter to check input signals (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points [P.00-5](#)).
2. The input signals below can be checked by connecting the MUT-III or a voltmeter to the diagnosis connector.

*NOTE: If a fault is found at the input signal check, refer to trouble symptom chart [P.54B-79](#).*

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

| Input signal   | Requirements for sounding buzzer   |
|--|--|
| Ignition switch (ACC)                                    | When turned from the LOCK (OFF) position to the ACC position                             |
| Ignition switch (IG1)                                    | When turned from ACC to ON   |
| Back-up lamp switch                                      | When the ignition switch is turned ON and the shift lever is moved to the R position.    |
| Inhibitor switch ("R" position)                          | When the ignition switch is turned ON and the selector lever is moved to the R position. |
| Key reminder switch <Vehicles with keyless entry system> | When the inserted ignition key is pulled out   |
| Hazard warning lamp switch                               | When the switch is turned from off to on   |
| Front fog lamp switch                                    |  |
| Rear fog lamp switch                                     |  |
| Driver's door switch                                     | When the driver's door is opened   |
| All of the door switches                                 | A door is opened when all the doors are closed   |

| Input signal  |                                      | Requirements for sounding buzzer  |  |
|---|--------------------------------------|---|--|
| Tailgate switch   |                                      | When the tailgate is opened   |  |
| Driver's door lock actuator                                     |                                      | When the driver's key cylinder or inside lock knob is unlocked or locked                      |  |
| Passenger's door lock key cylinder switch                       |                                      | When the passenger's key cylinder is unlocked or locked                                       |  |
| Tailgate key switch <vehicles without keyless entry system>     |                                      | When the tailgate key cylinder is unlocked or locked.   |  |
| Driver's seat belt switch                                       |                                      | When the driver's seat belt is fastened   |  |
| Passenger's seat belt switch                                    |                                      | When the front passenger is occupied and the seat belt is fastened                            |  |
| Electric-folding outside mirror switch                          |                                      | When the electric-folding outside mirror is operated  |  |
| Vehicle speed signal  |                                      | When the vehicle speed has reached 10 km/h or more  |  |
| Column switch   | Tail lamp switch                     | When the lighting switch is moved from the automatic lamp position to the tail lamp position. |  |
|   | Headlamp switch                      |   |  |
|   | Dimmer switch                        |   |  |
|   | Passing lamp switch                  |   |  |
|   | Turn-signal lamp switch (LH)         |   |  |
|   | Turn-signal lamp switch (RH)         |   |  |
|   | Wind shield mist wiper switch        |   |  |
|   | Headlamp washer switch               |   |  |
|   | Windshield intermittent wiper switch |   |  |
|   | Windshield low-speed wiper switch    |   |  |
|   | Windshield high-speed wiper switch   |   |  |
|   | Windshield intermittent wiper volume |   | When the windshield intermittent wiper volume is rotated from "FAST" to "SLOW" (a pulse is sent around the volume middle position) |
|   | Windshield washer switch             |   | When the switch is turned from off to on   |
|   | Rear wiper switch                    |   |  |
|   | Rear washer switch                   |   |  |
| Keyless entry transmitter                                       | Switches                             | When the switch is turned from off to on  |  |
| Interior lamp loaded signal <Vehicles for keyless entry system> |                                      | When a load is applied through multi-purpose fuse No.18                                       |  |

## DIAGNOSIS CODE CHART

M1549000700320

| Diagnosis code No. | Diagnostic item                                       | Reference page |
|--------------------|---|----------------|
| 01                 | Trouble in SWS communication line system or ETACS-ECU | P.54B-30       |
| 02                 | Communication error with column switch                | P.54B-32       |
| 03                 | Communication error with front-ECU                    | P.54B-39       |
| 04 <sup>*1</sup>   | Communication error with sunroof-ECU                  | P.54B-46       |
| 05                 | Communication error with power window main switch     | P.54B-56       |
| 10                 | Bus off   | P.54B-67       |
| 11                 | Engine-A/T-ECU time-out (related to engine)           | P.54B-68       |
| 12 <sup>*2</sup>   | Engine-A/T-ECU time-out (related to A/T)              | P.54B-69       |
| 13                 | A/C-ECU time-out                                      | P.54B-70       |
| 14                 | Meter time-out  | P.54B-72       |
| 15 <sup>*3</sup>   | Centre display unit time-out                          | –              |
| 21                 | Meter failure information                             | P.54B-73       |

**NOTE:**

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

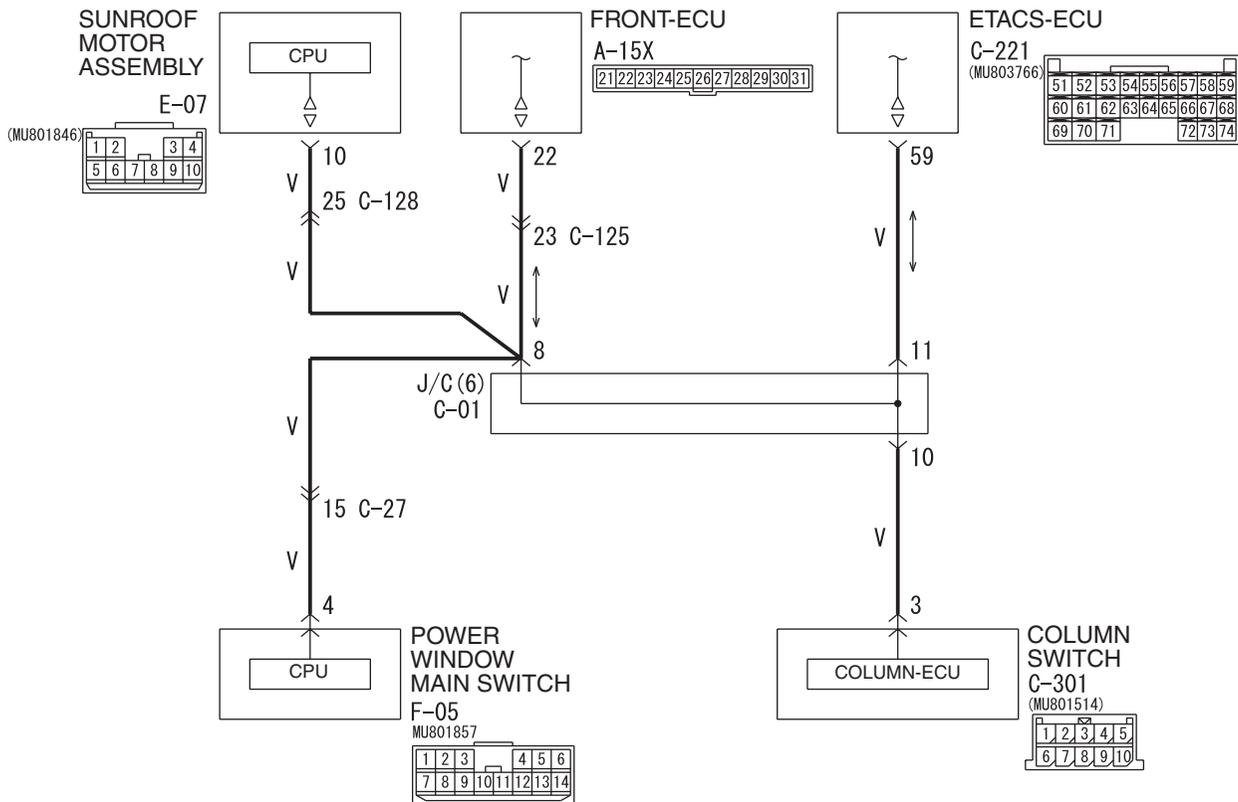
# DIAGNOSTIC TROUBLE CODE PROCEDURES

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

**CAUTION**

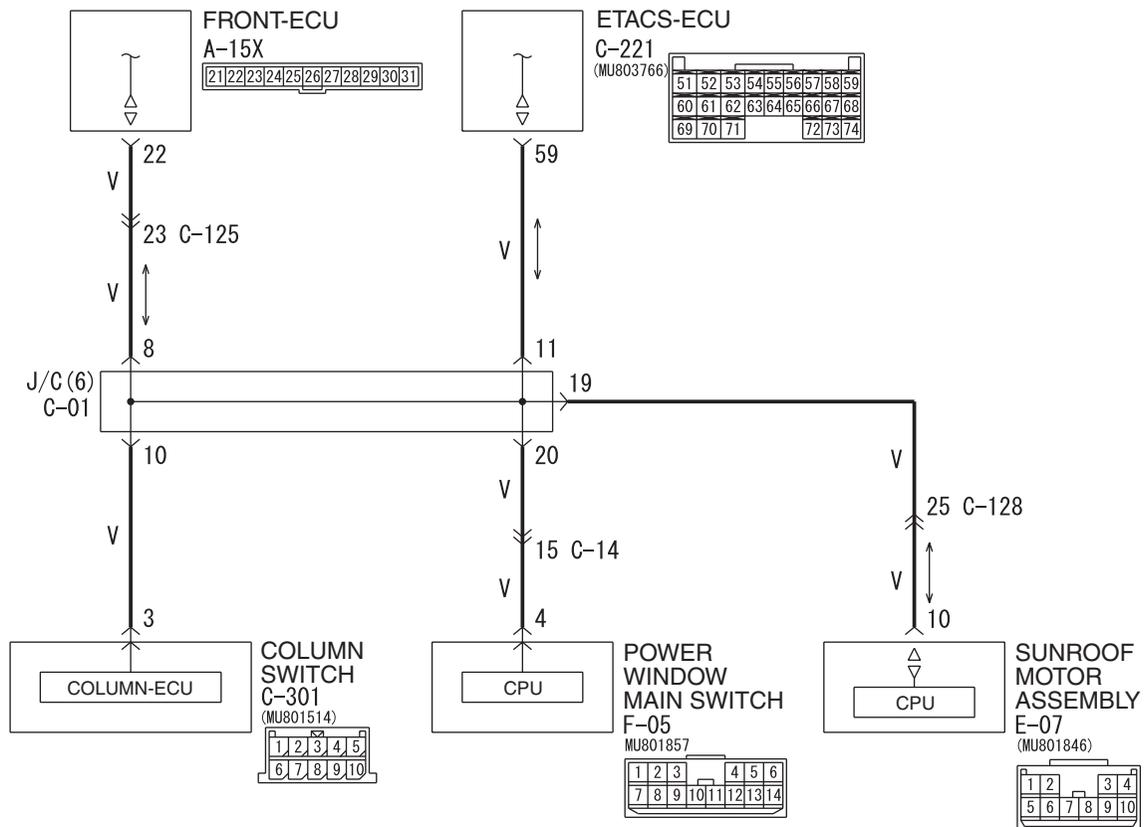
If diagnosis code No.01 is set in the ETACS-ECU, diagnose the CAN bus lines.

### 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

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

**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

## 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?**

troubleshooting/Inspection Service Points P.00-5).

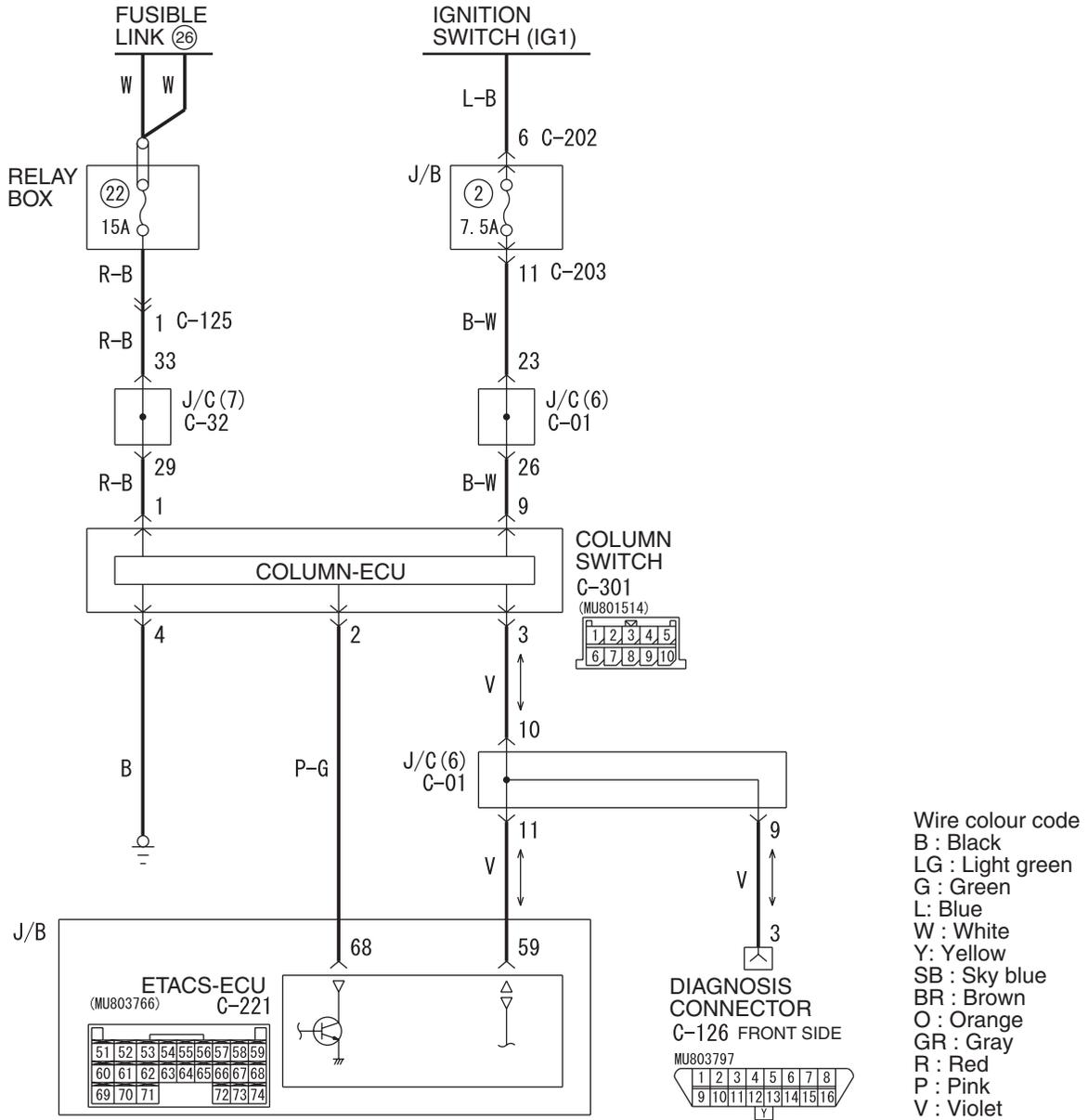
**NO :** Replace the ETACS-ECU.

Diagnosis code No.02 Communication error with column switch

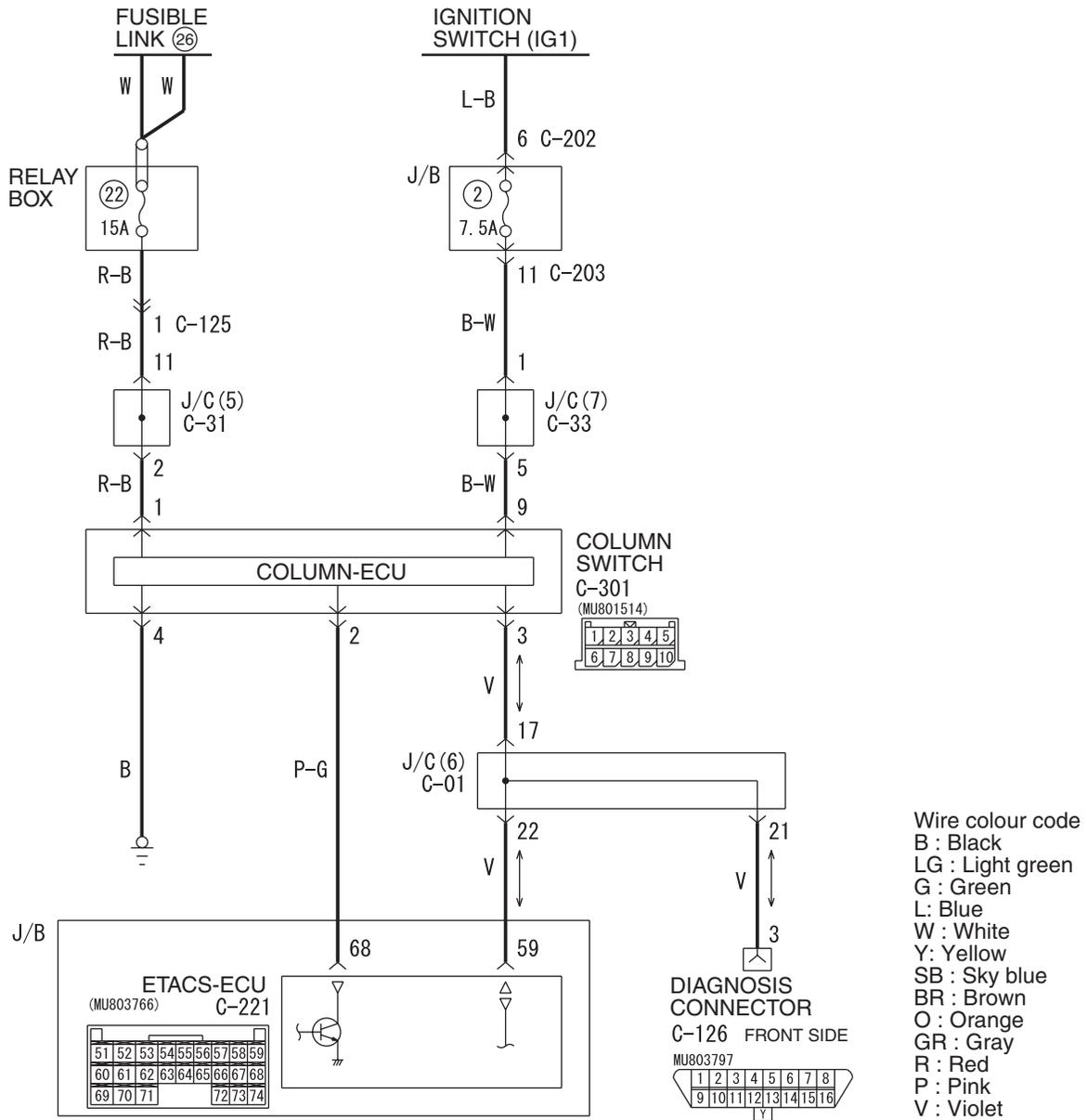
**CAUTION**

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

Column Switch Power Supply and SWS Communication Circuit <LHD>



Column Switch Power Supply and SWS Communication Circuit <RHD>



W4X54E120A

**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).

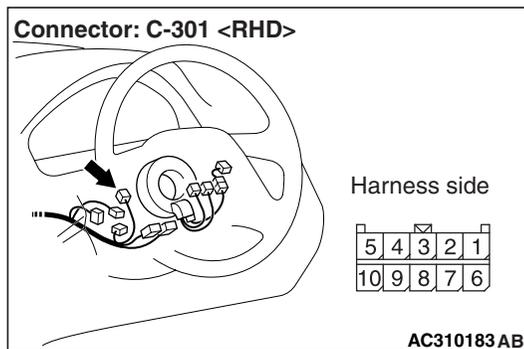
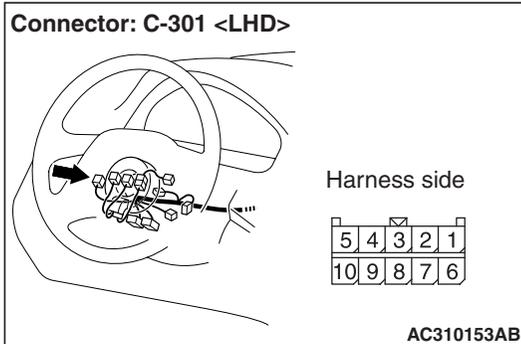
**Step 2. Use the MUT-III to confirm a diagnosis code. (MUT-III diagnosis code)**

- (1) Ignition switch: ON
- (2) On completion, check that diagnosis code No.02 is not reset.

**Q: Is diagnosis code No.02 set?**

**YES :** Go to Step 6.

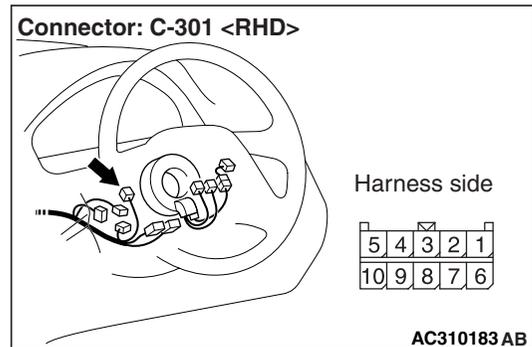
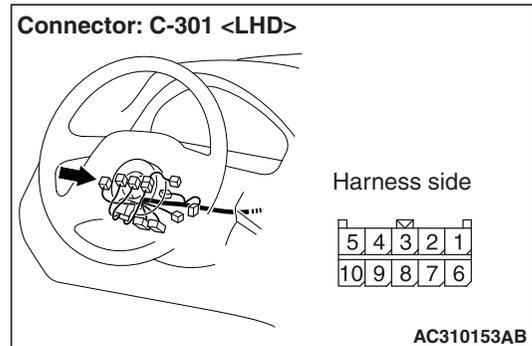
**NO :** Go to Step 3.

**Step 3. Connector check: C-301 column switch connector**

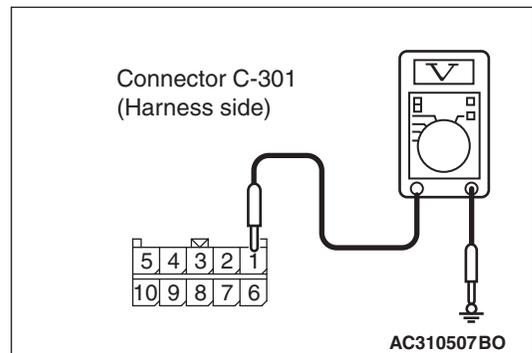
**Q: Is the check result normal?**

**YES :** Go to Step 4.

**NO :** Repair the defective connector.

**Step 4. Voltage measurement at C-301 column switch connector.**

- (1) Remove the column switch, and measure at the wiring harness side.



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

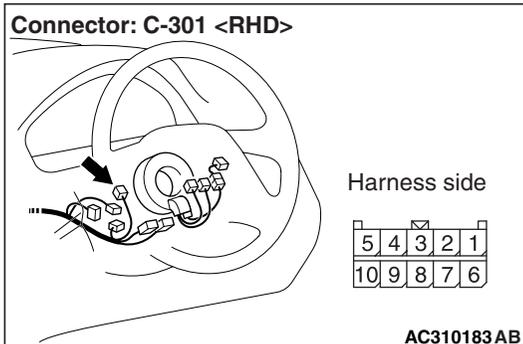
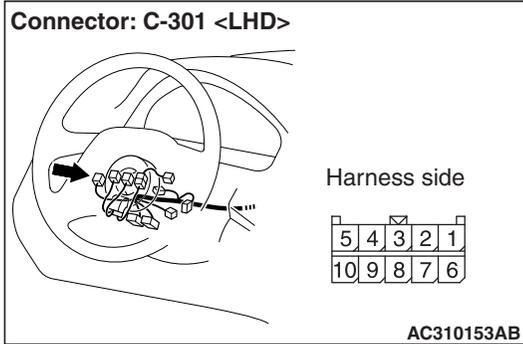
**OK: System voltage**

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

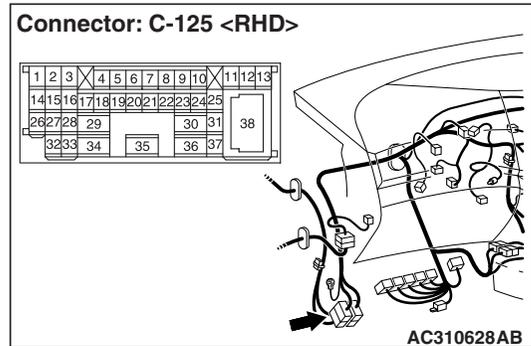
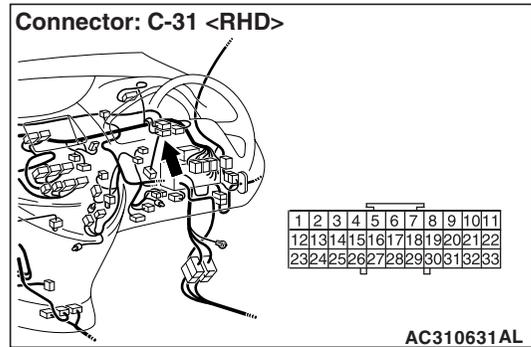
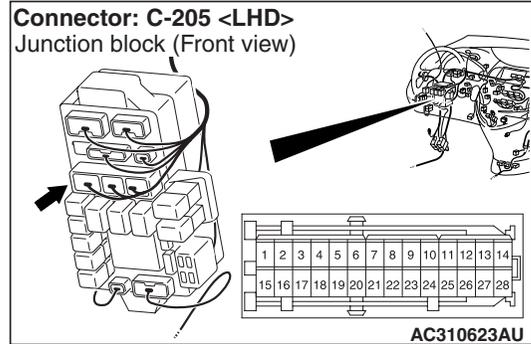
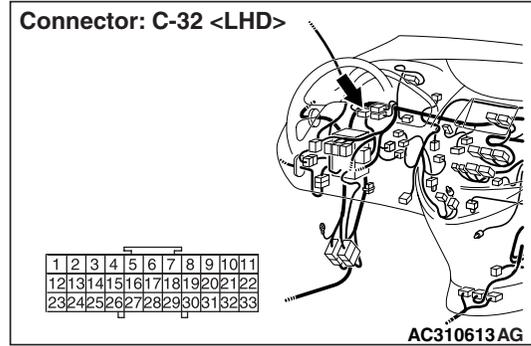
**YES :** Replace the column switch.

**NO :** Go to Step 5.

Step 5. Check the wiring harness between C-301 column switch connector terminal No.1 and the fusible link (26).



NOTE:



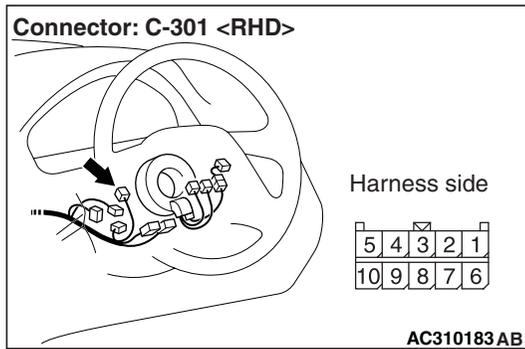
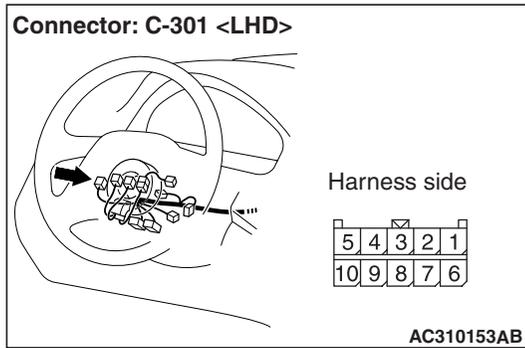
Prior to the wiring harness inspection, check intermediate connector C-205 <LH drive vehicles>, C-125 <RH drive vehicles> and joint connector C-32 <LH drive vehicles>, C-31 <RH drive vehicles> and repair if necessary.

- Check the power supply line for open circuit.

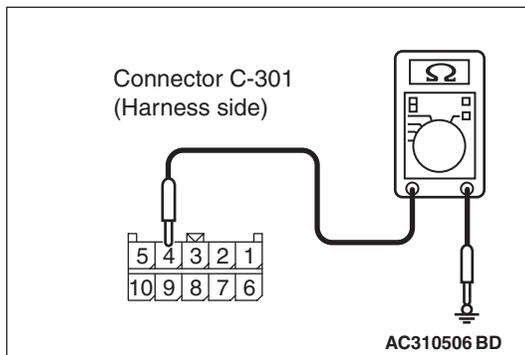
Q: Is the check result normal?

- 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 6. Resistance measurement at the C-301 column switch connector.**



(1) Remove the column switch, and measure at the wiring harness side.



(2) Resistance between C-301 column switch

connector terminal No.4 and body earth

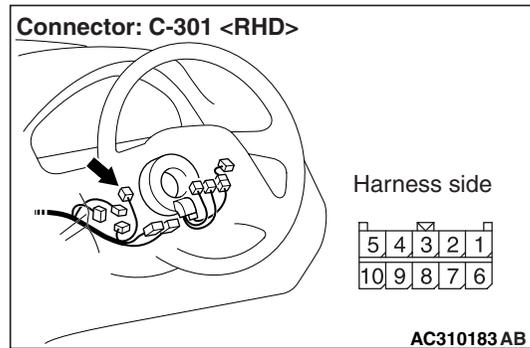
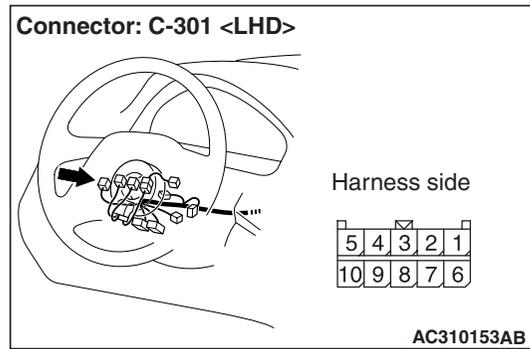
**OK: 2 Ω or less**

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

**YES :** Go to Step 8.

**NO :** Go to Step 7.

**Step 7. Check the wiring harness between C-301 column switch connector terminal No.4 and the body earth.**



- Check the earth wires for open circuit.

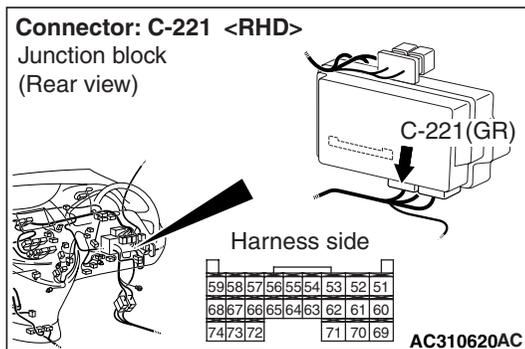
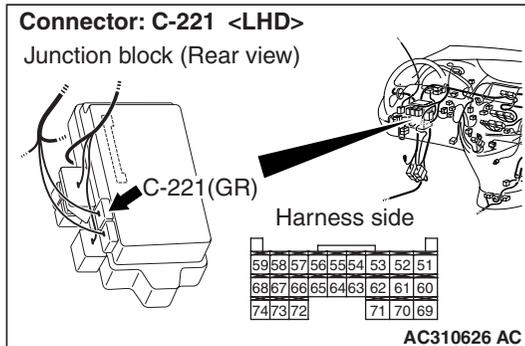
**Q: Is the check result normal?**

**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.

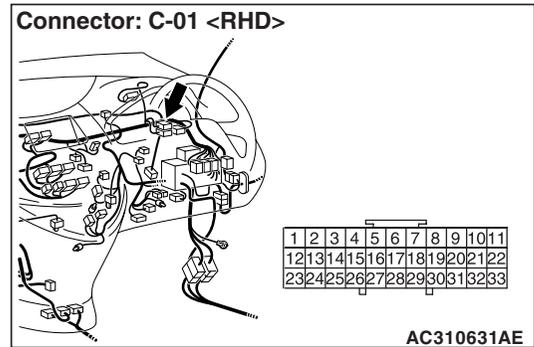
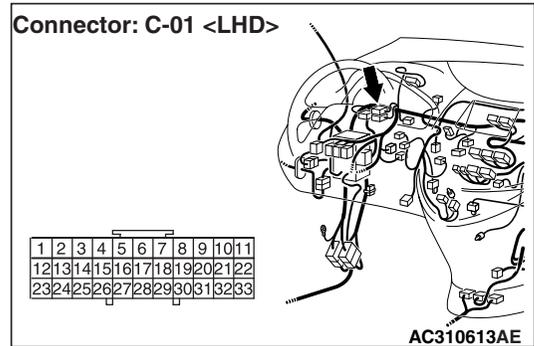
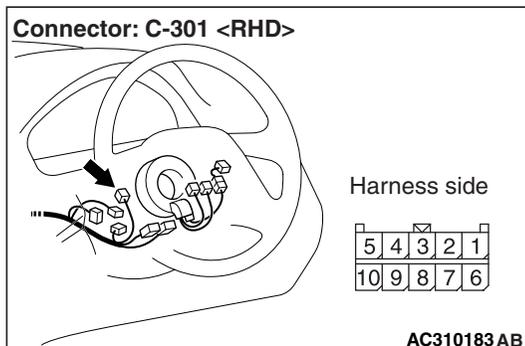
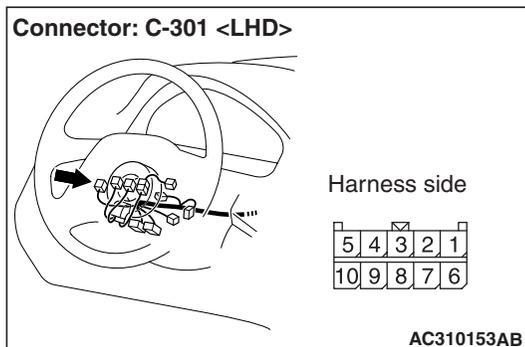
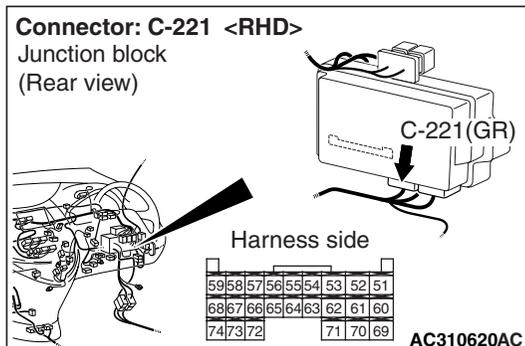
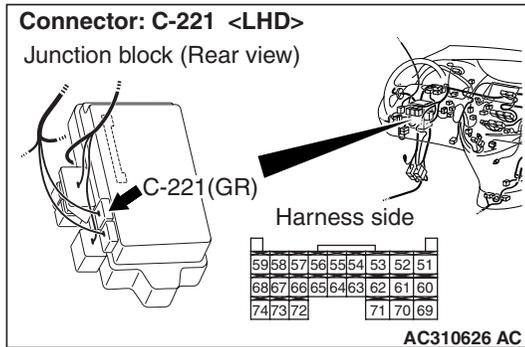
**Step 8. Connector check: C-221 ETACS-ECU connector**

YES : Go to Step 9.  
 NO : Repair the defective connector.



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

**Step 9. 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.**



*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 10.  
**NO :** Repair the wiring harness.

**Step 10. Check whether the diagnosis code is reset.**

Replace the column switch, and then check that the diagnosis code is not reset.

- (1) Replace the column switch.
- (2) Ignition switch: ON
- (3) On completion, check that diagnosis code No.02 is not reset.

**Q: Is diagnosis code No.02 set?**

- YES :** Replace the ETACS-ECU.  
**NO :** The procedure is complete.

**NOTE:**

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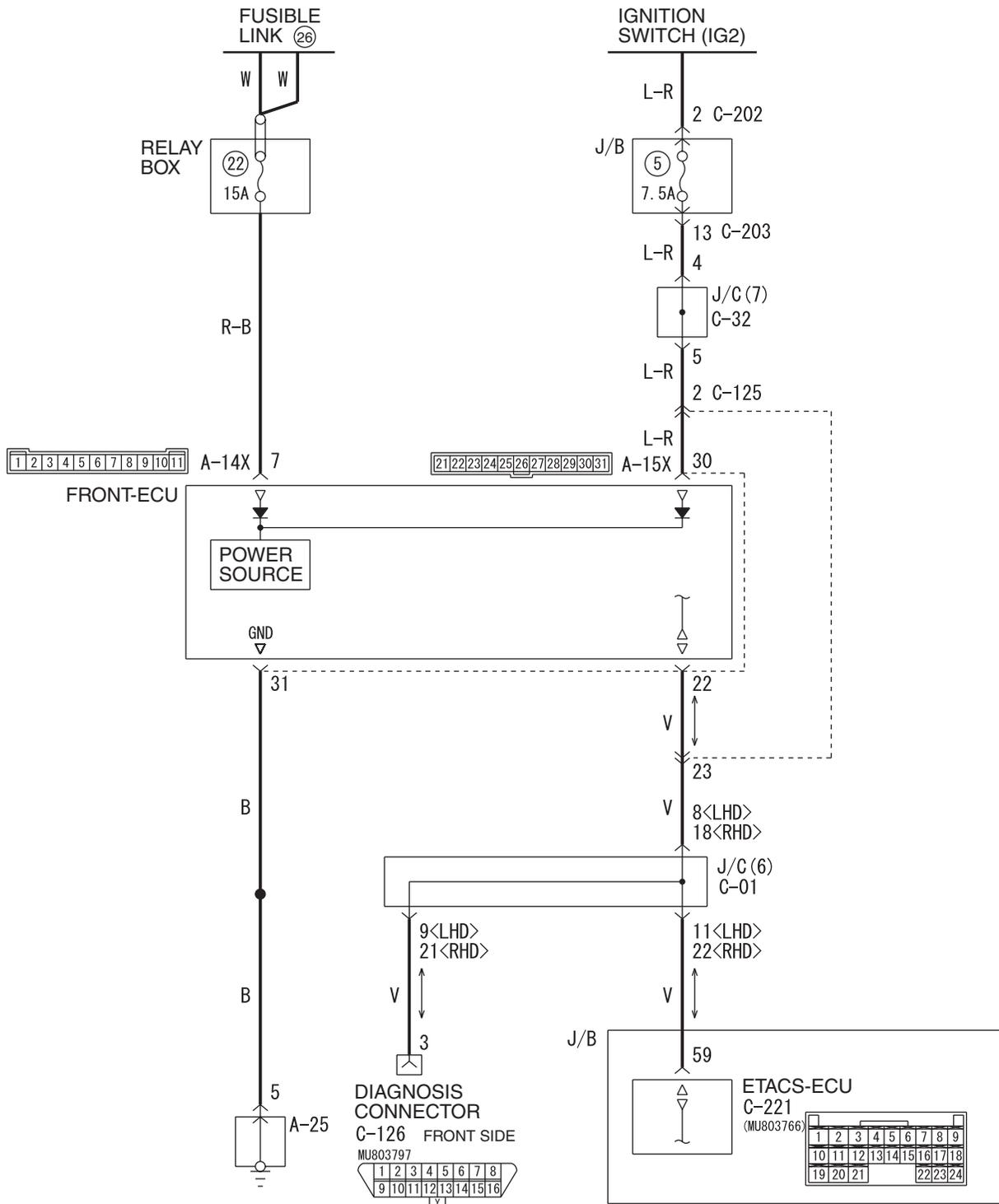
Diagnosis code No.03 Communication error with front-ECU

---

 CAUTION

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

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

**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. MUT-III diagnosis code

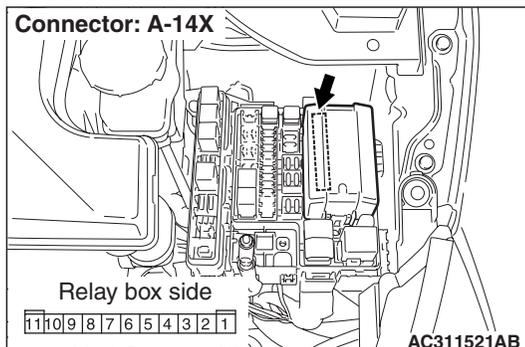
- (1) Ignition switch: ON
- (2) On completion, check that diagnosis code No.03 is not reset.

**Q: Is diagnosis code No.03 set?**

**YES :** Go to Step 6.

**NO :** Go to Step 3.

### Step 3. Connector check: A-14X front-ECU connector

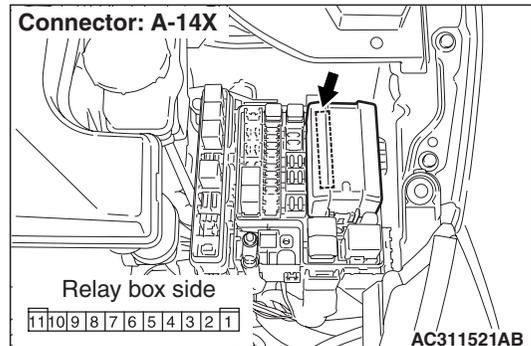


**Q: Is the check result normal?**

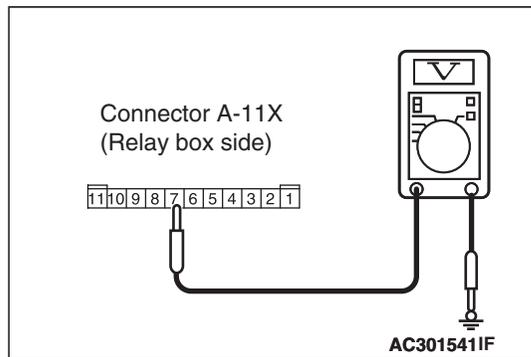
**YES :** Go to Step 4.

**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.7 and body earth

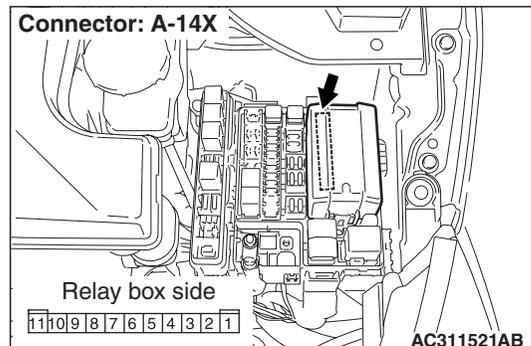
**OK: System voltage**

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

**YES :** Replace the front-ECU.

**NO :** Go to Step 5.

### Step 5. Check the wiring harness between A-14X front-ECU connector terminal No.7 and the fusible link (26).



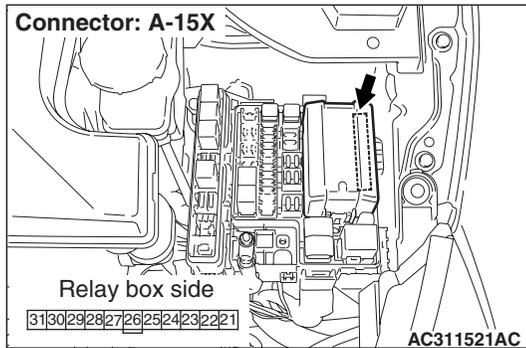
- Check the power supply line for open circuit.

**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).

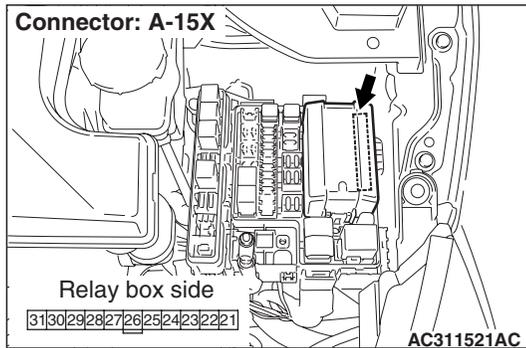
**NO :** Repair the wiring harness.

**Step 6. Connector check: A-15X front-ECU connector**

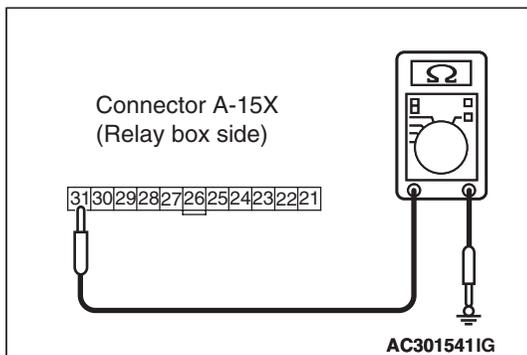


**Q: Is the check result normal?**  
**YES :** Go to Step 7.  
**NO :** Repair the defective connector.

**Step 7. Resistance measurement at A-15X front-ECU connector.**



(1) Remove the front-ECU, and measure at the relay box side.

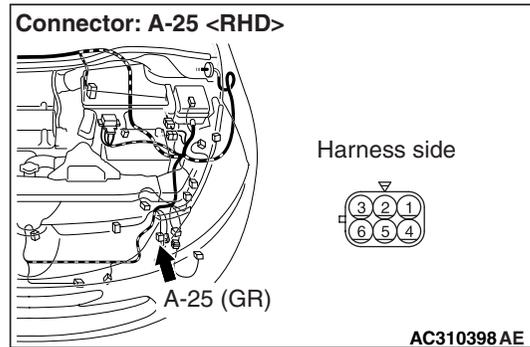
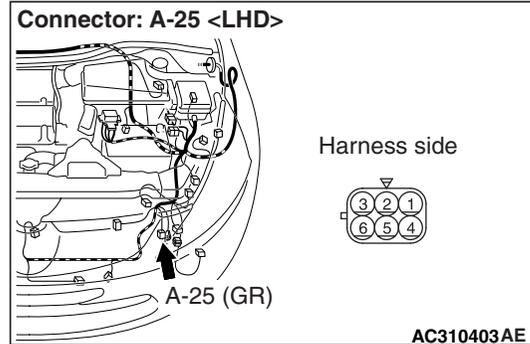


(2) Resistance between A-15X front-ECU connector

terminal No.31 and body earth  
**OK: 2 Ω or less**

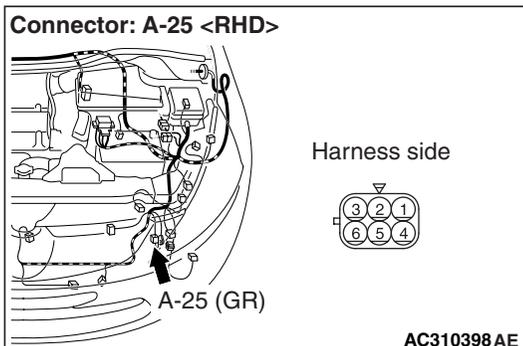
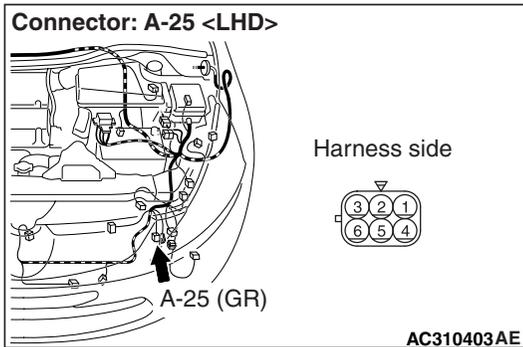
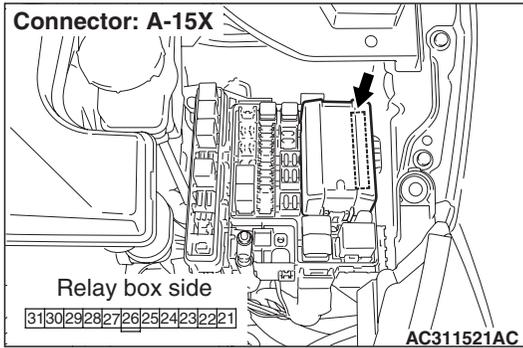
**Q: Is the check result normal?**  
**YES :** Go to Step 10.  
**NO :** Go to Step 8.

**Step 8. Connector check: A-25 earth 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.31 and the A-25 earth connector terminal No.5.**

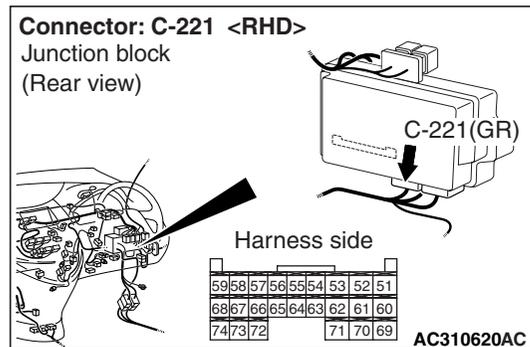
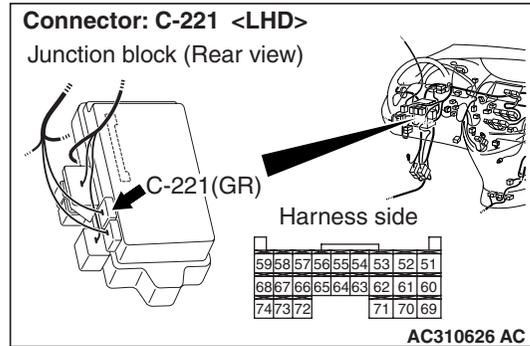


- Check the earth wires for open circuit.

**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.

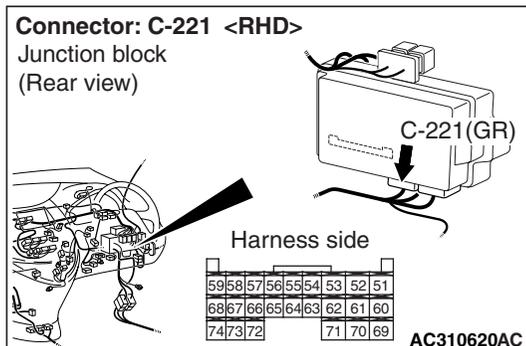
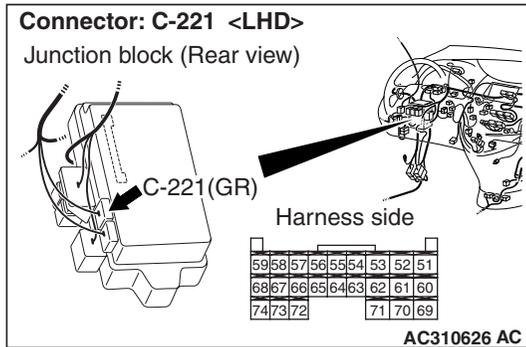
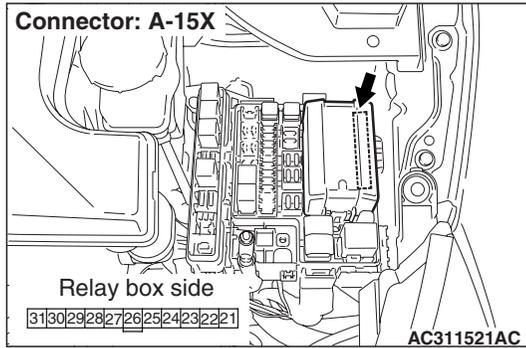
**Step 10. Connector check: C-221 ETACS-ECU connector**



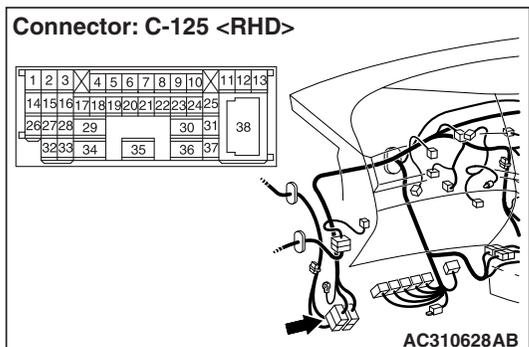
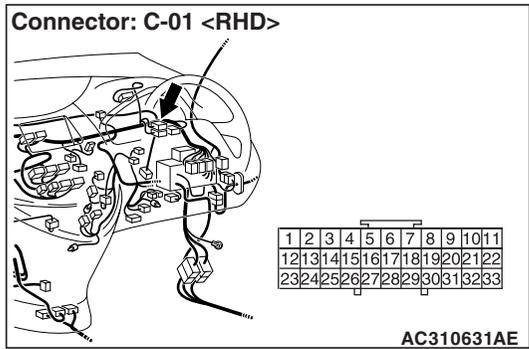
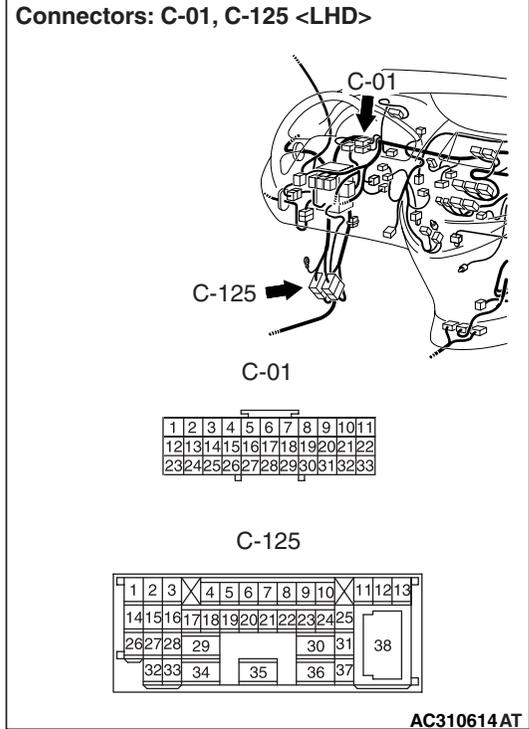
**Q: Is the check result normal?**

**YES :** Go to Step 11.  
**NO :** Repair the defective connector.

Step 11. Check the wiring harness between C-221 ETACS-ECU connector terminal No.59 and A-15X front-ECU connector terminal No.22.



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 12.

NO : Repair the wiring harness.

---

**Step 12. Check whether the diagnosis code is reset.**

Replace the front-ECU, and then check that the diagnosis code is not reset.

- (1) Replace the front-ECU.
- (2) Ignition switch: ON

- (3) On completion, check that diagnosis code No.03 is not reset.

**Q: Is diagnosis code No.03 set?**

**YES :** Replace the ETACS-ECU.

**NO :** The procedure is complete.

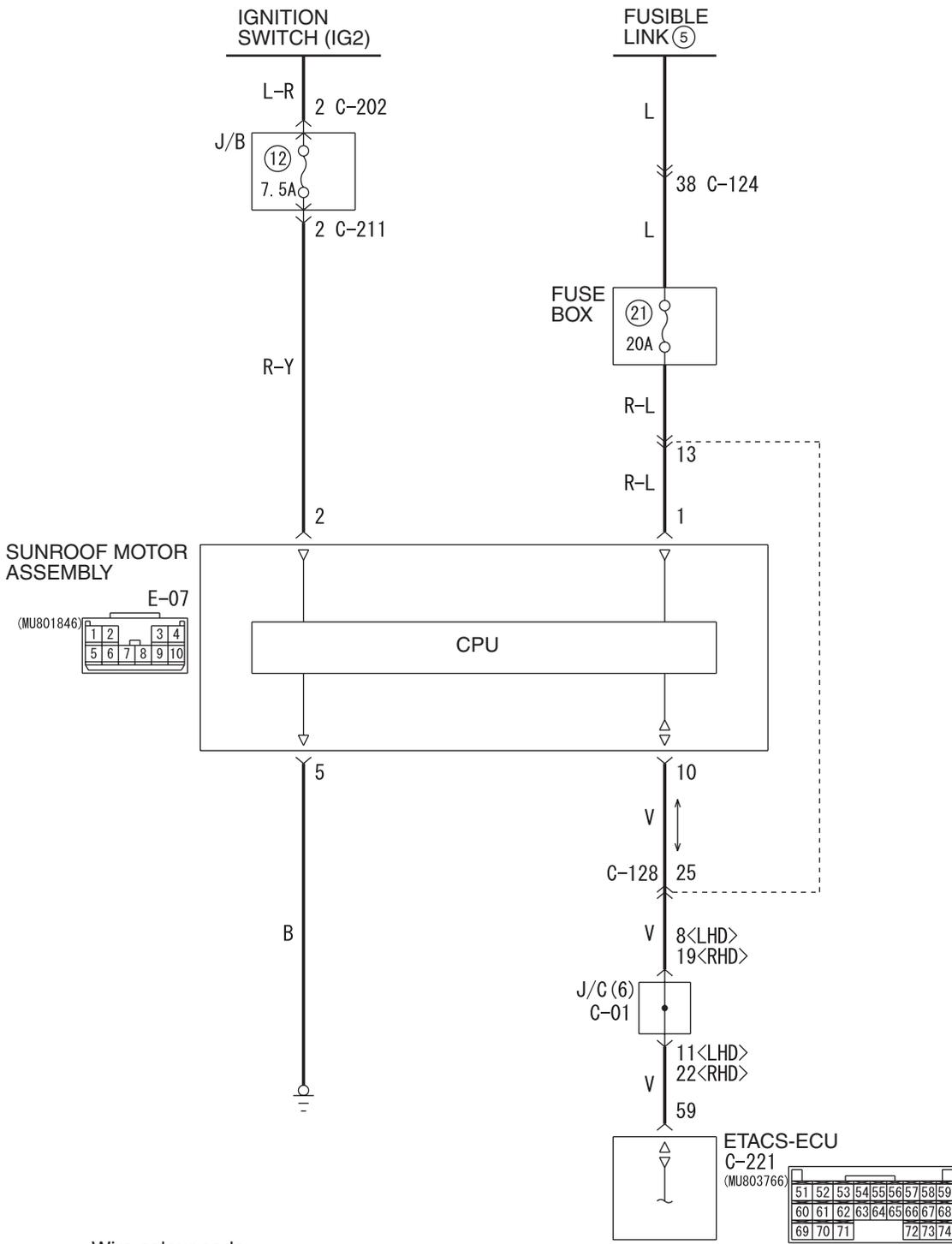
**Diagnosis code No.04 Communication error with sunroof-ECU**

---

 **CAUTION**

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

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

**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.**

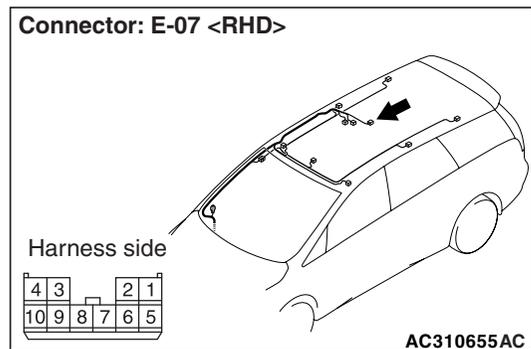
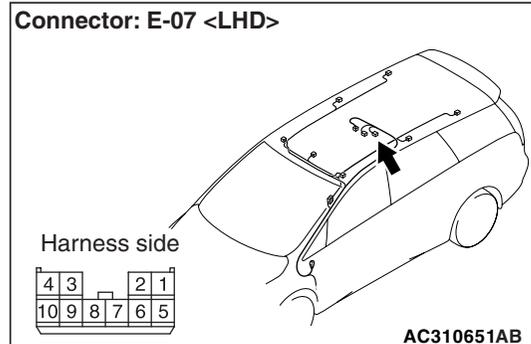
Check again if the diagnosis code is set.

- (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?**

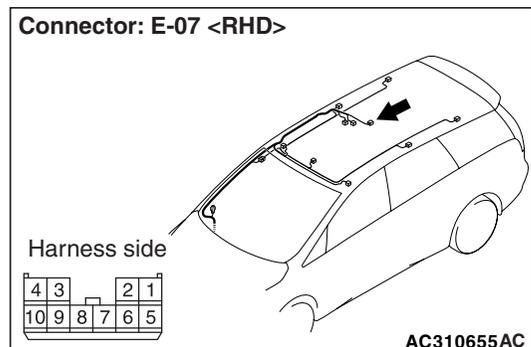
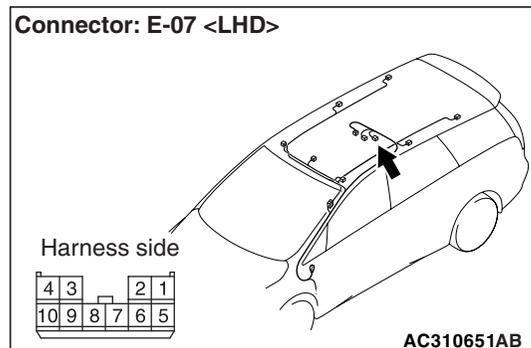
**YES** : If a trouble is solved, it is determined that there is an intermittent malfunction such as poor engaged connector(s) or open circuit (Refer to GROUP 00 – How to use troubleshooting/Inspection Service Points [P.00-5](#)).

**NO** : Go to Step 3.

**Step 3. Connector check: E-07 sunroof motor assembly connector****Q: Is the check result normal?**

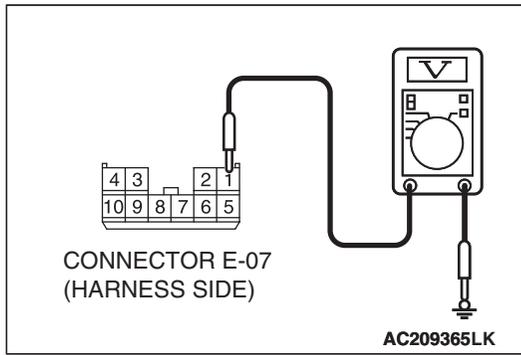
**YES** : Go to Step 4.

**NO** : Repair the defective connector.

**Step 4. Voltage measurement at E-07 sunroof motor assembly connector.**

- (1) Disconnect the connector, and measure at the

wiring harness side.



connector terminal No.1 and body earth

**OK: Battery positive voltage**

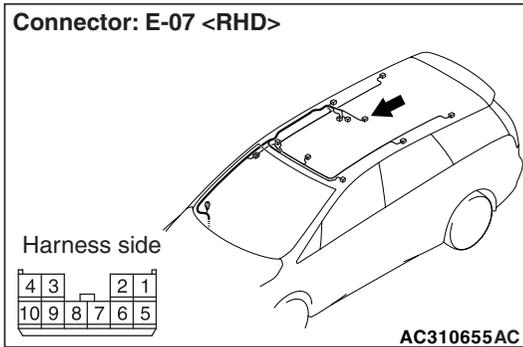
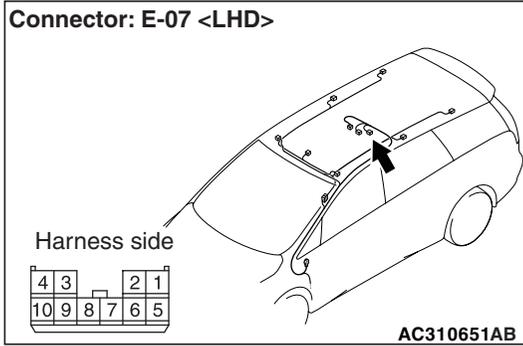
**Q: Is the check result normal?**

**YES :** Go to Step 6.

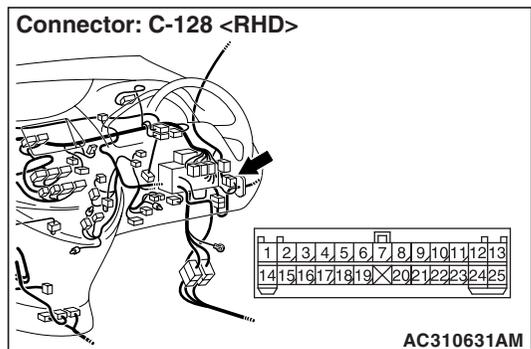
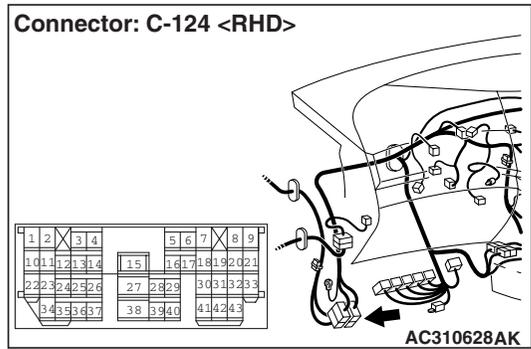
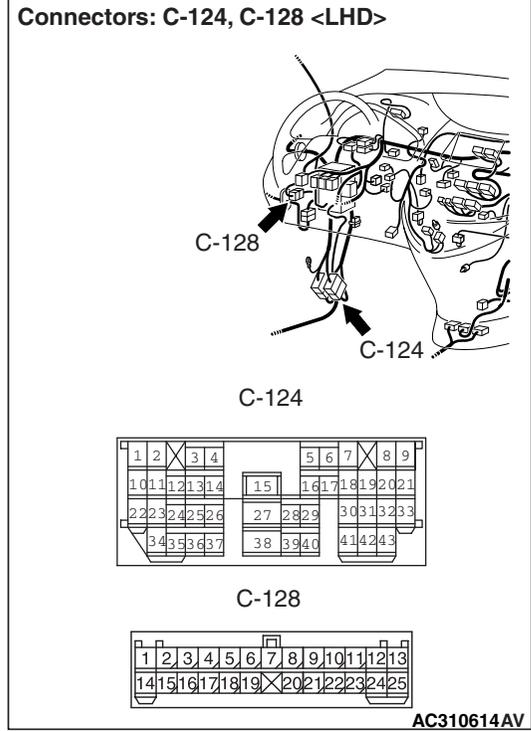
**NO :** Go to Step 5.

(2) Voltage between E-07 sunroof motor assembly

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



NOTE:



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

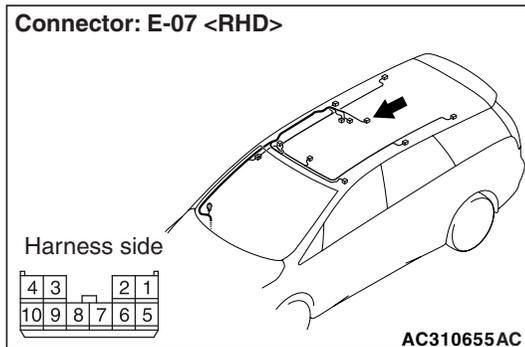
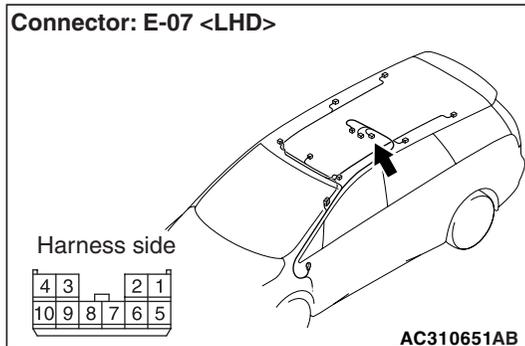
- Check the power supply line for open circuit.

Q: Is the check result normal?

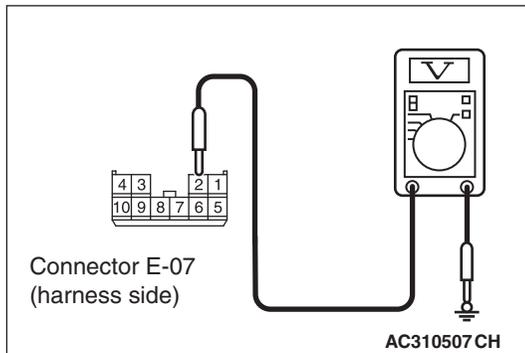
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Repair the wiring harness.

**Step 6. 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

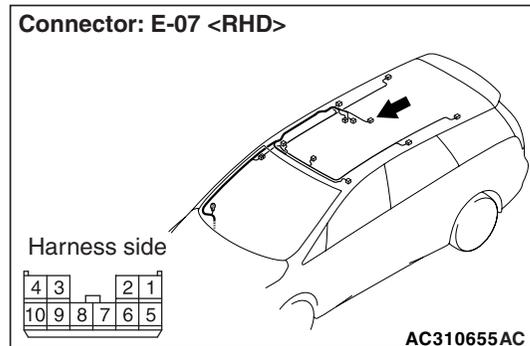
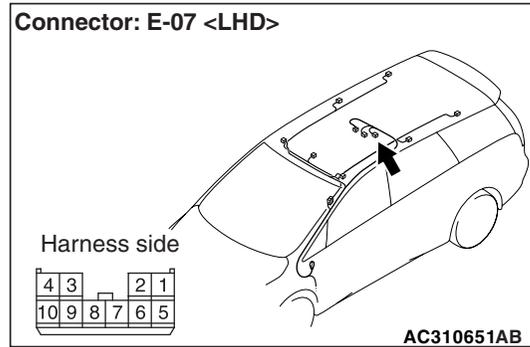
**OK: Battery positive voltage**

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

**YES :** Go to Step 8.

**NO :** Go to Step 7.

**Step 7. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.2 and ignition switch (IG2).**



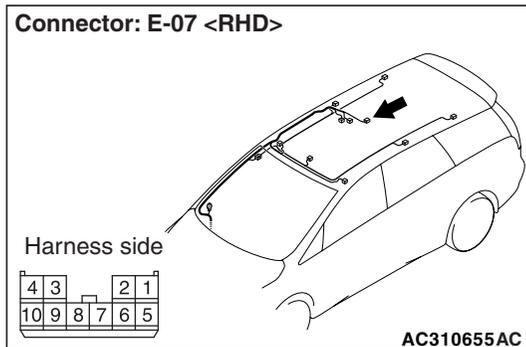
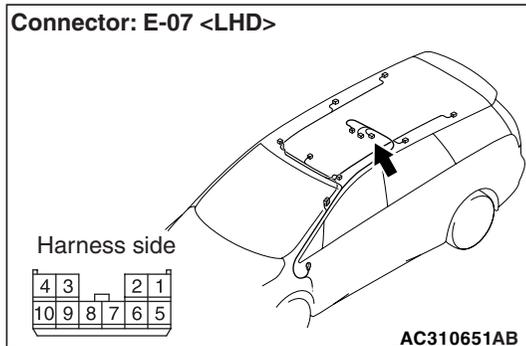
- Check the power supply line to the ignition switch (IG2) for open circuit.

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

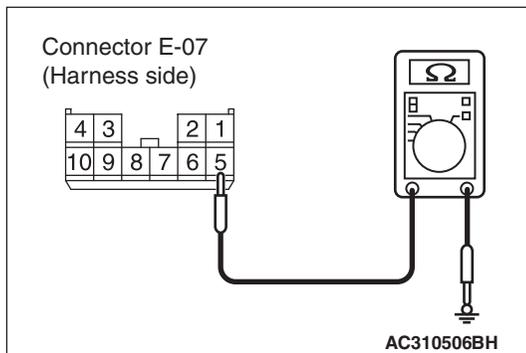
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP – 00, How to Cope with Intermittent Malfunction P.00-5).

**NO :** Repair the wiring harness.

**Step 8. 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

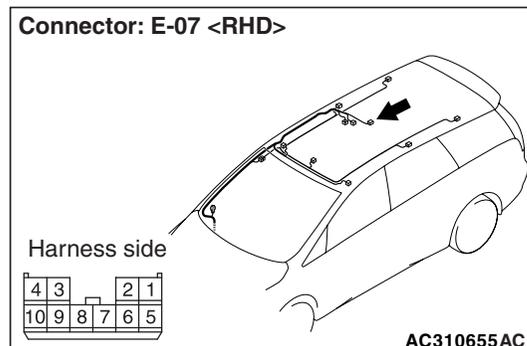
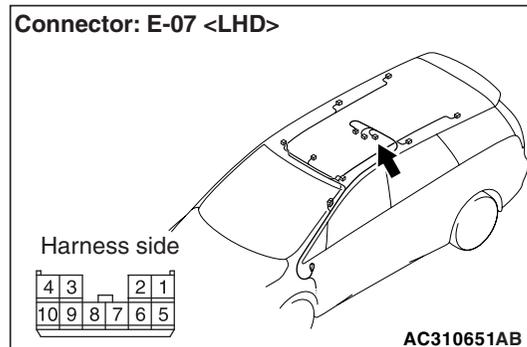
**OK: 2 Ω or less**

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

**YES :** Go to Step 10.

**NO :** Go to Step 9.

**Step 9. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.5 and body earth.**



- Check the earth wires for open circuit.

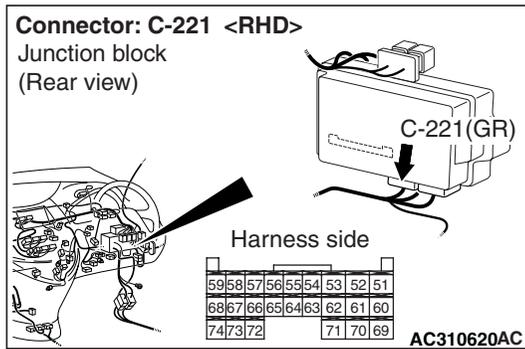
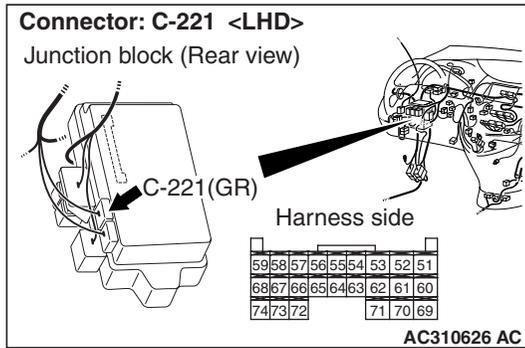
**Q: Is the check result normal?**

**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.

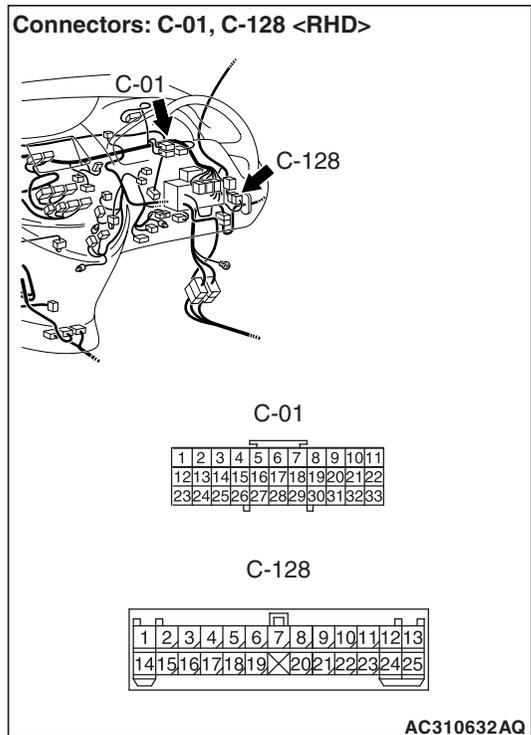
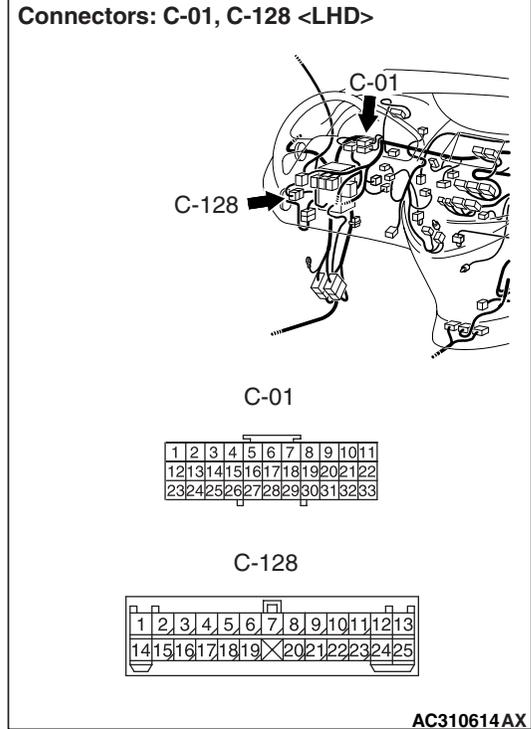
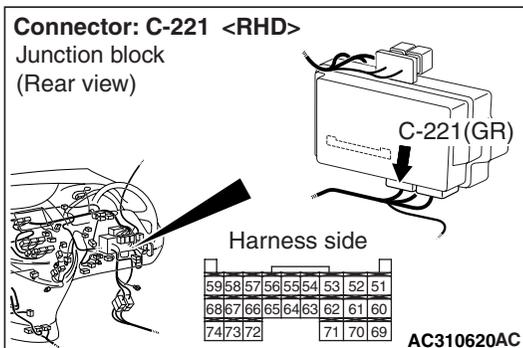
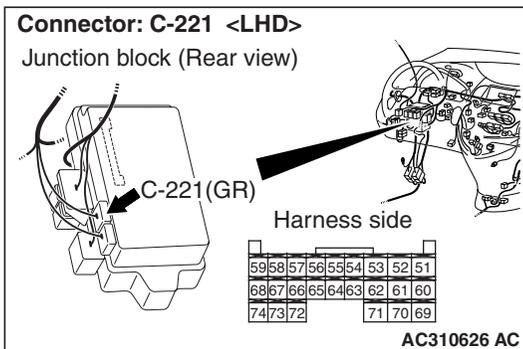
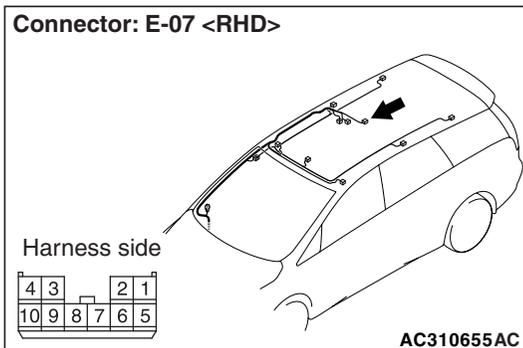
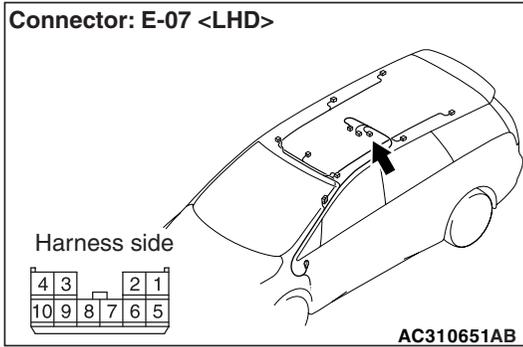
**Step 10. Connector check: C-221 ETACS-ECU connector**

YES : Go to Step 11.  
 NO : Repair the defective connector.



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

Step 11. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.10 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-128, and repair if necessary.

- Check the communication lines for open circuit.

Q: Is the check result normal?

YES : Go to Step 12.

NO : Repair the wiring harness.

---

**Step 12. Check whether the diagnosis code is reset.**

Replace the sunroof motor assembly (sunroof-ECU), and then check that the diagnosis code is not reset.

- (1) Replace the sunroof motor assembly (sunroof-ECU).

(2) Ignition switch: ON

(3) On completion, check that diagnosis code No.04 is not reset.

**Q: Is diagnosis code No.04 set?**

**YES :** Replace the ETACS-ECU.

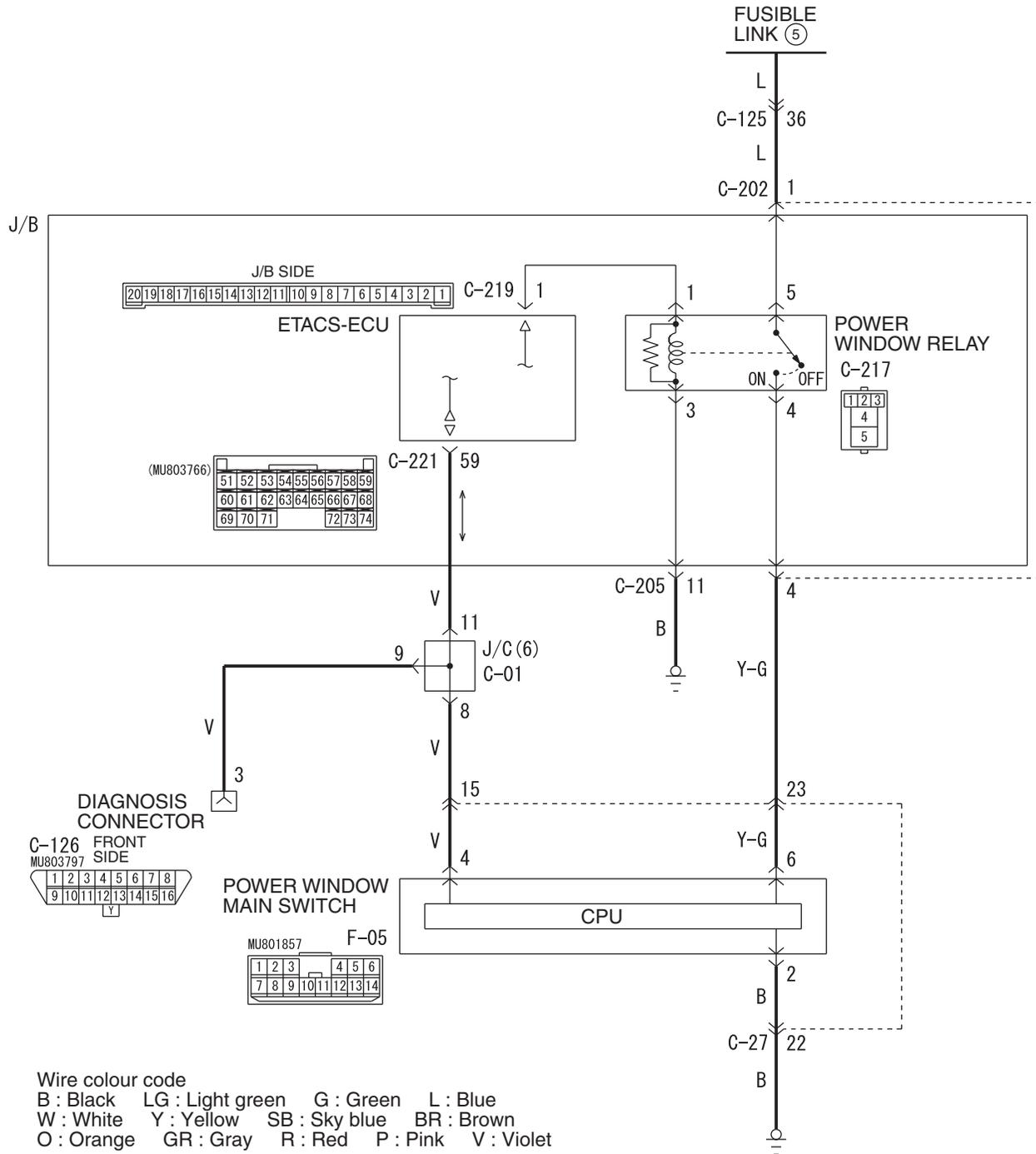
**NO :** The procedure is complete.

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

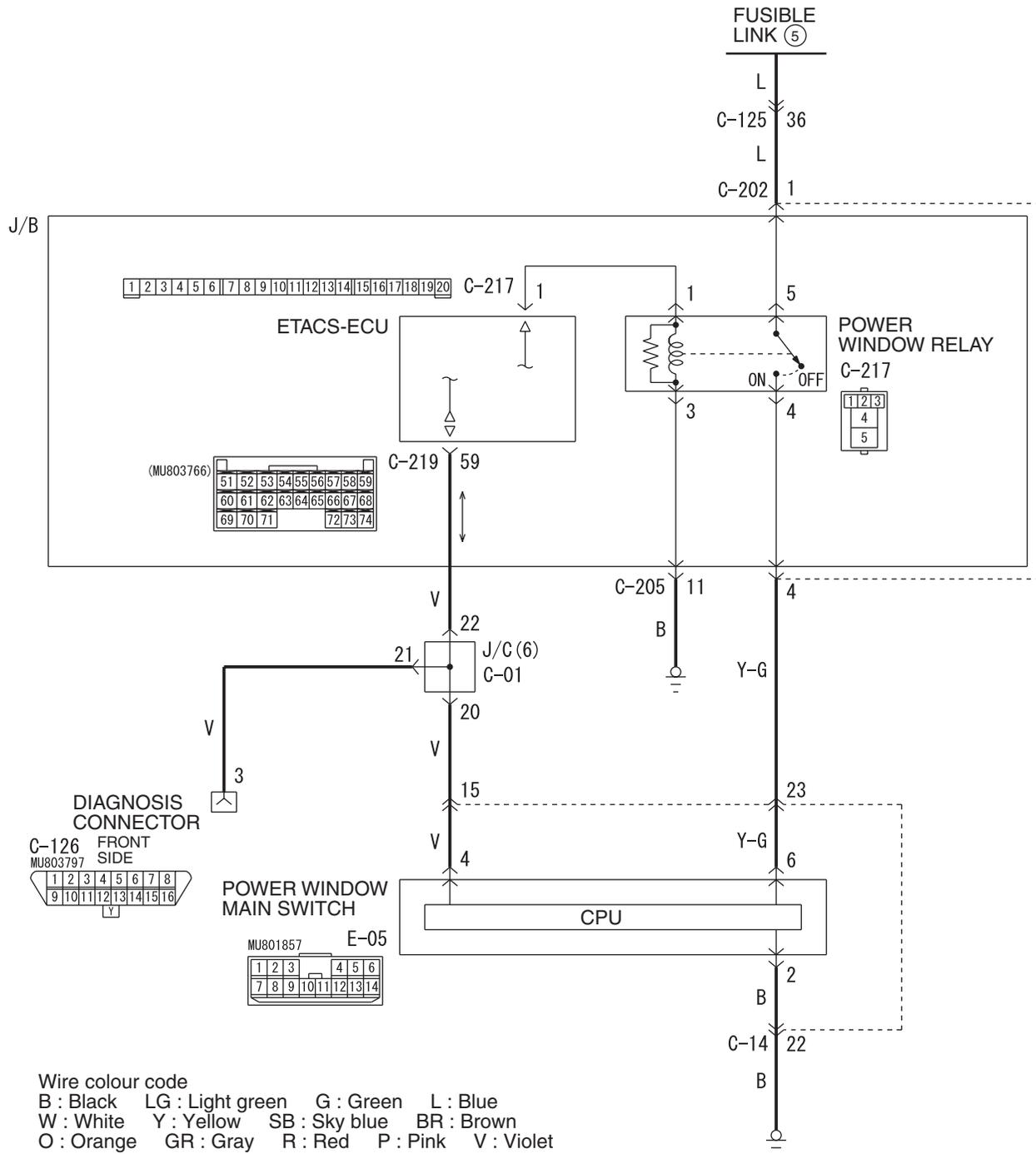
**CAUTION**

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

Power Window Main Switch and SWS Communication Circuit <LHD>



Power Window Main Switch and SWS Communication Circuit <RHD>



W4X54E181A

**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. Pulse check

Check the input signal from the ignition switch.

| System switch         | Check condition            |
|-----------------------|----------------------------|
| Ignition switch (IG1) | When turned from ACC to ON |

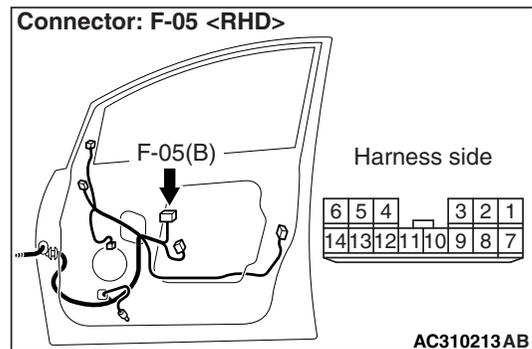
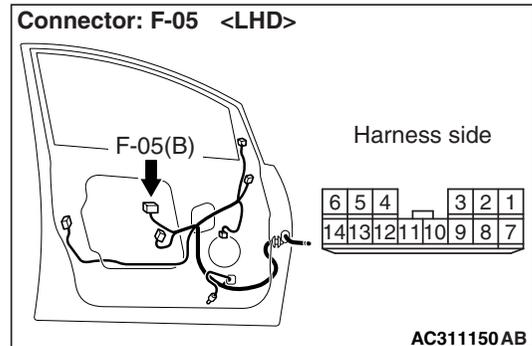
**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**YES** : Go to Step 4.

**NO** : Refer to inspection procedure A-2 "When the ignition switch is at the LOCK (OFF) position, the functions do not work normally. Check the battery power supply circuit to the ETACS-ECU P.54B-87."

### Step 4. Connector check: F-05 power window main switch connector

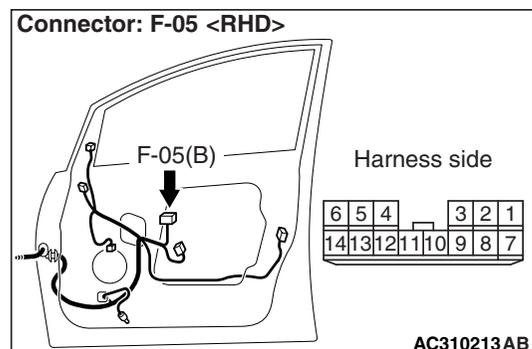
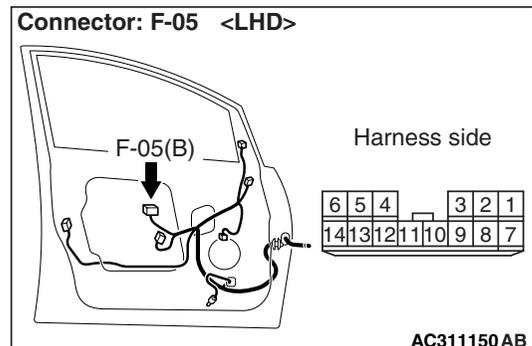


**Q: Is the check result normal?**

**YES** : Go to Step 5.

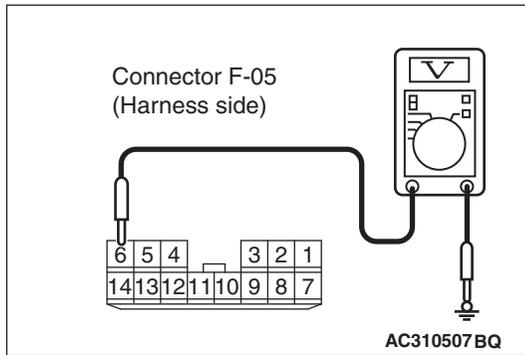
**NO** : Repair the defective connector.

### Step 5. 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

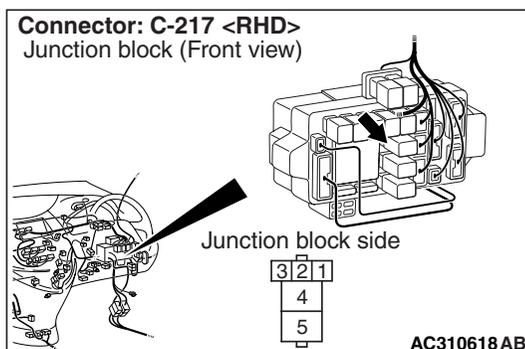
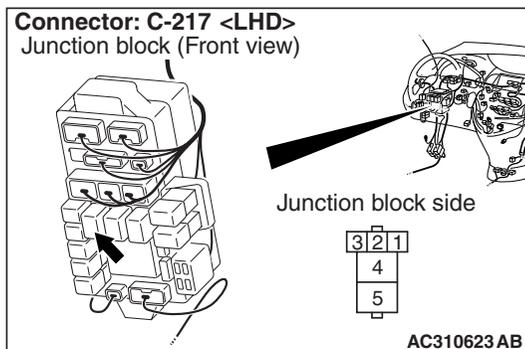
**OK: System voltage**

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

**YES :** Go to Step 14.

**NO :** Go to Step 6.

**Step 6. Connector check: C-217 power window relay connector**



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

**YES :** Go to Step 7.

**NO :** Repair the defective connector.

**Step 7. Check the power window relay.**

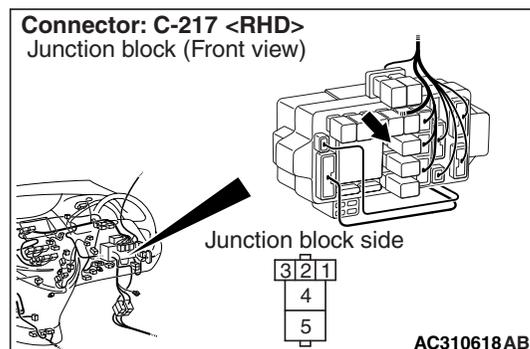
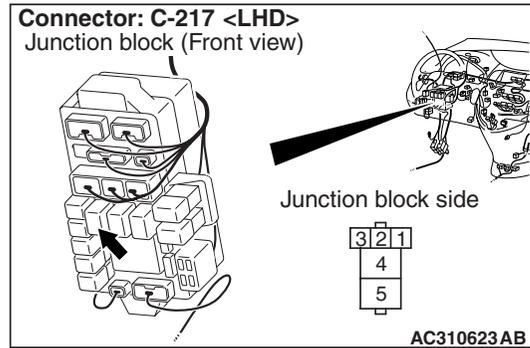
Refer to GROUP 42 – Door P.42-28.

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

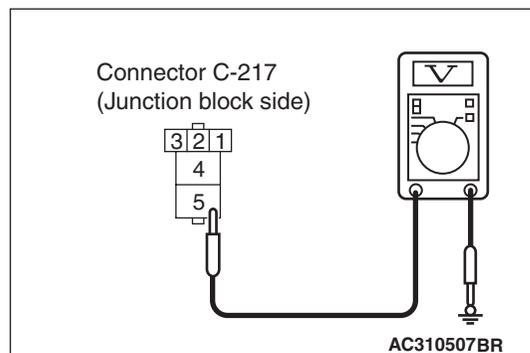
**YES :** Go to Step 8.

**NO :** Replace the power window relay.

**Step 8. 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

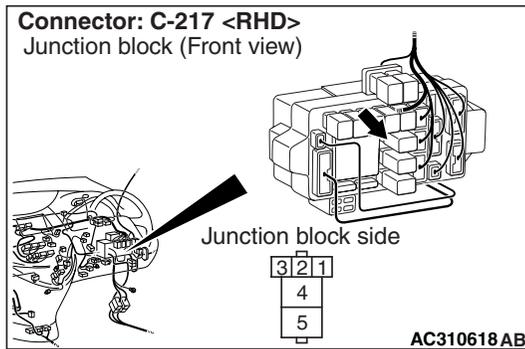
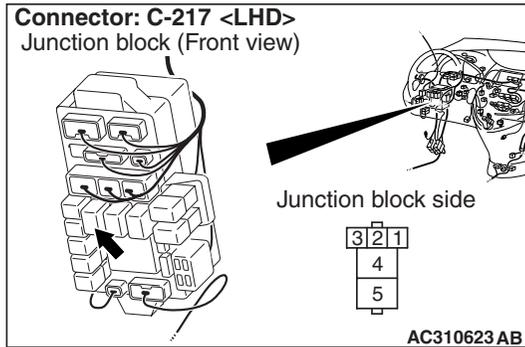
**OK: System voltage**

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

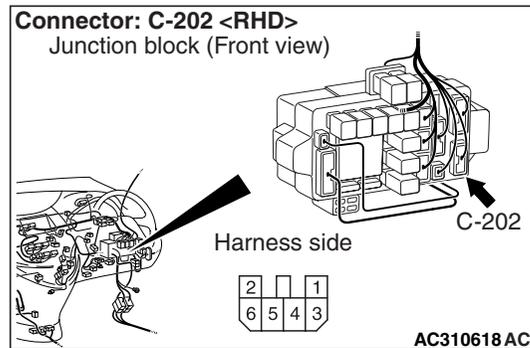
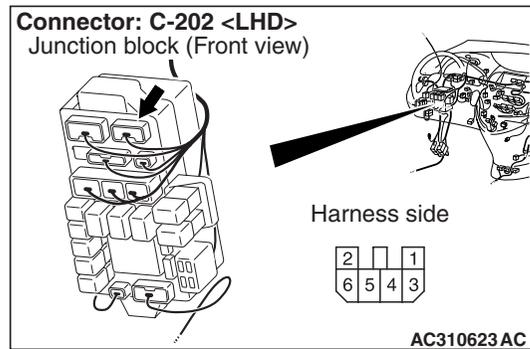
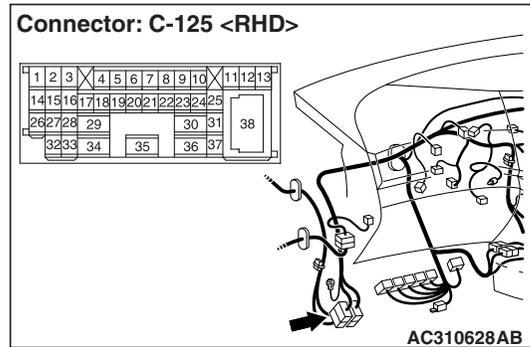
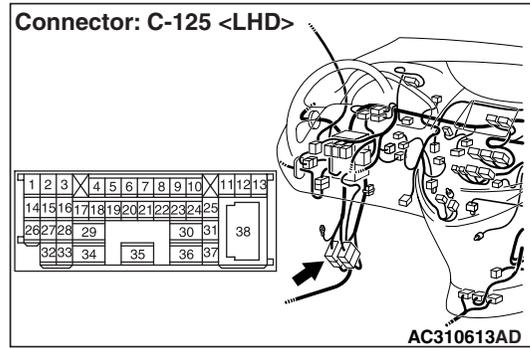
**YES :** Go to Step 10.

**NO :** Go to Step 9.

Step 9. Check the wiring harness between C-217 power window relay connector terminal No.5 and fusible link (5).



NOTE:



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

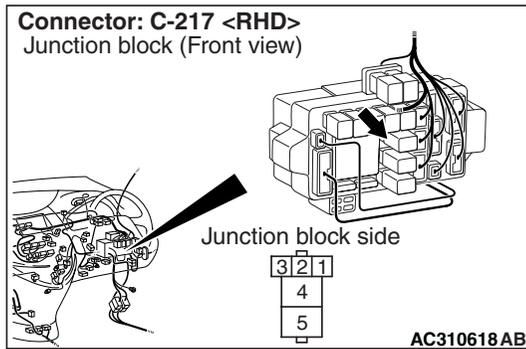
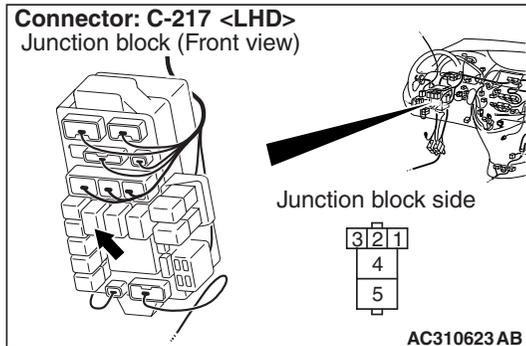
- Check the power supply line for open circuit.

Q: Is the check result normal?

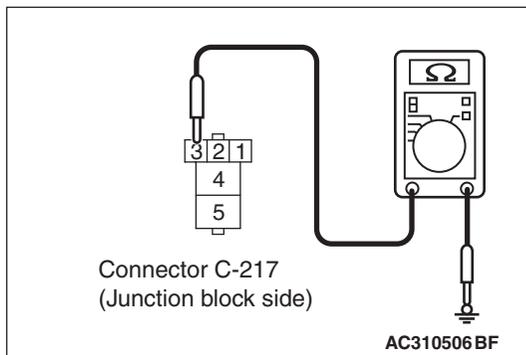
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Repair the wiring harness.

**Step 10. 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

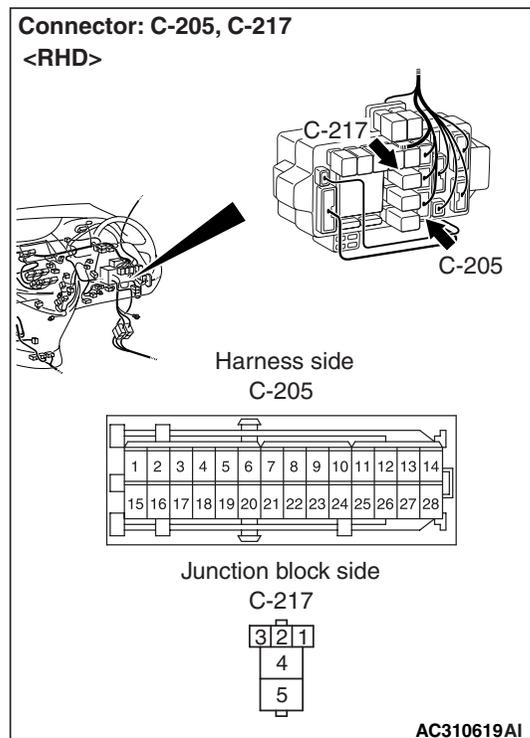
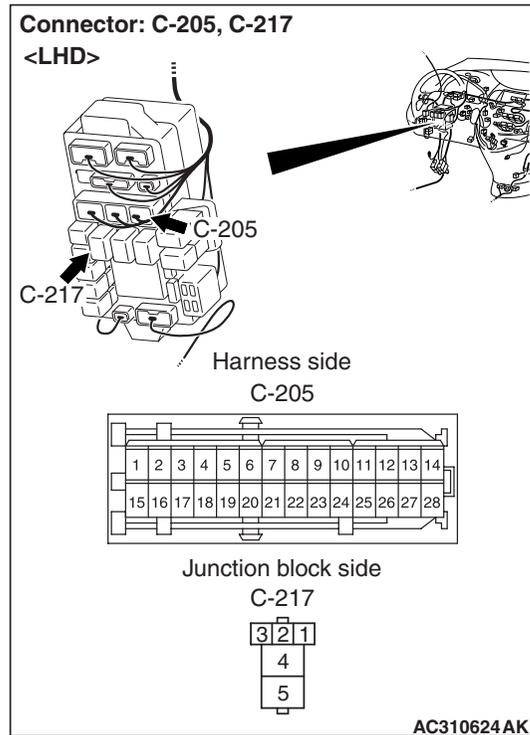
**OK: 2 Ω or less**

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

**YES :** Go to Step 12.

**NO :** Go to Step 11.

**Step 11. Check the wiring harness between C-217 power window relay connector terminal No.3 and body earth.**



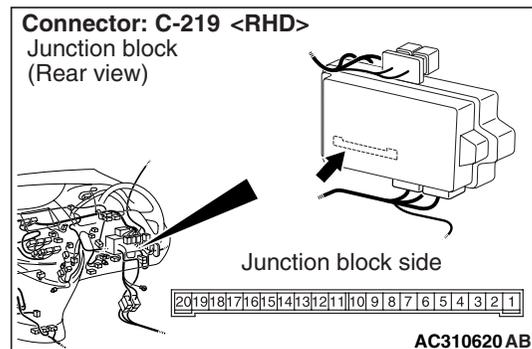
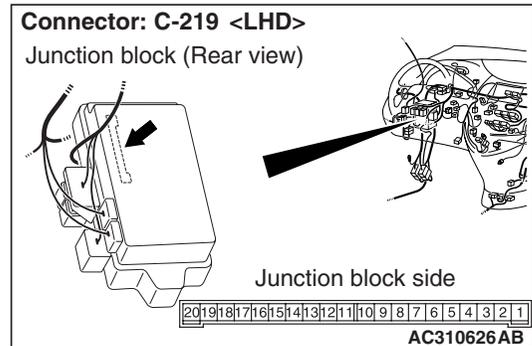
**NOTE:** Prior to the wiring harness inspection, check junction block connector C-205, and repair if necessary.

- 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 12. Connector check: C-219 ETACS-ECU connector**

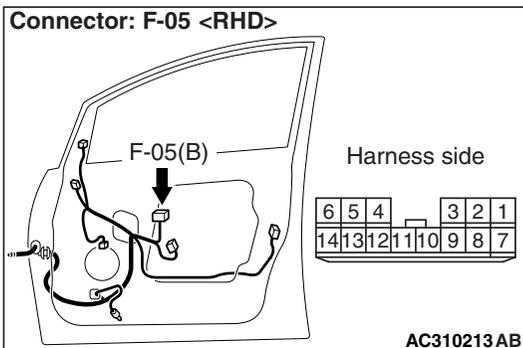
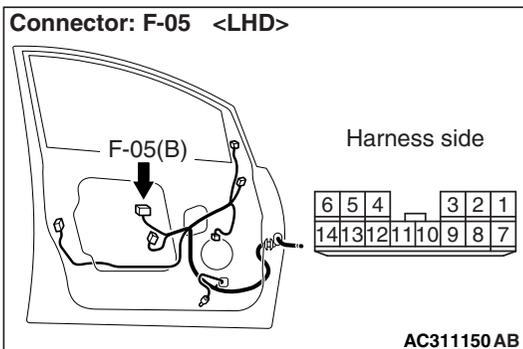
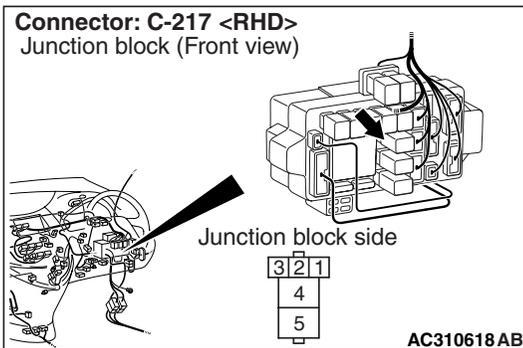
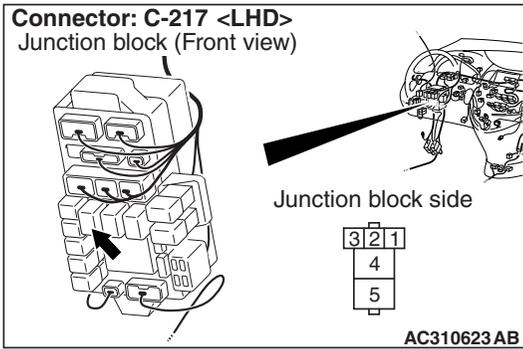


**Q: Is the check result normal?**

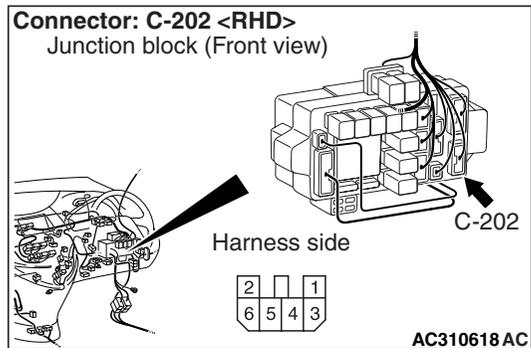
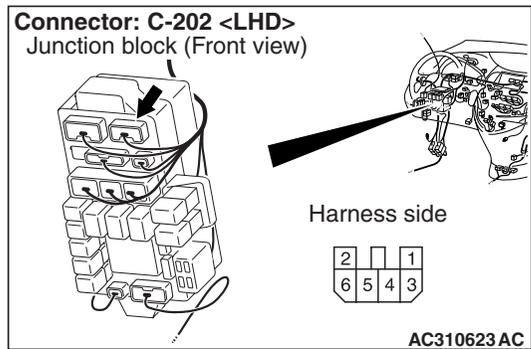
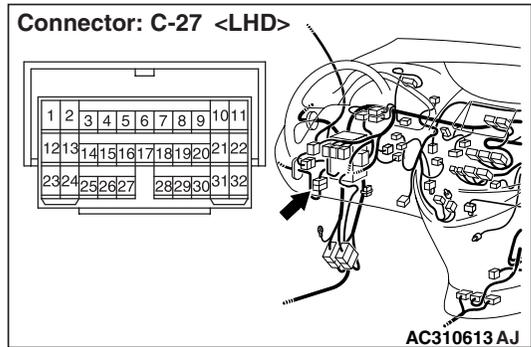
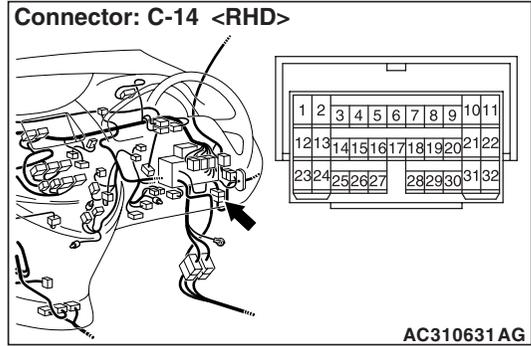
**YES** : Go to Step 13.

**NO** : Repair the defective connector.

**Step 13. Check the wiring harness 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.*

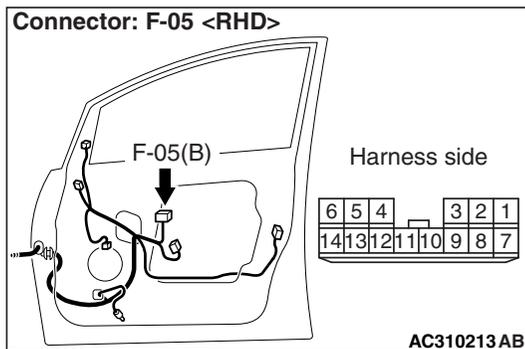
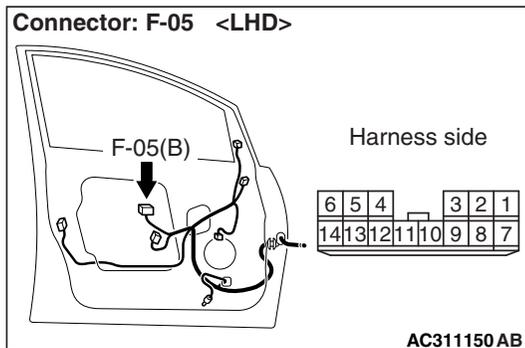
- Check the power supply line for open circuit.

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

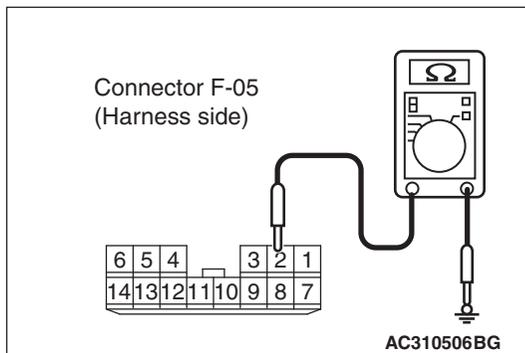
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Repair the wiring harness.

Step 14. 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

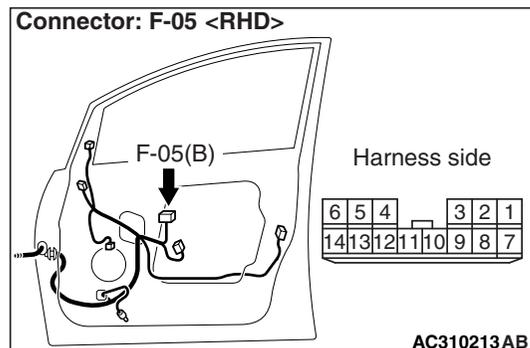
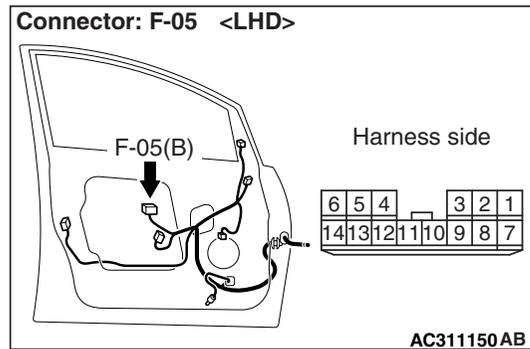
**OK: 2 Ω or less**

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

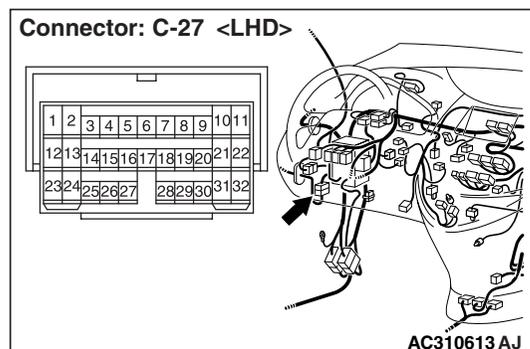
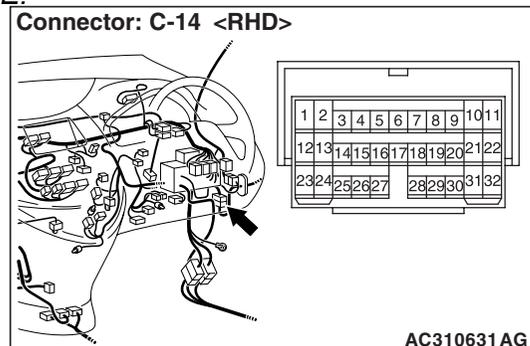
**YES :** Go to Step 16.

**NO :** Go to Step 15.

Step 15. Check the wiring harness between F-05 power window main switch connector terminal No.2 and body earth.



**NOTE:**



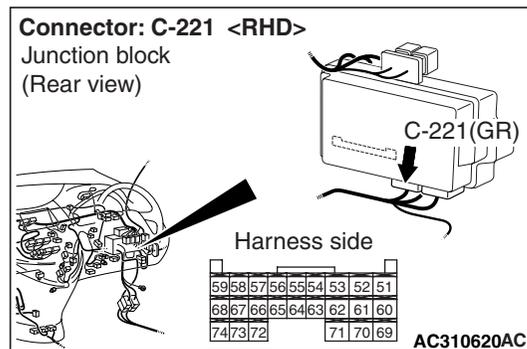
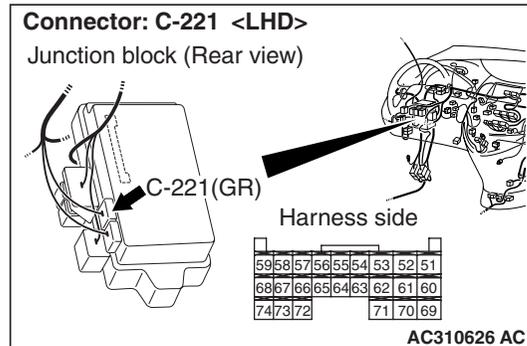
Prior to the wiring harness inspection, check intermediate connectors C-14 <RH drive vehicles>, C-27 <LH drive vehicles>, and repair if necessary.

- 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 16. Connector check: C-221 ETACS-ECU connector**

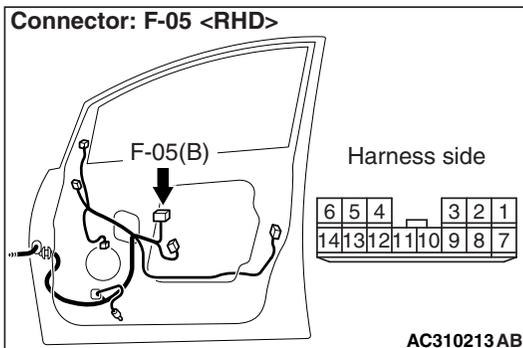
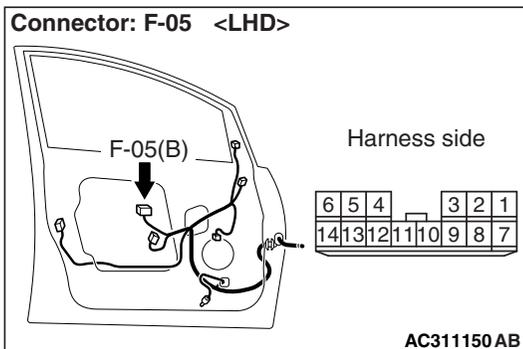
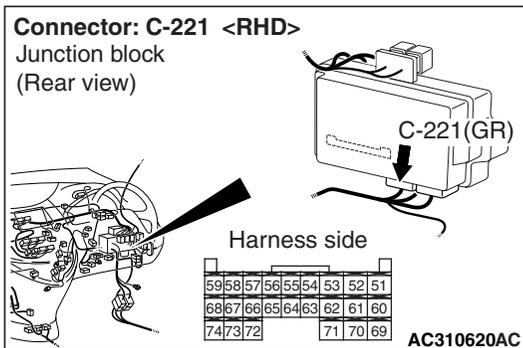
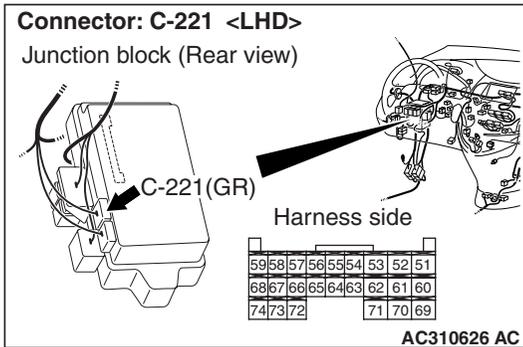


**Q: Is the check result normal?**

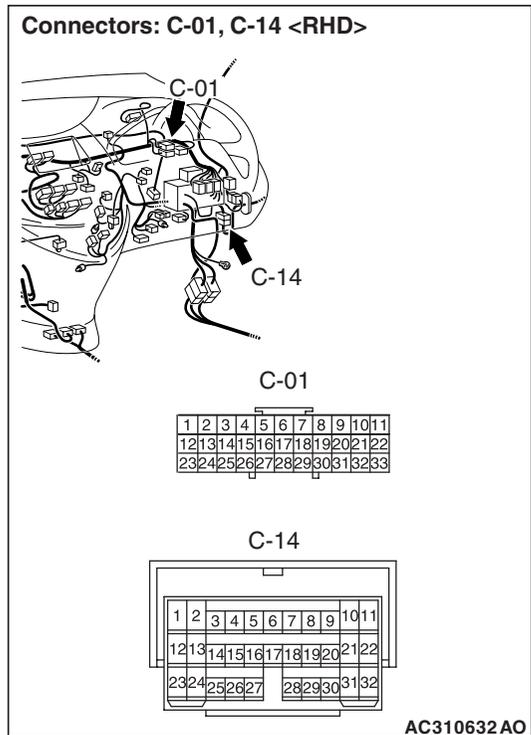
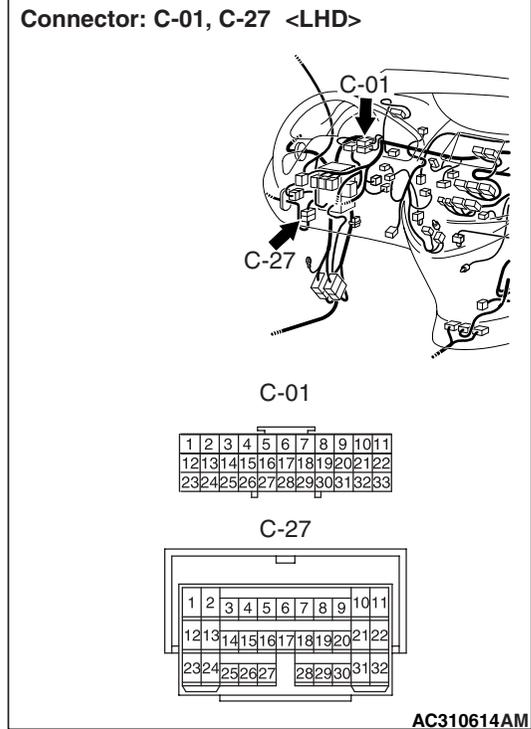
**YES** : Go to Step 17.

**NO** : Repair the defective connector.

Step 17. Check the wiring harness between C-221 ETACS-ECU connector terminal No.59 and F-05 power window main switch connector terminal No.4.



NOTE:



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 18.  
NO : Repair the wiring harness.

---

**Step 18. Check whether the diagnosis code is reset.**

Replace the power window main switch, and then check that the diagnosis code is not reset.

- (1) Replace the power window main switch.
- (2) Ignition switch: ON

- (3) On completion, check that diagnosis code No.05 is not reset.

**Q: Is diagnosis code No.05 set?**

- YES** : Replace the ETACS-ECU.  
**NO** : The procedure is complete.

---

**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 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](#)). Repair the CAN bus line and 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). Repair the CAN bus line and 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.55-8 <vehicles without multi-centre display> or P.55-8 <vehicles with multi-centre display>).

**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). Repair the CAN bus line and 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](#)). Repair the CAN bus line and 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**

M1549000800844

| Symptom   | Inspection procedure number | Reference page |
|---|-----------------------------|----------------|
| Communication with the MUT-III is not possible.   | A-1                         | P.54B-83       |
| When the ignition switch is at the LOCK (OFF) position, the functions do not work normally. | A-2                         | P.54B-87       |
| Check the battery power supply circuit to the ETACS-ECU.                                    |                             |                |

**<Function system>**

| <b>Symptom</b>       |   | <b>Inspection procedure number</b> | <b>Reference page</b>     |
|----------------------|---|------------------------------------|---------------------------|
| Alarm Function       | Lamp reminder buzzer function does not work normally.   | B-1                                | <a href="#">P.54B-92</a>  |
|                      | Seat belt warning buzzer function does not work normally.   | B-2                                | <a href="#">P.54B-94</a>  |
|                      | Door-ajar warning buzzer function does not work.  | B-3                                | <a href="#">P.54B-95</a>  |
|                      | Turn-signal lamp operation sound function does not work normally.                                 | B-4                                | <a href="#">P.54B-97</a>  |
| Central door locking | Central door locking system does not work.  | C-1                                | <a href="#">P.54B-99</a>  |
|                      | The central door locking system does not function by using the driver's door lock switch.         | C-2                                | <a href="#">P.54B-102</a> |
|                      | The central door locking system does not function by using the passenger's door key cylinder.     | C-3                                | <a href="#">P.54B-103</a> |
|                      | The central door locking system does not function by using the tailgate key cylinder.             | C-4                                | <a href="#">P.54B-105</a> |
|                      | A door can not be locked or unlocked by the central door locking system. <LH drive vehicles>      | C-5                                | <a href="#">P.54B-107</a> |
|                      | A door can not be locked or unlocked by the central door locking system. <RH drive vehicles>      |                                    | <a href="#">P.54B-114</a> |
|                      | The tailgate cannot be opened or closed.  | C-6                                | <a href="#">P.54B-120</a> |
| Power window         | Power windows do not work at all.   | D-1                                | <a href="#">P.54B-124</a> |
|                      | Driver's power window does not work by means of the power window main switch. <LH drive vehicles> | D-2                                | <a href="#">P.54B-134</a> |
|                      | Driver's power window does not work by means of the power window main switch. <RH drive vehicles> |                                    | <a href="#">P.54B-136</a> |
|                      | Relevant power window(s) do not work by means of the front and rear power window sub switches.    | D-3                                | <a href="#">P.54B-138</a> |
|                      | passenger's and/or rear power window(s) do not work by means of the power window main switch.     | D-4                                | <a href="#">P.54B-157</a> |
|                      | The window glass lowers automatically while it is rising.   | D-5                                | <a href="#">P.54B-167</a> |
|                      | Power window anti-trap function does not work normally.   | D-6                                | <a href="#">P.54B-168</a> |
|                      | The power window timer function does not work normally.   | D-7                                | <a href="#">P.54B-179</a> |

| Symptom                     |   | Inspection procedure number | Reference page            |
|-----------------------------|---|-----------------------------|---------------------------|
| Keyless entry system        | Keyless entry system does not work.   | E-1                         | <a href="#">P.54B-180</a> |
|                             | Keyless entry hazard lamp answerback function or the room lamp answerback function does not work normally.  | E-2                         | <a href="#">P.54B-181</a> |
|                             | Encrypted code cannot be registered.  | E-3                         | <a href="#">P.54B-183</a> |
|                             | The timer lock function does not work after the doors have been unlocked by the keyless entry system.   | E-4                         | <a href="#">P.54B-184</a> |
|                             | Multi-mode keyless entry system function does not work at all.  | E-5                         | <a href="#">P.54B-185</a> |
| Sunroof                     | The sunroof does not work at all.   | F-1                         | <a href="#">P.54B-186</a> |
|                             | Any of the sunroof switch positions is defective.   | F-2                         | <a href="#">P.54B-193</a> |
|                             | Sunroof timer function does not work normally.  | F-3                         | <a href="#">P.54B-196</a> |
|                             | The sunroof inhibition function does not work normally (The sunroof operation lock warning buzzer does not sound).  | F-4                         | <a href="#">P.54B-202</a> |
|                             | Sunroof anti-trap function does not work normally.  | F-5                         | <a href="#">P.54B-204</a> |
| Windshield wiper and washer | The windshield wipers do not work at all.   | G-1                         | <a href="#">P.54B-205</a> |
|                             | 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                         | <a href="#">P.54B-213</a> |
|                             | The windshield wipers do not stop at the specified park position.   | G-3                         | <a href="#">P.54B-214</a> |
|                             | The windshield wipers do not work normally.   | G-4                         | <a href="#">P.54B-219</a> |
|                             | The intermittent wiper interval cannot be adjusted by operating the windshield intermittent wiper volume control.   | G-5                         | <a href="#">P.54B-223</a> |
|                             | The intermittent wiper interval is not changed according to the vehicle speed.  | G-6                         | <a href="#">P.54B-224</a> |
|                             | The windshield washer does not work.  | G-7                         | <a href="#">P.54B-226</a> |

| Symptom  |  | Inspection procedure number | Reference page            |
|--|--|-----------------------------|---------------------------|
| Rear wiper and washer                              | Rear wiper does no not work at all.  | H-1                         | <a href="#">P.54B-230</a> |
|  | The rear wiper does not stop at the specified park position.   | H-2                         | <a href="#">P.54B-234</a> |
|  | 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                         | <a href="#">P.54B-239</a> |
|  | 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> |                             | <a href="#">P.54B-240</a> |
|  | The rear washer does not work.   | H-4                         | <a href="#">P.54B-241</a> |
| Headlamp washer                                    | The headlamp washer does not work.   | I-1                         | <a href="#">P.54B-245</a> |
| Electric retractable remote controlled door mirror | Electric retractable remote controlled door mirror does not work at all.   | J-1                         | <a href="#">P.54B-250</a> |
|  | Left or right side electric retractable remote controlled door mirror does not work at all.  | J-2                         | <a href="#">P.54B-256</a> |
|  | Electric retractable remote controlled door mirror timer function does not at all.   | J-3                         | <a href="#">P.54B-264</a> |
|  | Vehicle speed-dependent unfolding function does not work normally.   | J-4                         | <a href="#">P.54B-265</a> |
| Ignition key cylinder illumination lamp            | The ignition key cylinder illumination lamp does not illuminate/extinguish normally.   | K-1                         | <a href="#">P.54B-266</a> |
| Seat belt warning lamp                             | The seat belt warning lamp does not flash normally.  | L-1                         | <a href="#">P.54B-269</a> |

| Symptom                |  | Inspection procedure number | Reference page            |
|------------------------|--|-----------------------------|---------------------------|
| Headlamp and tail lamp | The tail lamps do not illuminate normally.   | M-1                         | <a href="#">P.54B-271</a> |
|                        | The low-beam headlamps do not illuminate normally.   | M-2                         | <a href="#">P.54B-273</a> |
|                        | The high-beam headlamps do not illuminate normally.  | M-3                         | <a href="#">P.54B-275</a> |
|                        | The high-beam and low-beam headlamps do not illuminate when the passing switch is operated.  | M-4                         | <a href="#">P.54B-276</a> |
|                        | The headlamp automatic-shutdown function does not work normally.   | M-5                         | <a href="#">P.54B-276</a> |
|                        | Any of tail lamps, position lamps or licence plate lamp does not illuminate.   | M-6                         | <a href="#">P.54B-278</a> |
|                        | The headlamp(s) do not illuminate.   | M-7                         | <a href="#">P.54B-294</a> |
|                        | The high-beam indicator lamps does not illuminate.   | M-8                         | <a href="#">P.54B-307</a> |
|                        | Daytime running lamp function does not work normally.  | M-9                         | <a href="#">P.54B-308</a> |
|                        | 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                        | <a href="#">P.54C-315</a> |
| Flasher timer          | The turn-signal lamps do not illuminate.   | N-1                         | <a href="#">P.54B-310</a> |
|                        | The hazard warning lamps do not illuminate.  | N-2                         | <a href="#">P.54B-314</a> |
|                        | Any of the turn-signal lamps does not illuminate.  | N-3                         | <a href="#">P.54B-316</a> |
|                        | The turn-signal indicator lamp does not illuminate.  | N-4                         | <a href="#">P.54B-341</a> |
| Fog lamp               | The front fog lamps do not illuminate normally.  | O-1                         | <a href="#">P.54B-342</a> |
|                        | The rear fog lamps do not illuminate normally.   | O-2                         | <a href="#">P.54B-345</a> |
|                        | Any of the front fog lamps does not illuminate normally.   | O-3                         | <a href="#">P.54B-356</a> |
|                        | The front fog lamps indicator does not illuminate normally.  | O-4                         | <a href="#">P.54B-362</a> |
|                        | The rear fog lamps indicator does not illuminate normally.   | O-5                         | <a href="#">P.54B-363</a> |

| Symptom       |  | Inspection procedure number | Reference page |
|---------------|--|-----------------------------|----------------|
| Interior lamp | The interior lamps (room lamp, rear personal lamps, door lamps, luggage compartment lamp, key illumination lamp) does not illuminate or extinguish normally. | P-1                         | P.54B-364      |
|               | The room lamp does not illuminate normally.  | P-2                         | P.54B-372      |
|               | The rear personal lamp does not illuminate normally.   | P-3                         | P.54B-381      |
|               | The luggage compartment lamp does not illuminate normally.   | P-4                         | P.54B-394      |
|               | The door lamp does not illuminate normally.  | P-5                         | P.54B-399      |
|               | Interior lamp automatic shutoff function does not work normally. <Vehicles with keyless entry system>  | P-6                         | P.54B-412      |
|               | The door-ajar warning lamp does not illuminate/extinguish normally.  | P-7                         | P.54B-414      |

## CHECK TROUBLE BY USING THE INPUT SIGNAL CHECK

M1549024200299

### <PULSE CHECK>

If a problem is found in the Service Data or Pulse Check inspection, observe the table below.

| Symptom  | Inspection procedure number | Reference page |
|--|-----------------------------|----------------|
| The ignition switch (ACC) signal is not received.                    | Q-1                         | P.54B-416      |
| The ignition switch (IG1) signal is not received.                    | Q-2                         | P.54B-420      |
| The back-up lamp switch signal is not received. <M/T>                | Q-3                         | P.54B-423      |
| The front fog lamp switch signal is not received.                    | Q-4                         | P.54B-430      |
| The driver's door switch signal is not received. <LH drive vehicles> | Q-5                         | P.54B-434      |
| The driver's door switch signal is not received. <RH drive vehicles> |                             | P.54B-436      |

| 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                         | <a href="#">P.54B-438</a> |
|   | 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                         | <a href="#">P.54B-439</a> |
|   | 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                         | <a href="#">P.54B-440</a> |
| When the power window main switch is operated, the switch signals are not received. | Q-9  | <a href="#">P.54B-444</a>   |                           |
| When the sunroof switch is operated, the switch signals are not received.           | Q-10   | <a href="#">P.54B-451</a>   |                           |
| The key reminder switch signal is not received.                                     | Q-11   | <a href="#">P.54B-457</a>   |                           |
| The hazard warning lamp switch signal is not received.                              | Q-12   | <a href="#">P.54B-461</a>   |                           |
| The rear fog lamp switch signal is not received.                                    | Q-13   | <a href="#">P.54B-465</a>   |                           |
| All the door switch signals are not received.                                       | Q-14   | <a href="#">P.54B-469</a>   |                           |
| The driver's door lock actuator switch signal is not received. <LH drive vehicles>  | Q-15   | <a href="#">P.54B-478</a>   |                           |
| The driver's door lock actuator switch signal is not received. <RH drive vehicles>  |  | <a href="#">P.54B-481</a>   |                           |

| Symptom  | Inspection procedure number | Reference page |
|--|-----------------------------|----------------|
| The passenger's door lock key switch signal is not detected. <LH drive vehicles>                     | Q-16                        | P.54B-484      |
| The passenger's door lock key switch signal is not detected. <RH drive vehicles>                     |                             | P.54B-487      |
| The tailgate key switch signal is not detected.  | Q-17                        | P.54B-490      |
| The tailgate lock release handle signal is not detected.   | Q-18                        | P.54B-494      |
| The driver's seat belt switch signal is not received <LH drive vehicles>                             | Q-19                        | P.54B-498      |
| The driver's seat belt switch signal is not received <RH drive vehicles>                             |                             | P.54B-501      |
| The front passenger's seat belt switch signal is not received <LH drive vehicles>                    | Q-20                        | P.54B-504      |
| The front passenger's seat belt switch signal is not received <RH drive vehicles>                    |                             | P.54B-507      |
| Signal is not received from the electric remote controlled mirror switch (folding/unfolding switch). | Q-21                        | P.54B-510      |
| The interior lamp signal is not received.  | Q-22                        | P.54B-514      |
| Each switch signal of the keyless entry transmitter is not received.                                 | Q-23                        | P.54B-523      |
| The interior lamp loaded signal is not detected.   | Q-24                        | P.54B-524      |
| Vehicle speed signal is not received.  | Q-25                        | P.54B-529      |

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

M1549020300294

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                    | -   | x   | x   | x   | -   | -    | -    | -    | -    | -    | -    | -    |
| Seat belt warning buzzer function         | x   | -   | -   | -   | -   | -    | -    | -    | -    | -    | -    | x    |
| Door-ajar warning buzzer function         | x   | x   | -   | -   | -   | -    | -    | x    | -    | -    | -    | x    |
| Turn-signal lamp operation sound function | -   | x   | -   | -   | -   | -    | x    | -    | -    | -    | -    | -    |
| Control of central door locking           | -   | -   | -   | -   | -   | -    | -    | -    | x    | -    | -    | -    |
| Power window control                      | -   | x   | -   | -   | -   | -    | -    | -    | -    | -    | -    | -    |
| Keyless entry system                      | -   | -   | x   | -   | -   | x    | x    | x    | -    | x    | -    | -    |

| 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       | -   | -   | -   | -   | -   | x    | x    | -    | -    | x    | -    | -    |
| Multi-mode keyless entry system                    | -   | -   | -   | -   | -   | -    | -    | -    | -    | x    | -    | -    |
| Sunroof control                                    | x   | -   | x   | -   | -   | -    | -    | -    | -    | -    | -    | -    |
| Control of windshield wiper washer                 | x   | -   | -   | -   | x   | -    | -    | -    | -    | -    | -    | x    |
| Rear wiper washer control                          | x   | -   | -   | -   | x   | -    | -    | -    | -    | -    | -    | -    |
| Headlamp washer control                            | x   | -   | -   | x   | x   | -    | -    | -    | -    | -    | -    | -    |
| Electric retractable remote controlled door mirror | x   | -   | x   | -   | -   | -    | -    | -    | -    | -    | -    | -    |
| Ignition key cylinder illumination lamp function   | -   | x   | x   | -   | -   | x    | -    | -    | -    | -    | -    | -    |
| Seat belt indicator lamp                           | -   | x   | -   | -   | -   | -    | -    | -    | -    | -    | -    | x    |
| Headlamp control                                   | -   | x   | -   | x   | -   | -    | -    | -    | -    | -    | -    | -    |
| Tail lamp control                                  | -   | x   | -   | x   | -   | -    | -    | -    | -    | -    | -    | -    |
| Headlamp automatic-shutdown function               | -   | x   | x   | x   | -   | -    | -    | -    | -    | -    | -    | -    |
| Front fog lamp control                             | -   | -   | -   | x   | -   | -    | -    | -    | -    | -    | -    | -    |
| Rear fog lamp control                              | -   | x   | -   | x   | -   | -    | -    | -    | -    | -    | -    | -    |
| Turn-signal lamp control                           | -   | x   | -   | x   | -   | -    | x    | -    | -    | -    | -    | -    |
| Interior lamp control                              | -   | x   | x   | -   | -   | x    | x    | x    | x    | -    | x    | -    |
| Interior lamp automatic-shutdown function          | x   | x   | x   | -   | -   | -    | -    | x    | -    | -    | x    | -    |
| Door-ajar warning lamp                             | -   | -   | x   | -   | -   | -    | x    | x    | -    | -    | -    | -    |

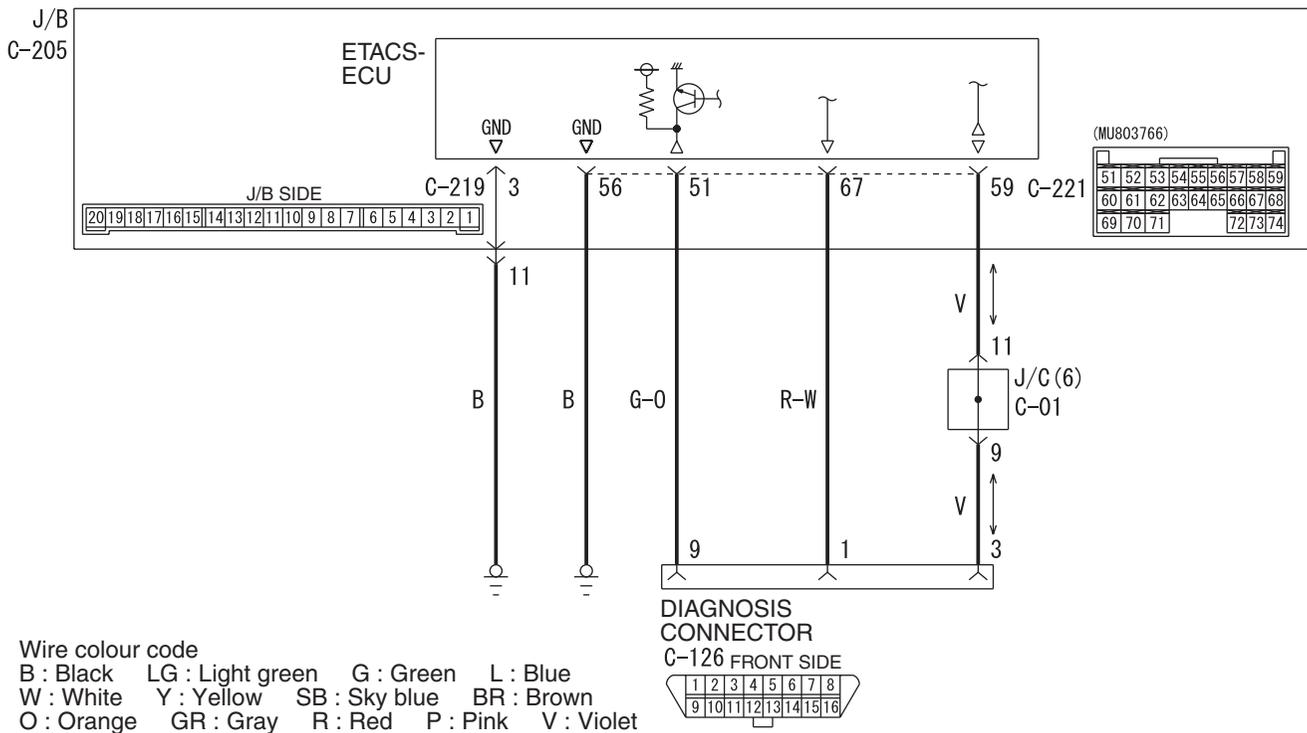
# SYMPTOM PROCEDURES

## Inspection Procedure A-1: Communication with the MUT-III is not possible

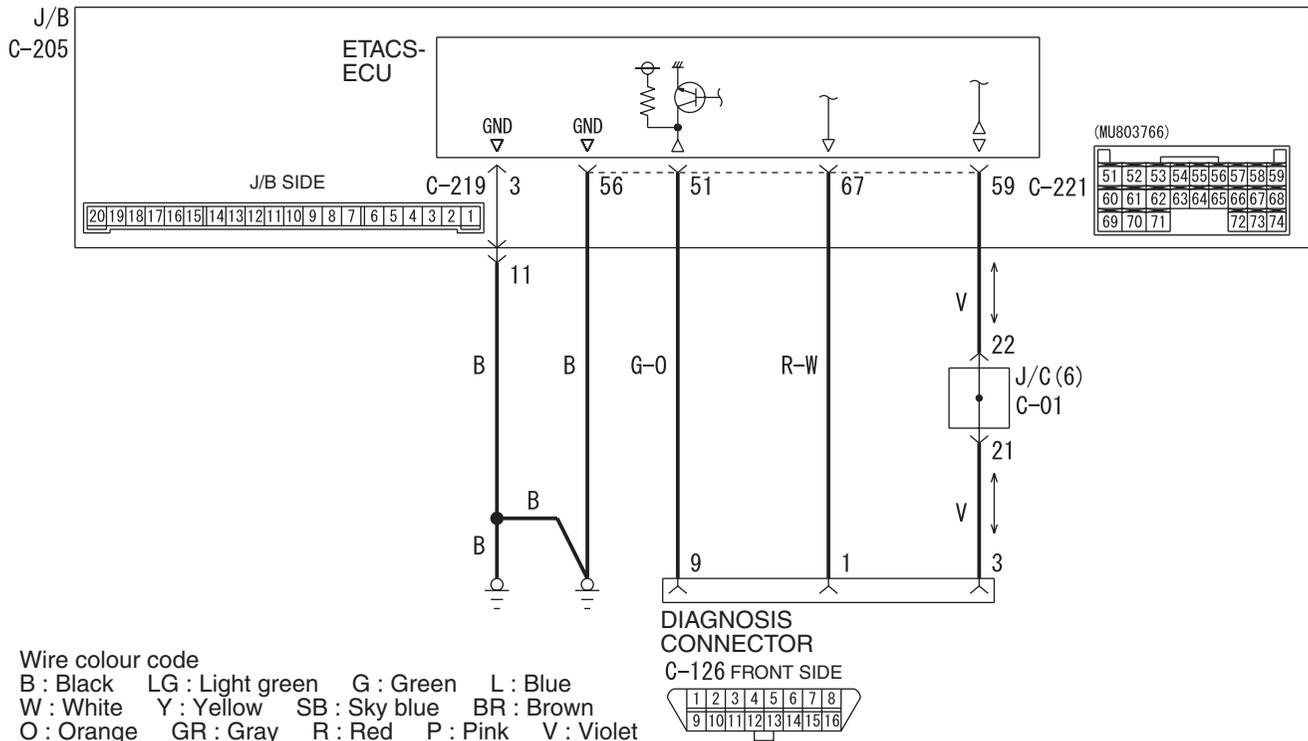
**CAUTION**

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>



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



W4X54E117A

**COMMENTS ON TROUBLE SYMPTOM**

It is suspected that the power supply circuit to the ETACS-ECU is defective, or the wiring harness between the diagnosis connector and the ETACS-ECU or their connector(s) is damaged.

*NOTE: If the wiring harness between the ETACS-ECU and body earth is defective, also check C-219 ETACS-ECU connector terminal No.3, and repair if necessary.*

**POSSIBLE CAUSES**

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

**DIAGNOSTIC PROCEDURE**

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

Use the MUT-III to confirm that it communicates with the engine-ECU.

**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.**

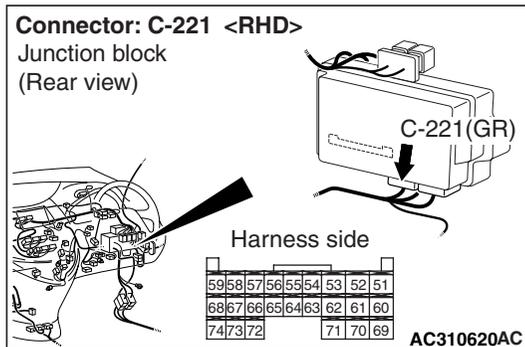
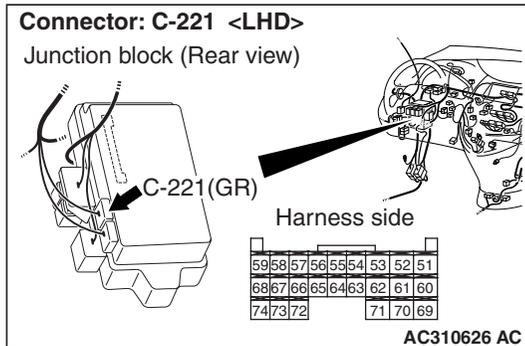
When the ignition switch is turned ON, check if the MUT-III can communicate with the system.

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

**YES :** Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit" **P.54B-87**.

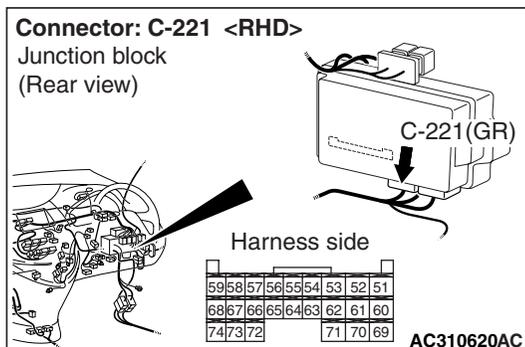
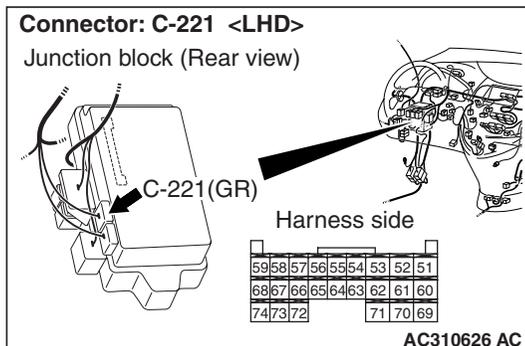
**NO :** Go to Step 3.

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



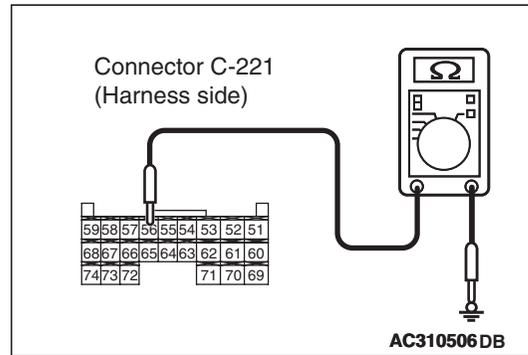
**Q: Is the check result normal?**  
**YES :** Go to Step 4.  
**NO :** Repair the defective connector.

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



(1) Disconnect the connector, and measure at the

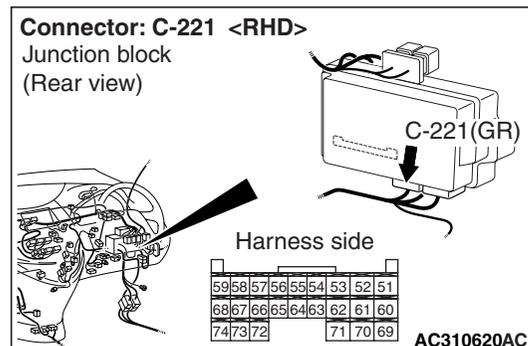
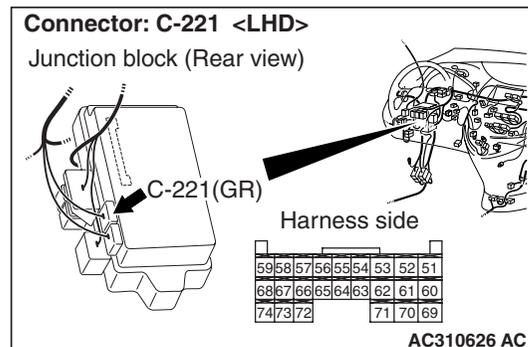
junction block side.



(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.

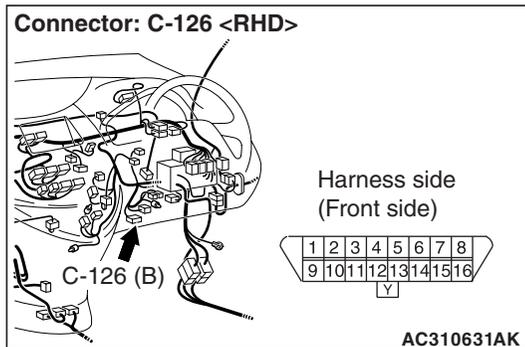
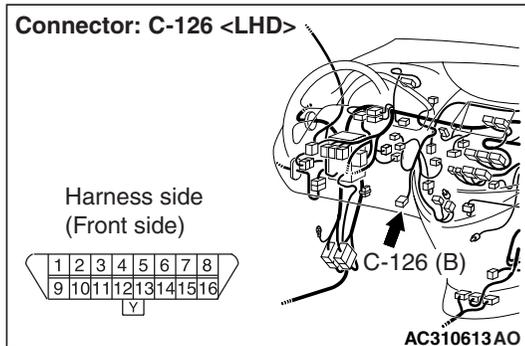
**Step 5. Check the wiring harness between C-221 ETACS-ECU connector terminal No.56 and body earth.**



- Check the earth wires for open circuit.

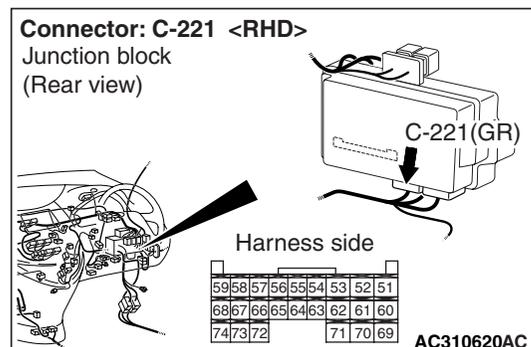
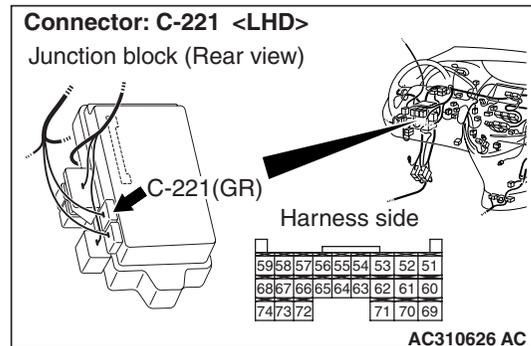
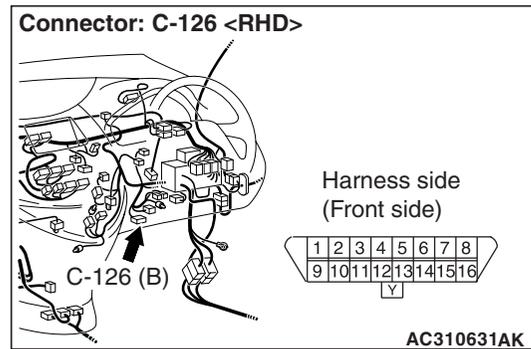
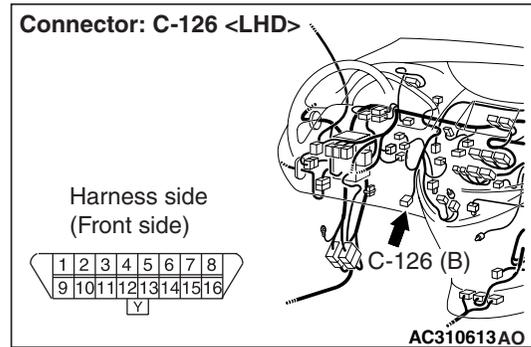
**Q: Is the check result normal?**  
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO :** Repair the wiring harness.

**Step 6. Connector check: C-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: Is the check result normal?**  
**YES :** Go to Step 8.  
**NO :** Repair the wiring harness.

**Step 8. Retest the system.**

Check whether the communication with the MUT-III is possible.

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

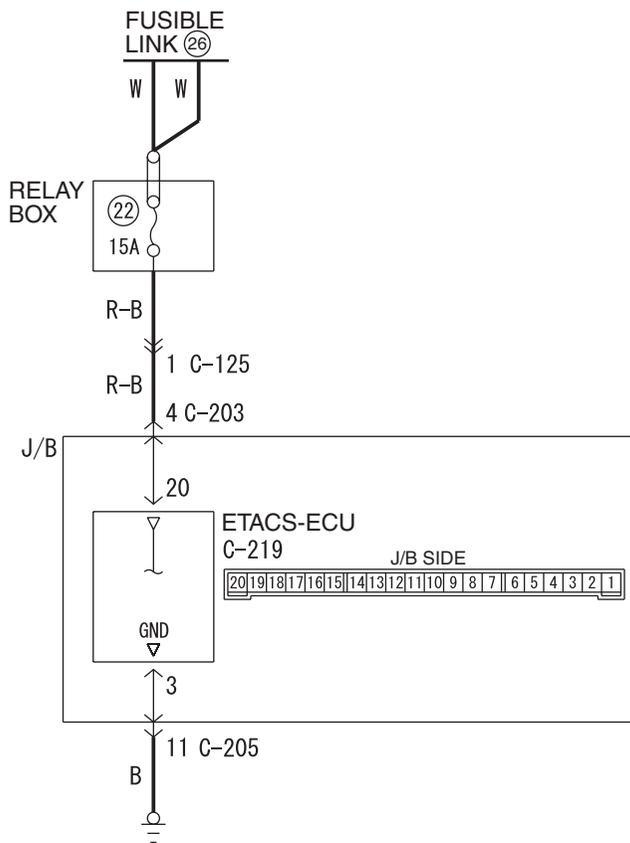
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO :** Replace the ETACS-ECU.

**Inspection Procedure A-2: When the ignition switch is at the LOCK (OFF) position, the functions do not work normally. Check the battery power supply circuit to the ETACS-ECU.**

**CAUTION**

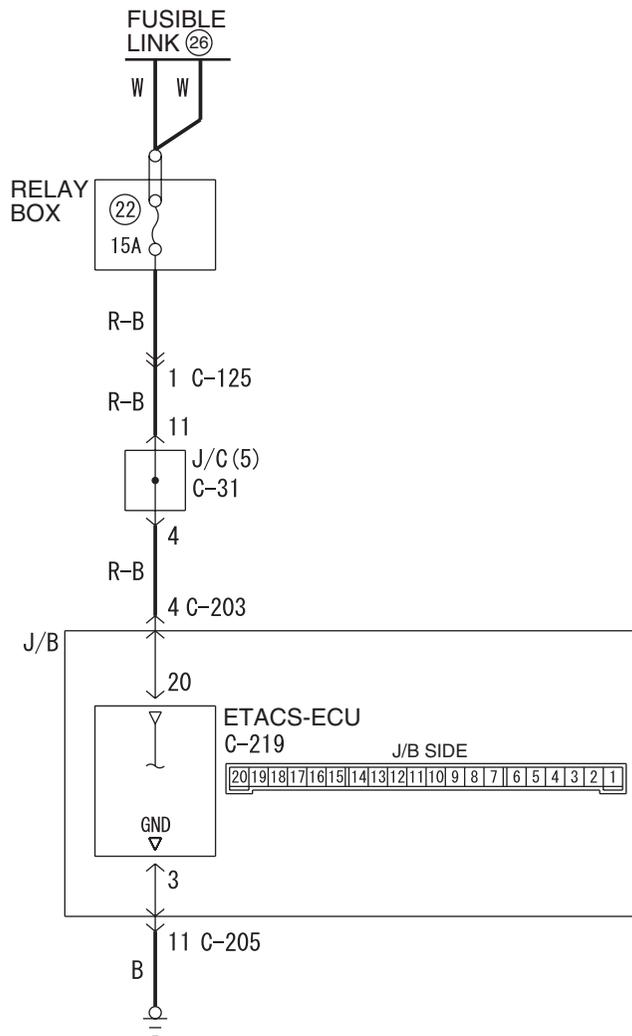
Whenever the ECU is replaced, ensure that the power supply circuit and the earthing circuit are normal.

ETACS-ECS Power Supply 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

## ETACS-ECS Power Supply Circuit &lt;RHD&gt;



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

W4X54E189A

**COMMENTS ON TROUBLE SYMPTOM**

If this circuit is defective and the ignition switch is at the LOCK (OFF) position, the ETACS-ECU does not work. In this case, the functions below will be suspended.

- Lamp reminder function
- Keyless entry system
- Ignition key cylinder illumination lamp
- Headlamp automatic-shutdown function

However, when the ignition switch is at the ON position, the functions below will work.

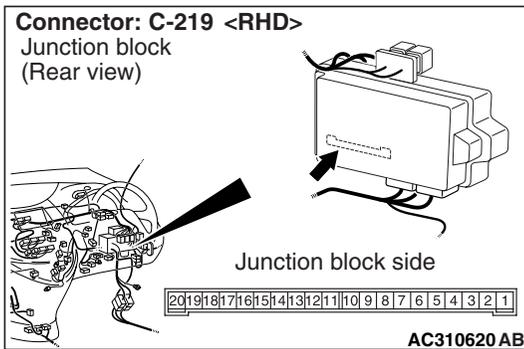
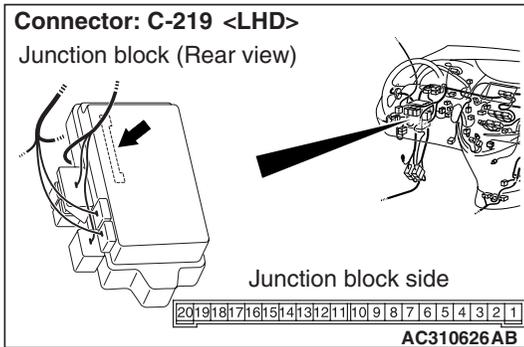
- Reading diagnosis code and checking input signal by MUT-III.
- Central door locking
- Headlamp and tail lamp
- Hazard warning lamp
- Interior lamps

**POSSIBLE CAUSES**

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

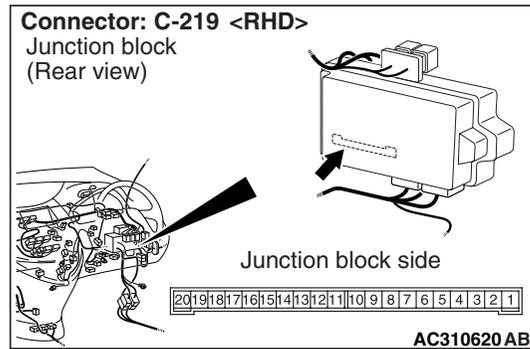
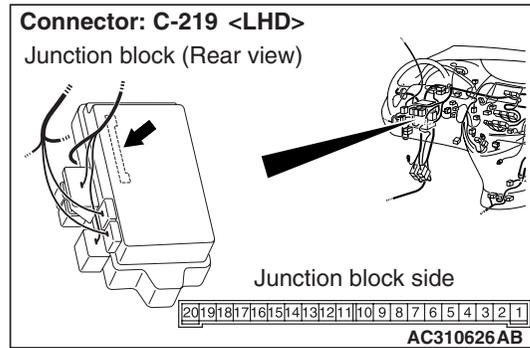
**DIAGNOSTIC PROCEDURE**

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

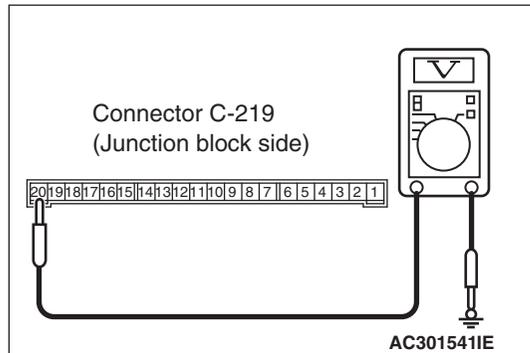


**Q: Is the check result normal?**  
**YES :** Go to Step 2.  
**NO :** Repair the defective connector.

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



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

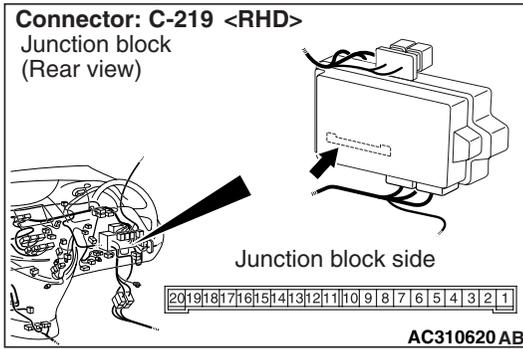
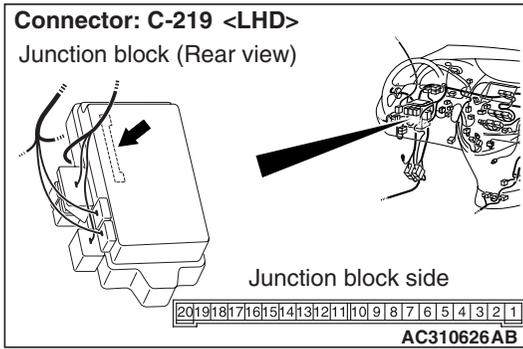


(2) Voltage between C-219 ETACS-ECU connector terminal No.20 and body earth.

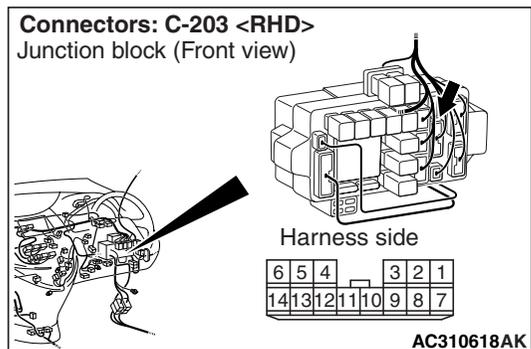
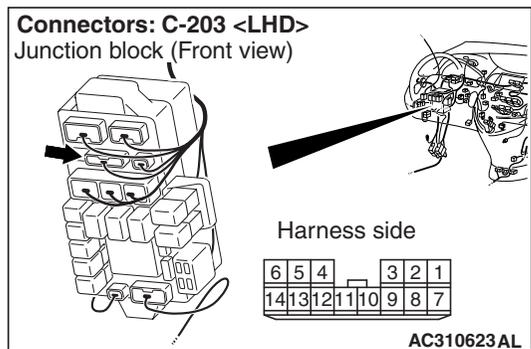
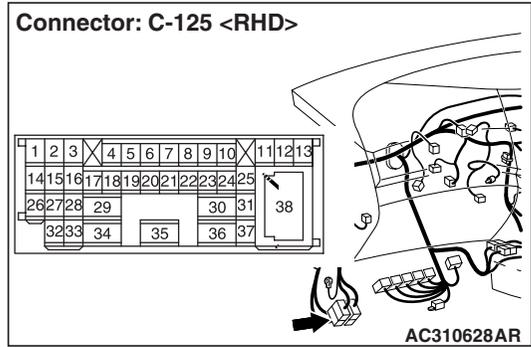
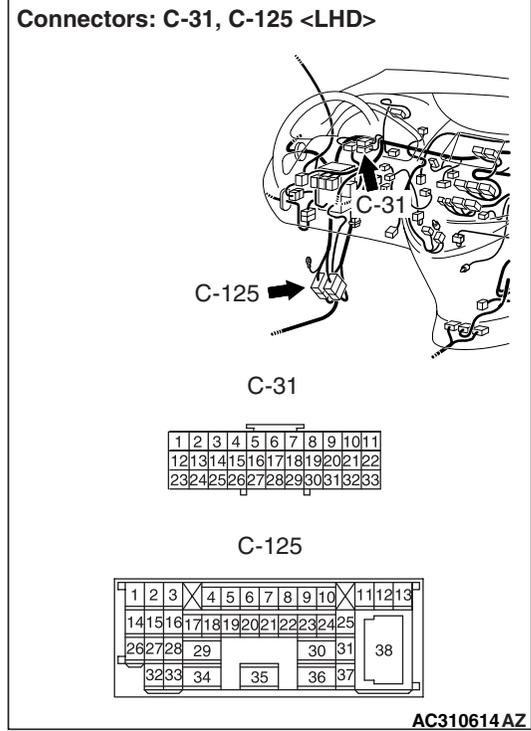
**OK: System voltage**

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

- Check the power supply line for open circuit.

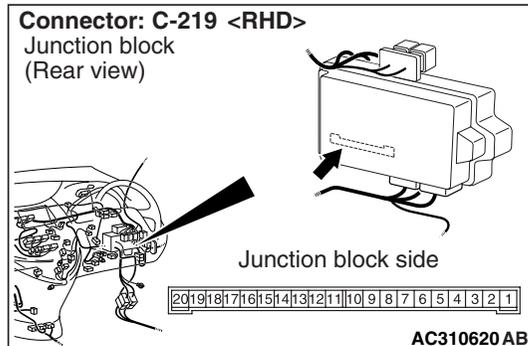
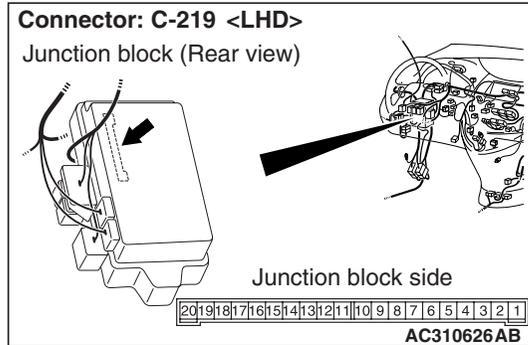
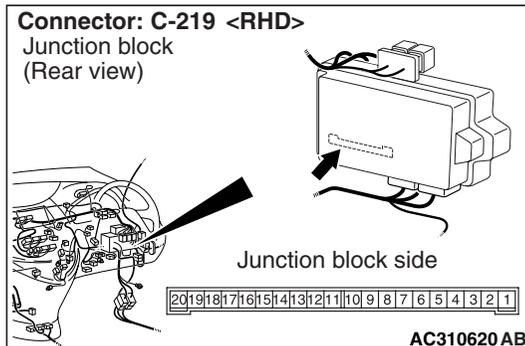
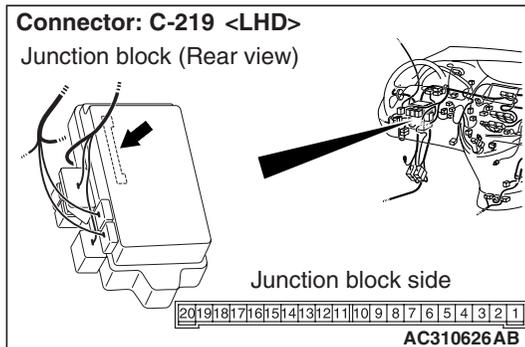
**Q: Is the check result normal?**

**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.

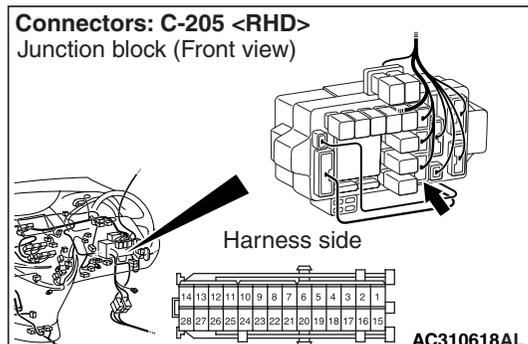
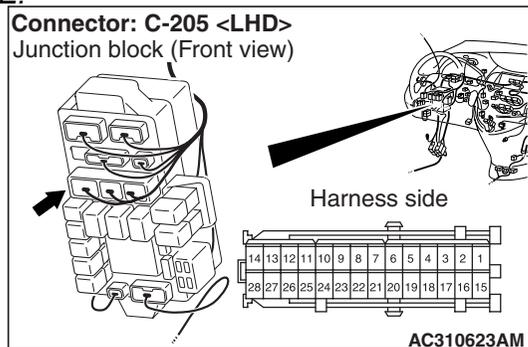
**YES :** Go to Step 6.

**NO :** Go to Step 5.

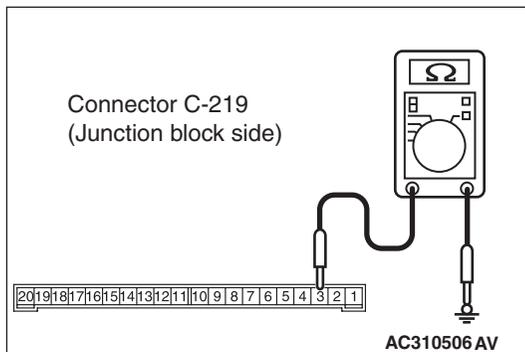
**Step 4. Resistance measurement at the C-219 ETACS-ECU connector.**



**NOTE:**



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



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

**OK: 2 Ω or less**

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

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.

**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.

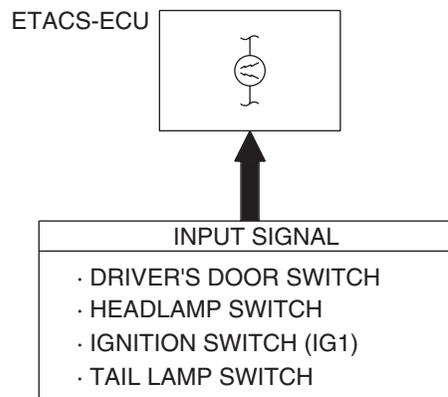
**Step 6. Retest the system.**

Check that the battery power supply circuit to the ETACS-ECU is normal.

