GROUP 54B

SMART WIRING SYSTEM (SWS) NOT USING SWS MONITOR

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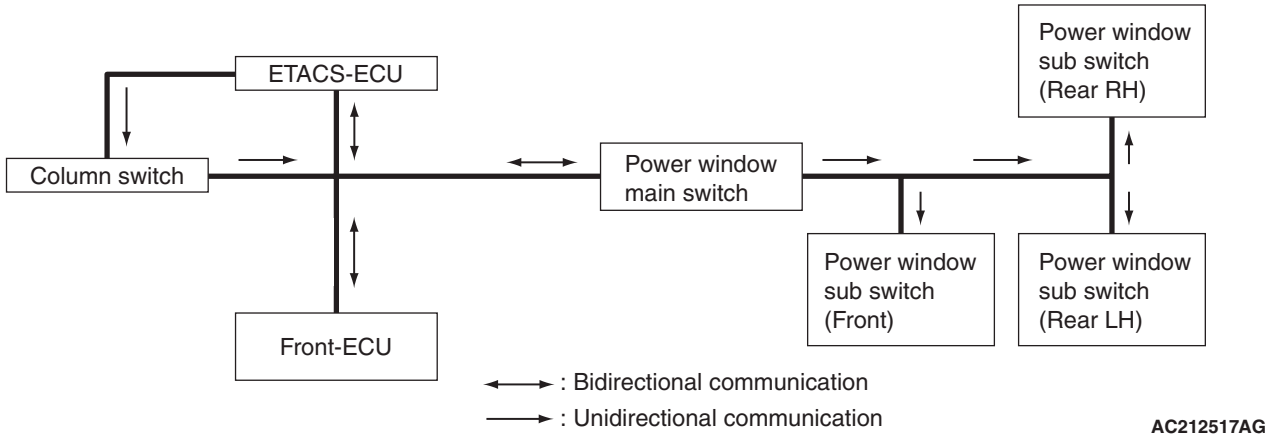
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GENERAL INFORMATION

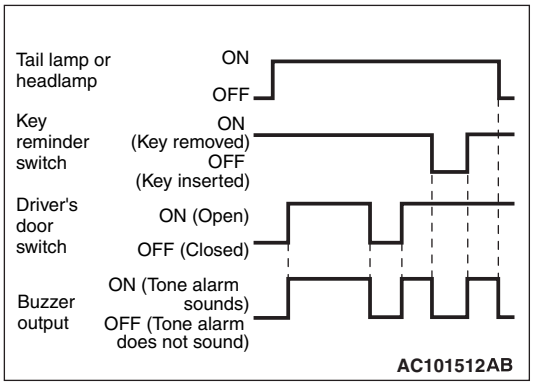
M1549000100544

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), and power window sub switches (incorporated inside the power window-ECU) for internal communication.



BUZZER

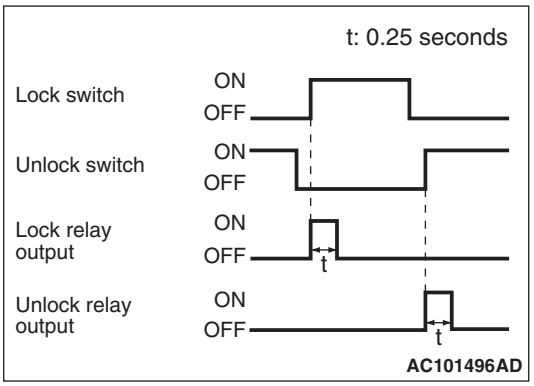
LAMP REMINDER FUNCTION



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 function, the buzzer does not sound.

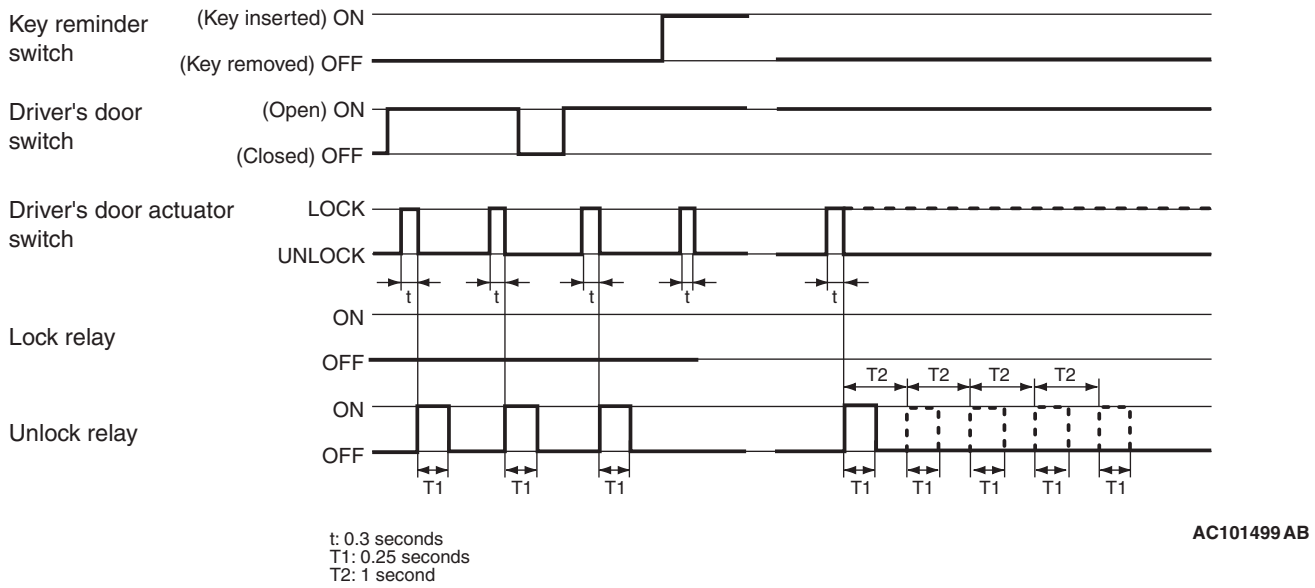
CENTRAL DOOR LOCKING

CENTRAL DOOR LOCKING CONTROL FUNCTION



When the front doors is locked (when the lock switch turns ON after turning OFF the unlock switch in the driver's door lock actuator or front passenger's door lock key cylinder switch), ETACS-ECU turns ON the lock relay output for 0.25 second, and locks all doors.
When the front doors is unlocked (when the unlock switch turns ON after turning OFF the lock switch on the driver's door lock actuator or front passenger's door lock key cylinder switch), ETACS-ECU turns ON the unlock relay output for 0.25 second, and unlocks all doors.

Key reminder function



t: 0.3 seconds
T1: 0.25 seconds
T2: 1 second

When the driver's door is opened with the ignition key inserted to the ignition cylinder and the door is locked (when the lock switch turns ON after turning OFF the unlock switch in the driver's door lock actuator), after approximately 0.3 second, ETACS-ECU turns ON the unlock relay output for 0.25 second to discourage the door lock operation so that the ignition key left in the ignition cylinder is prevented.
If the discouraging the door lock operation fails, the current supply will be retried (The unlock relay output is turned ON for 0.25 second up to five times with one second interval).

NOTE: The broken line in the graph indicates the current supply retry state if the discouraging door lock operation fails.

DOOR UNLOCK FUNCTION WITH THE IMPACT DETECTION

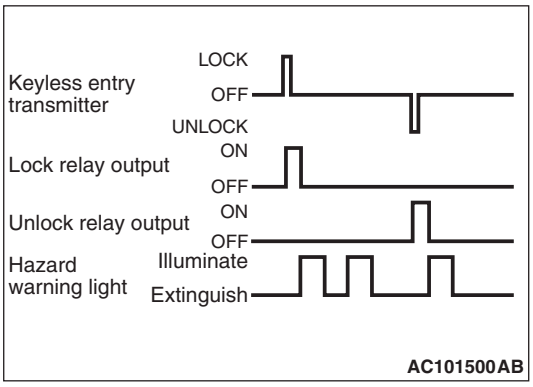
If the vehicle crashed with the ignition switch ON or 30 seconds after turning the ignition switch to LOCK (OFF), and the impact sensor detects an impact greater than the predetermined value, the impact sensor sends the signal to ETACS-ECU. Then, within the 0.1 second, ETACS-ECU energizes the unlock relay for one second for releasing the door lock to prevent passengers to be kept inside the vehicle after the crash.

NOTE: The fail safe disables the operation under the following conditions (Diagnosis code No.31 or 32 is set). Turn ON the ignition switch again after turning the ignition switch to LOCK (OFF) to return from the fail safe state.

- *No.31: When the ignition switch is ON, and the sensor shows under the short circuit voltage for 2.5 second*
- *No.32: When the ignition switch is ON, and the sensor shows over the closed circuit voltage for 0.4 second*

KEYLESS ENTRY SYSTEM

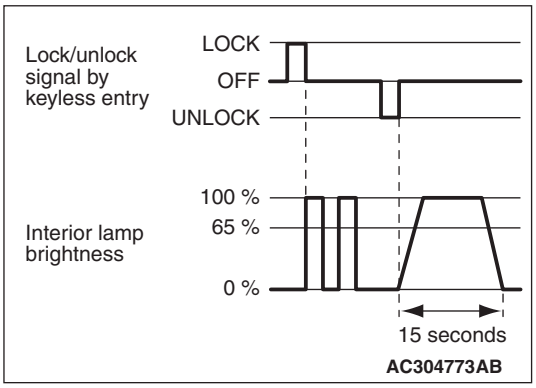
KEYLESS ENTRY HAZARD LAMP ANSWERBACK FUNCTION (THE INITIAL CONDITION: WITH FUNCTION OF LOCK/UNLOCK)



The hazard answerback function that allows checking the lock/unlock state of the door easily even in the daytime is adopted. When the lock signal from the keyless entry transmitter is received into ETACS-ECU, all doors are locked, and the hazard warning lamps blink twice. When the unlock signal is received, all doors are unlocked, and the hazard warning lamps blink once.

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

KEYLESS ENTRY INTERIOR LAMP ANSWERBACK FUNCTION



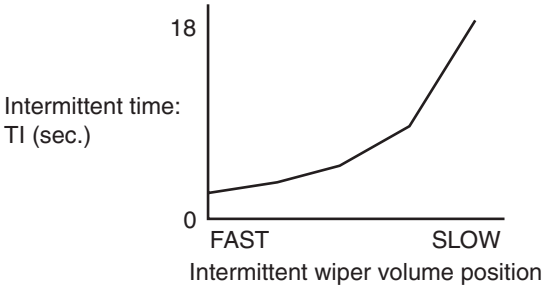
The interior lamp blinks two times while locking the door for easy checking the keyless entry function. When the door is unlocked, the lamp lamps on for 15 seconds (100%), and turns off.

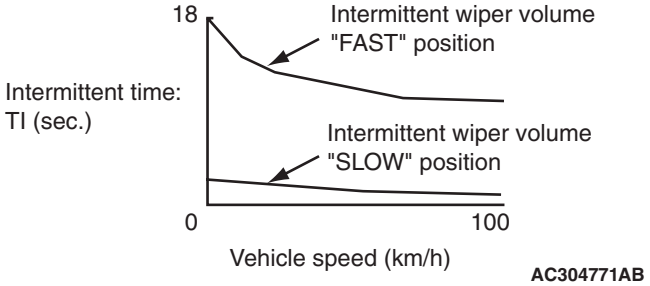
TIMED LOCKING MECHANISM

After unlocking the doors with the keyless entry transmitter, if no doors are opened, 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.

WINDSHIELD WIPER AND WASHER

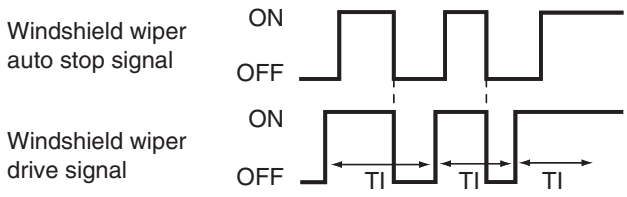
Intermittent control (the initial condition: with function)





ETACS-ECU calculates the intermittent time TI from the windshield intermittent wiper volume of the column switch and the vehicle speed calculated from the vehicle speed signals (vehicle speed sensor), and sends it to the front ECU as SWS data.

NOTE: The vehicle speed-dependent wiper function can be invalidated by the adjusting function.



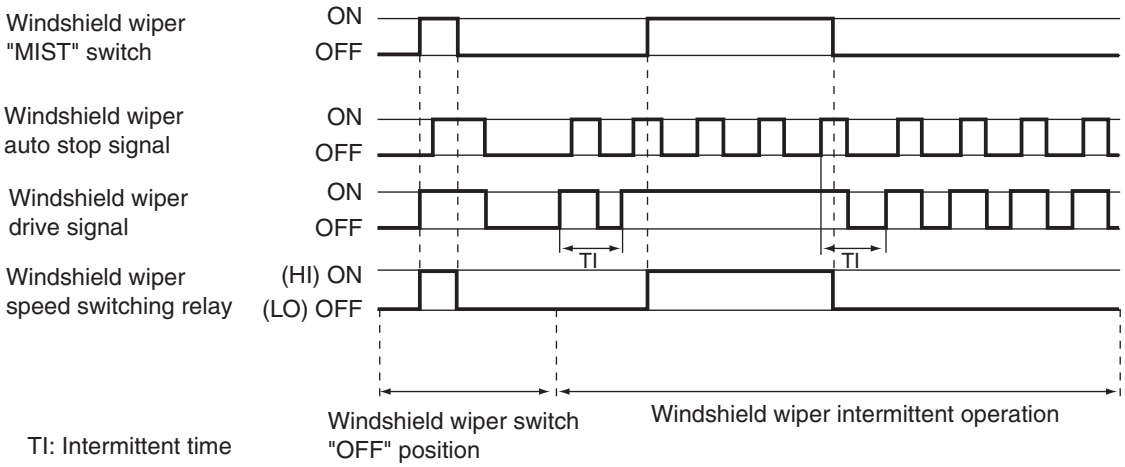
TI: Intermittent time

AC304772AB

The front ECU determines the intermittent time TI from the input SWS data, and turns ON the windshield wiper drive signal. When the wiper comes to the stop position, the windshield wiper auto-stop signal is turned OFF, and the windshield wiper drive signal turns OFF.

When the intermittent time TI is elapsed after being turned ON the windshield wiper drive signal, the windshield wiper drive signal is turned ON again, and the above-mentioned operation is repeated.

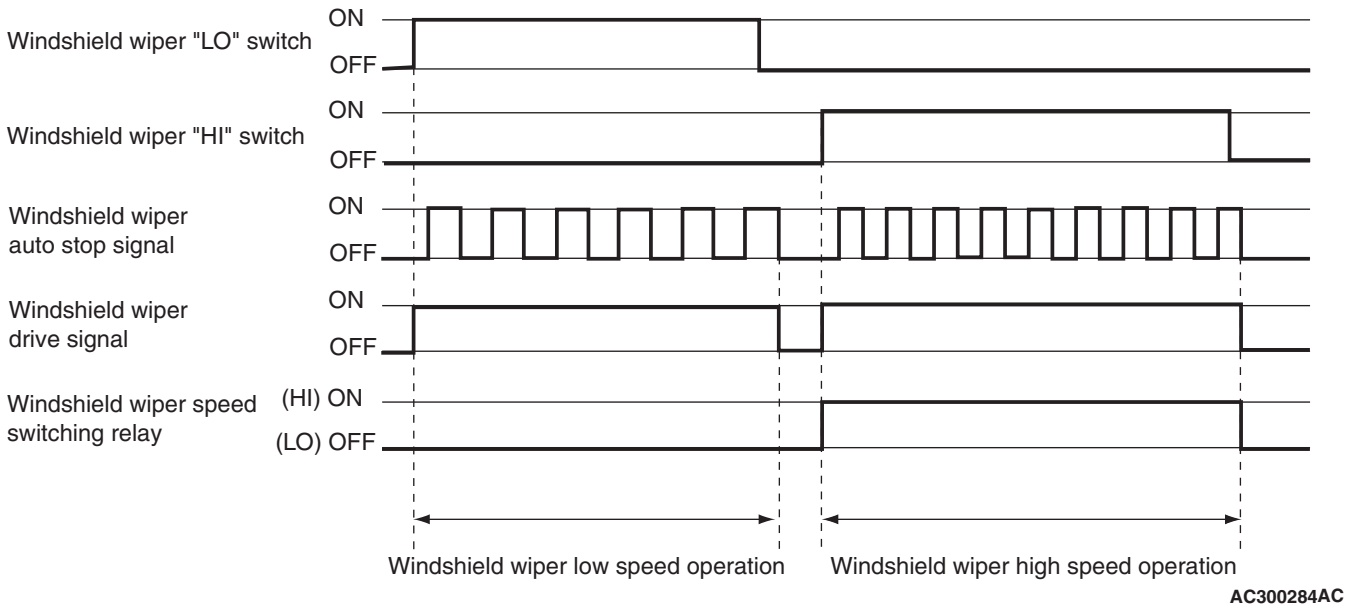
Mist wiper control



AC300283AD

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 switching relay turns to ON (HI). When the windshield mist wiper switch is ON, the windshield wipers operate at the high speed.

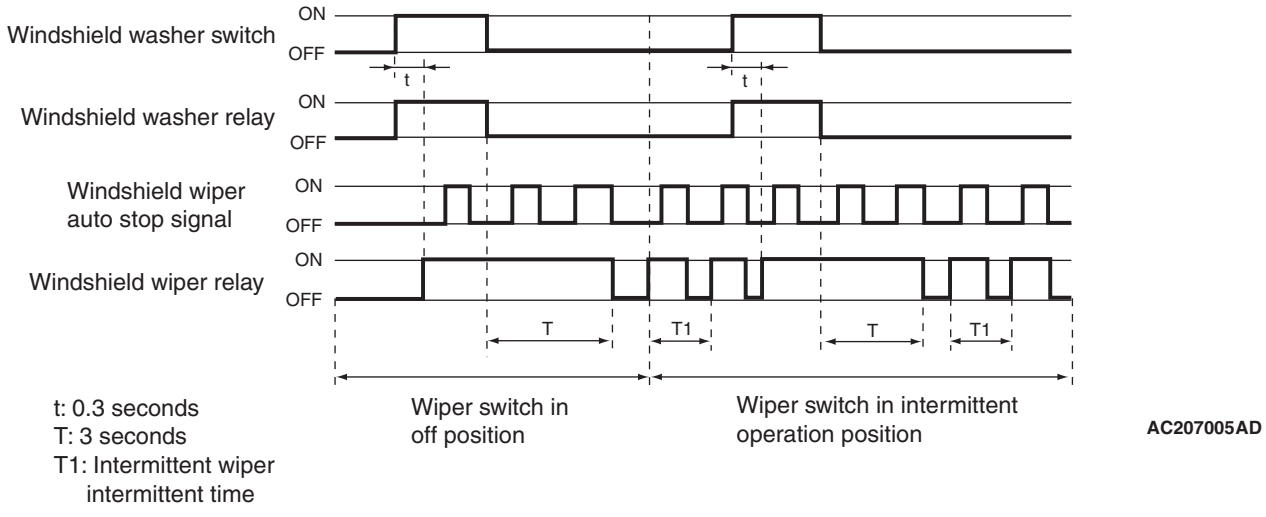
Low speed wiper and high speed wiper control



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 wipers operate 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 wipers operate at the high speed.

Windshield wiper linked with washer function (initial condition: function available)



t: 0.3 seconds
T: 3 seconds
T1: Intermittent wiper intermittent time

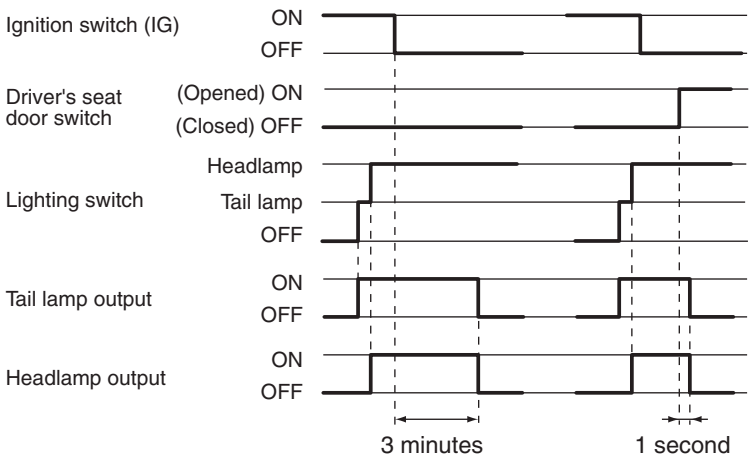
Wiper switch	OFF position				Intermittent operation position				Low-speed or high-speed operation position
Washer switch ON time	0.3 seconds or less	0.3 to 0.5 seconds	0.5 to 0.7 seconds	0.7 seconds or more	0.2 seconds or less	0.2 to 0.5 seconds	0.5 to 0.7 seconds	0.7 seconds or more	-
T1	0 second	1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

NOTE: The function to interlock the washer with windshield wiper operation can be enabled or disabled with its adjustment function.

HEADLAMP

Headlamp automatic-shutdown function (the initial condition: function available)



AC300449 AB

Even when the lighting switch (tail lamp switch or headlamp) 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.

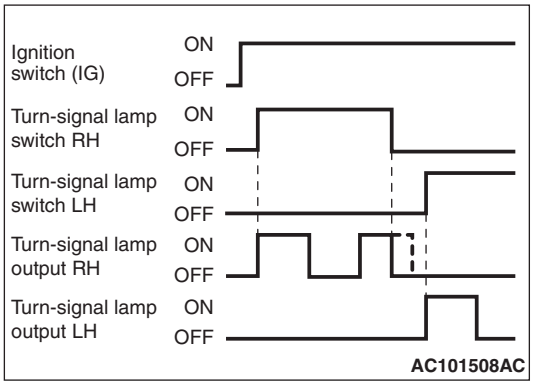
- If the ignition switch is turned OFF with the lighting switch ON, the lamp turns off automatically after 3 minutes. If the driver's door is opened during the 3 minutes, the lamp turns off after one second (One second before turning off, the lamp reminder buzzer sounds).

When the lighting switch is turned off and then on, or the ignition switch is turned ON while the headlamp automatic shutdown function is active, the headlamps illuminate again.

NOTE: For vehicles with the keyless entry system, this function can be invalidated by the adjusting function.

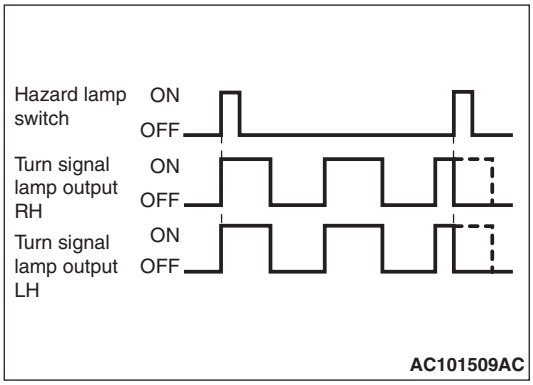
FLASHER TIMER FUNCTION

TURN SIGNAL LAMP



When the turn signal lamp switch is ON (LH or RH) with the ignition switch 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.

HAZARD WARNING LAMP



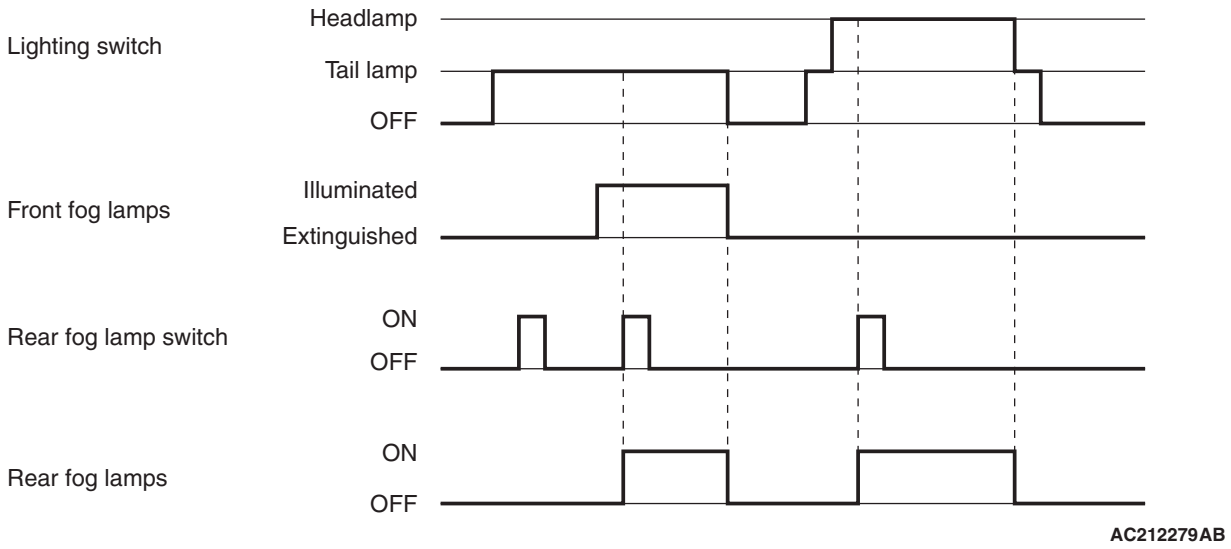
When the hazard lamp switch input signal turning from OFF to ON is detected, the flashing states turns over by the signal (When the hazard lamp is not blinking, it blinks. If it is blinking, it turns off).

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.*

FOG LAMP

Rear Fog Lamp Control Function

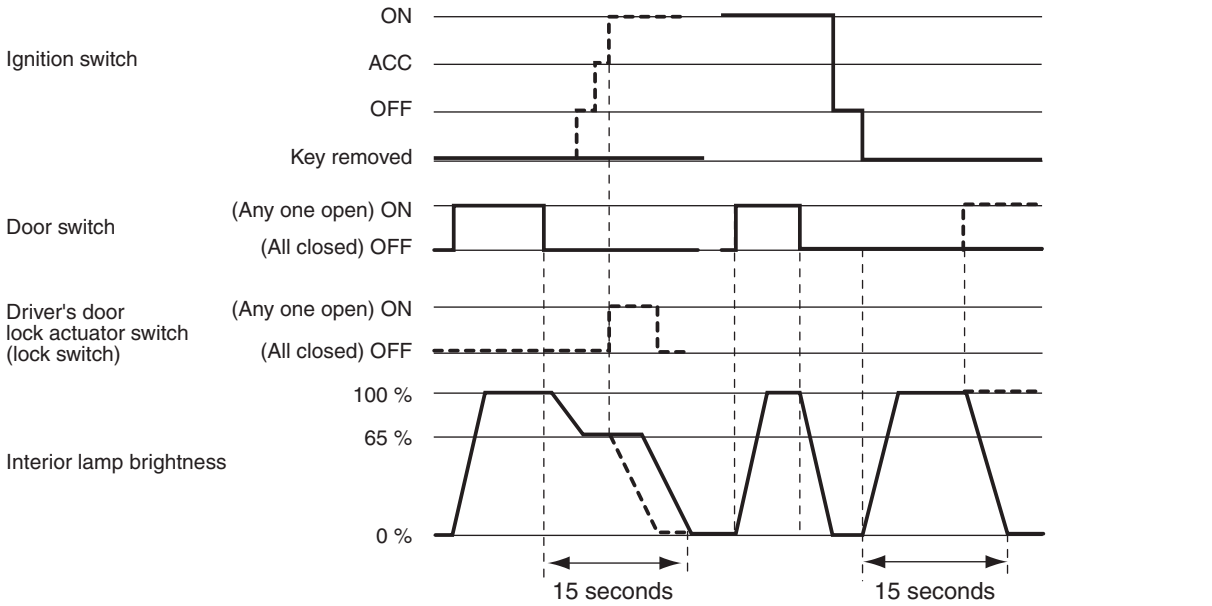


If the rear fog lamp switch is turned ON when the headlamp or the front fog lamp is turned ON, the rear fog lamp is switched ON and OFF alternatively.

If the headlamp and the front fog lamp are turned OFF, the rear fog lamp is turned OFF at the same time.

Interior lamp

Dimmer interior lamp control function (the initial condition: function available)



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

1. When the ignition switch is OFF:

By opening any door, the lamp turns ON (100%), and dims (65%) when the door is closed, then and turns off after 15 seconds.

However, when the ignition switch is turned ON or the door lock is operated, the lamps turn off at that time.

2. When the ignition switch is ON:

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

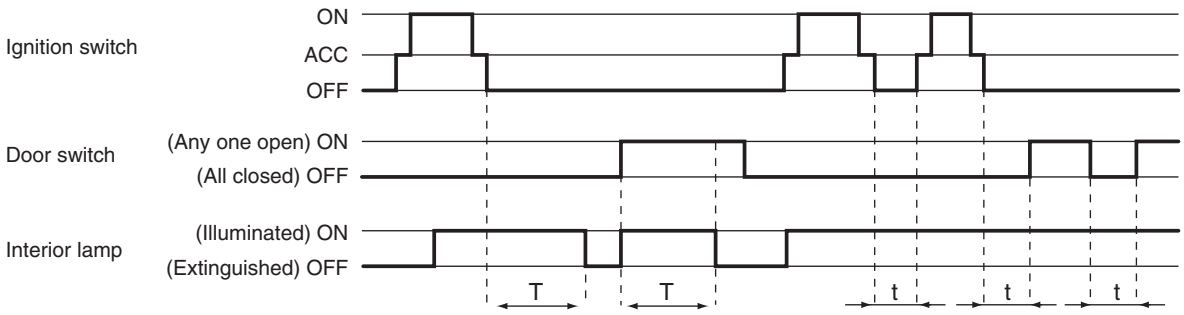
3. When all doors are closed, and the ignition key is removed:

By removing the ignition key with all doors closed, the lamp turns ON (100%), 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 can be changed by the adjusting function.

Interior lamp automatic-shutdown off function (the initial condition: function available)



T: 30 minutes
t: Within 30 minutes

AC212552AB

When the interior lamp such as the interior lamp [all interior lamps connecting to the interior lamp fuse (the front interior lamp, the map lamp, the rear interior lamp)] is lit, but either one of the 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-shutdown function, the interior lamp turns ON when any of the following condition is met.

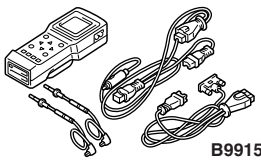
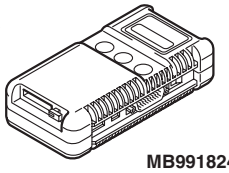
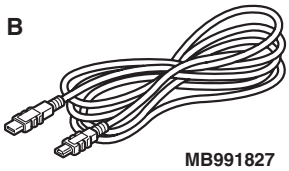
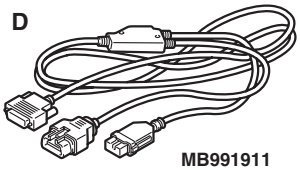
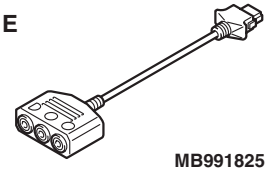
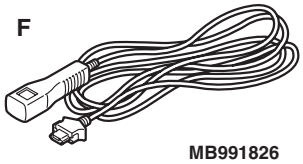
- Open and close doors.
- Operate the keyless entry transmitter.
- Turn the ignition switch to ACC or ON.

NOTE:

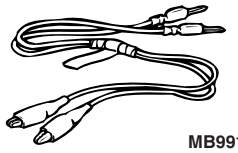
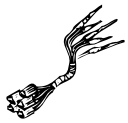
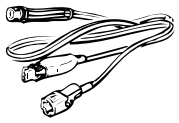
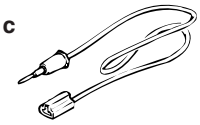
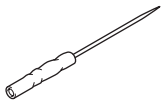
1. *The interior lamp automatic-shutdown function can be disabled or enabled by the adjusting function.*
2. *After illuminating again, the lamp turns off after 30 minutes, when the interior lamp automatic-shutdown function is met.*

SPECIAL TOOLS

M1549000300775

Tool	Number	Name	Use
 B991502	MB991502	M.U.T.-II sub assembly	Check the SWS (The M.U.T.-II displays diagnosis codes and input signals)
A  MB991824 B  MB991827 C  MB991910 D  MB991911 E  MB991825 F  MB991826 MB991955	MB991955 A: MB991824 B: MB991827 C: MB991910 D: MB991911 E: MB991825 F: MB991826	M.U.T.-III sub-assembly A: Vehicle Communication Interface (V. C. I.) B: M.U.T.-III USB cable C: M.U.T.-III main harness A (Vehicles with CAN communication system) D: M.U.T.-III main harness B (Vehicles without CAN communication system) E: M.U.T.-III measurement adapter F: M.U.T.-III trigger harness	Check the SWS (The M.U.T.-III displays diagnosis codes and input signals) **⚠ CAUTION** **M.U.T.-III main harness B (MB991911) should be used. M.U.T.-III main harness A should not be used for this vehicle.**

SPECIAL TOOLS

Tool	Number	Name	Use
 MB991529	MB991529	Diagnosis code check harness	Input signal check by using a voltmeter
a  b  c  d  DO NOT USE MB991223	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222	Harness set a. Check harness b. LED harness c. LED harness adapter d. Probe	Continuity check and voltage measurement at harness wire or connector a. For checking connector pin contact pressure b. For checking power supply circuit c. For checking power supply circuit d. For connecting a locally sourced tester
 MB992006	MB992006	Extra fine probe	Continuity check and voltage measurement at harness wire or connector

TROUBLESHOOTING

PRIOR TO TROUBLESHOOTING

M1549014700497

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

M1549000500683

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5.

DIAGNOSTIC FUNCTION

M1549028900148

HOW TO READ DIAGNOSIS CODE

Use the M.U.T.-II/III to read diagnosis code (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).

NOTE: Connect the M.U.T.-II/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 M.U.T.-II/III is not possible P.54B-38."

HOW TO CHECK INPUT SIGNALS

1. Use the M.U.T.-II/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 M.U.T.-II/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-36.

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
Key reminder switch	When the inserted ignition key is pulled out
Hazard warning lamp switch	When the switch is turned from off to on
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
Driver's door lock actuator	When the driver's key cylinder or inside lock knob is unlocked or locked
Door lock key cylinder switch	Turn the key to the lock or unlock position
Vehicle speed signal	When the vehicle speed has reached 10 km/h or more

Input signal		Requirements for sounding buzzer
Column switch	Tail lamp switch	When the lighting switch is moved from the headlamp position to the tail lamp position.
	Headlamp switch	When the lighting switch is moved from the tail lamp position to the headlamp position.
	Dimmer switch	When the switch is turned from off to on
	Passing lamp switch	
	Turn-signal lamp switch (LH)	
	Turn-signal lamp switch (RH)	
	Wind shield mist wiper 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
Keyless entry transmitter	Switches	When the switch is turned from off to on
Interior lamp loaded signal		When a load is applied through multi-purpose fuse No.18

DIAGNOSIS CODE CHART

M1549000700331

Code No.	Diagnosis Details	Reference page
11	Trouble related to the ETACS-ECU	P.54B-15
12	Trouble related to the column switch or improper connection to the ETACS-ECU	P.54B-16
13	Trouble related to the front-ECU or improper connection to the ETACS-ECU	P.54B-22
21	Short circuit in SWS communication line	P.54B-26
31	Open circuit in the signal line between the SRS-ECU and the ETACS-ECU (impact detection signal)	P.54B-30
32	Short circuit in the signal line between the SRS-ECU and the ETACS-ECU (impact detection signal)	

DIAGNOSTIC TROUBLE CODE PROCEDURES

Diagnosis code 11: Trouble related to the ETACS-ECU

DIAGNOSIS CODE SET CONDITIONS

The ETACS-ECU monitors the data, which the ECU itself sends. If errors occur consecutively 15 times (for 0.6 seconds), a diagnosis code will be set. Then, if the data does not contain any errors consecutively 15 times (for 0.6 seconds), the ECU will stop sending the diagnosis code.

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU

DIAGNOSTIC PROCEDURE

Check whether the diagnosis code is reset.
(1) Erase the diagnosis code.
(2) Again check that diagnosis code No.11 is set.

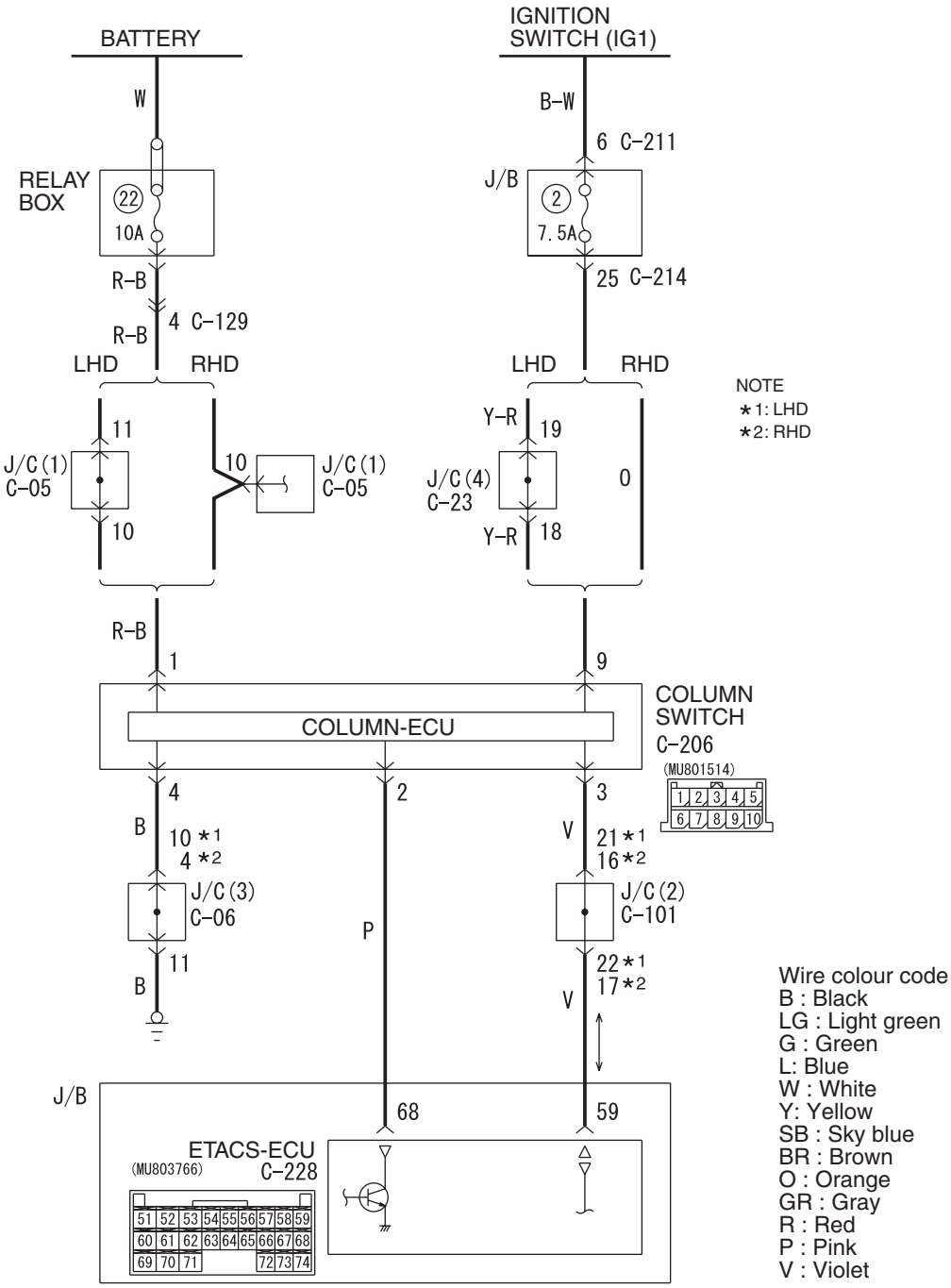
Q: Is diagnosis code No.11 set?
YES : Replace the ETACS-ECU.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

Diagnosis code 12: Trouble related to the column switch or improper connection to the ETACS-ECU

⚠ CAUTION

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

Column Switch Power Supply and SWS Communication Circuit



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

W4J54E84AA

DIAGNOSIS CODE SET CONDITIONS

If the column switch ignores the data request signal sent by the ETACS-ECU (three times or more for one second), this diagnosis code will be set. Then, when the column switch observes the request signal for one second, the ECU will stop sending the diagnosis code.

POSSIBLE CAUSES

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

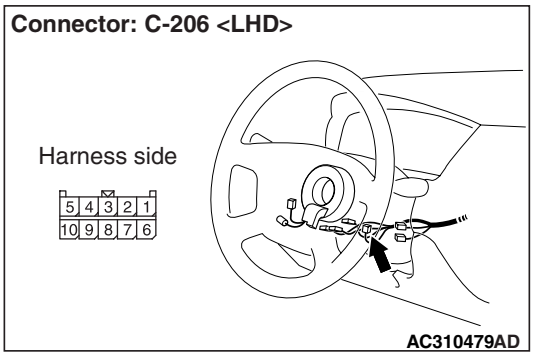
DIAGNOSTIC PROCEDURE

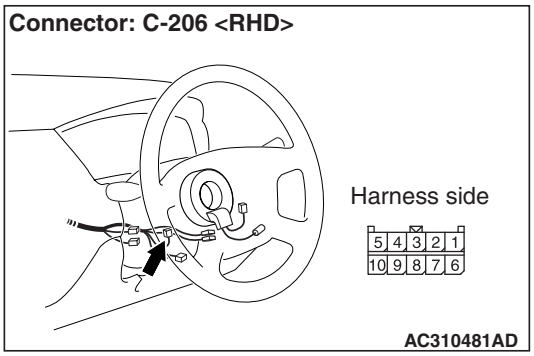
Step 1. M.U.T.-II/III diagnosis code.

(1) Ignition switch: ON
(2) On completion, check that diagnosis code No.12 is not reset.

Q: Is diagnosis code No.12 set?
YES : Go to Step 5.
NO : Go to Step 2.

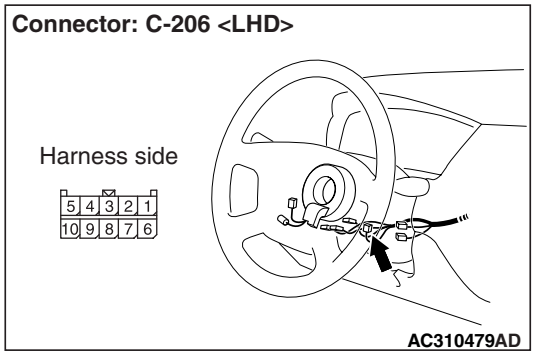
Step 2. Connector check: C-206 column switch connector

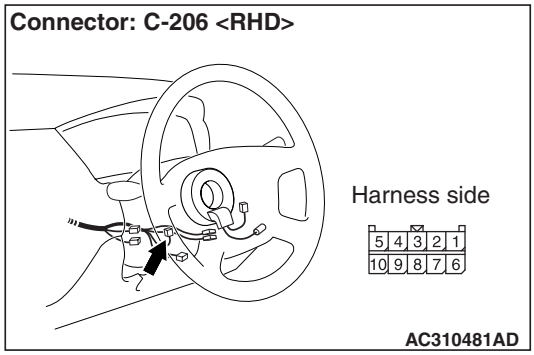




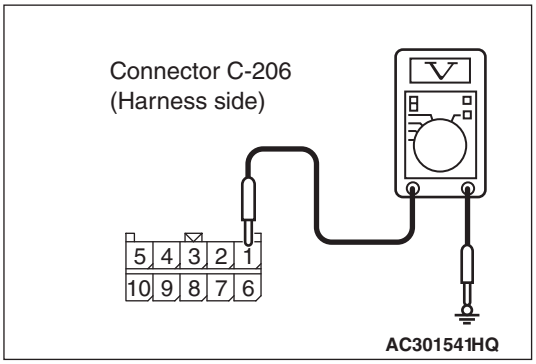
Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Voltage measurement at C-206 column switch connector





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

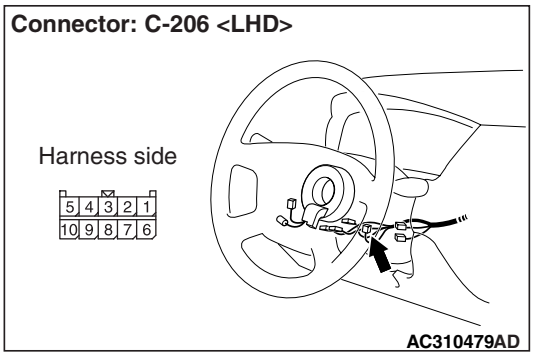


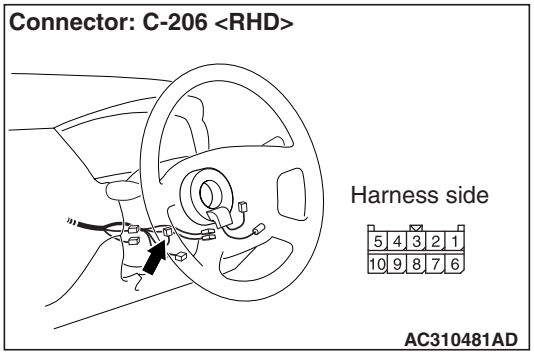
(2) Voltage between C-206 column switch connector terminal No.1 and body earth

OK: System voltage

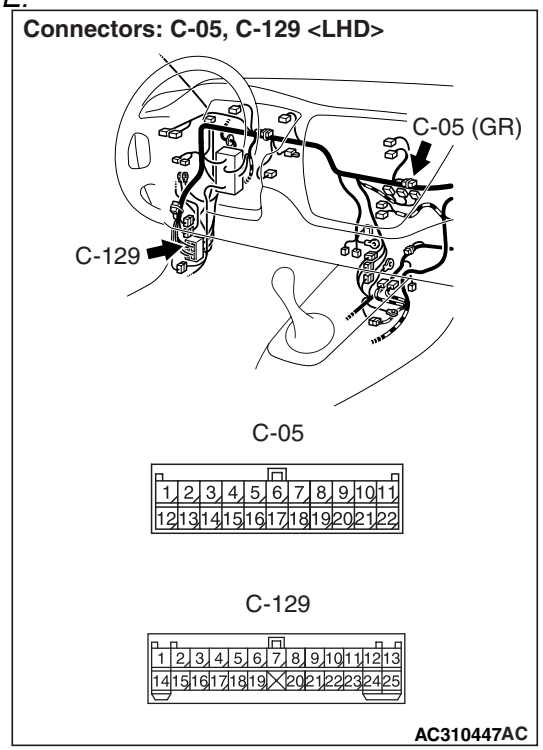
Q: Is the check result normal?
YES : Replace the column switch.
NO : Go to Step 4.

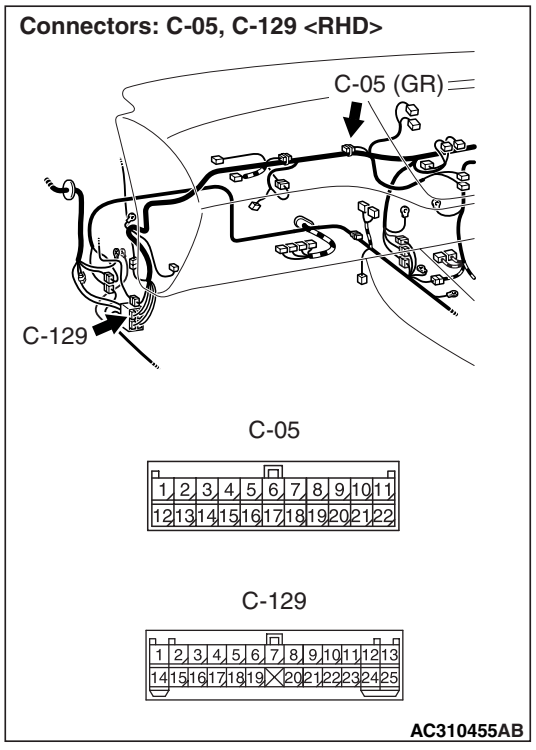
Step 4. Check the wiring harness between C-206 column switch connector terminal No.1 and the battery.





NOTE:





Prior to the wiring harness inspection, check intermediate connector C-129 and joint connector C-05, and repair if necessary.

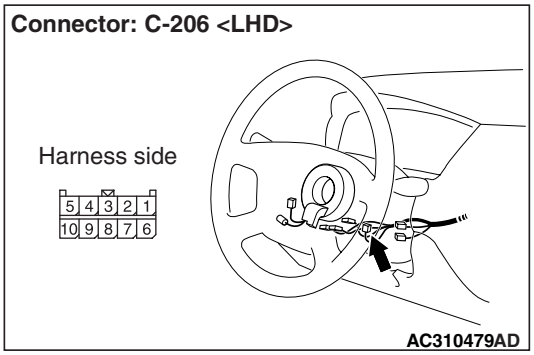
- Check the power supply line for open circuit.

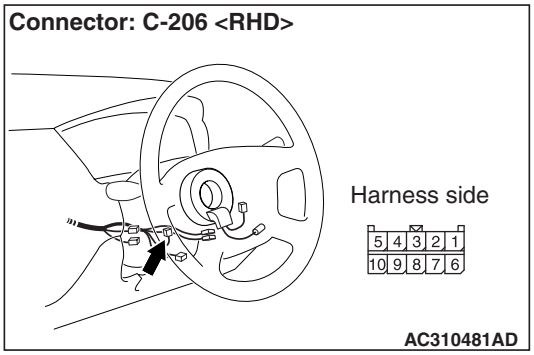
Q: Is the check result normal?