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

**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
- Headlamp 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

**DIAGNOSTIC PROCEDURE****Step 1. Check the power supply circuit.**

When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

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

**YES** : Go to Step 2.

**NO** : Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit [P.54B-87](#)."

**Step 2. Pulse check**

Check the input signals below, which are related to the lamp reminder buzzer function.

| <b>System switch</b>  | <b>Check condition</b>                                      |
|-----------------------|---|
| Ignition switch (IG1) | When turned from ACC to ON                                  |
| Driver's door switch  | When the driver's door is opened                            |
| Tail lamp switch      | When the lighting switch is turned to the TAIL position     |
| Headlamp switch       | When the lighting switch is turned to the HEADLAMP position |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally.** : Go to Step 3.

**The ignition switch (IG1) signal is not received.** : Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received [P.54B-420](#)."

**The driver's door switch signal is not received.** : Refer to inspection procedure Q-5 "The driver's door switch signal is not received [P.54B-434](#) <LH drive vehicles> or [P.54B-436](#) <RH drive vehicles>."

**The tail lamp switch signal is not received.** : Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp and headlamp washer switch) signal is not received [P.54B-438](#)."

**The headlamp switch signal is not received.** : Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp and headlamp washer switch) signal is not received [P.54B-438](#)."

**Step 3. Retest the system.**

The lamp reminder buzzer function should work normally.

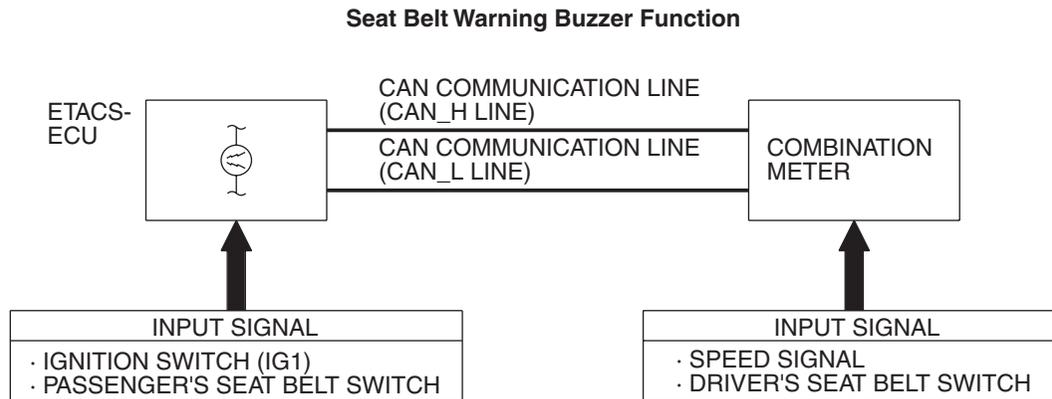
**Q: Is the check result normal?**

**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.



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. MUT-III diagnosis code**

When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

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

**YES** : Refer to diagnosis code chart [P.54B-29](#).

**NO** : Go to Step 2.

**Step 2. Check the seat belt switch, where the seat belt warning buzzer does not function normally.**

**Q: Which seat belt switch does not activate the seat belt warning buzzer?**

**Driver's seat belt** : Go to Step 3

**Passenger's seat belt** : Go to Step 4.

**Step 3. Pulse check**

Check the input signals, which are related to the seat belt warning buzzer function.

- Ignition switch: ON
- Driver's seat belt switch: ON

| System switch             | Check condition            |
|---------------------------|----------------------------|
| Ignition switch (IG1)     | When turned from ACC to ON |
| Driver's seat belt switch | ON                         |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally.** : Go to Step 5.

**The ignition switch (IG1) signal is not received.** : Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received [P.54B-420](#)."

**Driver's seat belt switch signal is not received** : Refer to inspection procedure Q-19 "The driver's seat belt switch signal is not received [P.54B-498](#) <LH drive vehicles> or [P.54B-501](#) <RH drive vehicles>."

**Step 4. Pulse check**

Check the input signals, which are related to the seat belt warning buzzer function.

- Ignition switch: ON
- Passenger's seat belt switch and seat occupancy sensor: ON

| System switch  | Check condition            |
|--|----------------------------|
| Ignition switch (IG1)                                  | When turned from ACC to ON |
| Passenger's seat belt switch and seat occupancy sensor | ON                         |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally. :** Go to Step 5.

**The ignition switch (IG1) signal is not received. :**  
Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received [P.54B-420](#)."

**Passenger's seat belt switch signal is not received :**  
Refer to inspection procedure Q-20 "The front passenger's seat belt switch signal is not received [P.54B-504](#) <LH drive vehicles> or [P.54B-507](#) <RH drive vehicles>."

**Step 5. Pulse check**

Check the input signals below which are related to the seat belt warning buzzer function.

| System switch        | Check condition                                     |
|----------------------|---|
| Vehicle speed signal | When the vehicle speed has reached 10 km/h or more. |

**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-25 "The vehicle speed signal is not received [P.54B-529](#)."

**Step 6. Retest the system.**

Check that the seat belt warning buzzer function work normally.

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

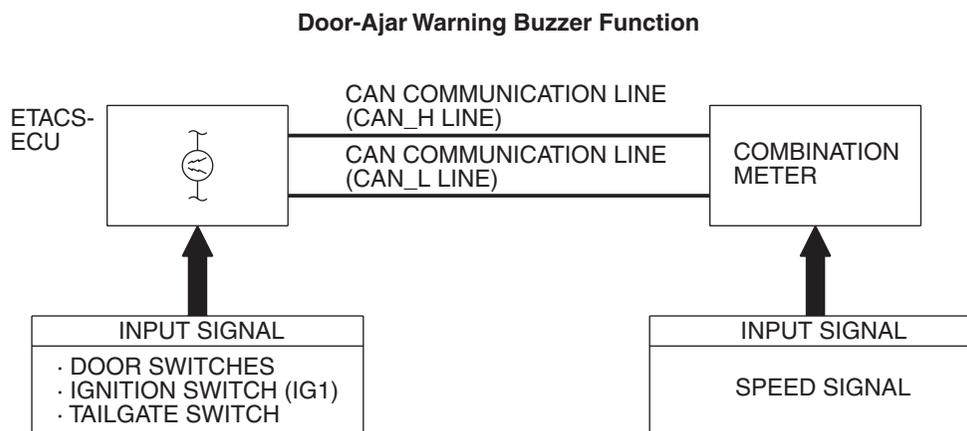
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

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

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

**CAUTION**

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



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. Check the power supply circuit.

When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

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

**YES** : Go to Step 2.

**NO** : Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit [P.54B-87](#)."

#### Step 2. Pulse check

Check the input signals below, which are related to the door-ajar warning buzzer function.

| System switch           | Check conditions   |
|-------------------------|--|
| Ignition switch (IG1)   | When turned from ACC to ON   |
| Driver's door switch    | Driver's door is opened while all the other doors are closed.      |
| Passenger's door switch | Passenger's door is opened while all the other doors are closed.   |
| Rear door (RH) switch   | Rear door (RH) is opened while all the other doors are closed      |
| Rear door (LH) switch   | Rear door (LH) door is opened while all the other doors are closed |
| Tailgate switch         | TAilgate is opened while all the other doors are closed            |
| Vehicle speed signal    | When the vehicle speed has reached 10 km/h or more                 |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally.** : Go to Step 3.

**The ignition switch (IG1) signal is not received.** :  
Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received" [P.54B-420](#).

**All the door switch signals are not received.** :  
Refer to inspection procedure Q-14 "All the door switch signals are not received" [P.54C-505](#).

**The vehicle speed signal is not received.** : Refer to inspection procedure Q-25 "The vehicle speed signal is not received" [P.54B-529](#).

**Step 3. Customize function by using the SWS monitor.**

Use the SWS monitor customize function to confirm that "DOOR WARN BUZ" is set to "W.FUNCTION".

**CAUTION**

The SWS monitor must be used in order to confirm and change that setting. Use the SWS monitor to confirm and/or change the customized function.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Use the SWS monitor customize function to set "DOOR WARN BUZ" to "W.FUNCTION" (Refer to GROUP 54C – Customize function P.54C-574).

**Step 4. 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).

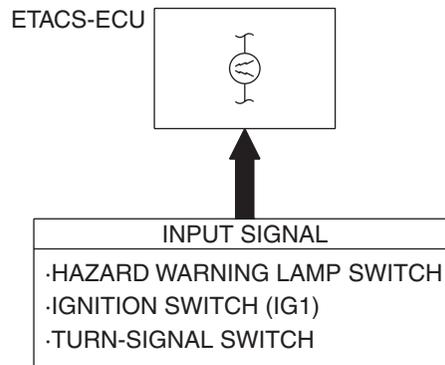
NO : Replace the ETACS-ECU.

**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.

- Ignition switch (IG1)
- 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 hazard warning lamp 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.54B-74](#)).

**Step 2. Pulse check**

Check the input signals below, which are related to the turn-signal lamp operation sound function.

| System switch                | Check conditions   |
|------------------------------|--|
| Ignition switch (IG1)        | When turned from ACC to ON                                     |
| Turn-signal lamp switch (RH) | When the turn-signal lamp switch (RH) is turned from off to on |
| Turn-signal lamp switch (LH) | When the turn-signal lamp switch (LH) is turned from off to on |
| Hazard warning lamp switch   | When the hazard warning lamp switch is turned from off to on   |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally. :** Go to Step 3.

**The ignition switch (IG1) signal is not received. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received" [P.54B-420](#).

**The turn-signal lamp switch (RH) signal is not received. :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp and headlamp washer switch) signal is not received" [P.54B-438](#).

**The turn-signal lamp switch (LH) signal is not received. :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp and headlamp washer switch) signal is not received" [P.54B-438](#).

**The hazard warning lamp switch signal is not received. :** Refer to inspection procedure Q-12 "The hazard warning lamp switch signal is not received" [P.54B-461](#).

**Step 3. Customize function by using the SWS monitor.**

Use the SWS monitor customize function to confirm that "T/SIG.BUZZER" is set to "W.FUNCTION".

**⚠ CAUTION**

**The SWS monitor must be used in order to confirm and change that setting. Use the SWS monitor to confirm and/or change the customized function.**

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

**YES :** Go to Step 4.

**NO :** Use the SWS monitor customize function to set "T/SIG.BUZZER" to "W.FUNCTION" (Refer to GROUP 54C – Customize function [P.54C-574](#)).

**Step 4. 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.

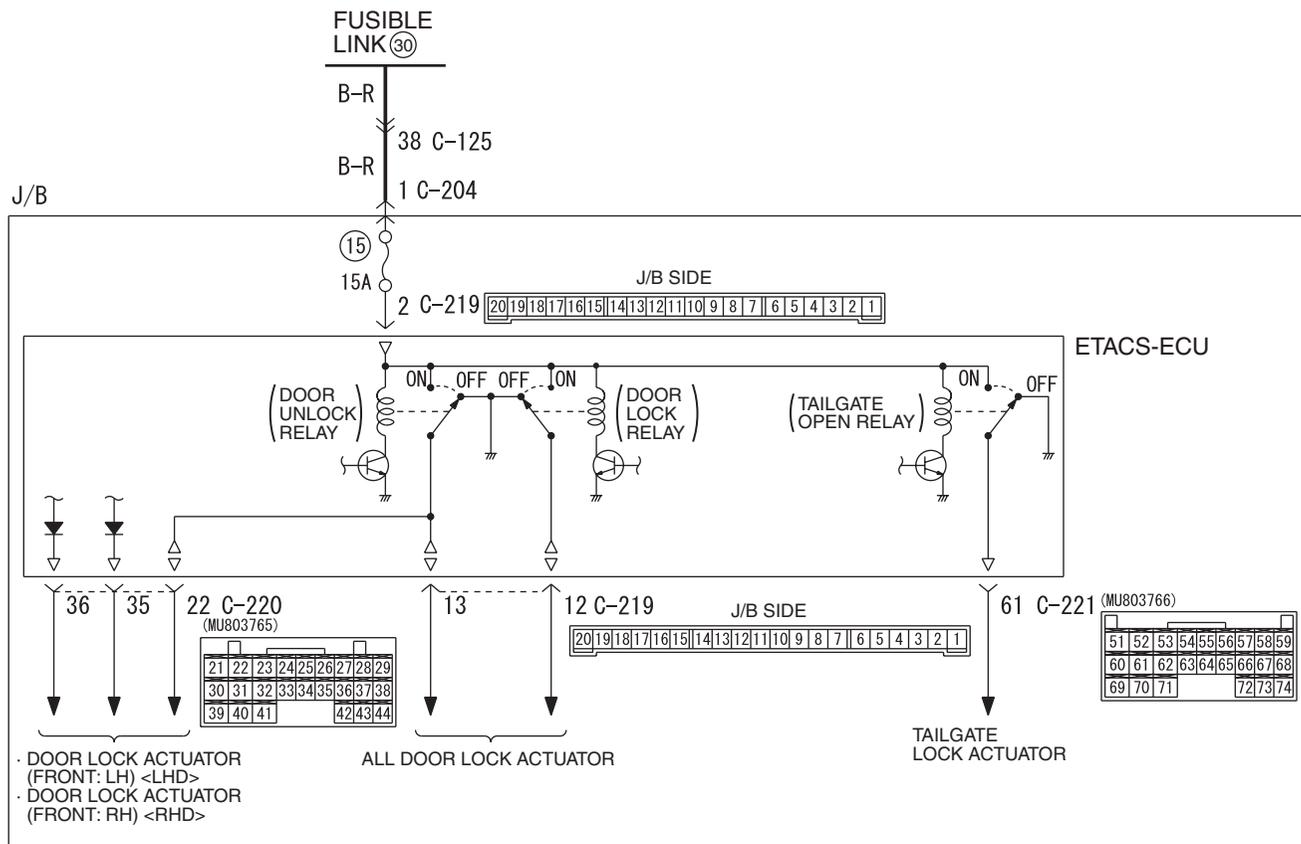
## CENTRAL DOOR LOCKING SYSTEM

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-2 "The central door locking system does not function by using the driver's door key cylinder or inside lock knob [P.54C-109](#)."

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### Step 2. Check the power supply circuit.

When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

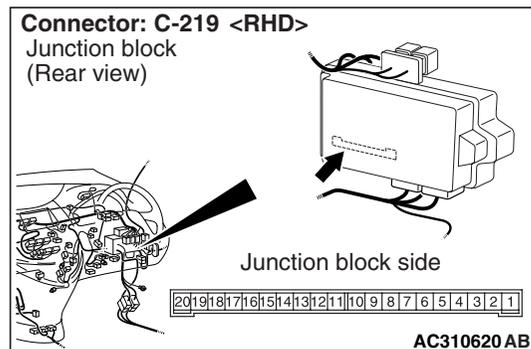
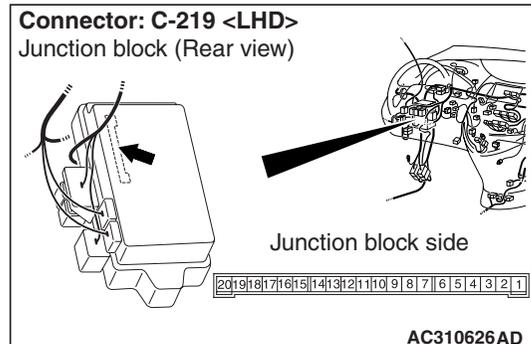
**Q: Is the check result normal?**

**YES :** Go to Step 3.

**NO :** Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit" [P.54B-87](#).

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

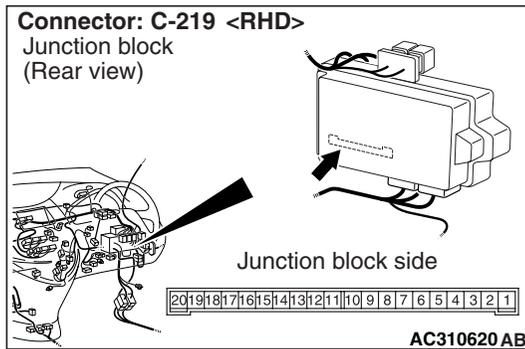
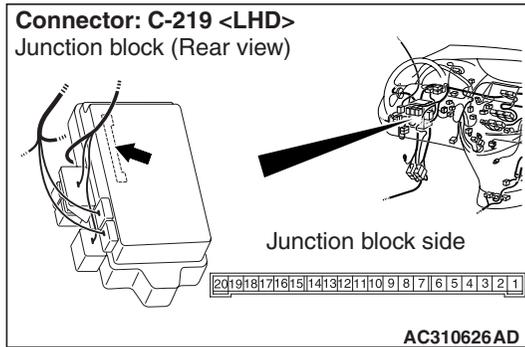


**Q: Is the check result normal?**

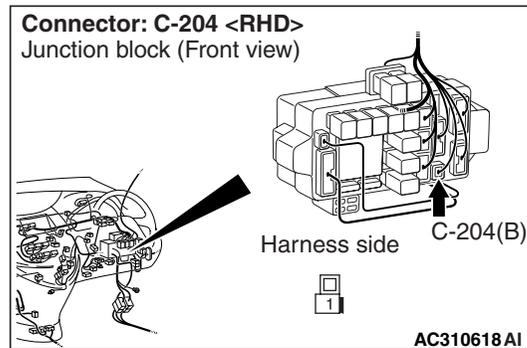
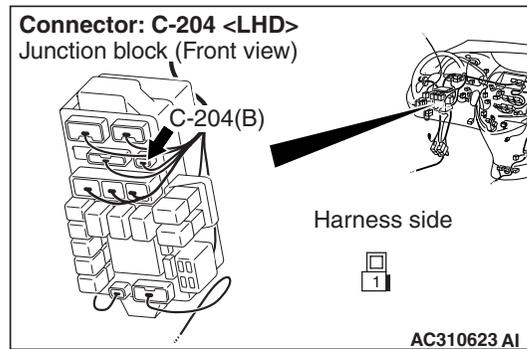
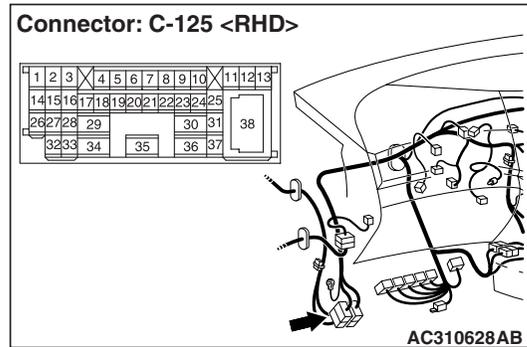
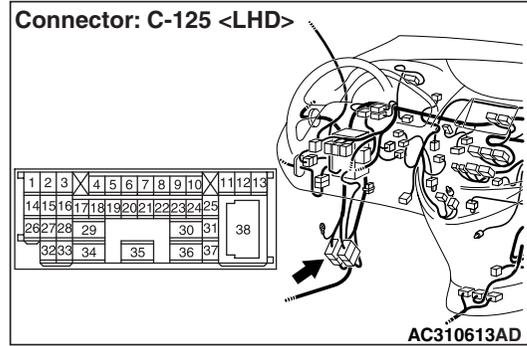
**YES :** Go to Step 4.

**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?**

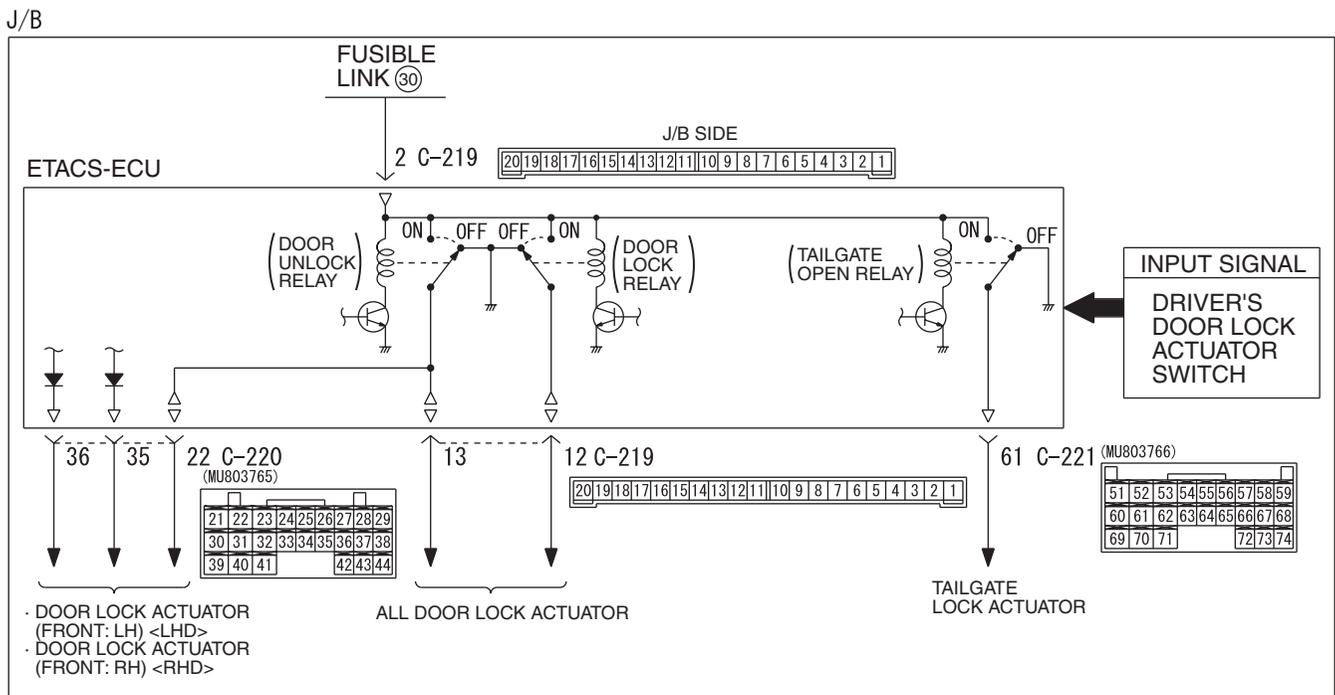
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO :** Replace the ETACS-ECU.

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

**DIAGNOSIS PROCEDURE**

**Step 1. Pulse check**

Check the input signal, which is related to the driver's door lock operation.

| System switch                      | Check condition  |
|------------------------------------|--|
| Driver's door lock actuator switch | When the driver's key cylinder or inside lock knob is unlocked or locked |

**OK: The MUT-III sound or the voltmeter needle fluctuate.**

**Q: Is 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.54B-478 or <RH drive vehicles>P.54B-481 ."

**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).

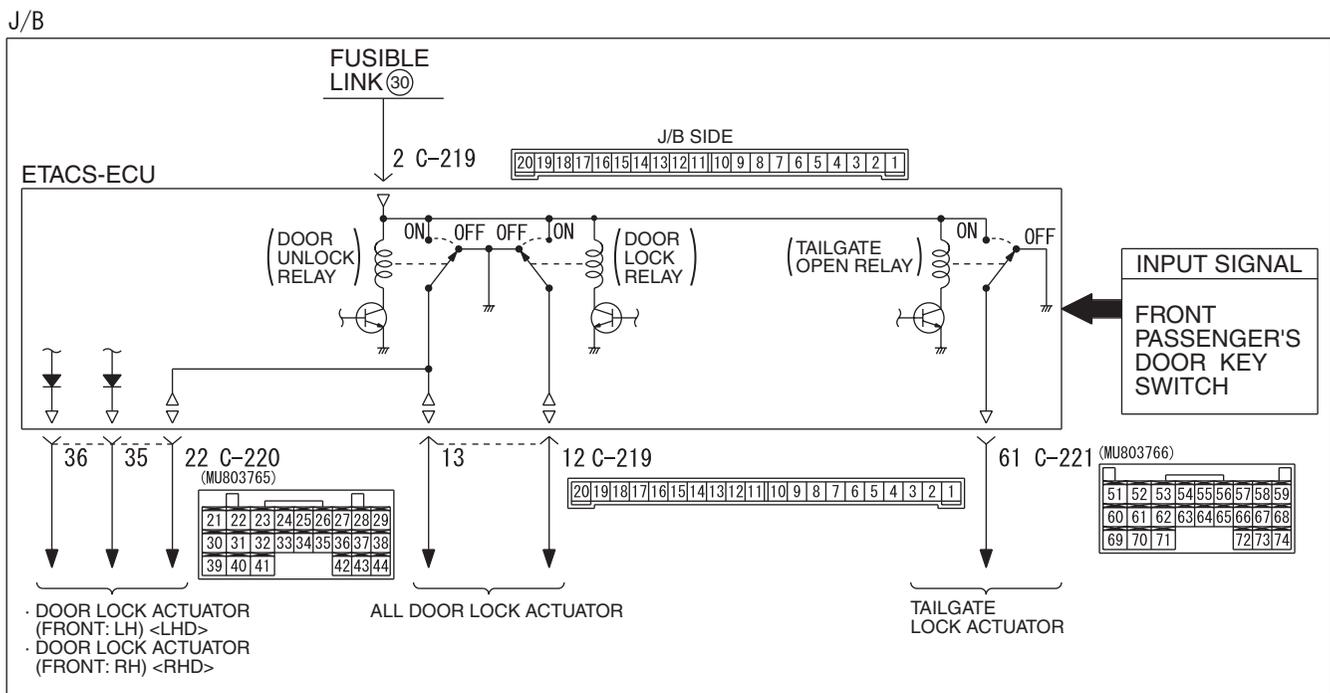
**NO :** Replace the ETACS-ECU.

**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

**YES** : Go to Step 2.

**NO** : Refer to inspection procedure Q-15 "The front passenger's door lock actuator signal is not received <LH drive vehicles>[P.54B-478](#) or <RH drive vehicles>[P.54B-481](#)."

**DIAGNOSIS PROCEDURE****Step 1. Pulse check**

Check the input signal, which is related to the front passenger's door key cylinder operation.

| System switch                       | Check condition   |
|-------------------------------------|---|
| Front passenger's door key cylinder | When the front passenger's key cylinder is unlocked or locked |

**OK: The MUT-III sound or the voltmeter needle fluctuate.**

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

**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](#)).

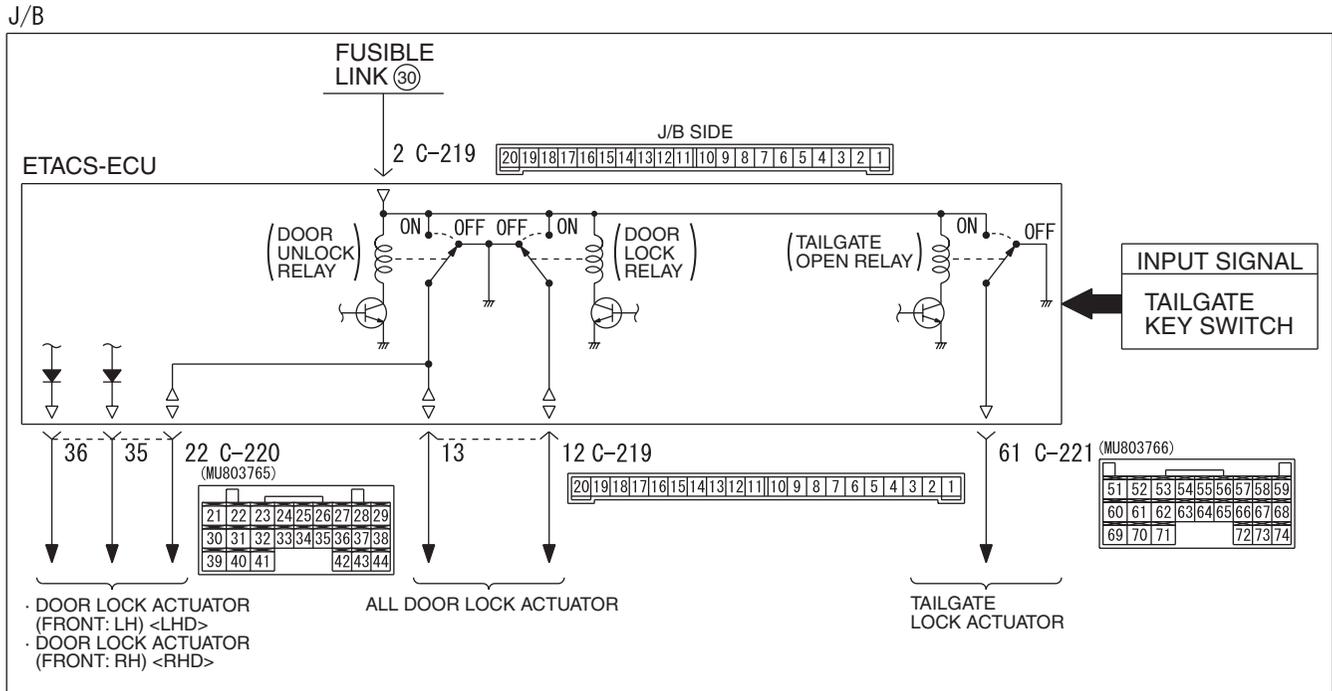
**NO** : Replace the ETACS-ECU.

**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. Pulse check**

Check the input signal, which is related to the tailgate key cylinder operation.

| System switch         | Check condition   |
|-----------------------|---|
| Tailgate key cylinder | When the front tail gate key cylinder is unlocked or locked |

**OK: The MUT-III sound or the voltmeter needle fluctuate.**

**Q: Is 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.54B-478 or <RH drive vehicles>P.54B-481."

**Step 2. Retest the system.**

Check that the central door locking system works normally by the tailgate key cylinder operation.

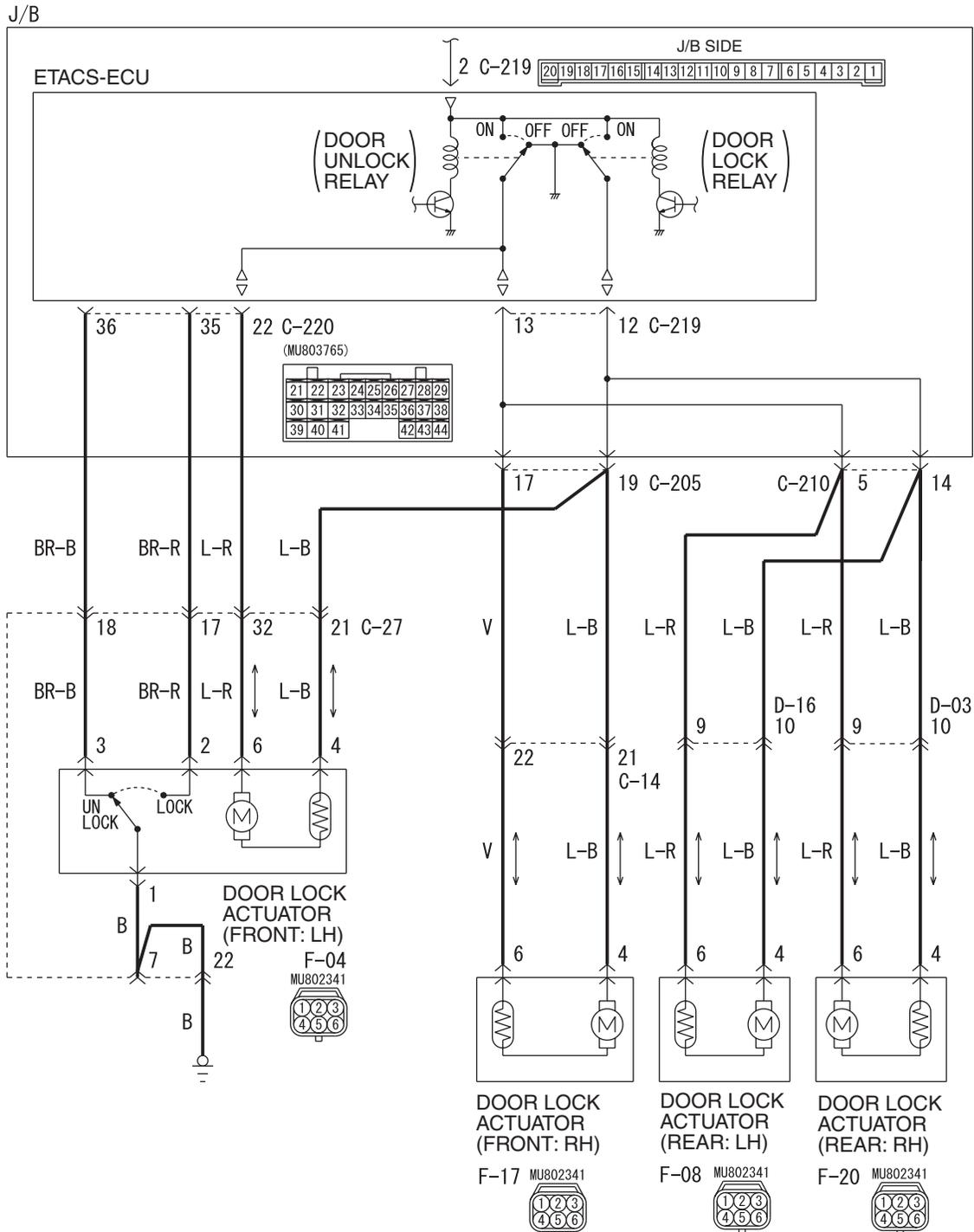
**Q: Is the check result normal?**

**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

**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

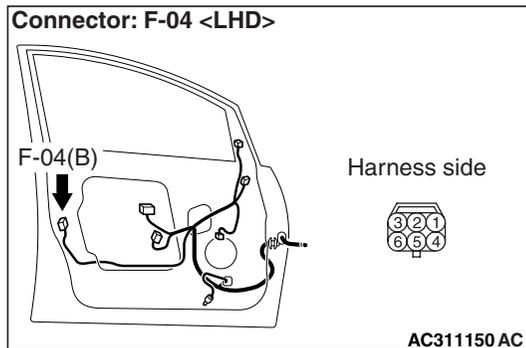
**DIAGNOSIS PROCEDURE**

**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) 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: LH)**

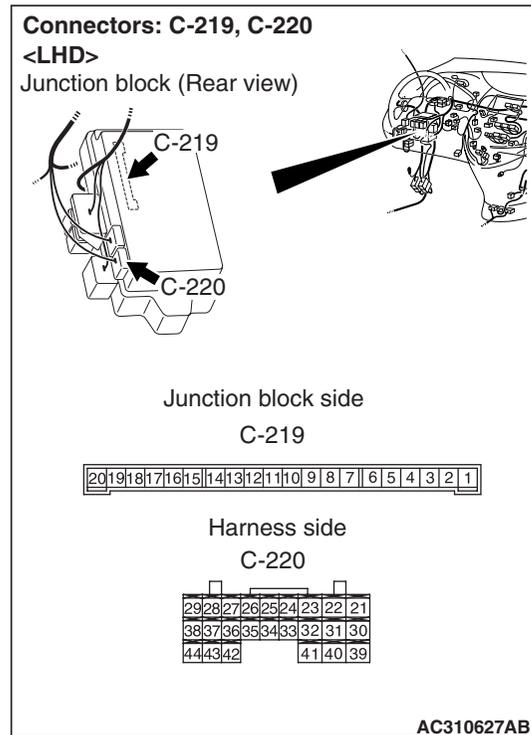
Check that the door lock actuator (front: LH) works normally. Refer to GROUP 42 – Door P.42-38.

**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**

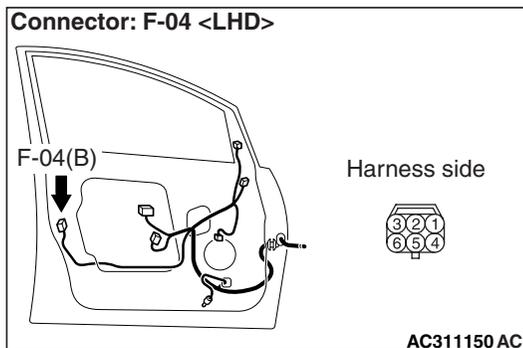
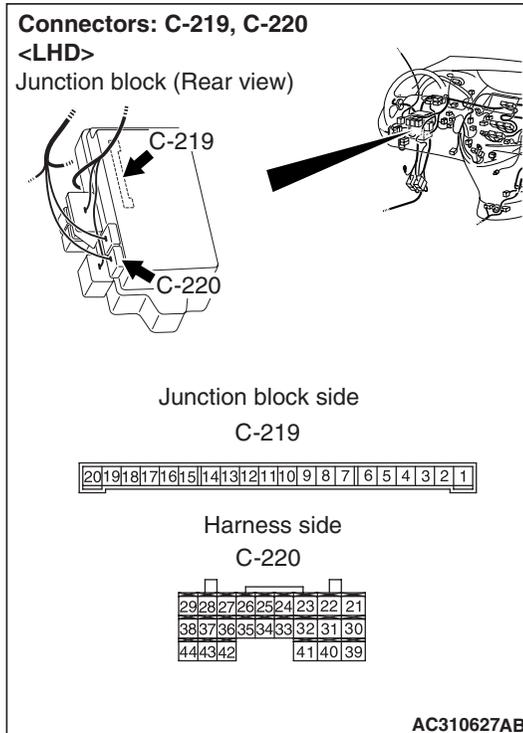


**Q: Is the check result normal?**

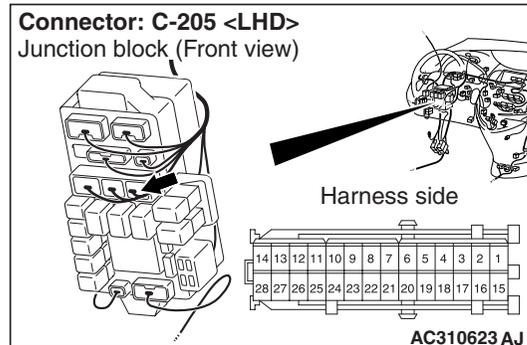
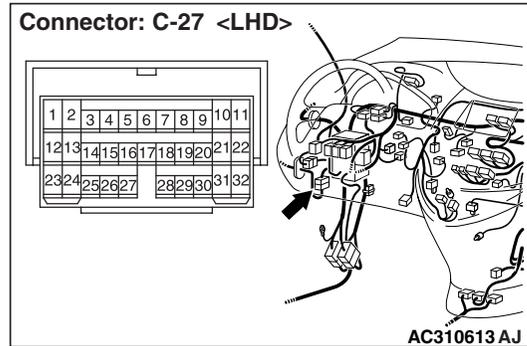
**YES :** Go to Step 5.

**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) 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.*

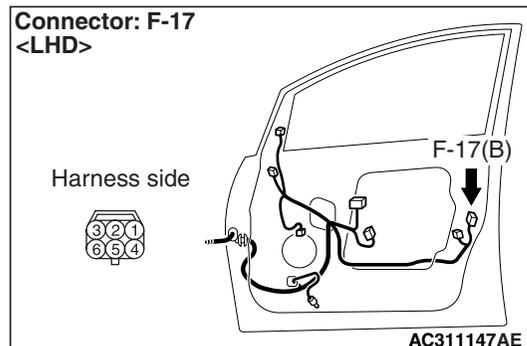
- Check the input and output lines for open circuit.

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



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

**YES :** Go to Step 7.

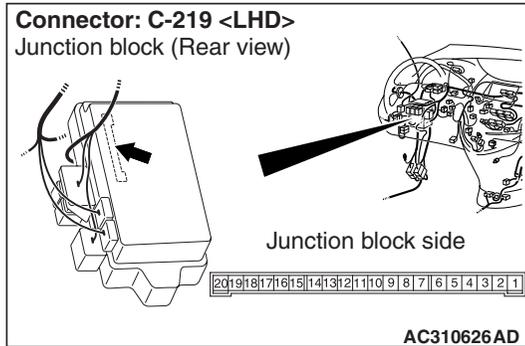
**NO :** Repair the defective connector.

**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?**

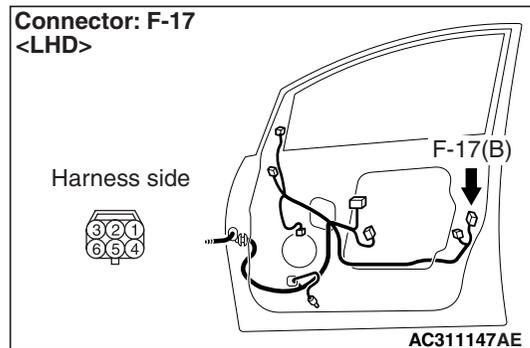
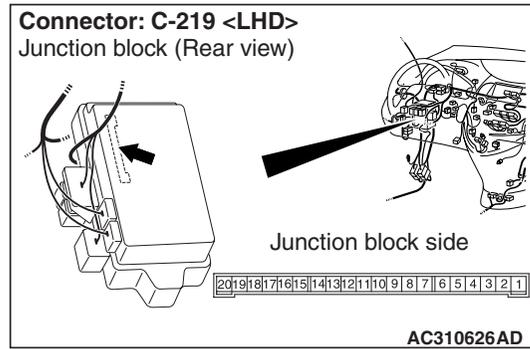
YES : Go to Step 8.  
NO : Replace the door lock actuator (front: RH).

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

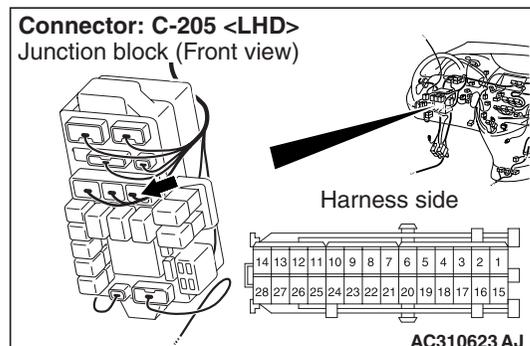
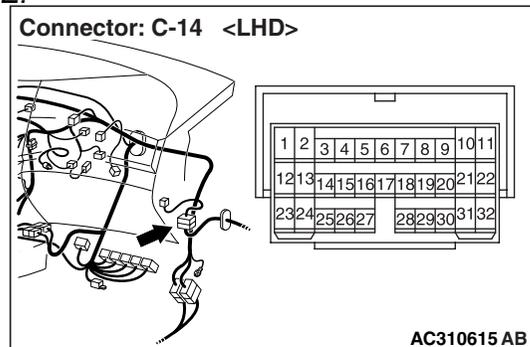


**Q: Is the check result normal?**  
YES : Go to Step 9.  
NO : Repair the defective connector.

**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.**



**NOTE:**



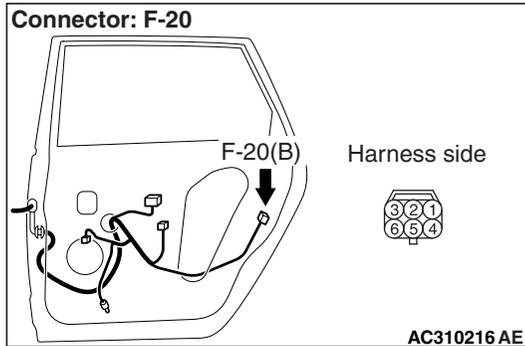
*Prior to the wiring harness inspection, check intermediate connector C-14 and junction block connector C-205, and repair if necessary.*

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

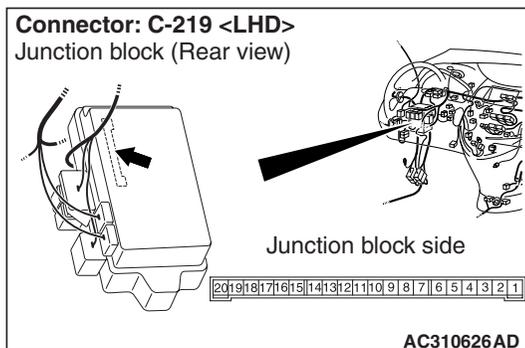


**Q: Is the check result normal?**  
**YES :** Go to Step 11.  
**NO :** Repair the defective connector.

**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.

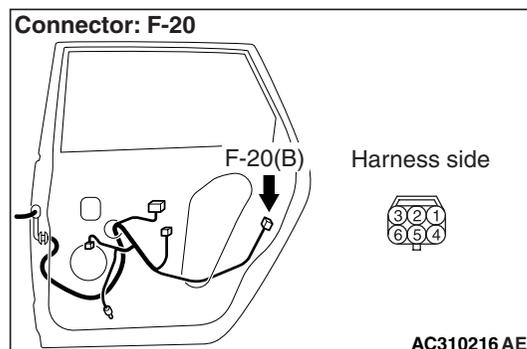
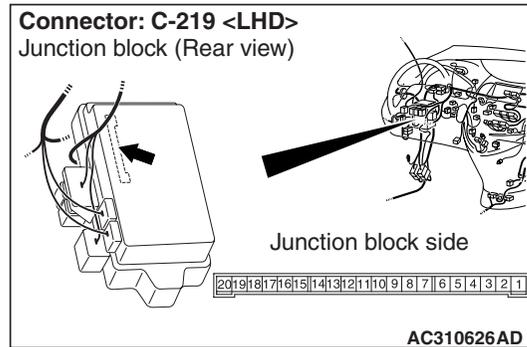
**Q: Is the check result normal?**  
**YES :** Go to Step 12.  
**NO :** Replace the door lock actuator (rear: RH).

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

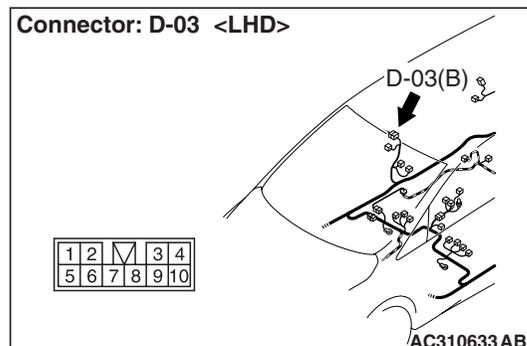
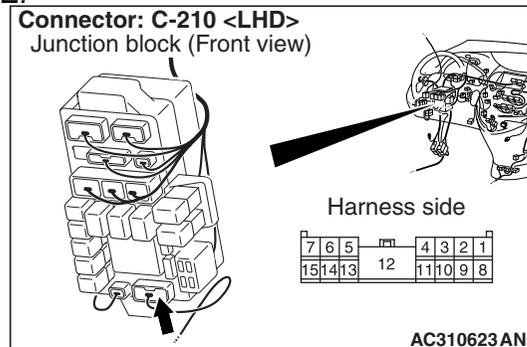


**Q: Is the check result normal?**  
**YES :** Go to Step 13.  
**NO :** Repair the defective connector.

**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:**



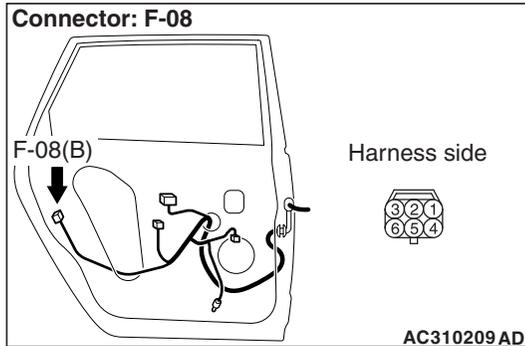
Prior to the wiring harness inspection, check D-03 intermediate connectors and C-210 junction block connector, and repair if necessary.

- 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.

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

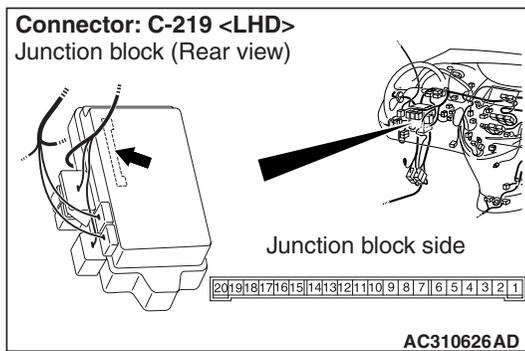


**Q: Is the check result normal?**  
**YES :** Go to Step 15.  
**NO :** Repair the defective connector.

**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.

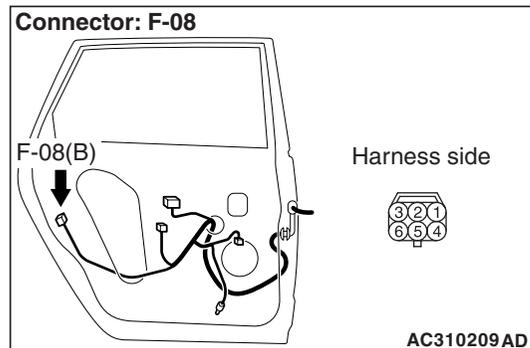
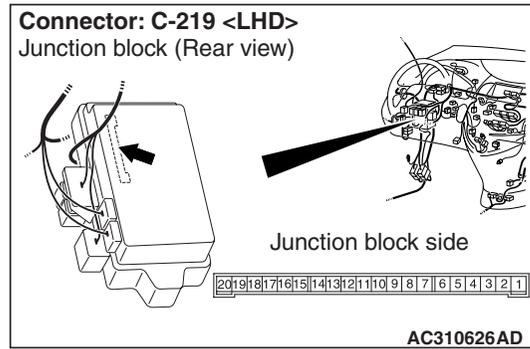
**Q: Is the check result normal?**  
**YES :** Go to Step 16.  
**NO :** Replace the door lock actuator (rear: LH).

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

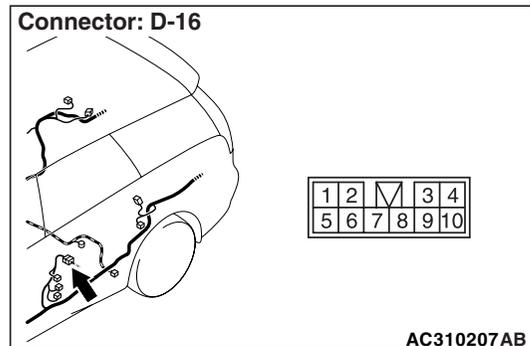
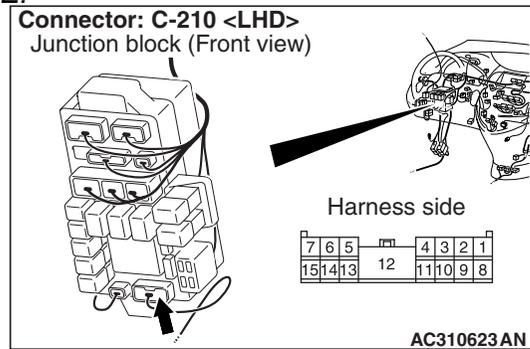


**Q: Is the check result normal?**  
**YES :** Go to Step 17.  
**NO :** Repair the defective connector.

**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.

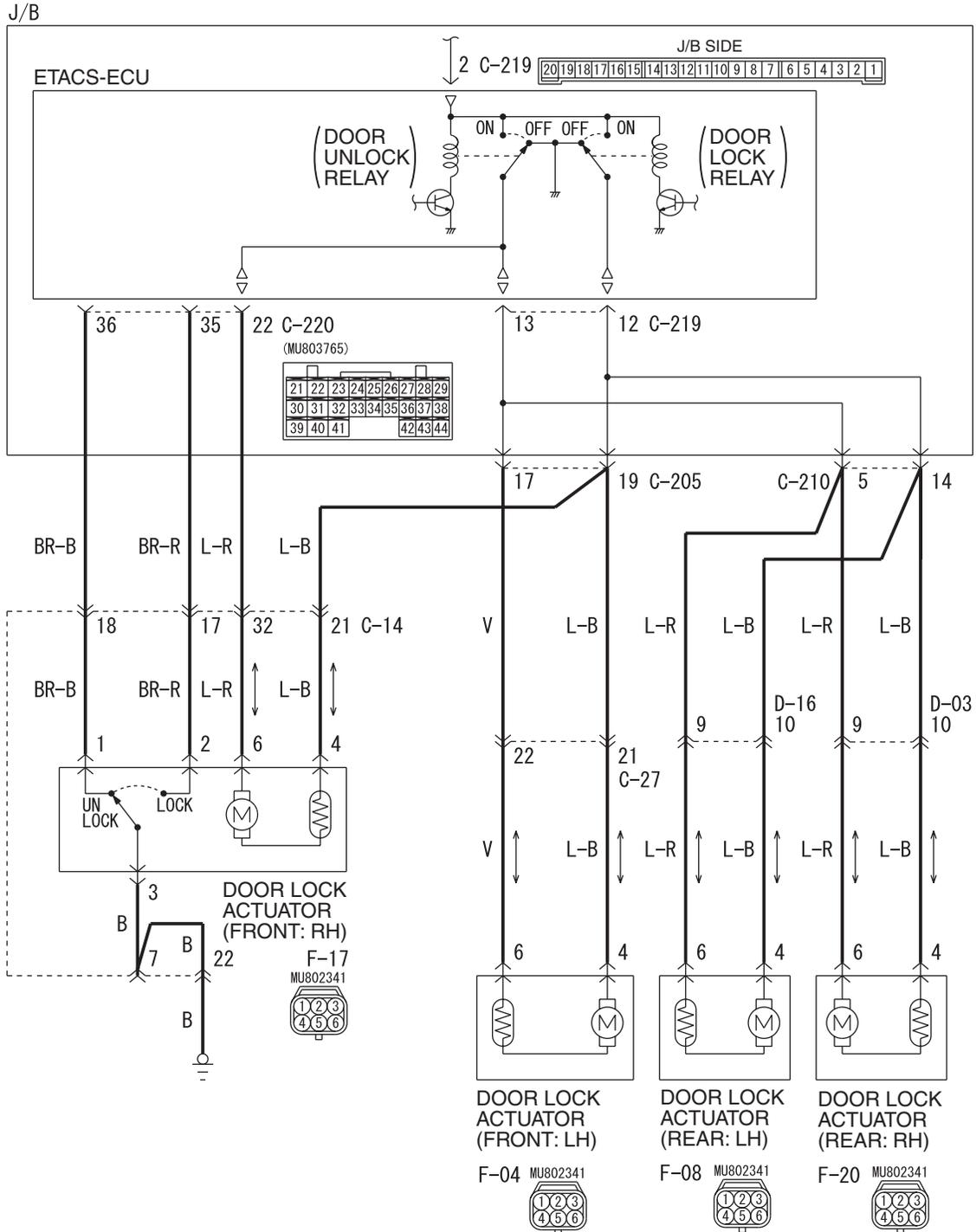
- Check the input and output lines for open circuit.

**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

## 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?**

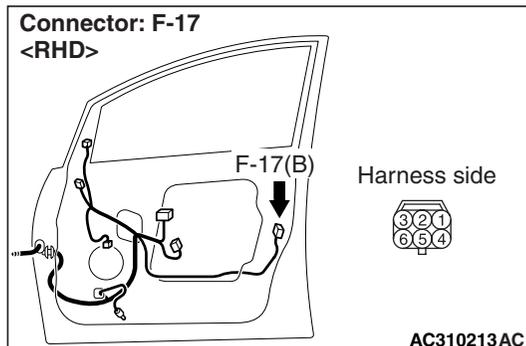
**Driver's door :** Go to Step 2.

**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)**

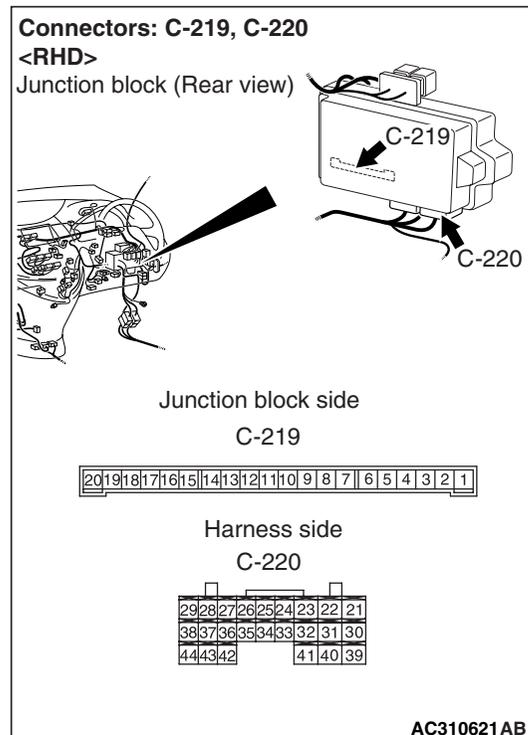
Check that the door lock actuator (front: RH) works normally. Refer to GROUP 42 – Door P.42-38.

**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**

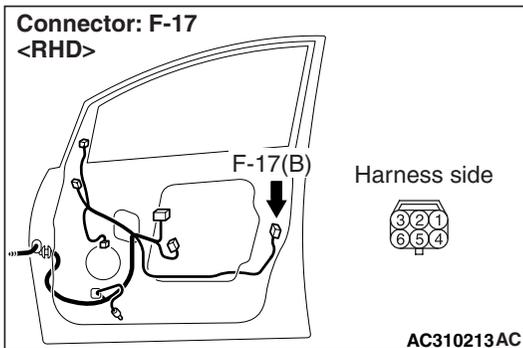
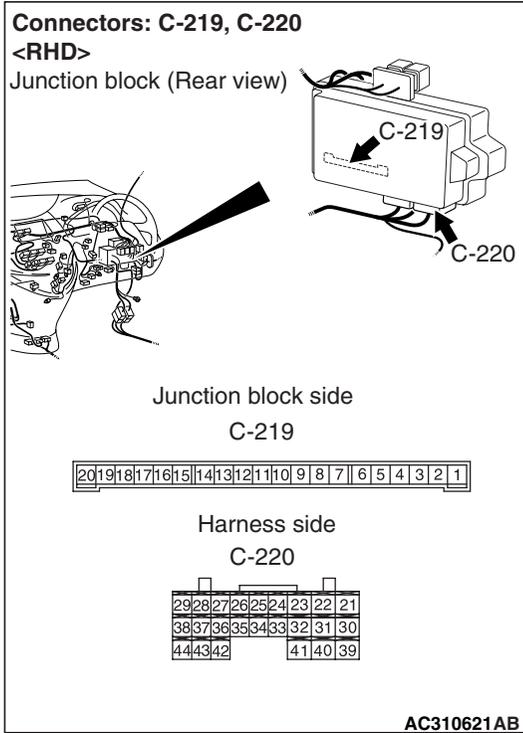


**Q: Is the check result normal?**

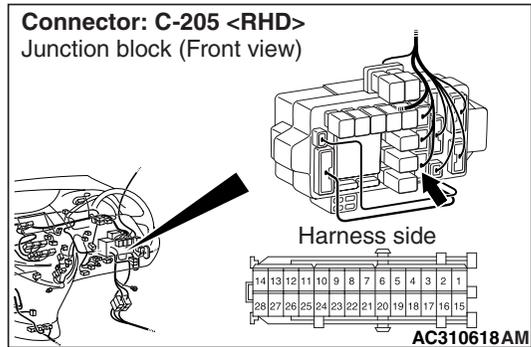
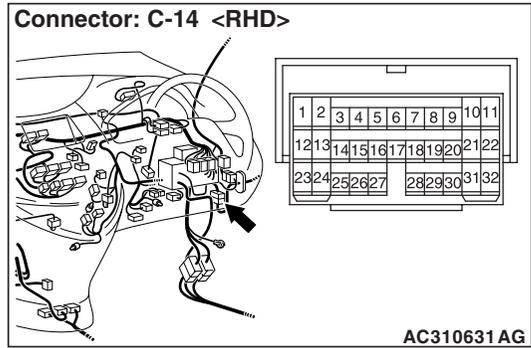
**YES :** Go to Step 5.

**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.*

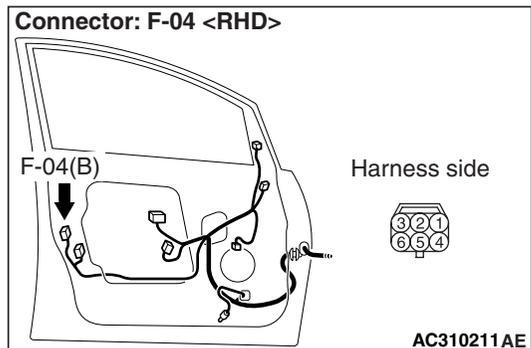
- Check the input and output lines for open circuit.

**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.

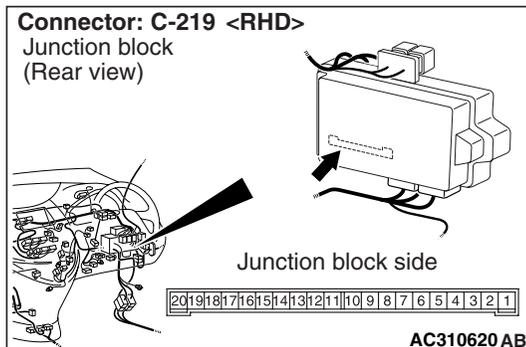
**Step 7. Check the door lock actuator (front: LH).** Check that the door lock actuator (front: LH) works normally. Refer to GROUP 42 – Door P.42-38.

**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**

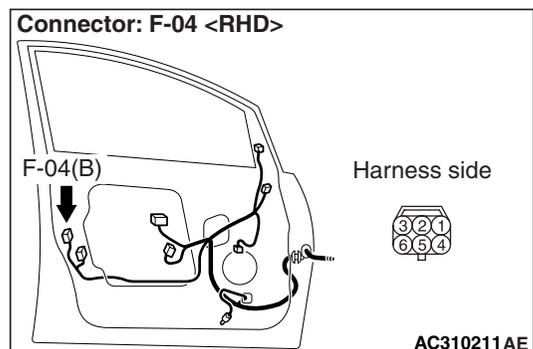
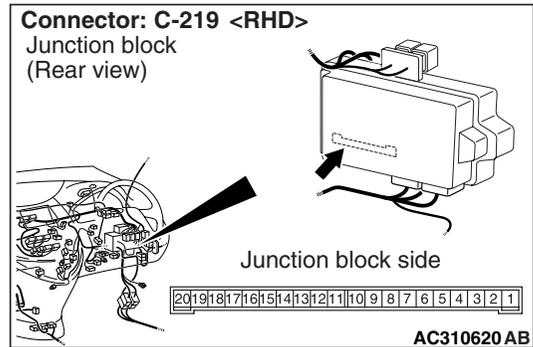


**Q: Is the check result normal?**

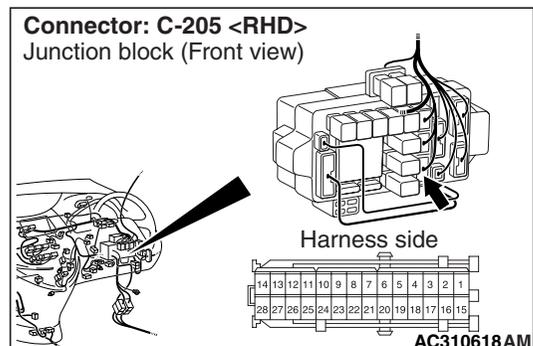
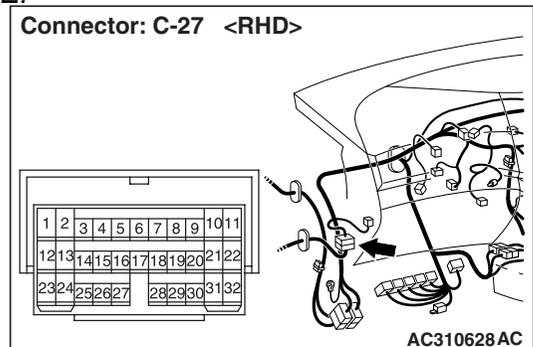
YES : Go to Step 9.

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:**



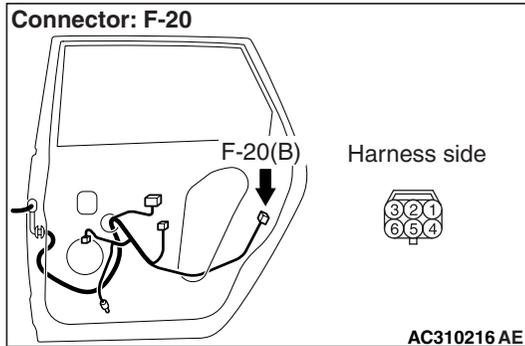
*Prior to the wiring harness inspection, check intermediate connector C-27 and junction block connector C-205, and repair if necessary.*

- 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**

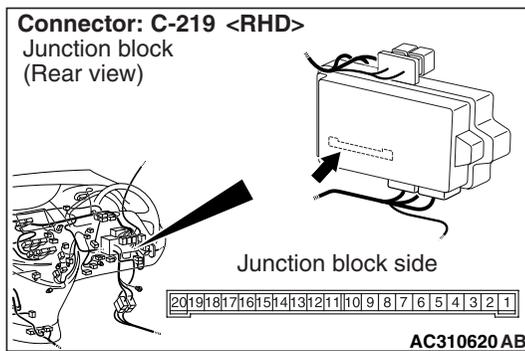


**Q: Is the check result normal?**  
**YES :** Go to Step 11.  
**NO :** Repair the defective connector.

**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.

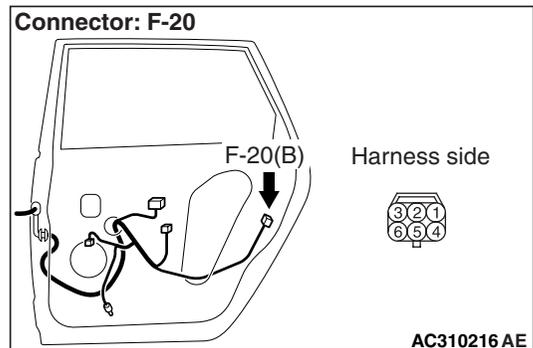
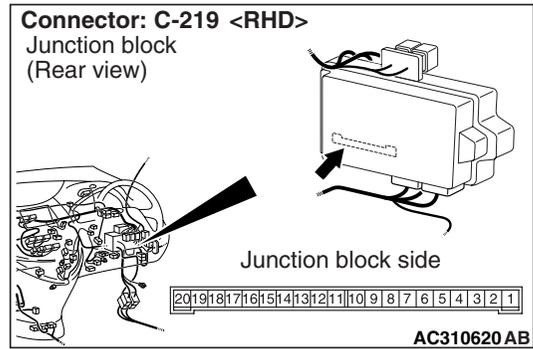
**Q: Is the check result normal?**  
**YES :** Go to Step 12.  
**NO :** Replace the door lock actuator (rear: RH).

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

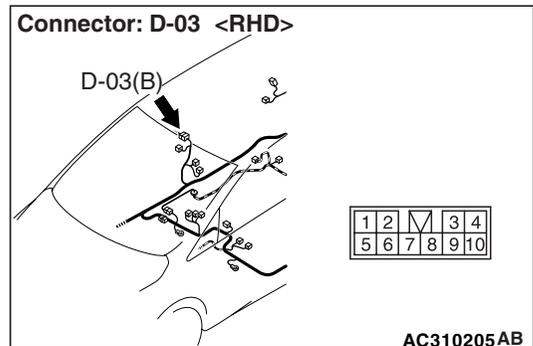
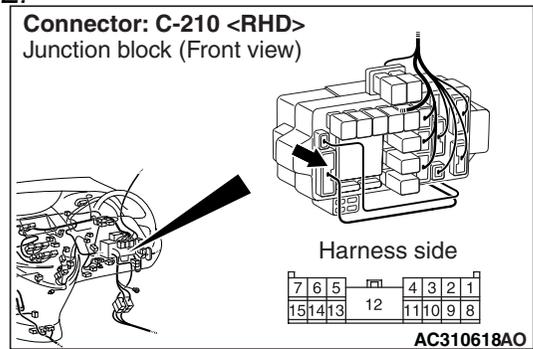


**Q: Is the check result normal?**  
**YES :** Go to Step 13.  
**NO :** Repair the defective connector.

**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:**



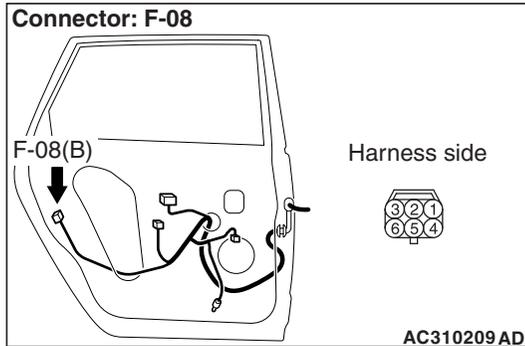
Prior to the wiring harness inspection, check D-03 intermediate connector and C-210 junction block connector, and repair if necessary.

- 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**

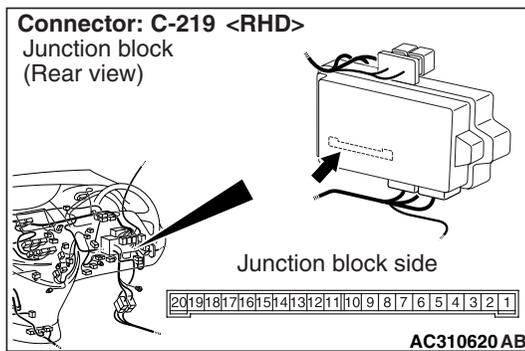


**Q: Is the check result normal?**  
**YES :** Go to Step 15.  
**NO :** Repair the defective connector.

**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.

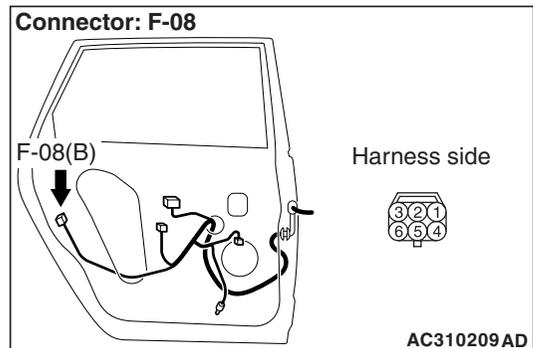
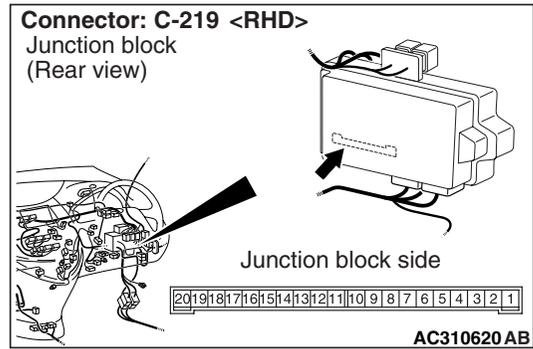
**Q: Is the check result normal?**  
**YES :** Go to Step 16.  
**NO :** Replace the door lock actuator (rear: LH).

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

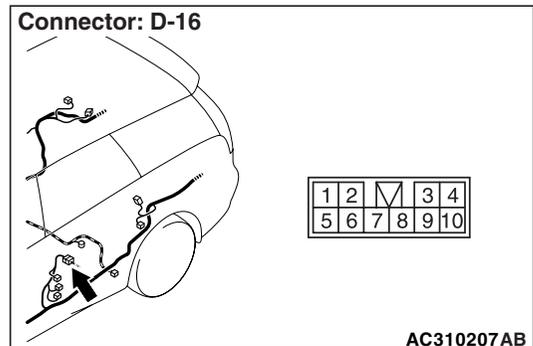
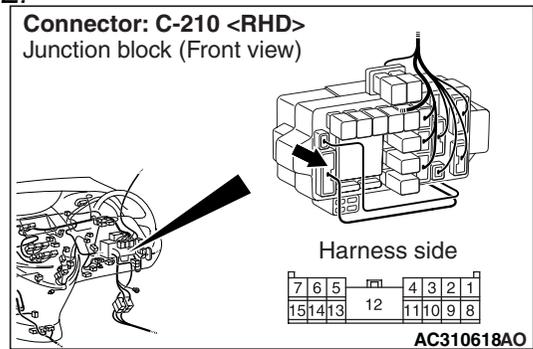


**Q: Is the check result normal?**  
**YES :** Go to Step 17.  
**NO :** Repair the defective connector.

**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.

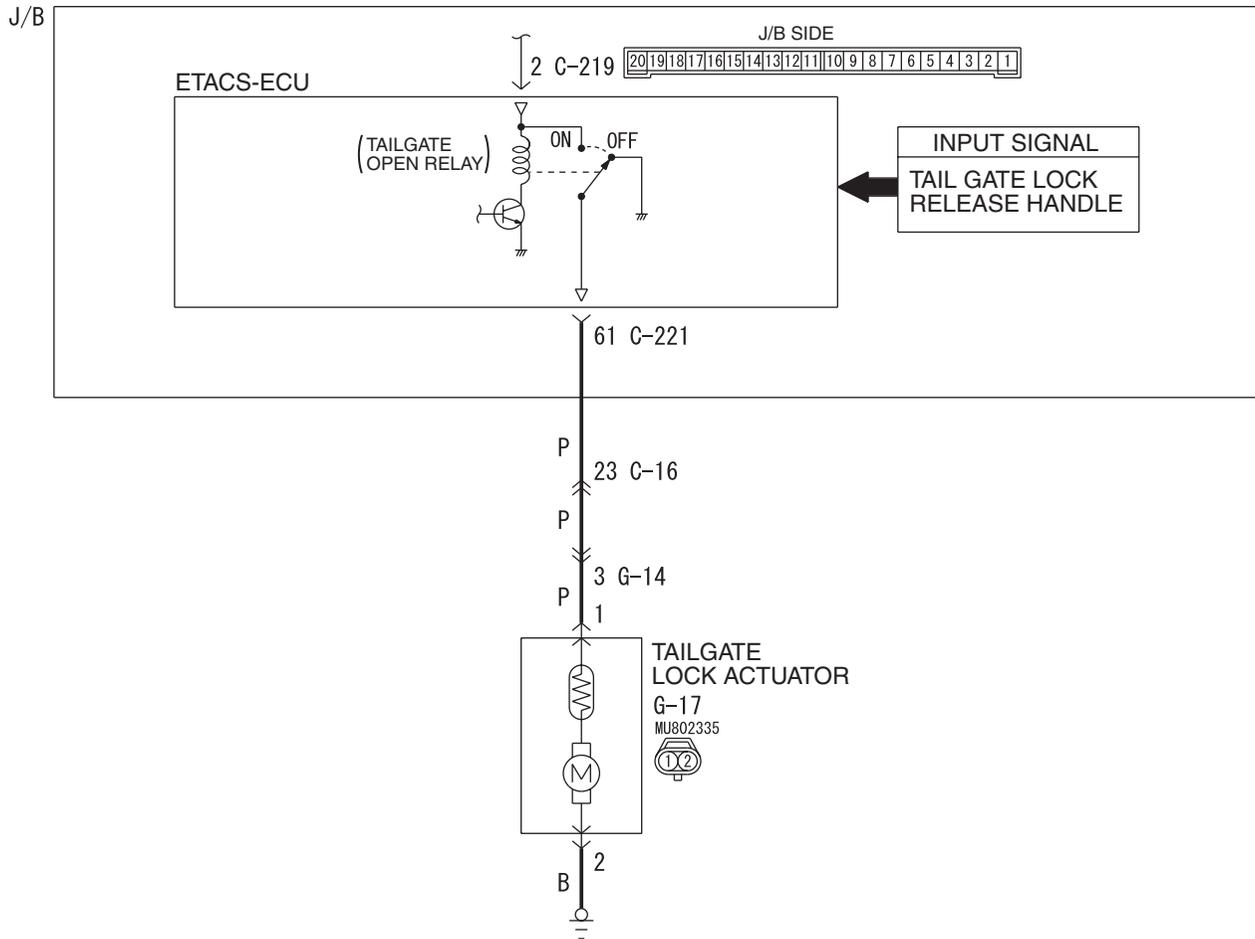
- Check the input and output lines for open circuit.

**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 :** Go to Step 2.

**NO :** <When the central door locking does not operate normally> Refer to Inspection Procedure C-1 "Central door locking system does not work P.54C-106." <When 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. Pulse check**

Check the input signals which are related to the tailgate opening and closing.

| System switch                | Check condition            |
|------------------------------|----------------------------|
| Ignition switch (IG1)        | When turned from ACC to ON |
| Tailgate lock release handle | When turned from OFF to ON |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

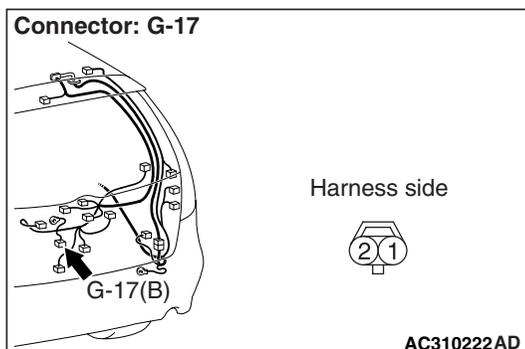
**Q: Is the check result normal?**

**All the signals are received normally. :** Go to Step 3.

**The ignition switch (IG1) signal is not received. :** Refer to Inspection Procedure Q-2 "The ignition switch (IG1) signal is not received P.54B-420."

**The Tailgate lock release handle signal is not received. :** Refer to Inspection Procedure Q-18 "The tailgate lock release handle signal is not received P.54B-494."

**Step 3. Connector check: G-17 tailgate lock actuator connector**



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

**YES :** Go to Step 4.

**NO :** Repair the defective connector.

**Step 4. Check the tailgate lock actuator.**

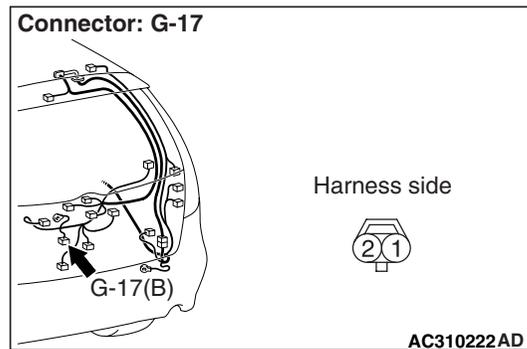
Check that the tailgate lock actuator is in good condition. Refer to GROUP 42 – Tailgate P.42-51.

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

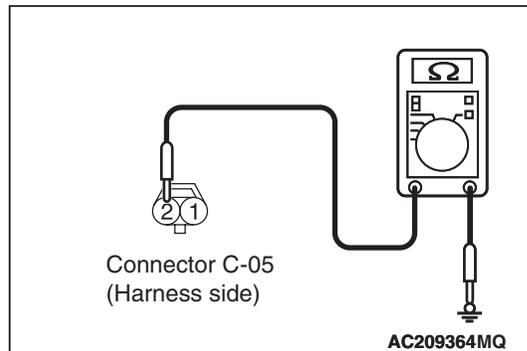
**YES :** Go to Step 5.

**NO :** Replace the tailgate lock actuator.

**Step 5. 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

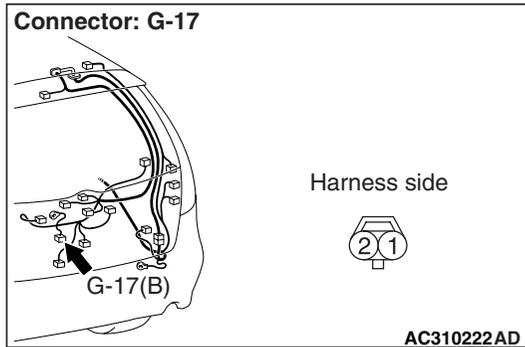
**OK: 2 Ω or less**

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

**YES :** Go to Step 7.

**NO :** Go to Step 6.

**Step 6. Check the wiring harness between G-17 tailgate lock actuator connector terminal No.2 and the body earth.**



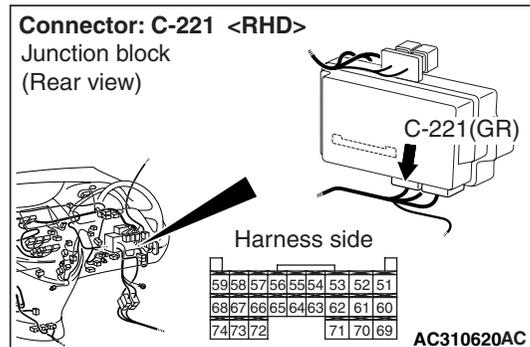
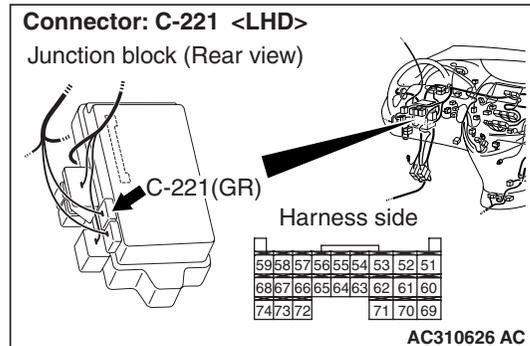
- Check the earth wires for open circuit.

**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 7. Connector check: C-221 ETACS-ECU connector**

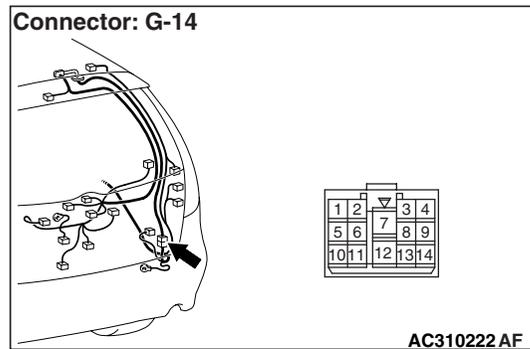
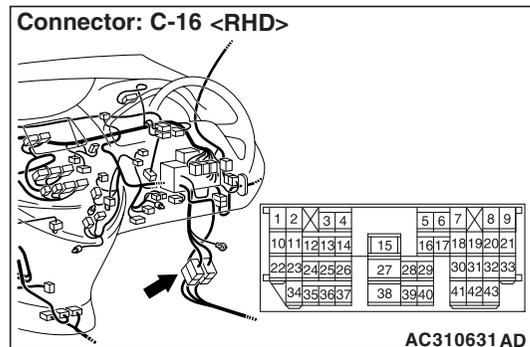
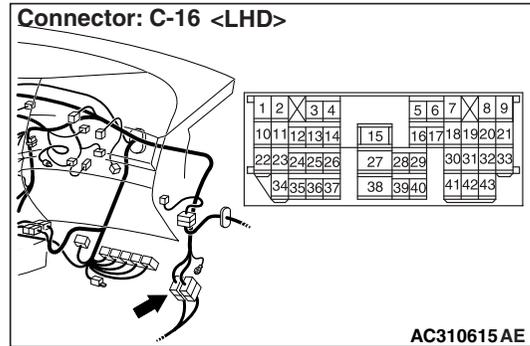
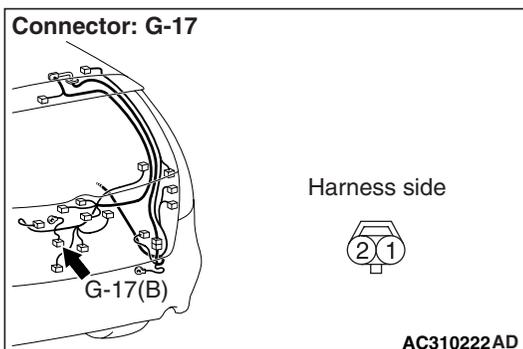
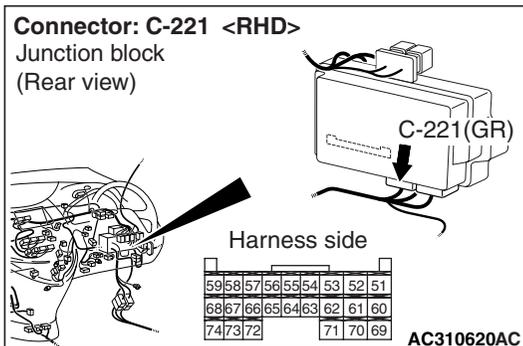
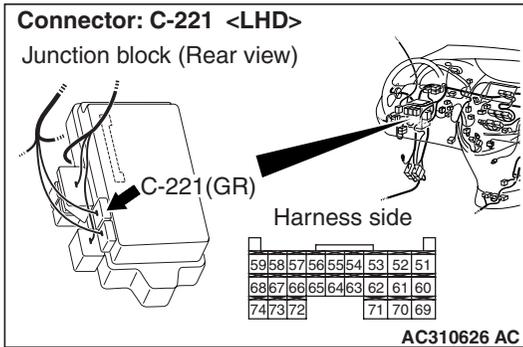


**Q: Is the check result normal?**

**YES :** Go to Step 8.

**NO :** Repair the defective connector.

**Step 8. Check the wiring harness from C-221 ETACS-ECU connector terminal 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 9.

**NO :** Repair the wiring harness.

**Step 9. 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.

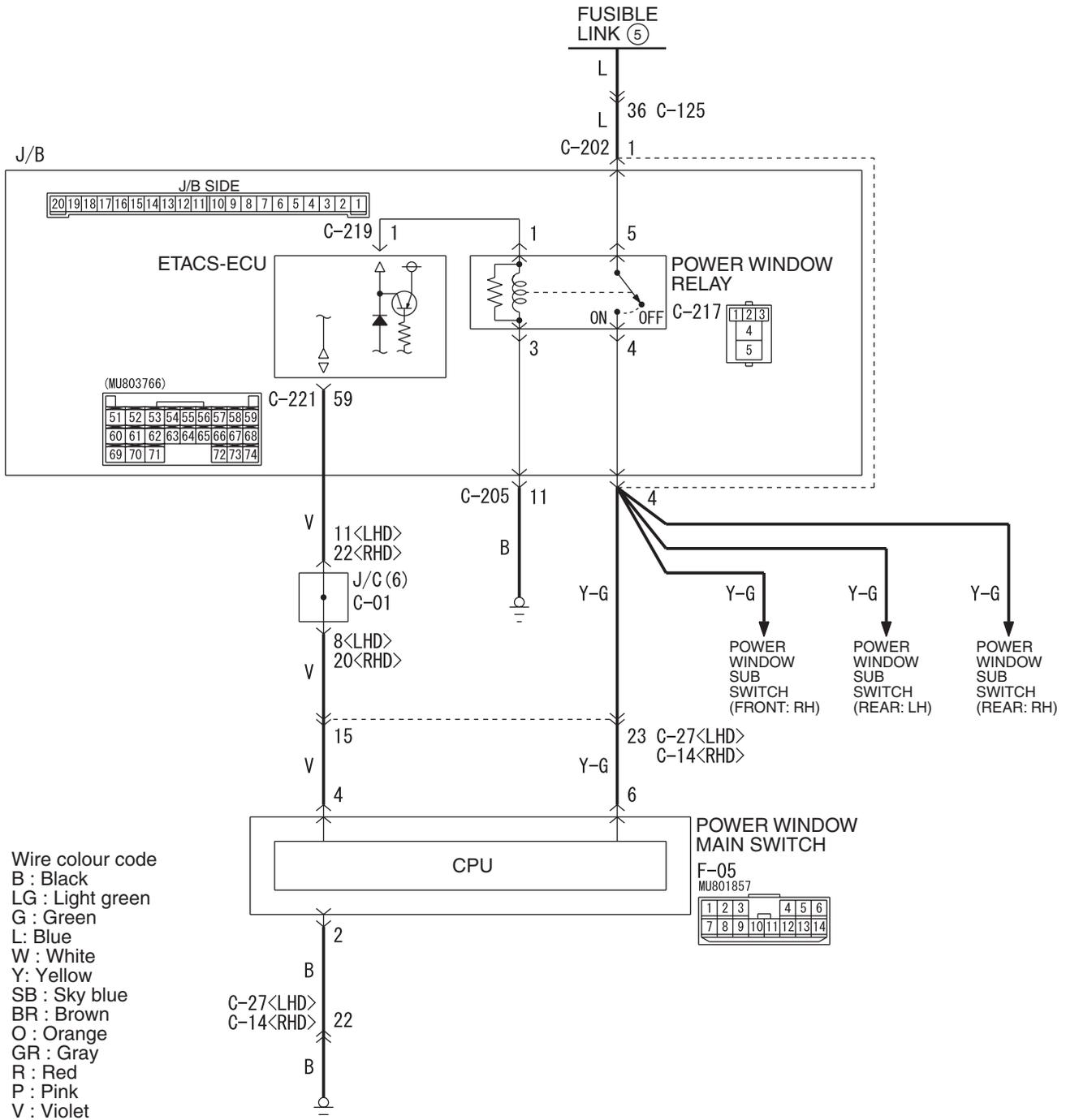
POWER WINDOWS

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



**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. Pulse check**

Check the input signal from the ignition switch.

| System switch         | Check condition            |
|-----------------------|----------------------------|
| Ignition switch (IG1) | When turned from ACC to ON |

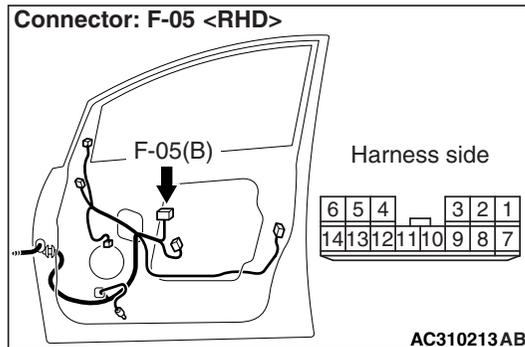
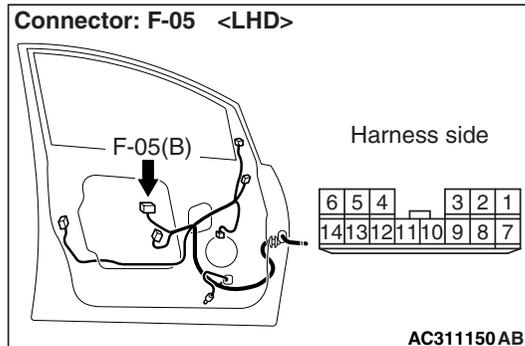
**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**YES :** Go to Step 2.

**NO :** Refer to inspection procedure A-2 "When the ignition switch is at the LOCK (OFF) position, the functions do not work normally. Check the battery power supply circuit to the ETACS-ECU P.54B-87."

**Step 2. Connector check: F-05 power window main switch connector**

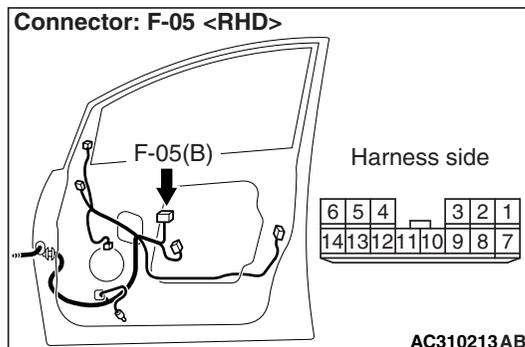
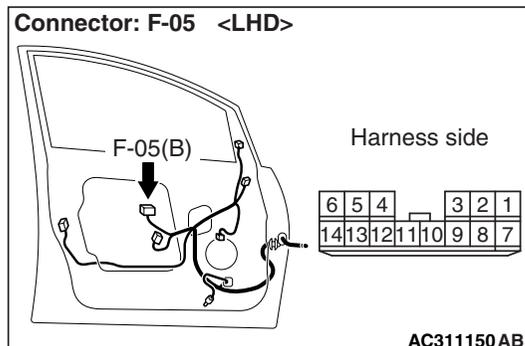


**Q: Is the check result normal?**

**YES :** Go to Step 3.

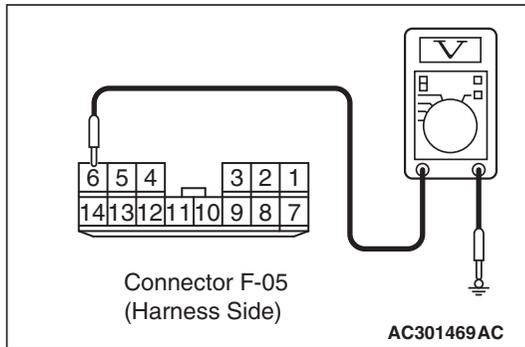
**NO :** Repair the connector.

**Step 3. Voltage measurement at the F-05 power window main switch connector.**



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

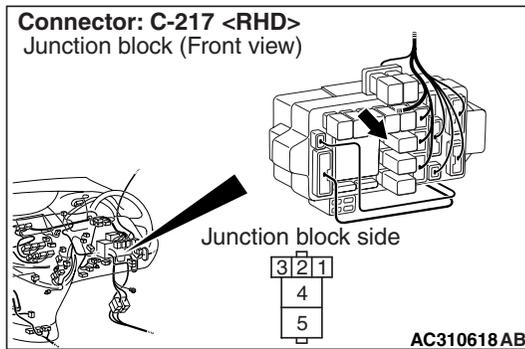
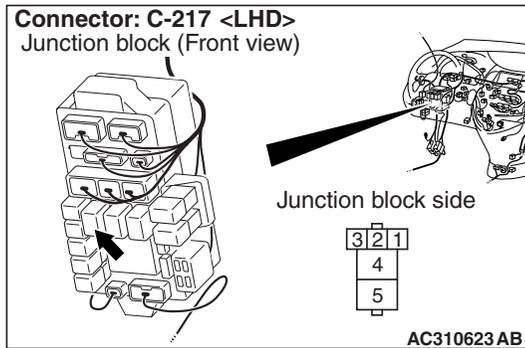
(2) Turn the ignition switch to the ON position.



(3) Voltage between terminal 6 and body earth  
**OK: System voltage**

**Q: Is the check result normal?**  
**YES :** Go to Step 10.  
**NO :** Go to Step 4.

**Step 4. Connector check: C-217 power window relay connector**

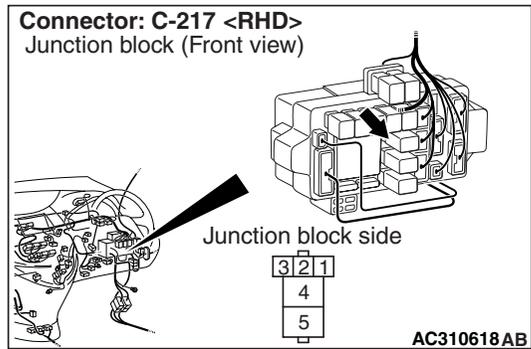
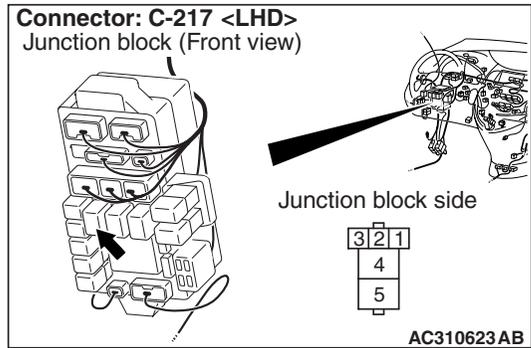


**Q: Is the check result normal?**  
**YES :** Go to Step 5.  
**NO :** Repair the connector.

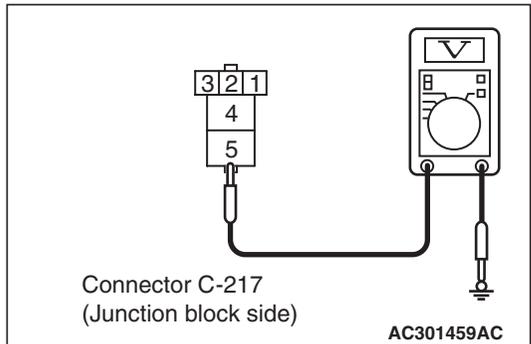
**Step 5. Check the power window relay.**  
Refer to GROUP 42 – Door – On-vehicle Service P.42-28.

**Q: Is the check result normal?**  
**YES :** Go to Step 6.  
**NO :** Replace the power window relay.

**Step 6. Voltage measurement at C-217 power window relay connector.**



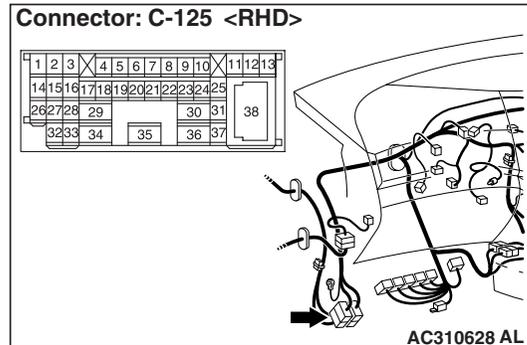
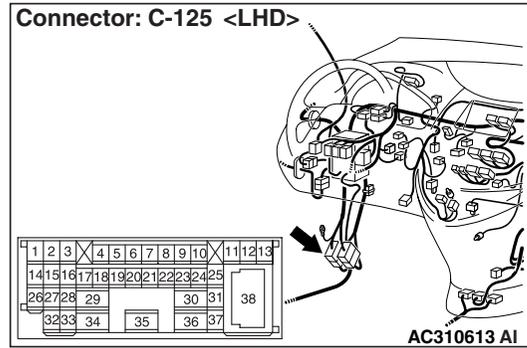
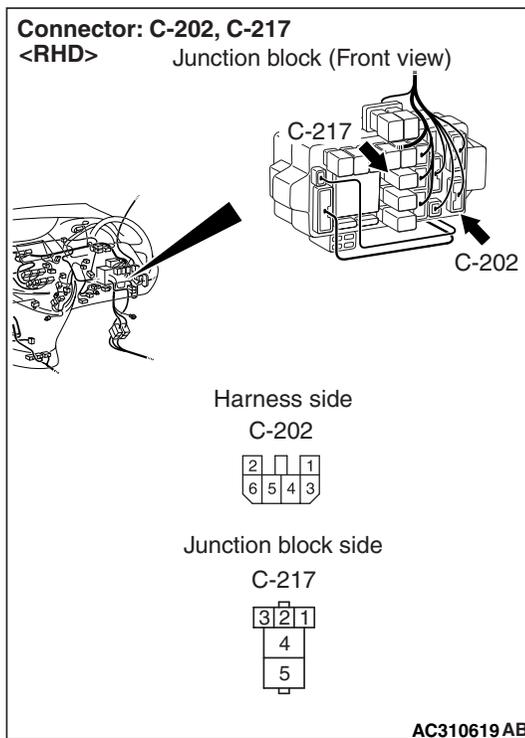
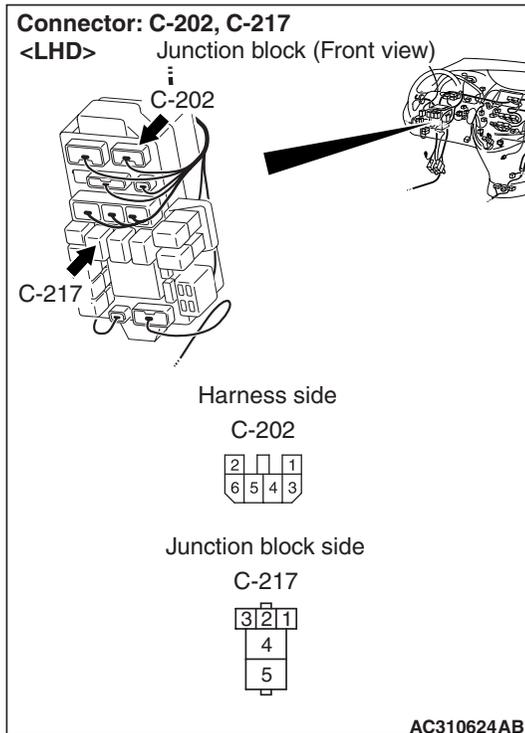
(1) Disconnect the connector, and measure at the wiring harness side.  
(2) Turn the ignition switch to the ON position.



(3) Voltage between terminal 5 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 C-217 power window relay connector terminal No.5 and fusible link (5).**



*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.

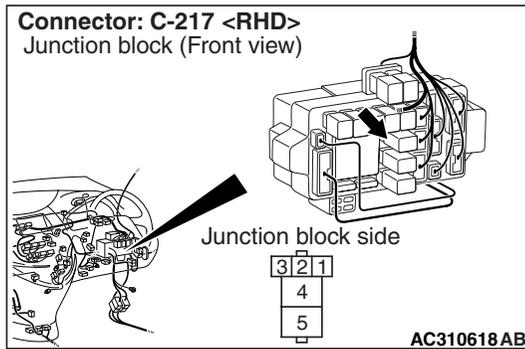
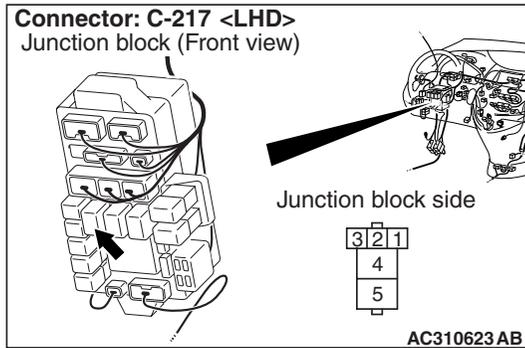
**Q: Is the check result normal?**

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

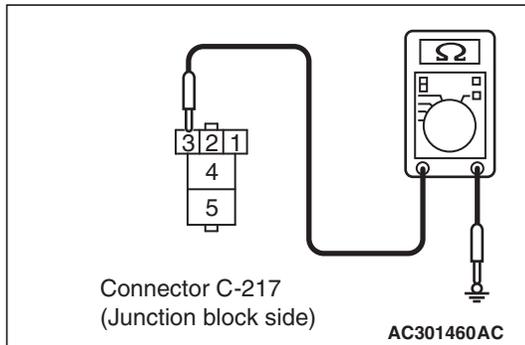
**NO :** Repair the wiring harness.

**NOTE:**

**Step 8. Resistance measurement at C-217 power window relay connector.**



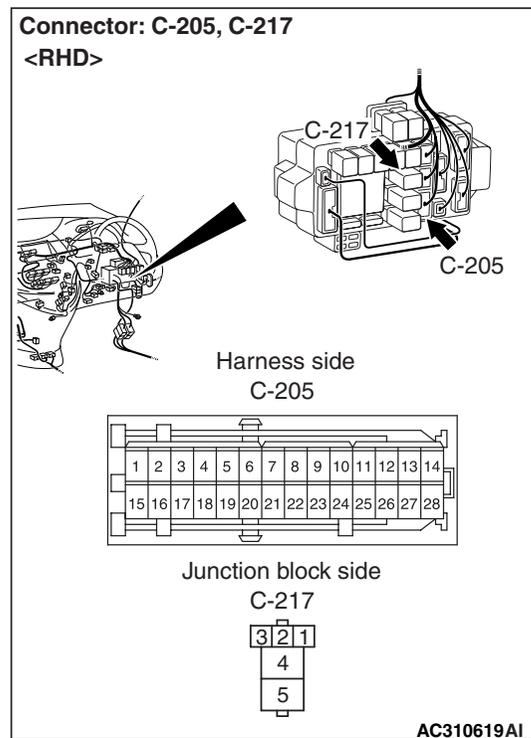
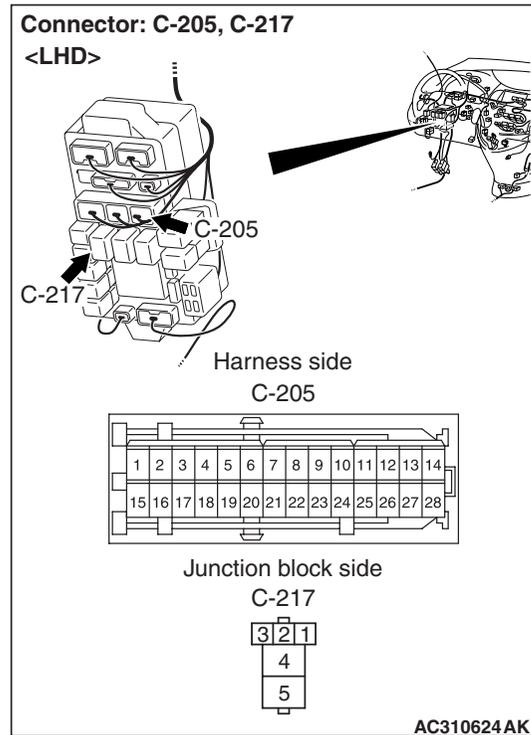
(1) Disconnect the connector, and measure at the wiring harness side.



(2) Resistance between terminal 3 and body earth  
**OK: 2 Ω or less**

**Q: Is the check result normal?**  
**YES :** Go to Step 10.  
**NO :** Go to Step 9.

**Step 9. Check the wiring harness between C-217 power window relay connector terminal No.3 and body earth.**



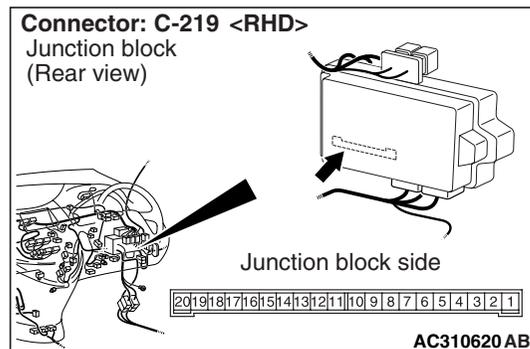
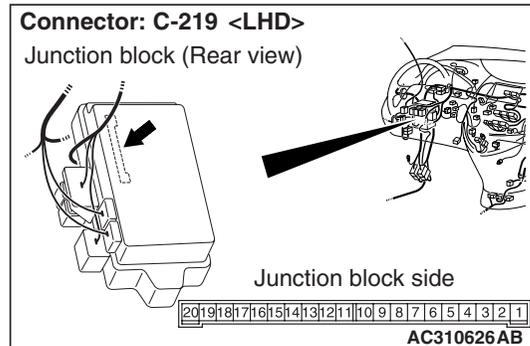
**NOTE:** Prior to the wiring harness inspection, check junction block connector C-205, and repair if necessary.

- Check the earth wires for open circuit.

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

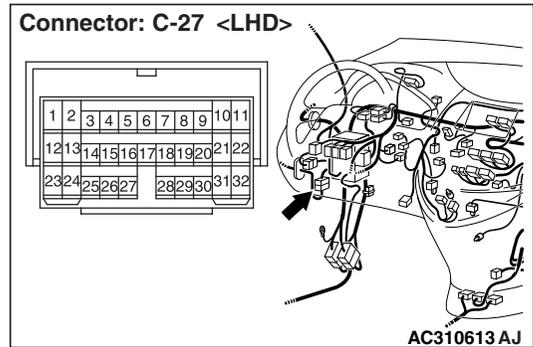
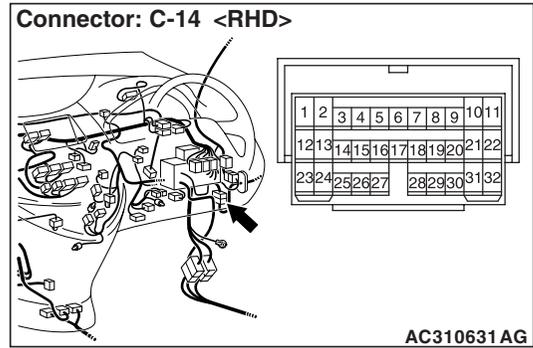
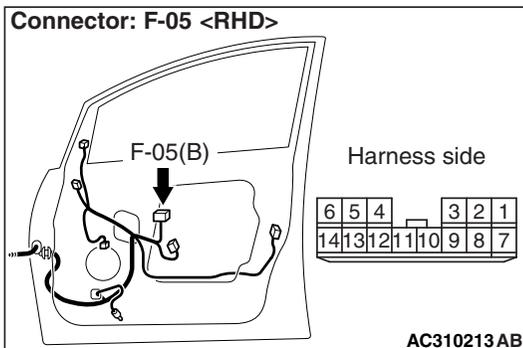
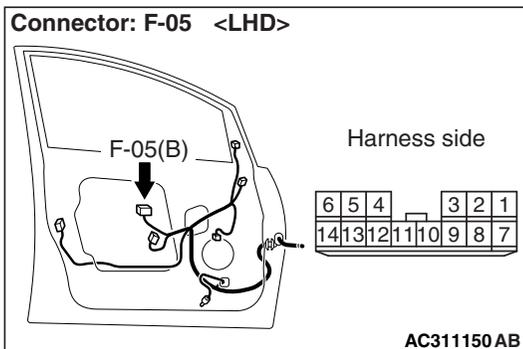
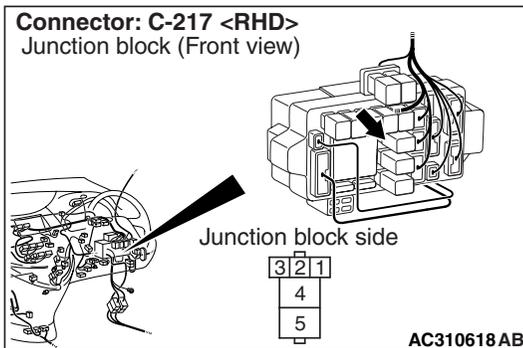
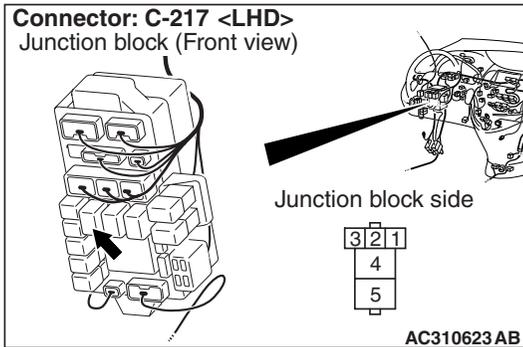
**YES** : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).  
**NO** : Repair the wiring harness.

**Step 10. Connector check: C-219 ETACS-ECU connector**



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

Step 11. 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.



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

- Check the power supply line for open circuit.

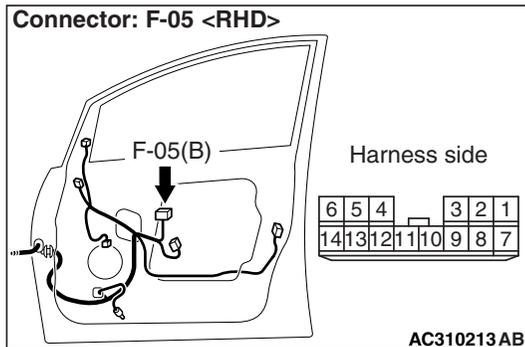
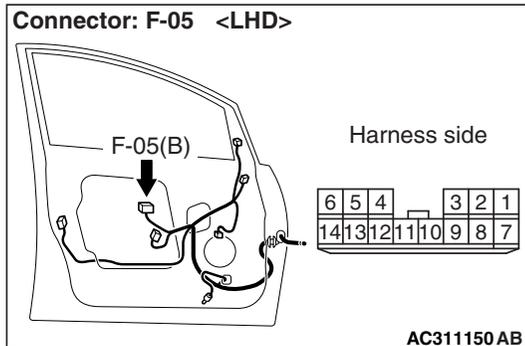
Q: Is the check result normal?

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

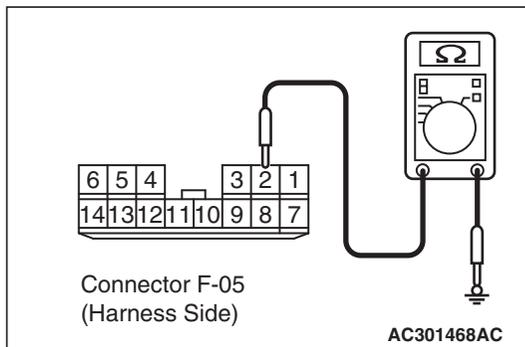
NO : Repair the harness wire, and then go to Step 12.

NOTE:

**Step 12. Resistance measurement at the F-05 power window main switch connector.**



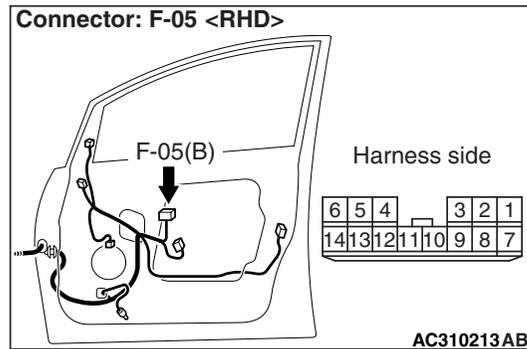
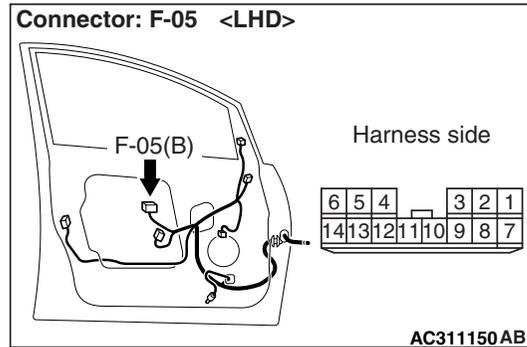
(1) Disconnect the connector, and measure at the wiring harness side.



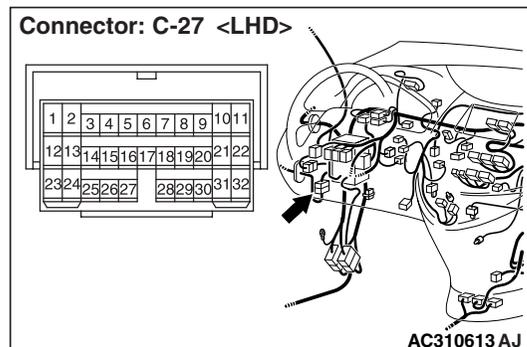
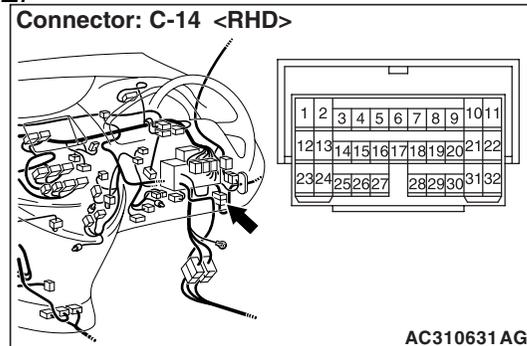
(2) Resistance between terminal 2 and body earth  
**OK: 2 Ω or less**

**Q: Is the check result normal?**  
**YES :** Go to Step 14.  
**NO :** Go to Step 13.

**Step 13. Check the wiring harness between F-05 power window main switch connector terminal No.2 and body earth.**



**NOTE:**



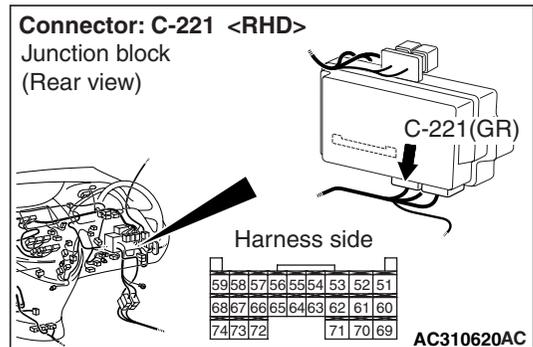
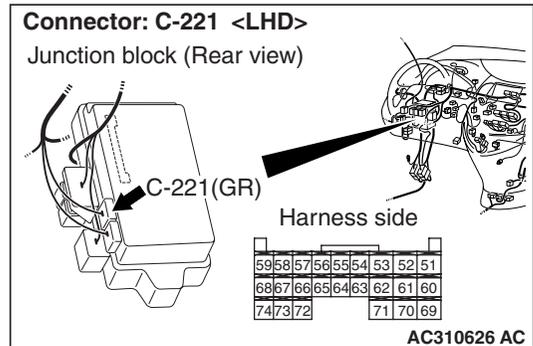
Prior to the wiring harness inspection, check intermediate connectors C-27 <LH drive vehicles>, C-14 <RH drive vehicles> and repair if necessary.

- Check the earth wires for open circuit.

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

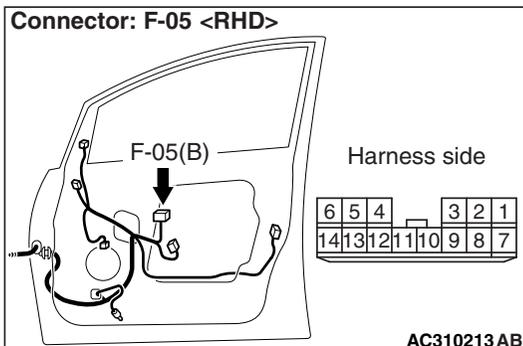
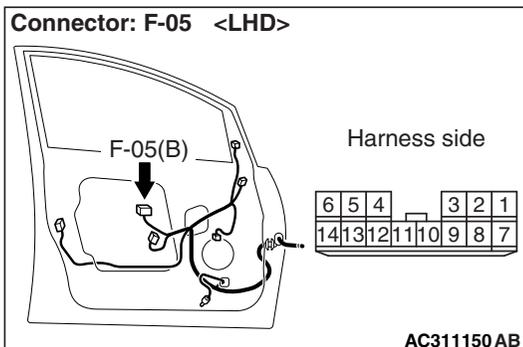
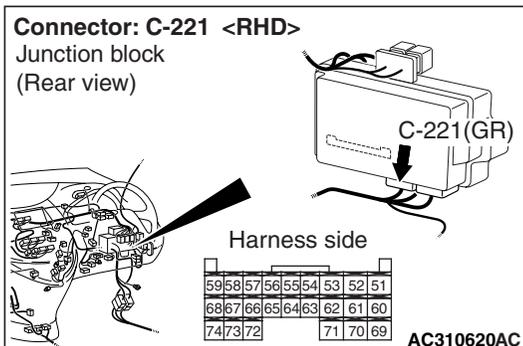
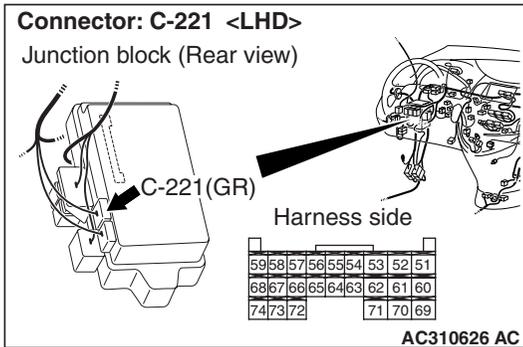
**YES** : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).  
**NO** : Repair the wiring harness.

**Step 14. Connector check: C-221 ETACS-ECU connector**

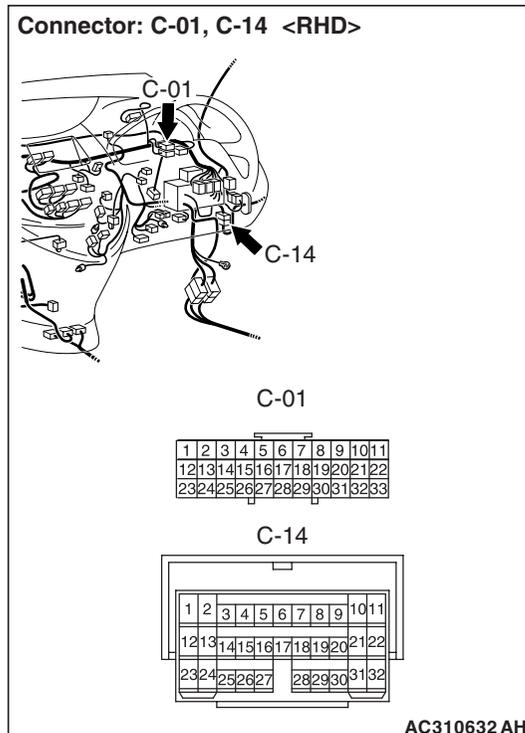
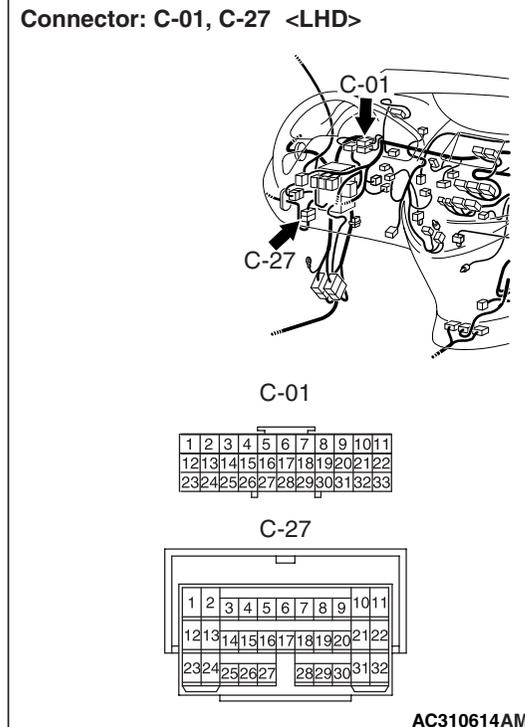


**Q: Is the check result normal?**  
**YES** : Go to Step 15.  
**NO** : Repair the connector.

**Step 15. Check the wiring harness between C-221 ETACS-ECU connector terminal No.59 and F-05 power window main switch connector terminal No.4.**



**NOTE:**



Prior to the wiring harness inspection, check intermediate connectors C-27 <LH drive vehicles>, C-14 <RH 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 16.  
**NO :** Repair the wiring harness.

**Step 16. Retest the system.**

After the power window main switch is replaced, check that all the power windows work.

- (1) Replace the power window main switch.
- (2) Check that the all the power windows work.

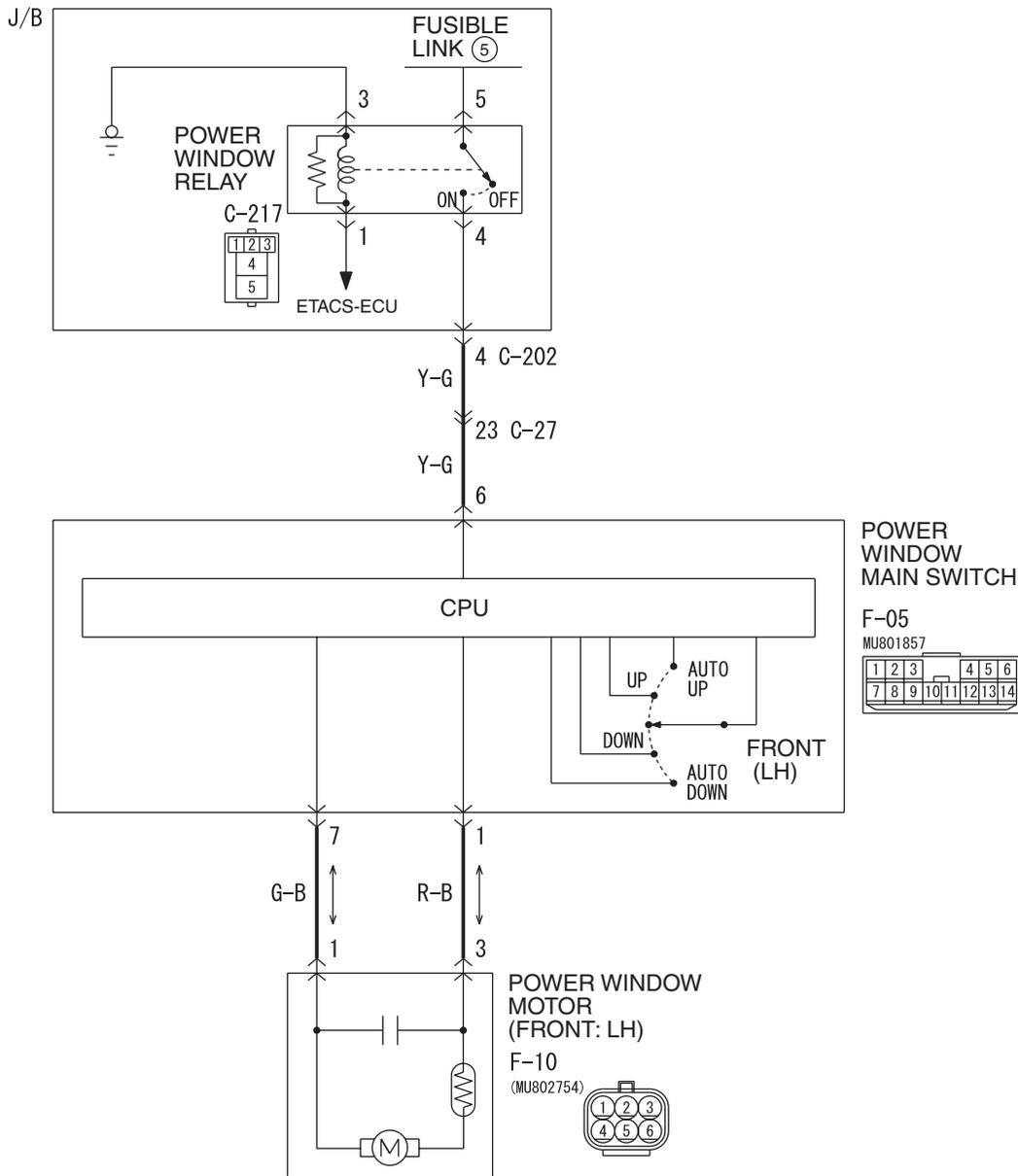
**Q: Is the check result normal?**

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

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

**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

**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.**

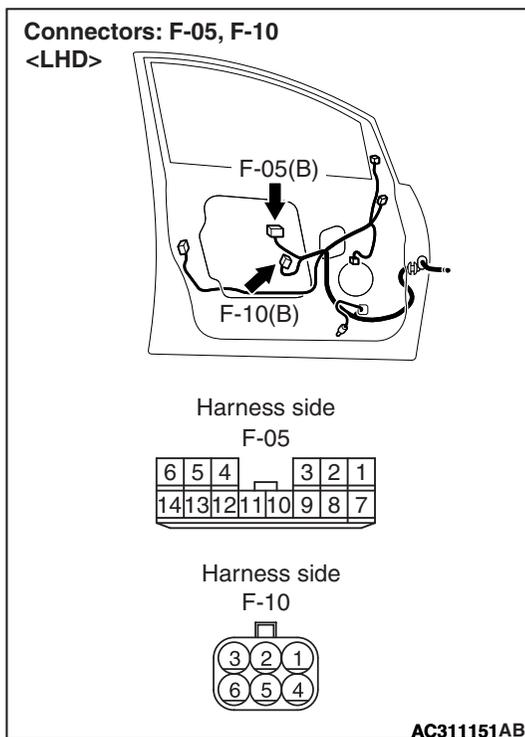
Check that all of the front passenger's and rear door power windows can operate by means of the power window main switch.

**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.54B-124."

**Step 2. Connector check: F-05 power window main switch connector and F-10 power window motor (front: LH) connector**

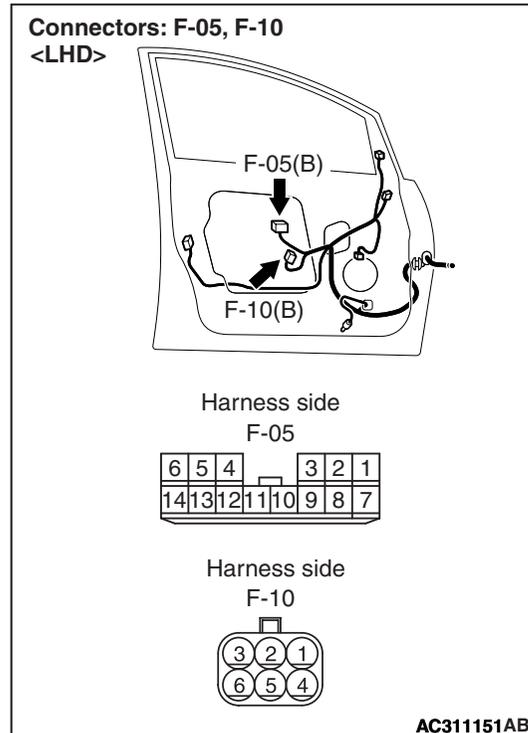


**Q: Is the check result normal?**

**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.

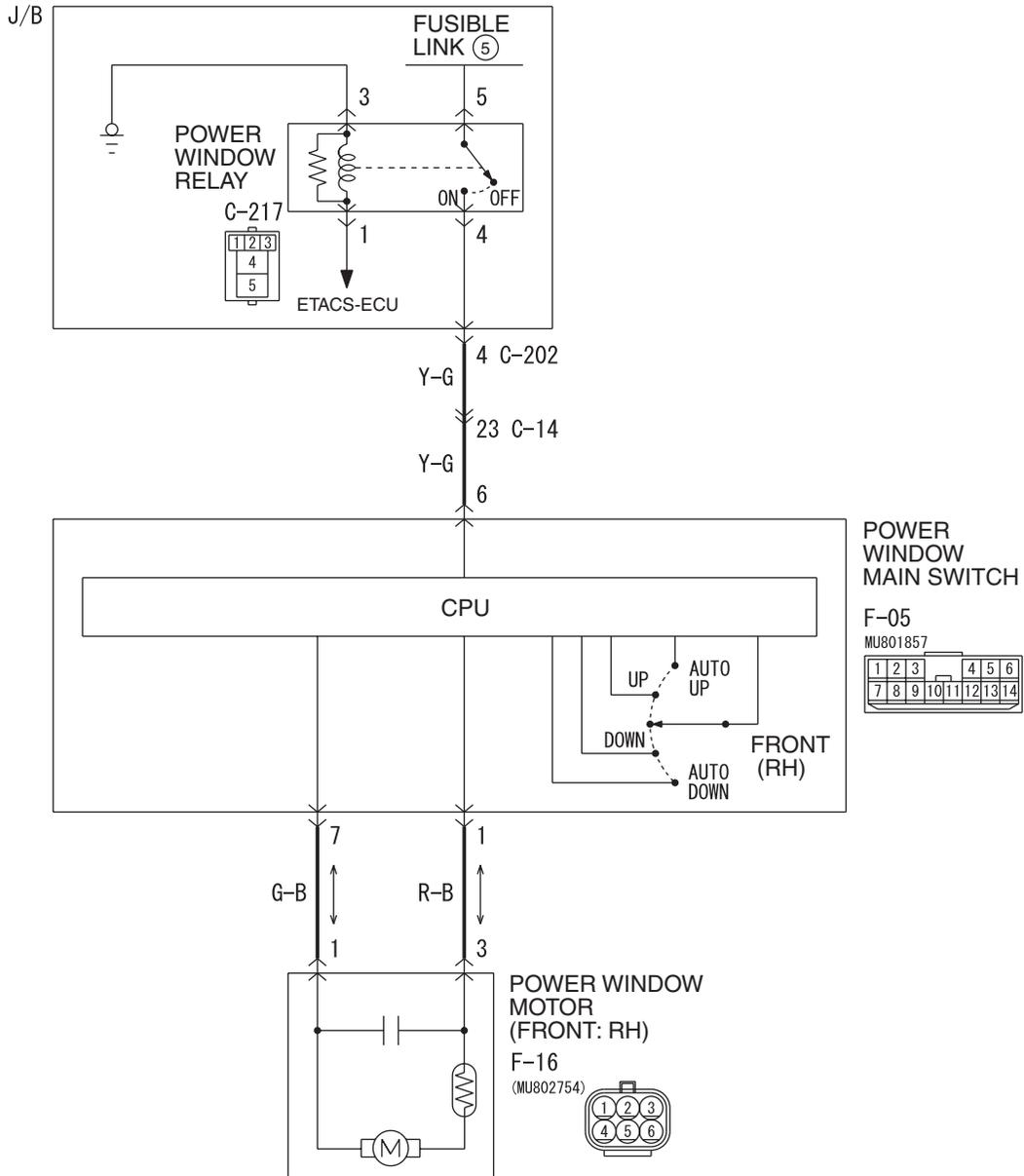
**Q: Is the check result normal?**

**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 front power window motor (front: RH)
- Damaged harness wires and connectors

**DIAGNOSIS PROCEDURE**

**Step 1. Check the power window main switch.**

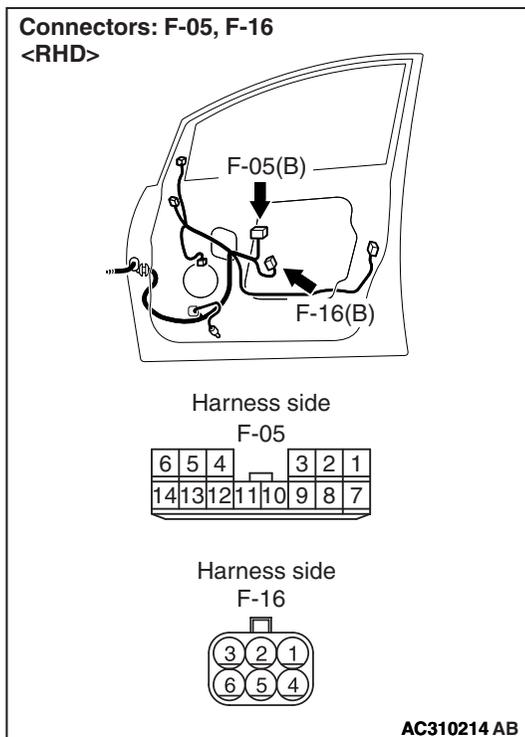
Check that all of the front passenger's and rear door power windows can operate by means of the power window main switch.

**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.54B-124.](#)"

**Step 2. Connector check: Connector check: F-05 power window main switch connector and F-16 power window motor (front: RH) connector**

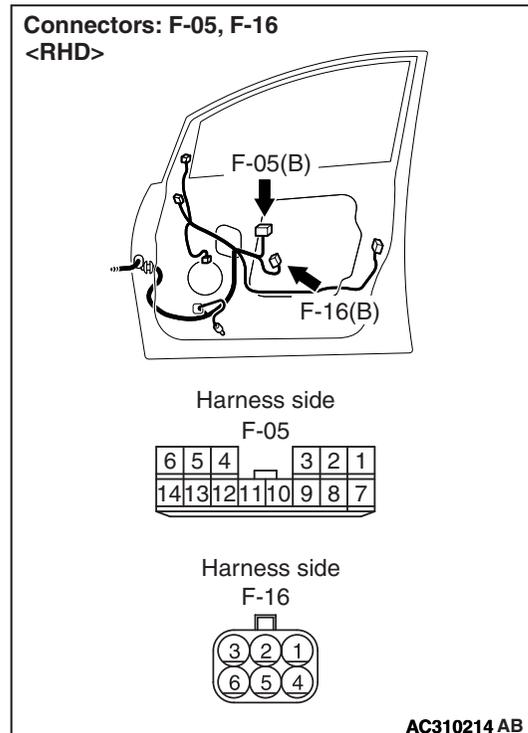


**Q: Is the check result normal?**

**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.

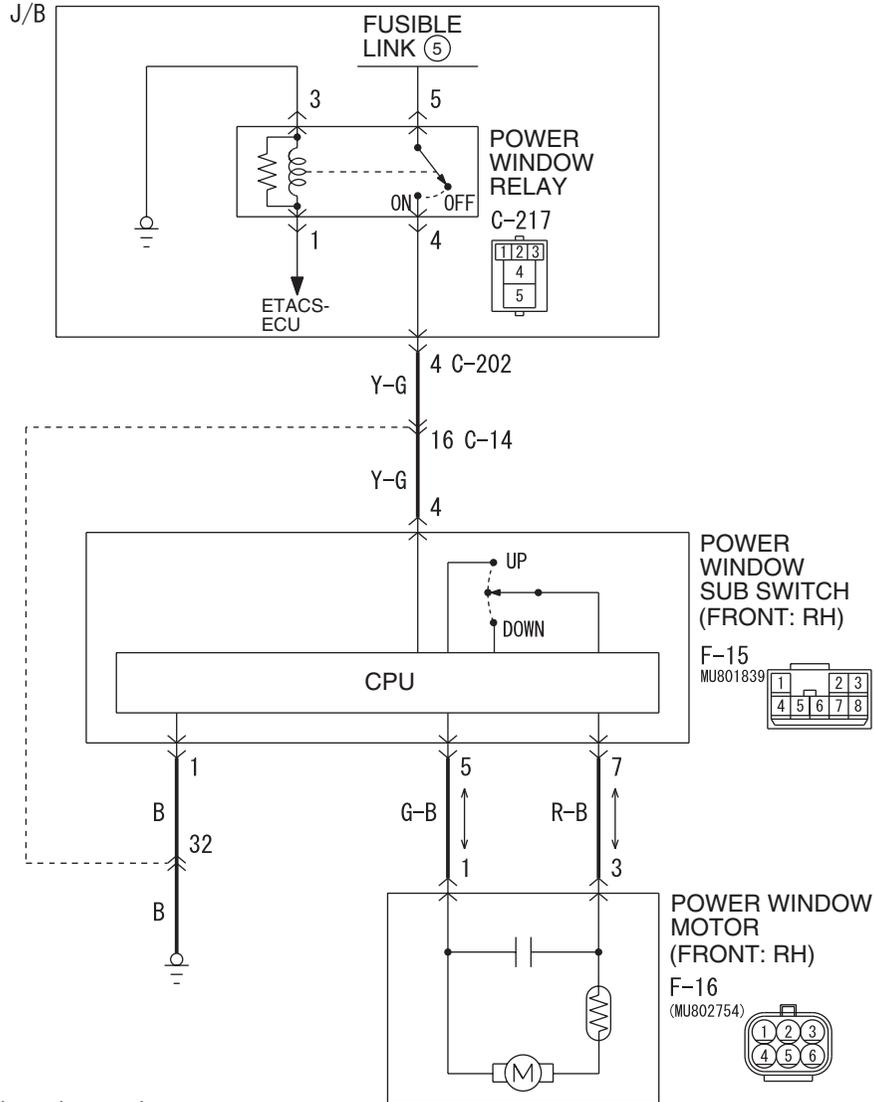
**Q: Is the check result normal?**

**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 (front: LH).

Inspection Procedure D-3: Relevant power window(s) do not work by means of the front and rear power window sub switches.

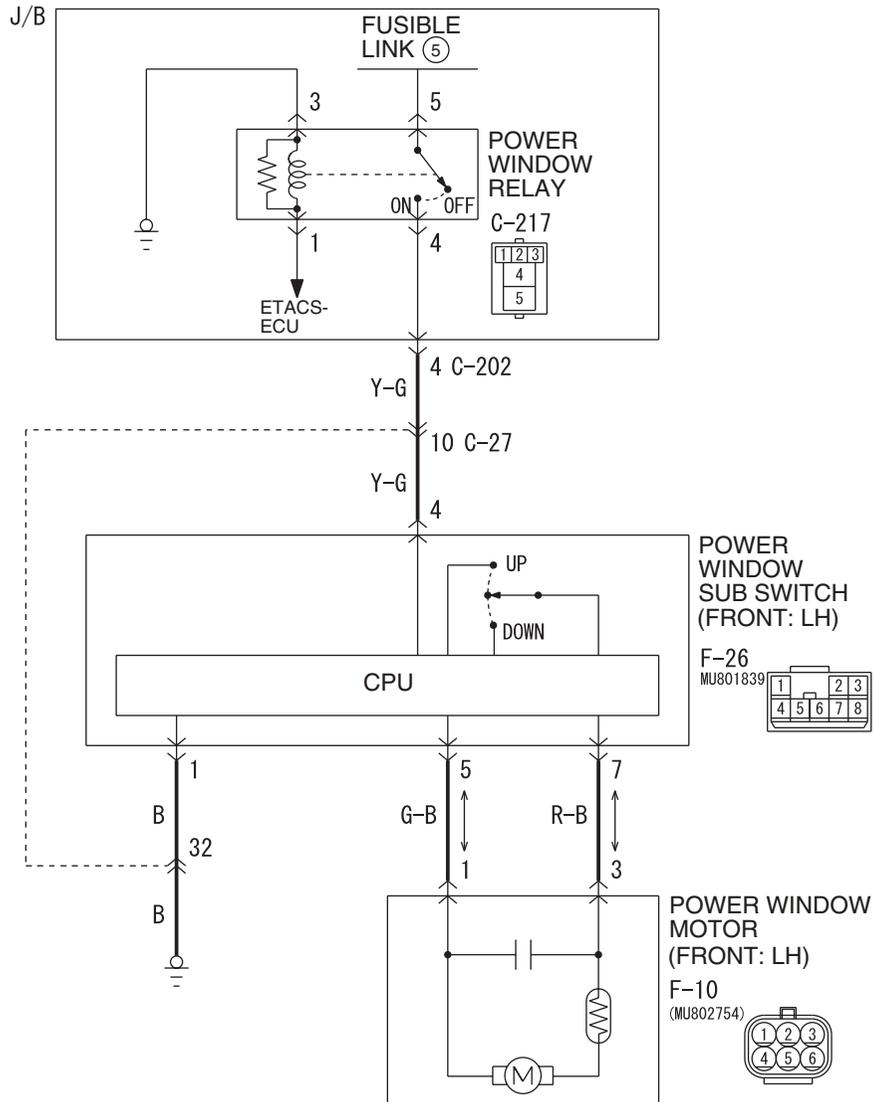
Power Window (front: RH) Circuit <LHD>



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

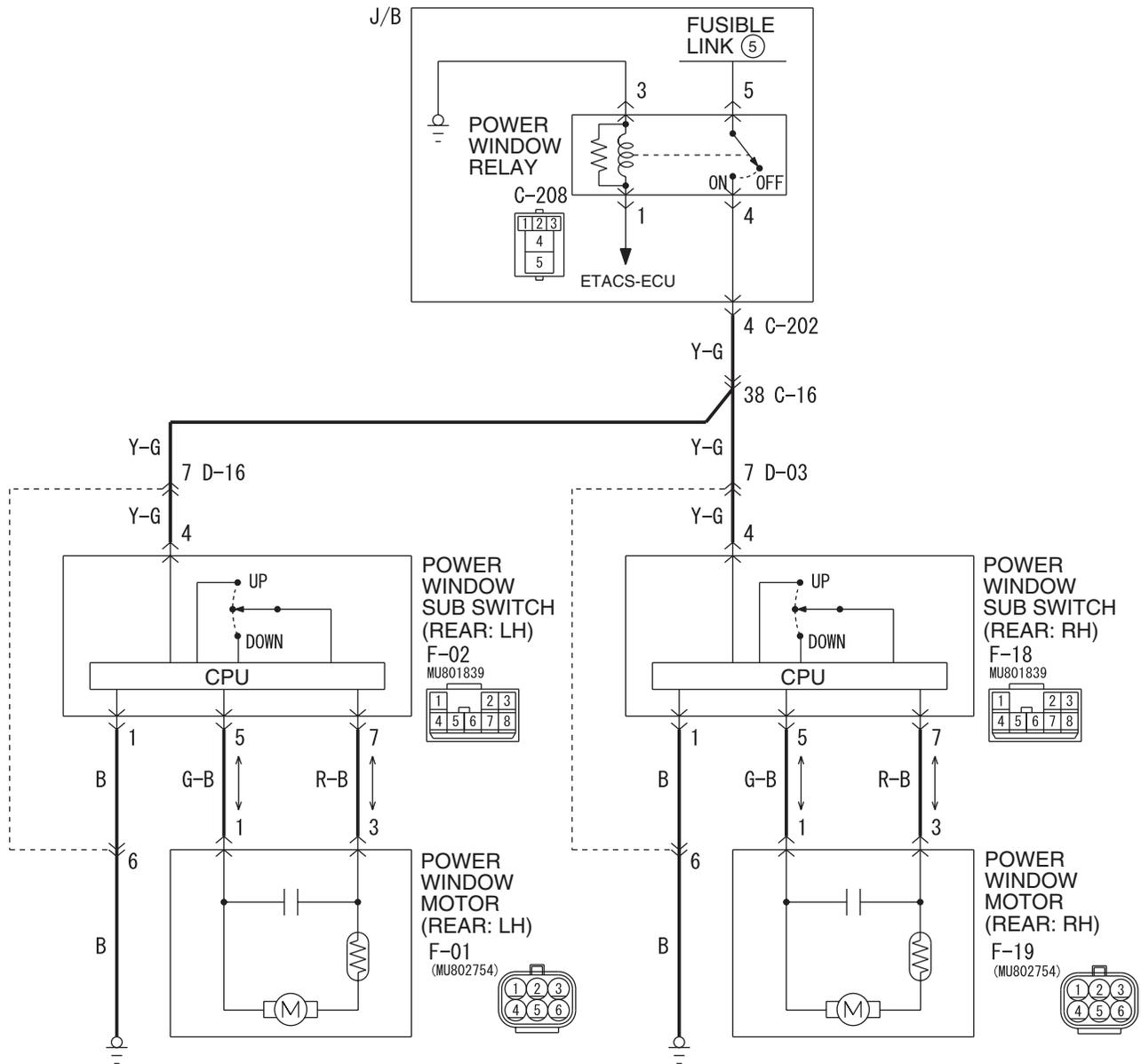
Power Window (front: LH) Circuit <RHD>



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

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 VEHICLE>**

- Malfunction of the power window sub switch (front: RH), power window sub switch (rear: RH) or power window sub switch (rear: LH)

- Malfunction of the power window motor (front: RH), power window motor (rear: RH) or power window motor (rear: LH)
- Damaged harness wires and connectors

**POSSIBLE CAUSES <RH DRIVE VEHICLE>**

- Malfunction of the power window sub switch (front: LH), power window sub switch (rear: RH) or power window sub switch (rear: LH)

- Malfunction of the power window motor (front: LH), power window motor (rear: RH) or power window motor (rear: LH)
- Damaged harness wires and connectors

**YES** : Go to Step 4.  
**NO** : Repair the connector.

## DIAGNOSIS PROCEDURE

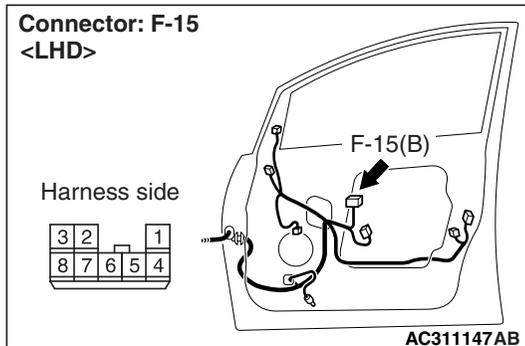
**Step 1. Check the power window main switch.**  
Check that the power window lock switch is turned off.

**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.**

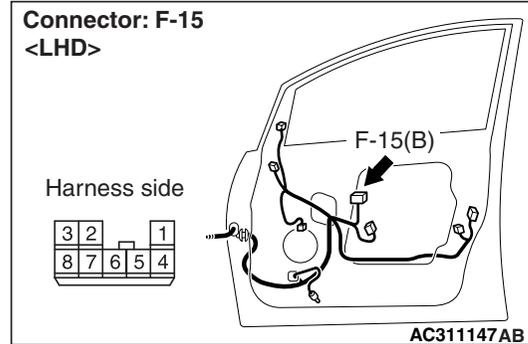
**Q: Which power window does not work?**  
Front passenger's door <LH drive vehicles> : Go to Step 3.  
Front passenger's door <RH drive vehicles> : Go to Step 12.  
Rear right door : Go to Step 21.  
Rear left door : Go to Step 30.

**Step 3. Connector check: F-15 power window sub switch (front: RH) connector**

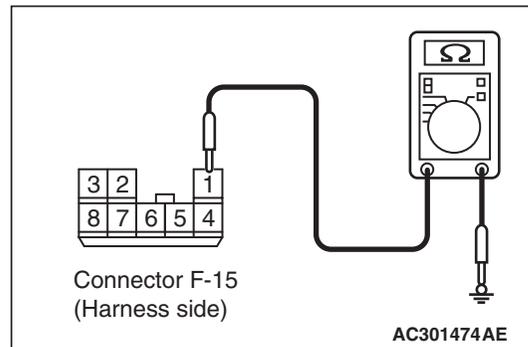


**Q: Is the check result normal?**

**Step 4. Resistance measurement at F-15 power window sub switch (front: RH) connector.**



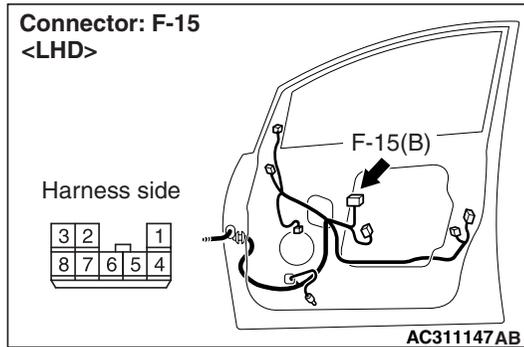
(1) Disconnect the connector, and measure at the wiring harness side.



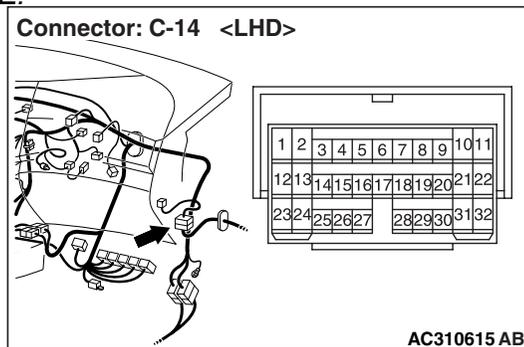
(2) Resistance between terminal 1 and body earth  
**OK: 2 Ω or less**

**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.*

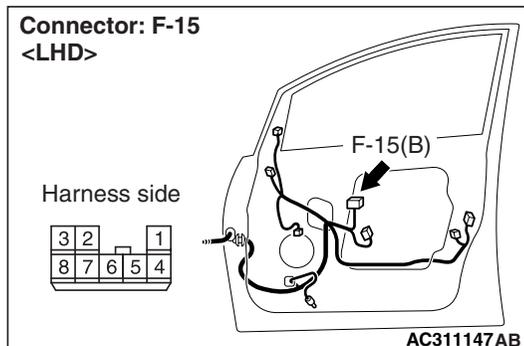
- Check the earth wires for open circuit.

**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.

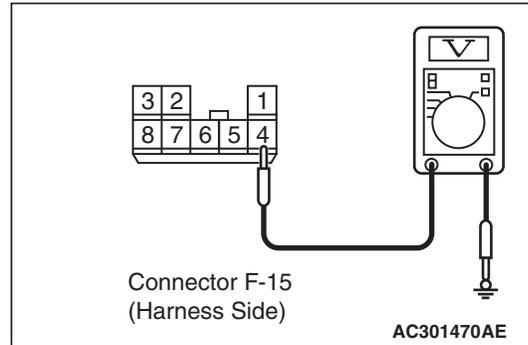
**Step 6. Voltage measurement at F-15 power window sub switch (front: RH) connector.**



(1) Disconnect the connector, and measure at the

wiring harness side.

(2) Turn the ignition switch to the ON position.



(3) Voltage between terminal 4 and body earth

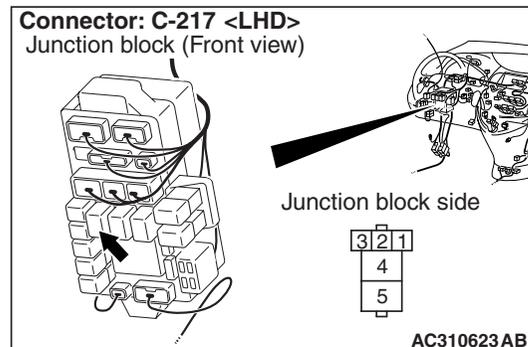
**OK: System voltage**

**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**

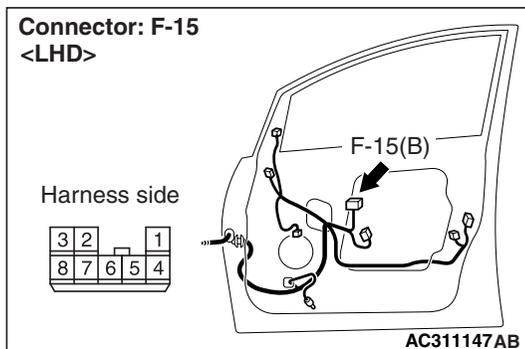
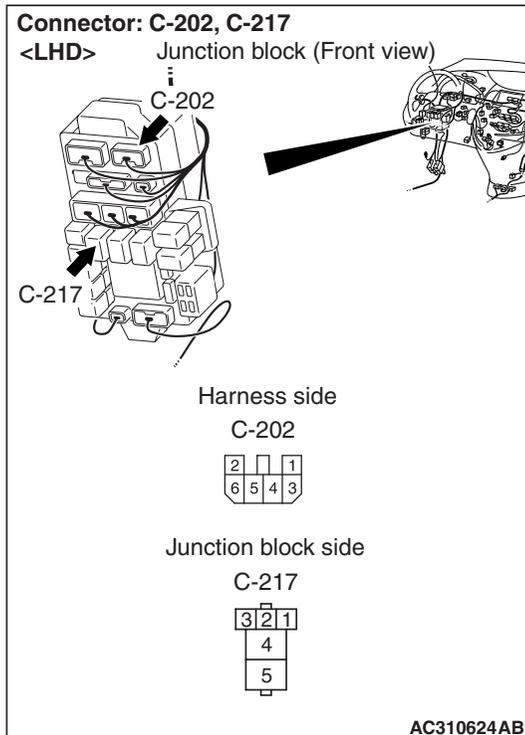


**Q: Is the check result normal?**

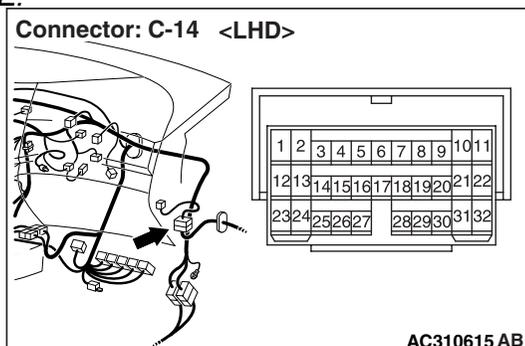
**YES :** Go to Step 8.

**NO :** Repair the connector.

**Step 8. Check the wiring harness from F-15 power window sub switch (front: RH) connector terminal No.4 to C-217 power window connector terminal No.4.**



**NOTE:**



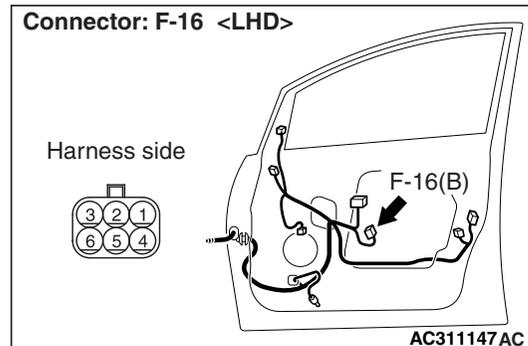
Prior to the wiring harness inspection, check intermediate connectors C-14 and junction block connector C-202, and repair if necessary.

- 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.

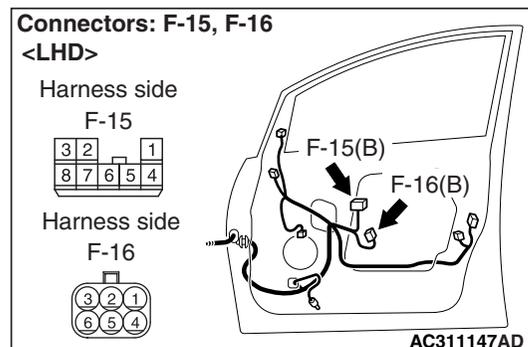
**Step 9. Connector check: F-16 power window motor (front: RH) connector**



**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).

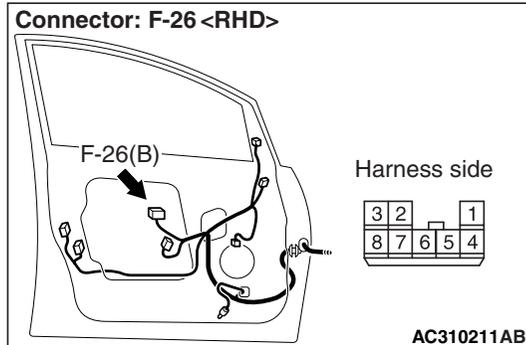
- (1) Replace the power window sub switch (front: RH).
- (2) Check that the front passenger's door power window can be operated by the power window

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).

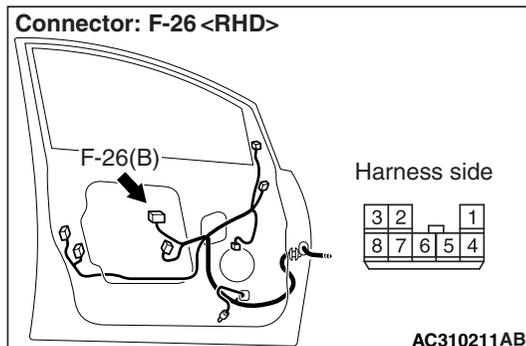
**Step 12. Connector check: F-26 power window sub switch (front: LH) connector**



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

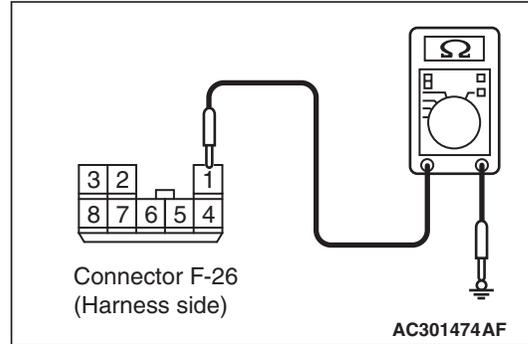
- YES :** Go to Step 13.
- NO :** Repair the connector.

**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.

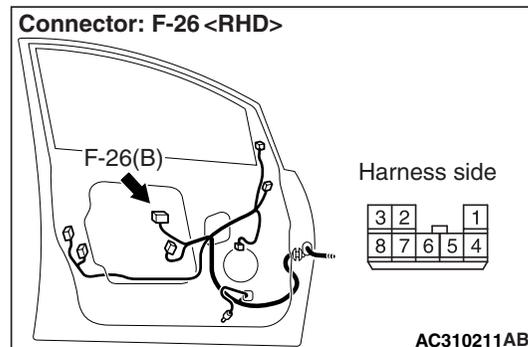


(2) Resistance between terminal 1 and body earth  
**OK: 2 Ω or less**

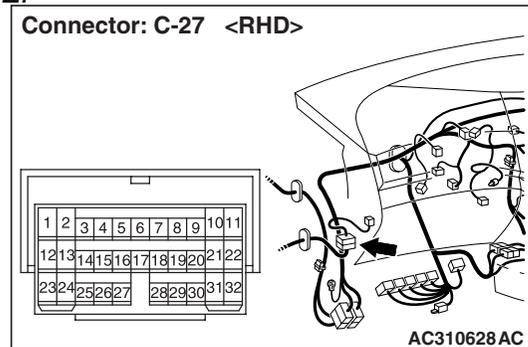
**Q: Is the check result normal?**

- 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:**



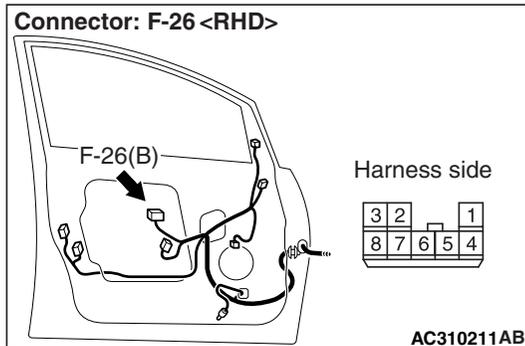
Prior to the wiring harness inspection, check intermediate connector C-27 and repair if necessary.

- Check the earth wires for open circuit.

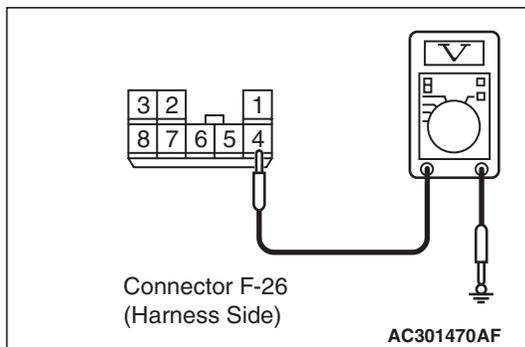
**Q: Is the check result normal?**

- 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.



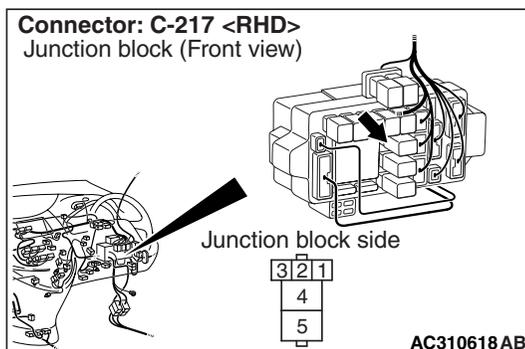
- (3) Voltage between terminal 4 and body earth  
**OK: System voltage**

**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**

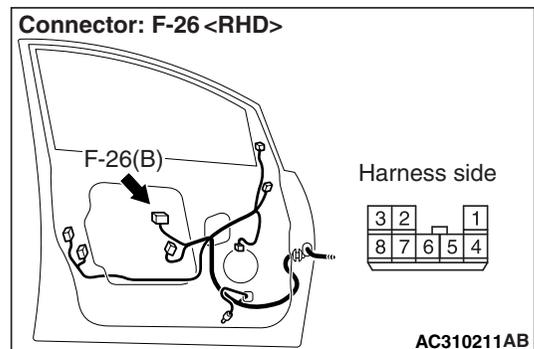
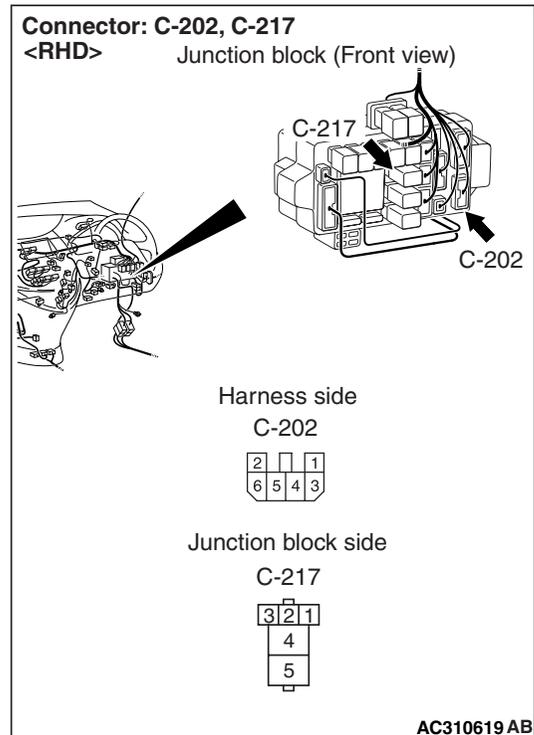


**Q: Is the check result normal?**

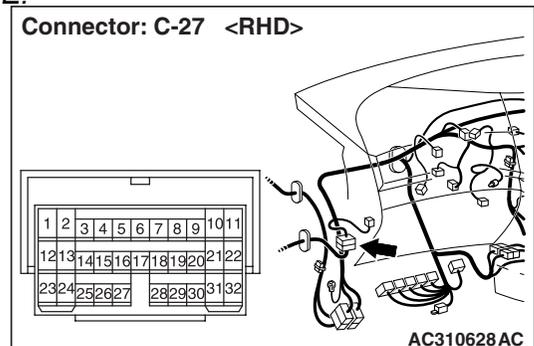
**YES :** Go to Step 17.

**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:**



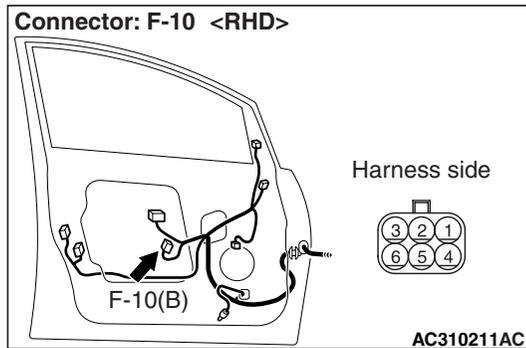
*Prior to the wiring harness inspection, check intermediate connectors C-27 and junction block connector C-202, and repair if necessary.*

- Check the power supply line for open circuit.

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

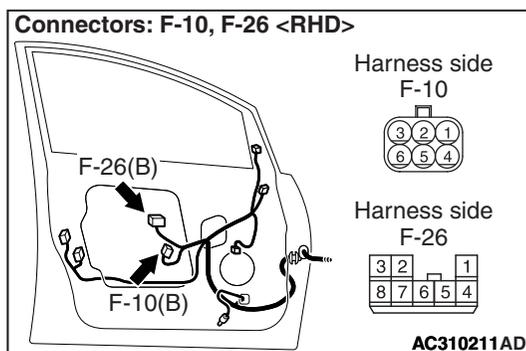
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).  
**NO :** Repair the wiring harness.

### 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.

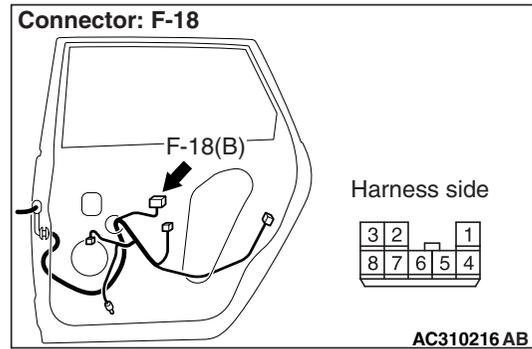
After the power window sub switch (front: LH) is replaced, check that the front passenger's door power window can be operated by the power window sub switch (front: LH).

- (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?**

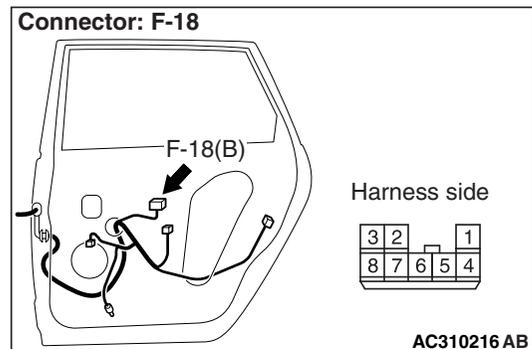
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO :** Replace the power window motor assembly (front: LH).

### Step 21. Connector check: F-18 power window sub switch (rear: RH) connector

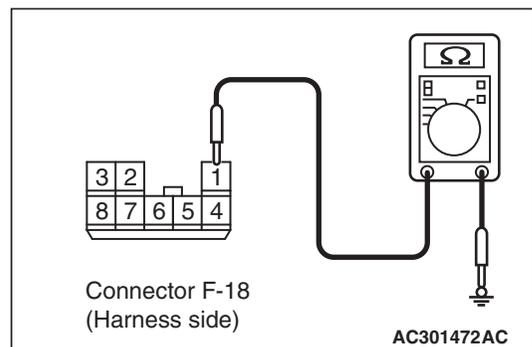


**Q: Is the check result normal?**  
**YES :** Go to Step 22.  
**NO :** Repair the connector.

### 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.



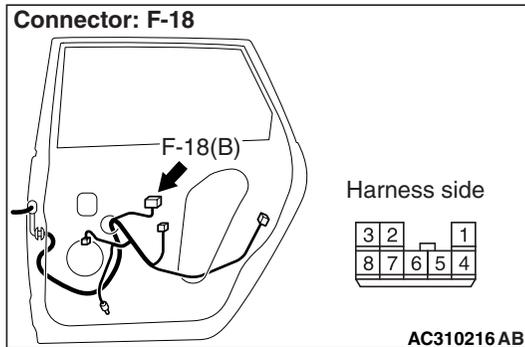
- (2) Resistance between terminal 1 and body earth  
**OK: 2 Ω or less**

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

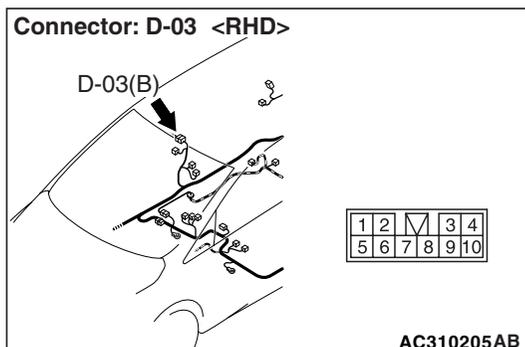
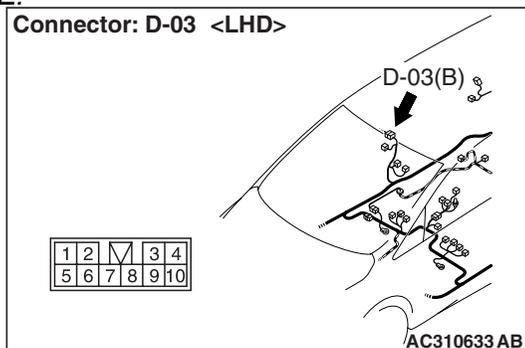
YES : Go to Step 24.