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

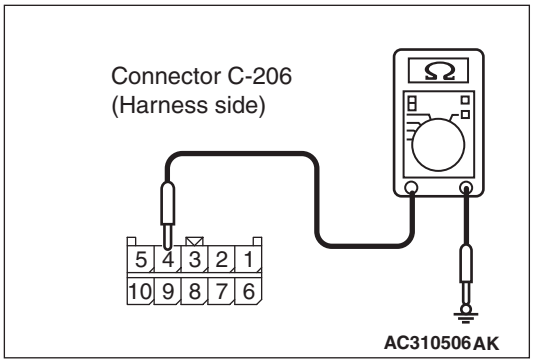
NO : Repair the wiring harness.

Step 5. Resistance measurement at the C-206 column switch connector





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

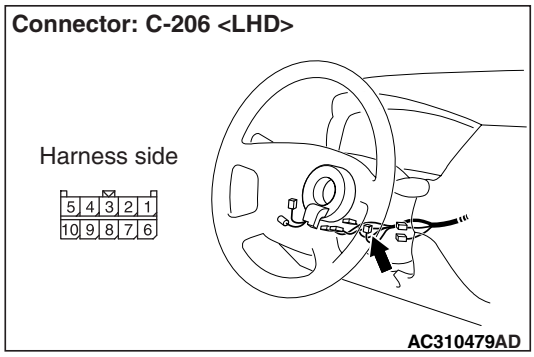


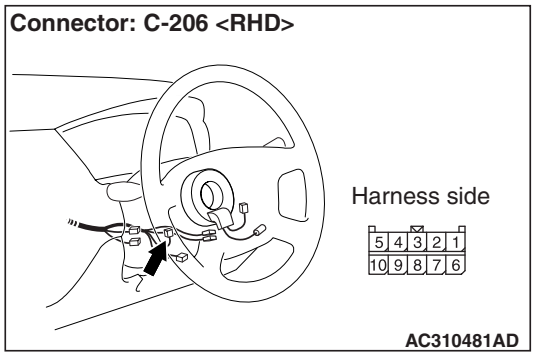
(2) Resistance between C-206 column switch connector terminal No.4 and body earth

OK: 2 Ω or less

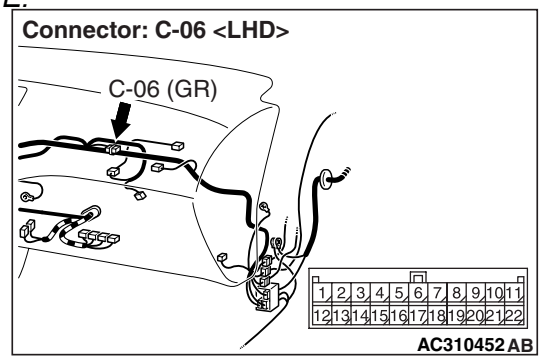
Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 6.

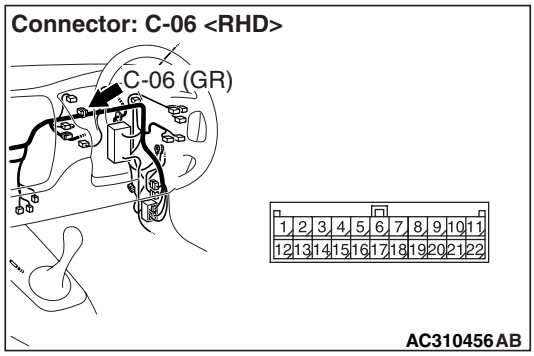
Step 6. Check the wiring harness between C-206 column switch connector terminal No.4 and the body earth.





NOTE:



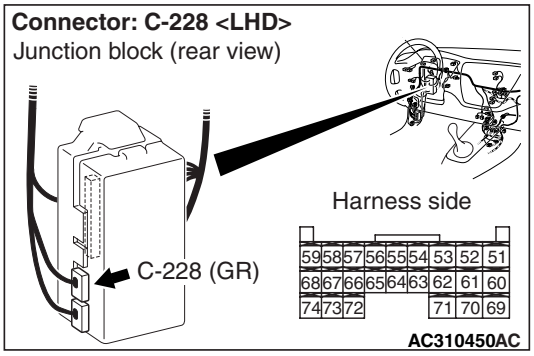


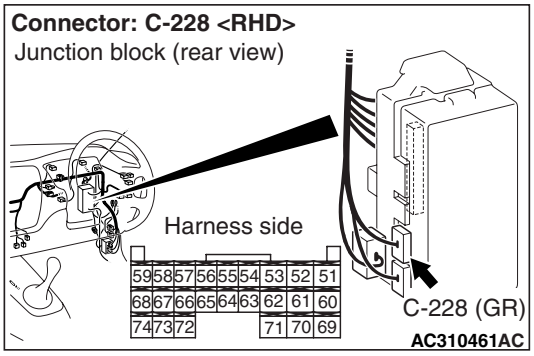
Prior to the wiring harness inspection, check joint connector C-06, and repair if necessary.

- 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.

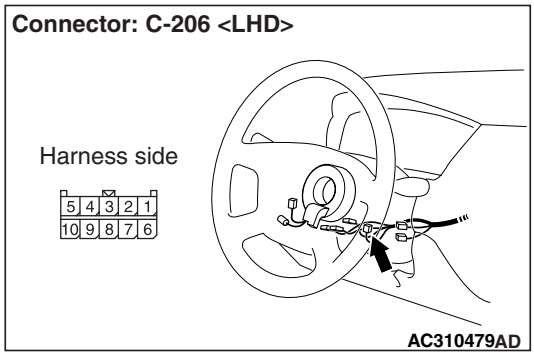
Step 7. Connector check: C-228 ETACS-ECU connector

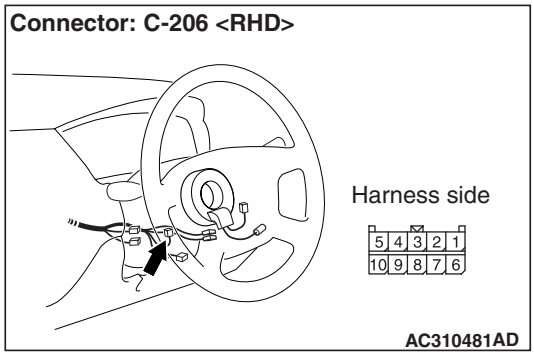


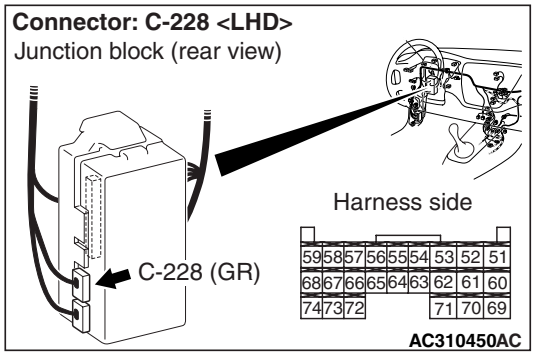


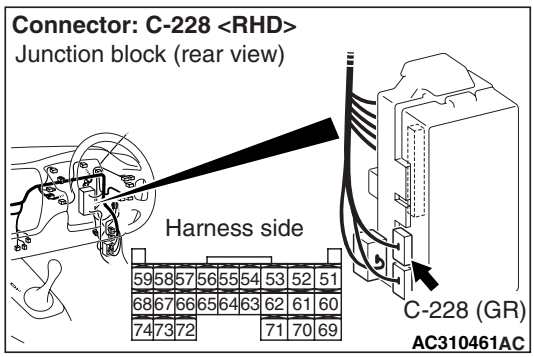
Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the defective connector.

Step 8. Check the wiring harness from C-228 ETACS-ECU connector terminal Nos.59 and 68 to C-206 column switch connector terminal Nos.3 and 2.

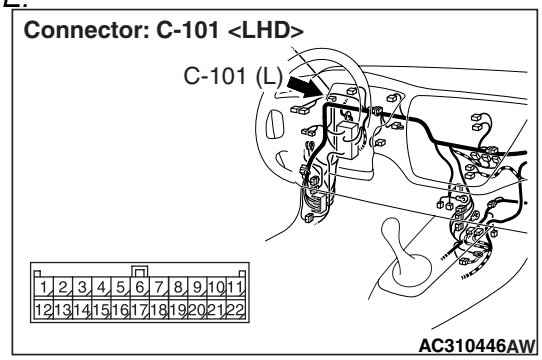


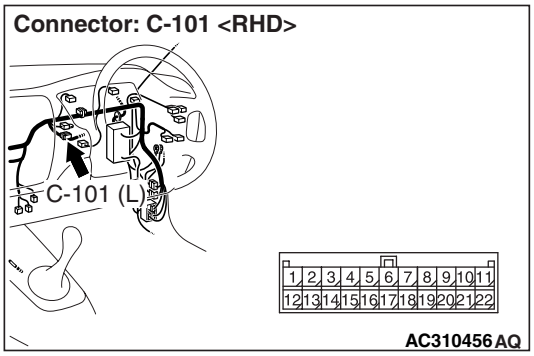






NOTE:





Prior to the wiring harness inspection, check joint connector C-101, and repair if necessary.

- Check the communication lines for open circuit.

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

Step 9. Check 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.12 is not reset.

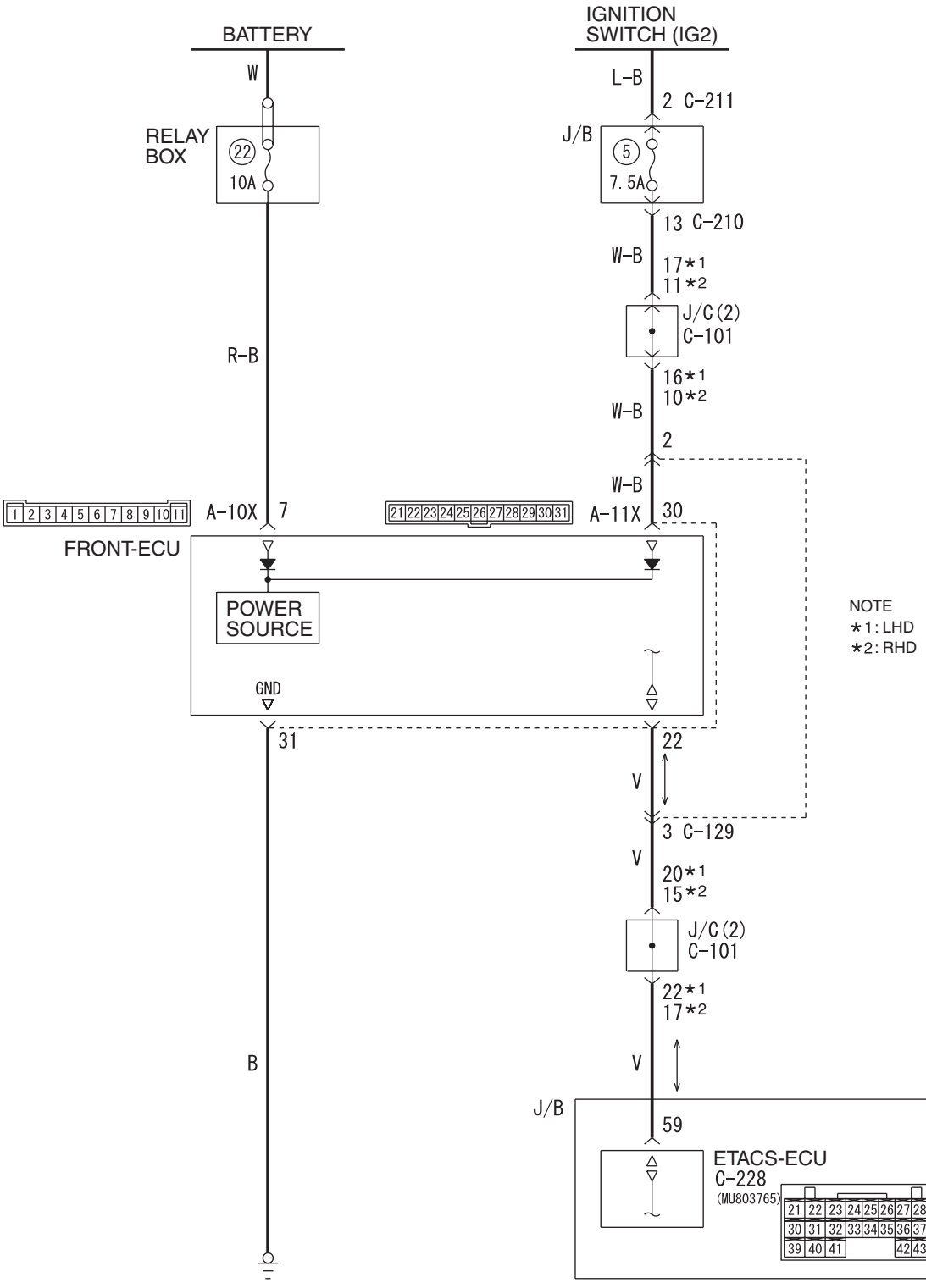
Q: Is diagnosis code No.12 set?
YES : Replace the ETACS-ECU.
NO : The procedure is complete.

Diagnosis code 13: Trouble related to the front-ECU or improper connection to the ETACS-ECU

⚠ CAUTION

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

Front-ECU Power Supply and SWS Communication Circuit



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

W4J54E85AA

DIAGNOSIS CODE SET CONDITIONS

If the front-ECU has sent abnormal signal to the ETACS-ECU for consecutively 15 communication cycles (0.6 second), the diagnosis code will be set. If the front-ECU has sent normal signal to the ETACS-ECU for consecutively 15 communication cycles (0.6 second), the ETACS-ECU will stop sending the diagnosis code.

POSSIBLE CAUSES

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

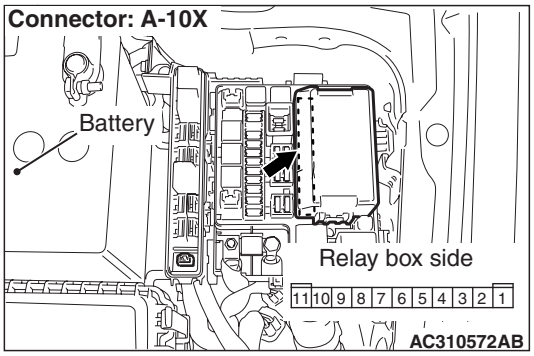
DIAGNOSTIC PROCEDURE

Step 1. M.U.T.-II/III diagnosis code.

(1) Ignition switch: ON
(2) On completion, check that diagnosis code No.13 is not reset.

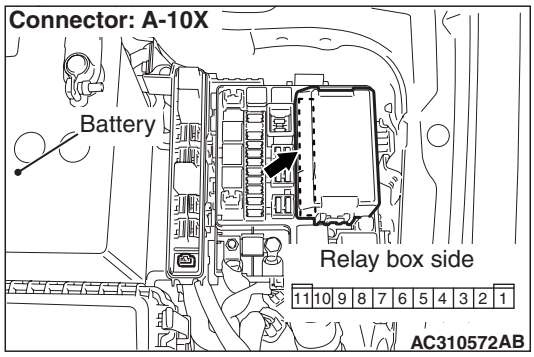
Q: Is diagnosis code No.13 set?
YES : Go to Step 5.
NO : Go to Step 2.

Step 2. Connector check: A-10X front-ECU connector

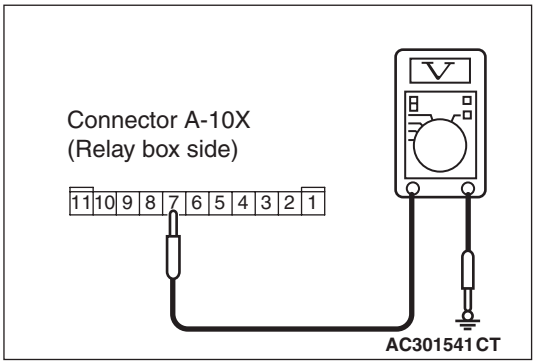


Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Voltage measurement at A-10X front-ECU connector



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

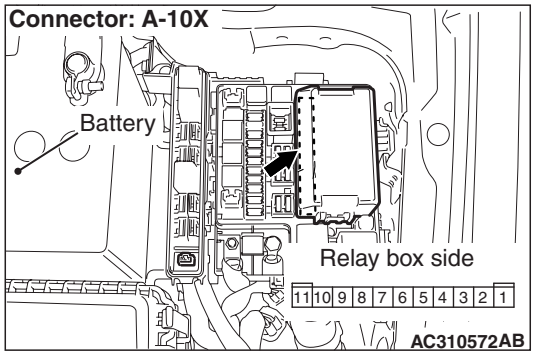


(2) Voltage between A-10X front-ECU connector terminal No.7 and body earth

OK: System voltage

Q: Is the check result normal?
YES : Replace the front-ECU.
NO : Go to Step 4.

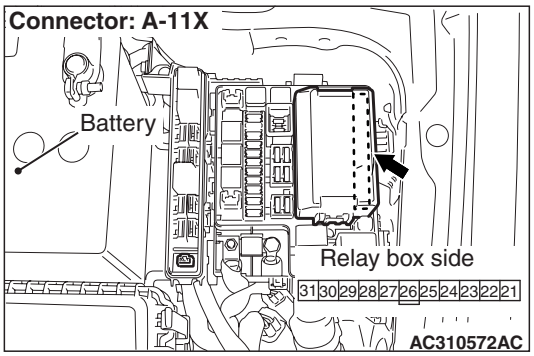
Step 4. Check the wiring harness between A-10X front-ECU connector terminal No.7 and the battery.



- Check the power supply line for open circuit.

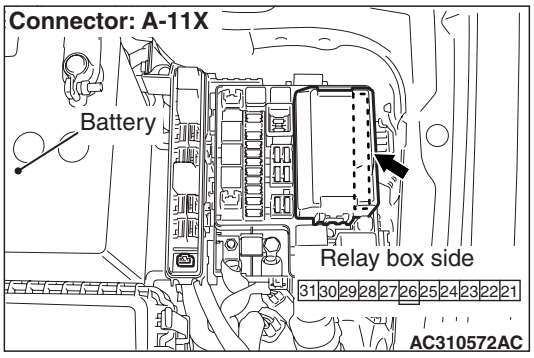
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: A-11X front-ECU connector

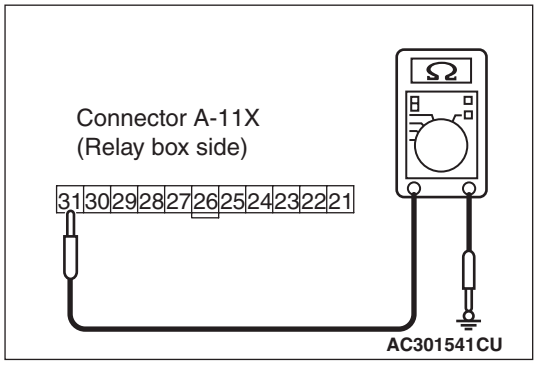


Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Resistance measurement at A-11X front-ECU connector



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

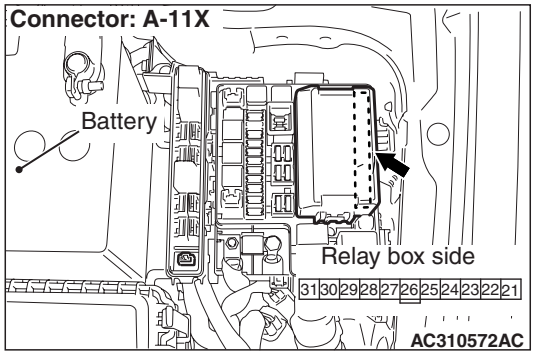


(2) Resistance between A-11X front-ECU connector terminal No.31 and body earth

OK: 2 Ω or less

Q: Is the check result normal?
YES : Go to Step 8.
NO : Go to Step 7.

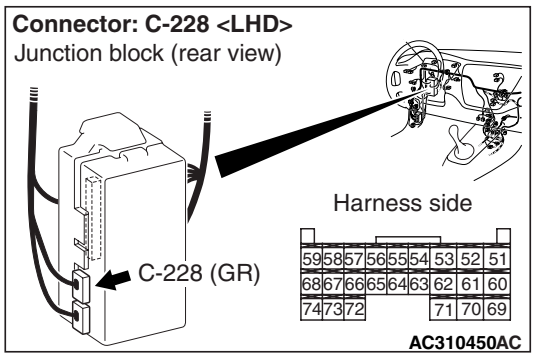
Step 7. Check the wiring harness between A-11X front-ECU connector terminal No.31 and the body earth.

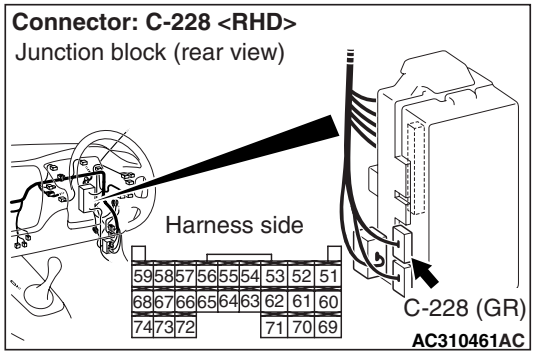


- Check the earth wires for open circuit.

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.

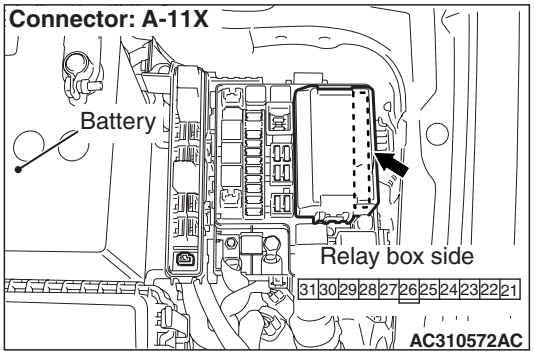
Step 8. Connector check: C-228 ETACS-ECU connector

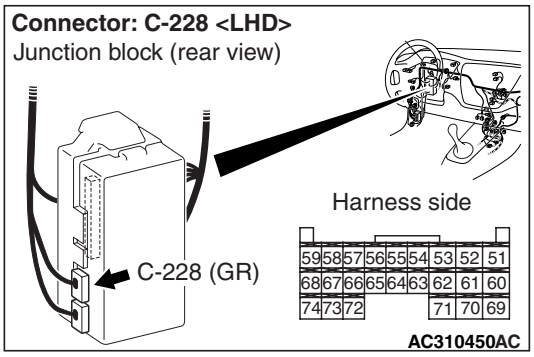


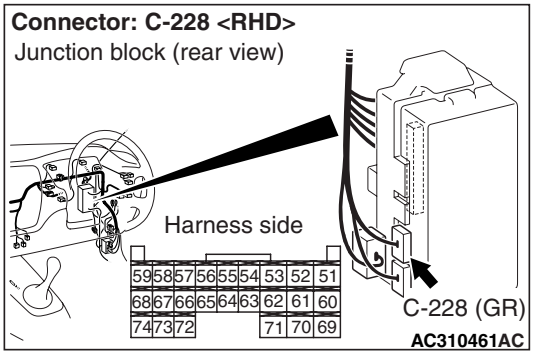


Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the defective connector.

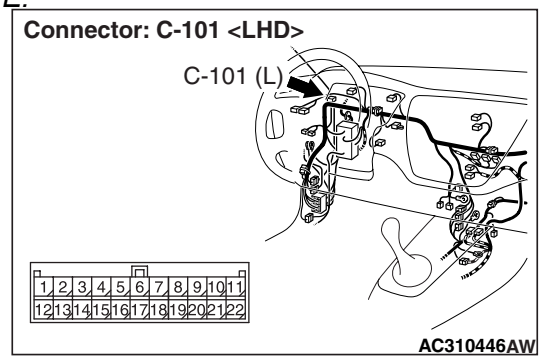
Step 9. Check the wiring harness between C-228 ETACS-ECU connector terminal No.59 and A-11X front-ECU connector terminal No.22.

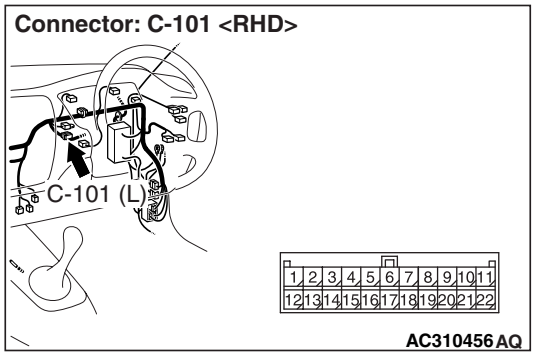


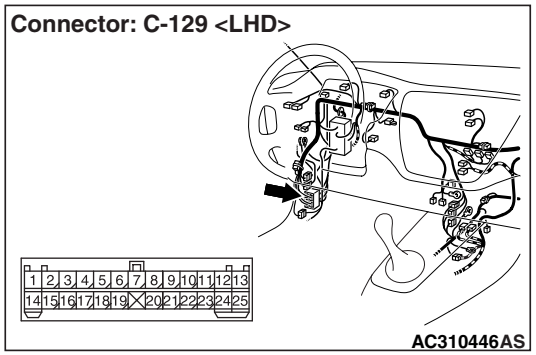


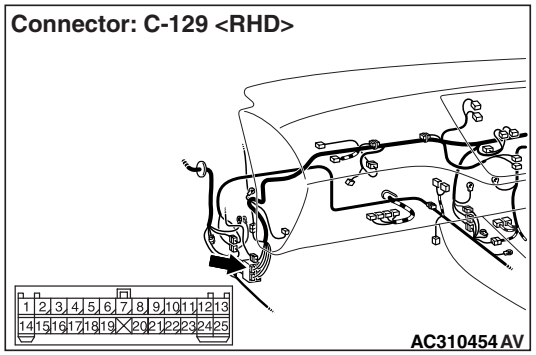


NOTE:









Prior to the wiring harness inspection, check joint connector C-101 and intermediate connector C-129, 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.

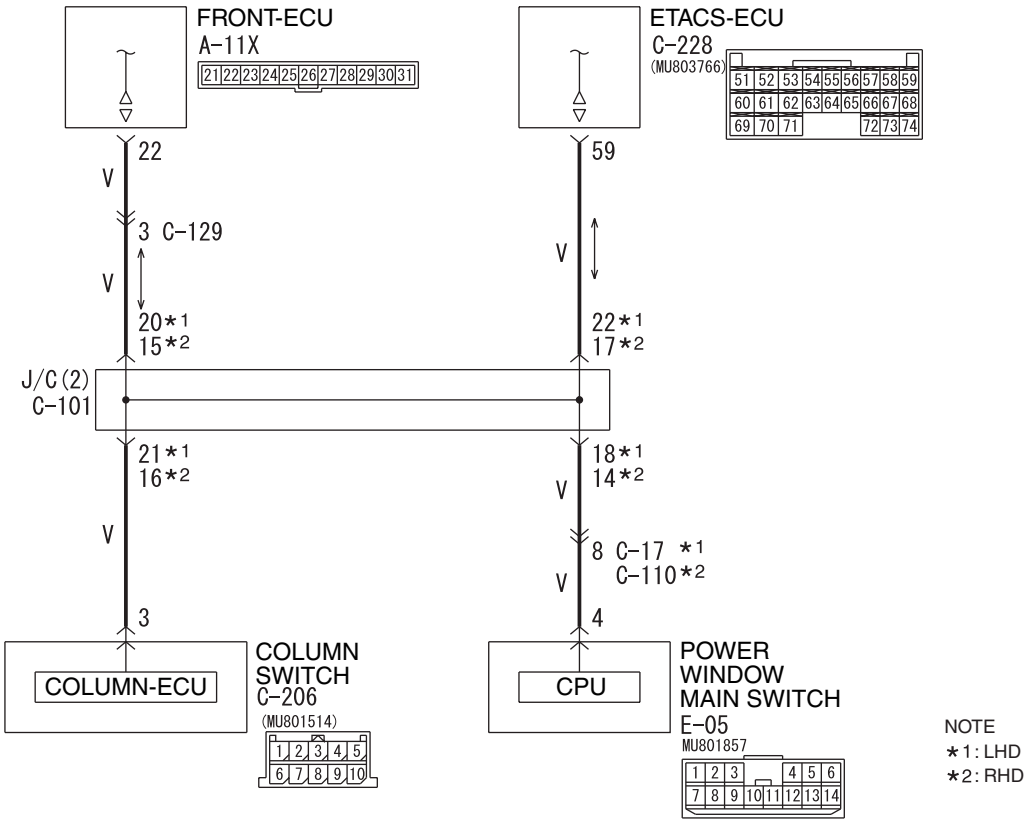
Replace the column switch, and then check that the diagnosis code is not reset.
(1) Replace the column switch.
(2) Ignition switch: ON
(3) On completion, check that diagnosis code No.13 is not reset.

Q: Is diagnosis code No.13 set?
YES : Replace the ETACS-ECU.
NO : The procedure is complete.

Diagnosis code 21: Short circuit in SWS communication line

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

SWS Communication Line



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

W4J54E86AA

DIAGNOSIS CODE SET CONDITIONS

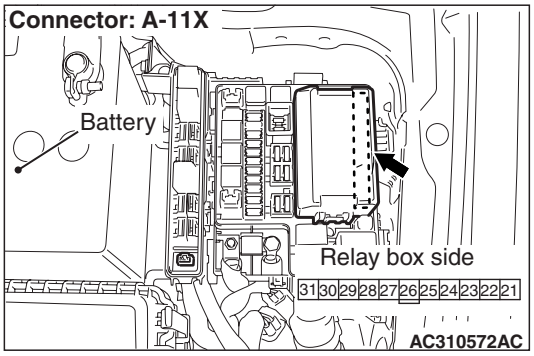
If the SWS communication line voltage is kept at low level for 0.3 second, the diagnosis code will be set. If the ETACS-ECU data line voltage is kept at high level for 0.3 second, or the ETACS-ECU has received normal signal from the other ECUs or switches, the ETACS-ECU will stop sending the diagnosis code. While this code is set, the other codes will not be set.

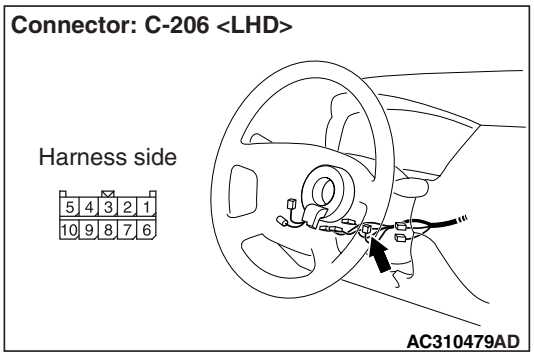
POSSIBLE CAUSES

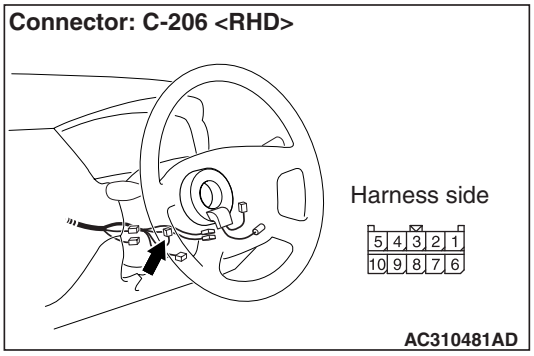
- Malfunction of the column switch
- Malfunction of the front-ECU
- Malfunction of the power window main switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

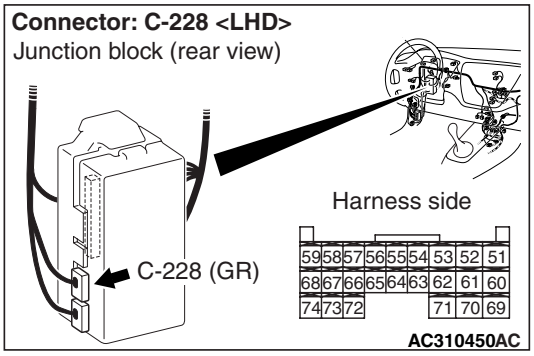
DIAGNOSTIC PROCEDURE

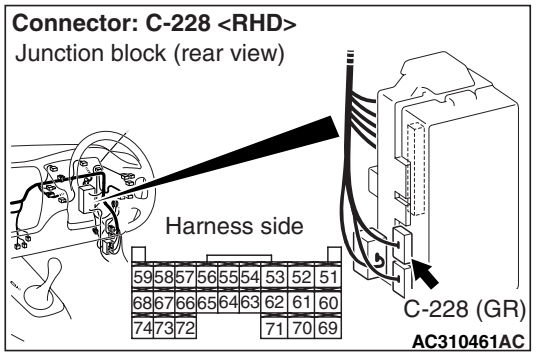
Step 1. Connector check: A-11X front-ECU connector, C-206 column switch connector, C-228 ETACS-ECU connector and E-05 power window main switch connector

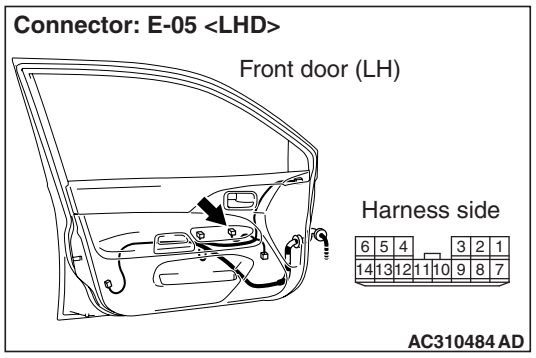


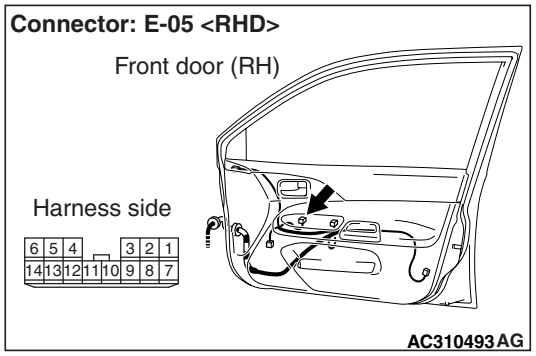






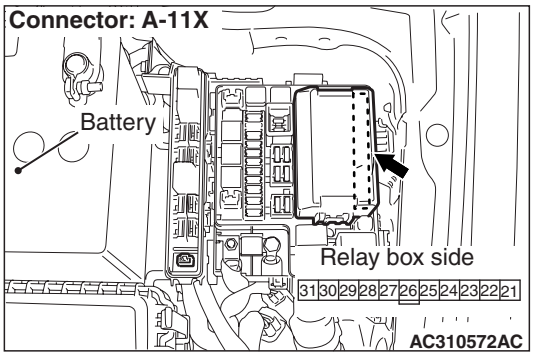


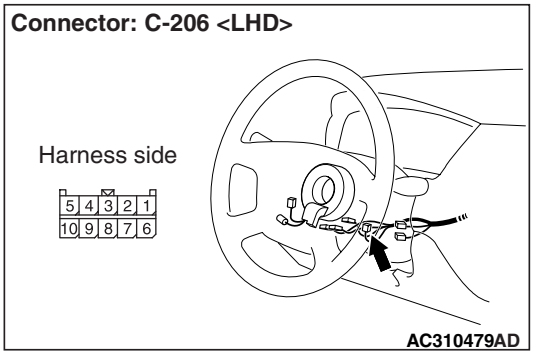


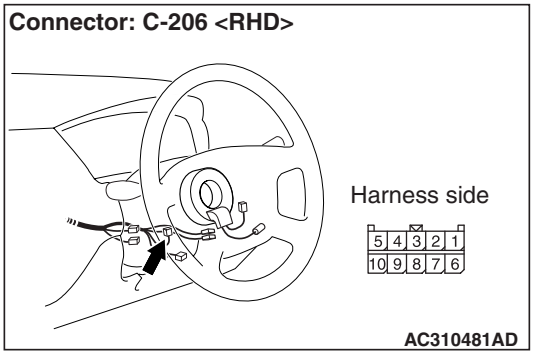


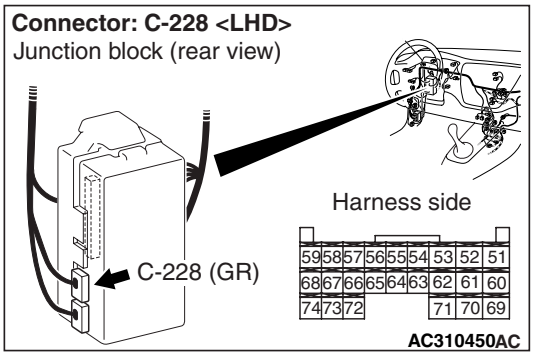
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

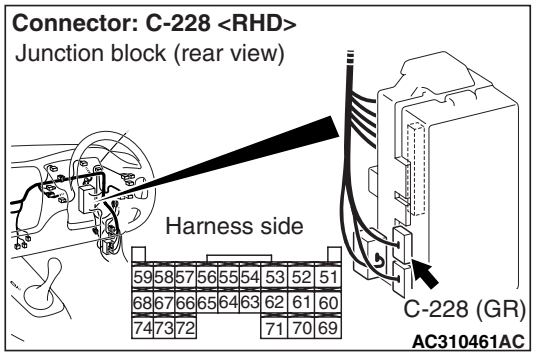
Step 2. Check the wiring harness from each of A-11X front-ECU connector terminal No.22, C-206 column switch connector terminal No.3 and E-05 power window main switch connector terminal No.4 to C-228 ETACS-ECU connector terminal No.59.

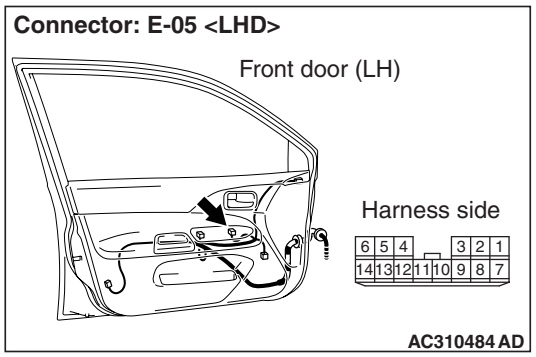


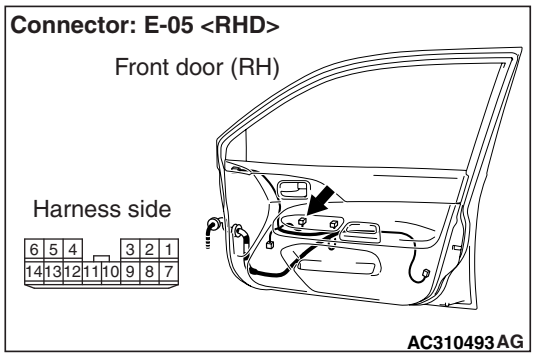






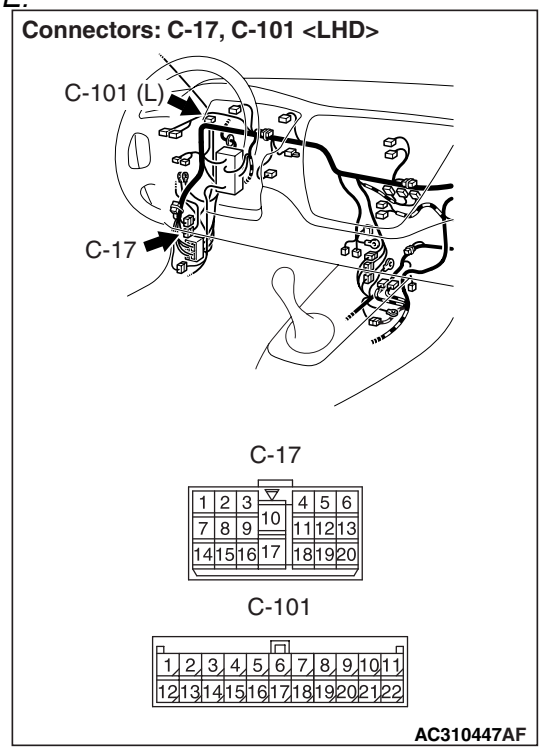






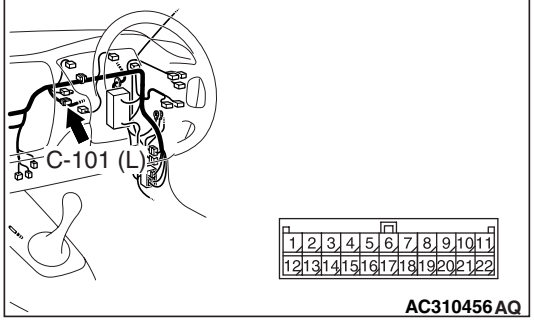
NOTE:

Connectors: C-17, C-101 <LHD>



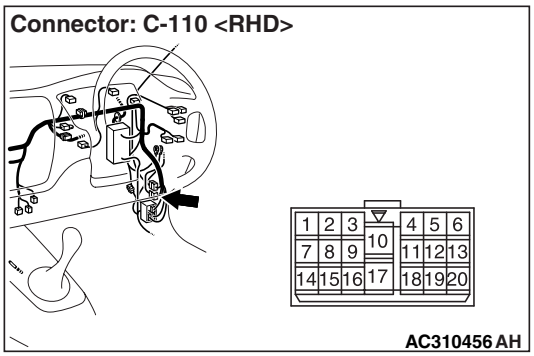
AC310447AF

Connector: C-101 <RHD>



AC310456AQ

Connector: C-110 <RHD>



AC310456AH

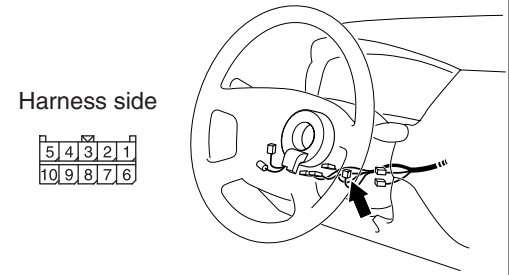
Prior to the wiring harness inspection, check joint connector C-101 and intermediate connector C-17 <LH drive vehicles> or C-110 <RH drive vehicles>, and repair if necessary.

- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the wiring harness.

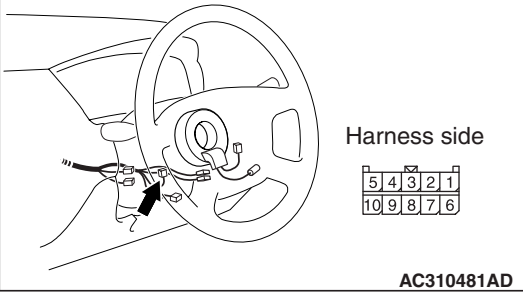
Step 3. Check the wiring harness between C-206 column switch connector terminal No.2 and C-228 ETACS-ECU connector terminal No.68.

Connector: C-206 <LHD>



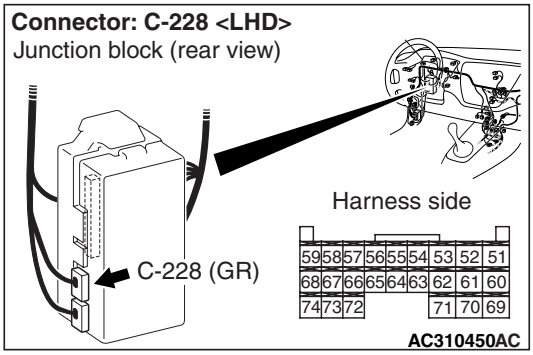
AC310479AD

Connector: C-206 <RHD>



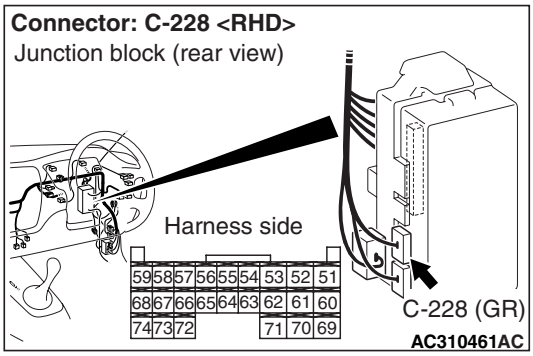
AC310481AD

Connector: C-228 <LHD>
Junction block (rear view)



AC310450AC

Connector: C-228 <RHD>
Junction block (rear view)



AC310461AC

- 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. Check whether the diagnosis code is reset.

When A-11X front-ECU connector is disconnected, check that diagnosis code No.21 is not reset. However, diagnosis code No.13 will be set at this time.

Q: Is diagnosis code No.21 set?

YES : Replace the front-ECU.

NO : Go to Step 5.

Step 5. Check whether the diagnosis code is reset.

When E-05 power window main switch connector is disconnected, check that diagnosis code No.21 is not reset.

Q: Is diagnosis code No.21 set?

YES : Replace the power window main switch.

NO : Go to Step 6.

Step 6. Check that the hazard warning lamps illuminate.

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

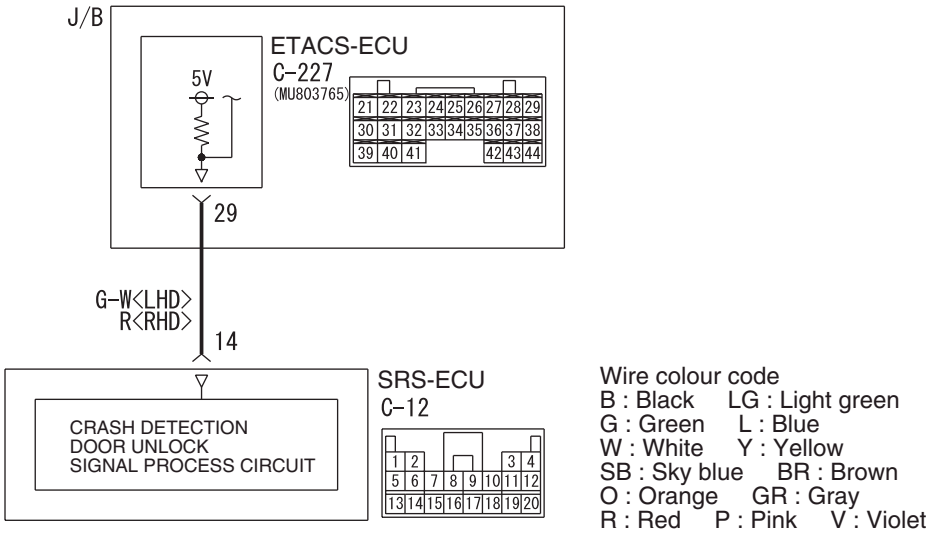
Q: Is the check result normal?

YES : Refer to diagnosis code No.12 "Trouble related to the column switch or improper connection to the ETACS-ECU P.54B-16."

NO : Refer to inspection procedure A-2 "Check the battery power supply circuit to the ETACS-ECU P.54B-42."

Diagnosis code 31: Open circuit in the signal line between the SRS-ECU and the ETACS-ECU (impact detection signal)
Diagnosis code 32: Short circuit in the signal line between the SRS-ECU and the ETACS-ECU (impact detection signal)

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.



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

W4J54E87AA

DIAGNOSIS CODE SET CONDITIONS

If the voltage in the signal line between the SRS-ECU and the ETACS-ECU has exceeded 4.6 V for 40 milliseconds or more, the ETACS-ECU will set diagnosis code No.31 as an open circuit. If the signal line voltage has reached 1.5 V or less for at least 2.5 seconds, the ETACS-ECU will set diagnosis code No.32 as a short circuit. If the ignition switch is turned off, the ETACS-ECU will stop sending the diagnosis code.

POSSIBLE CAUSES

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

DIAGNOSTIC PROCEDURE

Step 1. M.U.T.-II/III diagnosis code.

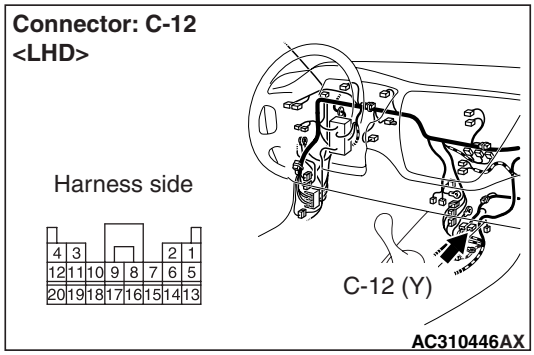
Check that the SRS-ECU sets a diagnosis code.

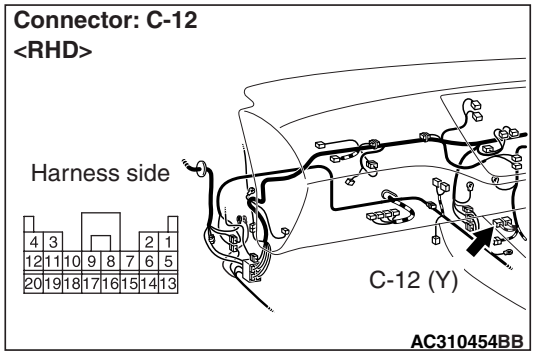
Q: Is the check result normal?