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.

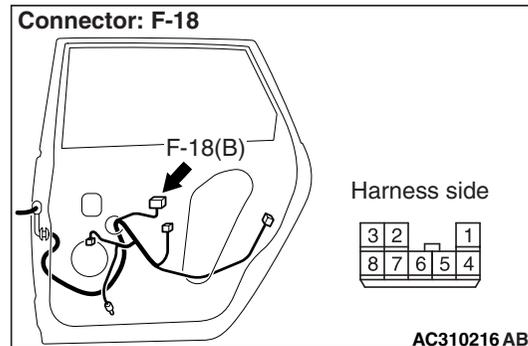
- Check the earth wires for open circuit.

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

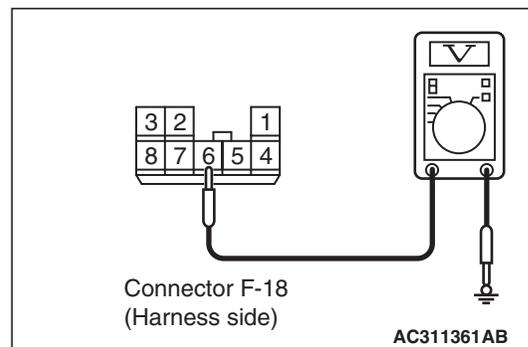
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).

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 6 and body earth

**OK: System voltage**

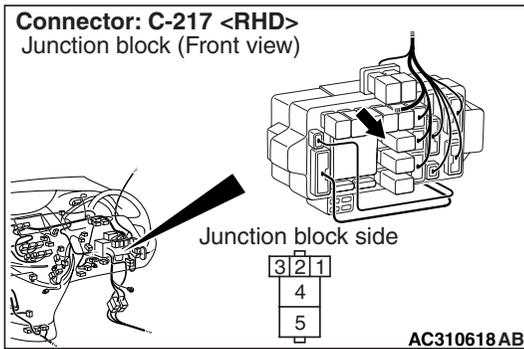
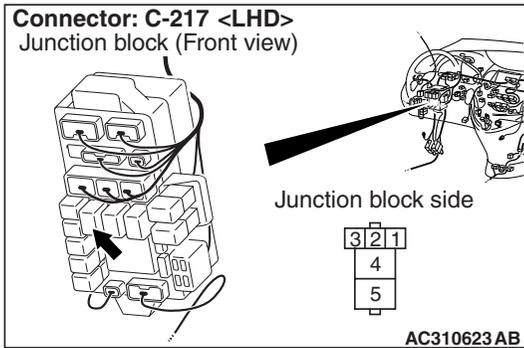
**Q: Is the check result normal?**

YES : Go to Step 27.

NO : Go to Step 25.

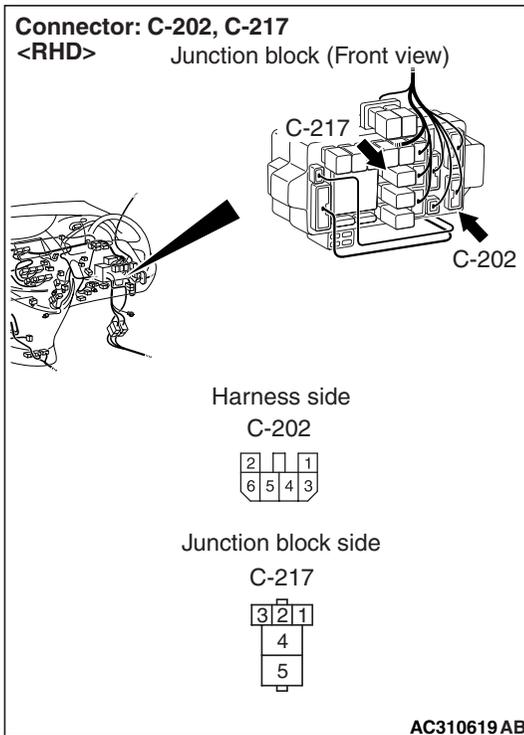
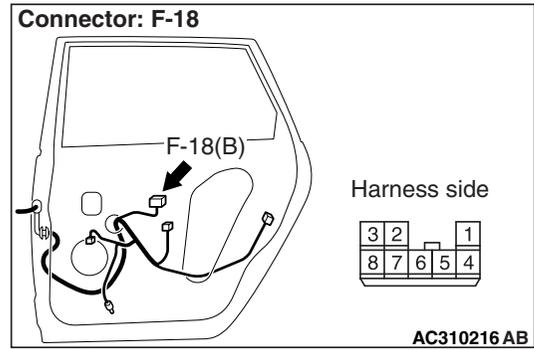
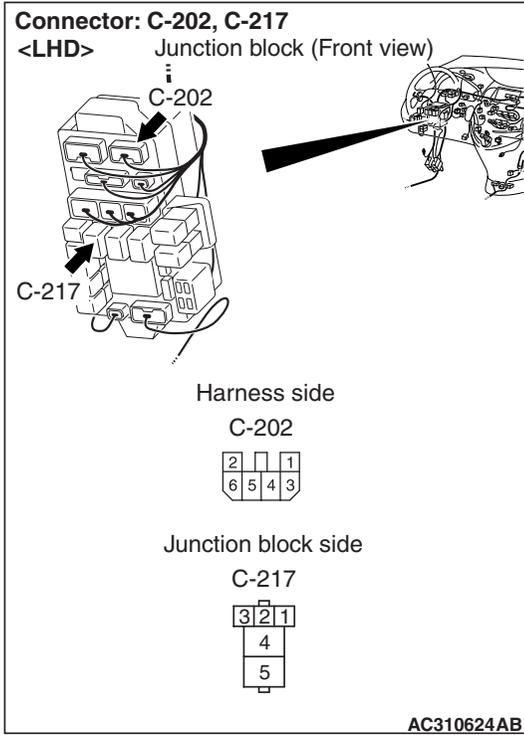
**Step 25. Connector check: C-217 power window relay connector**

**YES :** Go to Step 26.  
**NO :** Repair the connector.

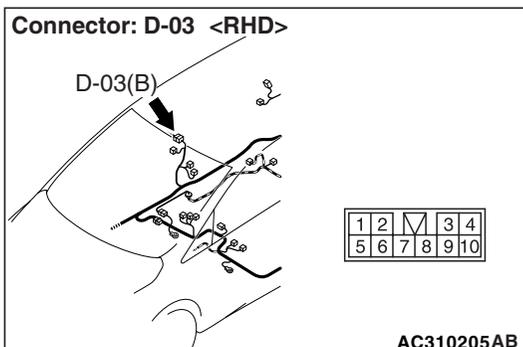
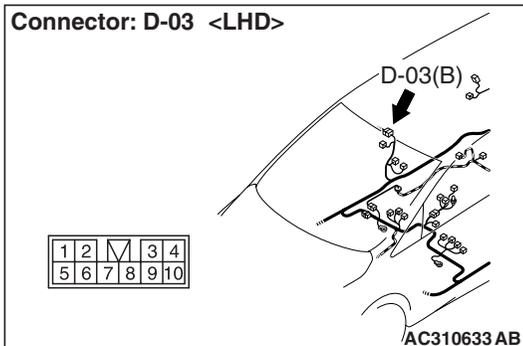
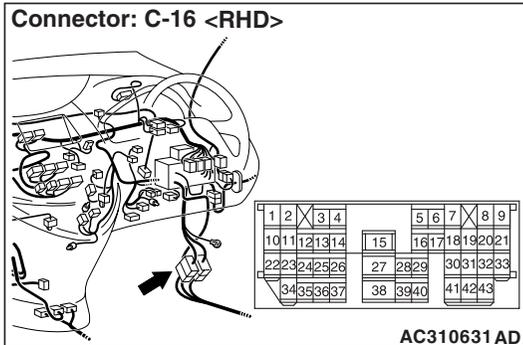
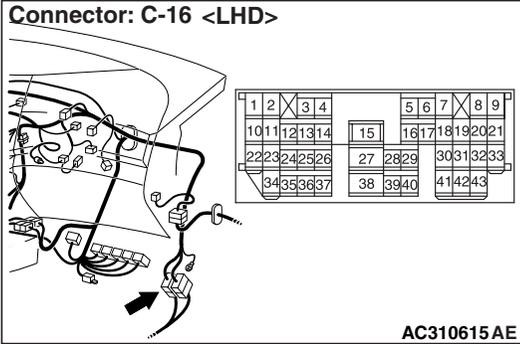


**Q: Is the check result normal?**

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.



NOTE:



Prior to the wiring harness inspection, check intermediate connectors C-16, D-03 and junction block connector C-202, and repair if necessary.

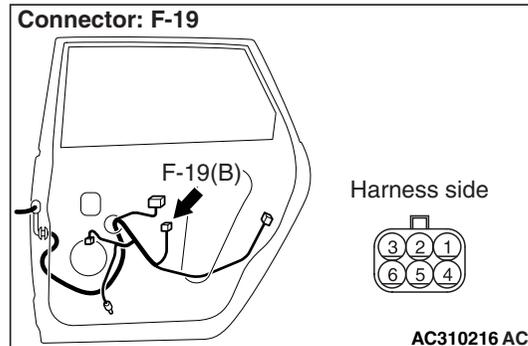
- Check the power supply line for open circuit.

**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**

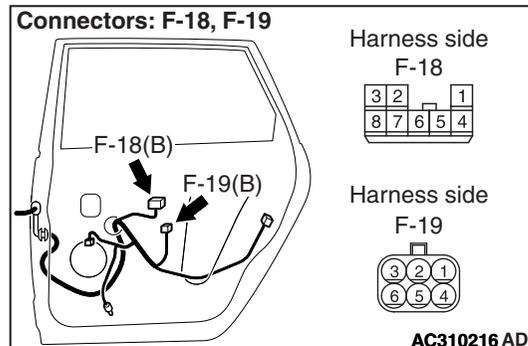


**Q: Is the check result normal?**

**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).

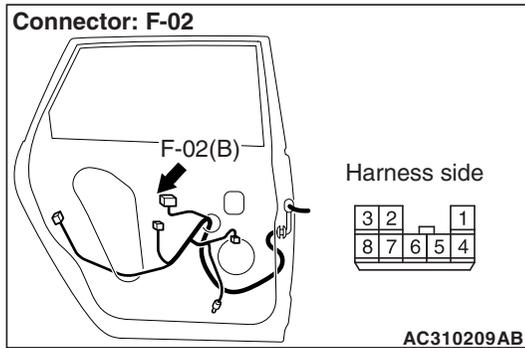
- (1) Replace the power window sub switch (rear: RH).
- (2) Check that the rear right door power window can be operated by the power window sub switch (rear: RH).

**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).

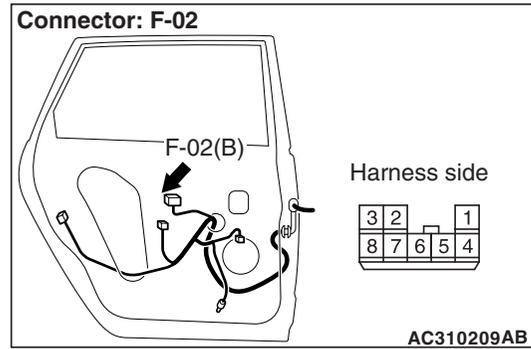
**NO :** Replace the power window motor assembly (rear: RH).

**Step 30. Connector check: F-02 power window sub switch (rear: LH) connector**

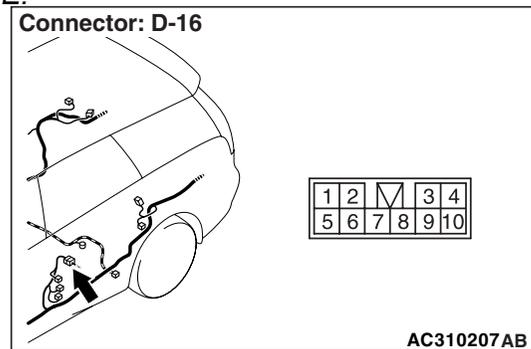


**Q: Is the check result normal?**  
**YES :** Go to Step 31.  
**NO :** Repair the connector.

**Step 32. Check the wiring harness from F-02 power window sub switch (rear: LH) connector terminal No.1 to body earth.**



**NOTE:**

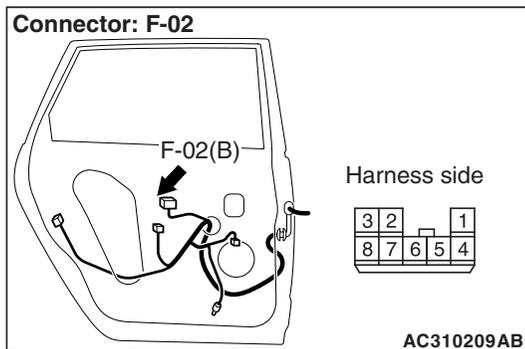


*Prior to the wiring harness inspection, check intermediate connectors D-16, and repair if necessary.*

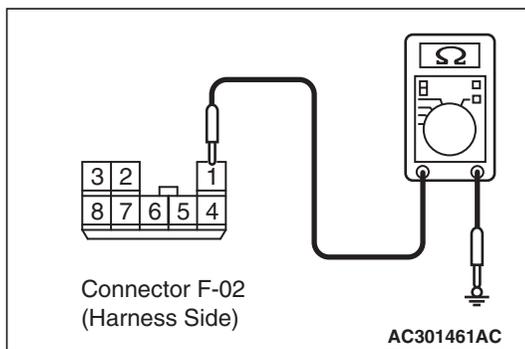
- Check the earth wires for open circuit.

**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 31. Resistance measurement at F-02 power window sub switch (rear: LH) connector.**



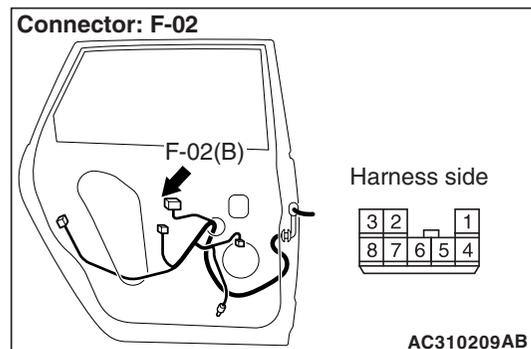
(1) Disconnect the connector, and measure at the wiring harness side.



(2) Resistance between terminal 1 and body earth  
**OK: 2 Ω or less**

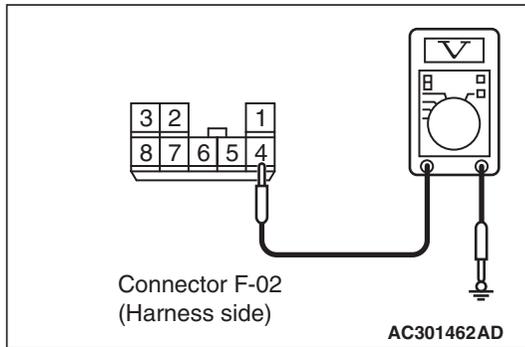
**Q: Is the check result normal?**  
**YES :** Go to Step 33.  
**NO :** Go to Step 32.

**Step 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

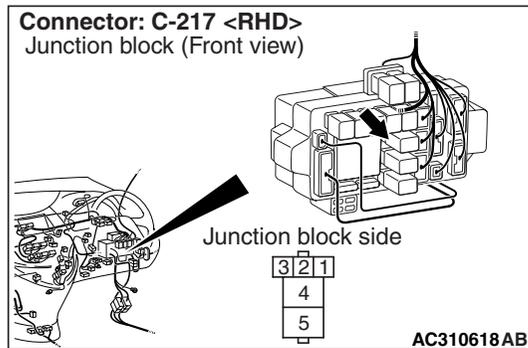
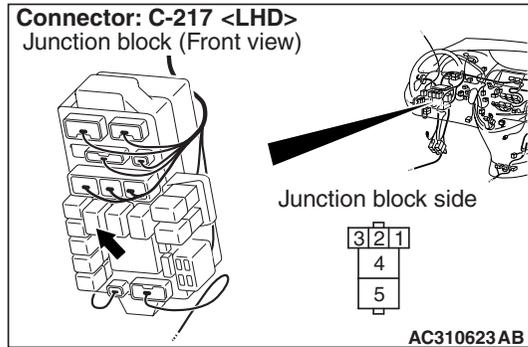
**OK: System voltage**

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

**YES :** Go to Step 36.

**NO :** Go to Step 34.

**Step 34. C-217 power window relay connector**



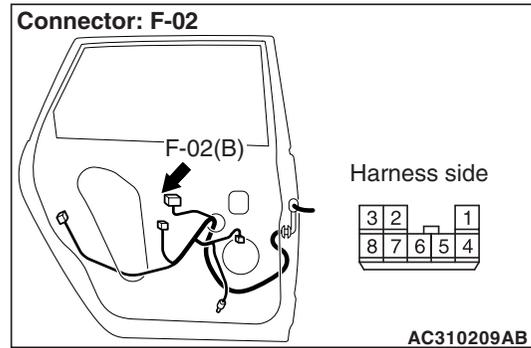
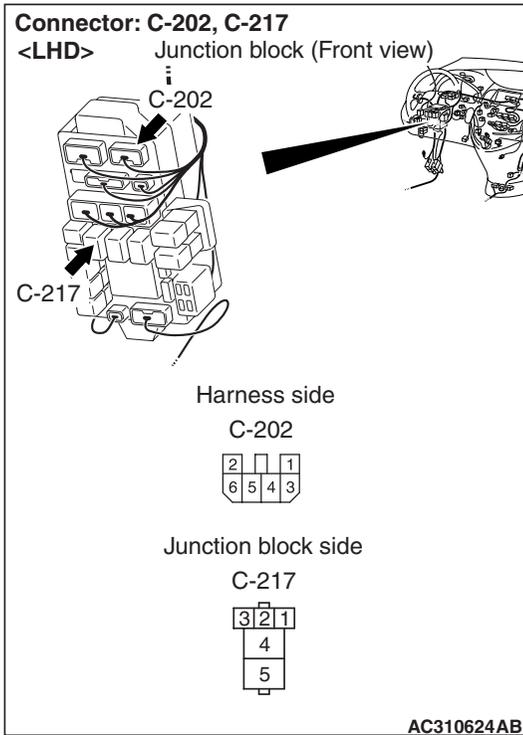
**Q: Is the check result normal?**

**YES :** Go to Step 35.

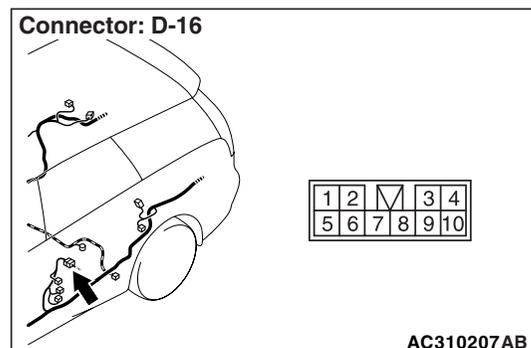
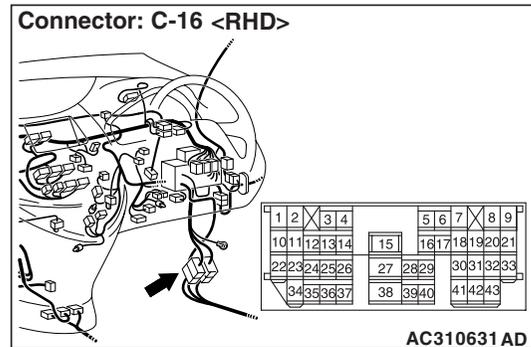
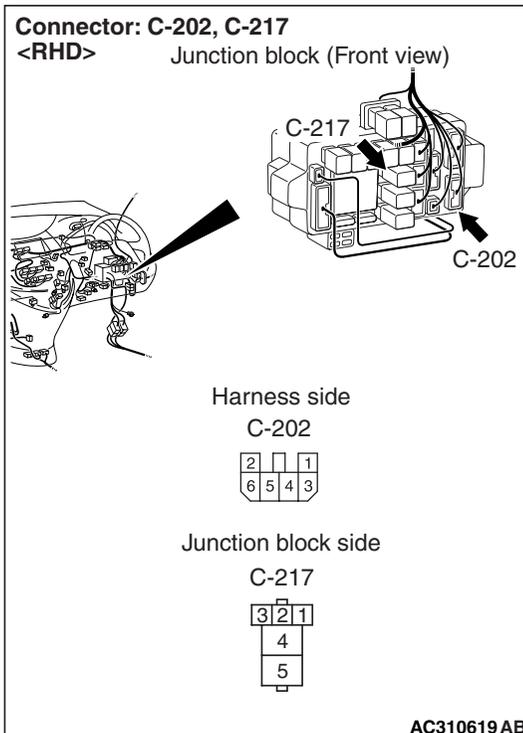
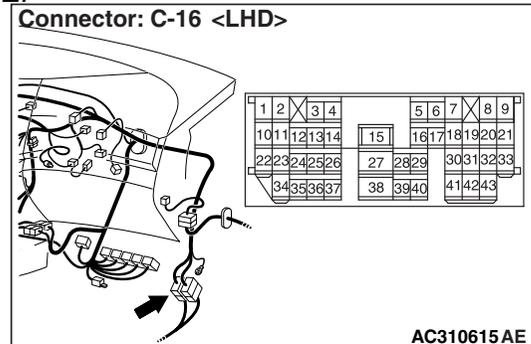
**NO :** Repair the connector.

---

**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:

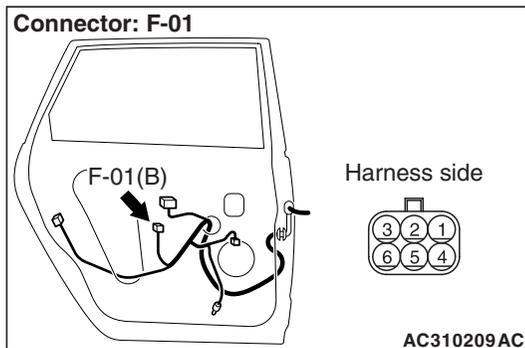
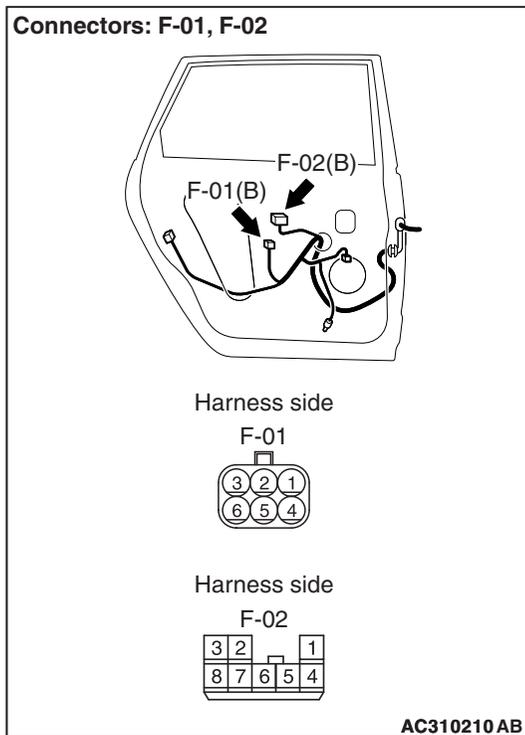


Prior to the wiring harness inspection, check intermediate connectors C-16, D-16 and junction block connector C-202, and repair if necessary.

- 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).

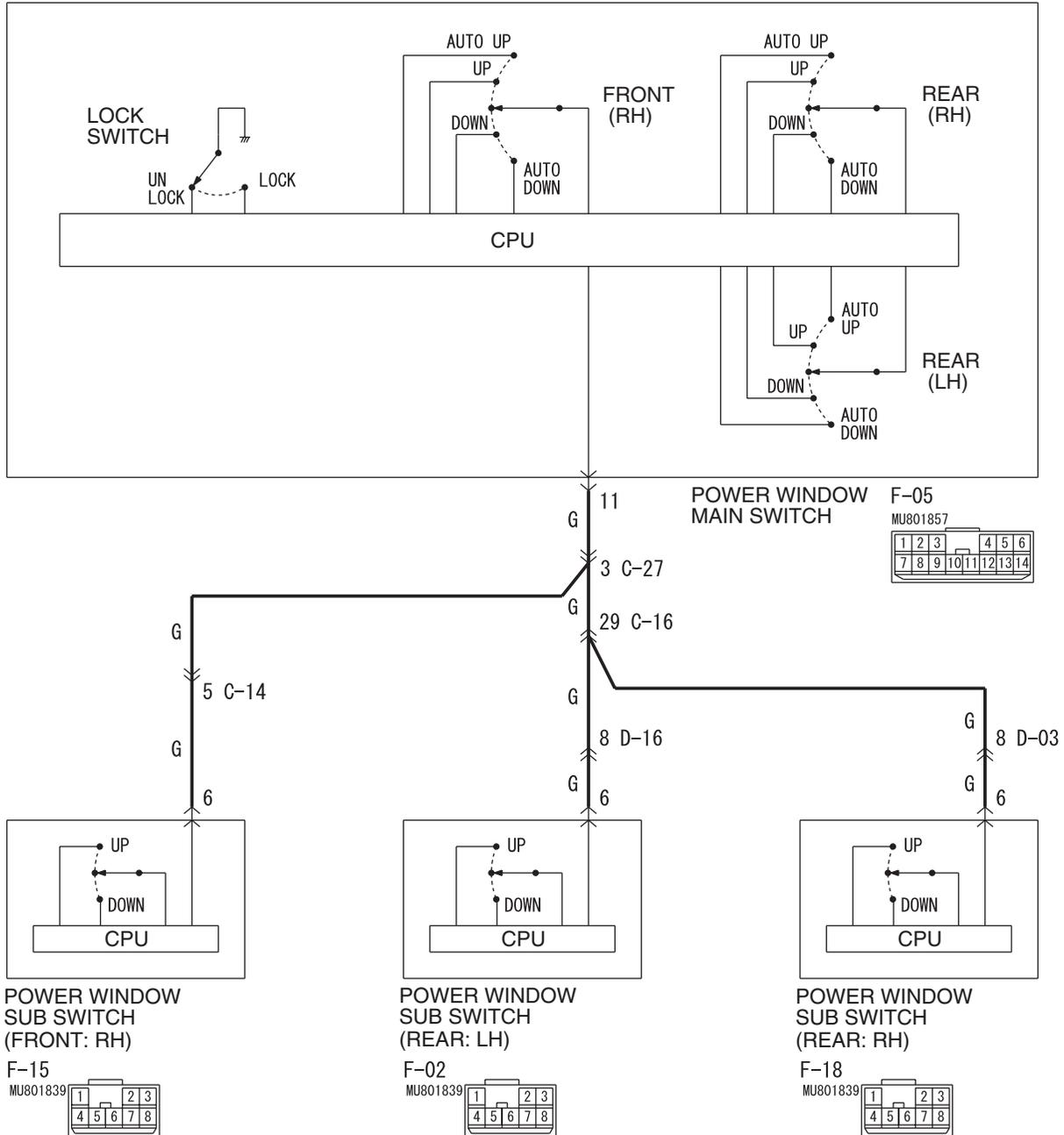
**Q: Is the check result normal?**

**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).

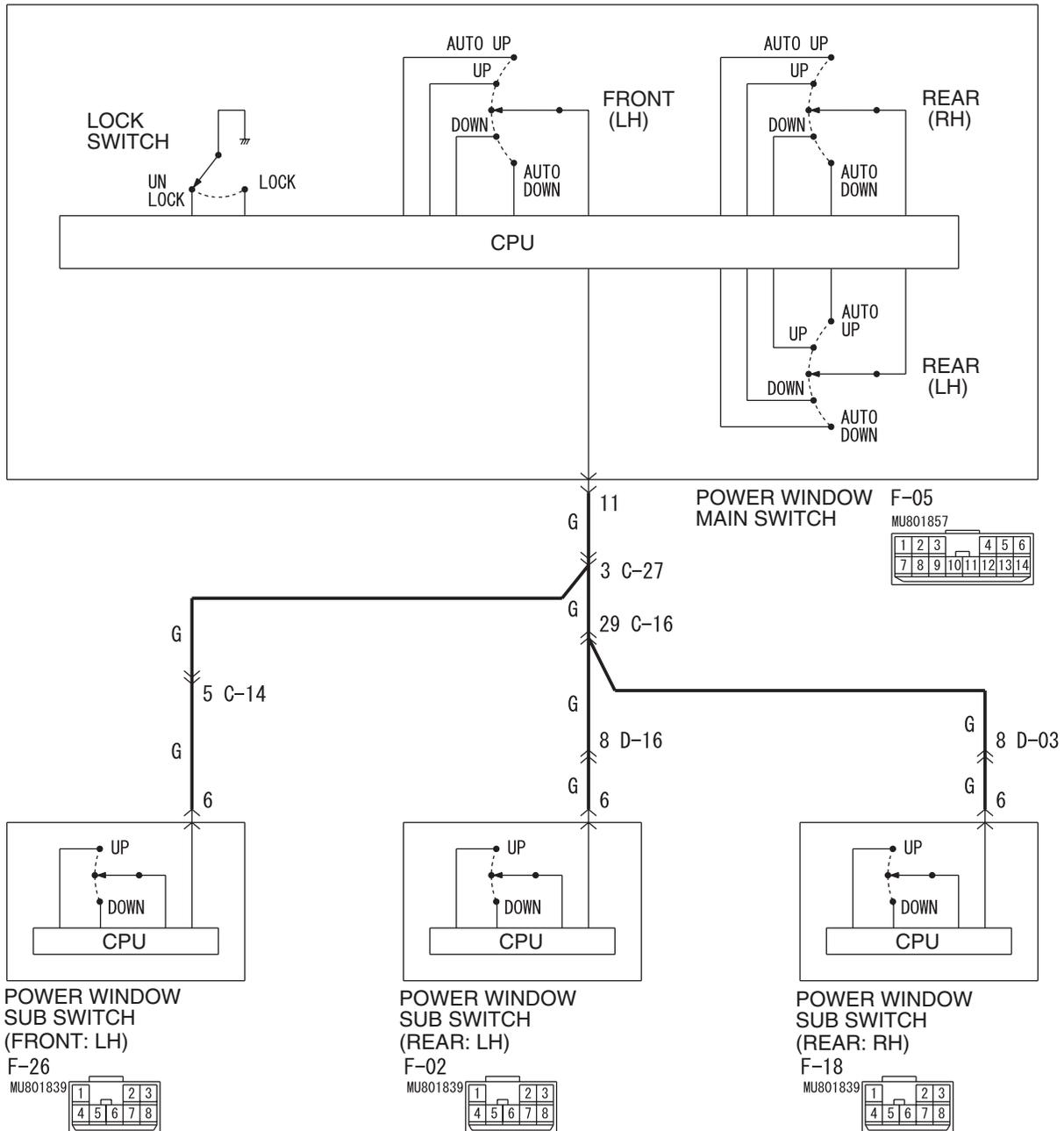
Inspection Procedure D-4: Passenger's and/or rear power window(s) do not work by means of the power window main switch.

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

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. Check the power window main switch.

Check that the driver's power window works 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-2 "Driver's power window does not work by means of the power window main switch P.54B-134 <LH drive vehicles> or P.54B-136 <RH drive vehicles>."

### 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.54B-138."

### Step 3. Determine a trouble spot.

**Q: Which power window does not work when the power window main switch is operated?**

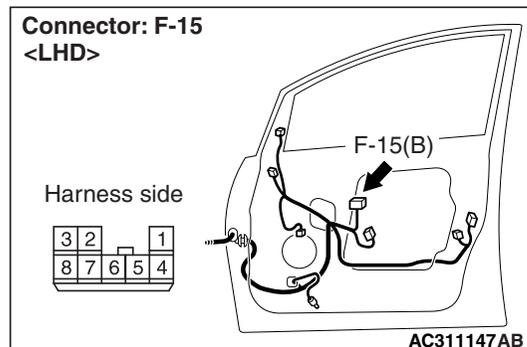
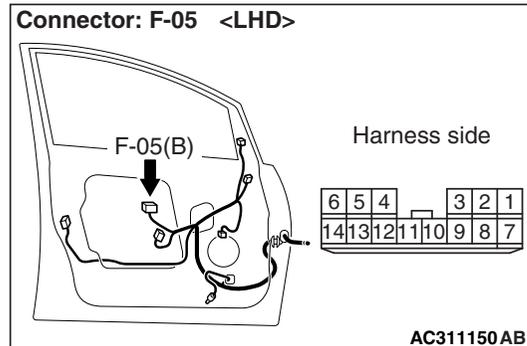
Front passenger's door <LH drive vehicles> : Go to Step 4.

Front passenger's door <RH drive vehicles> : Go to Step 7.

Rear right door : Go to Step 10.

Rear left door : Go to Step 13.

### Step 4. Connector check: F-05 power window main switch connector and F-15 power window sub switch (front: RH) connector

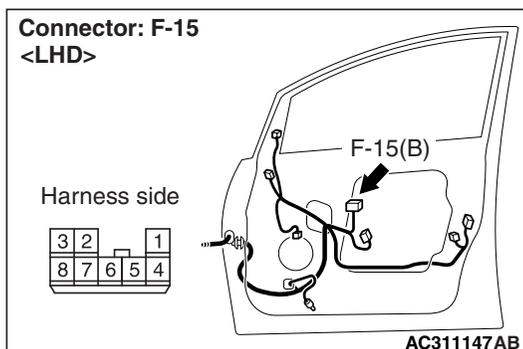
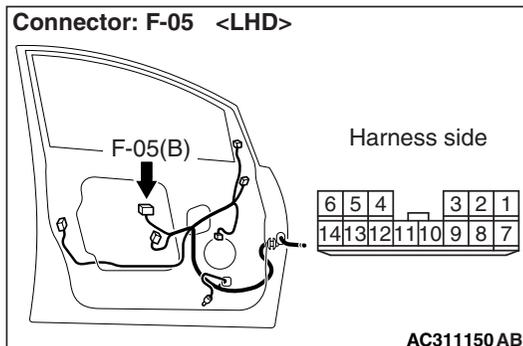


**Q: Is the check result normal?**

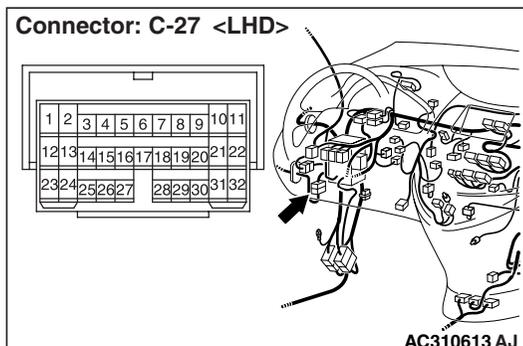
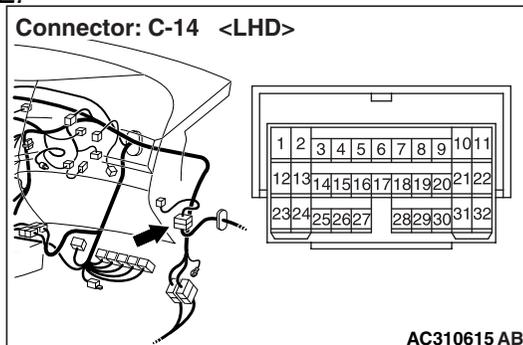
**YES :** Go to Step 5.

**NO :** Repair the connector.

**Step 5. Check the wiring harness between F-05 power window main switch connector terminal No.11 and F-15 power window sub switch (front: RH) connector terminal No.6.**



**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 6.

**NO :** Repair the wiring harness.

**Step 6. 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.

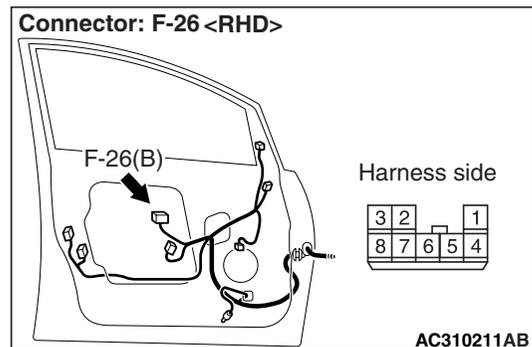
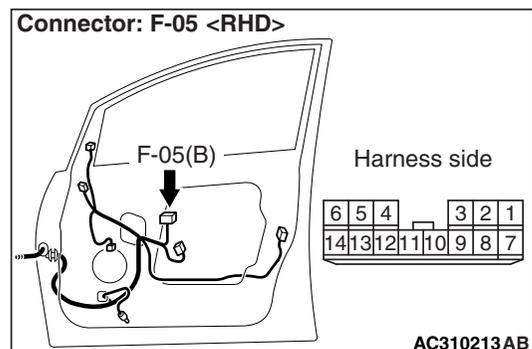
- (1) Replace the power window sub switch (front: RH).
- (2) Check that the front passenger's power window works by means of the power window main switch.

**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 7. Connector check: F-05 power window main switch connector and F-26 power window sub switch (front: LH) connector**

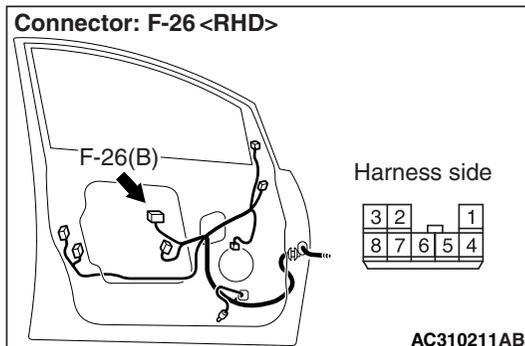
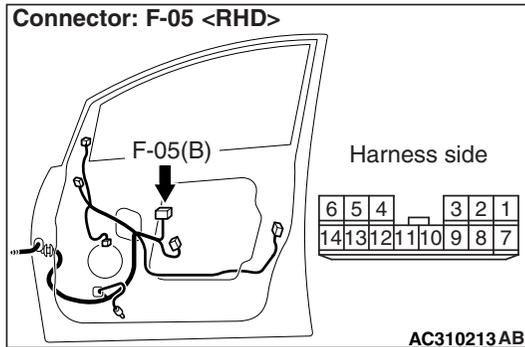


**Q: Is the check result normal?**

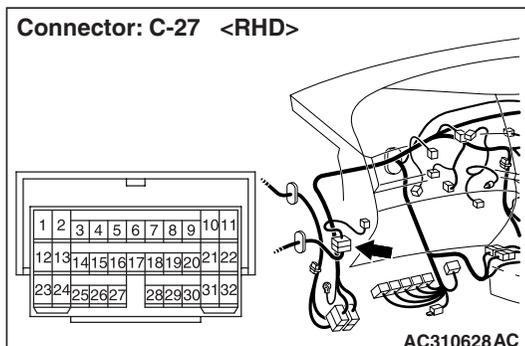
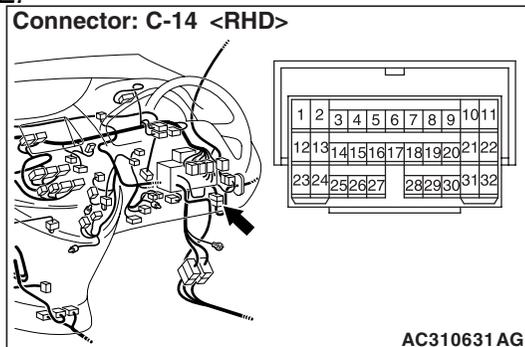
**YES :** Go to Step 8.

**NO :** Repair the connector.

**Step 8. Check the wiring harness between F-05 power window main switch connector terminal No.11 and F-26 power window sub switch (front: LH) connector terminal No.6.**



**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 9. 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.

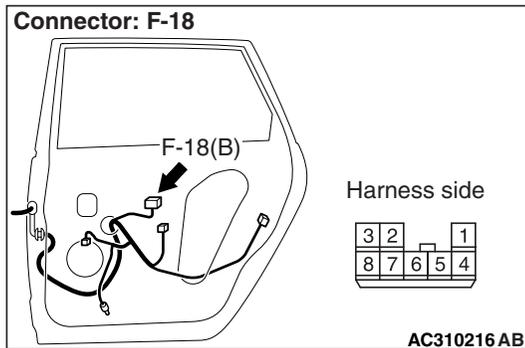
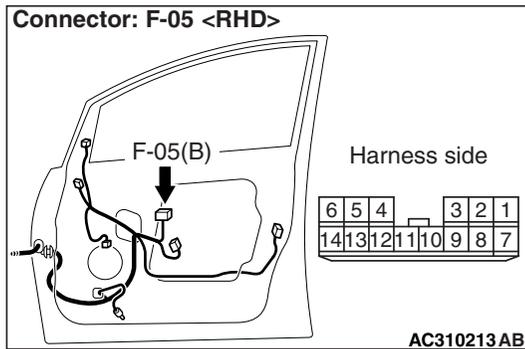
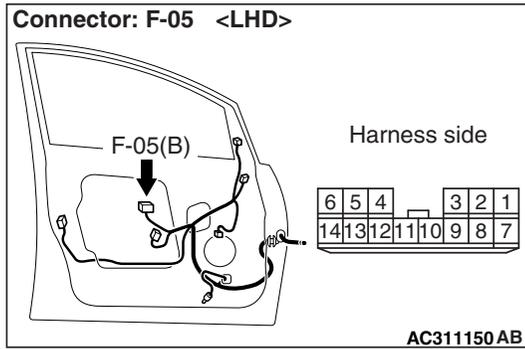
**Q: Is the check result normal?**

**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.

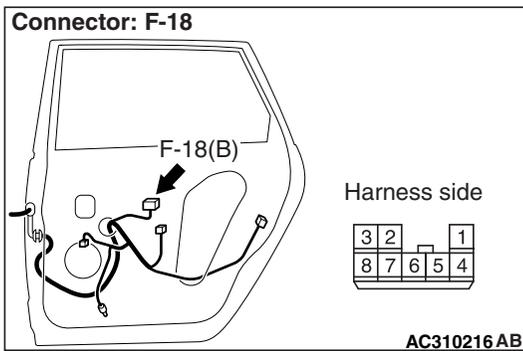
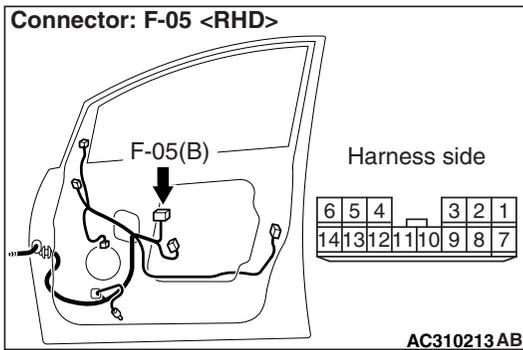
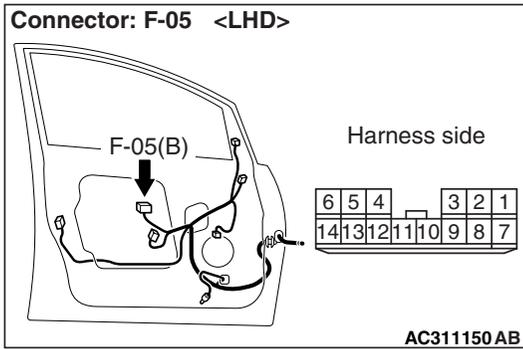
**Step 10. Connector check: F-05 power window main switch connector and F-18 power window sub switch (rear: RH) connector**

**YES :** Go to Step 11.  
**NO :** Repair the connector.

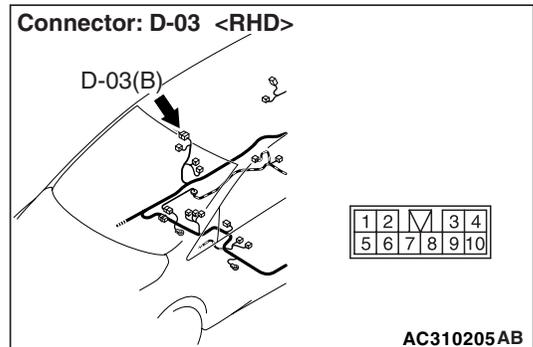
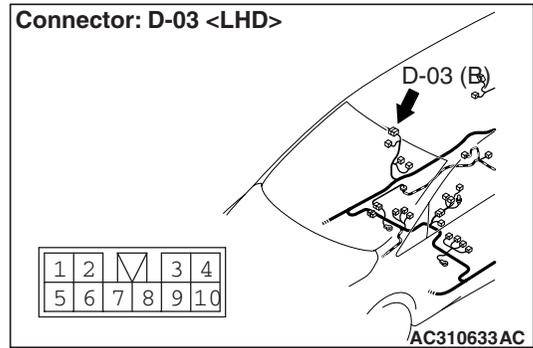
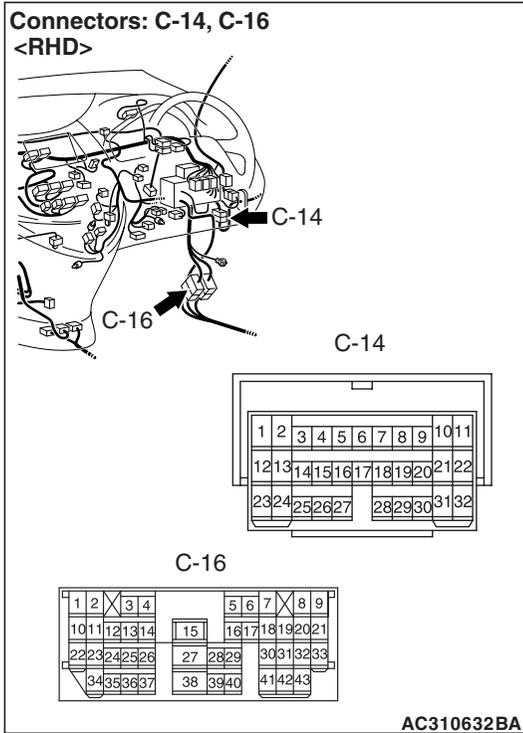


**Q: Is the check result normal?**

Step 11. Check the wiring harness between F-05 power window main switch connector terminal No.11 and F-18 power window sub switch (rear: RH) connector terminal No.6.



NOTE:

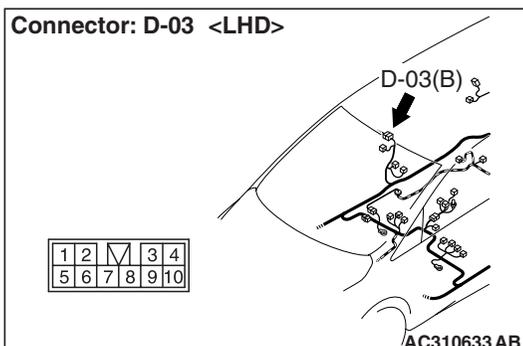
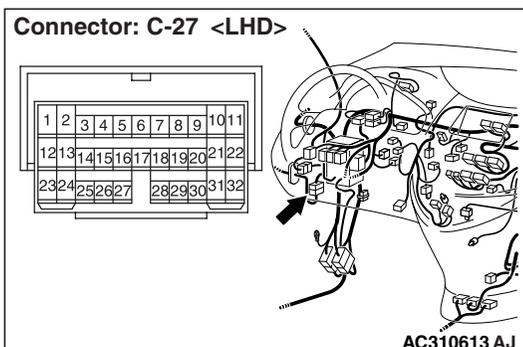
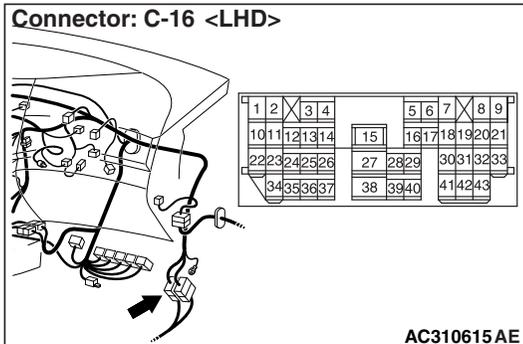


Prior to the wiring harness inspection, check intermediate connectors C-27 <LH drive vehicles>, C-14 <RH drive vehicles>, C-16, D-03, and repair if necessary.

- Check the communication lines for open circuit.

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

- YES :** Go to Step 12.  
**NO :** Repair the wiring harness.



**Step 12. 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.

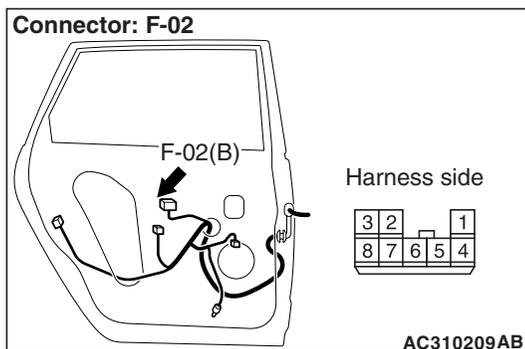
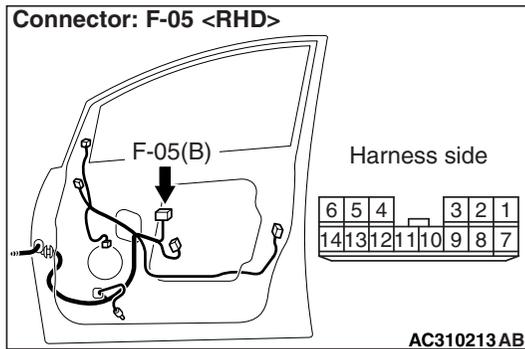
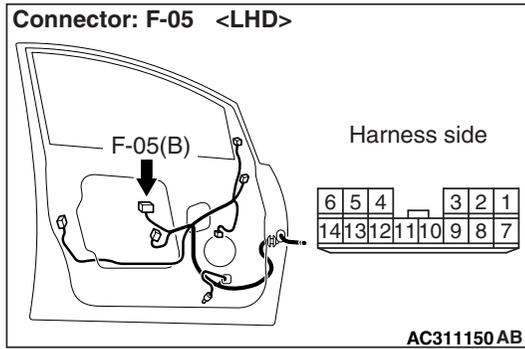
- (1) Replace the power window sub switch (rear: RH).
- (2) Check that the rear right power window works by means of the power window main switch.

**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.

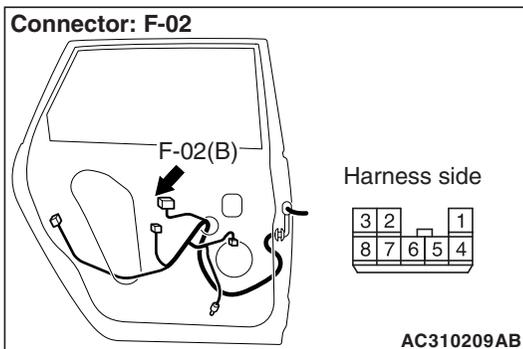
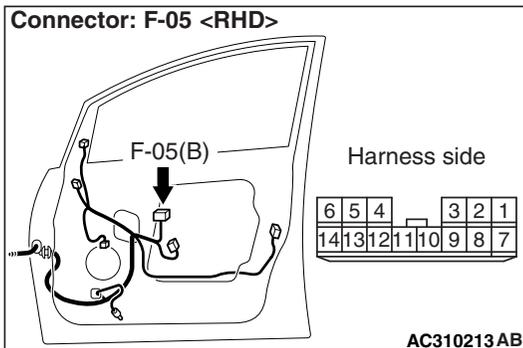
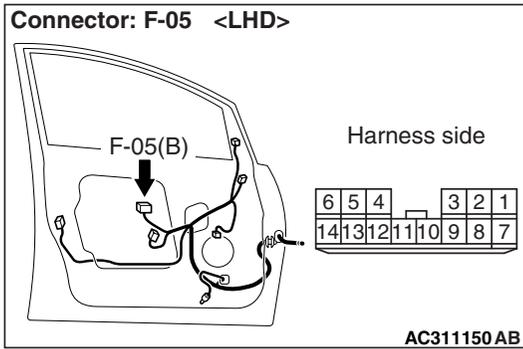
**Step 13. Connector check: F-05 power window main switch connector and F-02 power window sub switch (rear: LH) connector**

YES : Go to Step 14.  
NO : Repair the connector.

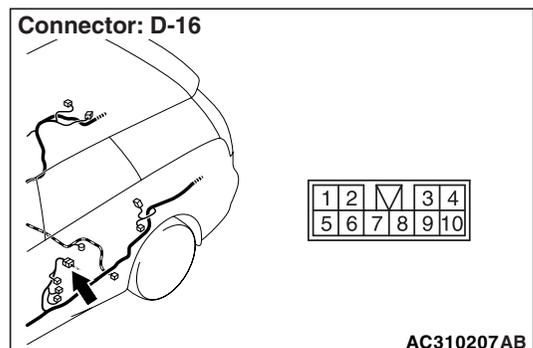
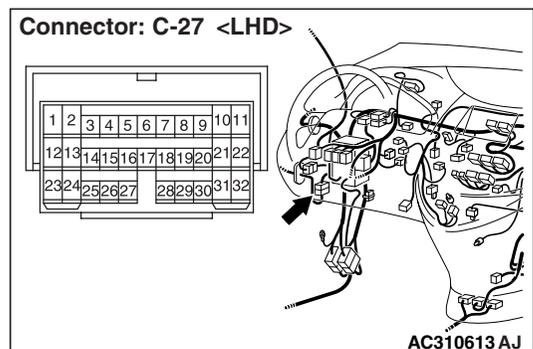
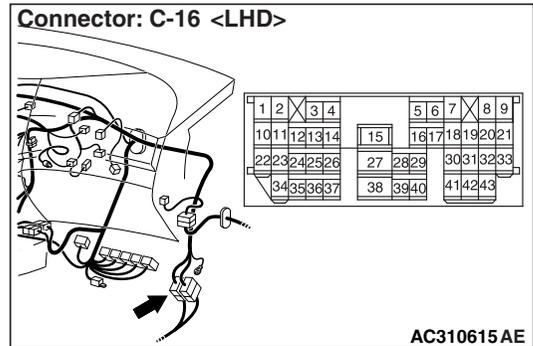
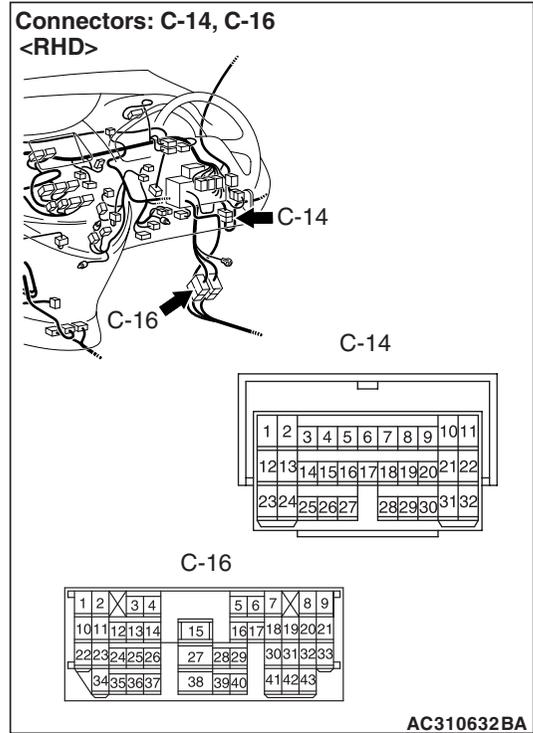


**Q: Is the check result normal?**

Step 14. Check the wiring harness between F-05 power window main switch connector terminal No.11 and F-02 power window sub switch (rear: LH) connector terminal No.6.



NOTE:



Prior to the wiring harness inspection, check intermediate connectors C-27 <LH drive vehicles>, C-14 <RH drive vehicles>, C-16, D-16 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. 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.54B-168](#)."

---

**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.

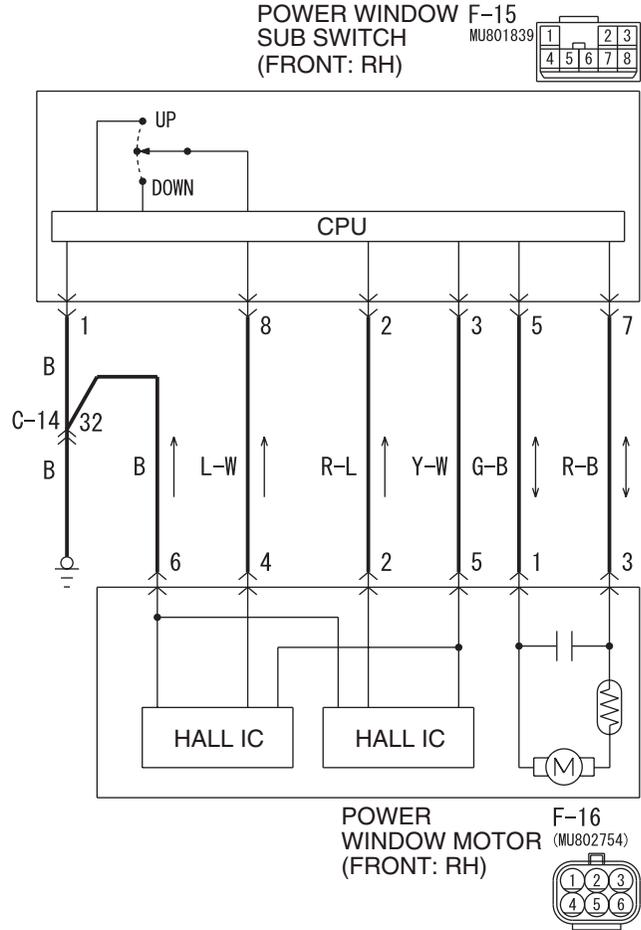
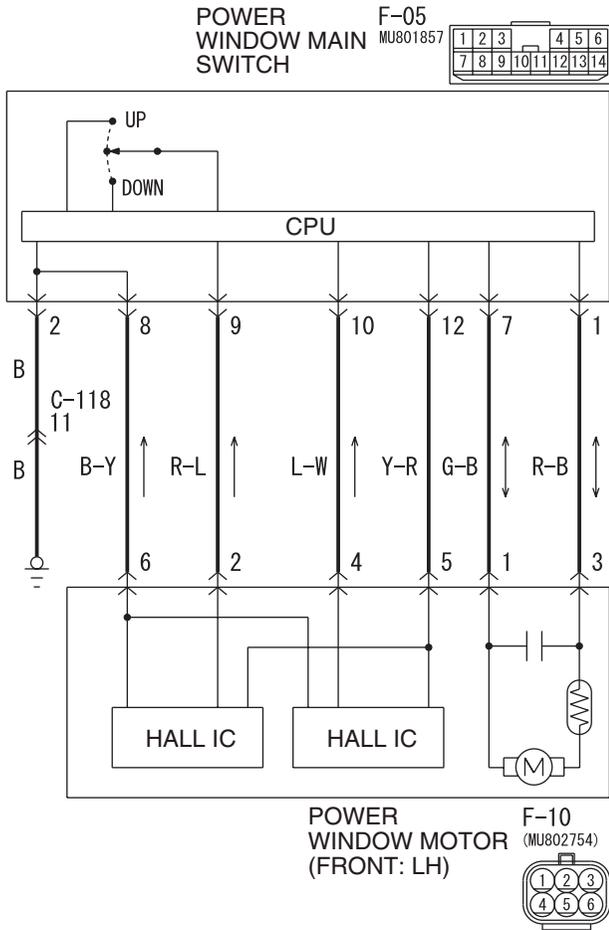
**Q: Is the check result normal?**

**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.

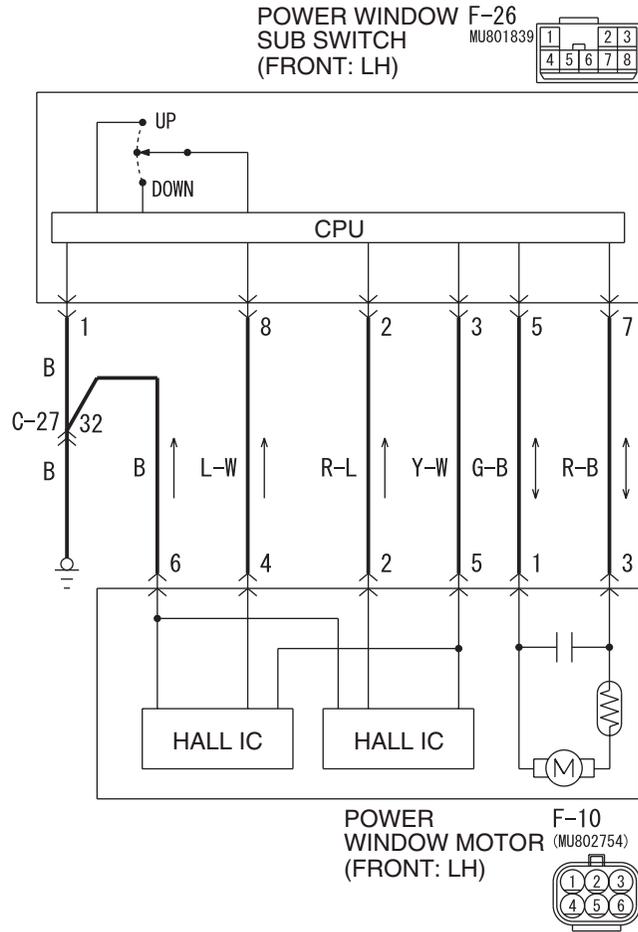
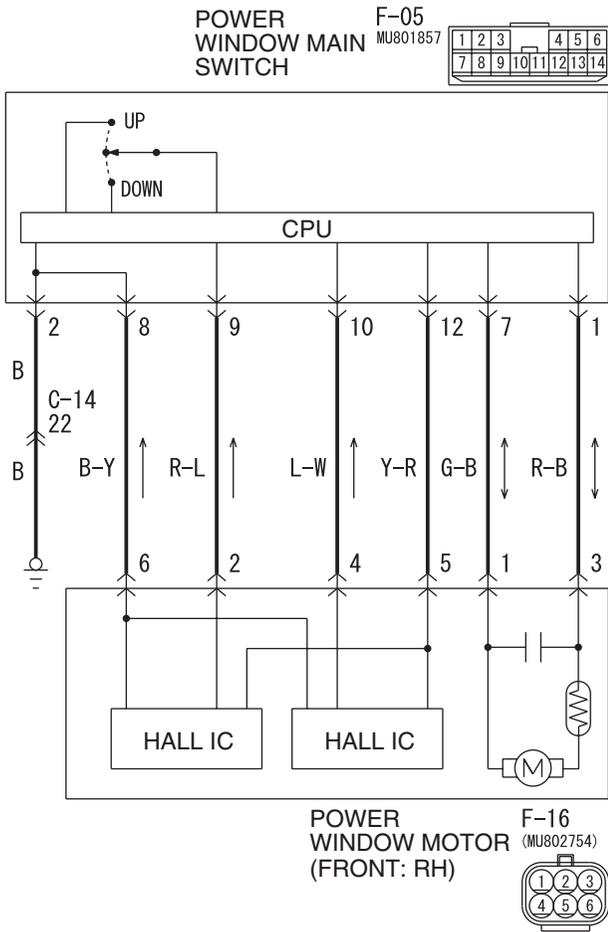
Power Window (front) Circuit <LHD>



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

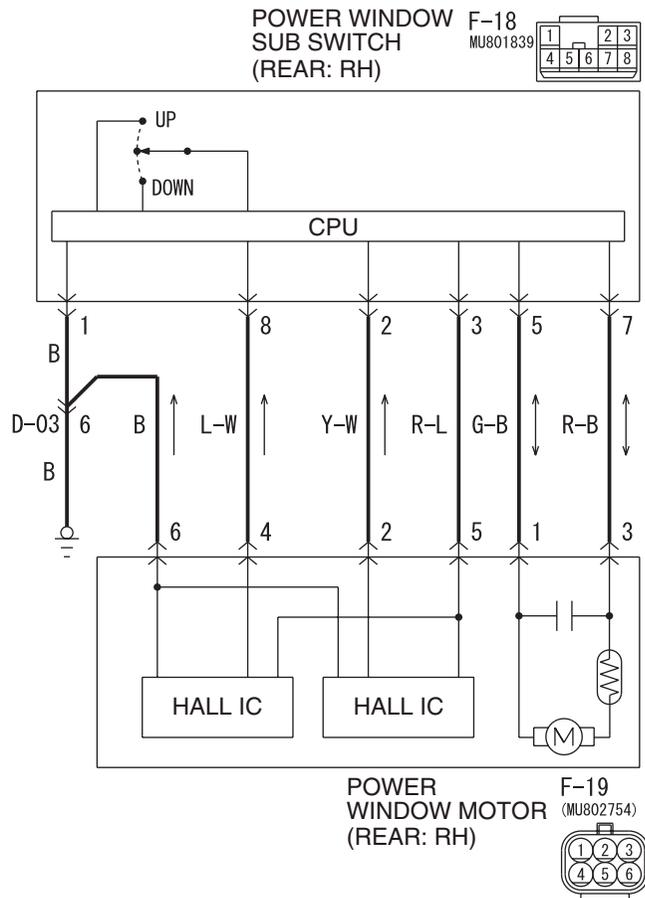
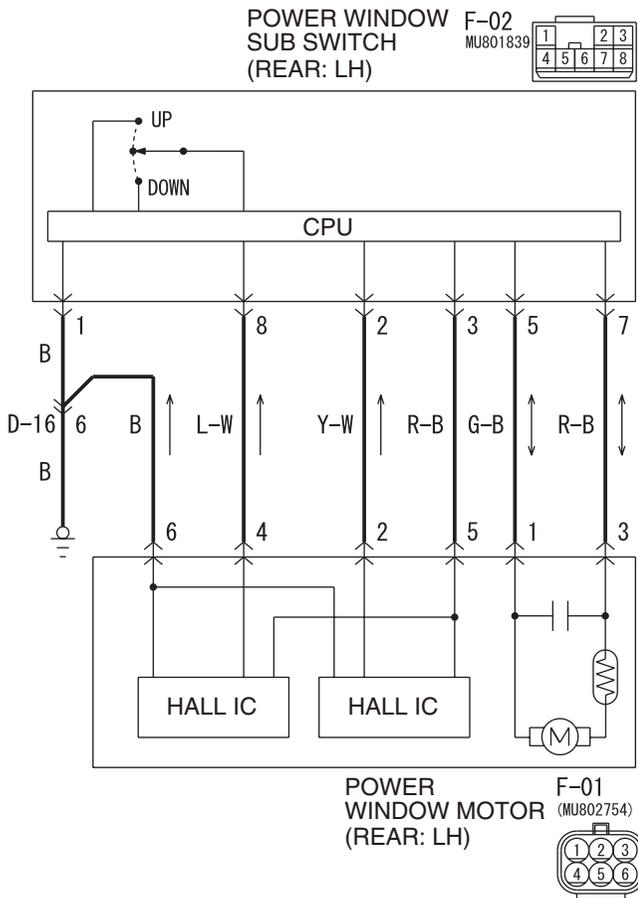
Power Window (front) Circuit <RHD>



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

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

W4X54E078A

**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 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.

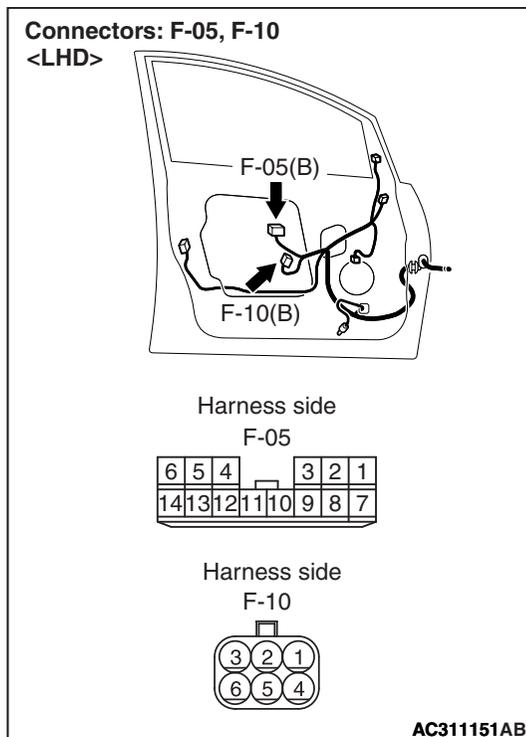
**NO :** Make the power window switch learn the fully closed position of the windows (Refer to GROUP 42 – Door P.42-35).

**Step 3. Determine a trouble spot.**

**Q: Which door does the power window anti-trap function fail on?**

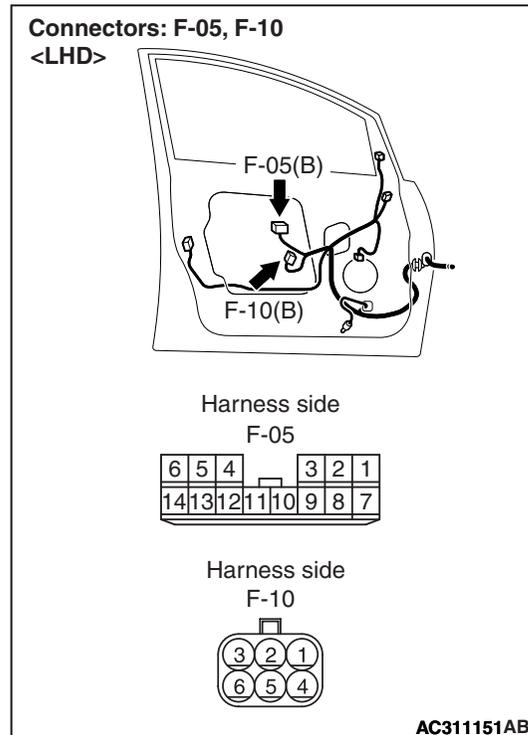
- Driver's door <LH drive vehicles> : Go to Step 4.
- Driver's door <RH drive vehicles> : Go to Step 7.
- Front passenger's door <LH drive vehicles> : Go to Step 10.
- Front passenger's door <RH drive vehicles> : Go to Step 16.
- Rear right door : Go to Step 22.
- Rear left door : Go to Step 28.

**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.

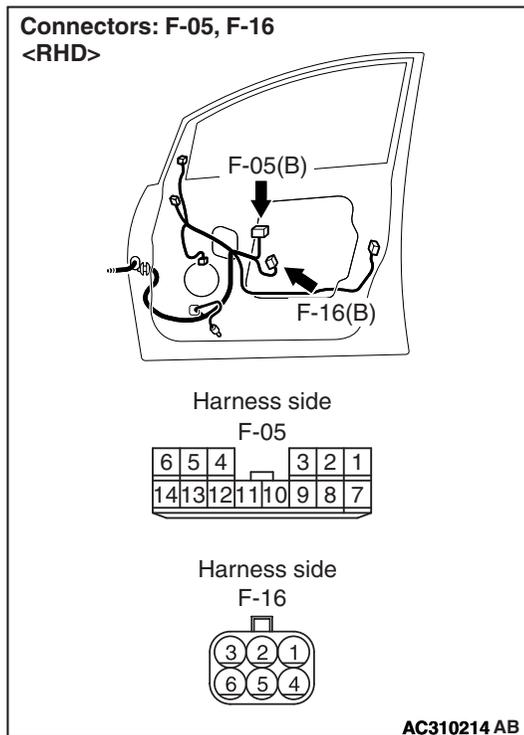
**Step 6. Retest the system.**

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**

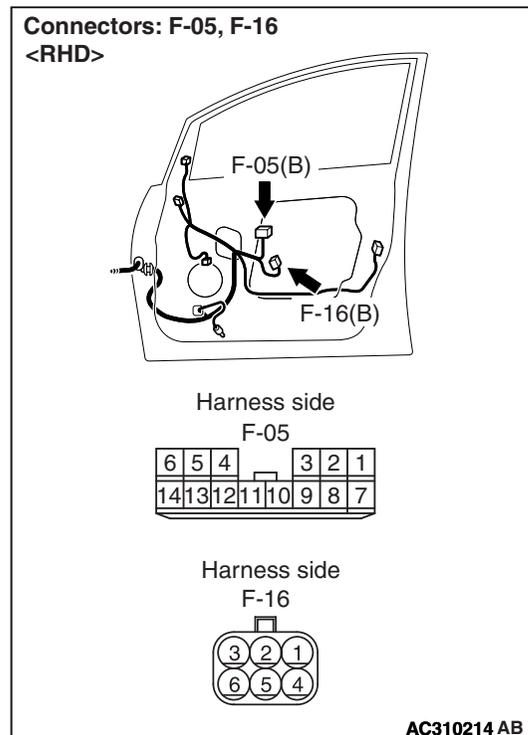


**Q: Is the check result normal?**

**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.

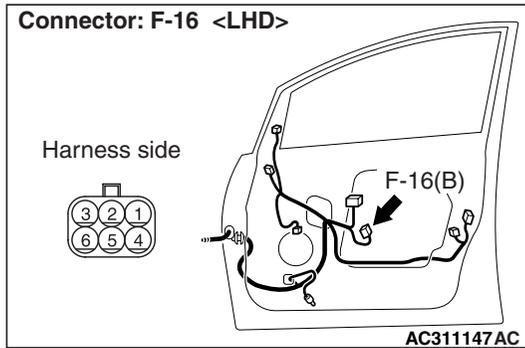
- (1) Replace the power window main switch.
- (2) Check that the driver's power window anti-trap function works.

**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).

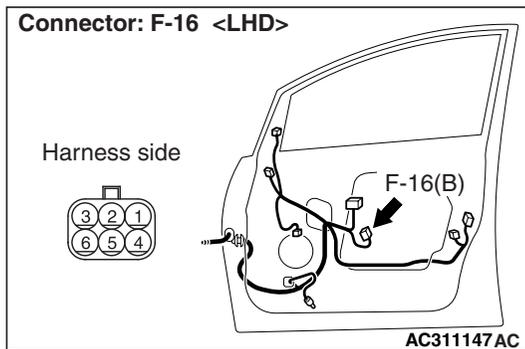
**NO** : Replace the power window motor (front: LH).

**Step 10. Connector check: F-16 power window motor (front: RH) connector**

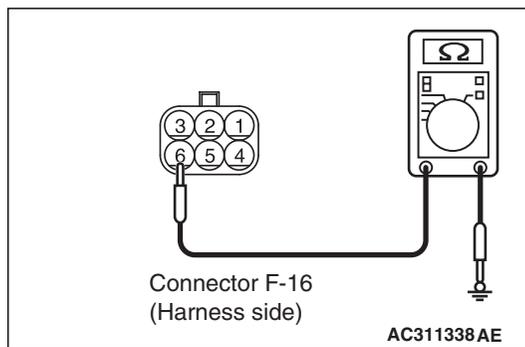


**Q: Is the check result normal?**  
**YES :** Go to Step 11.  
**NO :** Repair the defective connector.

**Step 11. Resistance measurement at F-16 power window motor (front: RH) connector.**



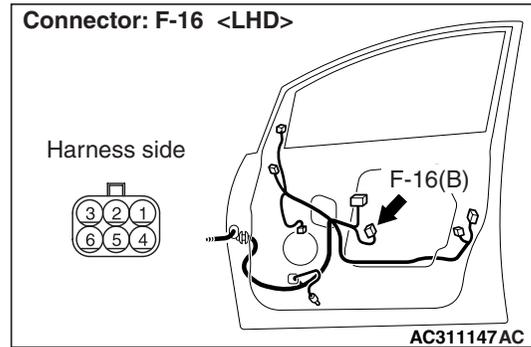
(1) Disconnect the connector, and measure at the wiring harness side.



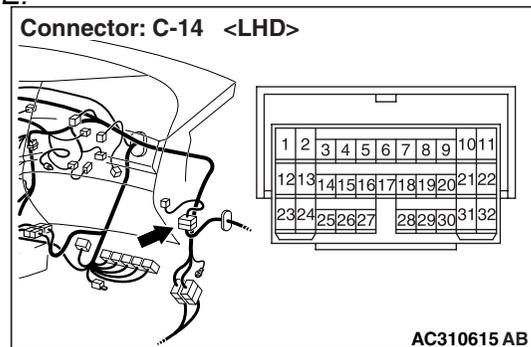
(2) Resistance between F-16 power window motor (front RH) connector power window motor (front: RH) connector terminal No.6 and body earth.  
**OK: 2 Ω or less**

**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:**

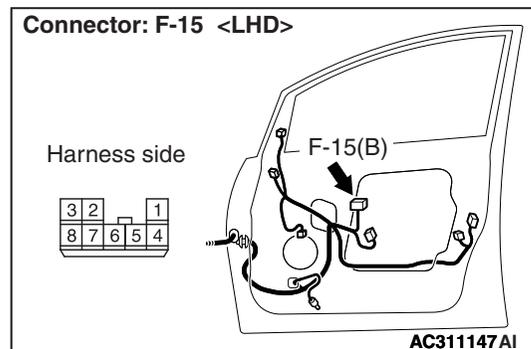


*Prior to the wiring harness inspection, check intermediate connector C-14 and repair if necessary.*

- Check the input and output lines to the revolution detection sensor for open or short circuit.

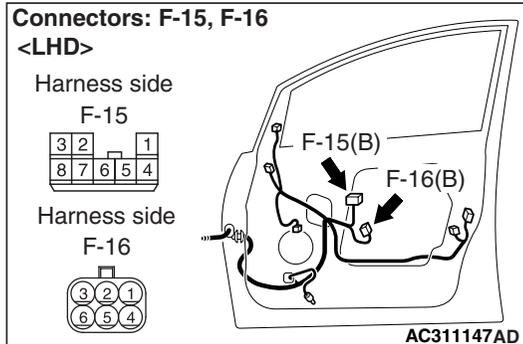
**Q: Is the check result normal?**  
**YES :** Go to Step 13.  
**NO :** Repair the wiring harness.

**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.

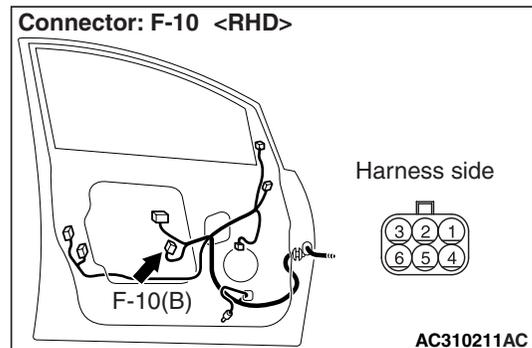
- (1) Replace the power window sub switch (front: RH).
- (2) Check that the front passenger's power window anti-trap function works.

**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**

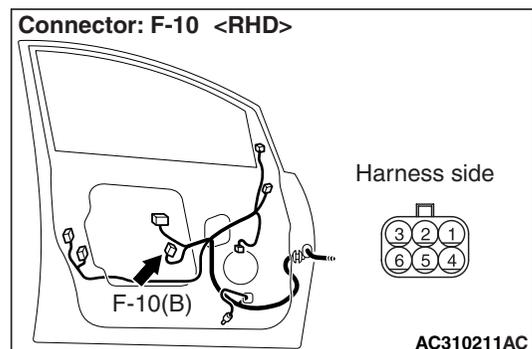


**Q: Is the check result normal?**

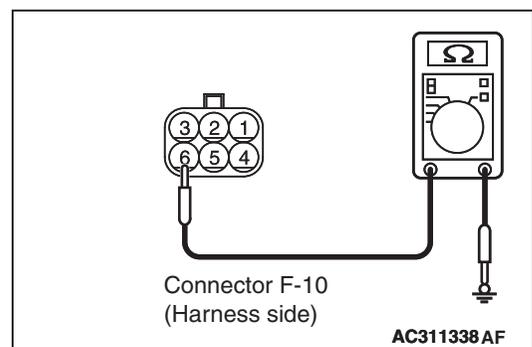
**YES :** Go to Step 17.

**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 power window motor (front: LH) connector terminal No.6 and body earth.

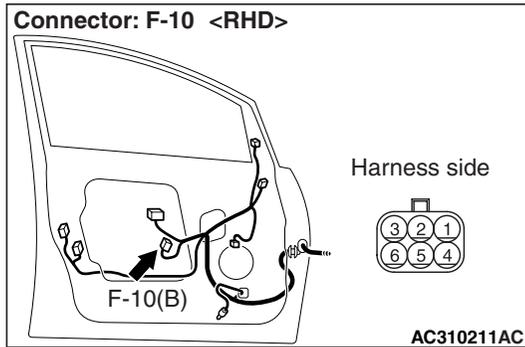
**OK: 2 Ω or less**

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

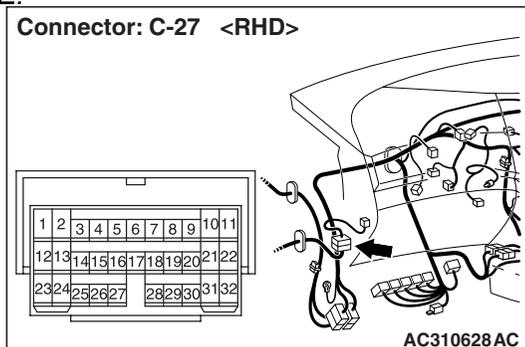
**YES :** Go to Step 19.

**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.*

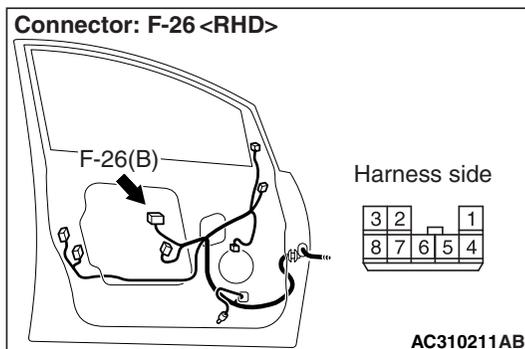
- Check the input and output lines to the revolution detection sensor for open or short circuit.

**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.**

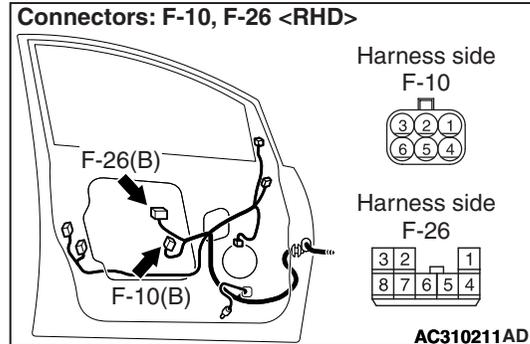


**Q: Is the check result normal?**

**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.

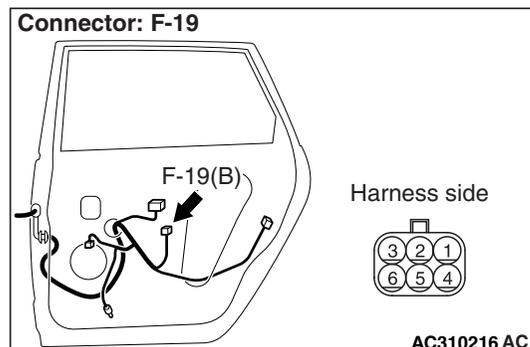
- (1) Replace the power window sub switch (front: LH).
- (2) Check that the front passenger's power window anti-trap function works.

**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**

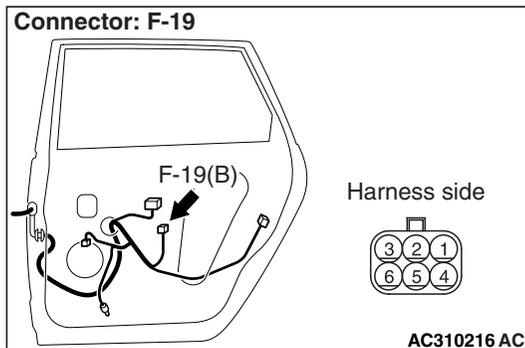


**Q: Is the check result normal?**

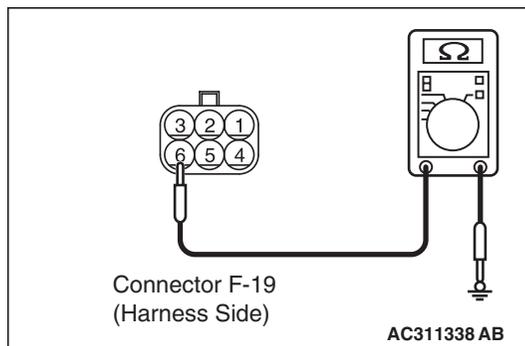
**YES :** Go to Step 23.

**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.

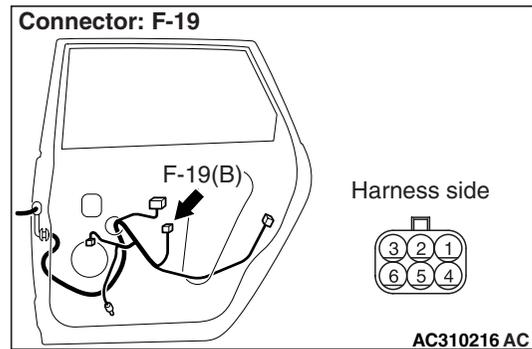
**OK: 2 Ω or less**

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

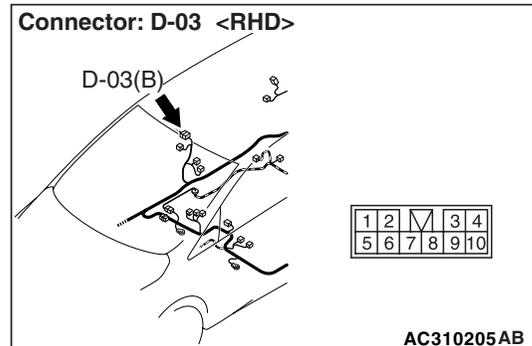
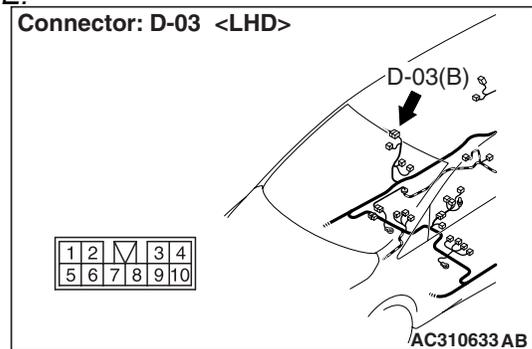
**YES :** Go to Step 25.

**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.*

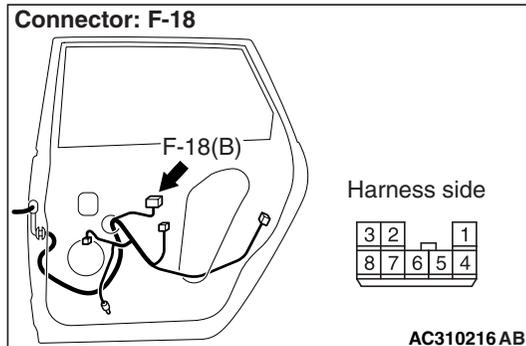
- Check the input and output lines to the revolution detection sensor for open or short circuit.

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

**YES :** Go to Step 25.

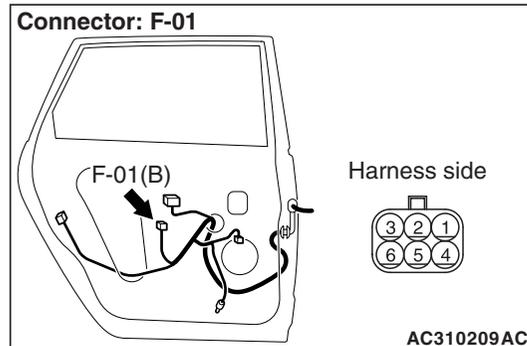
**NO :** Repair the wiring harness.

**Step 25. Connector check: F-18 power window sub switch (rear: RH) connector**



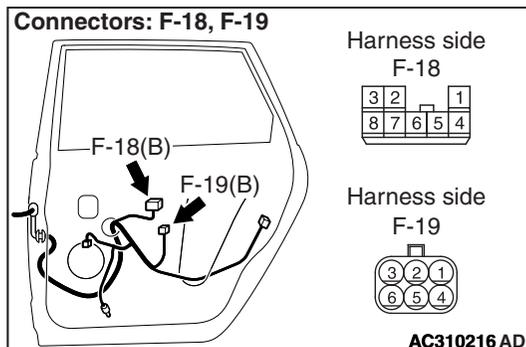
- Q: Is the check result normal?**  
**YES :** Go to Step 26.  
**NO :** Repair the defective connector.

**Step 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 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.

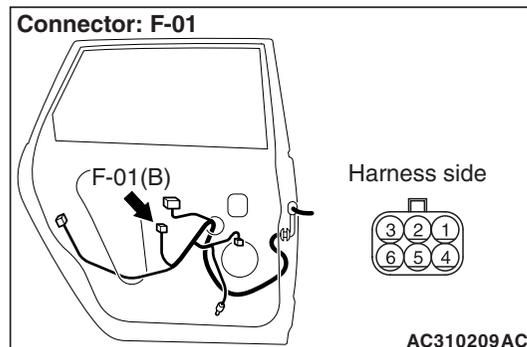
**Step 27. Retest the system.**

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.

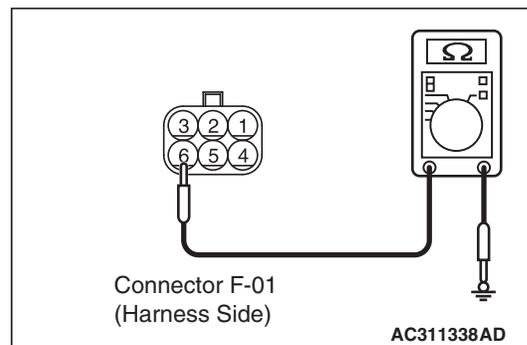
- (1) Replace the power window sub switch (rear: RH).
- (2) Check that the rear right power window anti-trap function works.

- 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 29. Resistance measurement at F-01 power window motor (rear: LH) connector.**



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

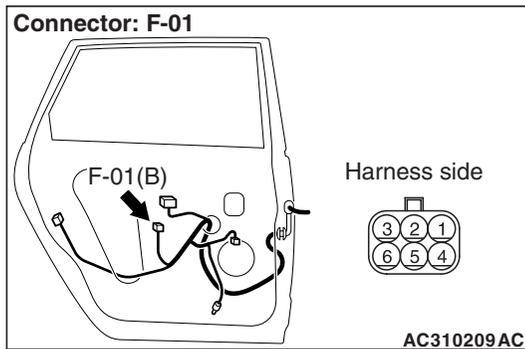


- (2) Resistance between F-01 power window motor (rear: LH) connector terminal No.6 and body earth.

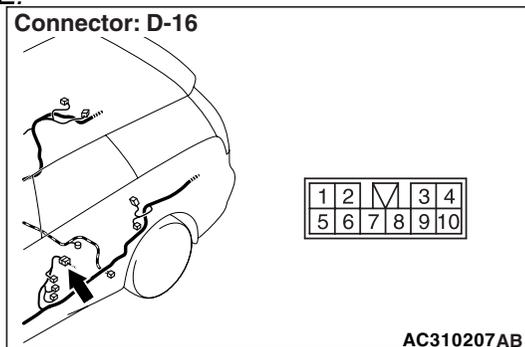
**OK: 2 Ω or less**

- 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.

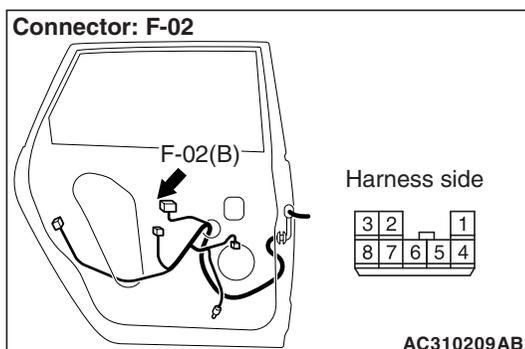
- Check the input and output lines to the revolution detection sensor for open or short circuit.

**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**

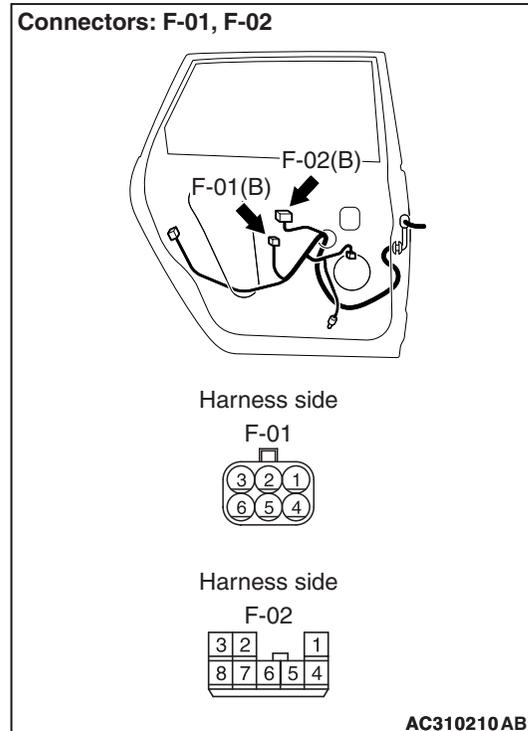


**Q: Is the check result normal?**

**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. Check the power supply circuit.**

When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

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

**YES :** Go to Step 2.

**NO :** Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit" [P.54B-87](#).

**Step 2. Pulse check**

Check the input signals below, which are related to the power window timer function.

| System switch            | Check conditions                 |
|--------------------------|----------------------------------|
| Ignition switch (IG1)    | When turned from ACC to ON       |
| Driver's door switch     | When the driver's door is opened |
| Power window main switch | When turned from off to on       |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally. :** Go to Step 3.

**The ignition switch (IG1) signal is not received. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received [P.54B-420](#)."

**The driver's door switch signals is not received. :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received [P.54B-434](#) <LH drive vehicles> or [P.54B-436](#) <RH drive vehicles>."

**The power window main switch signal is not received. :** Refer to inspection procedure Q-9 "When the power window main switch is operated, the switch signals are not received [P.54B-444](#)."

**Step 3. Retest the system.**

After the power window main switch is replaced, check that the power window timer function works normally.

- (1) Replace the power window main switch.
- (2) 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](#)).

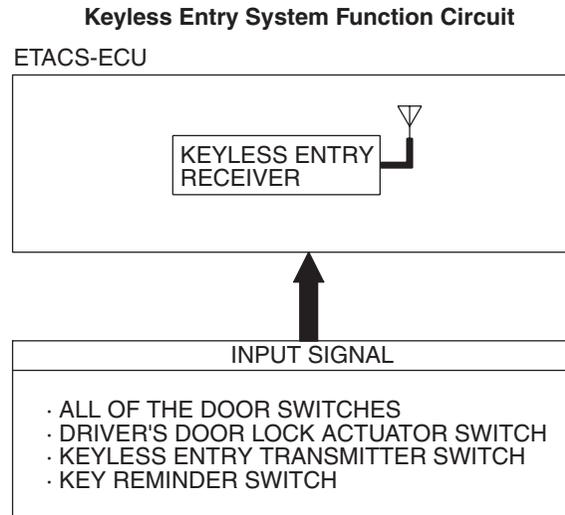
**NO :** Replace the ETACS-ECU.

## 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.



W3Z16E04AA

**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.54B-99.](#)"

**Step 2. Check the power supply circuit.**

When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

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

**YES** : Go to Step 3.

**NO** : Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit [P.54B-87.](#)"

**Step 3. Pulse check**

Check the input signals below which are related to the keyless entry system.

| System switch                    | Check condition  |
|----------------------------------|--|
| Key reminder switch              | When the inserted ignition key is pulled out                       |
| Driver's door switch             | Driver's door is opened while all the other doors are closed.      |
| Passenger's door switch          | Passenger's door is opened while all the other doors are closed.   |
| Rear door (RH) switch            | Rear door (RH) is opened while all the other doors are closed      |
| Rear door (LH) switch            | Rear door (LH) door is opened while all the other doors are closed |
| Tailgate switch                  | TAilgate is opened while all the other doors are closed            |
| Keyless entry transmitter switch | When the switch is turned from off to on                           |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally. :** Go to Step 4.

**The key reminder switch signal is not received. :** Refer to inspection procedure Q-11 "The key reminder switch signal is not received [P.54B-457.](#)"

**All the door switch signals are not received. :** Refer to inspection procedure Q-14 "All the door switch signals are not received [P.54B-469.](#)"

**The keyless entry transmitter switch signal is not received. :** Refer to inspection procedure Q-23 "Each switch signal of the keyless entry transmitter is not received [P.54B-523.](#)"

**Step 4. 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 adjustment 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.54B-314](#)".

**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 system>P.54B-372 ."

---

**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 P-1 "The front or rear room lamp does not illuminate or extinguish P.54C-374."

---

**Step 4. Check the power supply circuit.**

When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

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

**YES** : Go to Step 5.

**NO** : Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-87."

---

**Step 5. Customize function by using the SWS monitor.**

Check that the keyless entry hazard lamp answerback function has been enabled by using the customize function.

**⚠ CAUTION**

**The SWS monitor must be used in order to confirm and change that setting. Use the SWS monitor to confirm and/or change the customized function.**

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

**YES** : Go to Step 6.

**NO** : Enable the keyless entry hazard lamp answerback function by using the adjustment function. (Refer to GROUP 54C customize function P.54C-574).

---

**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?**

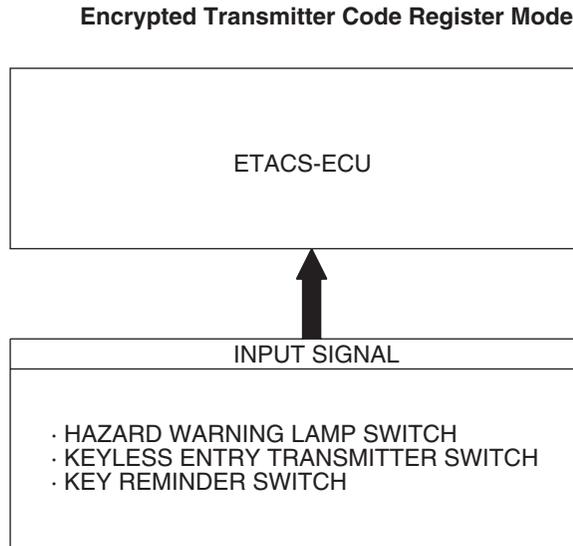
**YES** : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**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.



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**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. Pulse check**

Check the input signals below which are related to the encrypted code of the keyless entry transmitter.

| System switch                    | Check condition                              |
|----------------------------------|--|
| Key reminder switch              | When the inserted ignition key is pulled out |
| Hazard warning lamp switch       | When the switch is turned from off to on     |
| Keyless entry transmitter switch | When the switch is turned from off to on     |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

All the signals are received normally. : Go to Step 3.

The key reminder switch signal is not received. : Refer to inspection procedure Q-11 "The key reminder switch signal is not received P.54B-457."

The hazard warning lamp switch signal is not received. : Refer to inspection procedure Q-12 "The hazard warning lamp switch signal is not received P.54B-461."

The keyless entry transmitter switch signal is not received. : Refer to inspection procedure Q-23 "Each switch signal of the keyless entry transmitter is not received P.54B-523."

### Step 3. Pulse check

Check the input signals below which are related to the encrypted code of the keyless entry transmitter.

| System switch                    | Check condition                          |
|----------------------------------|--|
| Keyless entry transmitter 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 4.

**NO :** Refer to inspection procedure Q-23 "Each switch signal of the keyless entry transmitter is not received P.54B-523."

### 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
- Function diagnosis by using the SWS monitor  
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.54B-180."

#### Step 2. Customize function by using the SWS monitor.

Check that the keyless entry timer lock function has been enabled by using the customize function.

### CAUTION

**The SWS monitor must be used in order to confirm and change that setting. Use the SWS monitor to confirm and/or change the customized function.**

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

**YES :** Go to Step 3.

**NO :** Enable the keyless entry timer lock function by using the SWS monitor customize function. (Refer to GROUP 54C customize function P.54C-574).

#### Step 3. Retest the system.

Check that the timer 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.

**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 ETACS-ECU
- Malfunction of the keyless entry transmitter

**DIAGNOSTIC 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.54B-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.54B-180.](#)"

**Step 3. Check the power supply circuit.**

When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

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

**YES :** Go to Step 4.

**NO :** Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit [P.54B-87.](#)"

**Step 4. Pulse check**

Check the input signals which are related to the multimode keyless entry system.

| System switch                    | Check conditions                         |
|----------------------------------|--|
| Keyless entry transmitter 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 5.

**NO :** Refer to inspection procedure Q-23 "Each switch signal of the keyless entry transmitter is not received [P.54B-523.](#)"

**Step 5. Retest the system.**

Check that the multimode 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.

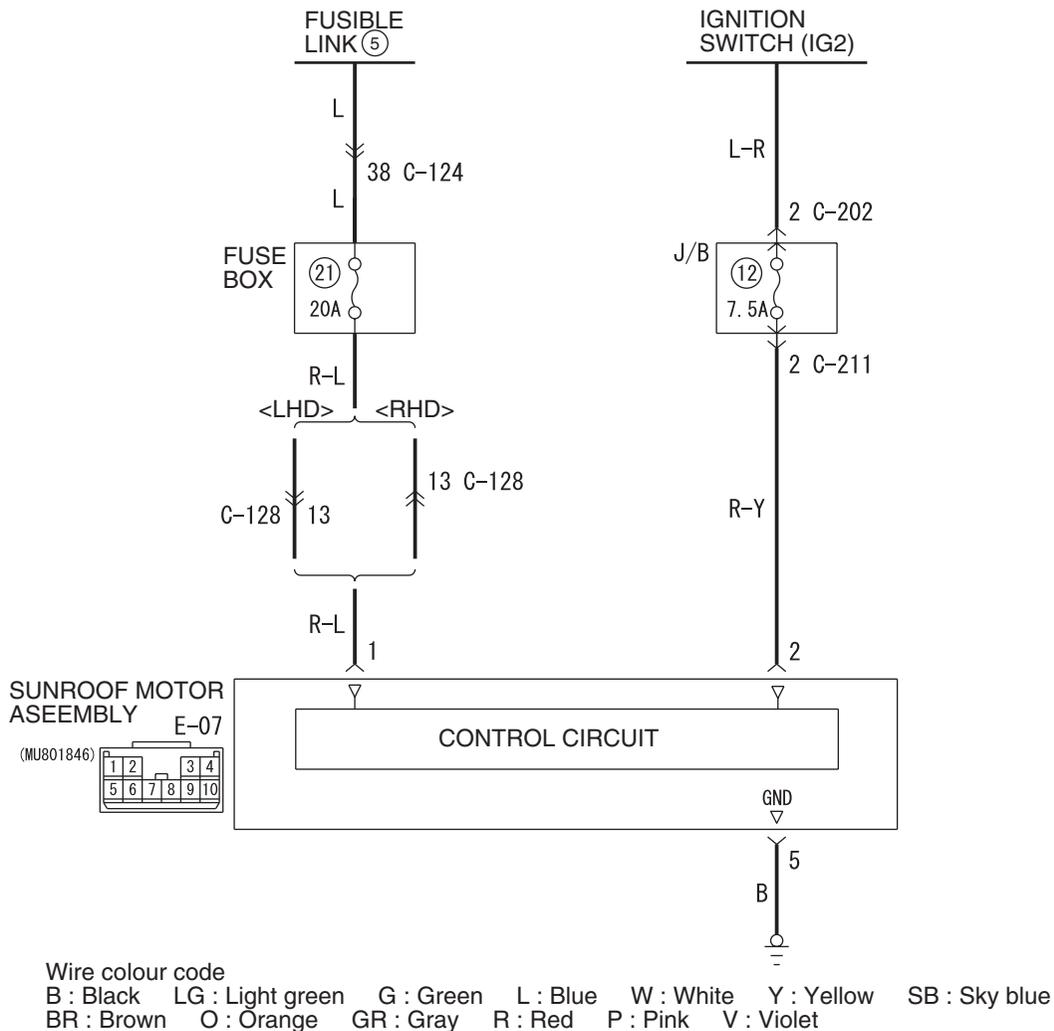
SUNROOF

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



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**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. Pulse check**

Check the input signals from the ignition switch (IG1) and the sunroof switch.

| System switch         | Check conditions                            |
|-----------------------|---|
| Ignition switch (IG1) | When turned from ACC to ON                  |
| sunroof switch        | When the sunroof switch is opened or closed |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally. :** Go to Step 3.

**The ignition switch (IG1) signal is not received. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54B-420."

**The sunroof switch signal is not received. :** Refer to inspection procedure Q-10 "When the sunroof switch is operated, the switch signals are not received P.54B-451."

**Step 3. Check the power window main switch.**

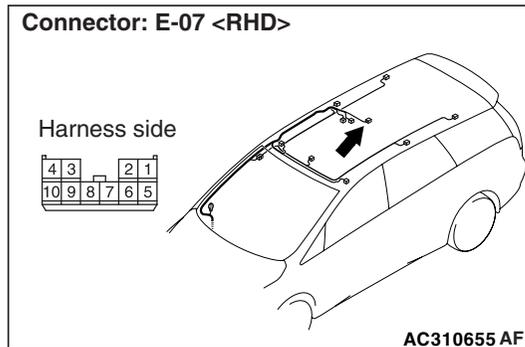
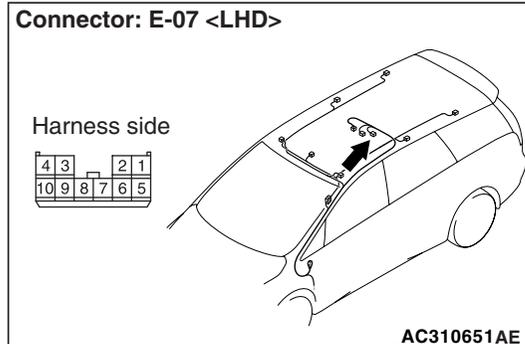
Check that all of the front passenger's and rear door power windows can operate by means of the power window main switch.

**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.54B-124."

**Step 4. Connector check: E-07 sunroof motor assembly connector**

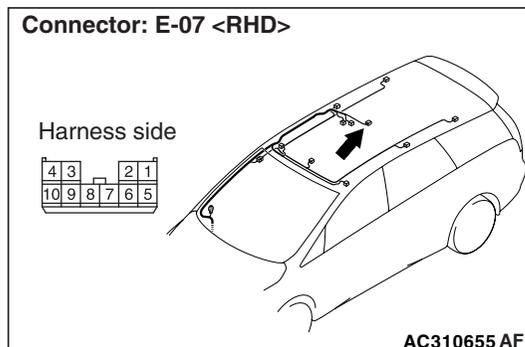
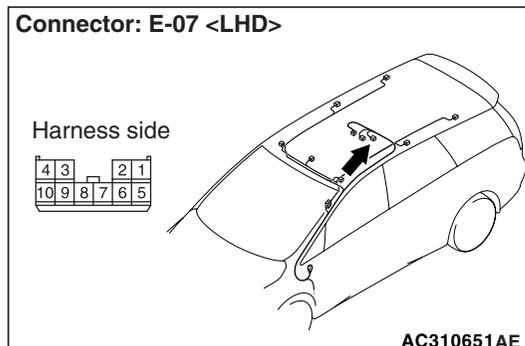


**Q: Is the check result normal?**

**YES :** Go to Step 5.

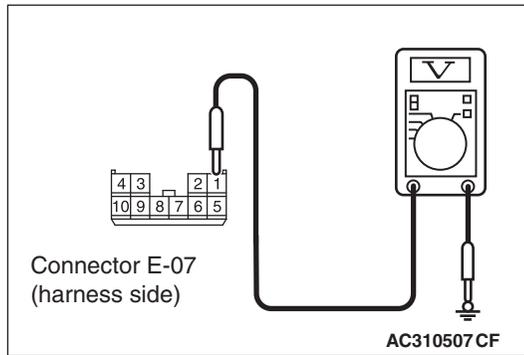
**NO :** Repair the connector.

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



(1) Disconnect the sunroof motor assembly

connector, and measure at the harness side.



(2) Check the voltage between the E-07 sunroof

motor assembly connector terminal No.1 and body earth.

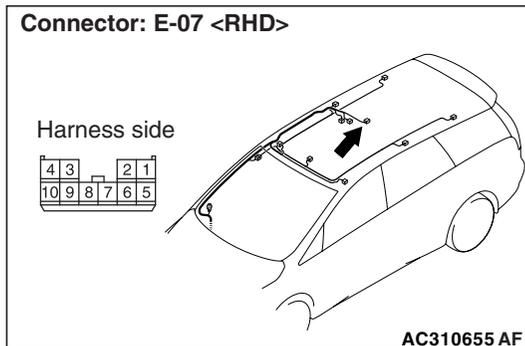
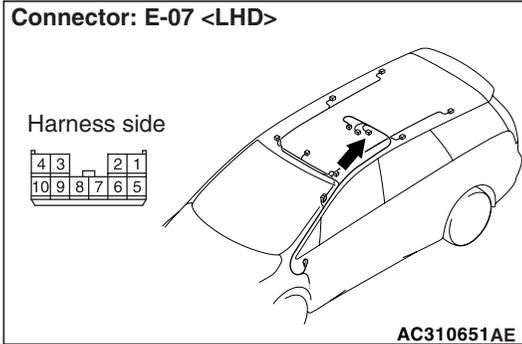
**OK: Battery positive voltage**

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

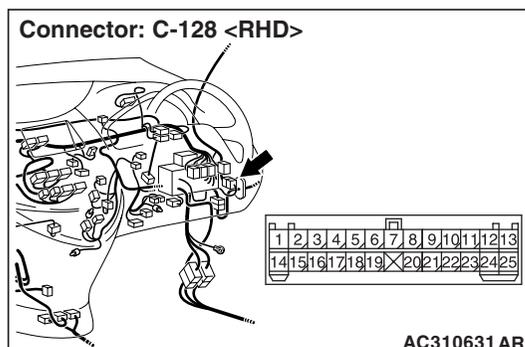
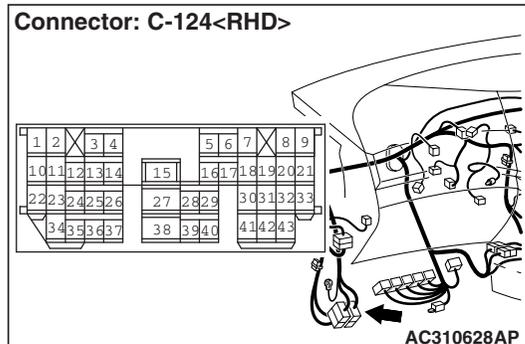
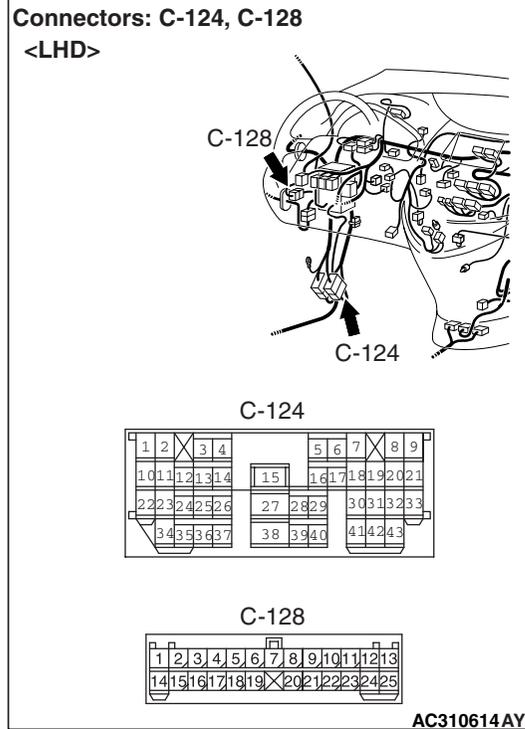
**YES :** Go to Step 7.

**NO :** Go to Step 6.

**Step 6. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.1 and the fusible link (5).**



**NOTE:**



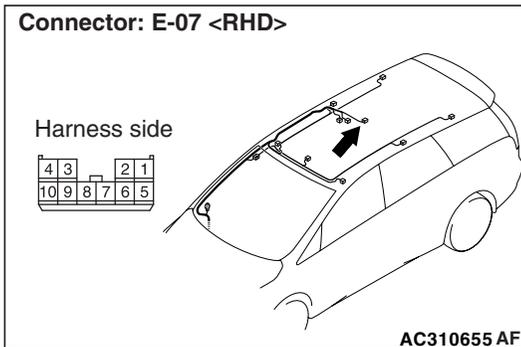
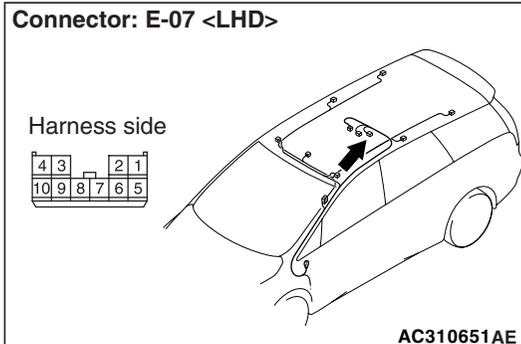
*Prior to the wiring harness inspection, check intermediate connector C-124 and C-128, and repair if necessary.*

- Check the power supply line for open circuit.

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

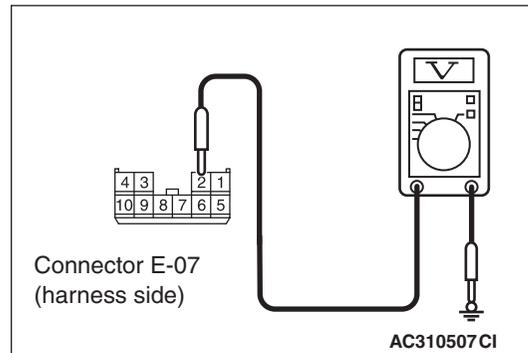
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Repair the wiring harness.

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

(1) Disconnect the sunroof motor assembly

connector, and measure at the harness side.  
(2) Ignition switch: ON



(3) Check the voltage between the E-07 sunroof motor assembly connector terminal No.2 and body earth.

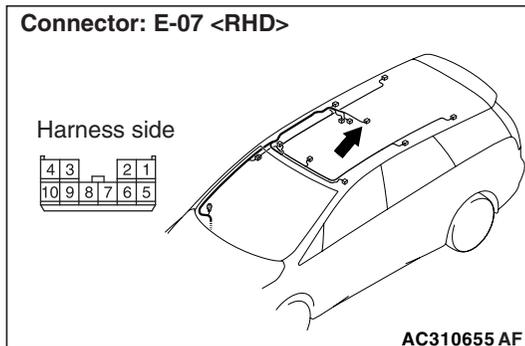
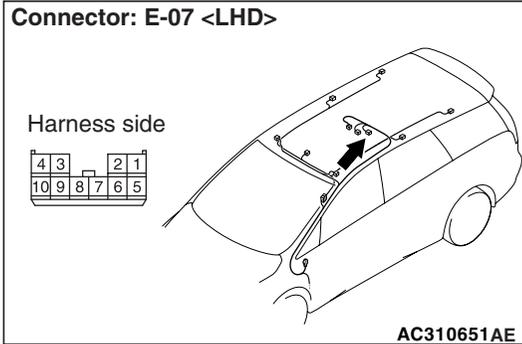
**OK: Battery positive voltage**

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

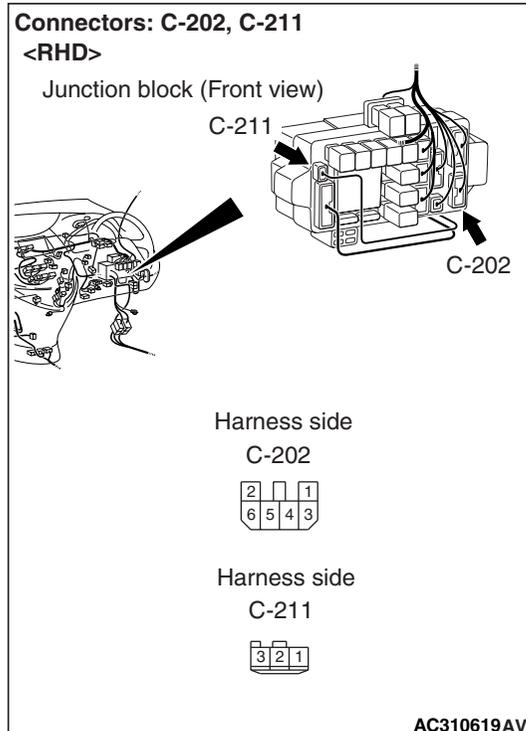
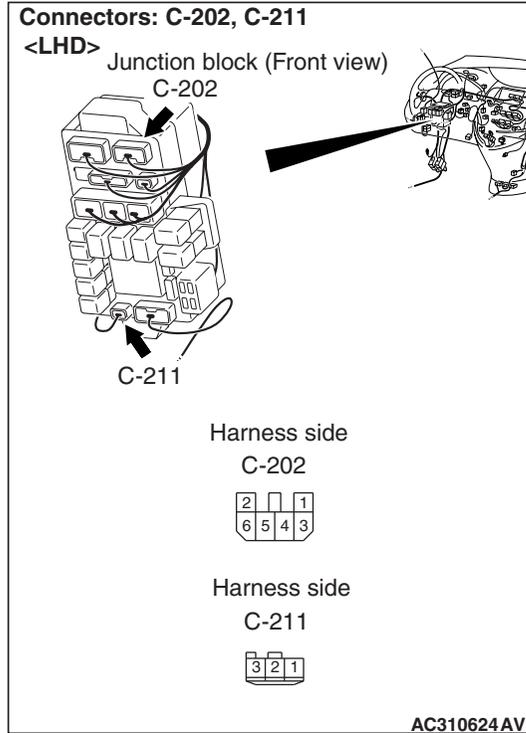
**YES :** Go to Step 9.

**NO :** Go to Step 8.

**Step 8. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.2 and the ignition switch (IG2).**



**NOTE:**

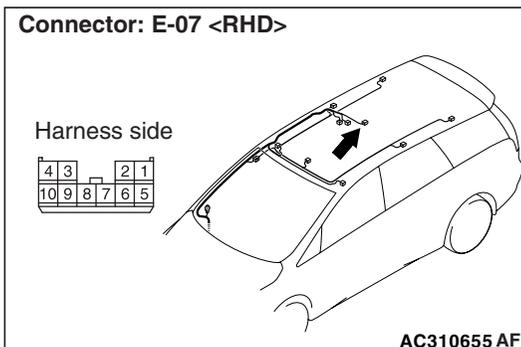
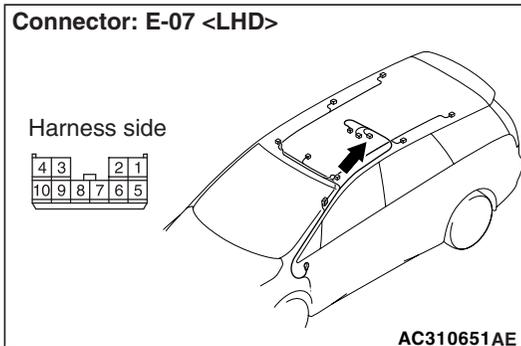


*Prior to the wiring harness inspection, check junction block connectors C-211 and C-202, and repair if necessary.*

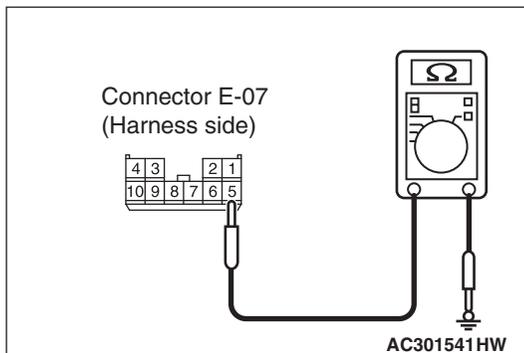
- Check the power supply line for open circuit.

**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 the E-07 sunroof motor assembly connector.**

- (1) Disconnect the sunroof motor assembly connector, and measure at the harness side.



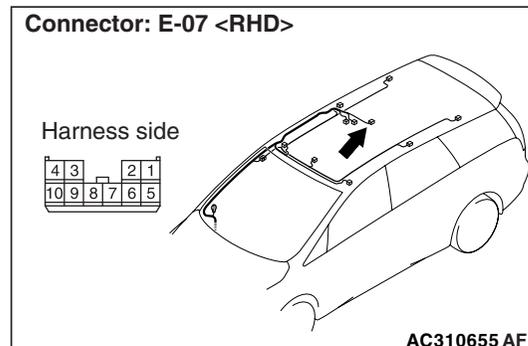
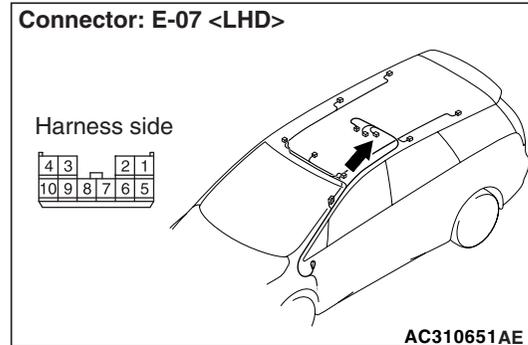
- (2) Check the resistance between E-07 sunroof motor assembly connector terminal No.5 and body earth.

**OK: 2 Ω or less**

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

**YES :** Go to Step 11.

**NO :** Go to Step 10.

**Step 10. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.5 and body earth.**

- Check body earth 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. 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](#)).

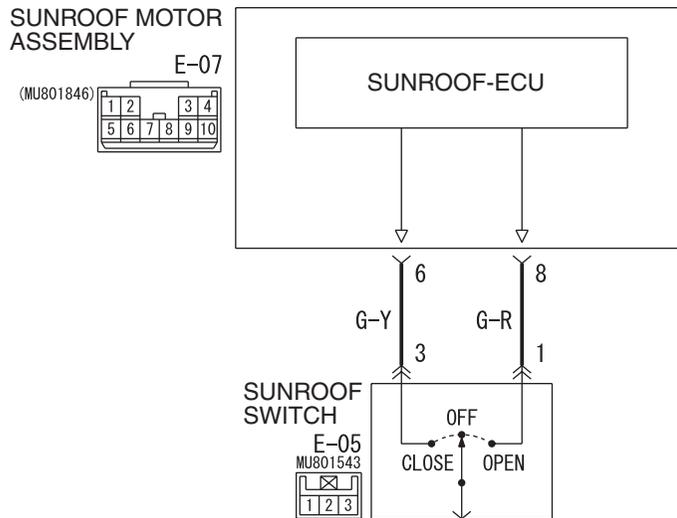
**NO :** Replace the sunroof motor assembly.

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

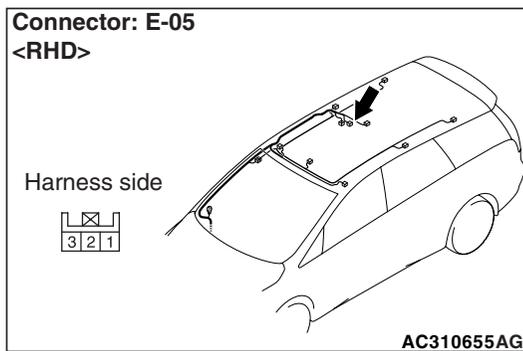
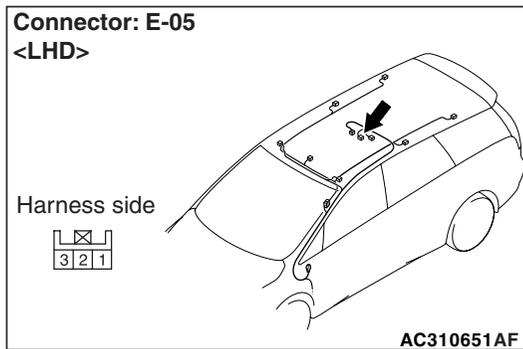
W4X54E106A

**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****Step 1. Connector check: E-05 sunroof switch connector**

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

**YES :** Go to Step 2.

**NO :** Repair the connector.

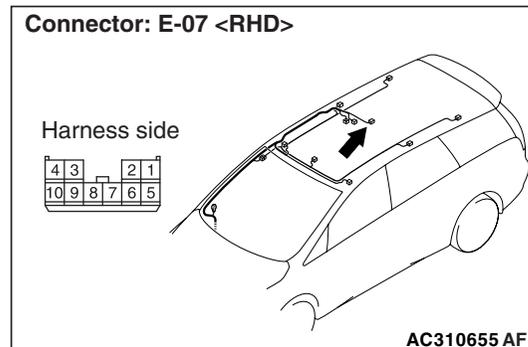
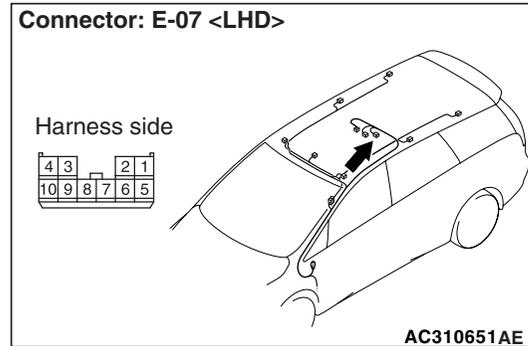
**Step 2. Check the sunroof switch.**

Refer to GROUP 42 – Sunroof P.42-66.

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

**YES :** Go to Step 3.

**NO :** Replace the sunroof switch.

**Step 3. Connector check: E-07 sunroof motor assembly connector**

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

**YES :** Go to Step 4.

**NO :** Repair the connector.

**Step 4. Retest the system.**

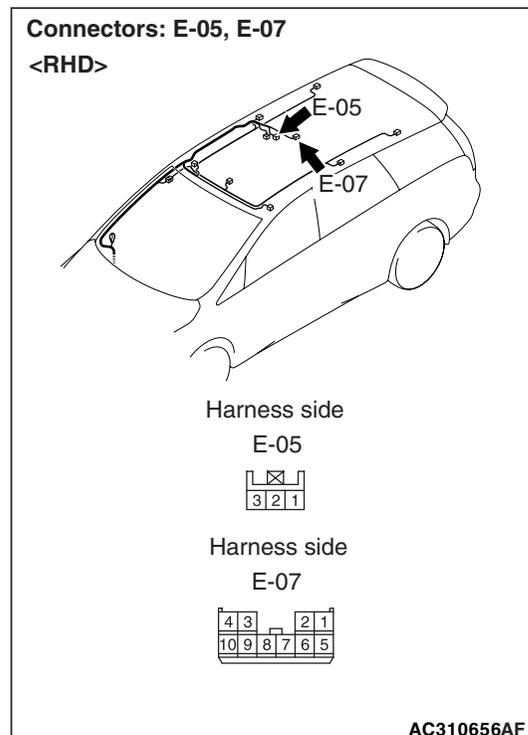
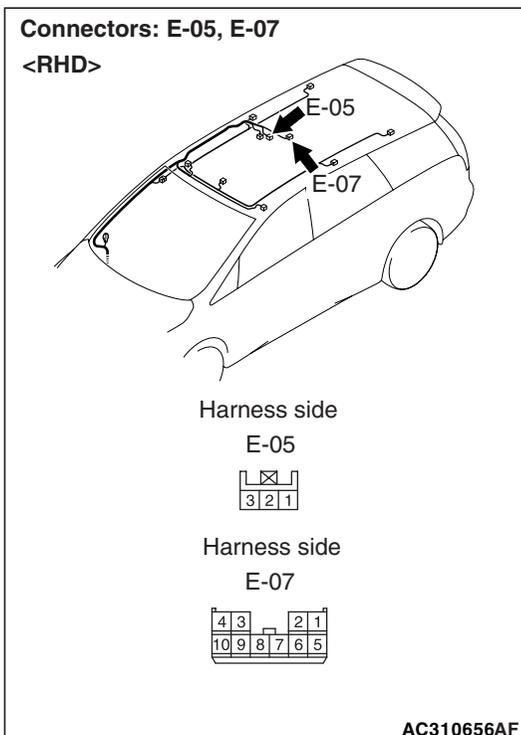
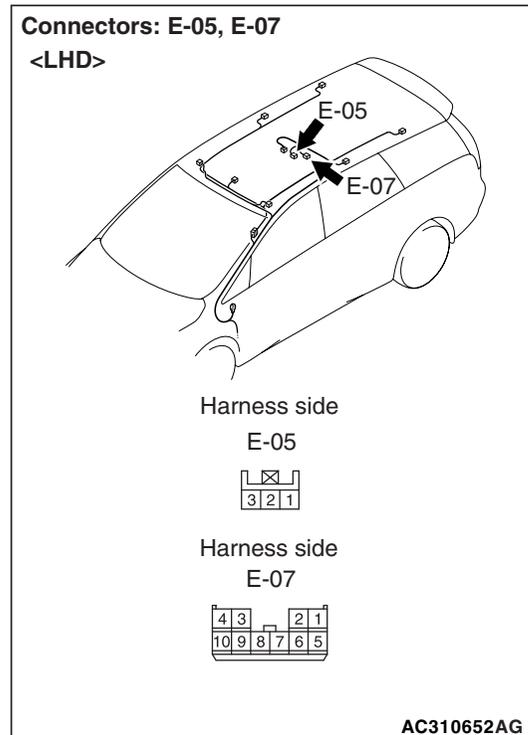
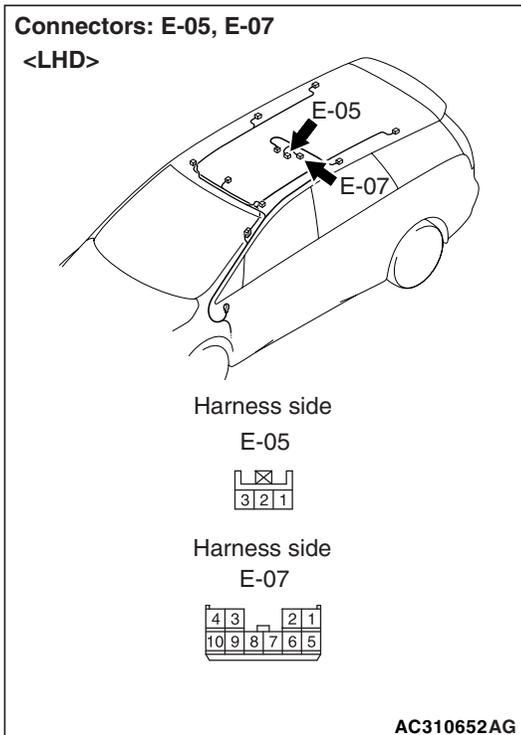
**Q: Which switch position is defective?**

**"OPEN" :** Go to Step 5.

**"CLOSE" :** Go to Step 6.

**Step 5. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.8 and E-05 sunroof switch connector terminal No.1.**

**Step 6. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.6 and E-05 sunroof switch connector terminal No.3.**



- Check the communication line for open circuit.

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

- YES** : Replace the sunroof motor assembly.
- NO** : Repair the wiring harness.

- Check the communication line for open circuit.

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

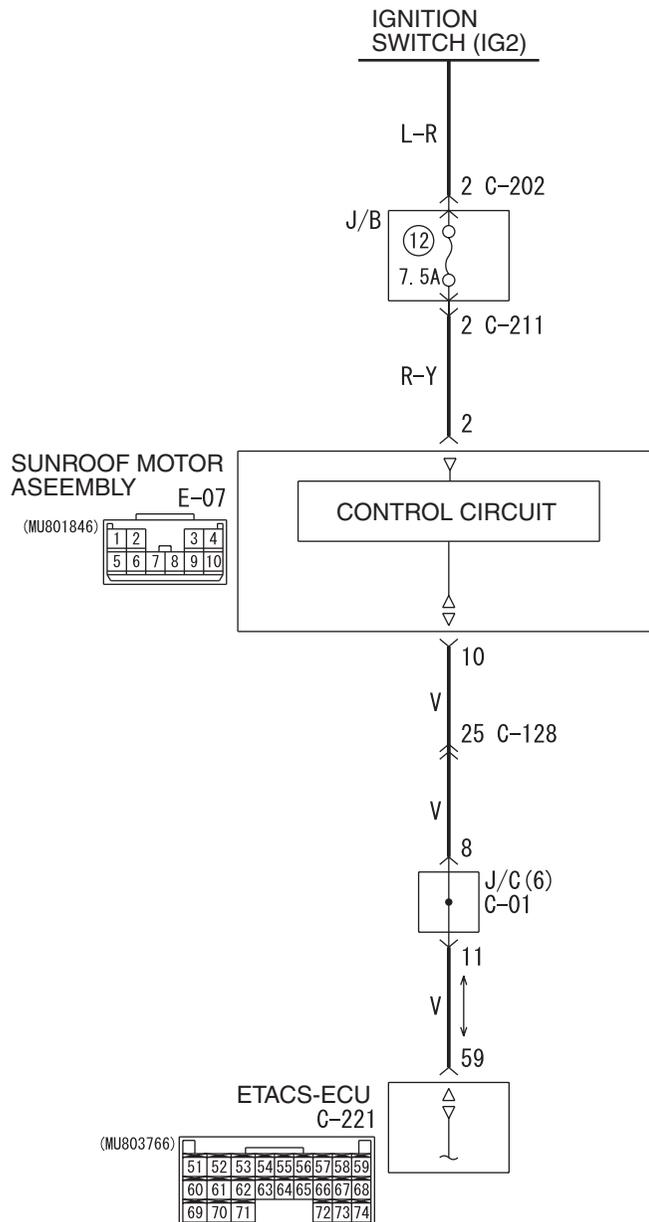
- YES** : Replace the sunroof motor assembly.
- NO** : Repair the wiring harness.

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.

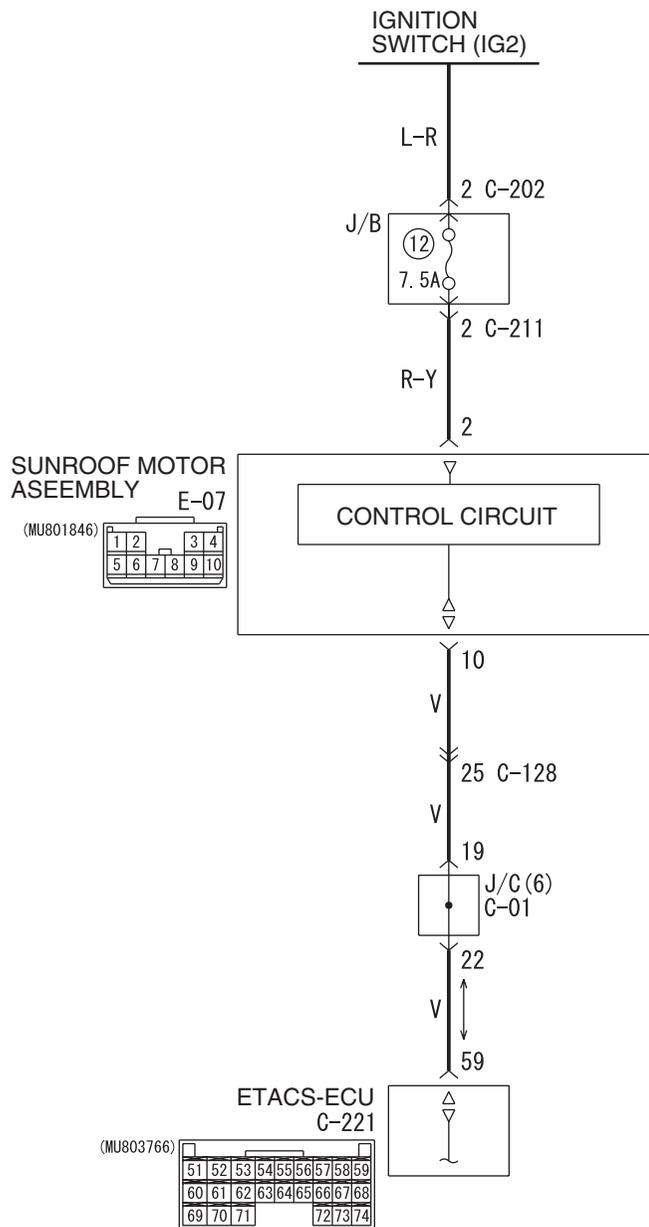
Sunroof Timer Function <LHD>



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

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

## DIAGNOSTIC PROCEDURE

**Step 1. Pulse check**

Check the input signals from the ignition switch (IG1) and the driver's door switch.

| System switch         | Check conditions                 |
|-----------------------|----------------------------------|
| Ignition switch (IG1) | When turned from ACC to ON       |
| Driver's door switch  | When the driver's door is opened |

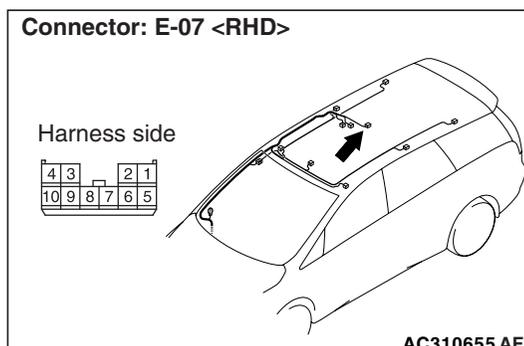
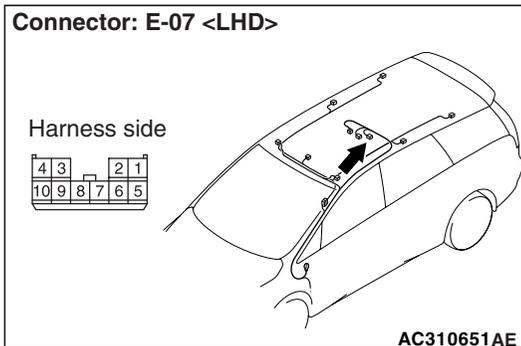
**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally. :** Go to Step 2.

**The ignition switch (IG1) signal is not received. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received [P.54B-420.](#)"

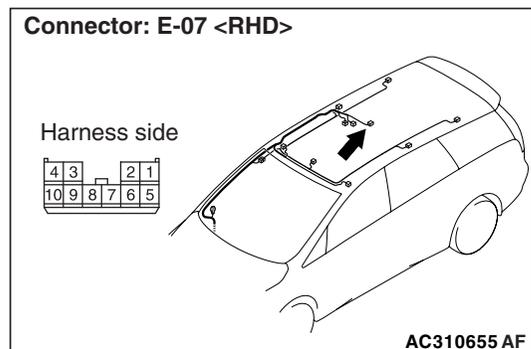
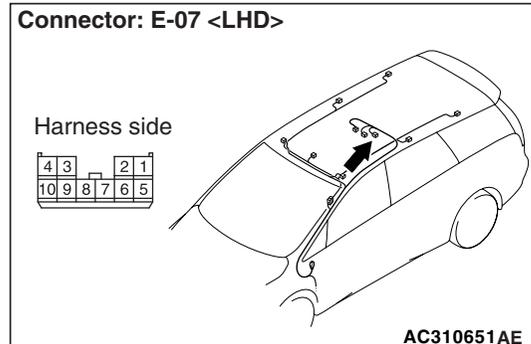
**The driver's door switch signal is not received. :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received <LH drive vehicles>[P.54B-434](#) or <RH drive vehicles>[P.54B-436](#) ."

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

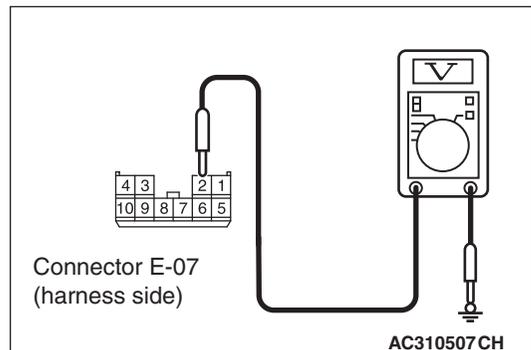
**Q: Is the check result normal?**

**YES :** Go to Step 3.

**NO :** Repair the connector.

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

- (1) Disconnect the sunroof motor assembly connector, and measure at the harness side.
- (2) Ignition switch: ON



- (3) Check the voltage between E-07 sunroof motor assembly connector terminal No.2 and body earth.

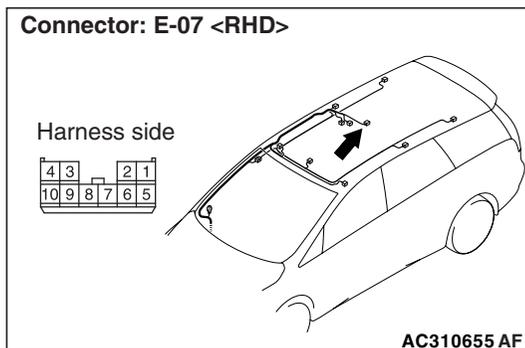
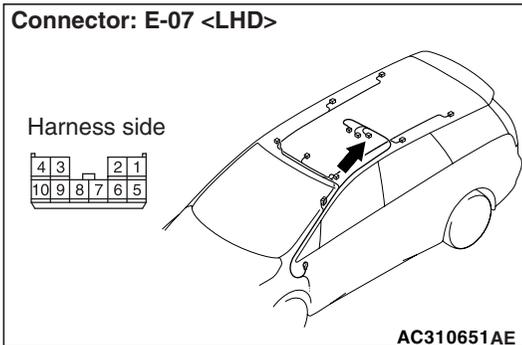
**OK: Battery positive voltage**

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

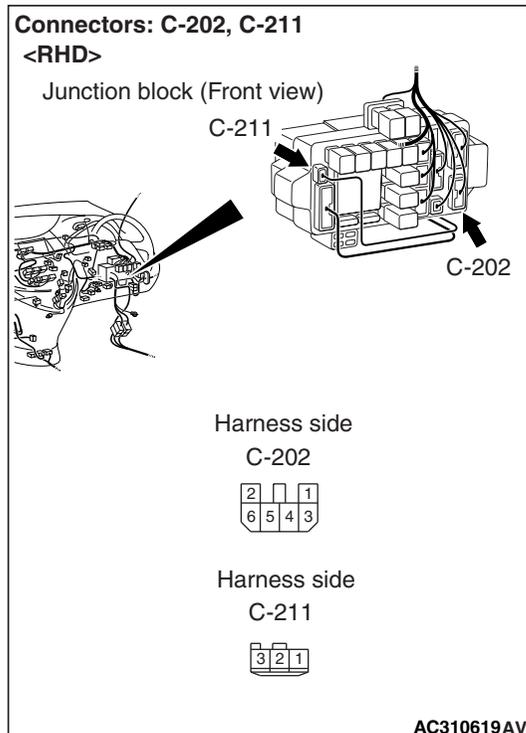
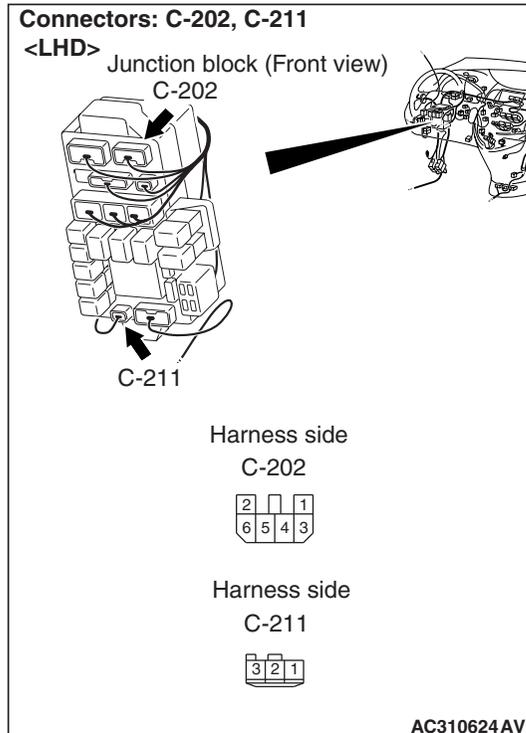
**YES :** Go to Step 5.

**NO :** Go to Step 4.

**Step 4. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.2 and the ignition switch (IG2).**



**NOTE:**



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

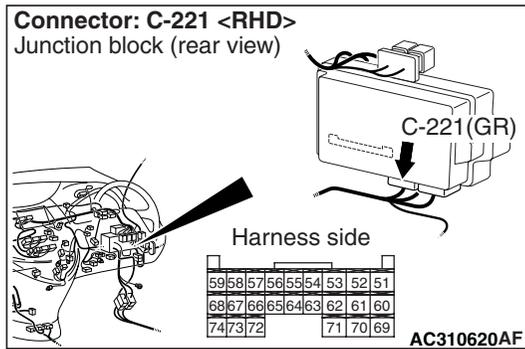
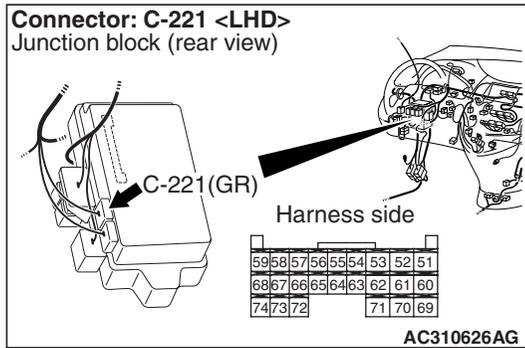
- Check the power supply line for open circuit.

**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.

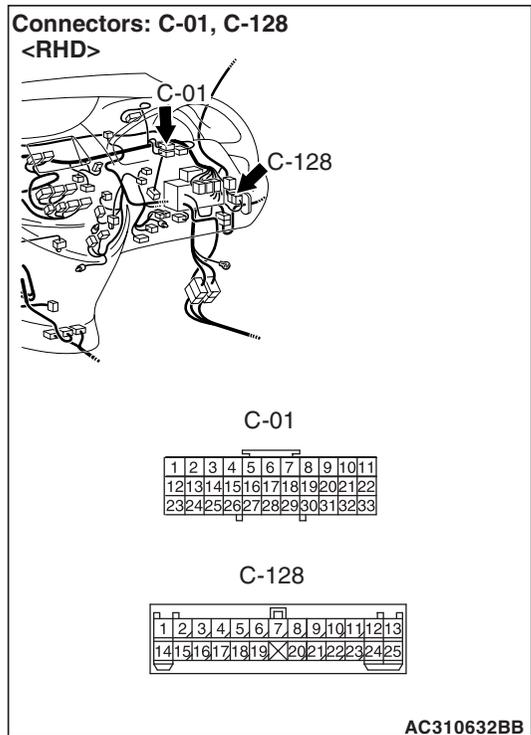
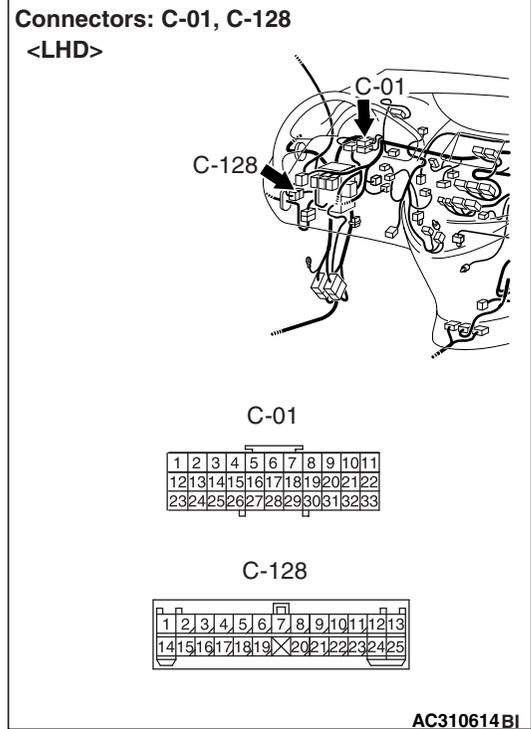
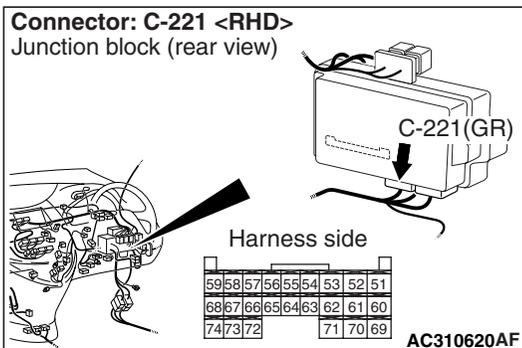
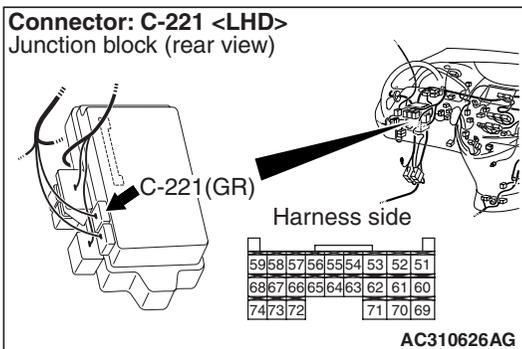
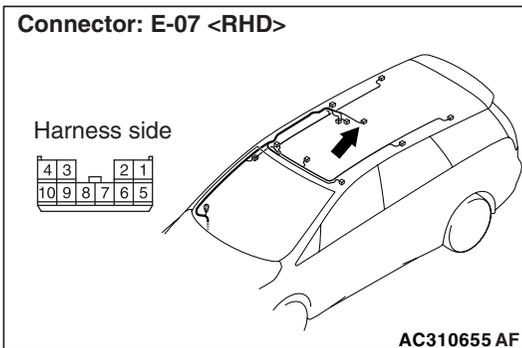
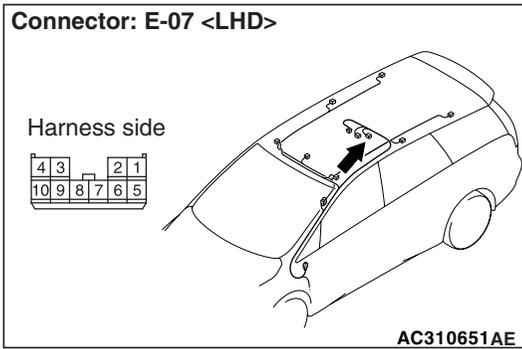
**Step 5. Connector check: C-221 ETACS-ECU connector**

**YES :** Go to Step 6.  
**NO :** Repair the connector.



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

**Step 6. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.10 and C-221 ETACS-ECU connector terminal No.59.**



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

- Check the communication lines for open circuit.

**NOTE:**

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

**YES :** Go to Step 7.

**NO :** Repair the wiring harness.

**Step 7. Retest the system.**

Check that the sunroof timer function work normally.

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

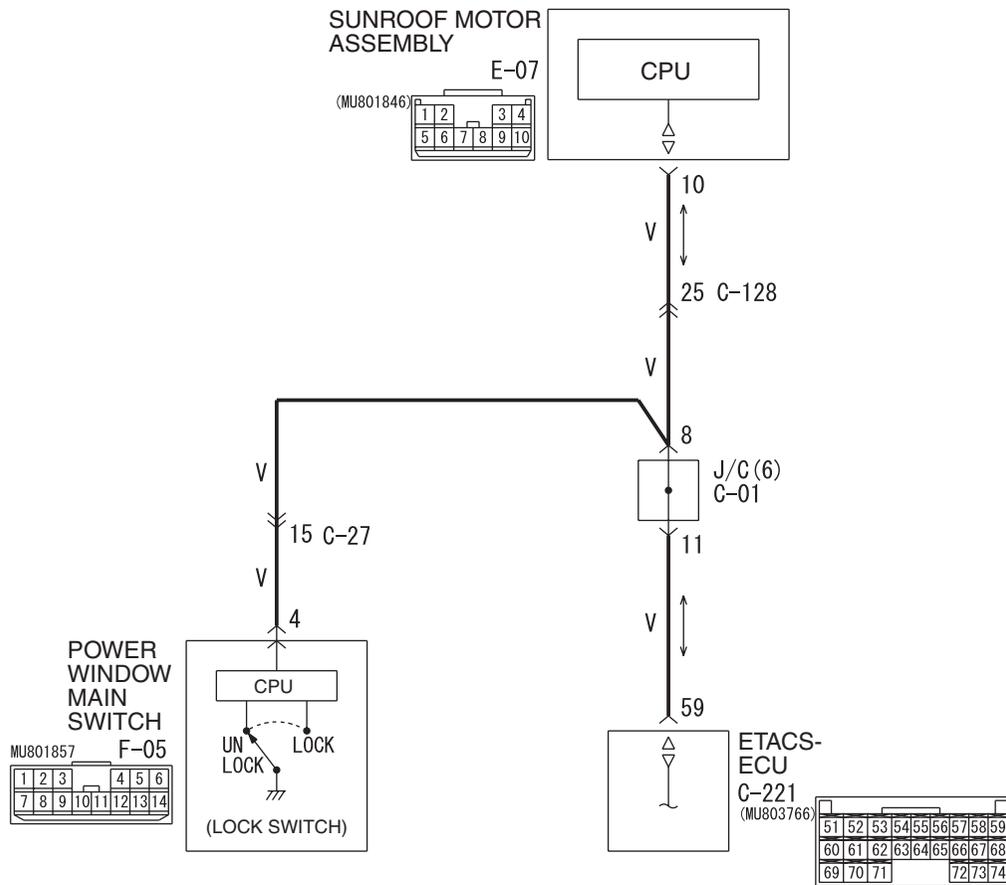
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO :** Replace the sunroof motor assembly.

**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.

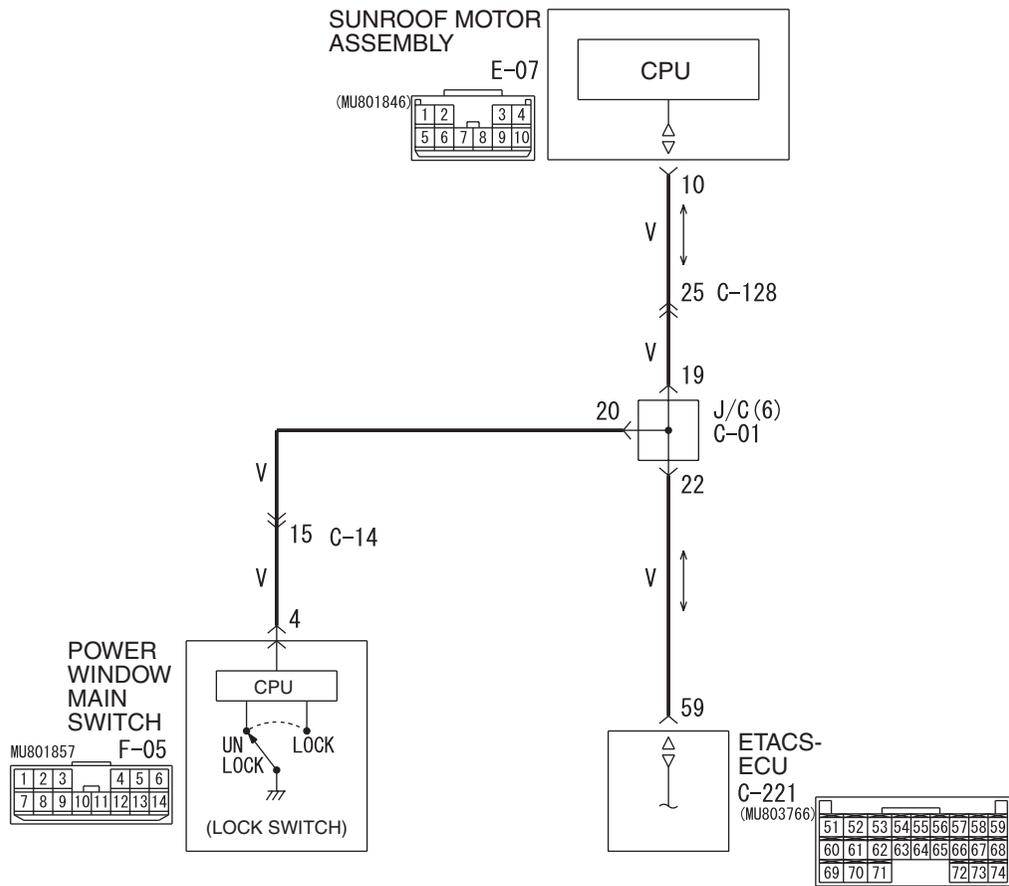
**Sunroof Lock Function <LHD>**



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

Sunroof Lock Function <RHD>



W4X54E222A

**COMMENTS ON TROUBLE SYMPTOM**

If the sunroof inhibition function does not work normally, the sunroof motor assembly, the power window main switch or the ETACS-ECU may be defective.

**POSSIBLE CAUSES**

- Malfunction of the power window main switch
- Malfunction of the sunroof motor assembly
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

**DIAGNOSIS PROCEDURE**

**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 5.

**Step 2. Check for sunroof diagnosis code.**

Check whether the sunroof-related diagnosis code is set.

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

**YES :** Go to Step 3.

**NO :** Refer to diagnosis code chart [P.54B-29](#).

**Step 3. Check the operation of the sunroof.**

Check that the sunroof works normally by using the sunroof 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** : Inspection procedure F-1 "The sunroof does not work [P.54B-186](#)."

---

#### Step 4. Check the power supply circuit.

When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

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

**YES** : Replace the ETACS-ECU.

**NO** : Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit [P.54B-87](#)."

---

#### Step 5. Confirm the operation of the power windows.

Check that each of the power windows (excluding the driver's door) works normally by using the power window main switch.

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

**YES** : Go to Step 6.

**NO** : Inspection procedure D-4 "Passenger's and/or rear power window(s) do not work by means of the power window main switch [P.54B-157](#)."

---

#### Step 6. Confirm the operation of the power windows.

Turn on the power window lock switch. Check that neither of the power windows (excluding the driver's door) works when the relevant power window sub switch is operated.

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

**YES** : Replace to the power window main switch.

**NO** : Go to Step 7.

---

#### Step 7. Check the operation of the sunroof.

Check that the sunroof works normally by using the sunroof switch.

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

**YES** : Go to Step 8.

**NO** : Inspection procedure F-1 "The sunroof does not work [P.54B-186](#)."

---

#### Step 8. Check the power supply circuit.

When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

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

**YES** : Go to Step 9.

**NO** : Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit [P.54B-87](#)."

---

#### Step 9. MUT-III diagnosis code

When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

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

**YES** : Refer to diagnosis code chart [P.54B-29](#).

**NO** : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

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### 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.

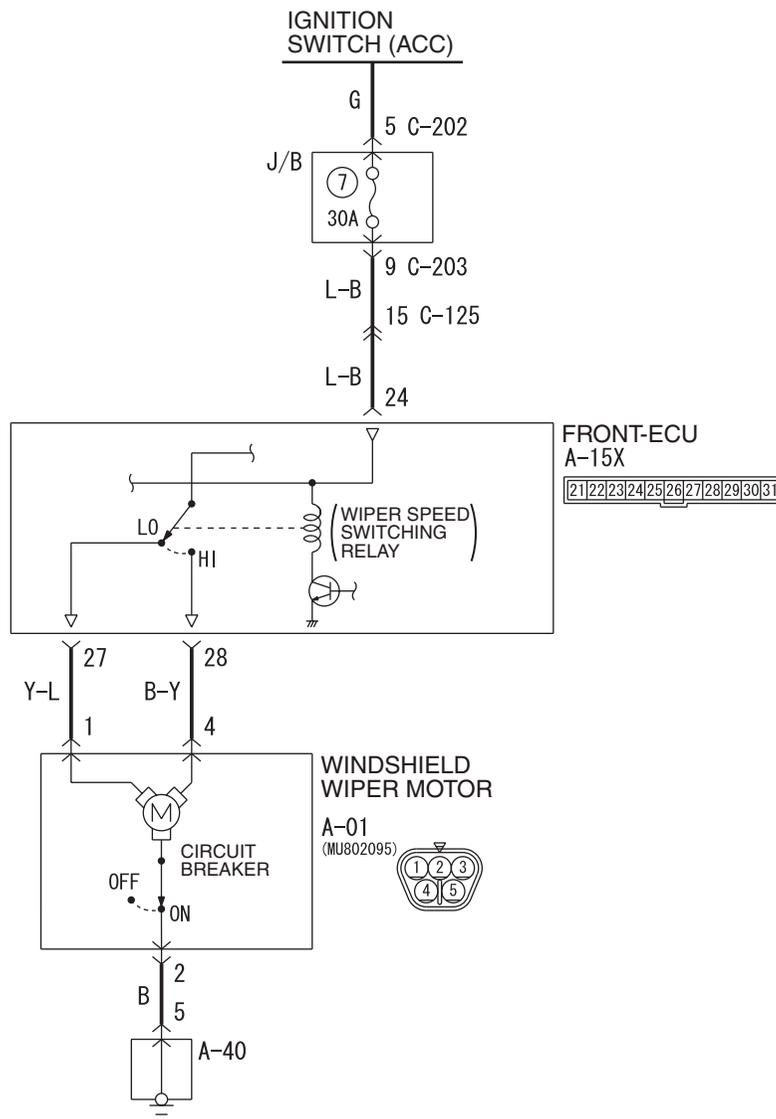
## WINDSHIELD WIPER AND WASHER

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.

### POSSIBLE CAUSES

- Malfunction of the windshield wiper motor
- Malfunction of the column switch

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

## DIAGNOSTIC PROCEDURE

### Step 1. MUT-III diagnosis code

When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

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

**YES** : Refer to diagnosis code chart [P.54B-29](#).

**NO** : Go to Step 2.

### Step 2. Pulse check.

Check the input signals below which are related to the windshield wiper.

| System switch                | Check condition   |
|------------------------------|---|
| Ignition switch (ACC)        | When turned from the LOCK (OFF) position to the ACC position. |
| Windshield mist wiper switch | When the switch is turned from off to on.                     |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

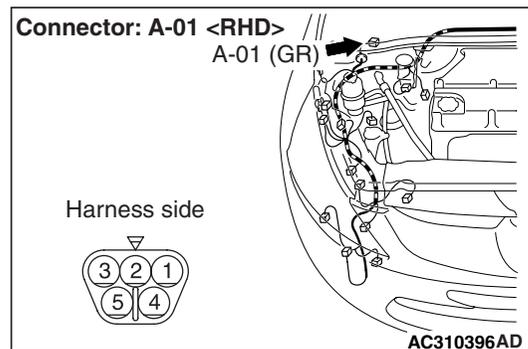
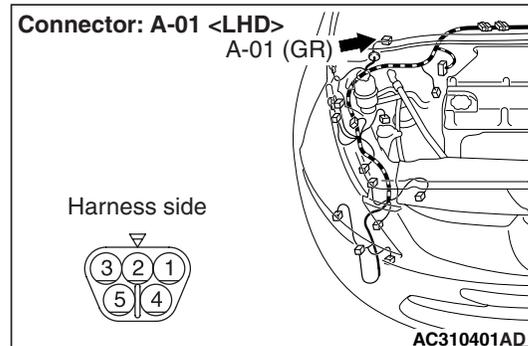
**Q: Are the check result normal?**

**All the signals are received normally** : Go to Step 3.

**The ignition switch (ACC) signal is not received.** : Refer to inspection procedure Q-1 "The ignition switch (ACC) signal is not received [P.54B-416](#)."

**Windshield mist wiper switch signal is not received.** : Refer to inspection procedure Q-7 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received [P.54B-439](#)."

### 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.

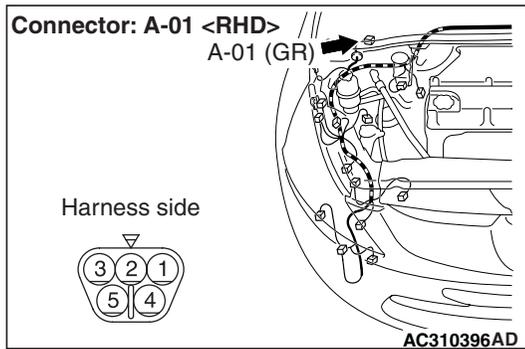
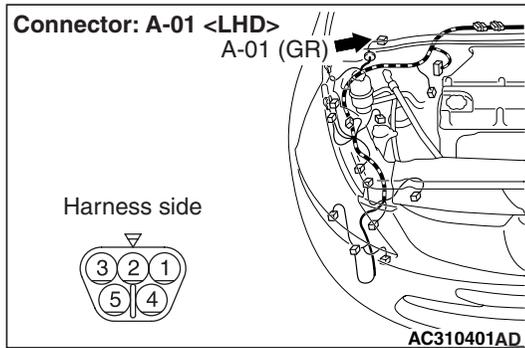
Refer to GROUP 51 – Windshield wiper [P.51-25](#).

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

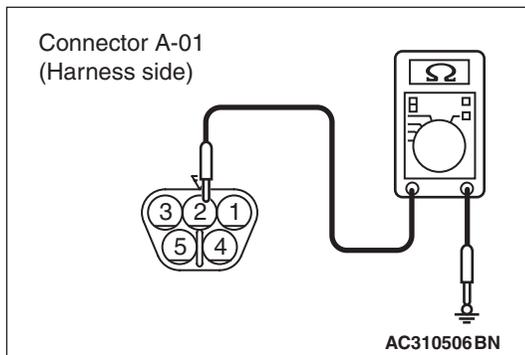
**YES** : Go to Step 5.

**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

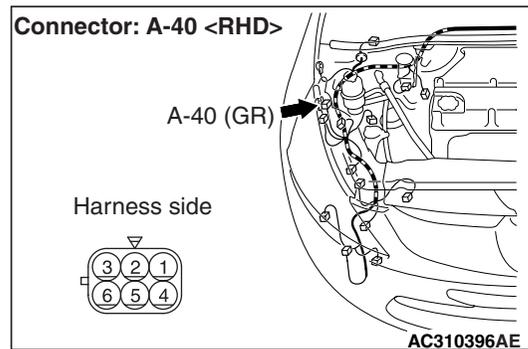
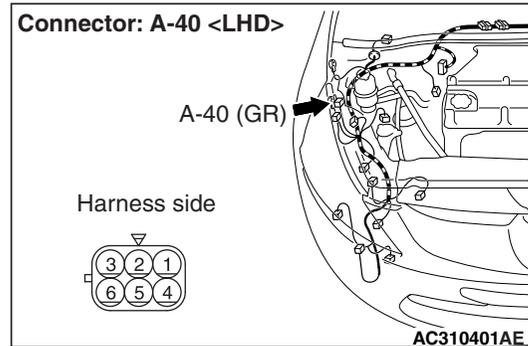
**OK: 2 Ω or less**

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

**YES :** Go to Step 8.

**NO :** Go to Step 6.

**Step 6. Connector check: A-40 earth connector**

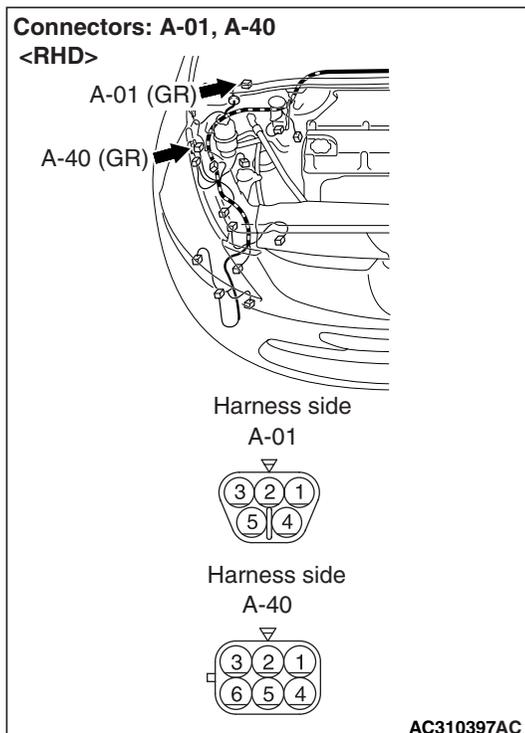
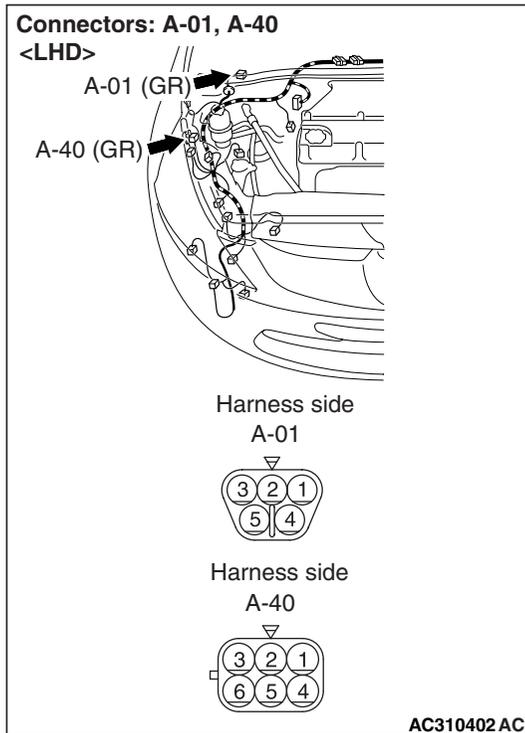


**Q: Is the check result normal?**

**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.**

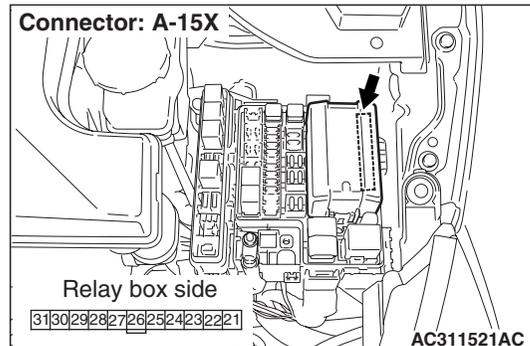


- Check the earth wires for open circuit.

**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.

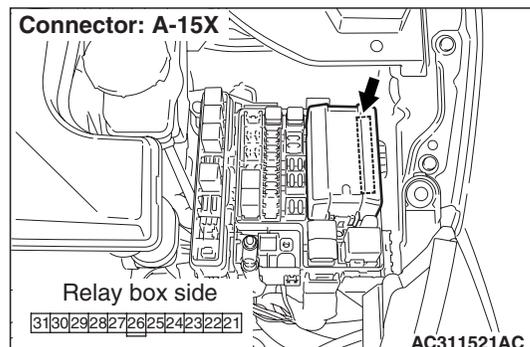
**Step 8. Connector check: A-15X front-ECU connector**



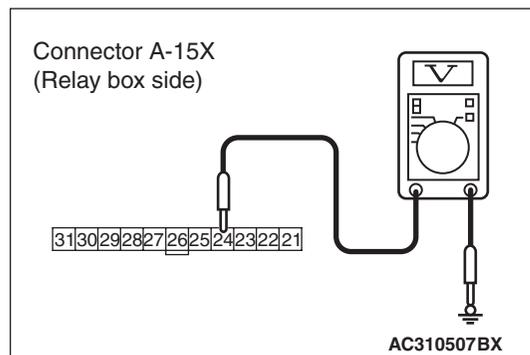
**Q: Is the check result normal?**

**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



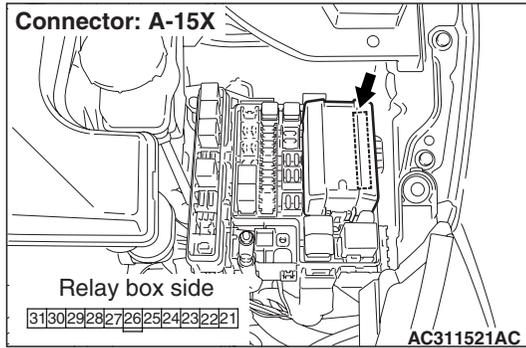
- (3) Check the voltage between the A-15X front-ECU connector terminal No.24 and body earth.

**OK: System voltage**

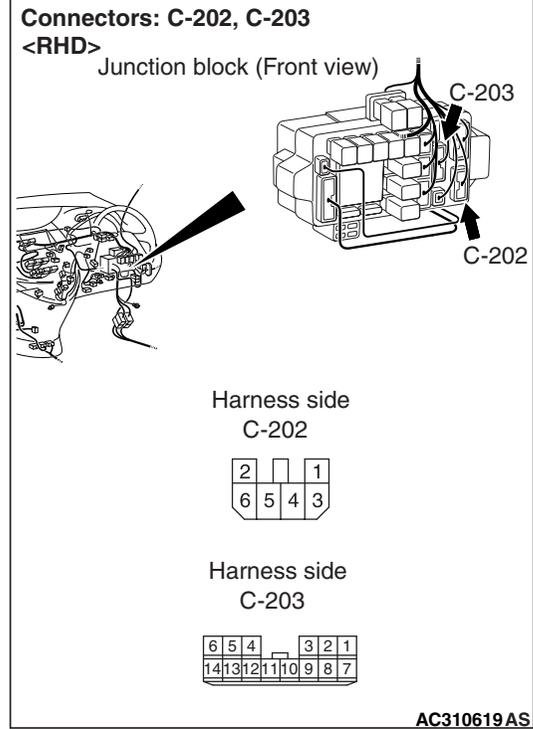
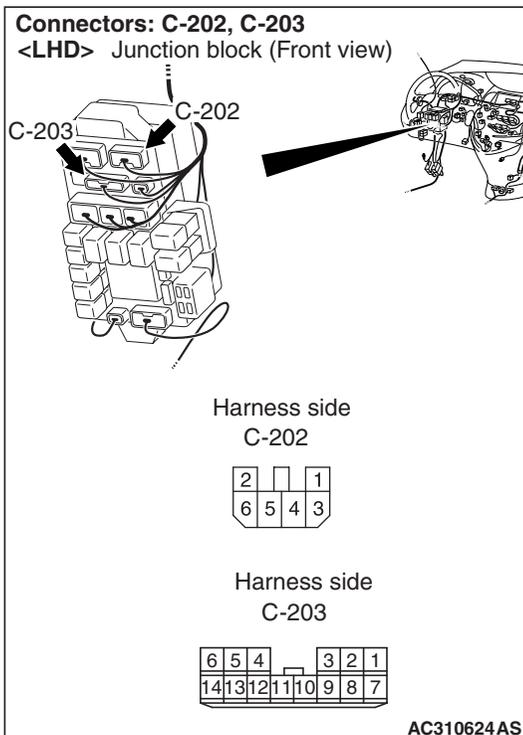
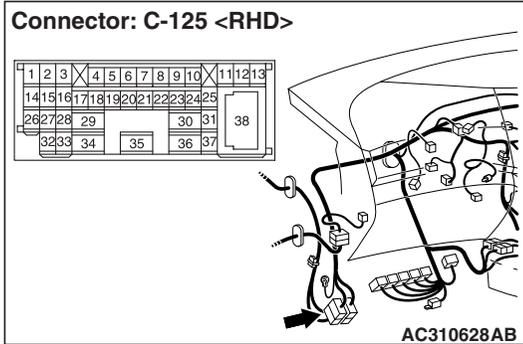
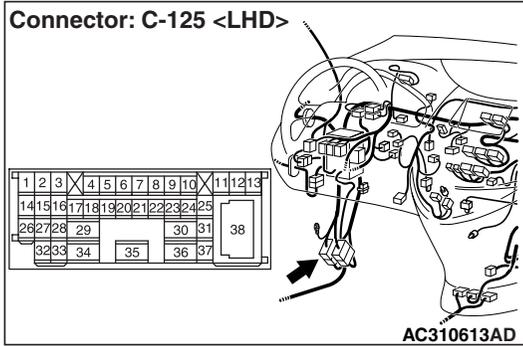
**Q: Is the check result normal?**

**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 for open circuit.

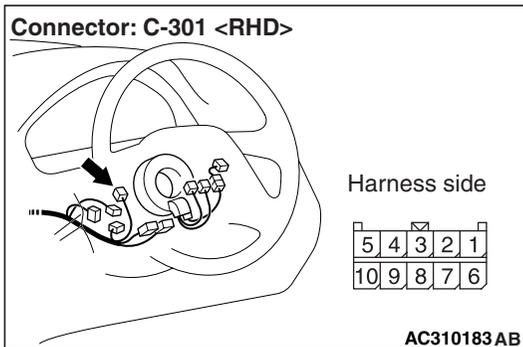
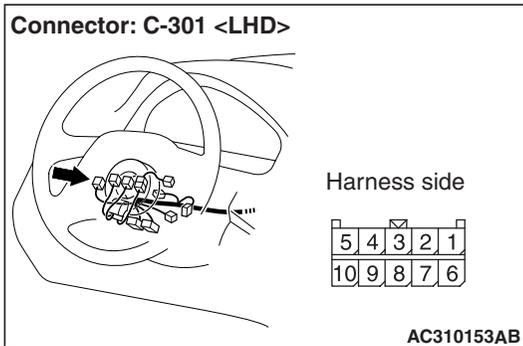
**Q: Is the check result normal?**

**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.

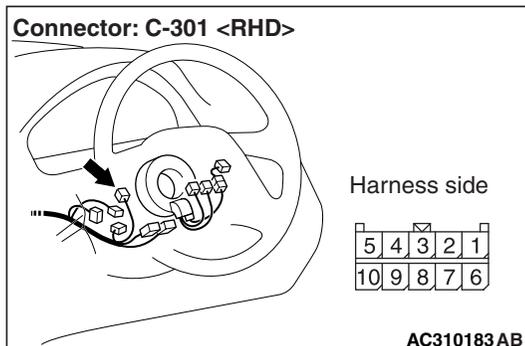
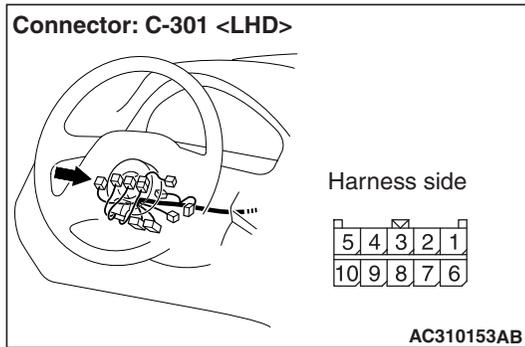
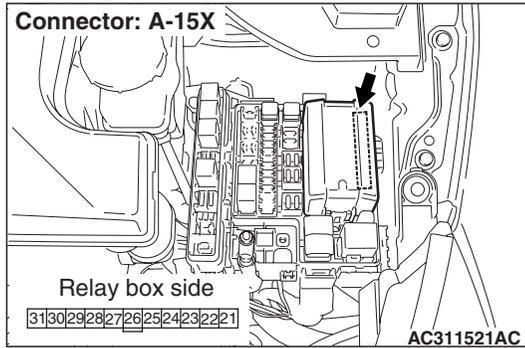
**Step 11. Connector check: C-301 column switch connector**

**YES :** Go to Step 12.  
**NO :** Repair the connector.

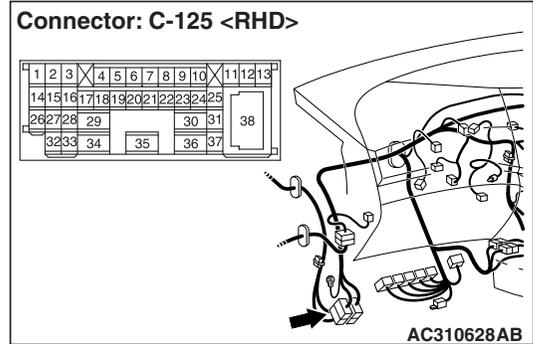
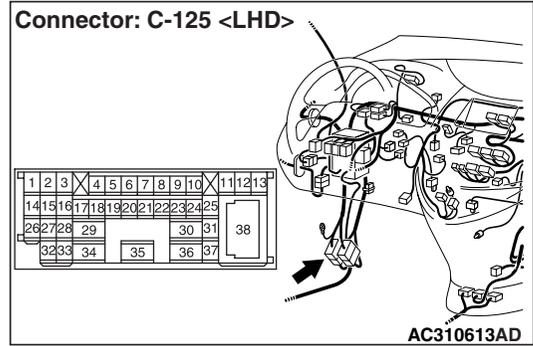


**Q: Is the check result normal?**

**Step 12. Check the wiring harness between C-301 column switch connector terminal No.8 and A-15X front-ECU connector terminal No.26.**



NOTE:



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

- Check the wiper backup circuit.

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

**YES :** Go to Step 13.

**NO :** Repair the wiring harness.

**Step 13. 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).

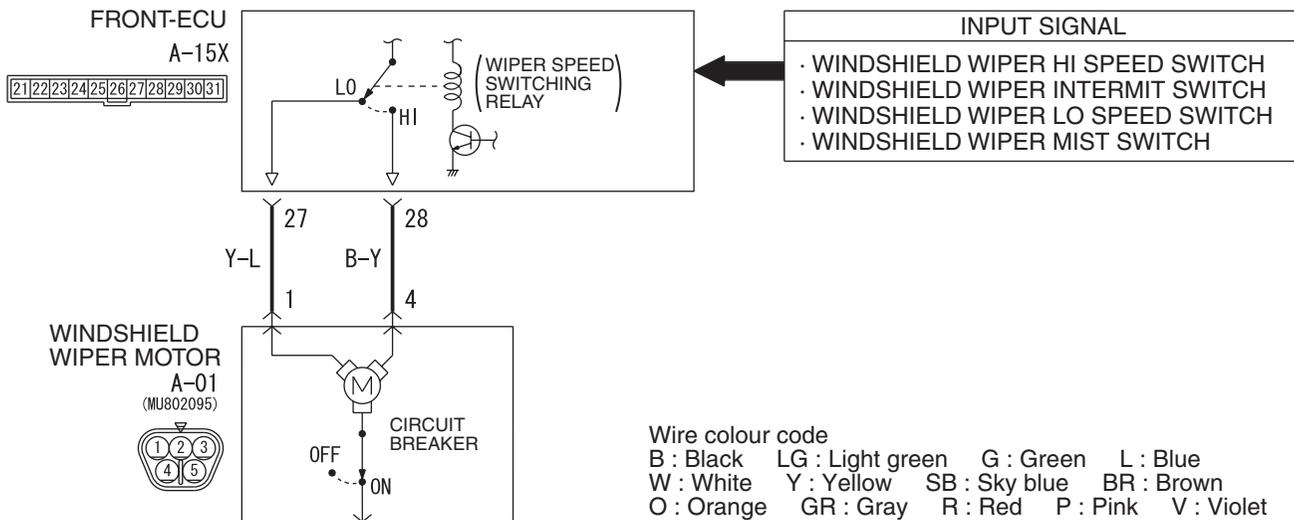
**NO :** Replace the front-ECU.

**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 front-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

**DIAGNOSTIC PROCEDURE**

**Step 1. MUT-III diagnosis code**

When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

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

**YES :** Refer to diagnosis code chart [P.54B-29](#).

**NO :** Go to Step 2.

**Step 2. Pulse check.**

Check the input signals below which are related to the windshield wiper.

| System switch                | Check condition   |
|------------------------------|---|
| Ignition switch (ACC)        | When turned from the LOCK (OFF) position to the ACC position. |
| Windshield mist wiper switch | When the switch is turned from off to on.                     |

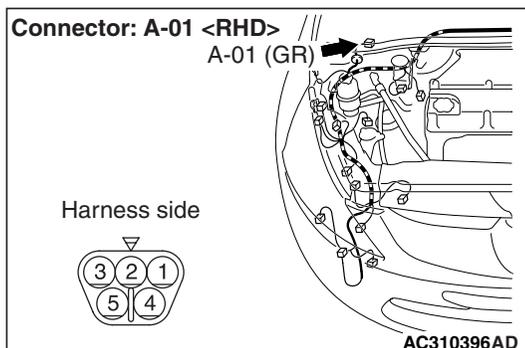
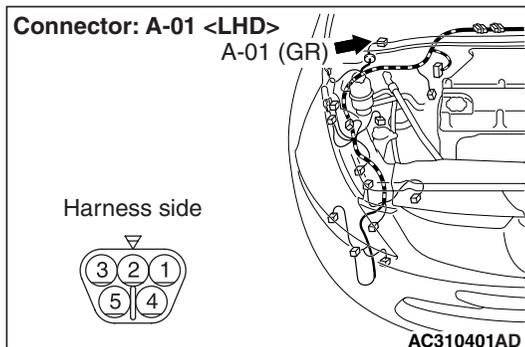
**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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



**DIAGNOSTIC 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.**

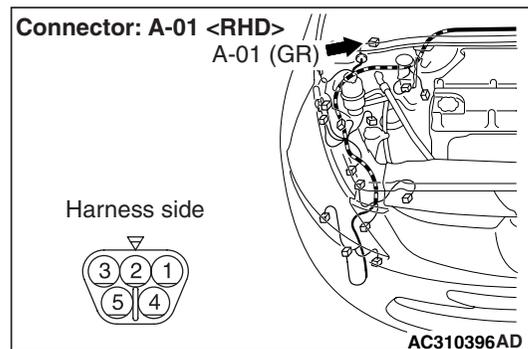
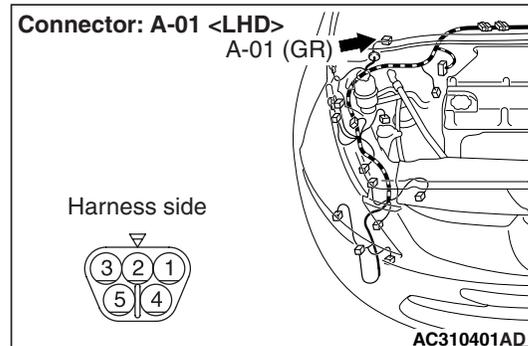
Refer to GROUP 51 – Windshield wiper [P.51-25](#).

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

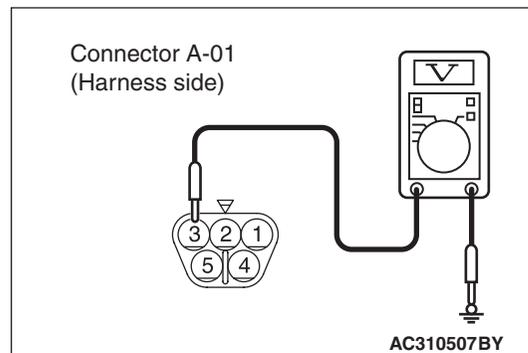
**YES :** Go to Step 3.

**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.

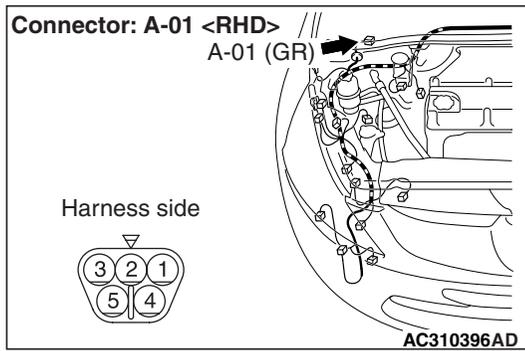
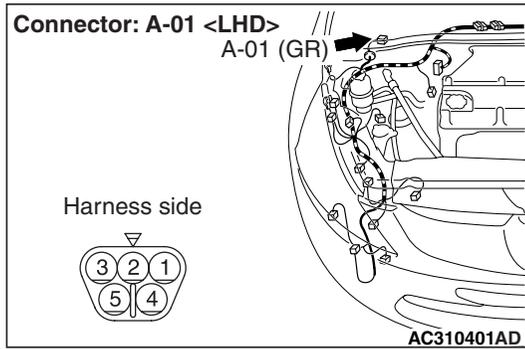
**OK: System voltage**

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

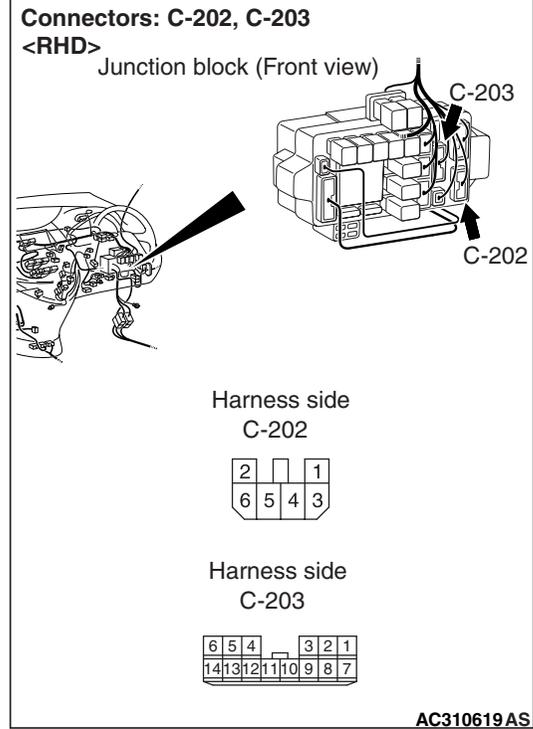
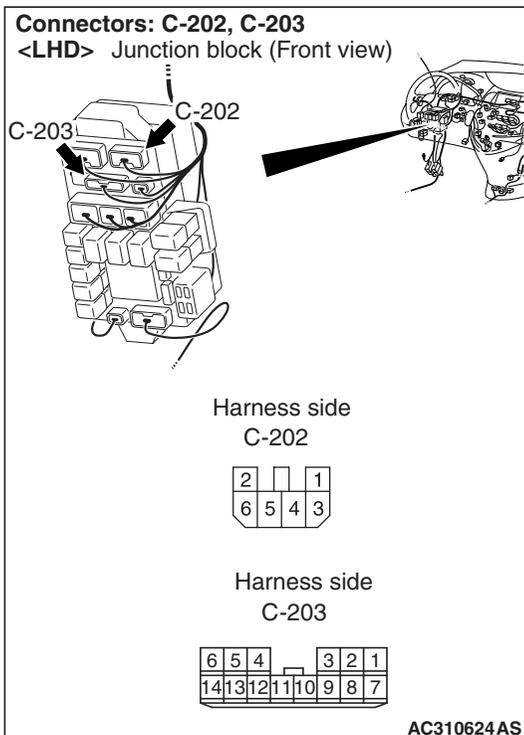
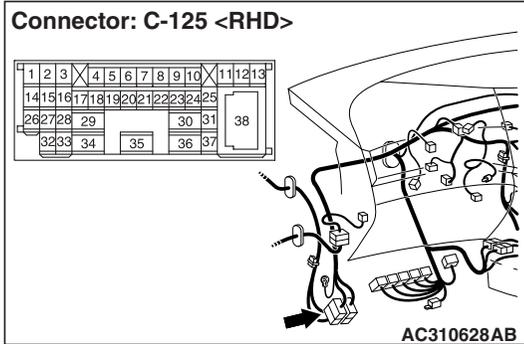
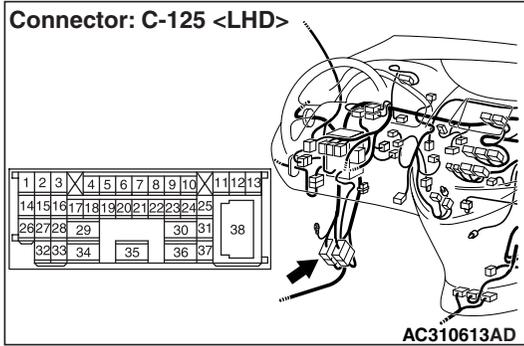
**YES :** Go to Step 5.

**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).**



**NOTE:**



Prior to the wiring harness inspection, check the intermediate connectors C-125 and junction block connectors C-202, C-203, and repair if necessary.

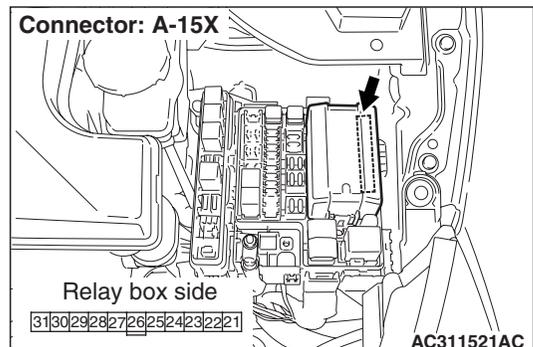
- Check the power supply line to ignition switch (ACC) for open circuit.

**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**

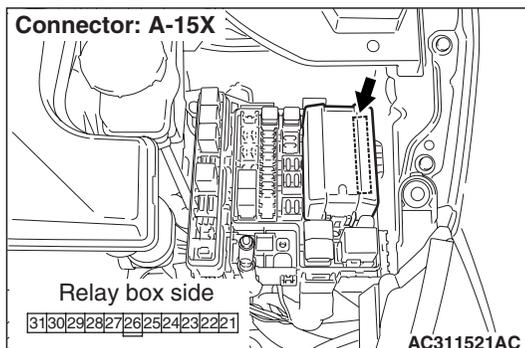
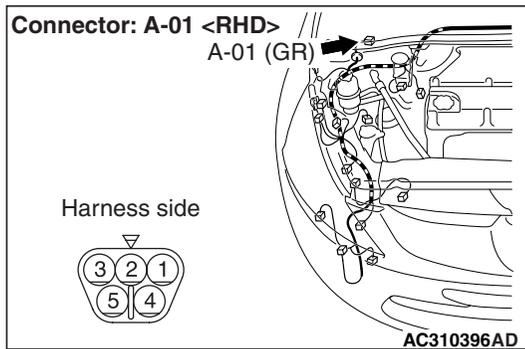
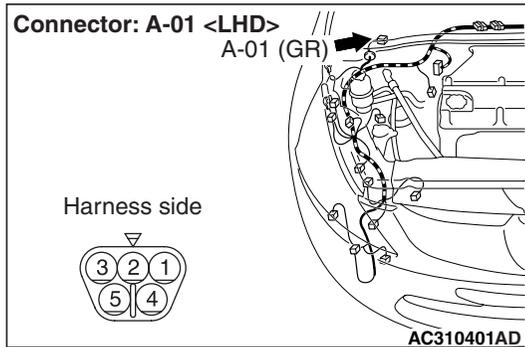


**Q: Is the check result normal?**

**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).

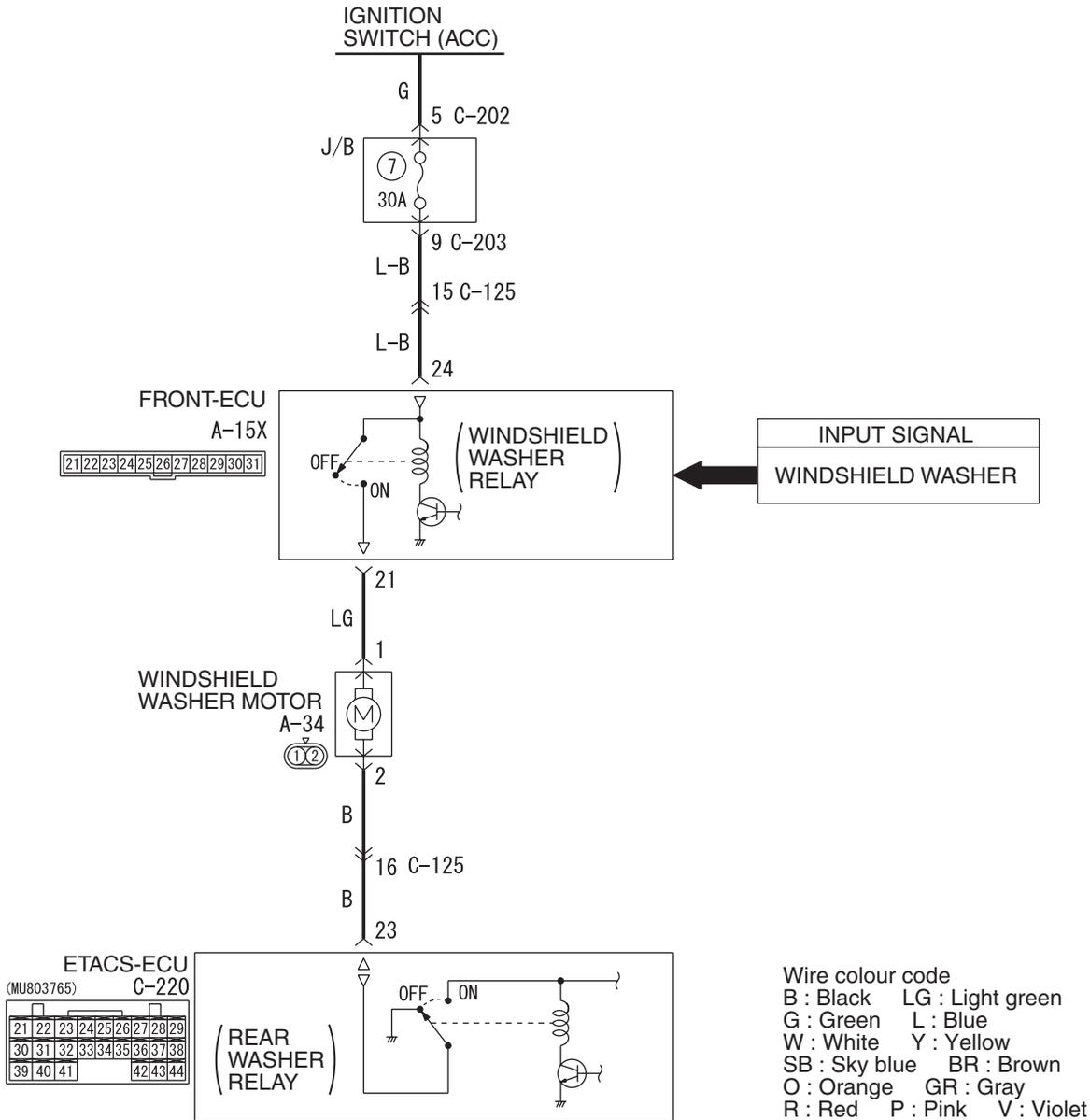
**NO :** Replace the front-ECU.

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. Pulse check**

Check the input signals below which are related to the windshield wiper.

| System switch                        | Check condition   |
|--------------------------------------|---|
| Ignition switch (ACC)                | When turned from the LOCK (OFF) position to the ACC position. |
| Windshield mist wiper switch         | When the switch is turned from off to on.                     |
| Windshield intermittent wiper switch | When the switch is turned from off to on.                     |
| Windshield low-speed wiper switch    | When the switch is turned from off to on.                     |
| Windshield high-speed wiper switch   | When the switch is turned from off to on.                     |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally :** Go to Step 2.

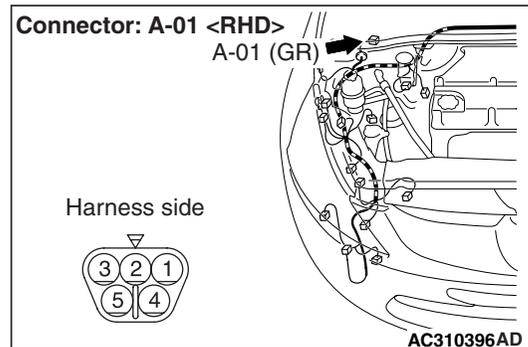
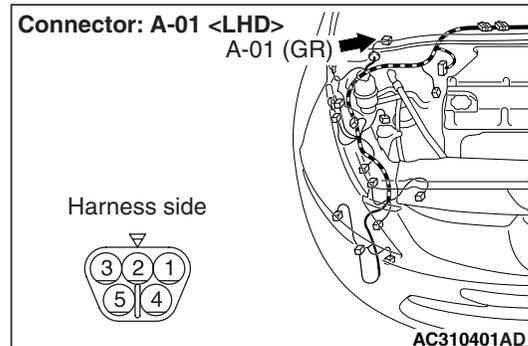
**The ignition switch (ACC) signal is not received. :**  
Refer to inspection procedure Q-1 "The ignition switch (ACC) signal is not received [P.54B-416.](#)"

**Windshield mist wiper switch signal is not received. :** Refer to inspection procedure Q-7 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received [P.54B-439.](#)"

**Windshield intermittent wiper switch signal is not received. :** Refer to inspection procedure Q-7 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received [P.54B-439.](#)"

**Windshield low-speed wiper switch signal is not received. :** Refer to inspection procedure Q-7 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received [P.54B-439.](#)"

**Windshield high-speed wiper switch signal is not received. :** Refer to inspection procedure Q-7 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received [P.54B-439.](#)"

**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.**

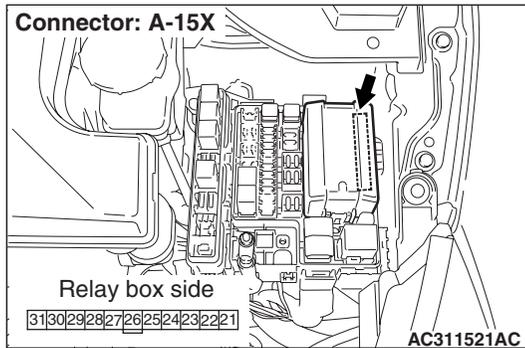
Check that the windshield wipers work normally by moving the switch to HI or MIST position.

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

**YES :** Go to Step 5.

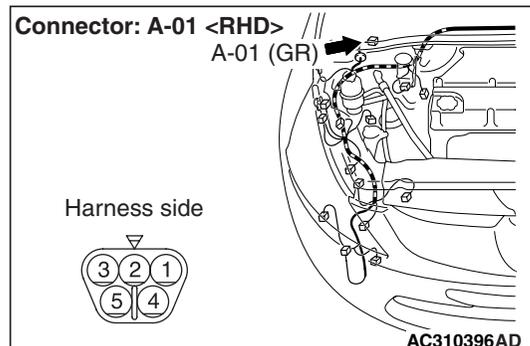
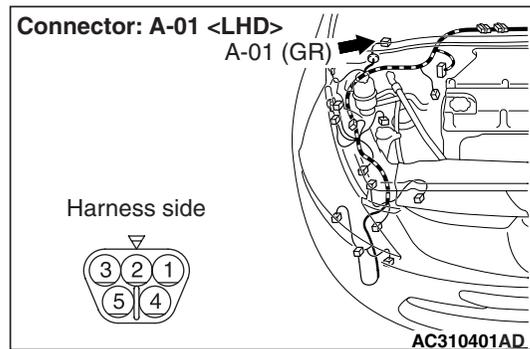
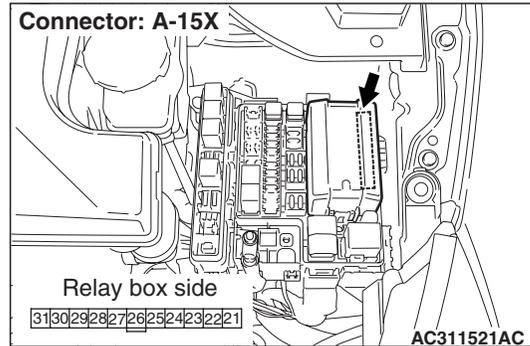
**NO :** Go to Step 8.

**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.**



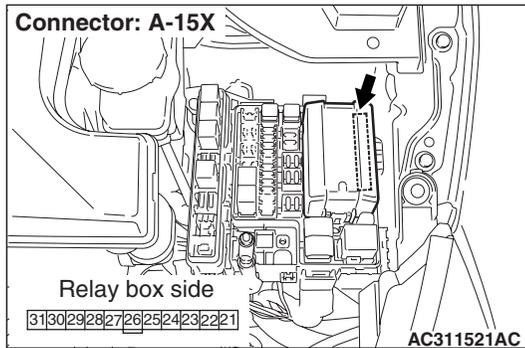
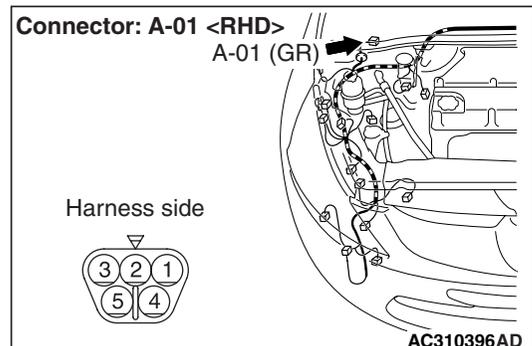
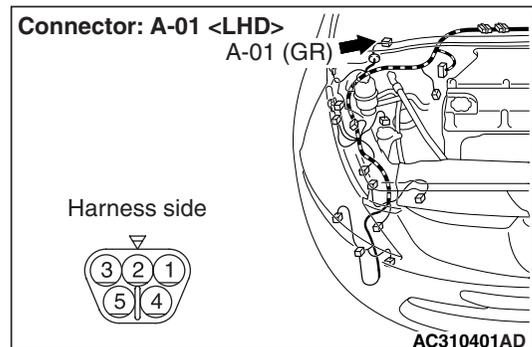
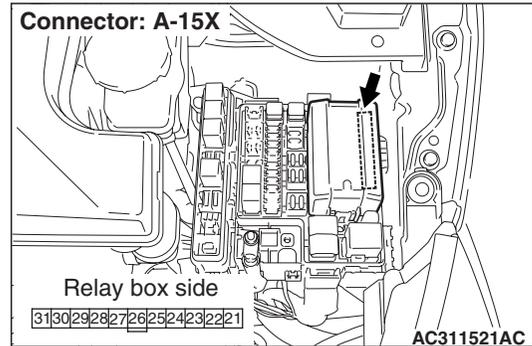
- Check the output lines for open circuit.

**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?**

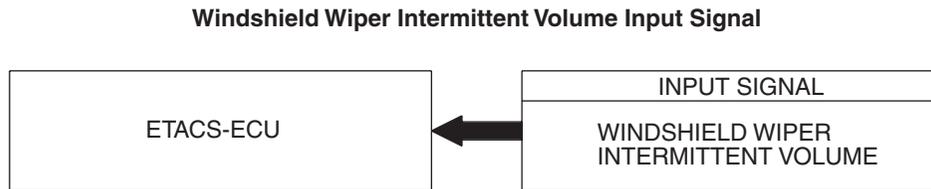
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

**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.



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

**All the signals are received normally.** : Go to Step 2.

**The ignition switch (IG1) signal is not received.** : Refer to inspection procedure Q-1 "The ignition switch (ACC) signal is not received [P.54B-416.](#)"

**The windshield wiper volume signal is not received.** : Refer to inspection procedure Q-8 "The windshield wiper volume signal is not received [P.54B-440.](#)"

**DIAGNOSIS PROCEDURE**

**Step 1. Pulse check**

Check the input signals below which are related to the windshield intermittent wiper function.

| System switch                        | Check condition  |
|--------------------------------------|--|
| Ignition switch (ACC)                | When turned from LOCK (OFF) position to the ACC position   |
| Windshield intermittent wiper volume | When the windshield intermittent wiper volume is rotated from "FAST" to "SLOW" (a pulse is sent around the volume middle position) |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**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](#)).

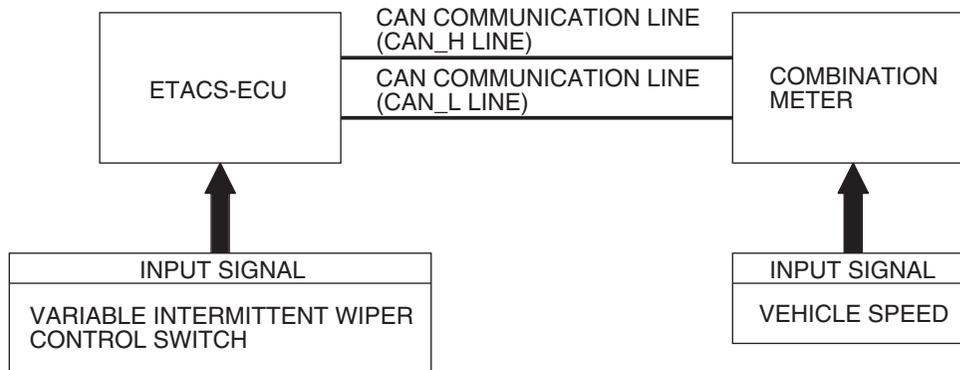
**NO** : Replace the front-ECU

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.

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 vehicle speed signal (engine-A/T-ECU <A/T> or engine-ECU <M/T>)
- 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.54B-223."

**Step 2. Pulse check**

Check the input signals below which are related to the vehicle speed-dependent intermittent wiper.

| System switch        | Check condition                                     |
|----------------------|---|
| Vehicle speed signal | When the vehicle speed has reached 10 km/h or more. |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**YES :** Go to Step 3.

**NO :** Refer to inspection procedure Q-25 "The vehicle speed signal is not received P.54B-529."

---

**Step 3. Customize function by using the SWS monitor.**

Use the SWS monitor customize function to confirm that "SPEED SEN WIP" is set to "W.FUNCTION". The SWS monitor must be used in order to confirm and change that setting. Use the SWS monitor to confirm and/or change the customized function.

 **CAUTION**

**The SWS monitor must be used in order to confirm and change that setting. Use the SWS monitor to confirm and/or change the customized function.**

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

**YES :** Go to Step 4.

**NO :** Use the SWS monitor customize function to set the "SPEED SEN WIP" to "W.FUNCTION" (Refer to GROUP 54C – Customize function [P.54C-574](#)).

---

**Step 4. 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](#)).

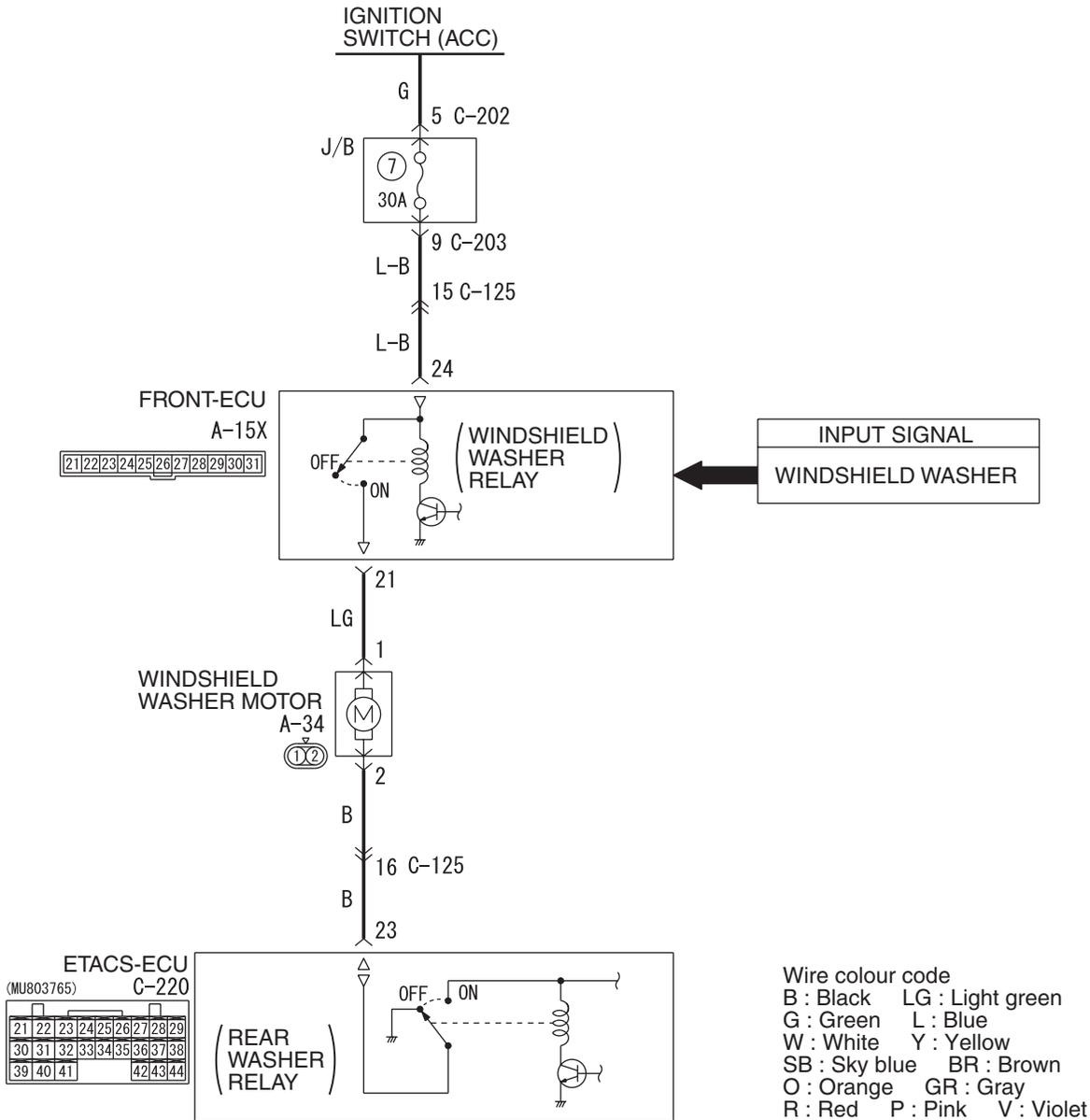
**NO :** Replace the combination meter.

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.54B-205.](#)"

**Step 2. Pulse check**

Check the input signals below which are related to the windshield wiper.

| System switch            | Check condition   |
|--------------------------|---|
| Ignition switch (ACC)    | When turned from the LOCK (OFF) position to the ACC position. |
| Windshield washer switch | When the switch is turned from off to on.                     |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

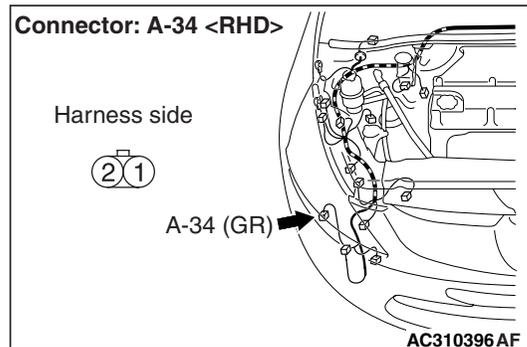
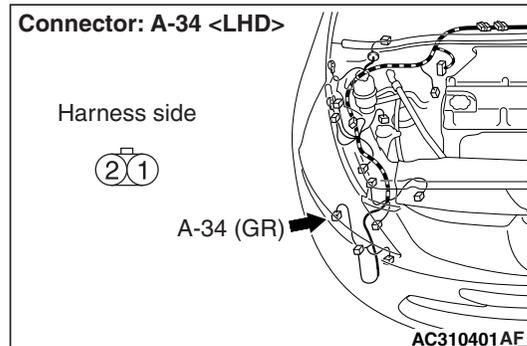
**Q: Are the check result normal?**

**All the signals are received normally :** Go to Step 3.

**The ignition switch (ACC) signal is not received. :**  
Refer to inspection procedure Q-1 "The ignition switch (ACC) signal is not received [P.54B-416.](#)"

**Windshield washer switch signal is not received. :**  
Refer to inspection procedure Q-7 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received [P.54B-439.](#)"

**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.**

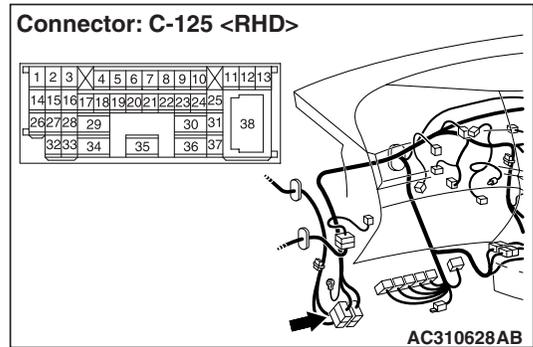
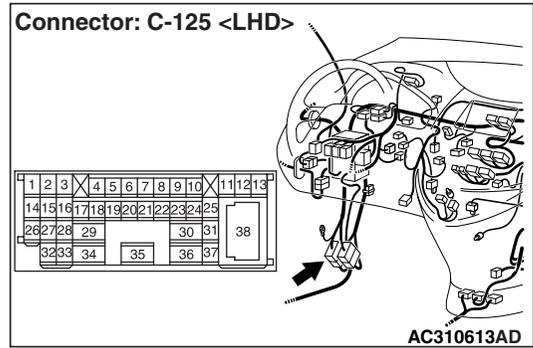
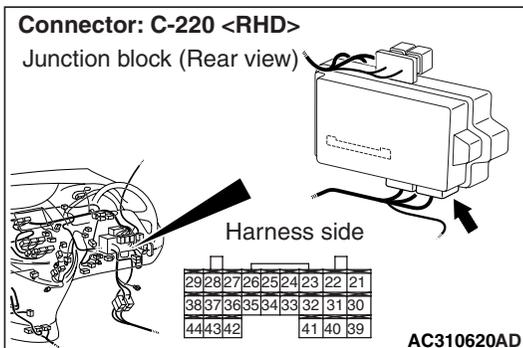
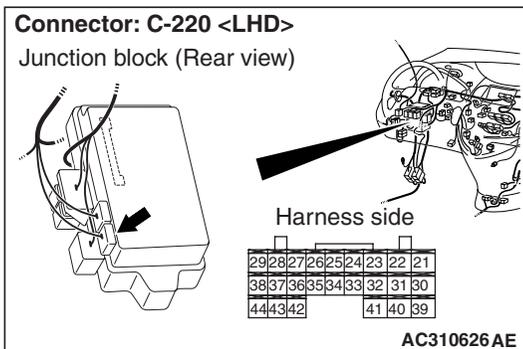
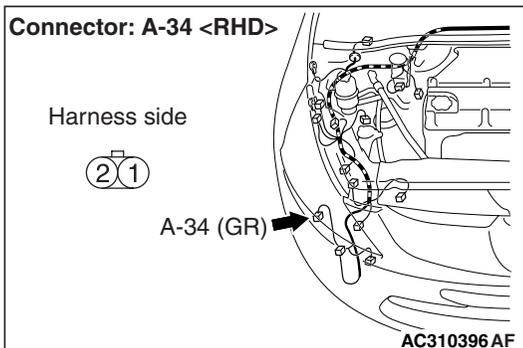
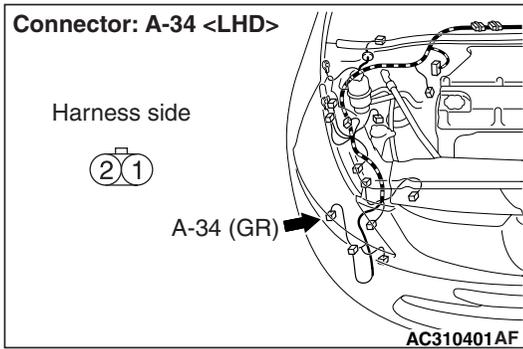
Refer to GROUP 51 – Windshield washer [P.51-21.](#)

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

**YES :** Go to Step 5

**NO :** Replace the windshield washer motor.

**Step 5. Check the wiring harness between A-34 windshield washer motor connector terminal No.2 and C-220 ETACS-ECU connector terminal No.23.**



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

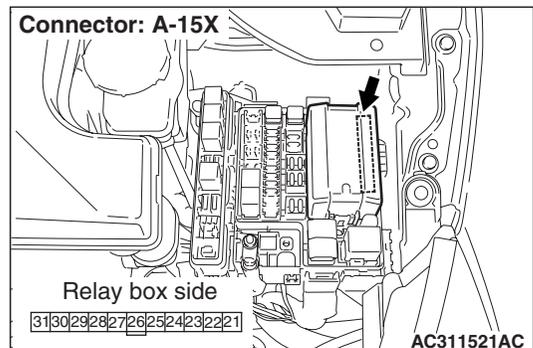
- Check the earth wires for open circuit.

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

**YES :** Go to Step 6.

**NO :** Repair the wiring harness.

**Step 6. Connector check: A-15X front-ECU connector**



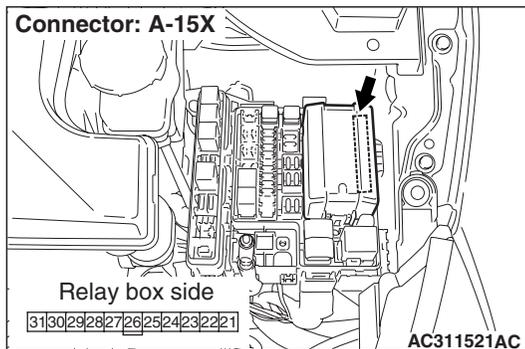
**Q: Is the check result normal?**

**YES :** Go to Step 7.

**NO :** Repair the connector.

**NOTE:**

**Step7. Check the wiring harness between A-34 windshield washer motor connector terminal No.1 and A-15X front-ECU connector terminal No.21.**



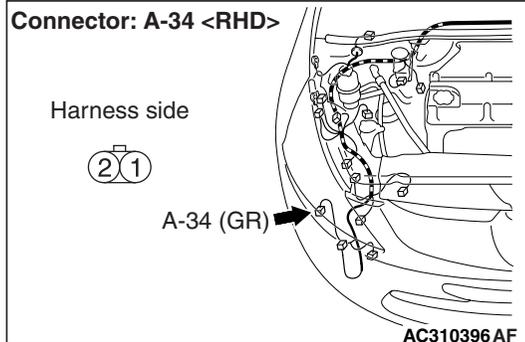
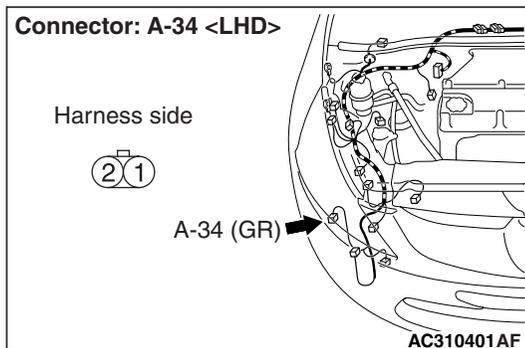
**YES :** Go to Step 8.  
**NO :** Repair the wiring harness.

**Step 8. 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.



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

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

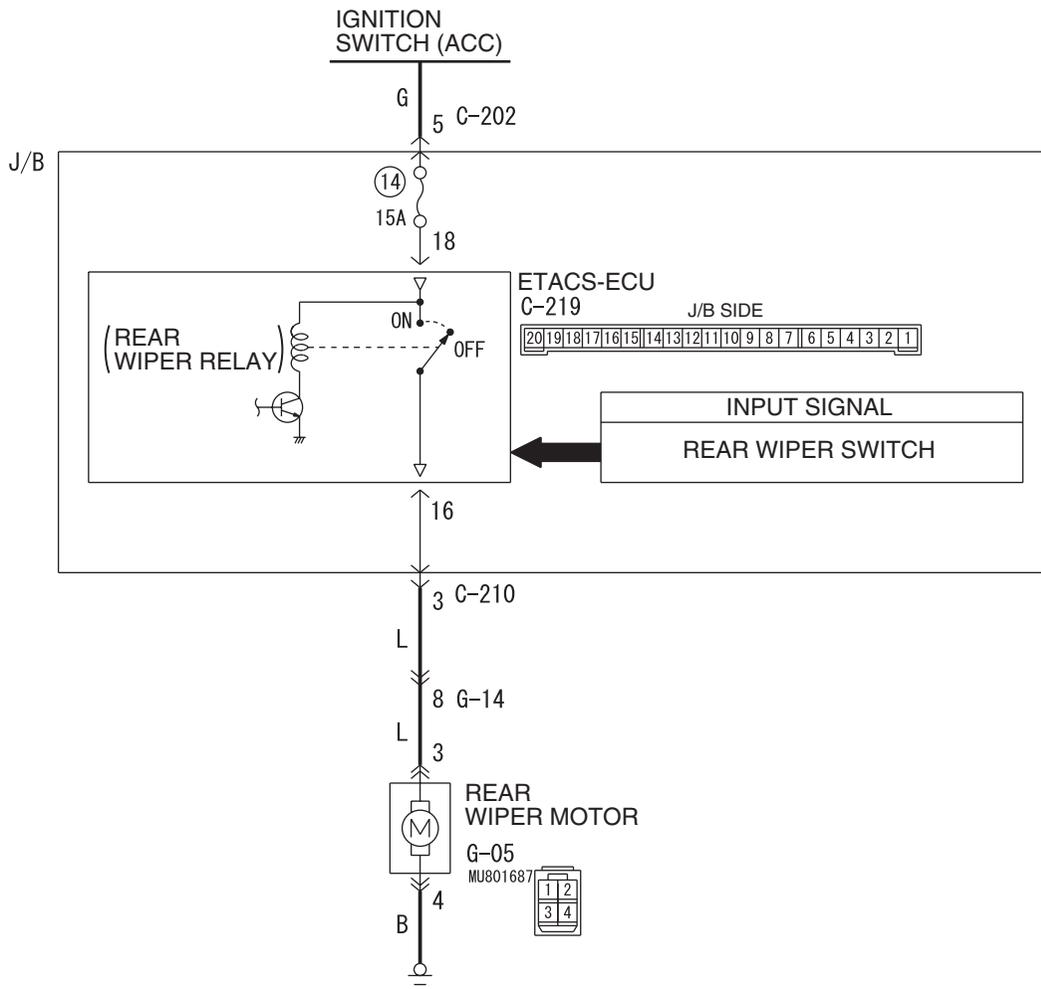
REAR WIPER AND WASHER

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

**DIAGNOSTIC PROCEDURE**

**Step 1. Use the MUT-III to confirm a diagnosis code.**

Check that the ETACS-ECU sets a diagnosis code.

**Q: Is diagnosis code set?**

- YES :** Refer to diagnosis code chart [P.54B-29](#).
- NO :** Go to Step 2.

**Step 2. Pulse check**

Check the input signals below which are related to the rear wiper.

| System switch                     | Check condition  |
|-----------------------------------|--|
| Ignition switch (ACC)             | When turned from the LOCK (OFF) position to the ACC position |
| Column switch (rear wiper switch) | When the switch is turned from off to on                     |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

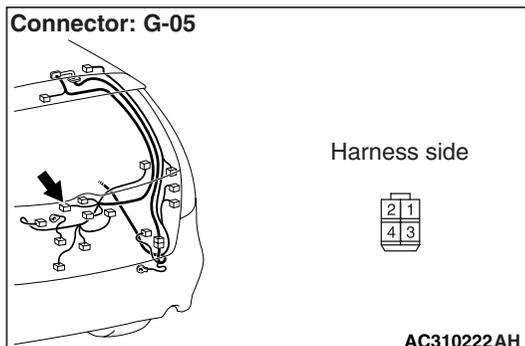
**Q: Are the check result normal?**

**All the signals are received normally. :** Go to Step 3.

**The ignition switch (ACC) signal is not received. :** Refer to inspection procedure Q-1 "The ignition switch (ACC) signal is not received [P.54C-456](#)."

**The column switch (rear wiper switch) signal is not received. :** Refer to inspection procedure Q-7 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received [P.54B-439](#)."

**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.

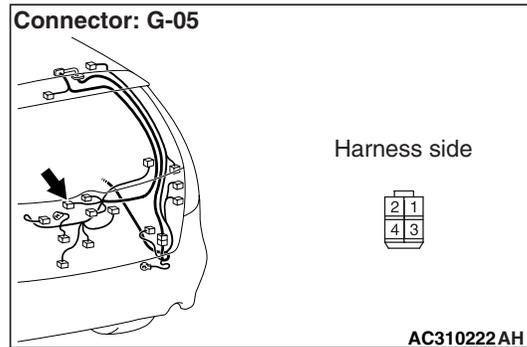
**Step 4. Check the rear wiper motor.**

Refer to GROUP 51 – Rear wiper and washer [P.51-32](#).

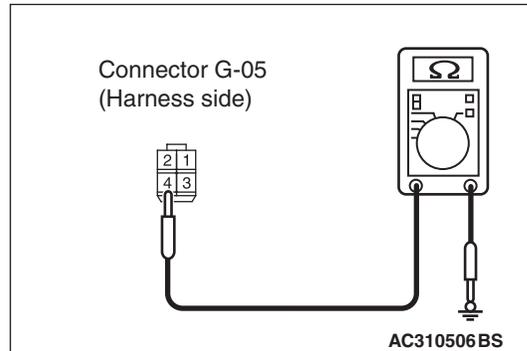
**Q: Is the check result normal?**

- 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.



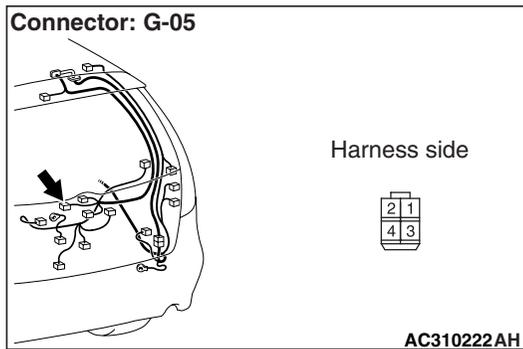
(2) Resistance between G-05 rear wiper motor connector terminal No.4 and body earth

**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.**



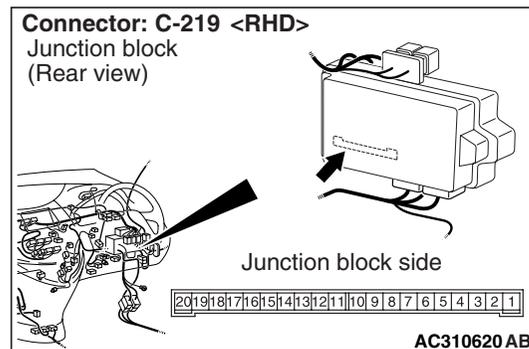
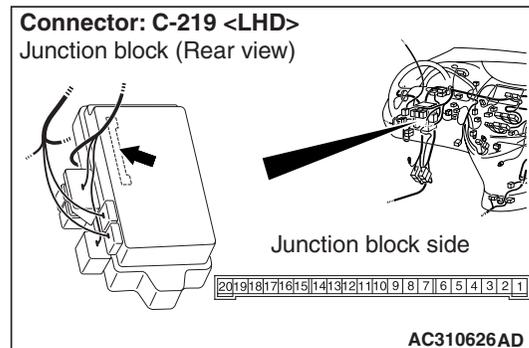
- Check the earth line for open or short circuit.

**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**

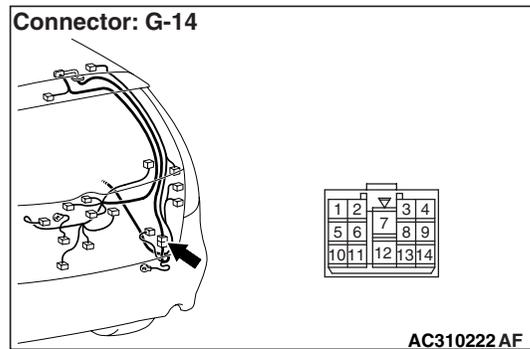
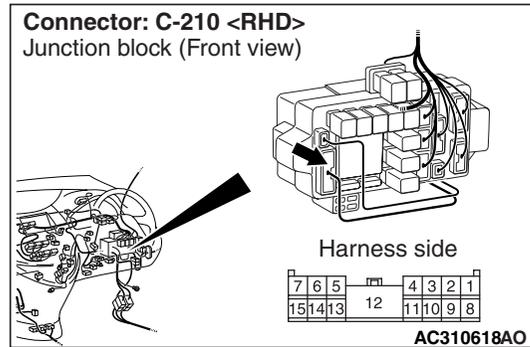
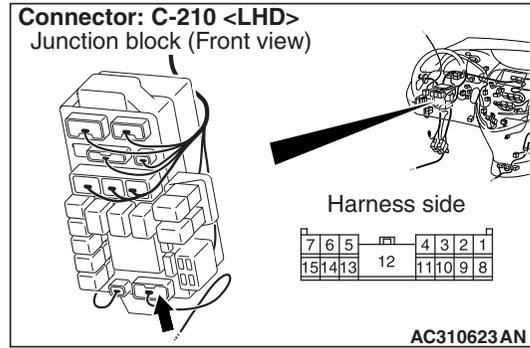
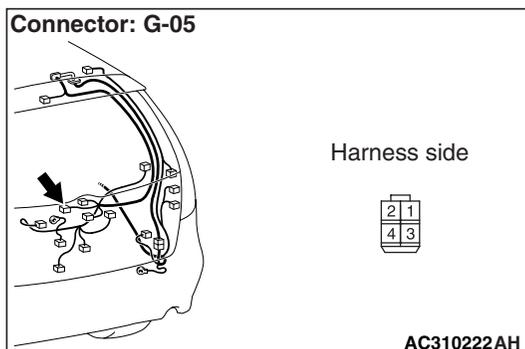
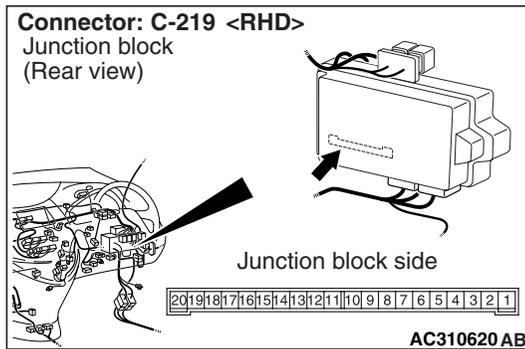
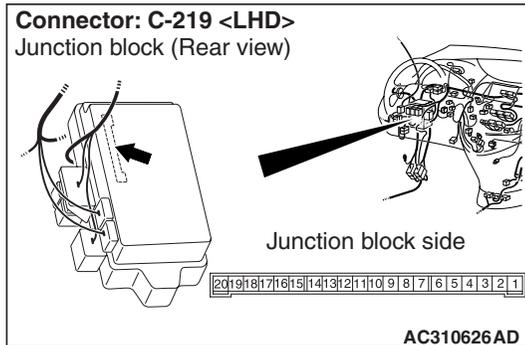


**Q: Is the check result normal?**

**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: 1Is 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).

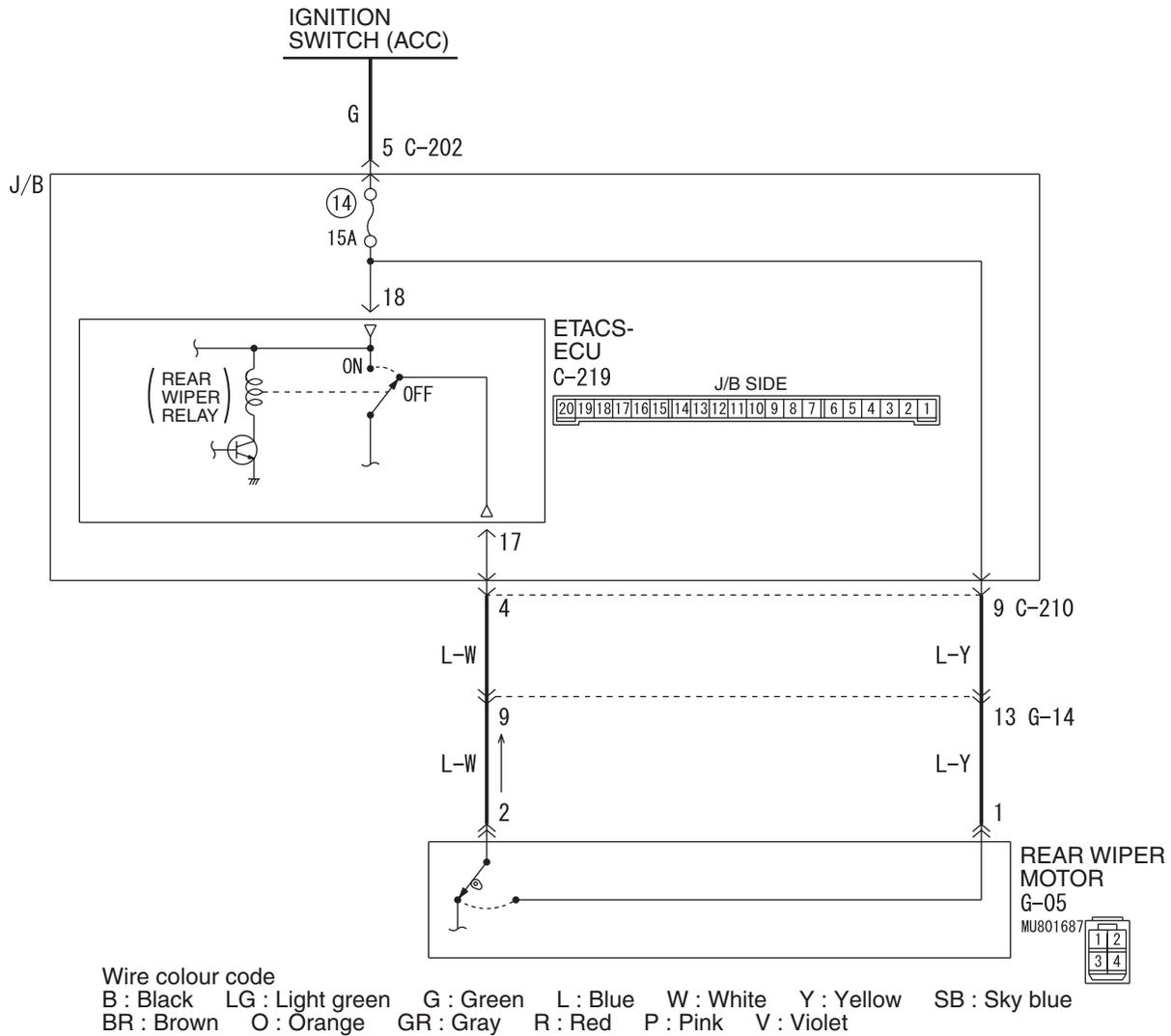
**NO :** Replace the ETACS-ECU.

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



W4X54E088A

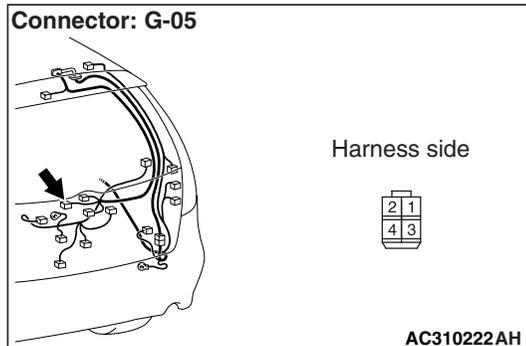
**COMMENTS ON TROUBLE SYMPTOM**

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

**Step 1. Connector check: G-05 rear wiper motor connector**



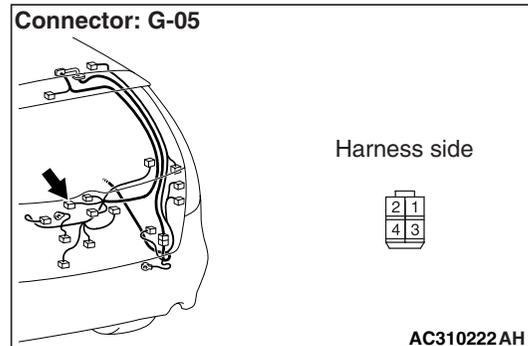
**Q: Is the check result normal?**  
**YES :** Go to Step 2.  
**NO :** Repair the connector.

**Step 2. Check the rear wiper motor.**

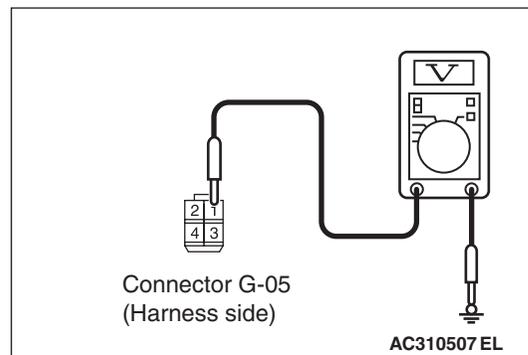
Refer to GROUP 51 – Rear wiper and washer  
[P.51-32.](#)

**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

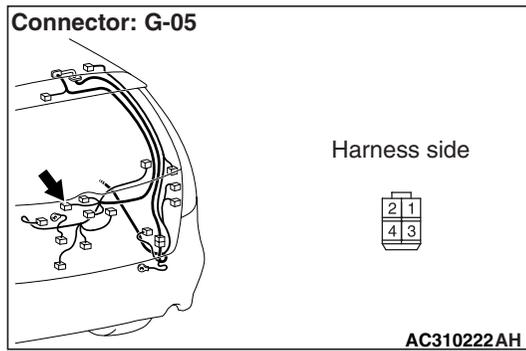


- (3) Check the voltage between G-05 rear wiper motor connector terminal No.1 and body earth

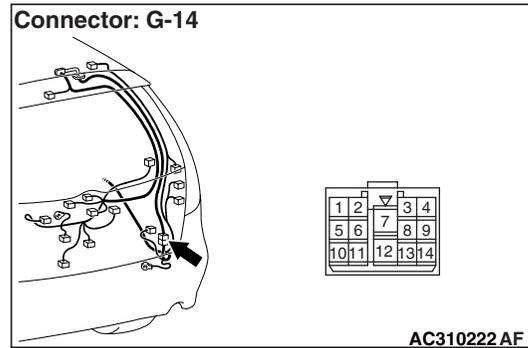
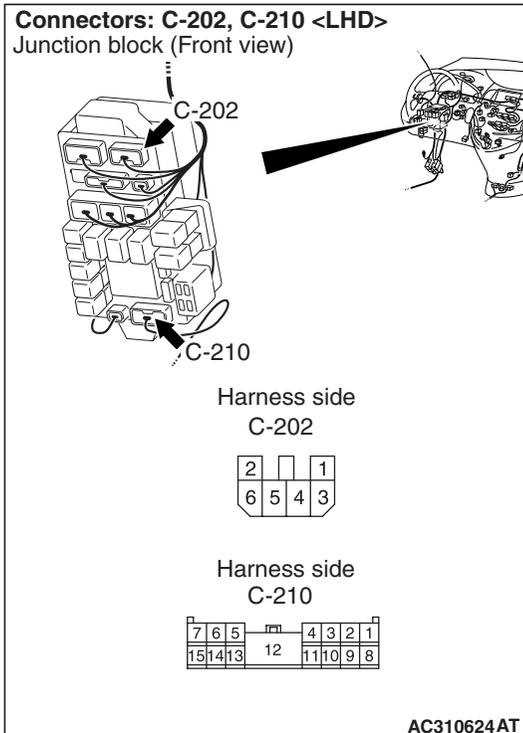
**OK: System voltage**

**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:**

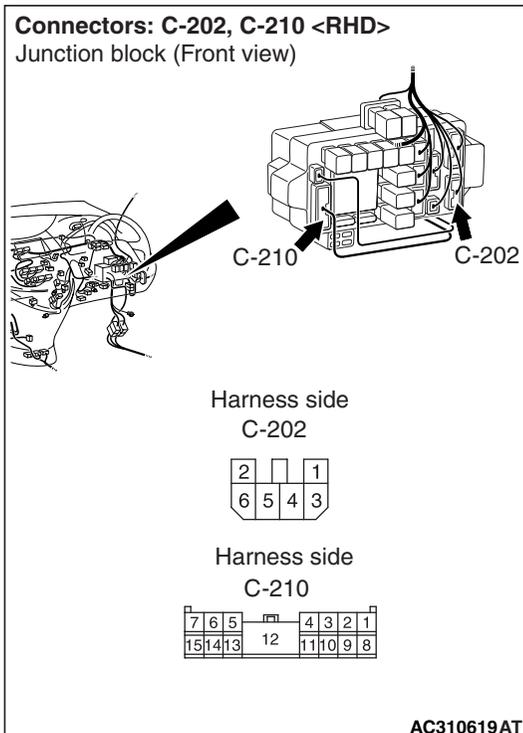


Prior to the wiring harness inspection, check intermediate connector G-14 and junction block connectors C-202, C-210, and repair if necessary.

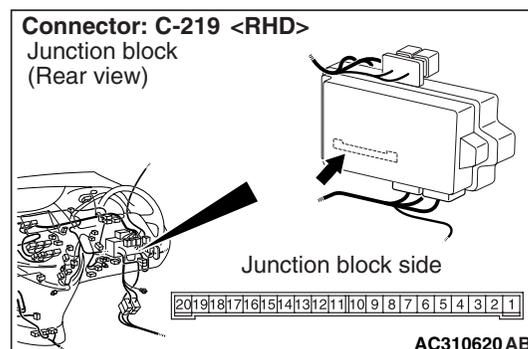
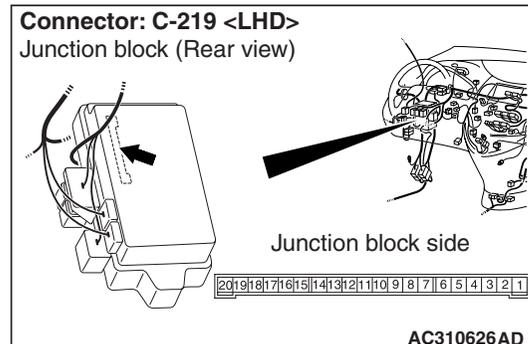
- Check the power supply line for open or short circuit.

**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.



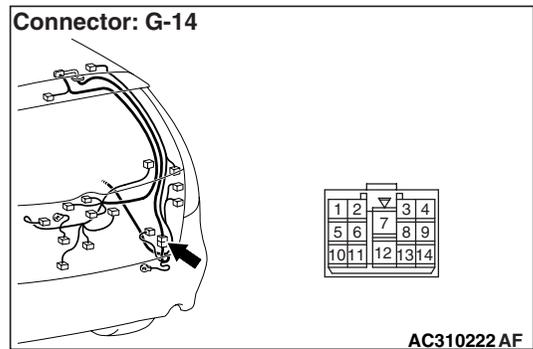
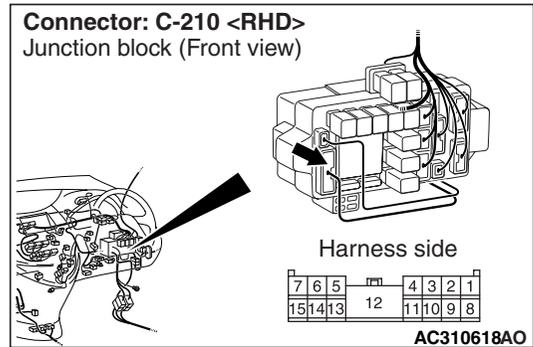
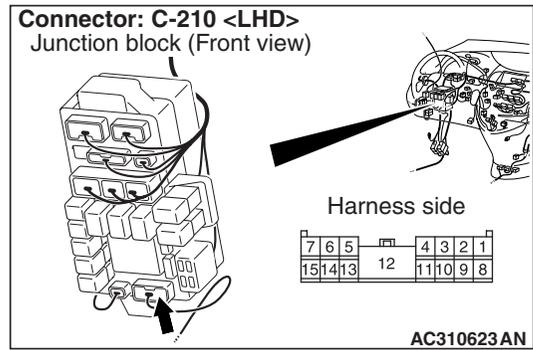
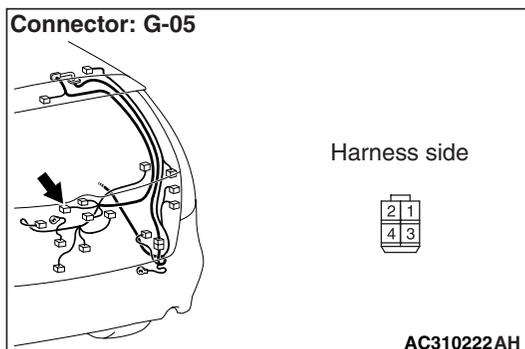
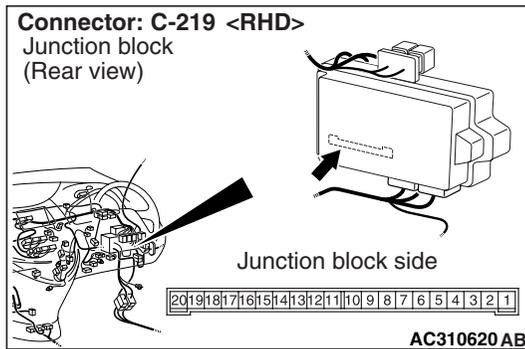
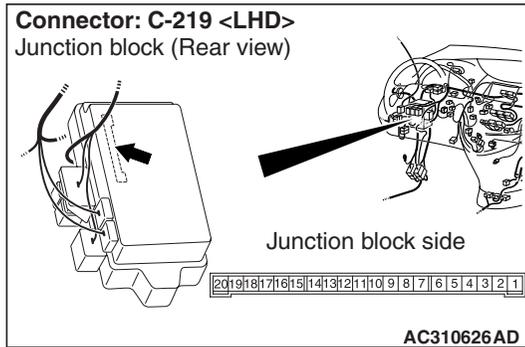
**Step 5. Connector check: C-219 ETACS-ECU connector**



**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. Retest the system.**

Check that the rear wiper auto stop function works normally.

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

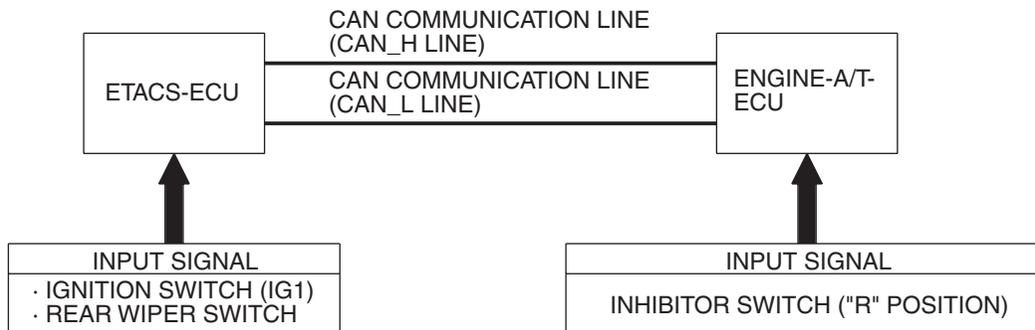
- YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO :** Replace the ETACS-ECU.

**INSPECTION PROCEDURE 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 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.54B-230."

**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.54B-68 ."

**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).

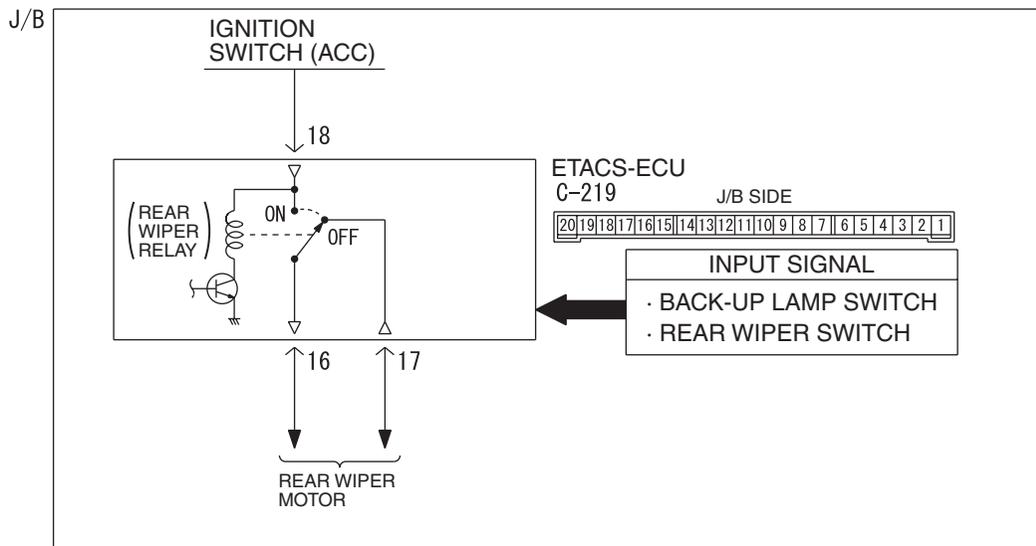
**NO :** Replace the ETACS-ECU.

**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. 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.54B-230](#)."

**Step 2. Pulse check**

Check the input signal, which are related to the R (reverse) gear-linked rear wiper operation.

| System switch       | Check condition   |
|---------------------|---|
| Back-up lamp switch | When the ignition switch is turned ON and the shift 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 inspection procedure Q-3 "The back-up lamp switch signal is not received [P.54B-423](#)."

**Step 3. 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?**

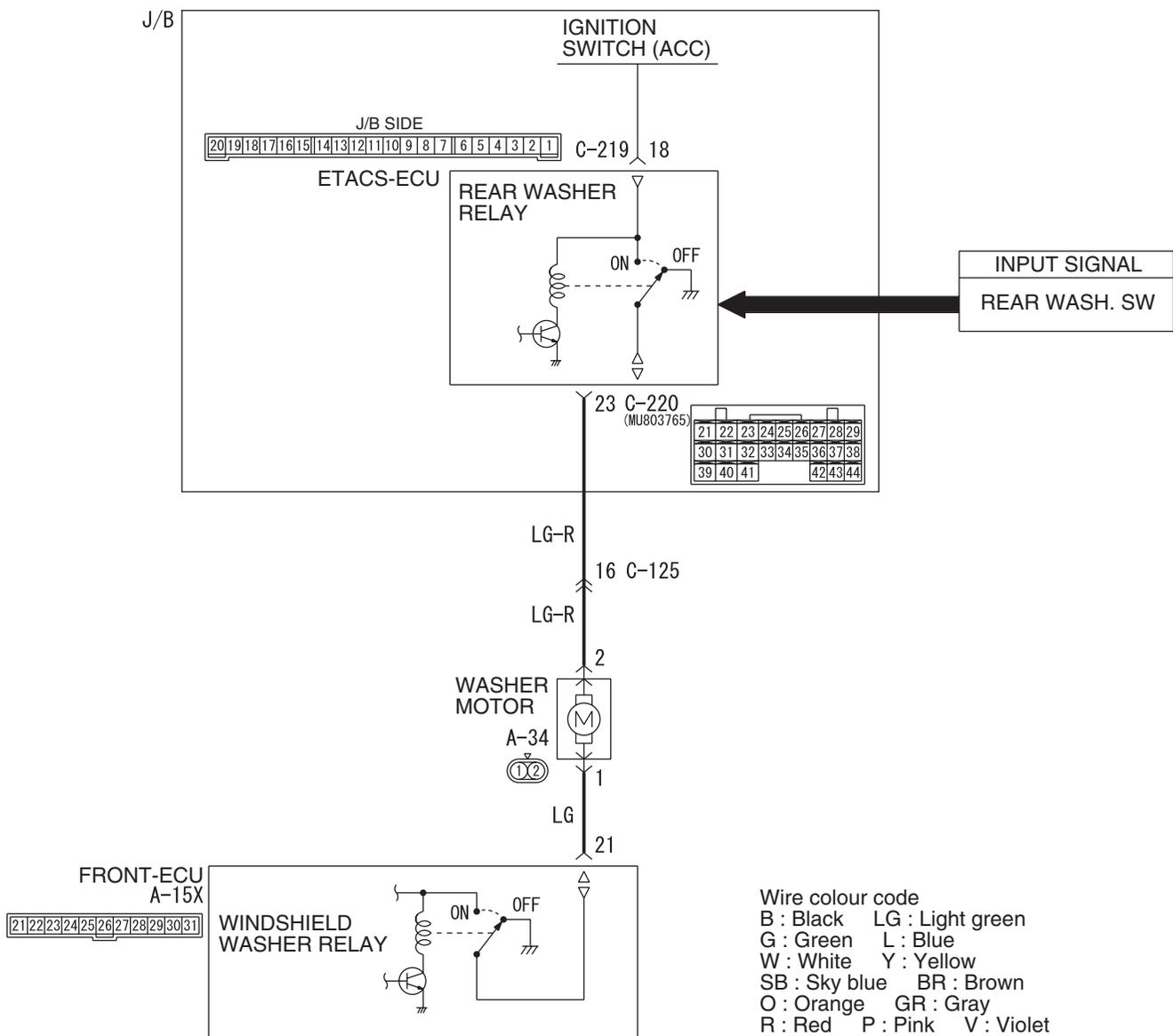
**YES** : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO** : Replace the ETACS-ECU.

**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 washer switch, rear washer motor or the ETACS-ECU may be defective.

**POSSIBLE CAUSES**

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

**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.54B-230."

**Step 2. Pulse check**

Check the input signals below which are related to the rear washer.

- Ignition switch: ACC

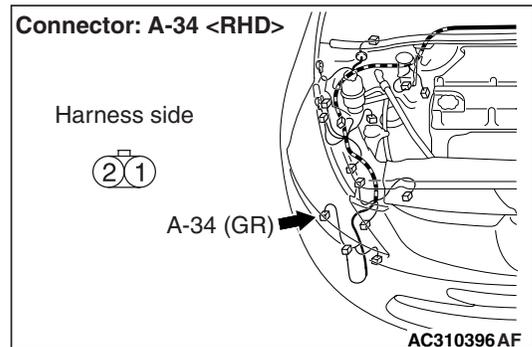
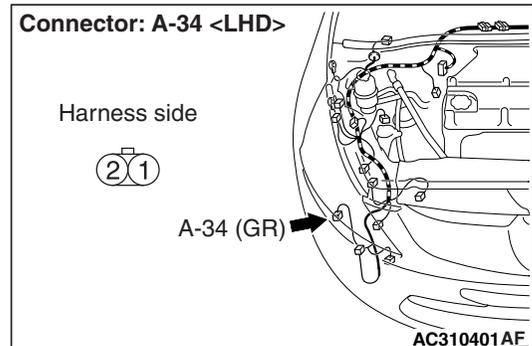
| System switch                      | Check condition                          |
|------------------------------------|--|
| Column switch (rear washer switch) | When the switch is turned from off to on |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**YES** : Go to Step 3.

**NO** : Refer to inspection procedure Q-7 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received P.54B-439."

**Step 3. Connector check: A-34 washer motor connector****Q: Is the check result normal?**

**YES** : Go to Step 4.

**NO** : Repair the connector.

**Step 4. Check the washer motor.**

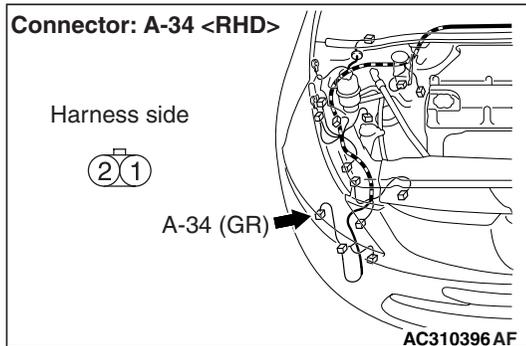
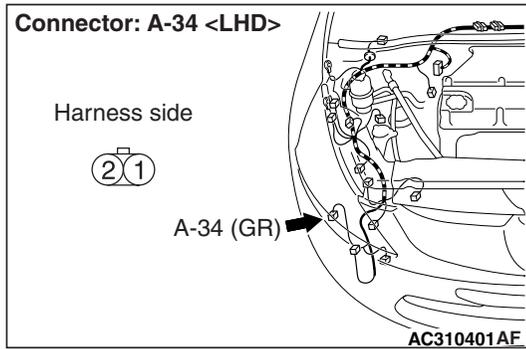
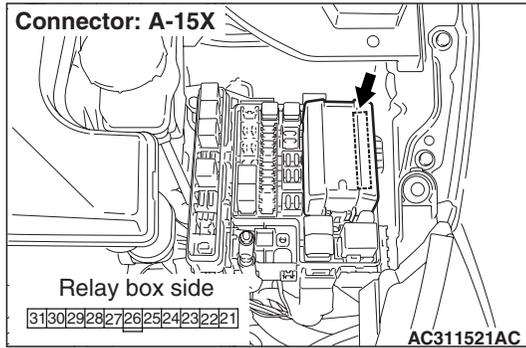
Refer to GROUP 51 – Rear wiper and washer P.51-29.

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

**YES** : Go to Step 5.

**NO** : Replace the washer motor.

**Step 5. Check the wiring harness between A-34 washer motor connector terminal No.1 and A-15X front-ECU connector No.21.**

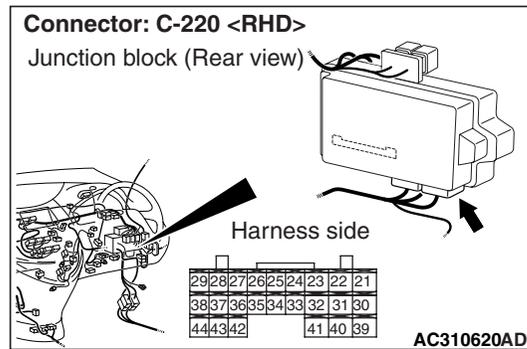
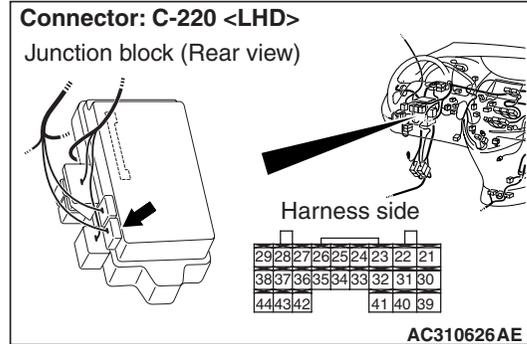


- Check the earth line for open or short circuit.

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

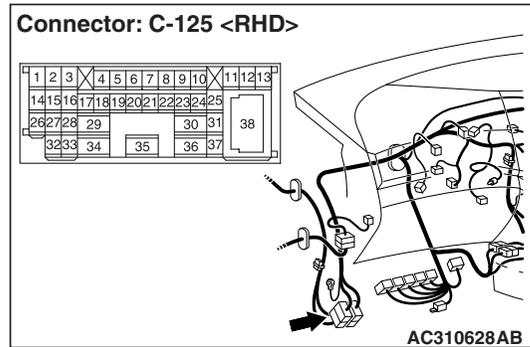
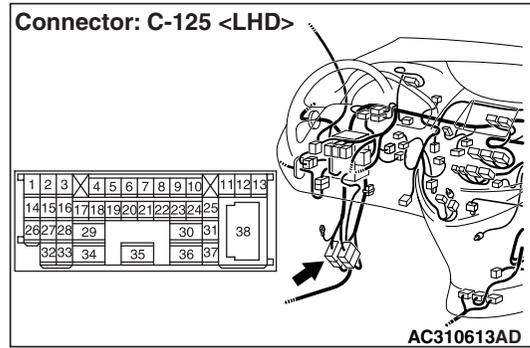
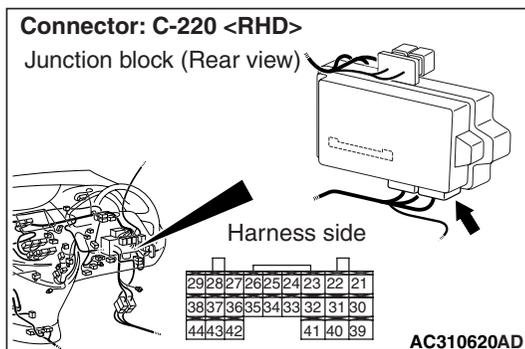
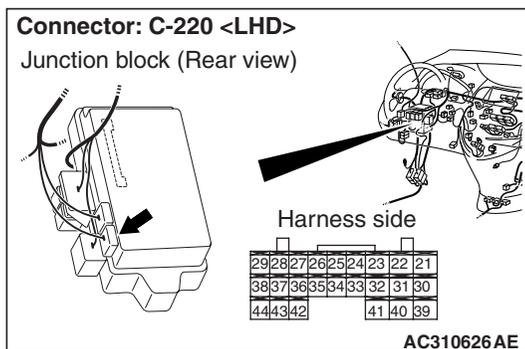
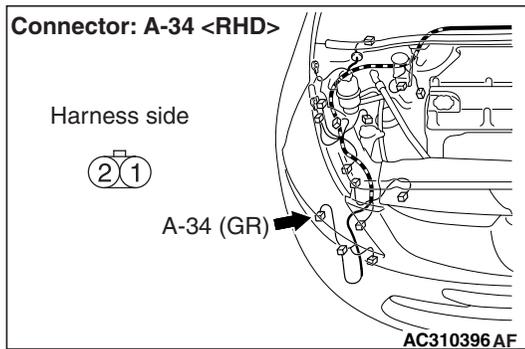
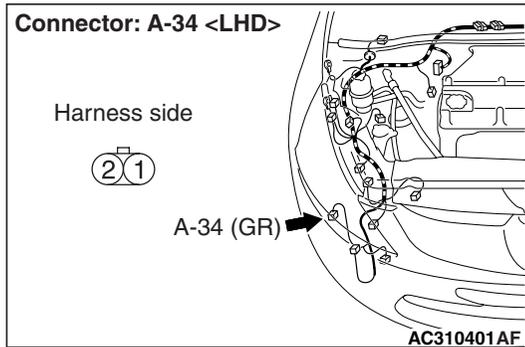
**YES :** Go to Step 6.  
**NO :** Repair the wiring harness.

**Step 6. Connector check: C-220 ETACS-ECU connector**



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

**Step 7. Check the wiring harness between C-220 ETACS-ECU connector terminal No.23 and A-34 washer motor connector terminal No.2.**



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 8.

**NO :** Repair the wiring harness.

**Step 8. 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.

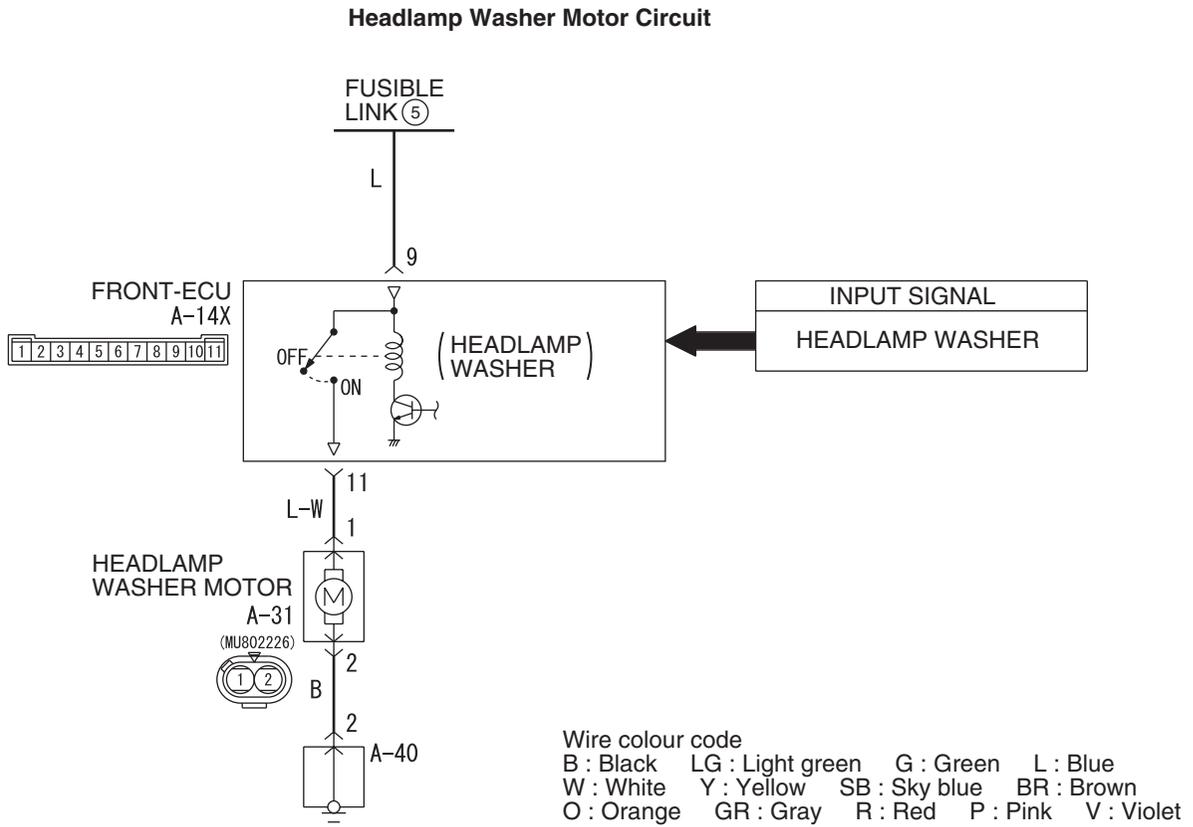
NOTE:

## 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.



W4X54E091A

### 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. MUT-III diagnosis code

When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

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

- YES** : Refer to diagnosis code chart [P.54B-29](#).  
**NO** : Go to Step 2.

**Step 2. Pulse check**

Check the input signals below which are related to the windshield wiper.

| System switch          | Check condition   |
|------------------------|---|
| Ignition switch (ACC)  | When turned from the LOCK (OFF) position to the ACC position. |
| Headlamp washer switch | When the switch is turned from off to on.                     |

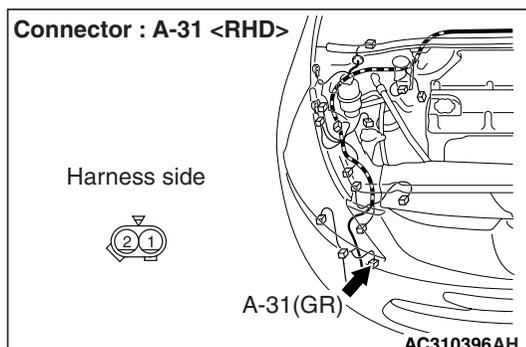
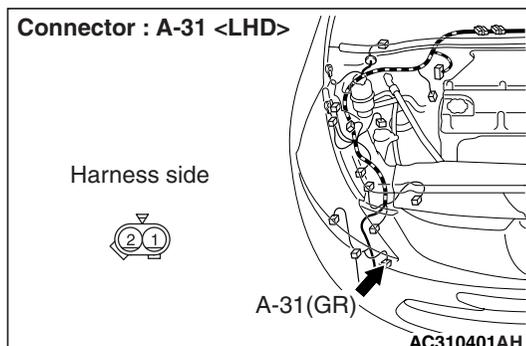
**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally :** Go to Step 3.

**The ignition switch (ACC) signal is not received. :**  
Refer to inspection procedure Q-1 "The ignition switch (ACC) signal is not received P.54B-416."

**Headlamp washer switch signal is not received. :**  
Refer to inspection procedure Q-6 "The column switch (headlamp washer switch) signal is not received P.54B-438."

**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.

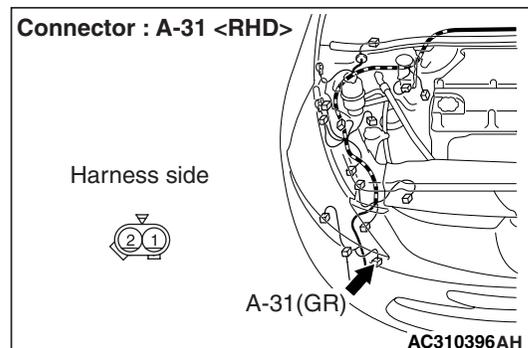
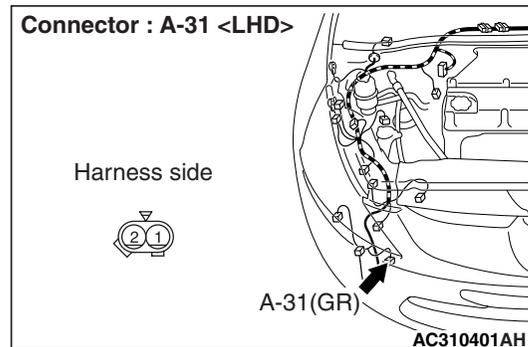
**Step 4. Check the headlamp washer motor assembly.**

Refer to GROUP 51 – Headlamp washer P.51-35.

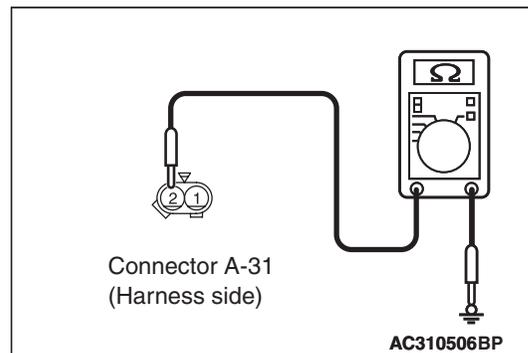
**Q: Is the check result normal?**

**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

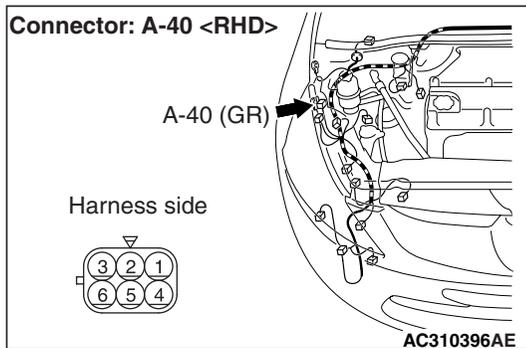
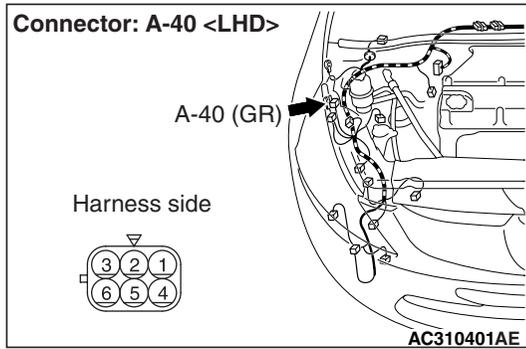
**OK: 2 Ω or less**

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

**YES :** Go to Step 8.

**NO :** Go to Step 6.

**Step 6. Connector check: A-40 earth connector**

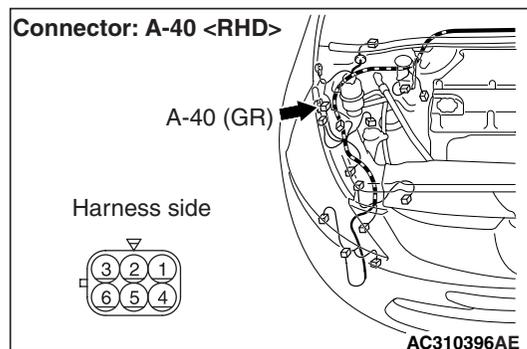
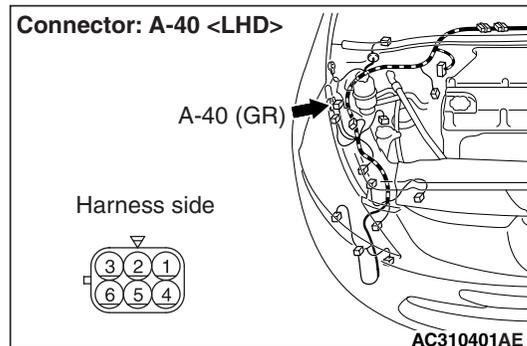
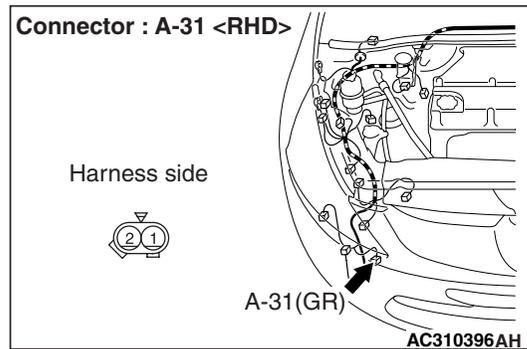
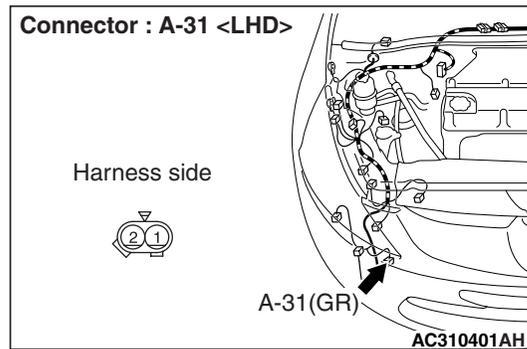


**Q: Is the check result normal?**

**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.**

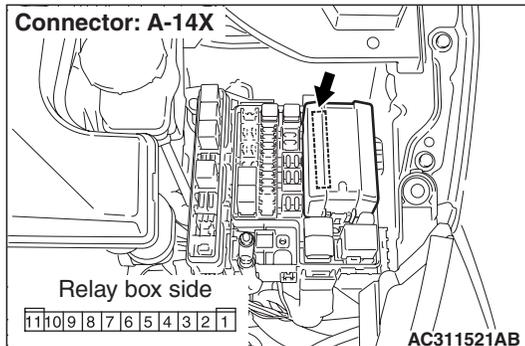


- Check the earth wires for open circuit.

**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).

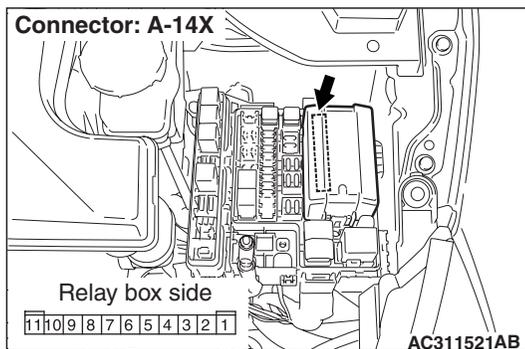
**NO :** Repair the wiring harness.

**Step 8. Connector check: A-14X front-ECU connector.**

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

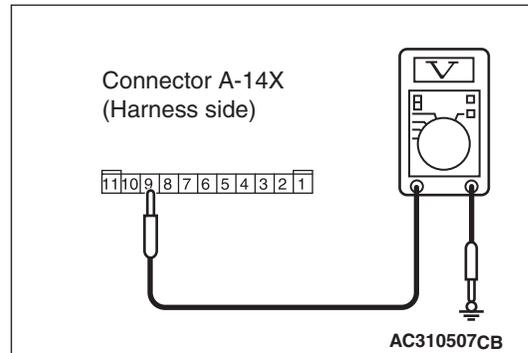
**YES :** Go to Step 9.

**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



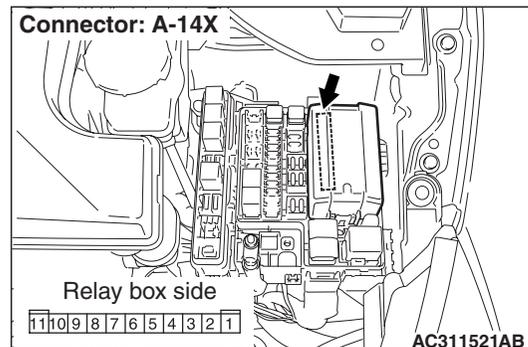
(3) Check the voltage between the A-14X front-ECU connector terminal No.9 and body earth.

**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.

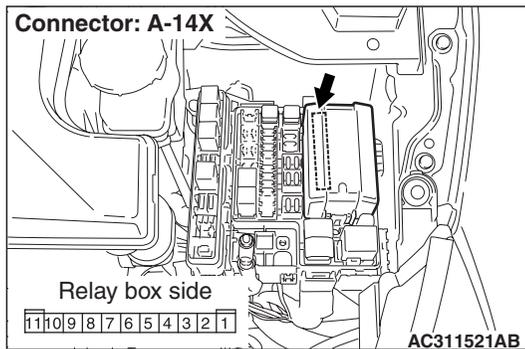
**Q: Is the check result normal?**

**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.**

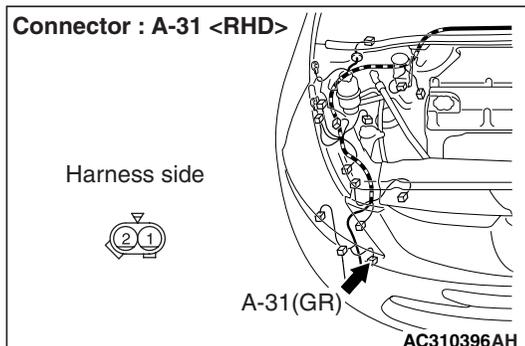
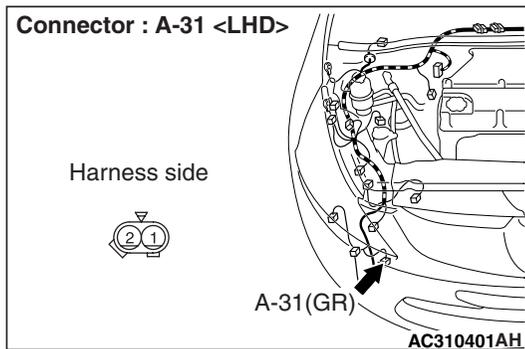
**YES :** Go to Step 12.  
**NO :** Repair the wiring harness.



**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.



- Check the output line for open circuit.

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

**ELECTRIC RETRACTABLE REMOTE  
CONTROLLED DOOR MIRROR**

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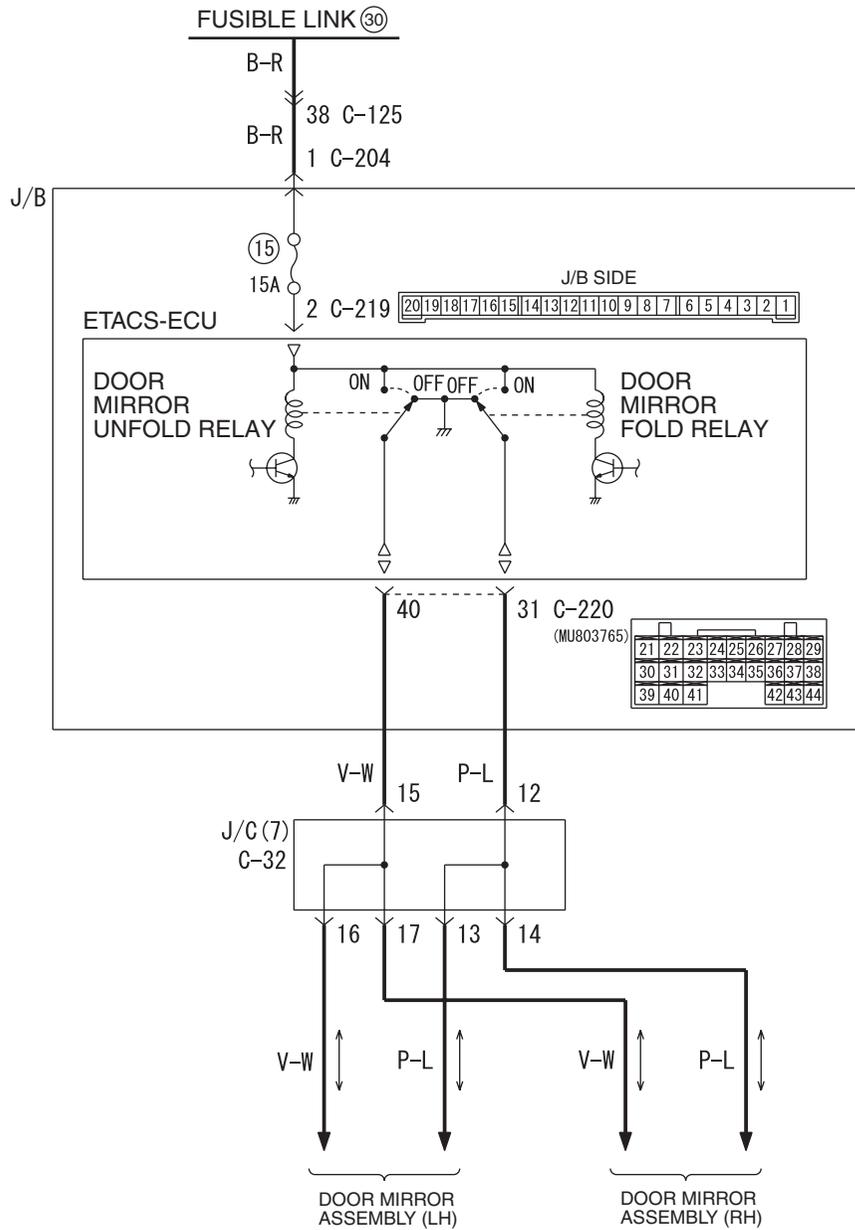
**Inspection Procedure J-1: Electric retractable remote controlled door mirror does not work at all.**

---

** CAUTION**

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

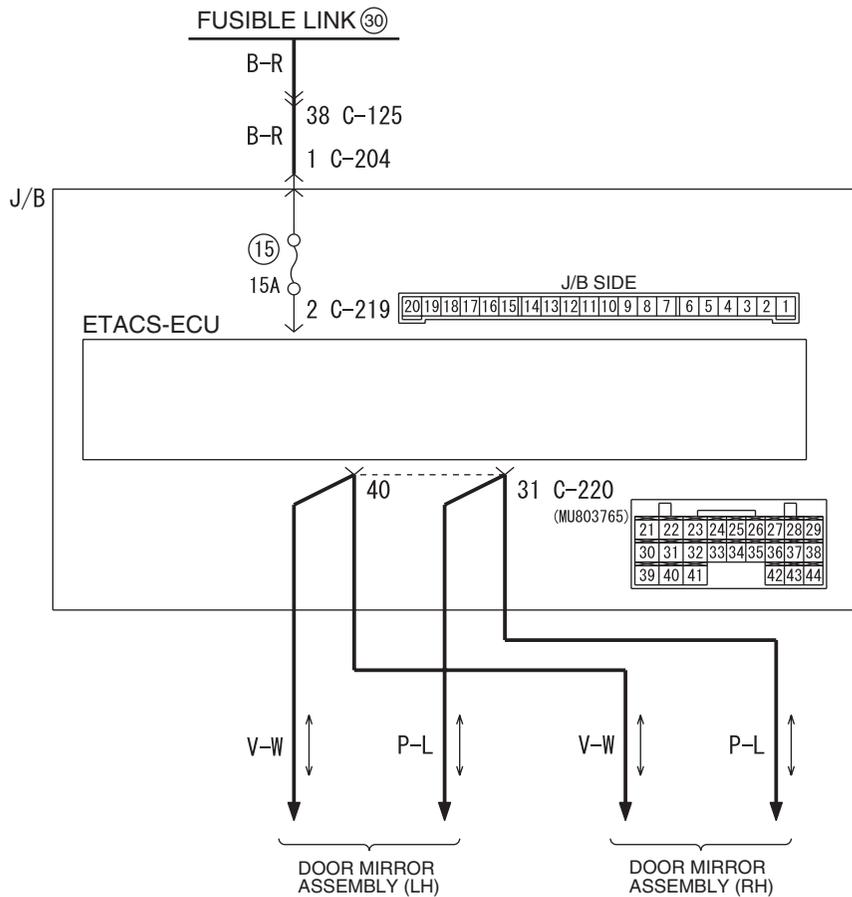
Door Mirror Relay Circuit <LHD>



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

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. Pulse check**

Check the input signals below which are related to the electric retractable remote controlled door mirror.

| System switch   | Check conditions   |
|---|--|
| Ignition switch (ACC)   | When turned from the LOCK (OFF) position to the ACC position |
| Electric remote controlled mirror switch (folding/unfolding switch) | When the switch turned from off to on                        |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

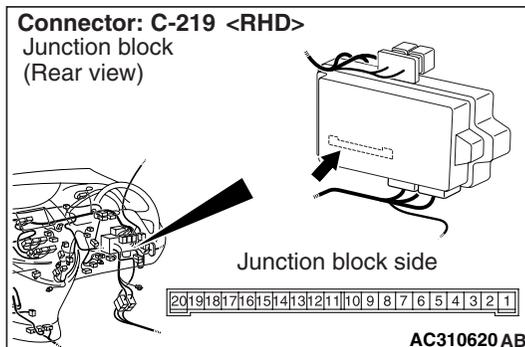
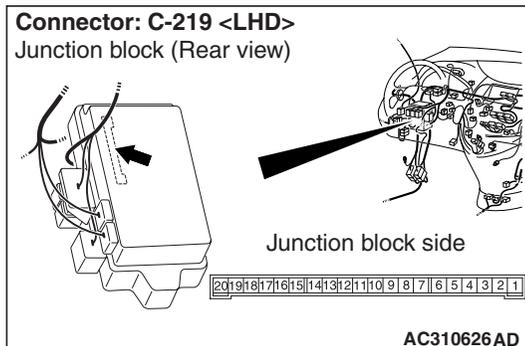
**Q: Is the check result normal?**

All the signals are received normally. : Go to Step 2.

The ignition switch (ACC) signal is not received. :  
Refer to inspection procedure Q-1 "The ignition switch (ACC) signal is not received P.54C-456."

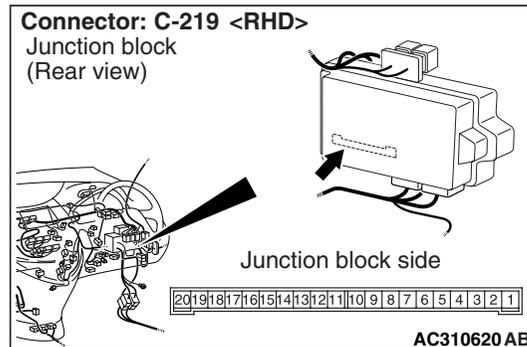
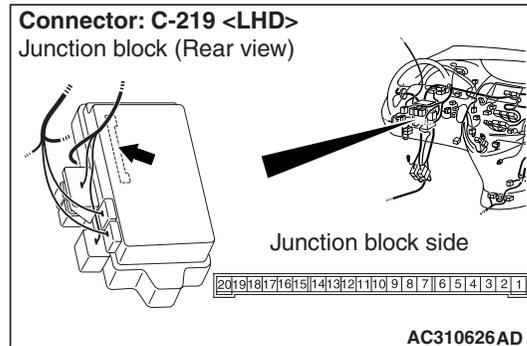
The electric remote controlled mirror switch (folding/unfolding switch) signal is not received. :  
Refer to inspection procedure Q-21 "Signal is not received from the electric remote controlled mirror switch (folding/unfolding switch) P.54B-510."

**Step 2. Connector check: C-219 ETACS-ECU connector**

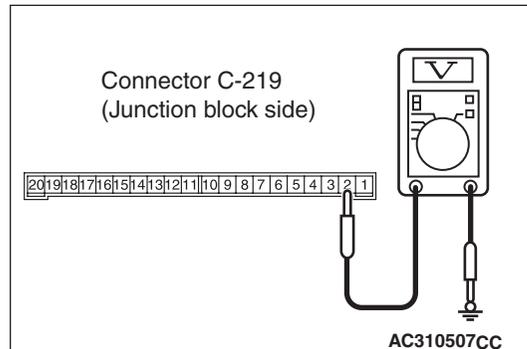


**Q: Is the check result normal?**  
**YES :** Go to Step 3.  
**NO :** Repair the connector.

**Step 3. Voltage measurement at the C-219 ETACS-ECU connector.**



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

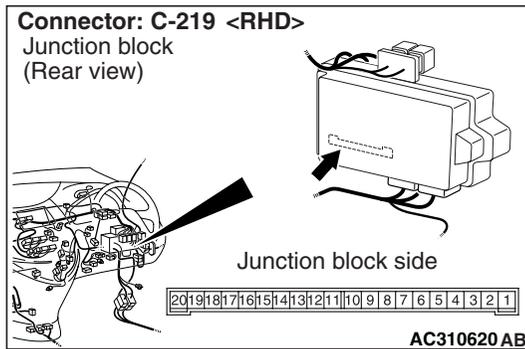
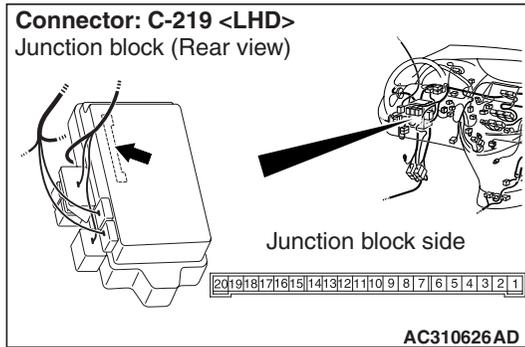


(2) Check the voltage between the C-219 ETACS-ECU connector terminal No.2 and body earth.

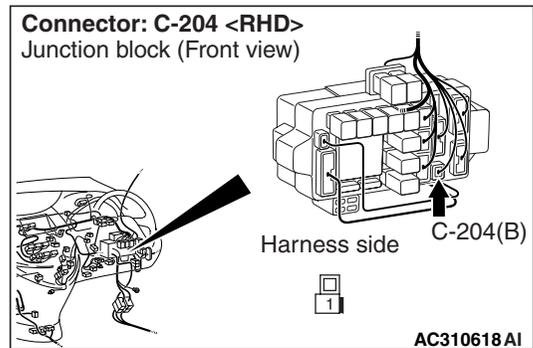
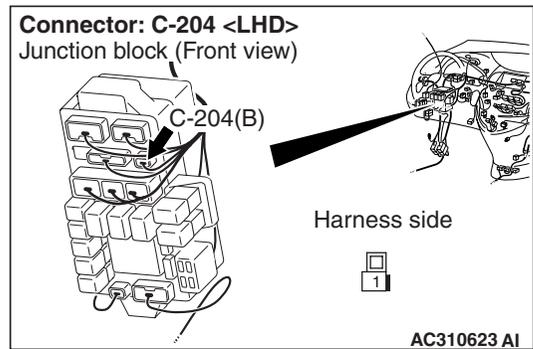
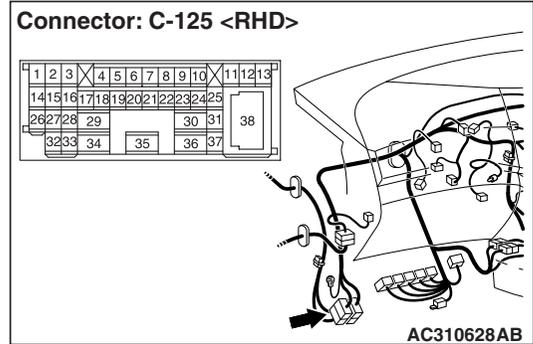
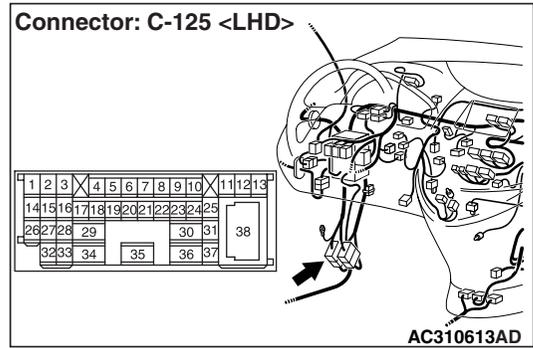
**OK: Battery positive voltage**

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

Step 4. 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 5. Retest the system.**

The electric retractable remote controlled mirror 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](#)).

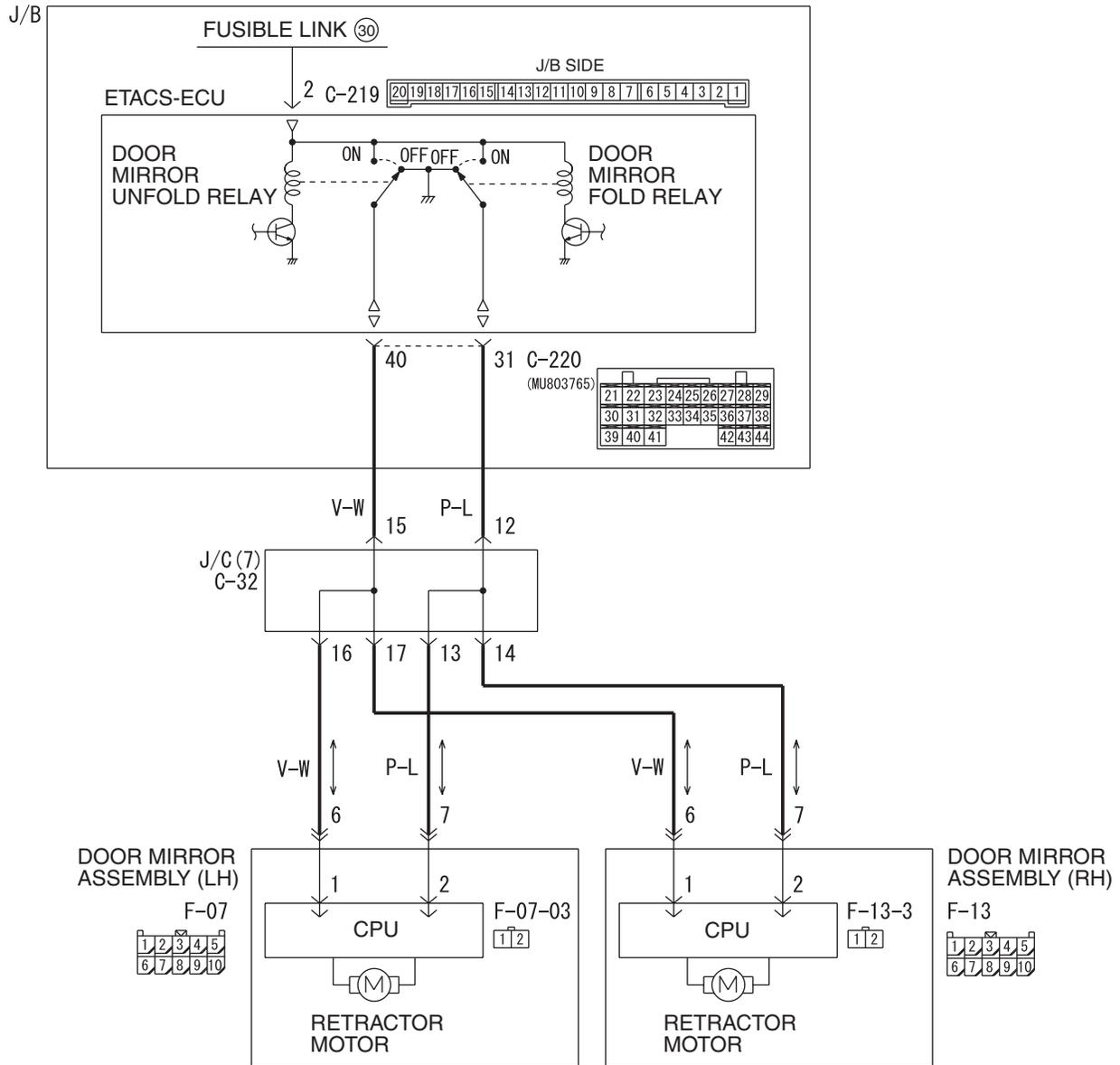
**NO :** Replace the ETACS-ECU.

Inspection Procedure J-2: Left or right side electric retractable remote controlled door mirror does not work at all.

**CAUTION**

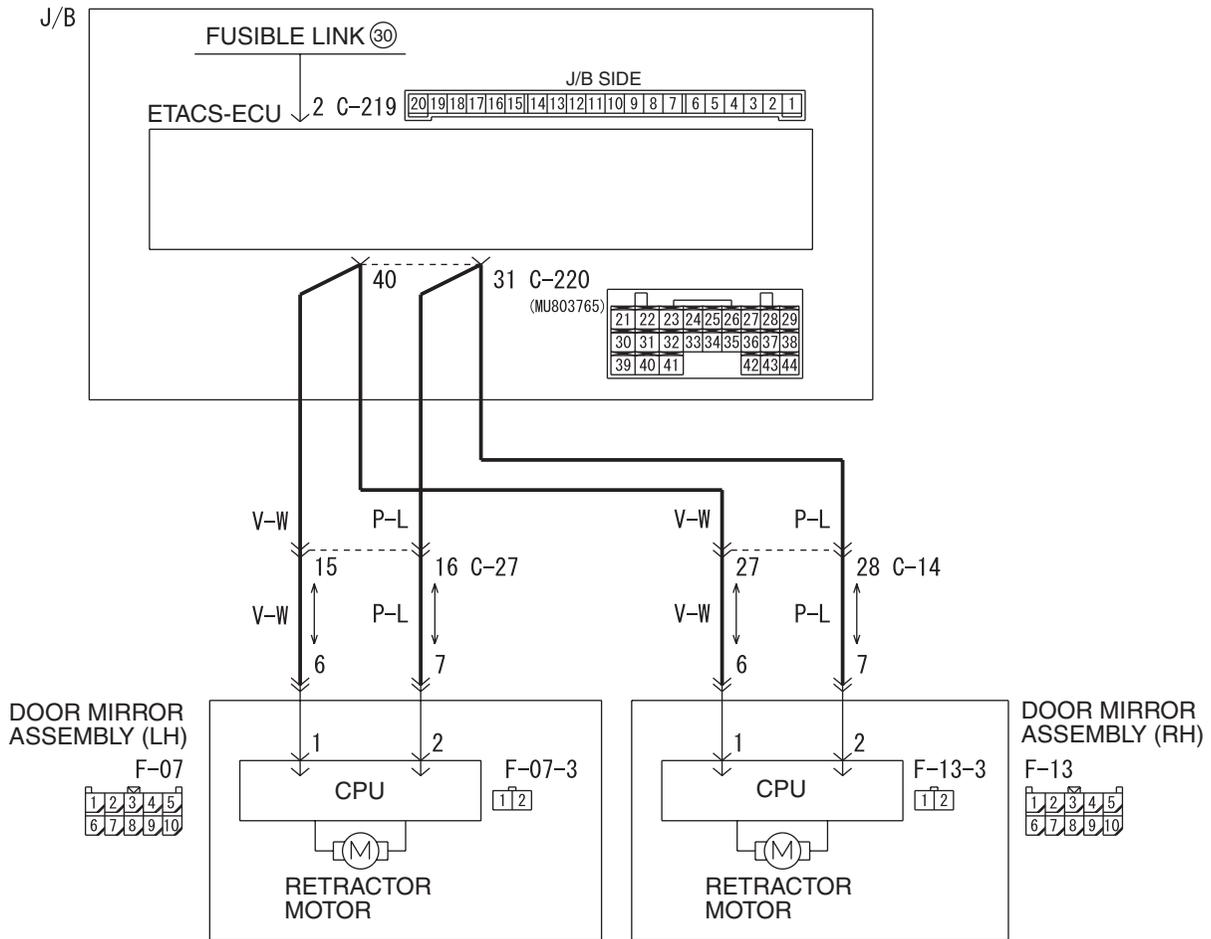
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

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

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 electric retractable remote controlled door mirror

- Damaged harness wires and connectors

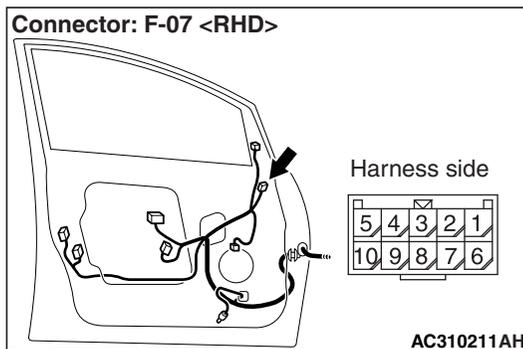
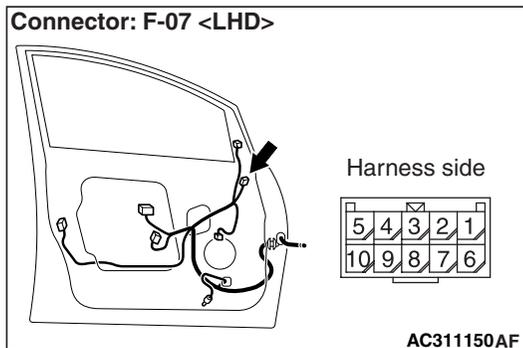
**DIAGNOSTIC PROCEDURE**

**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.

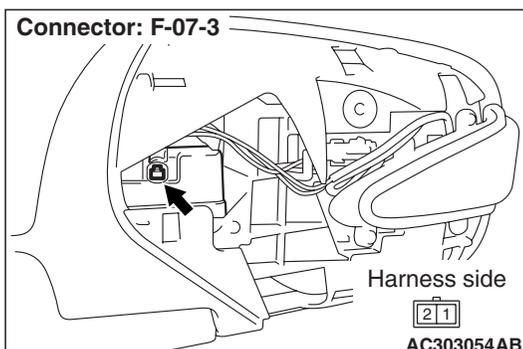
**Step 3. Check the door mirror assembly (LH).**

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.

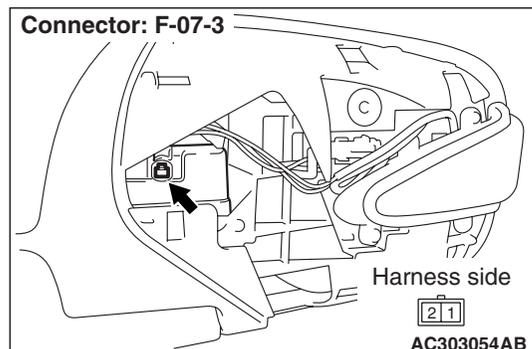
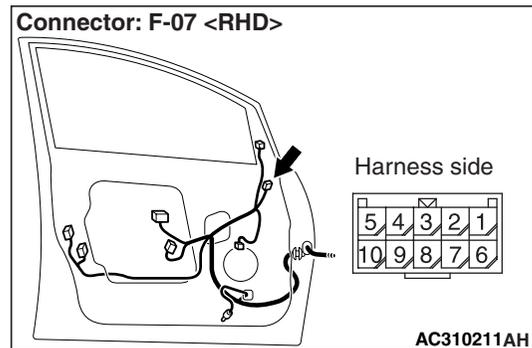
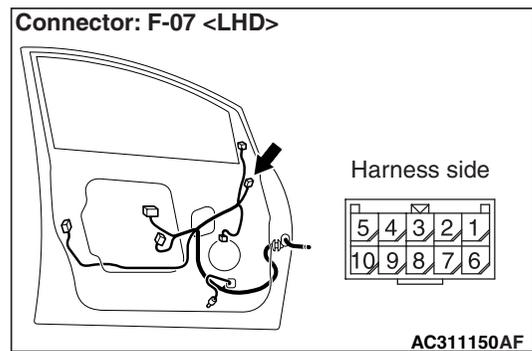
**Step 5. Check the retractor motor (LH).**

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.

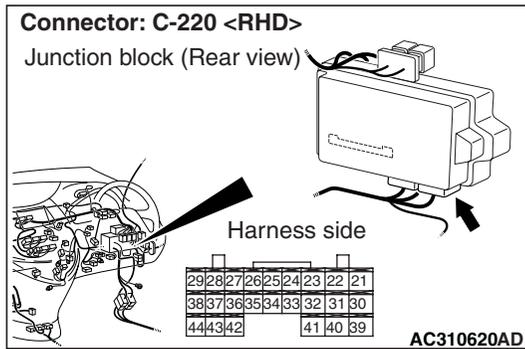
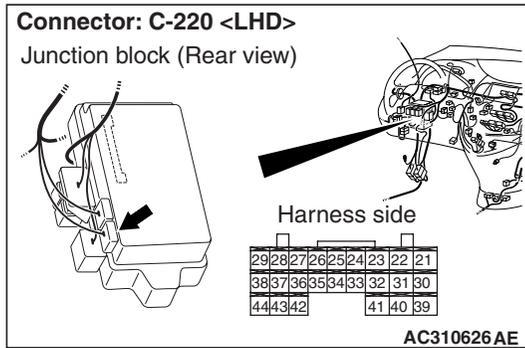
**Q: Is the check result normal?**

**YES :** Replace the door mirror assembly (LH).

**NO :** Repair the wiring harness.

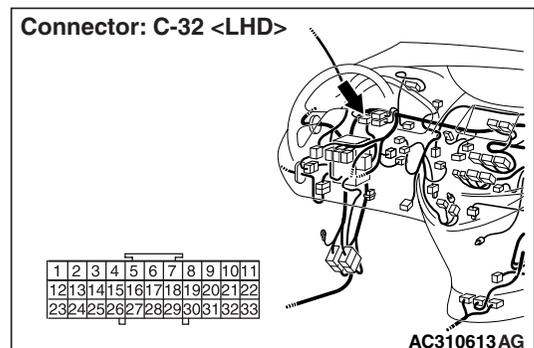
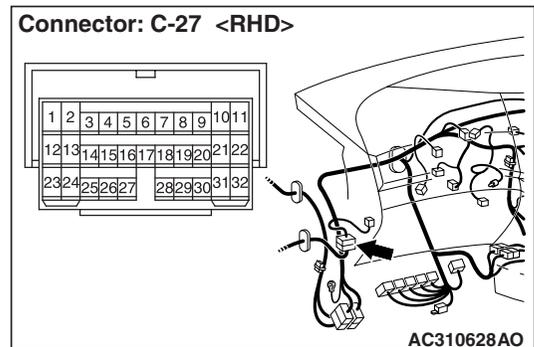
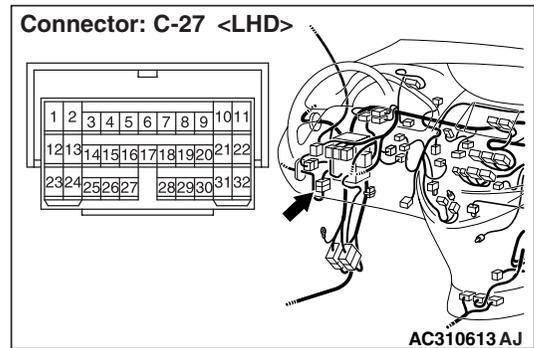
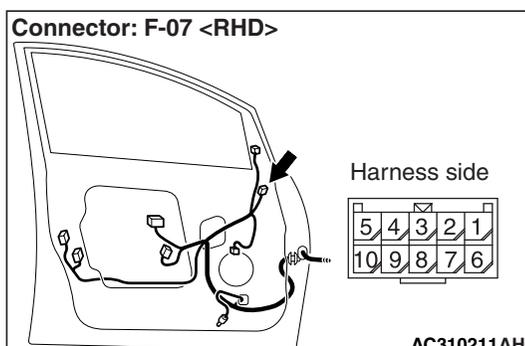
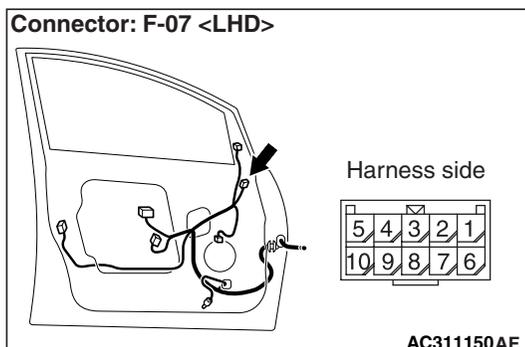
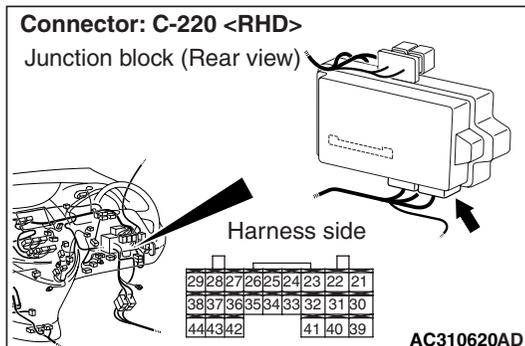
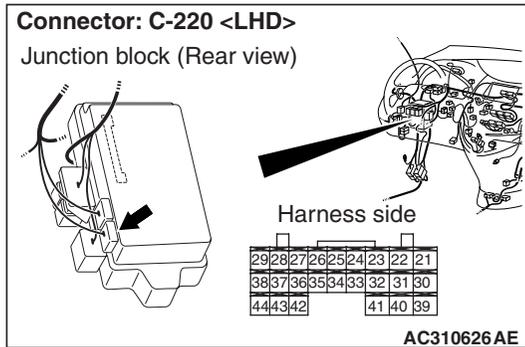
**Step 7. Connector check: C-220 ETACS-ECU connector**

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



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

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.



Prior to the wiring harness inspection, check intermediate connector C-27 and junction block connector C-32 <LH drive vehicles>, and repair if necessary.

- Check the input and output signal line for open circuit.

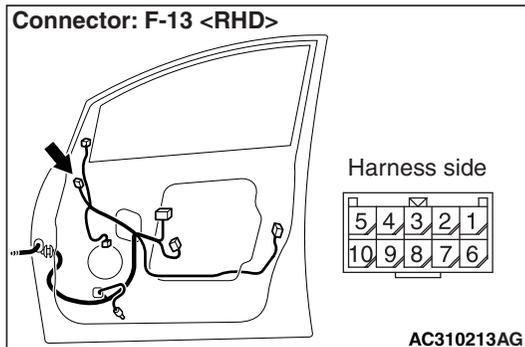
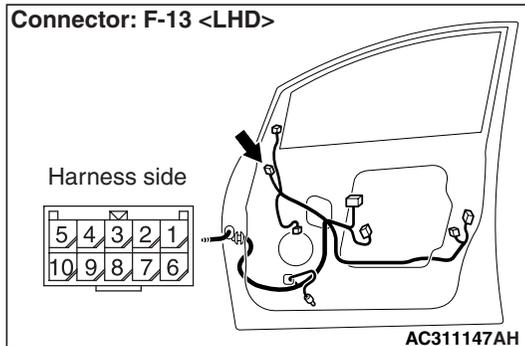
Q: Is the check result normal?

YES : Go to Step 16.

NO : Repair the wiring harness.

NOTE:

**Step 9. Connectors check: F-13 door mirror assembly (RH) connectors**

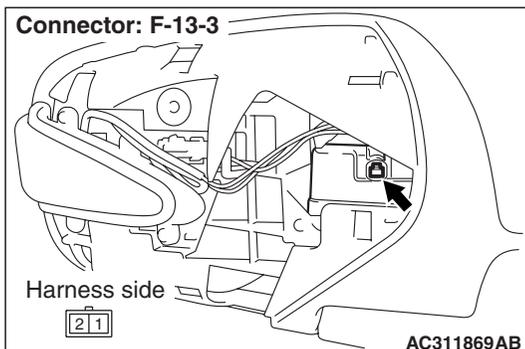


**Q: Is the check result normal?**  
**YES :** Go to Step 10.  
**NO :** Repair the connector.

**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**

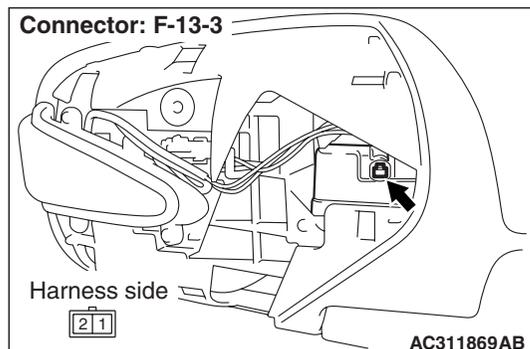
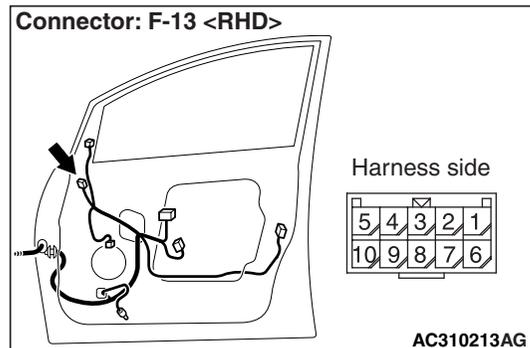
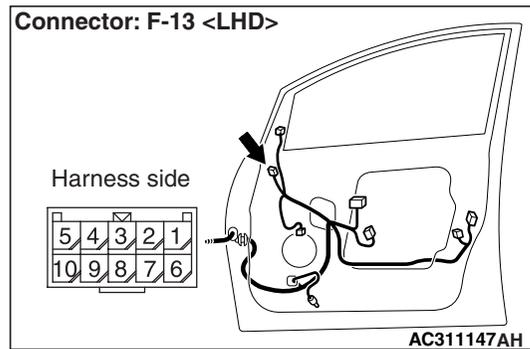


**Q: Is the check result normal?**  
**YES :** Go to Step 12.  
**NO :** Repair the connector.

**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.**

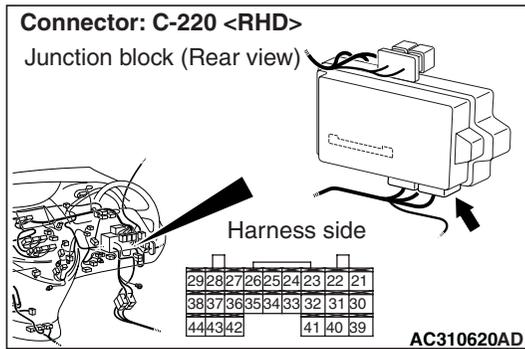
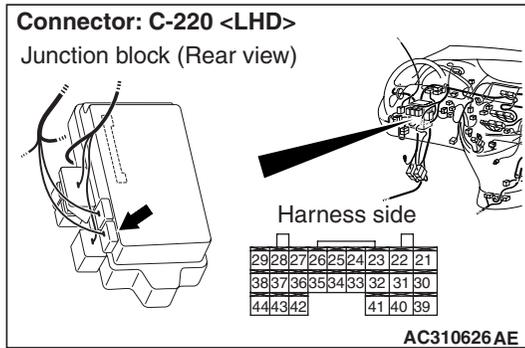


- Check the input and output signal line for open circuit.

**Q: Is the check result normal?**  
**YES :** Replace the door mirror assembly (RH).  
**NO :** Repair the wiring harness.

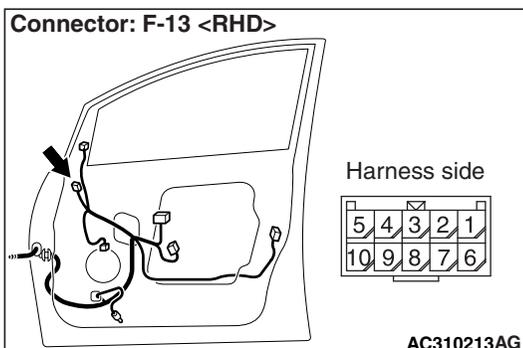
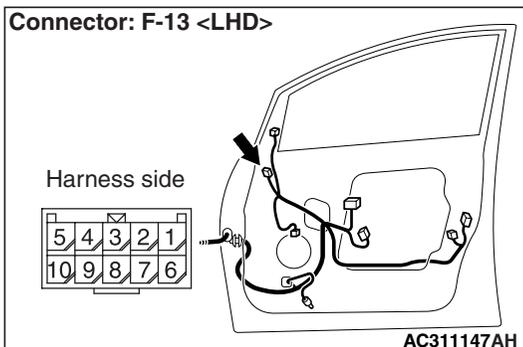
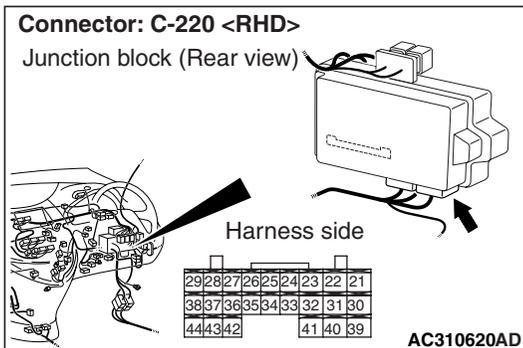
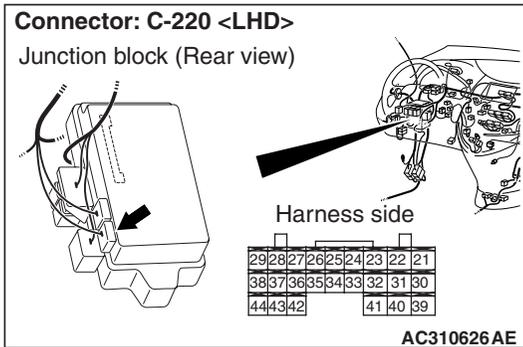
**Step 14. Connector check: C-220 ETACS-ECU connector**

**YES :** Go to Step 15.  
**NO :** Repair the connector.

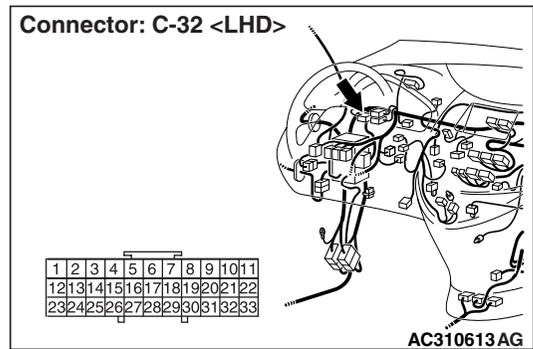
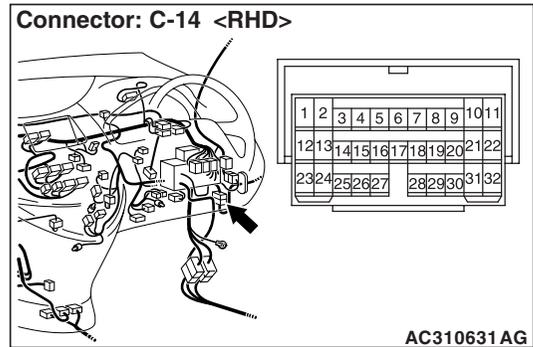
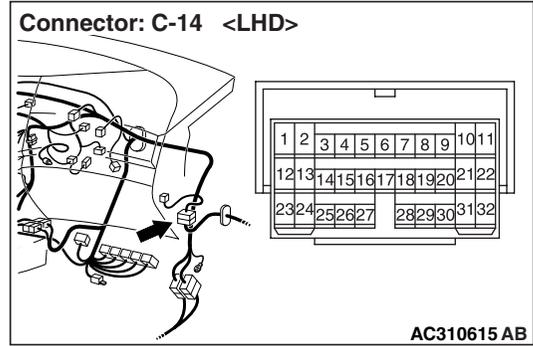


**Q: Is the check result normal?**

**Step 15. Check the wiring harness between C-220 ETACS-ECU connector terminal Nos.31, 40 and F-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 driver's door switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

**DIAGNOSTIC PROCEDURE**

**Step 1. 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 2.

**NO :** Refer to inspection procedure J-1 "The electric retractable remote controlled door mirrors does not work at all [P.54B-250](#)."

**Step 2. Pulse check**

Check the input signals below which are related to the electric retractable remote controlled door mirror timer function.

| System switch         | Check conditions   |
|-----------------------|--|
| Ignition switch (ACC) | When turned from the LOCK (OFF) position to the ACC 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 inspection procedure Q-1 "The ignition switch (ACC) signal is not received [P.54B-416](#)."

**Step 3. Retest the system.**

Check that the electric-folding 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](#)).

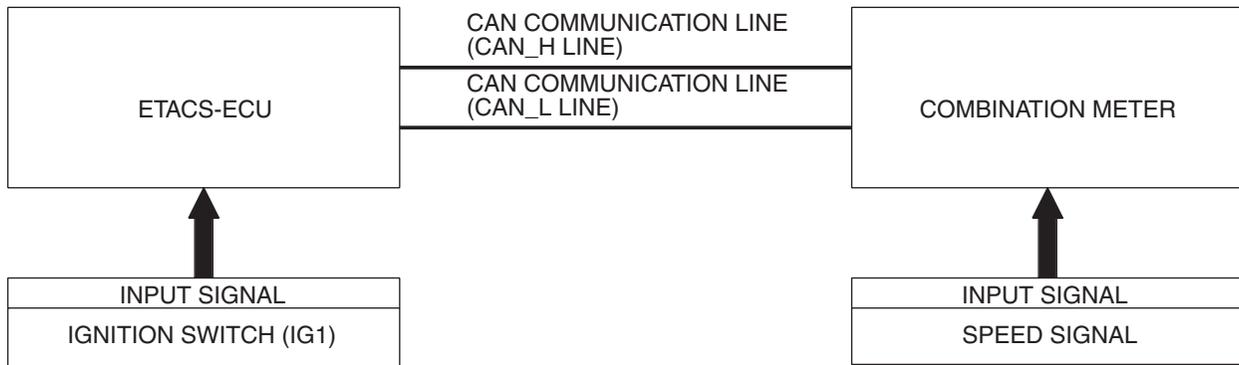
**NO :** Replace the ETACS-ECU.

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



W4X54E103A

**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**

- The CAN bus line is defective.
- Malfunction of ETACS-ECU
- Damaged harness wires and connectors

**DIAGNOSTIC PROCEDURE**

**Step 1. Pulse check**

Check the input signals below which are related to the electric retractable remote controlled door mirror vehicle speed-dependent unfolding function.

| System switch         | Check condition                                     |
|-----------------------|---|
| Ignition switch (IG1) | When turned from ACC to ON                          |
| Vehicle speed signal  | When the vehicle speed has reached 10 km/h or more. |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally. :** Go to Step 2.

**The ignition switch (IG1) signal is not received. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received [P.54B-420.](#)"

**The vehicle speed signal is not received. :** Refer to inspection procedure Q-25 "The vehicle speed signal is not received [P.54B-529.](#)"

**Step 2. Customize function by using the SWS monitor.**

Check that "WING MIRROR" is set to "SPEED SEN FUN" by using the customized function.

**⚠ CAUTION**

The SWS monitor must be used in order to confirm and change that setting. Use the SWS monitor to confirm and/or change the customized function.

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

**YES** : Go to Step 3.

**NO** : Set "WING MIRROR" to "SPEED SEN FUN" by using the customized function. (Refer to P.54C-574).

**Step 3. Retest the system.**

The vehicle speed-dependent unfolding function 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 ETACS-ECU.

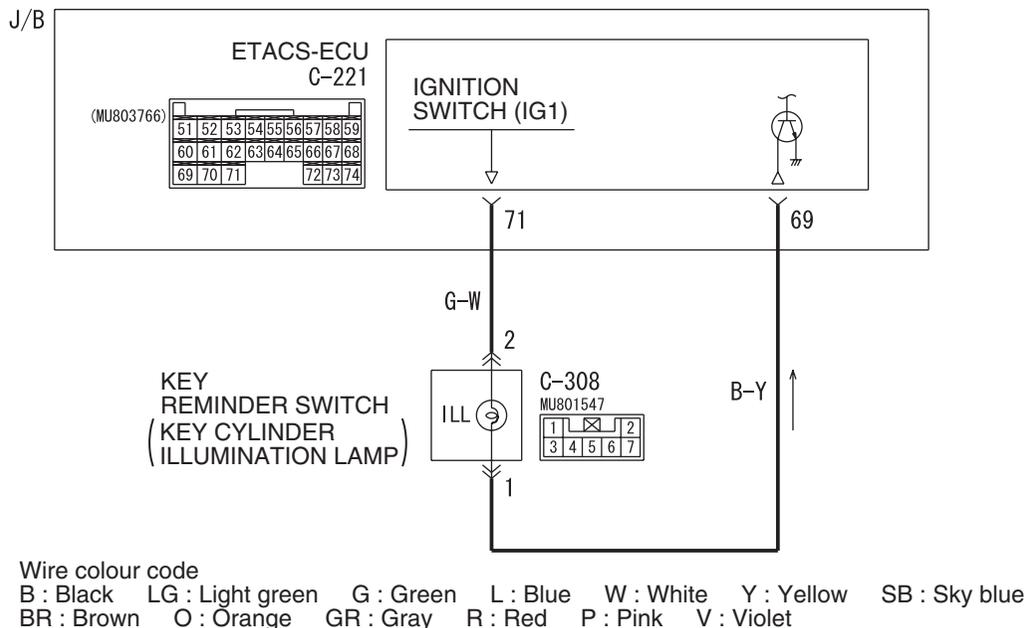
**IGNITION KEY CYLINDER ILLUMINATION LAMP**

**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



W4X54E168A

**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

**DIAGNOSTIC PROCEDURE**

**Step 1. Check the operation of the interior lamp.**

Check that the interior lamp 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 lamp, rear personal lamps, door lamps, luggage compartment lamp, key illumination lamp) does not illuminate or extinguish normally P.54B-364."

**Step 2. Pulse check**

Check the input signals below, which are related to the ignition key cylinder illumination lamp.

| System switch         | Check condition                              |
|-----------------------|--|
| Ignition switch (IG1) | When turned from ACC to ON                   |
| Key reminder switch*  | When the inserted ignition key is pulled out |
| Driver's door switch  | When the driver's door is opened             |

*NOTE: \* : Vehicles with keyless entry system*

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

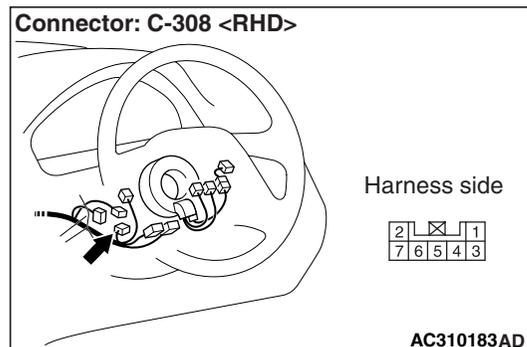
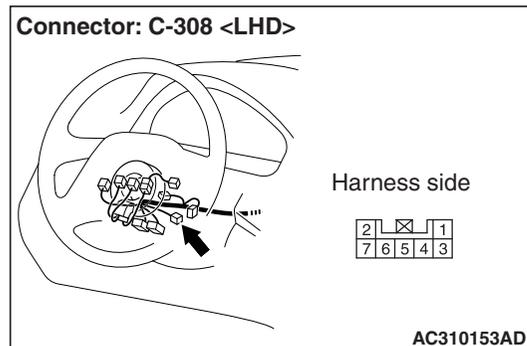
**All the signals are received normally. :** Go to Step 3.

**The ignition switch (IG1) signal is not received. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54B-420."

**The key reminder switch signal is not received. :** Refer to inspection procedure Q-11 "The key reminder switch signal is not received P.54B-457."

**The driver's door switch signal is not received. :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received <LH drive vehicles>P.54B-434 or <RH drive vehicles>P.54B-436 ."

**Step 3. Connector check: C-308 key reminder switch connector**



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

**YES :** Go to Step 4.

**NO :** Repair the defective connector.

**Step 4. Check the bulb of the ignition key cylinder illumination lamp.**

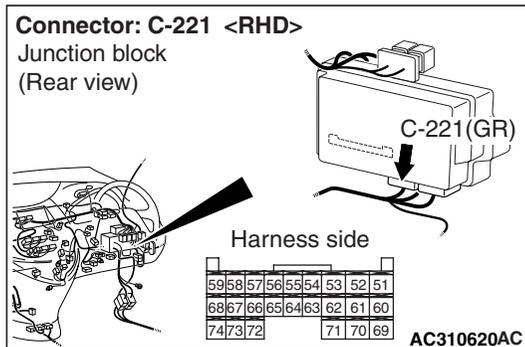
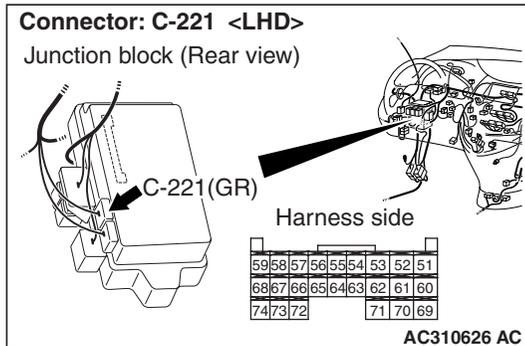
Check the bulb of the ignition key cylinder illumination lamp.

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

**YES :** Go to Step 5.

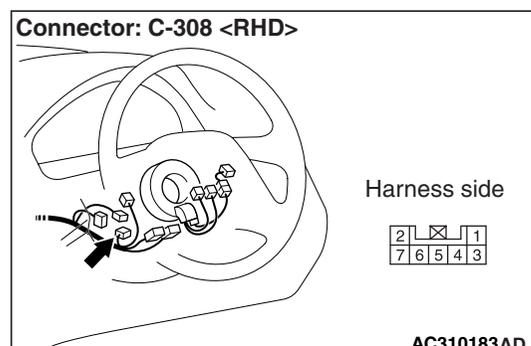
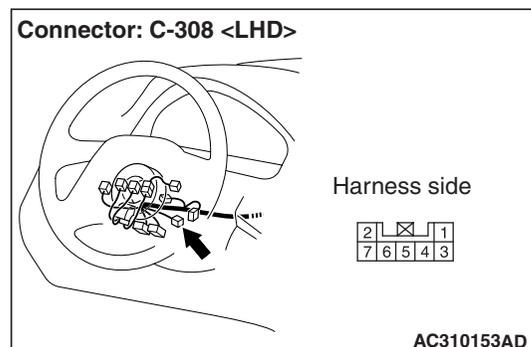
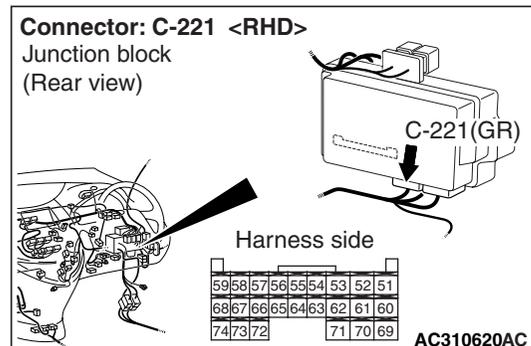
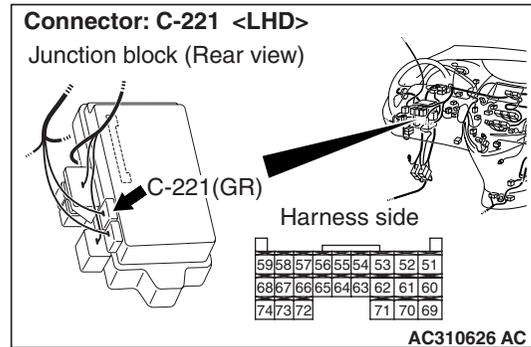
**NO :** Replace the bulb of the ignition key cylinder illumination lamp.

**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 Nos.69 and 71 to C-308 ignition 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 7.  
**NO :** Repair the wiring harness.

**Step 7. Retest the system.**

Check that the ignition key cylinder illumination lamp illuminates/extinguishes normally.

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

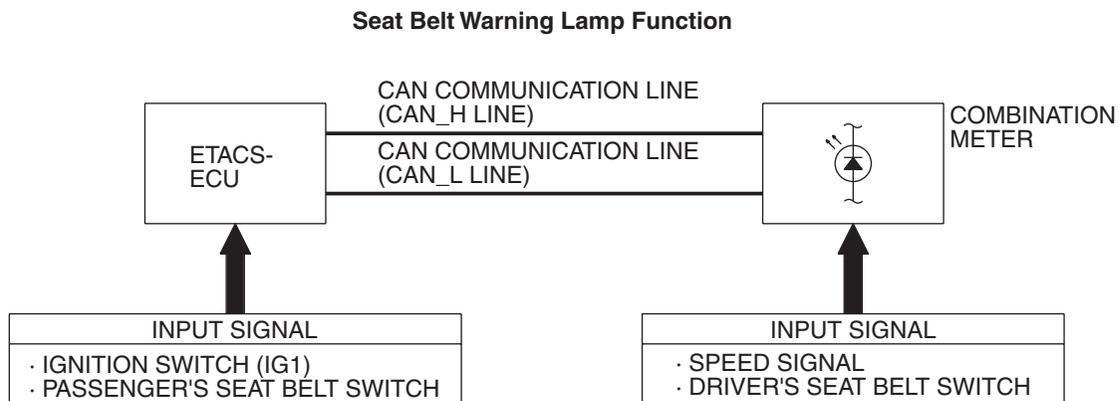
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO :** Replace the ETACS-ECU.

**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.



W4X54E167A

**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. MUT-III diagnosis code**

When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

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

**YES :** Refer to diagnosis code chart P.54B-29.  
**NO :** Go to Step 2.

**Step 2. Check the seat belt switch, where the seat belt warning lamp does not function normally.**

**Q: Which seat belt switch does not activate the seat belt warning lamp?**

**Driver's seat belt :** Go to Step 3  
**Passenger's seat belt :** Go to Step 4.

**Step 3. Pulse check**

Check the input signals, which are related to the seat belt warning lamp.

- Ignition switch: ON
- Driver's seat belt switch: ON

| System switch             | Check condition            |
|---------------------------|----------------------------|
| Ignition switch (IG1)     | When turned from ACC to ON |
| Driver's seat belt switch | ON                         |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

All the signals are received normally. : Go to Step 5.

The ignition switch (IG1) signal is not received. :  
Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54B-420."

Driver's seat belt switch signal is not received :  
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>."

#### Step 4. Pulse check

Check the input signals, which are related to the seat belt warning lamp.

- Ignition switch: ON
- Passenger's seat belt switch and seat occupancy sensor: ON

| System switch  | Check condition            |
|--|----------------------------|
| Ignition switch (IG1)                                  | When turned from ACC to ON |
| Passenger's seat belt switch and seat occupancy sensor | ON                         |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

All the signals are received normally. : Go to Step 5.

The ignition switch (IG1) signal is not received. :  
Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54B-420."

Passenger's seat belt switch signal is not received :  
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 5. Pulse check

Check the input signals below which are related to the seat belt warning lamp.

| System switch        | Check condition                                     |
|----------------------|---|
| Vehicle speed signal | When the vehicle speed has reached 10 km/h or more. |

**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-25 "The vehicle speed signal is not received P.54B-529."

#### Step 6. Retest the system.

Check that the seat belt warning lamp 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.