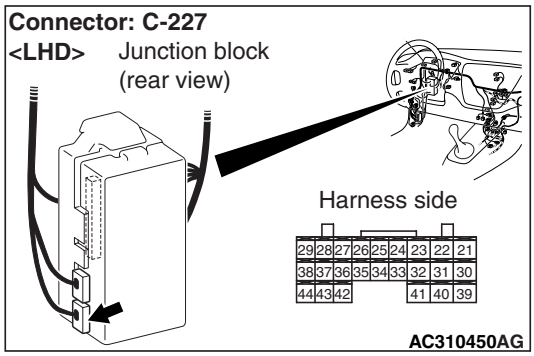
YES : Go to Step 2.

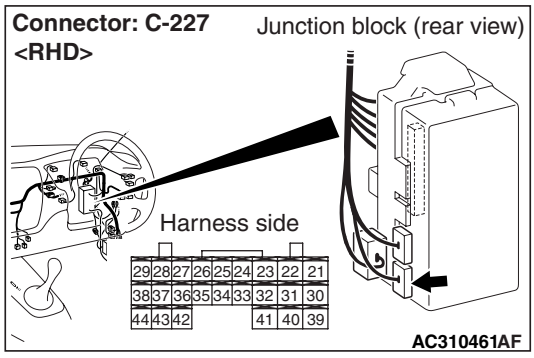
NO : Refer to GROUP 52B – Troubleshooting P.52B-9.

Step 2. Connector check: C-12 SRS-ECU connector and C-227 ETACS-ECU connector







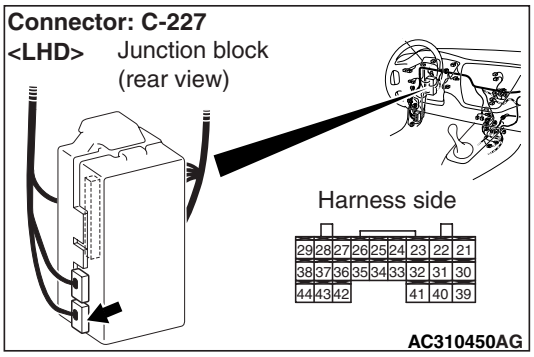


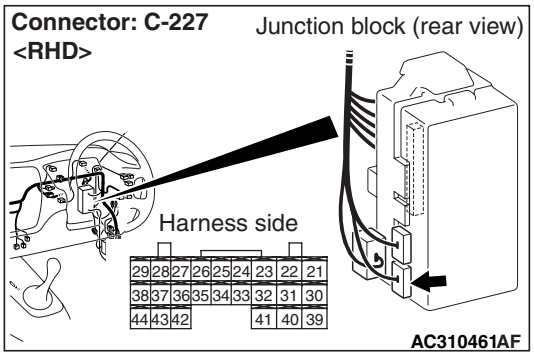
Q: Is the check result normal?

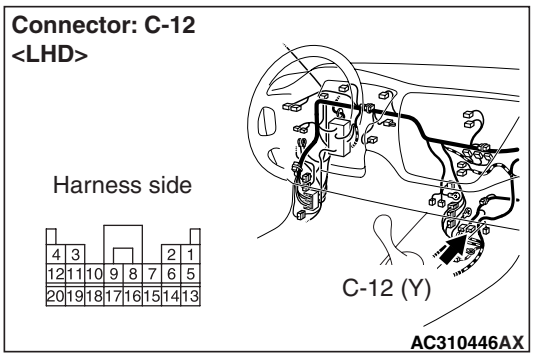
YES : Go to Step 3.

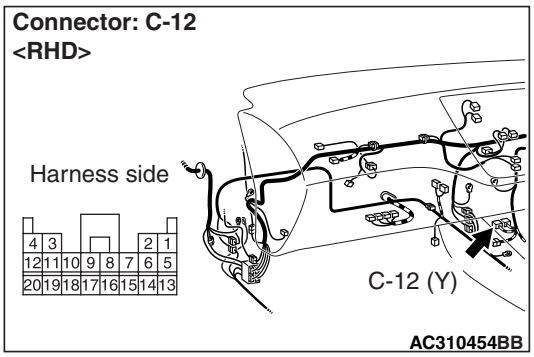
NO : Repair the defective connector.

Step 3. Check the wiring harness between C-227 ETACS-ECU connector terminal No.29 and C-12 SRS-ECU connector terminal No.14.









- 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. Check whether the diagnosis code is reset.

Replace the SRS-ECU, and then check that the diagnosis code is not reset.
(1) Replace the SRS-ECU.
(2) Ignition switch: ON
(3) Check that diagnosis code No.31 or 32 is not reset.

Q: Is diagnosis code No.31 or 32 set?
YES : Replace the ETACS-ECU.
NO : The procedure is complete.

TROUBLE SYMPTOM CHART

M1549000800866

Symptom	Inspection procedure number	Reference page
Communication with the M.U.T.-II/III is not possible.	A-1	P.54B-38
When the ignition switch is at the LOCK (OFF) position, the functions do not work normally.	A-2	P.54B-42
Check the battery power supply circuit to the ETACS-ECU.		

<FUNCTION SYSTEM>

Symptom		Inspection procedure number	Reference page
Buzzer	Lamp reminder buzzer function does not work normally.	B-1	P.54B-46
Central door locking system	Central door locking system does not work. <LH drive vehicles>	C-1	P.54B-48
	Central door locking system does not work. <RH drive vehicles>		P.54B-51
	A door or a tailgate can not be locked or unlocked by the central door locking system. <LH drive vehicles>	C-2	P.54B-54
	A door or a tailgate can not be locked or unlocked by the central door locking system. <RH drive vehicles>		P.54B-61
	The central door locking system can not be operated by means of the front passenger's door lock key cylinder.	C-3	P.54B-68
	The ignition key reminder function does not work normally.	C-4	P.54B-69
	The impact detection door unlock function does not function.	C-5	P.54B-71

Symptom		Inspection procedure number	Reference page
Power windows	Power windows do not work at all.	D-1	P.54B-72
	Driver's power window does not work by means of the power window main switch. <LH drive vehicles>	D-2	P.54B-81
	Driver's power window does not work by means of the power window main switch. <RH drive vehicles>		P.54B-83
	Relevant power window(s) do not work by means of the front and rear passenger's power window sub switches.	D-3	P.54B-85
	Front and/or rear passenger's power window(s) do not work by means of the power window main switch.	D-4	P.54B-103
	The window glass lowers automatically while it is rising.	D-5	P.54B-112
	Power window anti-trap function does not work normally.	D-6	P.54B-113
Keyless entry system	Keyless entry system does not work.	E-1	P.54B-125
	Keyless entry hazard warning lamp answerback function or the room lamp answerback function does not work normally.	E-2	P.54B-127
	Encrypted code cannot be registered.	E-3	P.54B-128
	The timer lock function does not work after the doors have been unlocked by the keyless entry system.	E-4	P.54B-129
Windshield wiper and washer	The windshield wipers do not work at all.	F-1	P.54B-130
	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.	F-2	P.54B-137
	The windshield wipers do not stop at the specified park position.	F-3	P.54B-139
	The windshield wipers does not work normally.	F-4	P.54B-144
	The intermittent wiper interval can not be adjusted by operating the windshield intermittent wiper volume control.	F-5	P.54B-149
	The intermittent wiper interval is not changed according to the vehicle speed.	F-6	P.54B-150
	The windshield washer does not work.	F-7	P.54B-152
Ignition key cylinder illumination lamp	The ignition key cylinder illumination lamp does not illuminate/extinguish normally.	G-1	P.54B-156

Symptom		Inspection procedure number	Reference page
Headlamp and tail lamp	The tail lamps do not illuminate normally.	H-1	P.54B-160
	The low-beam headlamps do not illuminate normally.	H-2	P.54B-162
	The high-beam headlamps do not illuminate normally.	H-3	P.54B-164
	The high-beam and low-beam headlamps do not illuminate when the passing switch is operated.	H-4	P.54B-165
	The headlamp automatic shutdown function does not work normally.	H-5	P.54B-166
	Any of tail lamps, position lamps or licence plate lamps does not illuminate. <LH drive vehicles>	H-6	P.54B-168
	Any of tail lamps, position lamps or licence plate lamps does not illuminate. <RH drive vehicles>		P.54B-175
	The headlamp(s) do not illuminate. <including high-beam indicator>	H-7	P.54B-182
Flasher timer	The turn-signal lamps do not illuminate.	I-1	P.54B-191
	The hazard warning lamps do not illuminate.	I-2	P.54B-196
	Any of the turn-signal lamps does not illuminate. <LH drive vehicles>	I-3	P.54B-198
	Any of the turn-signal lamps does not illuminate. <RH drive vehicles>		P.54B-205
Fog lamp	The rear fog lamp do not illuminate normally.	J-1	P.54B-212
	The rear fog lamp or the rear fog lamp indicator does not illuminate normally.	J-2	P.54B-218
Room lamp	The front, rear room lamp and/or luggage compartment lamp do not illuminate or extinguish normally.	K-1	P.54B-225
	Interior lamp automatic shutdown function does not work normally.	K-2	P.54B-233
	The door-ajar warning lamp does not illuminate/extinguish normally.	K-3	P.54B-235

CHECK TROUBLE BY USING THE INPUT SIGNAL CHECK

M1549024200318

<PULSE CHECK>

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

Symptom		Inspection procedure number	Reference page
The ignition switch (ACC) signal is not received.		L-1	P.54B-239
The ignition switch (IG1) signal is not received.		L-2	P.54B-242
The door switch (front: LH) signal is not received. <LH drive vehicles>		L-3	P.54B-244
The door switch (front: RH) signal is not received. <RH drive vehicles>			P.54B-246
Column switch (lighting and turn-signal lamp switch)	The tail lamp switch signal is not received.	L-4	P.54B-248
	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.		
Column switch (windshield wiper/washer switch)	The windshield mist wiper switch signal is not received.	L-5	P.54B-249
	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 windshield intermittent wiper volume signal is not received.	L-6	P.54B-250
Power window main switch	When the power window main switch is operated, the switch signals are not received.	L-7	P.54B-254
The key reminder switch signal is not received.		L-8	P.54B-257
The hazard warning lamp switch signal is not received.		L-9	P.54B-261
All the door switch signals are not received.	LH drive vehicles	L-10	P.54B-265
	RH drive vehicles		P.54B-268

Symptom	Inspection procedure number	Reference page
The front door lock actuator (LH) switch signal is not received. <LH drive vehicles>	L-11	P.54B-272
The front door lock actuator (RH) switch signal is not received. <RH drive vehicles>		P.54B-275
The vehicle speed sensor signal is not received.	L-12	P.54B-278
Each switch signal of the keyless entry transmitter is not received.	L-13	P.54B-282
The rear fog lamp switch signal is not received.	L-14	P.54B-283
The interior lamp loaded signal is not received.	L-15	P.54B-287
The door lock key cylinder switch signal is not received.	L-16	P.54B-292

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

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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	L-1	L-2	L-3	L-4	L-8	L-10	L-11	L-15
Lamp reminder function	–	×	×	×	–	–	–	–
Control of central door locking	–	–	–	–	–	–	×	–
Key reminder function	–	–	×	–	×	–	×	–
Door locking released due to impact detection	–	–	–	–	–	–	–	–
Keyless entry system	–	–	×	–	×	×	×	–
Keyless entry hazard warning lamp answerback	–	–	–	–	–	–	–	–
Power window control	–	×	–	–	–	–	–	–
Control of windshield wiper/washer	×	–	–	–	–	–	–	–
Ignition key cylinder illumination lamp function	–	×	×	–	×	–	–	×
Headlamp control	–	×	–	×	–	–	–	–
Tail lamp control	–	×	–	×	–	–	–	–
Headlamp automatic shutdown function	–	×	×	×	–	–	–	–
Fog lamp control	–	–	–	×	–	–	–	–
Turn-signal lamp control	–	×	–	×	–	–	–	–

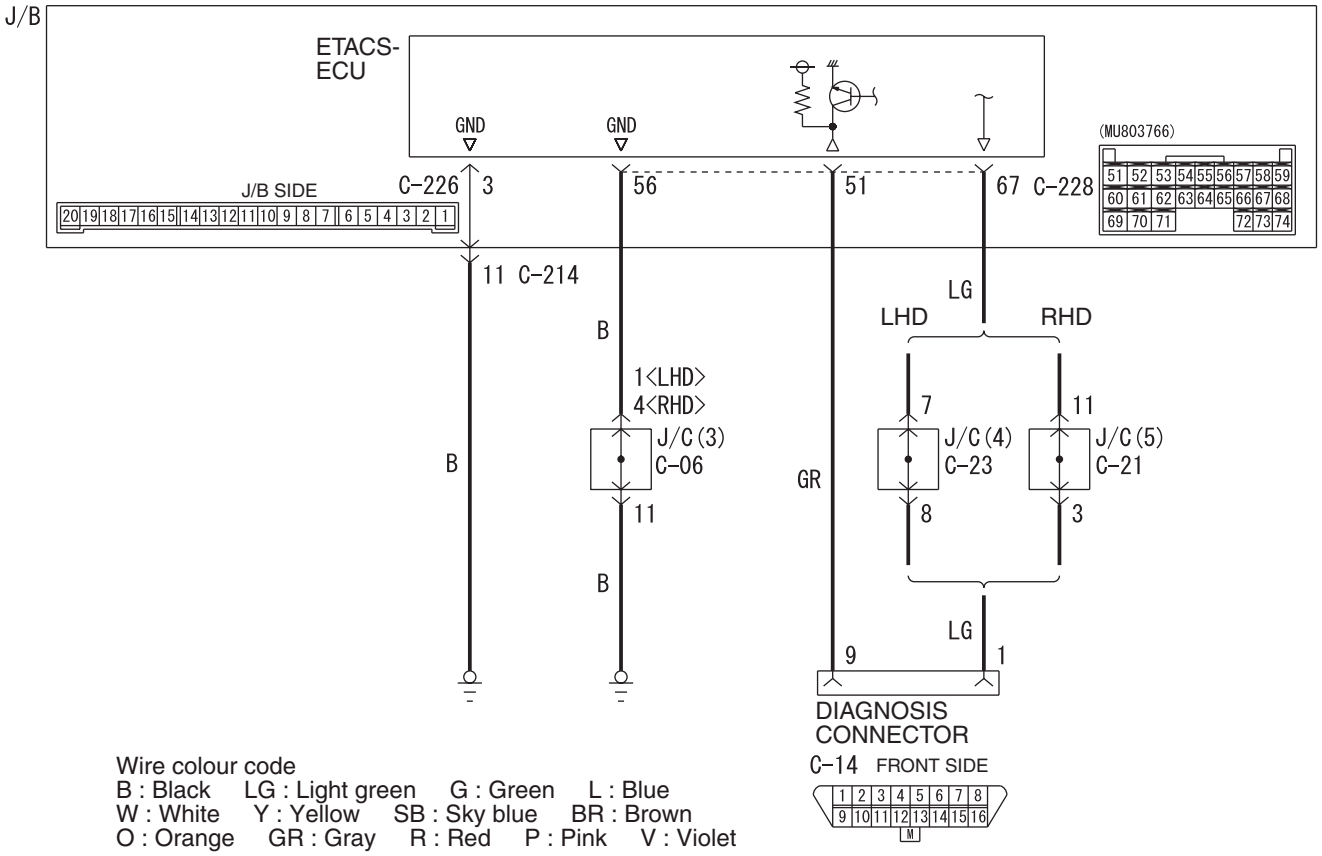
Function	L-1	L-2	L-3	L-4	L-8	L-10	L-11	L-15
Room lamp control	–	×	×	–	×	×	×	×
Interior lamp automatic shutdown function	×	–	–	–	–	–	–	×
Door-ajar indicator lamp	–	–	×	–	–	×	–	–

SYMPTOM PROCEDURES

INSPECTION PROCEDURE A-1: Communication with the M.U.T.-II/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-II/III Communication Circuit and ETACS-ECU Ground Circuit



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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-225 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 M.U.T.-II/III communicates with the other systems.

Use the M.U.T.-II/III to confirm that it communicates with the engine-ECU.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Diagnose the engine control system by referring to P.13A-237.

Step 2. Check that the M.U.T.-II/III can communicate with the system.

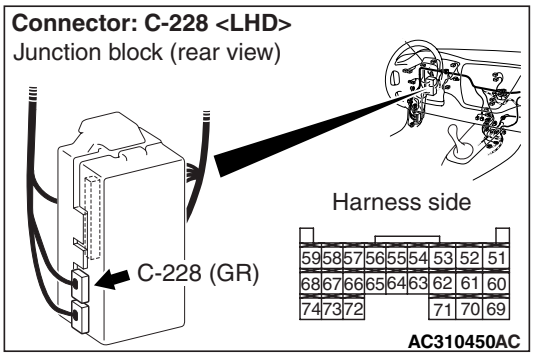
When the ignition switch is turned ON, check if the M.U.T.-II/III can communicate with the system.

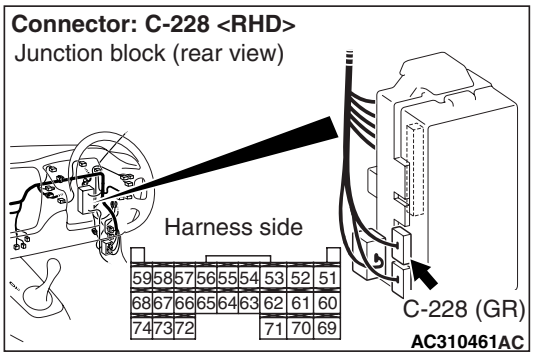
Q: Is the check result normal?

YES : Refer to inspection procedure A-2 "Check the battery power supply circuit to the ETACS-ECU P.54B-42."

NO : Go to Step 3.

Step 3. Connector check: C-228 ETACS-ECU connector



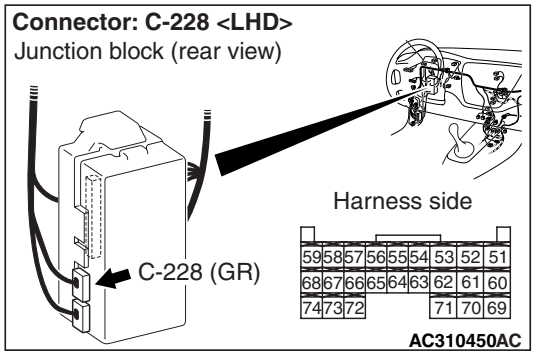


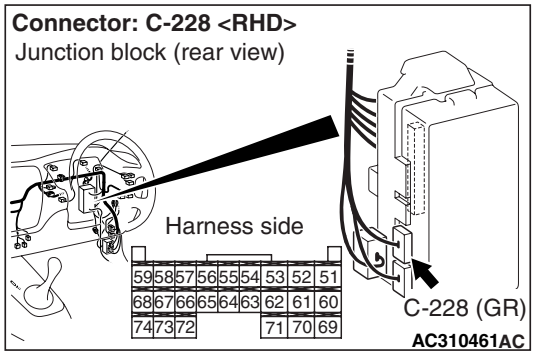
Q: Is the check result normal?

YES : Go to Step 4.

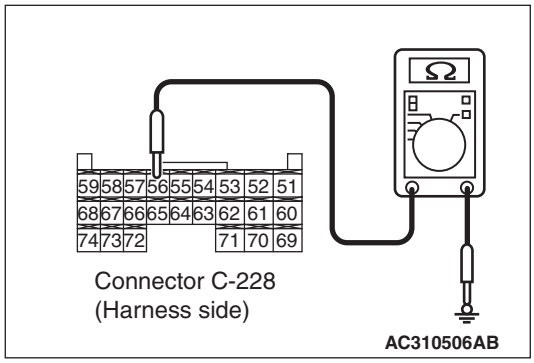
NO : Repair the defective connector.

Step 4. Resistance measurement at the C-228 ETACS-ECU connector





(1) Disconnect the connector, and measure at the junction block side.



(2) Resistance between C-228 ETACS-ECU connector terminal No.56 and body earth

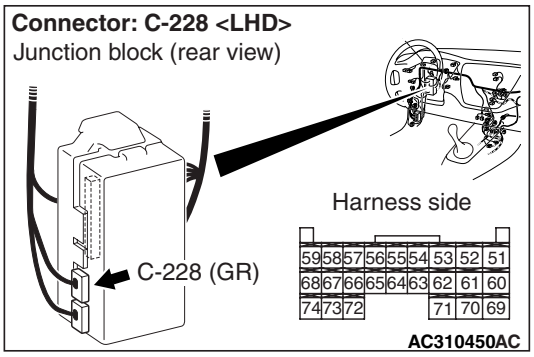
OK: 2 Ω or less

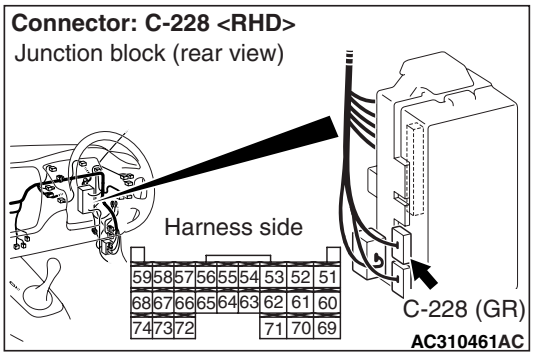
Q: Is the check result normal?

YES : Go to Step 6.

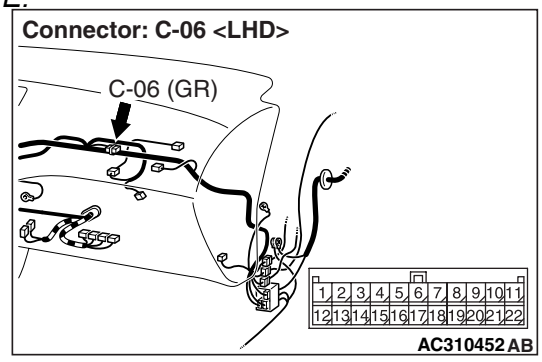
NO : Go to Step 5.

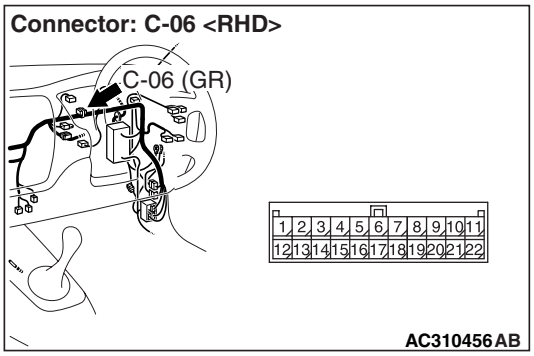
Step 5. Check the wiring harness between C-228 ETACS-ECU connector terminal No.56 and body earth.





NOTE:





Prior to the wiring harness inspection, check joint connector C-06, and repair if necessary.

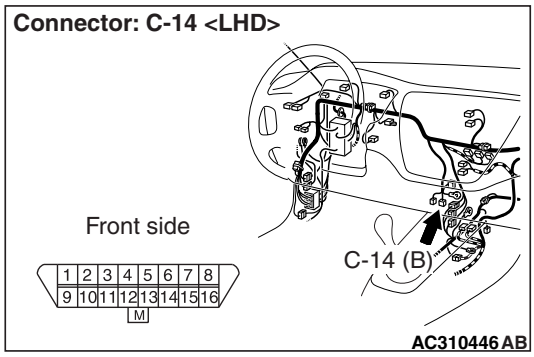
- Check the earth wires for open circuit.

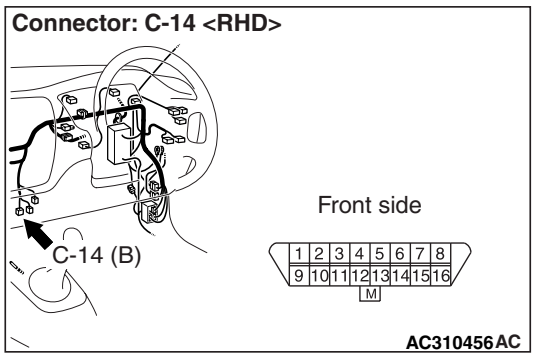
Q: Is the check result normal?

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

NO : Repair the wiring harness.

Step 6. Connector check: C-14 diagnosis connector



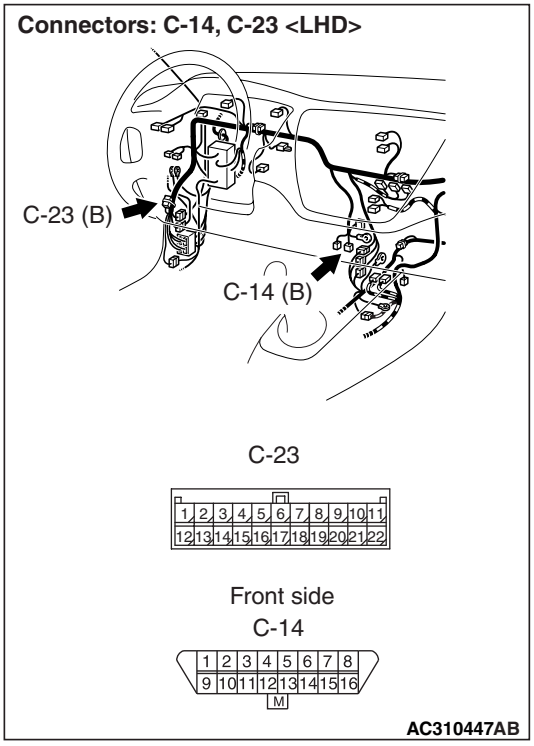


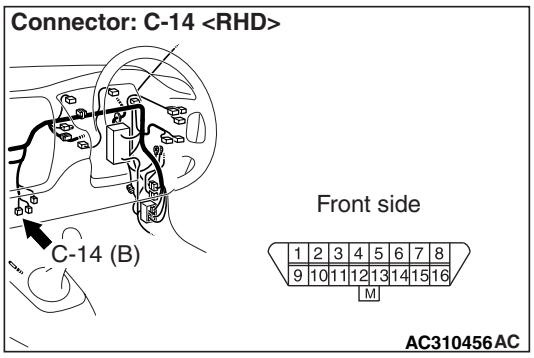
Q: Is the check result normal?

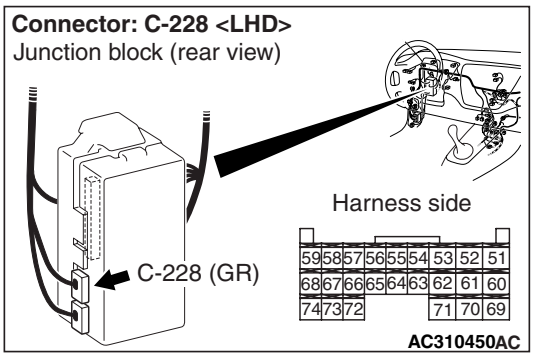
YES : Go to Step 7.

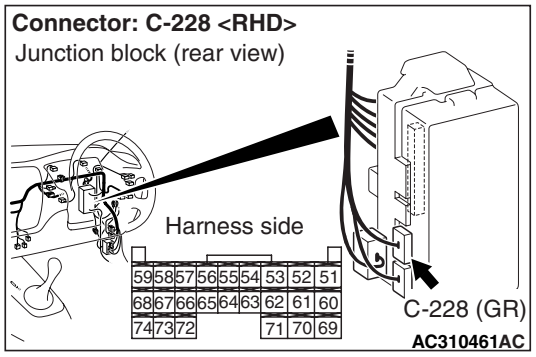
NO : Repair the defective connector.

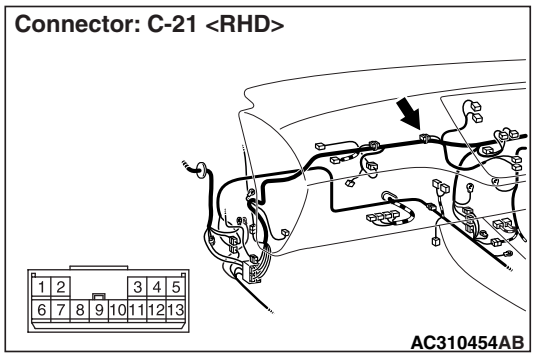
Step 7. Check the wiring harness from C-228 ETACS-ECU connector terminal Nos.51 and 67 to C-14 diagnosis connector terminal Nos.9 and 1.











NOTE: Prior to the wiring harness inspection, check joint connector C-23 <LH driver vehicles> or C-21 <RH drive vehicles>, and repair if necessary.

- Check the communication lines for open circuit.

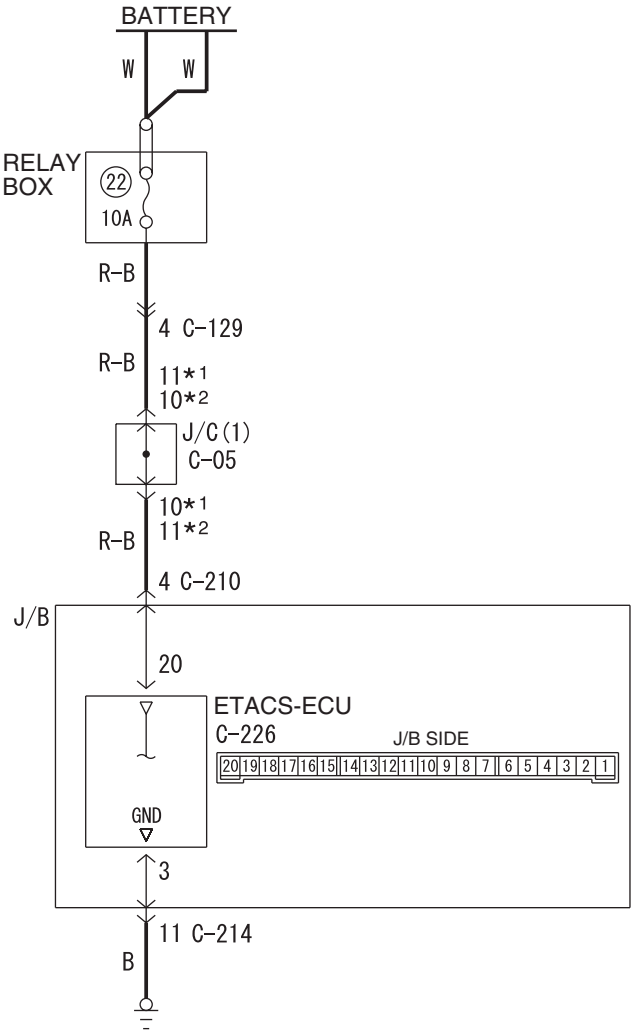
Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the wiring harness.

Step 8. Retest the system.
Check whether the communication with the M.U.T.-II/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.



NOTE
*1: LHD
*2: 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

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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
- Headlamp automatic shutdown function

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

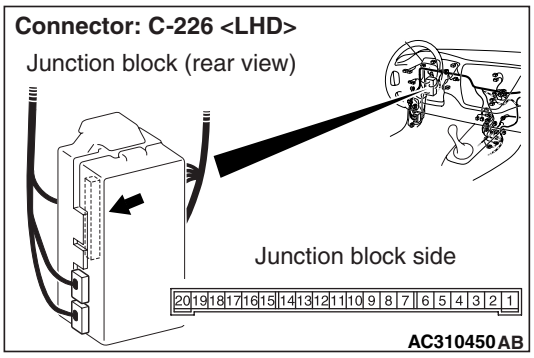
- Reading diagnosis code and checking input signal by M.U.T.-II/III.
- Central door locking
- Headlamp and tail lamp
- Hazard warning lamp
- Room lamps

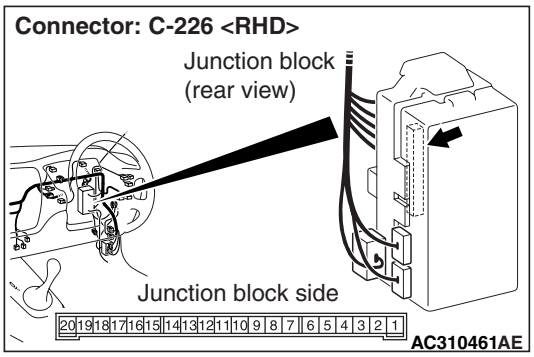
POSSIBLE CAUSES

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

DIAGNOSTIC PROCEDURE

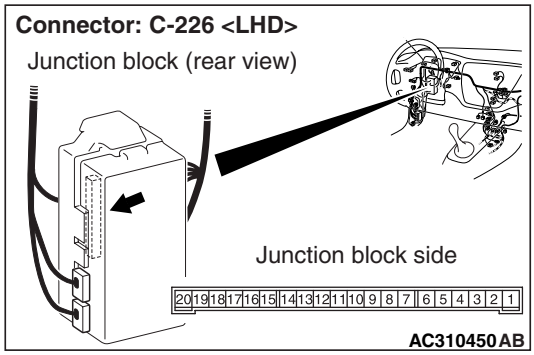
Step 1. Connector check: C-226 ETACS-ECU connector

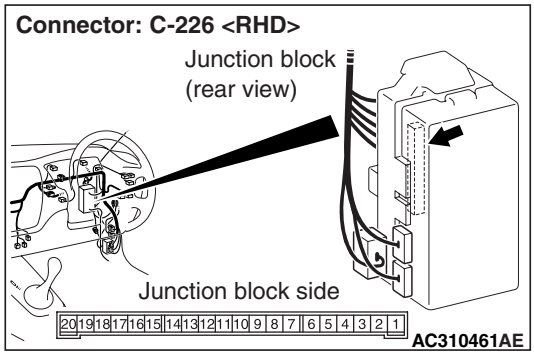




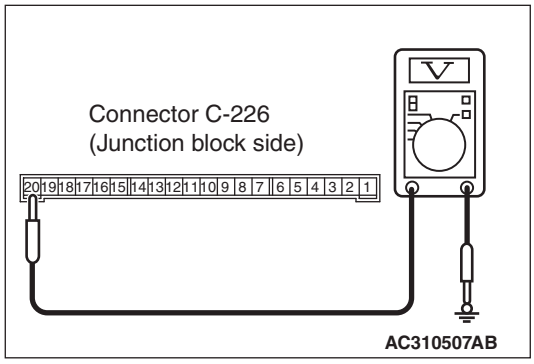
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Voltage measurement at the C-226 ETACS-ECU connector





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

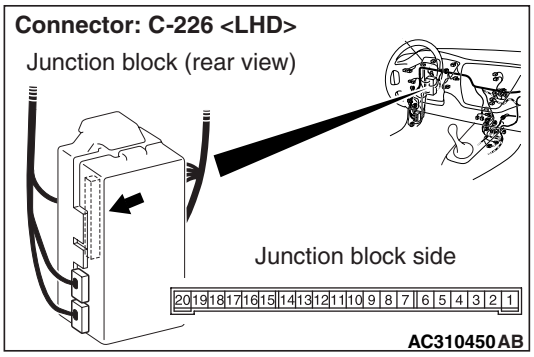


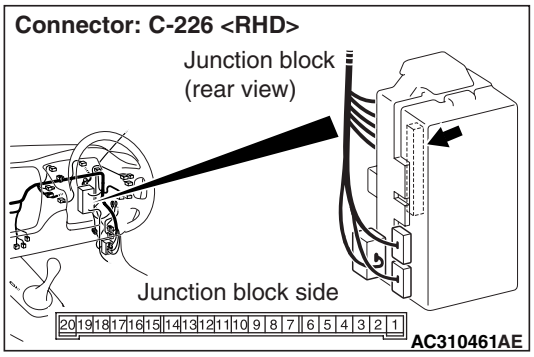
(2) Voltage between C-226 ETACS-ECU connector terminal No.20 and body earth.

OK: System voltage

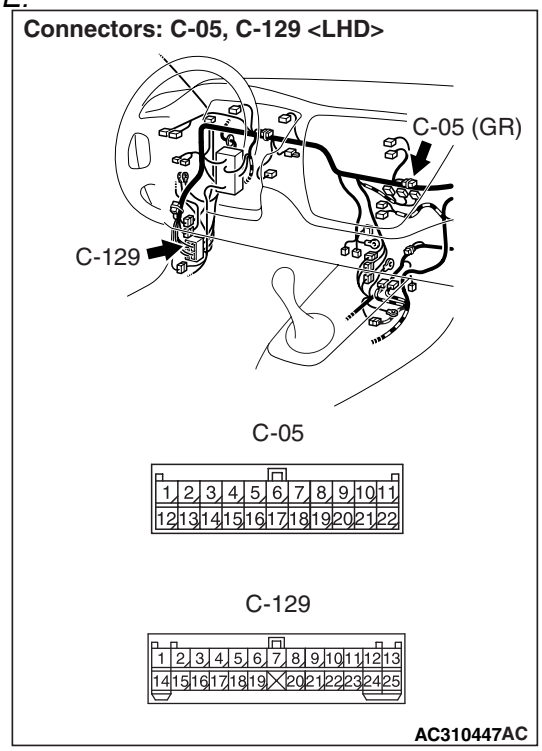
Q: Is the check result normal?
YES : Go to Step 4.
NO : Go to Step 3.

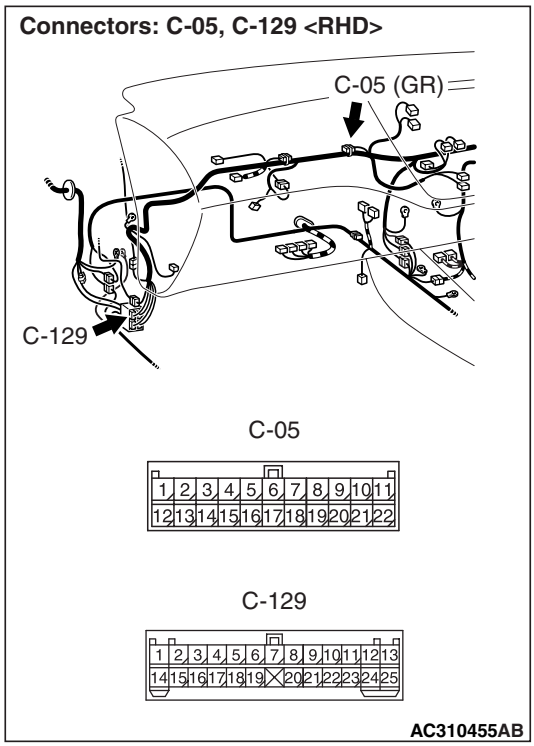
Step 3. Check the wiring harness between C-226 ETACS-ECU connector terminal No.20 and battery.

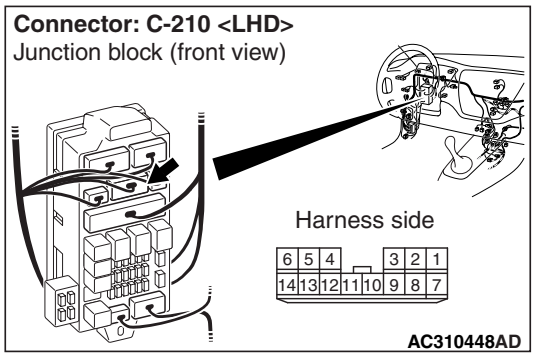


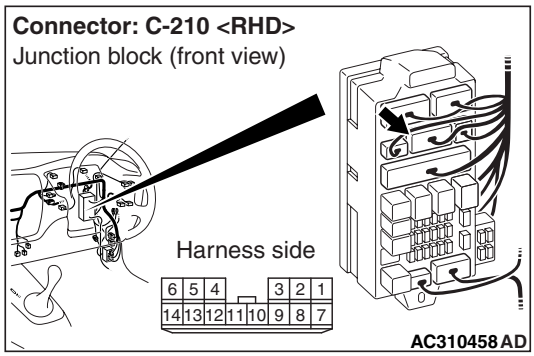


NOTE:









Prior to the wiring harness inspection, check joint connector C-05, intermediate connector C-129 and junction block connector C-210, and repair if necessary.

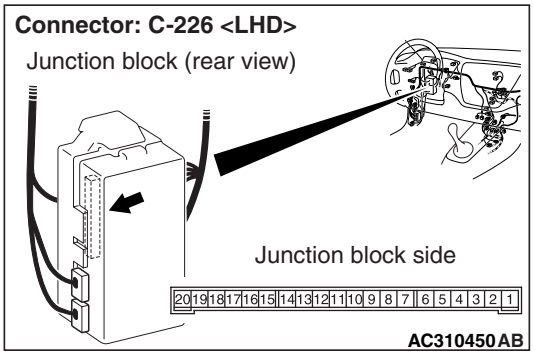
- Check the power supply line for open circuit.

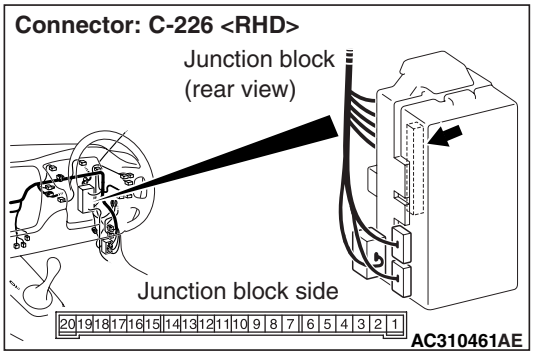
Q: Is the check result normal?

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

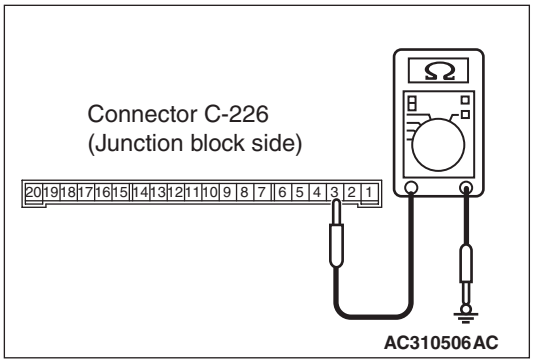
NO : Repair the wiring harness.

Step 4. Resistance measurement at the C-226 ETACS-ECU connector





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

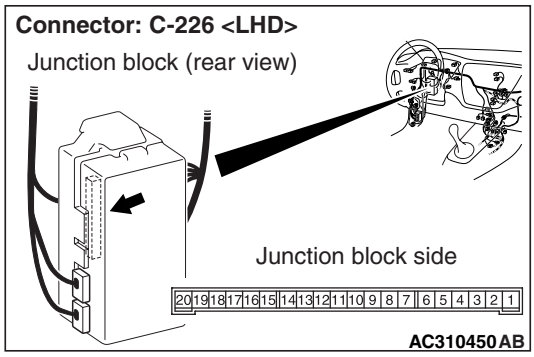


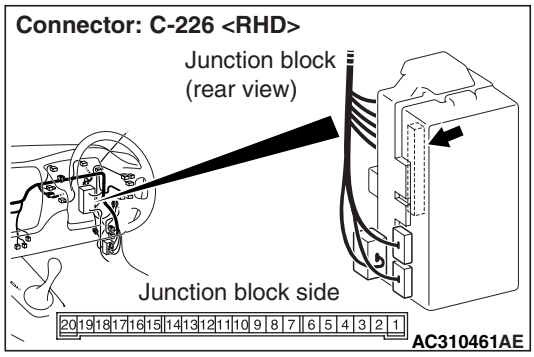
(2) Continuity between C-226 ETACS-ECU connector terminal No.3 and body earth.

OK: 2Ω or less

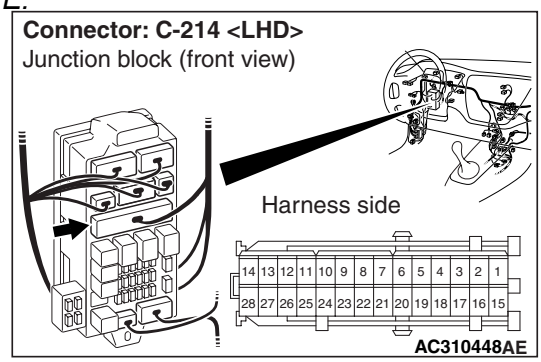
Q: Is the check result normal?
YES : Go to Step 6.
NO : Go to Step 5.

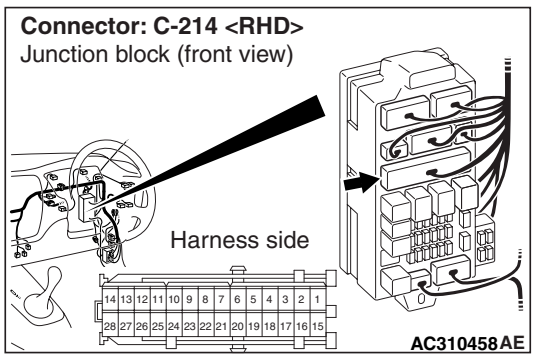
Step 5. Check the wiring harness between C-226 ETACS-ECU connector terminal No.3 and body earth.





NOTE:





Prior to the wiring harness inspection, check junction block connector C-214, 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. Retest the system.
Check that the battery power supply circuit to the ETACS-ECU is normal.

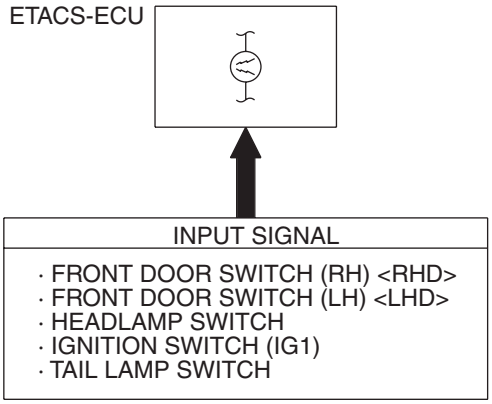
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

BUZZER

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 Tone Alarm Function



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COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.
- Ignition switch (IG1)
- 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 battery power supply circuit to the ETACS-ECU P.54B-42."

Step 2. Pulse check

Check the input signals below, which are related to the lamp reminder buzzer 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
Headlamp switch	When the lighting switch is turned to the HEADLAMP position

OK: The M.U.T.-II/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 L-2 "The ignition switch (IG1) signal is not received P.54B-242."

The driver's door switch signal is not received. : Refer to inspection procedure L-3 "The door switch (front: LH) signal is not received <LH drive vehicles>P.54B-244 ." Refer to inspection procedure L-3 "The door switch (front: RH) signal is not received <RH drive vehicles>P.54B-246 ."

The tail lamp switch signal is not received. : Refer to inspection procedure L-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-248."

The headlamp switch signal is not received. : Refer to inspection procedure L-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-248."

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).

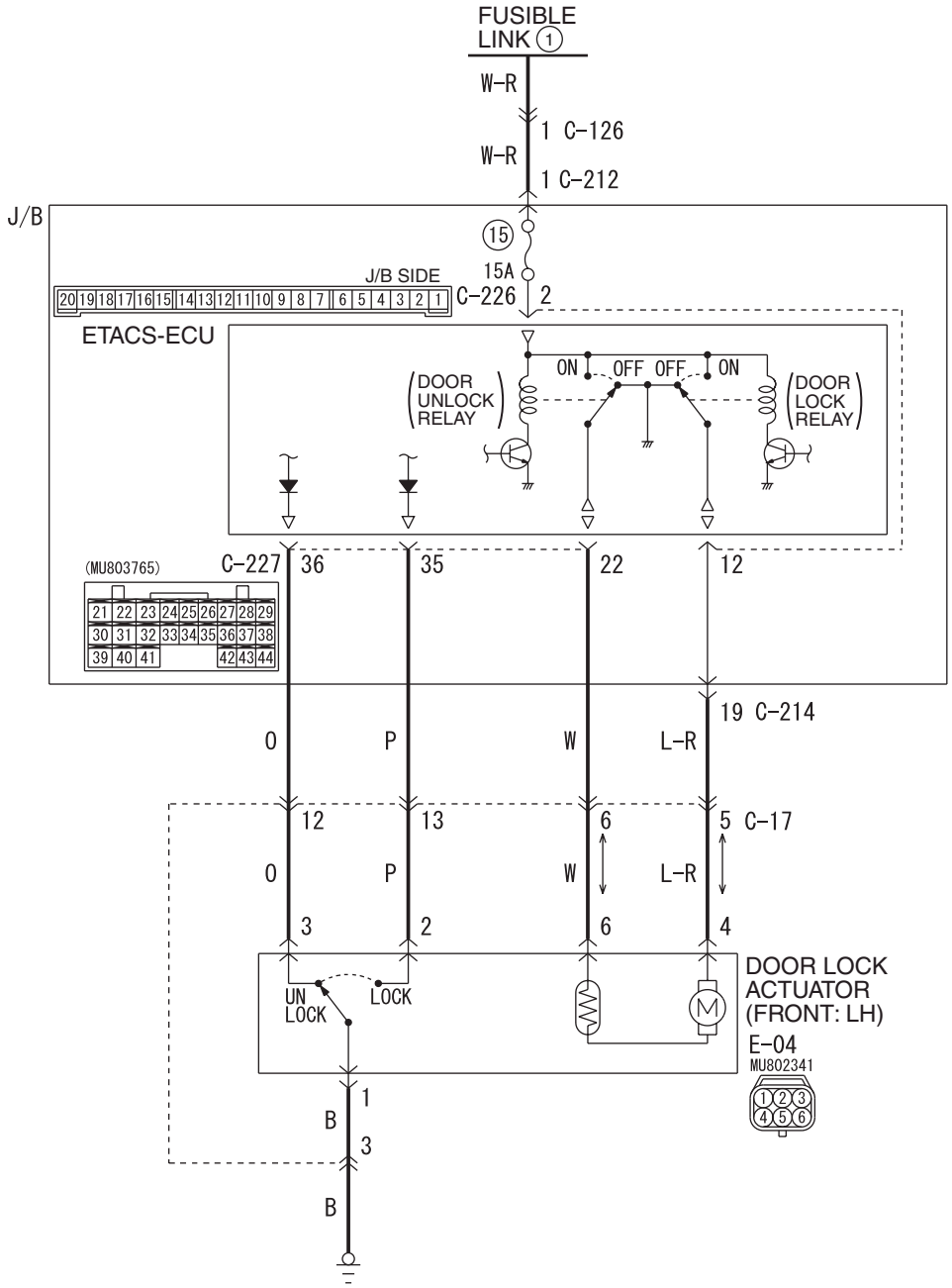
NO : Replace the ETACS-ECU.

CENTRAL DOOR LOCKING SYSTEM

INSPECTION PROCEDURE C-1: Central door locking system does not work. <LH drive vehicles>

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

Central Door Lock 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

W4J54E91AA

COMMENT ON TROUBLE SYMPTOM

If the central door locking system does not work at all, the front door lock actuator (LH) or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the front door lock actuator (LH)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS 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-42."

Step 2. Pulse check

Check the input signal from the driver's door lock actuator switch.

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

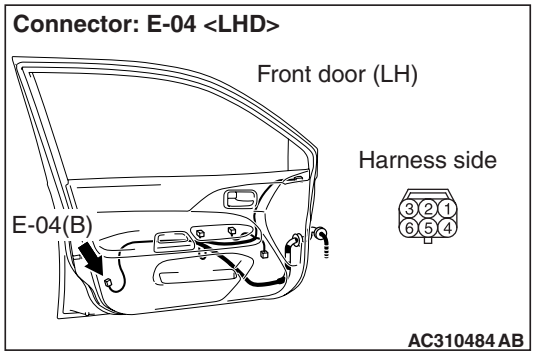
OK: The M.U.T.-II/III sound or the voltmeter needle fluctuate.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to inspection procedure L-11 "The front door lock actuator (LH) switch signal is not received <LH drive vehicles>P.54B-272."

Step 3. Connector check: E-04 front door lock actuator (LH) connector



Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the defective connector.

Step 4. Check the front door lock actuator (LH)

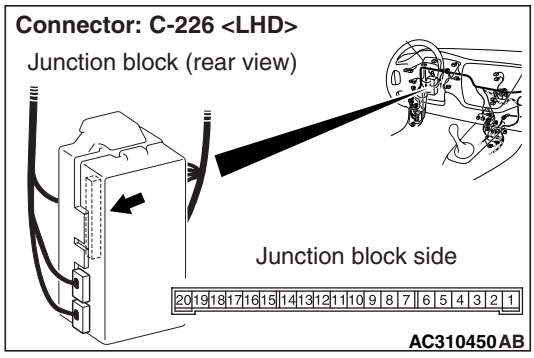
Check that the front door lock actuator (LH) works normally. Refer to GROUP 42 – Door P.42-31.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace the front door lock actuator (LH).

Step 5. Connector check: C-226 ETACS-ECU connector

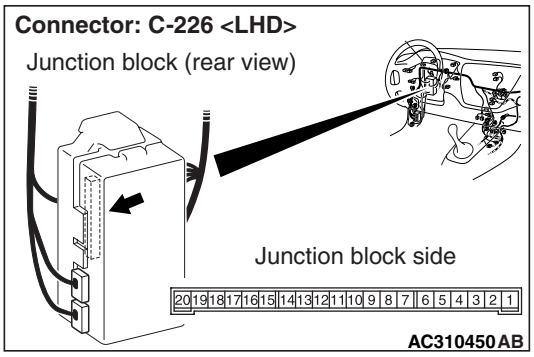


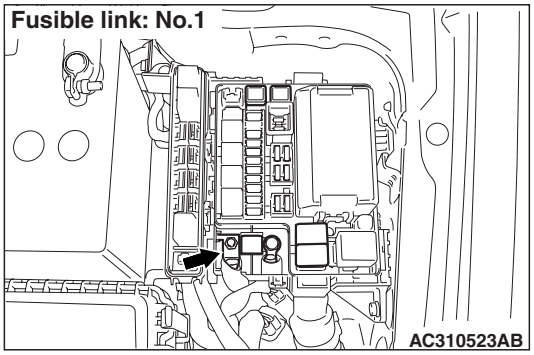
Q: Is the check result normal?

YES : Go to Step 6.

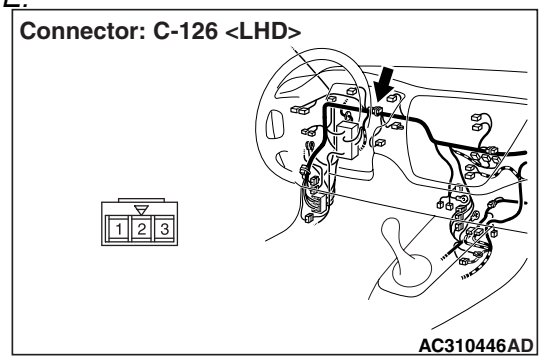
NO : Repair the defective connector.

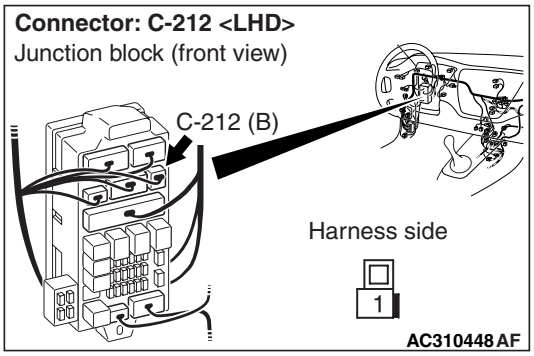
Step 6. Check the wiring harness between C-226 ETACS-ECU connector terminal No.2 and fusible link (1).





NOTE:





Prior to the wiring harness inspection, check intermediate connector C-126 and junction block connector C-212, 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.

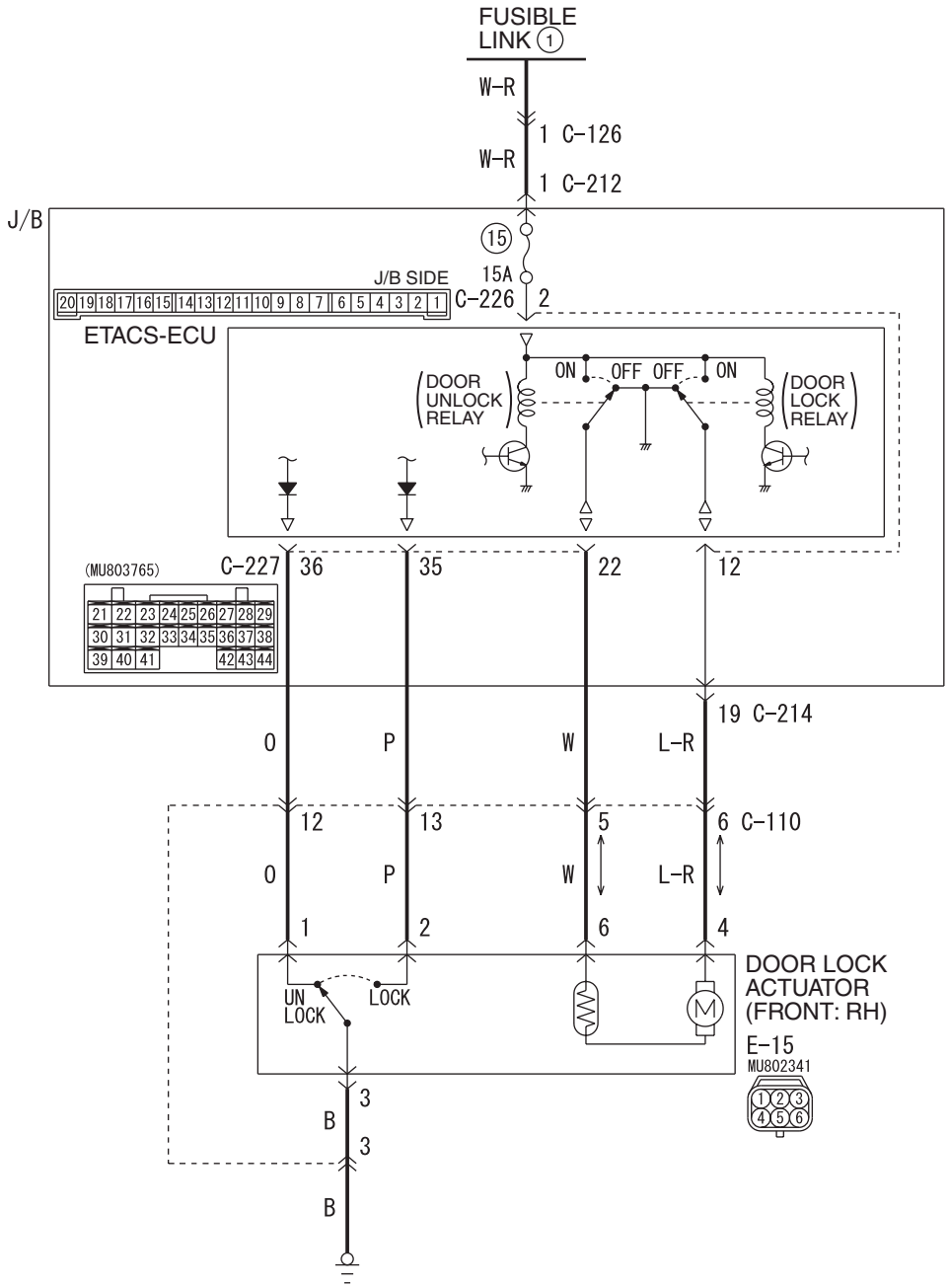
Check that the central door locking system works normally.

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-1: Central door locking system does not work. <RH drive vehicles>

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

Central Door Lock Power Supply 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

W4J54E92AA

COMMENT ON TROUBLE SYMPTOM

If the central door locking system does not work at all, the front door lock actuator (RH) or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the front door lock actuator (RH)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS 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-42.

Step 2. Pulse check

Check the input signal from the driver's door lock actuator switch.

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

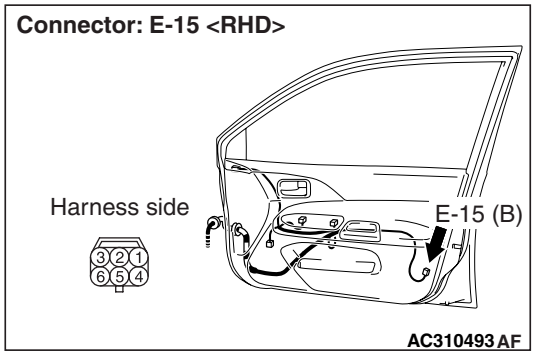
OK: The M.U.T.-II/III sound or the voltmeter needle fluctuate.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to inspection procedure L-11 "The front door lock actuator (RH) switch signal is not received <RH drive vehicles>P.54B-275 ."

Step 3. Connector check: E-15 front door lock actuator (RH) connector



Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the defective connector.

Step 4. Check the front door lock actuator (RH)

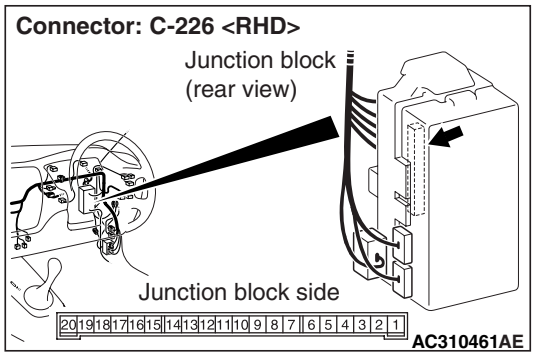
Check that the front door lock actuator (RH) works normally. Refer to GROUP 42 – Door P.42-31.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace the front door lock actuator (RH).

Step 5. Connector check: C-226 ETACS-ECU connector

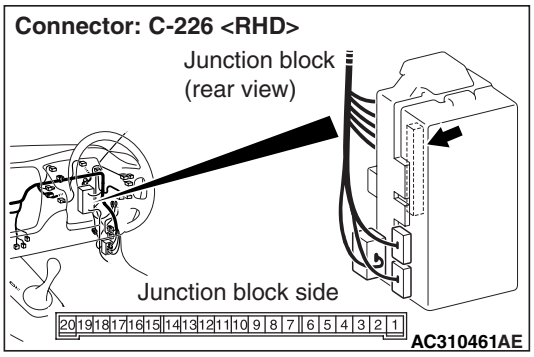


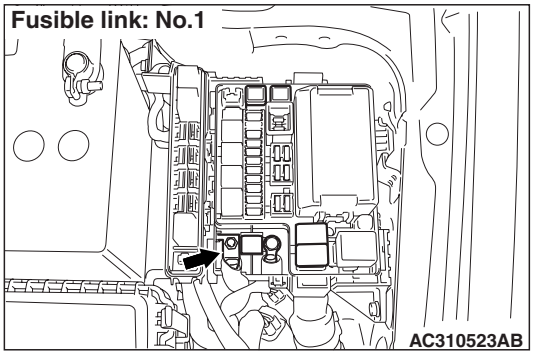
Q: Is the check result normal?

YES : Go to Step 6.

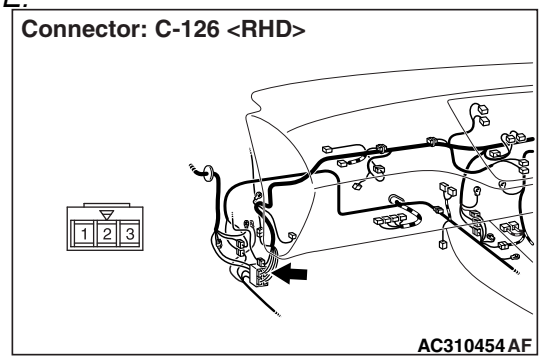
NO : Repair the defective connector.

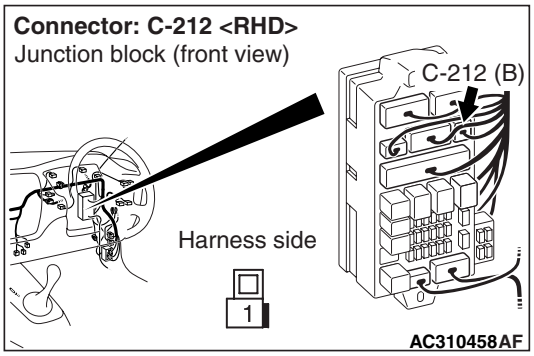
Step 6. Check the wiring harness between C-226 ETACS-ECU connector terminal No.2 and fusible link (1).





NOTE:





Prior to the wiring harness inspection, check intermediate connector C-126 and junction block connector C-212, and repair if necessary.

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

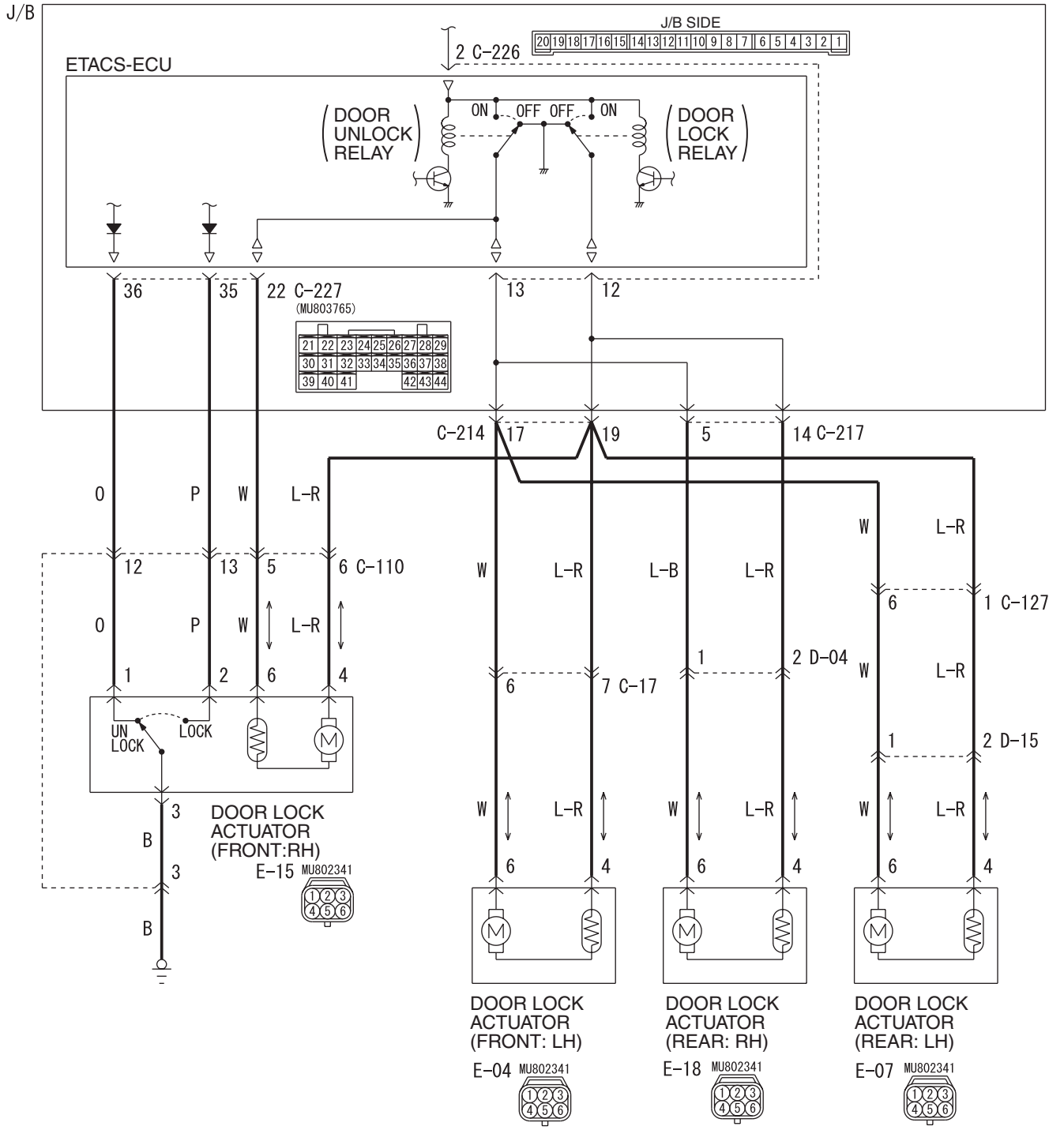
Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

Step 7. Retest the system.
Check that the 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: A Door or a tailgate 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 : Grey R : Red P : Pink V : Violet PU : Purple

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COMMENT ON TROUBLE SYMPTOM

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

POSSIBLE CAUSES

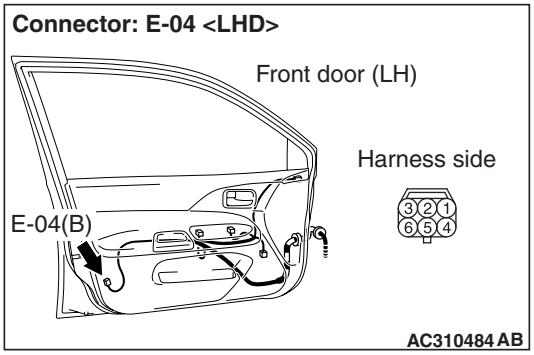
- Malfunction of the door lock actuator
- Damaged harness wires and connectors

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: E-04 front door lock actuator (LH) connector



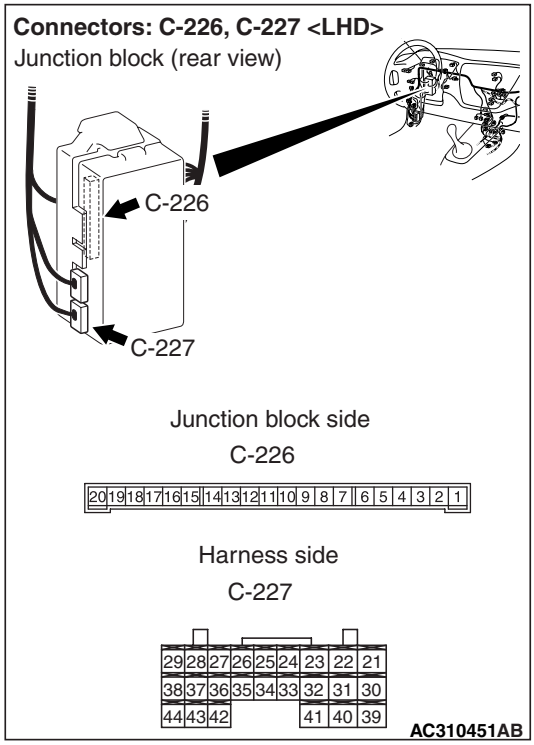
Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Check the front door lock actuator (LH)

Check that the front door lock actuator (LH) works normally. Refer to GROUP 42 – Door P.42-31.

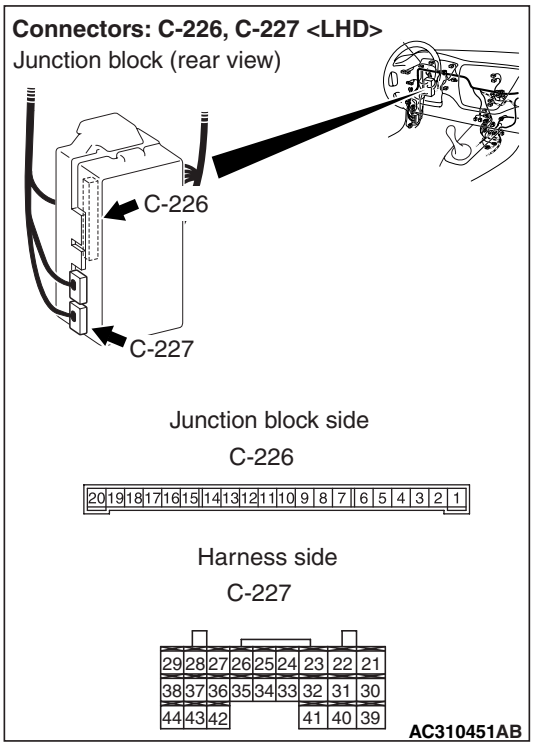
Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the front door lock actuator (LH).

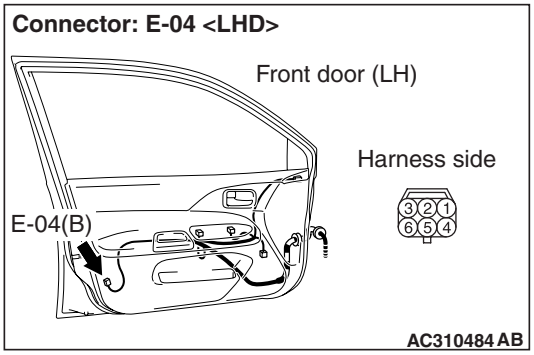
Step 4. Connector check: C-226, C-227 ETACS-ECU connector



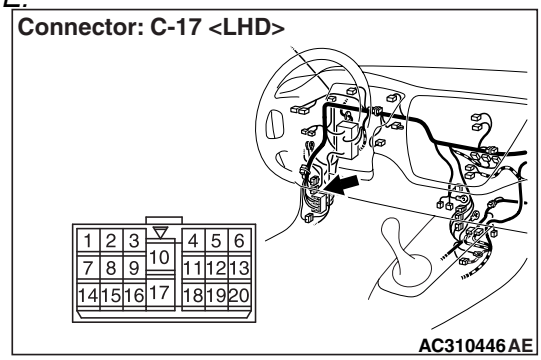
Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the defective connector.

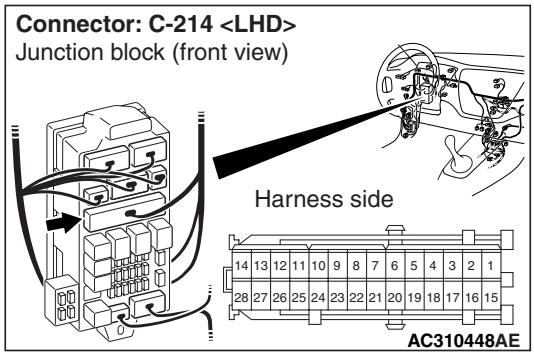
Step 5. Check the wiring harness from C-226 ETACS-ECU connector terminal No.12 and C-227 ETACS-ECU connector terminal No.22 to E-04 front door lock actuator (LH) connector terminal Nos.4 and 6.





NOTE:





Prior to the wiring harness inspection, check intermediate connector C-17 and junction block connector C-214, and repair if necessary.

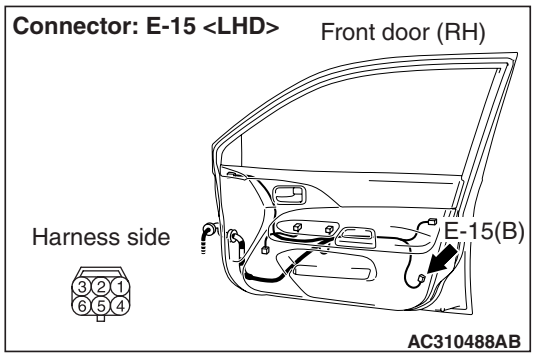
- Check the input and output lines for open circuit.

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: E-15 front door lock actuator (RH) connector



Q: Is the check result normal?

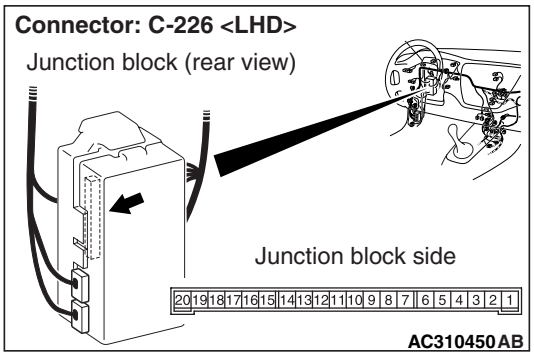
YES : Go to Step 7.

NO : Repair the defective connector.

Step 7. Check the front door lock actuator (RH).
Check that the front door lock actuator (RH) works normally. Refer to GROUP 42 – Door P.42-31.

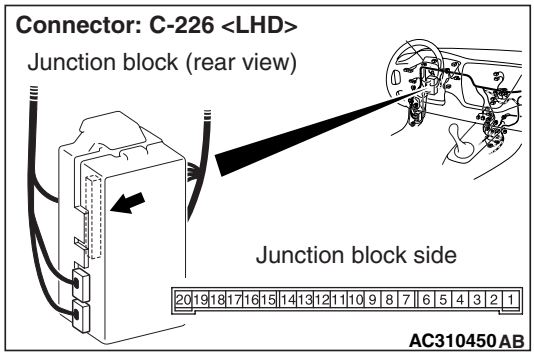
Q: Is the check result normal?
YES : Go to Step 8.
NO : Replace the front door lock actuator (RH).

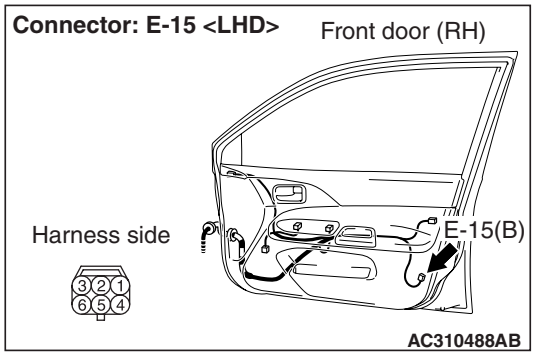
Step 8. Connector check: C-226 ETACS-ECU connector



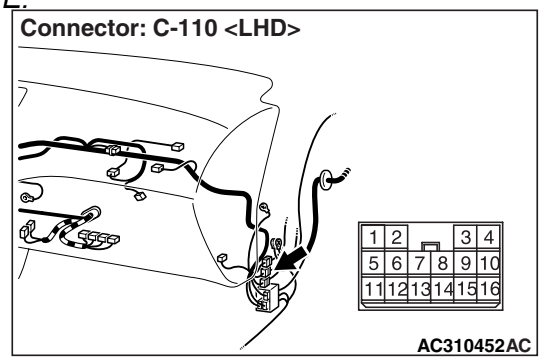
Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the defective connector.

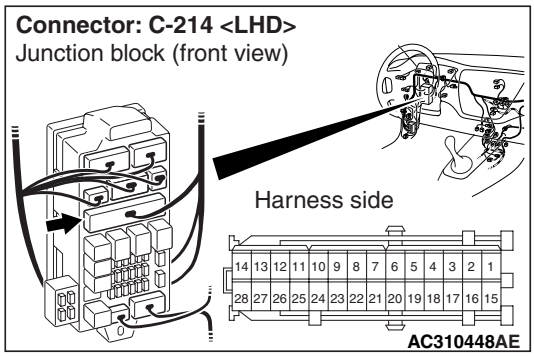
Step 9. Check the wiring harness from C-226 ETACS-ECU connector terminal Nos.12 and 13 to E-15 front door lock actuator (RH) connector terminal Nos.4 and 6.





NOTE:



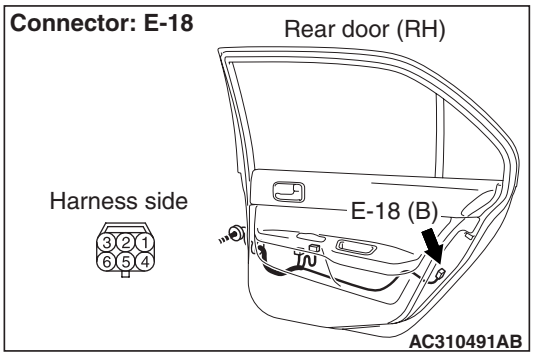


Prior to the wiring harness inspection, check intermediate connector C-110 and junction block connector C-214, and repair if necessary.

- 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: E-18 rear door lock actuator (RH) connector



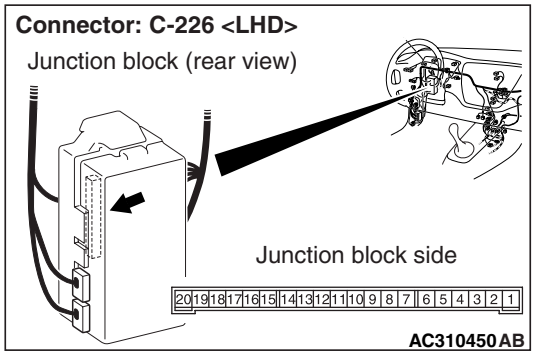
Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the defective connector.

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

Check that the rear door lock actuator (RH) is in good condition. Refer to GROUP 42 – Door P.42-31.

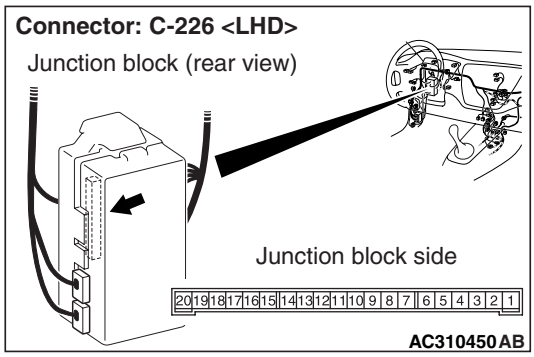
Q: Is the check result normal?
YES : Go to Step 12.
NO : Replace the rear door lock actuator (RH).

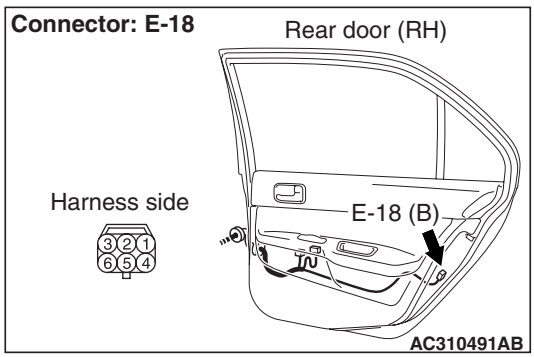
Step 12. Connector check: C-226 ETACS-ECU connector



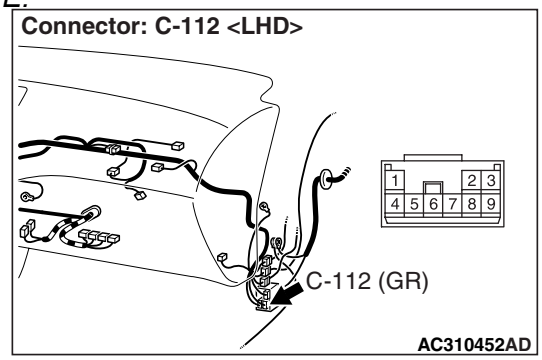
Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the defective connector.

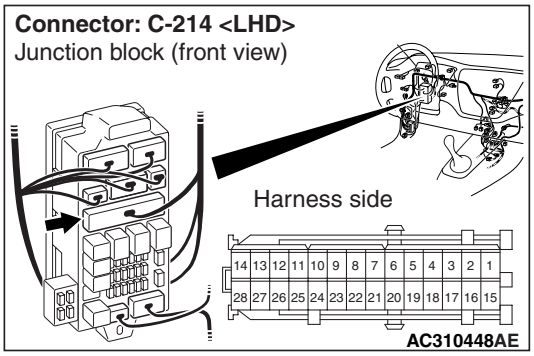
Step 13. Check the wiring harness from C-226 ETACS-ECU connector terminal Nos.12 and 13 to E-18 rear door lock actuator (RH) connector terminal Nos.4 and 6.

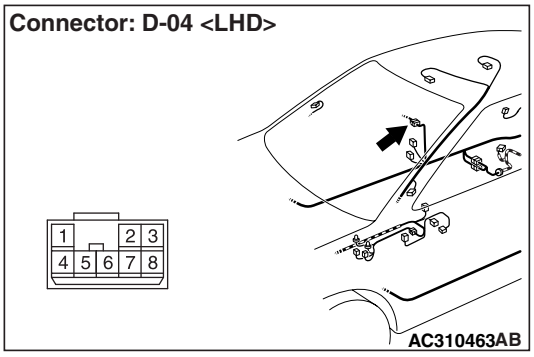




NOTE:







Prior to the wiring harness inspection, check C-112, D-04 intermediate connectors and C-214 junction block connector, and repair if necessary.

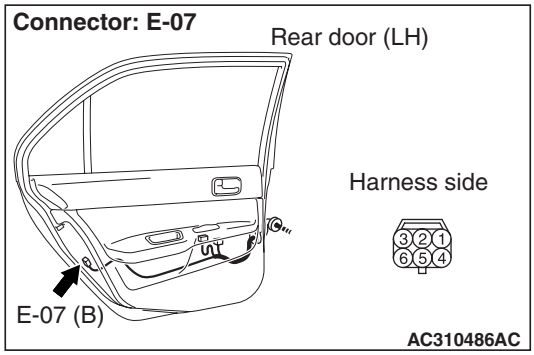
- Check the input and output lines for open circuit.

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: E-07 rear door lock actuator (LH) connector



Q: Is the check result normal?

YES : Go to Step 15.

NO : Repair the defective connector.

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

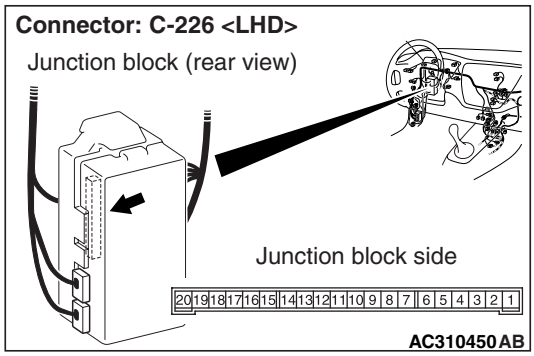
Check that the rear door lock actuator (LH) is in good condition. Refer to GROUP 42 – Door P.42-31.

Q: Is the check result normal?

YES : Go to Step 16.

NO : Replace the rear door lock actuator (LH).

Step 16. Connector check: C-226 ETACS-ECU connector

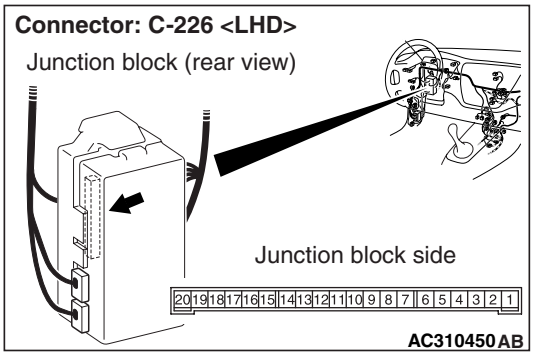


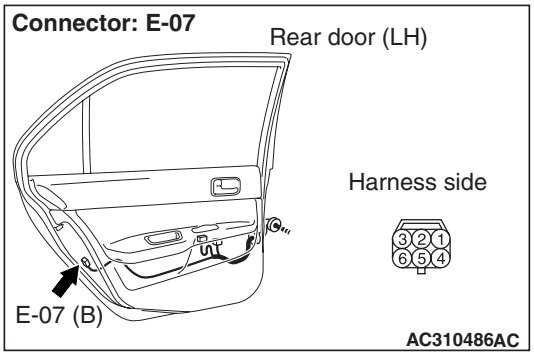
Q: Is the check result normal?

YES : Go to Step 17.

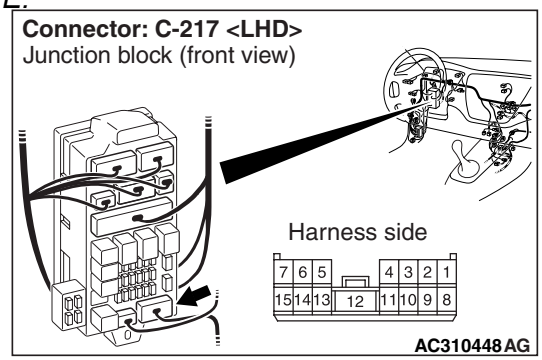
NO : Repair the defective connector.

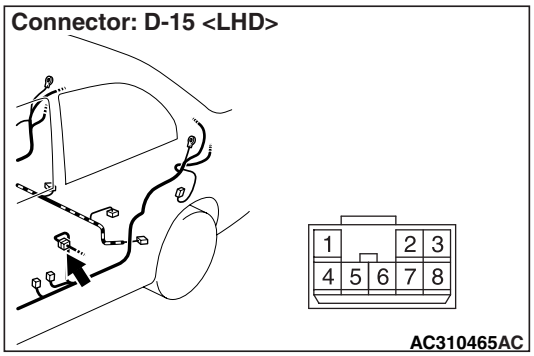
Step 17. Check the wiring harness from C-226 ETACS-ECU connector terminal Nos.12 and 13 to E-07 rear door lock actuator (LH) connector terminal Nos.4 and 6.





NOTE:





Prior to the wiring harness inspection, check D-15 intermediate connectors and C-217 junction block connector, and repair if necessary.

- Check the input and output lines for open circuit.

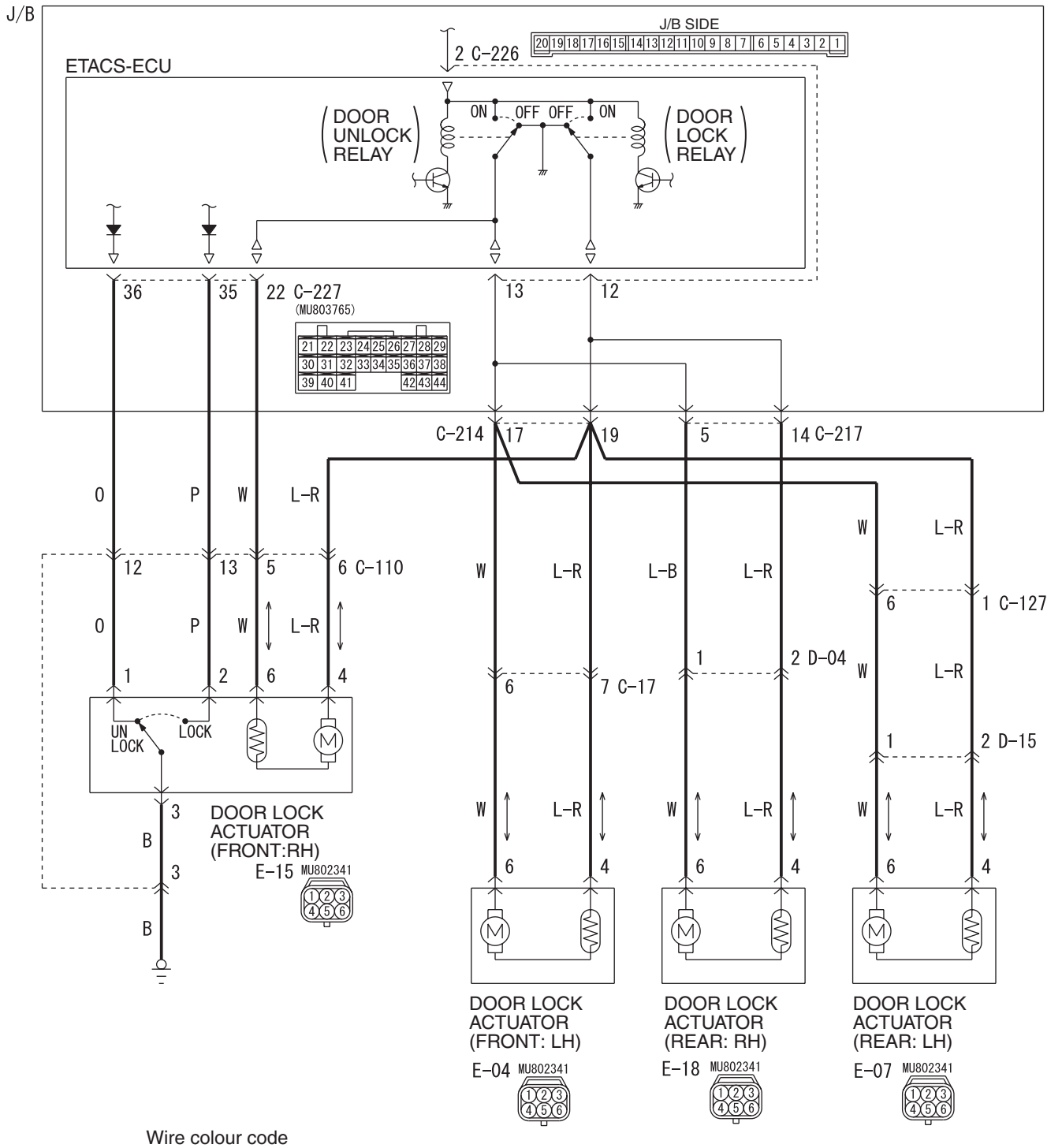
Q: Is the check result normal?

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-2: A door or a tailgate 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 : Grey R : Red P : Pink V : Violet PU : Purple

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COMMENT ON TROUBLE SYMPTOM

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

POSSIBLE CAUSES

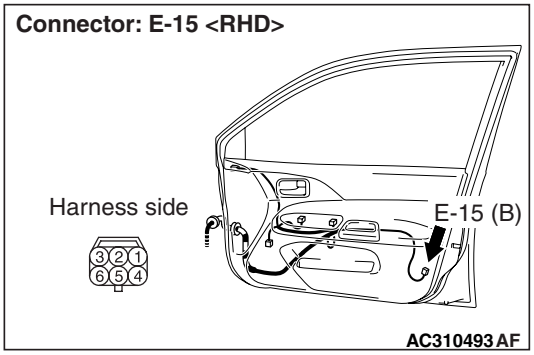
- Malfunction of the door lock actuator
- Damaged harness wires and connectors

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: E-15 front door lock actuator (RH) connector



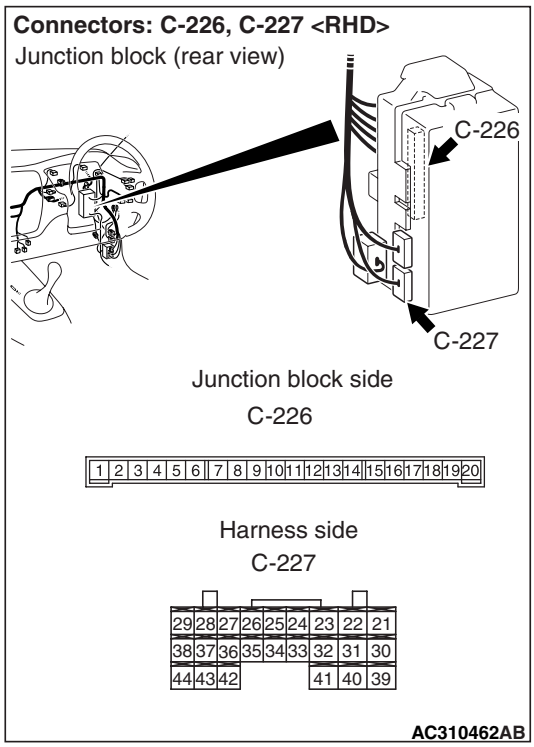
Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

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

Check that the front door lock actuator (RH) works normally. Refer to GROUP 42 – Door P.42-31.

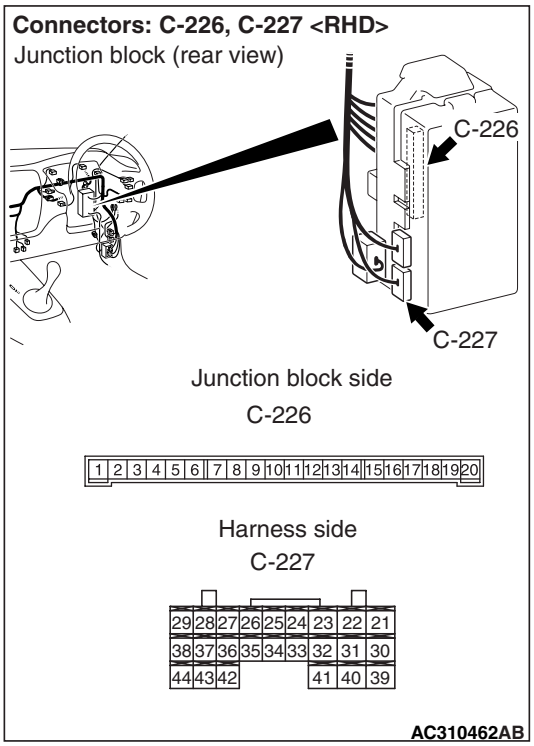
Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the front door lock actuator (RH).

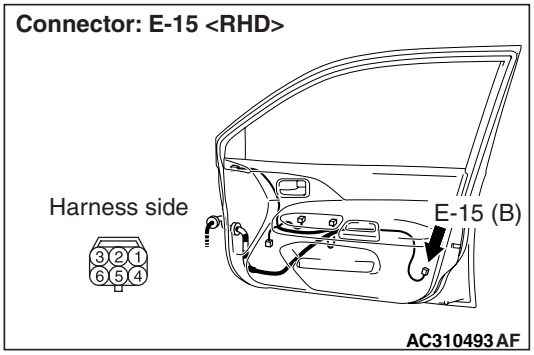
Step 4. Connector check: C-226, C-227 ETACS-ECU connector



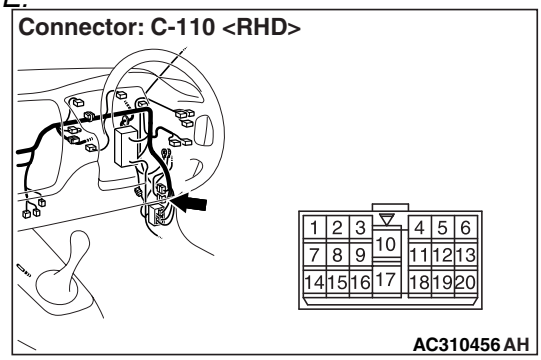
Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the defective connector.

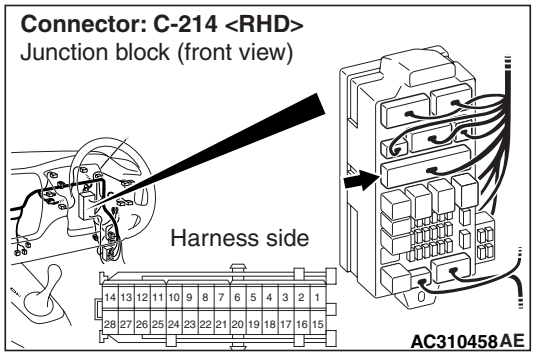
Step 5. Check the wiring harness from C-226 ETACS-ECU connector terminal No.12 and C-227 ETACS-ECU connector terminal No.22 to E-15 front door lock actuator (RH) connector terminal Nos.4 and 6.





NOTE:





Prior to the wiring harness inspection, check intermediate connector C-110 and junction block connector C-214, and repair if necessary.

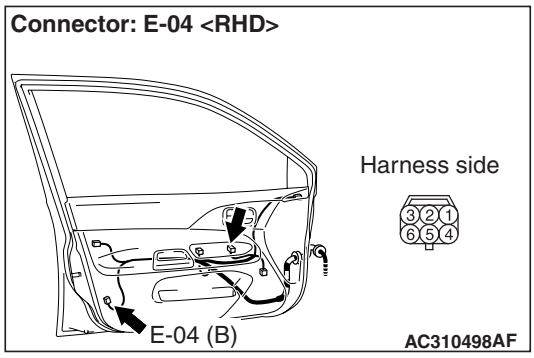
- Check the input and output lines for open circuit.

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: E-04 front door lock actuator (LH) connector



Q: Is the check result normal?