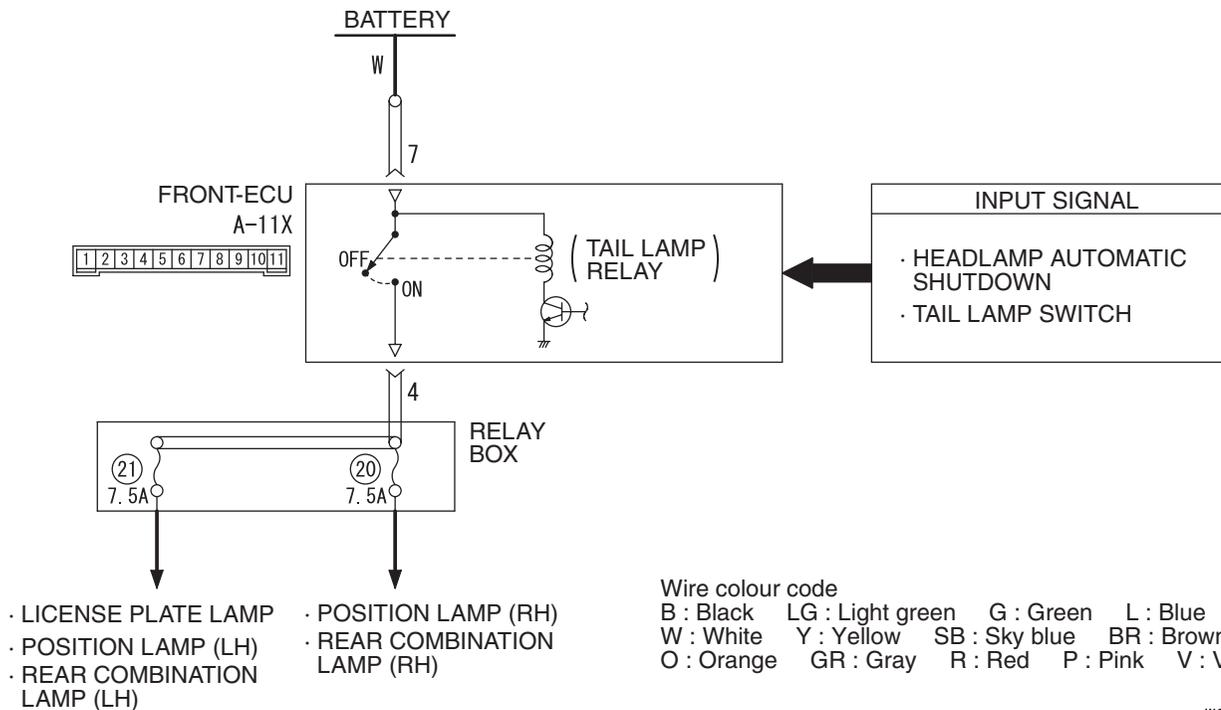
## HEADLAMP AND TAIL LAMP

### 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



W3Z10E09AA

### 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

### DIAGNOSTIC PROCEDURE

#### Step 1. Pulse check

Check the input signal from the tail lamp switch.

| System switch         | Check condition   |
|-----------------------|---|
| Ignition switch (IG1) | When turned from ACC to ON                              |
| Tail lamp switch      | When the lighting switch is turned to the TAIL position |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

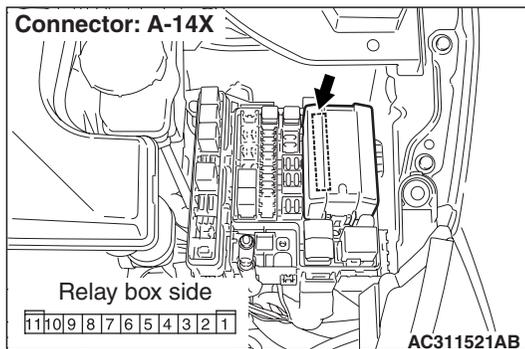
**Q: Is the check result normal?**

All the signals are received normally. : Go to Step 2.

The ignition switch (IG1) signal is not received. : Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54B-420."

The tail lamp switch signal is not received. : Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp and headlamp washer switch) signal is not received P.54B-438."

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

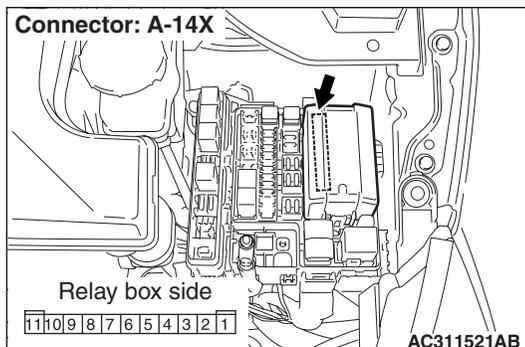


Q: Is the check result normal?

YES : Go to Step 3.

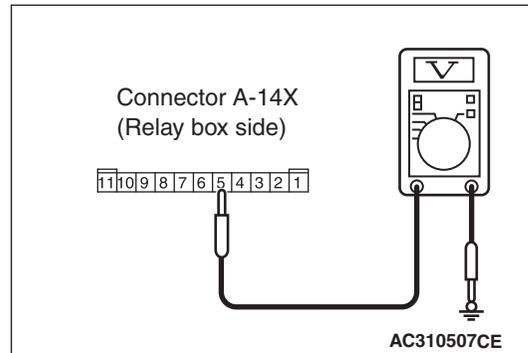
NO : Repair the defective connector.

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



(1) 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

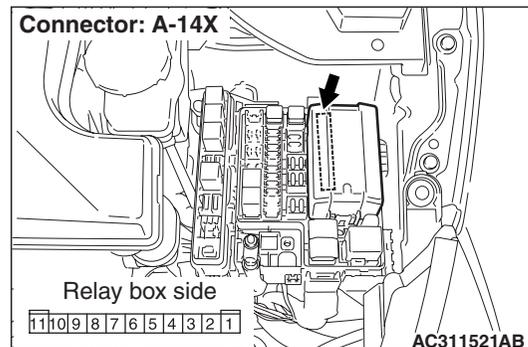
**OK: System voltage**

Q: Is the check result normal?

YES : Go to Step 5.

NO : Go to Step 4.

### Step 4. 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 5. Retest the system.

Check that the tail/stop lamps illuminate normally.

Q: Is the check result normal?

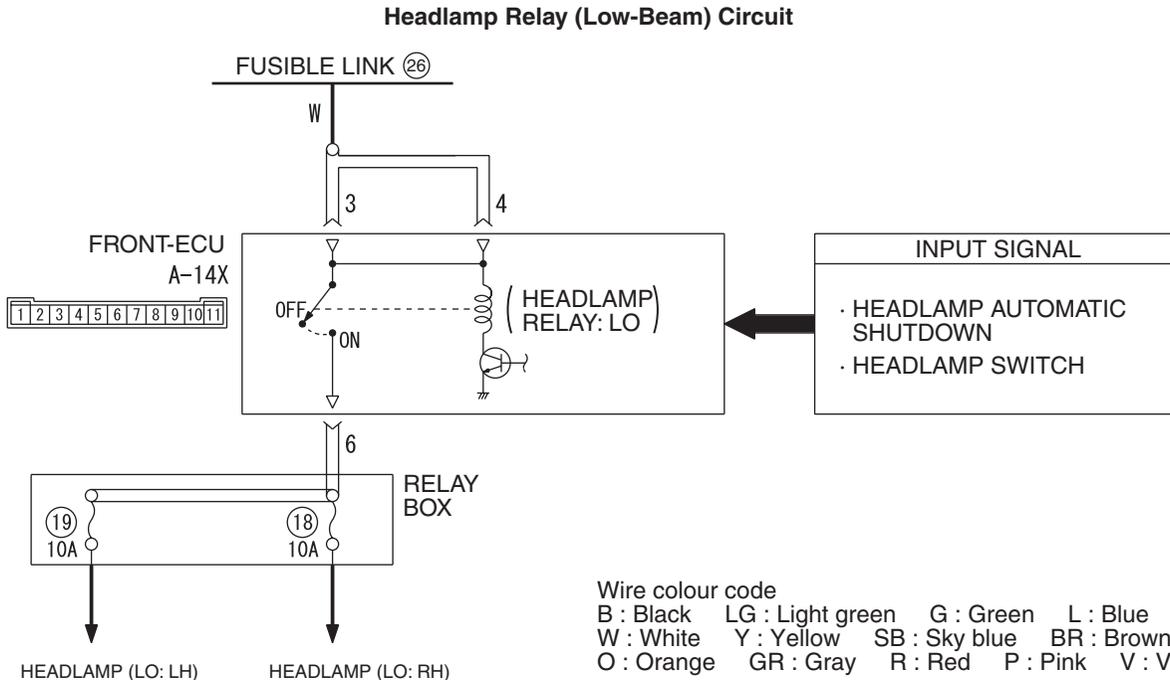
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

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.



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

**DIAGNOSTIC PROCEDURE**

**Step 1. Pulse check**

Check the input signal from the headlamp switch.

| System switch         | Check condition   |
|-----------------------|---|
| Ignition switch (IG1) | When turned from ACC to ON                                  |
| Headlamp switch       | When the lighting switch is turned to the HEADLAMP position |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

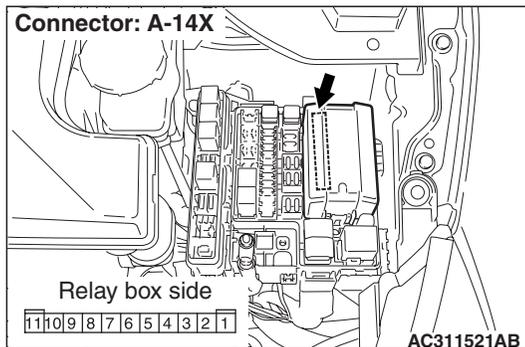
**Q: Are the check result normal?**

All the signals are received normally. : Go to Step 2.

The ignition switch (IG1) signal is not received. : Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54B-420."

The headlamp switch signal is not received. : Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp and headlamp washer switch) signal is not received P.54B-438."

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

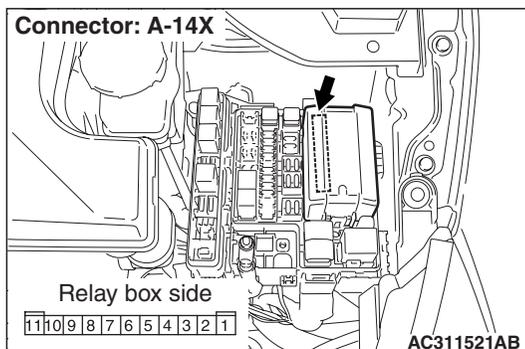


Q: Is the check result normal?

YES : Go to Step 3.

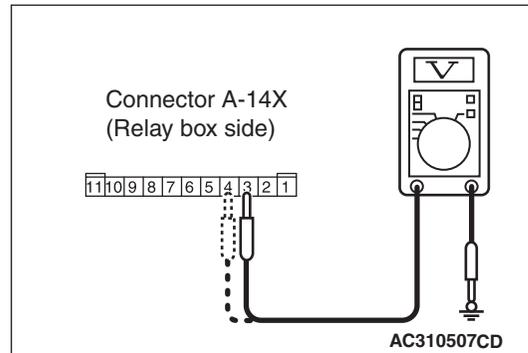
NO : Repair the defective connector.

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



(1) Remove the front-ECU, and measure at the relay

box side.



(2) Voltage between A-14X front-ECU connector terminal Nos.3 and 4 body earth

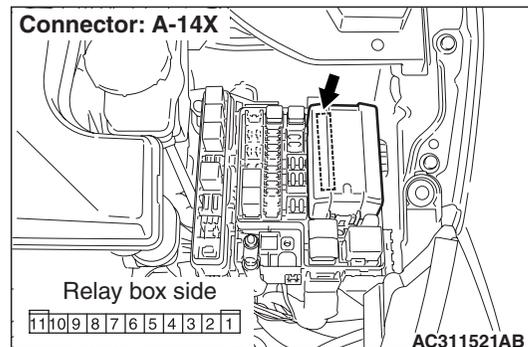
**OK: System voltage**

Q: Is the check result normal?

YES : Go to Step 5.

NO : Go to Step 4.

### Step 4. Check the wiring harness between A-14X front-ECU connector terminal Nos.3 and 4 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. Retest the system.

Check that the low-beam headlamps illuminate normally.

Q: Is the check result normal?

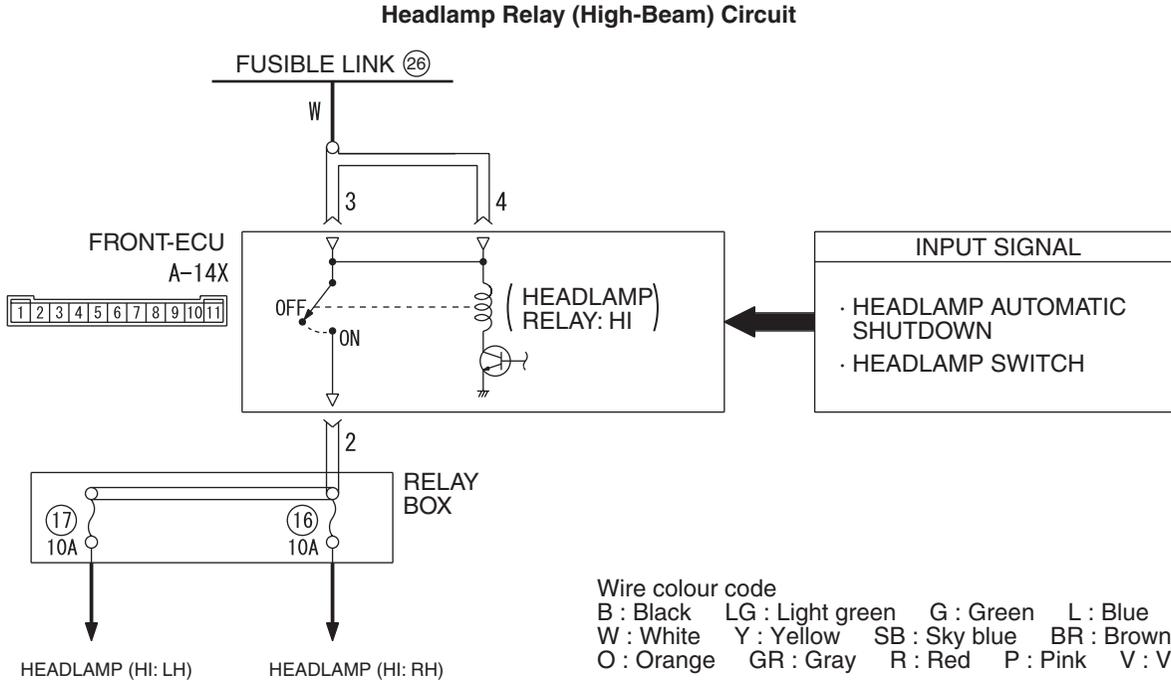
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

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.



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

**DIAGNOSTIC PROCEDURE**

**Step 1. Check that the headlamps operate.**

Check that the low-beam headlamps illuminate and extinguish normally.

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

**YES :** Go to Step 2.

**NO :** Refer to inspection procedure M-2 "The low-beam headlamps do not illuminate normally [P.54B-273](#)."

**Step 2. Pulse check**

Check the input signal from the dimmer switch.

| System switch | Check condition                                 |
|---------------|---|
| Dimmer switch | When the dimmer 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 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.54B-438](#)."

**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

**DIAGNOSTIC PROCEDURE**

**Step 1. Check that the headlamps operate.**

Check that the low-beam and high-beam headlamps work normally.

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

**YES :** Go to Step 2.

**NO :** Repair the headlamps. Refer to trouble symptom chart [P.54B-74](#).

**Step 2. Pulse check**

Check the input signal from the passing switch.

| System switch       | Check condition                                  |
|---------------------|--|
| Passing lamp switch | When the passing 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 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.54B-438](#)."

**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](#)).

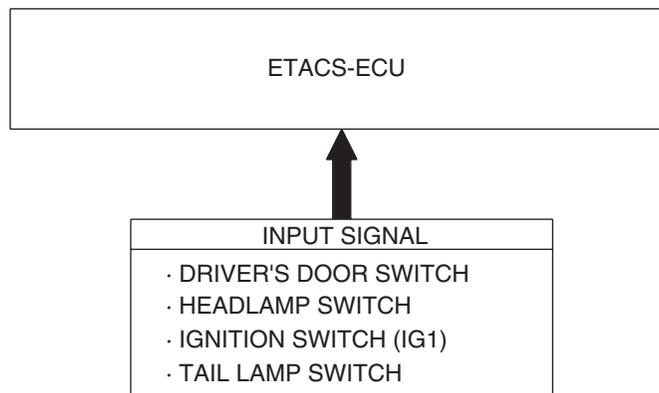
**NO :** Replace the front-ECU.

**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**



## 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. Note that this function can be disabled/enabled by the adjustment 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

## DIAGNOSTIC PROCEDURE

### Step 1. Check that the headlamps operate.

Check that the low-beam and high-beam headlamps work normally.

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

**YES :** Go to Step 2.

**NO :** Repair the headlamps. Refer to trouble symptom chart [P.54B-74](#).

### Step 2. Pulse check

Check the input signals below, which are related to the headlamp automatic-shutdown function.

| System switch         | Check condition   |
|-----------------------|---|
| Ignition switch (IG1) | When turned from ACC to ON                              |
| Driver's door switch  | When the driver's door is opened                        |
| Tail lamp switch      | When the lighting switch is turned to the TAIL position |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

All the signals are received normally. : Go to Step 3.

**The ignition switch (IG1) signal is not received. :** Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received [P.54B-420](#)."

**The driver's door switch signal is not received. :** Refer to inspection procedure Q-5 "The driver's door switch signal is not received <LH drive vehicles>[P.54B-434](#) or <RH drive vehicles>[P.54B-436](#)."

**The tail lamp switch signal is not received. :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp switch) signal is not received [P.54B-438](#)."

### Step 3. Customize function by using the SWS monitor.

Check that the headlamp automatic-shutdown function has been enabled by using the customized function.

#### CAUTION

**The SWS monitor must be used in order to confirm and change that setting. Use the SWS monitor to confirm and/or change the customized function.**

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

**YES :** Go to Step 4.

**NO :** Enable the headlamp automatic-shutdown function by using the customized function (Refer to GROUP 54C, Customize function [P.54C-574](#)).

### Step 4. Retest the system.

Replace the ETACS-ECU, and then check that the headlamp automatic-shutdown function works normally.

(1) Replace the ETACS-ECU.

(2) 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 front-ECU.

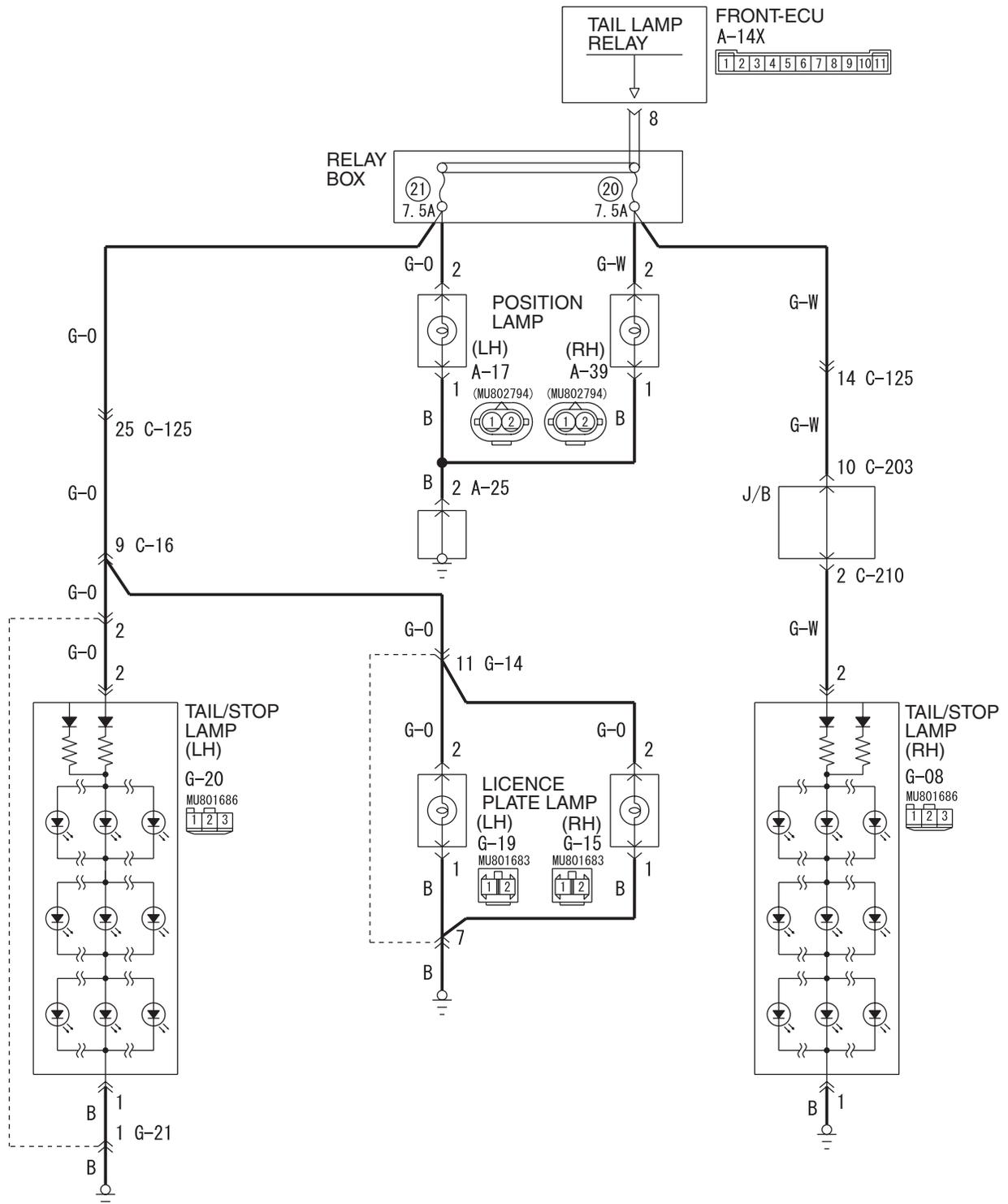
**Inspection Procedure M-6: Any of tail/stop lamps, position lamps or licence plate lamp does not illuminate.**

---

** CAUTION**

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

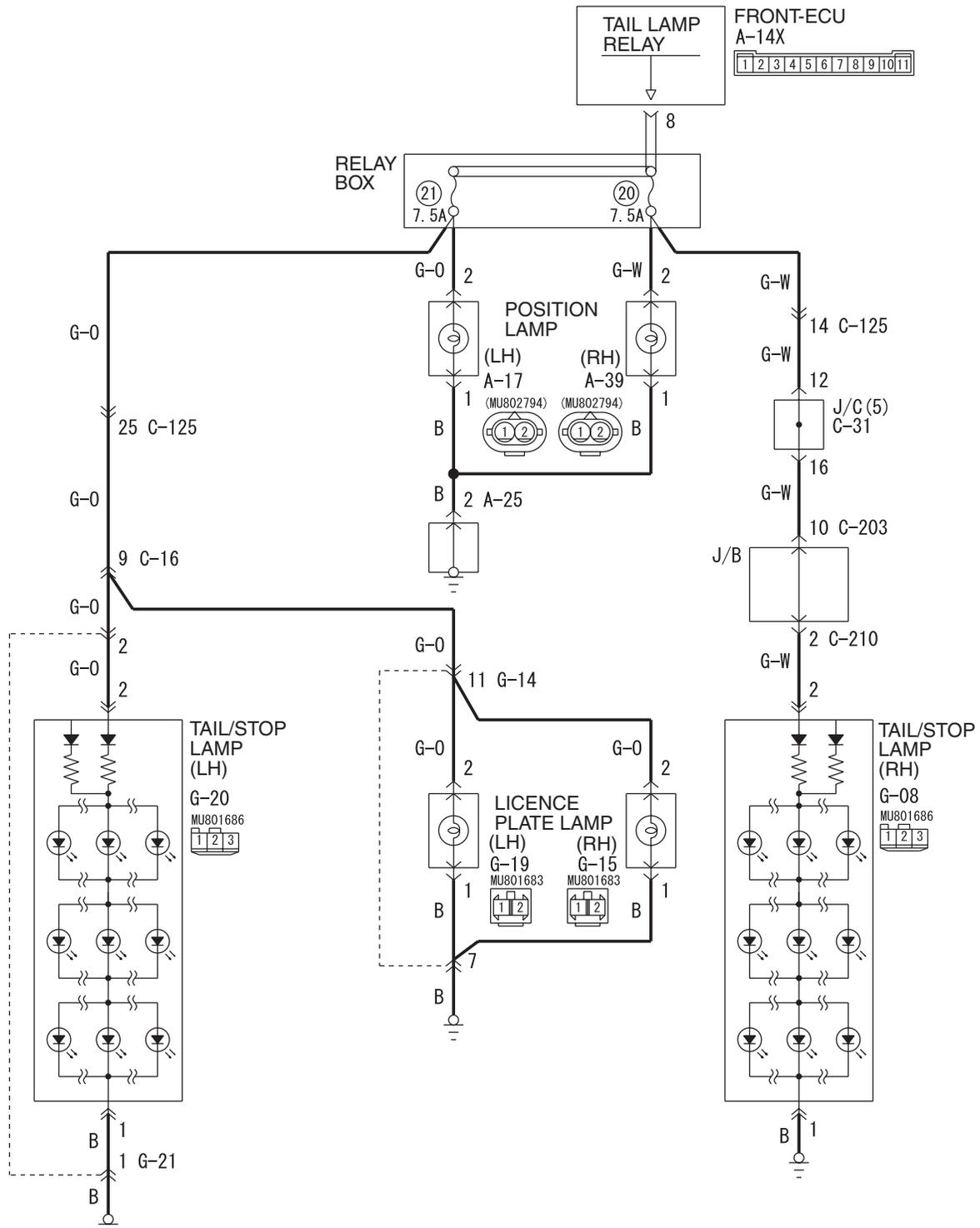
Tail lamps, Position Lamps and License Plate Lamps Circuit <LHD>



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

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/stop 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.

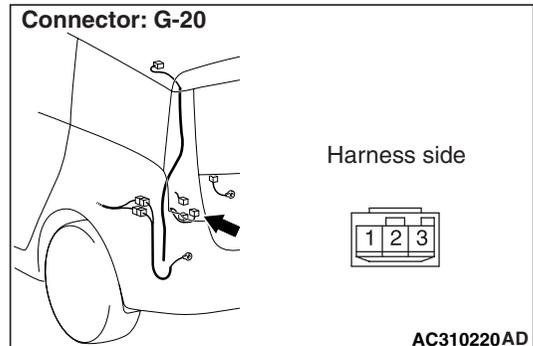
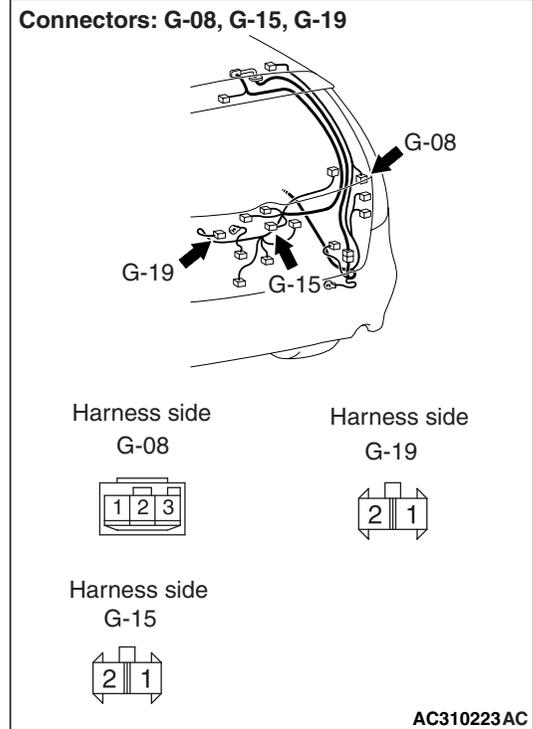
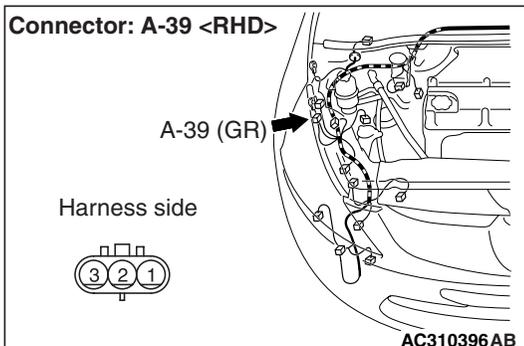
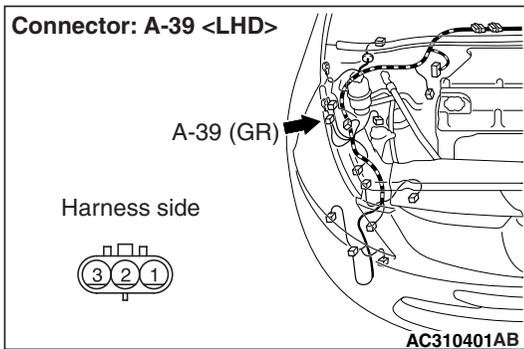
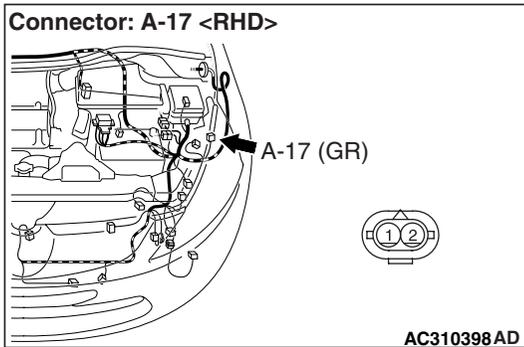
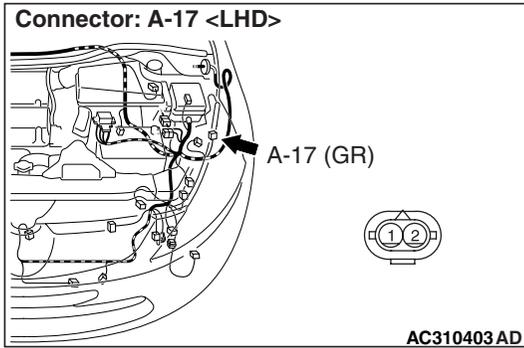
**POSSIBLE CAUSES**

- Burned-out bulb
- Damaged harness wires and connectors

**DIAGNOSIS PROCEDURE**

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**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**



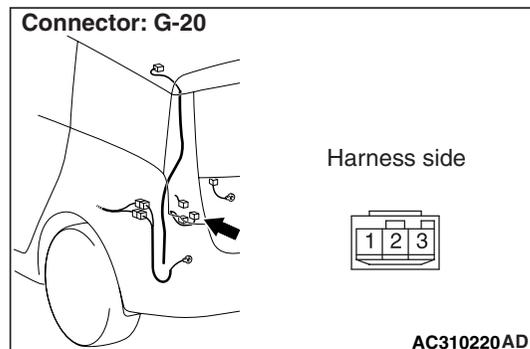
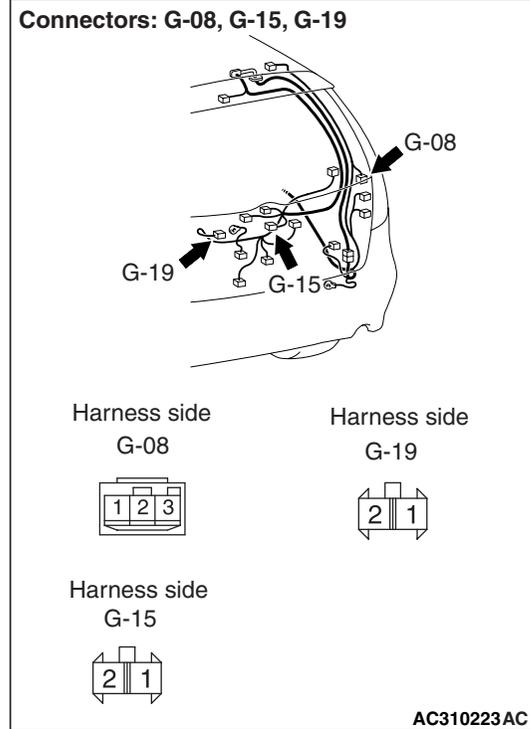
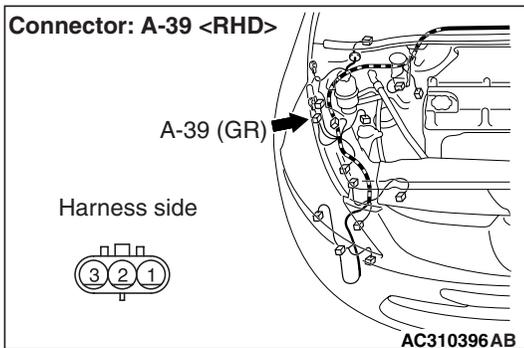
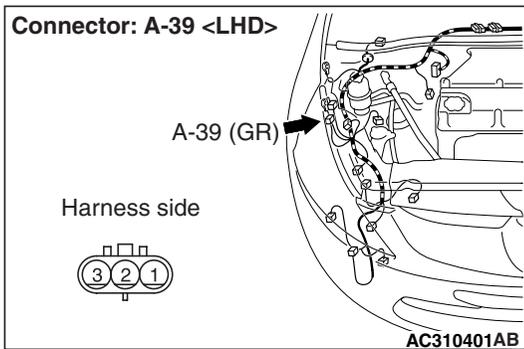
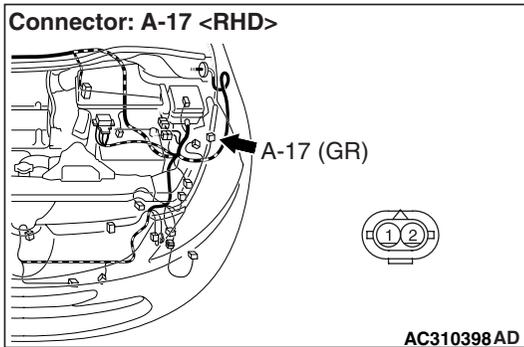
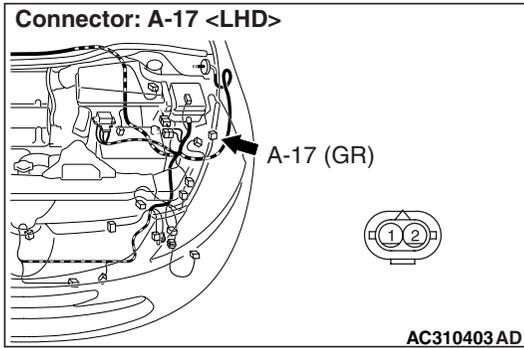
- Q: Is the check result normal?**  
**YES :** Go to Step 2.  
**NO :** Repair the defective connector.

**Step 2. Check the bulbs of the position lamp or the licence plate lamp.**

Check the bulb of the lamp which does not illuminate.

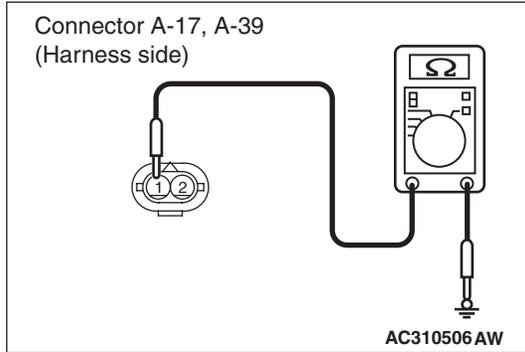
- Q: Is the check result normal?**  
**YES :** Go to Step 3.  
**NO :** Replace the bulb of the lamp which does not illuminate.

**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.**

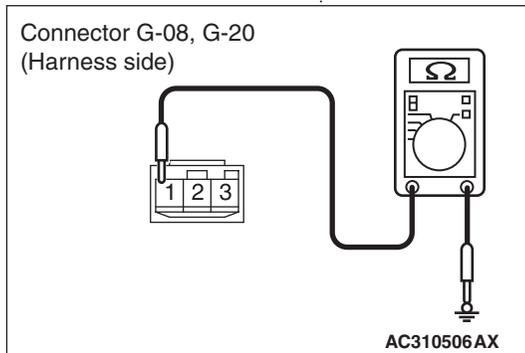


- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Check the resistance between the lamp

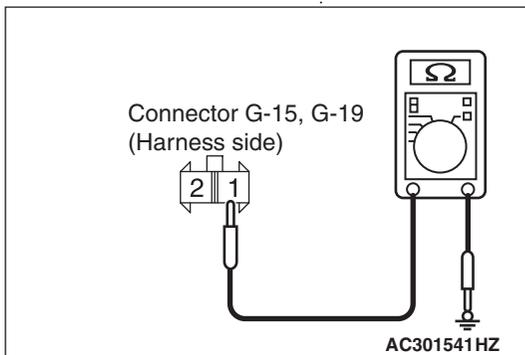
connector and body earth.



- 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



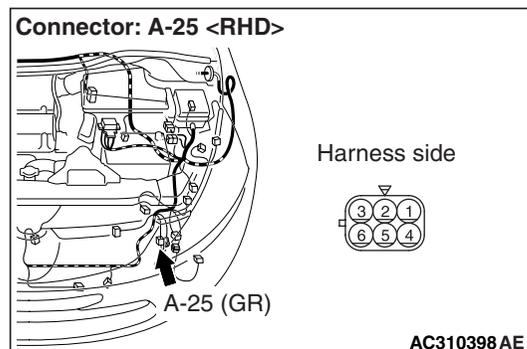
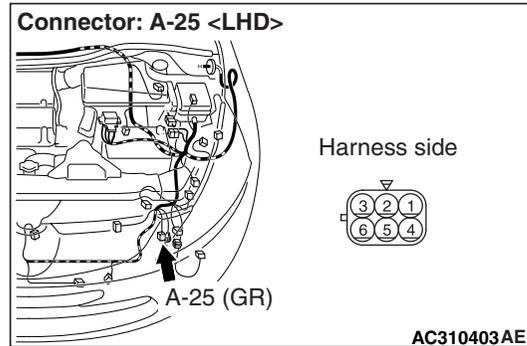
- Resistance between G-15 licence plate lamp (RH) connector terminal No.1 and body earth
- Resistance between G-19 licence plate lamp (LH) connector terminal No.1 and body earth
- OK: 2 Ω or less**

**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>**



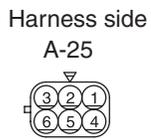
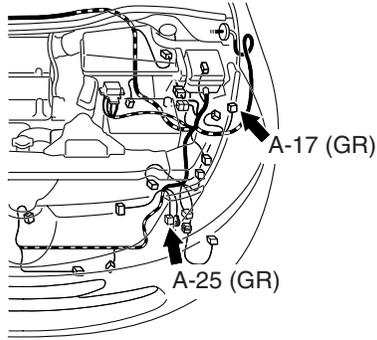
**Q: Is the check result normal?**

**YES :** Go to Step 5.

**NO :** Repair the defective connector.

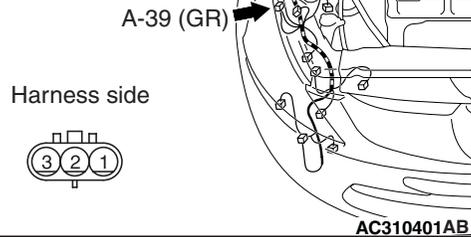
**Step 5. Check the wiring harness from G-08 tail/stop lamp (RH) connector terminal No.1 or G-20 tail/stop lamp (LH) connector terminal No.1 or G-15 licence plate lamp (RH) connector terminal No.1 or G-19 licence plate lamp (LH) connector terminal No.1 to body earth, or A-39 position lamp (RH) connector terminal No.1 or A-17 position lamp (LH) connector terminal No.1 to A-25 earth connector terminal No.2.**

Connectors: A-17, A-25 <LHD>

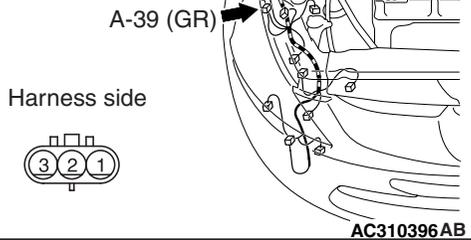


AC310404AE

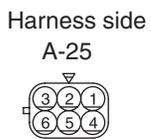
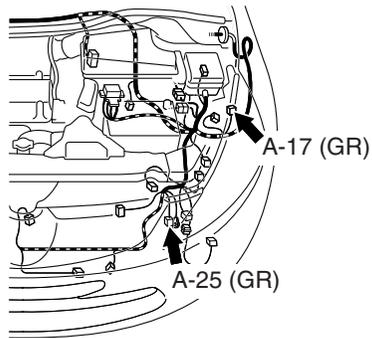
Connector: A-39 <LHD>



Connector: A-39 <RHD>

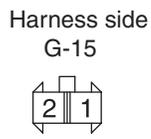
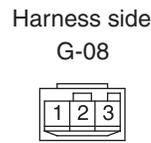
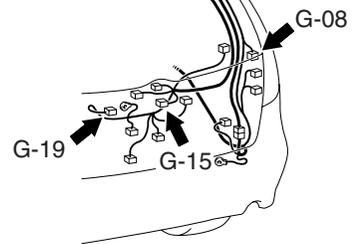


Connectors: A-17, A-25 <RHD>



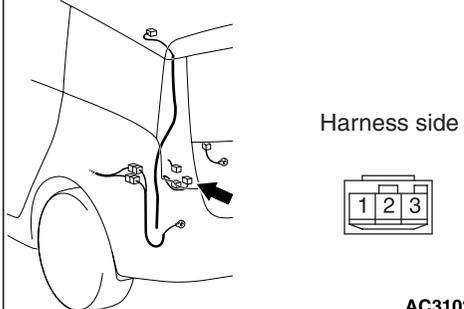
AC310399AE

Connectors: G-08, G-15, G-19



AC310223AC

Connector: G-20



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.*

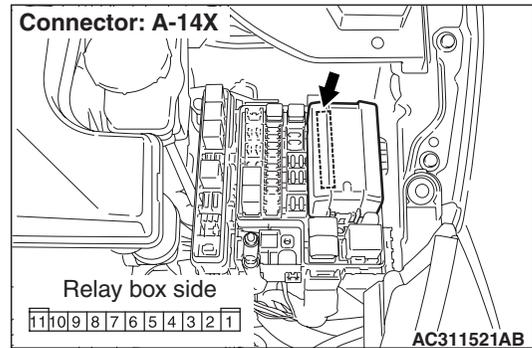
- Check the earth wires for open circuit.

**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**

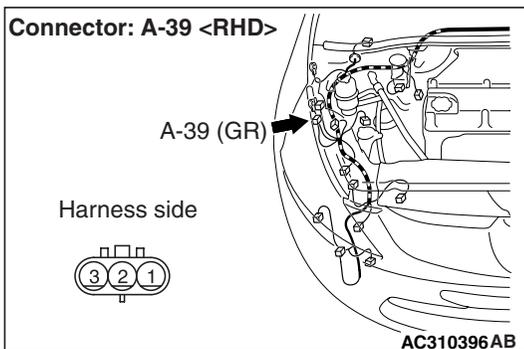
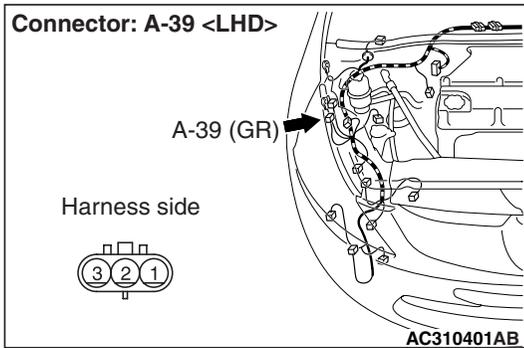
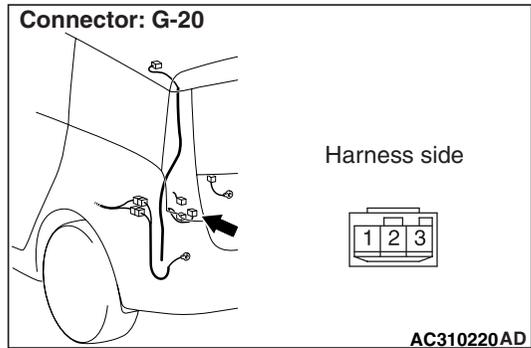
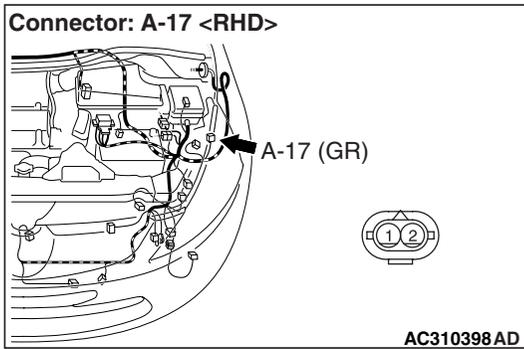
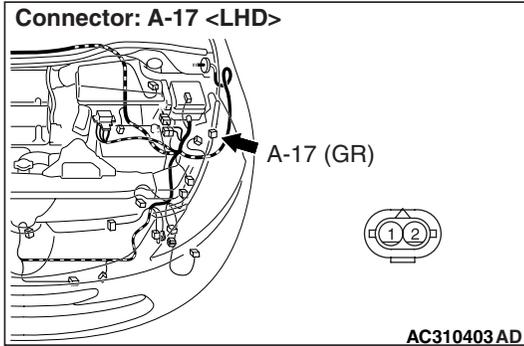
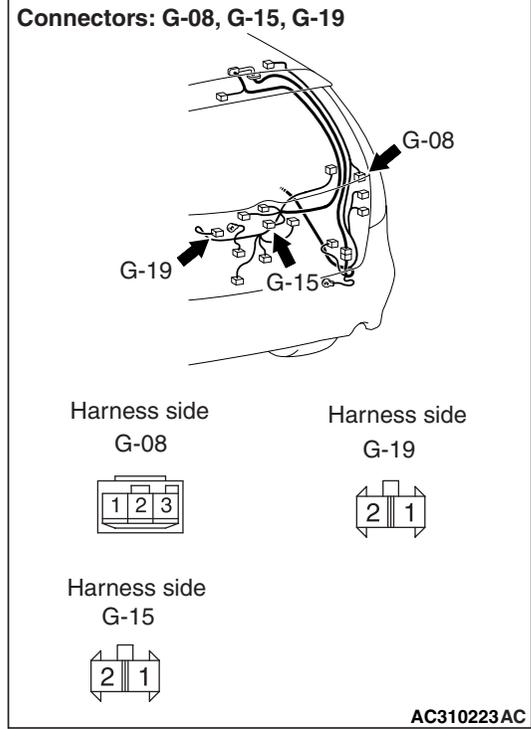
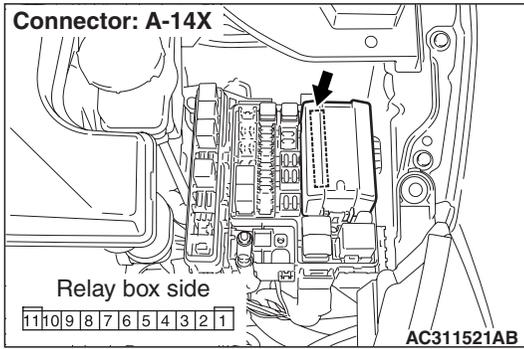


**Q: Is the check result normal?**

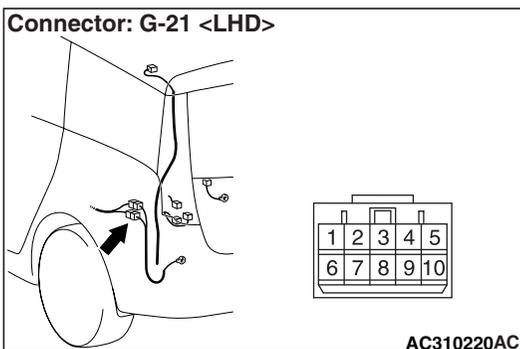
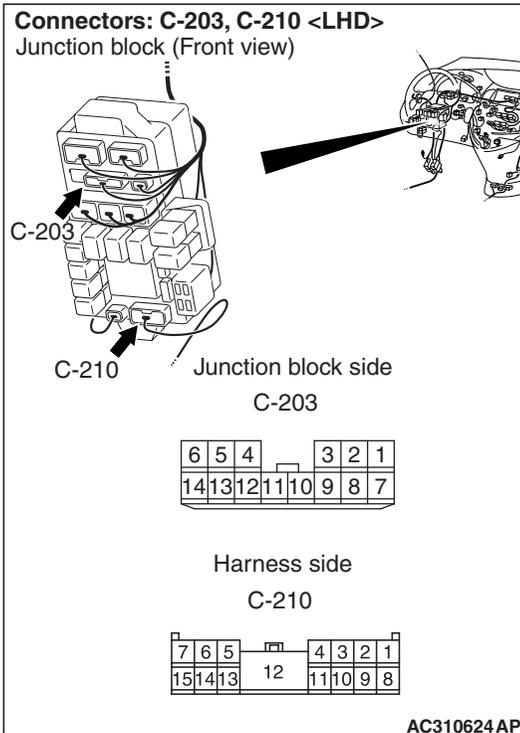
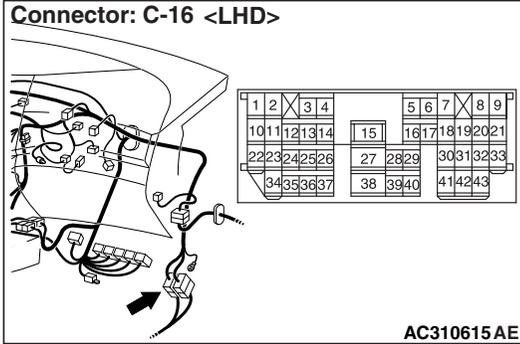
**YES :** Go to Step 7.

**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.**



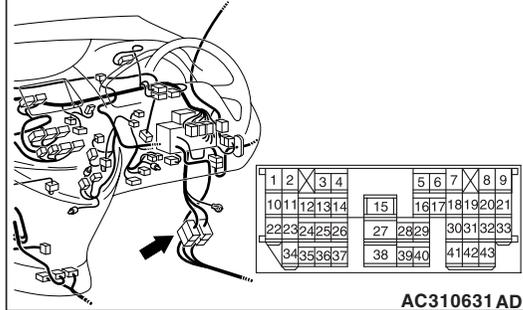
NOTE:



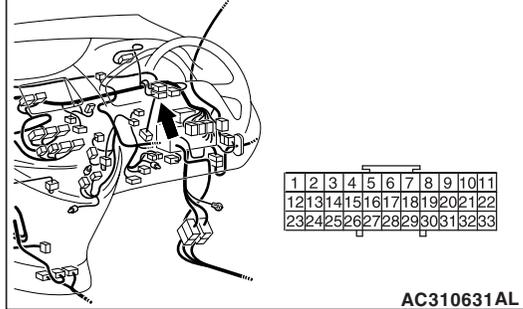
<LH drive vehicles> Prior to the wiring harness inspection, check intermediate connector C-16 <tail/stop lamp (LH) and licence plate lamp>, C-125 <tail/stop lamp and licence plate lamp>, G-14 <licence plate lamp>, G-21 <tail/stop lamp (LH)>, junction block connector C-203 <tail/stop lamp (LH)> and C-210 <tail/stop lamp (LH)>, and repair if necessary.

NOTE:

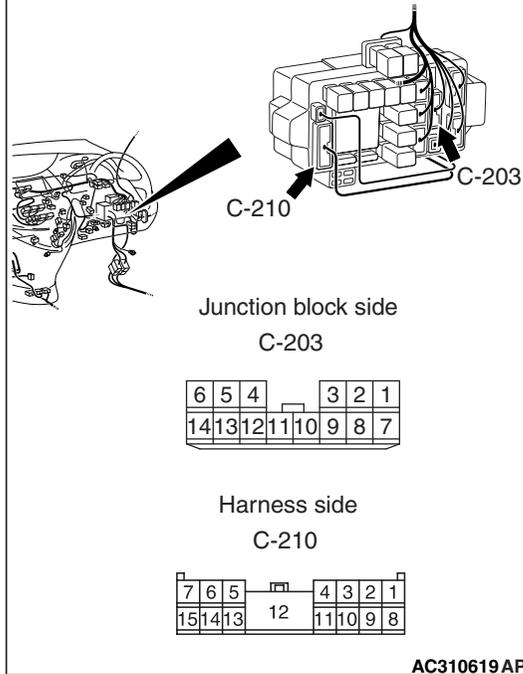
Connector: C-16 <RHD>



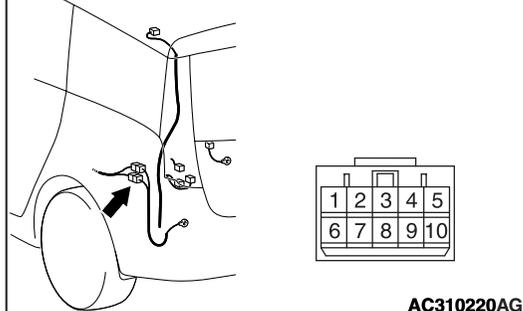
Connector: C-31 <RHD>



Connectors: C-203, C-210 <RHD>  
Junction block (Front view)



Connector: G-21 <RHD>



<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 :**

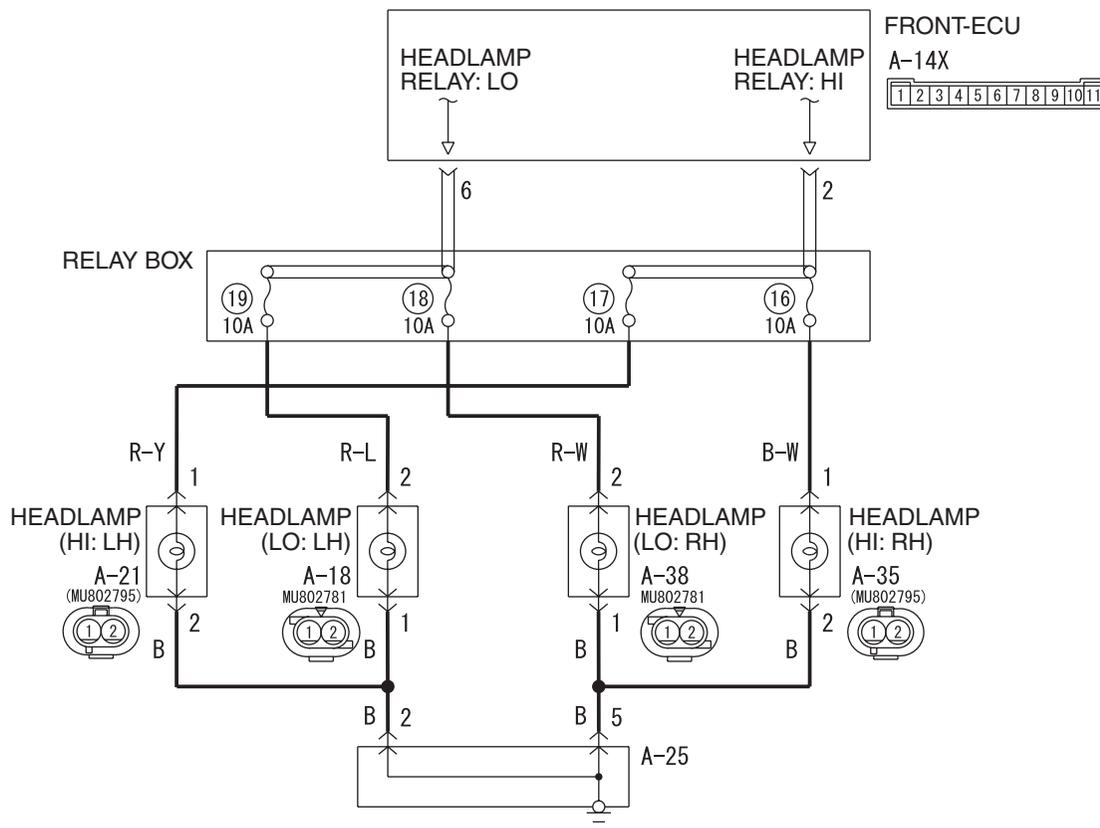
Replace the licence plate lamp socket.

### 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

**COMMENTS ON TROUBLE SYMPTOM**

If any of the headlamps or the high-beam indicator does not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

**POSSIBLE CAUSES**

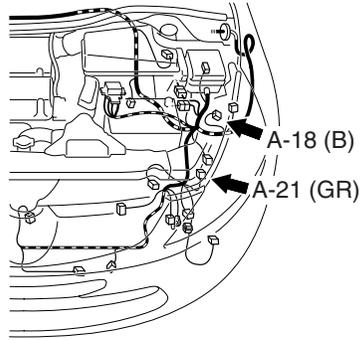
- Malfunction of the headlamp bulbs
- Malfunction of the high-beam indicator bulb
- Damaged harness wires and connectors

**DIAGNOSIS PROCEDURE**

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**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**

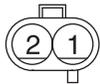
Connectors: A-18, A-21 <LHD>



Harness side  
A-18

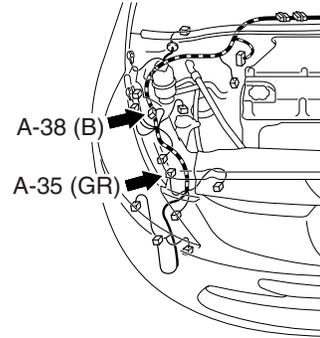


Harness side  
A-21

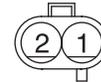


AC310404AB

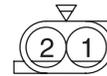
Connectors: A-35, A-38 <LHD>



Harness side  
A-35

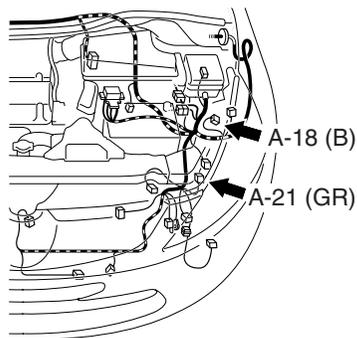


Harness side  
A-38

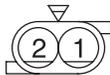


AC310402AB

Connectors: A-18, A-21 <RHD>



Harness side  
A-18

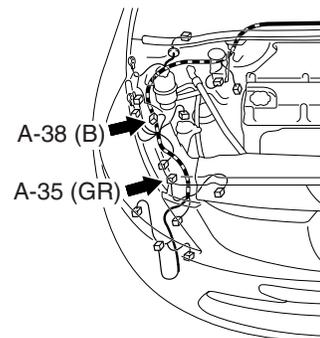


Harness side  
A-21

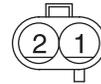


AC310399AB

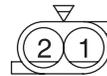
Connectors: A-35, A-38 <RHD>



Harness side  
A-35



Harness side  
A-38



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.

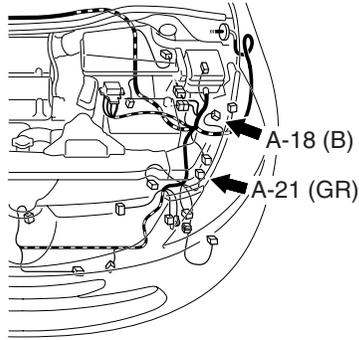
**Q: Is the check result normal?**

**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>



Harness side  
A-18

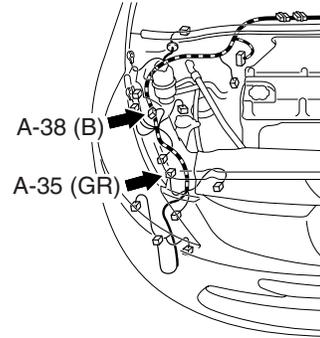


Harness side  
A-21

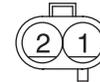


AC310404AB

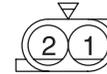
Connectors: A-35, A-38 <LHD>



Harness side  
A-35

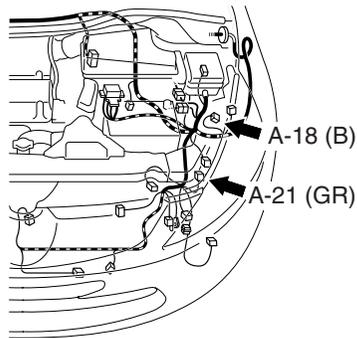


Harness side  
A-38

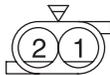


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Connectors: A-18, A-21 <RHD>



Harness side  
A-18

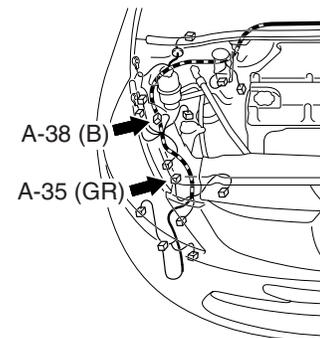


Harness side  
A-21

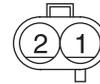


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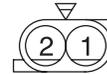
Connectors: A-35, A-38 <RHD>



Harness side  
A-35



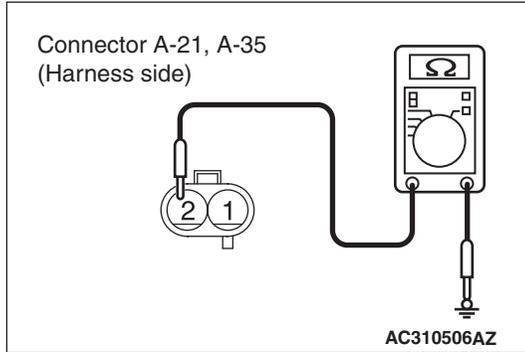
Harness side  
A-38



AC310397AB

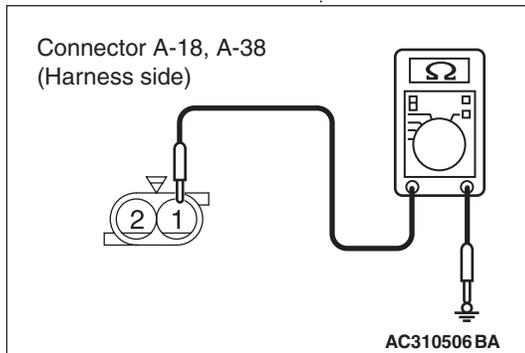
- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Check the resistance between the lamp

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-30 headlamp (LO: RH) connector terminal No.1 and body earth

- Resistance between A-18 headlamp (LO: LH) connector terminal No.1 and body earth

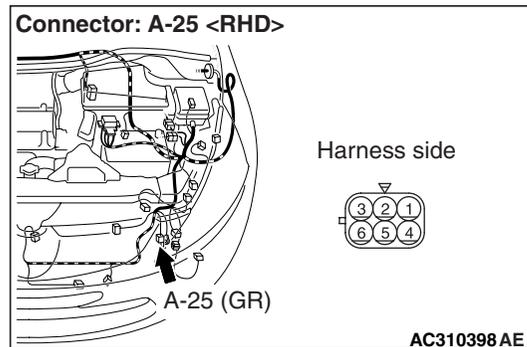
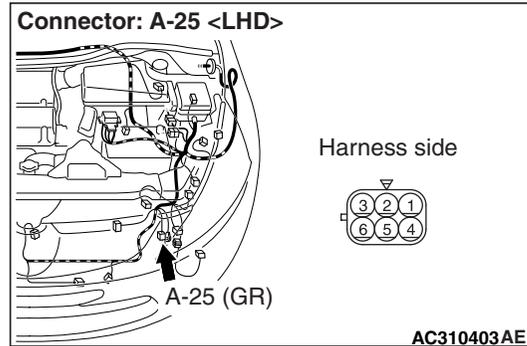
**OK: 2 Ω or less**

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

**YES :** Go to Step 6.

**NO :** Go to Step 4.

**Step 4. Connector check: A-25 earth connector**



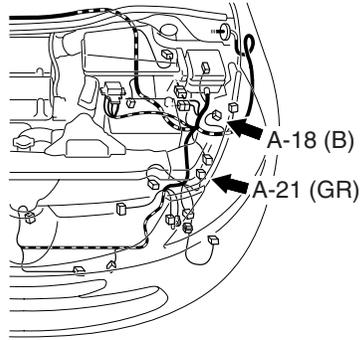
**Q: Is the check result normal?**

**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>



Harness side  
A-18

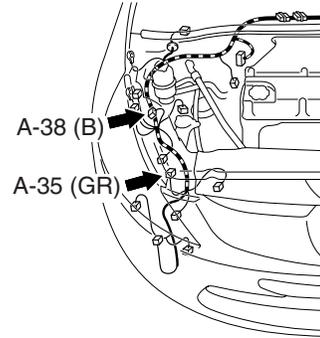


Harness side  
A-21

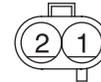


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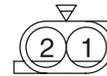
Connectors: A-35, A-38 <LHD>



Harness side  
A-35

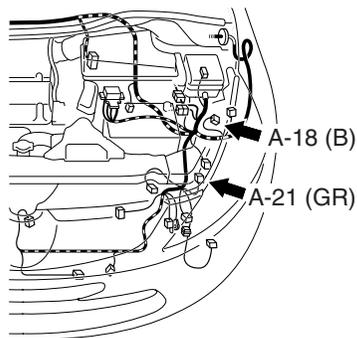


Harness side  
A-38

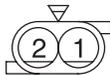


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Connectors: A-18, A-21 <RHD>



Harness side  
A-18

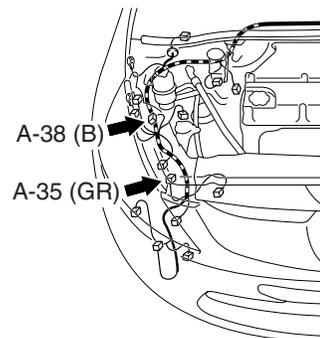


Harness side  
A-21

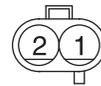


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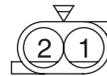
Connectors: A-35, A-38 <RHD>



Harness side  
A-35



Harness side  
A-38



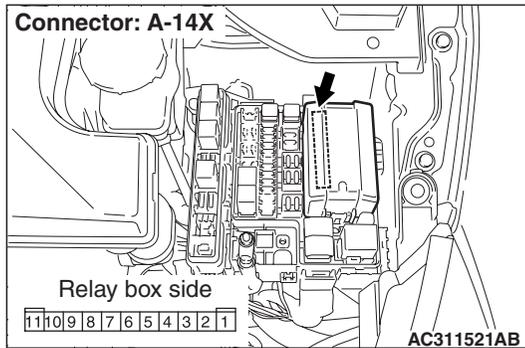
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- Check the earth wires for open circuit.

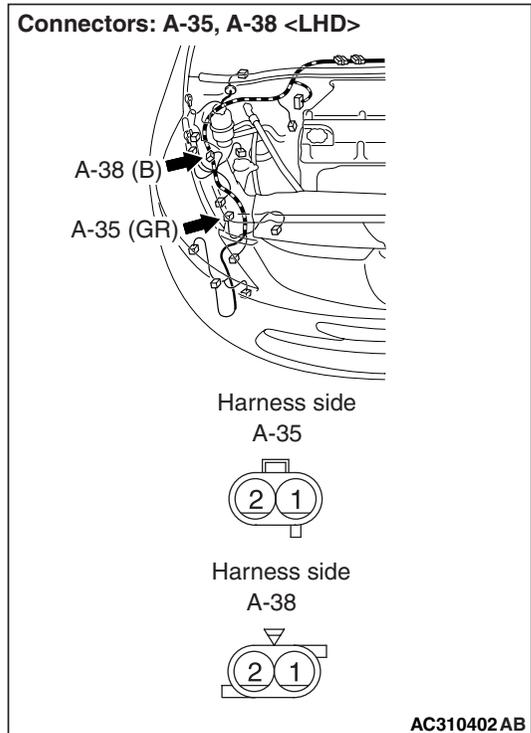
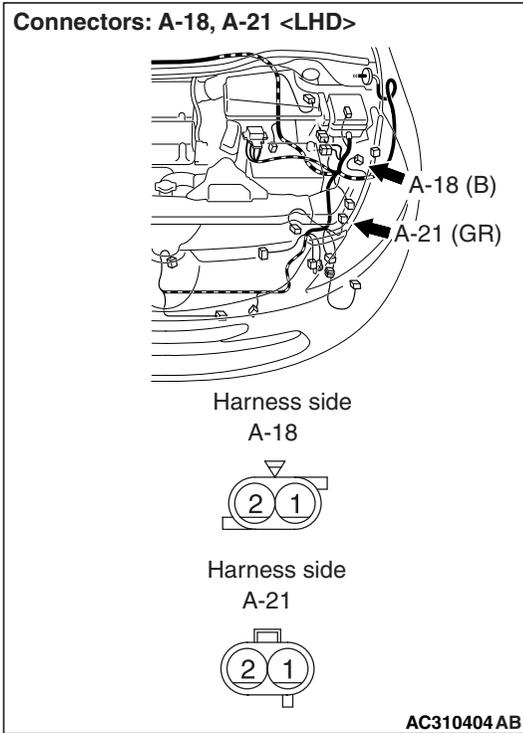
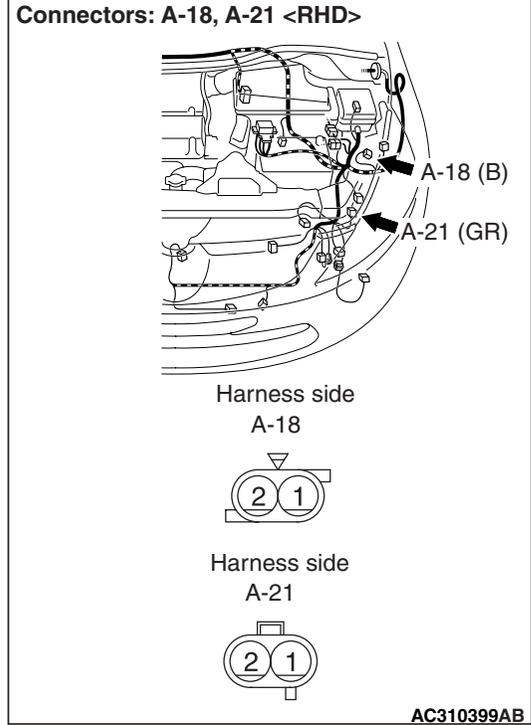
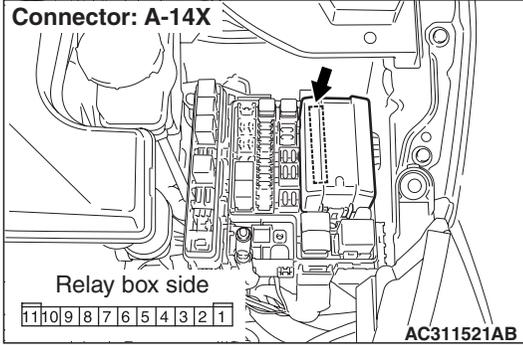
Q: Is the check result normal?

YES : Go to Step 8.

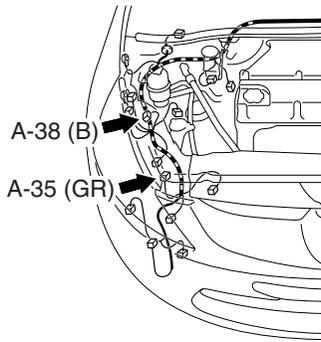
NO : Repair the wiring harness.

**Step 6. Connector check: A-14X front-ECU  
connector****YES** : Go to Step 7.**NO** : Repair the defective connector.**Q: Is the check result normal?**

**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.**



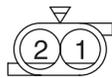
Connectors: A-35, A-38 <RHD>



Harness side  
A-35



Harness side  
A-38



AC310397AB

- 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).

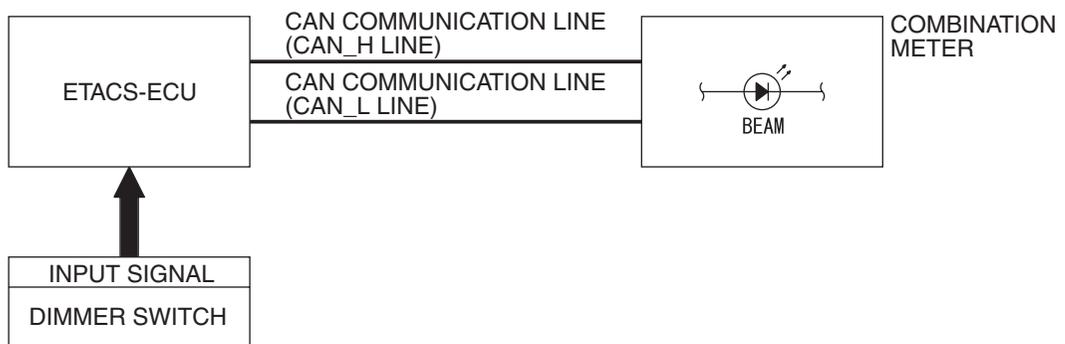
**NO** : Replace the headlamp assembly.

**Inspection Procedure M-8: The high-beam indicator lamps 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.54B-275."

**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.**

When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

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

**YES** : Refer to diagnosis code chart P.54B-29.

**NO** : Go to Step 4.

**Step 4. 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).

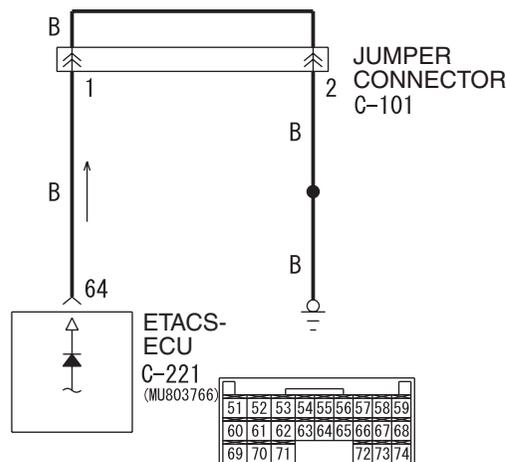
**Q: Is the check result normal?**

**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. Check the power supply circuit.

When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

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

**YES :** Go to Step 3.

**NO :** Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit" P.54B-87.

### Step 3. Pulse check

Check the input signals below, which are related to the daytime running lamp function.

| System switch         | Check condition            |
|-----------------------|----------------------------|
| Ignition switch (IG1) | When turned from ACC to ON |

**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-2 "The ignition switch (IG1) signal is not received P.54B-420."

### Step 4. Connector check: C-221 ETACS-ECU connector.

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

**YES :** Go to Step 5.

**NO :** Repair the defective connector.

### Step 5. 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 :** Replace the ETACS-ECU.

**NO :** Go to Step 6.

### Step 6. 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.

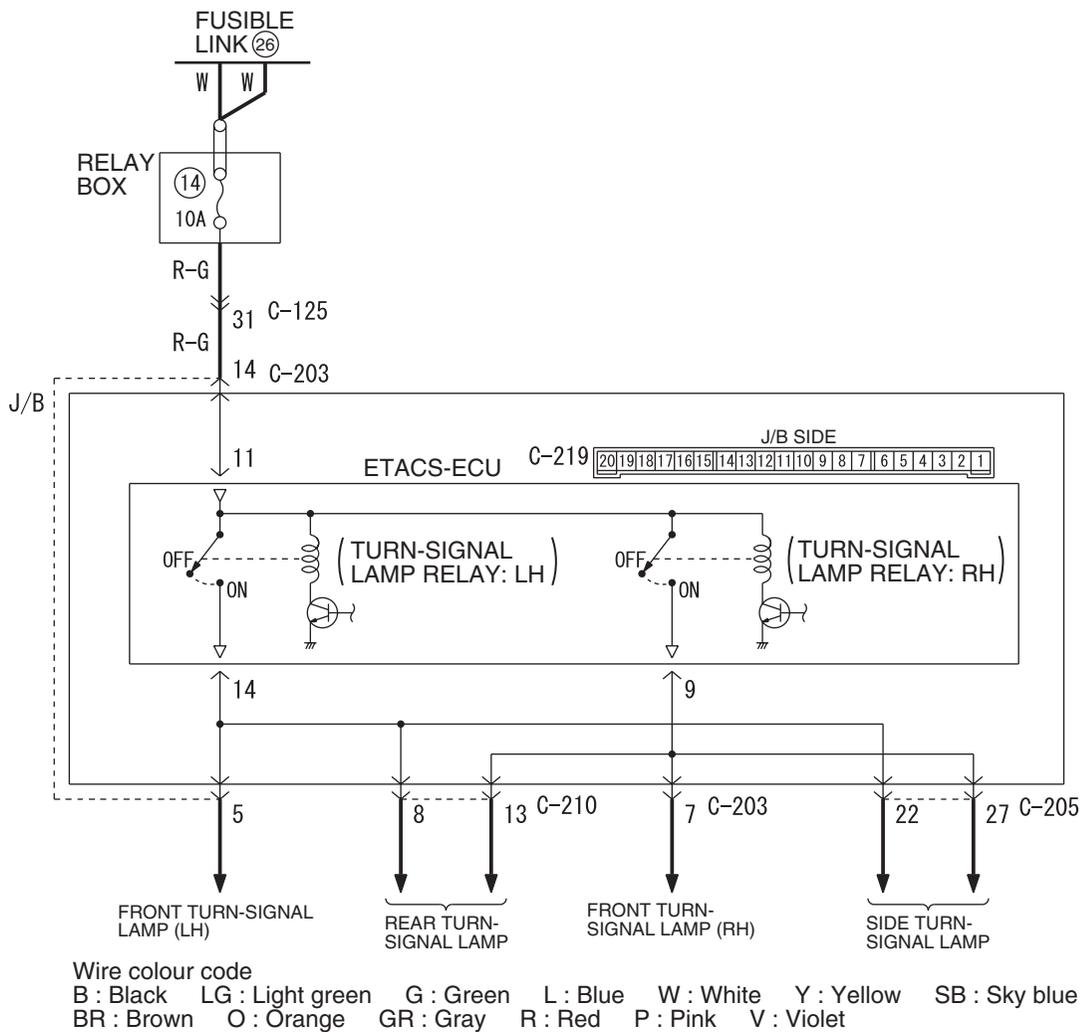
## FLASHER TIMER

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



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

### DIAGNOSTIC PROCEDURE

**Step 1. Check that the hazard warning lamps operate.**

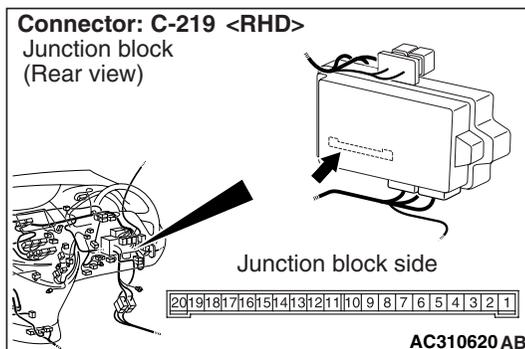
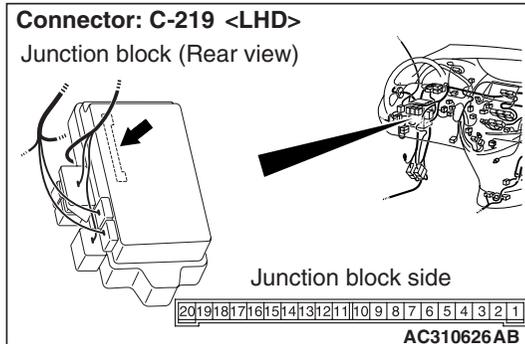
Check that the hazard warning lamps illuminate normally.

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

YES : Go to Step 6.

NO : Go to Step 2.

**Step 2. Connector check: C-219 ETACS-ECU connector**

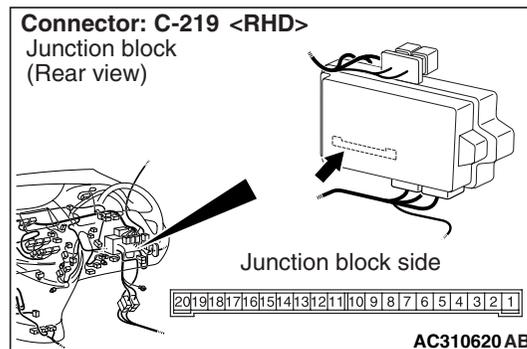
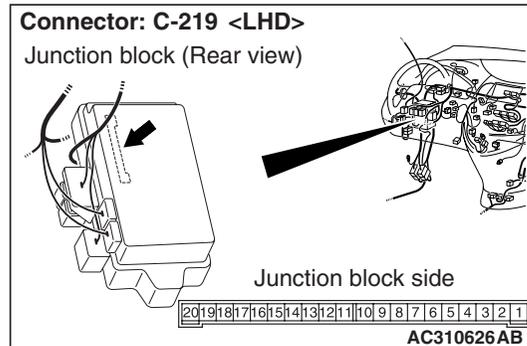


**Q: Is the check result normal?**

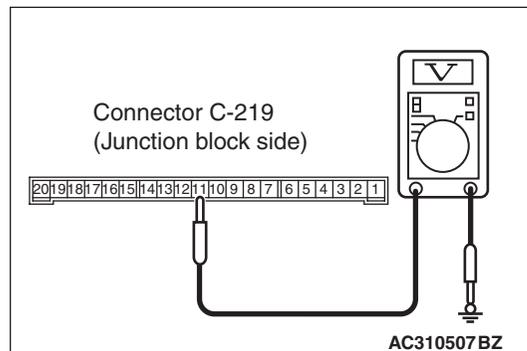
YES : Go to Step 3.

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) Voltage between C-219 ETACS-ECU connector terminal No.11 and body earth

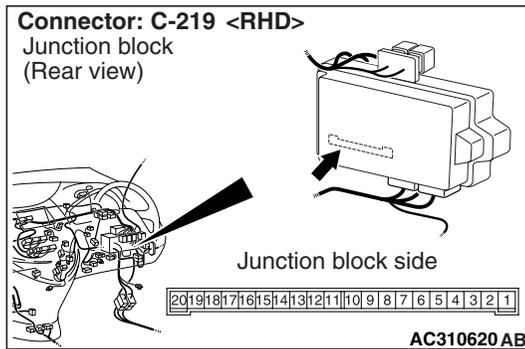
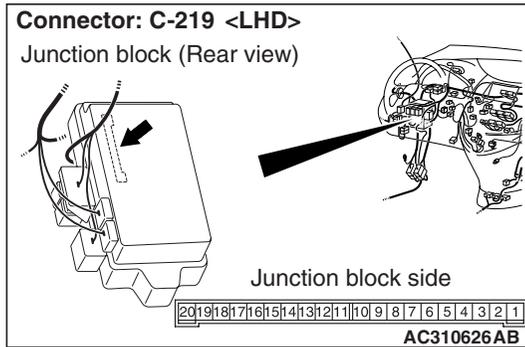
**OK: System voltage**

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

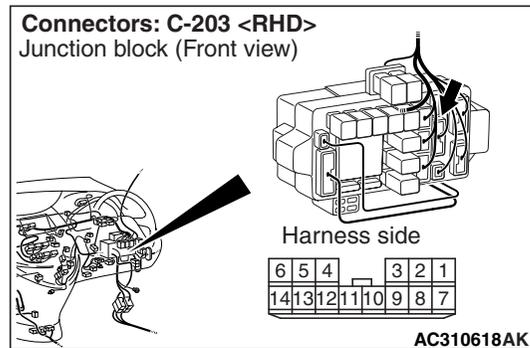
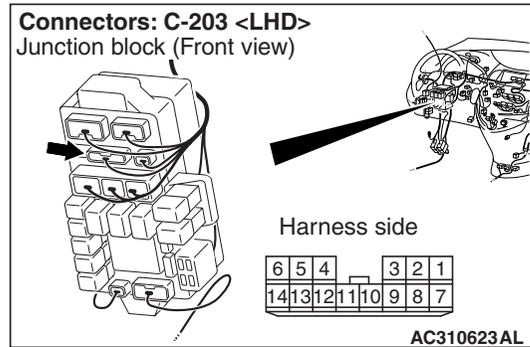
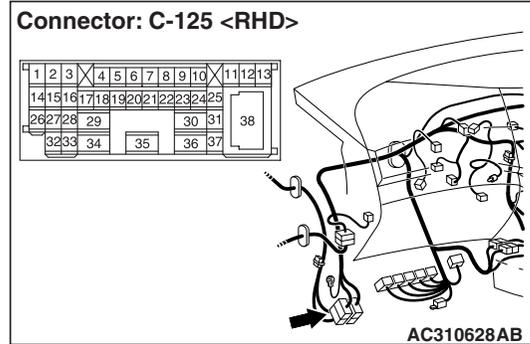
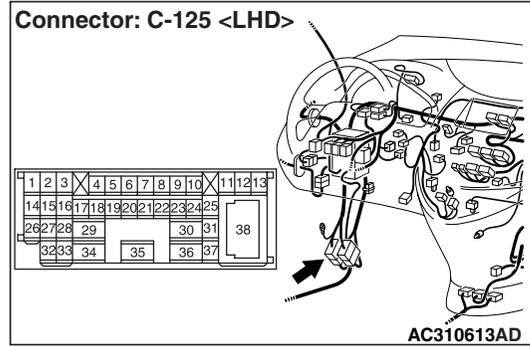
YES : Go to Step 5.

NO : Go to Step 4.

Step 4. 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 : 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. 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 ETACS-ECU.

**Step 6. Pulse check**

Check the input signals below, which are related to the turn-signal lamp illumination.

| <b>System switch</b>         | <b>Check condition</b>   |
|------------------------------|--|
| Turn-signal lamp switch (RH) | When the turn-signal lamp switch (RH) is turned from off to on |
| Turn-signal lamp switch (LH) | When the turn-signal lamp switch (LH) is turned from off to on |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally. :** Go to Step 7.

**The turn-signal lamp switch (RH) signal is not received. :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp switch) signal is not received [P.54B-438](#)."

**The turn-signal lamp switch (LH) signal is not received. :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp and headlamp washer switch) signal is not received [P.54B-438](#)."

**Step 7. Retest the system.**

Check that the turn-signal lamps illuminate.

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

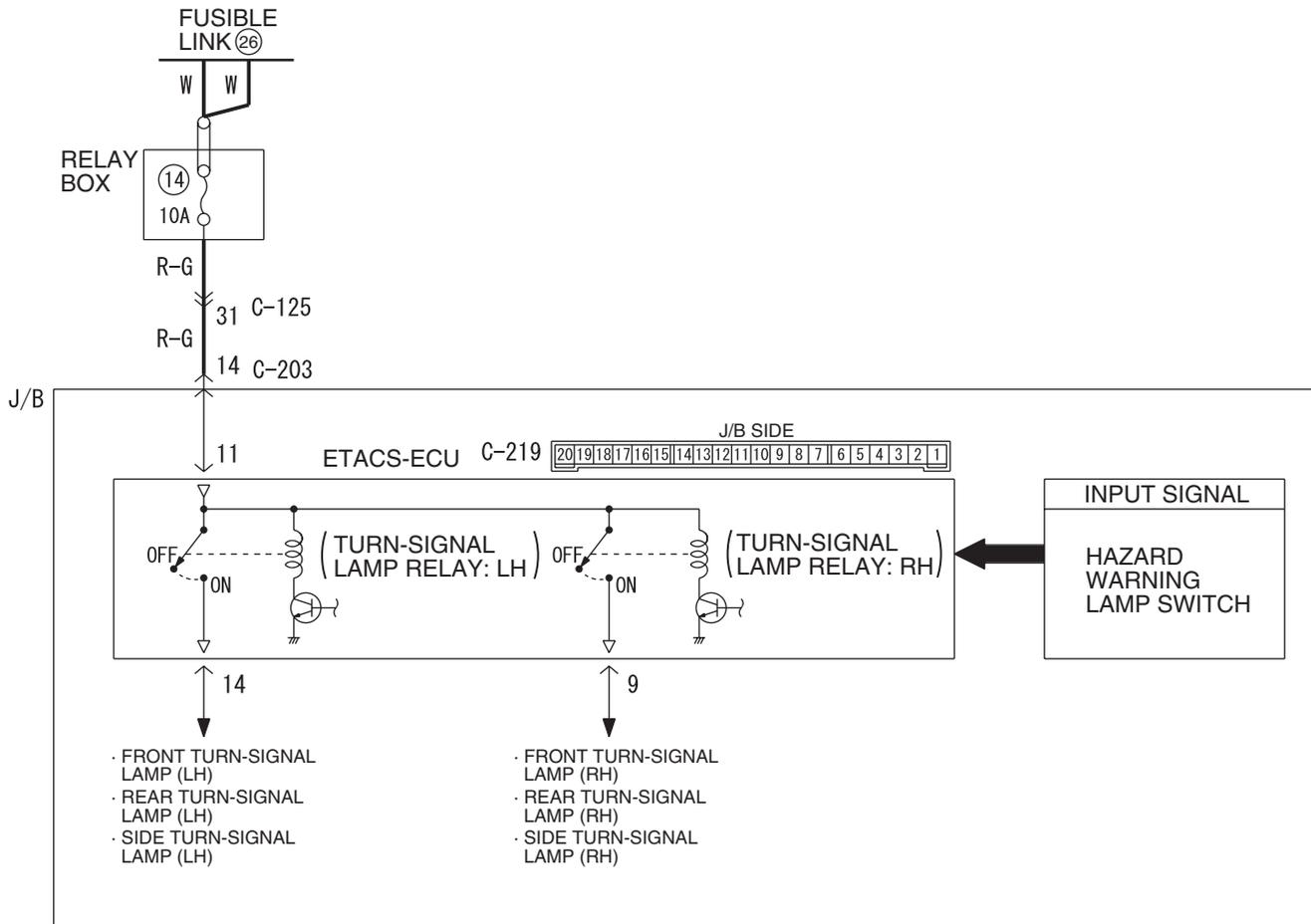
- YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).
- NO :** Replace the ETACS-ECU.

## 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



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

**DIAGNOSTIC 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.54B-310.](#)"

**Step 2. Check the power supply circuit.**

When the ignition switch is at the LOCK (OFF) position, check that the functions below work normally.

- Lamp reminder function
- Central door locking system
- Room lamp (excluding interior lamp automatic-shutdown function)

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

**YES :** Go to Step 3.

**NO :** Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit [P.54B-87](#)."

**Step 3. Pulse check**

Check the input signal from the hazard warning lamp switch.

| <b>System switch</b>       | <b>Check condition</b>                                       |
|----------------------------|--|
| Hazard warning lamp switch | When the hazard warning lamp 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 4.

**NO :** Refer to inspection procedure Q-12 "The hazard warning lamp switch signal is not received [P.54B-461](#)."

**Step 4. 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.

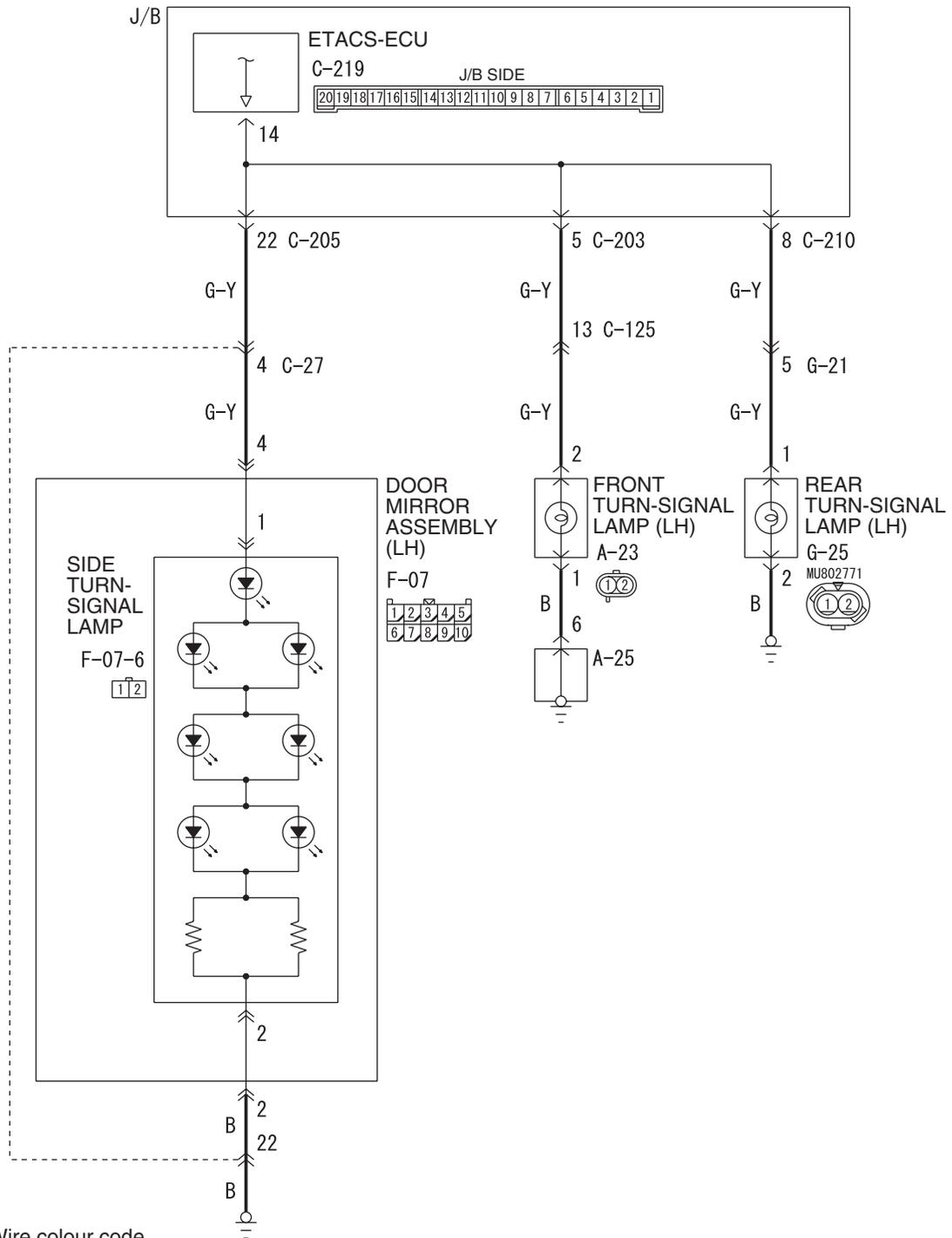
**Inspection Procedure N-3: Any of the turn-signal lamps does not illuminate.**

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** CAUTION**

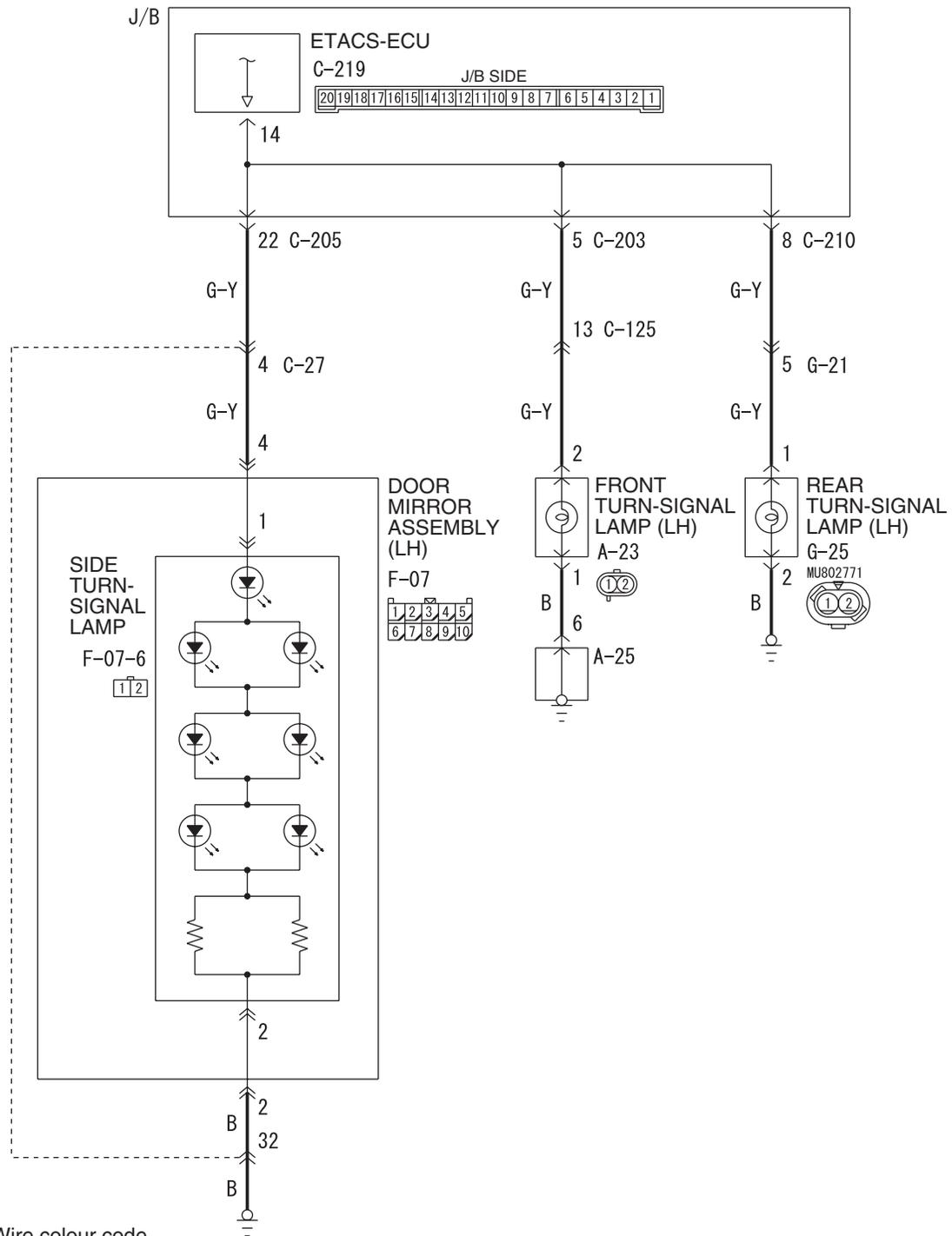
**Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

Left Turn-Signal Lamps Circuit <LHD>



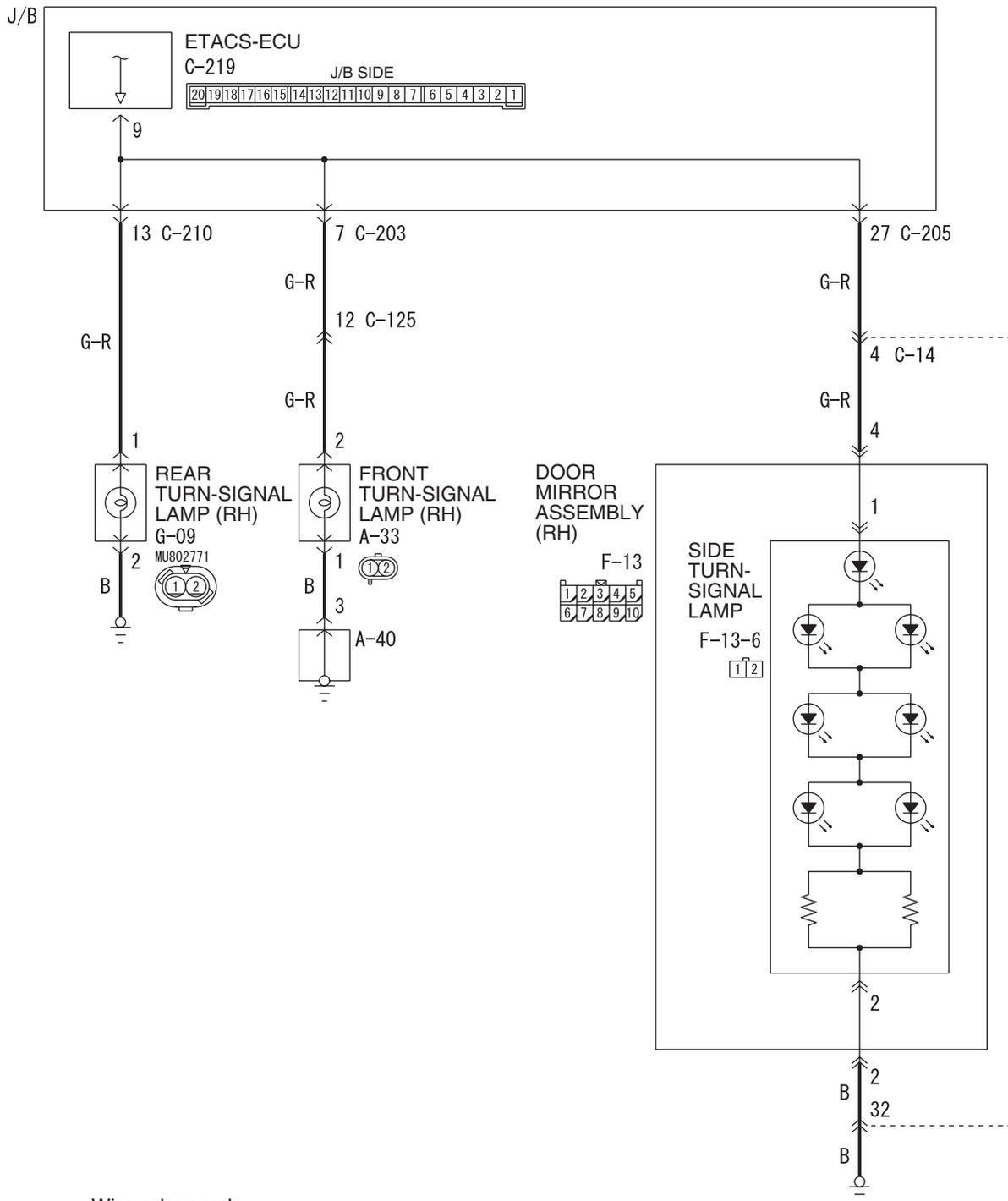
Wire colour code  
 B : Black   LG : Light green   G : Green   L : Blue   W : White   Y : Yellow   SB : Sky blue  
 BR : Brown   O : Orange   GR : Gray   R : Red   P : Pink   V : Violet

Left Turn-Signal Lamps Circuit <RHD>



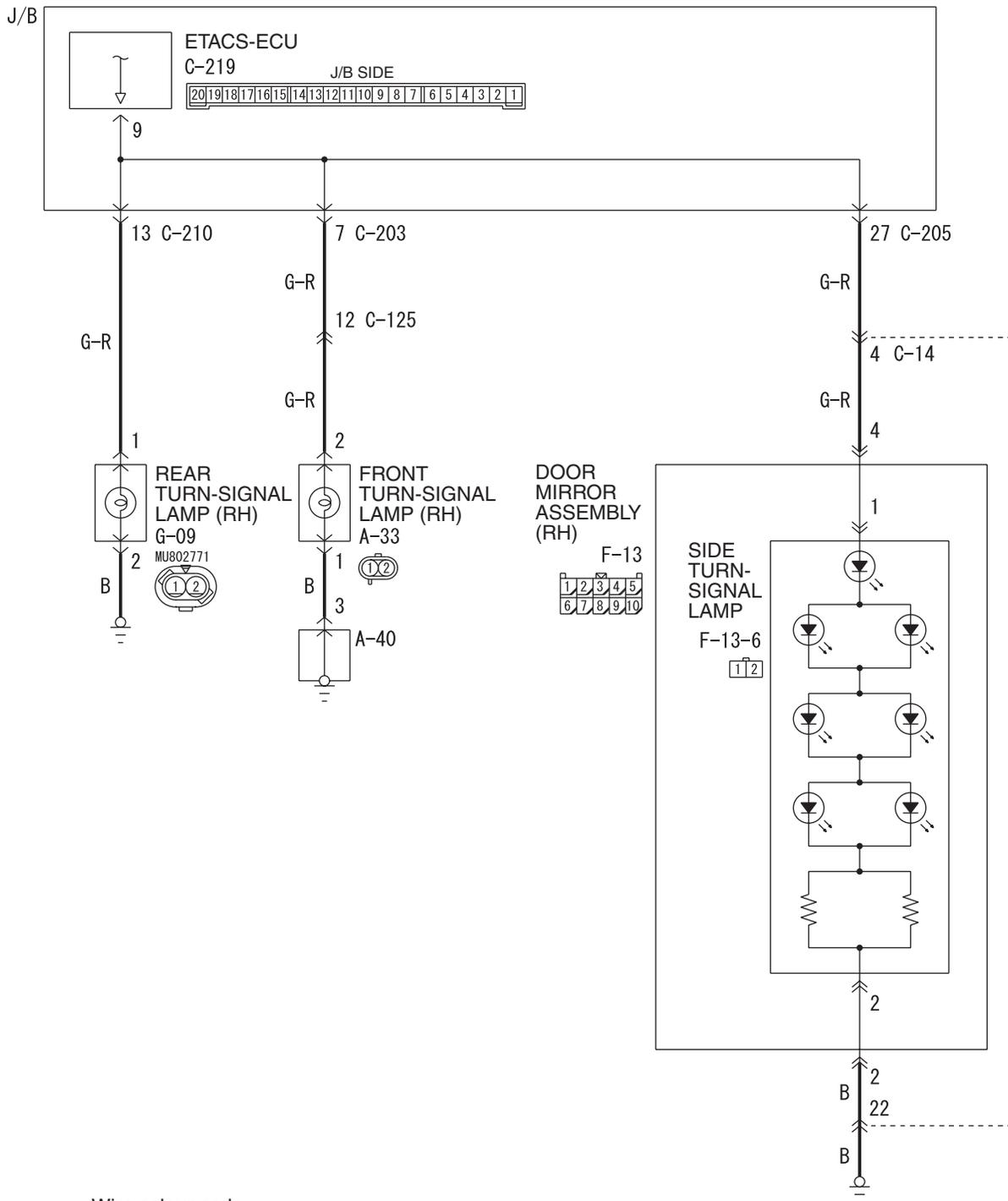
Wire colour code  
 B : Black    LG : Light green    G : Green    L : Blue    W : White    Y : Yellow    SB : Sky blue  
 BR : Brown    O : Orange    GR : Gray    R : Red    P : Pink    V : Violet

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

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 turn-signal lamp bulb
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

Step 1. Confirm which turn-signal lamp is defective.

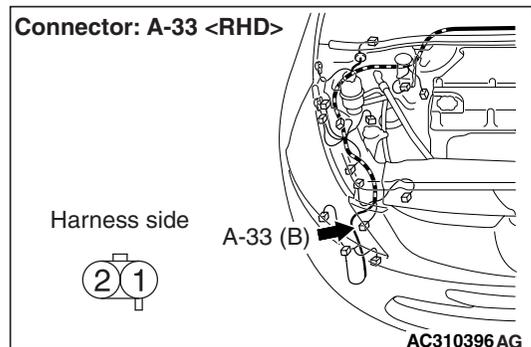
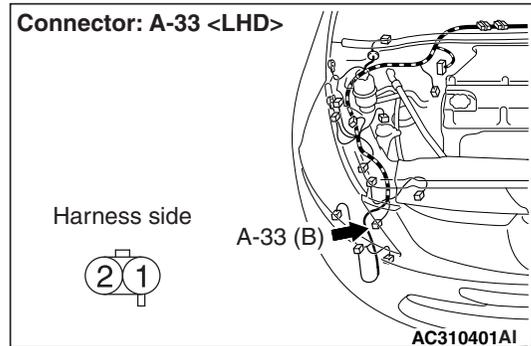
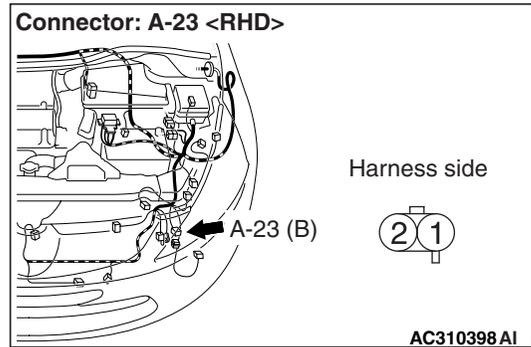
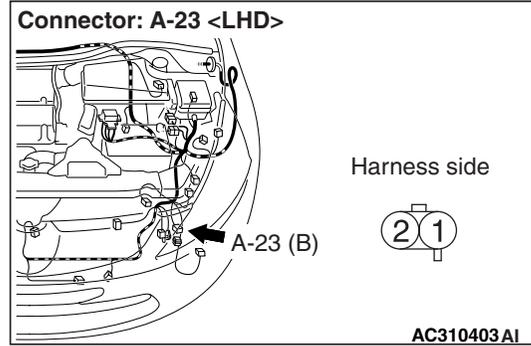
Q: Which turn-signal lamp fails to illuminate correctly?

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-23 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.

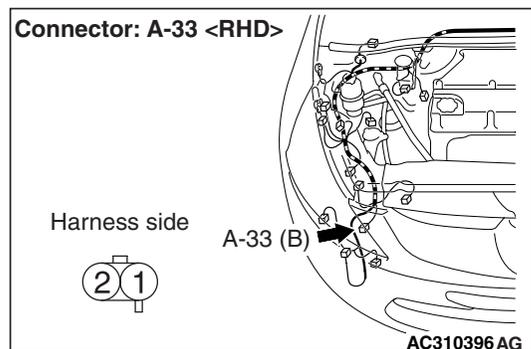
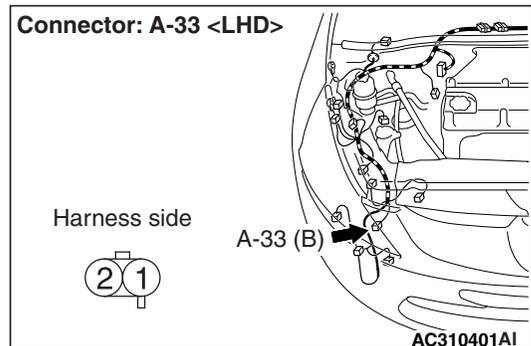
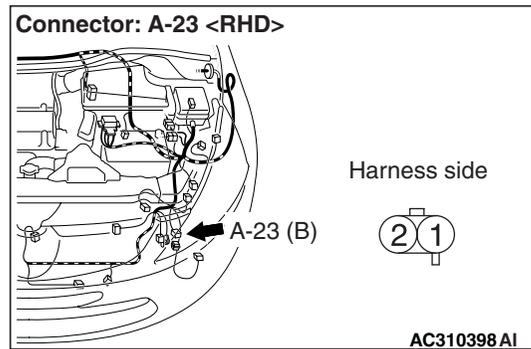
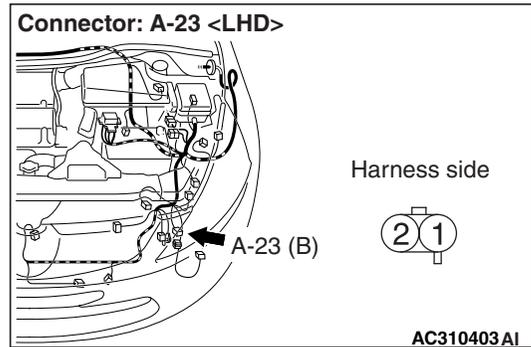
**Step 3. Check the bulb(s) of the turn-signal lamps.**

Check the bulb(s) of the defective lamp.

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

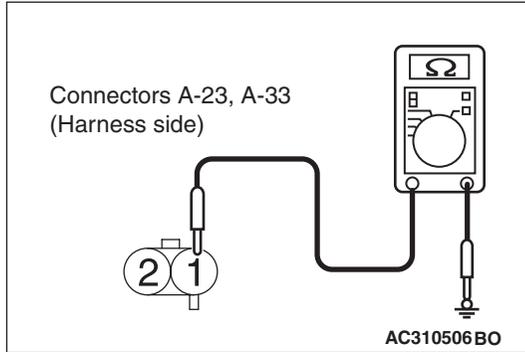
**YES :** Go to Step 4.

**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

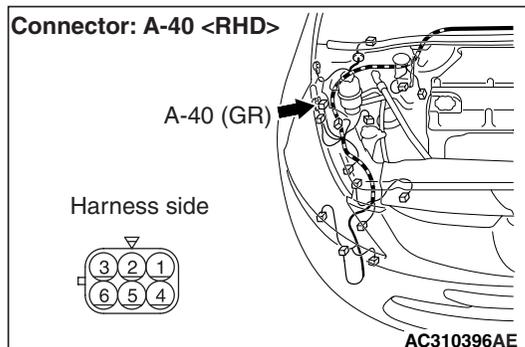
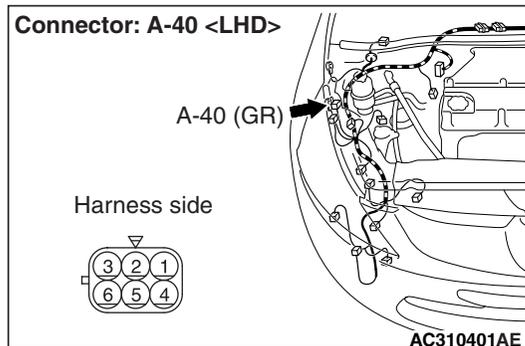
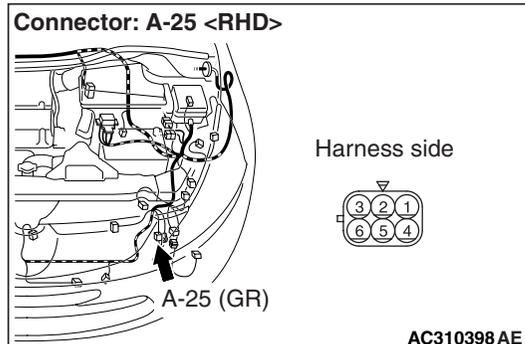
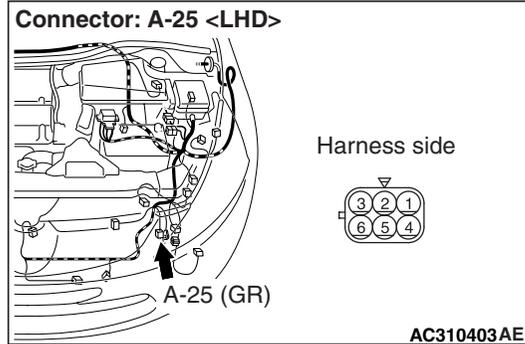
**OK: 2  $\Omega$  or less**

**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)>.**

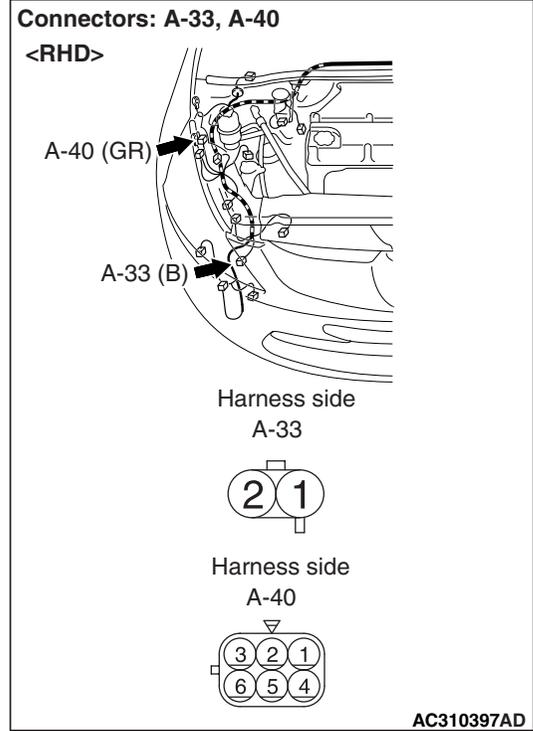
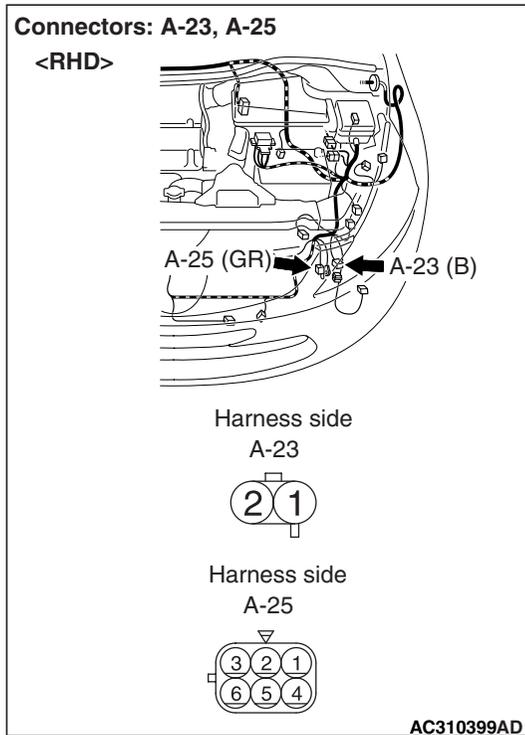
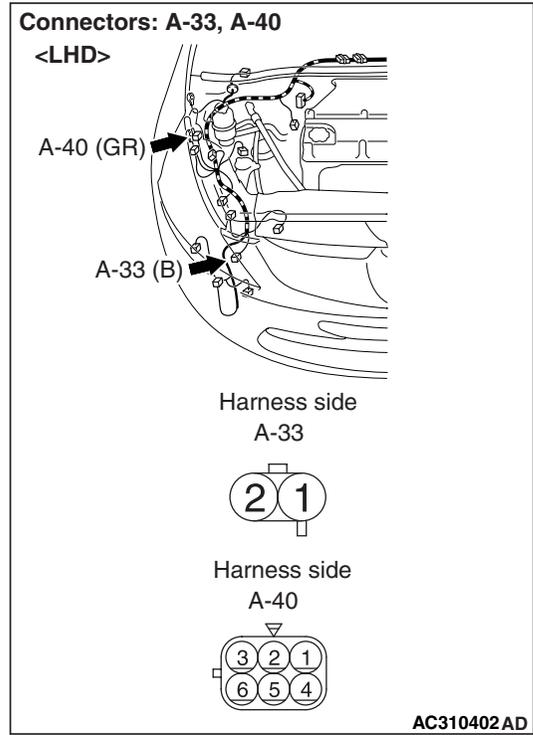
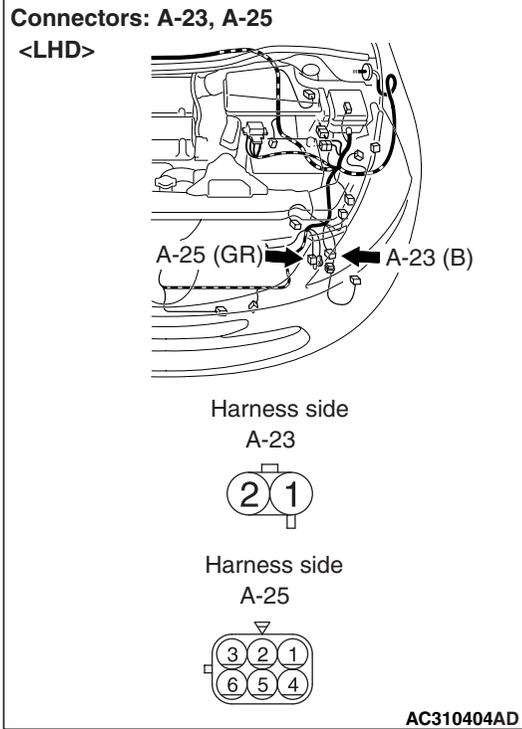


**Q: Is the check result normal?**

**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.**



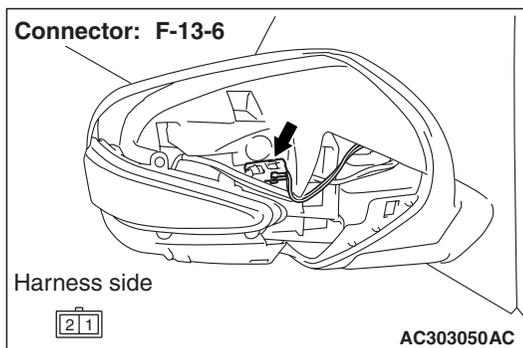
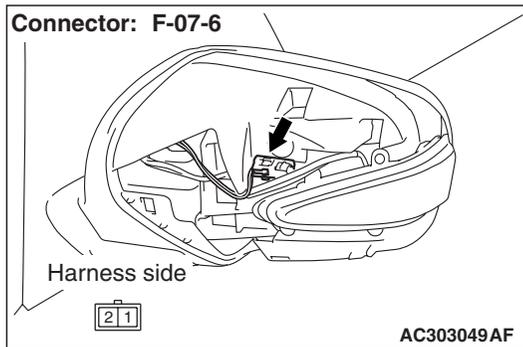
- Check the earth wires for open circuit.

**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.**

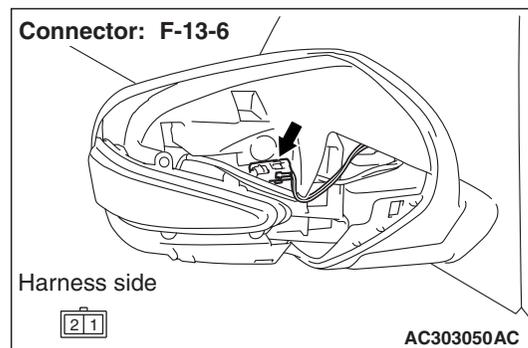
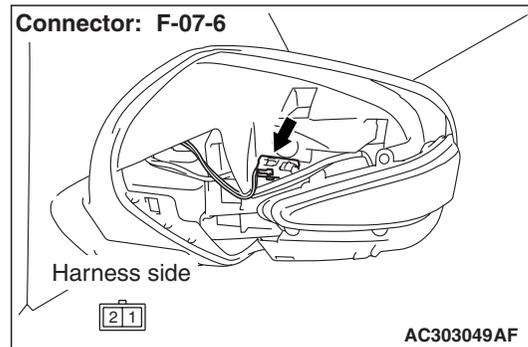


**Q: Is the check result normal?**

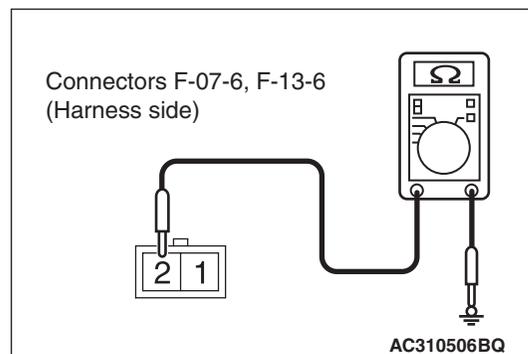
**YES :** Go to Step 8.

**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  $\Omega$  or less**

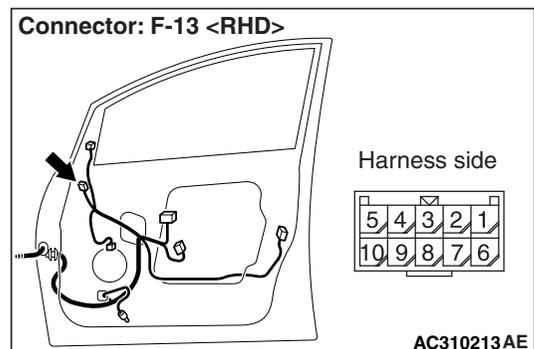
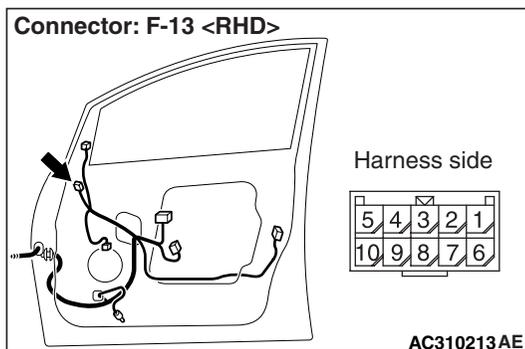
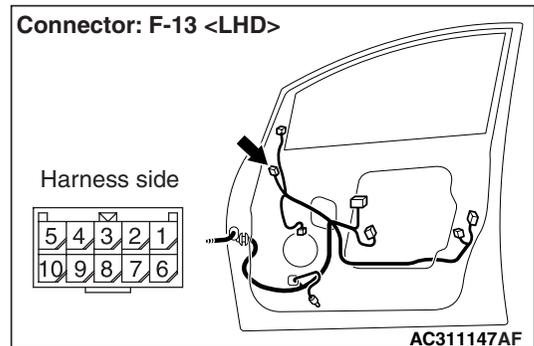
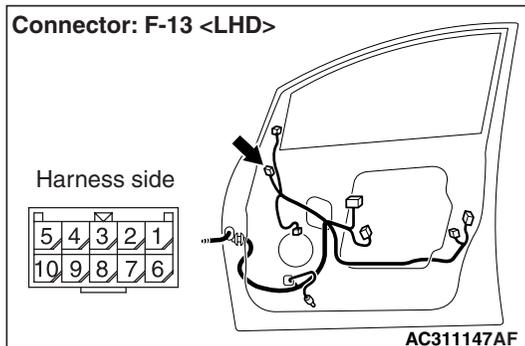
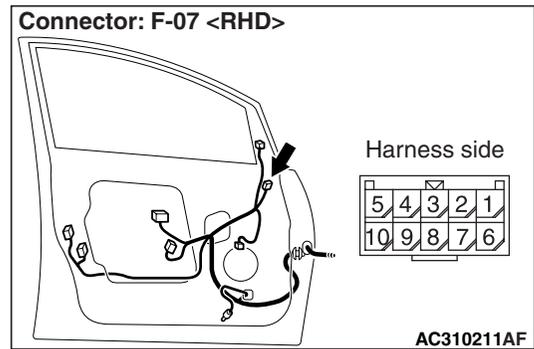
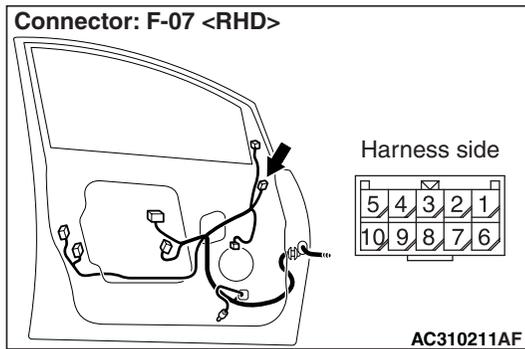
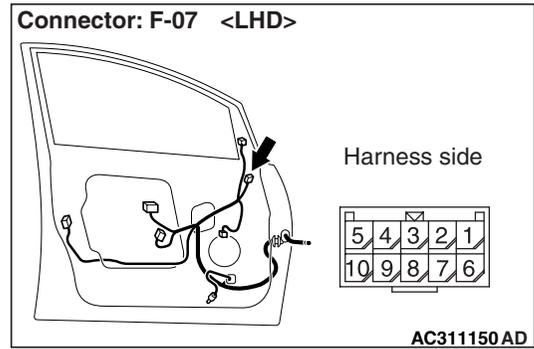
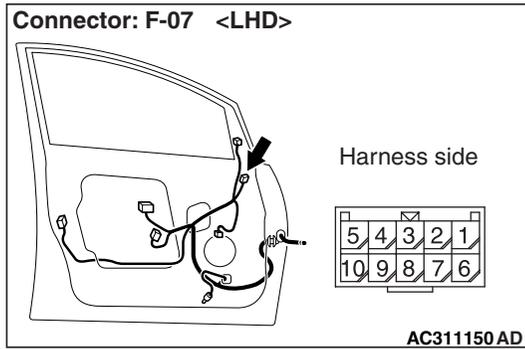
**Q: Is the check result normal?**

**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.**

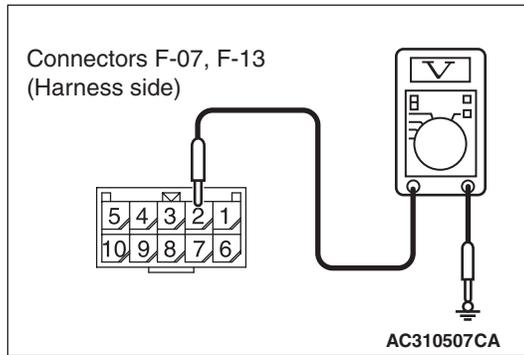
**Step 10. Resistance measurement at the F-13 door mirror assembly (RH) or F-07 door mirror assembly (LH) connector.**



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

(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

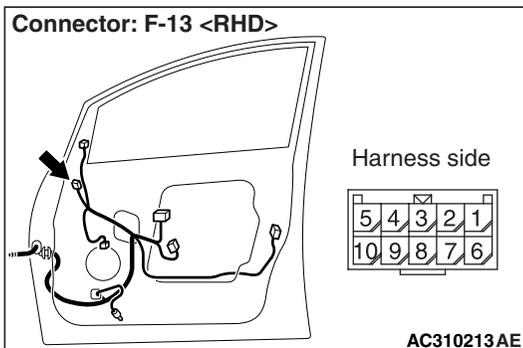
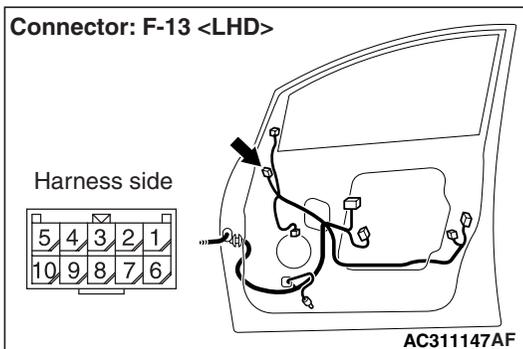
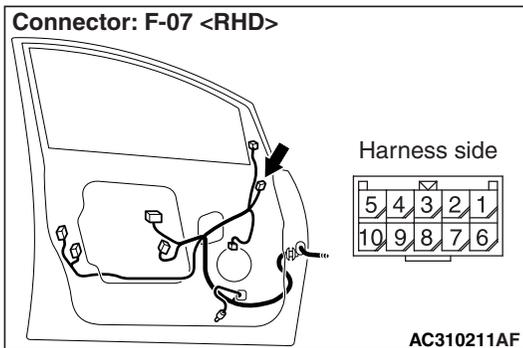
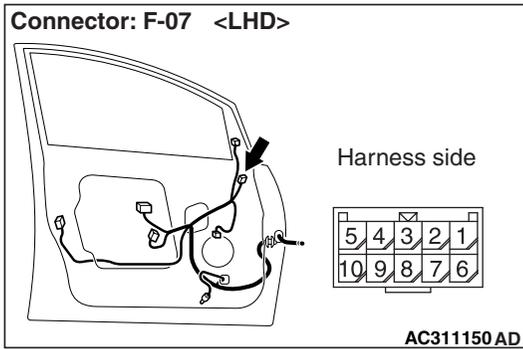
**OK: 2  $\Omega$  or less**

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

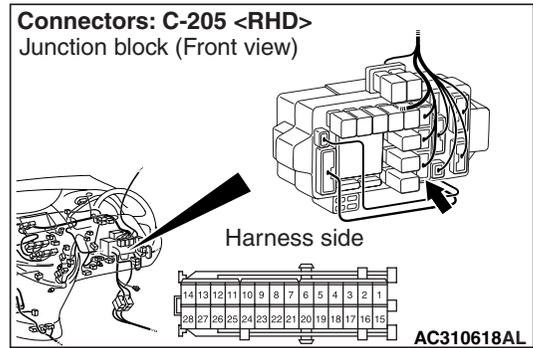
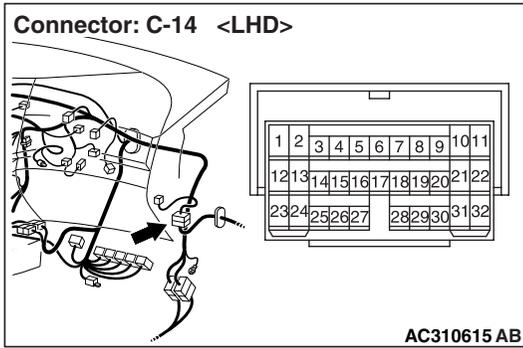
**YES :** Repair the wiring harness in the door mirror assembly.

**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:

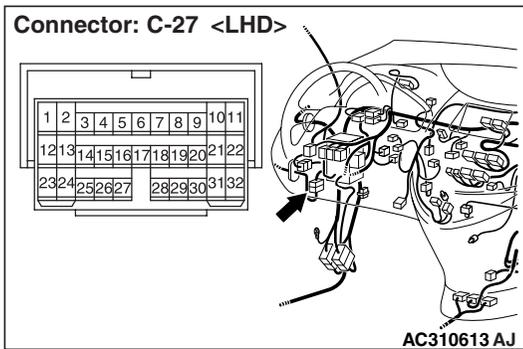
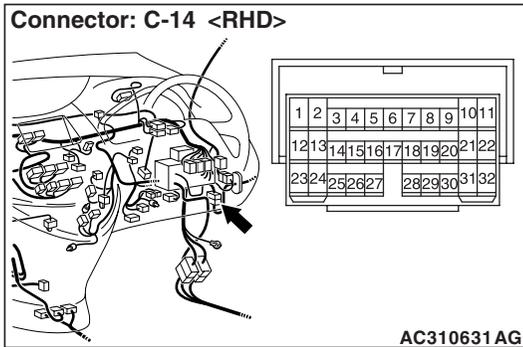


Prior to the wiring harness inspection, check intermediate connector C-14 <side turn-signal lamp (RH)>, C-27 <side turn-signal lamp (LH)> and junction block connector C-205, and repair if necessary.

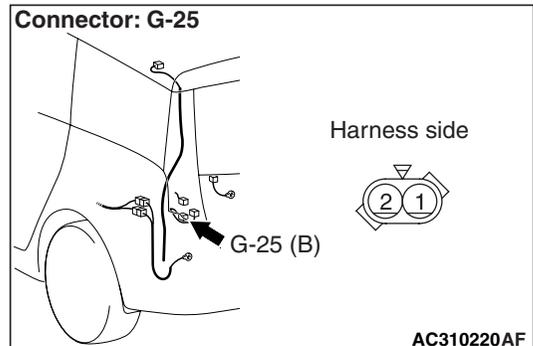
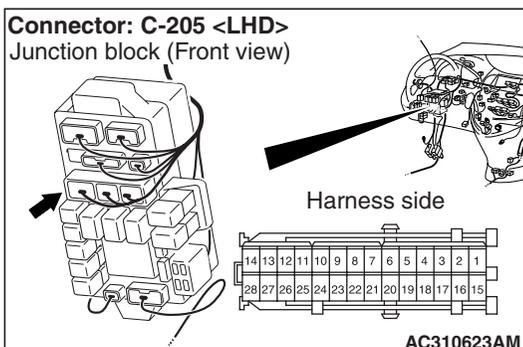
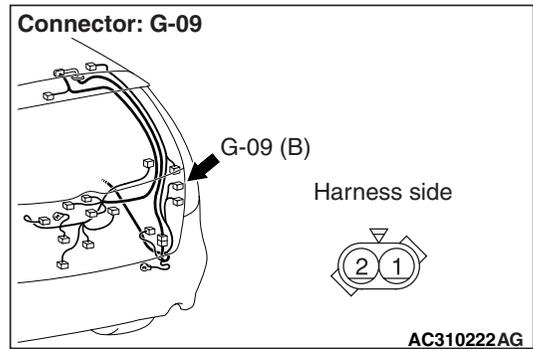
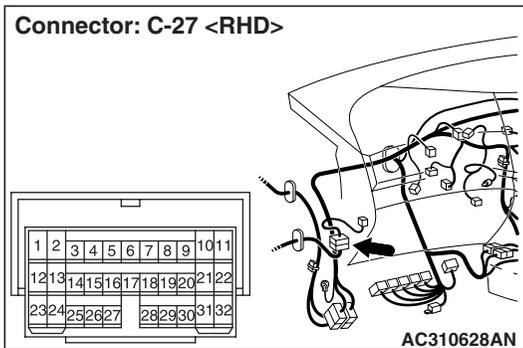
- Check the earth wires for open circuit.

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.**

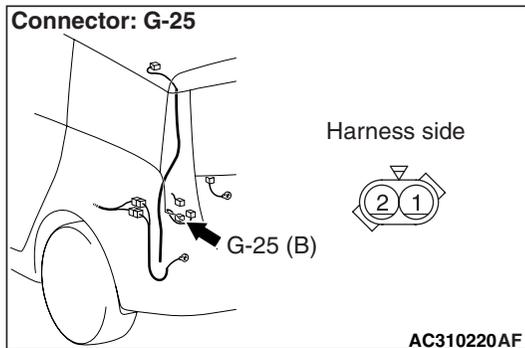
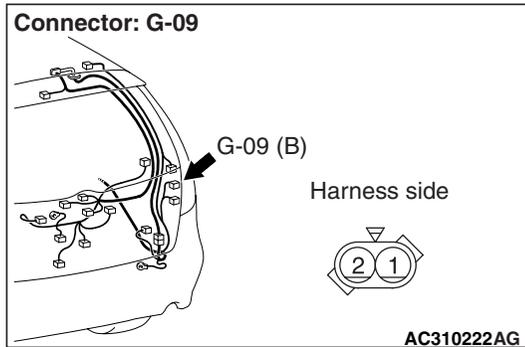
Check the bulb(s) of the defective lamp.

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

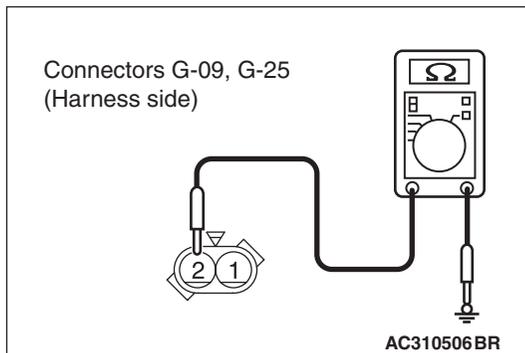
**YES :** Go to Step 14.

**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

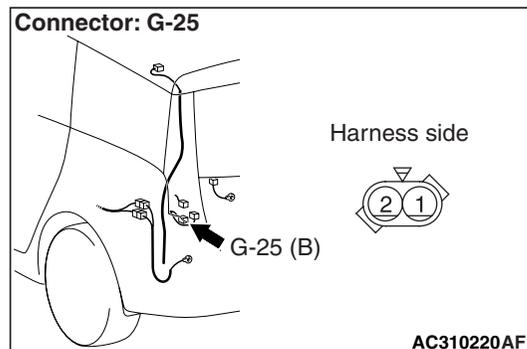
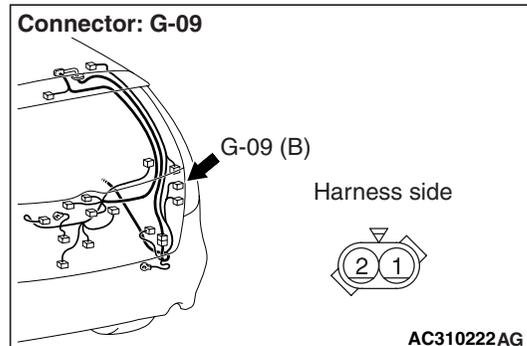
**OK: 2 Ω or less**

**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.

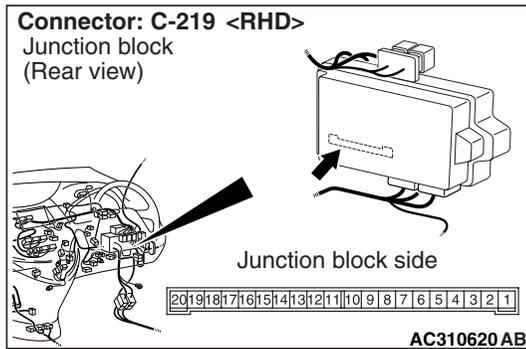
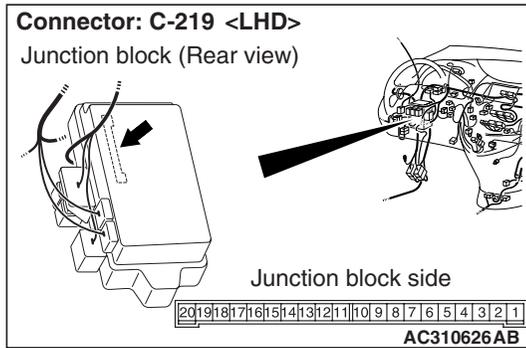
**Q: Is the check result normal?**

**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.

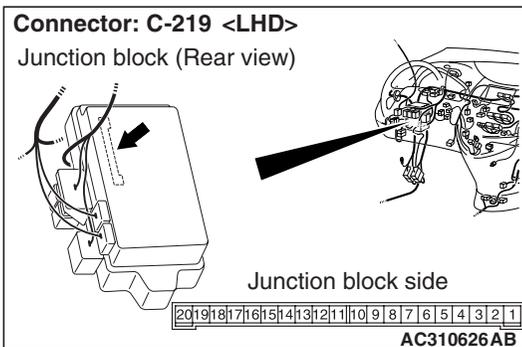
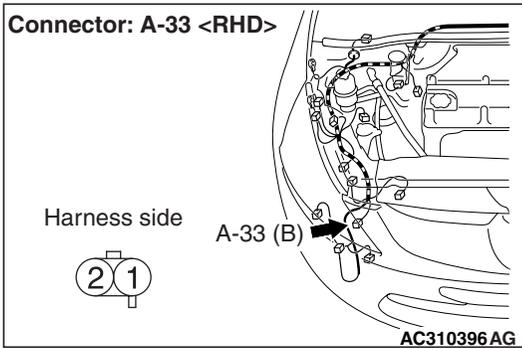
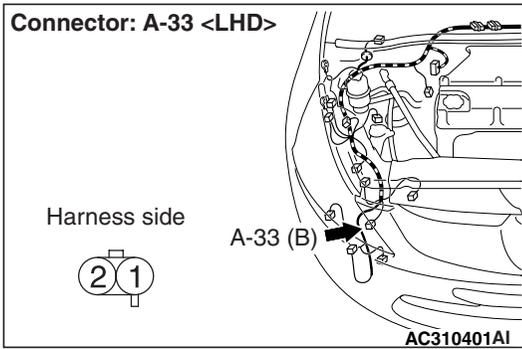
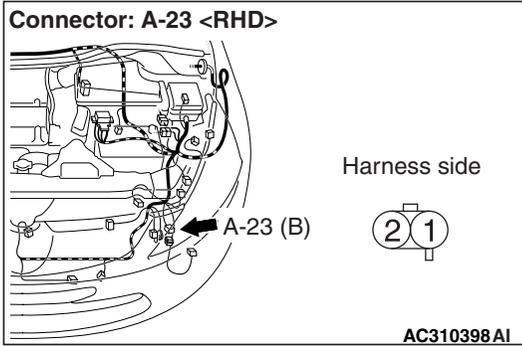
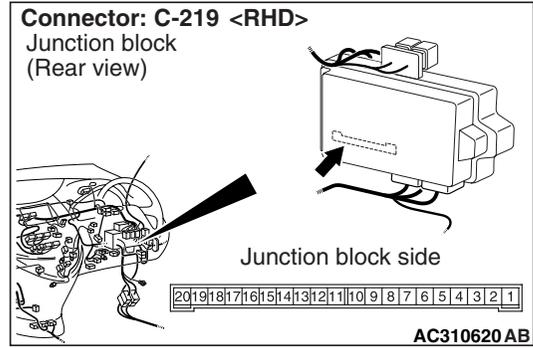
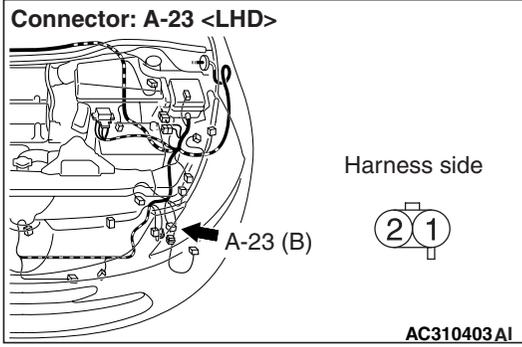
**Step 16. Connector check: C-219 ETACS-ECU connector**

**YES :** Go to Step 17.  
**NO :** Repair the defective connector.

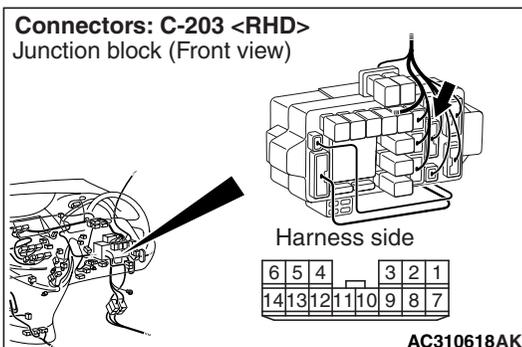
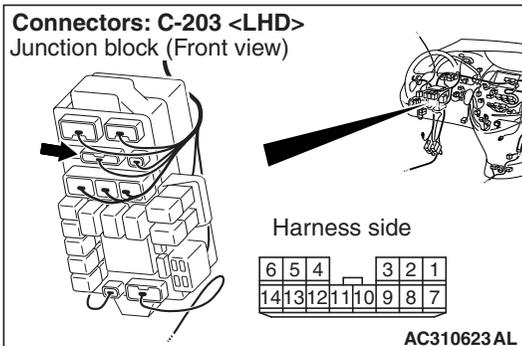
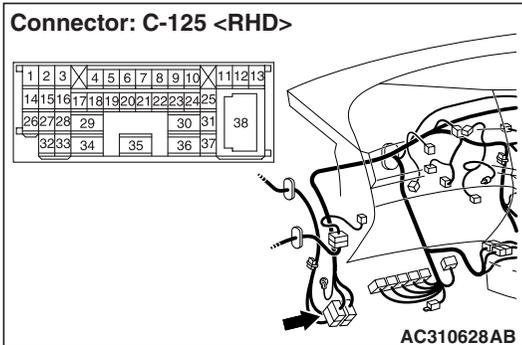
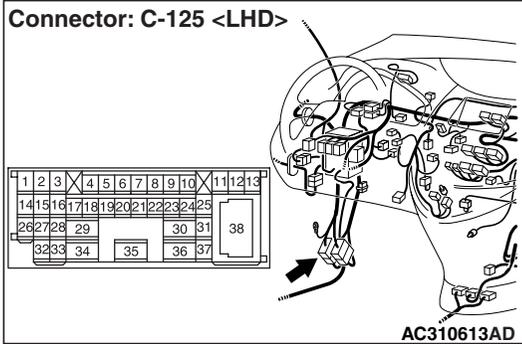


**Q: Is the check result normal?**

**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.**



NOTE:



YES : Go to Step 18.  
NO : Repair the wiring harness.

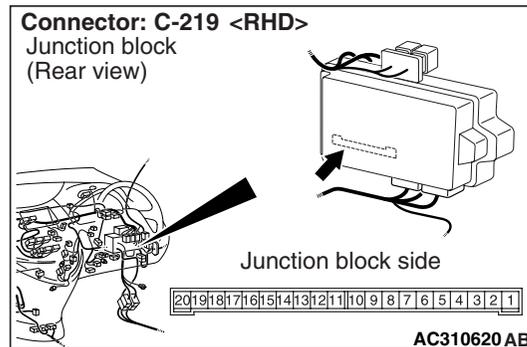
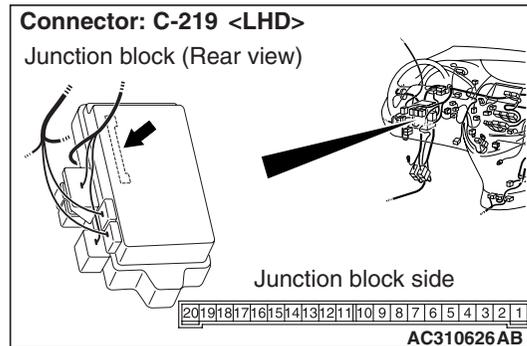
Step 18. Retest the system.

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.

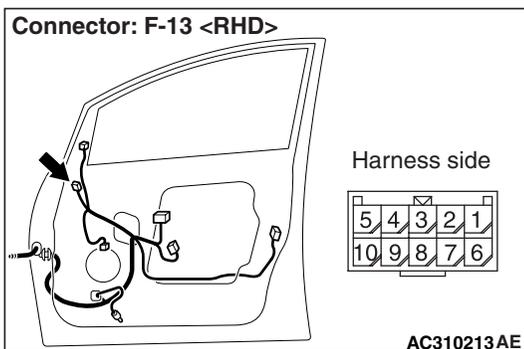
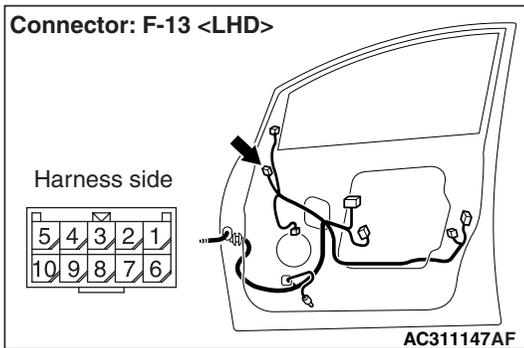
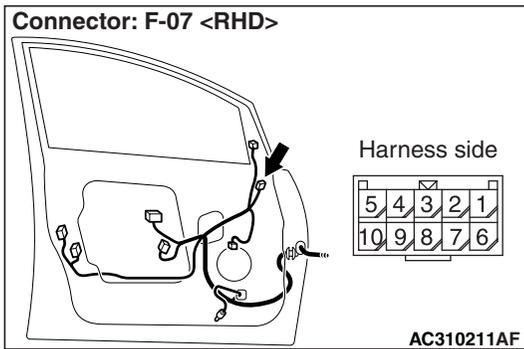
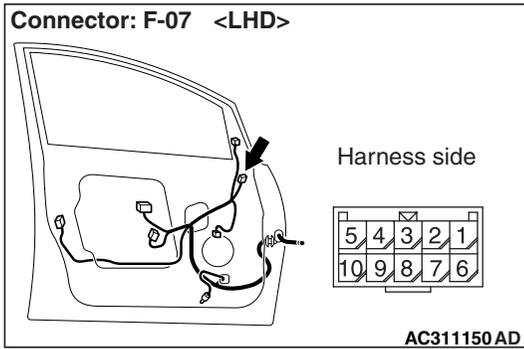
Prior to the wiring harness inspection, check intermediate connector C-125 and junction block connector C-203, and repair if necessary.

- Check the output lines for open circuit.

Q: Is the check result normal?

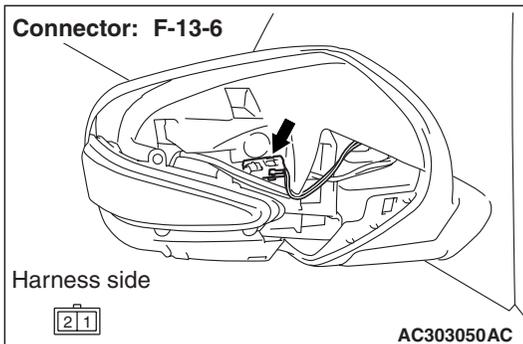
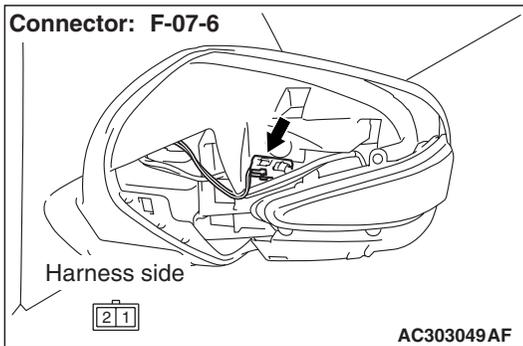
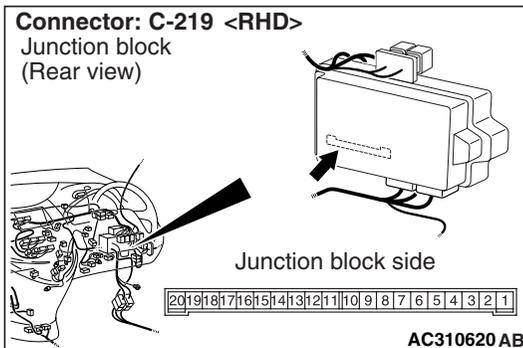
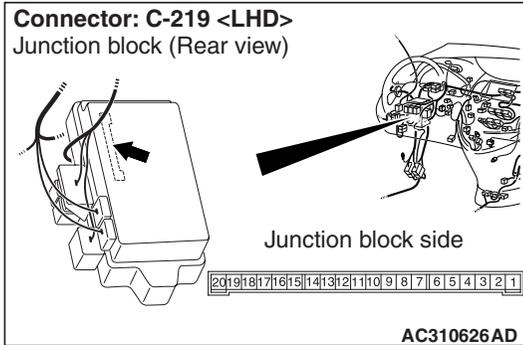
**Step 20. Connector check: F-13 door mirror assembly (RH) or F-07 door mirror assembly (LH) connector.**

**YES :** Go to Step 21.  
**NO :** Repair the defective connector.

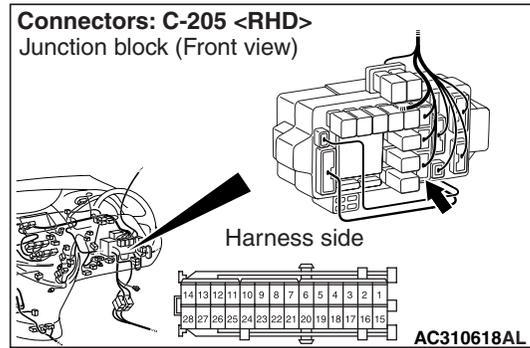
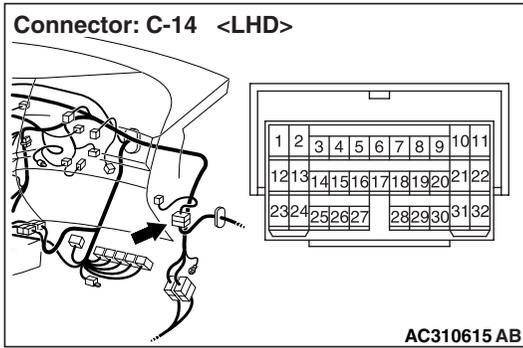


**Q: Is the check result normal?**

**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:**

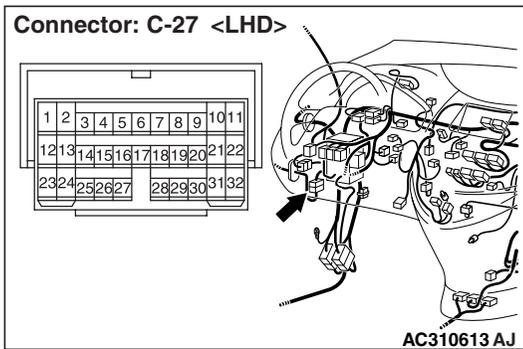
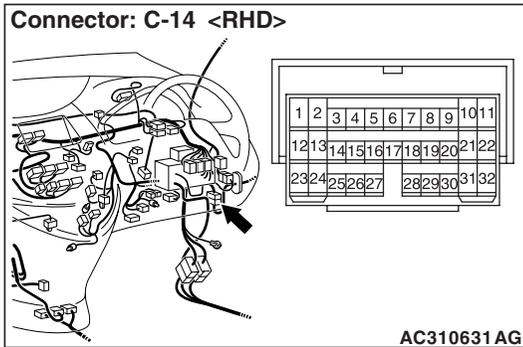


Prior to the wiring harness inspection, check intermediate connector C-14 <side turn-signal lamp (RH)>, C-27 <side turn-signal lamp (LH)> and junction block connector C-205, and repair if necessary.

- Check the output lines for open circuit.

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

- YES :** Go to Step 22.  
**NO :** Repair the wiring harness.

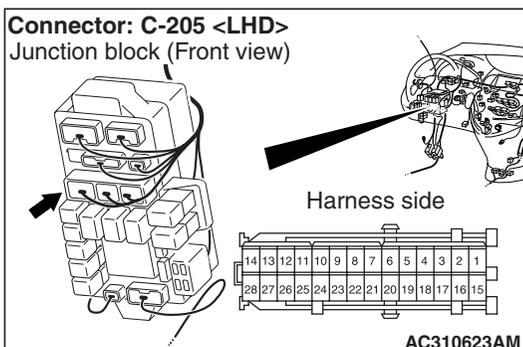
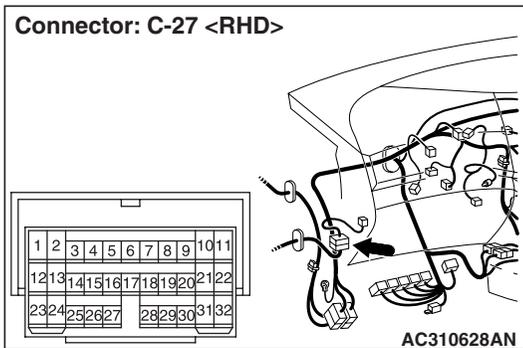


**Step 22. Retest the system.**

Check that the side turn-signal lamps illuminate normally.

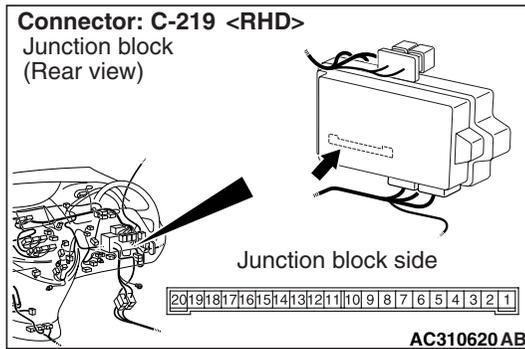
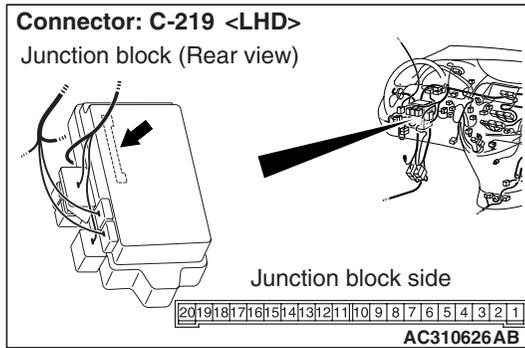
**Q: Is the check result normal?**

- 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.



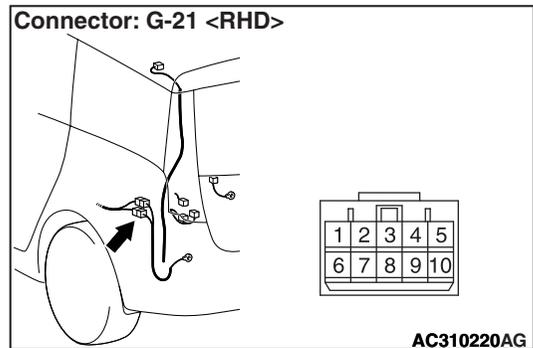
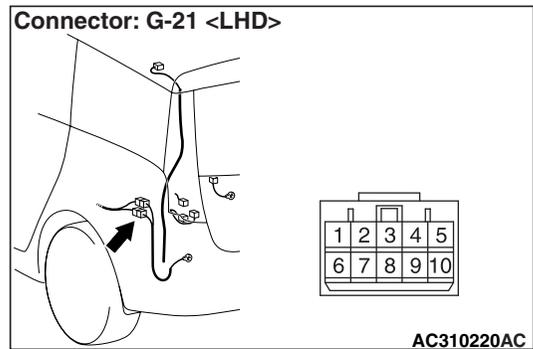
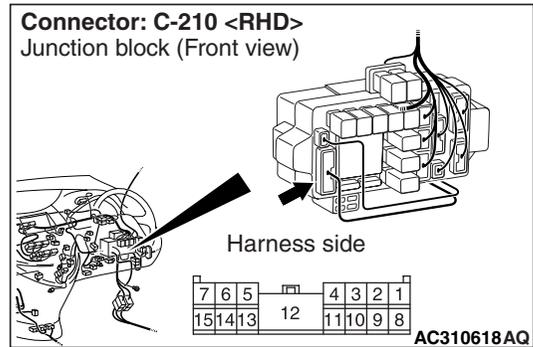
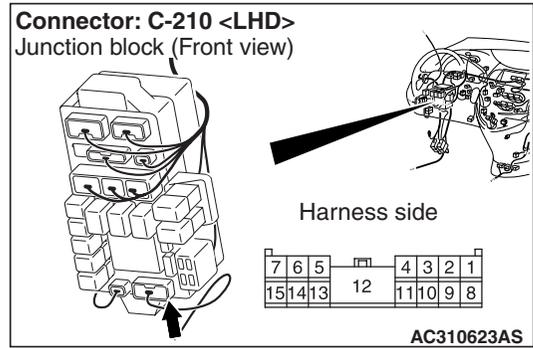
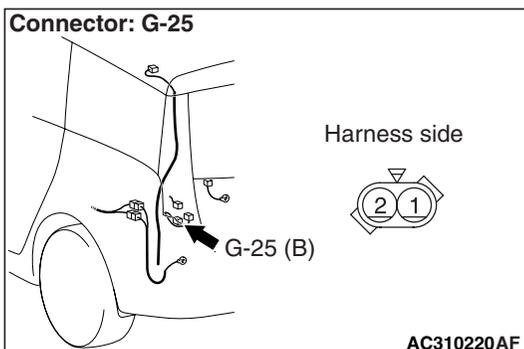
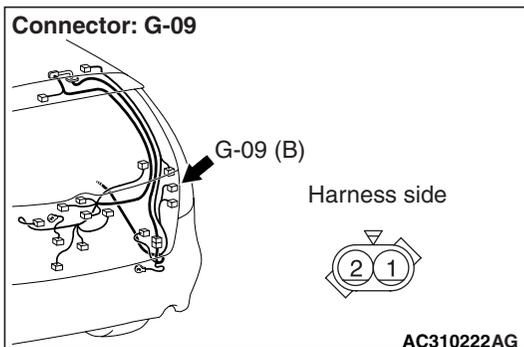
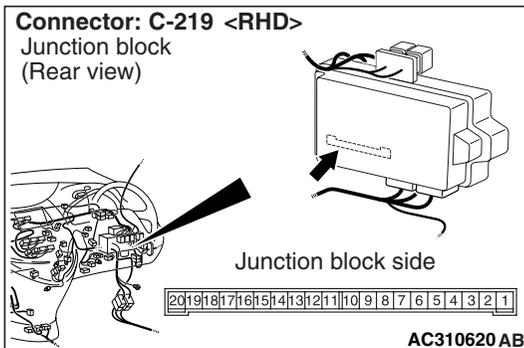
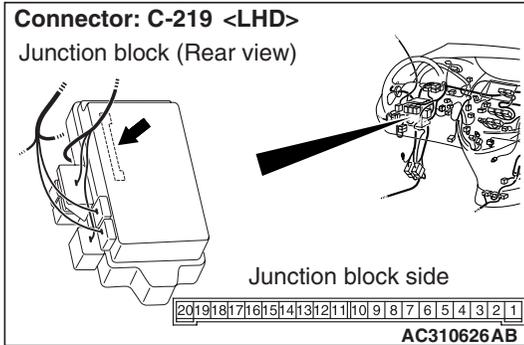
**Step 23. Connector check: C-219 ETACS-ECU connector**

YES : Go to Step 24.  
NO : Repair the defective connector.



Q: Is the check result normal?

**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.**



*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.

**NOTE:**

**Step 25. Retest the system.**

Check that the turn-signal lamps illuminate normally.

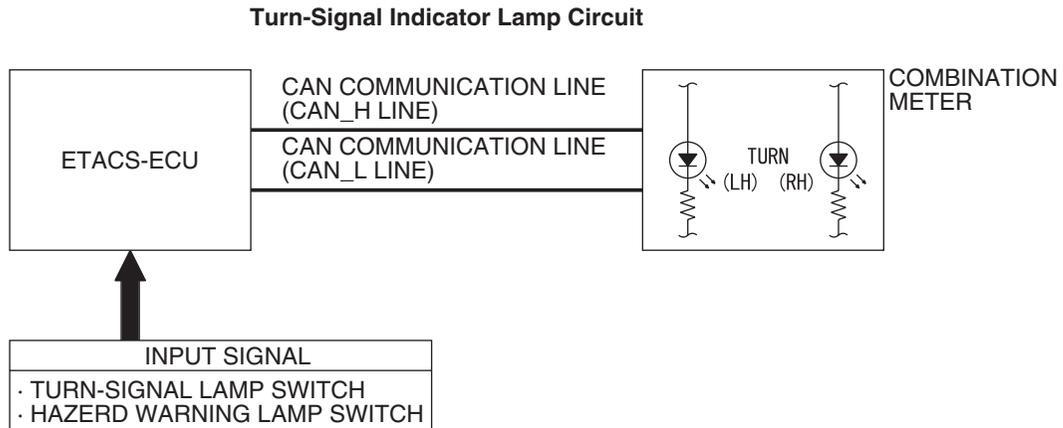
**Q: Is the check result normal?**

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



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 CAN bus line is defective.
- 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 check result normal?**

**YES :** Go to Step 2.

**NO :** First, repair the turn-signal lamp. Refer to Inspection Procedure N-2 "The hazard warning lamps do not illuminate [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. MUT-III diagnosis code**

When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

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

**YES :** Refer to diagnosis code chart [P.54B-29](#).

**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.

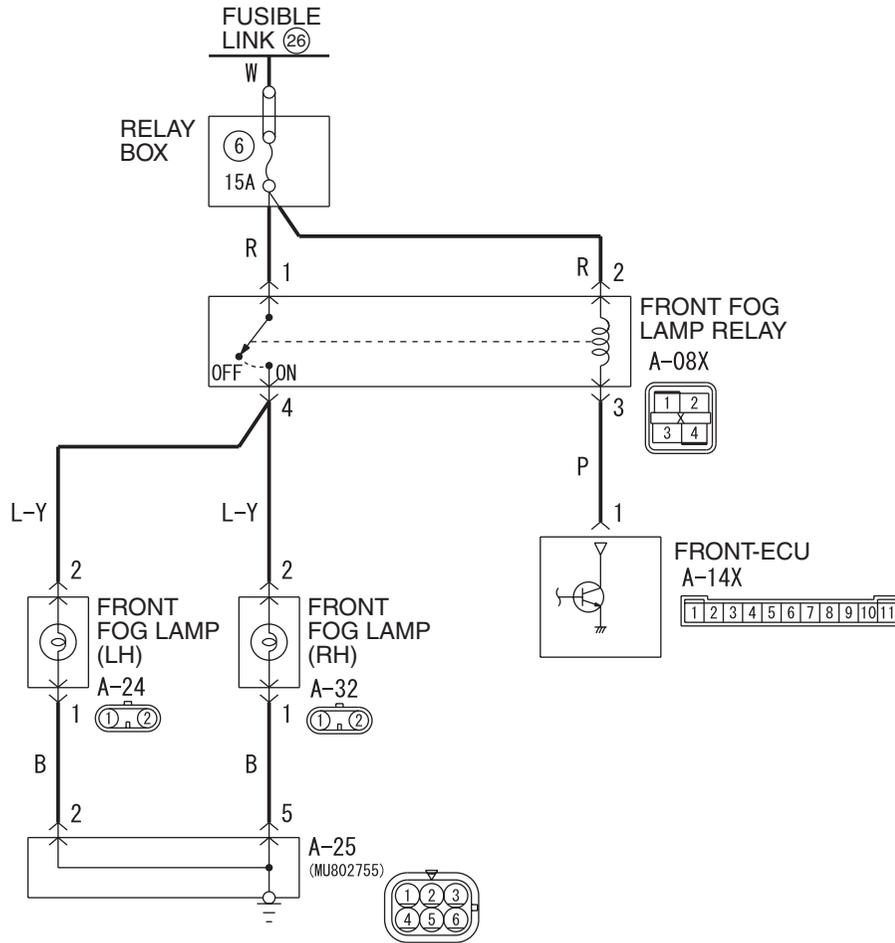
FOG LAMP

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 ETACS-ECU
- Damaged harness wires and connectors

**DIAGNOSTIC 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.54B-74).

**Step 2. Pulse check**

Check the input signals below, which are related to the front fog lamps.

| System switch         | Check condition   |
|-----------------------|---|
| Ignition switch (IG1) | When turned from ACC to ON                                  |
| Tail lamp switch      | When the lighting switch is turned to the TAIL position     |
| Headlamp switch       | When the lighting switch is turned to the HEADLAMP position |
| Front fog lamp switch | When the front fog lamp switch is turned from off to on     |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally.** : Go to Step 3.