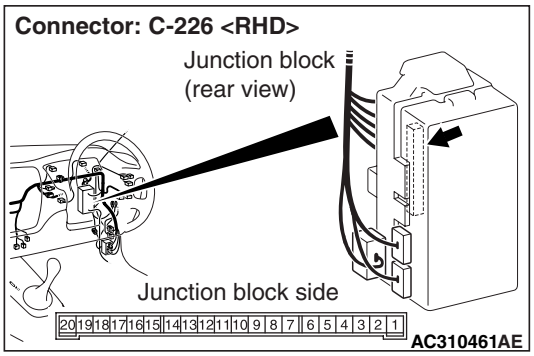
YES : Go to Step 7.

NO : Repair the defective connector.

Step 7. Check the front door lock actuator (LH).
Check that the front door lock actuator (RH) works normally. Refer to GROUP 42 – Door P.42-31.

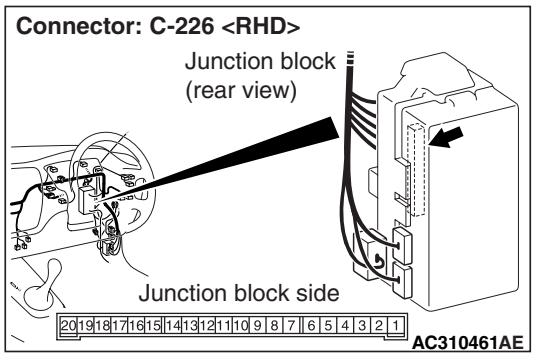
Q: Is the check result normal?
YES : Go to Step 8.
NO : Replace the front door lock actuator (LH).

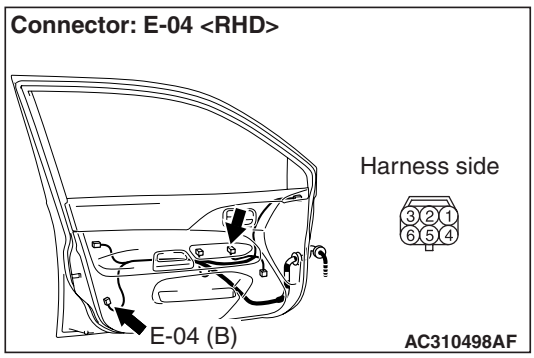
Step 8. Connector check: C-226 ETACS-ECU connector



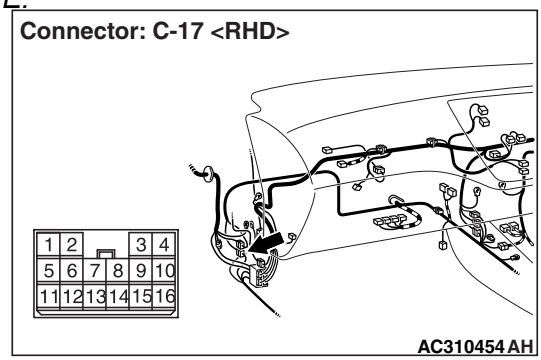
Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the defective connector.

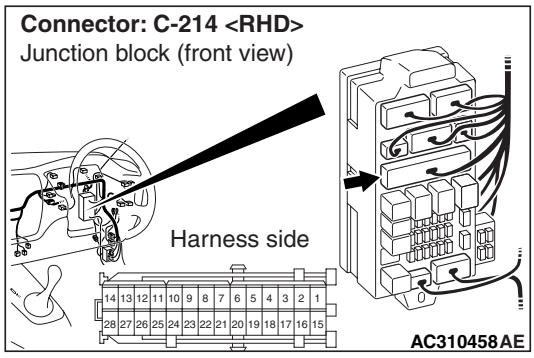
Step 9. Check the wiring harness from C-226 ETACS-ECU connector terminal Nos.12 and 13 to E-04 front door lock actuator (LH) connector terminal Nos.4 and 6.





NOTE:



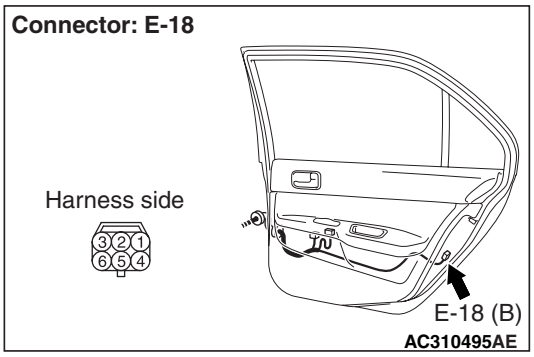


Prior to the wiring harness inspection, check intermediate connector C-17 and junction block connector C-214, and repair if necessary.

- 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: E-18 rear door lock actuator (RH) connector



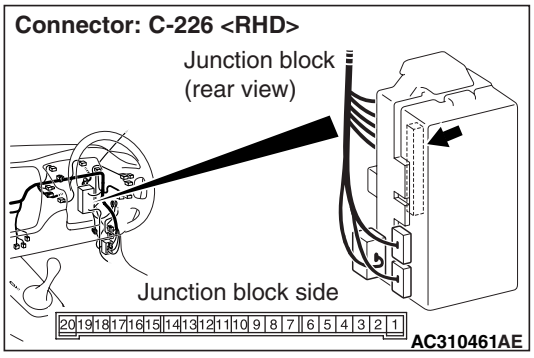
Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the defective connector.

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

Check that the rear door lock actuator (RH) is in good condition. Refer to GROUP 42 – Door P.42-31.

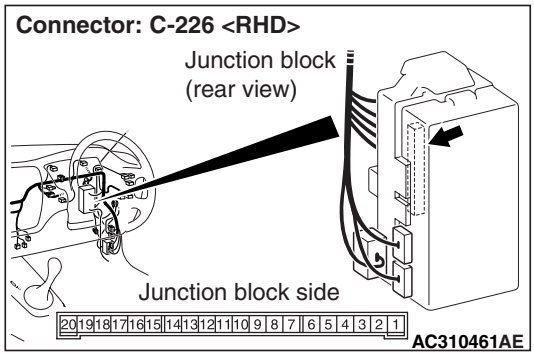
Q: Is the check result normal?
YES : Go to Step 12.
NO : Replace the rear door lock actuator (RH).

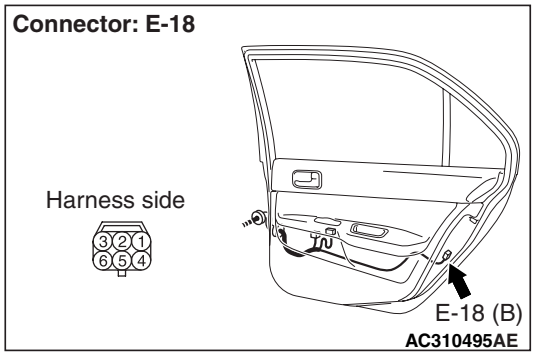
Step 12. Connector check: C-226 ETACS-ECU connector



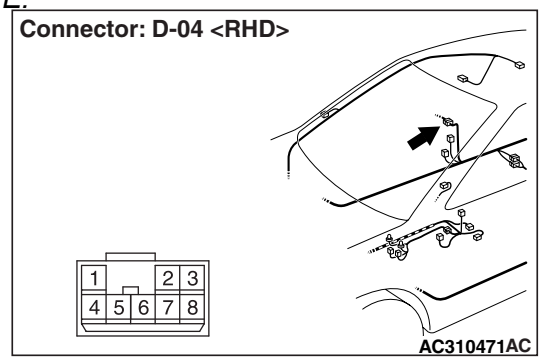
Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the defective connector.

Step 13. Check the wiring harness from C-226 ETACS-ECU connector terminal Nos.12 and 13 to E-18 rear door lock actuator (RH) connector terminal Nos.4 and 6.





NOTE:

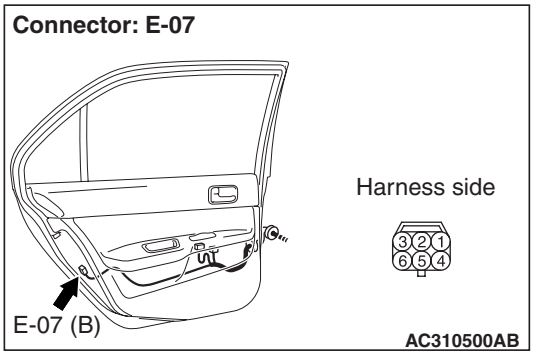


Prior to the wiring harness inspection, check intermediate connector D-04, and repair if necessary.

- 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: E-07 rear door lock actuator (LH) connector

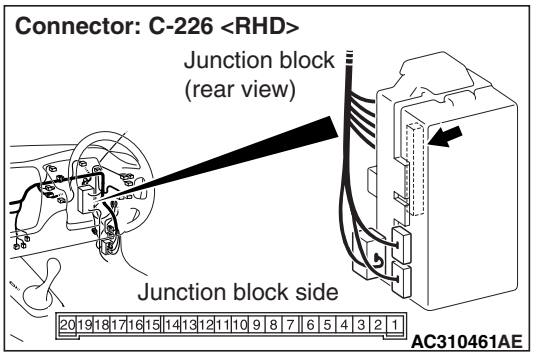


Q: Is the check result normal?
YES : Go to Step 15.
NO : Repair the defective connector.

Step 15. Check the rear door lock actuator (LH).
Check that the rear door lock actuator (LH) is in good condition. Refer to GROUP 42 – Door P.42-31.

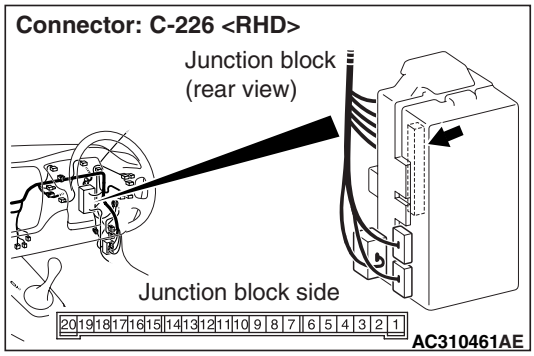
Q: Is the check result normal?
YES : Go to Step 16.
NO : Replace the rear door lock actuator (LH).

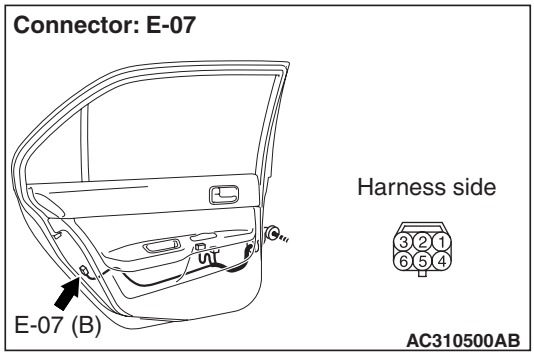
Step 16. Connector check: C-226 ETACS-ECU connector



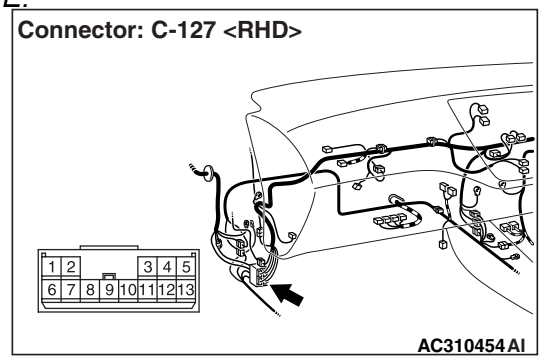
Q: Is the check result normal?
YES : Go to Step 17.
NO : Repair the defective connector.

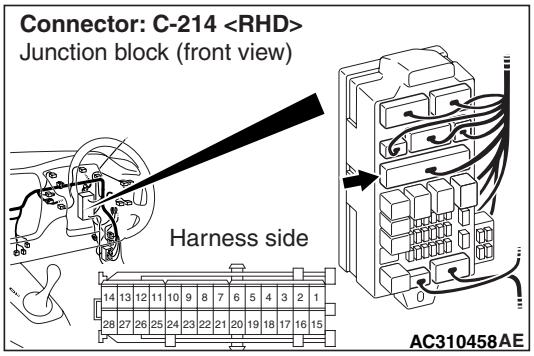
Step 17. Check the wiring harness from C-226 ETACS-ECU connector terminal Nos.12 and 13 to E-07 rear door lock actuator (LH) connector terminal Nos.4 and 6.

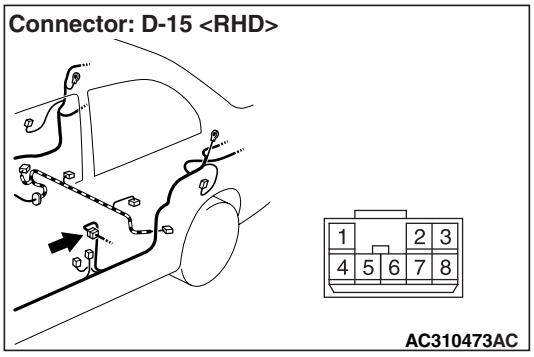




NOTE:







Prior to the wiring harness inspection, check intermediate connectors C-127, D-15 and junction block connector C-214, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?

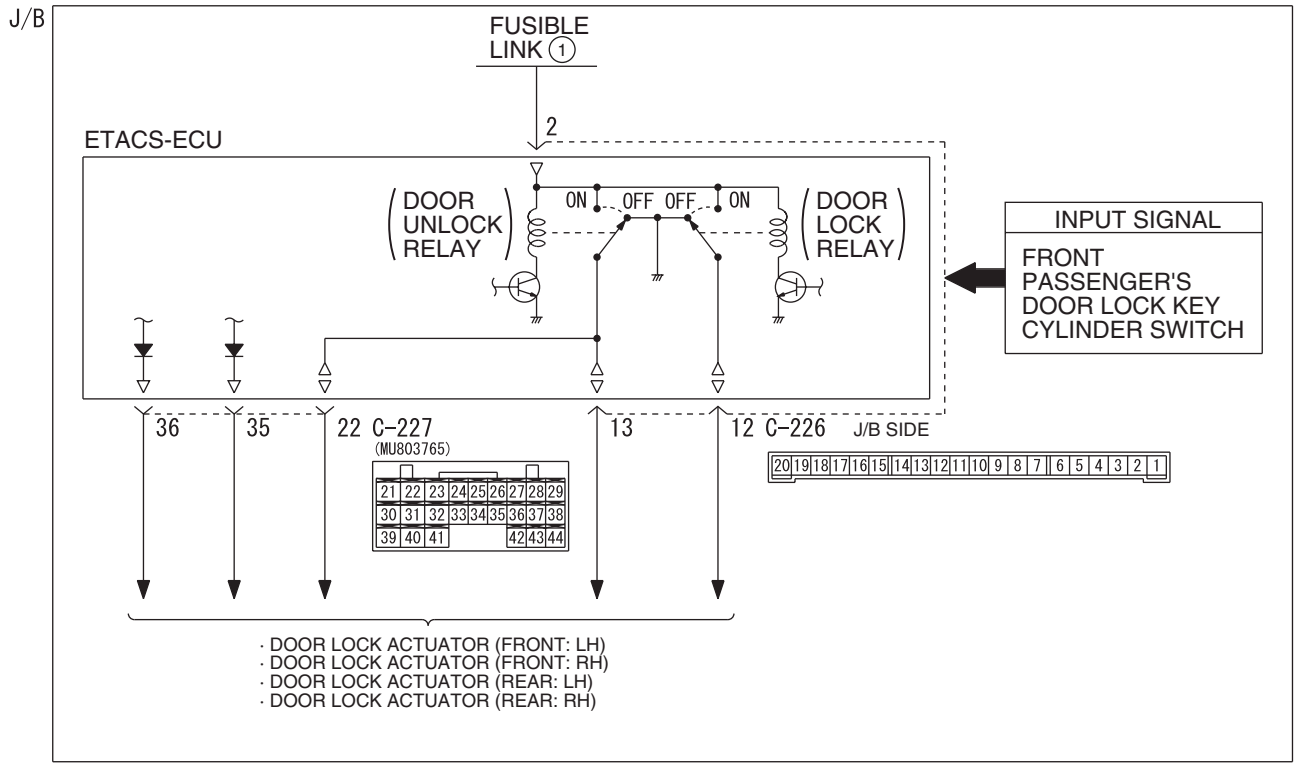
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Repair the wiring harness.

INSPECTION PROCEDURE C-3: The central door locking system can not be operated by means of the front passenger's door lock key cylinder.

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

Central Door Lock (Front Passenger's Door Lock Key Cylinder Switch) Circuit



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COMMENTS ON TROUBLE SYMPTOM

If the central door locking system does not work by means of the front passenger's door lock key cylinder, the front passenger's door lock key cylinder or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the front passenger's door lock key cylinder
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Check the operation of the central door locking system.

Check that the central door locking system works normally by means of the driver's door lock key cylinder and inside lock knob.

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-48. <LH drive vehicles>" Refer to inspection procedure C-1 "Central door locking system does not work P.54B-51. <RH drive vehicles>"

Step 2. Pulse check

Check the input signal from the front passenger's door lock key cylinder switch.

System switch	Check condition
Front passenger's door lock key cylinder switch	Turn the key to the lock or unlock position

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to inspection procedure L-16 "The door lock key cylinder switch signal is not received P.54B-292."

Step 3. Retest the system.

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

Q: Is the check result normal?

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

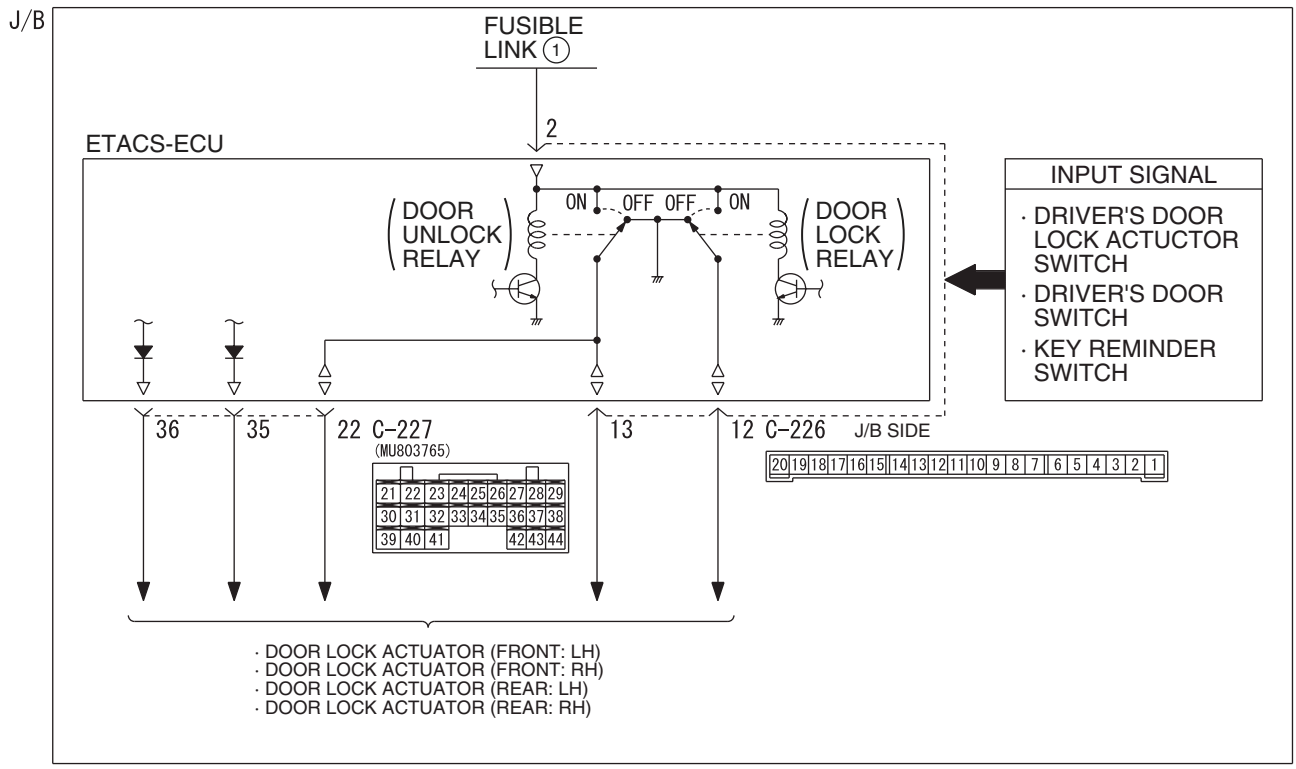
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE C-4: The ignition key reminder function does not work normally.

⚠ CAUTION

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

Ignition Key Reminder Function Circuit



W4J54E96AA

COMMENTS ON TROUBLE SYMPTOM

If the key reminder function does not work normally, the input signal circuits below or the ETACS-ECU may be defective.

- Key reminder switch
- Driver's door switch
- Driver's door lock actuator

POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the driver's door switch
- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS 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-42.

Step 2. Pulse check

Check the input signals below which are related to the key reminder function.

System switch	Check condition
Driver's door switch	When the driver's door is opened
Key reminder switch	When the inserted ignition key is pulled out
Driver's door lock actuator switch	When the driver's key cylinder or inside lock knob is unlocked or locked

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?

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

The driver's door switch signal is not received. : Refer to inspection procedure L-3 "The door switch (front: LH) signal is not received <LH drive vehicles>P.54B-244 ." Refer to inspection procedure L-3 "The door switch (front: RH) signal is not received <RH drive vehicles>P.54B-246 ."

The key reminder switch signal is not received. : Refer to inspection procedure L-8 "The key reminder switch signal is not received P.54B-257."

The driver's door lock actuator switch signal is not received. : Refer to inspection procedure L-11 "The front door lock actuator (LH) switch signal is not received <LH drive vehicles>P.54B-272 . " Refer to inspection procedure L-11 "The front door lock actuator (RH) switch signal is not received <RH drive vehicles>P.54B-275 ."

Step 3. Retest the system.

Q: Does the ignition key reminder function work normally?

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: The impact detection door unlock function does not function.

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

COMMENTS ON TROUBLE SYMPTOM

If the impact detection door unlock function does not work normally, the input signal circuit from the impact detection sensor, the SRS-ECU or the ETACS-ECU may be defective.

POSSIBLE CAUSES

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

DIAGNOSTIC PROCEDURE

Use the M.U.T.-II/III to confirm a diagnosis code.
Check whether the ETACS-ECU sets diagnosis code No.31 or 32.

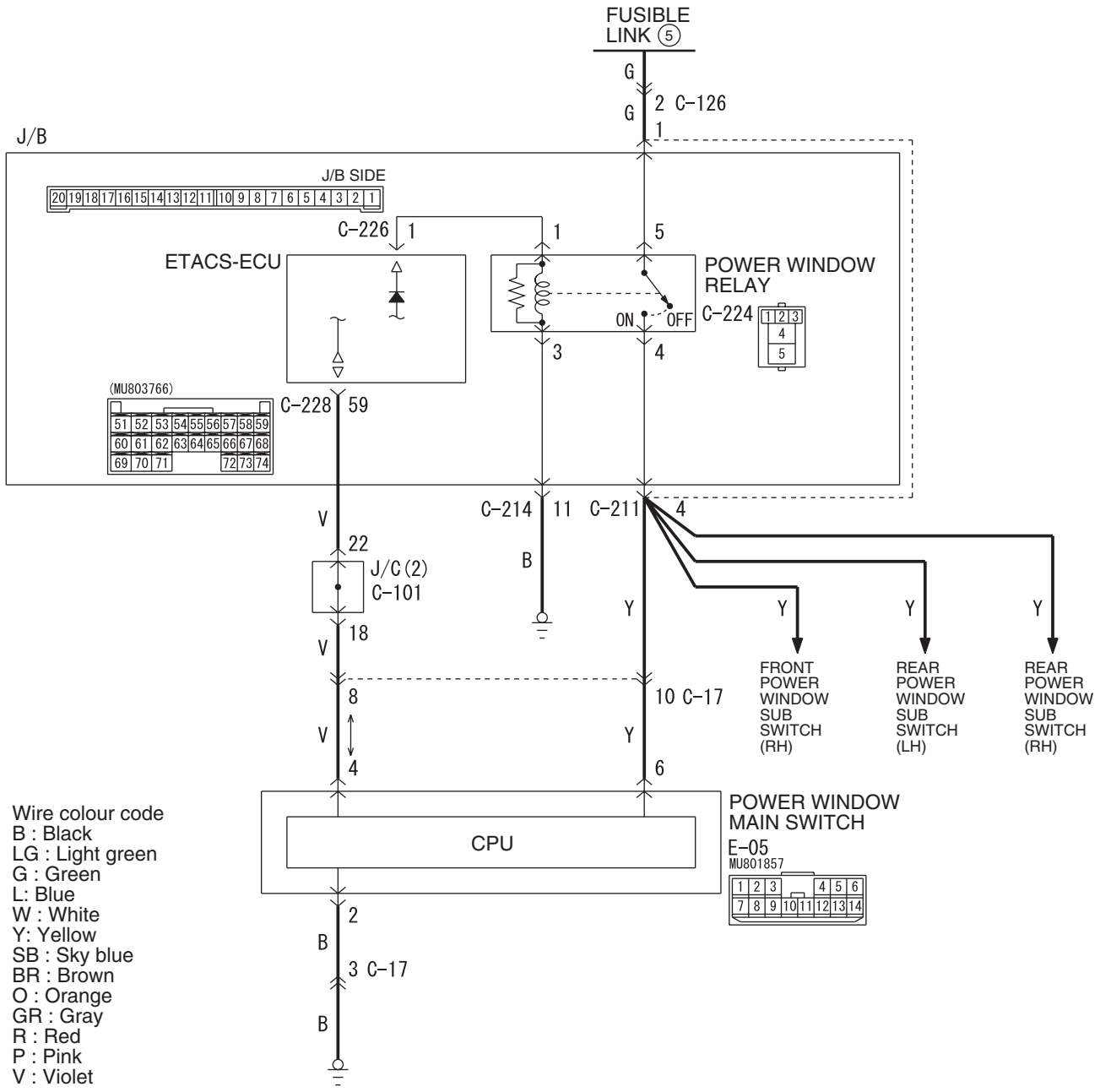
Q: Is the diagnosis code set?
YES : Refer to P.54B-30.
NO : Replace the ETACS-ECU.

POWER WINDOW

INSPECTION PROCEDURE D-1: Power windows do not work at all.

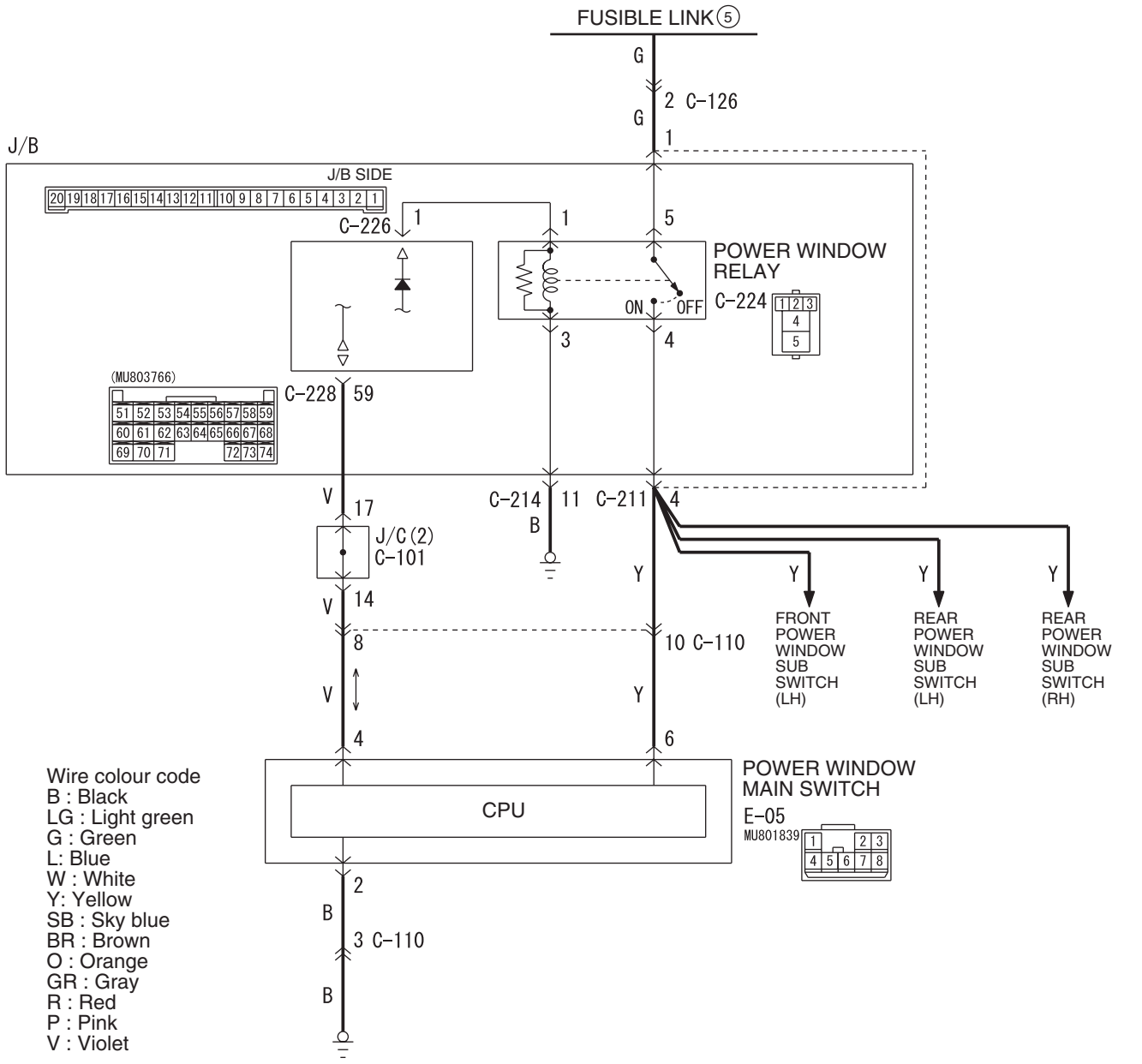
⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Power Window Relay Circuit <LHD>



W4J54E97AA

Power Window Relay Circuit <RHD>



W4J54E98AA

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

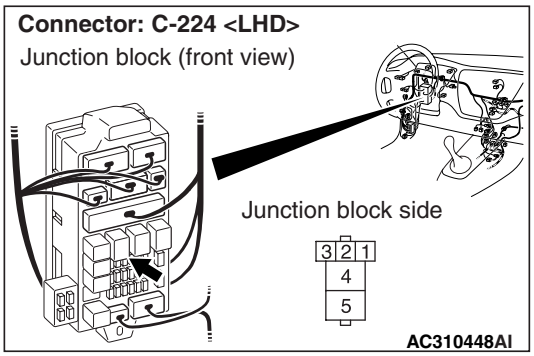
Check the input signal from the ignition switch.

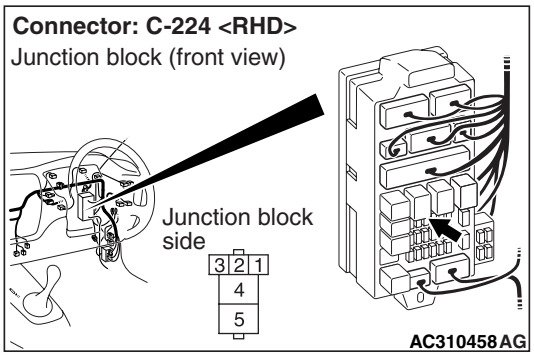
System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON

OK: The M.U.T.-II/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-42."

Step 2. Connector check: C-224 power window relay connector





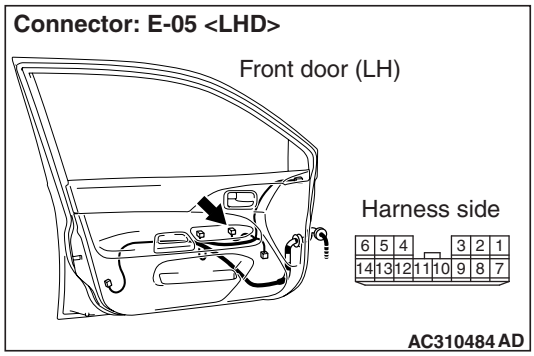
Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the connector.

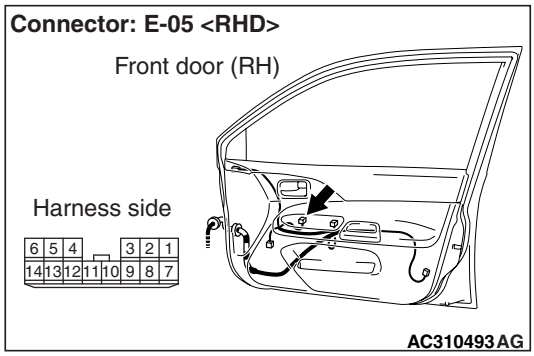
Step 3. Check the power window relay.

Refer to GROUP 42 – Door – On-vehicle Service P.42-24.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the power window relay.

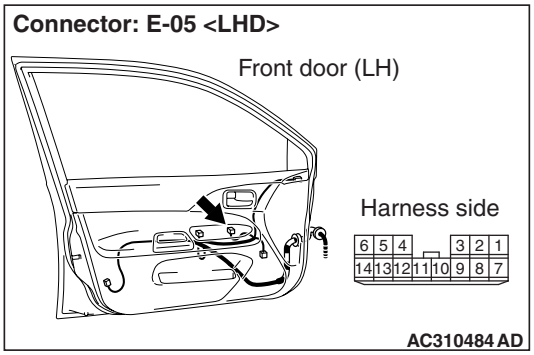
Step 4. Connector check: E-05 power window main switch connector

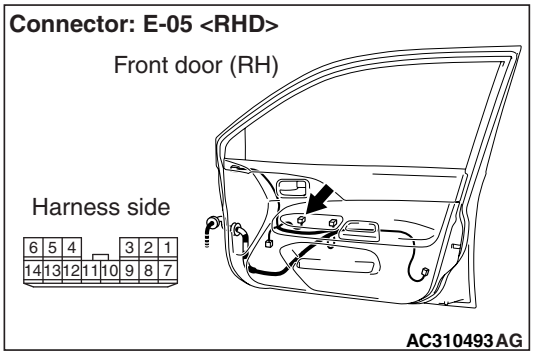




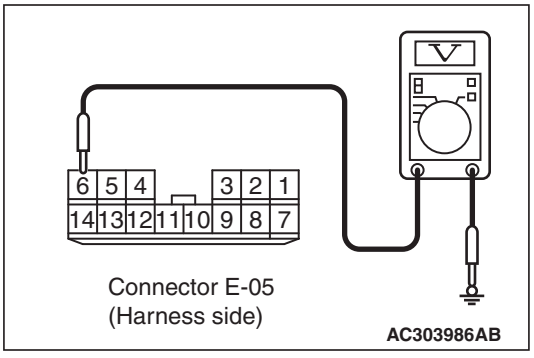
Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the connector.

Step 5. Voltage measurement at the E-05 power window main switch connector





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

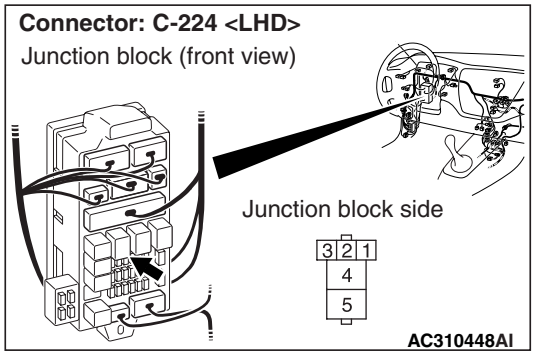


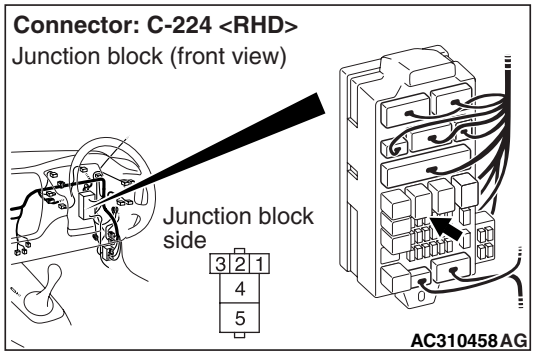
(2) Voltage between terminal 6 and body earth

OK: System voltage

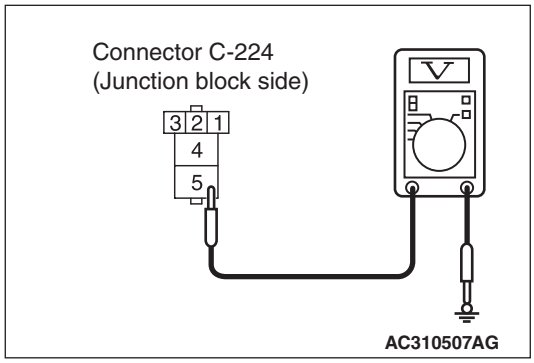
Q: Is the check result normal?
YES : Go to Step 13.
NO : Go to Step 6.

Step 6. Voltage measurement at the C-224 power window relay connector





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

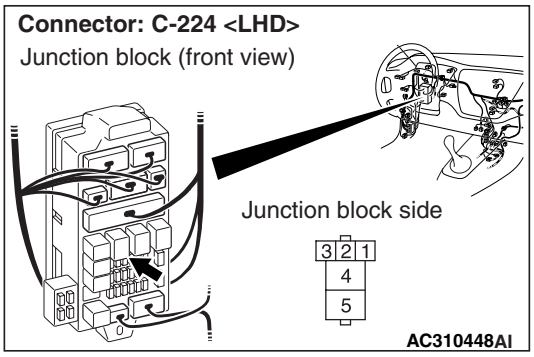


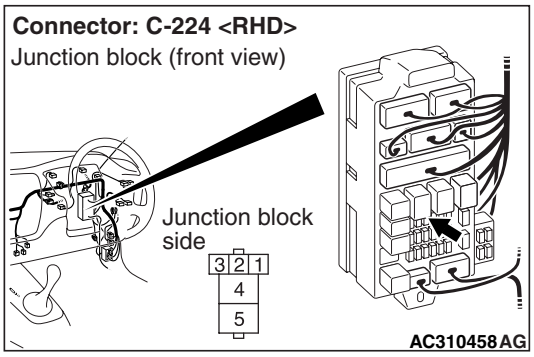
(2) Voltage between terminal 5 and body earth

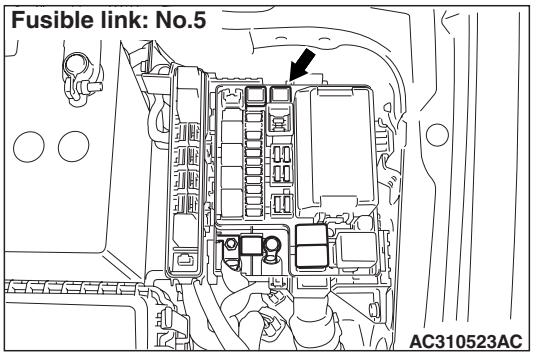
OK: System voltage

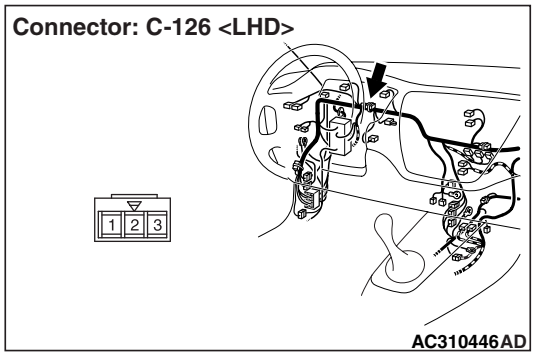
Q: Is the check result normal?
YES : Go to Step 8.
NO : Go to Step 7.

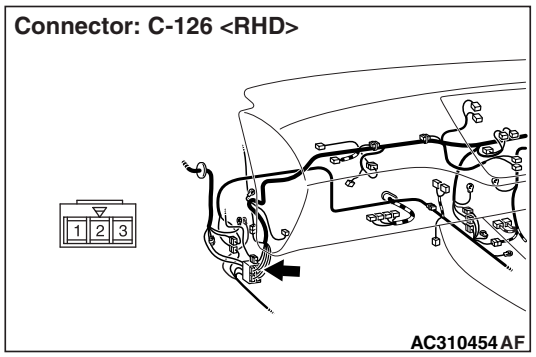
Step 7. Check the wiring harness between C-224 power window relay connector terminal No.5 and fusible link (5).

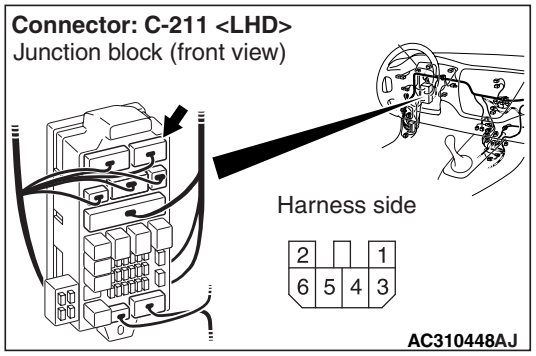


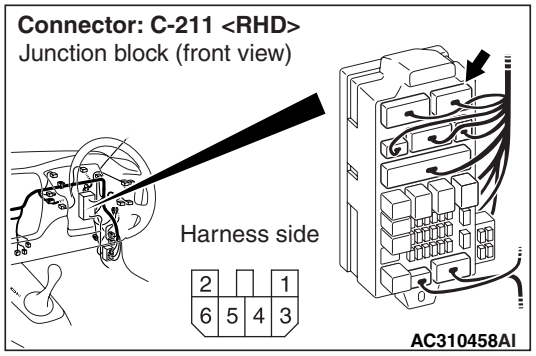












NOTE: Prior to the wiring harness inspection, check intermediate connector C-126 and junction block connector C-211, and repair if necessary.

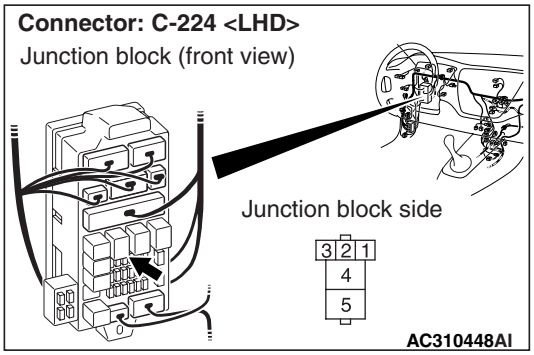
- Check the power supply line for open circuit.

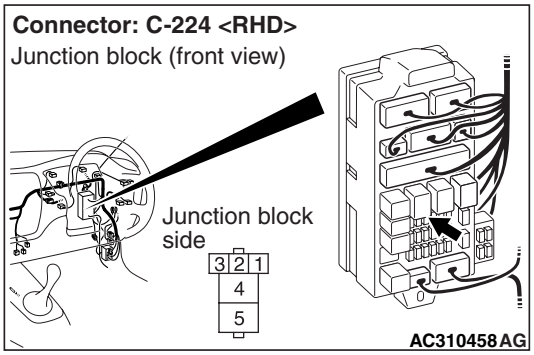
Q: Is the check result normal?

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

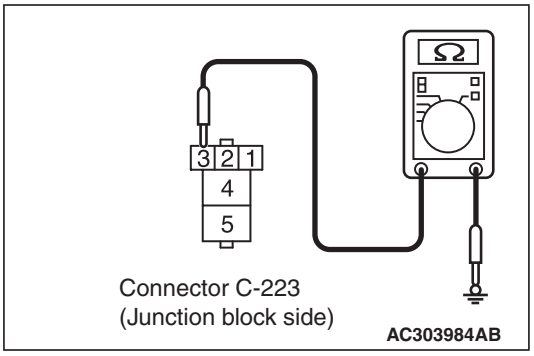
NO : Repair the wiring harness.

Step 8. Resistance measurement at C-224 power window relay connector





(1) Disconnect the connector, and measure at the junction block side.

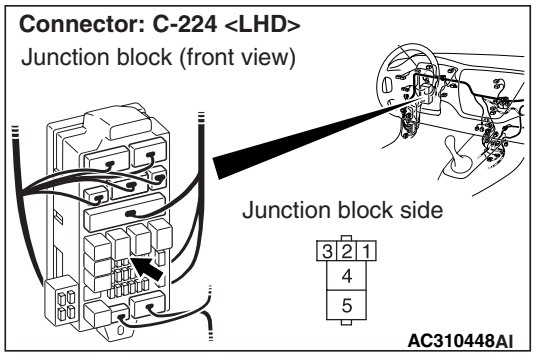


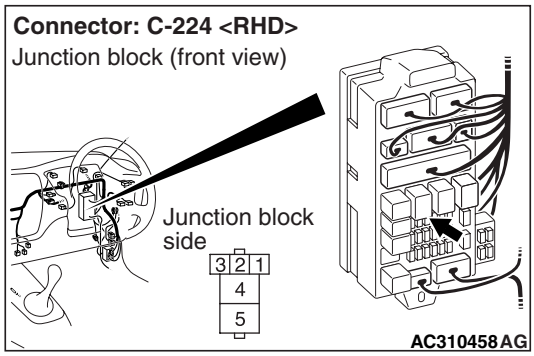
(2) Resistance between terminal 3 and body earth

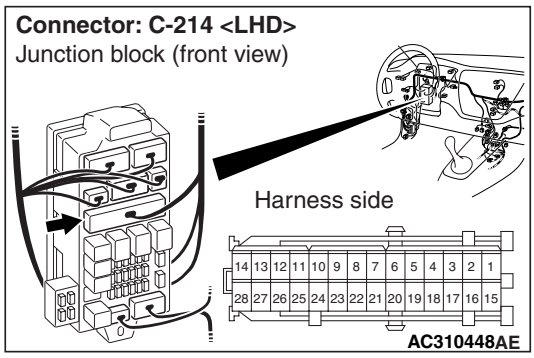
OK: 2Ω or less

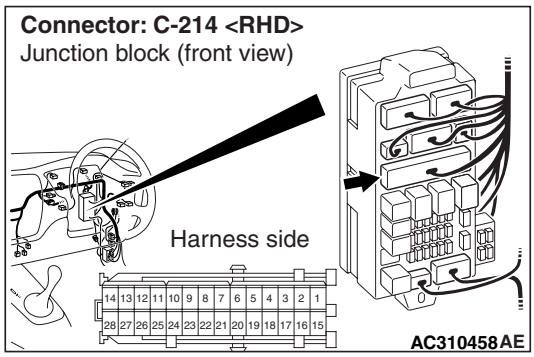
Q: Is the check result normal?
YES : Go to Step 10.
NO : Go to Step 9.

Step 9. Check the wiring harness between C-224 power window relay connector terminal No.3 and body earth.







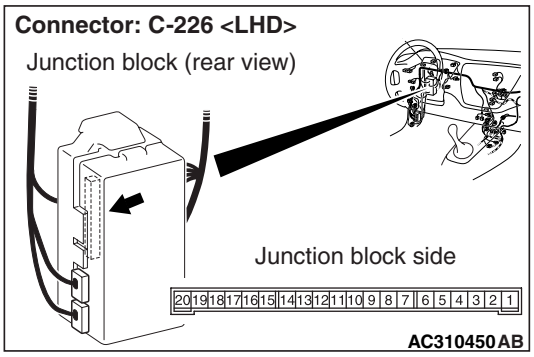


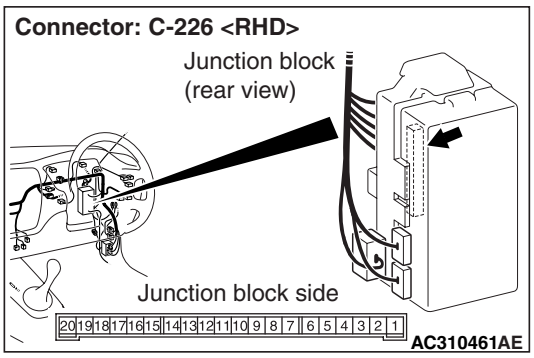
NOTE: Prior to the wiring harness inspection, check junction block connector C-214, and repair if necessary.

- 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.