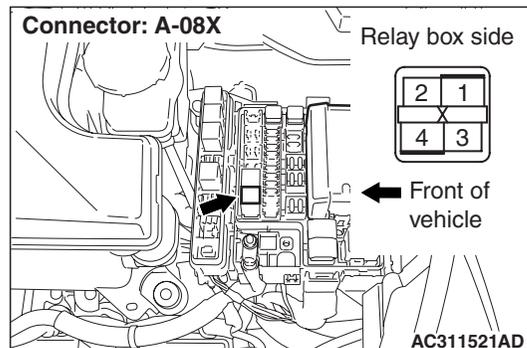
**The ignition switch (IG1) signal is not received.** : Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54B-420."

**The tail lamp switch signal is not received.** : Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp and headlamp washer switch) signal is not received P.54B-438."

**The headlamp switch signal is not received.** : Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp and headlamp washer switch) signal is not received P.54B-438."

**The front fog lamp switch signal is not received.** : Refer to inspection procedure Q-4 "The front fog lamp switch signal is not received P.54B-430."

**Step 3. Connector check: A-08X front fog lamp relay connector.**



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

**YES** : Go to Step 4.

**NO** : Repair the defective connector.

**Step 4. Check the front fog lamp relay.**

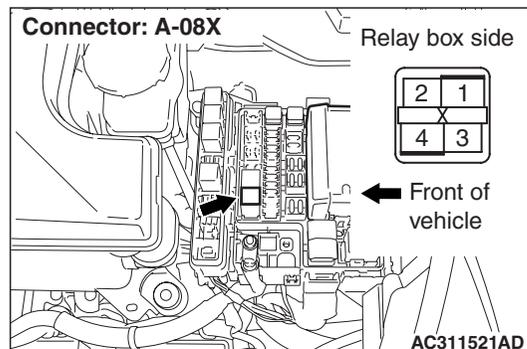
Refer to GROUP 54A – Front fog lamp P.54A-93.

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

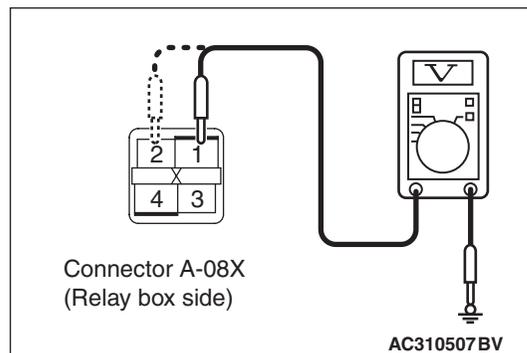
**YES** : Go to Step 5.

**NO** : Replace the front fog lamp relay.

**Step 5. 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

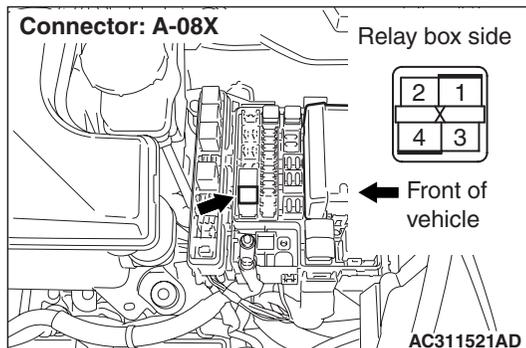
**OK: System voltage**

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

**YES :** Go to Step 7.

**NO :** Go to Step 6.

**Step 6. Check the wiring harness between A-08X front fog lamp relay connector (terminal Nos.1 and 2) and the fusible link (26).**



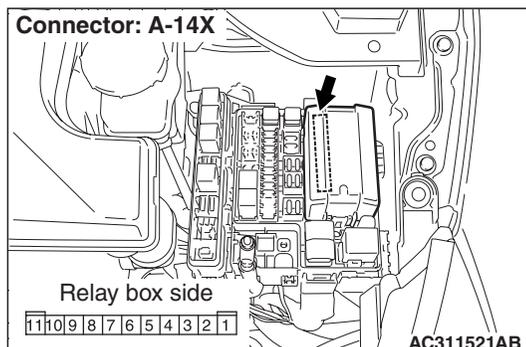
- Check the power supply line for open circuit.

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

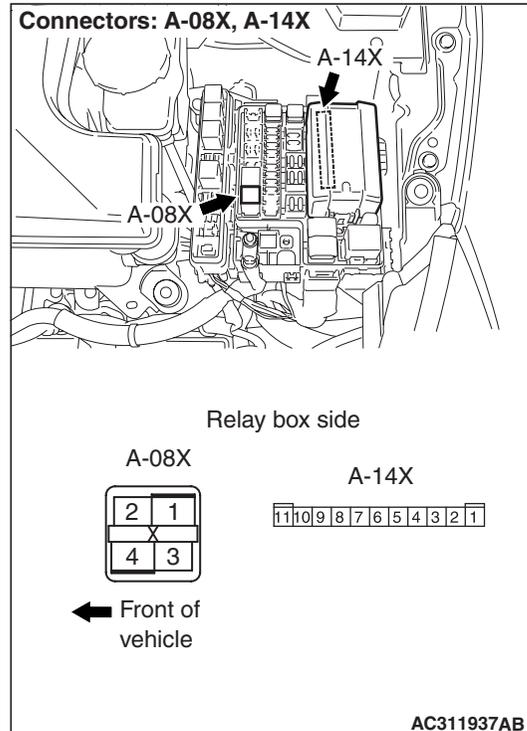


**Q: Is the check result normal?**

**YES :** Go to Step 8.

**NO :** Repair the defective connector.

**Step 8. Check the wiring harness between A-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 9.

**NO :** Repair the wiring harness.

**Step 9. 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).

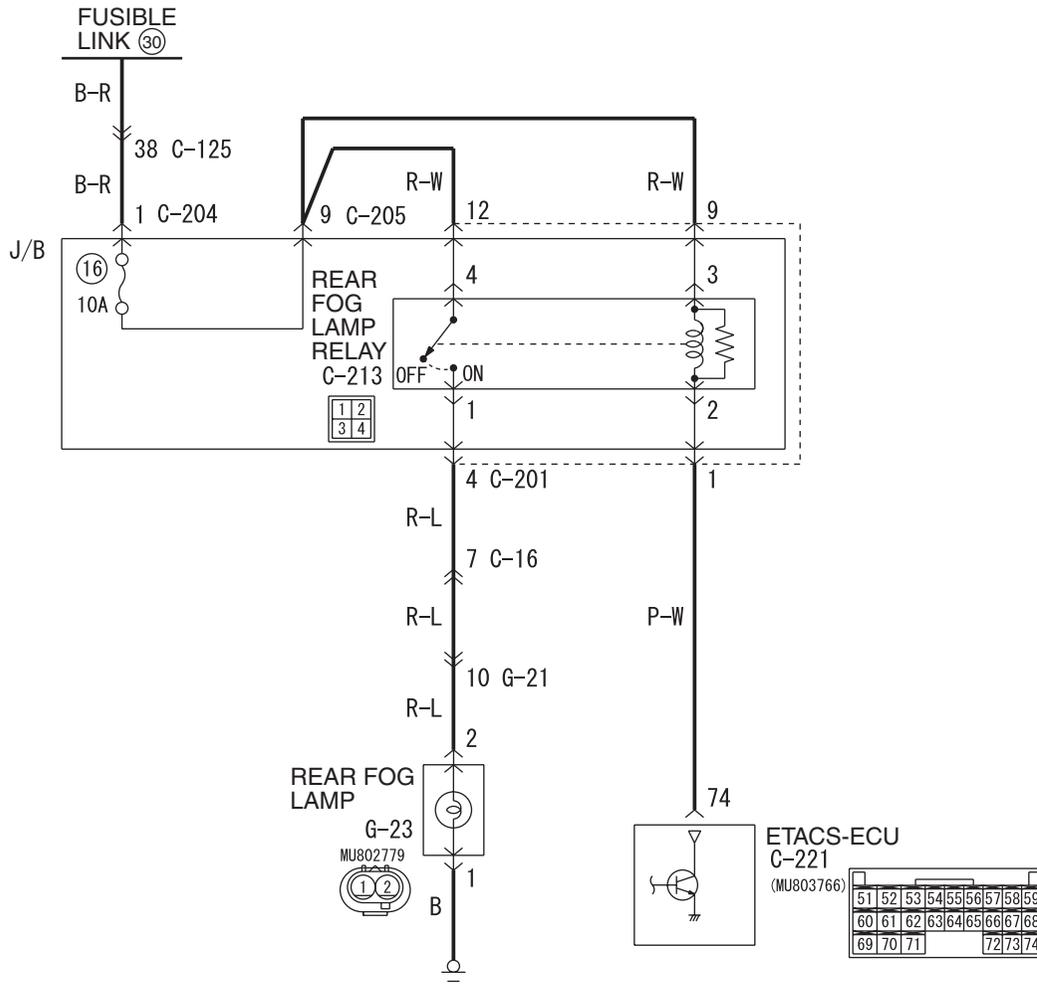
**NO :** Replace the ETACS-ECU.

Inspection Procedure O-2: The rear fog lamps do not illuminate normally.

**CAUTION**

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

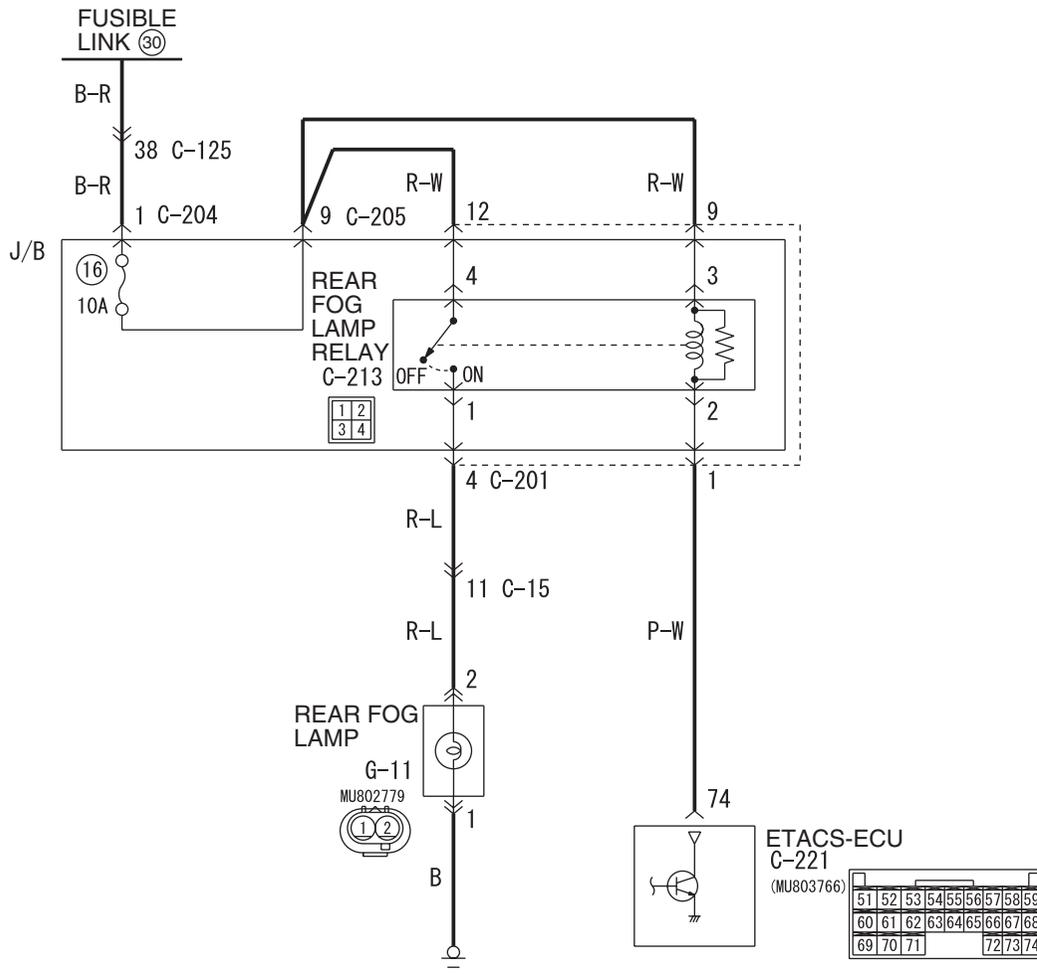
Rear Fog Lamp Circuit <LHD>



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

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

**DIAGNOSTIC 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.54B-74](#)).

**Step 2. Pulse check**

Check the input signals below, which are related to the rear fog lamps.

| System switch         | Check condition   |
|-----------------------|---|
| Ignition switch (IG1) | When turned from ACC to ON                                  |
| Tail lamp switch      | When the lighting switch is turned to the TAIL position     |
| Headlamp switch       | When the lighting switch is turned to the HEADLAMP position |
| Rear fog lamp switch  | When the rear fog lamp switch is turned from off to on      |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally. :** Go to Step 3.

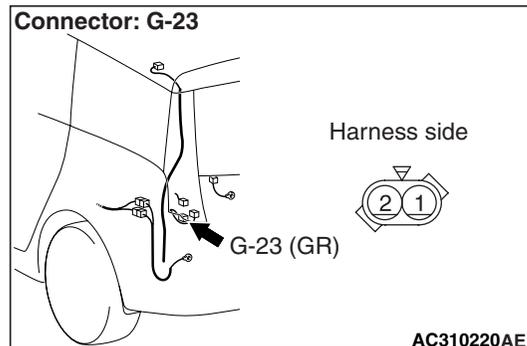
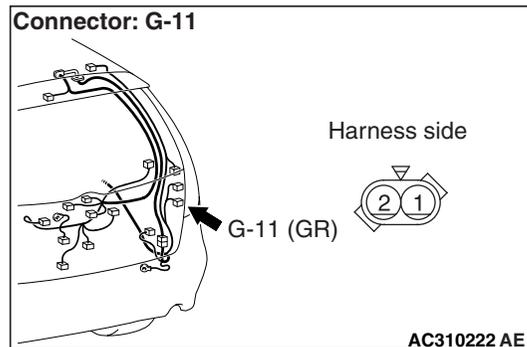
**The ignition switch (IG1) signal is not received. :**  
Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received P.54B-420."

**The tail lamp switch signal is not received. :** Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp and headlamp washer switch) signal is not received P.54B-438."

**The headlamp switch signal is not received. :**  
Refer to inspection procedure Q-6 "The column switch (lighting and turn-signal lamp and headlamp washer switch) signal is not received P.54B-438."

**The rear fog lamp switch signal is not received. :**  
Refer to inspection procedure Q-13 "The rear fog lamp switch signal is not received P.54B-465."

**Step 3. 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 4.

**NO :** Repair the defective connector.

**Step 4. Check the bulbs of the rear fog lamps.**

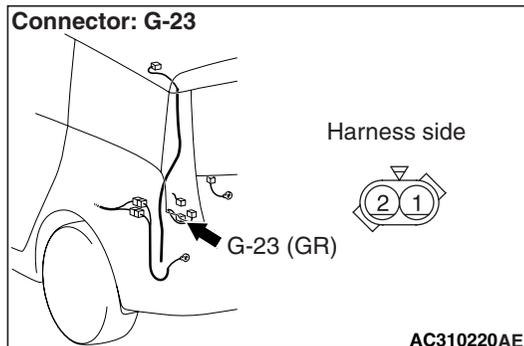
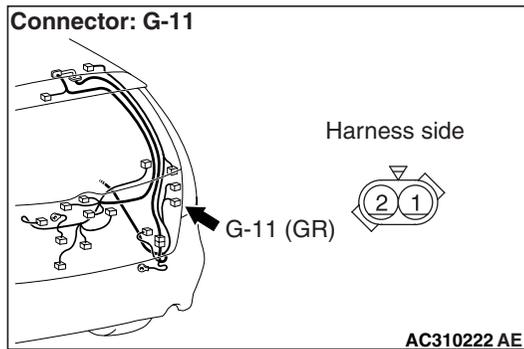
Check the bulb(s) of the defective lamp.

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

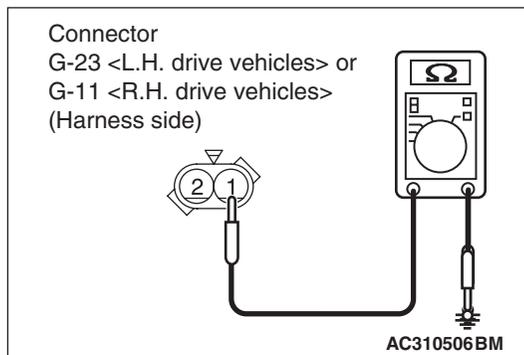
**YES :** Go to Step 5.

**NO :** Replace the bulb(s) of the defective lamp.

**Step 5. 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

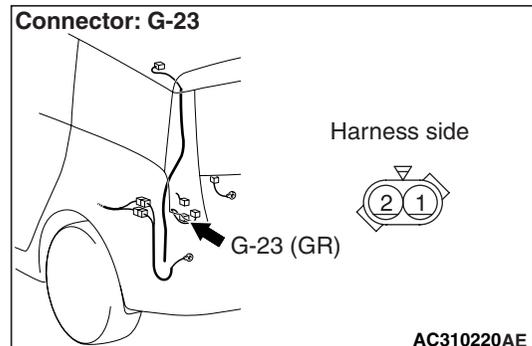
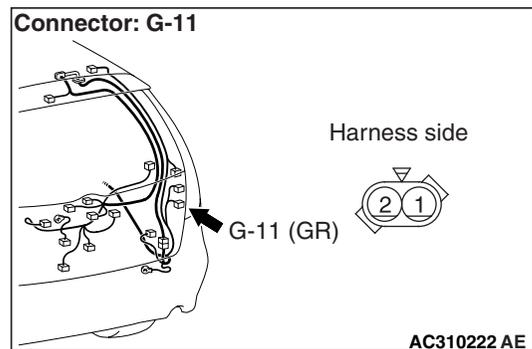
**OK: 2 Ω or less**

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

**YES :** Go to Step 7.

**NO :** Go to Step 6.

**Step 6. 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.**



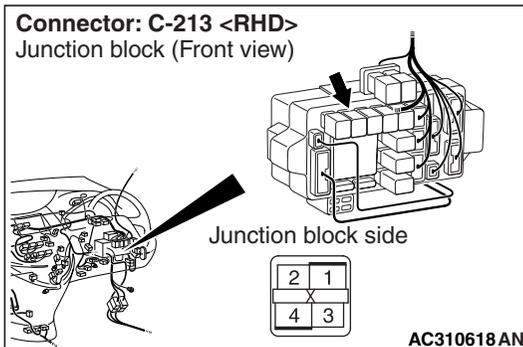
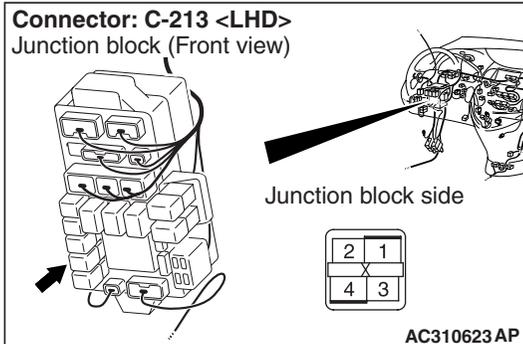
- Check the earth wires for open circuit.

**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 7. Connector check: C-213 rear fog lamp relay connector**



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

**YES :** Go to Step 8.

**NO :** Repair the defective connector.

**Step 8. Check the rear fog lamp relay.**

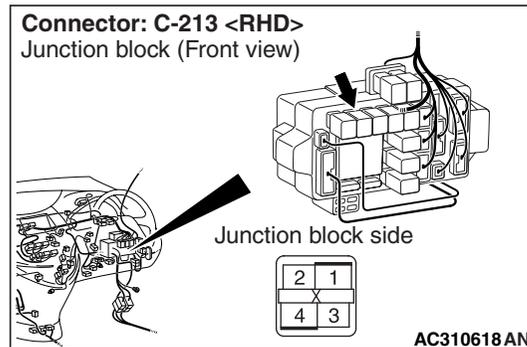
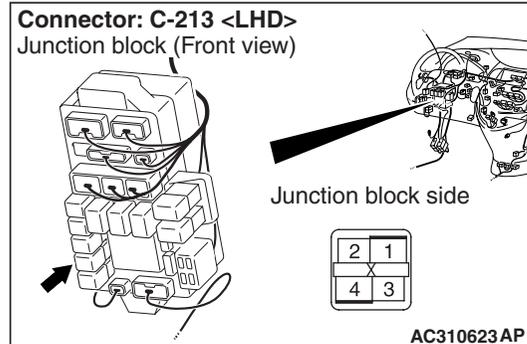
Refer to GROUP 54A – Rear fog lamp [P.54A-94](#).

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

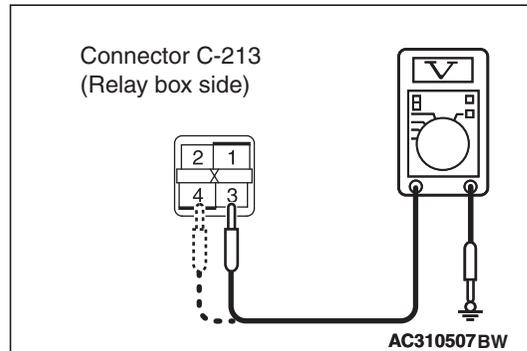
**YES :** Go to Step 9.

**NO :** Replace the rear fog lamp relay.

**Step 9. 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

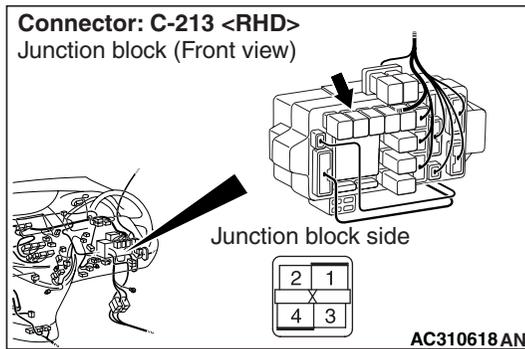
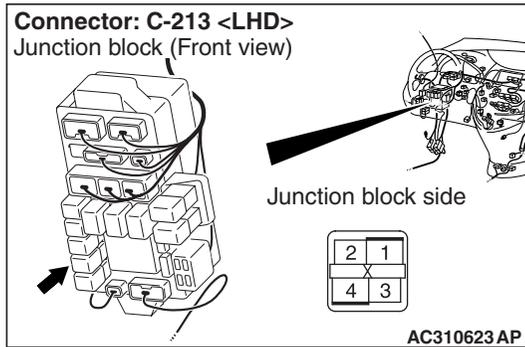
**OK: System voltage**

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

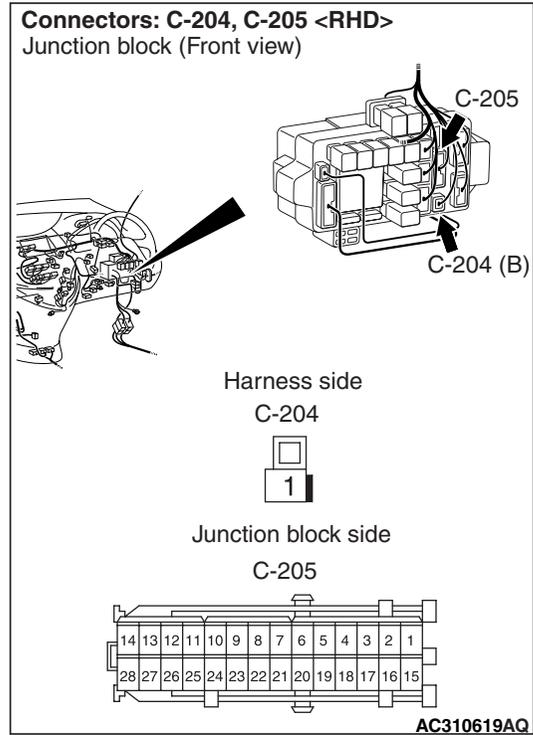
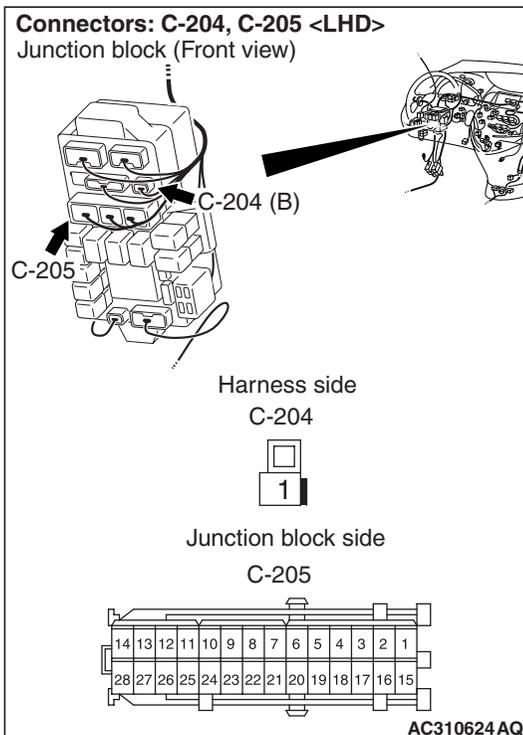
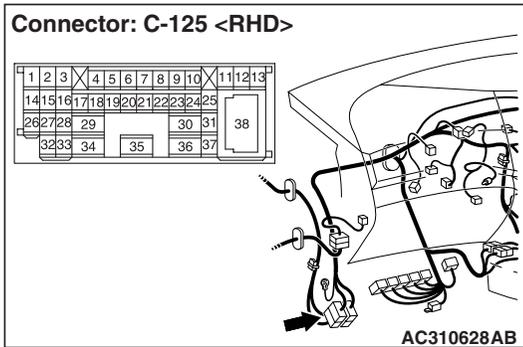
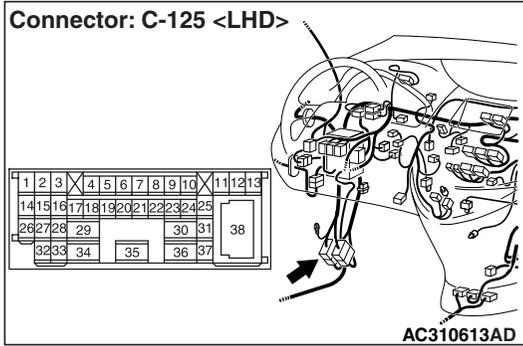
**YES :** Go to Step 11.

**NO :** Go to Step 10.

**Step 10. 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.

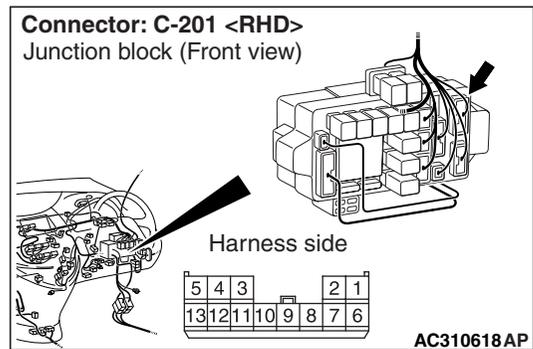
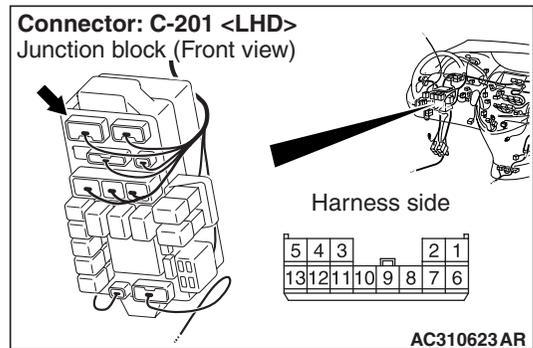
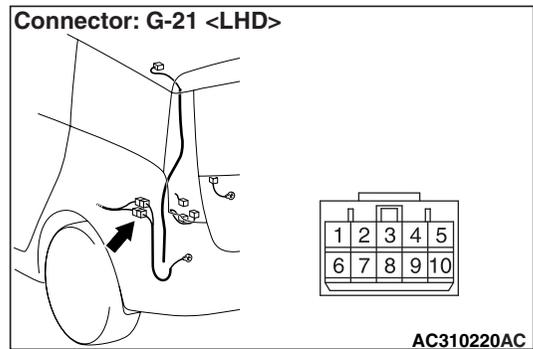
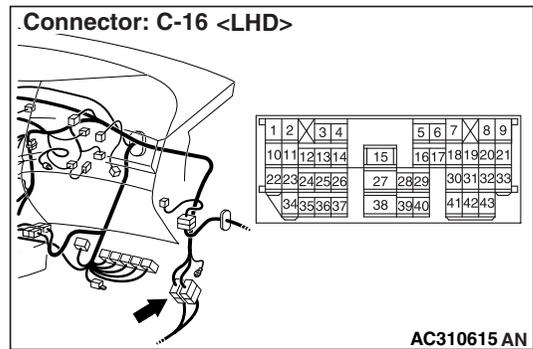
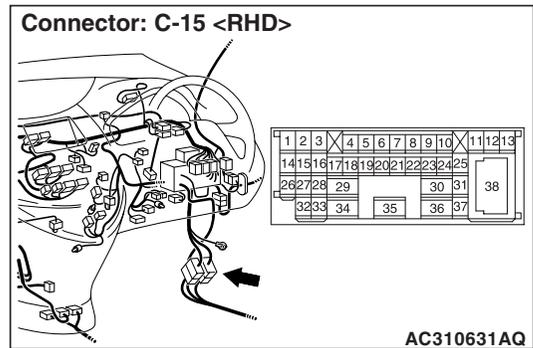
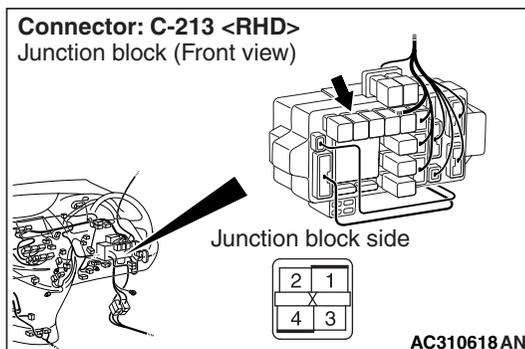
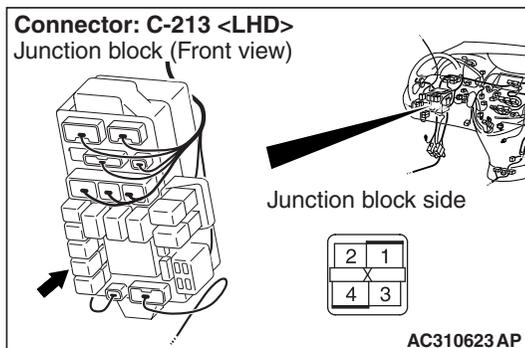
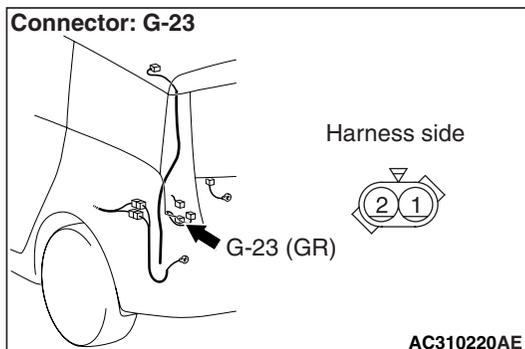
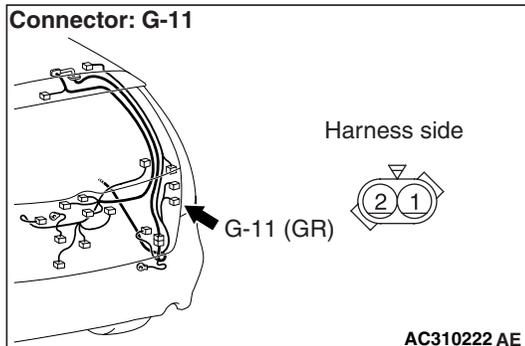
- Check the power supply line for open circuit.

**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 11. 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.



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.

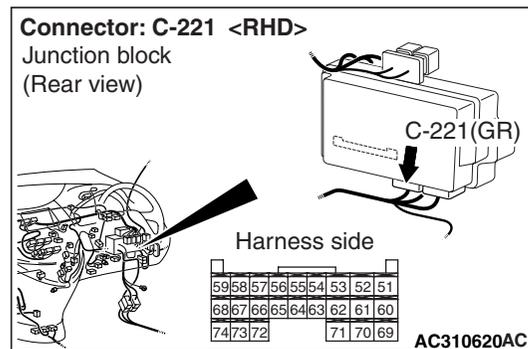
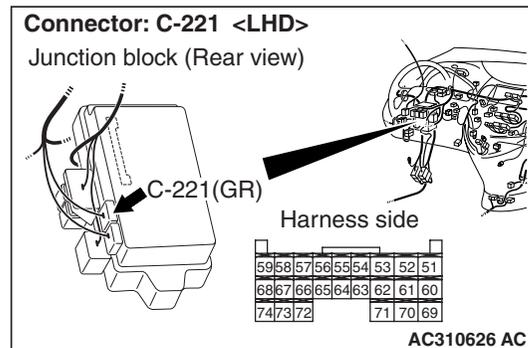
- Check the output lines for open circuit.

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

**YES :** Go to Step 12.

**NO :** Repair the wiring harness.

**Step 12. Connector check: C-221 ETACS-ECU connector**



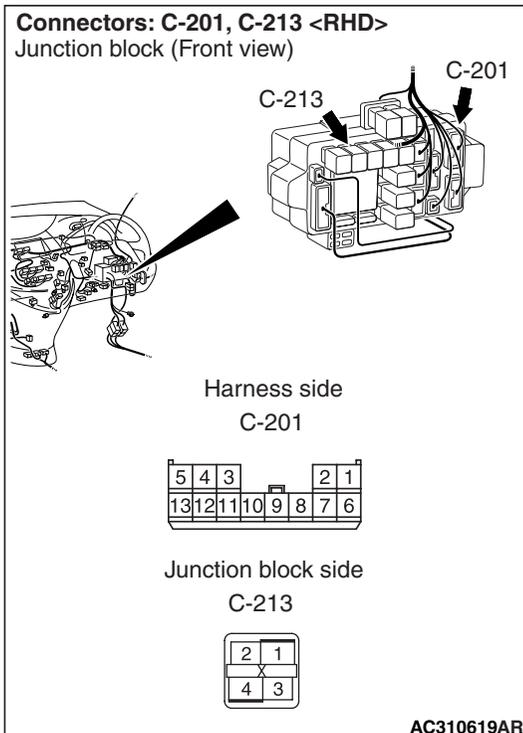
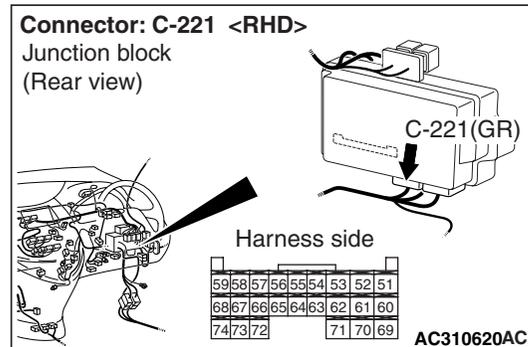
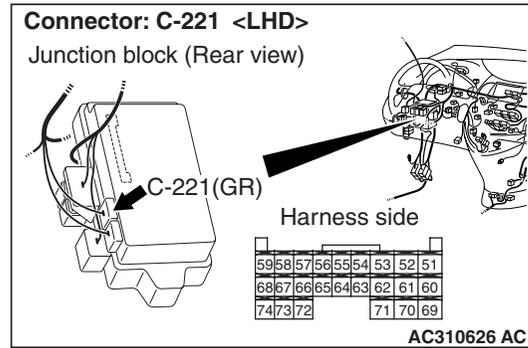
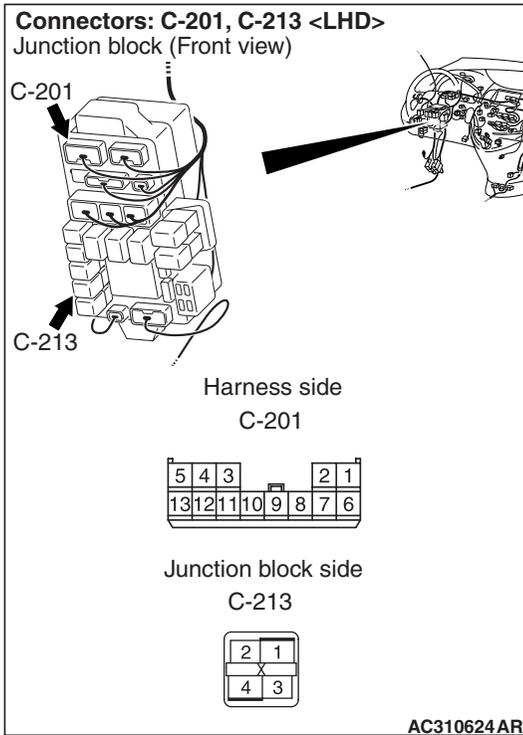
**Q: Is the check result normal?**

**YES :** Go to Step 13.

**NO :** Repair the defective connector.

---

**Step 13. Check the wiring harness 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 14.  
**NO :** Repair the wiring harness.

**Step 14. Retest the system.**

Check that the rear fog lamps illuminate normally.

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

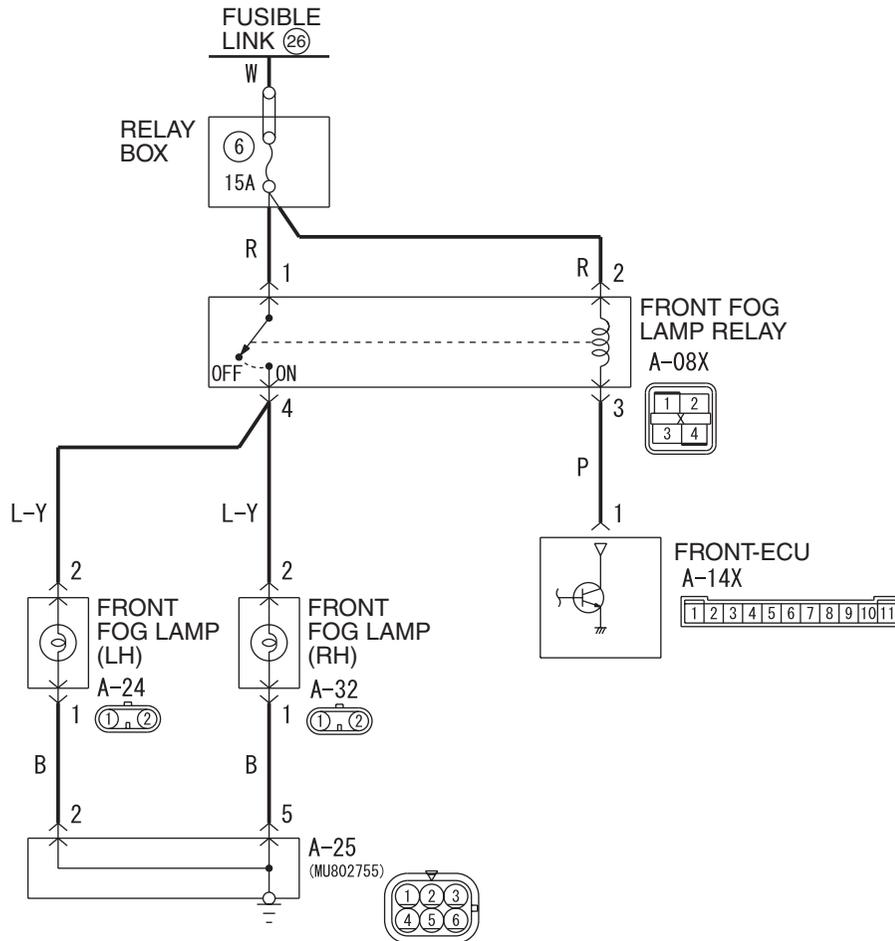
- YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO :** Replace the ETACS-ECU.

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

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**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

**DIAGNOSTIC PROCEDURE**

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

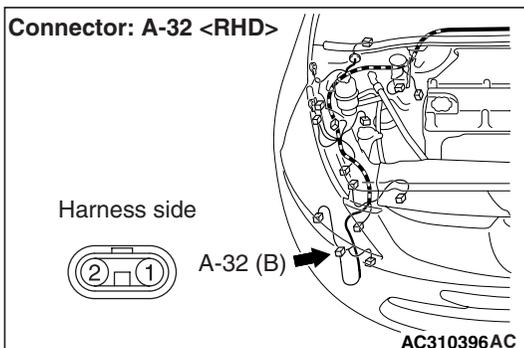
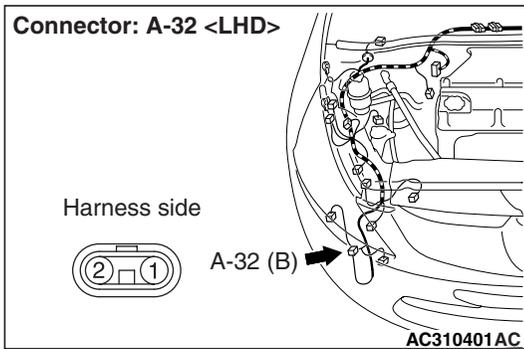
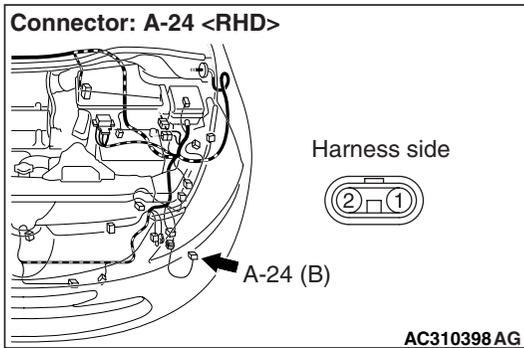
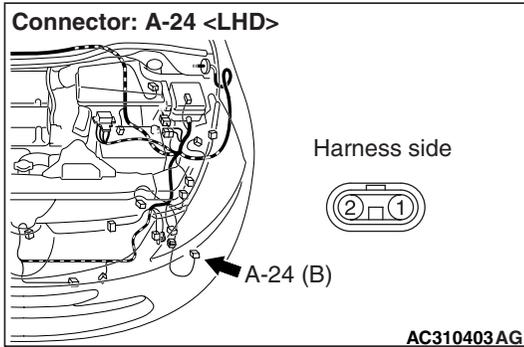
**Step 1. Connector check: A-32 front fog lamp (RH) connector or A-24 front fog lamp (LH) connector**

**Step 2. Check the bulbs of the front fog lamps lamp.**

Check the bulb(s) of the defective lamp.

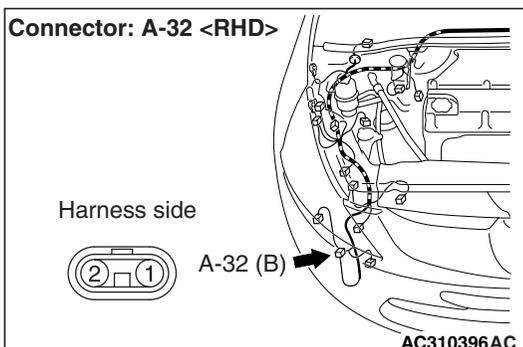
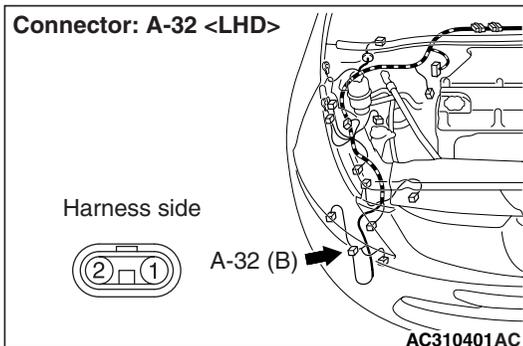
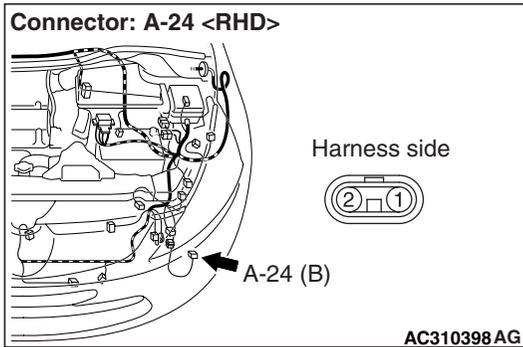
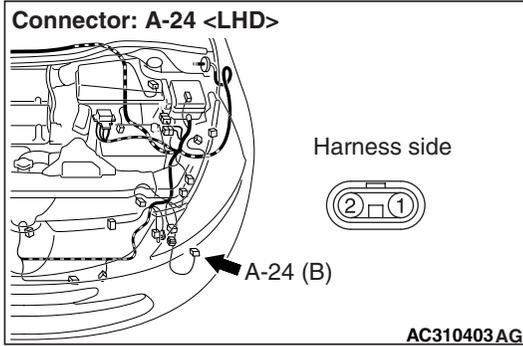
**Q: Is the check result normal?**

**YES :** Go to Step 3.  
**NO :** Replace the bulb(s) of the defective lamp.



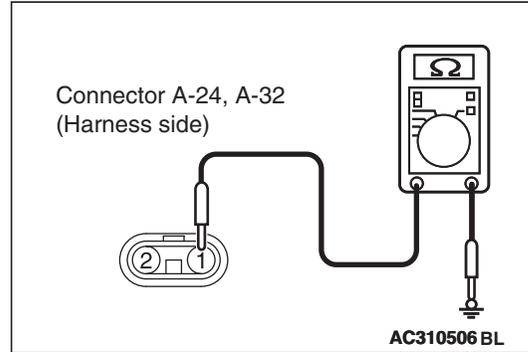
**Q: Is the check result normal?**

**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

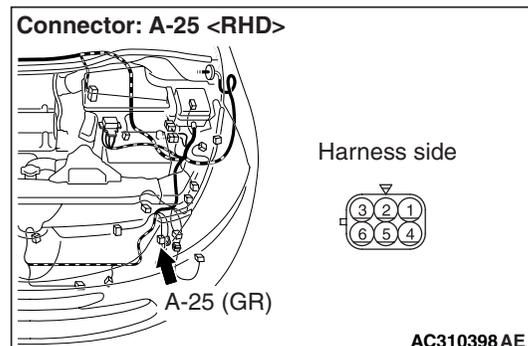
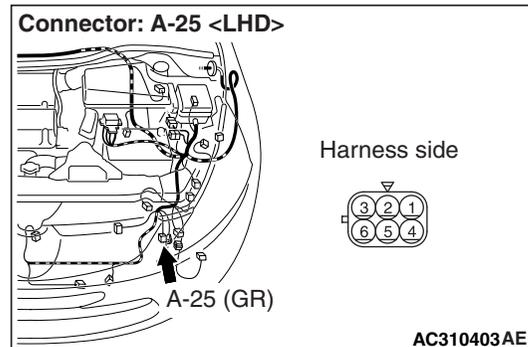
**OK: 2 Ω or less**

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

**YES :** Go to Step 6.

**NO :** Go to Step 4.

**Step 4. Connector check: A-25 earth connector**

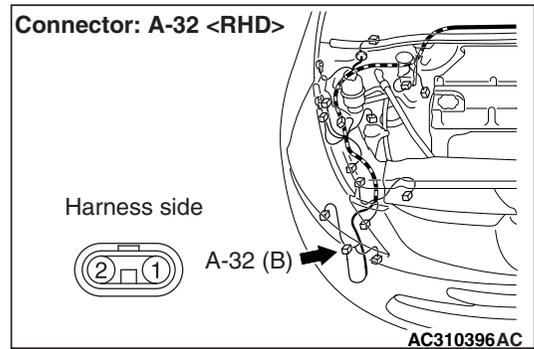
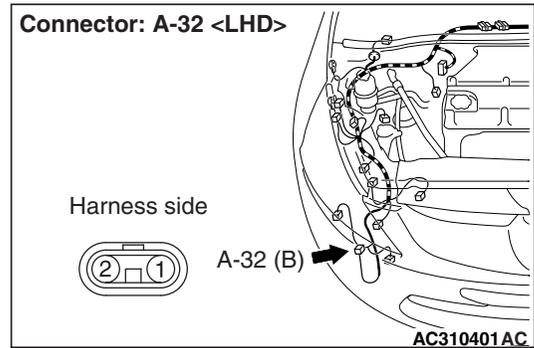
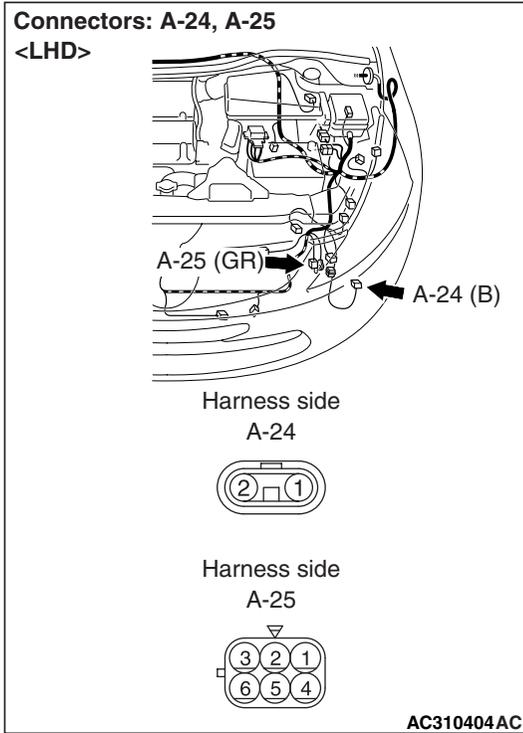


**Q: Is the check result normal?**

**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.**

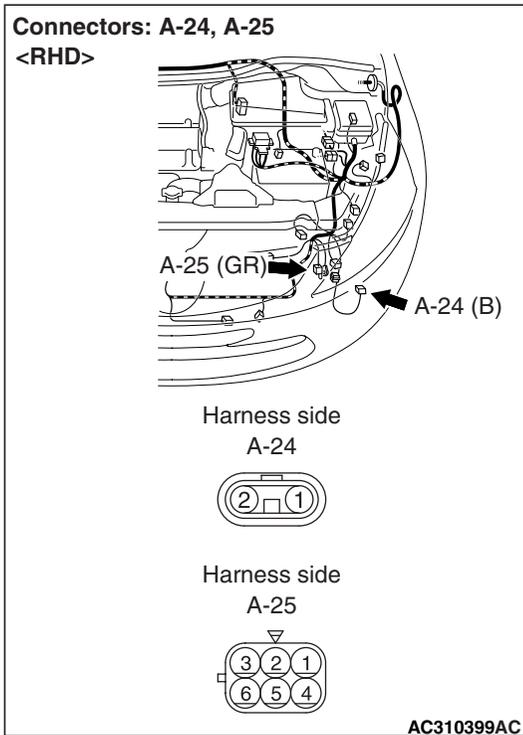


- Check the earth wires for open circuit.

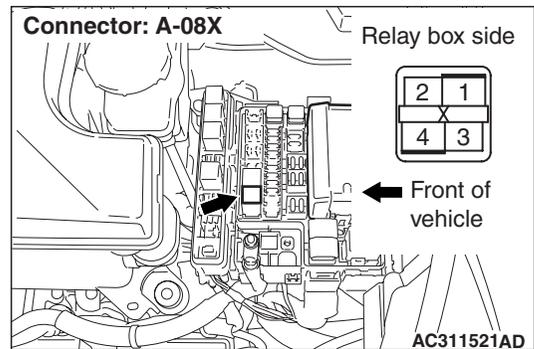
**Q: Is the check result normal?**

**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**

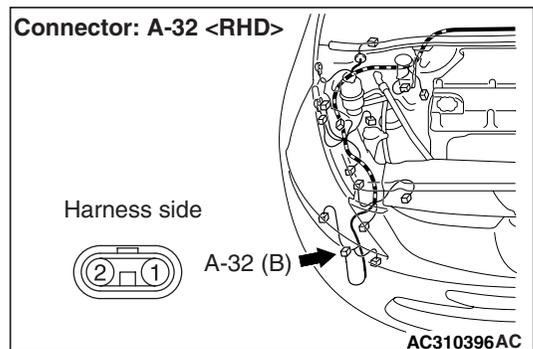
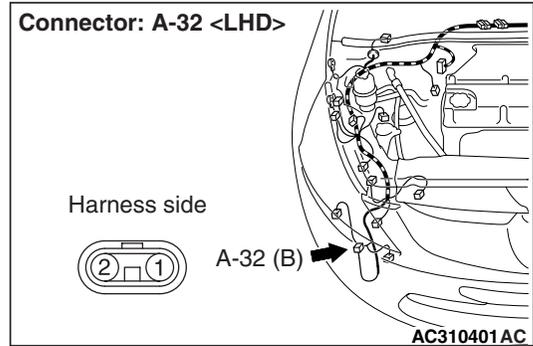
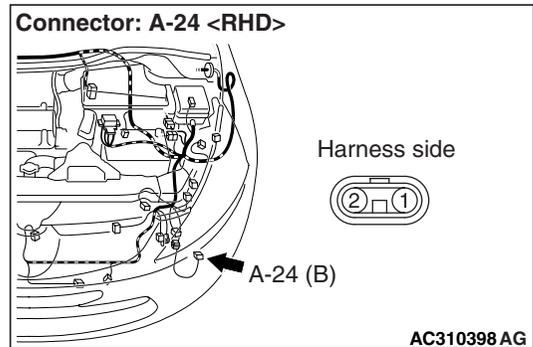
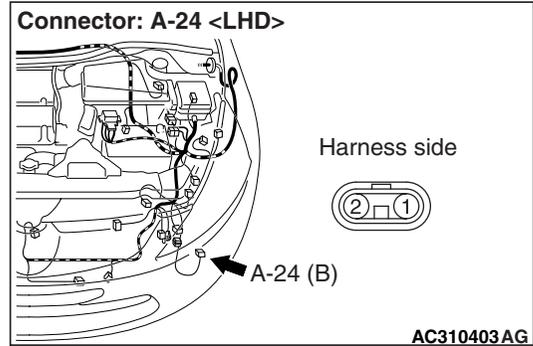
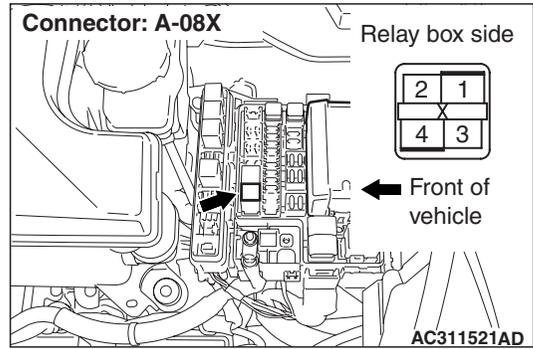


**Q: Is the check result normal?**

**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 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 front fog lamp illuminate normally.

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

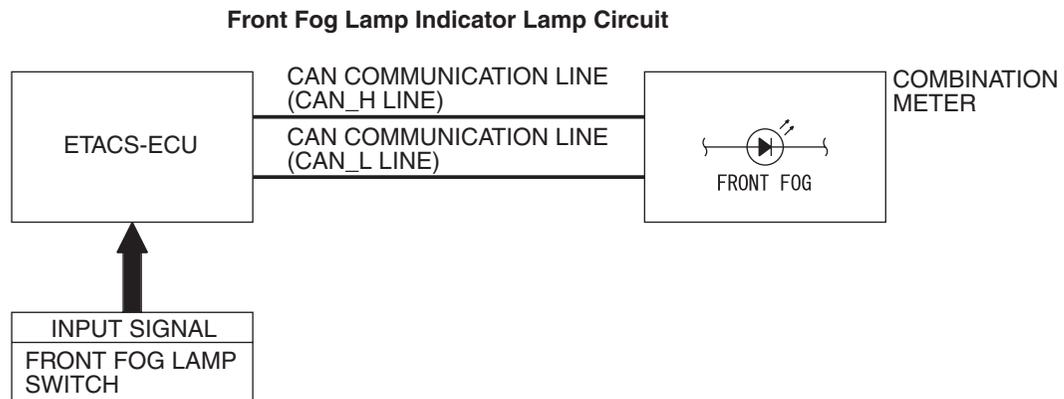
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**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.



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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 CAN bus line is defective.
- 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 :** First, repair the front fog lamps. Refer to Inspection Procedure O-3 "Any of the front fog lamps does not illuminate P.54B-356."

### 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 diagnosis code

When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

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

**YES** : Refer to diagnosis code chart [P.54B-29](#).

**NO** : Go to Step 5.

**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?**

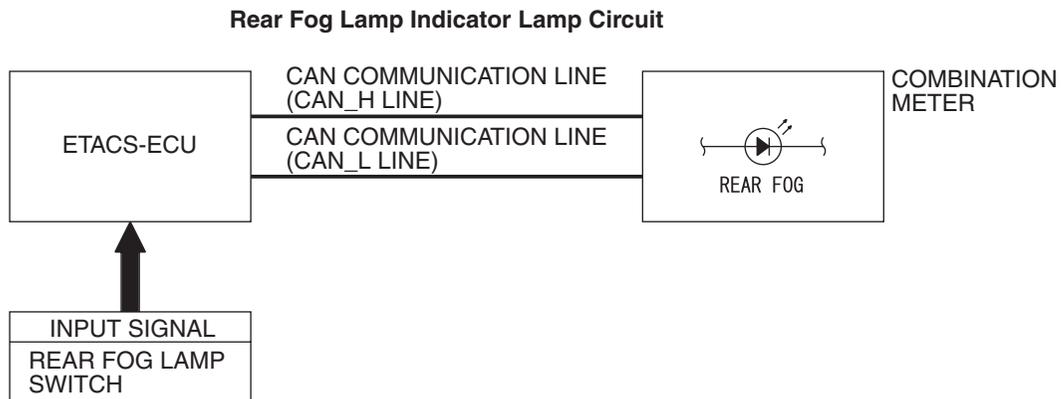
**YES** : Replace the ETACS-ECU.

**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.



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**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 CAN bus line is defective.
- 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: Are the fog lamps operating properly?**

**YES** : Go to Step 2.

**NO** : Refer to Inspection Procedure O-2 "The rear fog lamps do not illuminate normally [P.54B-345](#)."

**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 diagnosis code**

When the ignition switch is turned to the LOCK (OFF) position, check that the ETACS-ECU does not set the diagnosis code.

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

- YES** : Refer to diagnosis code chart P.54B-29.
- NO** : Go to Step 5.

**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.

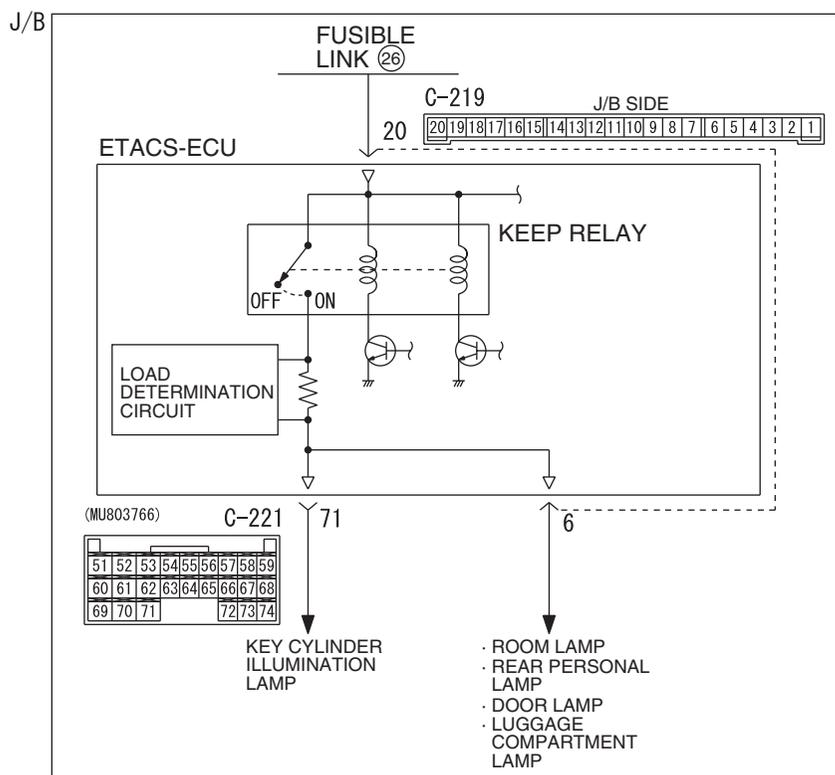
**ROOM LAMP**

**Inspection Procedure P-1: The interior lamps (room lamp, rear personal lamps, door lamps, luggage compartment lamp, key illumination lamp) does not illuminate or extinguish normally.**

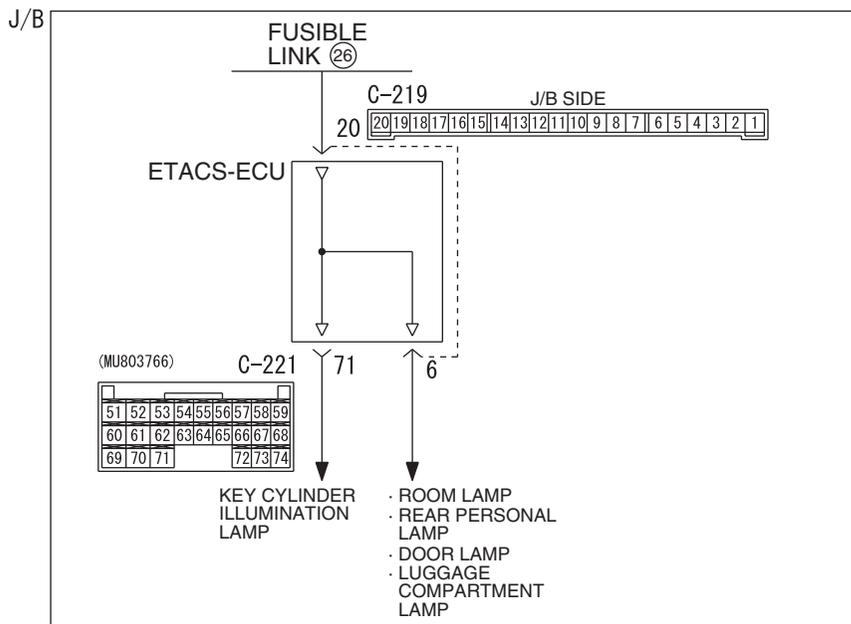
**CAUTION**

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

Interior Lamp Circuit <with keyless entry system>



Interior Lamp Circuit <without keyless entry system>



W4X54E211A

**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. Check the power supply circuit.**

When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

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

**YES :** Go to Step 2.

**NO :** Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-87."

**Step 2. 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.54B-514."

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 3. 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 5.

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.54B-514."

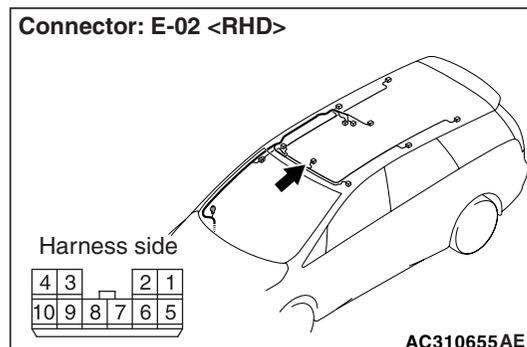
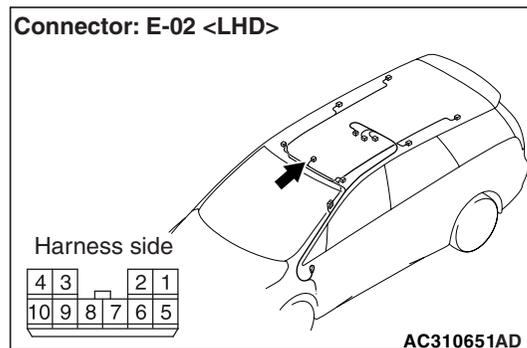
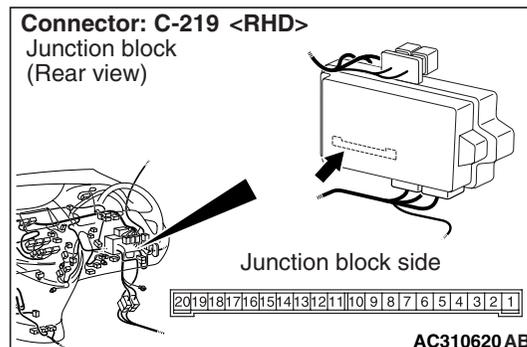
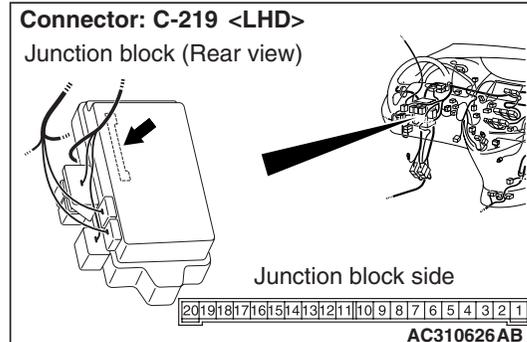
Only right or left rear personal lamp does not illuminate or extinguish normally. : Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54B-514."

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.54B-514."

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.54B-514."

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.54B-514."

### Step 3. Connector check: C-219 ETACS-ECU connector and E-02 room lamp connector



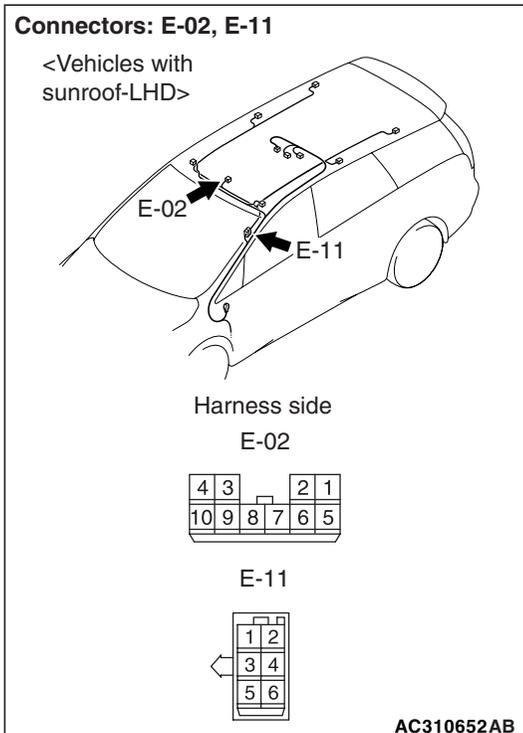
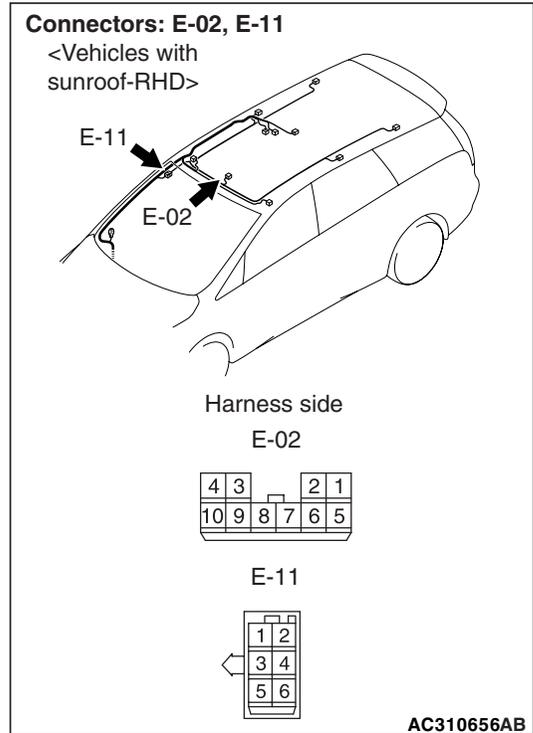
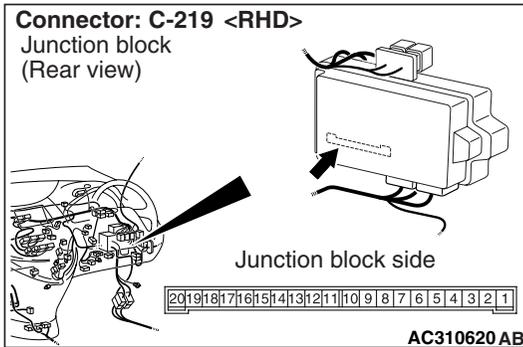
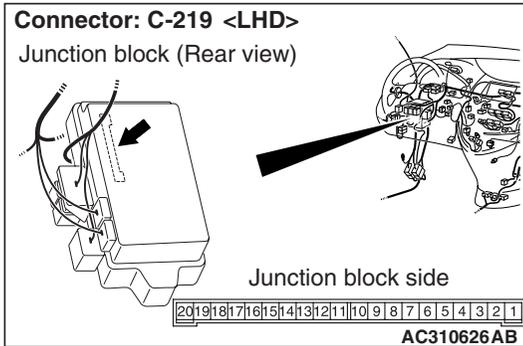
Q: Is the check result normal?

YES : Go to Step 4.

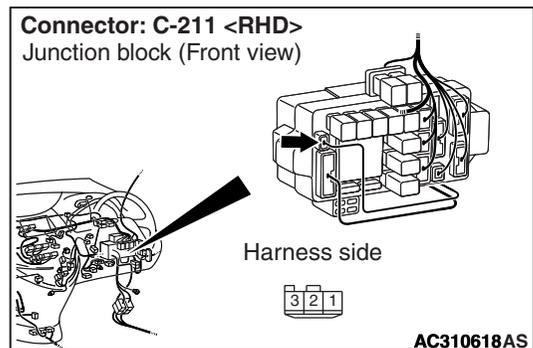
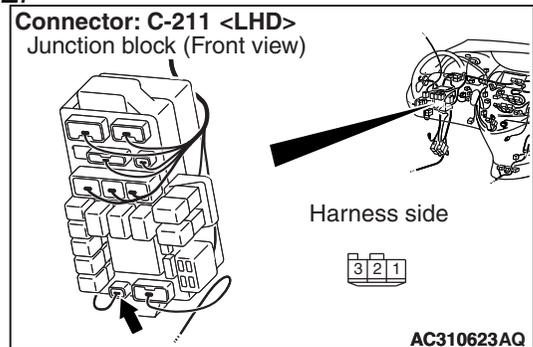
NO : Repair the defective connector.

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**Step 4. Check the wiring harness from C-219  
ETACS-ECU connector terminal No.6 to E-02  
room lamp connector terminal No.10.**



**NOTE:**



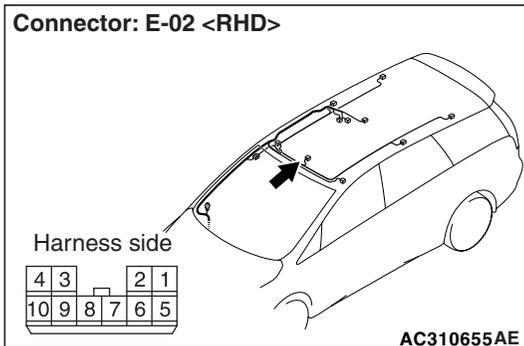
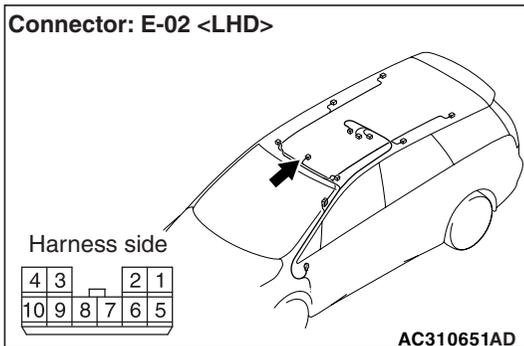
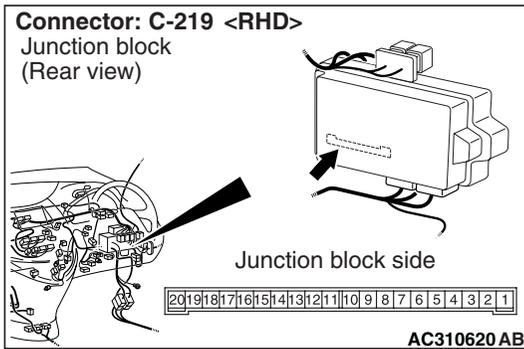
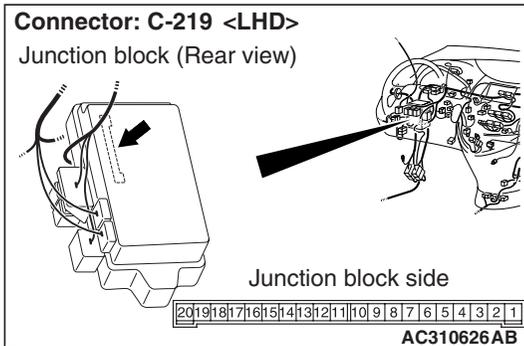
Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.

- Check the power supply line for open circuit.

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

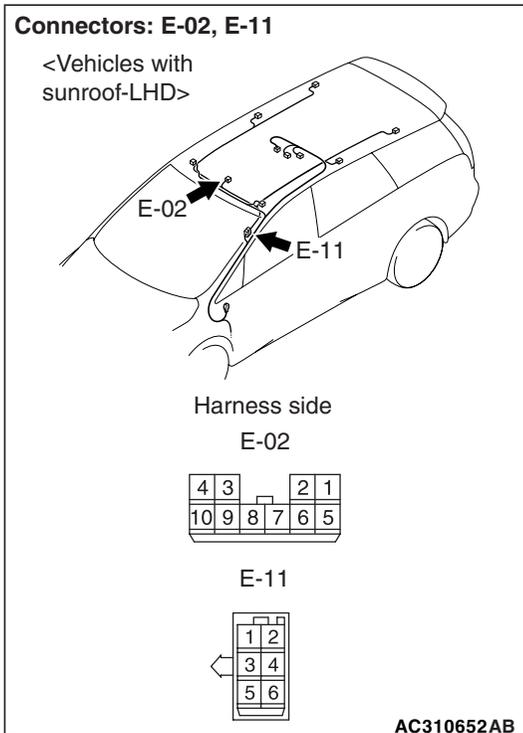
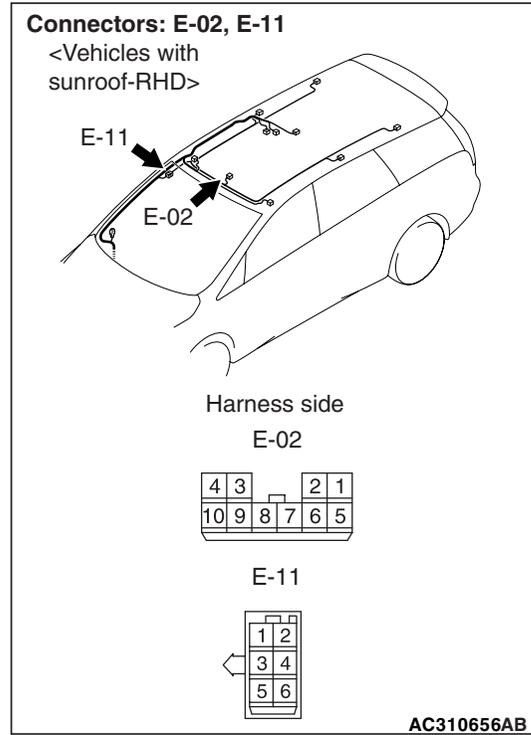
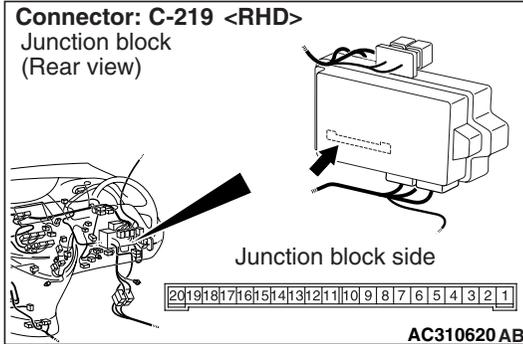
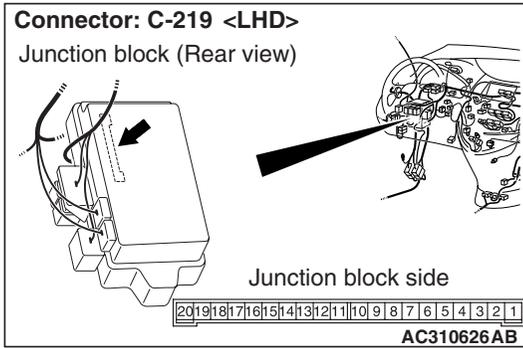
**Step 5. Connector check: C-219 ETACS-ECU connector and E-02 room lamp connector**

YES : Go to Step 6.  
NO : Repair the defective connector.

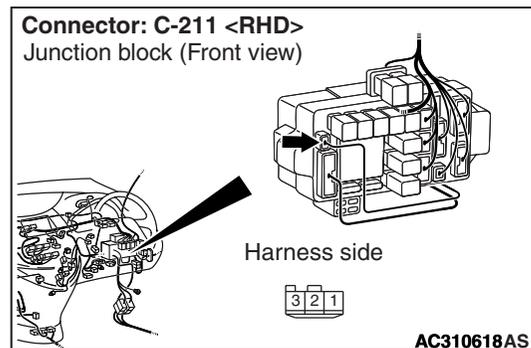
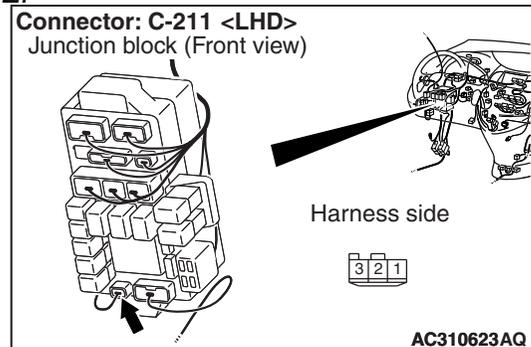


**Q: Is the check result normal?**

**Step 6. Check the wiring harness from C-219  
ETACS-ECU connector terminal No.5 to E-02  
room lamp connector terminal No.8.**



**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 ETACS-ECU.

**NO :** Repair the wiring harness.

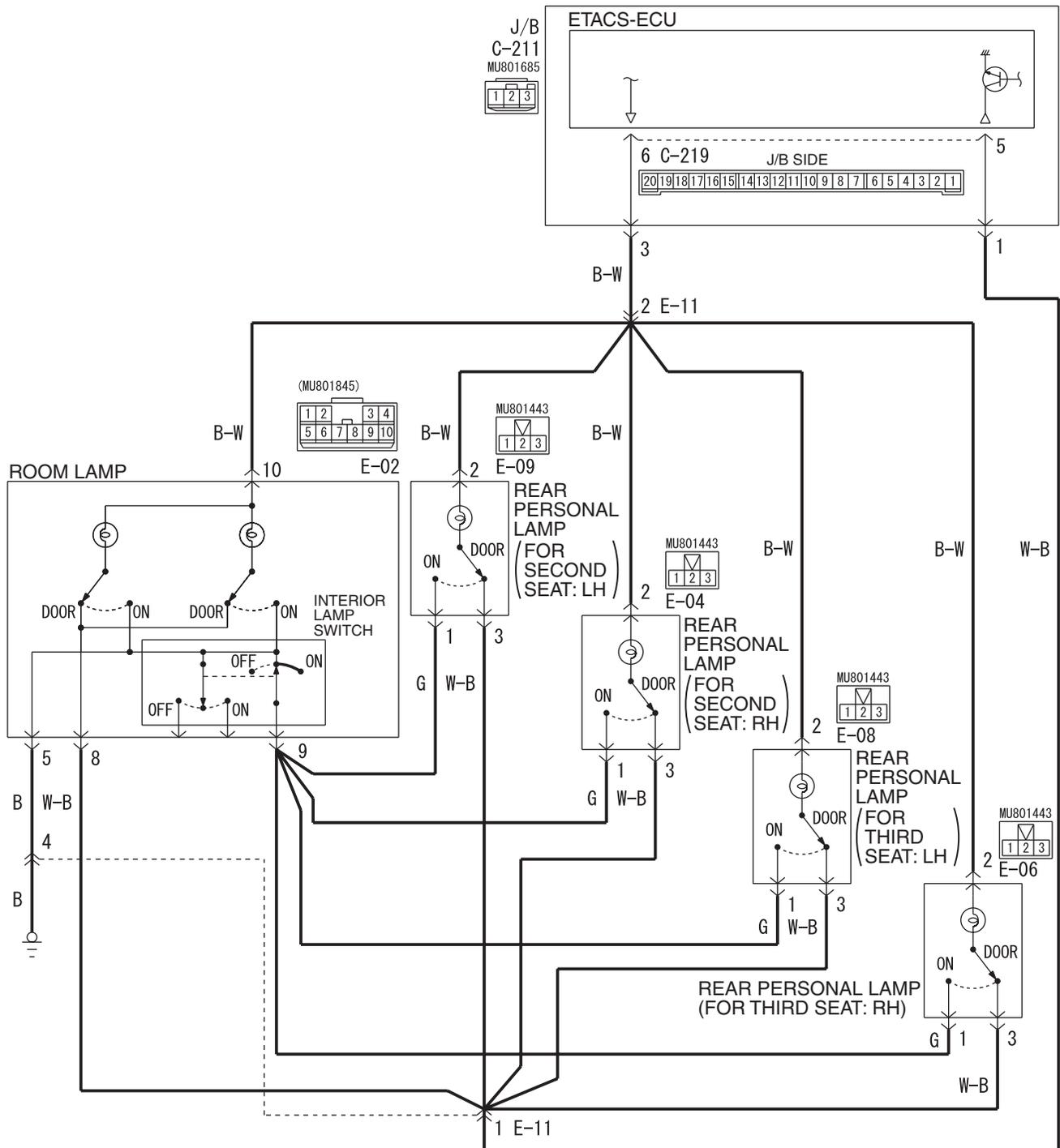
**Inspection Procedure P-2: The room lamp does not illuminate normally.**

---

** 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. Pulse check**

Check the input signals below, which are related to the room lamp.

| System switch                      | Check condition  |
|------------------------------------|--|
| Driver's door switch               | Driver's door is opened while all the other doors are closed.      |
| Passenger's door switch            | Passenger's door is opened while all the other doors are closed.   |
| Rear door (RH) switch              | Rear door (RH) is opened while all the other doors are closed      |
| Rear door (LH) switch              | Rear door (LH) door is opened while all the other doors are closed |
| Tailgate switch                    | TAilgate is opened while all the other doors are closed            |
| Driver's door lock actuator switch | When the driver's door is unlocked or locked                       |
| 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?**

**All the signals are received normally. :** Go to Step 2.

**All the door switch signals are not received. :**  
Refer to inspection procedure Q-14 "All the door switch signals are not received <LH drive vehicles>P.54B-469 or <RH drive vehicles>P.54B-469."

**The driver's door lock actuator switch signal is not received. :** Refer to inspection procedure Q-15 "The driver's door lock actuator switch signal is not received <LH drive vehicles>P.54B-478 or <RH drive vehicles>P.54B-481."

**The interior lamp switch signal is not received. :** Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54B-514."

**Step 2. Retest the system.**

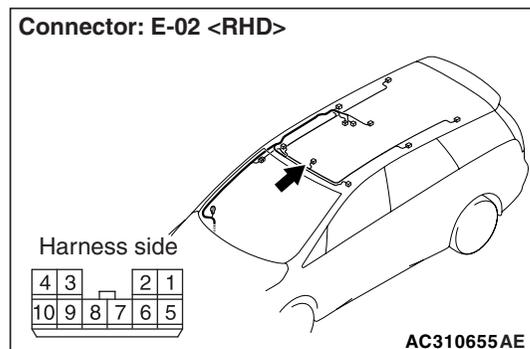
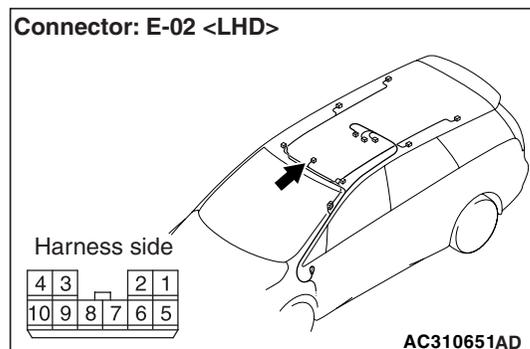
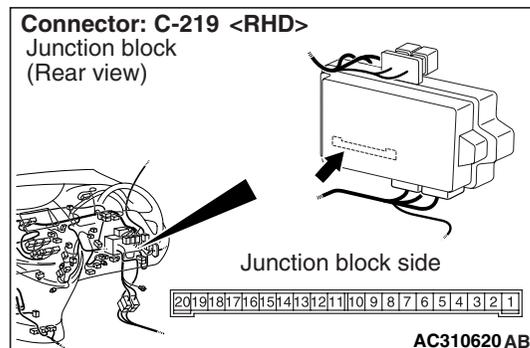
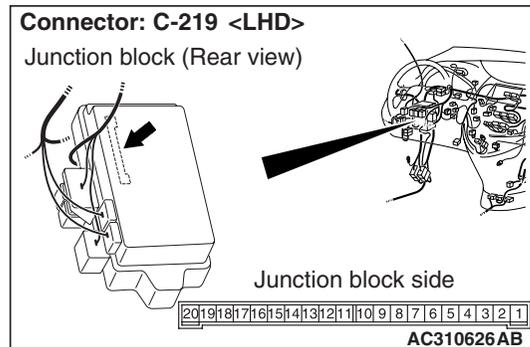
Check that the right or left room lamp illuminates when the interior lamp switch is operated.

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

**YES :** Go to Step 5.

**NO :** Go to Step 3.

**Step 3. Connector check: C-219 ETACS-ECU connector, E-02 room lamp connector**



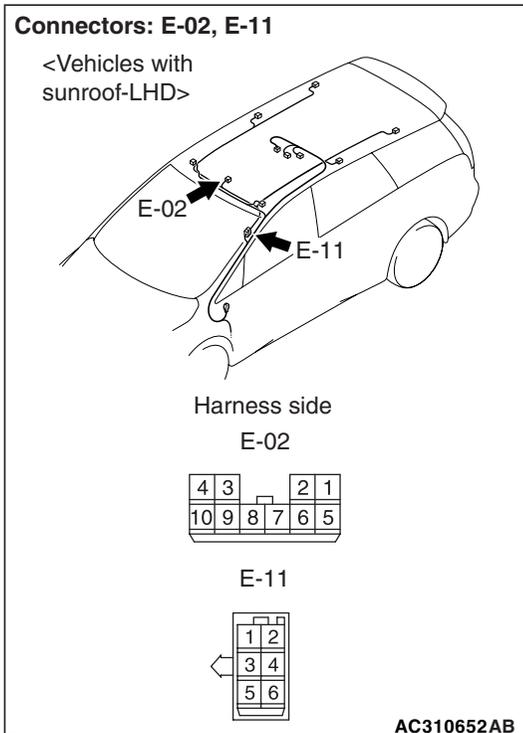
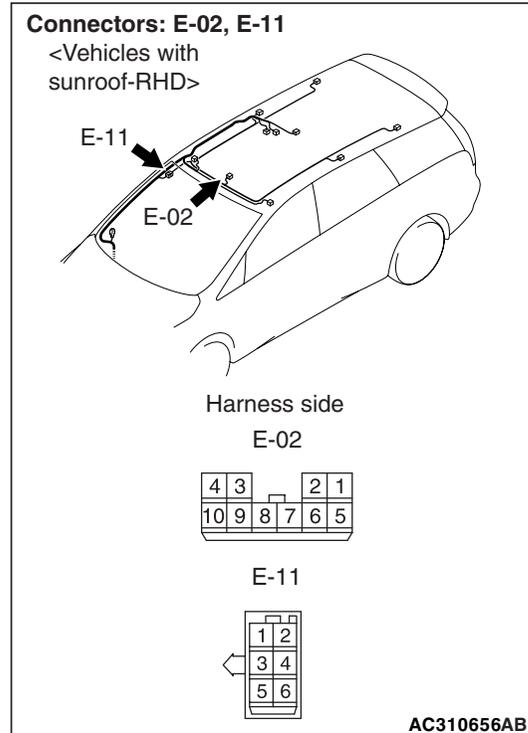
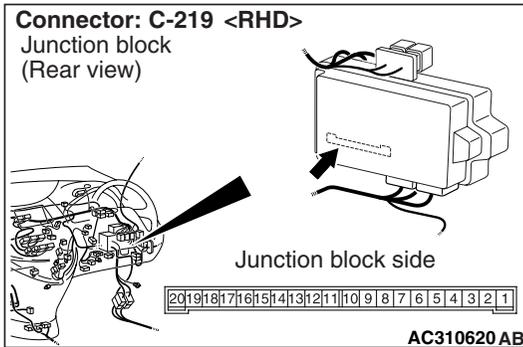
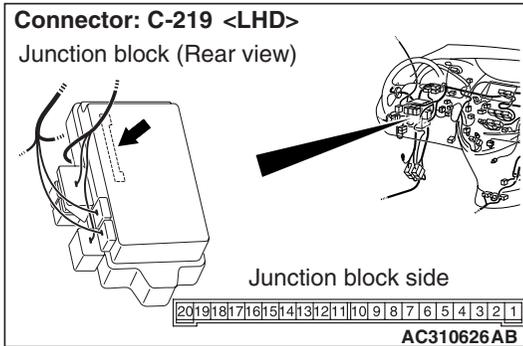
**Q: Is the check result normal?**

**YES** : Go to Step 4.

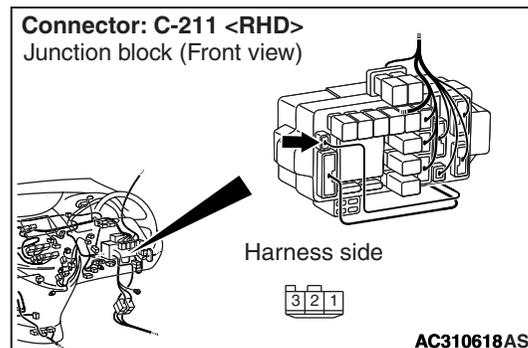
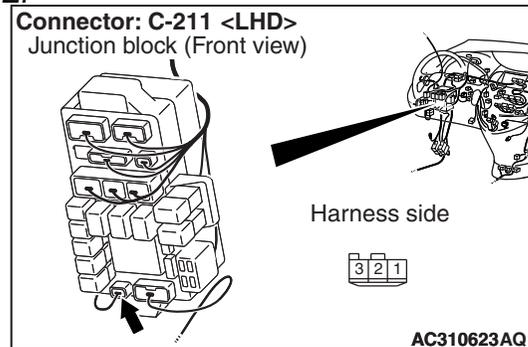
**NO** : Repair the defective connector.

---

**Step 4. 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 5. Check the room lamp switch.**

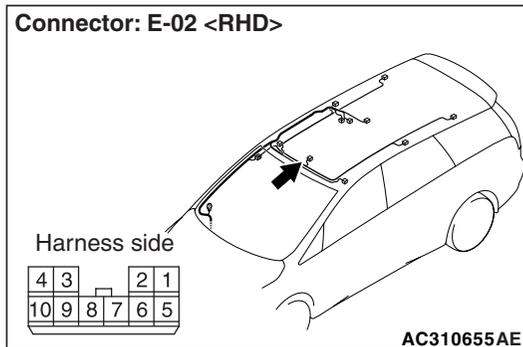
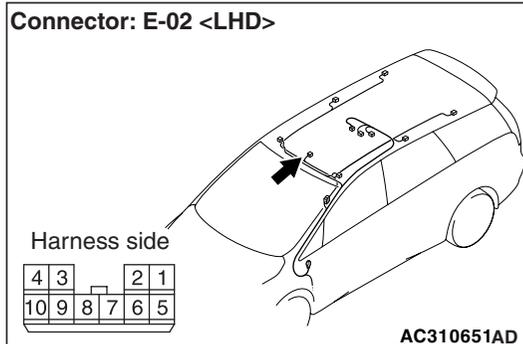
Check which position (ON or DOOR) of the room lamp switch does not activate the room lamp.

**Q: Which switch position does not activate the lamp?**

**The lamp illuminates at neither the ON nor DOOR position. :** Go to Step 6.

**The lamp does not illuminate at the ON position. :**  
Go to Step 6.

**The lamp does not illuminate at the DOOR position. :**  
Go to Step 8.

**Step 6. Connector check: E-02 room lamp connector**

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

**YES :** Go to Step 7.

**NO :** Repair the defective connector.

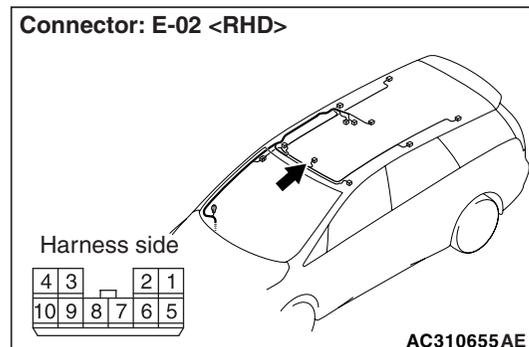
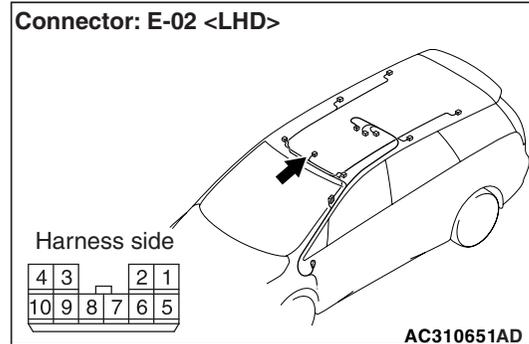
**Step 7. Check the bulbs of the room lamp.**

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 8. Connector check: E-02 room lamp connector**

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

**YES :** Go to Step 9.

**NO :** Repair the defective connector.

**Step 9. Check the bulbs of the room lamp.**

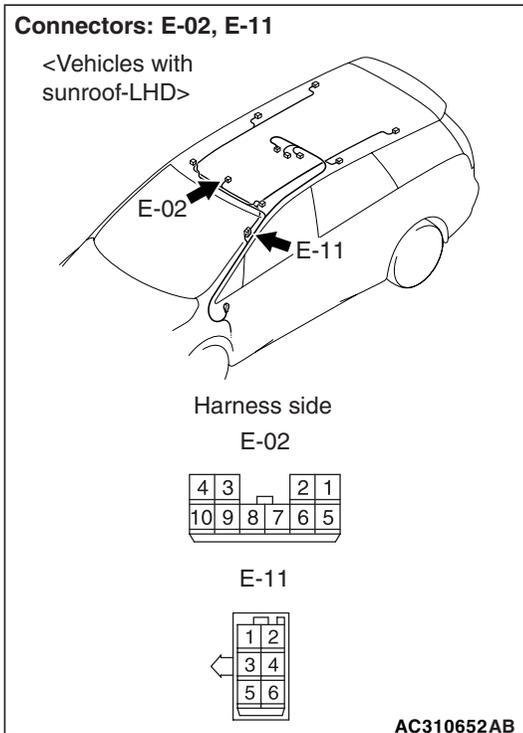
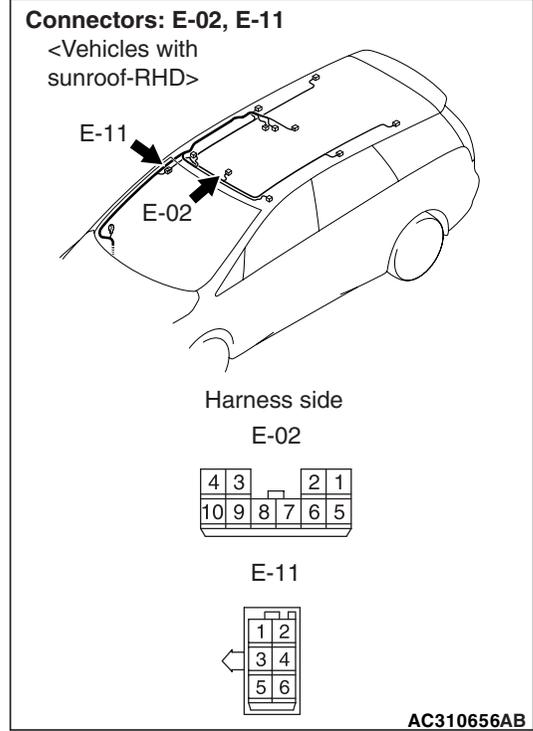
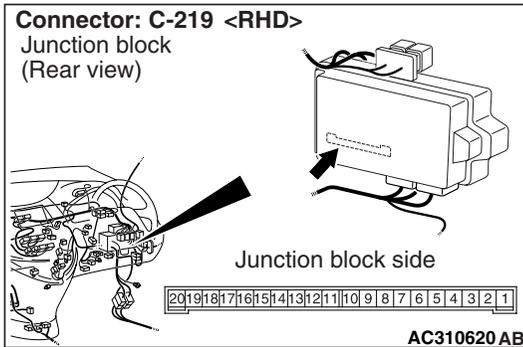
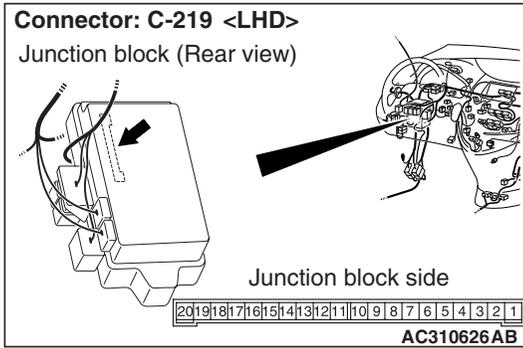
Check that the room lamp bulbs are not burned out.

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

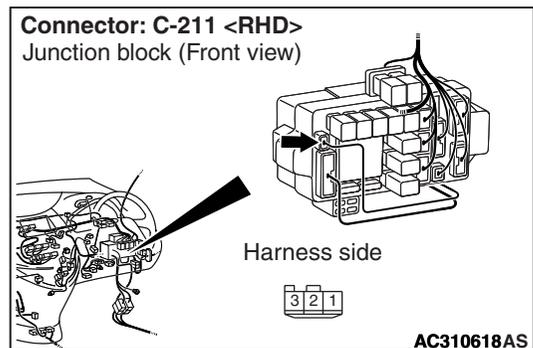
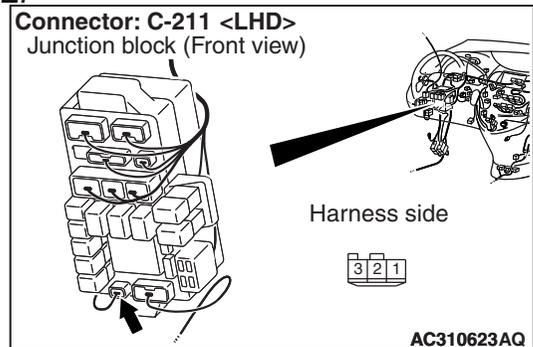
**YES :** Go to Step 10.

**NO :** Replace the room lamp bulb.

Step 10. Check the wiring harness from C-219  
ETACS-ECU connector terminal No.5 to E-02  
room lamp connector terminal No.8.



**NOTE:**



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.

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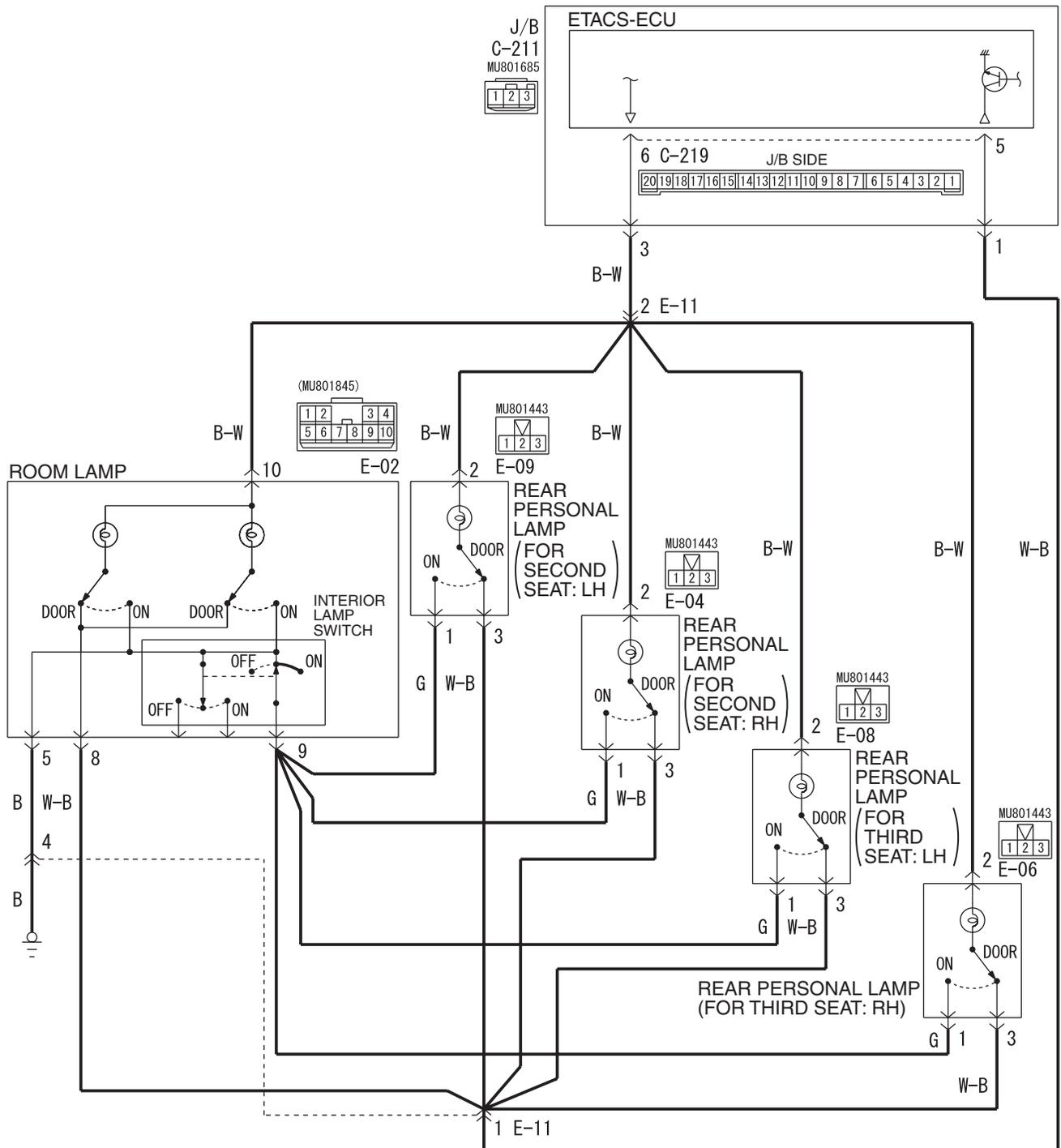
Inspection Procedure P-3: The rear personal lamp does not illuminate normally.

---

 **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. Pulse check

Check the input signals below, which are related to the room lamp.

| System switch                      | Check condition  |
|------------------------------------|--|
| Driver's door switch               | Driver's door is opened while all the other doors are closed.      |
| Passenger's door switch            | Passenger's door is opened while all the other doors are closed.   |
| Rear door (RH) switch              | Rear door (RH) is opened while all the other doors are closed      |
| Rear door (LH) switch              | Rear door (LH) door is opened while all the other doors are closed |
| Tailgate switch                    | TAilgate is opened while all the other doors are closed            |
| Driver's door lock actuator switch | When the driver's door is unlocked or locked                       |
| 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?**

All the signals are received normally. : Go to Step 2.

All the door switch signals are not received. :

Refer to inspection procedure Q-14 "All the door switch signals are not received

P.54B-469."

The driver's door lock actuator switch signal is not received. : Refer to inspection procedure Q-15

"The driver's door lock actuator switch signal is not received <LH drive vehicles>P.54B-478 or <RH drive vehicles>P.54B-481."

The interior lamp switch signal is not received. :

Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54B-514."

### Step 2. 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 3.

**One of the second seat lamps (RH or LH) or the third seat lamps (RH or LH) does not illuminate. :**  
Go to Step 7.

### Step 3. 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?**

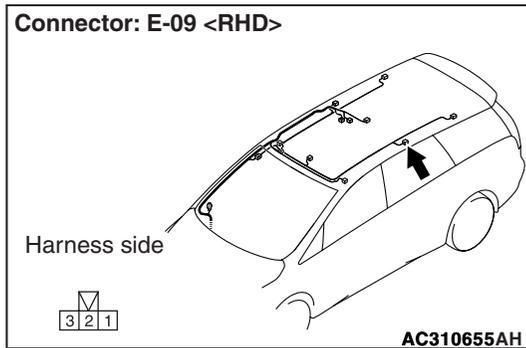
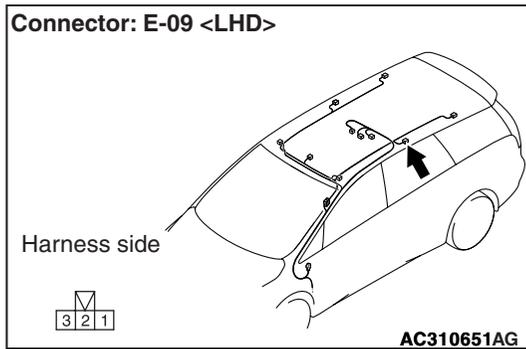
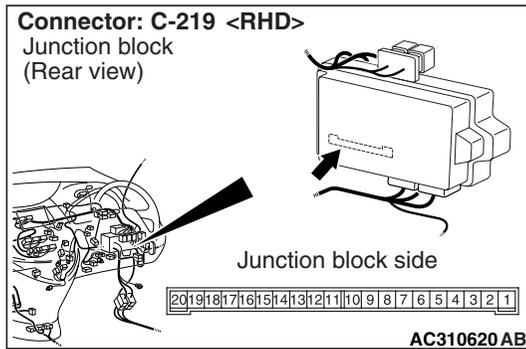
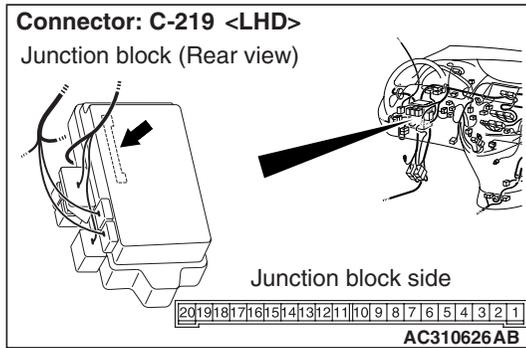
**The lamp illuminates at neither the ON nor DOOR position. :** Go to Step 4.

**The lamp does not illuminate at the DOOR position. :**  
Go to Step 6.

**The lamp does not illuminate at the ON position. :**  
Replace the rear personal lamp.

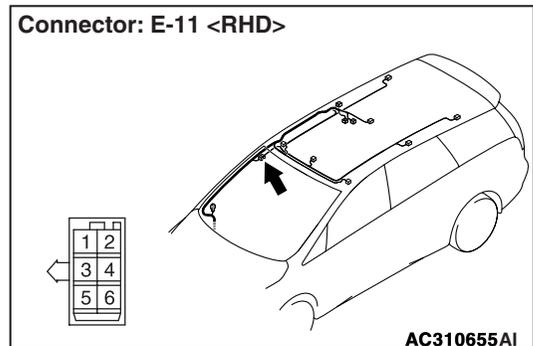
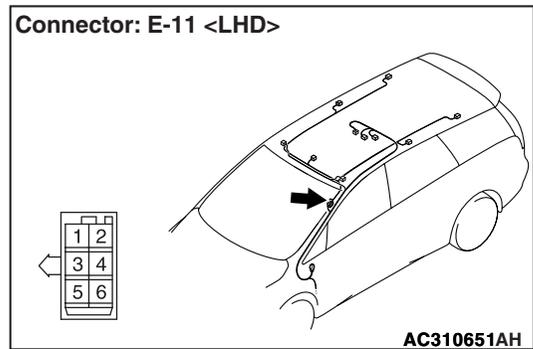
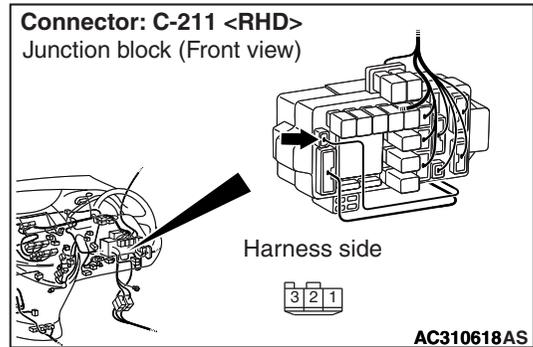
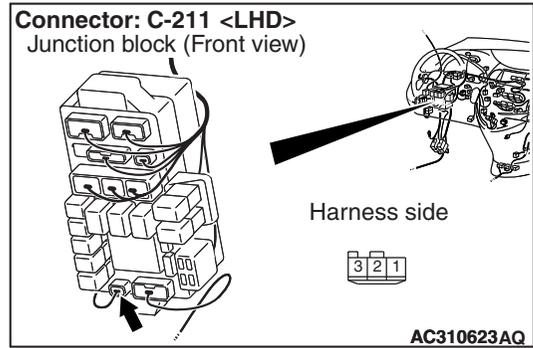
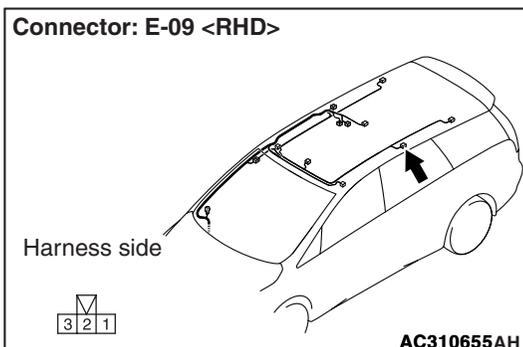
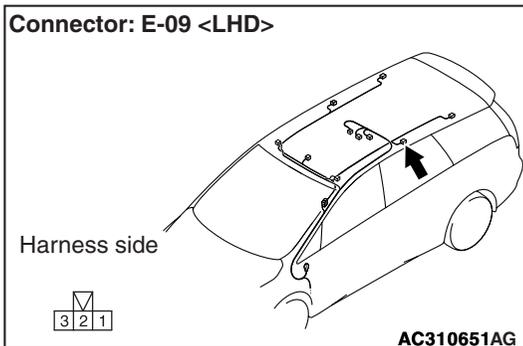
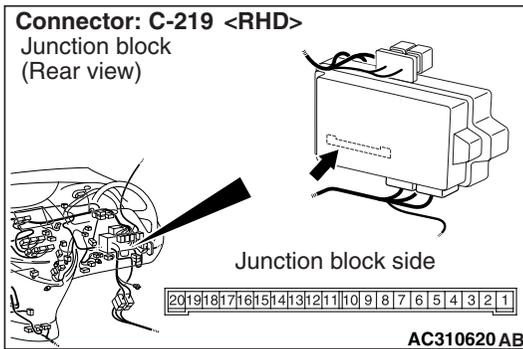
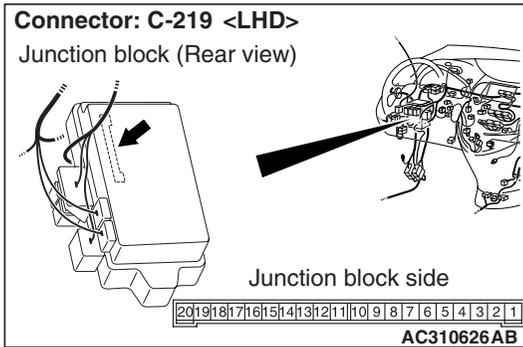
**Step 4. Connector check: C-219 ETACS-ECU connector, E-09 rear personal lamp connector**

YES : Go to Step 5.  
NO : Repair the defective connector.



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

**Step 5. Check the wiring harness from C-219 ETACS-ECU connector terminal No.6 to E-09 rear personal lamp connector terminal No.2.**



NOTE:

Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.

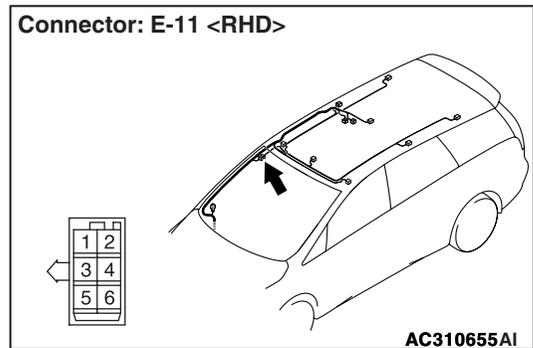
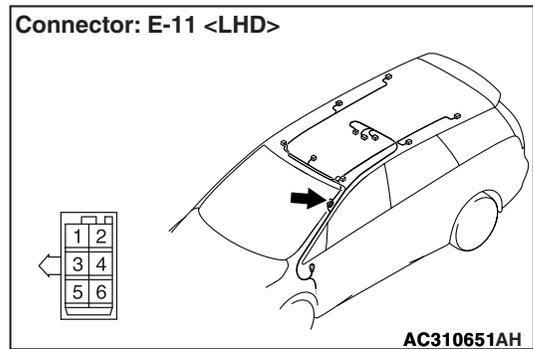
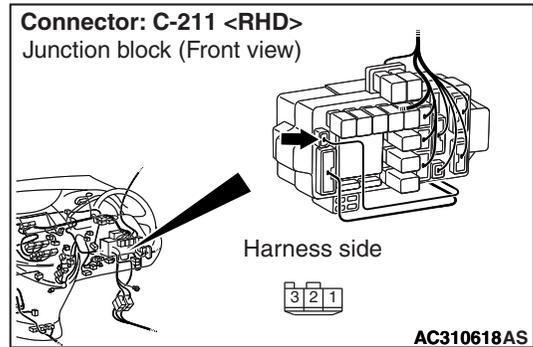
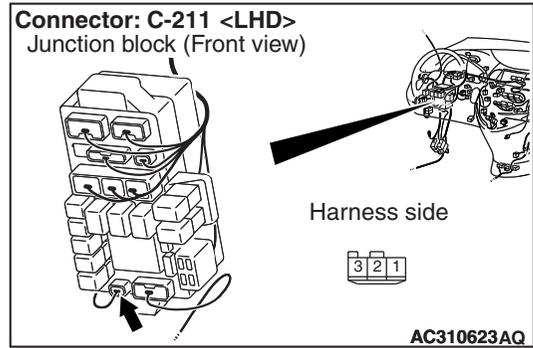
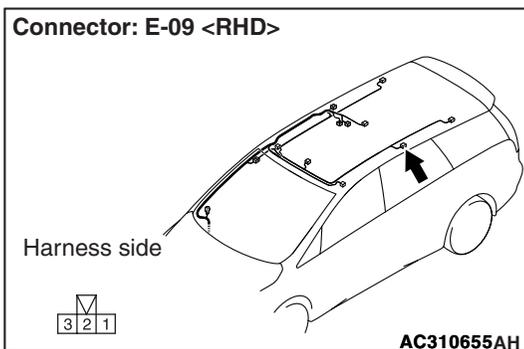
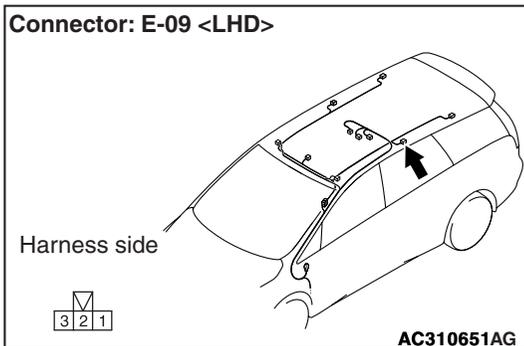
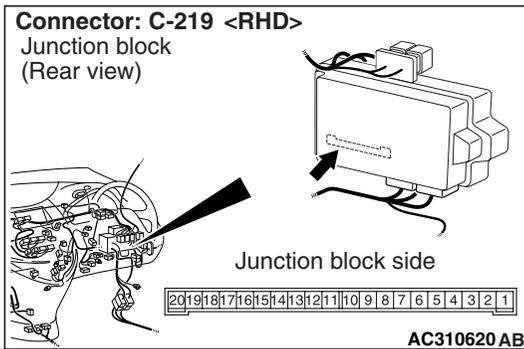
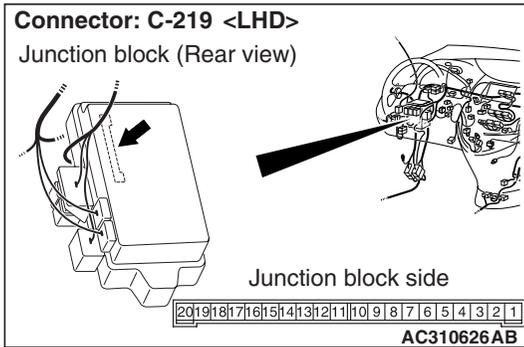
- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : Replace the rear personal lamp.

NO : Repair the wiring harness.

**Step 6. Check the wiring harness from C-219 ETACS-ECU connector terminal No.5 to E-09 rear personal lamp connector terminal No.3.**



NOTE:

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.

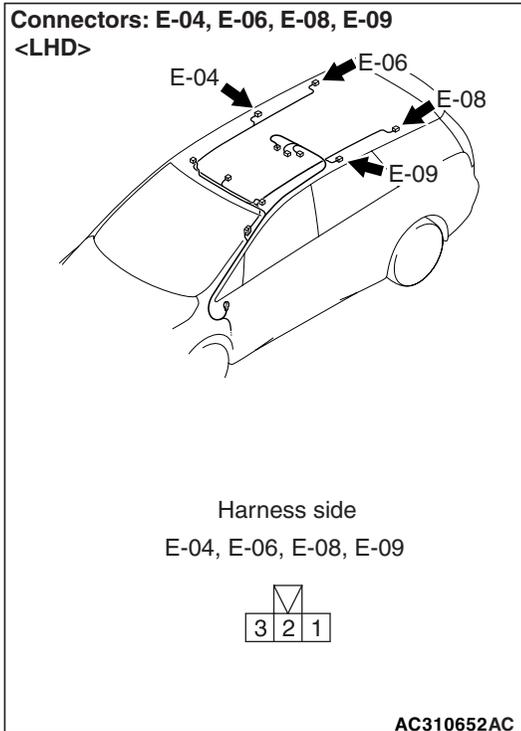
Q: Is the check result normal?

YES : Replace the rear personal lamp.

NO : Repair the wiring harness.

**Step 7. 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)**

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



**Step 8. 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 9

**NO :** Replace the rear personal lamp bulb.

**Step 9. 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?**

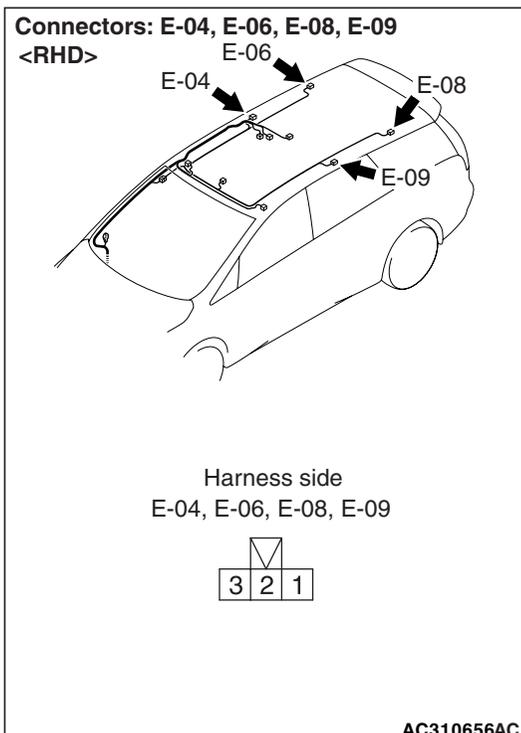
**The lamp illuminates at neither the ON nor DOOR position. :** Go to Step 10.

**The lamp does not illuminate at the DOOR position. :**

Go to Step 11.

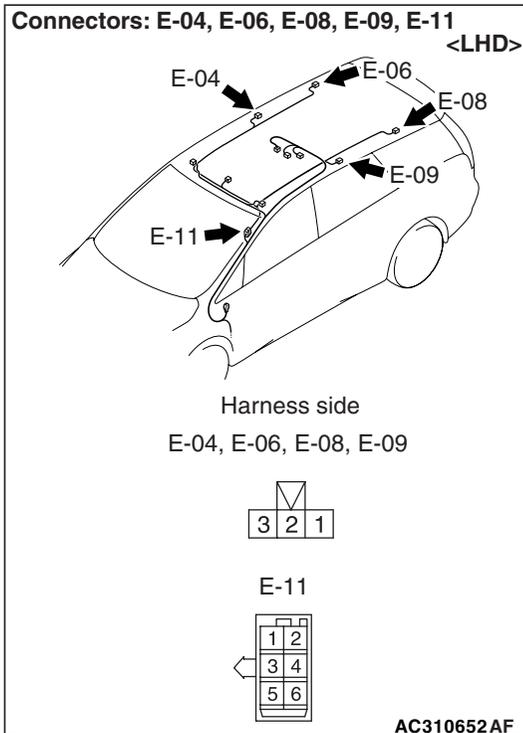
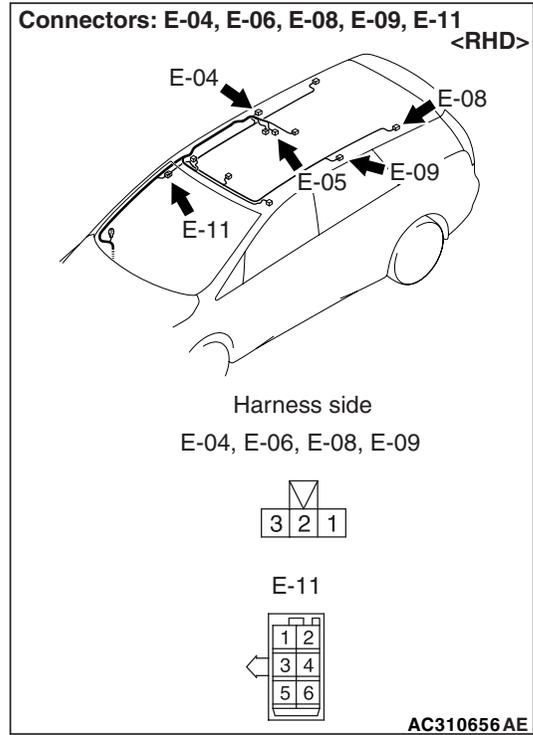
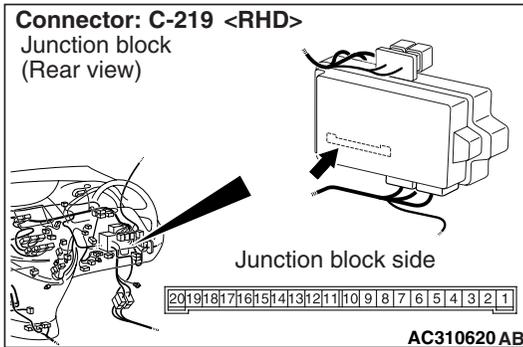
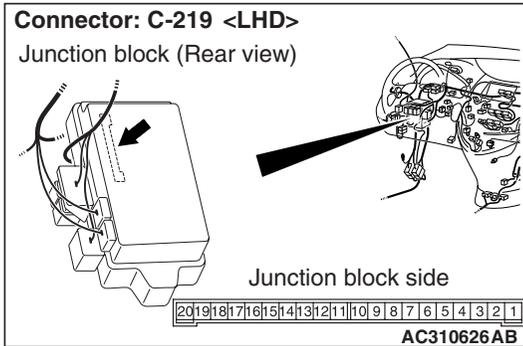
**The lamp does not illuminate at the ON position. :**

Go to Step 13.

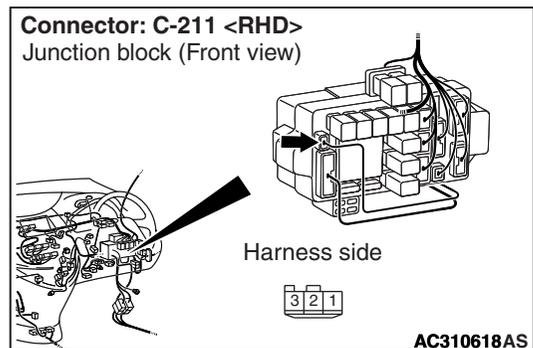
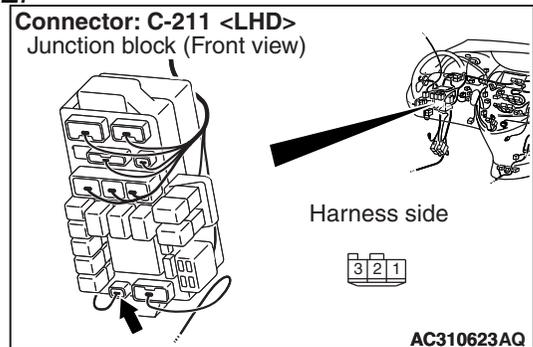


**Q: Is the check result normal?**

**Step 10. 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.**



**NOTE:**



Prior to the wiring harness inspection, check intermediate connector E-11 and junction block connector C-211, and repair if necessary.

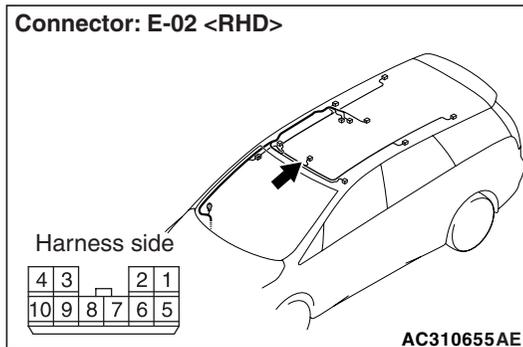
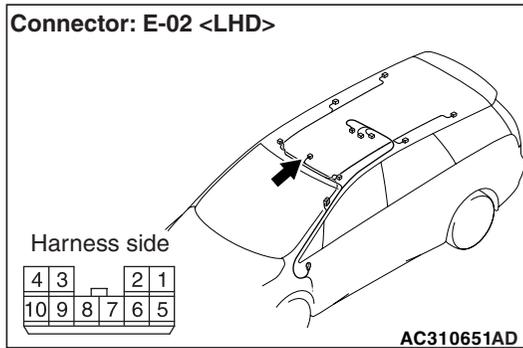
- Check the power supply line for open circuit.

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

- YES :** Replace the rear personal lamp.  
**NO :** Repair the wiring harness.

**Step 11. Connector check: E-02 room lamp connector**

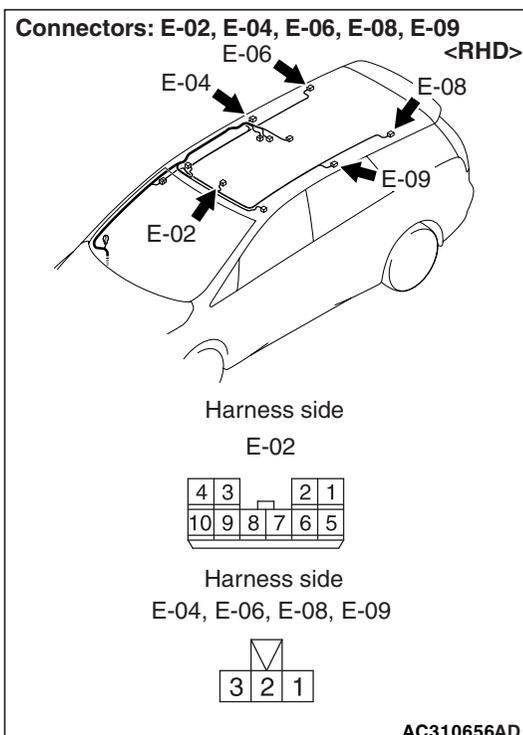
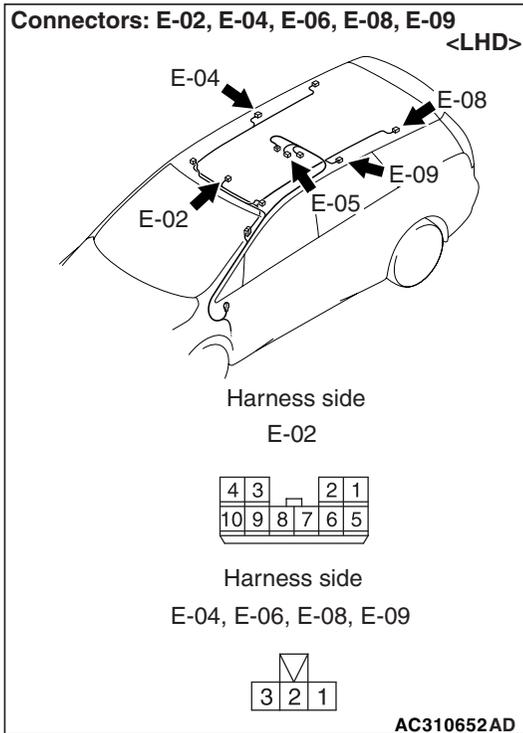
**YES** : Go to Step 12.  
**NO** : Repair the defective connector.



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

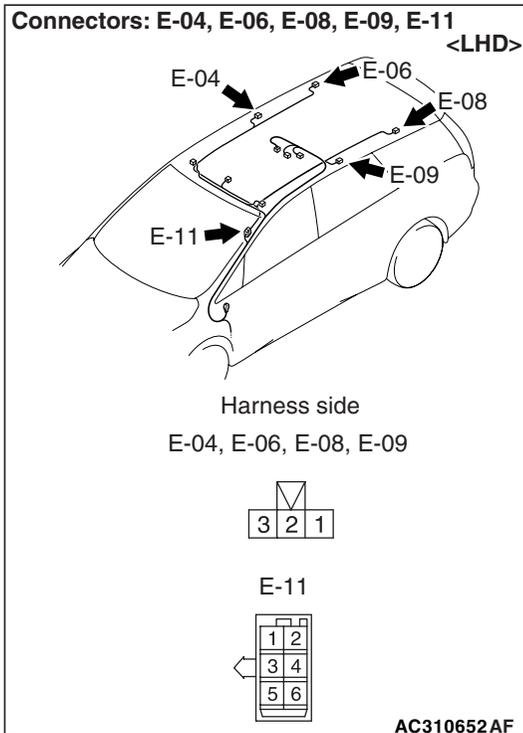
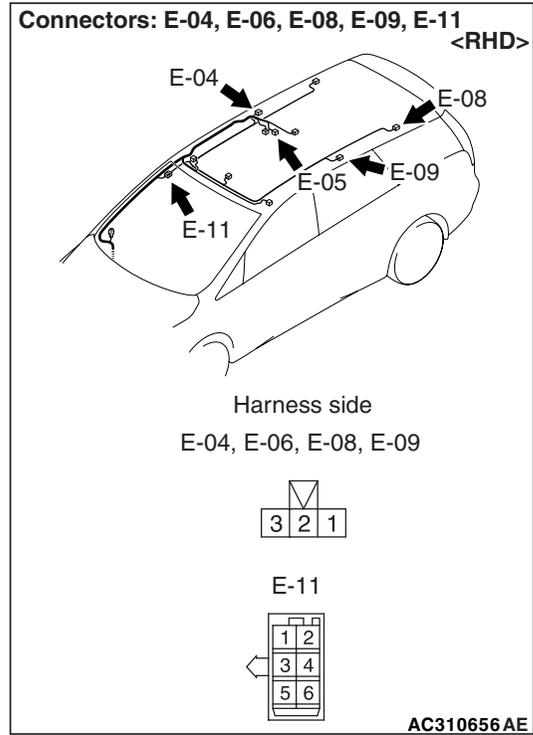
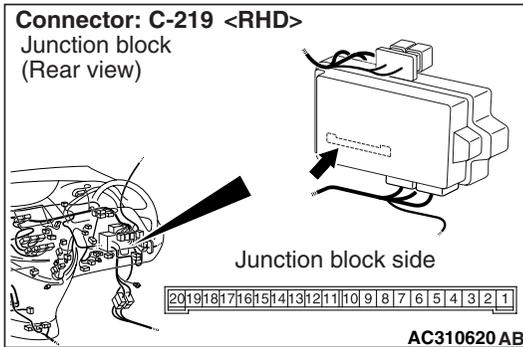
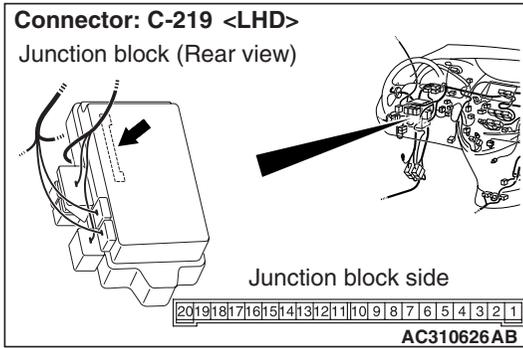
**Step 12. Check the wiring harness from E-02 room lamp connector terminal No.9 to E-09 rear personal lamp (for second seat: RH) connector terminal No.1, E-04 rear personal lamp (for second seat: LH) connector terminal No.1, E-08 rear personal lamp (for third seat: LH) connector terminal No.1, E-06 rear personal lamp (for third seat: RH) connector terminal No.1.**

**Q: Is the check result normal?**  
**YES :** Replace the rear personal lamp.  
**NO :** Repair the wiring harness.

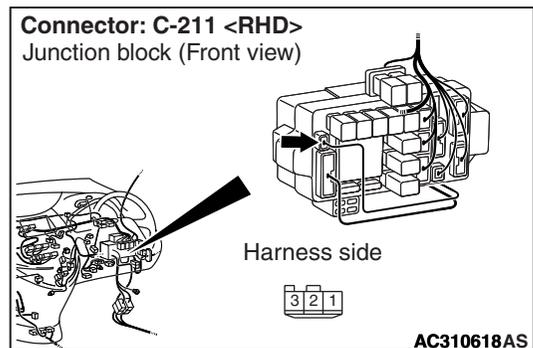
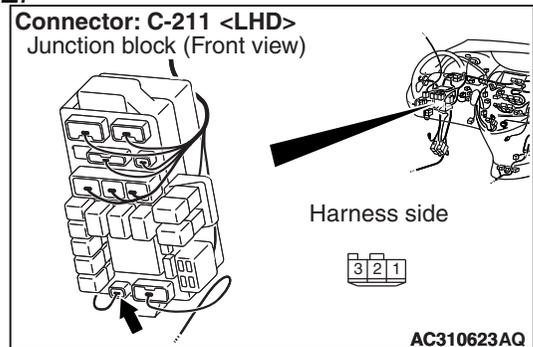


- Check the earth wires for open circuit.

**Step 13. 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.**



**NOTE:**



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?**

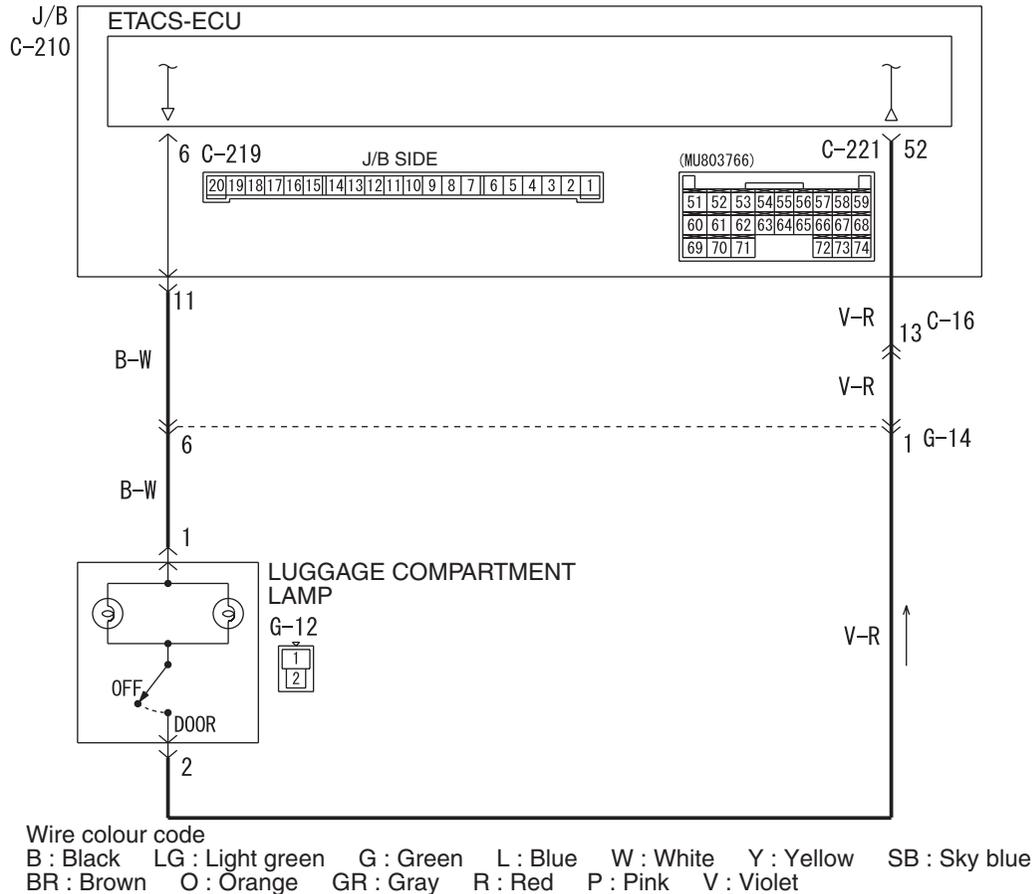
- YES :** Replace the rear personal lamp.  
**NO :** Repair the wiring harness.

**Inspection Procedure P-4: The luggage compartment lamp does not illuminate normally.**

**CAUTION**

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

Luggage Room Lamp Circuit



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. Pulse check**

Check the input signals below, which are related to the room lamp.

| System switch                      | Check condition  |
|------------------------------------|--|
| Driver's door switch               | Driver's door is opened while all the other doors are closed.      |
| Passenger's door switch            | Passenger's door is opened while all the other doors are closed.   |
| Rear door (RH) switch              | Rear door (RH) is opened while all the other doors are closed      |
| Rear door (LH) switch              | Rear door (LH) door is opened while all the other doors are closed |
| Tailgate switch                    | TAilgate is opened while all the other doors are closed            |
| Driver's door lock actuator switch | When the driver's door is unlocked or locked                       |
| 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?**

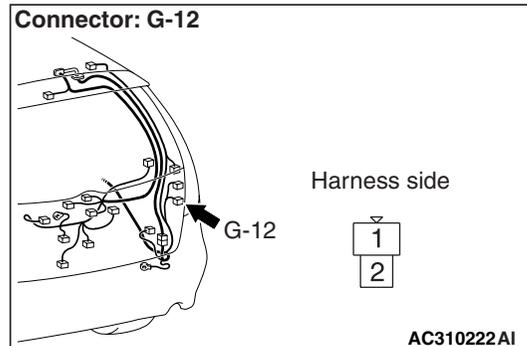
**All the signals are received normally. :** Go to Step 2.

**All the door switch signals are not received. :**  
Refer to inspection procedure Q-14 "All the door switch signals are not received P.54B-469."

**The driver's door lock actuator switch signal is not received. :** Refer to inspection procedure Q-15 "The driver's door lock actuator switch signal is not received <LH drive vehicles>P.54B-478 or <RH drive vehicles>P.54B-481."

**The interior lamp switch signal is not received. :** Refer to inspection procedure Q-22 "The interior lamp "all on" or "all off" switch signal is not sent to the ETACS-ECU P.54B-514."

**Step 2. Connector check: G-12 luggage compartment lamp connector**



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

**YES :** Go to Step 3.

**NO :** Repair the defective connector.

**Step 3. Check the bulbs of the luggage compartment lamp.**

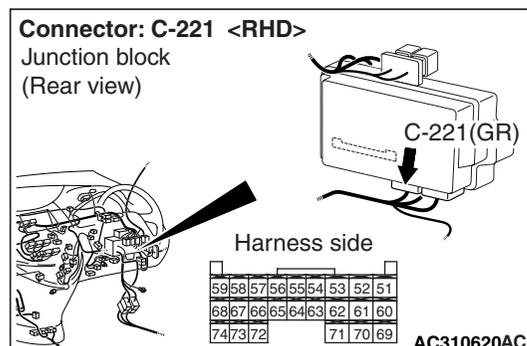
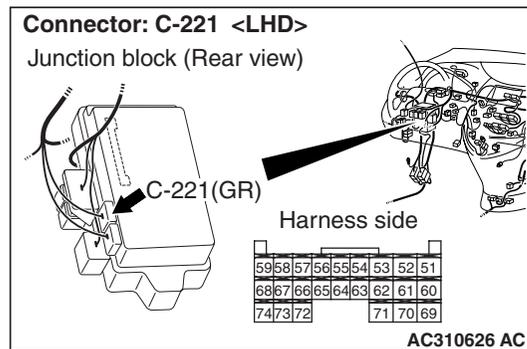
Check that the luggage compartment lamp bulbs are not burned out.

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

**YES :** Go to Step 4.

**NO :** Replace the luggage compartment lamp bulb.

**Step 4. Connector check: C-221 ETACS-ECU connector**

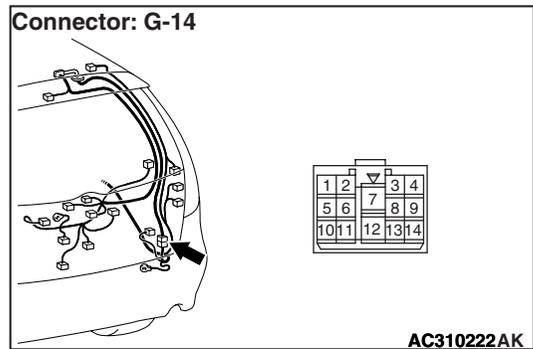
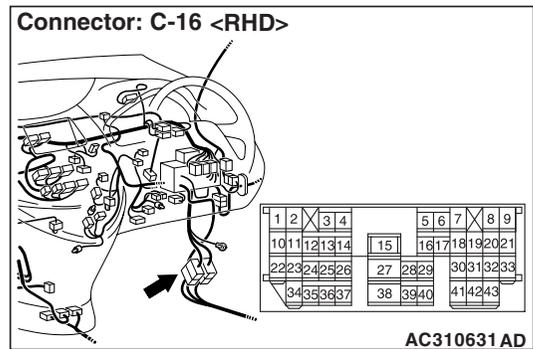
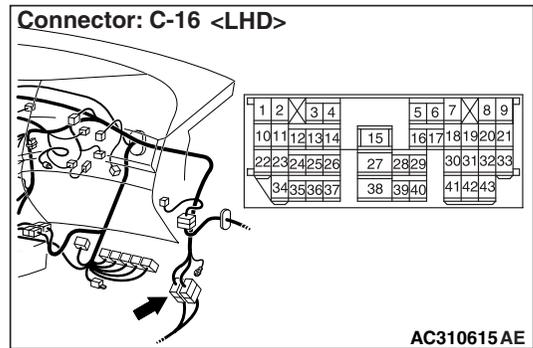
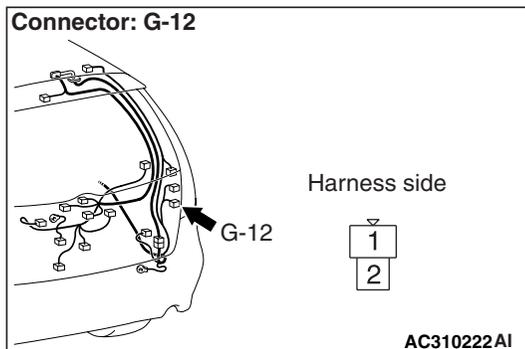
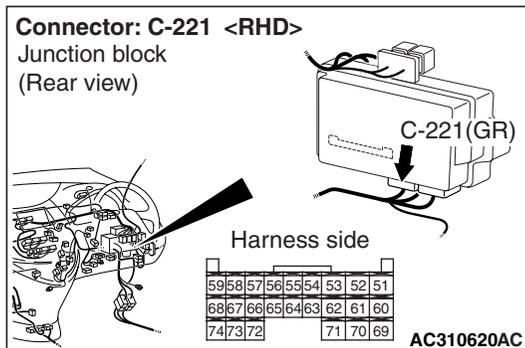
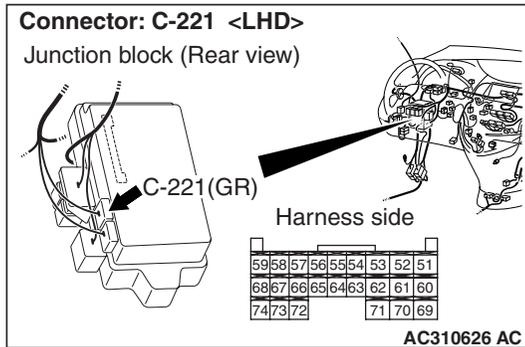


**Q: Is the check result normal?**

**YES :** Go to Step 5.

**NO :** Repair the defective connector.

**Step 5. Check the wiring harness from C-221 ETACS-ECU connector terminal No.52 to G-12 luggage compartment lamp connector terminal No.2.**



*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?**

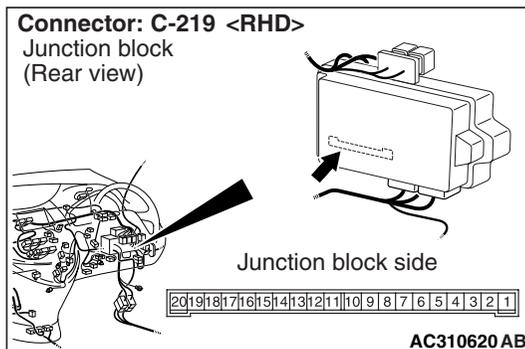
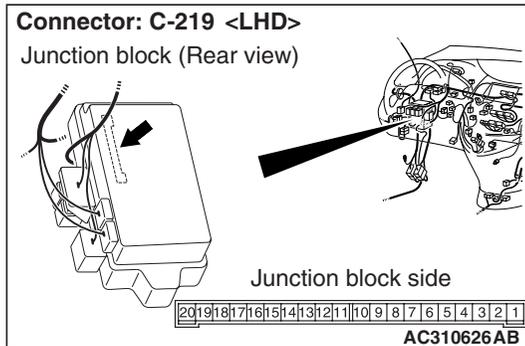
**YES :** Go to Step 6.

**NO :** Repair the wiring harness.

**NOTE:**

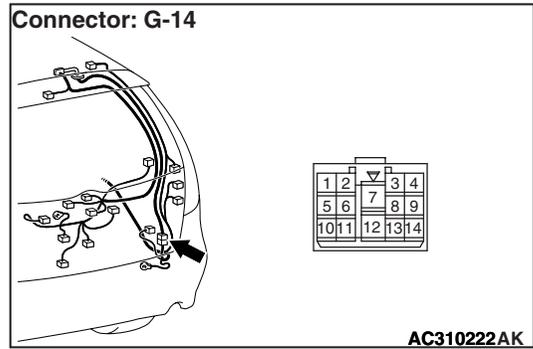
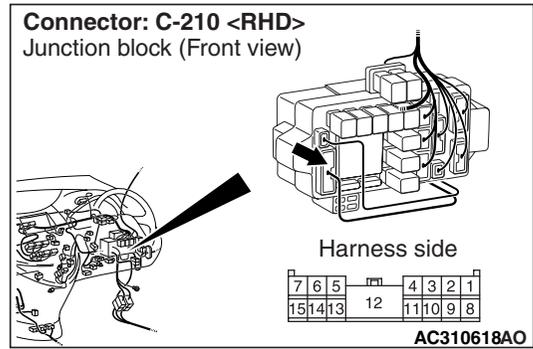
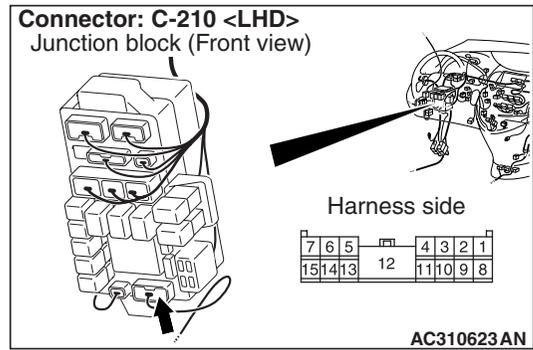
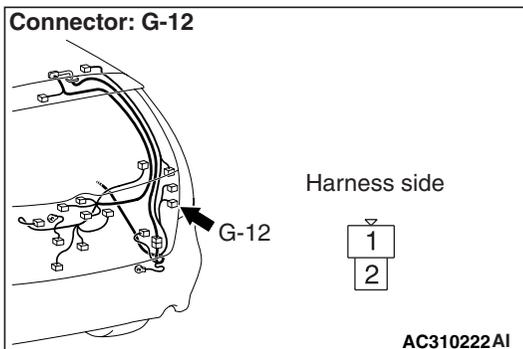
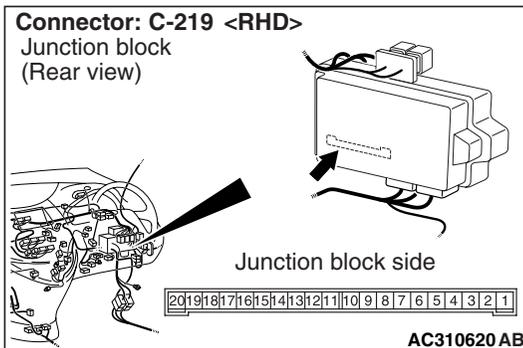
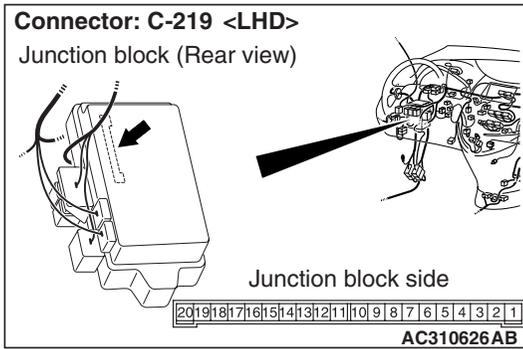
**Step 6. Connector check: C-219 ETACS-ECU connector**

YES : Go to Step 7.  
NO : Repair the defective connector.



Q: Is the check result normal?

**Step 7. Check the wiring harness from C-219 ETACS-ECU connector terminal No.6 to G-12 luggage compartment lamp connector terminal No.1.**



*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.

**NOTE:**

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

**YES :** Go to Step 8.

**NO :** Repair the wiring harness.

**Step 8. 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).

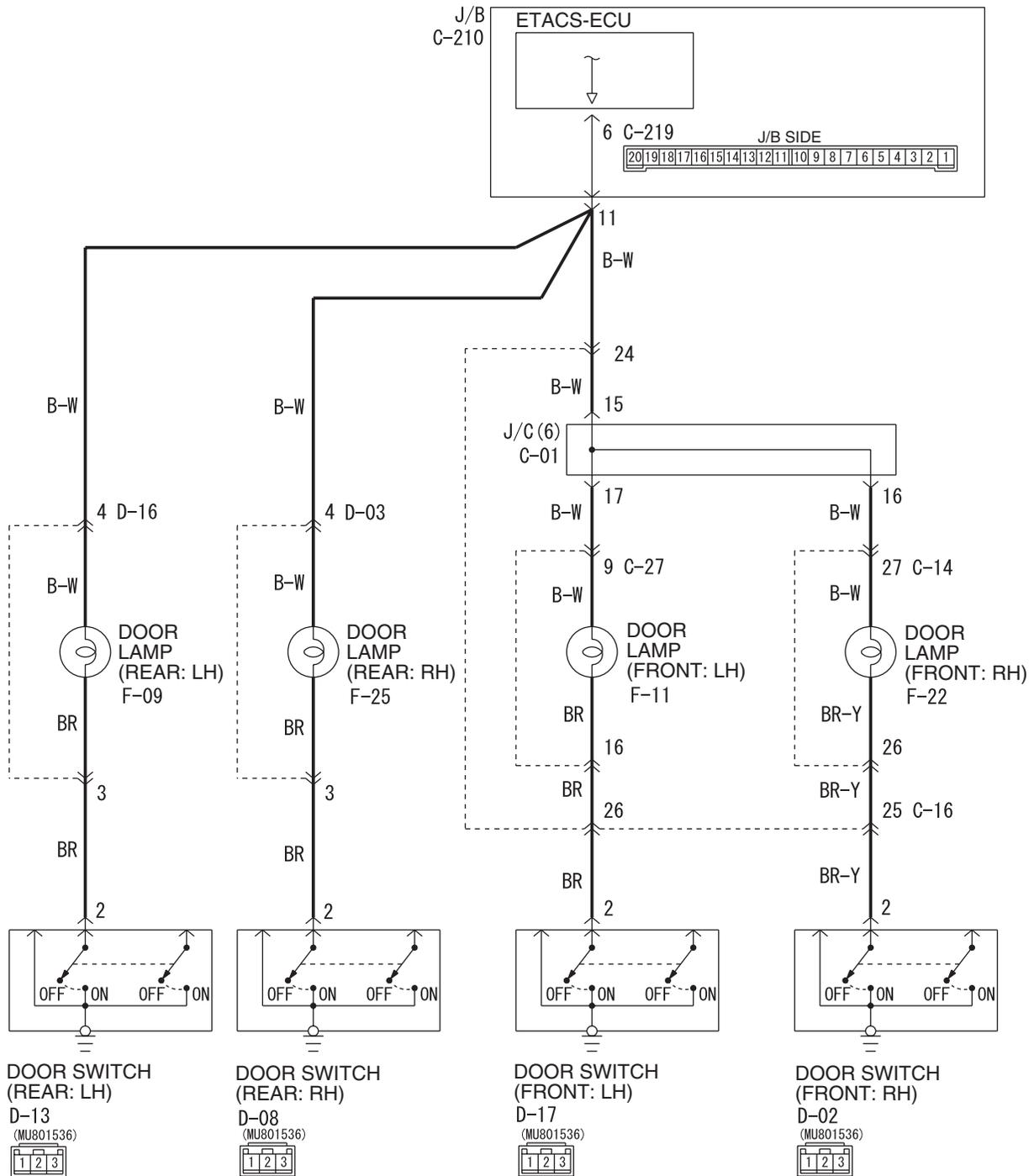
**NO :** Replace the luggage compartment lamp.

Inspection Procedure P-5: The door lamps do not illuminate normally.

**CAUTION**

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

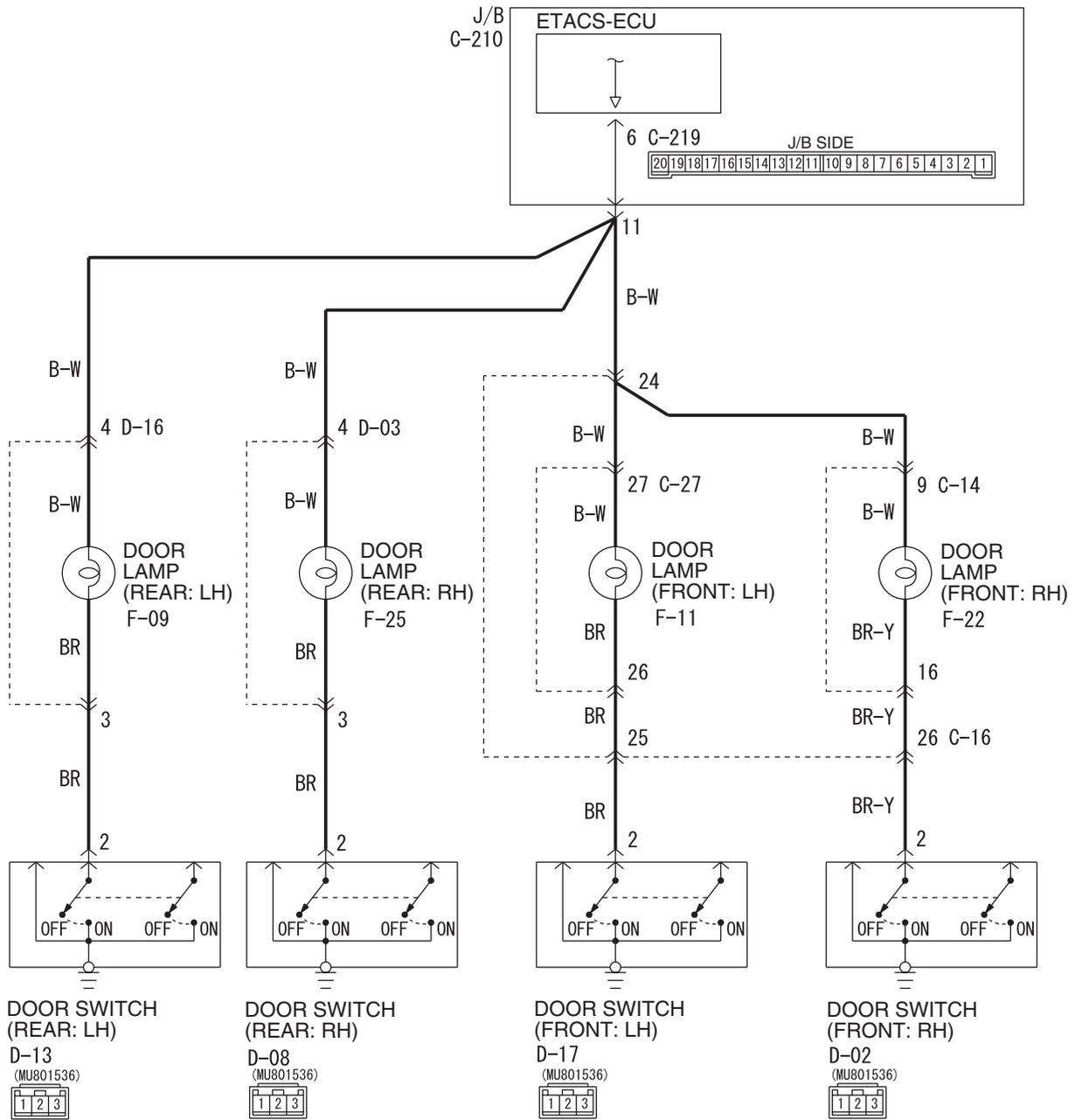
Door Lamp Circuit <LHD>



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

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.

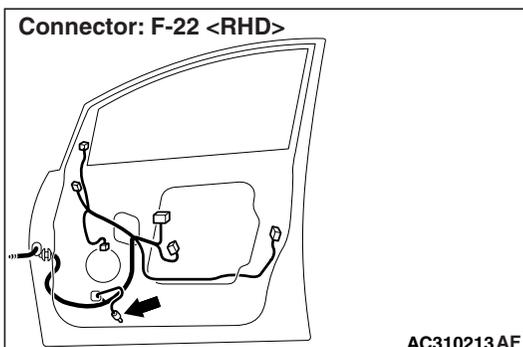
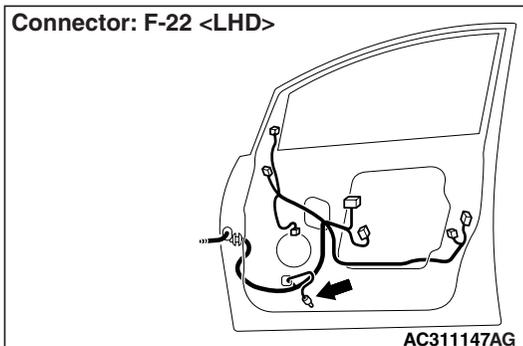
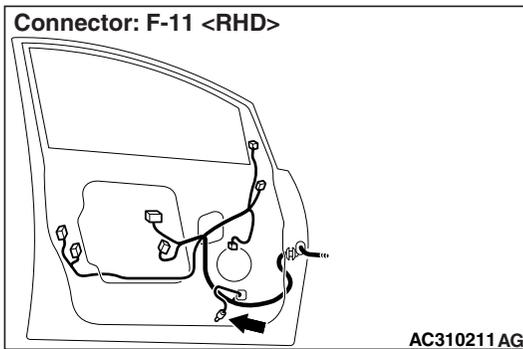
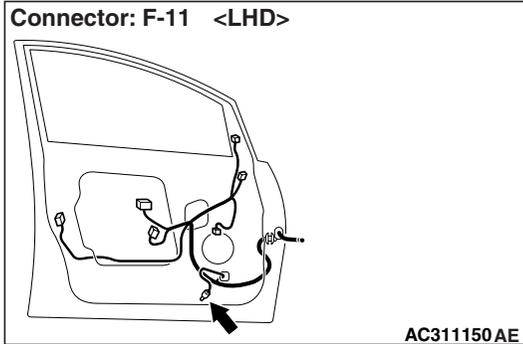
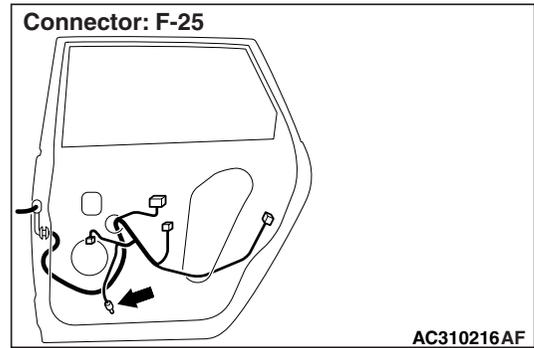
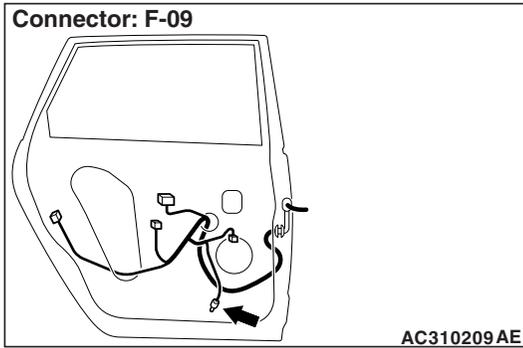
**POSSIBLE CAUSES**

- Malfunction of the door lamp bulbs
- Malfunction of the door switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

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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)



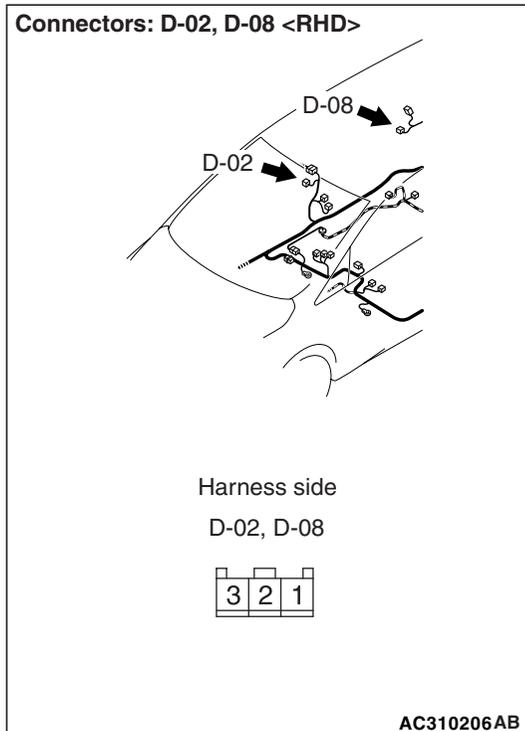
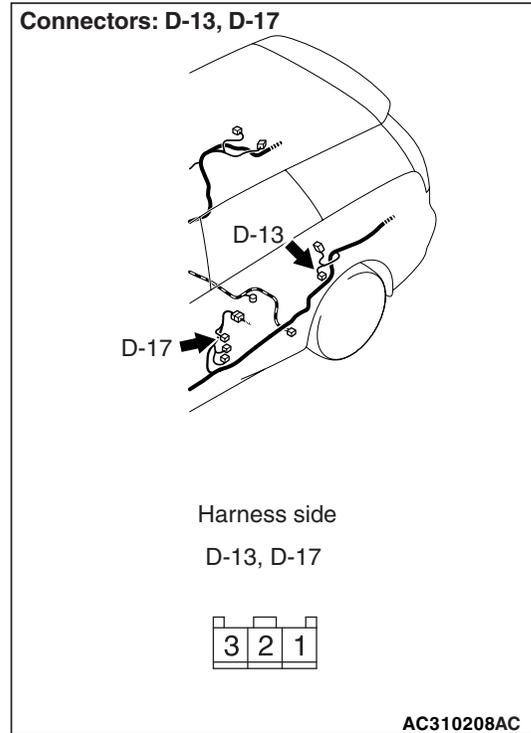
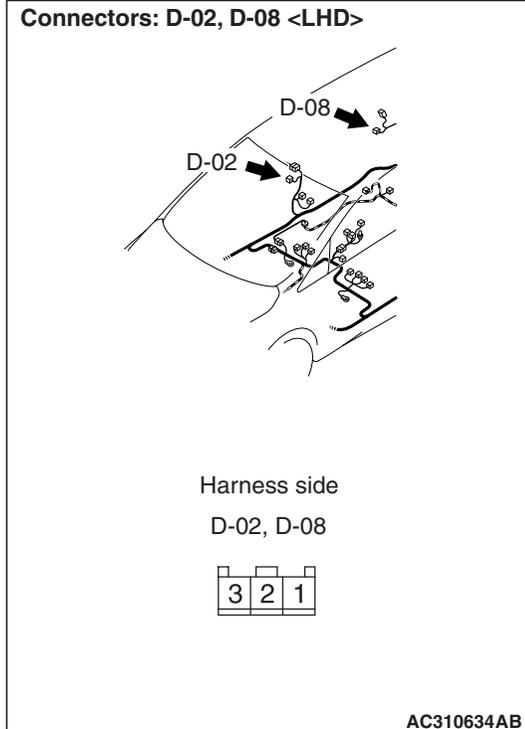
- Q: Is the check result normal?**  
**YES :** Go to Step 2.  
**NO :** Repair the defective connector.

---

**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**



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

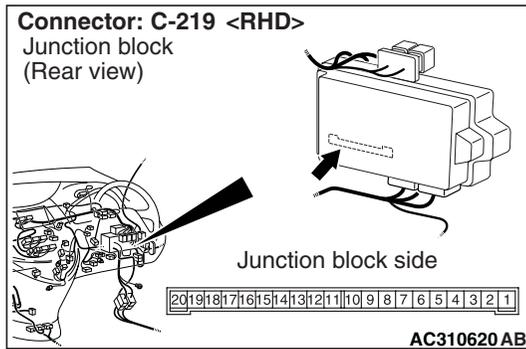
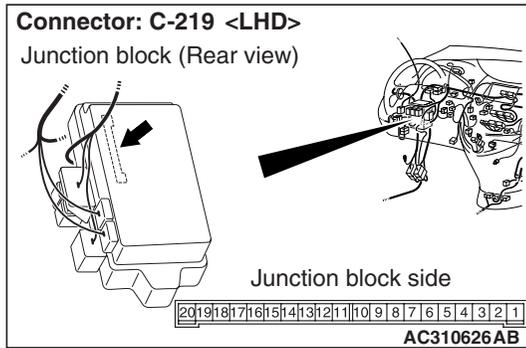
**Step 4. Check the door switch.**

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**

YES : Go to Step 6.  
NO : Repair the defective connector.

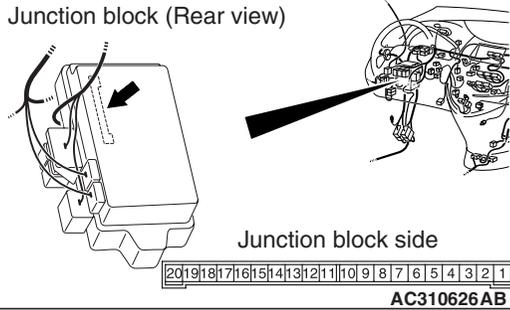


Q: Is the check result normal?