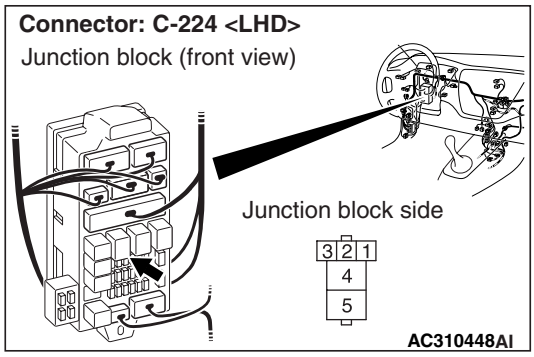
Step 10. Connector check: C-226 ETACS-ECU connector

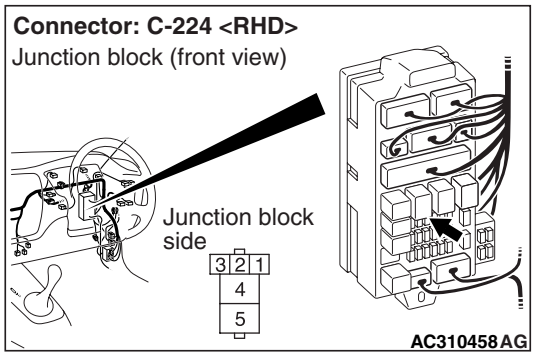


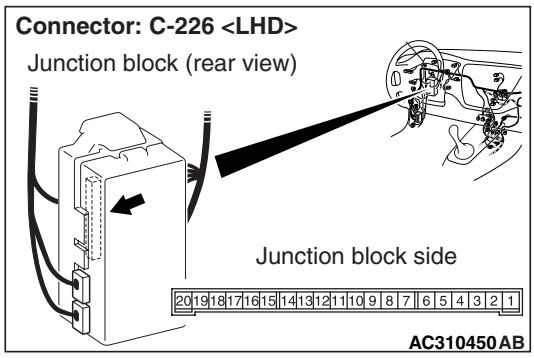


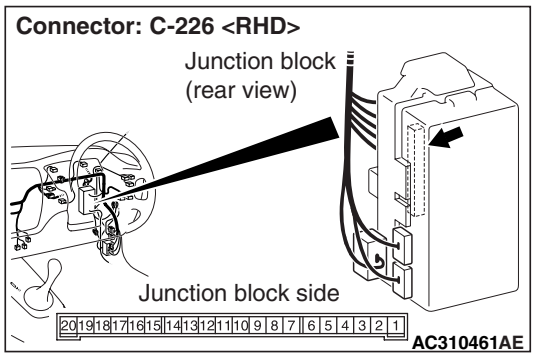
Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the connector.

Step 11. Check the wiring harness between C-226 ETACS-ECU connector terminal No.1 and C-224 power window relay connector terminal No.1.





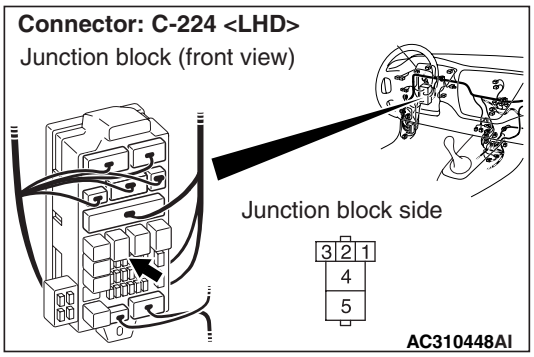


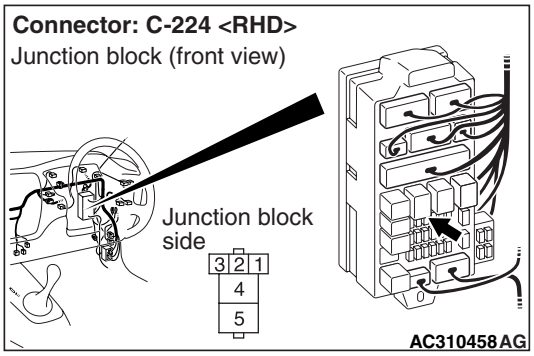


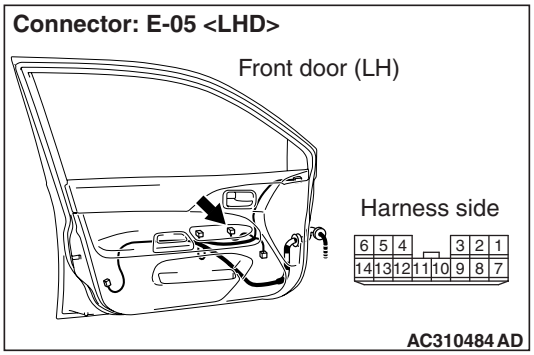
- Check the earth wires for open circuit.

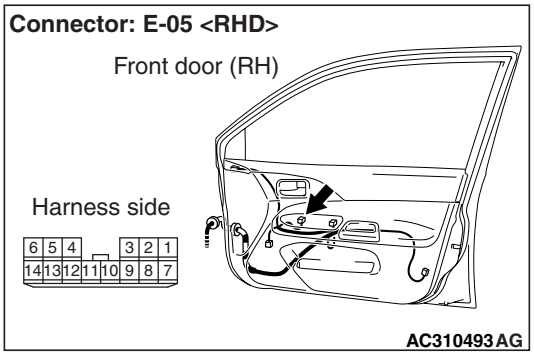
Q: Is the check result normal?
YES : Go to Step 12.
NO : Repair the wiring harness.

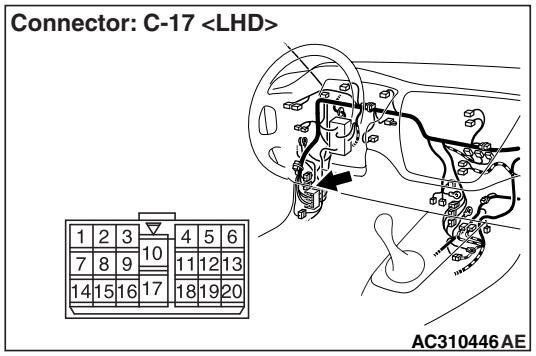
Step 12. Check the wiring harness between C-224 power window relay connector terminal No.4 and E-05 power window main switch connector terminal No.6.

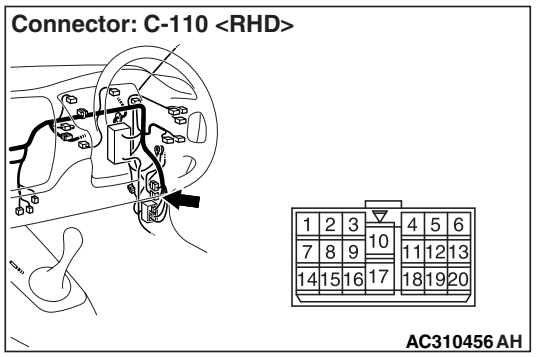


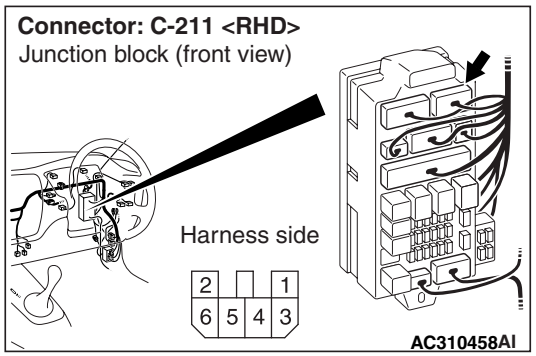


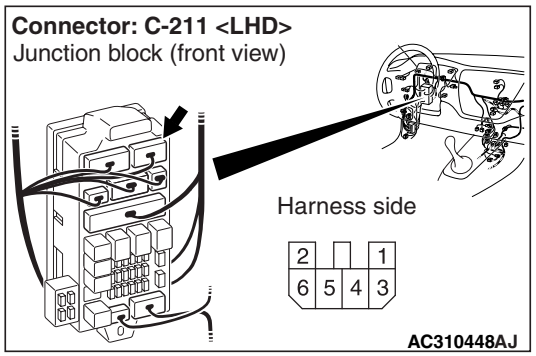












NOTE: Prior to the wiring harness inspection, check intermediate connectors C-17 <LH drive vehicles>, C-110 <RH drive vehicles> and junction block connector C-211, and repair if necessary.

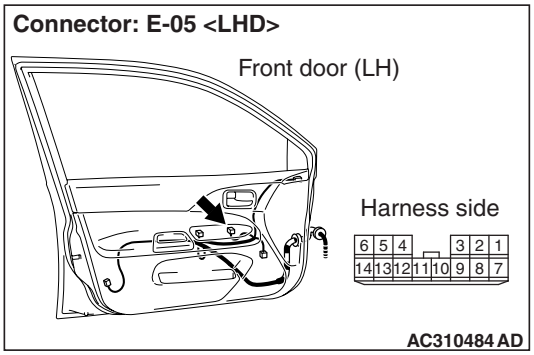
- Check the power supply line for open circuit.

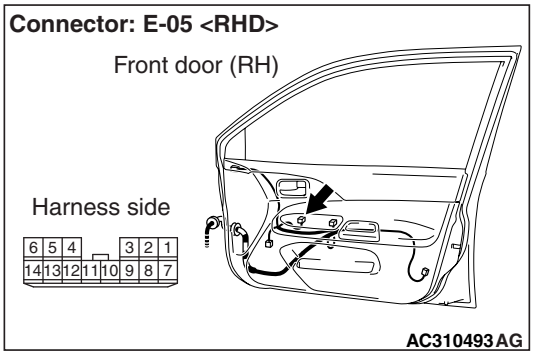
Q: Is the check result normal?

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

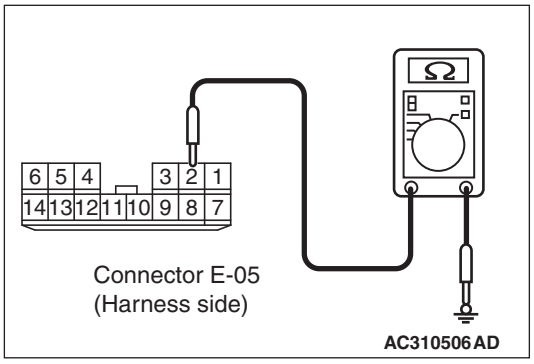
NO : Repair the harness wire.

Step 13. Resistance measurement at E-05 power window main switch connector





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

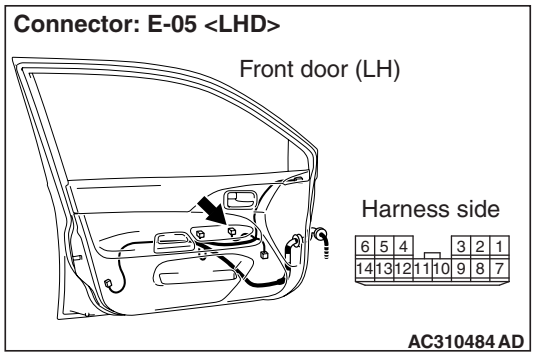


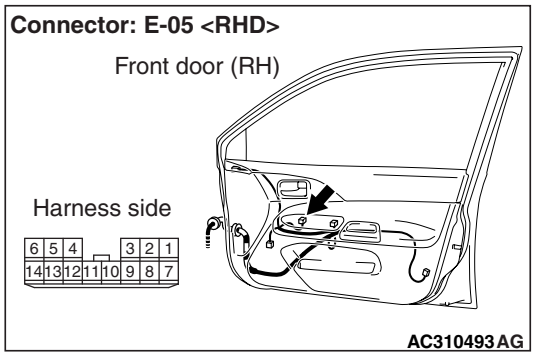
(2) Resistance between terminal 2 and body earth

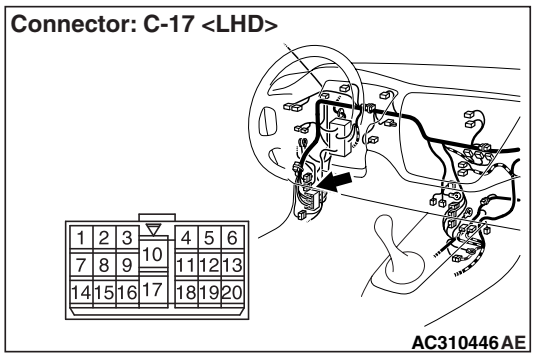
OK: 2Ω or less

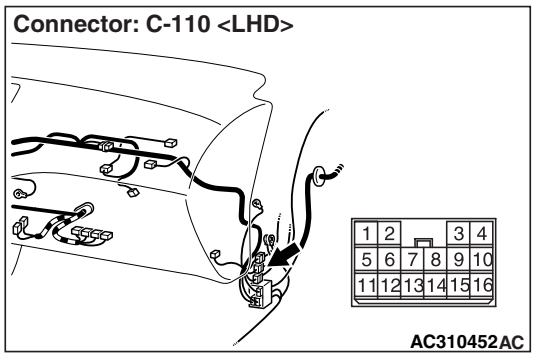
Q: Is the check result normal?
YES : Go to Step 15.
NO : Go to Step 14.

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









NOTE: Prior to the wiring harness inspection, check intermediate connector C-17 <LH drive vehicles> or C-110 <RH drive vehicles>, and repair if necessary.

- Check the earth wires for open circuit.

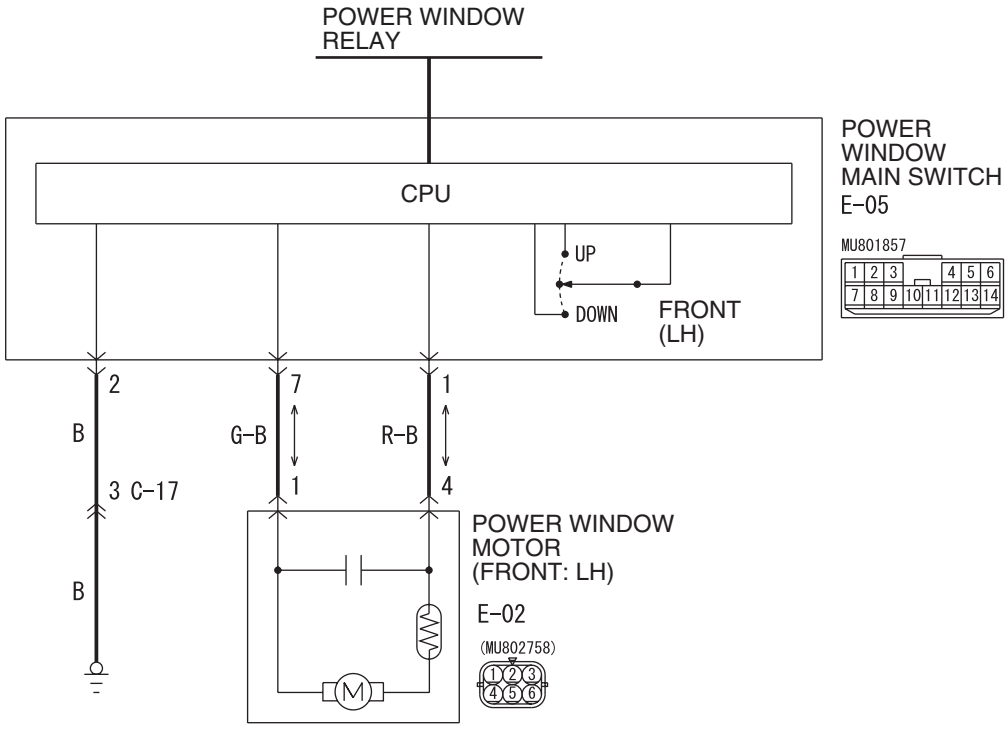
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 15. 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

W4J54E99AA

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 regulator motor may be defective.

POSSIBLE CAUSES

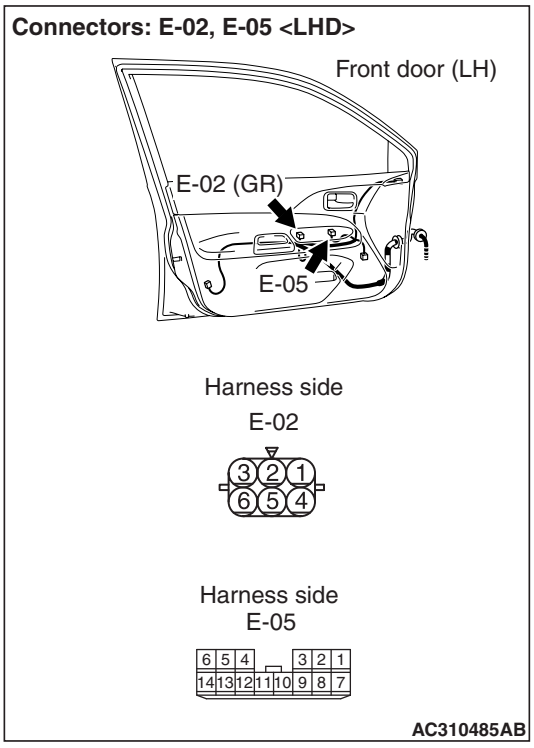
- Malfunction of the power window main switch
- Malfunction of the front power window regulator motor (LH)
- Damaged harness wires and connectors

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.

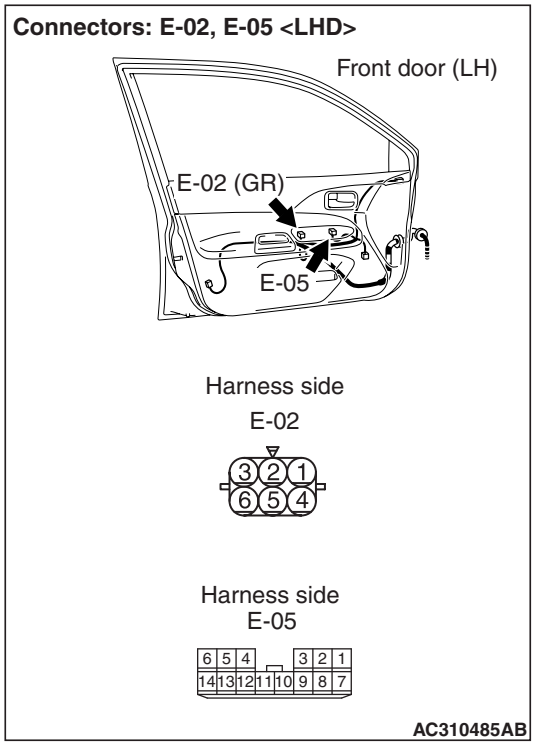
Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure D-1 "Power windows do not work at all P.54B-72."

STEP 2. Connector check: E-05 power window main switch connector and E-02 front power window regulator motor (LH) connector



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

STEP 3. Check the wiring harness from E-02 front power window regulator motor (LH) connector terminal Nos.1 and 4 to E-05 power window main switch connector terminal Nos.7 and 1.



- Check the input and output lines for open or short circuit.

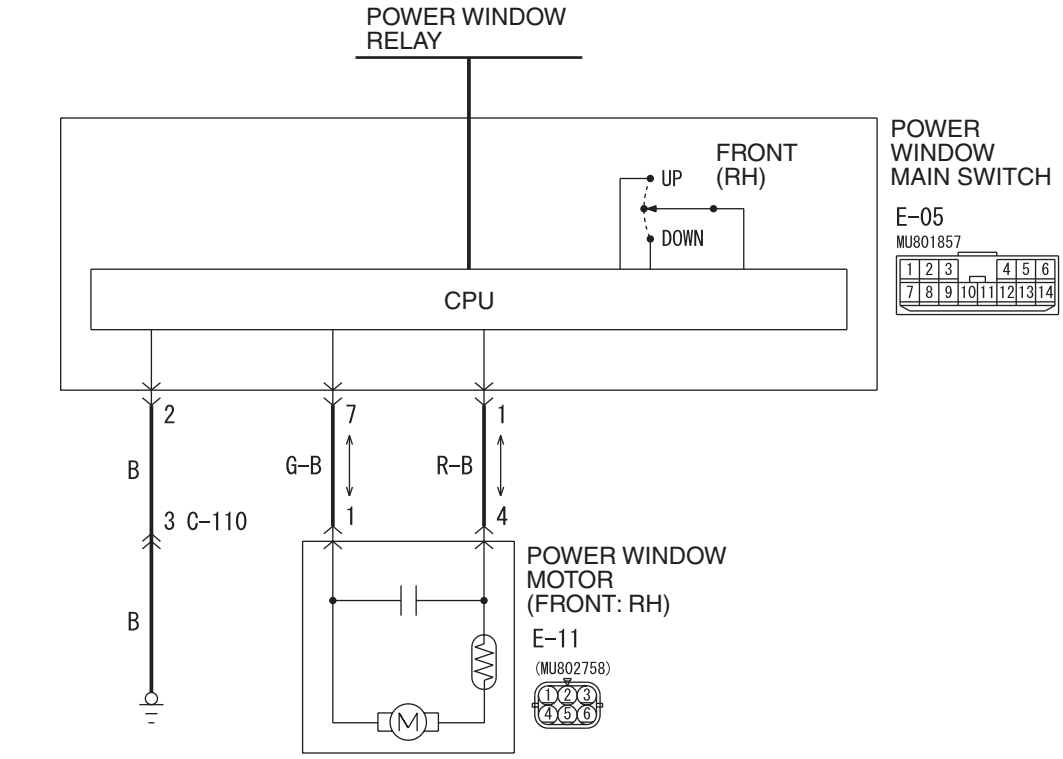
Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the wiring harness.

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 front power window regulator motor assembly (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

W4J54E100A

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 regulator motor may be defective.

POSSIBLE CAUSES

- Malfunction of the power window main switch
- Malfunction of the front power window regulator motor (RH)
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

STEP 1. Check the power window main switch.

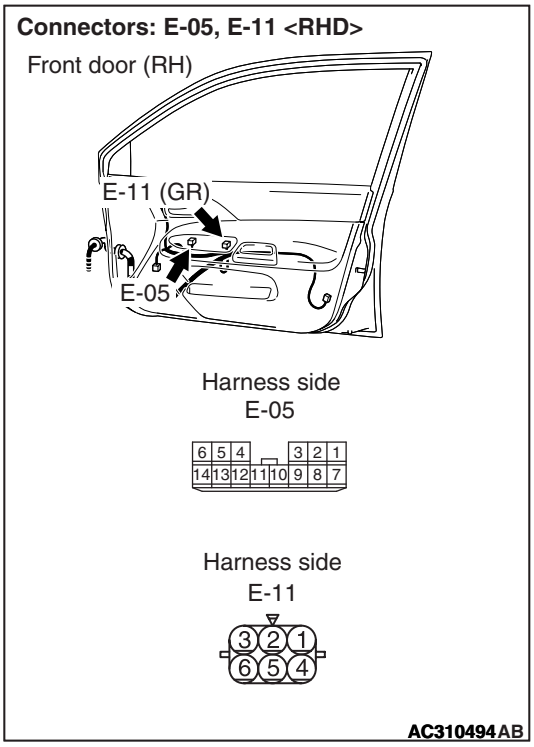
Check that all of the front passenger's and rear door power windows can operate by means of the power window main switch.

Q: Is the check result normal?

YES : Go to Step 2.

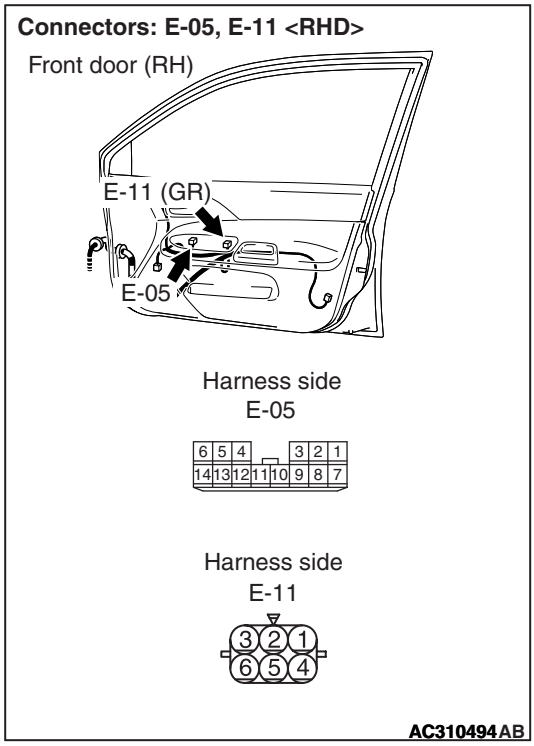
NO : Refer to Inspection Procedure D-1 "Power windows do not work at all P.54B-72."

STEP 2. Connector check: E-05 power window main switch connector and E-11 front power window regulator motor (RH) connector



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

STEP 3. Check the wiring harness from E-11 front power window regulator motor (RH) connector terminal Nos.1 and 4 to E-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.

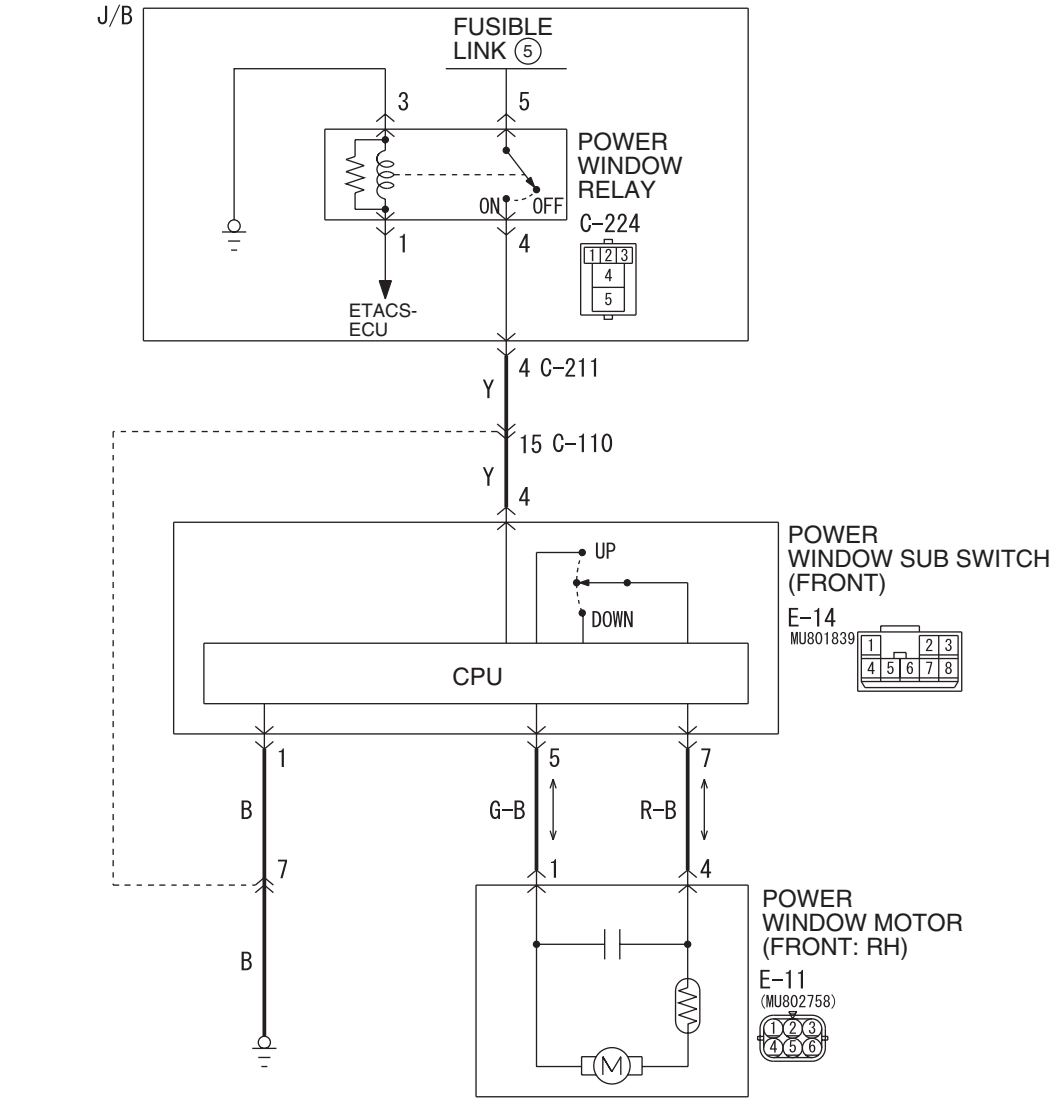
STEP 4. Retest the system.

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 front power window regulator motor assembly (RH).

INSPECTION PROCEDURE D-3: Relevant power window(s) do not work by means of the front and rear passenger's power window sub switches.

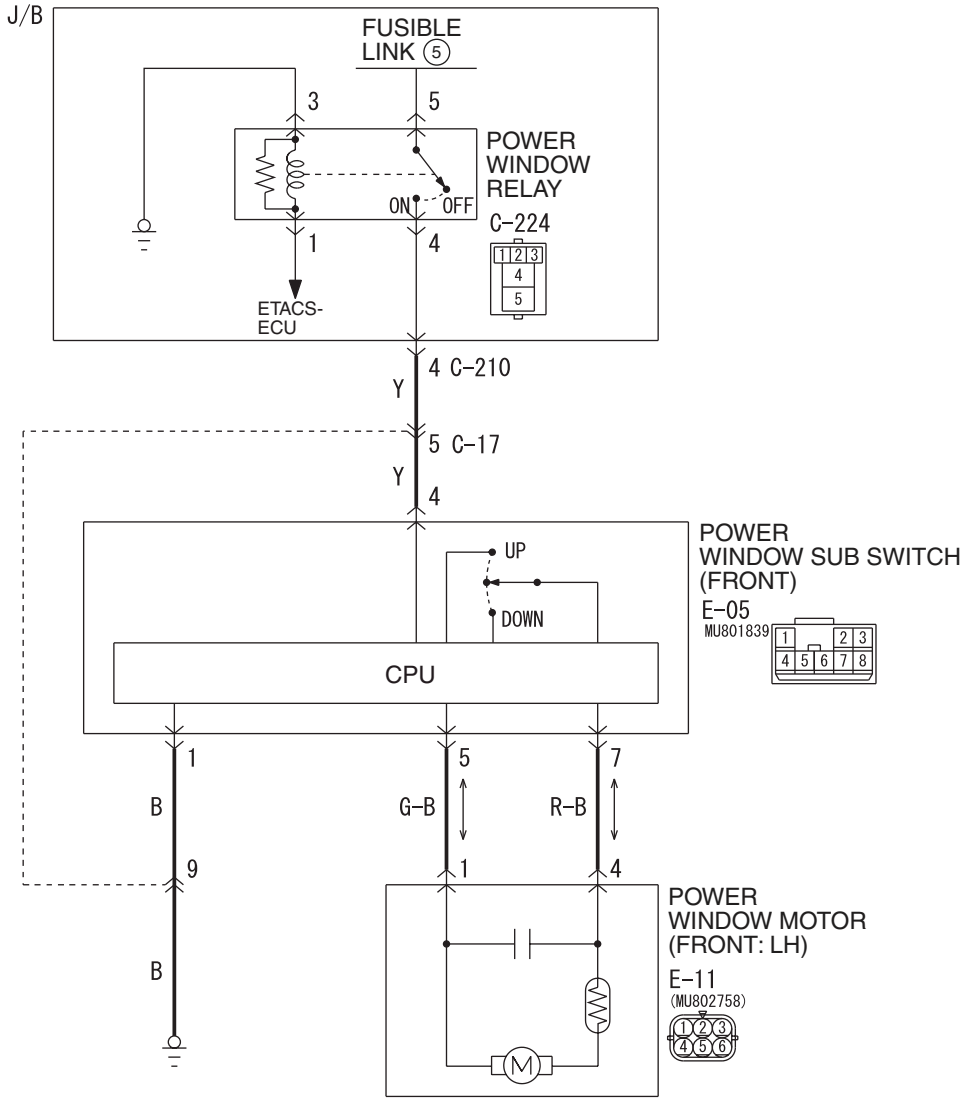
Power Window (front: RH) Circuit <LHD>



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

W4J54E101A

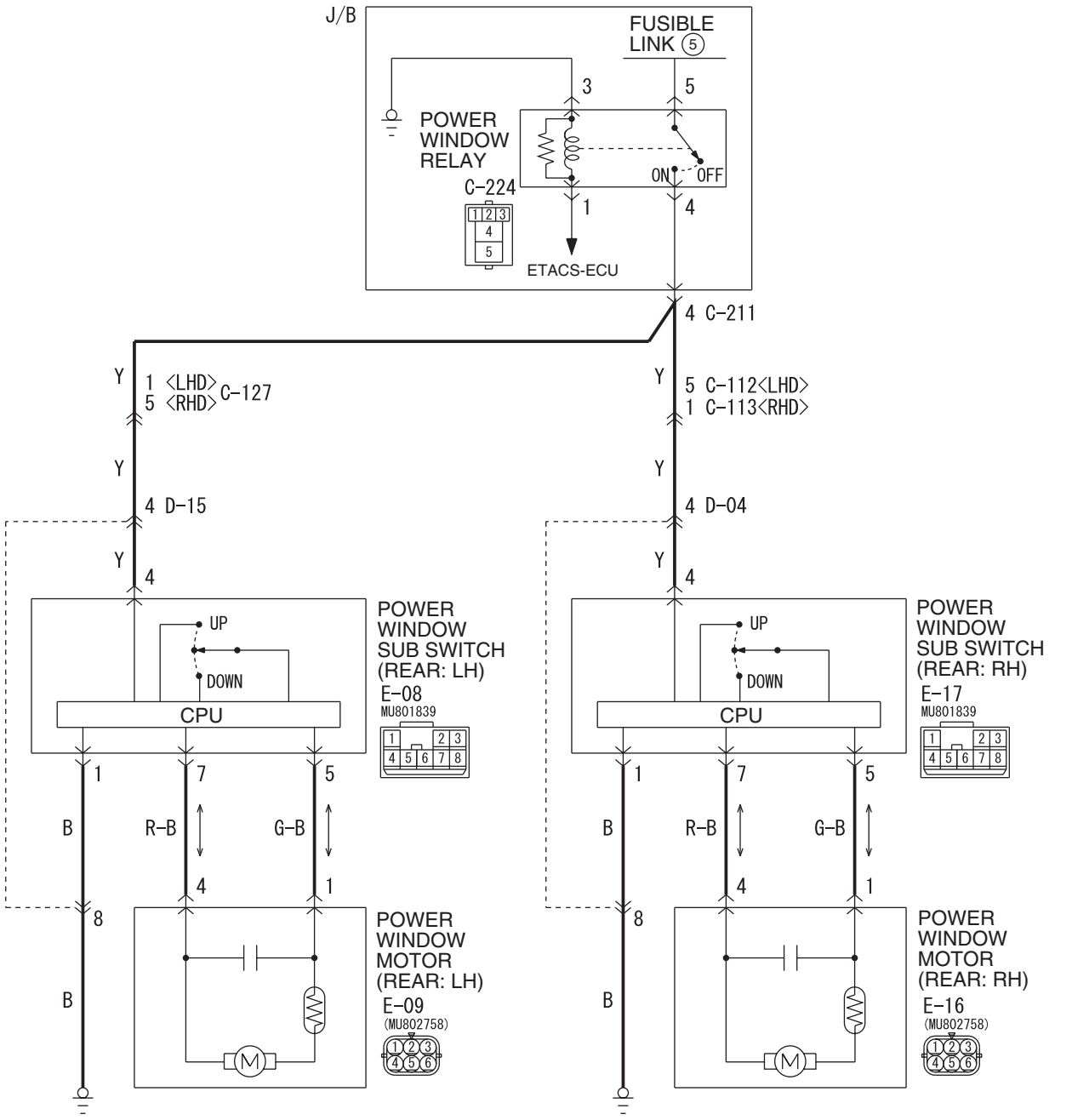
Power Window (front: LH) Circuit <RHD>



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

W4J54E102A

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

W4J54E103A

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 regulator motor may be defective.

POSSIBLE CAUSES

- Malfunction of the front power window sub switch, rear power window sub switch (RH) or rear power window sub switch (LH)
- Malfunction of the front power window regulator motor (RH) <LH drive vehicles>, front power window regulator motor (LH) <RH drive vehicles>, rear power window regulator motor (RH) or rear power window regulator motor (LH)
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

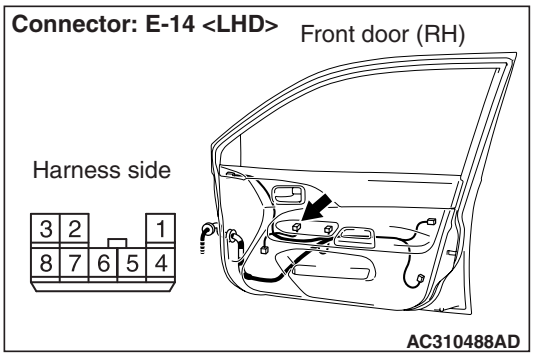
Step 1. Check the power window main switch.
Check that the power window lock switch is turned off.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Turn off the power window lock switch.

Step 2. Determine a trouble spot.

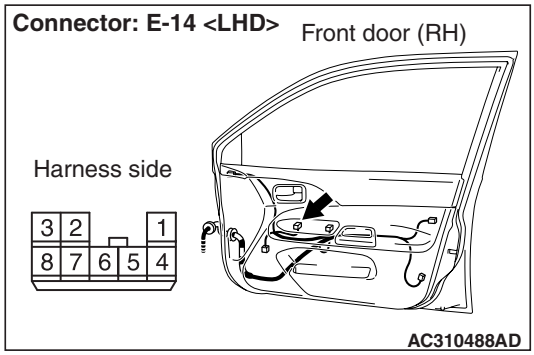
Q: Which power window does not work?
Front passenger's door <LH drive vehicles> : Go to Step 3.
Front passenger's door <RH drive vehicles> : Go to Step 12.
Rear right door : Go to Step 21.
Rear left door : Go to Step 30.

Step 3. Connector check: E-14 front power window sub switch connector

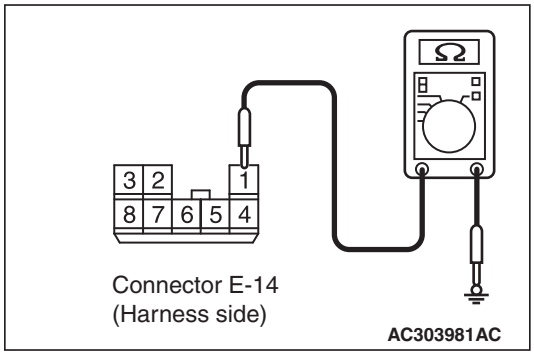


Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the connector.

Step 4. Resistance measurement at E-14 front power window sub switch connector



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

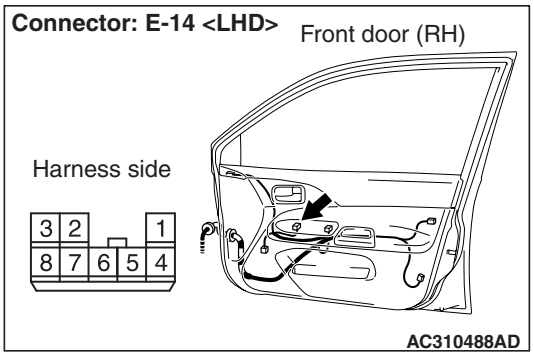


(2) Resistance between E-14 front power window sub switch connector terminal No.1 and body earth

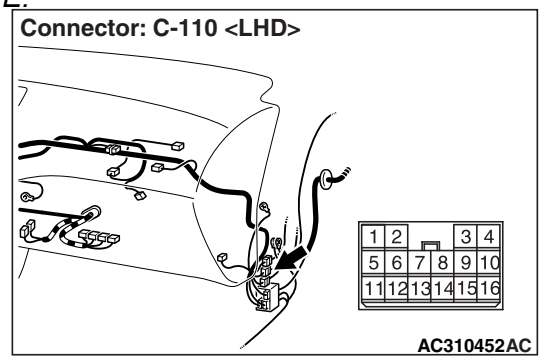
OK: 2Ω or less

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

Step 5. Check the wiring harness from E-14 front power window sub switch connector terminal No.1 to body earth.



NOTE:

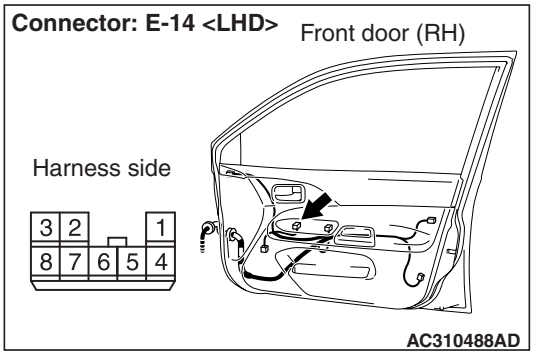


Prior to the wiring harness inspection, check intermediate connector C-110, and repair if necessary.

- Check the earth wires for open circuit.

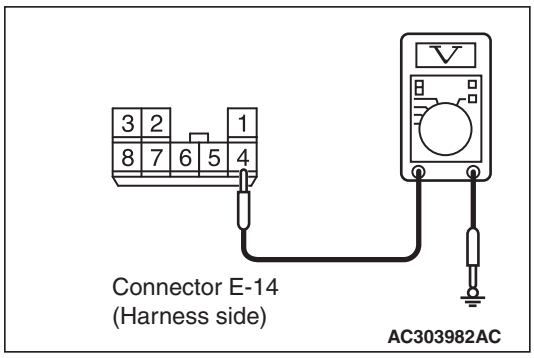
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 6. Voltage measurement at E-14 front power window sub switch connector



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

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

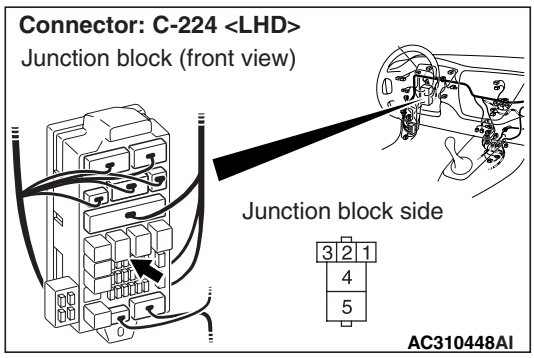


(3) Voltage between E-14 front power window sub switch connector terminal No.4 and body earth

OK: System voltage

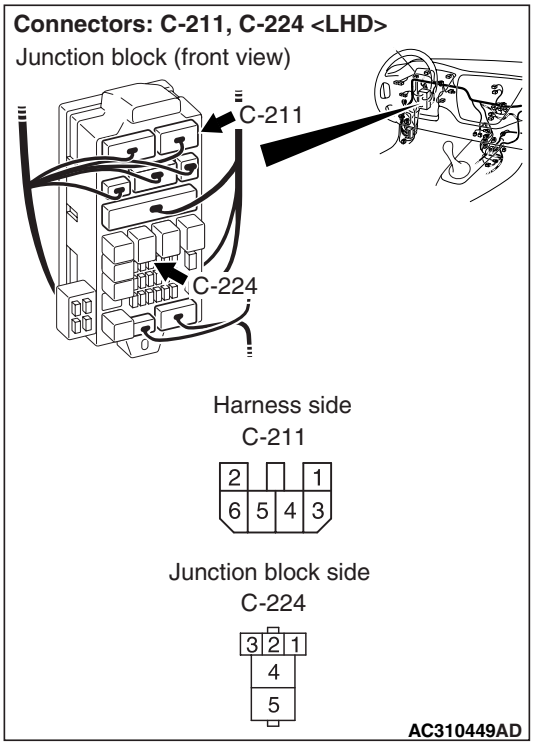
Q: Is the check result normal?
YES : Go to Step 9.
NO : Go to Step 7.

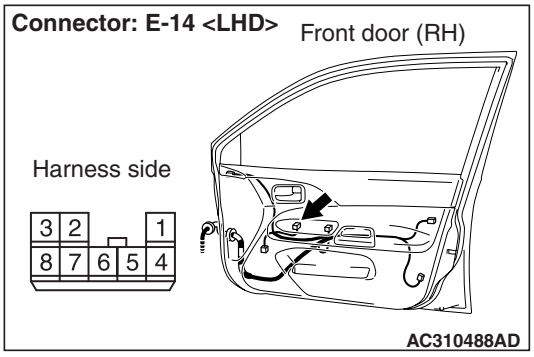
Step 7. Connector check: C-224 power window relay connector



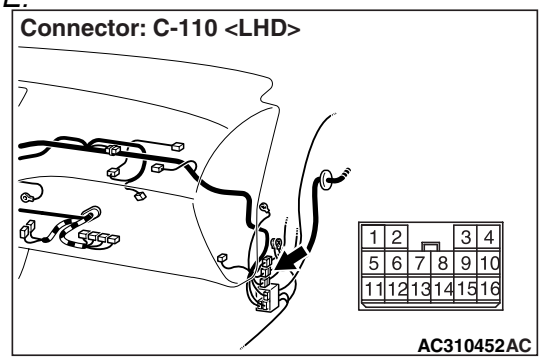
Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the connector.

Step 8. Check the wiring harness from E-14 front power window sub switch connector terminal No.4 to C-224 power window relay connector terminal No.4.





NOTE:

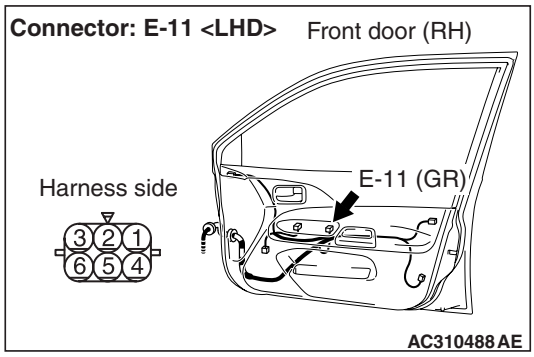


Prior to the wiring harness inspection, check intermediate connectors C-110 and junction block connector C-211, and repair if necessary.

- Check the power supply line for open circuit.

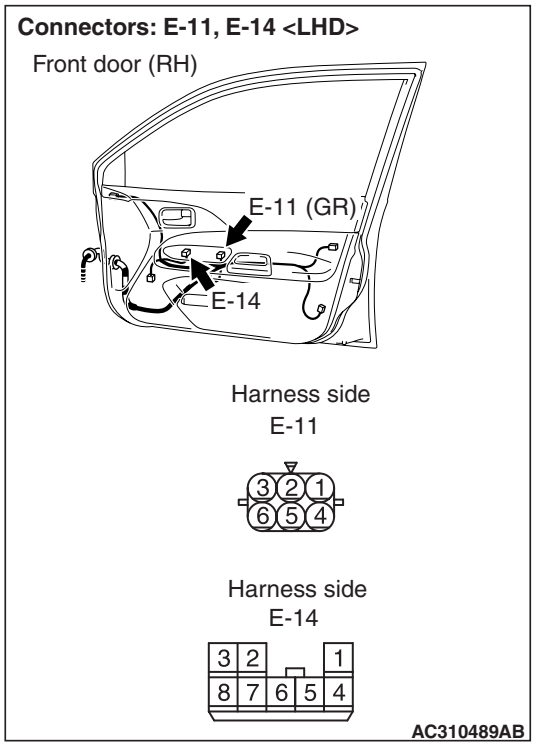
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 9. Connector check: E-11 front power window regulator motor (RH) connector



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

Step 10. Check the wiring harness from E-11 front power window regulator motor (RH) connector terminal Nos.1 and 4 to E-14 front power window sub switch 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.

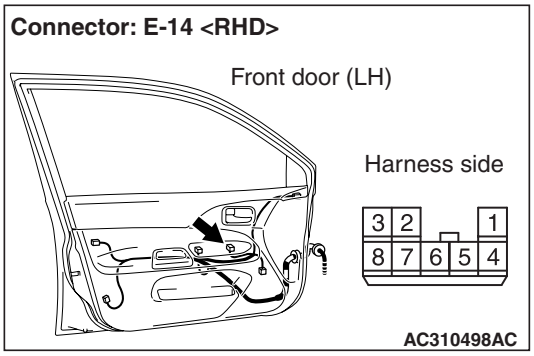
Step 11. Retest the system.

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

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

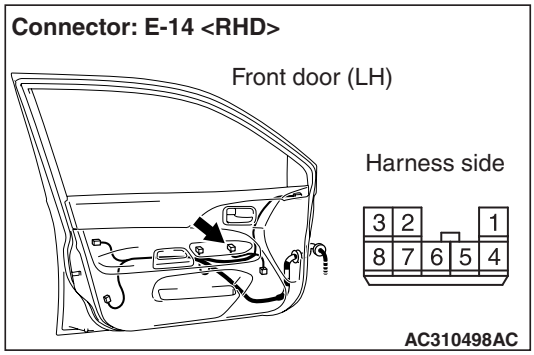
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front power window regulator motor assembly (RH).

Step 12. Connector check: E-14 front power window sub switch connector

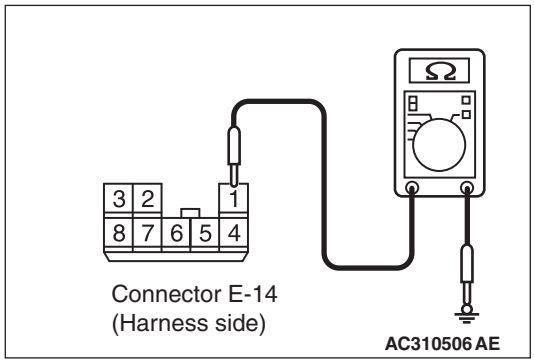


Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the connector.

Step 13. Resistance measurement at E-14 front power window sub switch connector



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

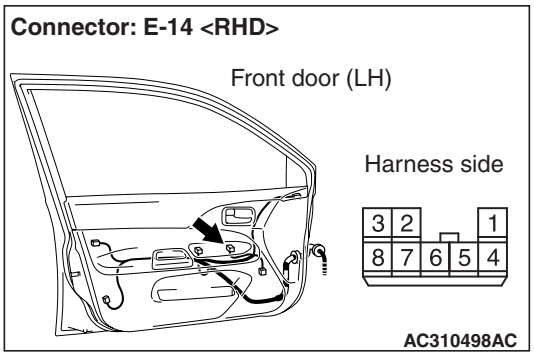


(2) Resistance between E-14 front power window sub switch connector terminal No.1 and body earth

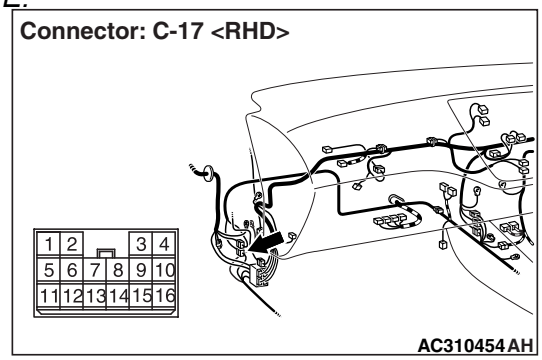
OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 15.
NO : Go to Step 14.

Step 14. Check the wiring harness from E-14 front power window sub switch connector terminal No.1 to body earth.



NOTE:

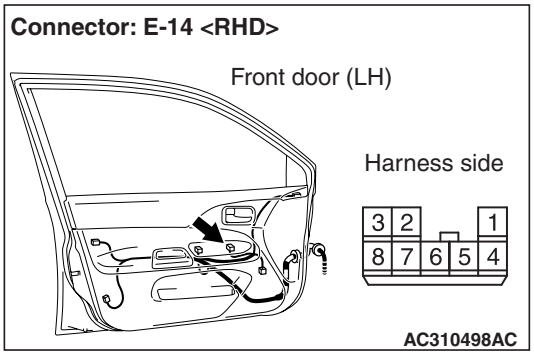


Prior to the wiring harness inspection, check intermediate connector C-17, and repair if necessary.

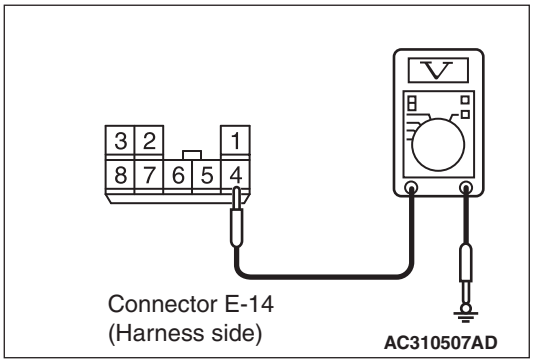
- Check the earth wires for open circuit.

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 E-14 front power window sub switch connector



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

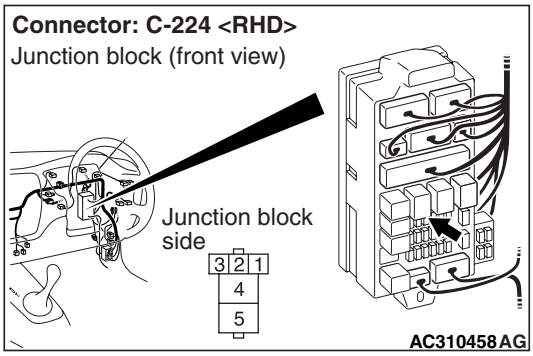


(3) Voltage between E-14 front power window sub switch connector terminal No.4 and body earth

OK: System voltage

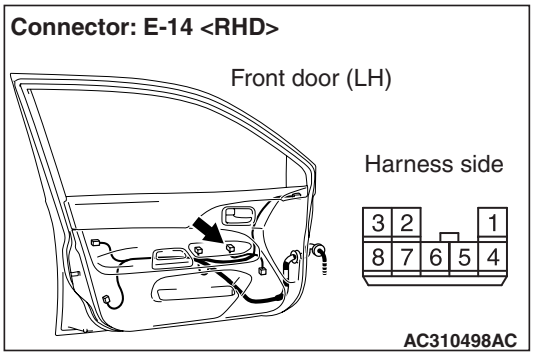
Q: Is the check result normal?
YES : Go to Step 18.
NO : Go to Step 16.

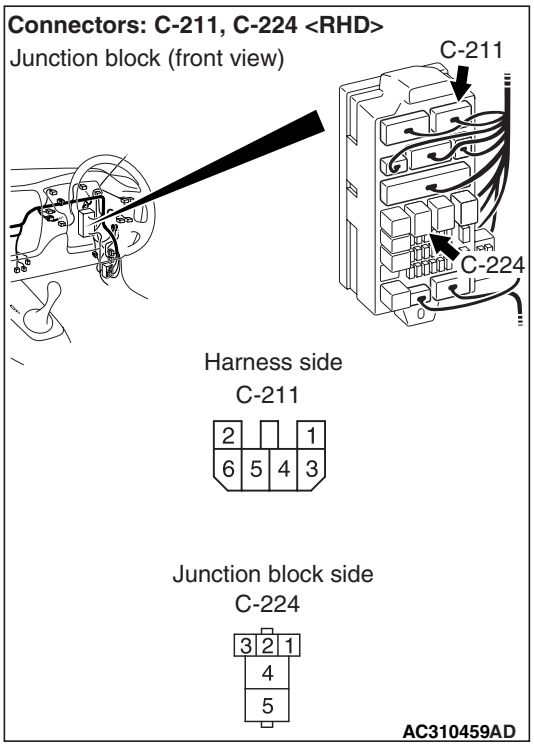
Step 16. Connector check: C-224 power window relay connector



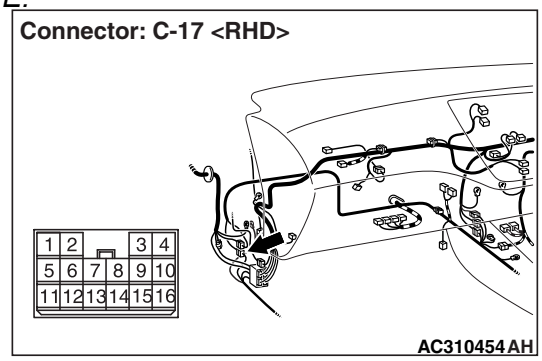
Q: Is the check result normal?
YES : Go to Step 17.
NO : Repair the connector.

Step 17. Check the wiring harness from E-14 front power window sub switch connector terminal No.4 to C-224 power window relay connector terminal No.4.





NOTE:

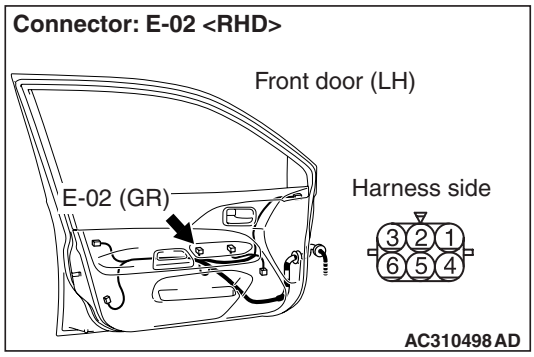


Prior to the wiring harness inspection, check intermediate connectors C-17 and junction block connector C-211, and repair if necessary.

- Check the power supply line for open circuit.

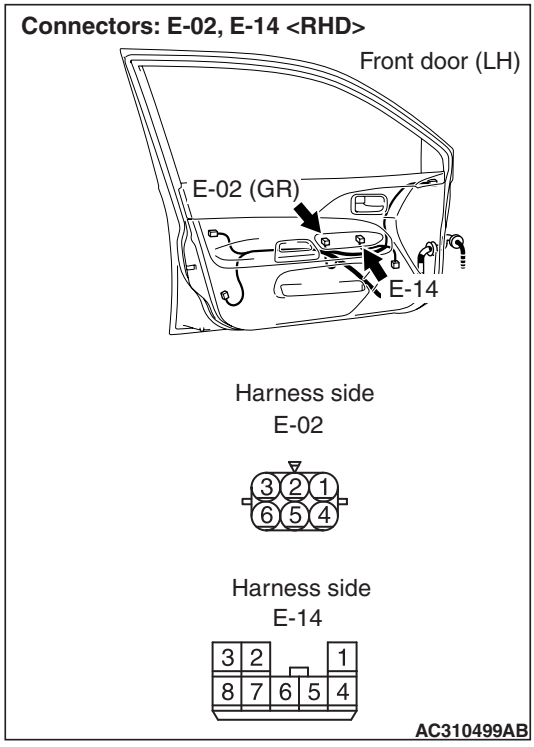
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 18. Connector check: E-02 front power window regulator motor (LH) connector



Q: Is the check result normal?
YES : Go to Step 19.
NO : Repair the connector.

Step 19. Check the wiring harness from E-02 front power window regulator motor (LH) connector terminal Nos.1 and 4 to E-14 front power window sub switch connector terminal Nos.5 and 7.



- Check the input and output lines for open or short circuit.

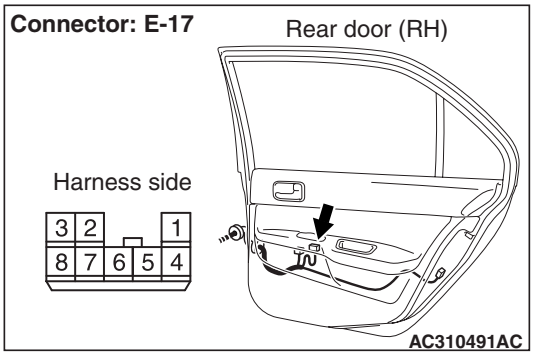
Q: Is the check result normal?
YES : Go to Step 20.
NO : Repair the wiring harness.

Step 20. Retest the system.

After the front power window sub switch is replaced, check that the front passenger's door power window can be operated by the front power window sub switch.
(1) Replace the front power window sub switch.
(2) Check that the front passenger's door power window can be operated by the front power window sub switch.

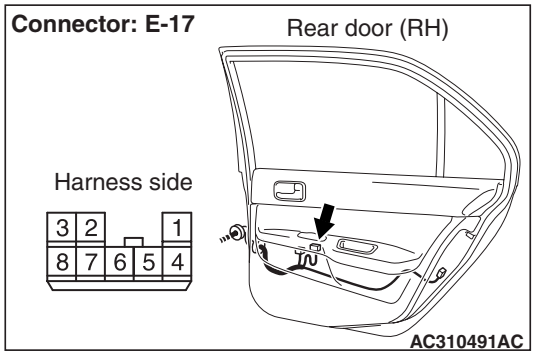
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front power window regulator motor assembly (LH).

Step 21. Connector check: E-17 rear power window sub switch (RH) connector

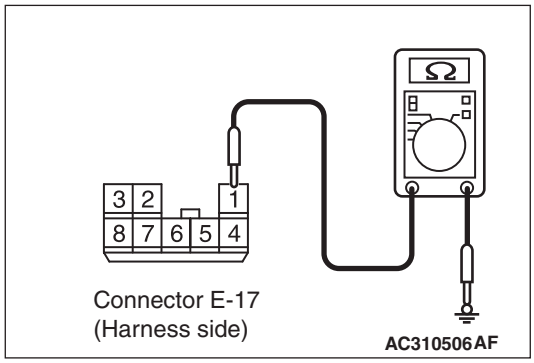


Q: Is the check result normal?
YES : Go to Step 22.
NO : Repair the connector.

Step 22. Resistance measurement at E-17 rear power window sub switch (RH) connector



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

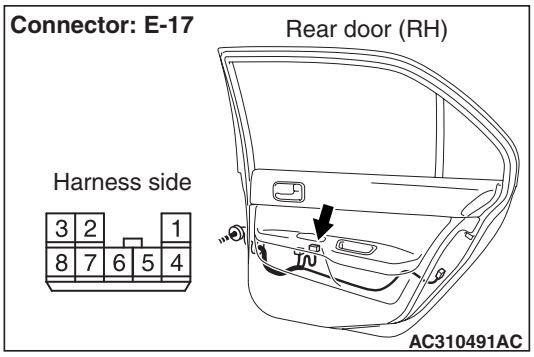


(2) Resistance between E-17 rear power window sub switch (RH) connector terminal No.1 and body earth

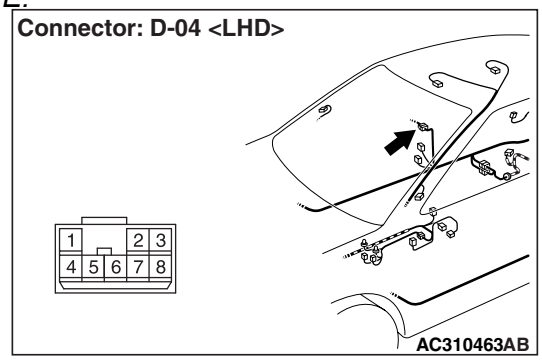
OK: 2Ω or less

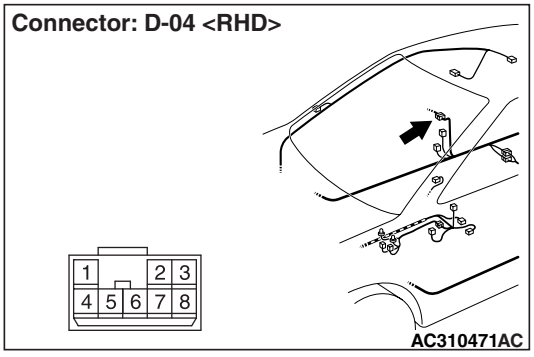
Q: Is the check result normal?
YES : Go to Step 24.
NO : Go to Step 23.

Step 23. Check the wiring harness from E-17 rear power window sub switch (RH) connector terminal No.1 to body earth.



NOTE:



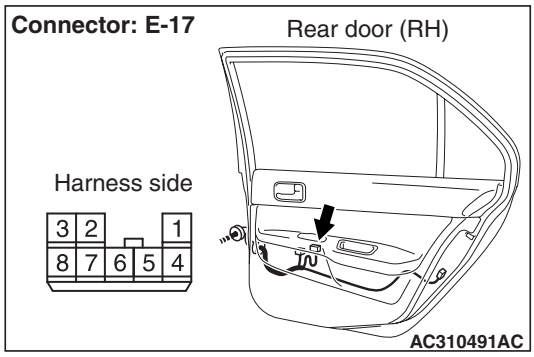


Prior to the wiring harness inspection, check intermediate connectors D-04, and repair if necessary.

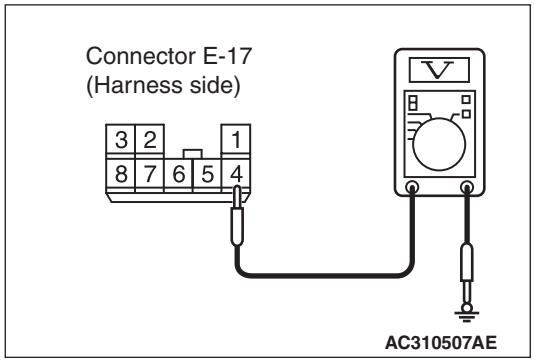
- Check the earth wires for open circuit.

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 E-17 rear power window sub switch (RH) connector



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

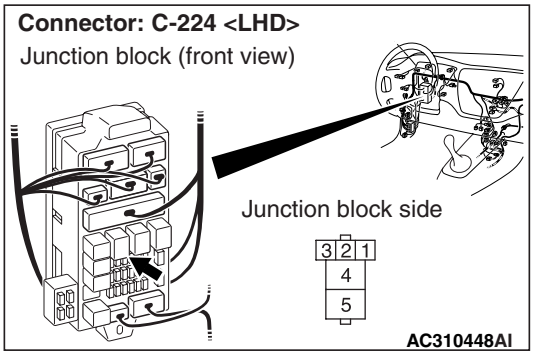


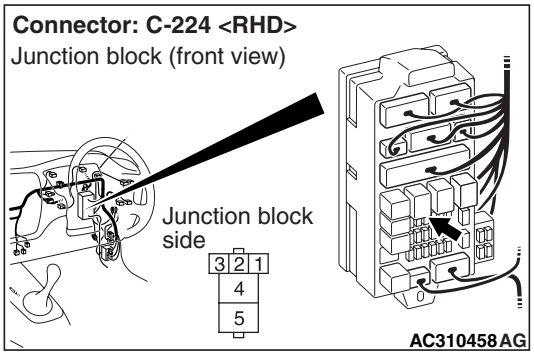
(3) Voltage between E-17 rear power window sub switch (RH) connector terminal No.4 and body earth

OK: System voltage

Q: Is the check result normal?
YES : Go to Step 27.
NO : Go to Step 25.

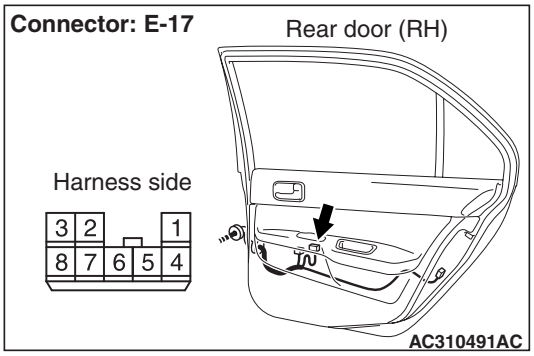
Step 25. Connector check: C-224 power window relay connector

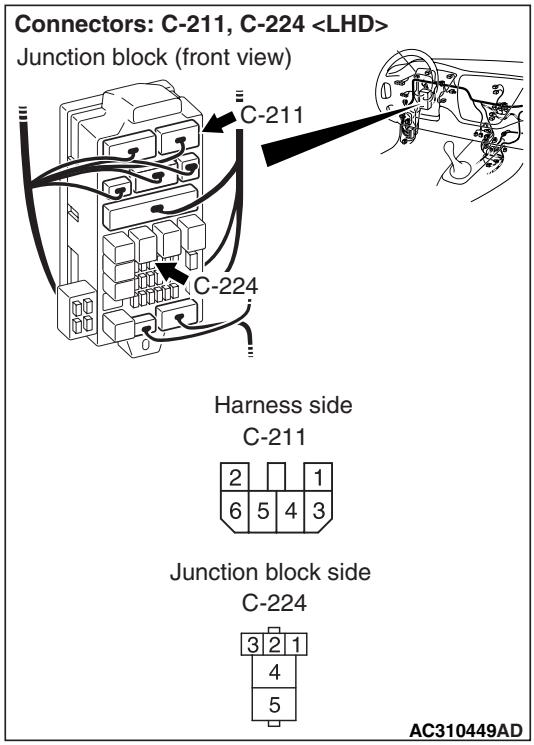


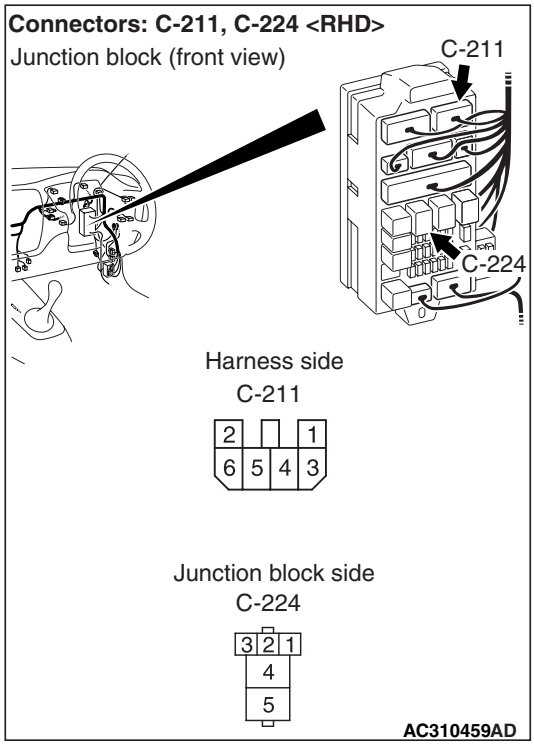


Q: Is the check result normal?
YES : Go to Step 26.
NO : Repair the connector.

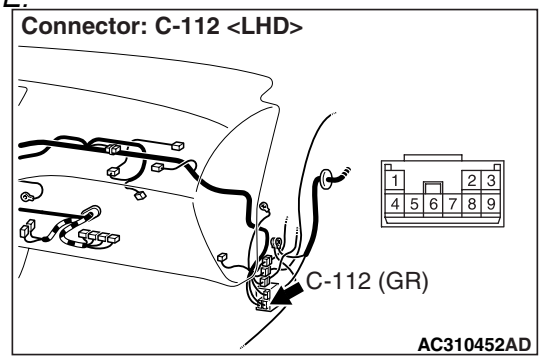
Step 26. Check the wiring harness from E-17 rear power window sub switch (RH) connector terminal No.4 to C-224 power window connector terminal No.4.

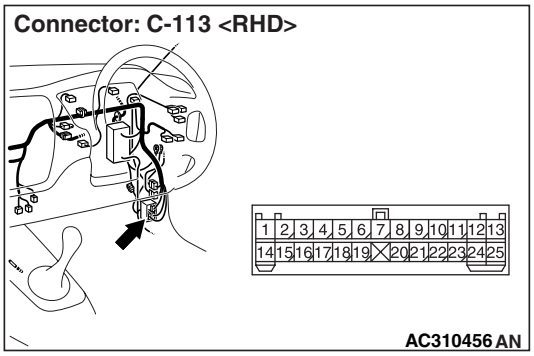


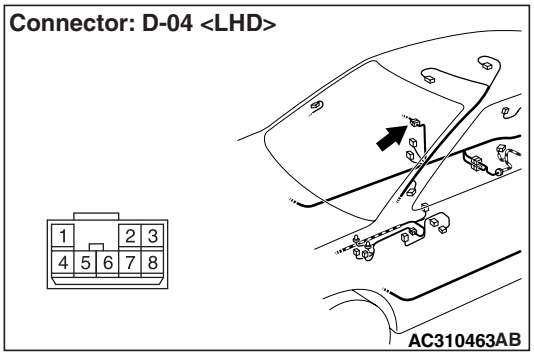


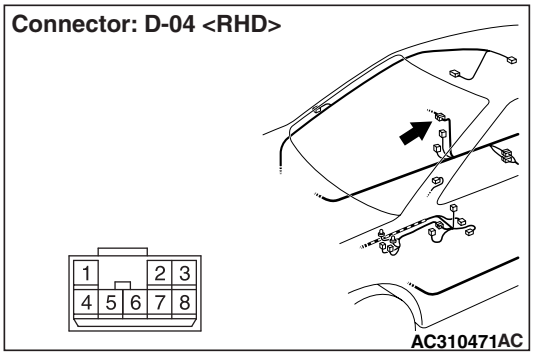


NOTE:







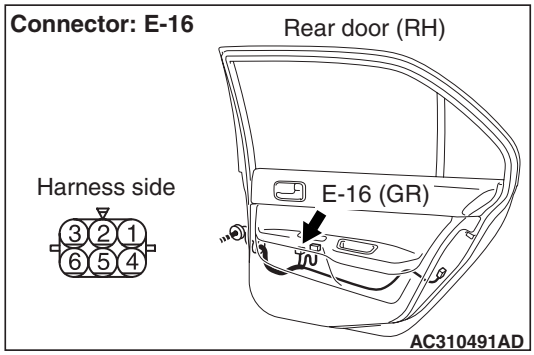


Prior to the wiring harness inspection, check intermediate connectors C-112 <LH drive vehicles>, C-113 <RH drive vehicles>, D-04 and junction block connector C-211, and repair if necessary.

- Check the power supply line for open circuit.

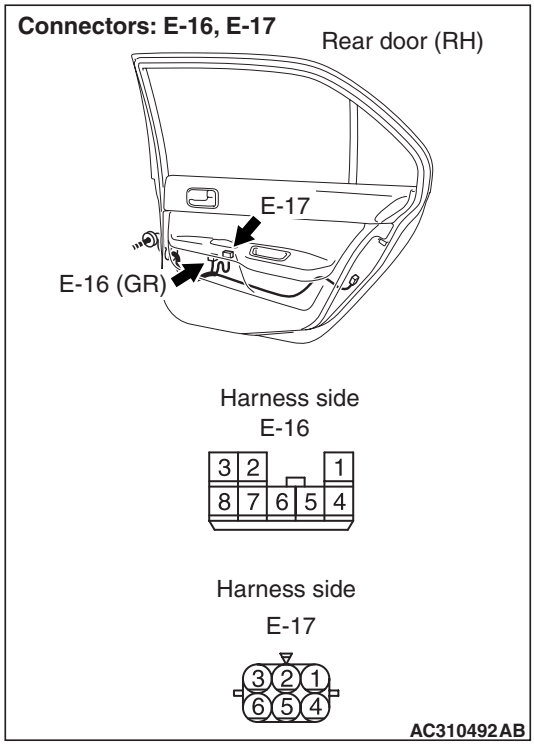
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 27. Connector check: E-16 rear power window regulator motor (RH) connector



Q: Is the check result normal?
YES : Go to Step 28.
NO : Repair the connector.

Step 28. Check the wiring harness from E-16 rear power window regulator motor (RH) connector terminal Nos.1 and 4 to E-17 rear power window sub switch (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 rear power window sub switch (RH) is replaced, check that the rear right door power window can be operated by the rear power window sub switch (RH).

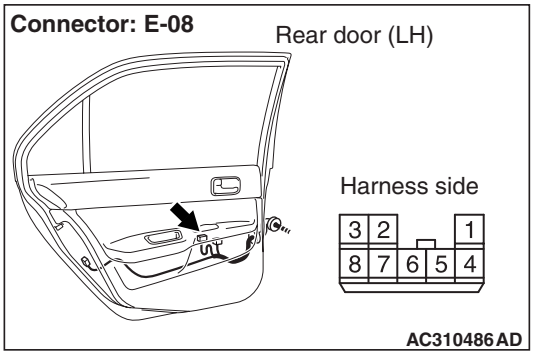
(1) Replace the rear power window sub switch (RH).
(2) Check that the rear right door power window can be operated by the rear power window sub switch (RH).

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 rear power window regulator motor assembly (RH).

Step 30. Connector check: E-08 rear power window sub switch (LH) connector

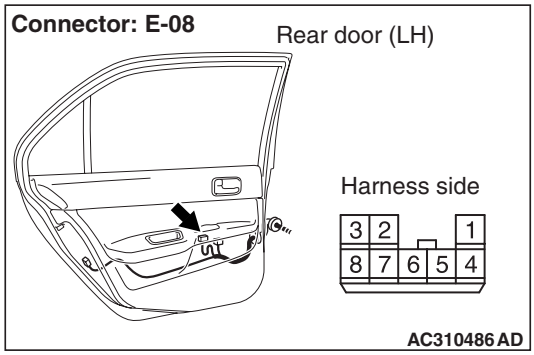


Q: Is the check result normal?

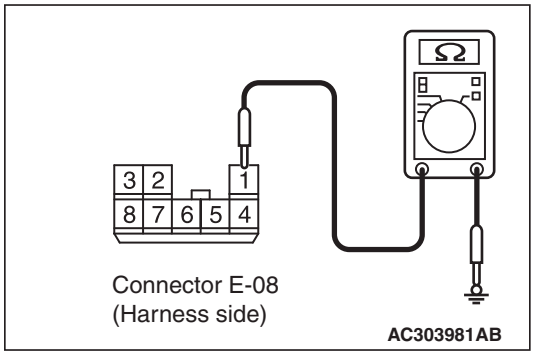
YES : Go to Step 31.

NO : Repair the connector.

Step 31. Resistance measurement at E-08 rear power window sub switch (LH) connector



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



(2) Resistance between E-08 rear power window sub switch (LH) connector terminal No.1 and body earth

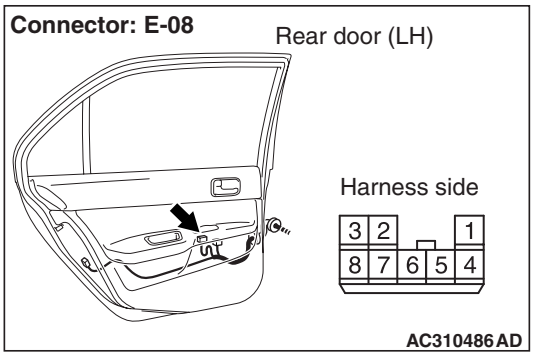
OK: 2Ω or less

Q: Is the check result normal?

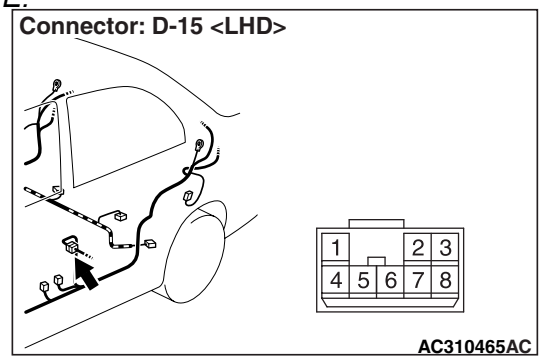
YES : Go to Step 33.

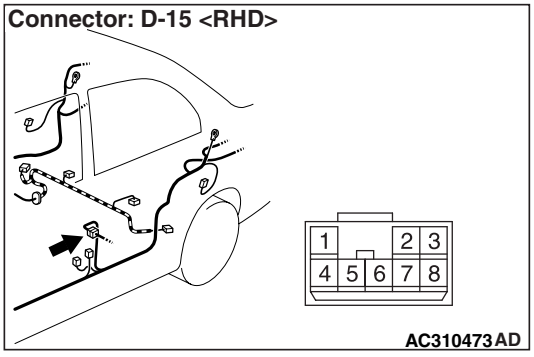
NO : Go to Step 32.

Step 32. Check the wiring harness from E-08 rear power window sub switch (LH) connector terminal No.1 to body earth.



NOTE:



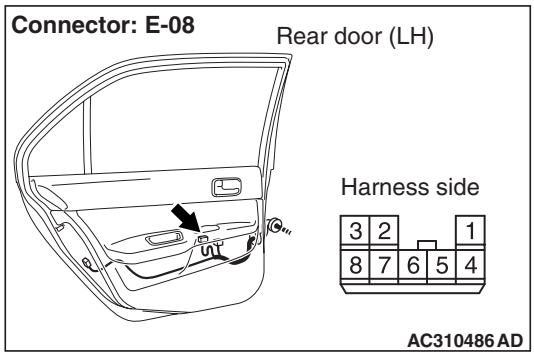


Prior to the wiring harness inspection, check intermediate connectors D-15, and repair if necessary.

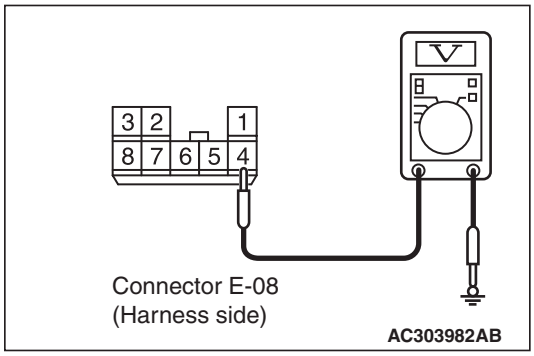
- Check the earth wires for open circuit.

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

Step 33. Voltage measurement at E-08 rear power window sub switch (LH) connector



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

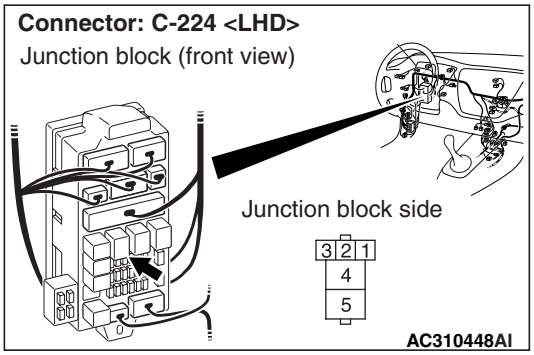


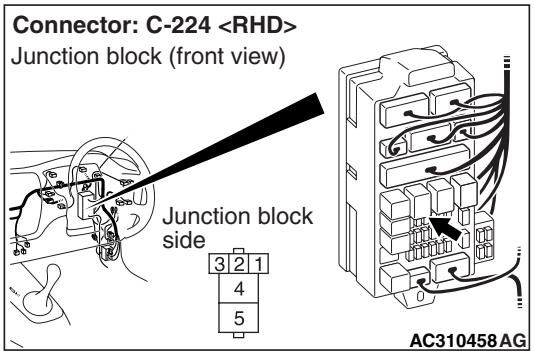
(3) Voltage between E-08 rear power window sub switch (LH) connector terminal No.4 and body earth

OK: System voltage

Q: Is the check result normal?
YES : Go to Step 36.
NO : Go to Step 34.

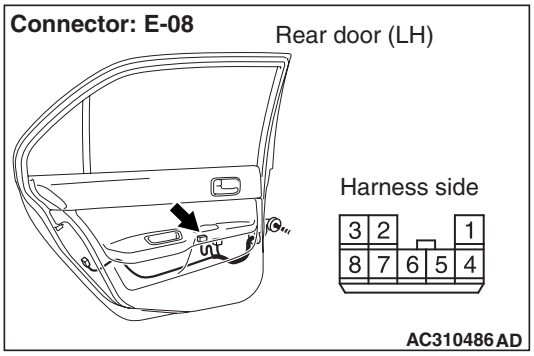
Step 34. Connector check: C-224 power window relay connector

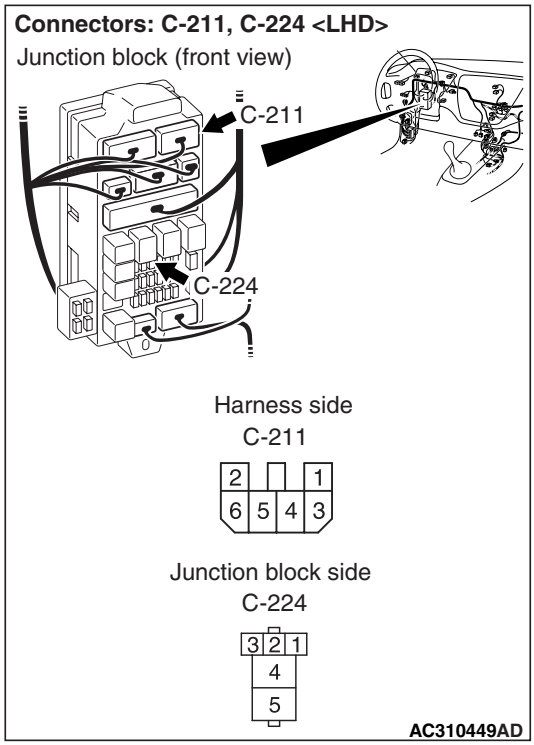


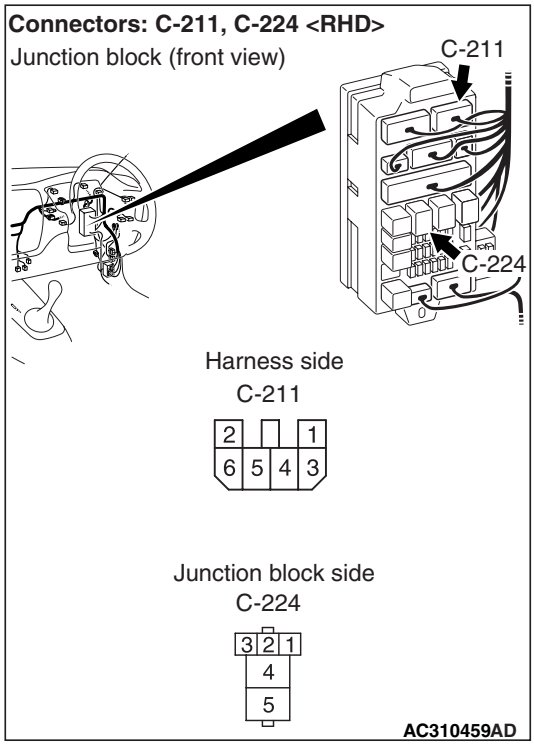


Q: Is the check result normal?
YES : Go to Step 35.
NO : Repair the connector.

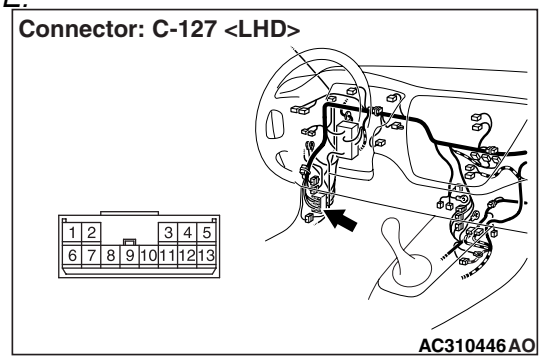
Step 35. Check the wiring harness from E-08 rear power window sub switch (LH) connector terminal No.4 to C-224 power window relay connector terminal No.4.

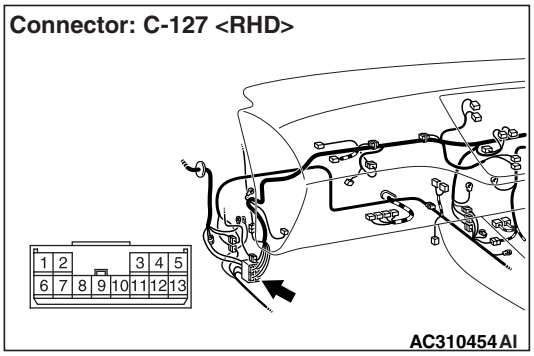


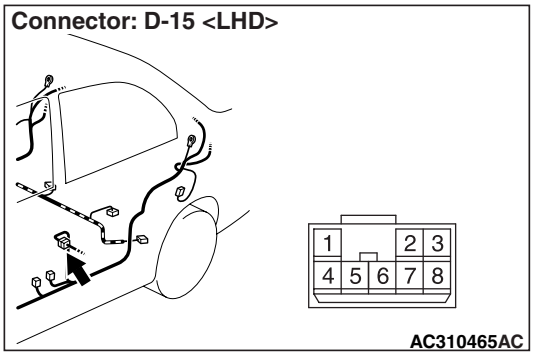


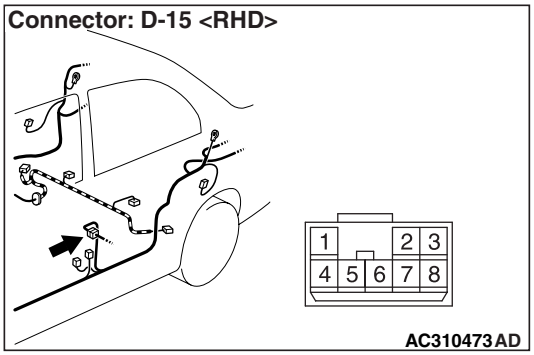


NOTE:







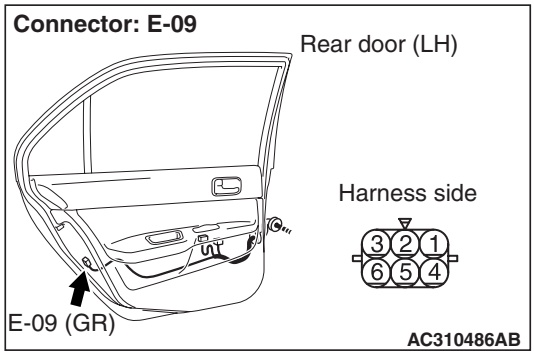


Prior to the wiring harness inspection, check intermediate connectors C-127, D-15 and junction block connector C-211, and repair if necessary.

- Check the power supply line for open circuit.

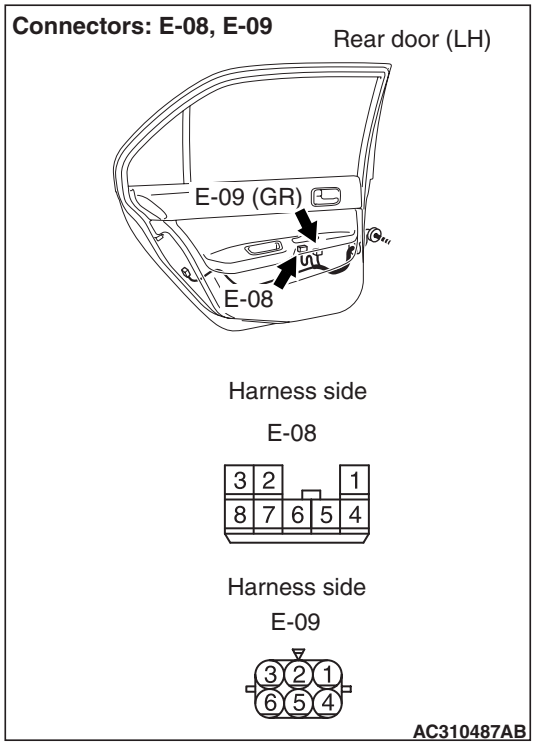
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 36. Connector check: E-09 rear power window regulator motor (LH) connector



Q: Is the check result normal?
YES : Go to Step 37.
NO : Repair the connector.

Step 37. Check the wiring harness from E-09 rear power window regulator motor (LH) connector terminal Nos.1 and 4 to E-08 rear power window sub switch (LH) connector terminal Nos.5 and 7.



- Check the input and output lines for open or short circuit.

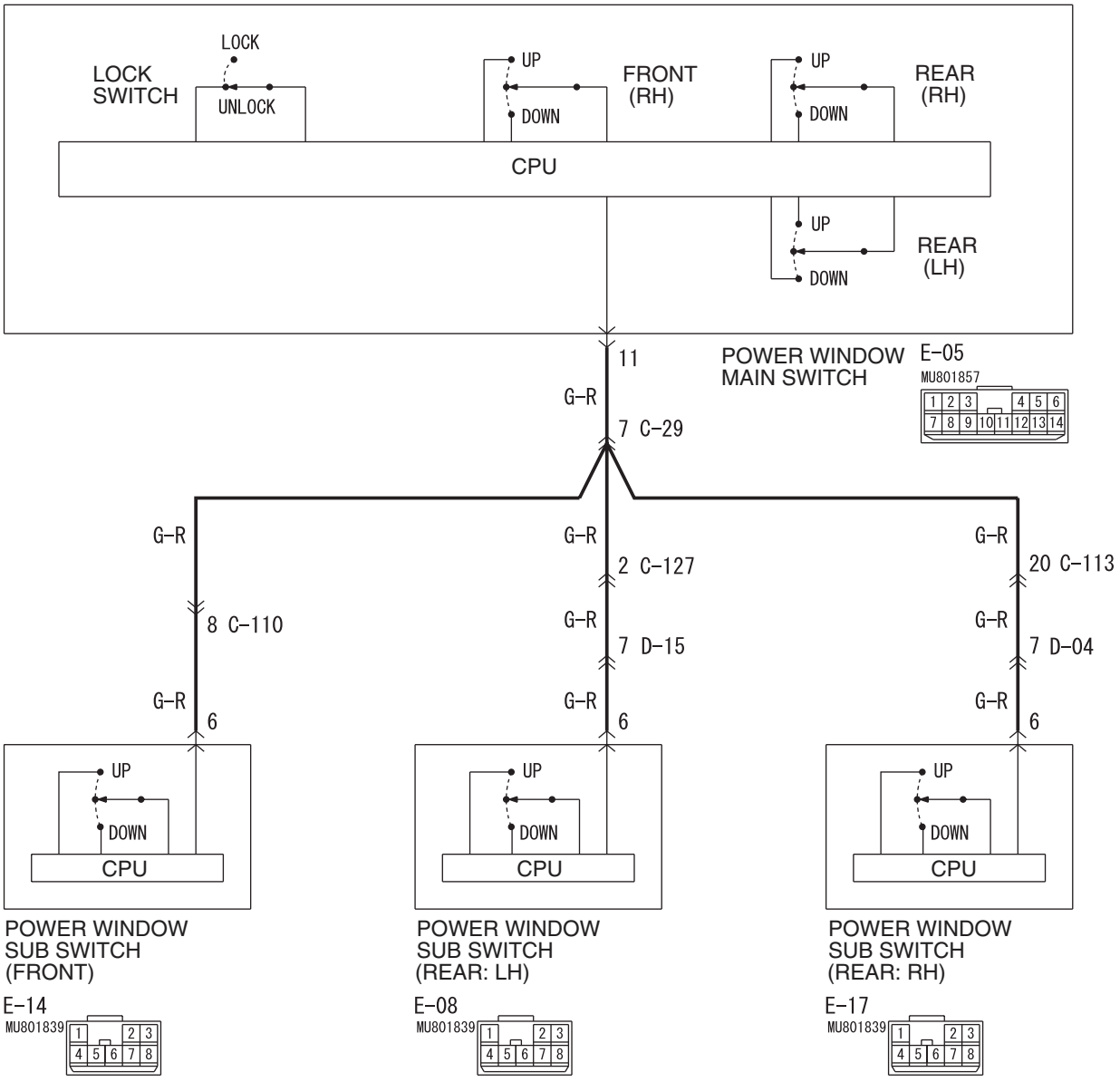
Q: Is the check result normal?
YES : Go to Step 38.
NO : Repair the wiring harness.

Step 38. Retest the system.
After the rear power window sub switch (LH) is replaced, check that the rear left door power window can be operated by the rear power window sub switch (LH).
(1) Replace the rear power window sub switch (LH).
(2) Check that the rear left door power window can be operated by the rear power window sub switch (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 rear power window regulator motor assembly (LH).

INSPECTION PROCEDURE D-4: Front and/or rear passenger's power window(s) do not work by means of the power window main switch.

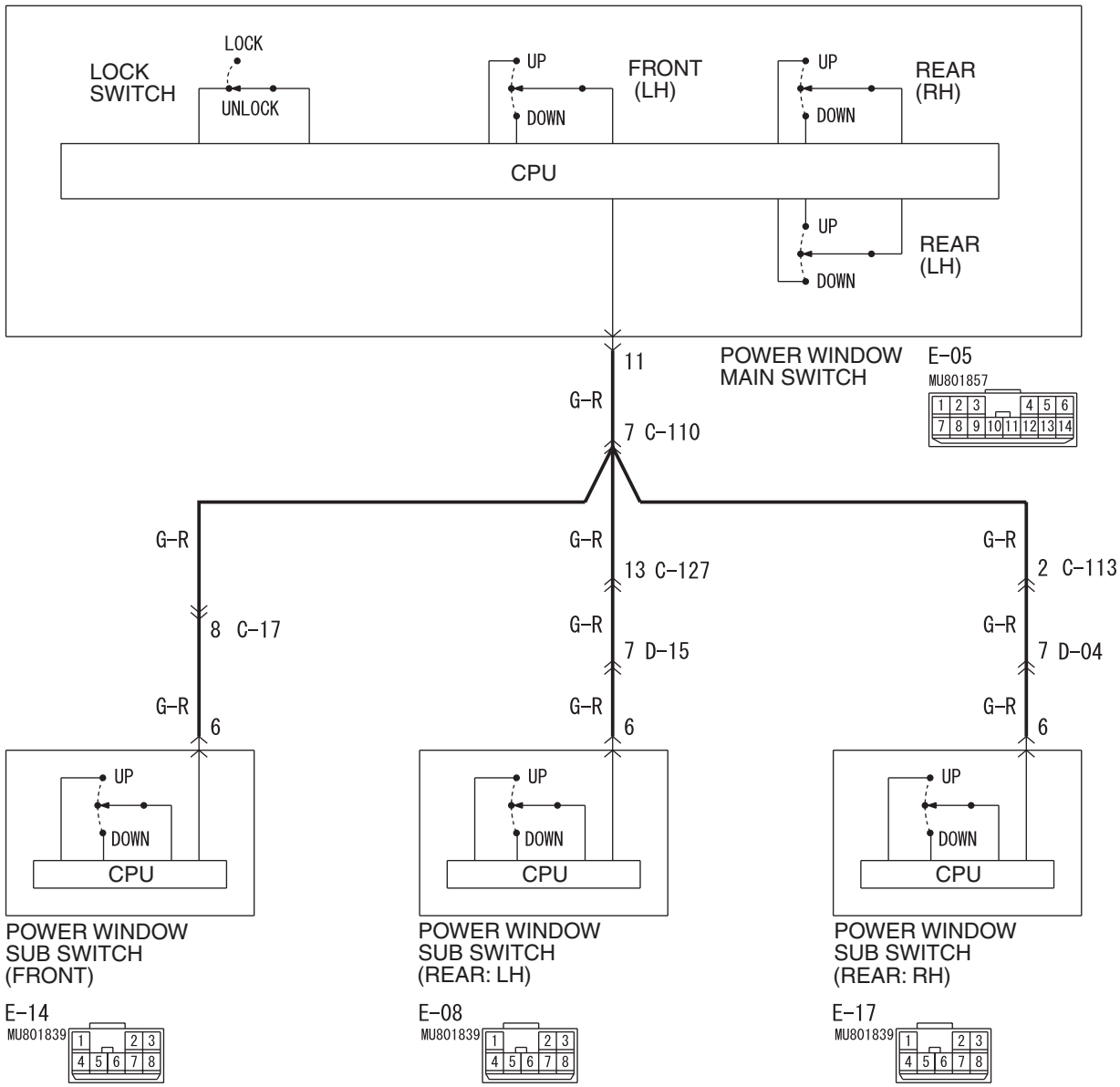
Power Window Circuit <LHD>



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

W4J54E104A

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

W4J54E105A

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

- Malfunction of the power window main switch
- Malfunction of the front power window sub switch, rear power window sub switch (RH) or rear power window sub switch (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 <LH drive vehicles>P.54B-81 ." Refer to inspection procedure D-2 "Driver's power window does not work by means of the power window main switch <RH drive vehicles>P.54B-83 ."

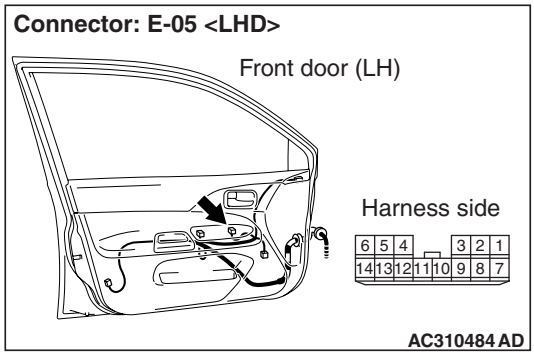
Step 2. Check the power window sub switch.
Check that each power window works by means of the respective power window sub switch when the power window lock switch is turned off.