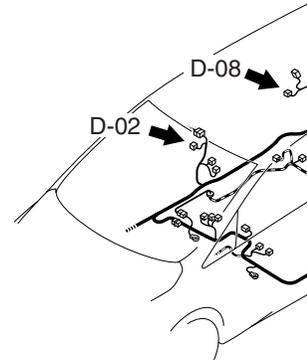
**Step 6. Check the wiring harness from C-219 ETACS-ECU connector terminal No.6 to D-17 door switch (front: LH) or D-02 door switch (front: RH) connector, D-13 door switch (rear: LH) connector, D-08 door switch (rear: RH) connector terminal No.2.**

**Connector: C-219 <LHD>**

Junction block (Rear view)

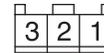


**Connectors: D-02, D-08 <RHD>**



Harness side

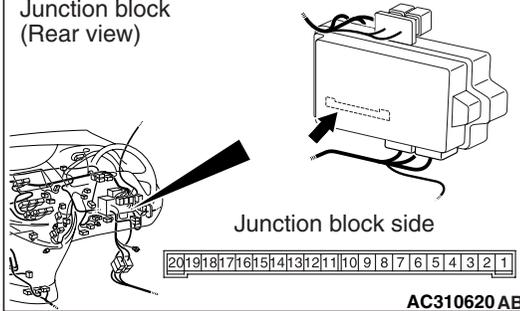
D-02, D-08



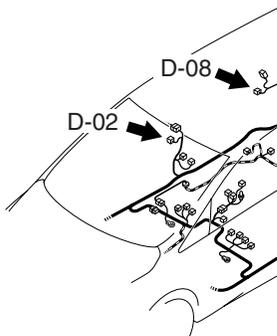
AC310206AB

**Connector: C-219 <RHD>**

Junction block  
(Rear view)

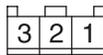


**Connectors: D-02, D-08 <LHD>**



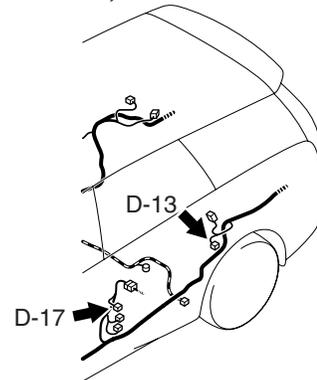
Harness side

D-02, D-08



AC310634AB

**Connectors: D-13, D-17**



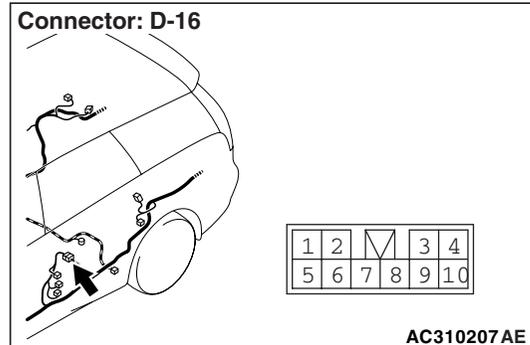
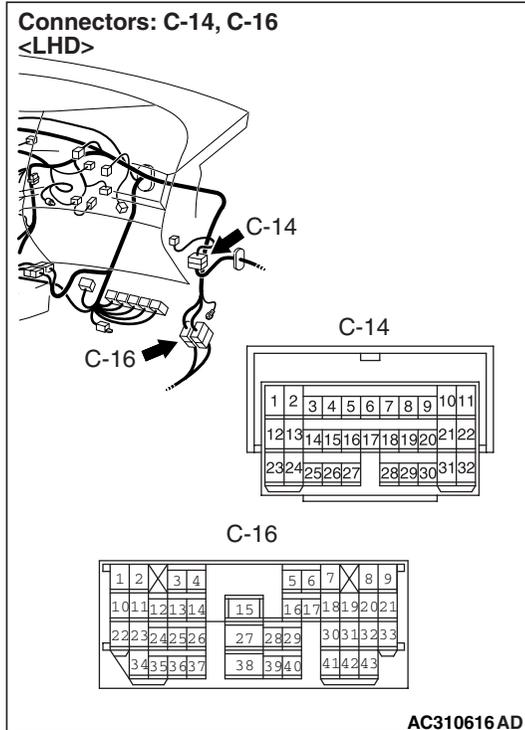
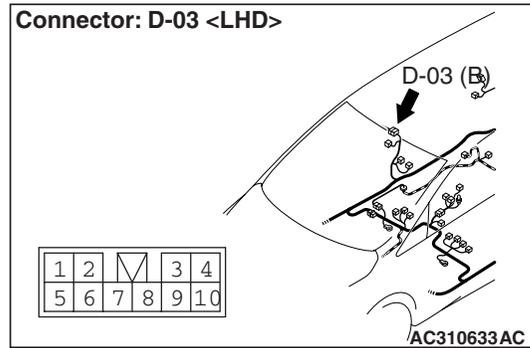
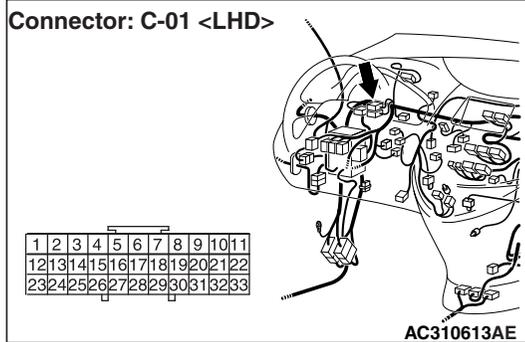
Harness side

D-13, D-17

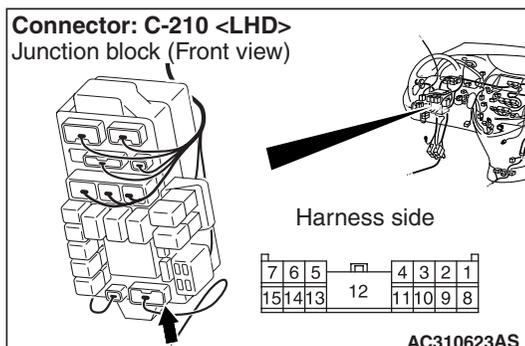
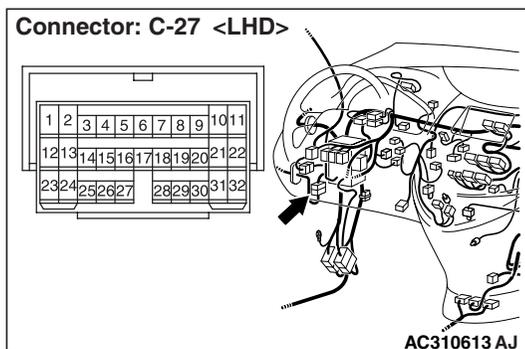


AC310208AC

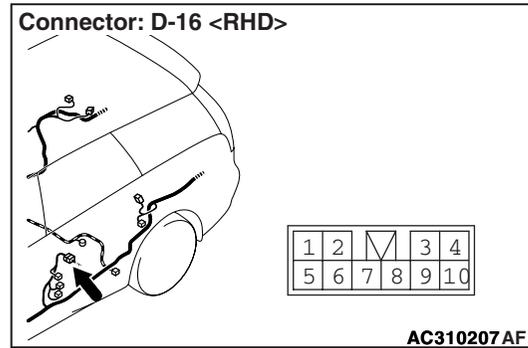
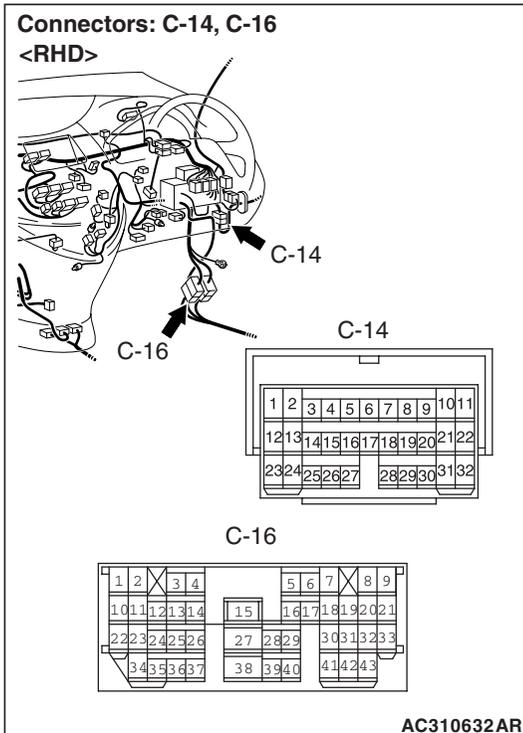
*NOTE:*



<LH drive vehicles> Prior to the wiring harness inspection, check intermediate connector C-14 <door switch (front: RH)>, C-16 <door switch (front: RH), 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.



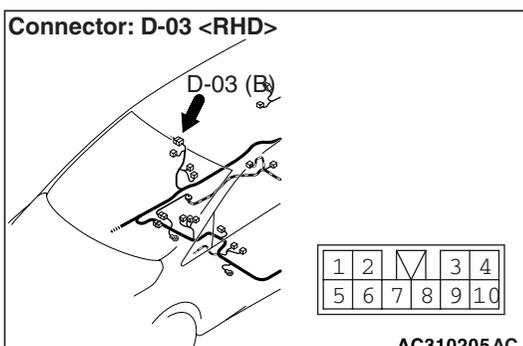
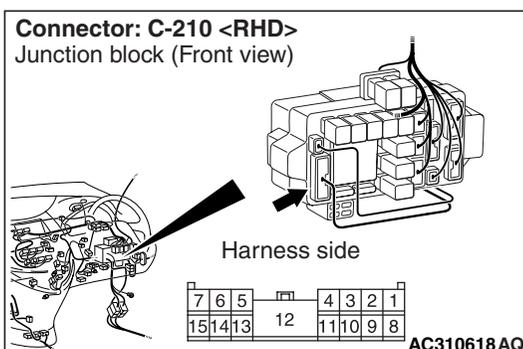
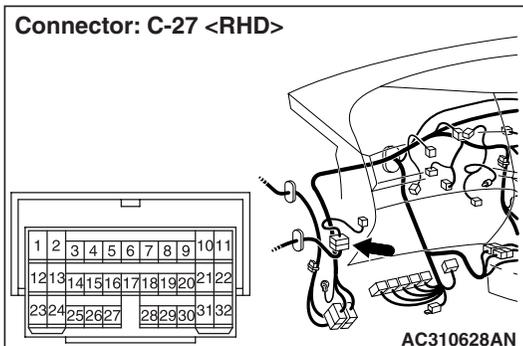
*NOTE:*



<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.

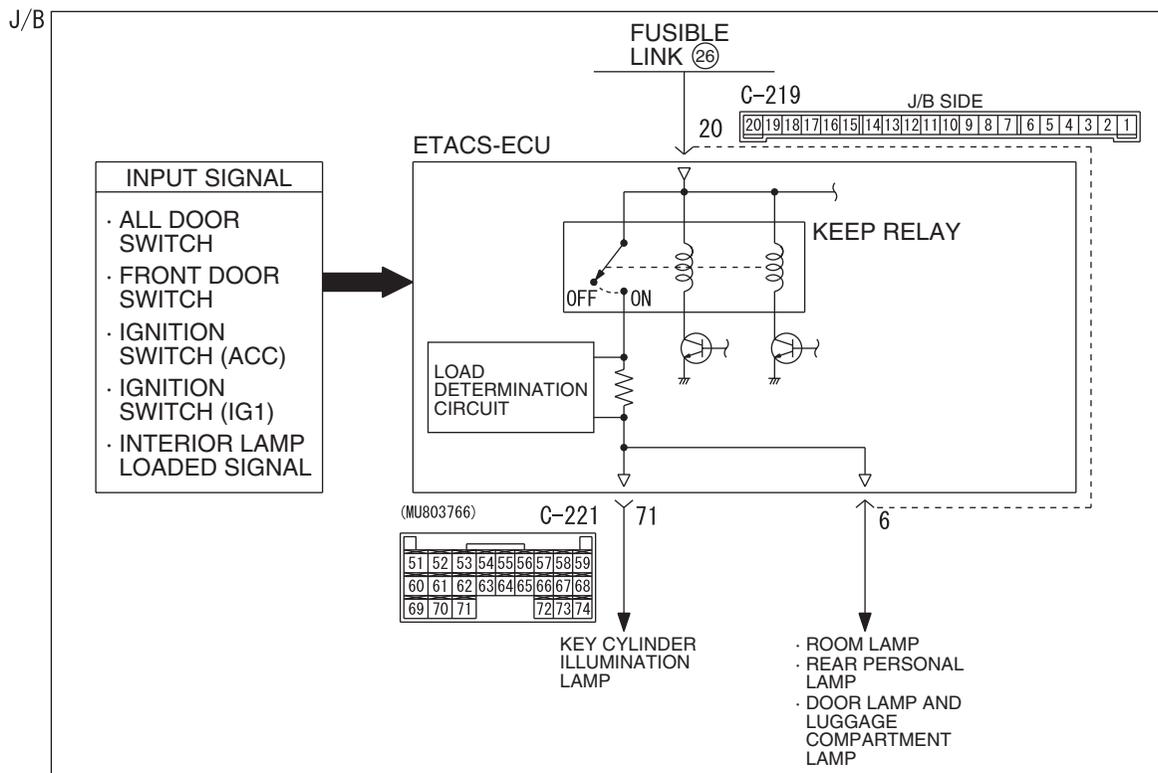


Inspection Procedure P-6: Interior lamp automatic shutoff function does not work normally. <Vehicles with keyless entry system>

**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
- 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 room lamp
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

**DIAGNOSTIC PROCEDURE**

**Step 1. Check the power supply circuit.**

When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

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

**YES** : Go to Step 2.

**NO** : Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-87."

**Step 2. Pulse check**

Check the input signals below, which are related to the front and rear dome lamps.

| <b>System switch</b>        | <b>Check condition</b>   |
|-----------------------------|--|
| Ignition switch (ACC)       | When turned from the LOCK (OFF) position to the ACC position       |
| Ignition switch (IG1)       | When turned from ACC to ON   |
| Driver's door switch        | Driver's door is opened while all the other doors are closed.      |
| Passenger's door switch     | Passenger's door is opened while all the other doors are closed.   |
| Rear door (RH) switch       | Rear door (RH) is opened while all the other doors are closed      |
| Rear door (LH) switch       | Rear door (LH) door is opened while all the other doors are closed |
| Tailgate switch             | Tailgate is opened while all the other doors are closed            |
| 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?**

**All the signals are received normally.** : Go to Step 3.

**The ignition switch (ACC) signal is not received.** : Refer to inspection procedure Q-1 "The ignition switch (ACC) signal is not received [P.54B-416.](#)"

**The ignition switch (IG1) signal is not received.** : Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received [P.54B-420.](#)"

**All the door switch signals are not received.** : Refer to inspection procedure Q-14 "All the door switch signals are not received [P.54B-469.](#)"

**Interior lamp loaded signal is not detected** : Refer to inspection procedure Q-24 "Interior lamp loaded signal is not detected [P.54B-524.](#)"

**Step 3. Customize function by using the SWS monitor.**

Check that the interior lamp automatic-shutdown function has been enabled by using the adjustment function.

**⚠ CAUTION**

**The SWS monitor must be used in order to confirm and change that setting. Use the SWS monitor to confirm and/or change the customized function.**

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

**YES** : Go to Step 4.

**NO** : Enable the interior lamp automatic-shutdown function by using the SWS monitor customize function (Refer to GROUP 54C – Customize function [P.54C-574.](#))

**Step 4. Retest the system.**

Check that the interior lamp automatic-shutdown function works normally.

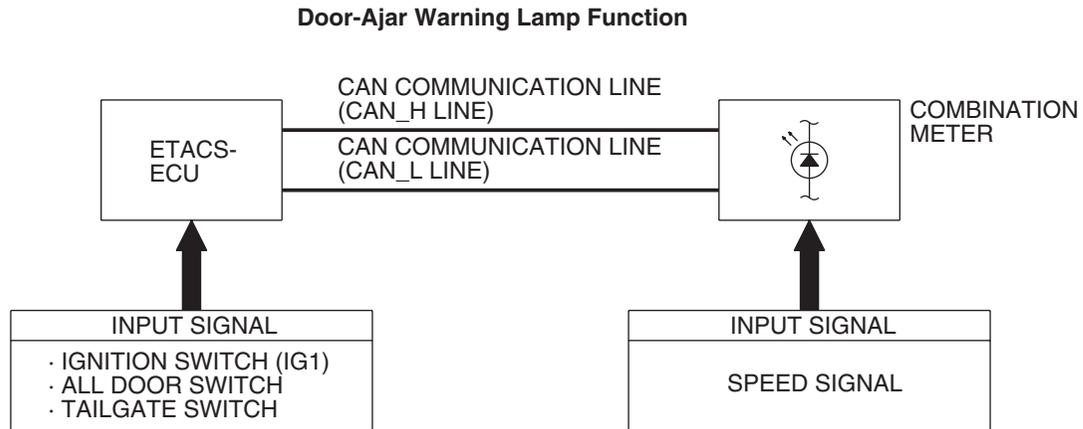
**Q: Is the check result normal?**

**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.



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**COMMENTS ON TROUBLE SYMPTOM**

If the door-ajar warning lamp does not work normally, these input signal circuits or the ETACS-ECU 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 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 illuminate normally [P.54B-399](#)."

**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. Check the power supply circuit.**

When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

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

**YES** : Go to Step 5.

**NO** : Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit [P.54B-87](#)."

**Step 5. Pulse check**

Check the input signals below, which are related to the door-ajar warning lamp.

| <b>System switch</b>    | <b>Check conditions</b>  |
|-------------------------|--|
| Ignition switch (IG1)   | When turned from ACC to ON   |
| Driver's door switch    | Driver's door is opened while all the other doors are closed.      |
| Passenger's door switch | Passenger's door is opened while all the other doors are closed.   |
| Rear door (RH) switch   | Rear door (RH) is opened while all the other doors are closed      |
| Rear door (LH) switch   | Rear door (LH) door is opened while all the other doors are closed |
| Tailgate switch         | TAilgate is opened while all the other doors are closed            |
| Tailgate switch         | A tailgate opened  |
| Vehicle speed signal    | When the vehicle speed has reached 10 km/h or more                 |

**OK: The MUT-III sounds or the voltmeter needle fluctuates.**

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

**All the signals are received normally.** : Go to Step 6.

**The ignition switch (IG1) signal is not received.** : Refer to inspection procedure Q-2 "The ignition switch (IG1) signal is not received" [P.54B-420](#).

**All the door switch or tailgate switch signals are not received.** : Refer to inspection procedure Q-14 "All the door switch signals are not received" [P.54C-505](#)".

**The vehicle speed signal is not received.** : Refer to inspection procedure Q-25 "The vehicle speed signal is not received" [P.54B-529](#).

**Step 6. 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.

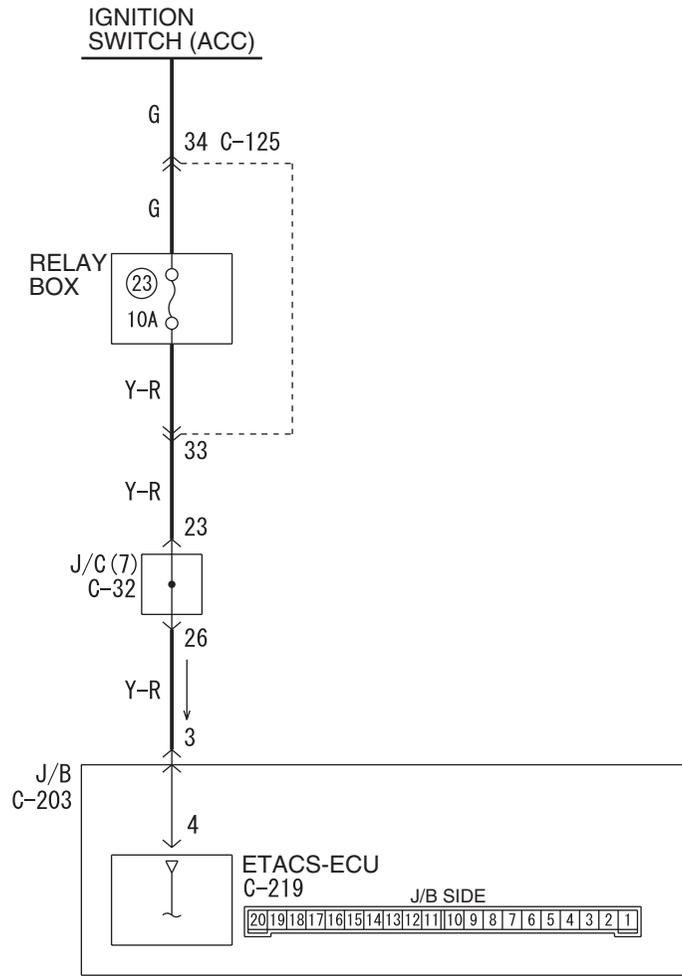
# INPUT SIGNAL PROCEDURES

**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.

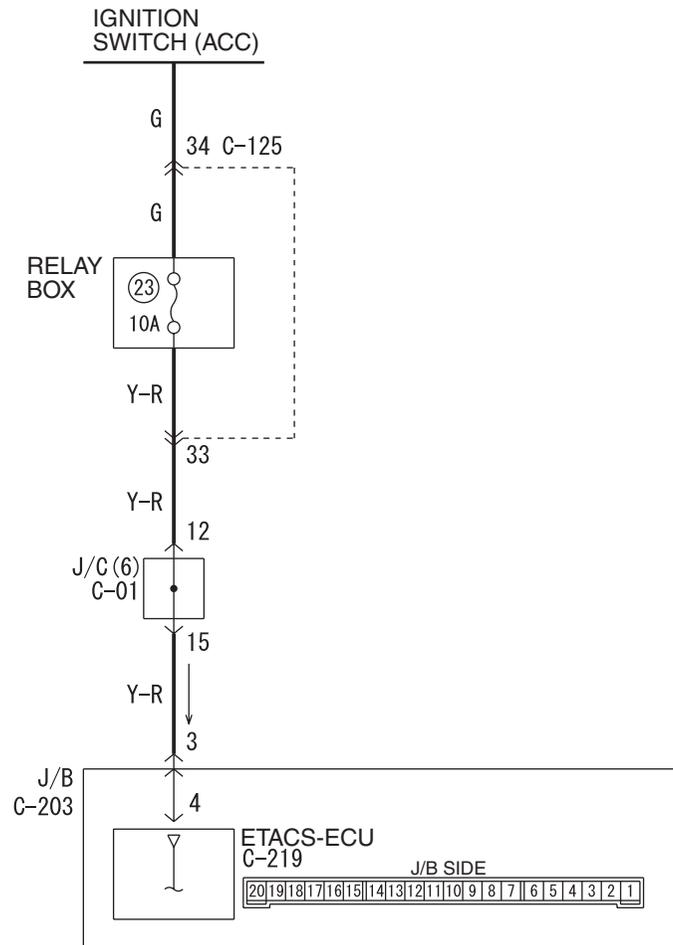
Ignition Switch (ACC) Input Circuit <LHD>



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

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.

- Seat belt warning buzzer function
- Door-ajar warning buzzer function
- Sunroof timer function
- Windshield wiper and washer

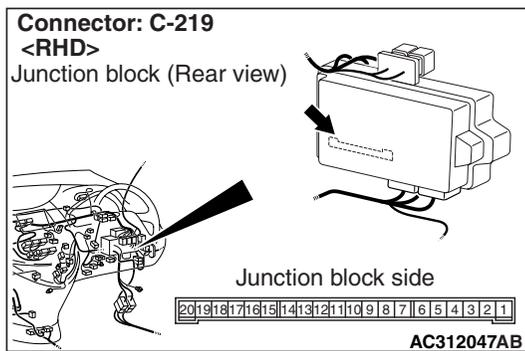
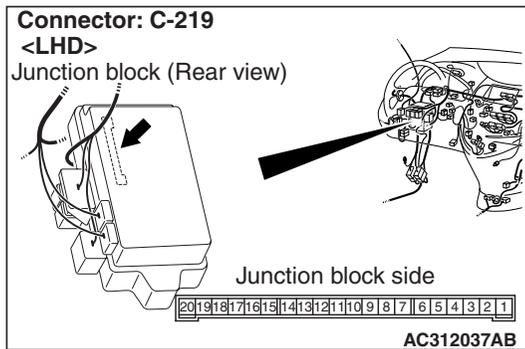
- Rear wiper and washer
- Headlamp washer
- Electric retractable remote controlled mirror
- Interior lamp automatic-shutdown function

**POSSIBLE CAUSES**

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

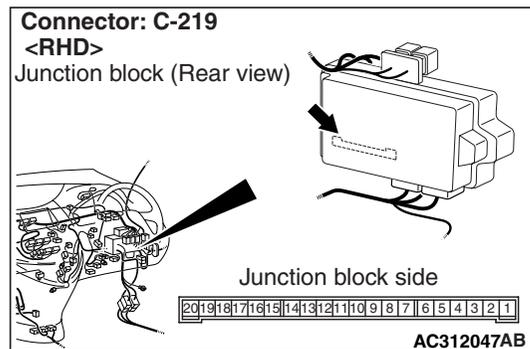
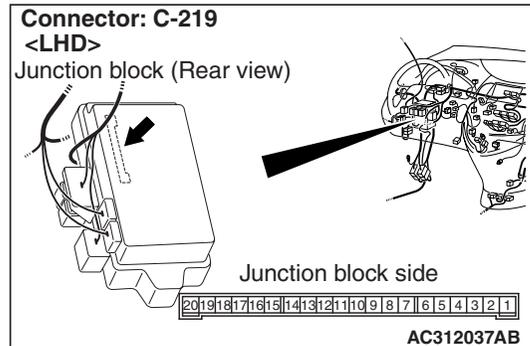
DIAGNOSTIC PROCEDURE

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

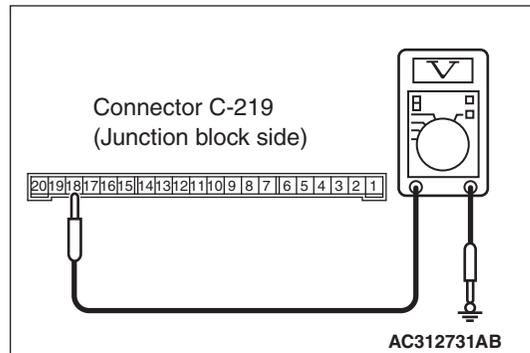


Q: Is the check result normal?  
 YES : Go to Step 2.  
 NO : Repair the defective connector.

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



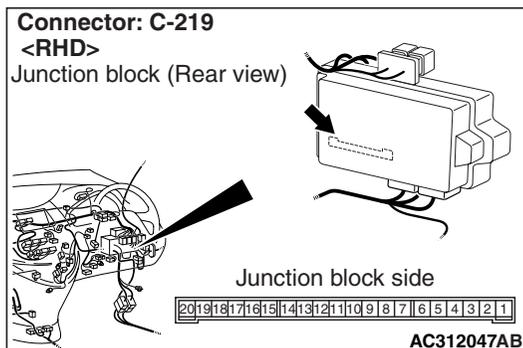
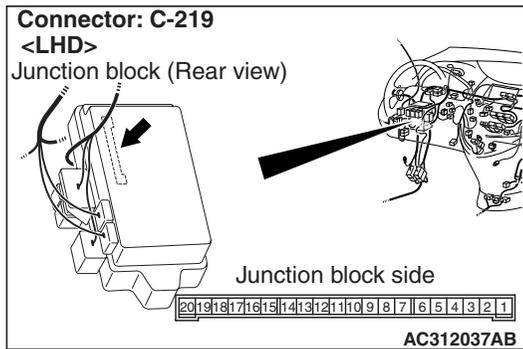
- (3) Voltage between C-219 ETACS-ECU connector terminal No.18 and body earth

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).**

**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.



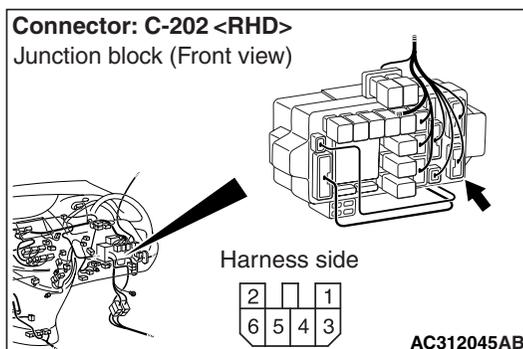
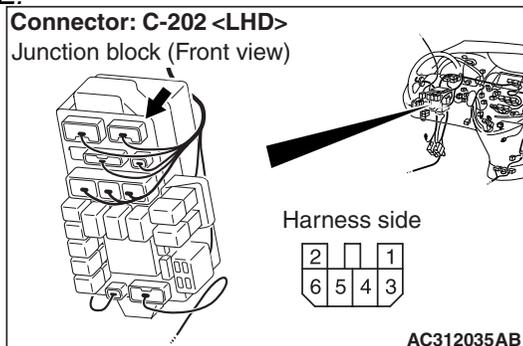
**Step 4. Retest the system.**

Check that the ignition switch (ACC) signal is received 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.

**NOTE:**



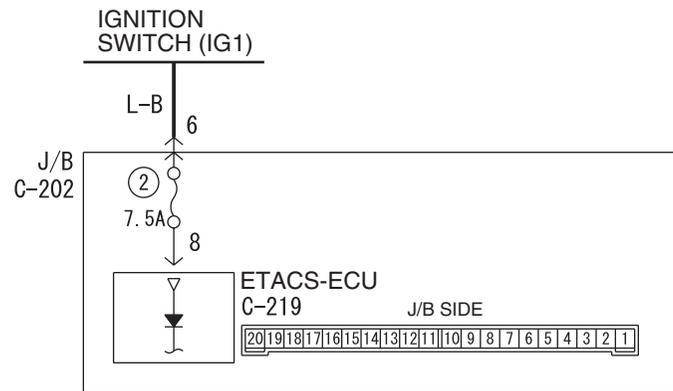
*Prior to the wiring harness inspection, check junction block connector C-202, and repair if necessary.*

- Check the power supply line for open circuit.

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

**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

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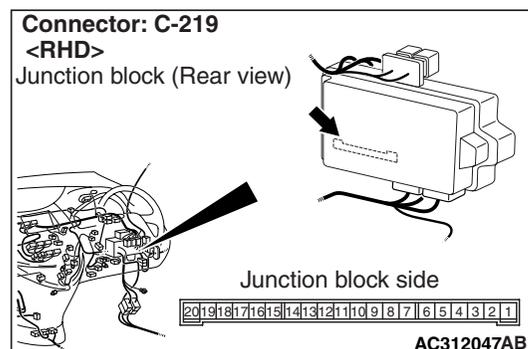
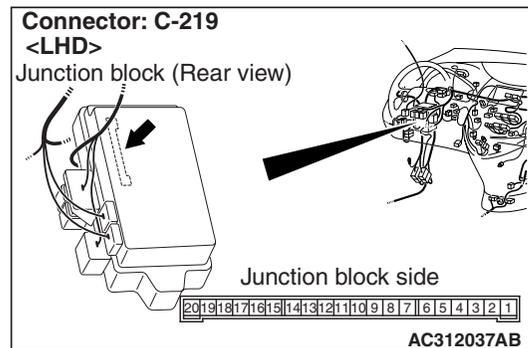
**COMMENTS ON TROUBLE SYMPTOM**

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 function
- Turn-signal lamp operation sound function
- Power window
- Ignition key cylinder illumination lamp
- Seat belt indicator
- Head and tail lamps
- Headlamp automatic-shutdown function
- Rear fog lamp
- Turn signal lamp
- Interior lamps
- Interior lamp automatic-shutdown function

**POSSIBLE CAUSES**

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

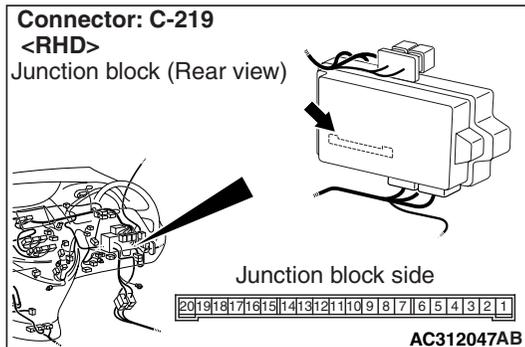
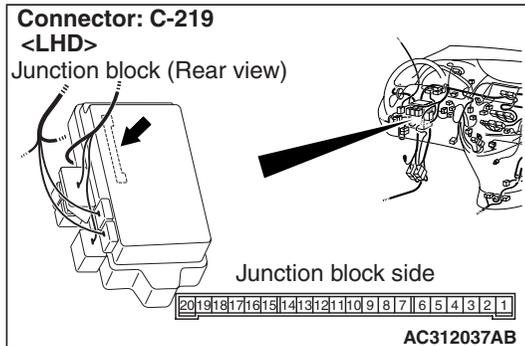
**DIAGNOSTIC PROCEDURE****Step 1. Connector check: C-219 ETACS-ECU connector**

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

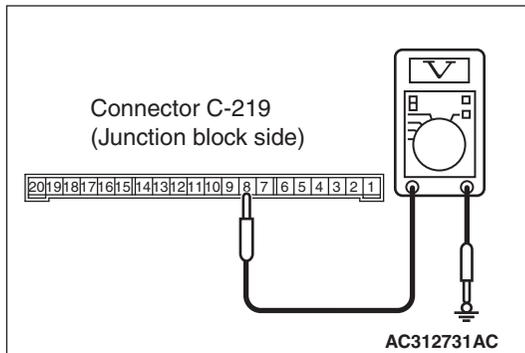
**YES :** Go to Step 2.

**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

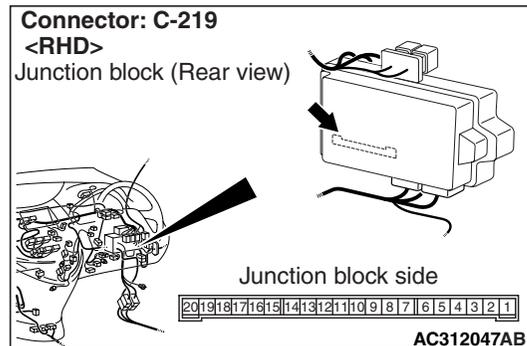
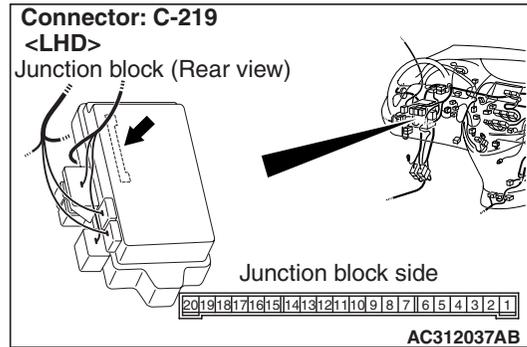
**OK: System voltage**

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

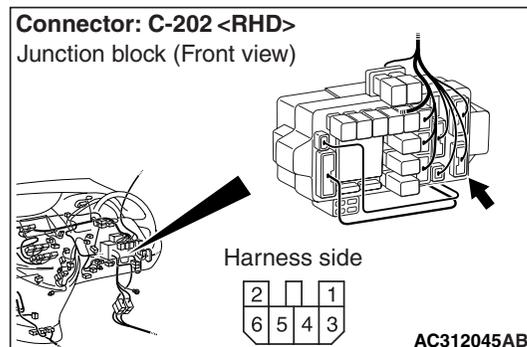
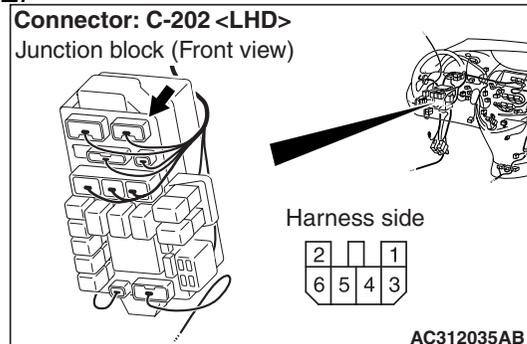
**YES :** Go to Step 4.

**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. Retest the system.**

Check that the ignition switch (IG1) signal is received 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](#)).

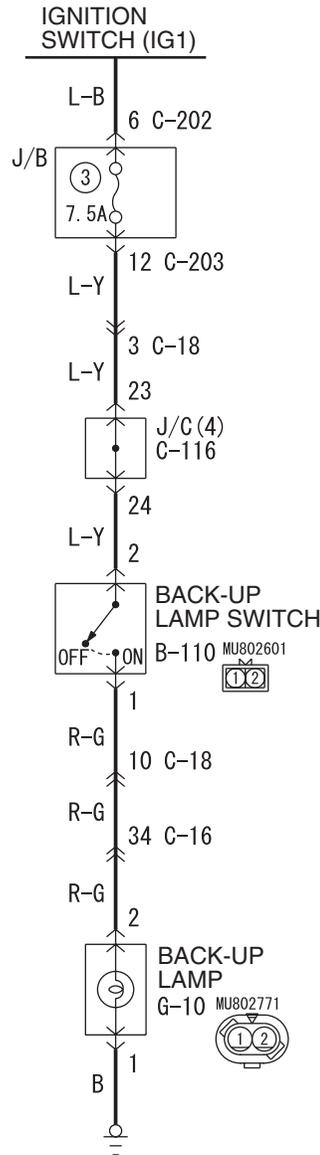
**NO** : Replace the ETACS-ECU.

Inspection Procedure 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.

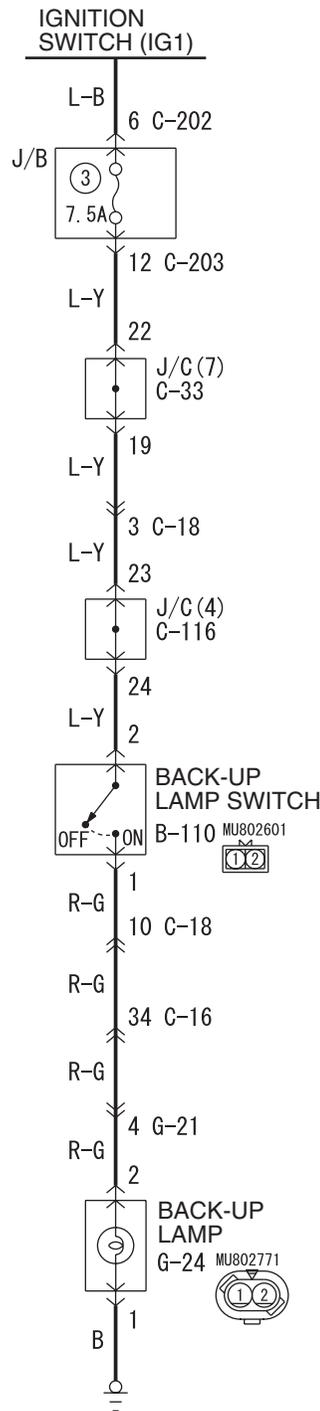
Back-up Lamp Switch Input Circuit <LHD>



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

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**

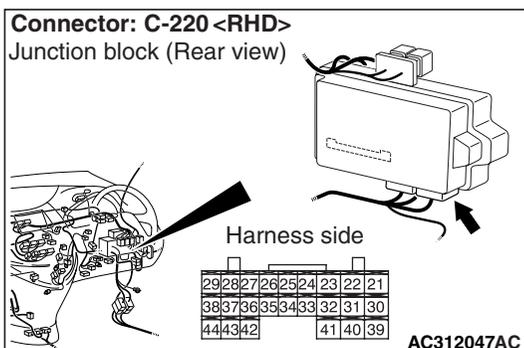
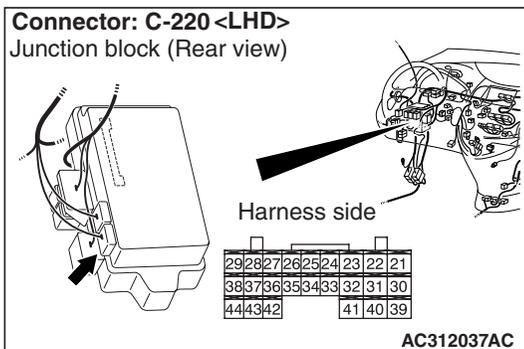
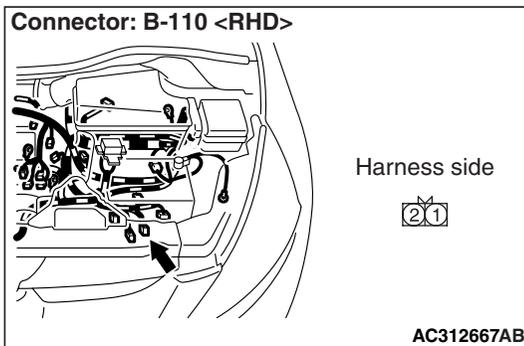
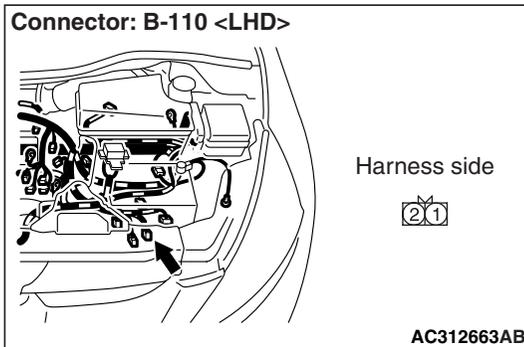
Input signal from the back-up lamp switch is used to operate the rear wiper. If the signal is abnormal, the rear wiper will not work normally.

**POSSIBLE CAUSES**

- Malfunction of the back-up lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

**DIAGNOSTIC PROCEDURE**

**Step 1. Connector check: B-110 back-up lamp switch connector and C-220 ETACS-ECU connector**

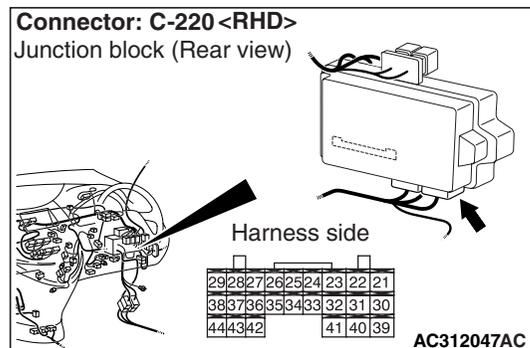
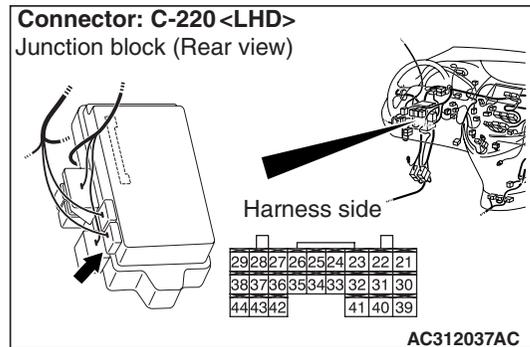


**Q: Is the check result normal?**  
**YES :** Go to Step 2.  
**NO :** Repair the defective connector.

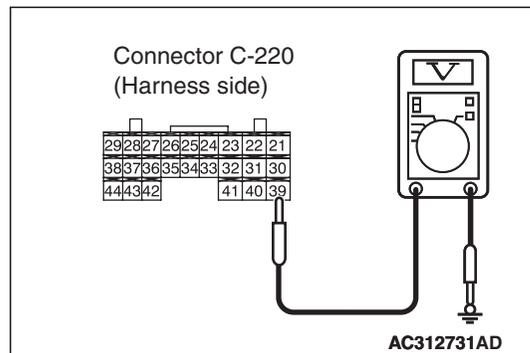
**Step 2. Check the back-up lamp switch**  
 Check the back-up lamp switch (Refer to GROUP 22B – Transmission P.22B-17).

**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.**



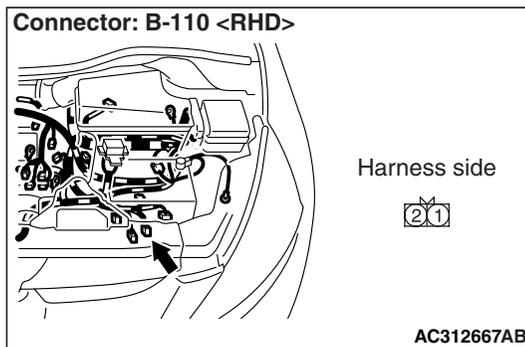
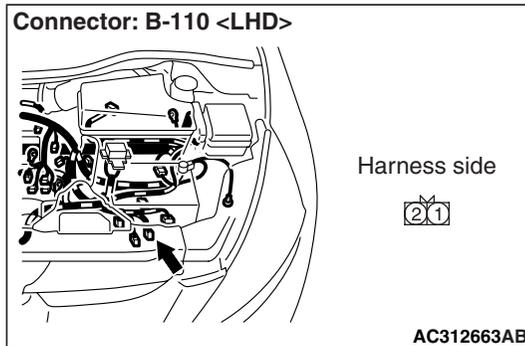
- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Ignition switch: ON
- (3) Shift position: R position



- (4) Voltage between C-220 ETACS-ECU connector terminal No.39 and body earth

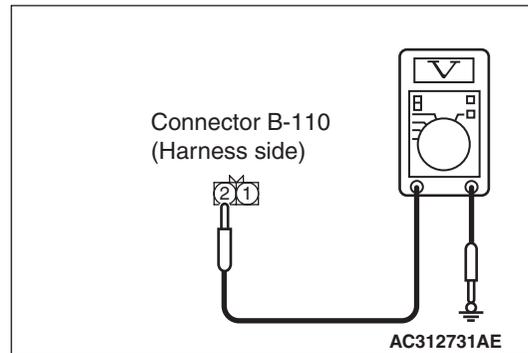
**OK: System voltage**

**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

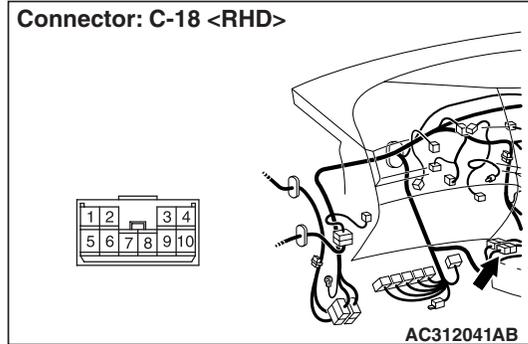
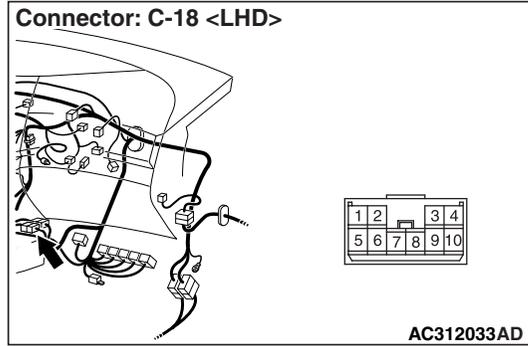
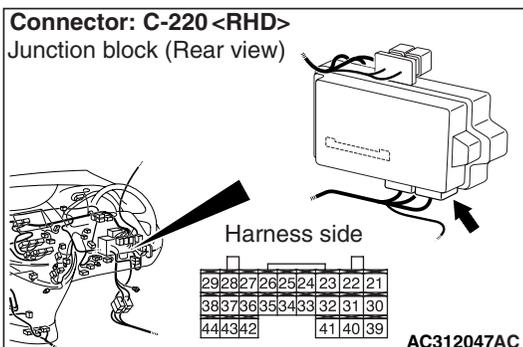
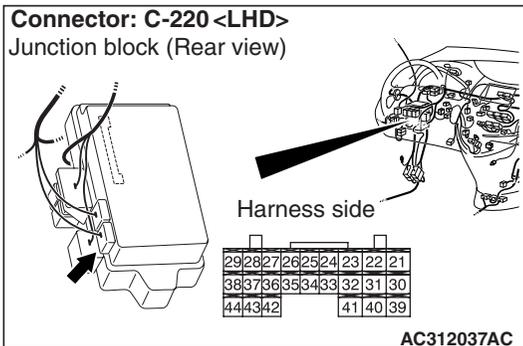
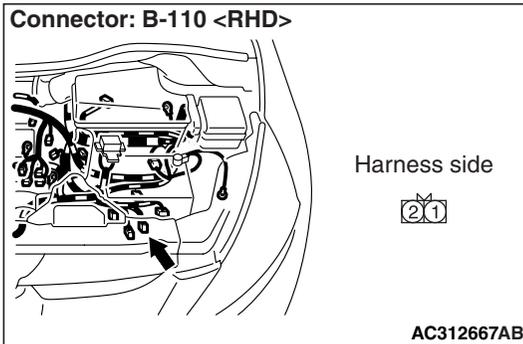
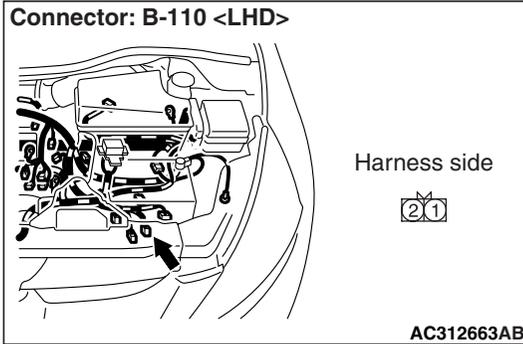
**OK: System voltage**

**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.**



*Prior to the wiring harness inspection, check intermediate connector C-18, and repair if necessary.*

- Check the input line for open circuit.

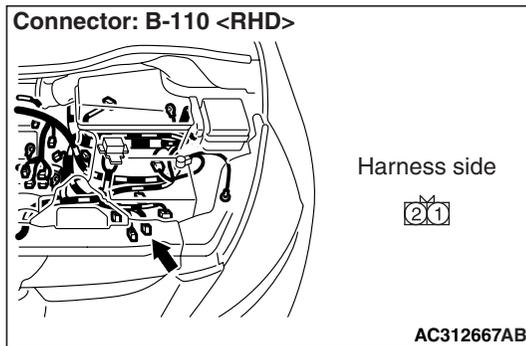
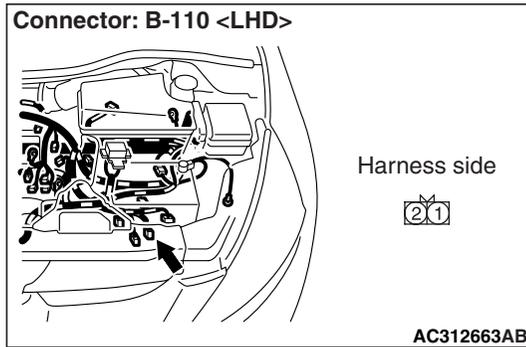
**Q: Is the check result normal?**

**YES :** Go to Step 7.

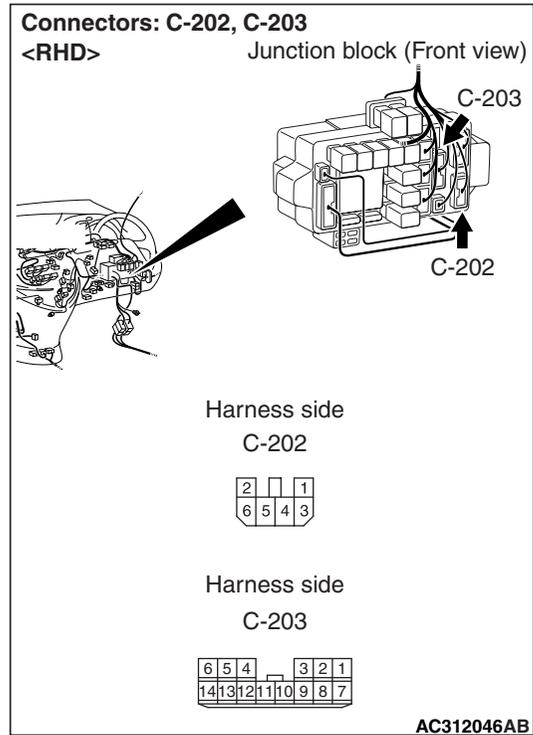
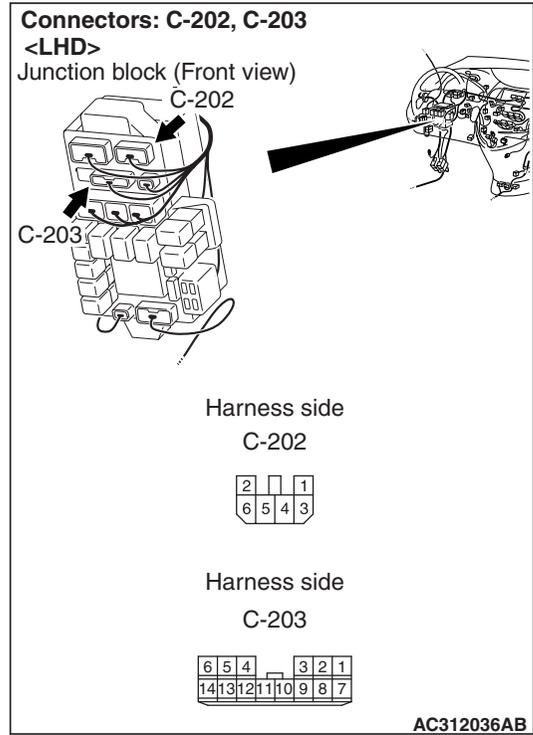
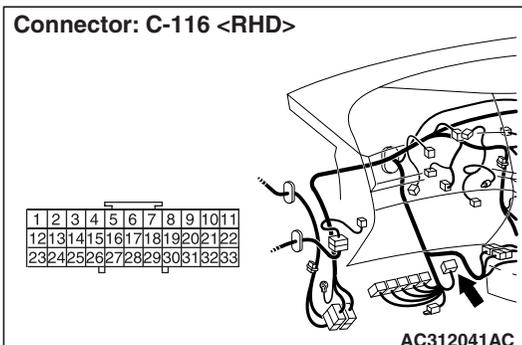
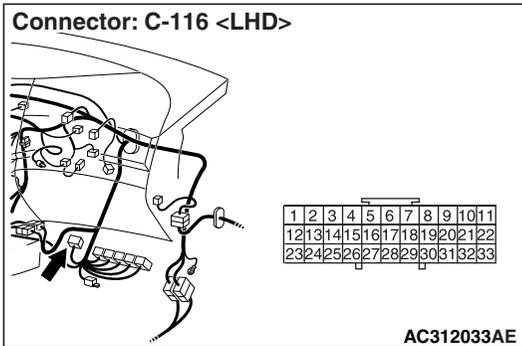
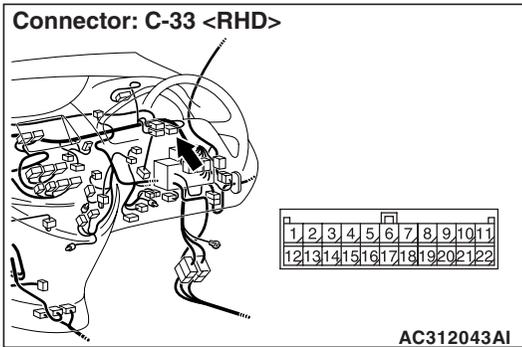
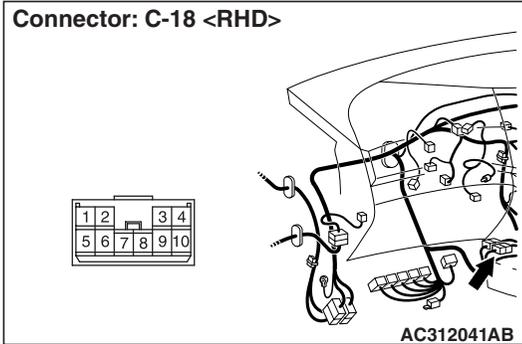
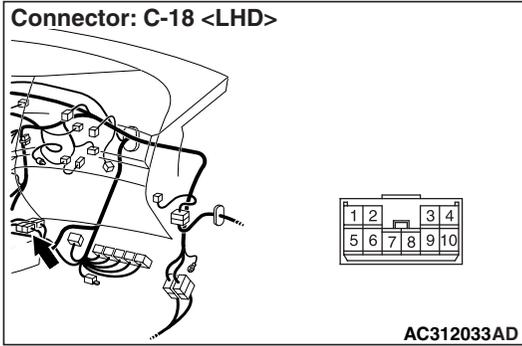
**NO :** Repair the wiring harness.

**NOTE:**

Step 6. Check the wiring harness between B-110 back-up lamp switch connector terminal No.2 and the ignition switch (IG1).



NOTE:



*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. Retest the system.**

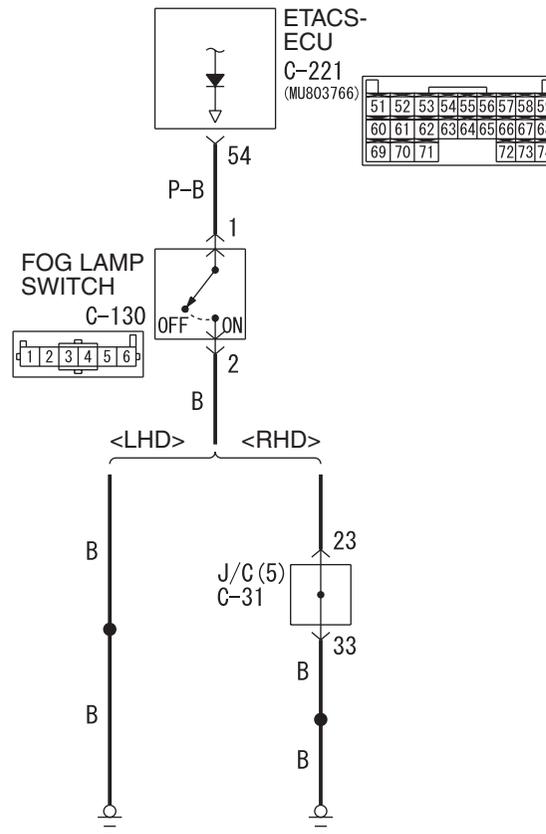
Check that the back-up lamp switch signal is received normally.

**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 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**

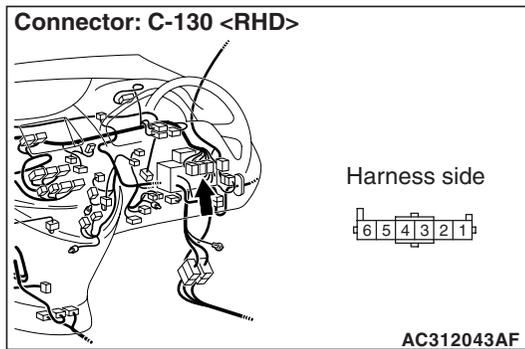
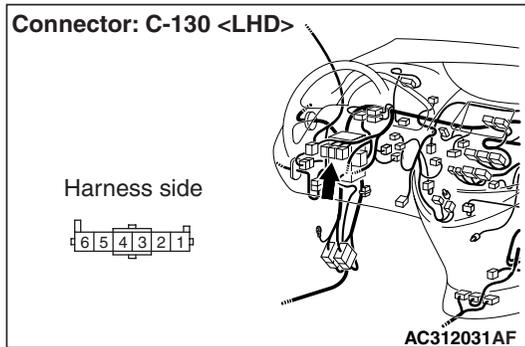
Input signal from the front fog lamp switch is used to operate the front fog lamps. If the signal is abnormal, the front fog lamps will not illuminate and extinguish normally.

**POSSIBLE CAUSES**

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

**DIAGNOSTIC PROCEDURE**

**Step 1. Connector check: C-130 fog lamp switch connector**

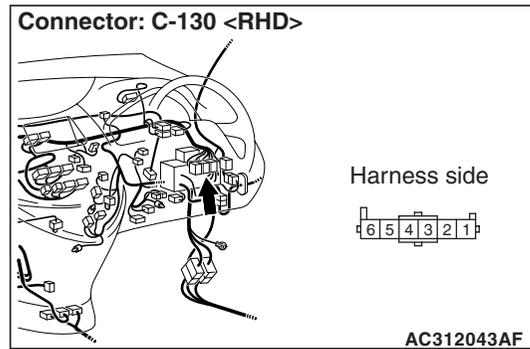
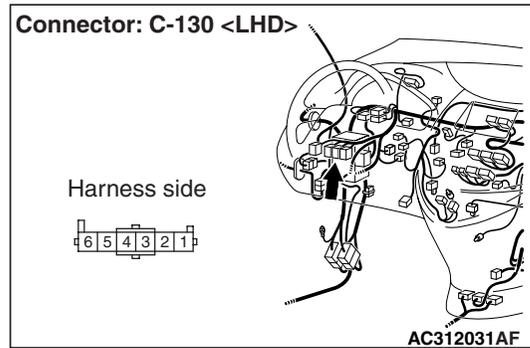


**Q: Is the check result normal?**  
**YES :** Go to Step 2.  
**NO :** Repair the defective connector.

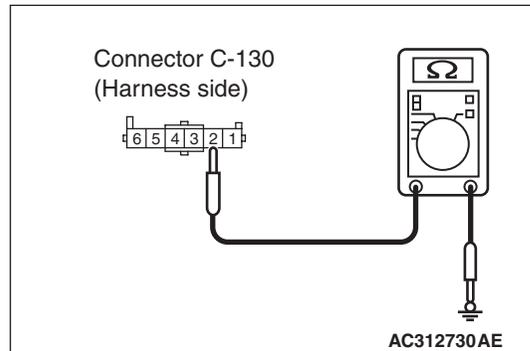
**Step 2. Check the front fog lamp switch.**  
Refer to GROUP 54A – Front fog lamp P.54A-93.

**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.

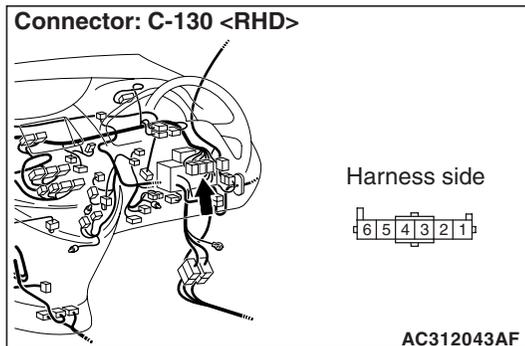
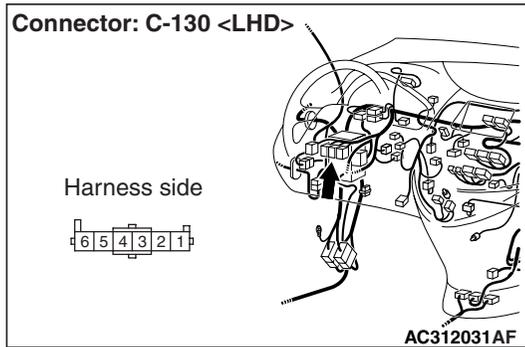


(2) Resistance between C-130 fog lamp switch connector terminal No.2 and body earth

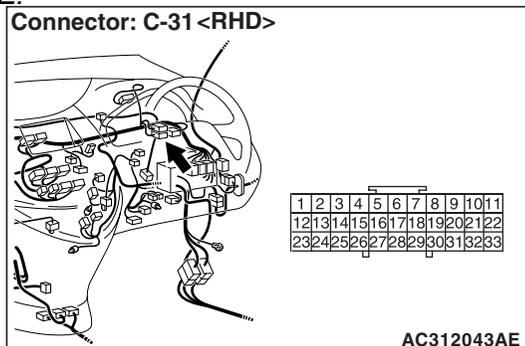
**OK: 2 Ω or less**

**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:**



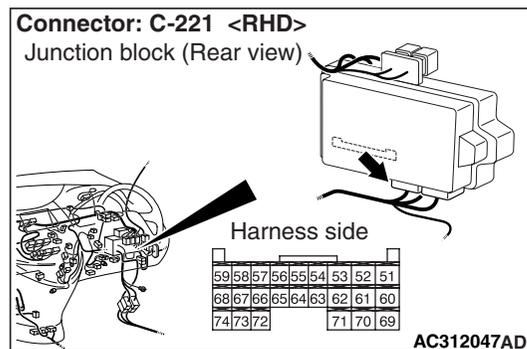
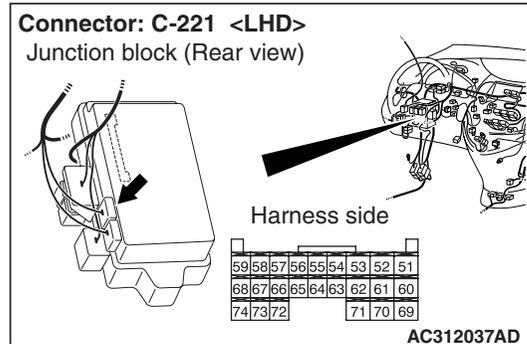
Prior to the wiring harness inspection, check joint connector C-31 <RH drive vehicles>, and repair if necessary.

- 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**

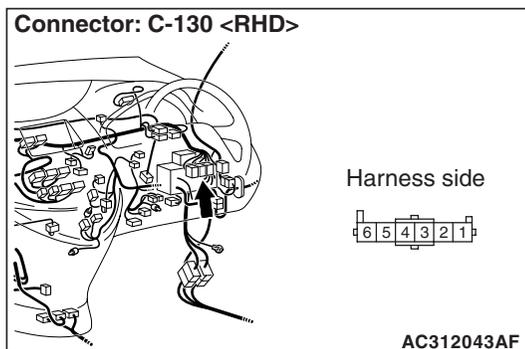
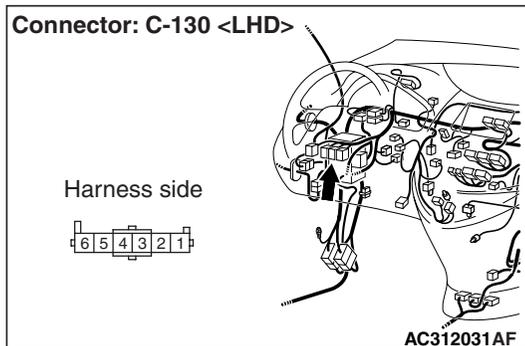
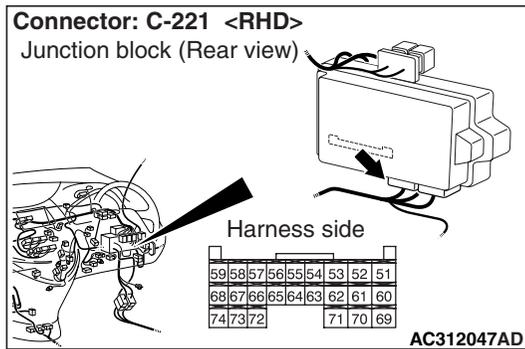
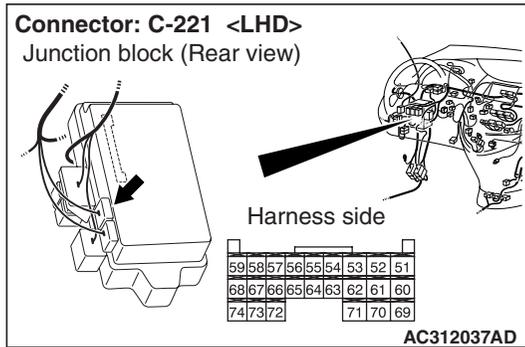


**Q: Is the check result normal?**

**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.**

**YES :** Go to Step 7.  
**NO :** Repair the wiring harness.



- Check the input line for open circuit.

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

**Step 7. Retest the system.**

Check that the front fog lamp switch signal is received normally.

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

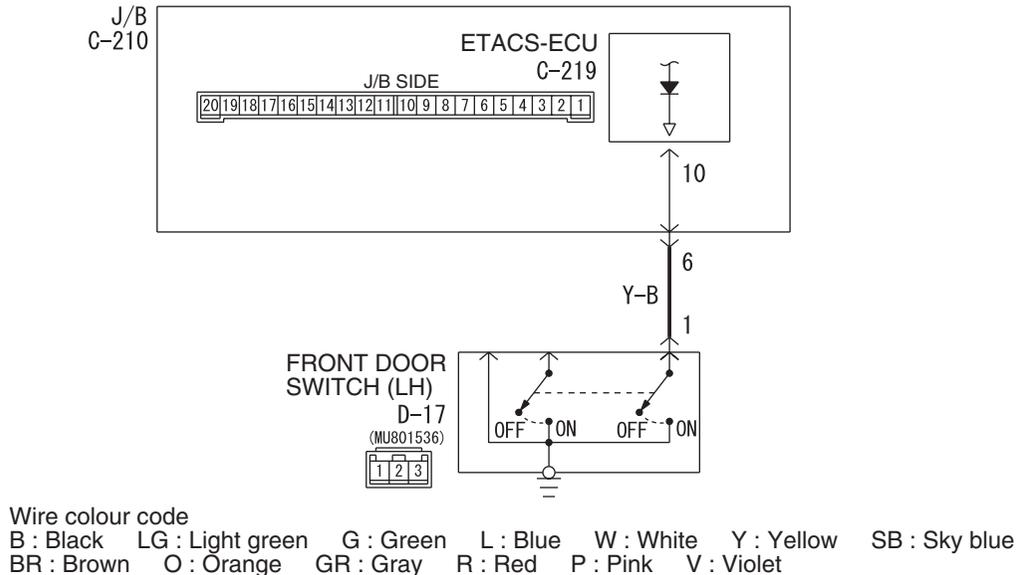
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO :** Replace the ETACS-ECU.

## Inspection Procedure Q-5: The driver's door switch signal is not received. &lt;LH drive vehicles&gt;

**CAUTION**

Whenever the ECU is replaced, ensure that the input signal circuit is normal.

## Driver's Door Switch Input Circuit &lt;LHD&gt;



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
- Key reminder function
- Ignition key cylinder illumination lamp
- Headlamp automatic-shutdown function
- Room lamps

**POSSIBLE CAUSES**

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

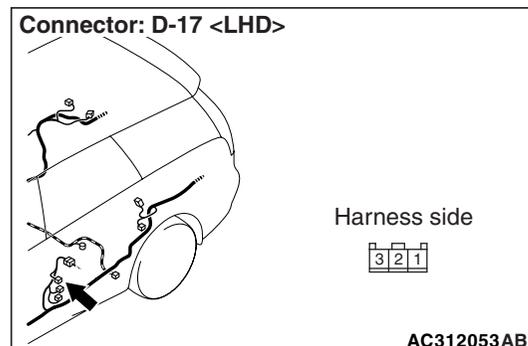
**DIAGNOSTIC PROCEDURE****Step 1. Check the installation condition.**

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).**

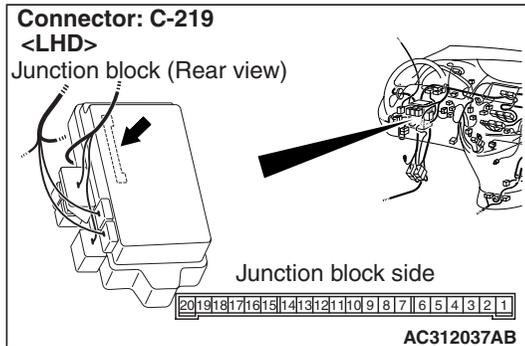
Refer to GROUP 42 – Door P.42-32.

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

**YES** : Go to Step 4.

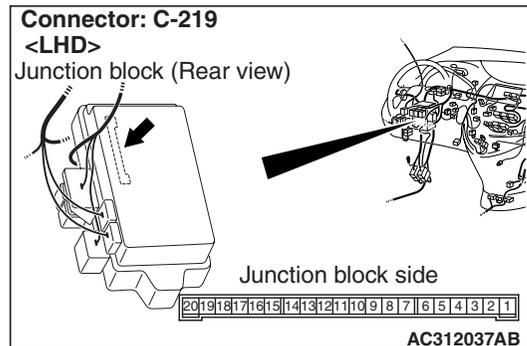
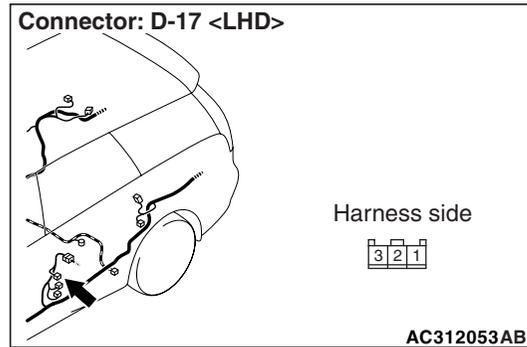
**NO** : Replace the front door switch (LH).

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

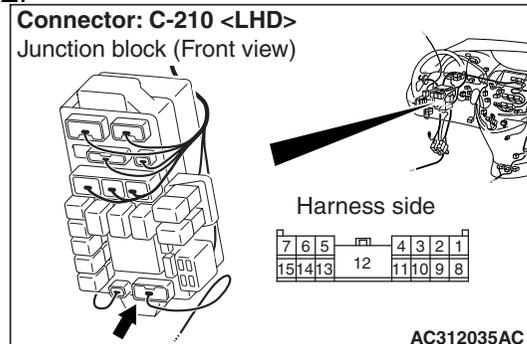


**Q: Is the check result normal?**  
**YES :** Go to Step 5.  
**NO :** Repair the defective connector.

**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.

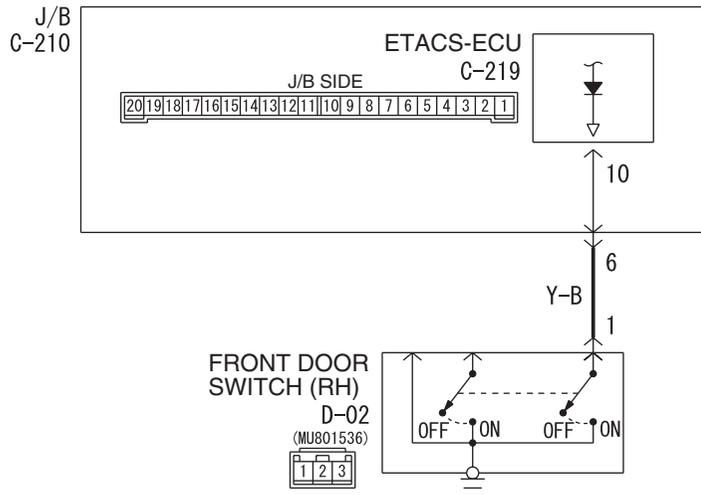
**Step 6. Retest the system.**

Check that the driver's door switch signal is received 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 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 front door switch (RH) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Lamp reminder function
- Headlamp automatic-shutdown function
- Room lamps

**POSSIBLE CAUSES**

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

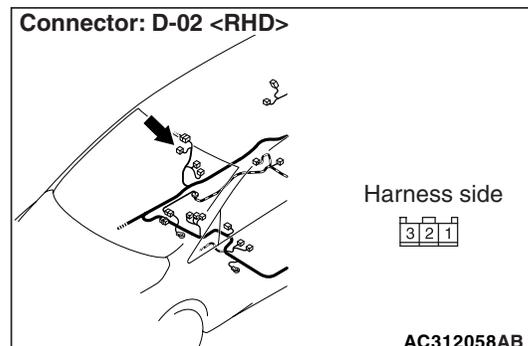
**DIAGNOSTIC PROCEDURE****Step 1. Check the installation condition.**

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).**

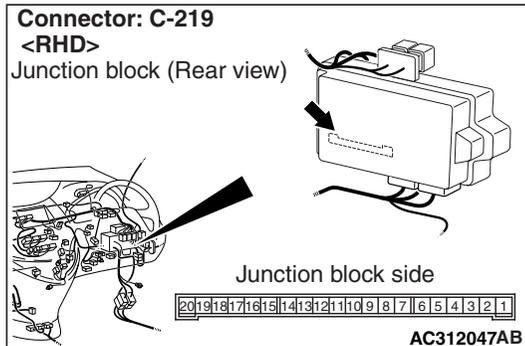
Refer to GROUP 42 – Door P.42-32.

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

**YES :** Go to Step 4.

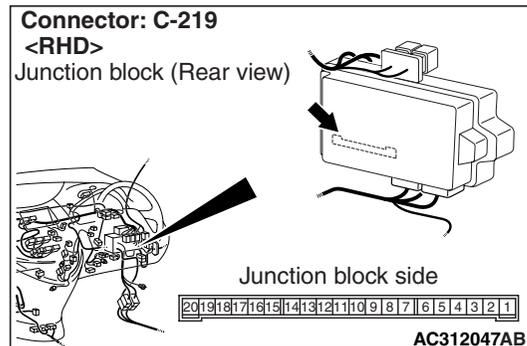
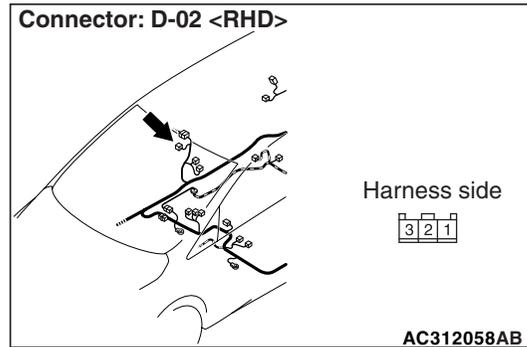
**NO :** Replace the front door switch (RH).

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

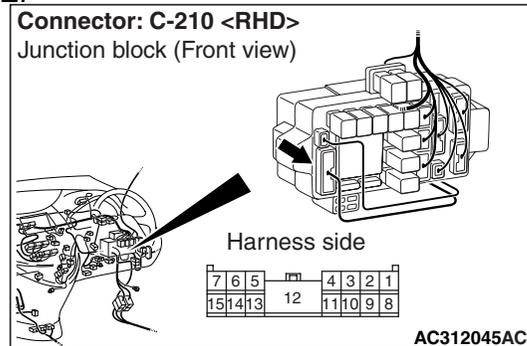


**Q: Is the check result normal?**  
**YES :** Go to Step 5.  
**NO :** Repair the defective connector.

**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. Retest the system.**

Check that the front door switch (RH) signal is received normally.

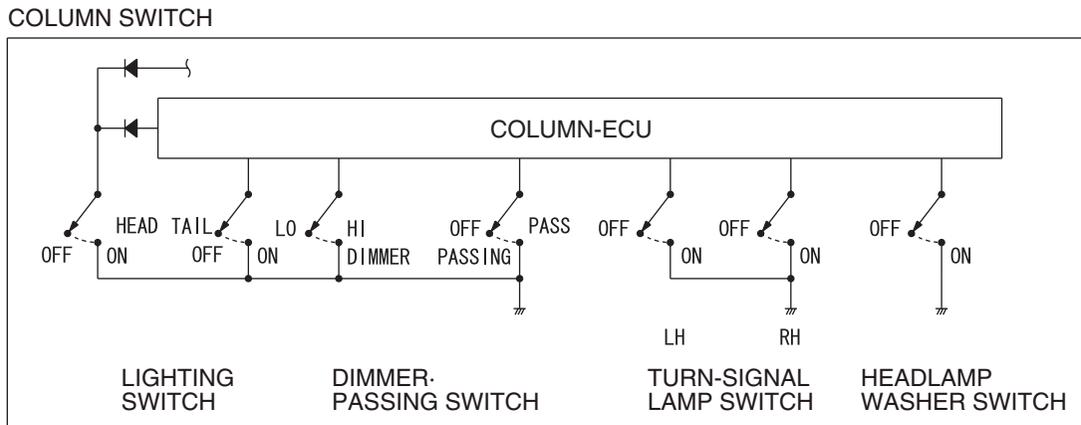
**Q: Is the check result normal?**  
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO :** Replace the ETACS-ECU.

Inspection Procedure 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 and tail lamp
- Fog lamp
- Turn signal lamp
- Headlamp washer

## POSSIBLE CAUSES

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

## DIAGNOSTIC 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. Use the MUT-III to confirm a diagnosis code.

Check that the ETACS-ECU sets a diagnosis code.

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

**YES :** Refer to diagnosis code chart [P.00-5](#).

**NO :** Go to Step 4.

### Step 4. Retest the system.

Replace the column switch, and check if the column switch (lighting, turn-signal lamp and headlamp washer switch) sends signal.

(1) Replace the column switch.

(2) Check if the column switch (lighting and turn-signal switch) sends signal.

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

**YES :** The procedure is complete.

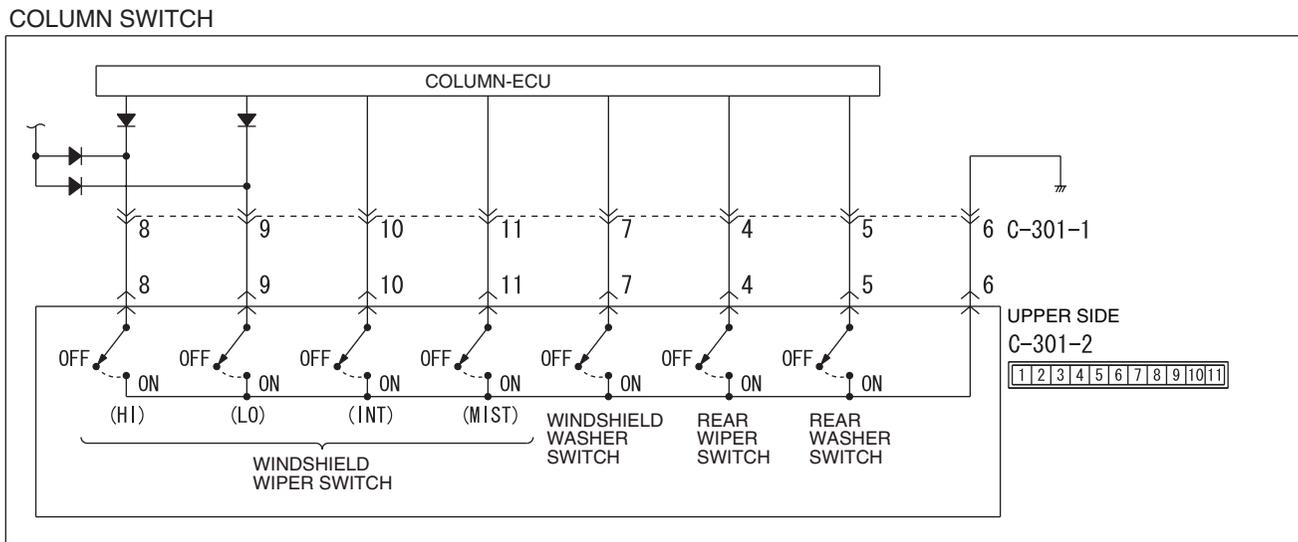
**NO :** Replace the ETACS-ECU.

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

**POSSIBLE CAUSES**

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

**DIAGNOSTIC PROCEDURE**

**Step 1. Use the MUT-III to confirm a diagnosis code.**

Check that the ETACS-ECU sets a diagnosis code.

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

**YES :** Refer to diagnosis code chart [P.00-5](#).

**NO :** Go to Step 2.

**Step 2. Retest the system.**

Replace the column switch, and check if the column switch (windshield wiper washer and rear wiper washer switch) sends signal.

- (1) Replace the column switch.
- (2) Check if the column switch (windshield wiper/washer and rear wiper washer switch) sends signal.

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

**YES :** The procedure is complete.

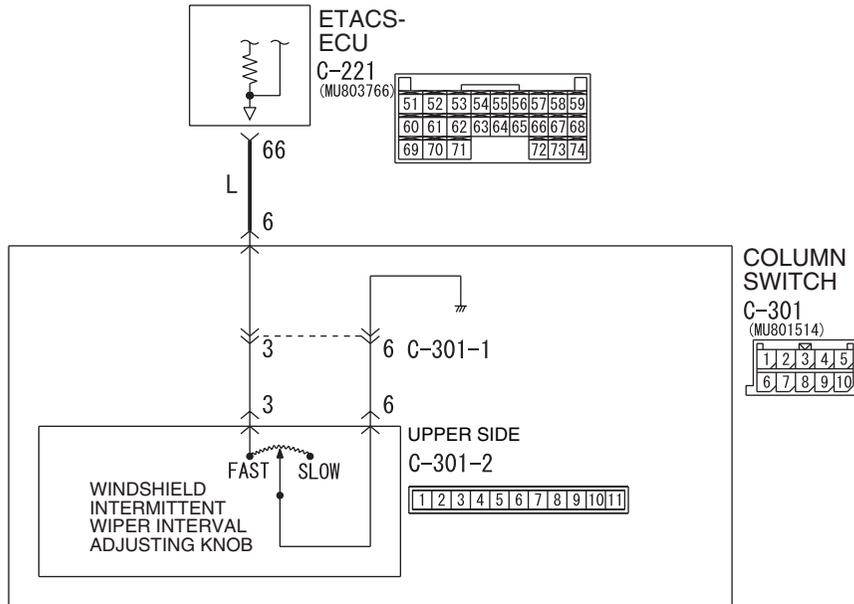
**NO :** Replace the ETACS-ECU.

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**

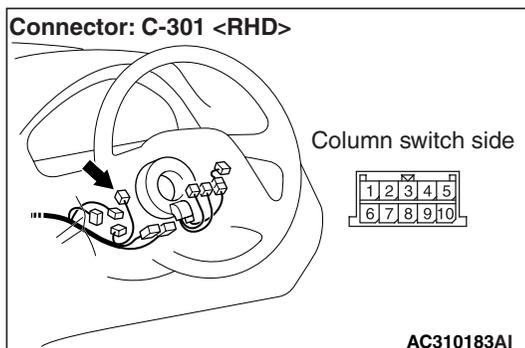
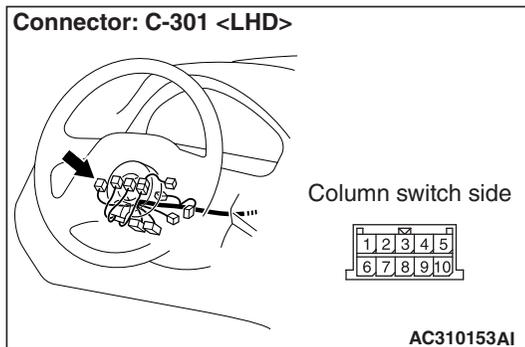
The intermittent wiper interval is calculated in accordance with the input signal from the windshield intermittent wiper volume. If this signal is abnormal, the wiper interval can not be adjusted.

**POSSIBLE CAUSES**

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

**DIAGNOSTIC PROCEDURE**

**Step 1. Connector check: C-301 column switch connector**

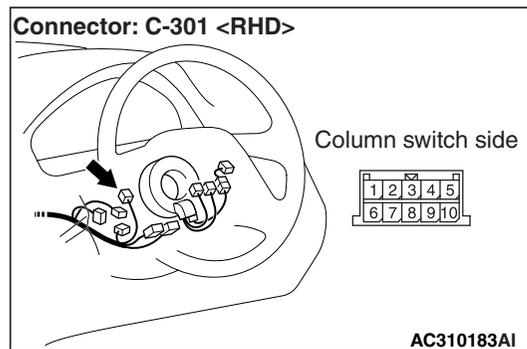
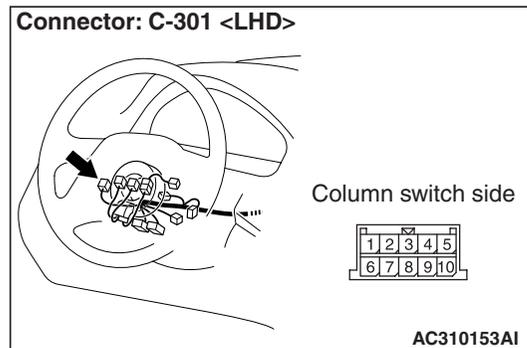


**Q: Is the check result normal?**

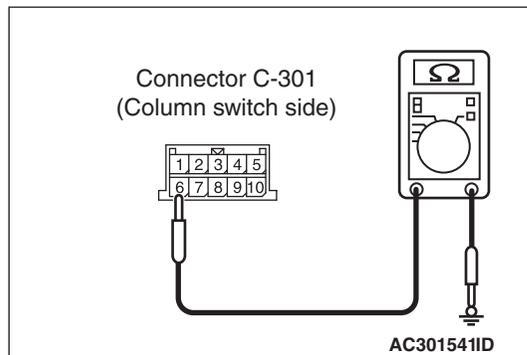
**YES :** Go to Step 2.

**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

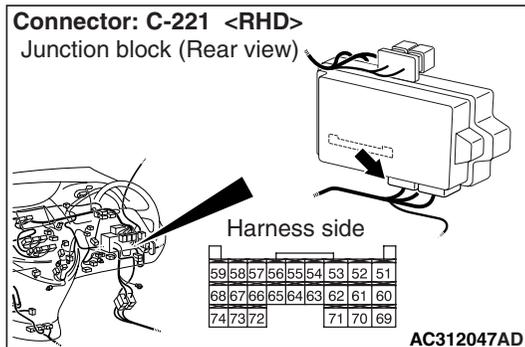
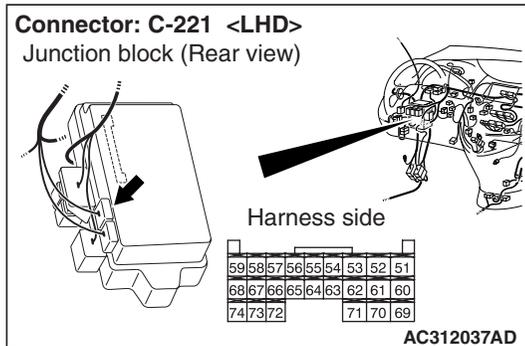
**OK: The resistance should rise from 0 to 1 kΩ when the windshield intermittent wiper volume is rotated from "Fast" to "Slow".**

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

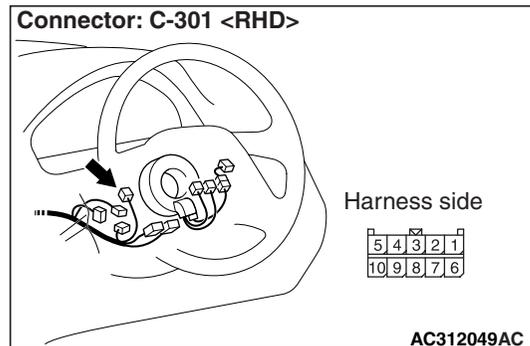
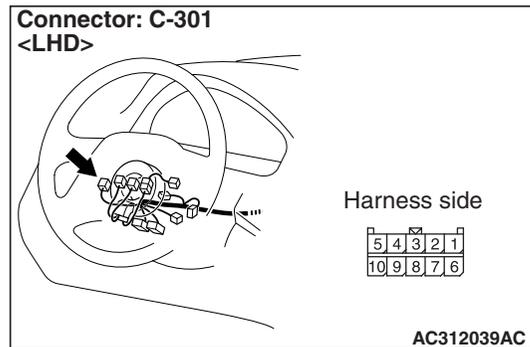
**YES :** Go to Step 3.

**NO :** Replace the column switch.

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



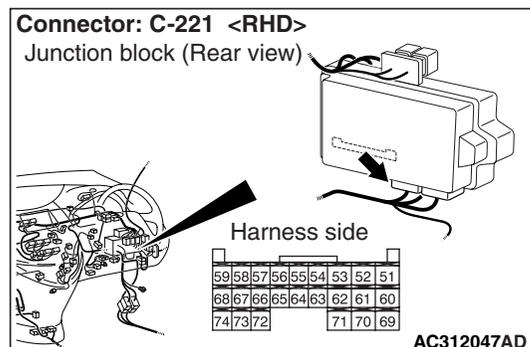
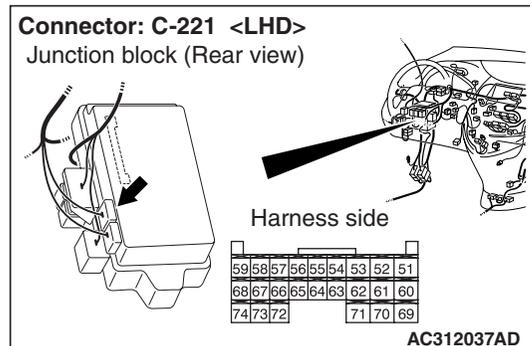
**Step 4. Check the wiring harness between C-301 column switch connector terminal No.6 and C-221 ETACS-ECU connector terminal No.66.**



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

**YES :** Go to Step 4.

**NO :** Repair the defective connector.



- 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. Retest the system.**

Check that the windshield intermittent wiper volume is sending a correct signal.

**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](#)).

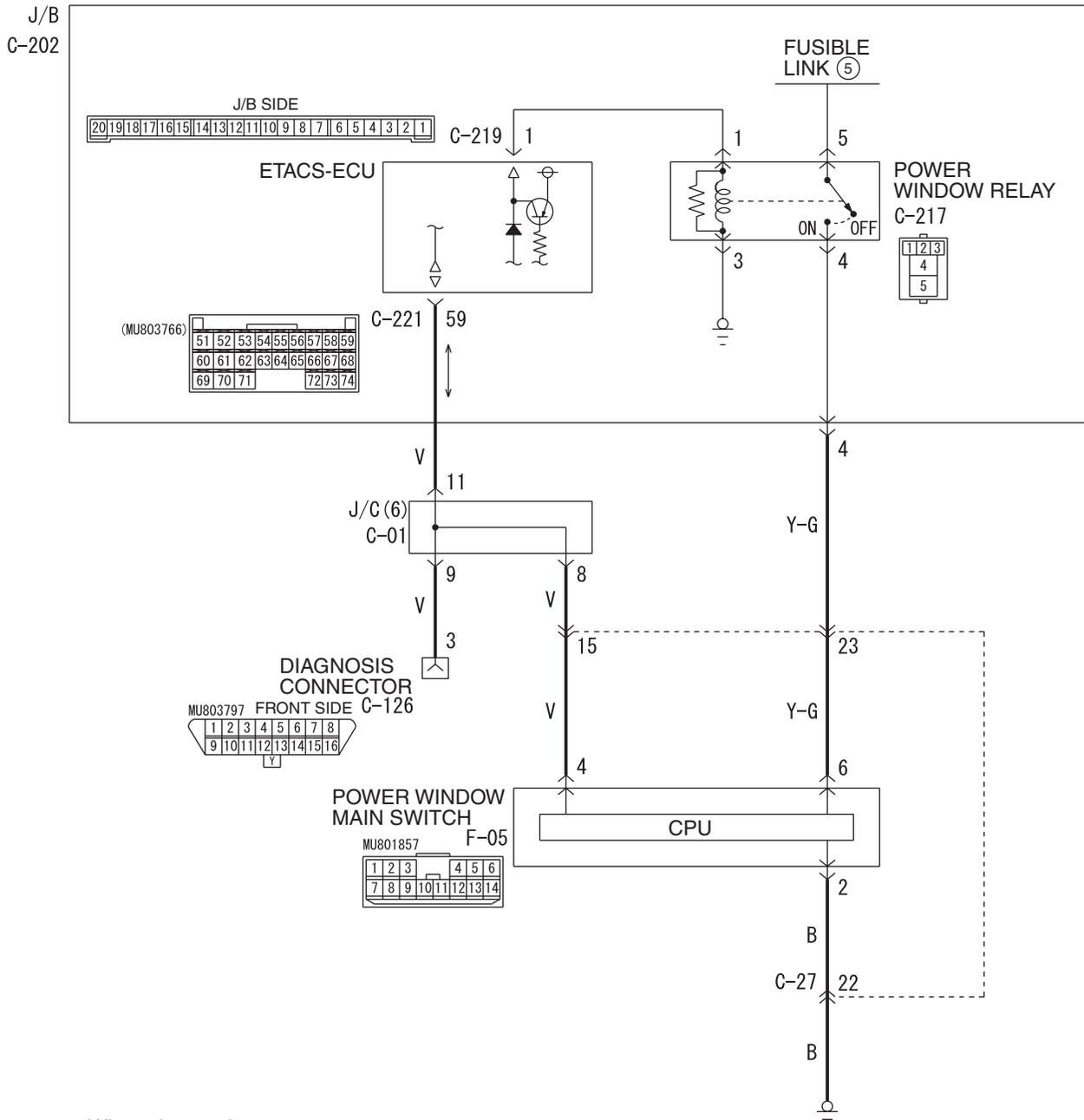
**NO :** Replace the ETACS-ECU.

Inspection Procedure Q-9: When the power window main switch is operated, the switch signals are not received.

**CAUTION**

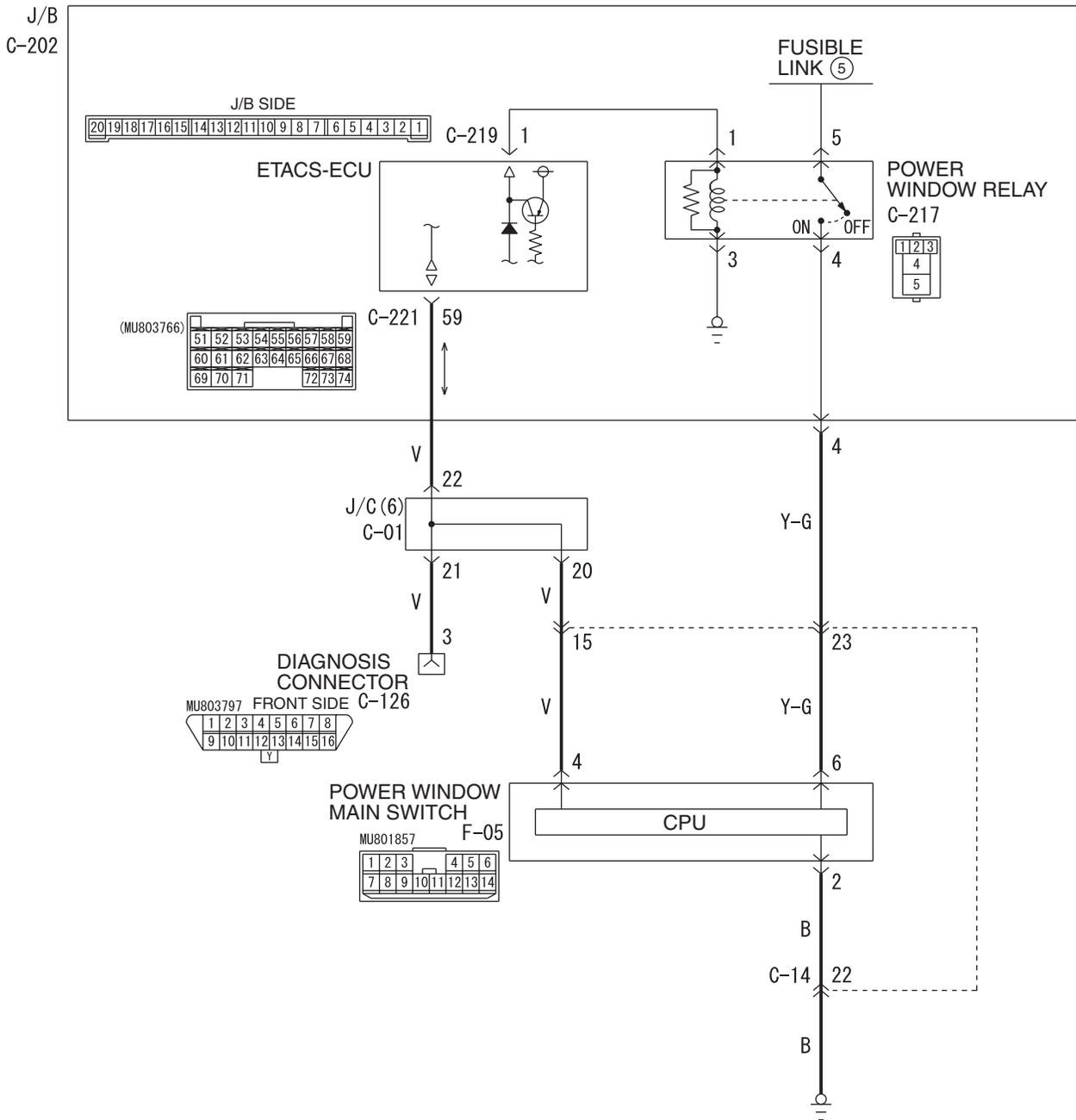
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

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

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
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

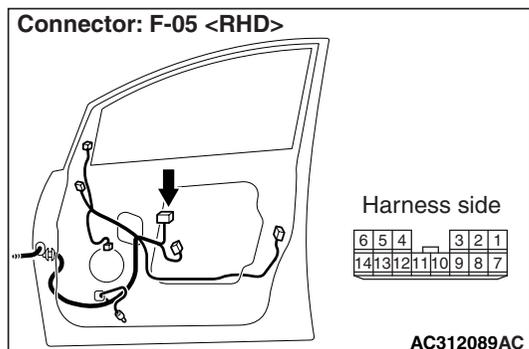
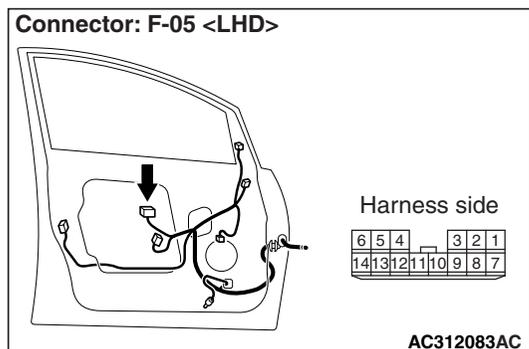
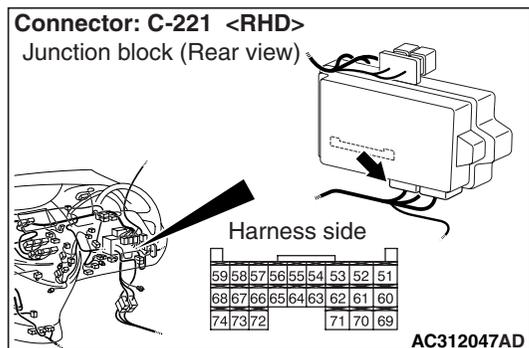
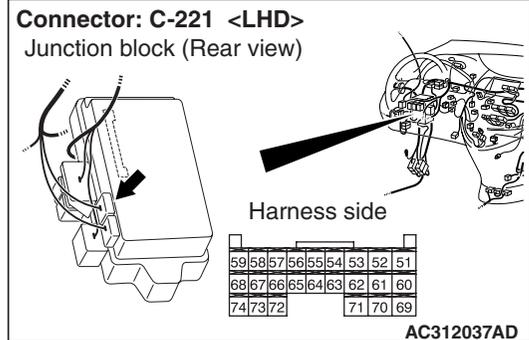
**Step 1. Check the operation by using the power window main switch.**

Check if each window can be operated by means of the power window main switch.

**Q: Can each power window be operated by means of the power window main switch?**

**YES :** Go to Step 2.

**NO :** Go to Step 5.

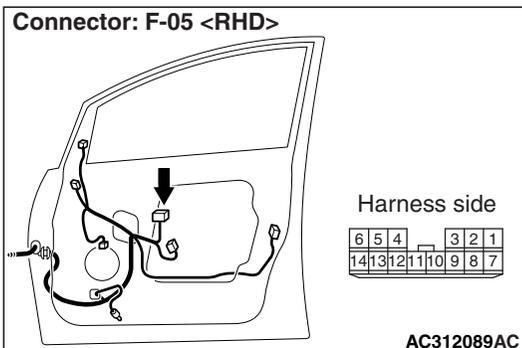
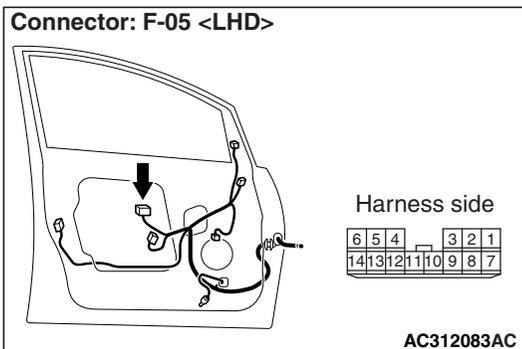
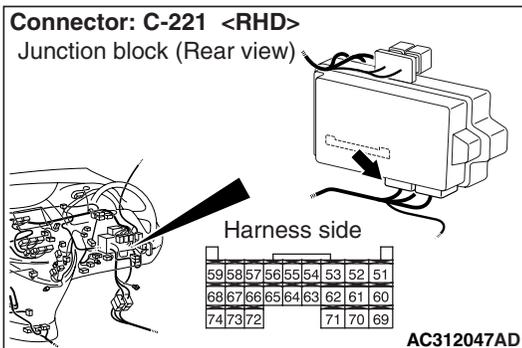
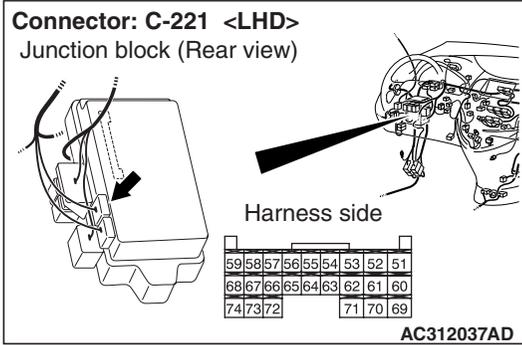
**Step 2. Connector check: C-221 ETACS-ECU connector and F-05 power window main switch connector**

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

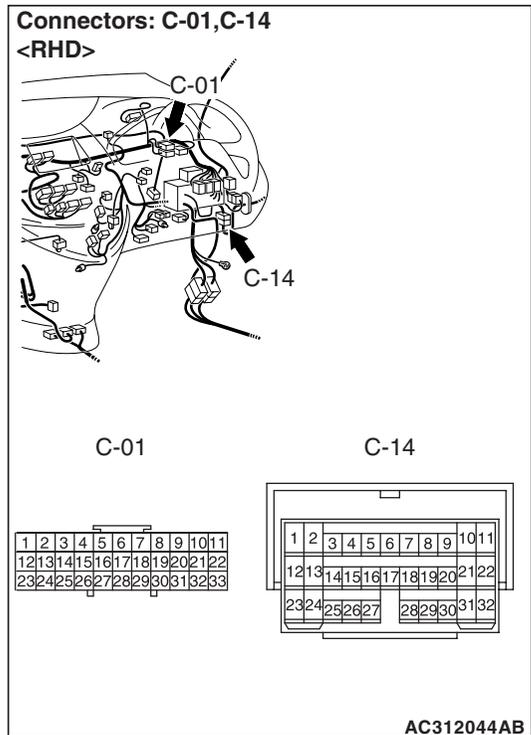
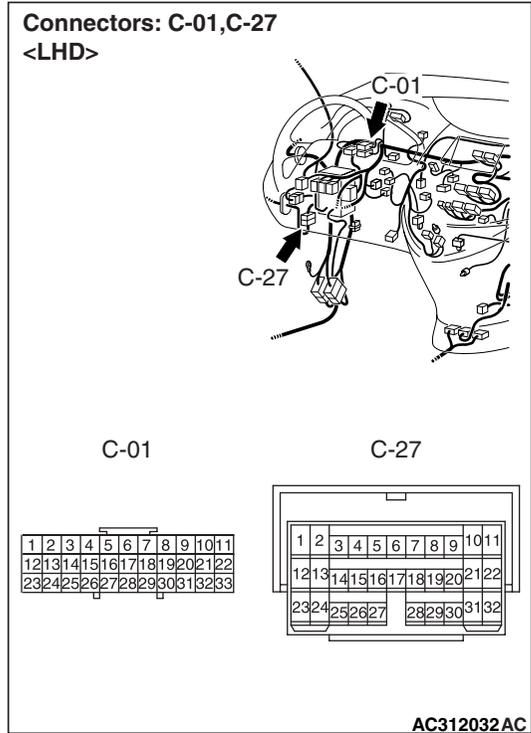
**YES :** Go to Step 3.

**NO :** Repair the defective connector.

**Step 3. Check the wiring harness between C-221 ETACS-ECU connector terminal No.59 and F-05 power window main switch connector terminal No.4.**



**NOTE:**



*Prior to the wiring harness inspection, check intermediate connectors C-27 <LH drive vehicles>, C-14 <RH 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 4.

**NO :** Repair the wiring harness.

**Step 4. Replace the power window main switch, and then retest the system.**

Replace the power window main switch, and check that the power window main switch signal is received.

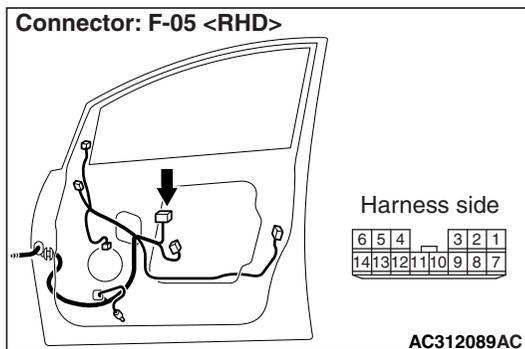
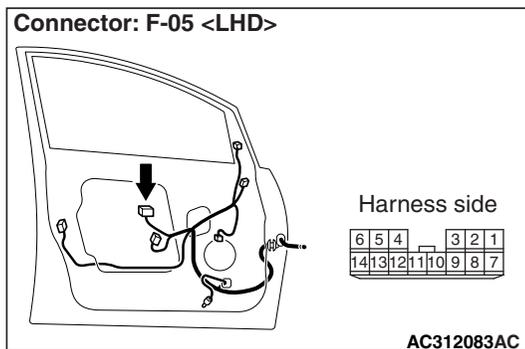
- (1) Replace the power window main switch.
- (2) Check that the power window main switch signal is received.

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

**YES :** The procedure is complete.

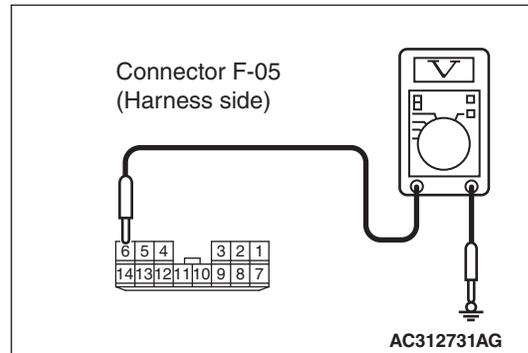
**NO :** Replace the ETACS-ECU.

**Step 5. Voltage measurement at the F-05 power window main switch connector.**



- (1) Remove the power window main switch, and measure at the wiring harness side.

- (2) Ignition switch: ON position



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

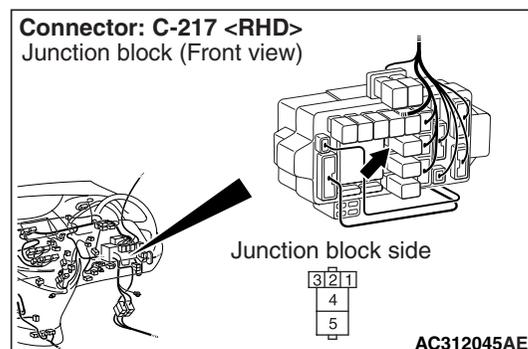
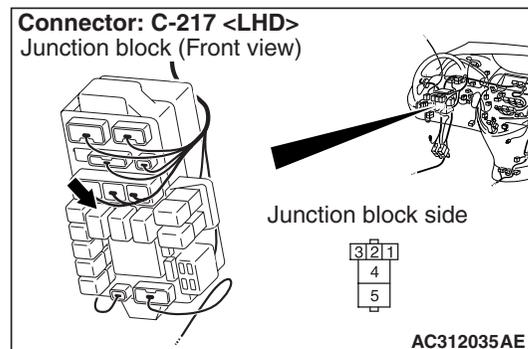
**OK: System voltage**

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

**YES :** Go to Step 8.

**NO :** Go to Step 6.

**Step 6. Connector check: C-217 power window relay connector**

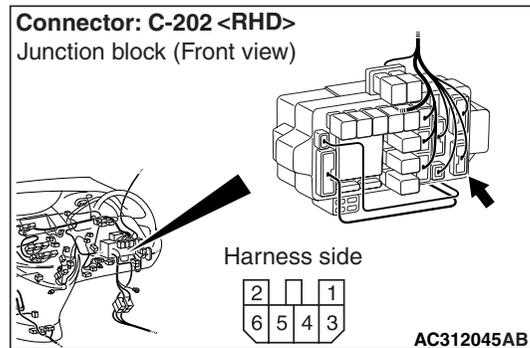
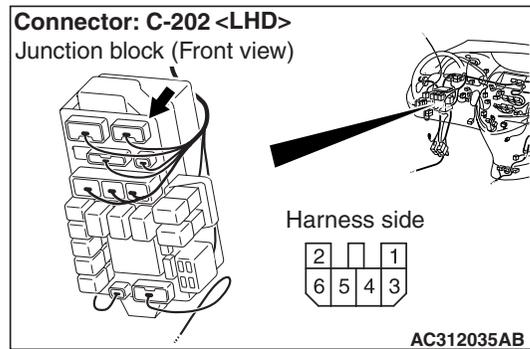
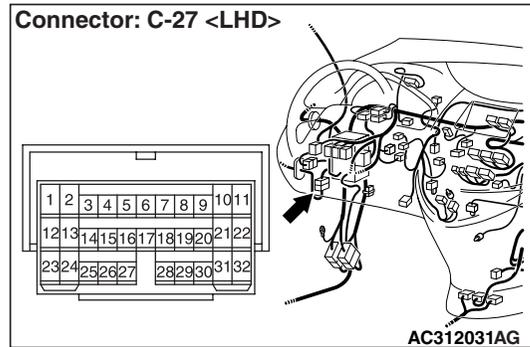
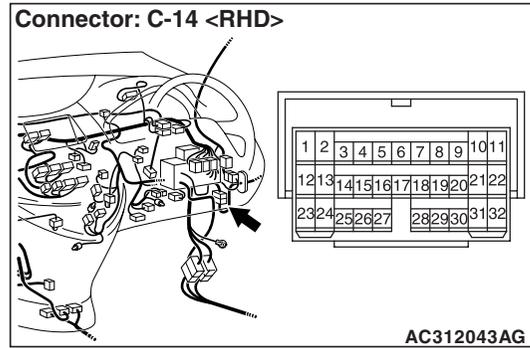
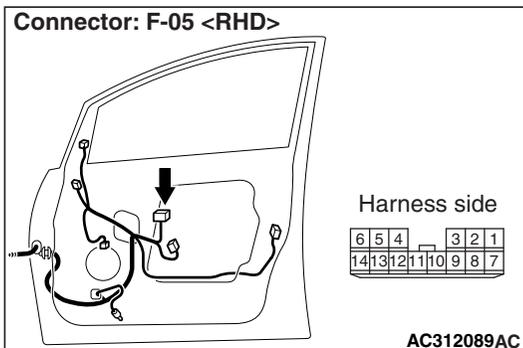
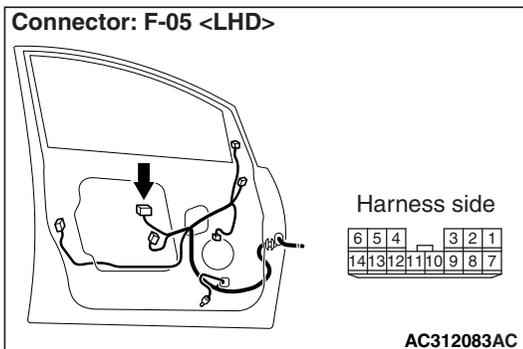
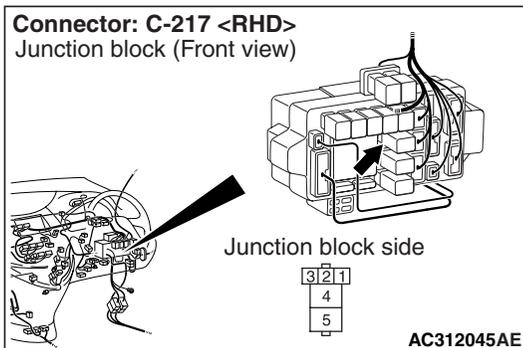
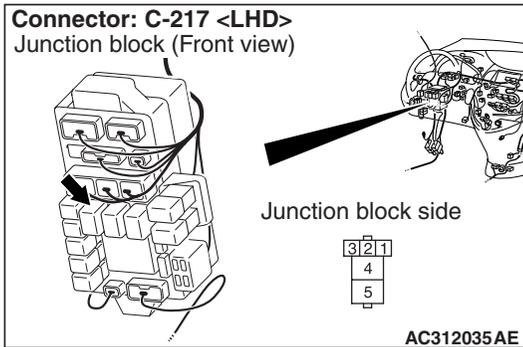


**Q: Is the check result normal?**

**YES :** Go to Step 7.

**NO :** Repair the defective connector.

Step 7. 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.



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

- Check the power supply line for open circuit.

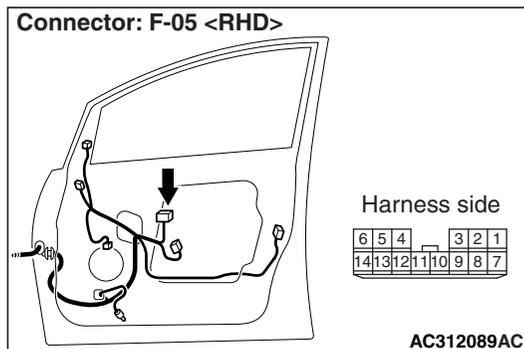
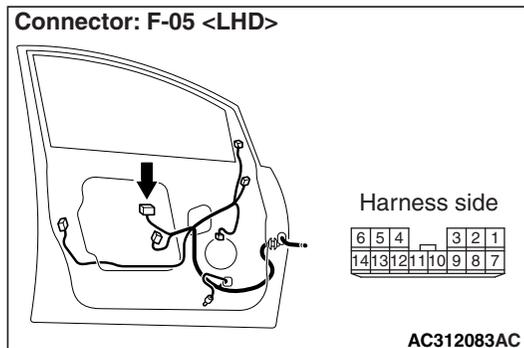
NOTE:

Q: Is the check result normal?

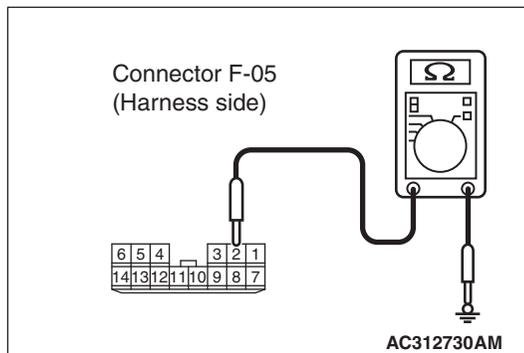
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Repair the wiring harness.

**Step 8. Resistance measurement at the F-05 power window main switch connector.**



(1) Remove the power window main switch, and measure at the wiring harness side.



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

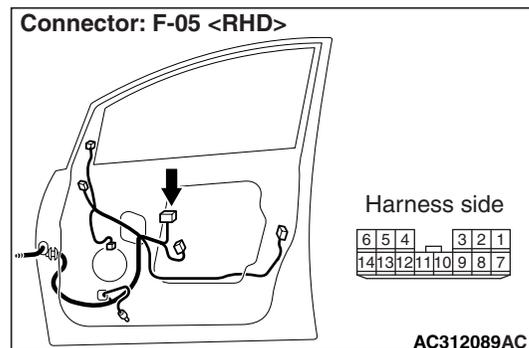
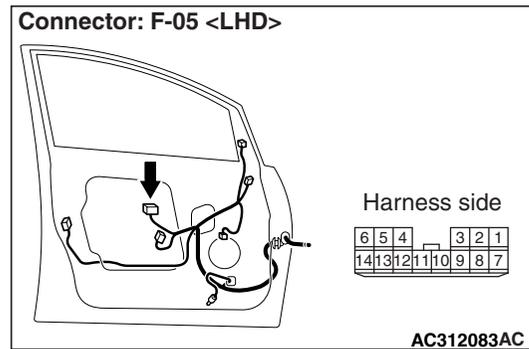
**OK: 2 Ω or less**

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

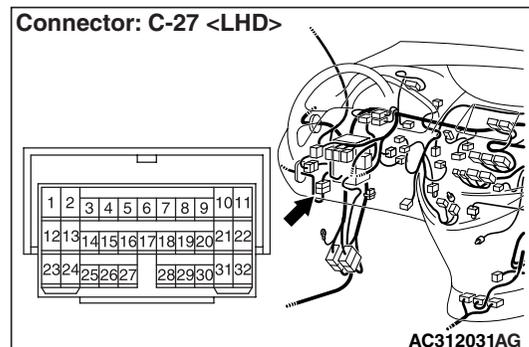
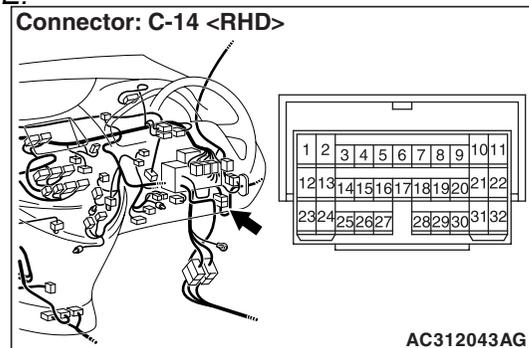
**YES :** Go to Step 10.

**NO :** Go to Step 9.

**Step 9. 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-27 <LH drive vehicles>, C-14 <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 10. Retest the system.**

Check that each switch signal is received by operating the power window main switch.

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

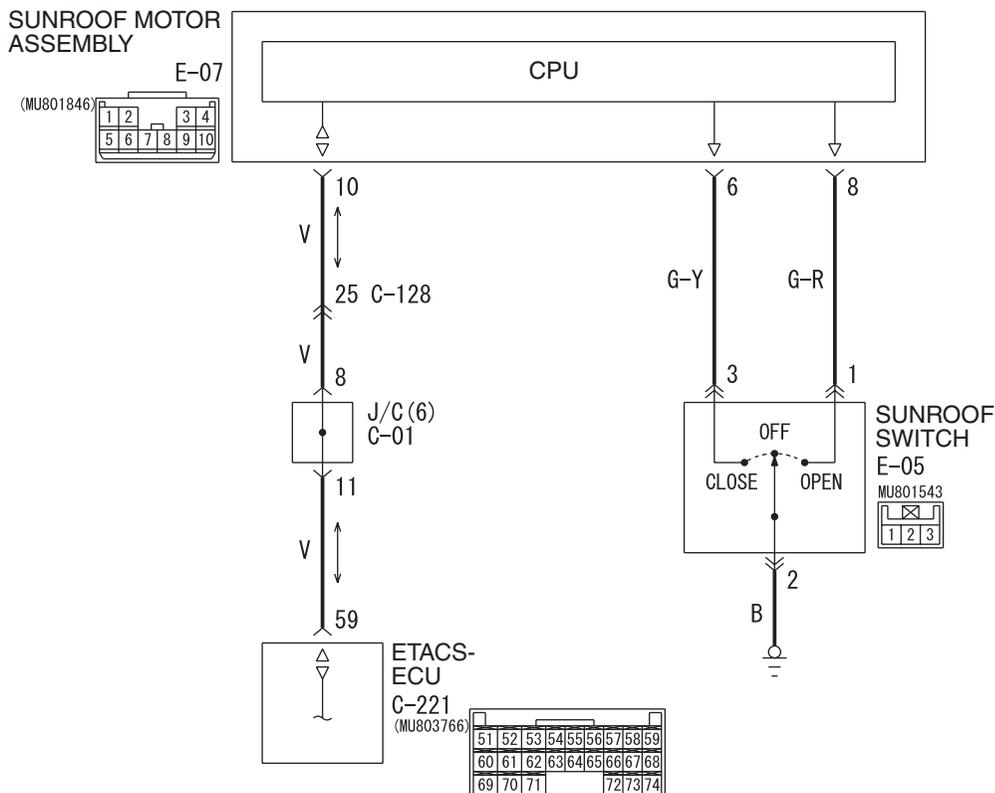
**YES** : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO** : Replace the power window main switch.

**Inspection Procedure 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.

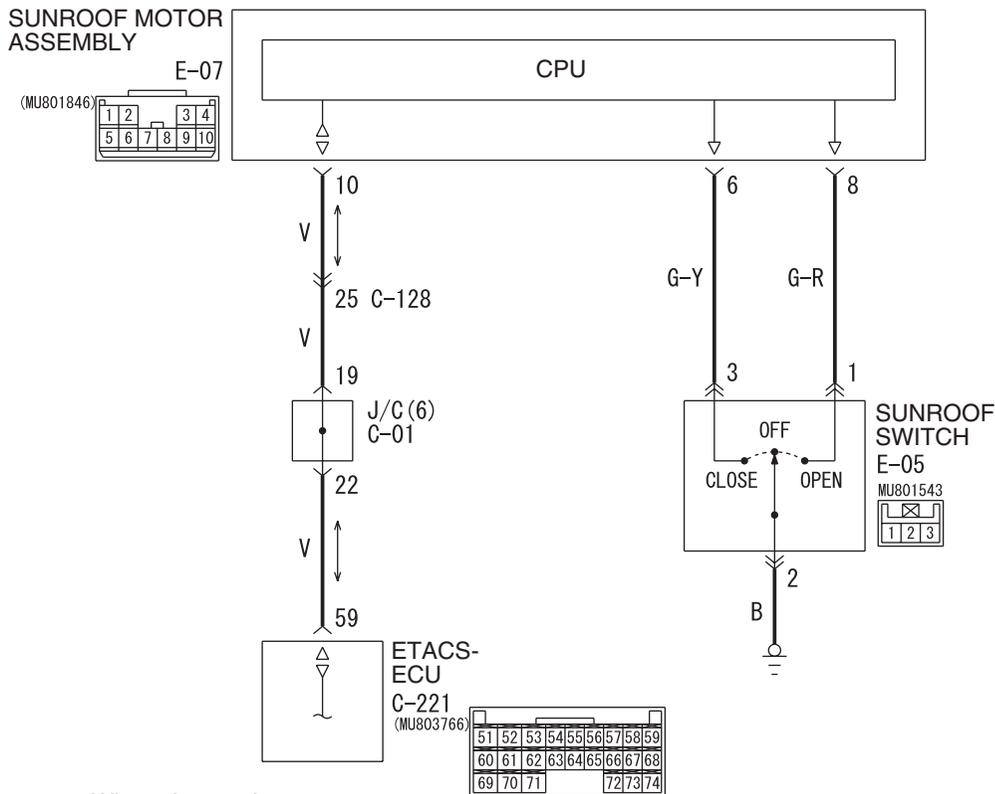
Sunroof Switch Input Circuit <LHD>



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

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

**DIAGNOSTIC PROCEDURE**

**Step 1. Check the operation condition of the sunroof.**

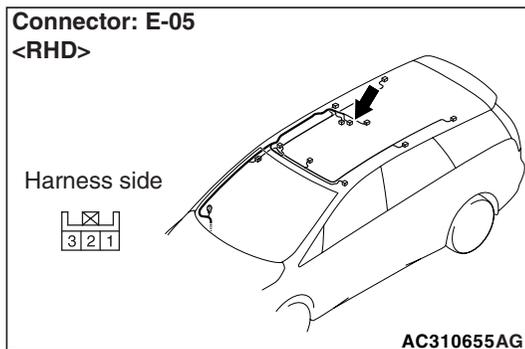
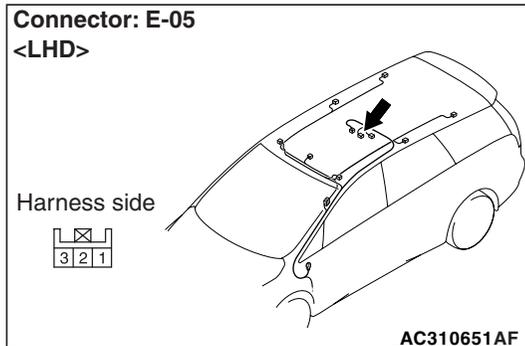
Check that the sunroof works normally.

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

**YES :** Go to Step 2.

**NO :** Refer to Inspection Procedure F-1 "Sunroof does not work at all P.54B-186."

**Step 2. Connector check: E-05 sunroof switch connector**



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

**YES :** Go to Step 3.

**NO :** Repair the connector.

**Step 3. Check the sunroof switch.**

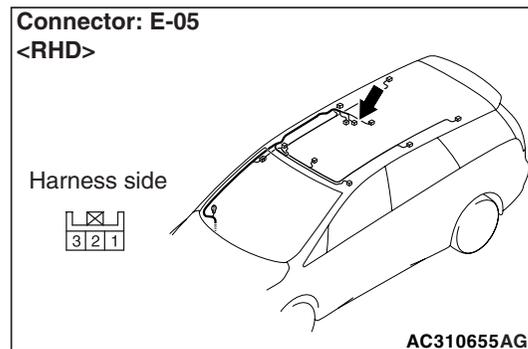
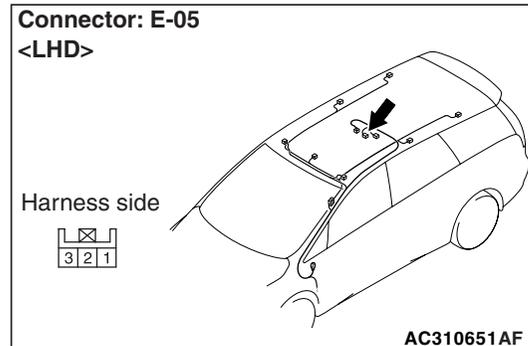
Refer to GROUP 42 – Sunroof P.42-66.

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

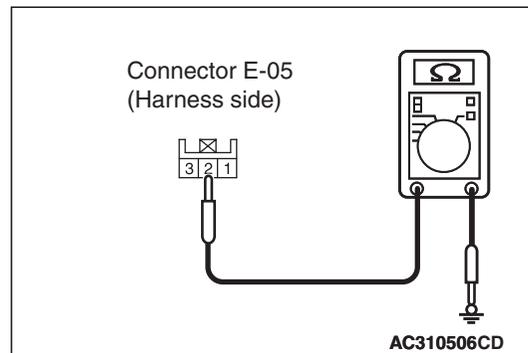
**YES :** Go to Step 4.

**NO :** Replace the sunroof switch.

**Step 4. Resistance measurement at the E-05sunroof 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

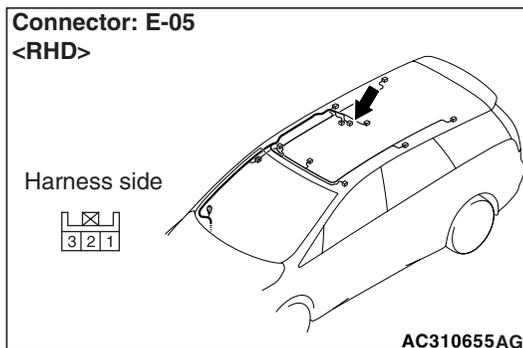
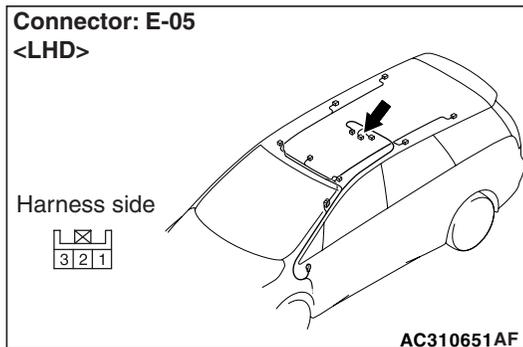
**OK: 2 Ω or less**

**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.**



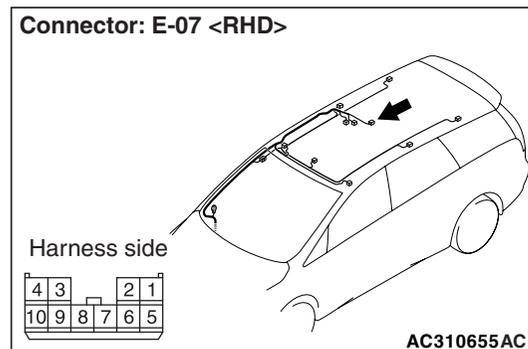
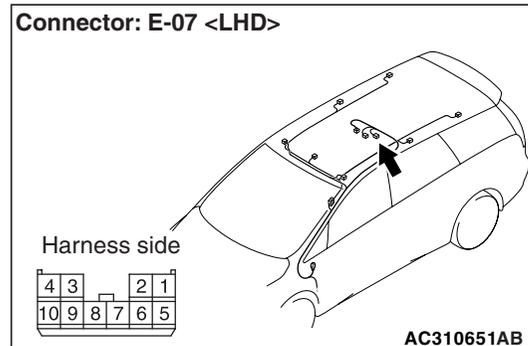
- Check the earth wires for open circuit.

**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**

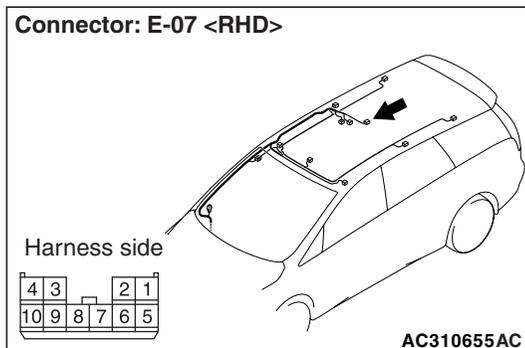
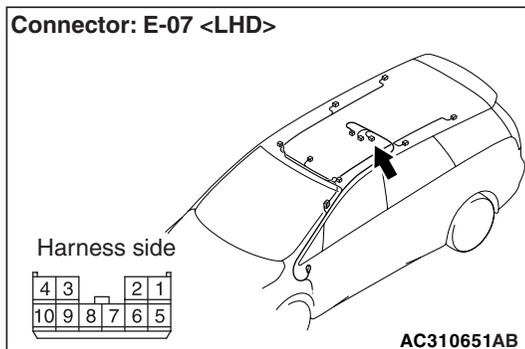
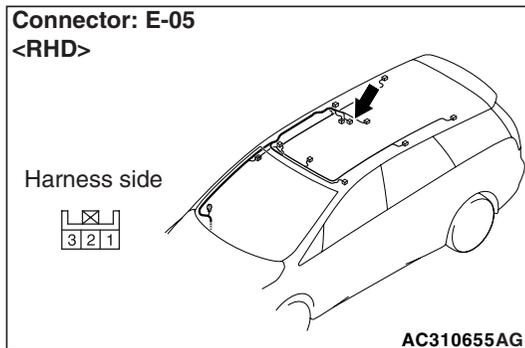
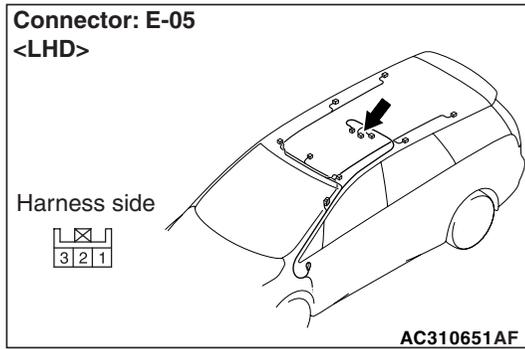


**Q: Is the check result normal?**

**YES :** Go to Step 7.

**NO :** Repair the 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.**

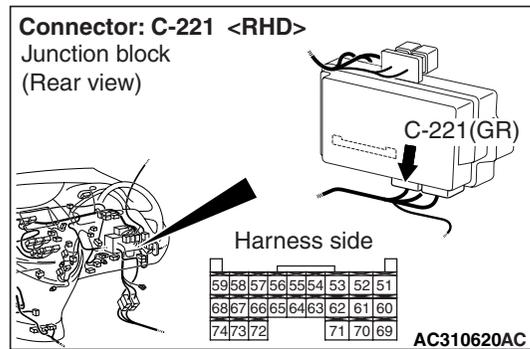
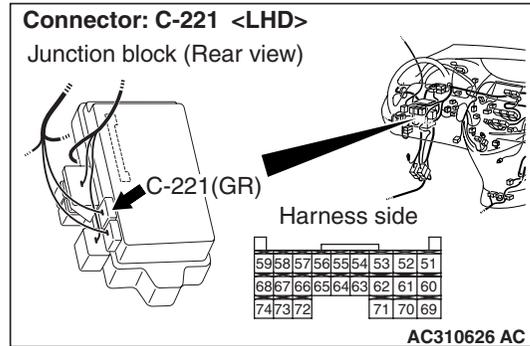


- Check the input line for open circuit.

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

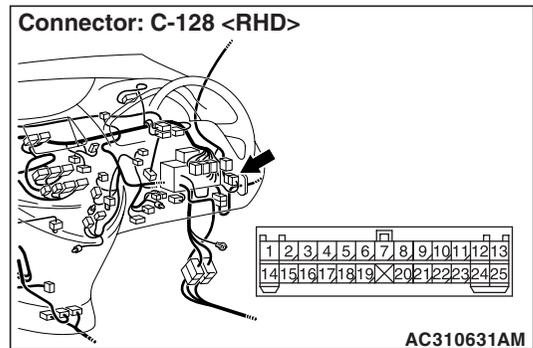
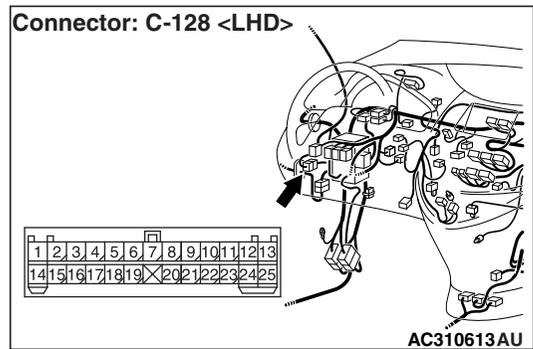
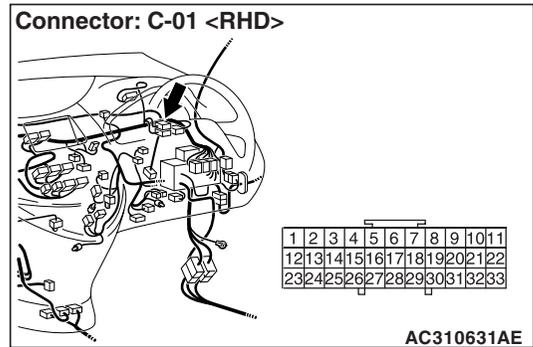
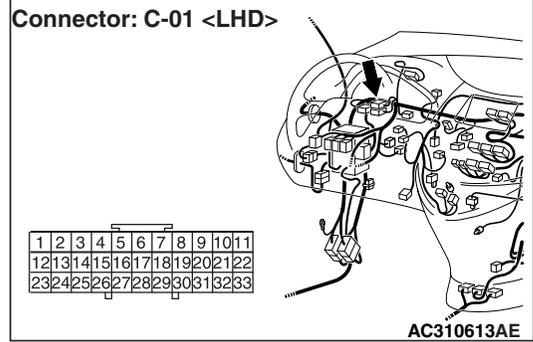
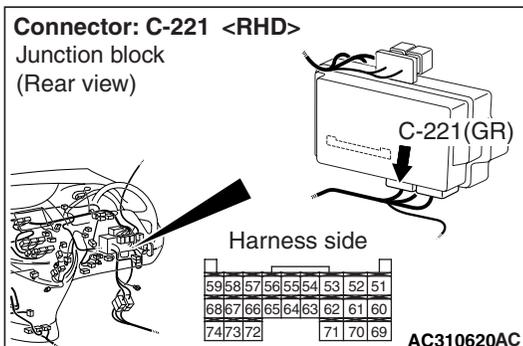
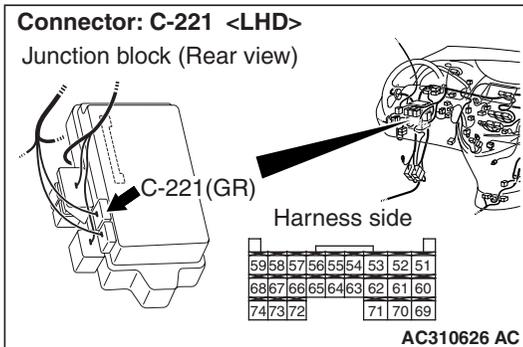
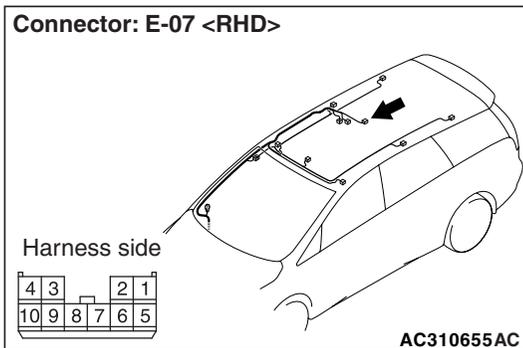
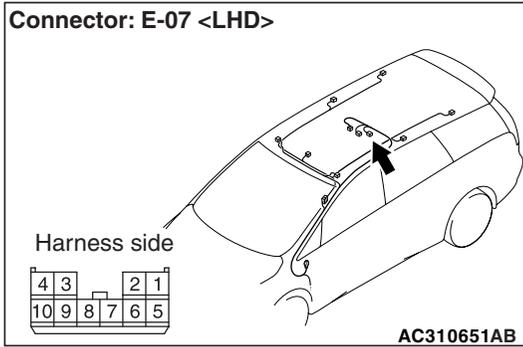
**YES :** Go to Step 8.  
**NO :** Repair the wiring harness.

**Step 8. Connector check: C-221 ETACS-ECU connector**



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

Step 9. Check the wiring harness between E-07 sunroof motor assembly connector terminal No.10 and C-221 ETACS-ECU connector terminal No.59.



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 10.

NO : Repair the wiring harness.

NOTE:

**Step 10. Retest the system.**

Check that each switch signal is received by operating the sunroof switch.

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

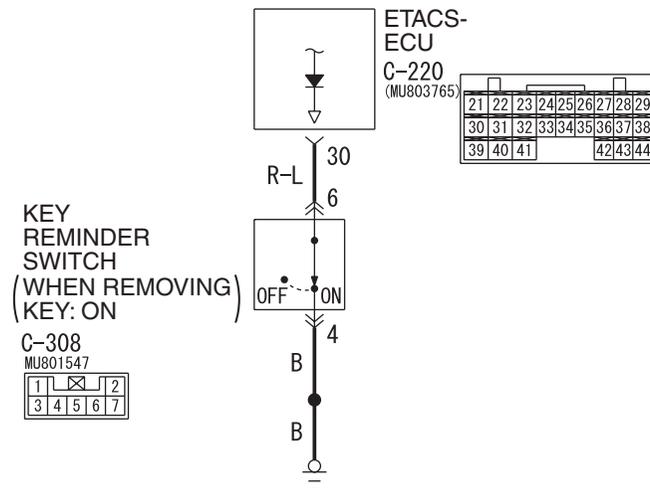
- YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO :** Replace the sunroof motor assembly.

**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.

- Key reminder function
- Keyless entry system
- Ignition key cylinder illumination lamp

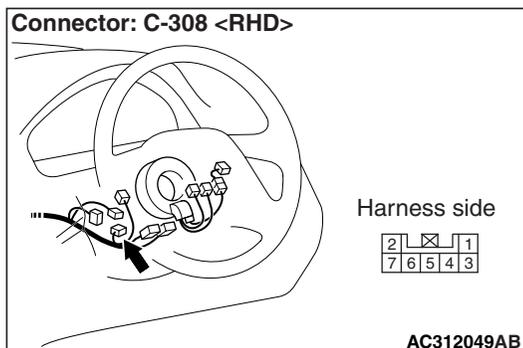
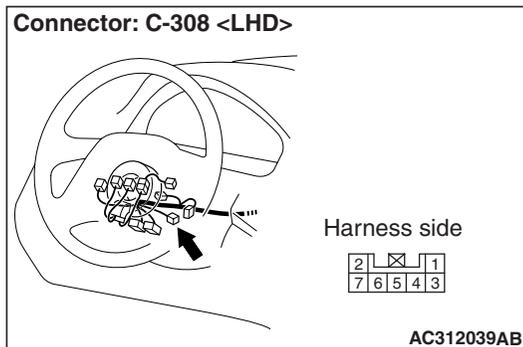
- Interior lamps

**POSSIBLE CAUSES**

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

## DIAGNOSTIC 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.

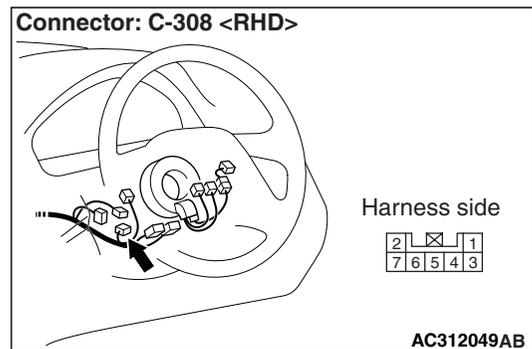
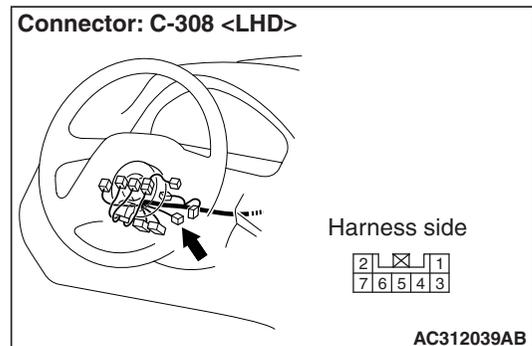
Refer to GROUP 54A – Ignition switch [P.54A-31](#).

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

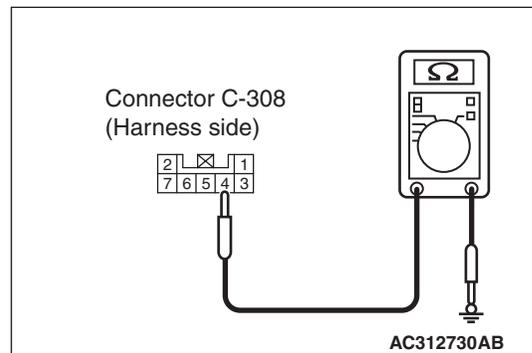
**YES :** Go to Step 3.

**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

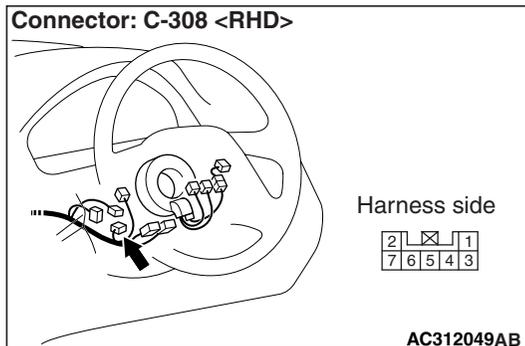
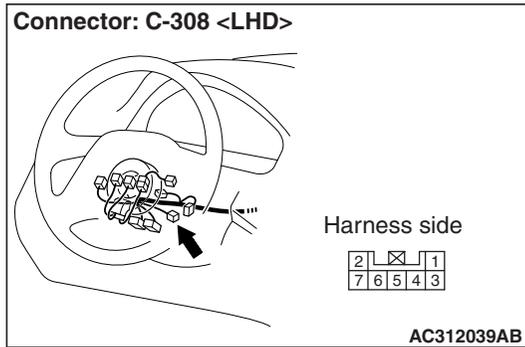
**OK: 2 Ω or less**

**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.**



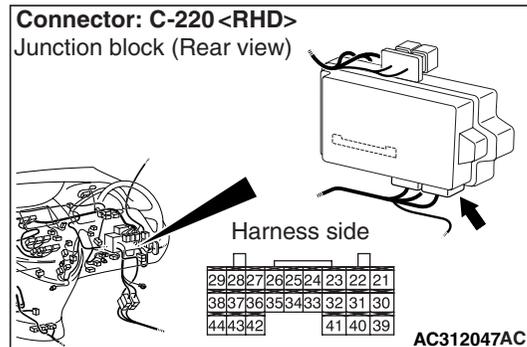
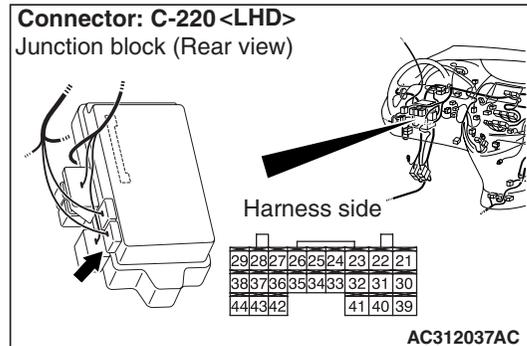
- Check the earth wires for open circuit.

**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.**

**YES :** Go to Step 7.  
**NO :** Repair the wiring harness.

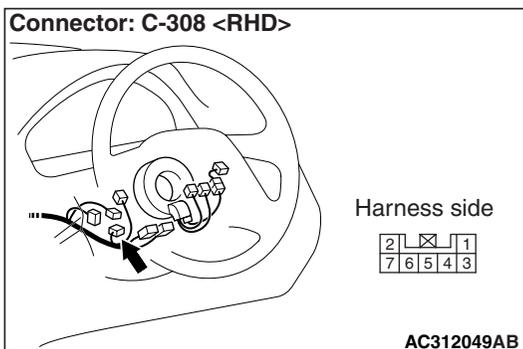
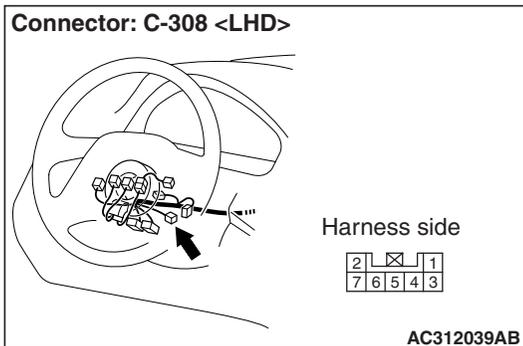
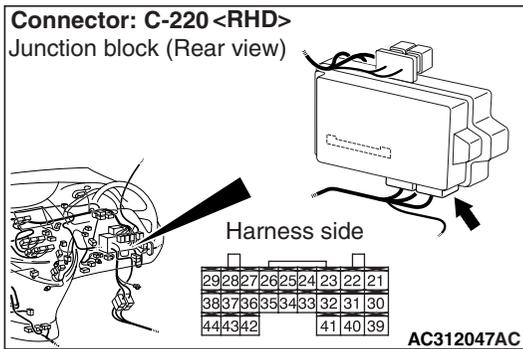
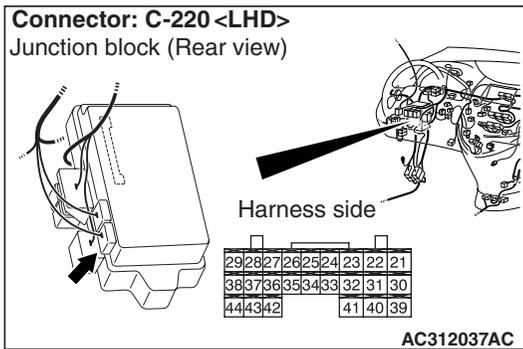
**Step 7. Retest the system.**

Check that the key reminder switch signal is received 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.



- Check the input line for open circuit.

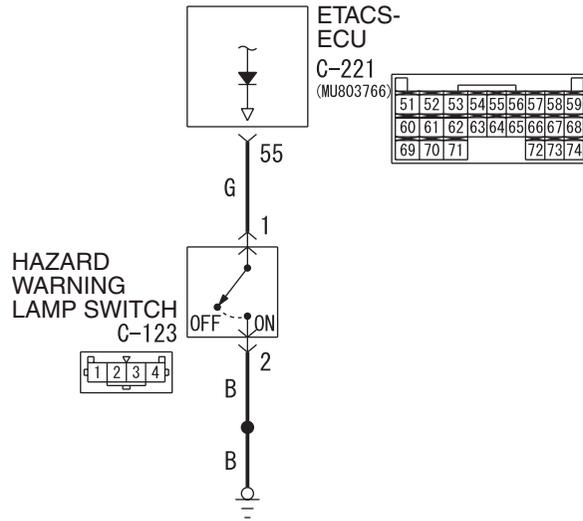
**Q: Is the check result normal?**

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.

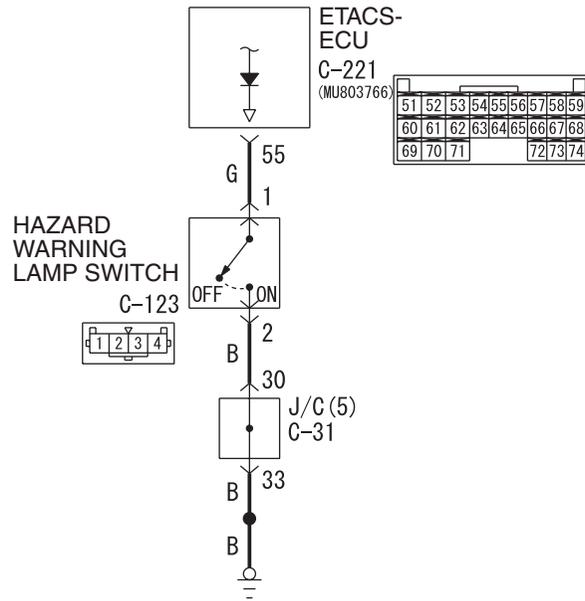
Hazard Warning Lamp Switch Input Circuit <LHD>



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

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.

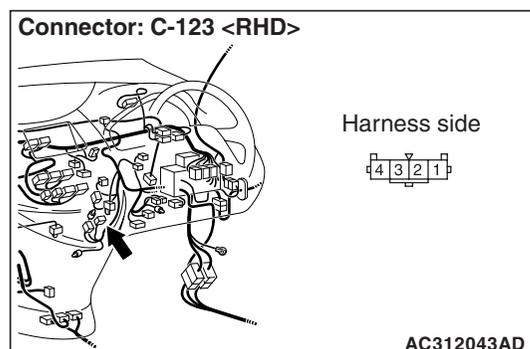
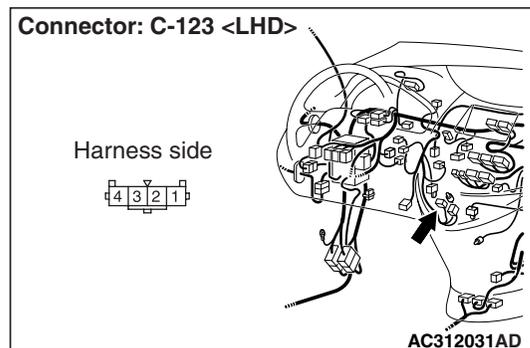
- Keyless entry system (encrypted code registration)
- Hazard warning lamp

POSSIBLE CAUSES

- Malfunction of the hazard warning lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC 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.

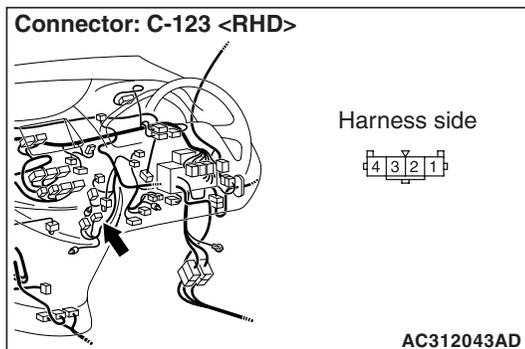
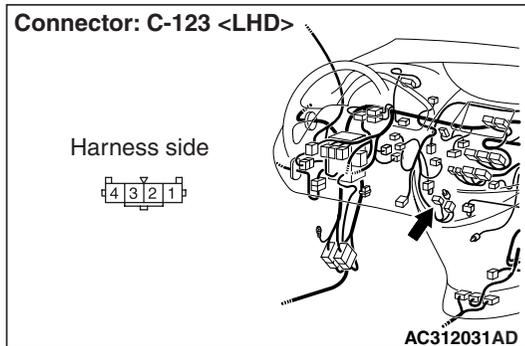
**Step 2. Check the hazard warning lamp switch.**  
Refer to GROUP 54A – Hazard warning lamp switch  
P.54A-101.

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

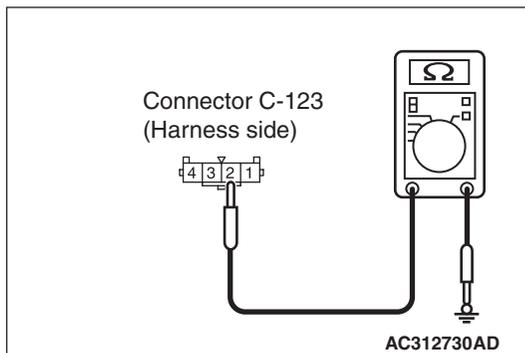
**YES :** Go to Step 3.

**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

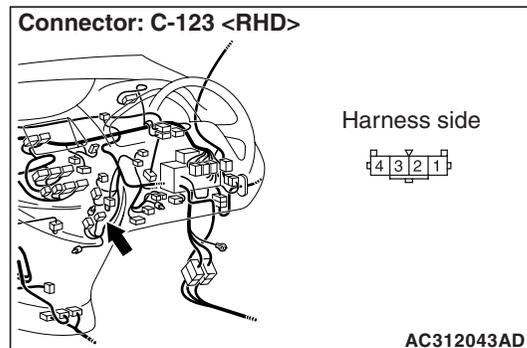
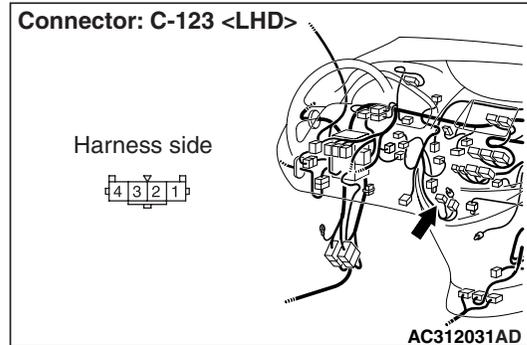
**OK: 2 Ω or less**

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

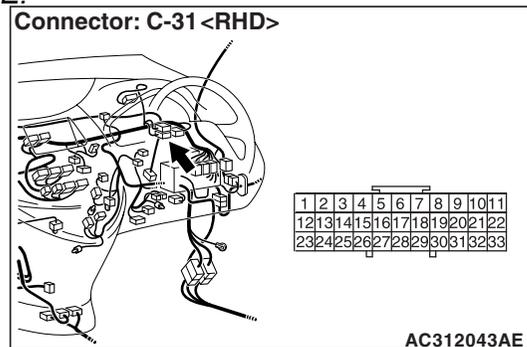
**YES :** Go to Step 5.

**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.*

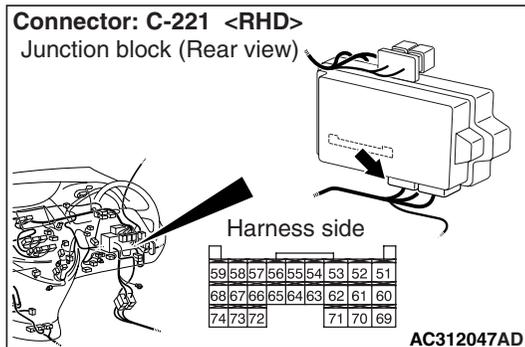
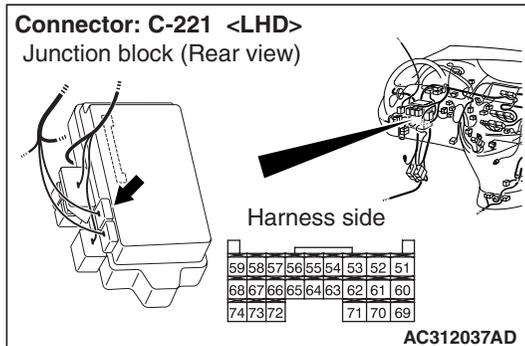
- Check the earth wires for open circuit.

**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**

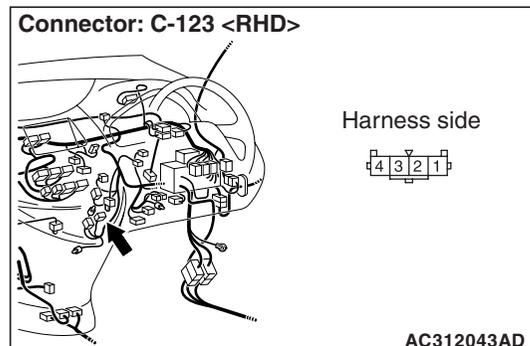
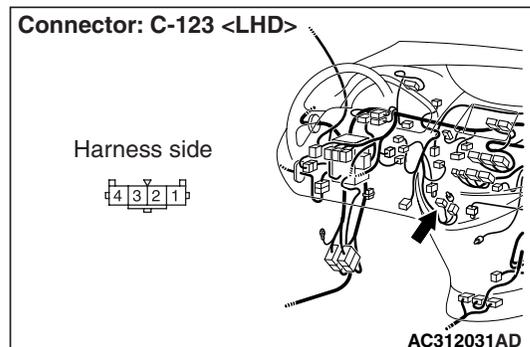
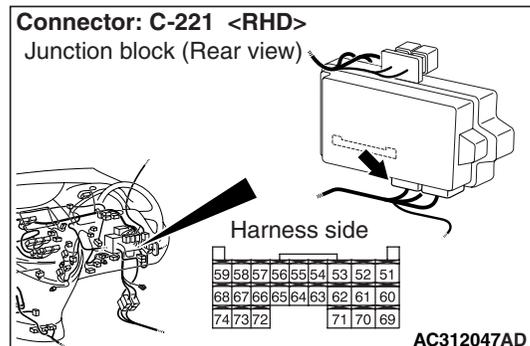
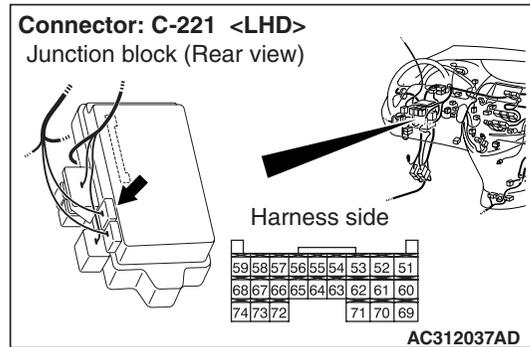


**Q: Is the check result normal?**

**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. Retest the system.**

Check that the hazard warning lamp switch signal is received normally.

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

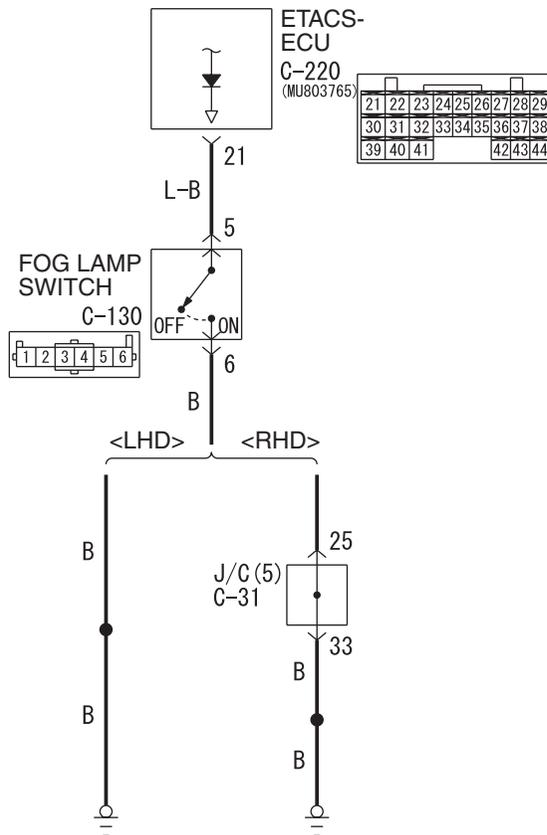
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO :** Replace the ETACS-ECU.

**Inspection Procedure 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**

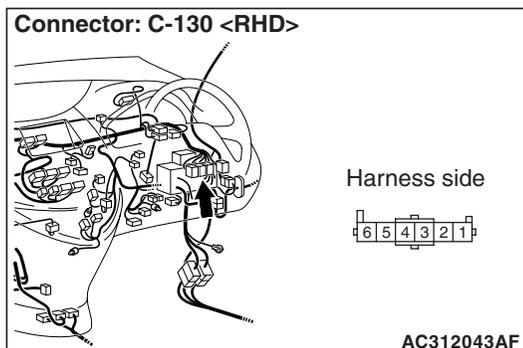
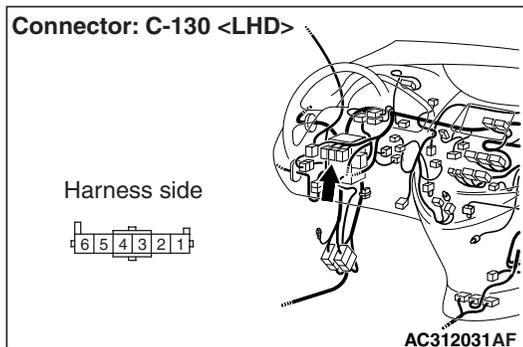
Input signal from the rear fog lamp switch is used to operate the rear fog lamps. If the signal is abnormal, the rear fog lamps will not illuminate and extinguish normally.

**POSSIBLE CAUSES**

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

## DIAGNOSTIC 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.

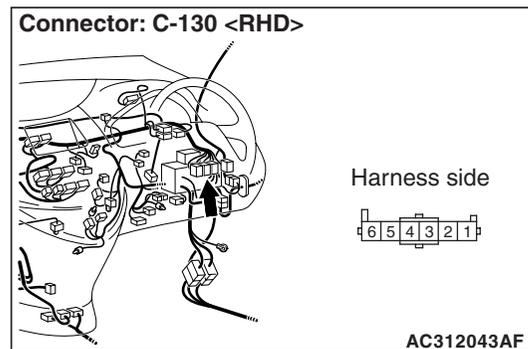
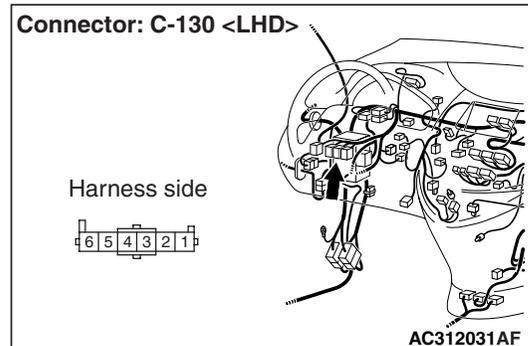
Refer to GROUP 54A – Rear fog lamp [P.54A-94](#).

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

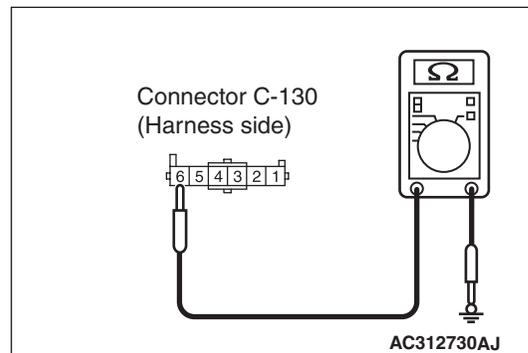
**YES :** Go to Step 3.

**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

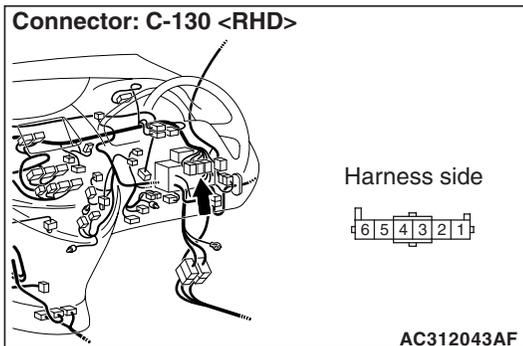
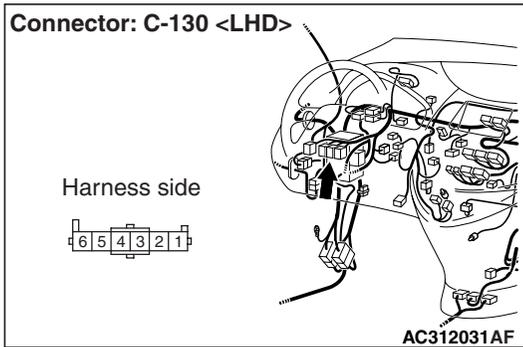
**OK: 2 Ω or less**

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

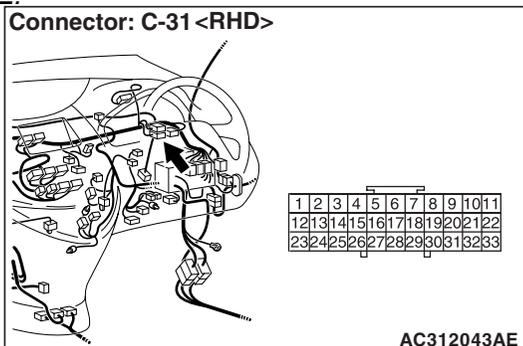
**YES :** Go to Step 5.

**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:**



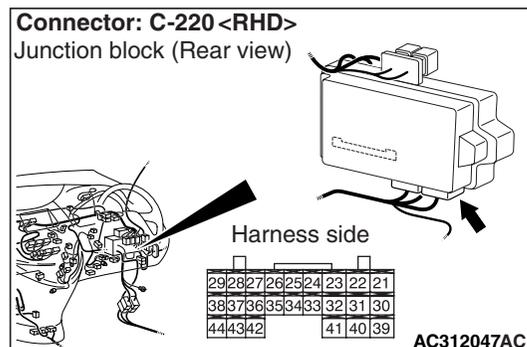
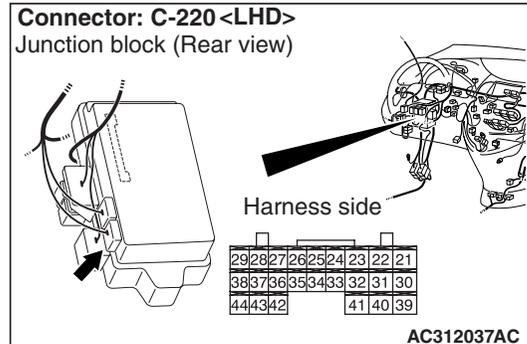
Prior to the wiring harness inspection, check joint connector C-31 <RH drive vehicles>, and repair if necessary.

- 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.

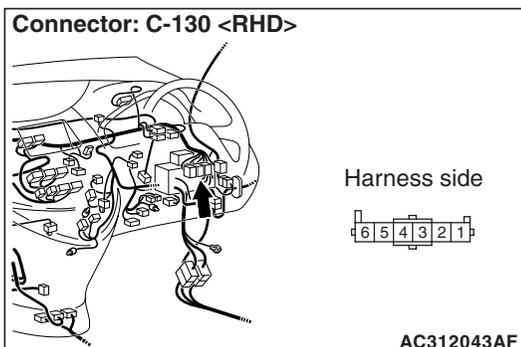
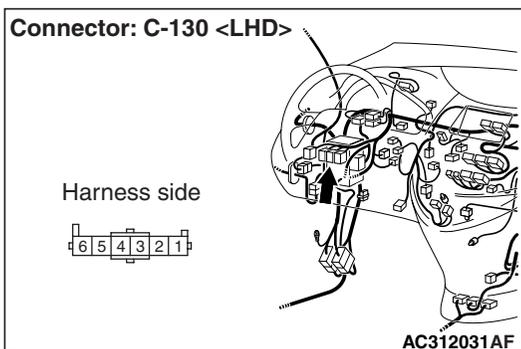
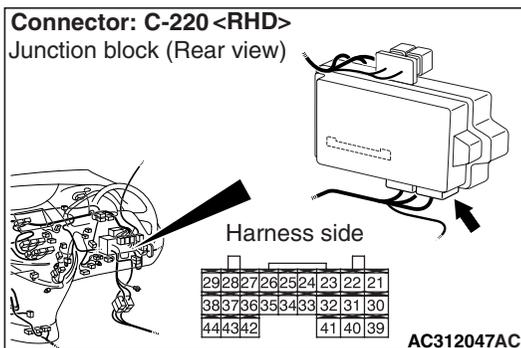
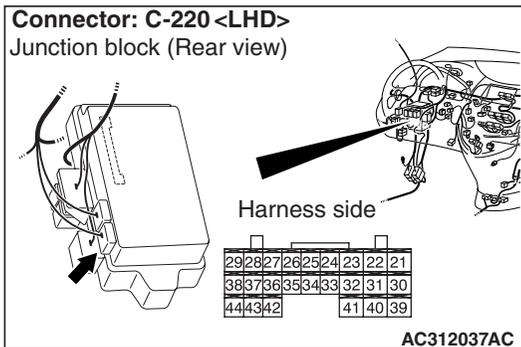
**Step 5. Connector check: C-220 ETACS-ECU connector**



**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. Retest the system.**

Check that the rear fog lamp switch signal is received 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](#)).

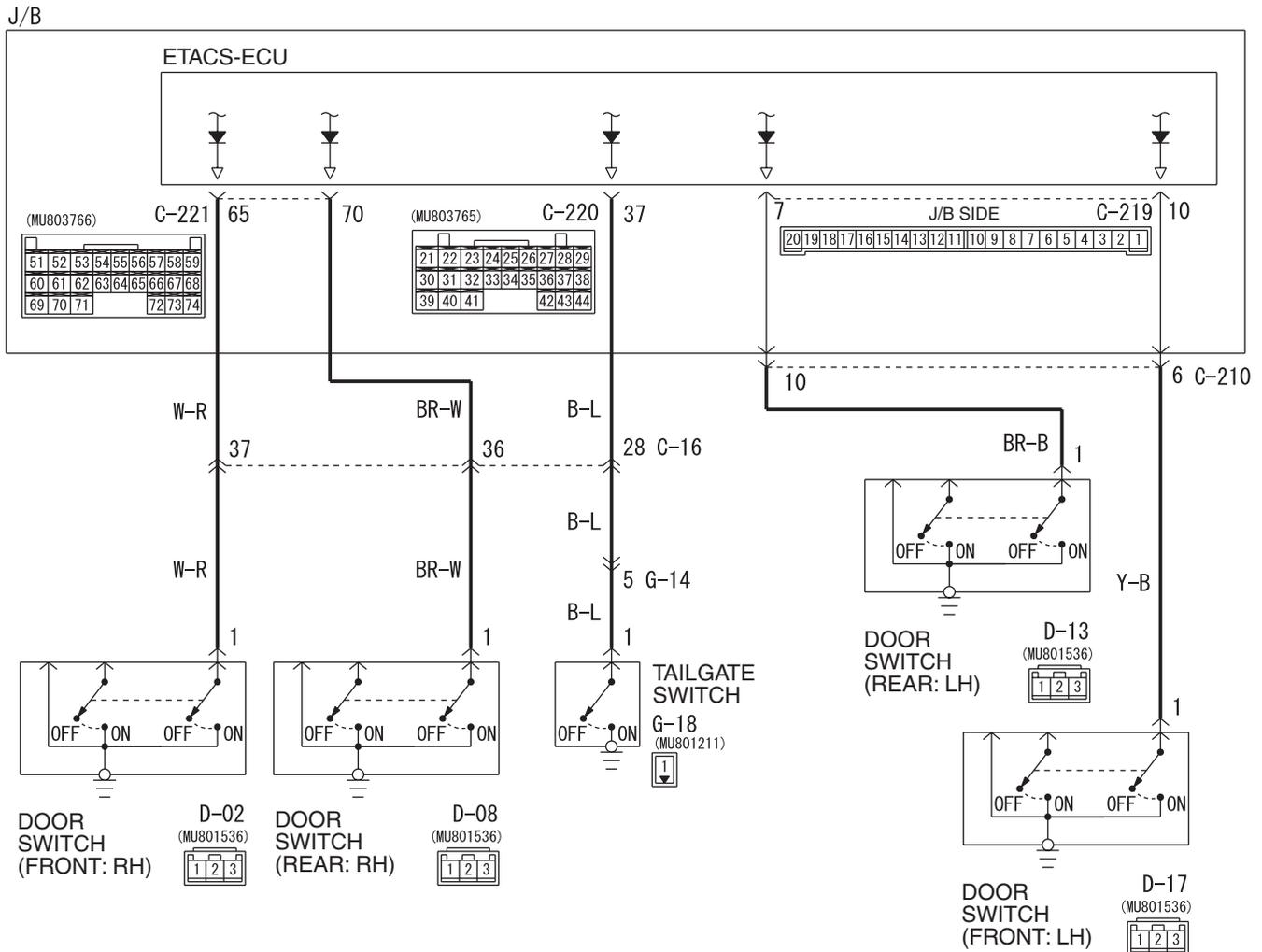
**NO :** Replace the ETACS-ECU.

Inspection Procedure Q-14: All the door switch signals are not received.

**CAUTION**

Whenever the ECU is replaced, ensure that the input signal circuit is normal.

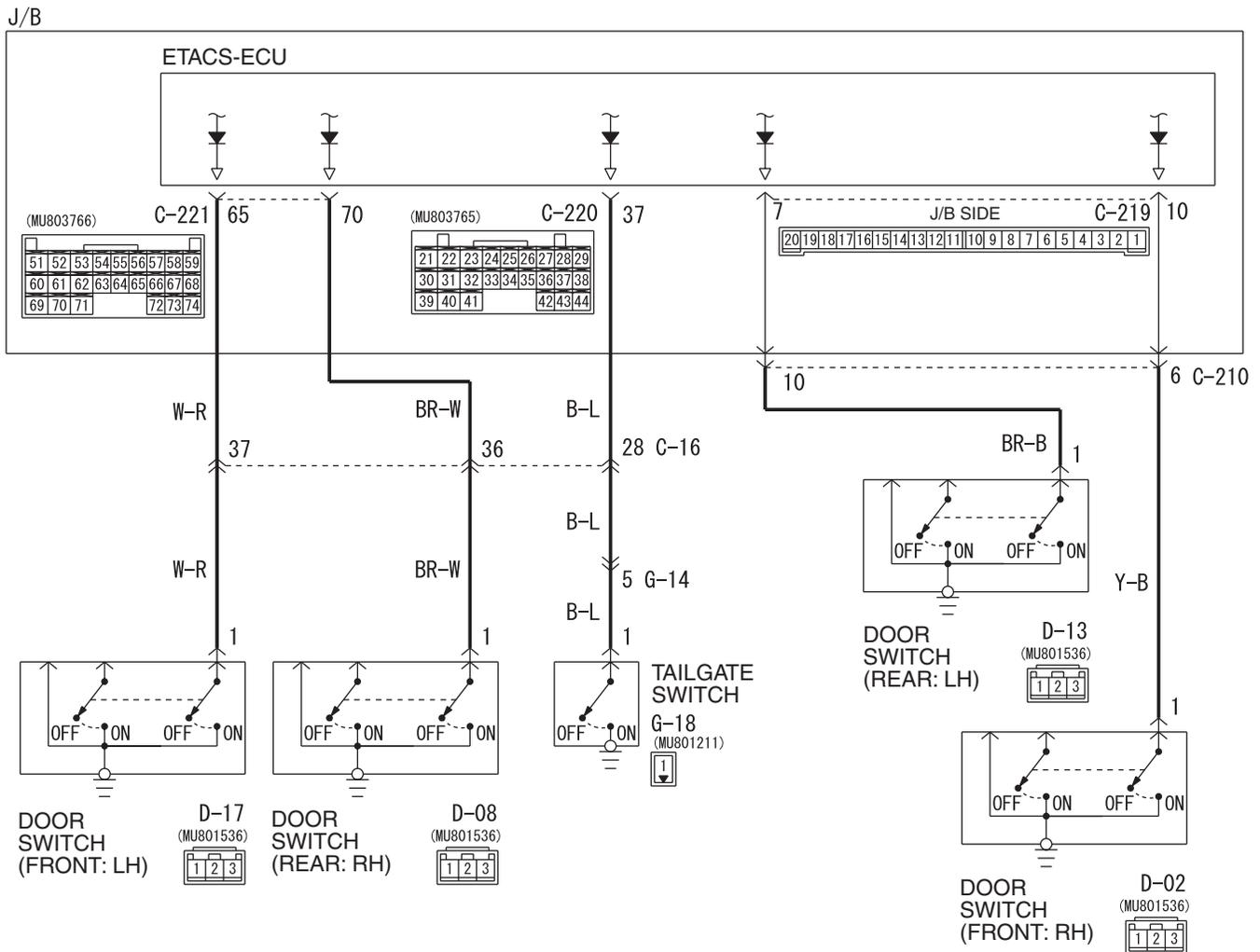
Door Switches Input Circuit <LHD>



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

Door Switches Input Circuit <RHD>



W4X54E138A

**COMMENTS ON TROUBLE SYMPTOM**

Input signals from all the door switches and tailgate switch are used to operate the functions below. If the signal(s) are abnormal, these functions will not work normally.

- Keyless entry system
- Room lamps

**POSSIBLE CAUSES**

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

**DIAGNOSTIC PROCEDURE**

**Step 1. Pulse check**

Check the input signal from the driver's door switch.

| System switch        | Check conditions                 |
|----------------------|----------------------------------|
| Driver's door switch | When the driver's door is opened |

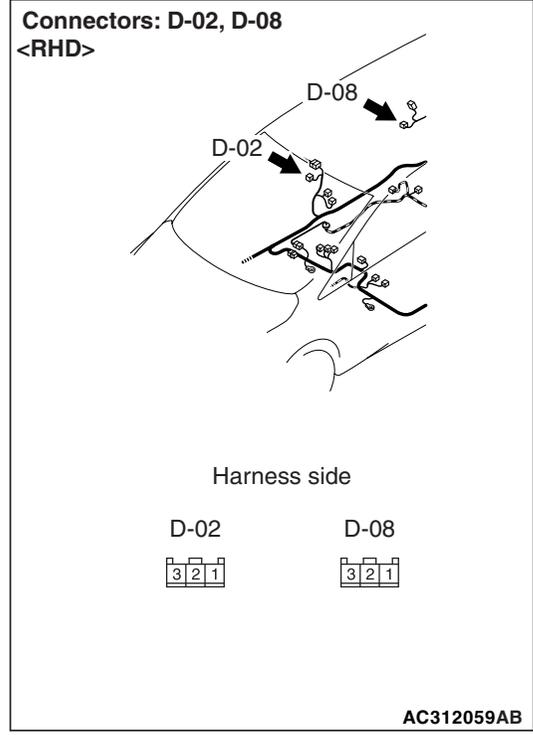
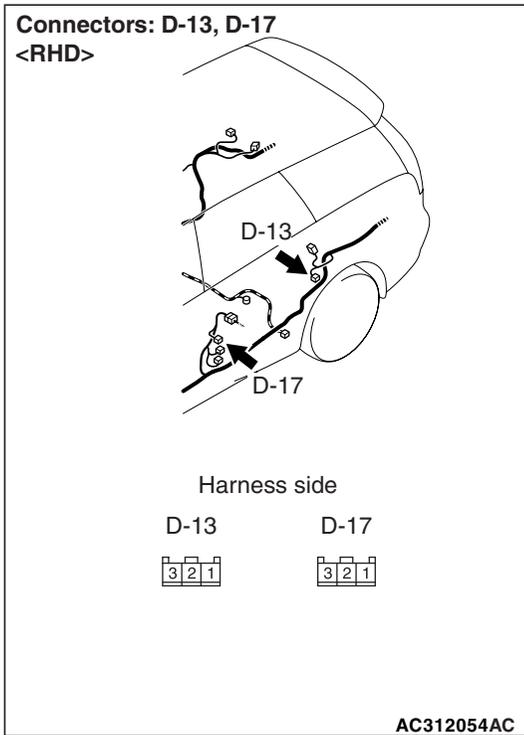
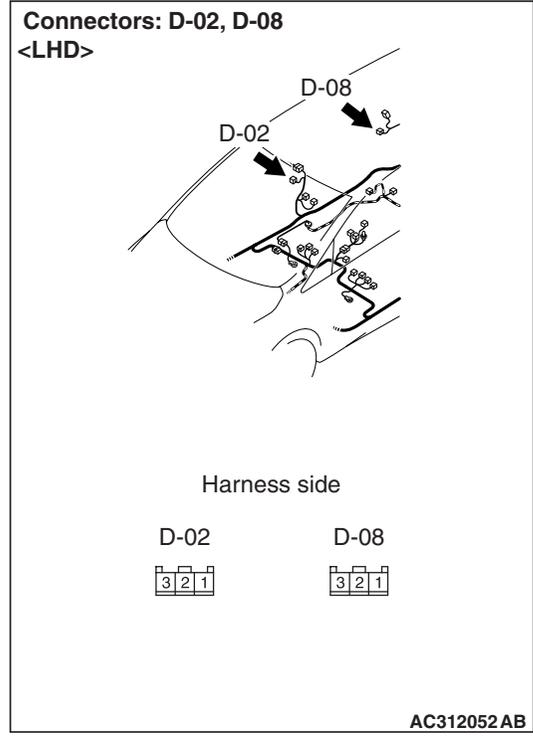
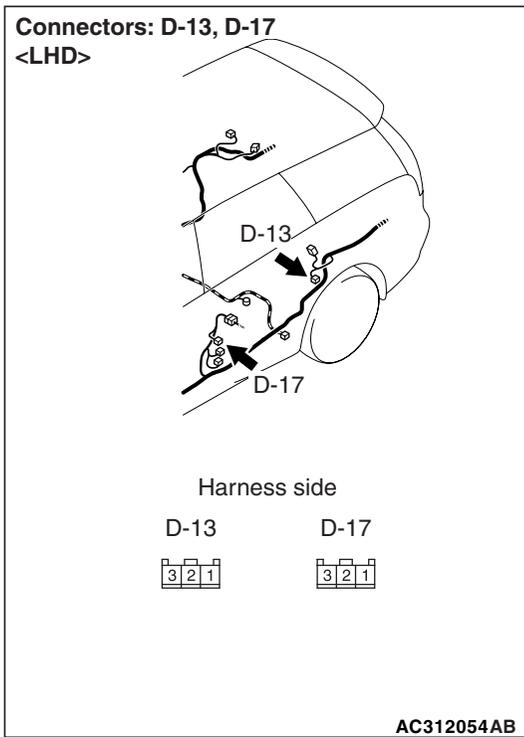
**OK:** The MUT-III sounds or the voltmeter needle fluctuates.

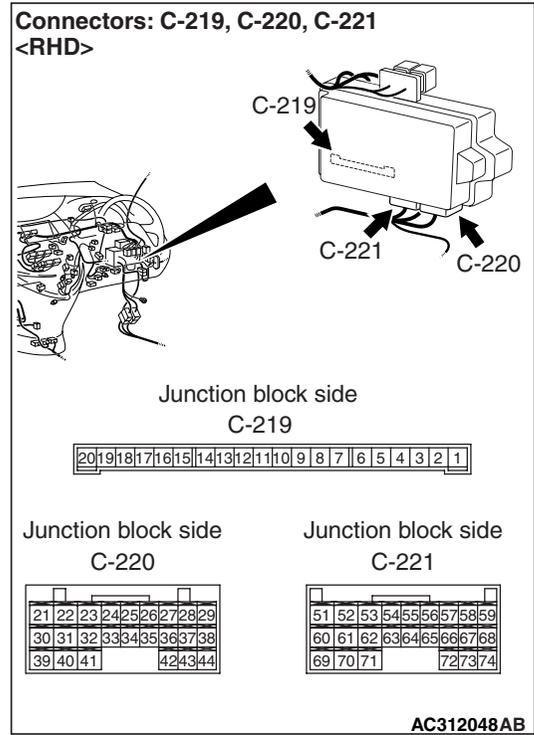
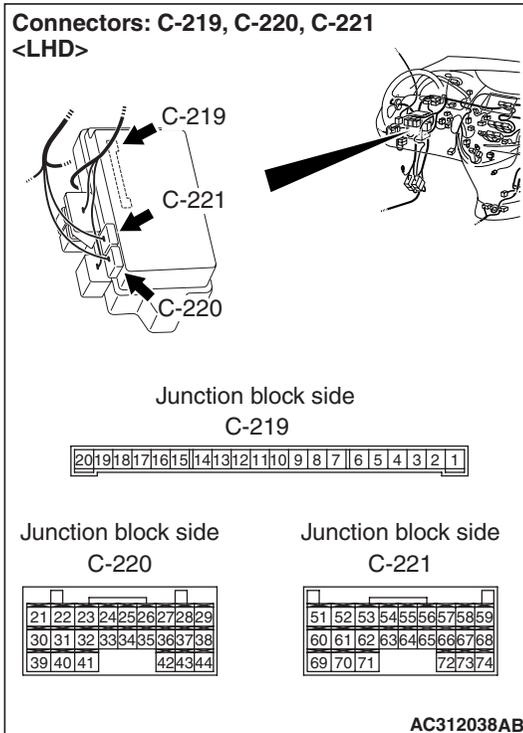
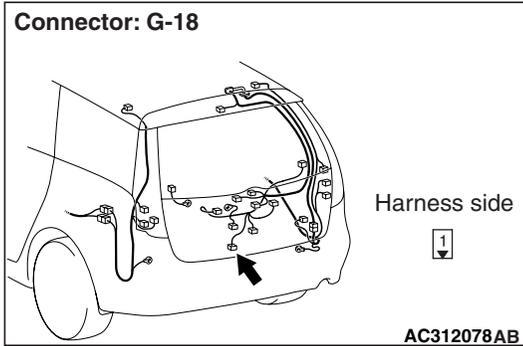
**Q:** Is the check result normal?

**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.54B-434 or <RH drive vehicles> P.54B-436 ."

**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**





- 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.

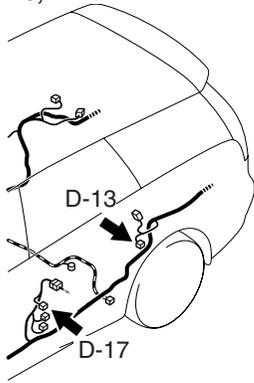
- Q: Is the check result normal?**  
**YES :** Go to Step 4.  
**NO :** Correct the installation condition.

**Step 4. Check the door switch.**  
 Refer to GROUP 42 – Door P.42-32.

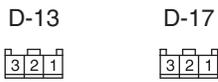
- Q: Is the check result normal?**  
**YES :** Go to Step 5.  
**NO :** Replace the door switch.

**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>

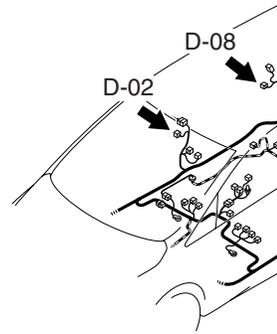


Harness side



AC312054AB

Connectors: D-02, D-08  
<LHD>

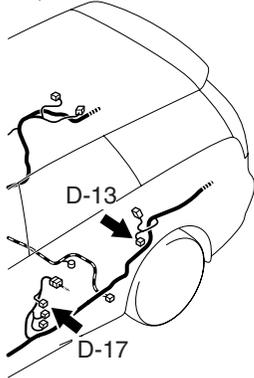


Harness side

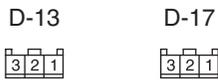


AC312052AB

Connectors: D-13, D-17  
<RHD>

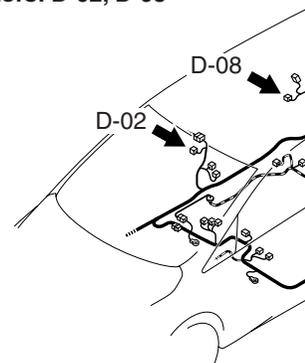


Harness side



AC312054AC

Connectors: D-02, D-08  
<RHD>



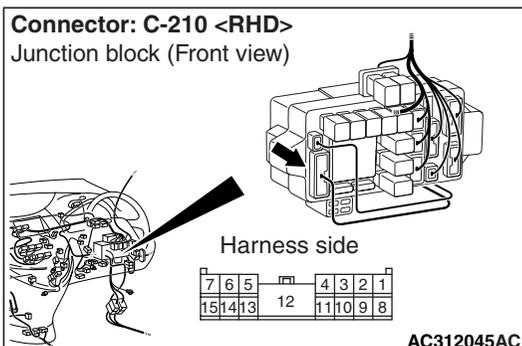
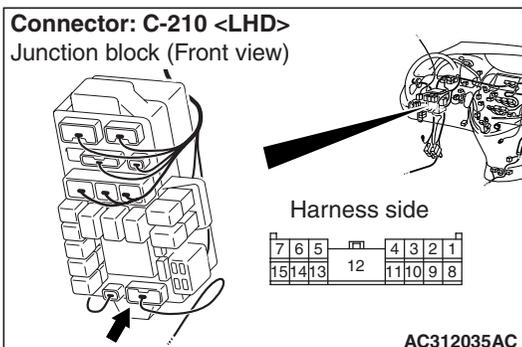
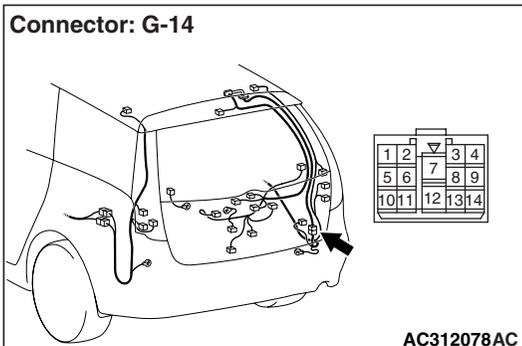
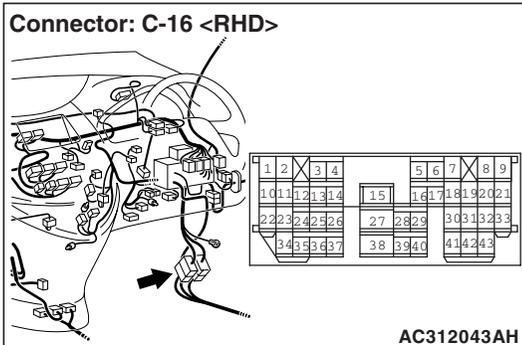
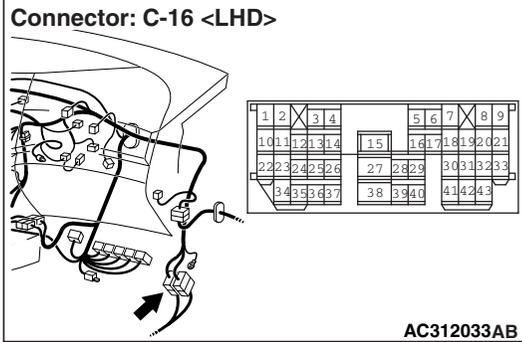
Harness side



AC312059AB



NOTE:



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. Retest the system.**

Check that all the all door switch signals are received 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).

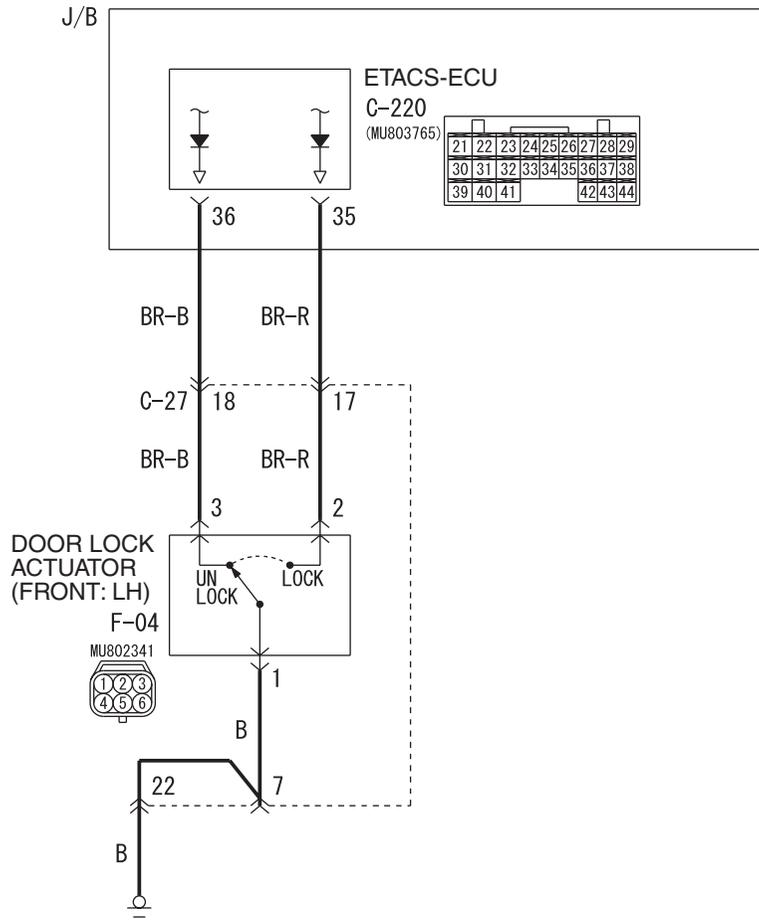
**NO :** Replace the ETACS-ECU.

Inspection Procedure 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.

- Key reminder function
- Central door locking
- Keyless entry system

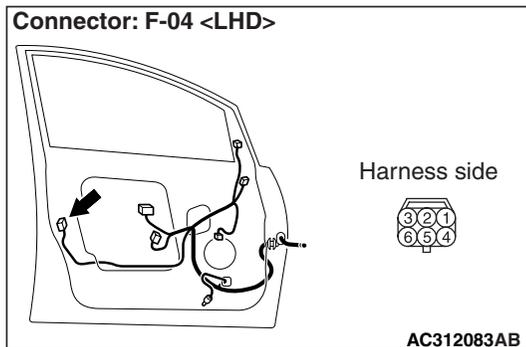
- Interior lamps

**POSSIBLE CAUSES**

- Malfunction of the front door lock actuator (LH)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

**DIAGNOSTIC PROCEDURE**

**Step 1. Connector check: F-04 front door lock actuator (LH) connector**

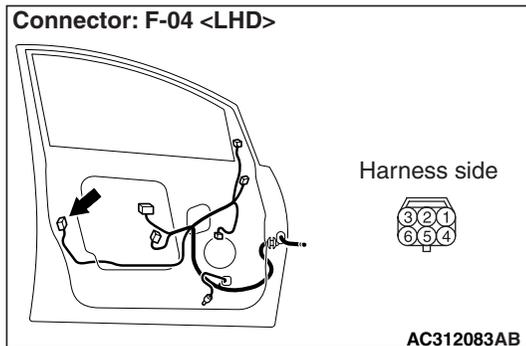


**Q: Is the check result normal?**  
**YES :** Go to Step 2.  
**NO :** Repair the defective connector.

**Step 2. Check the front door lock actuator (LH).**  
Refer to GROUP 42 – Door P.42-38.

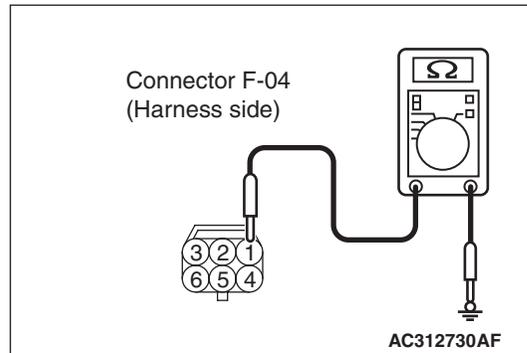
**Q: Is the check result normal?**  
**YES :** Go to Step 3.  
**NO :** Replace the front door lock actuator (RH).

**Step 3. Resistance measurement at the F-04 front door lock actuator (LH) connector.**



(1) Disconnect the connector, and measure at the

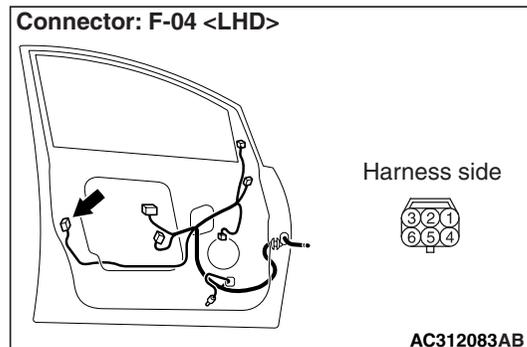
wiring harness side.



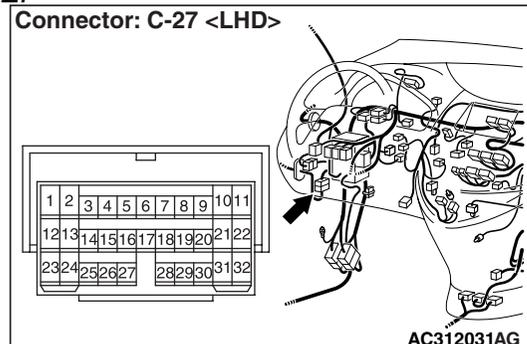
(2) Resistance between F-04 front door lock actuator (LH) connector terminal No.1 and body earth  
**OK: 2 Ω or less**

**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**



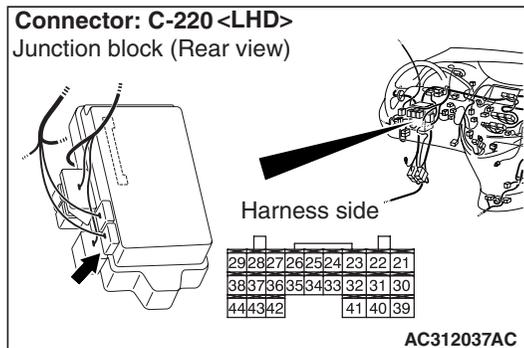
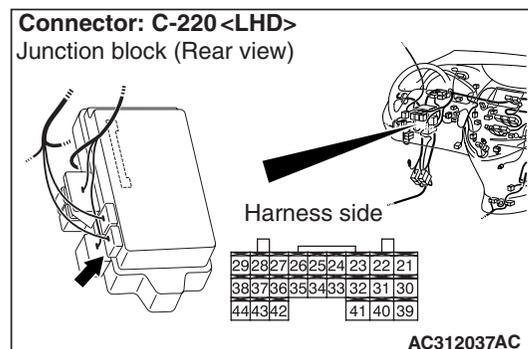
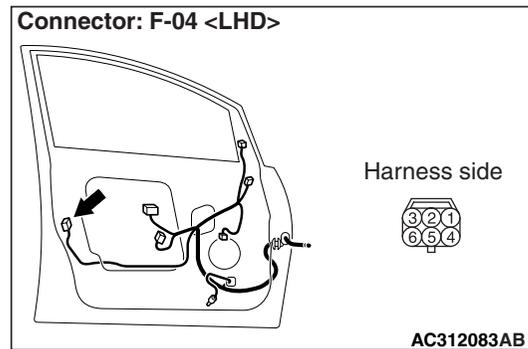
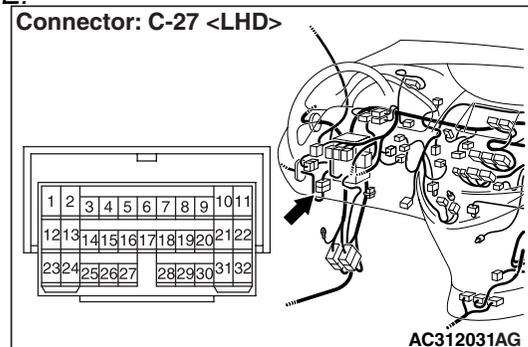
**NOTE:**



*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. Retest the system.**

Check that the driver's door lock actuator switch signal is received 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).

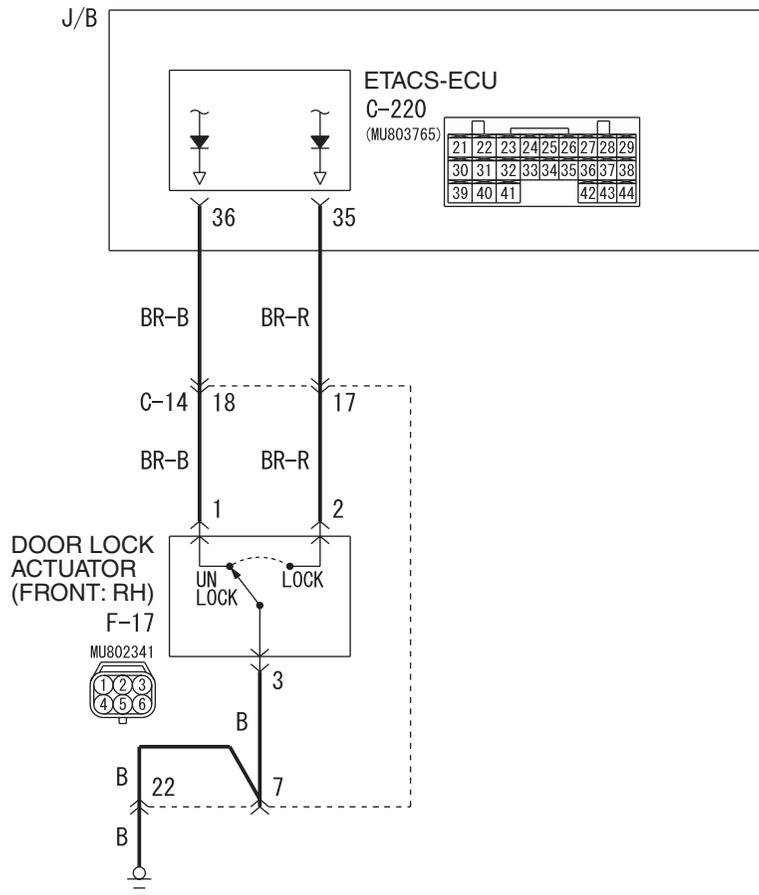
**NO :** Replace the ETACS-ECU.

Inspection Procedure 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 front door lock actuator (RH) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

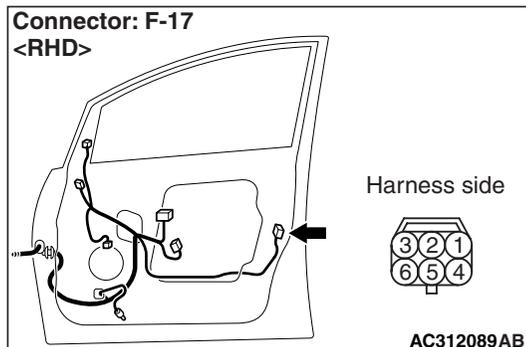
- Central door locking
- Keyless entry system

- Interior lamps

**POSSIBLE CAUSES**

- Malfunction of the front door lock actuator (RH)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

## DIAGNOSTIC PROCEDURE

**Step 1. Connector check: F-17 front door lock actuator (RH) connector**

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

**YES :** Go to Step 2.

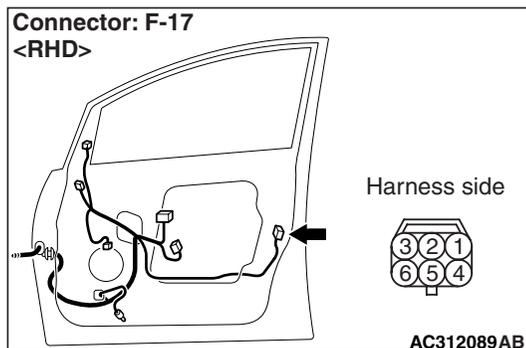
**NO :** Repair the defective connector.

**Step 2. Check the front door lock actuator (RH).**  
Refer to GROUP 42 – Door P.42-38.

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

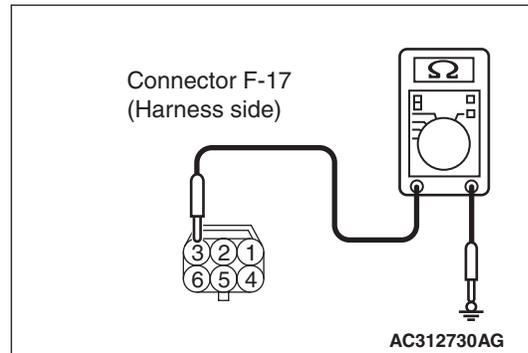
**YES :** Go to Step 3.

**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.



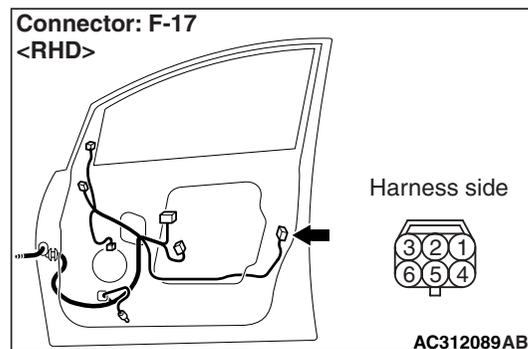
(2) Resistance between F-17 front door lock actuator (RH) connector terminal No.3 and body earth

**OK: 2 Ω or less**

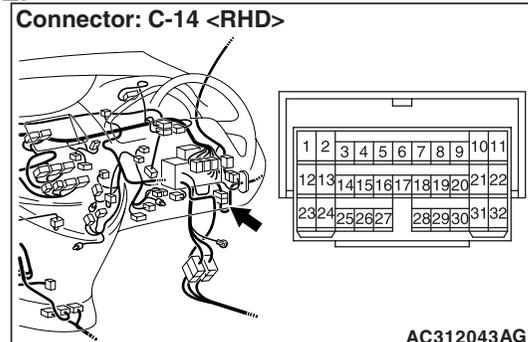
**Q: Is the check result normal?**

**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.*

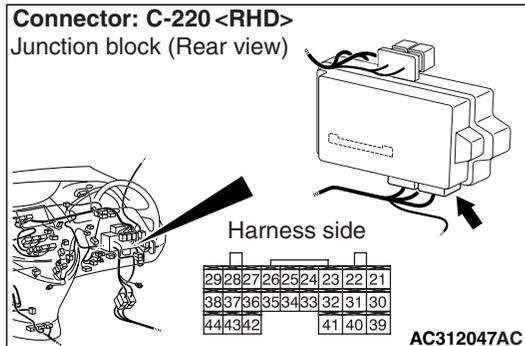
- Check the earth wires for open circuit.

**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**

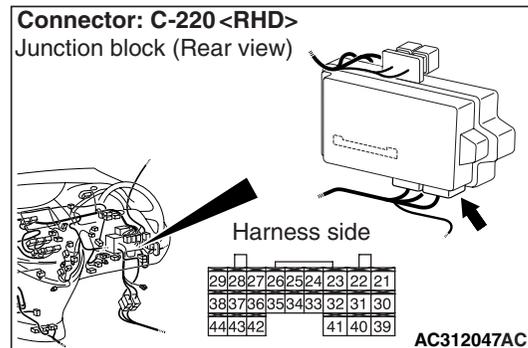
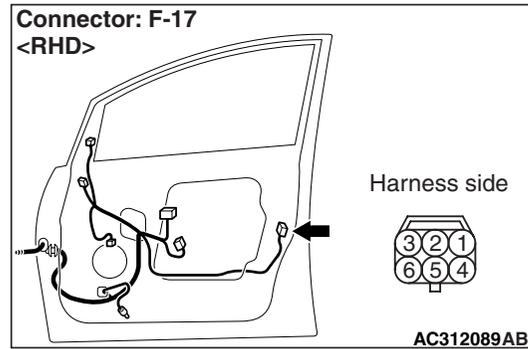


**Q: Is the check result normal?**

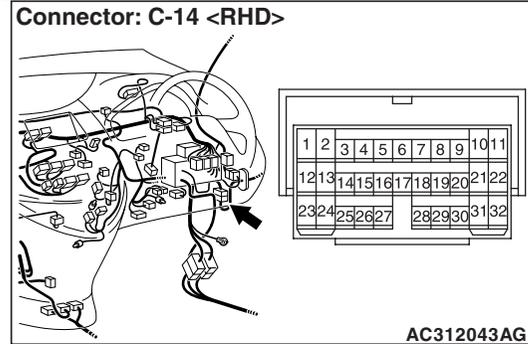
**YES :** Go to Step 6.

**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. Retest the system.**

Check that the front door lock actuator (RH) switch signal is received 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).

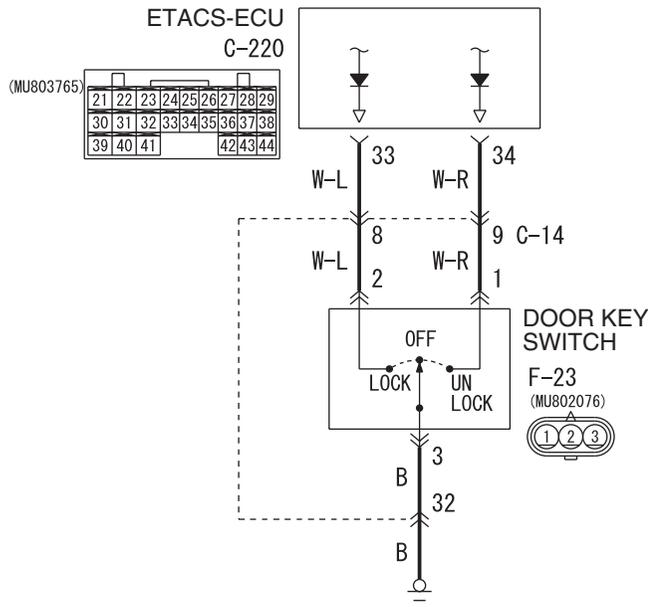
**NO :** Replace the ETACS-ECU.

Inspection Procedure Q-16: The passenger's door 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

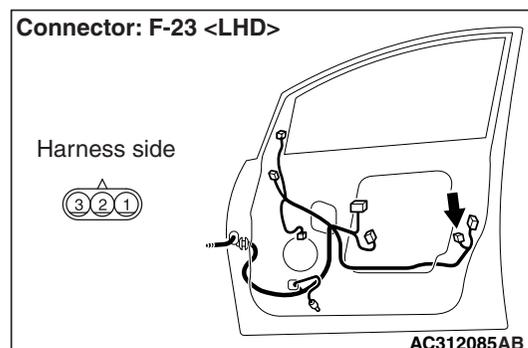
Input signal from the front passenger's door key switch is used to operate the central door locking function. If the signal is abnormal, the central door locking function will not work normally.

## POSSIBLE CAUSES

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

## DIAGNOSTIC 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.**

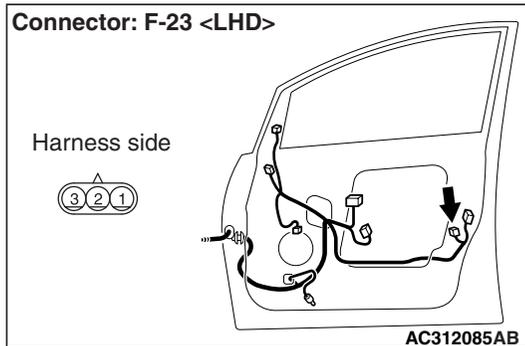
Refer to GROUP 42 – Door P.42-38.

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

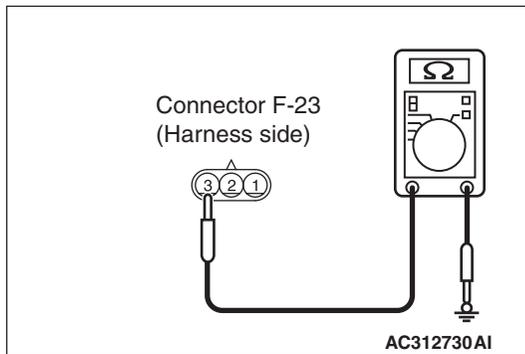
**YES :** Go to Step 3.

**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

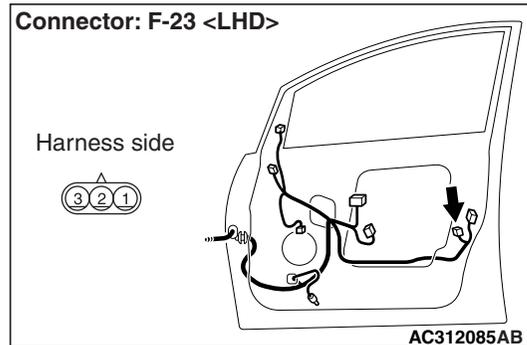
**OK: 2 Ω or less**

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

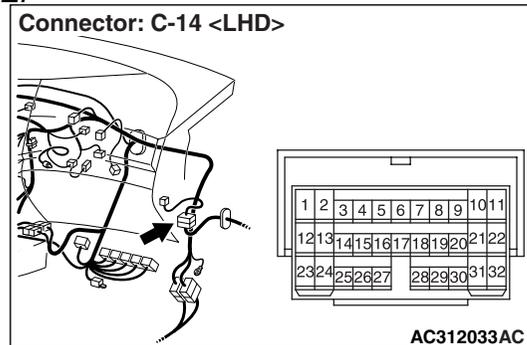
**YES :** Go to Step 5.

**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.*

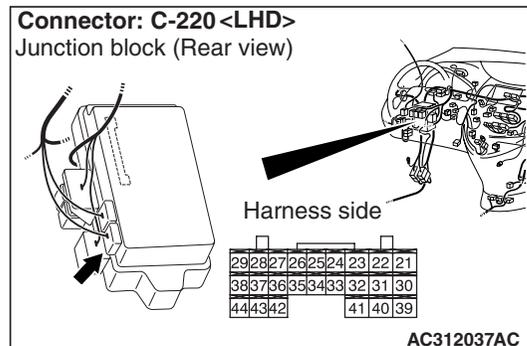
- Check the earth wires for open circuit.

**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**

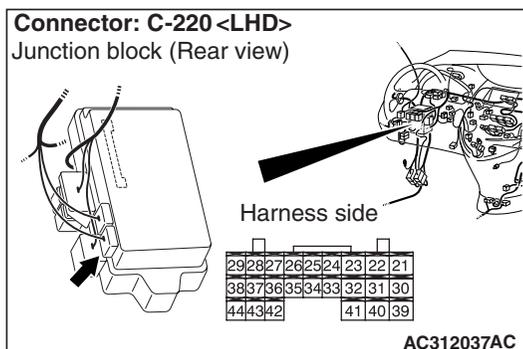
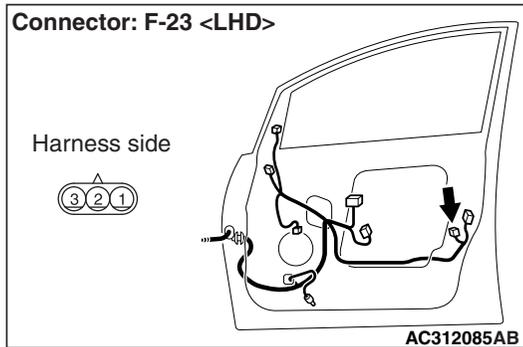


**Q: Is the check result normal?**

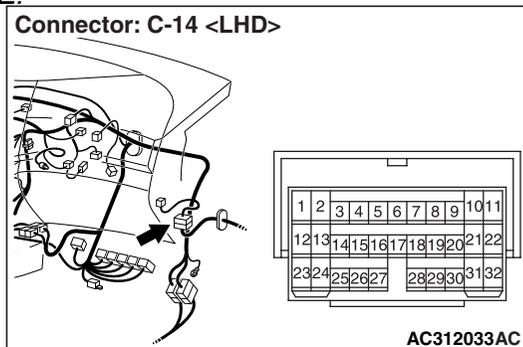
**YES :** Go to Step 6.

**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. Retest the system.**

Check that the passenger's door key switch signal is received normally.

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

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

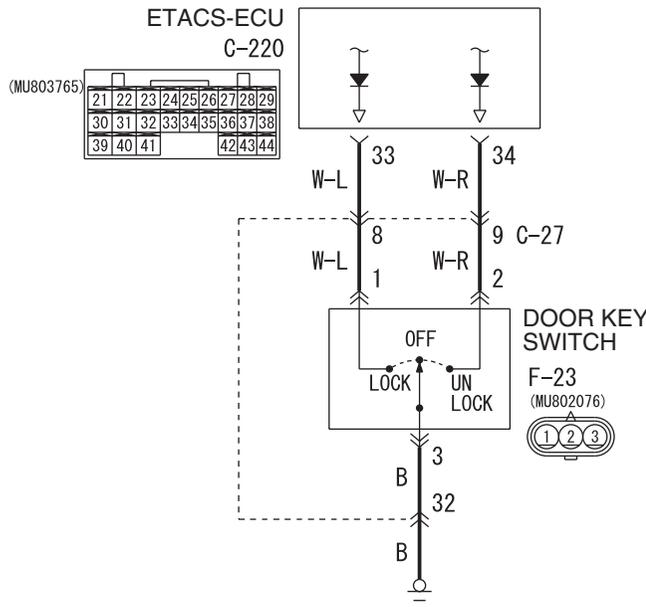
**NO :** Replace the ETACS-ECU.

Inspection Procedure Q-16: The passenger's door 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**

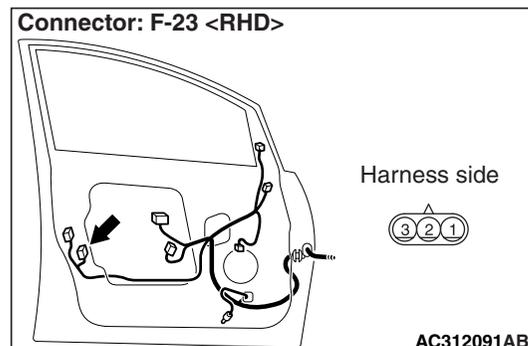
Input signal from the front passenger's door key switch is used to operate the central door locking function. If the signal is abnormal, the central door locking function will not work normally.

**POSSIBLE CAUSES**

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

**DIAGNOSTIC 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.**

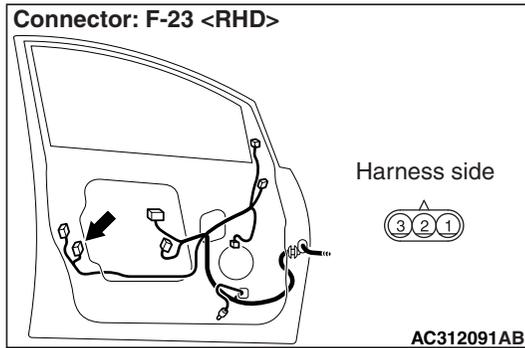
Refer to GROUP 42 – Door P.42-38.

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

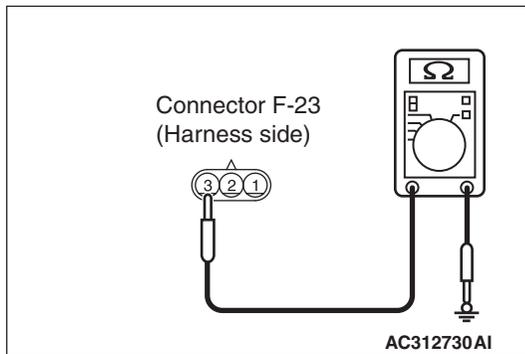
**YES :** Go to Step 3.

**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

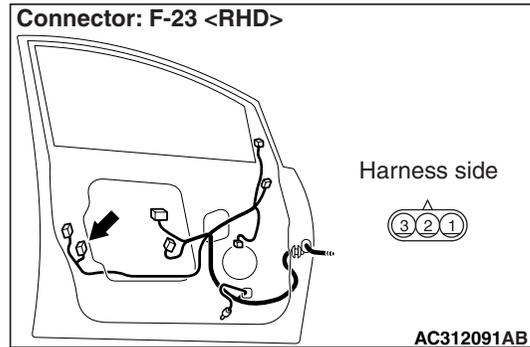
**OK: 2 Ω or less**

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

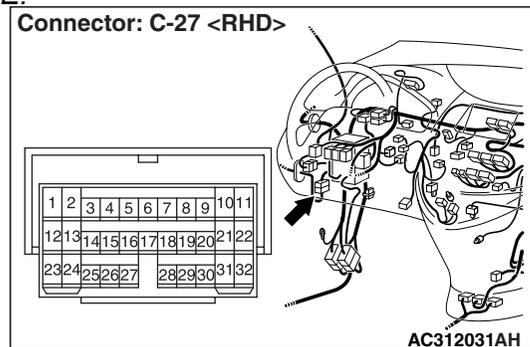
**YES :** Go to Step 5.

**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.*

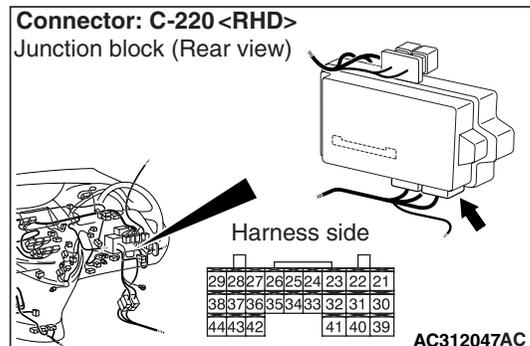
- Check the earth wires for open circuit.

**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**

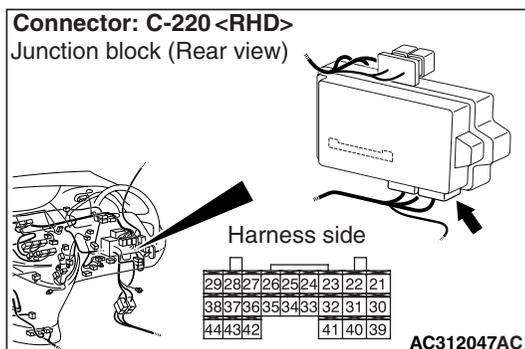
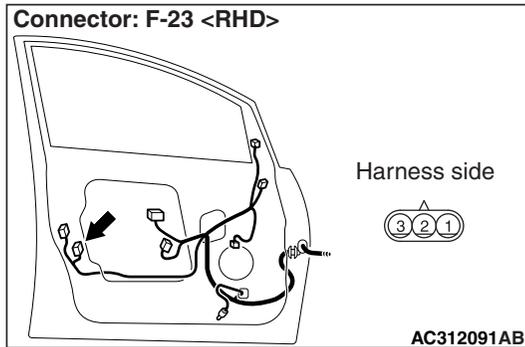


**Q: Is the check result normal?**

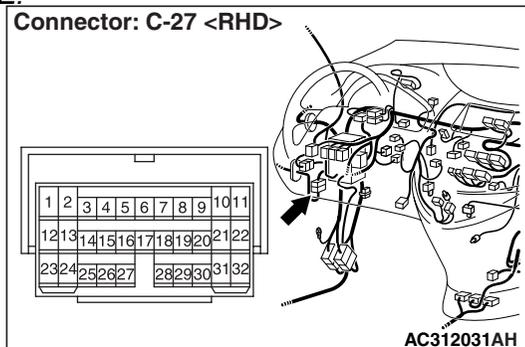
**YES :** Go to Step 6.

**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. Retest the system.**

Check that the passenger's door key switch signal is received normally.

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

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

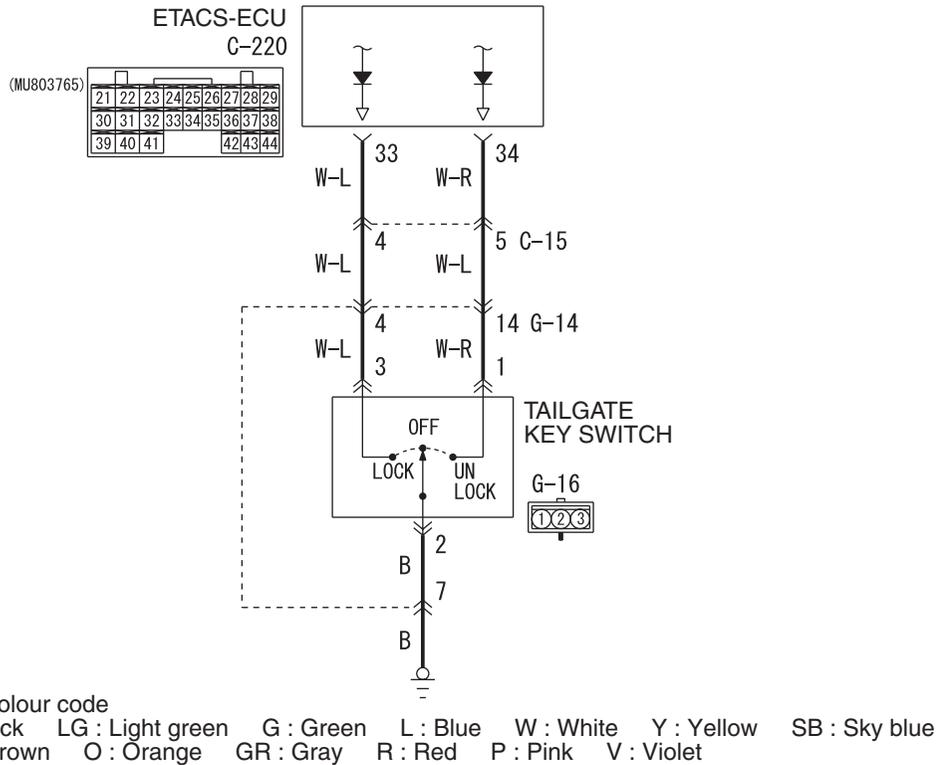
**NO :** Replace the ETACS-ECU.

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



W4X54E147A

**COMMENTS ON TROUBLE SYMPTOM**

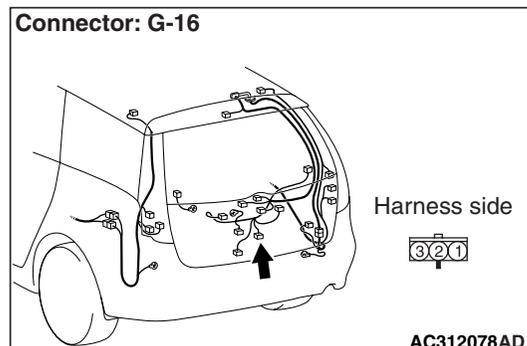
Input signal from the tailgate key switch is used to operate the central door locking function. If the signal is abnormal, the central door locking function will not work normally.

**POSSIBLE CAUSES**

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

**DIAGNOSTIC 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 – Tailgate P.42-51.

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

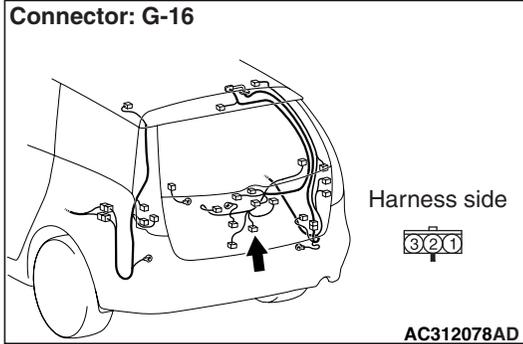
**YES :** Go to Step 3.

**NO :** Replace the tailgate lock key switch.

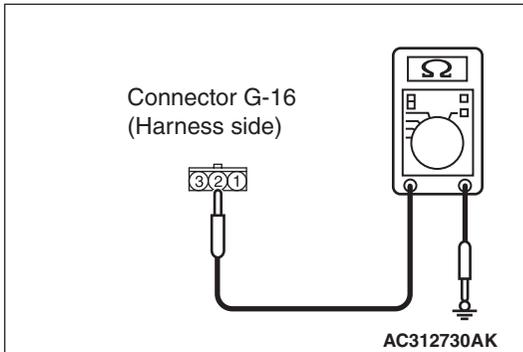
**YES :** Go to Step 5.

**NO :** Go to Step 4.

**Step 3. Resistance measurement at the G-16 tailgate key switch connector.**



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

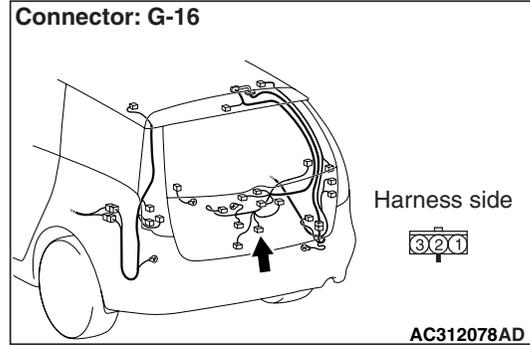


(2) Resistance between G-16 tailgate key switch connector terminal No.2 and body earth

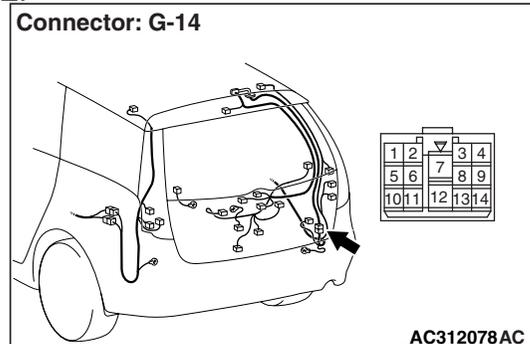
**OK: 2 Ω or less**

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

**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.

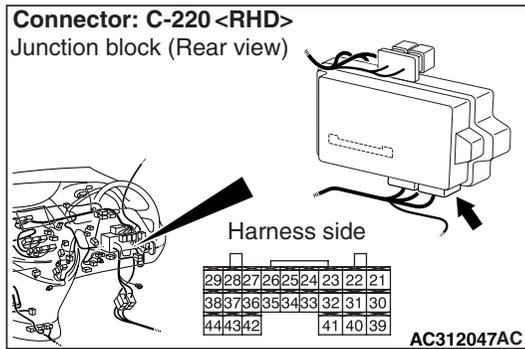
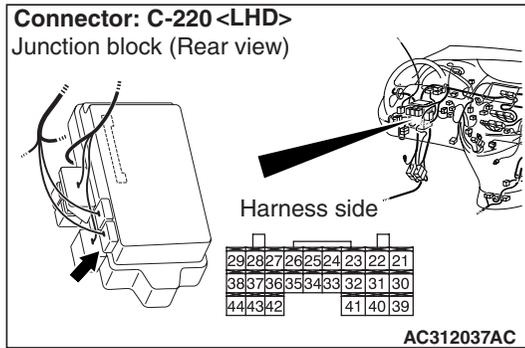
**Q: Is the check result normal?**

**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

**NO :** Repair the wiring harness.

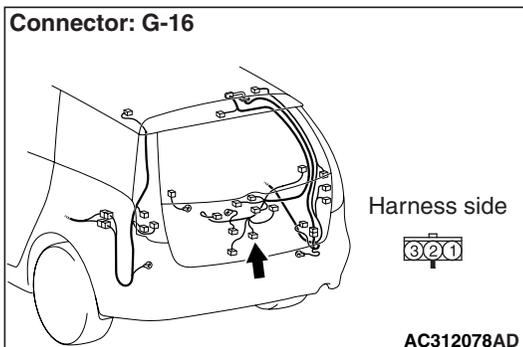
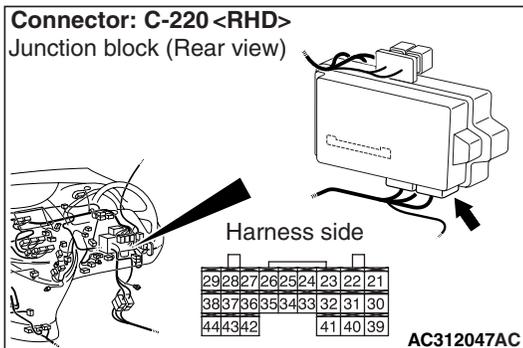
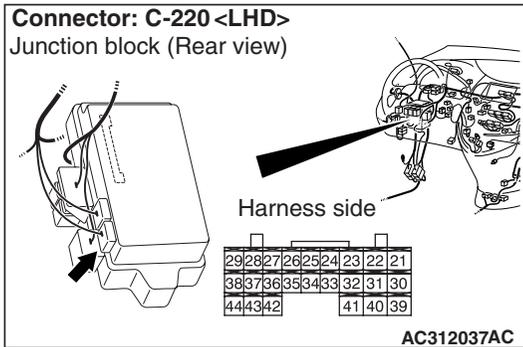
**Step 5. Connector check: C-220 ETACS-ECU connector**

YES : Go to Step 6.  
NO : Repair the defective connector.

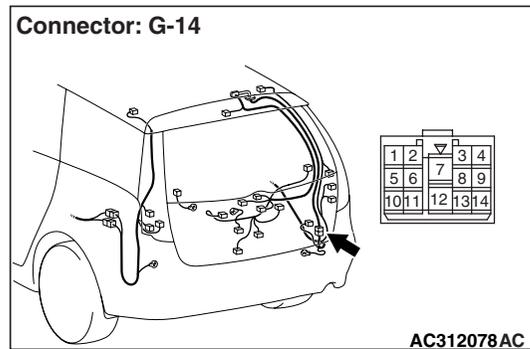
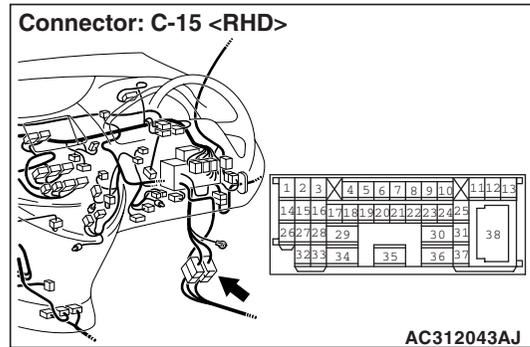
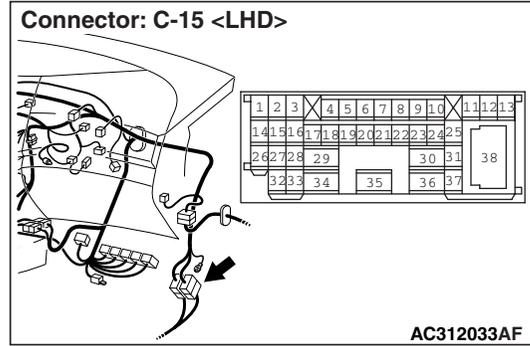


**Q: Is the check result normal?**

**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. Retest the system.**

Check that the tailgate key switch signal is received normally.

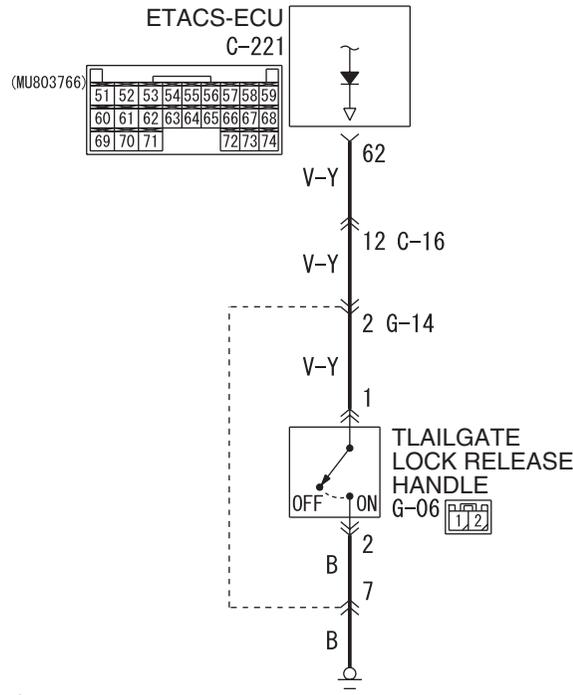
**Q: Is the check result normal?**

**YES :** 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

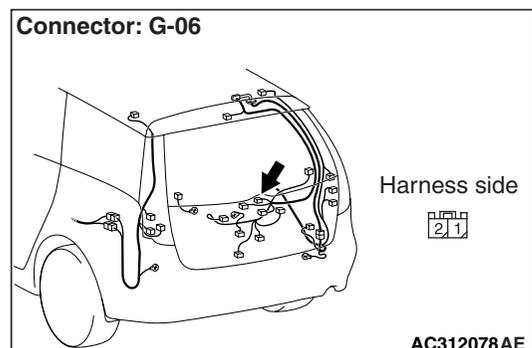
W4X54E188A

**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

**DIAGNOSTIC 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?**

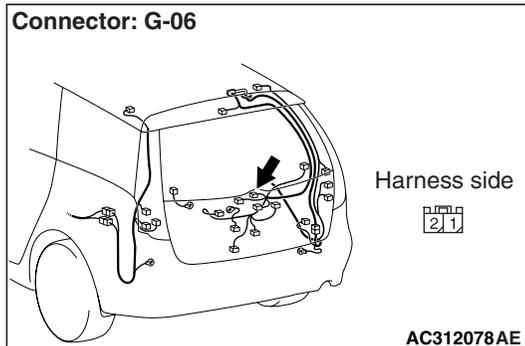
**YES :** Go to Step 3.

**NO :** Replace the tailgate lock release handle.

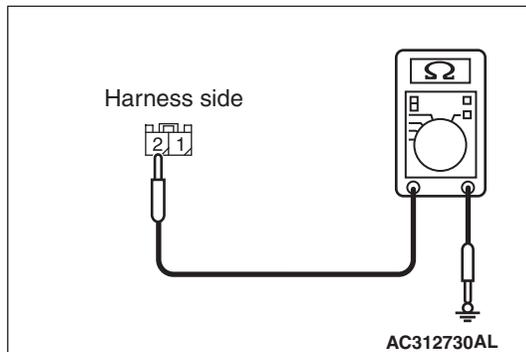
**YES :** Go to Step 5.

**NO :** Go to Step 4.

**Step 3. Measure the resistance at tailgate lock release handle connector G-06.**



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

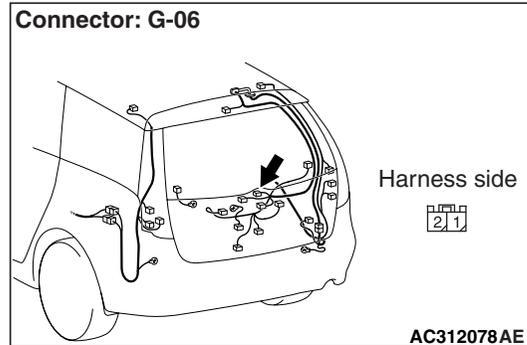


(2) Resistance between tailgate lock release handle connector G-06 terminal No.2 and body earth

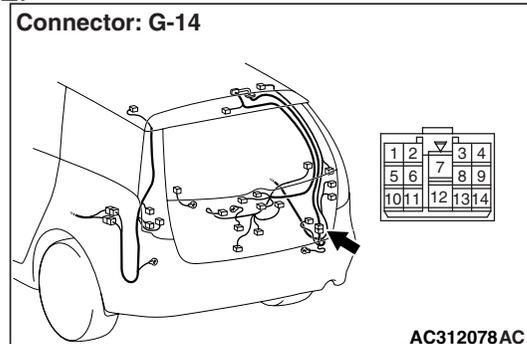
**OK: 2 Ω or less**

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

**Step 4. Check the wiring harness between tailgate lock release handle connector G-06 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.

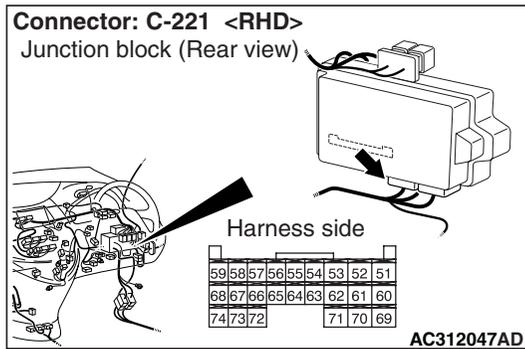
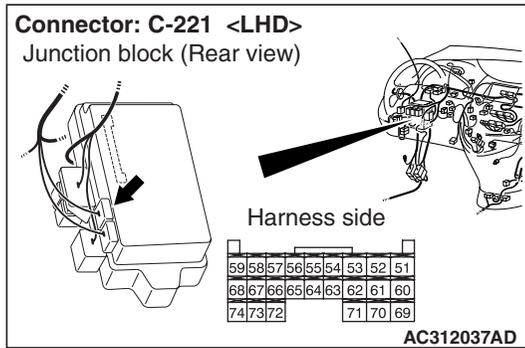
**Q: Is the check result normal?**

**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.

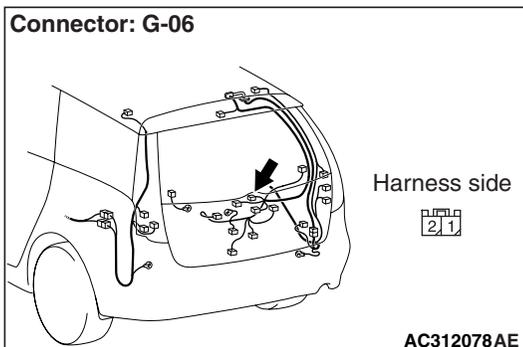
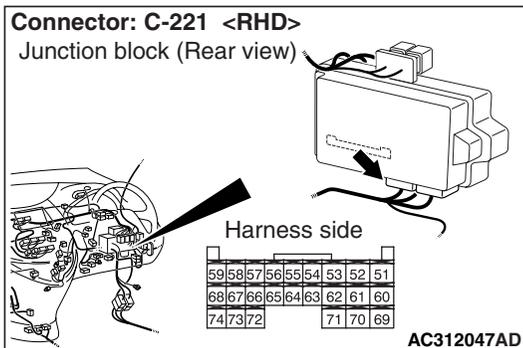
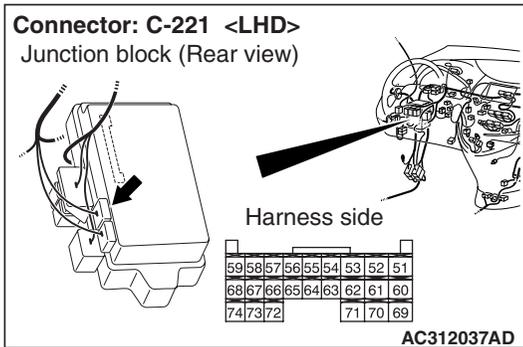
**Step 5. Connector check: C-221 ETACS-ECU connector**

**YES :** Go to Step 6.  
**NO :** Repair the defective connector.

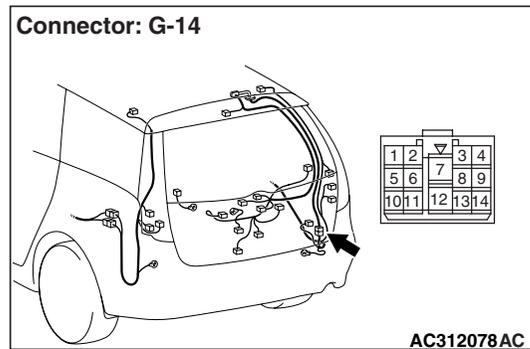
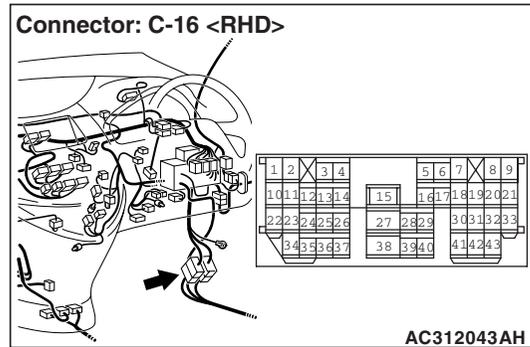
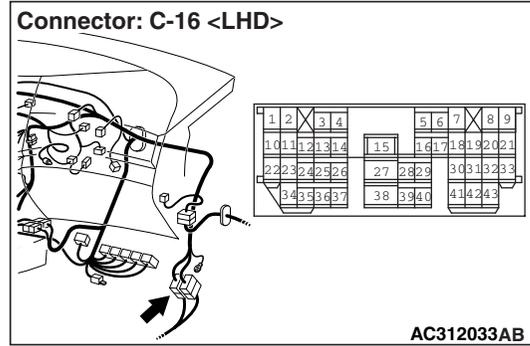


**Q: Is the check result normal?**

**Step 6. Check the wiring harness between ETACS-ECU connector C-221 terminal No.62 and tailgate lock release handle connector G-06 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 line 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 tailgate lock release handle switch signal is received normally.

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

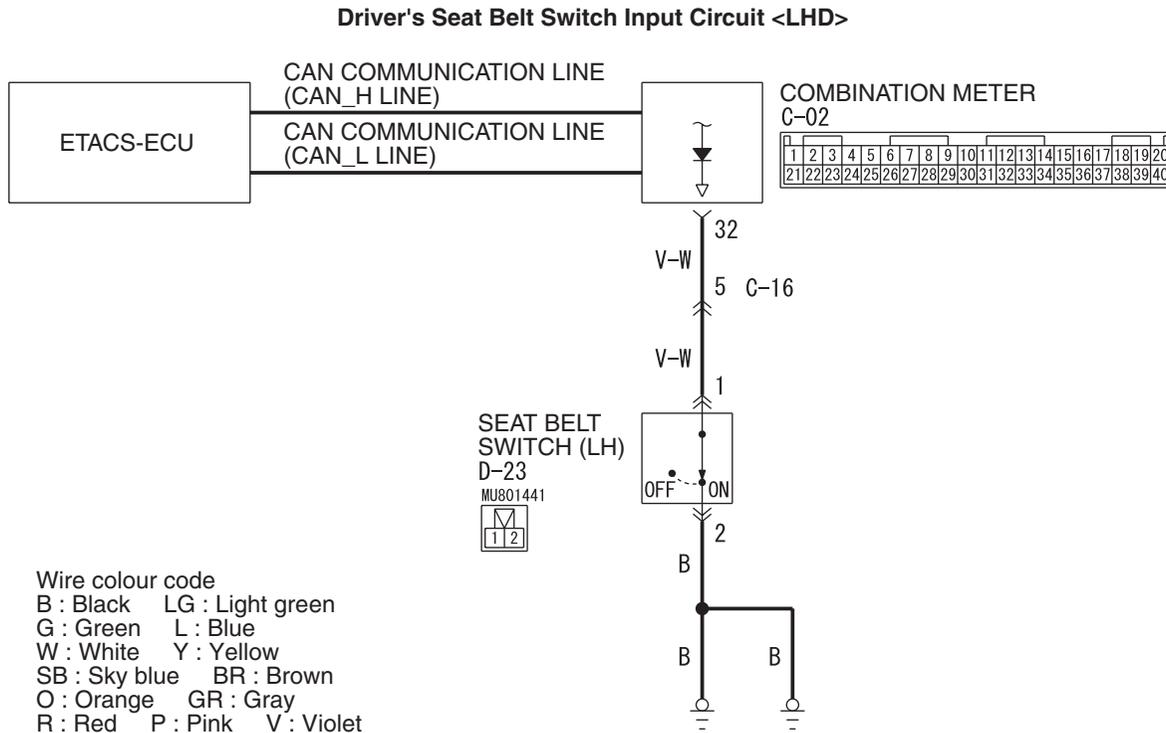
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

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

## Inspection Procedure Q-19: The driver's seat belt switch signal is not received. &lt;LH drive vehicles&gt;

**CAUTION**

Whenever the ECU is replaced, ensure that the input signal circuit is normal.



W4X54E212A

**COMMENTS ON TROUBLE SYMPTOM**

Input signal from the driver's seat belt switch signal is used to operate the seat belt warning buzzer function and seat belt warning lamp. If the signal is abnormal, the seat belt warning buzzer function and seat belt warning lamp 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.

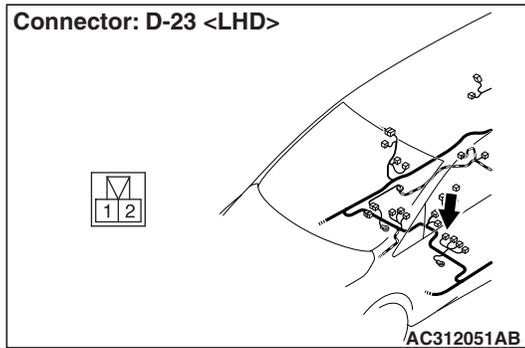
**Q: Is the diagnosis code set?**

**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**

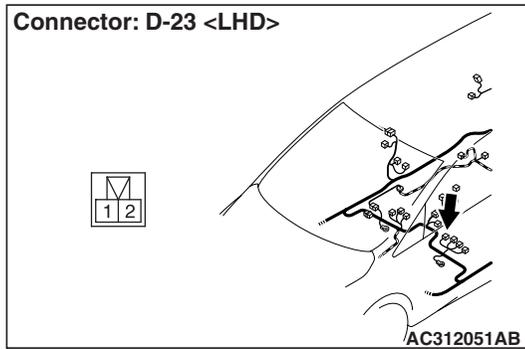


**Q: Is the check result normal?**  
**YES :** Go to Step 4.  
**NO :** Repair the defective connector.

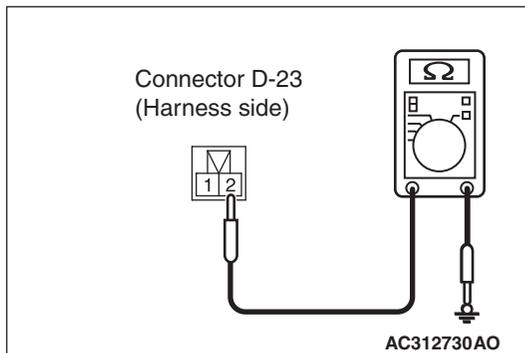
**Step 4. Check the seat belt switch (LH).**  
 Refer to GROUP 52A – Front seat belt P.52A-36.

**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.



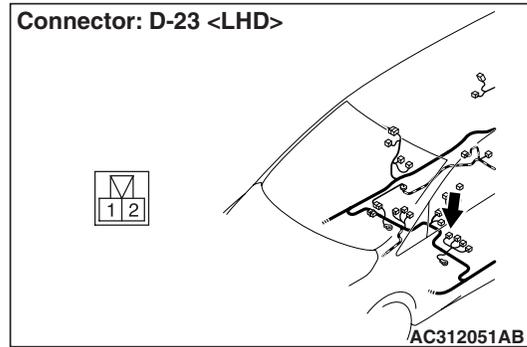
(2) Resistance between D-23 seat belt switch (LH)

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.

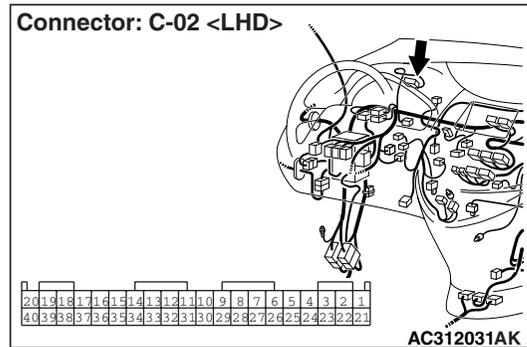
**Step 6. Check the wiring harness between D-23 seat belt switch (LH) connector terminal No.2 and body earth.**



- Check the earth wires for open circuit.

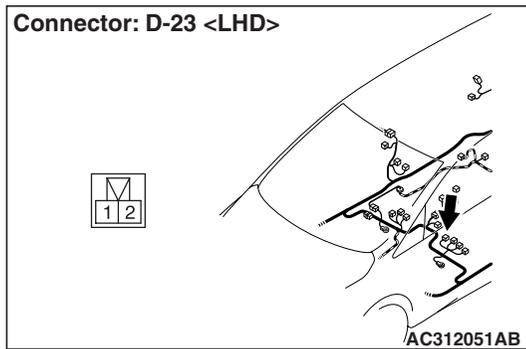
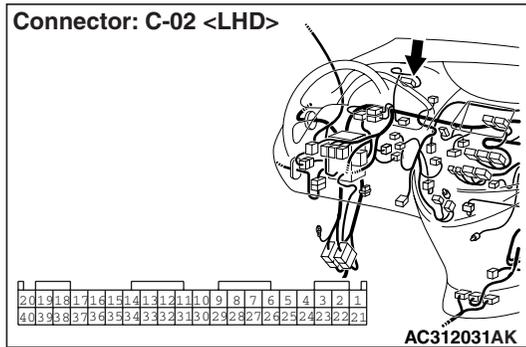
**Q: Is the check result normal?**  
**YES :** Replace the inner seat belt (driver's side).  
**NO :** Repair the wiring harness.

**Step 7. Connector check: C-02 combination meter connector**

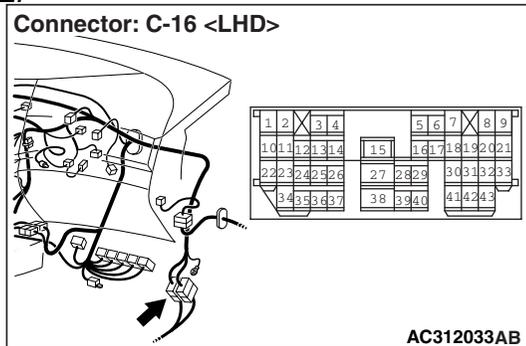


**Q: Is the check result normal?**  
**YES :** Go to Step 8.  
**NO :** Repair the defective connector.

**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. 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?**

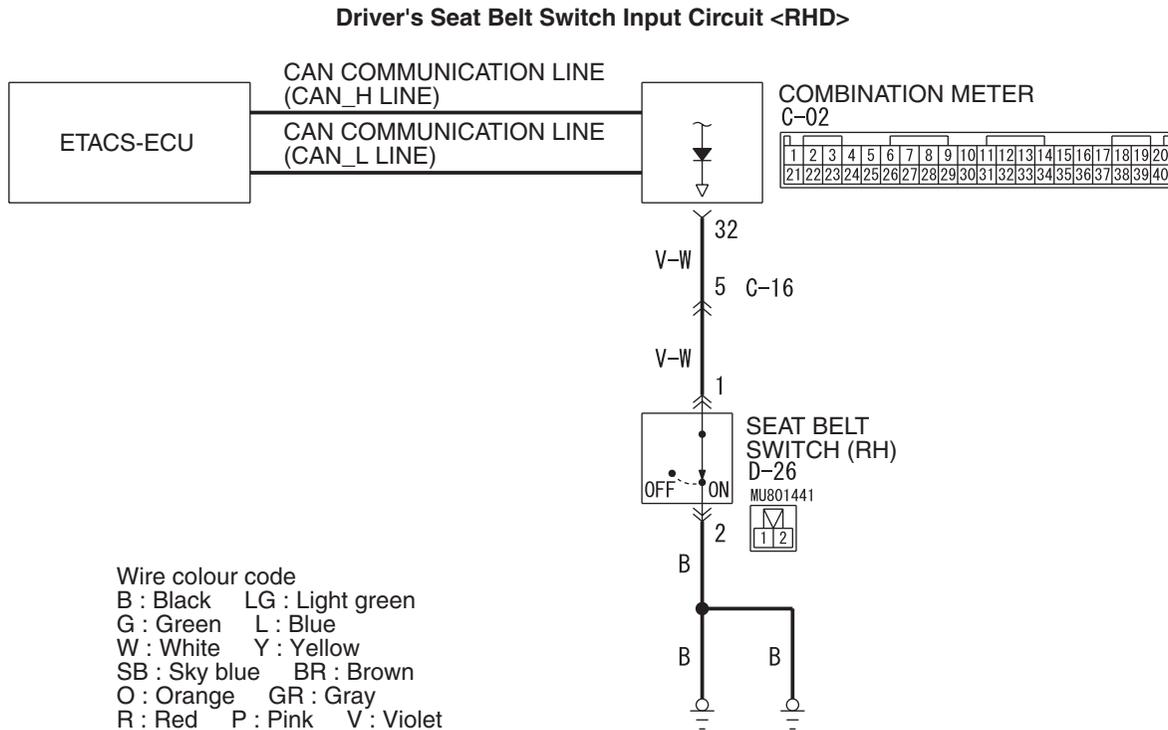
**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

**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.



W4X54E213A

**COMMENTS ON TROUBLE SYMPTOM**

Input signal from the driver's seat belt switch signal is used to operate the seat belt warning buzzer function and seat belt warning lamp. If the signal is abnormal, the seat belt warning buzzer function and seat belt warning lamp 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**

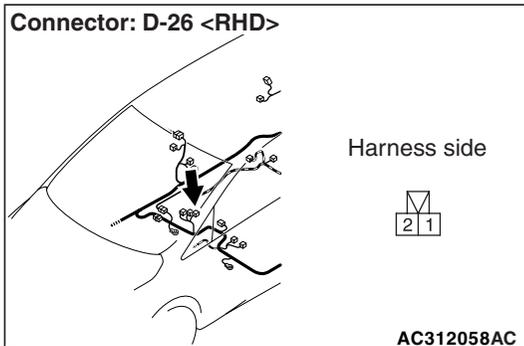
Check whether the combination meter-related diagnosis code is set.

**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**

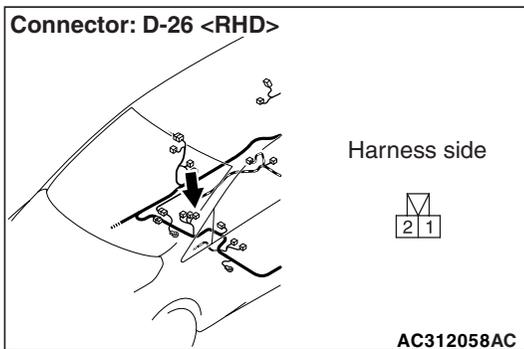


**Q: Is the check result normal?**  
**YES :** Go to Step 4.  
**NO :** Repair the defective connector.

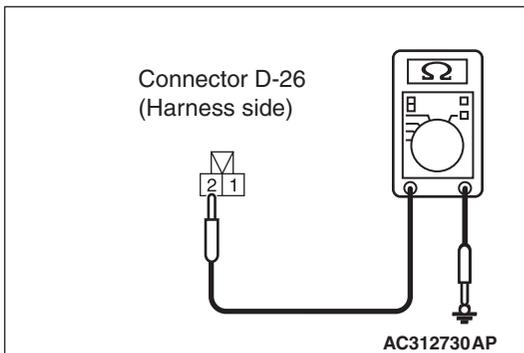
**Step 4. Check the seat belt switch (RH).**  
 Refer to GROUP 52A – Front seat belt P.52A-36.

**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.



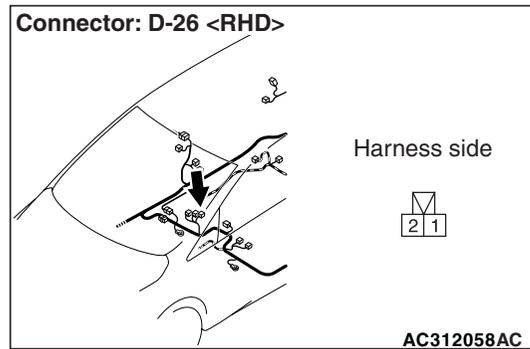
(2) Resistance between D-26 seat belt switch (RH)

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.

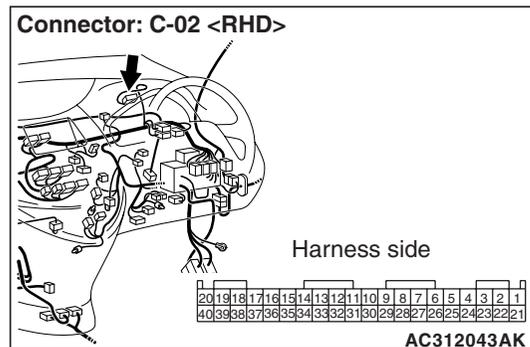
**Step 6. Check the wiring harness between D-26 seat belt switch (RH) connector terminal No.2 and body earth.**



- 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.

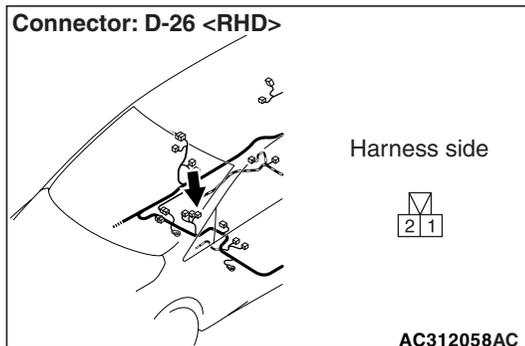
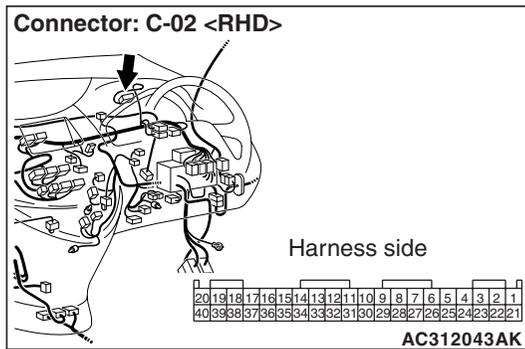
**Step 7. Connector check: C-02 combination meter connector**



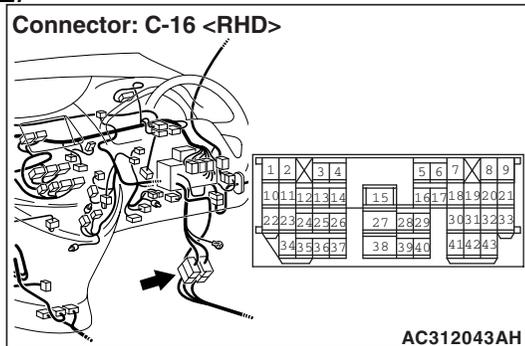
**Q: Is the check result normal?**  
**YES :** Go to Step 8.  
**NO :** Repair the defective connector.

**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.**

**YES :** Go to Step 9.  
**NO :** Repair the wiring harness.



**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?**

**Step 9. 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](#)).

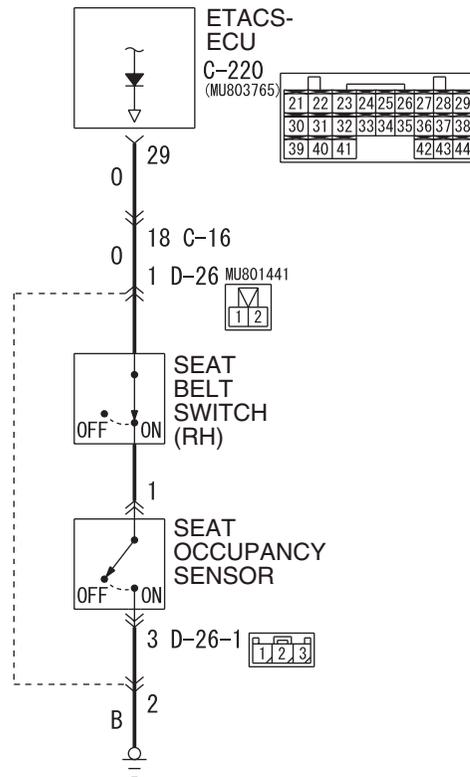
**NO :** Replace the combination meter.

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

W4X54E184A

**COMMENTS ON TROUBLE SYMPTOM**

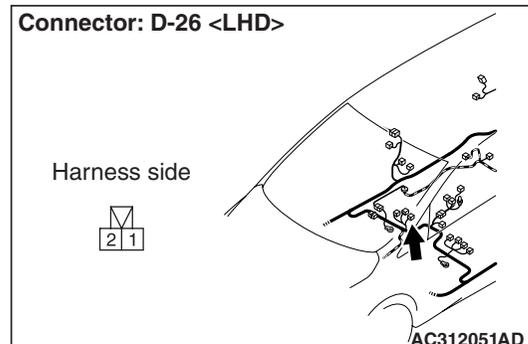
Input signal from the passenger's seat belt switch is used to operate the seat belt warning buzzer function and seat belt warning lamp. If the signal is abnormal, the seat belt warning buzzer function and seat belt warning lamp will not work normally.

**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 (LH) connector**



Q: Is the check result normal?

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

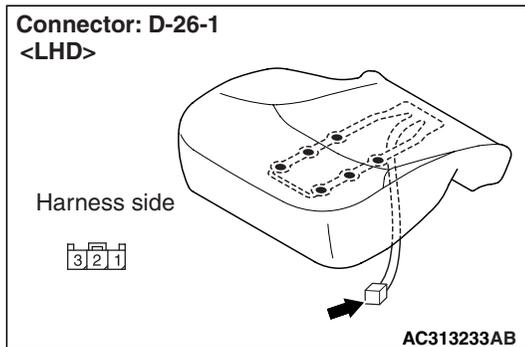
**Step 2. Check the seat belt switch (LH).**

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-26-1 seat occupancy sensor connector**



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

YES : Go to Step 4.  
NO : Repair the defective connector.

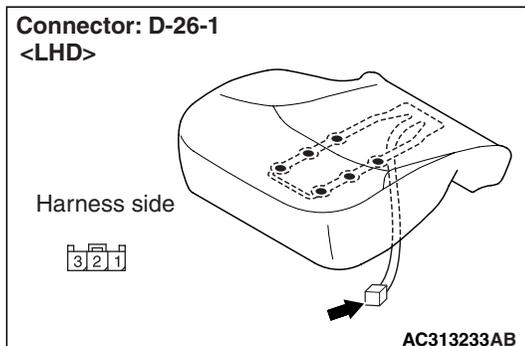
**Step 4. Check the seat occupancy sensor.**

Refer to GROUP 52A – Front seat P.52A-22.

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

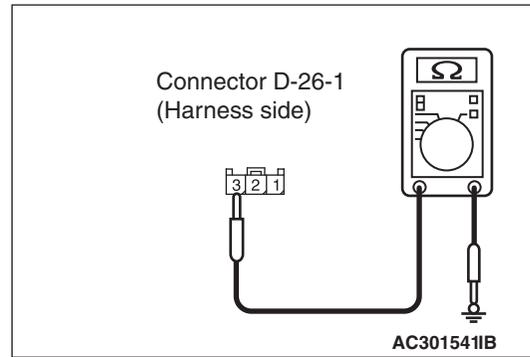
YES : Go to Step 5.  
NO : Replace the seat occupancy sensor.

**Step 5. Resistance measurement at the D-26-1 seat occupancy sensor connector.**



(1) Disconnect the connector, and measure at the

wiring harness side.



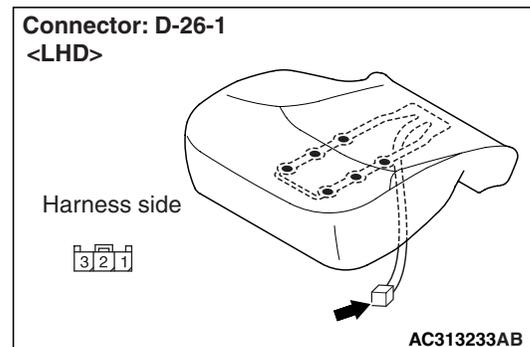
(2) Resistance between D-26-1 seat occupancy sensor connector terminal No.3 and body earth

**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.**

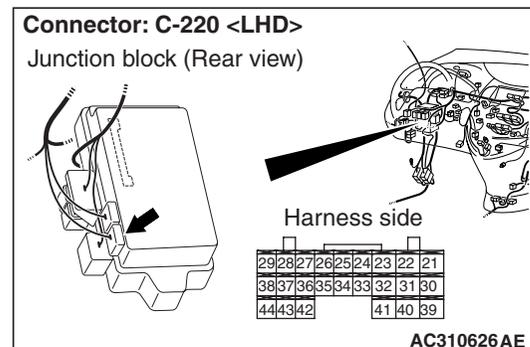


- Check the earth wires for open circuit.

**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**

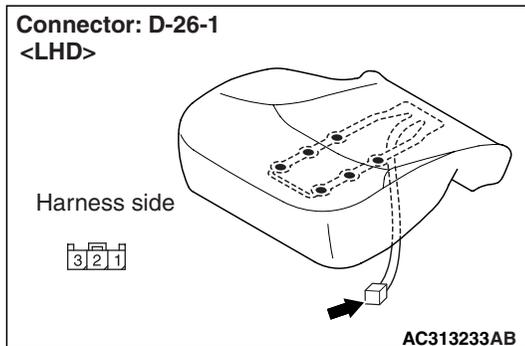
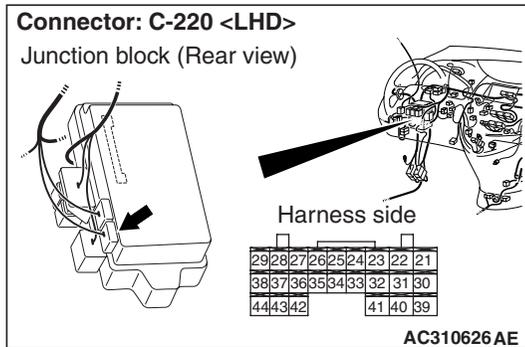


**Q: Is the check result normal?**

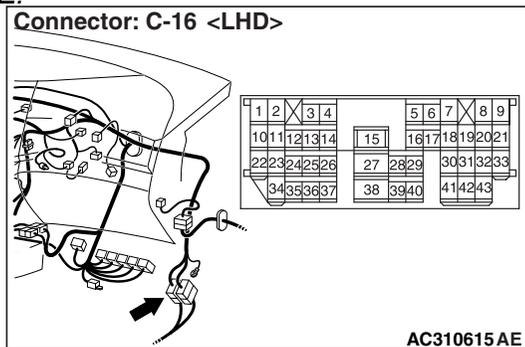
**YES :** Go to Step 8.  
**NO :** Repair the defective connector.

**YES :** Go to Step 9.  
**NO :** Repair the wiring harness or replace the inner seat belt (front passenger's side).

**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?**

**Step 9. Retest the system.**

Check that the front passenger's seat belt switch signal is received normally.

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

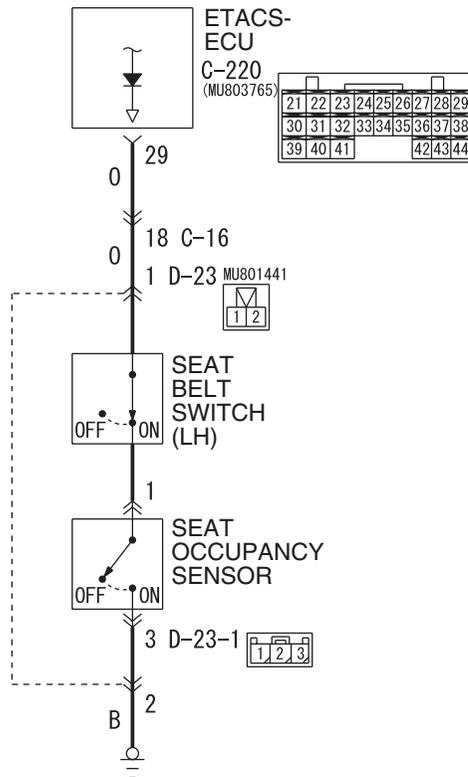
**YES :** Intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO :** Replace the ETACS-ECU.

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**

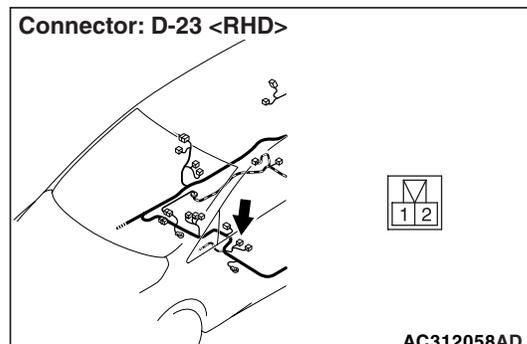
Input signal from the passenger's seat belt switch is used to operate the seat belt warning buzzer function and seat belt warning lamp. If the signal is abnormal, the seat belt warning buzzer function and seat belt warning lamp will not work normally.

**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**



AC312058AD

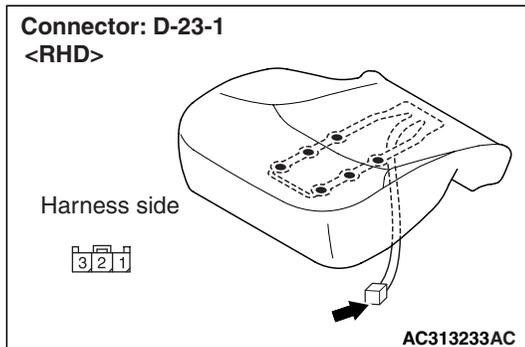
Q: Is the check result normal?

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**

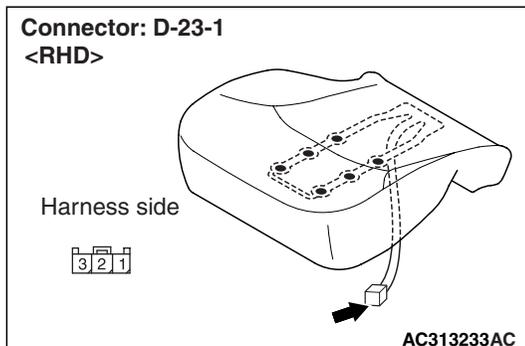


**Q: Is the check result normal?**  
YES : Go to Step 4.  
NO : Repair the defective connector.

**Step 4. Check the seat occupancy sensor.**  
Refer to GROUP 52A – Front seat P.52A-22.

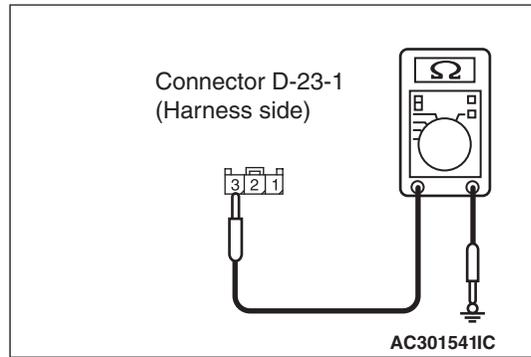
**Q: Is the check result normal?**  
YES : Go to Step 5.  
NO : Replace the seat occupancy sensor.

**Step 5. Resistance measurement at the D-23-1 seat occupancy sensor connector.**



(1) Disconnect the connector, and measure at the

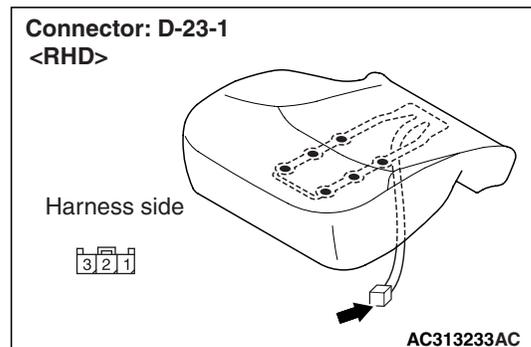
wiring harness side.



(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.

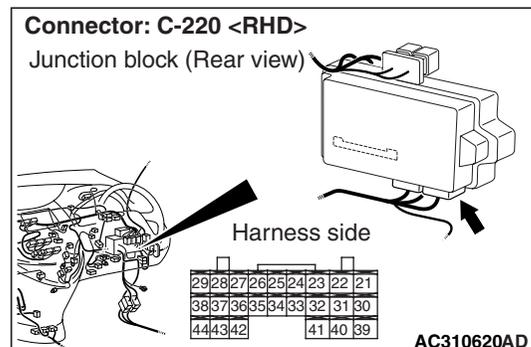
**Step 6. Check the wiring harness between D-23-1 seat occupancy sensor connector terminal No.3 and body earth.**



- 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**

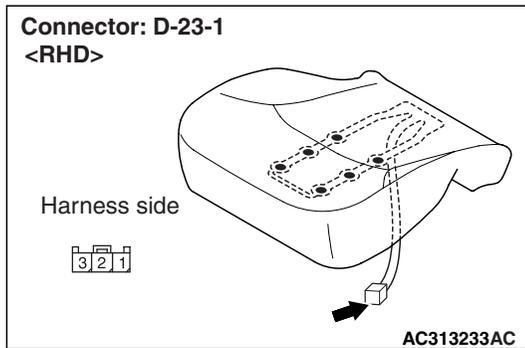
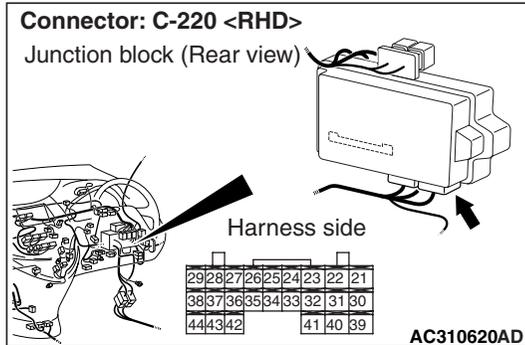


**Q: Is the check result normal?**

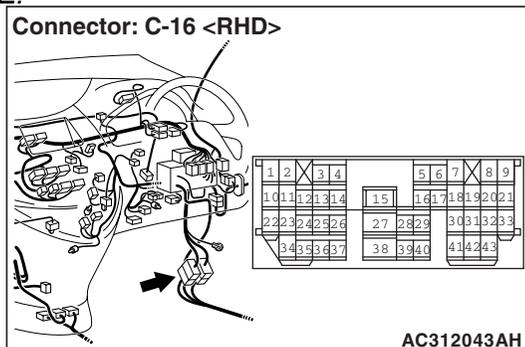
**YES** : Go to Step 8.  
**NO** : Repair the defective connector.

**YES** : Go to Step 9.  
**NO** : Repair the wiring harness or replace the inner seat belt (front passenger's side).

**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?**

**Step 9. Retest the system.**

Check that the passenger's seat belt switch signal is received normally.

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

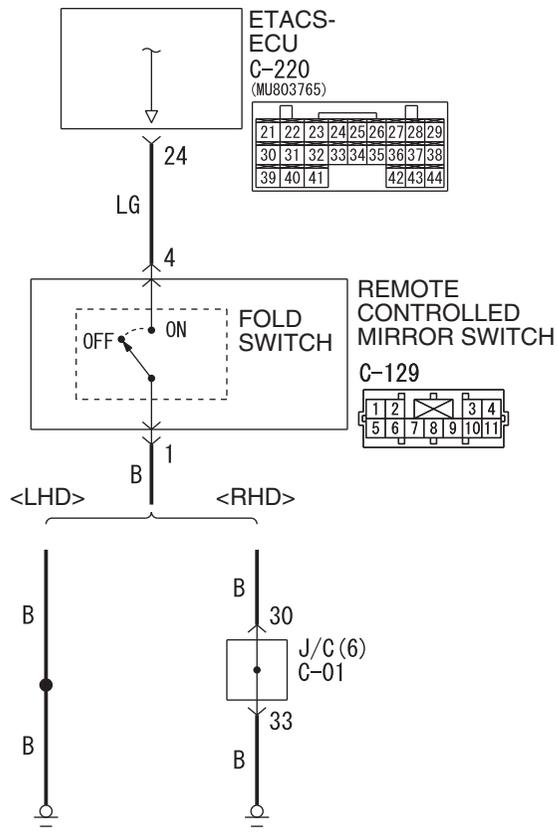
**YES** : Intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).  
**NO** : Replace the ETACS-ECU.

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**

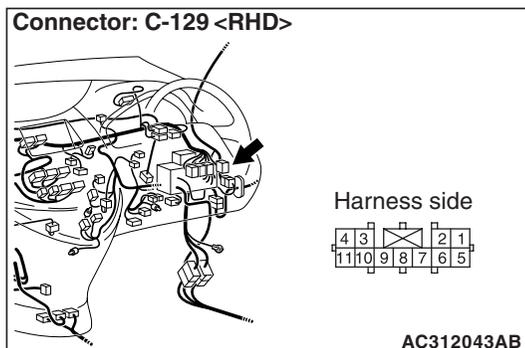
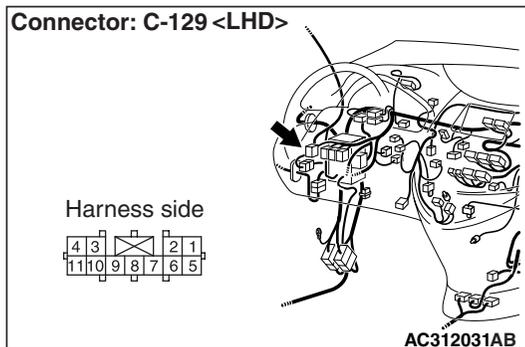
The electric-folding door mirrors work in accordance with the input signal from the remote controlled mirror switch. If the input signal is abnormal, the door mirrors will not work normally.

**POSSIBLE CAUSES**

- Malfunction of the remote controlled mirror switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

**DIAGNOSTIC 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.**

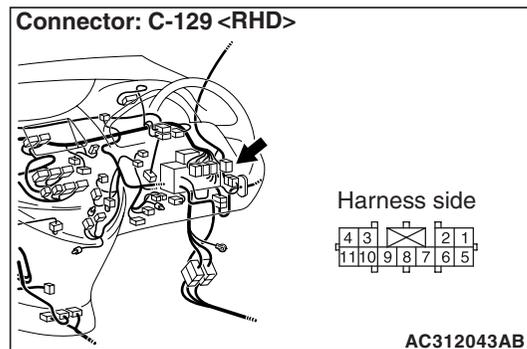
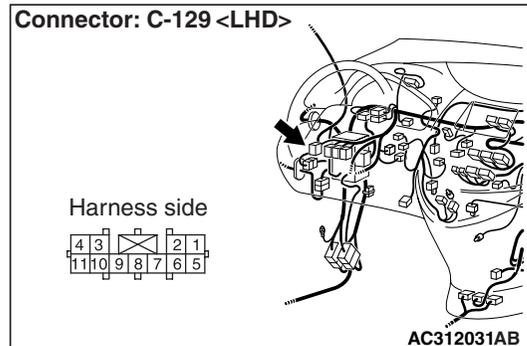
Refer to GROUP 51 – Door mirror [P.51-51](#).

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

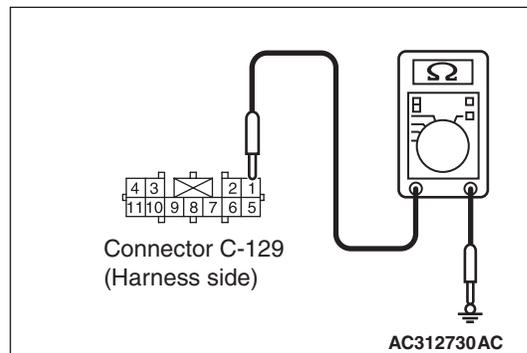
**YES :** Go to Step 3.

**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

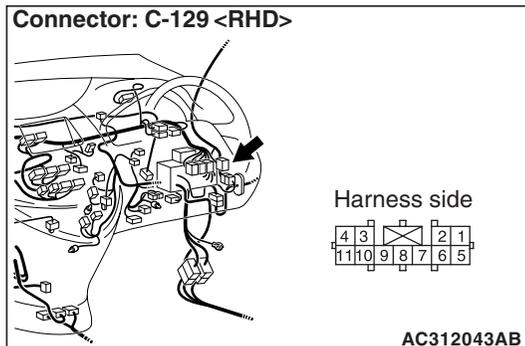
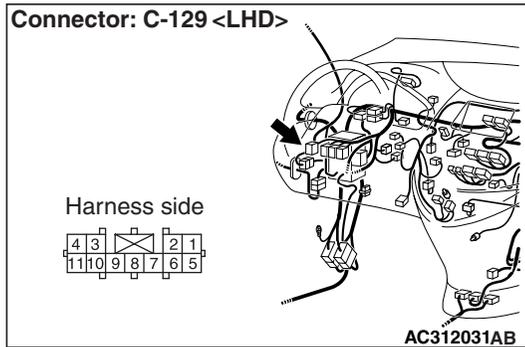
**OK: 2 Ω or less**

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

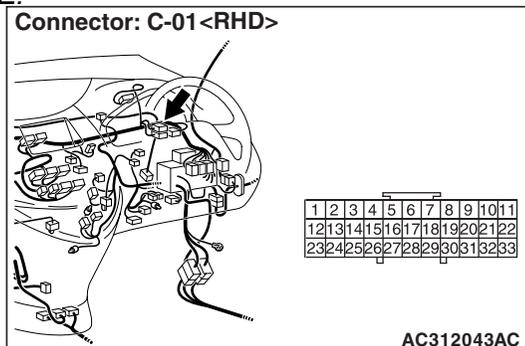
**YES :** Go to Step 5.

**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:**



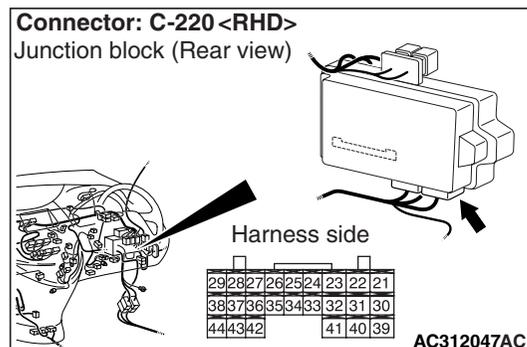
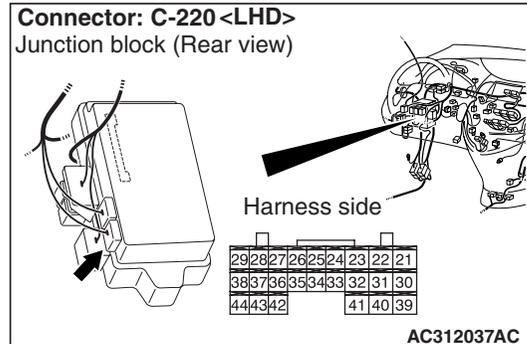
Prior to the wiring harness inspection, check joint connector C-01 <RH drive vehicles>, and repair if necessary.

- 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**

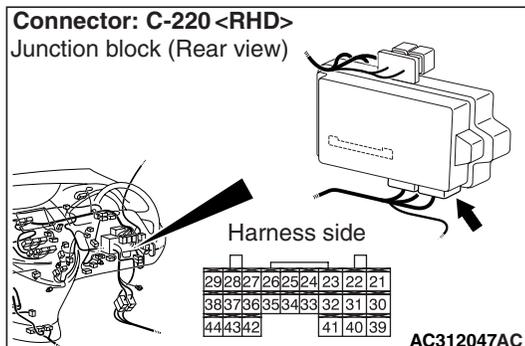
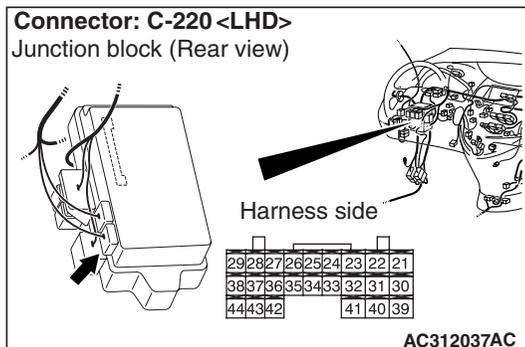
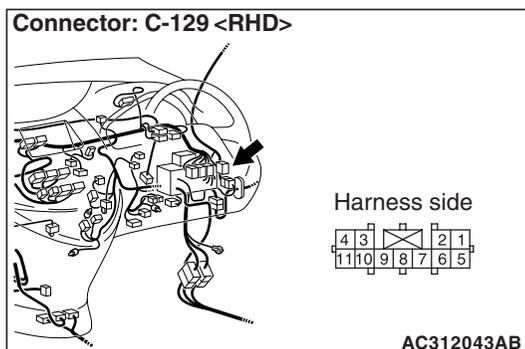
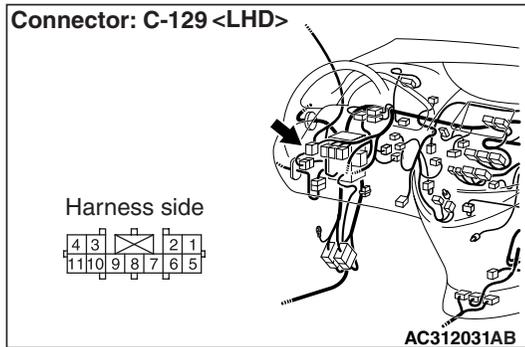


**Q: Is the check result normal?**

**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.**

**YES :** Go to Step 7.  
**NO :** Repair the wiring harness.



**Step 7. Retest the system.**

Check that the remote controlled mirror switch signal is received 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.

- Check the input line for open circuit.

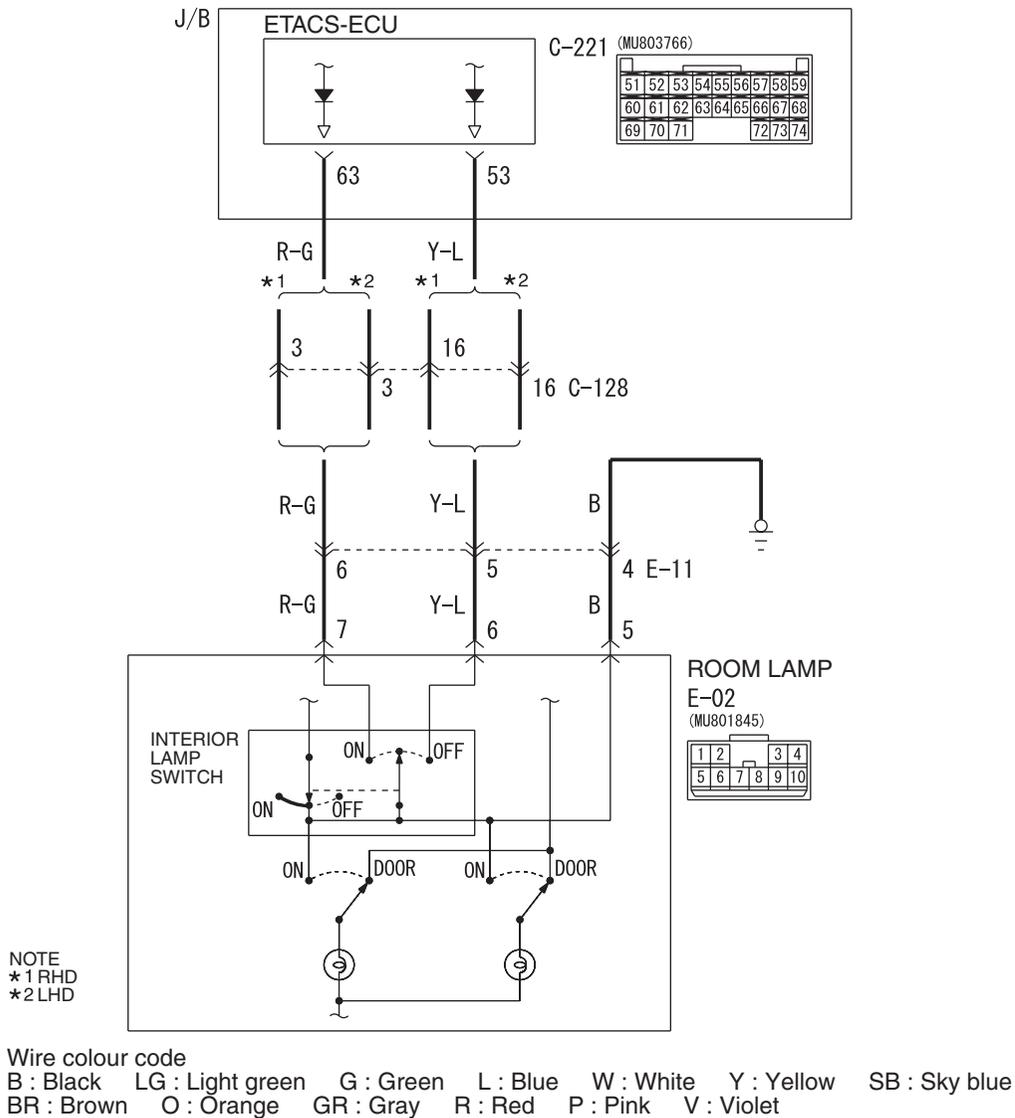
**Q: Is the check result normal?**

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



W4X54E169A

**COMMENTS ON TROUBLE SYMPTOM**

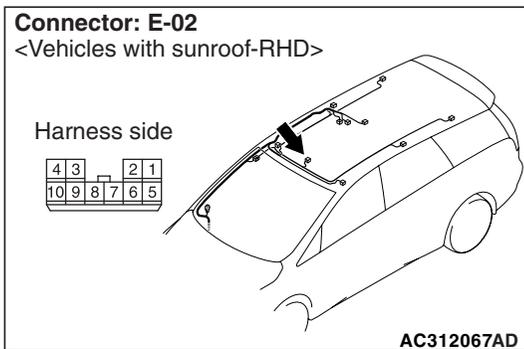
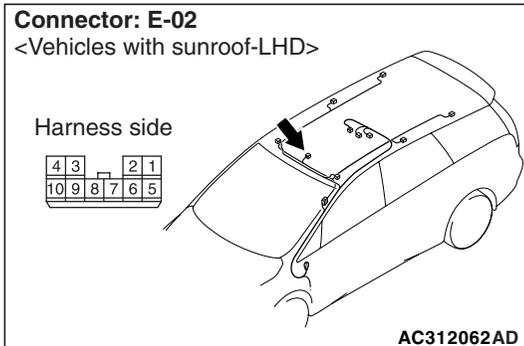
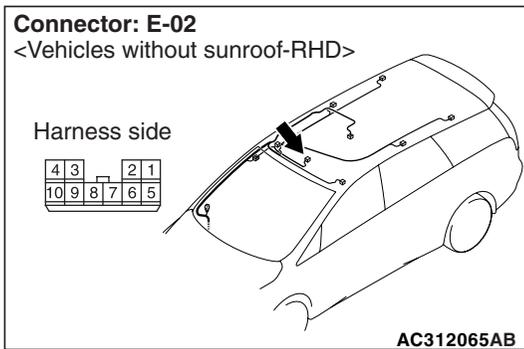
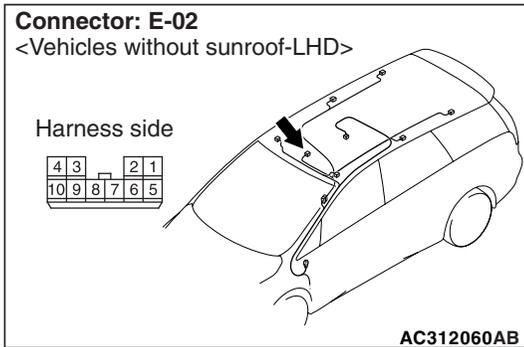
Input signals from the interior lamp "ON" and "OFF" switch are used to operate the interior lamps (interior lamp, rear personal lamp, luggage compartment lamp, door lamps and key illumination lamp). If the signals are abnormal, the interior lamps will not illuminate and extinguish normally.

**POSSIBLE CAUSES**

- Malfunction of the interior lamp (interior lamp switch)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

**DIAGNOSTIC PROCEDURE**

**Step 1. Connector check: E-02 interior lamp connector**

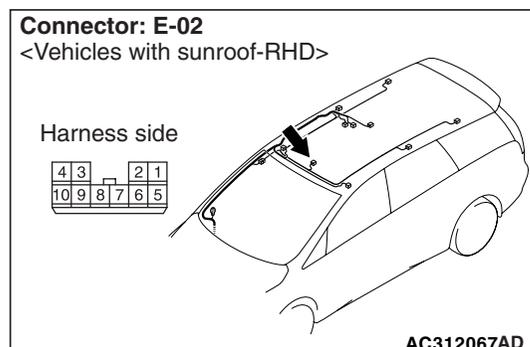
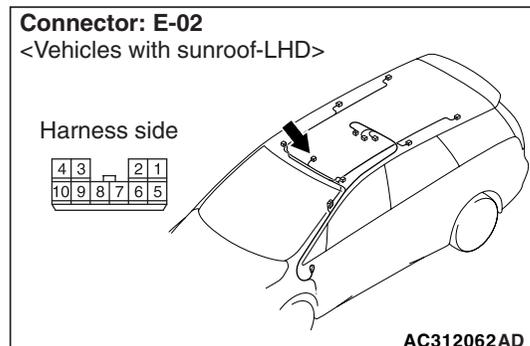
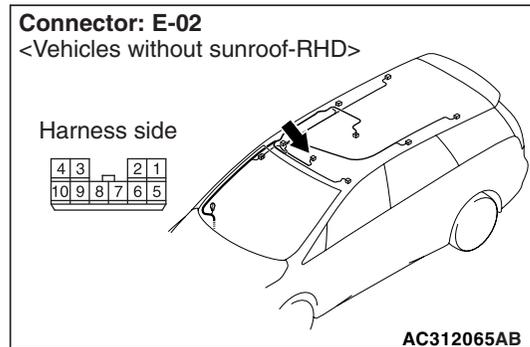
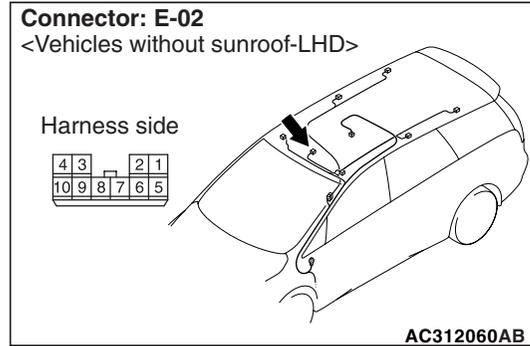


**Q: Is the check result normal?**  
**YES :** Go to Step 2.  
**NO :** Repair the connector.

**Step 2. Check the interior lamp.**  
Refer to GROUP 54A – Interior lamp P.54A-95.

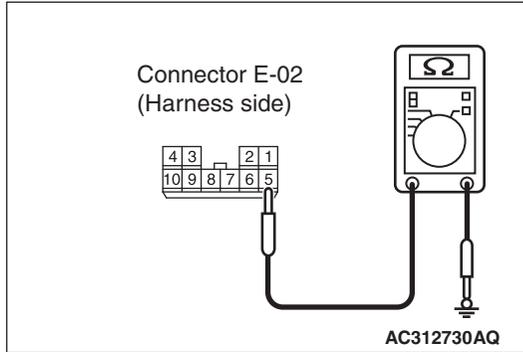
**Q: Is the check result normal?**  
**YES :** Go to Step 3.  
**NO :** Replace the interior lamp.

**Step 3. Resistance measurement at the E-02 interior lamp connector.**



(1) Disconnect the connector, and measure at the

wiring harness side.



terminal No.5 and body earth

**OK: 2  $\Omega$  or less**

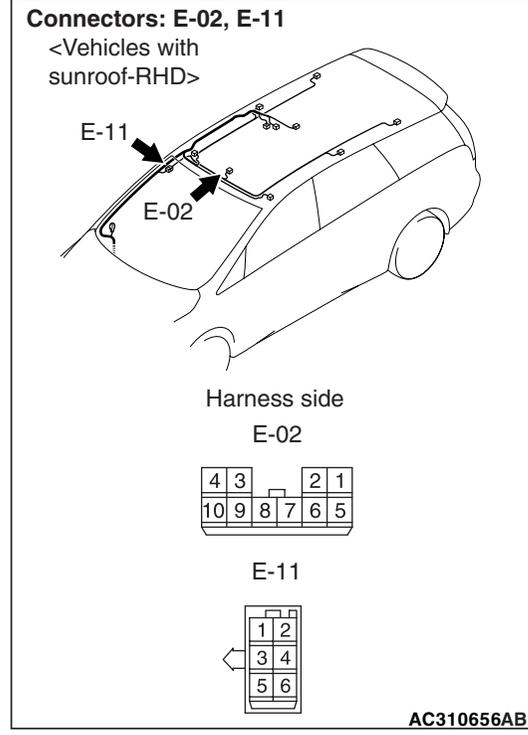
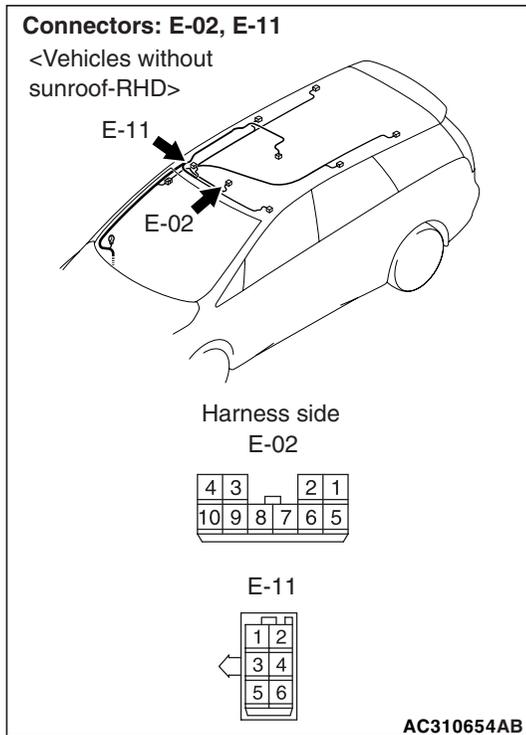
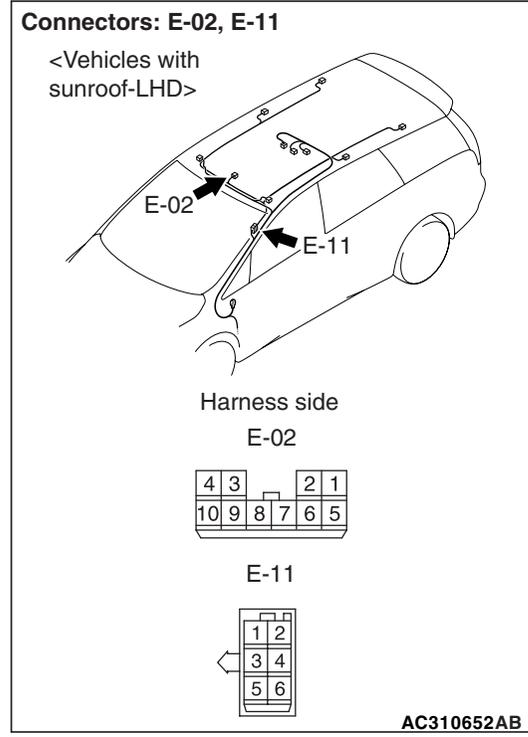
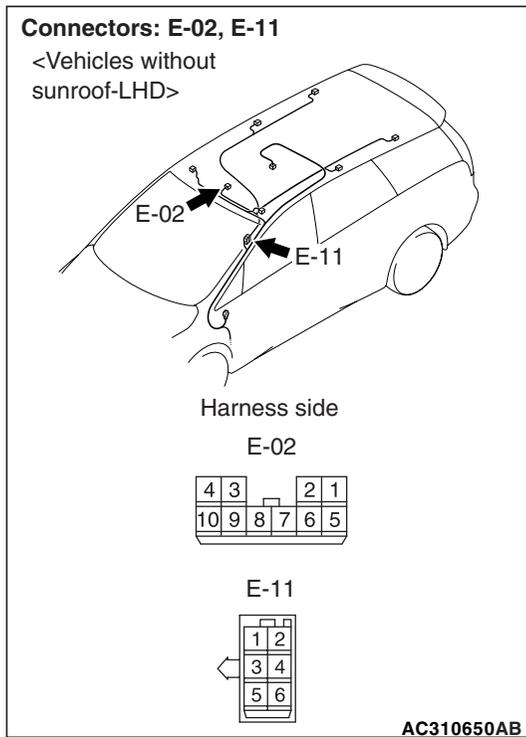
**Q: Is the check result normal?**

**YES :** Go to Step 5.

**NO :** Go to Step 4.

(2) Resistance between E-02 interior lamp connector

**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.

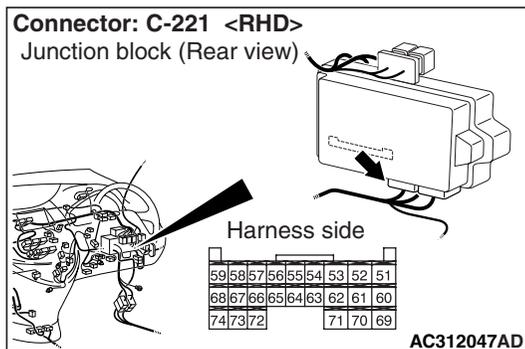
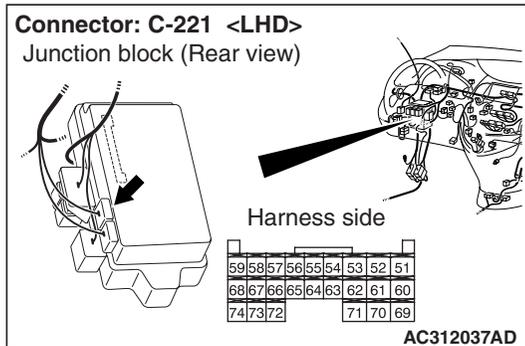
**Q: Is the check result normal?**

**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.

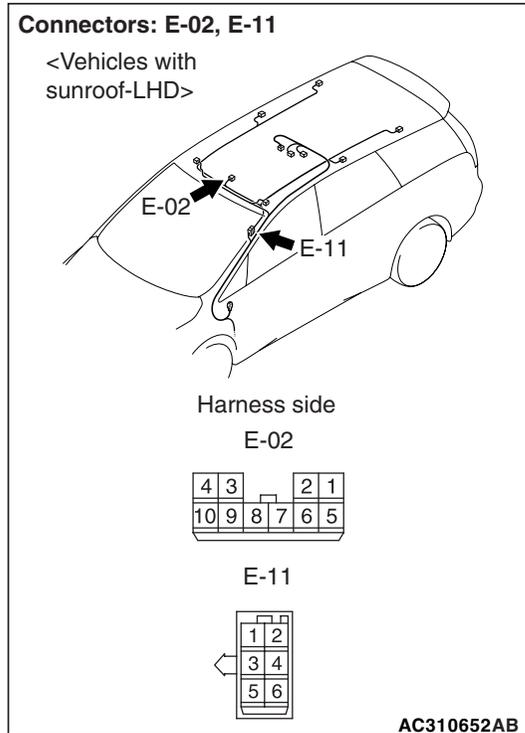
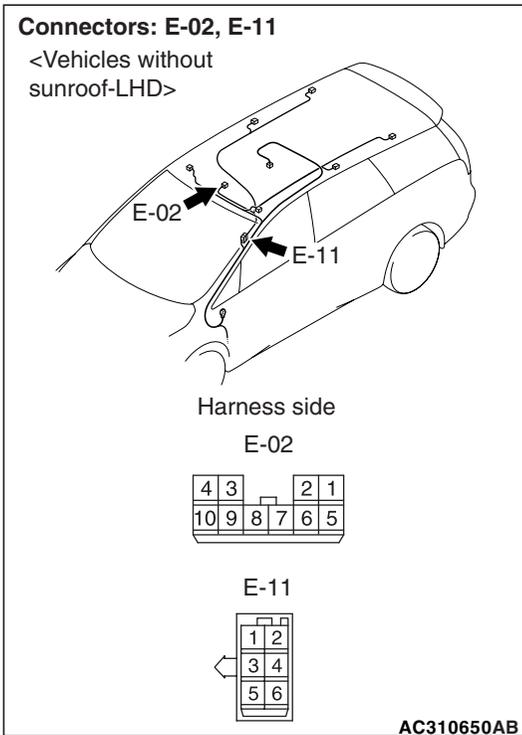
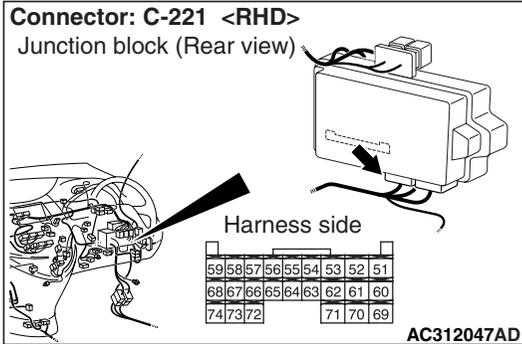
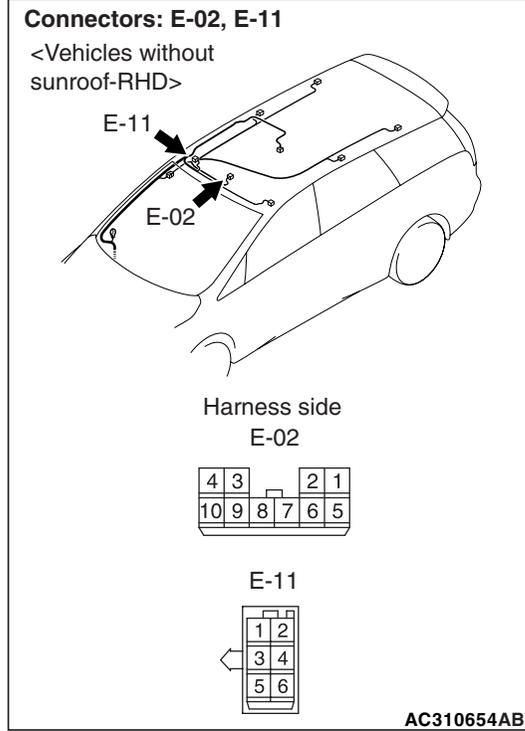
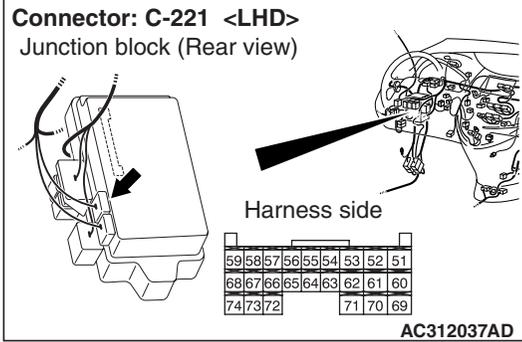
**Step 5. Connector check: C-221 ETACS-ECU connector**

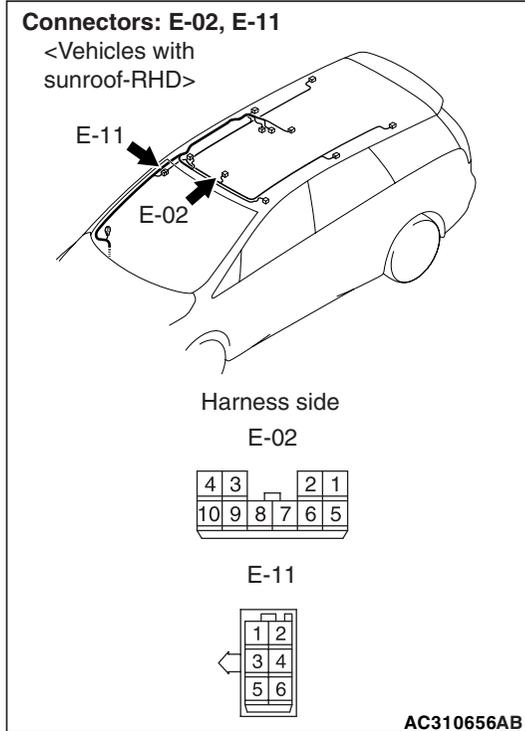
YES : Go to Step 6.  
 NO : Repair the defective connector.



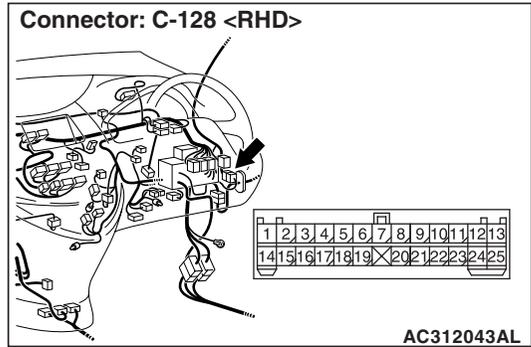
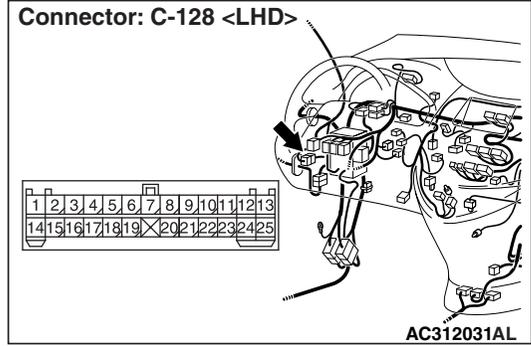
**Q: Is the check result normal?**

**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.**





**NOTE:**



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. Retest the system.**

Check that the interior lamp signal is received 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).

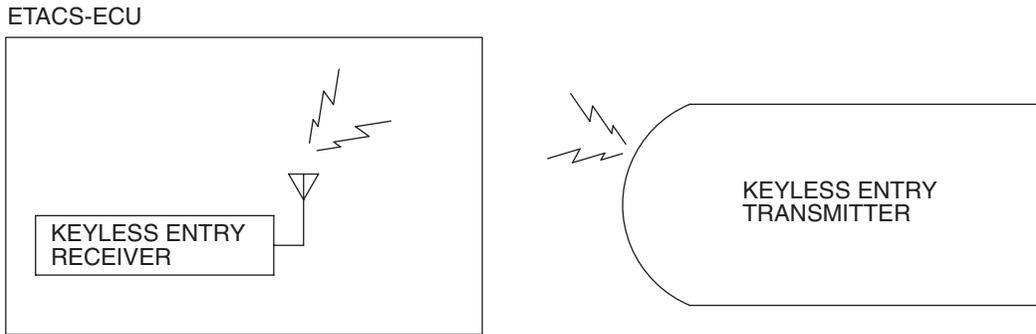
**NO :** Replace the ETACS-ECU.

Inspection Procedure 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



W3Z10E39AA

**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.

**POSSIBLE CAUSES**

- Malfunction of the keyless entry transmitter
- Defective battery of the keyless entry transmitter
- Malfunction of the ETACS-ECU

**DIAGNOSTIC 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?**

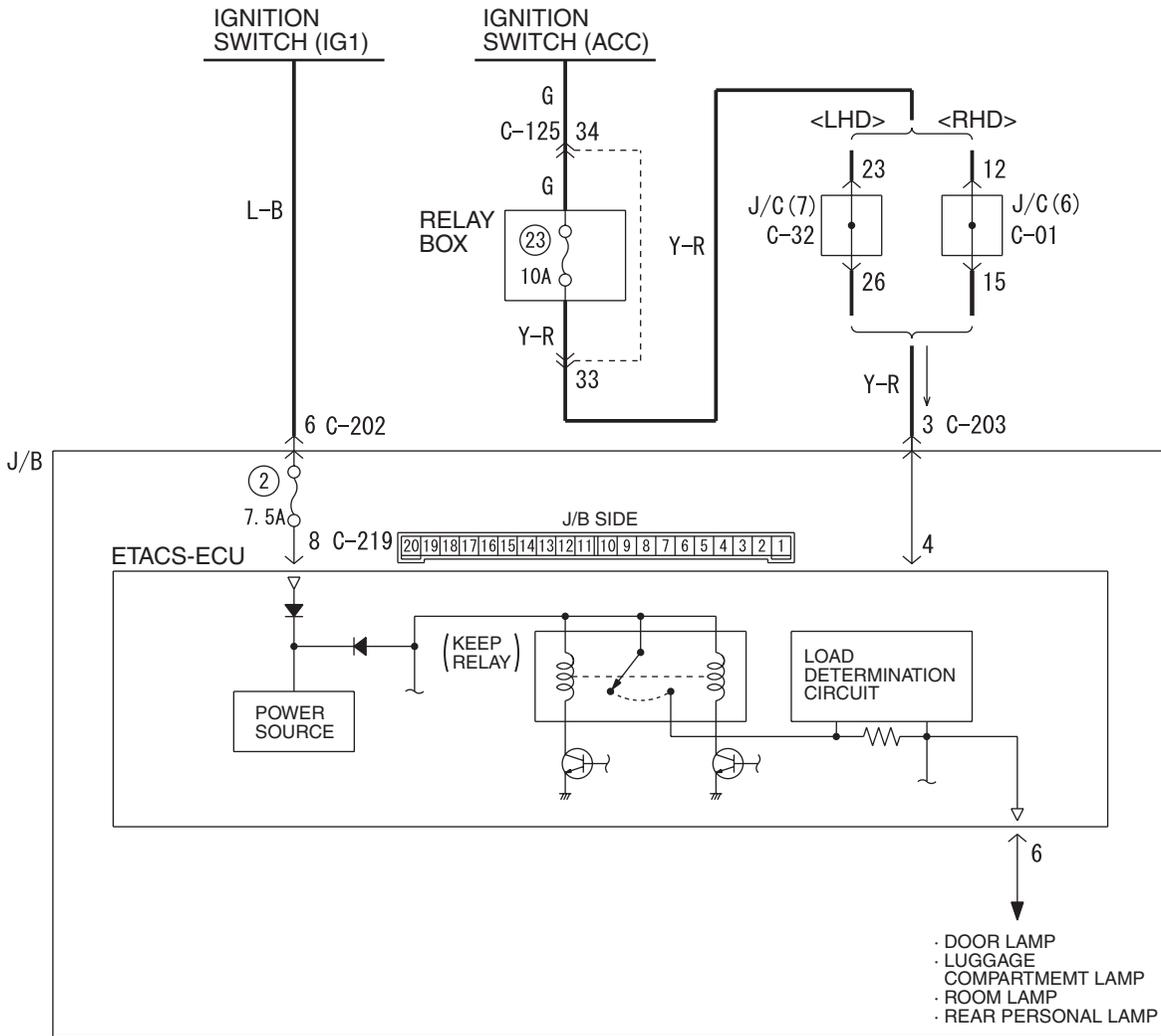
- YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
- NO :** Replace the ETACS-ECU.

**Inspection Procedure Q-24: The 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

W4X54E143A

**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.

- Ignition key cylinder illumination lamp
- Room lamps

**POSSIBLE CAUSES**

- Malfunction of the ETACS-ECU

- Damaged wiring harness or connector(s)

**DIAGNOSTIC PROCEDURE**

**Step 1. Check the power supply circuit.**

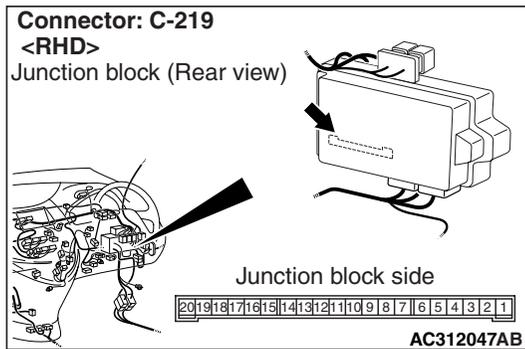
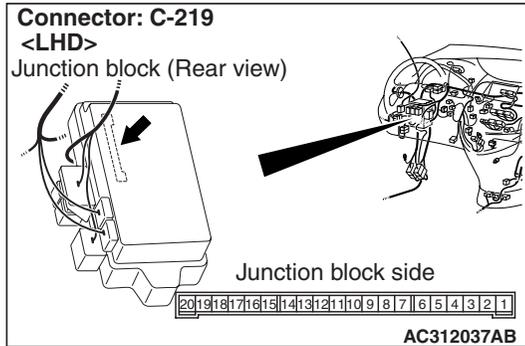
When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

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

YES : Go to Step 2.

NO : Refer to inspection procedure A-2 "Check the ETACS-ECU battery power supply circuit P.54B-87."

**Step 2. Connector check: C-219 ETACS-ECU connector**

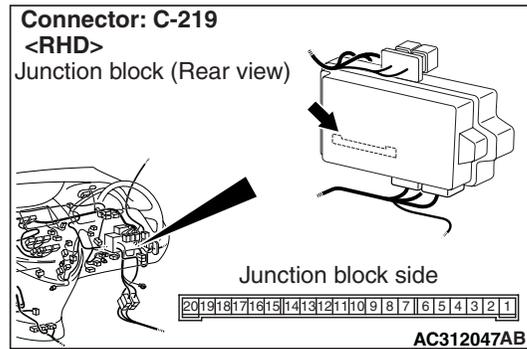
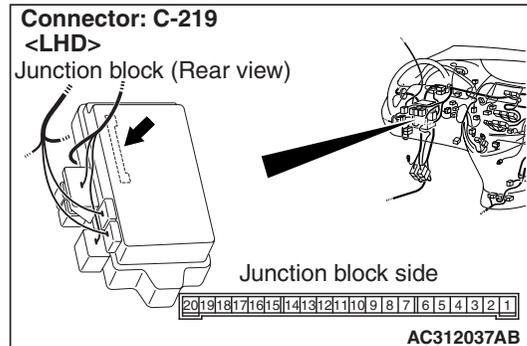


**Q: Is the check result normal?**

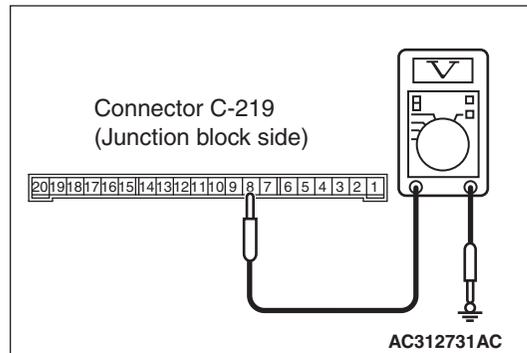
YES : Go to Step 3.

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

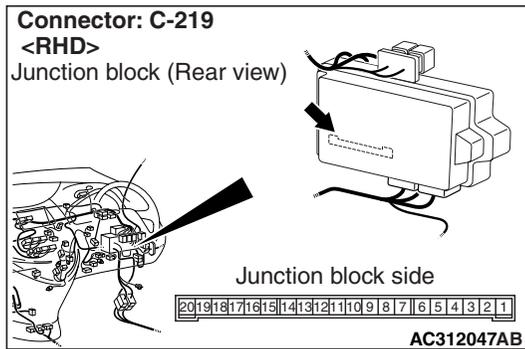
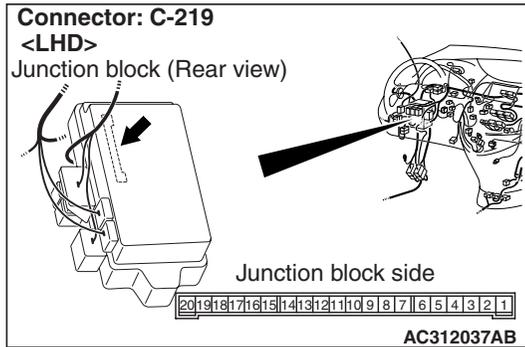
**OK: System voltage**

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

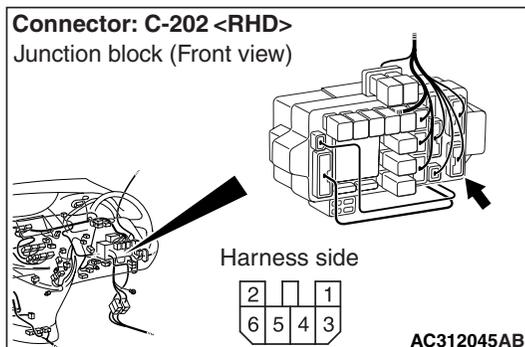
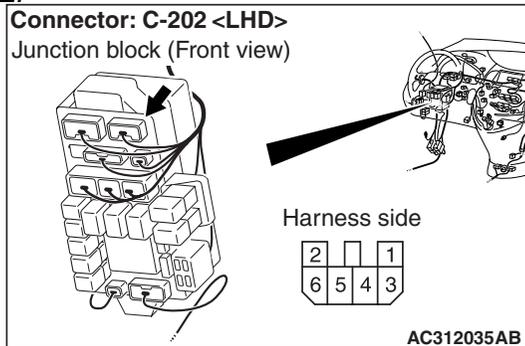
YES : Go to Step 5.

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).**



**NOTE:**



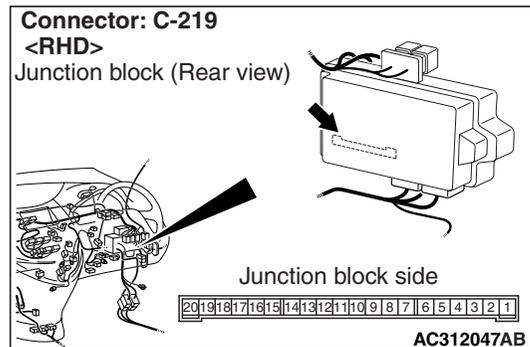
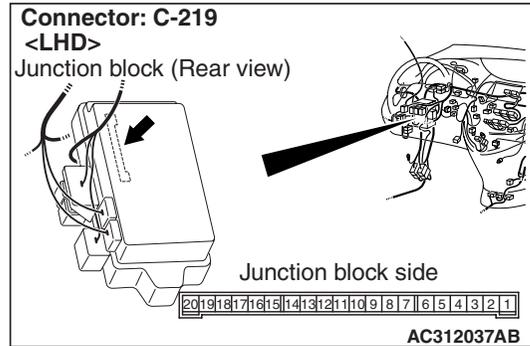
Prior to the wiring harness inspection, check junction block connector C-202, and repair if necessary.

- Check the power supply line to the ignition switch (IG1) for open circuit.

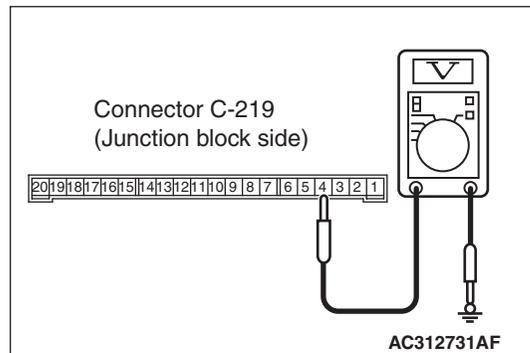
**Q: Is the check result normal?**

- 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.



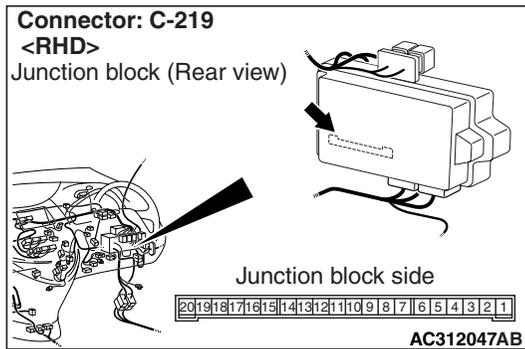
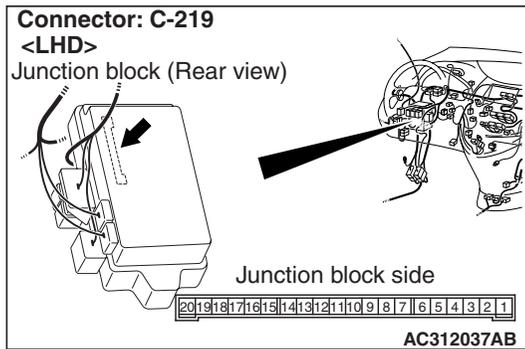
- (3) Voltage between terminal 4 and body earth

**OK: System voltage**

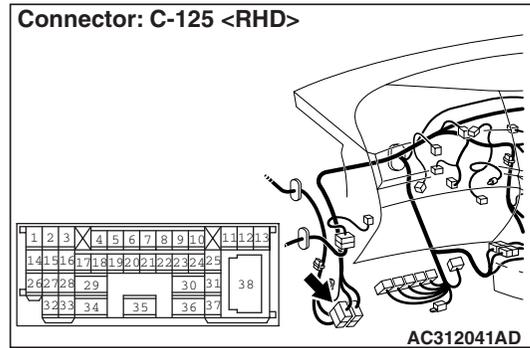
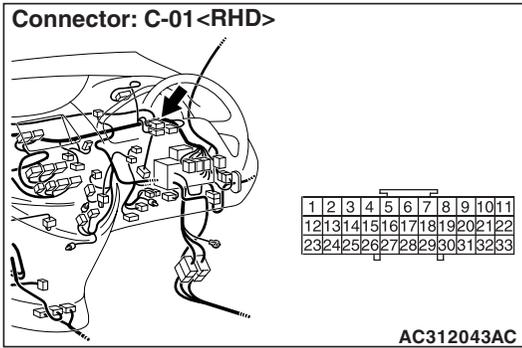
**Q: Is the check result normal?**

- 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:**

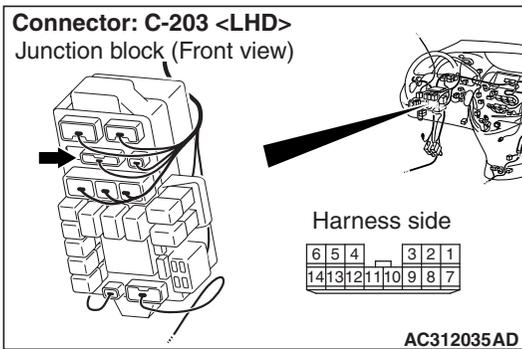
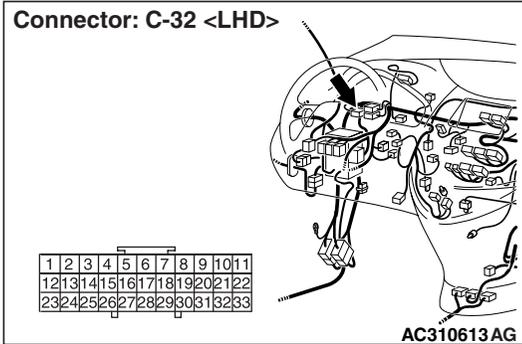


Prior to the wiring harness inspection, check joint connector C-32 <LH drive vehicles>, C-01 <RH drive vehicles> junction block connector C-203 or intermediate connector C-125, and repair if necessary.

- 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.

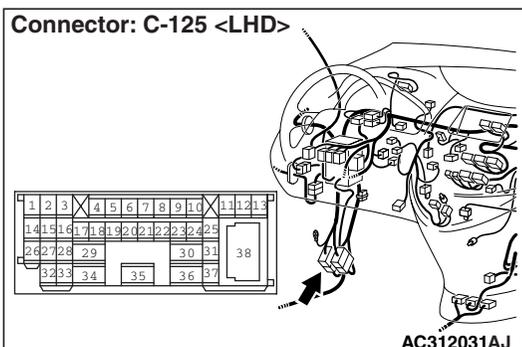
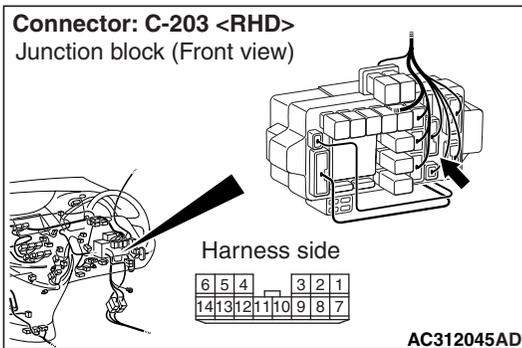


**Step 7. Retest the system.**

Check that the interior lamp loaded signal is received normally.

Q: Is the check result normal?

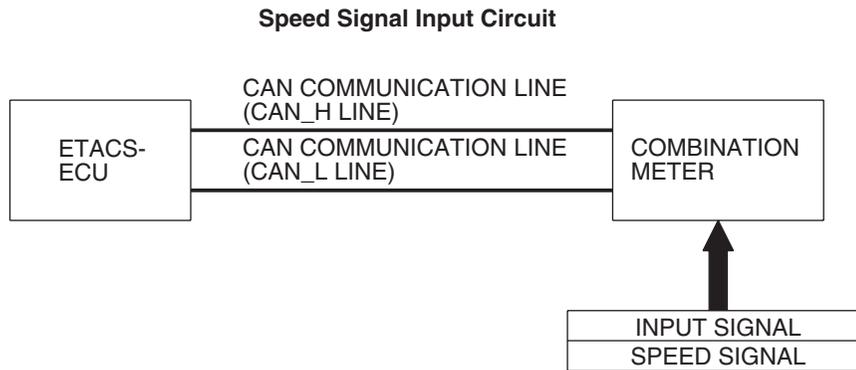
- YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
- NO : Replace the ETACS-ECU.



Inspection Procedure Q-25: The vehicle speed signal is not received.

**CAUTION**

Whenever the ECU is replaced, ensure that the input signal circuit is normal.



W4X54E218A

**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
- Door ajar indicator

**POSSIBLE CAUSES**

- The CAN bus line is defective.
- 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. 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. Pulse check**

| System switch        | Check condition                                    |
|----------------------|--|
| Vehicle speed signal | When the vehicle speed has reached 10 km/h or more |

**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 :** Go to Step 4.

**Step 4. Retest the system.**

Check that the vehicle speed signal is received 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.

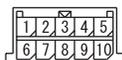


| <b>Terminal No.</b> | <b>Check item</b>  | <b>Check condition</b>  | <b>Normal condition</b>                 |
|---------------------|--|---|---|
| 19                  | –  | –   | –                                       |
| 20                  | Battery power supply (for ECU)                                   | 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

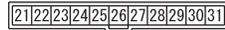
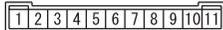
| Terminal No. | Check item                                     | Check condition  | Normal condition         |
|--------------|--|--|--------------------------|
| 1            | System voltage                                 | Always   | System voltage           |
| 2            | Input of SWS request 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**

A-14X

A-15X



AC312904AB

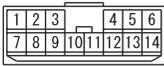
*NOTE: Measurement is not possible as the front-ECU is mounted on the relay box directly. The values are for reference only.*

| 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



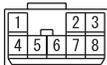
AC312905 AB

| 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) &lt;LHD&gt;

F-26 (front: LH), F-02 (rear: LH), F-18 (rear: RH) &lt;RHD&gt;

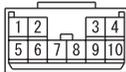


AC312906 AB

| 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

E-07



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) |