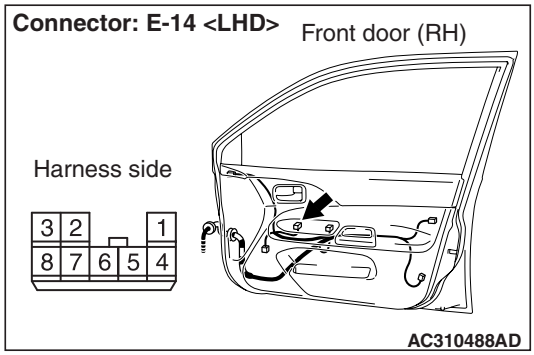
Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to inspection procedure D-3 "Relevant power window(s) do not work by means of the front and rear passenger's power window sub switches P.54B-85."

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.

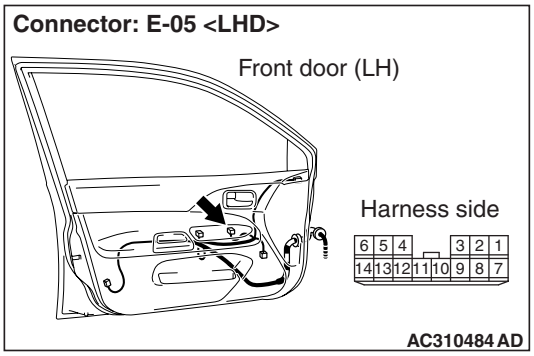
Step 4. Connector check: E-05 power window main switch connector and E-14 front power window sub switch connector

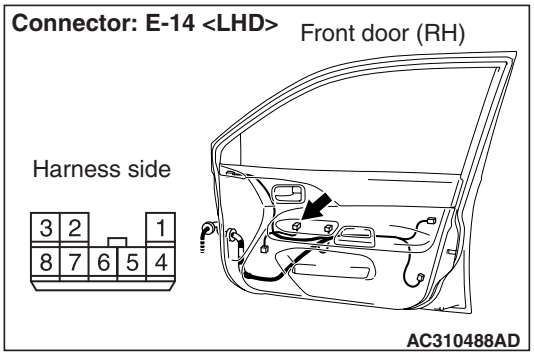




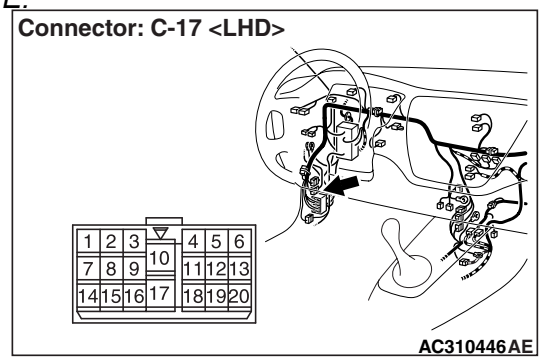
Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the connector.

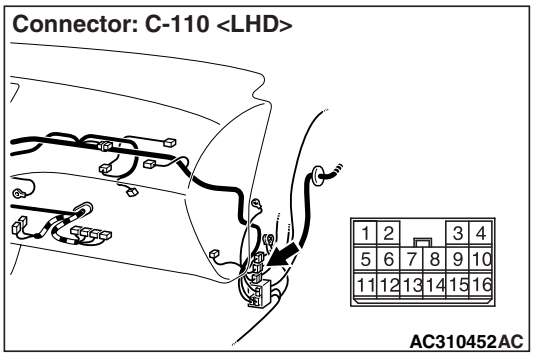
Step 5. Check the wiring harness between E-05 power window main switch connector terminal No.11 and E-14 front power window sub switch connector terminal No.6.





NOTE:





Prior to the wiring harness inspection, check intermediate connectors C-17, C-110, and repair if necessary.

- Check the communication lines for open circuit.

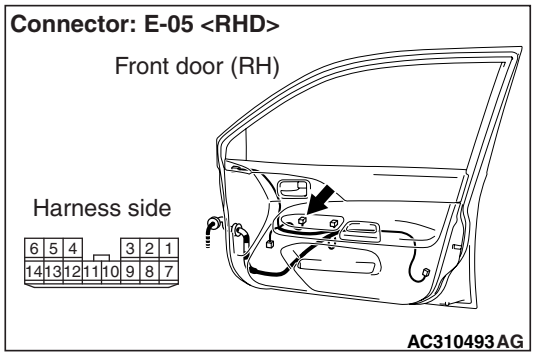
Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the wiring harness.

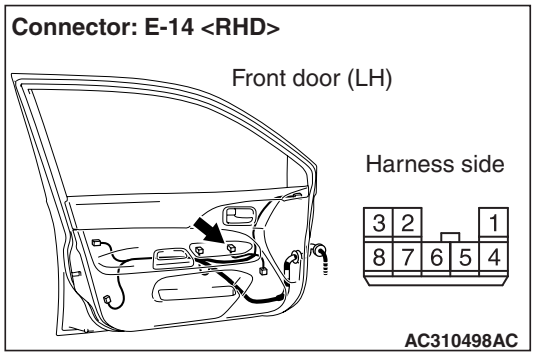
Step 6. Retest the system.

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

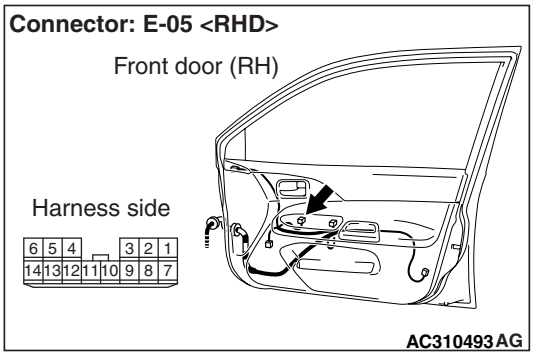
Step 7. Connector check: E-05 power window main switch connector and E-14 front power window sub switch connector

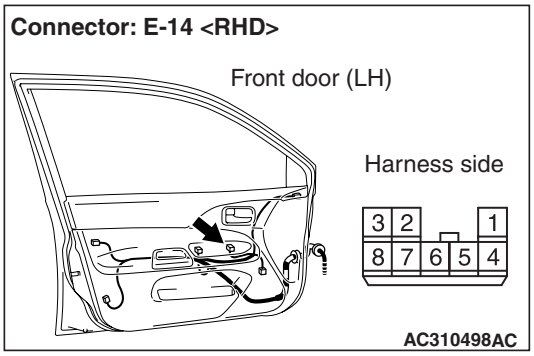




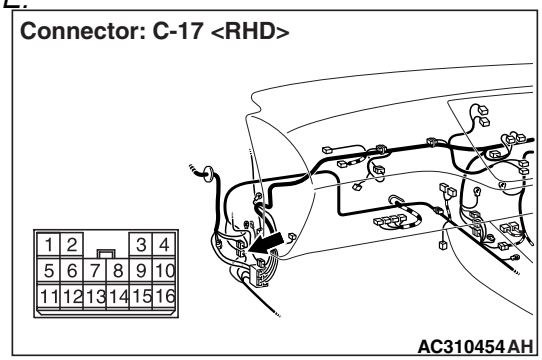
Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the connector.

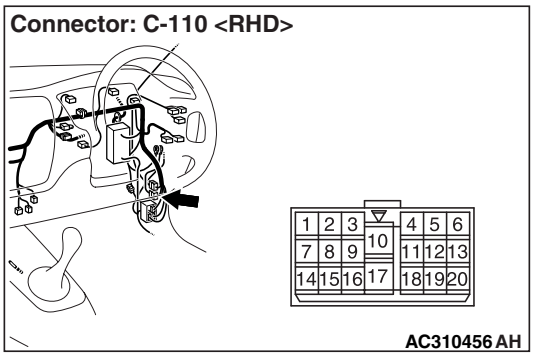
Step 8. Check the wiring harness between E-05 power window main switch connector terminal No.11 and E-14 front power window sub switch connector terminal No.6.





NOTE:





Prior to the wiring harness inspection, check intermediate connectors C-17, C-110, 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.

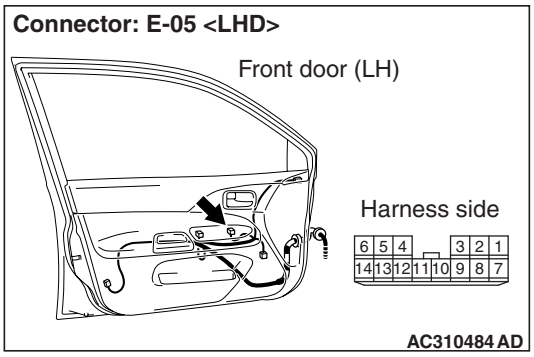
Step 9. Retest the system.

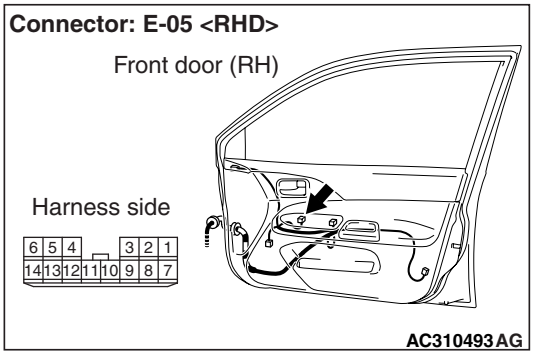
After the front power window sub switch is replaced, check that the front passenger's door power window can be operated by the power window sub switch.

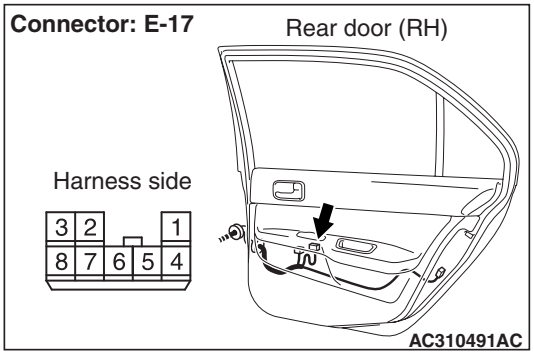
(1) Replace the front power window sub switch.
(2) Check that the front passenger's power window works by means of the power window main switch.

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: E-05 power window main switch connector and E-17 rear power window sub switch (RH) connector

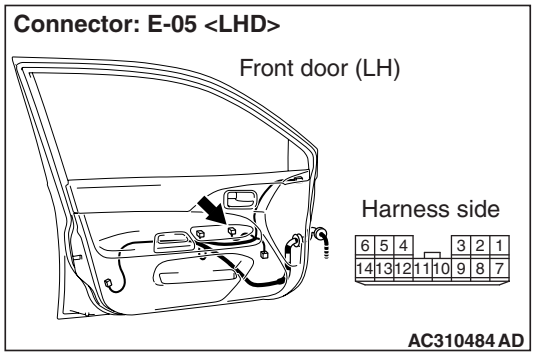


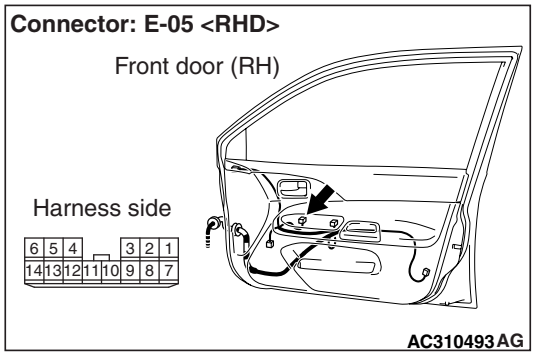


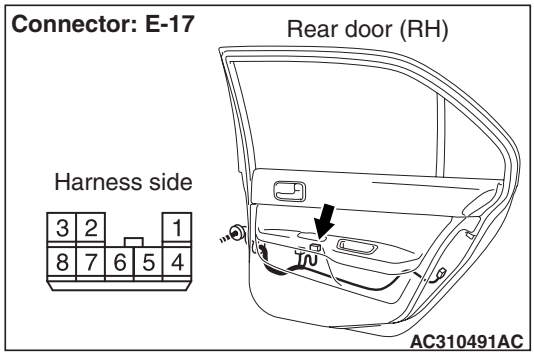


Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the connector.

Step 11. Check the wiring harness between E-05 power window main switch connector terminal No.11 and E-17 rear power window sub switch (RH) connector terminal No.6.

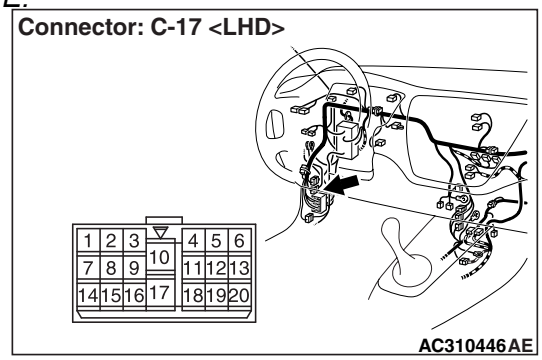






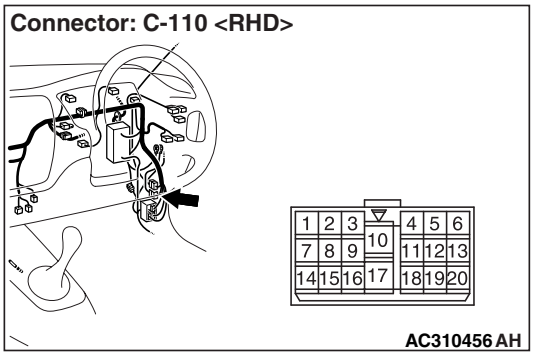
NOTE:

Connector: C-17 <LHD>



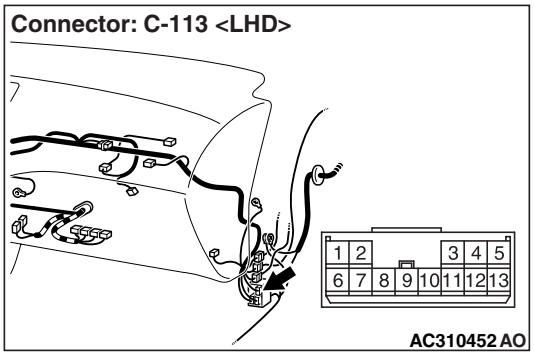
AC310446AE

Connector: C-110 <RHD>



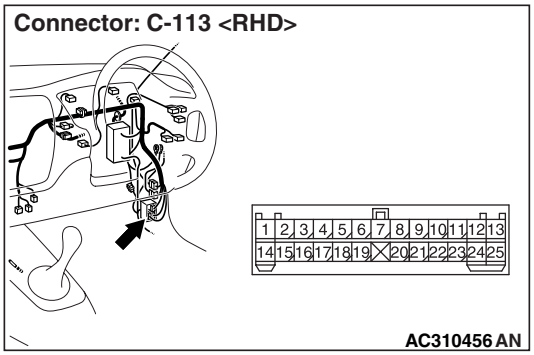
AC310456AH

Connector: C-113 <LHD>



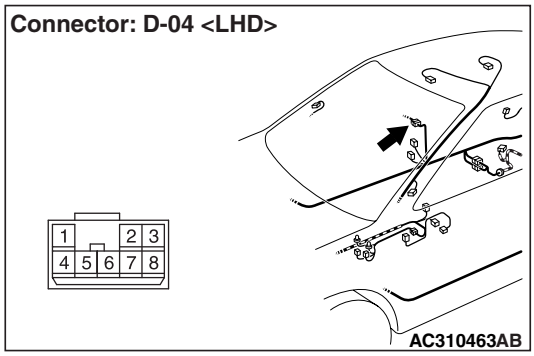
AC310452AO

Connector: C-113 <RHD>



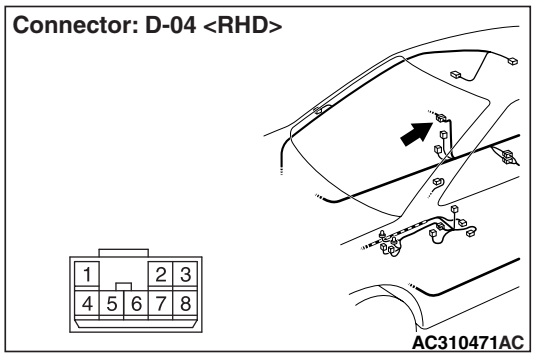
AC310456AN

Connector: D-04 <LHD>



AC310463AB

Connector: D-04 <RHD>



AC310471AC

Prior to the wiring harness inspection, check intermediate connectors C-113, C-17 <LH drive vehicles>, C-110 <RH drive vehicles>, D-04, 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.

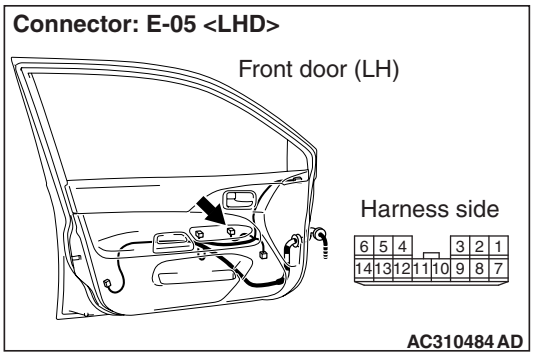
Step 12. Retest the system.

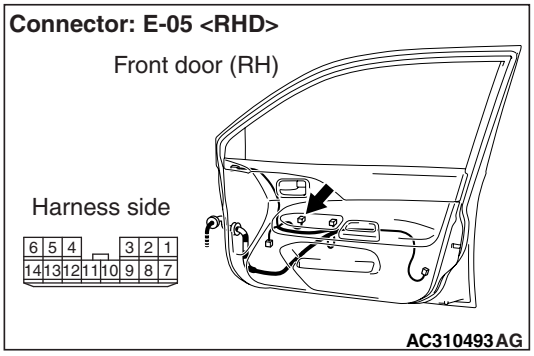
After the rear power window sub switch (RH) is replaced, check that the rear right door power window can be operated by the power window sub switch.

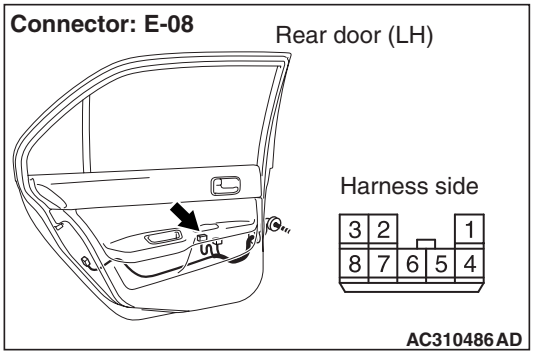
(1) Replace the rear power window sub switch (RH).
(2) Check that the rear right power window works by means of the power window main switch.

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: E-05 power window main switch connector and E-08 rear power window sub switch (LH) connector

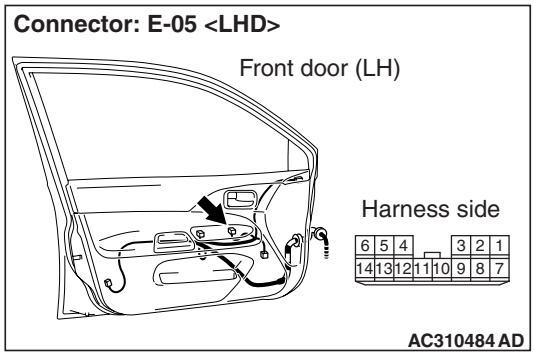


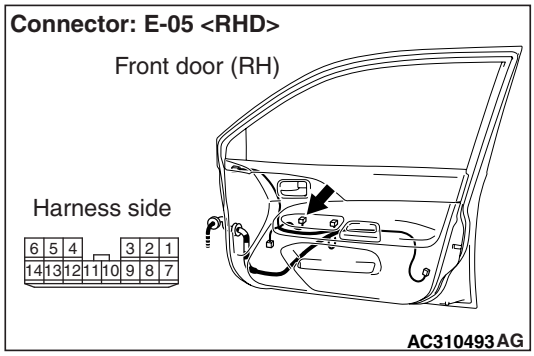


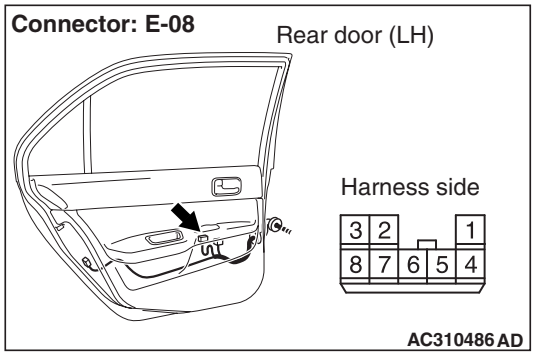


Q: Is the check result normal?
YES : Go to Step 14.
NO : Repair the connector.

Step 14. Check the wiring harness between E-05 power window main switch connector terminal No.11 and E-08 rear power window sub switch (LH) connector terminal No.6.

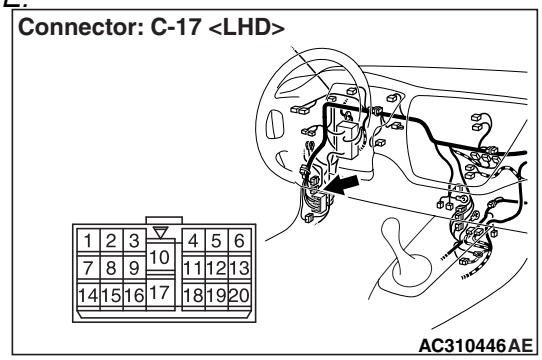






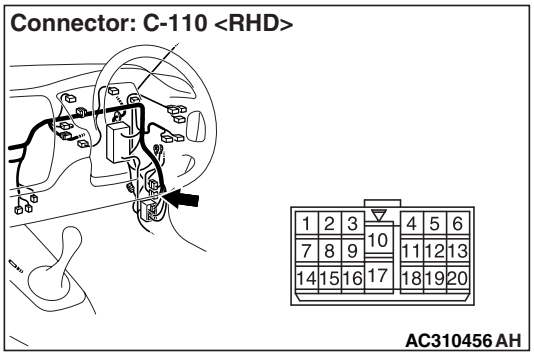
NOTE:

Connector: C-17 <LHD>



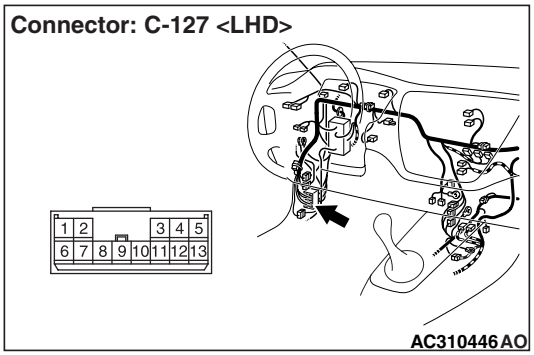
AC310446AE

Connector: C-110 <RHD>



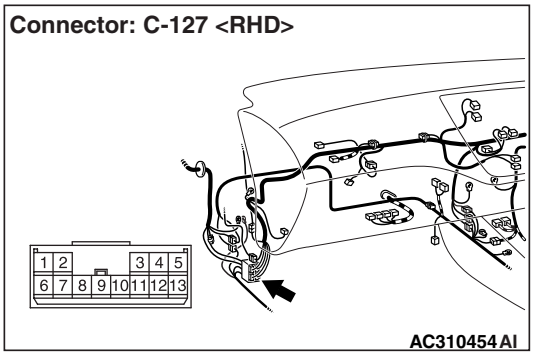
AC310456AH

Connector: C-127 <LHD>



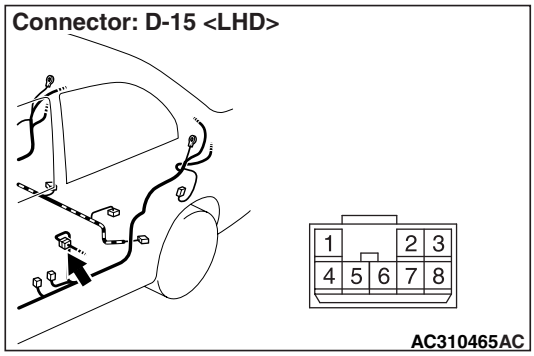
AC310446AO

Connector: C-127 <RHD>



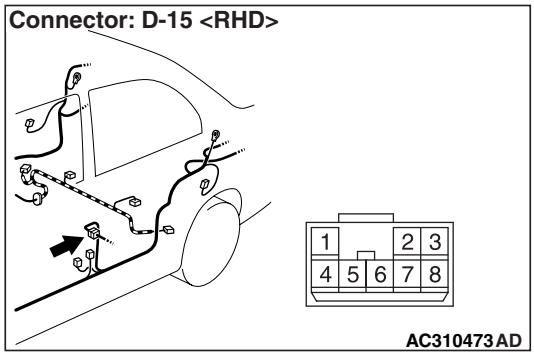
AC310454AI

Connector: D-15 <LHD>



AC310465AC

Connector: D-15 <RHD>



AC310473AD

Prior to the wiring harness inspection, check intermediate connectors C-17 <LH drive vehicles>, C-110 <RH drive vehicles>, C-127, D-15, 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 rear power window sub switch (LH) is replaced, check that the rear left door power window can be operated by the power window sub switch.

(1) Replace the rear power window sub switch (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 regulator 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.42-24.

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-113."

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.42-24).

Q: Is the check result normal?

YES : Adjust the door window glass (Refer to GROUP 42 – Door – On-vehicle service P.42-23), and then go to Step 3.

NO : Replace the defective power window regulator 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.42-23.

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.42-23).

Step 4. Retest the system.

Check that the power window does not lower automatically while it is being raised.

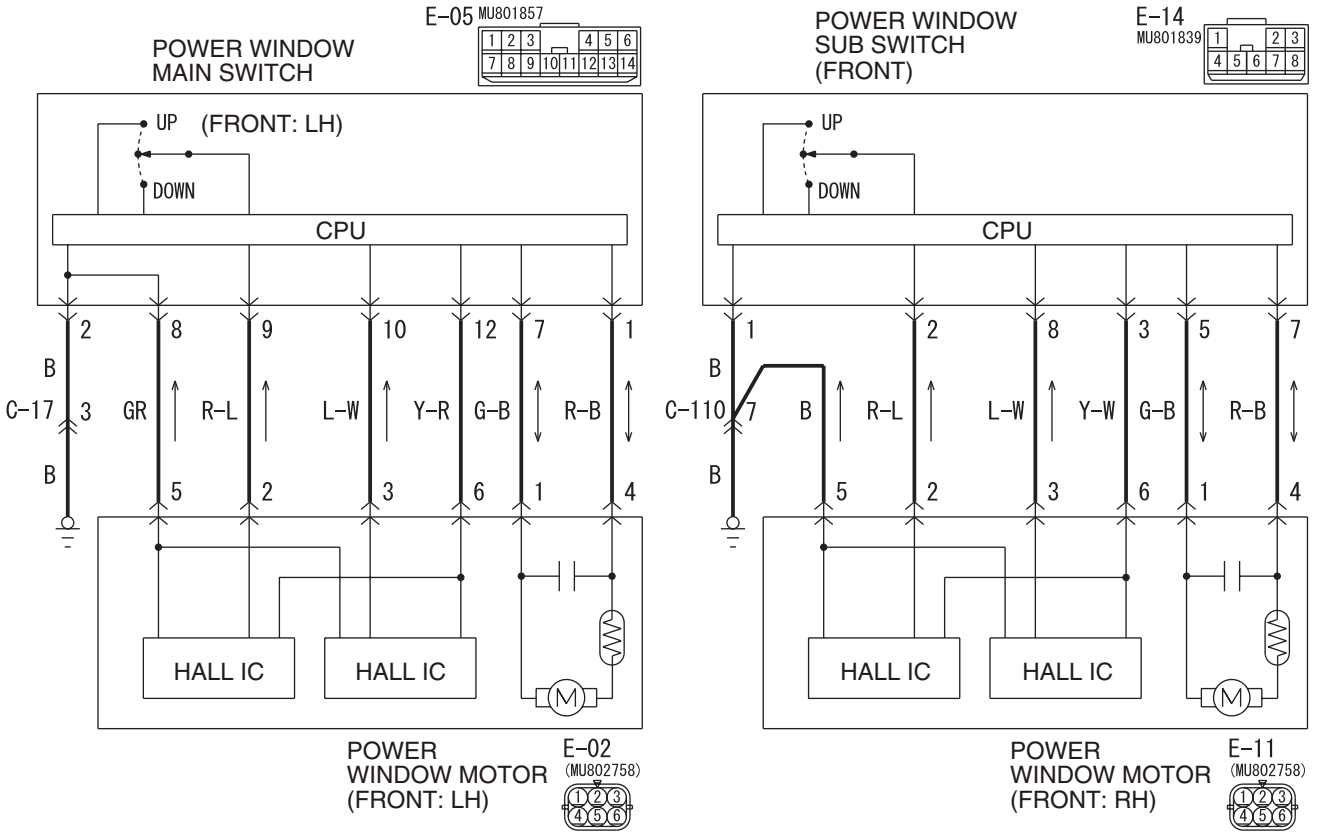
Q: Is the check result normal?

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 regulator motor assembly of the defective window.

INSPECTION PROCEDURE D-6: Power window anti-trap function does not work normally.

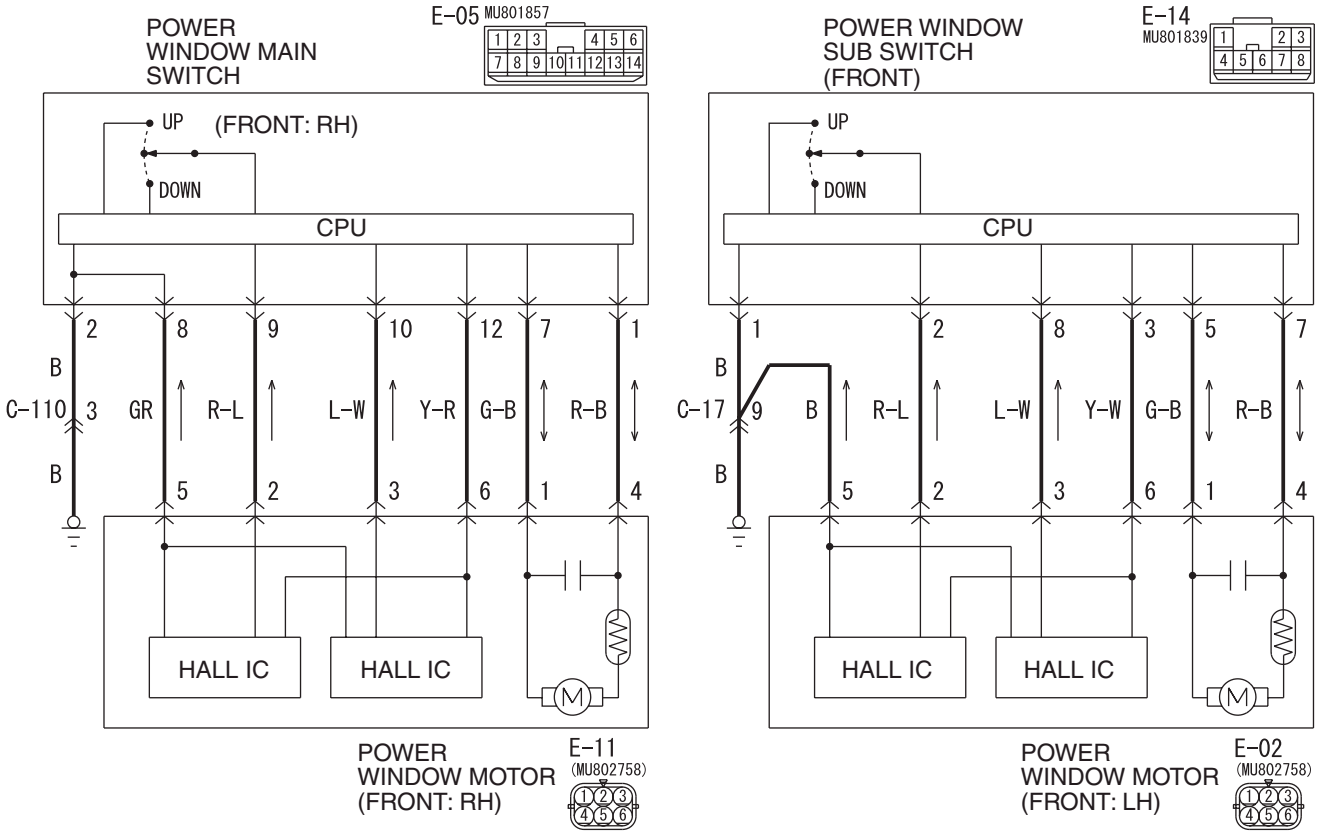
Power Window (front) Circuit <LHD>



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

W4J54E106A

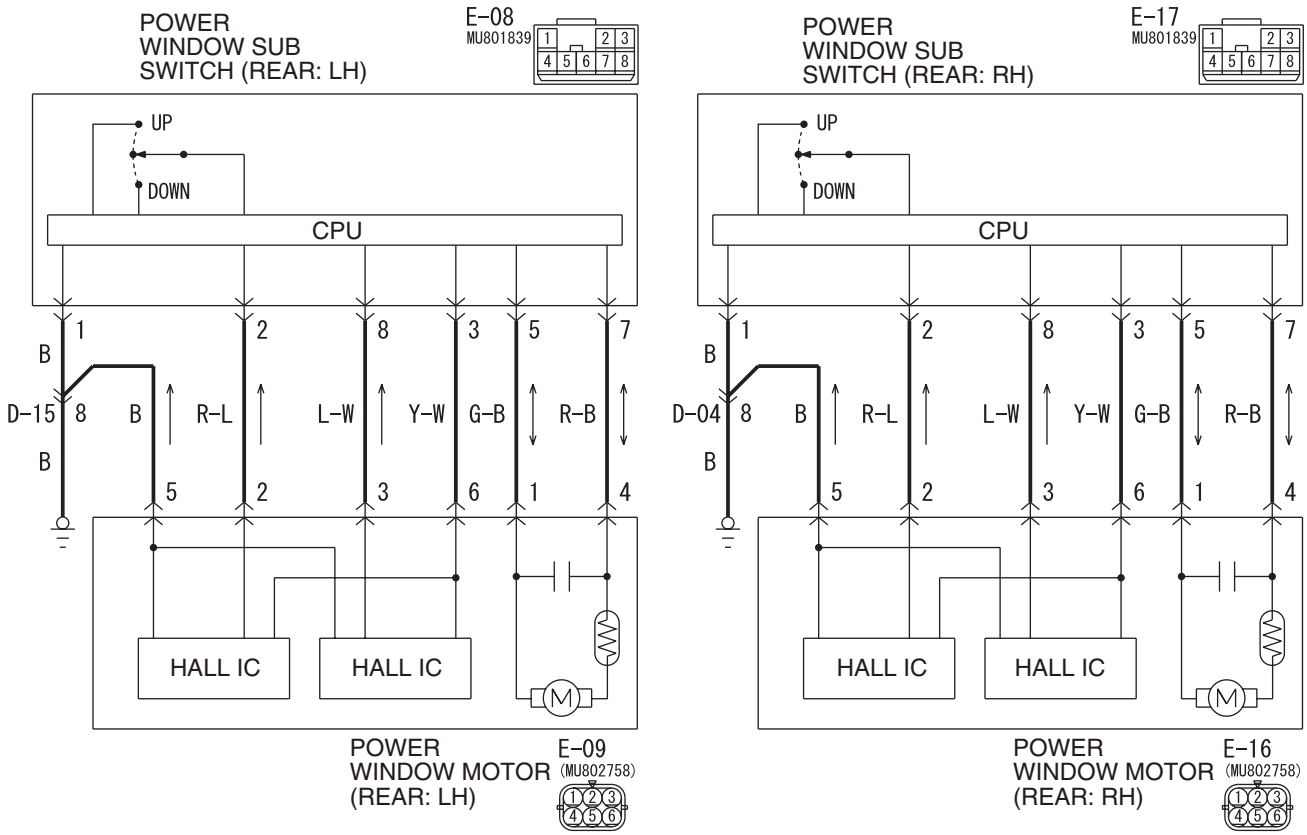
Power Window (front) Circuit <RHD>



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

W4J54E107A

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

W4J54E108A

COMMENTS ON TROUBLE SYMPTOM

The revolution detection sensor, which is incorporated in the power window regulator motor, may be defective.

POSSIBLE CAUSES

- Malfunction of the power window regulator 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.42-24).

Q: Is the check result normal?

YES : Adjust the door window glass (Refer to GROUP 42 – Door – On-vehicle service P.42-23), and then go to Step 2.

NO : Replace the defective power window regulator motor assembly which operating current are abnormal.

Step 2. Confirm the power window learning function.

Check that the power window switch has learned the fully closed position of the windows (Refer to GROUP 42 – Door P.42-29).

Q: Is the check result normal?

YES : Go to Step 3.

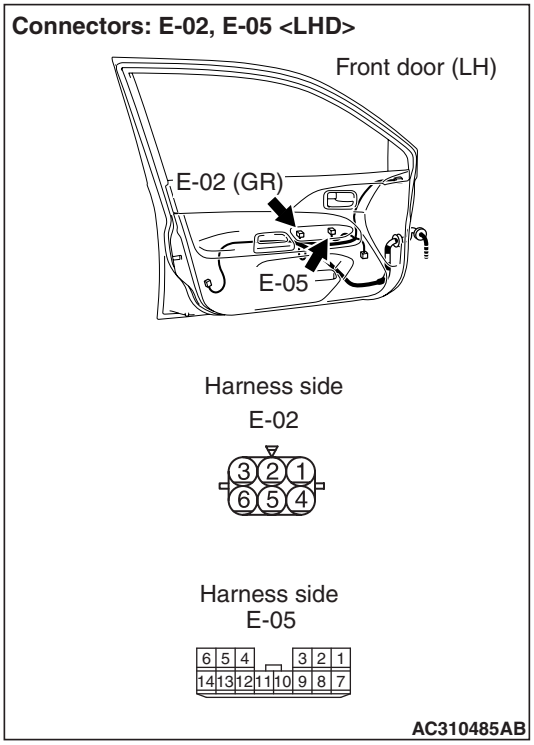
NO : Make the power window switch learn the fully closed position of the windows (Refer to GROUP 42 – Door P.42-29).

Step 3. Determine a trouble spot.

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

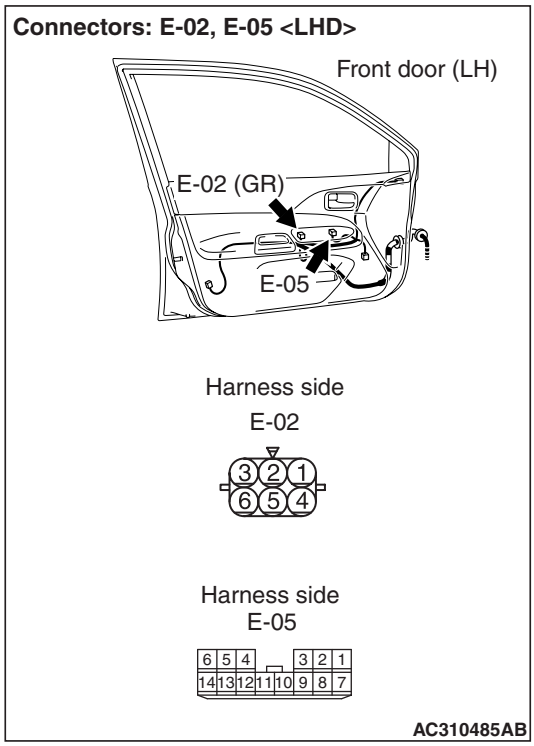
Driver's door <LH drive vehicles> : Go to Step 4.
Driver's door <RH drive vehicles> : Go to Step 7.
Front passenger's door <LH drive vehicles> : Go to Step 10.
Front passenger's door <RH drive vehicles> : Go to Step 16.
Rear right door : Go to Step 22.
Rear left door : Go to Step 28.

Step 4. Connector check: E-05 power window main switch connector and E-02 front power window regulator motor (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 E-05 power window main switch connector terminal Nos.8, 9, 10 and 12 to E-02 front power window regulator motor (RH) connector terminal Nos.5, 2, 3 and 6.



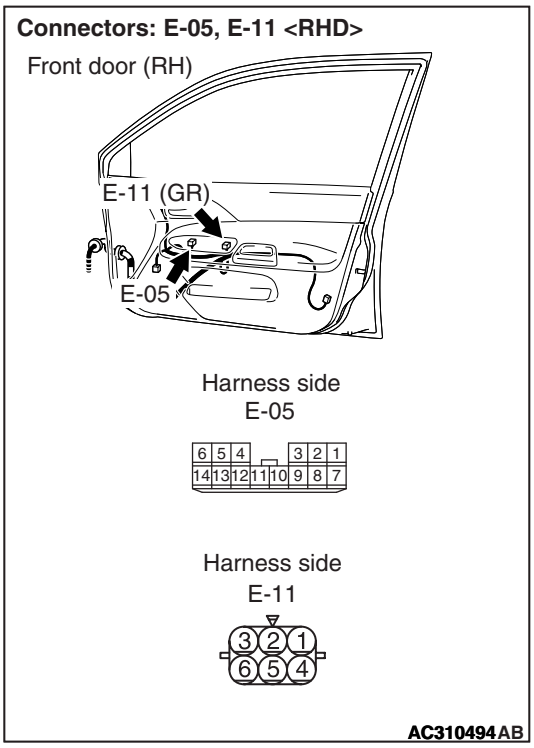
- Check the input and output lines to the revolution detection sensor for open or short circuit.

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.

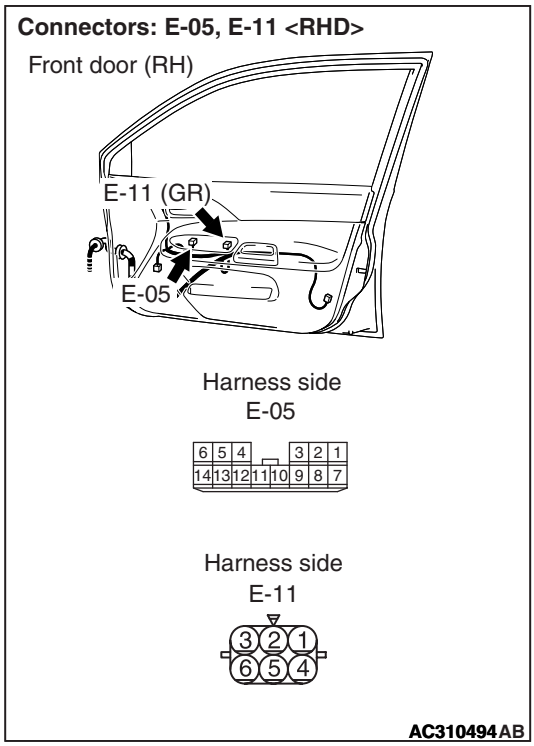
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front power window regulator motor assembly (LH).

Step 7. Connector check: E-05 power window main switch connector and E-11 front power window regulator motor (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 E-05 power window main switch connector terminal Nos.8, 9, 10 and 12 to E-11 front power window regulator motor (RH) connector terminal Nos.5, 2, 3 and 6.



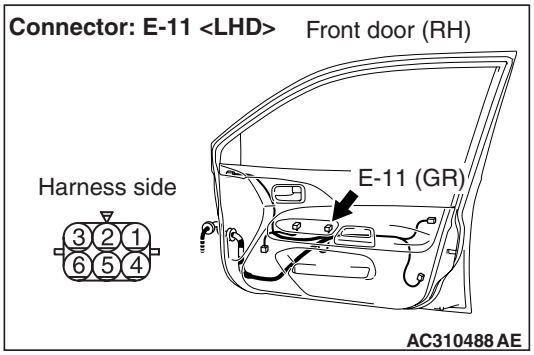
- Check the input and output lines to the revolution detection sensor for open or short circuit.

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.

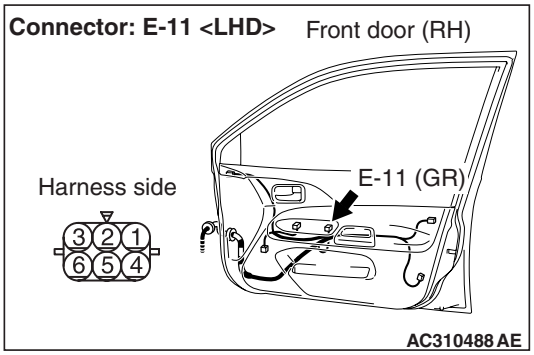
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front power window regulator motor assembly (RH).

Step 10. Connector check: E-11 front power window regulator motor (RH) connector

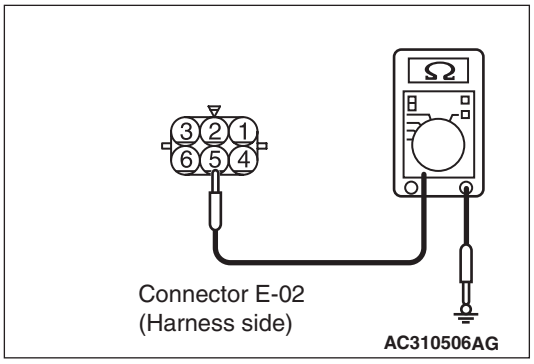


Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the defective connector.

Step 11. Resistance measurement at E-11 front power window regulator motor (RH) connector



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

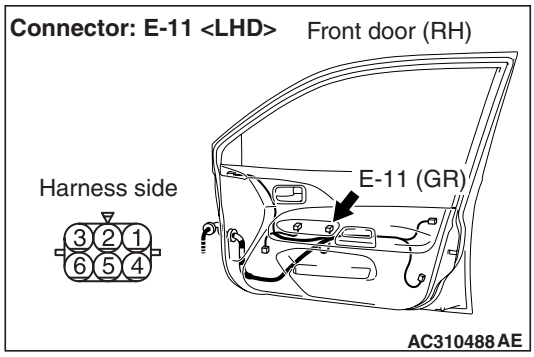


(2) Resistance between E-11 front power window regulator motor (RH) connector terminal No.5 and body earth.

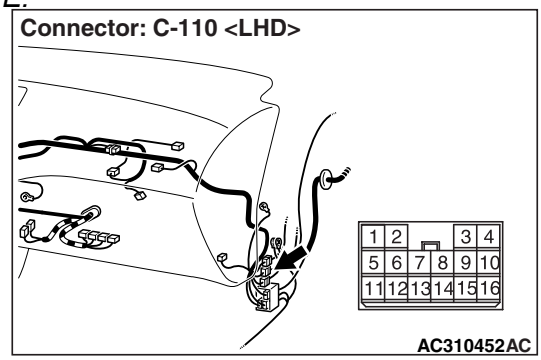
OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 13.
NO : Go to Step 12.

Step 12. Check the wiring harness from E-11 front power window regulator motor (RH) connector terminal No.5 to body earth.



NOTE:

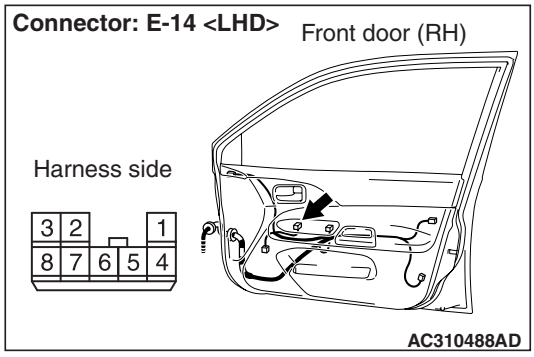


Prior to the wiring harness inspection, check intermediate connector C-110, and repair if necessary.

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

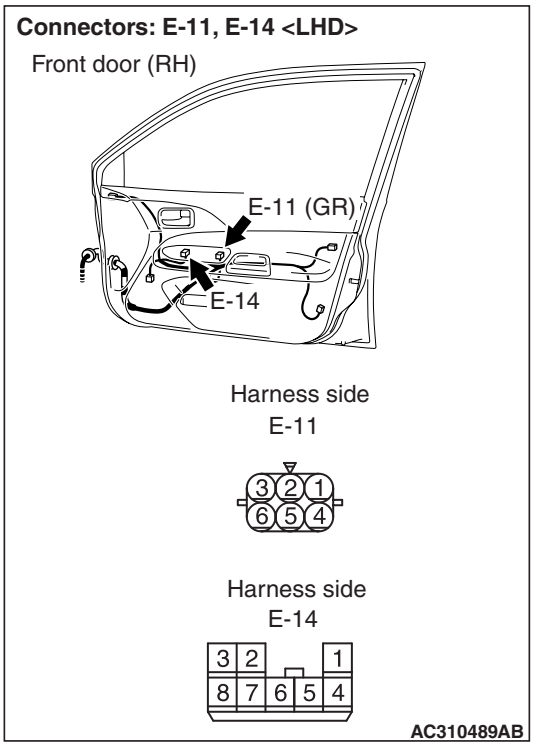
Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the wiring harness.

Step 13. Connector check: E-14 front power window sub switch (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 E-14 front power window sub switch connector terminal Nos.2, 8 and 3 to E-11 front power window regulator motor (RH) connector terminal Nos.2, 3 and 6.



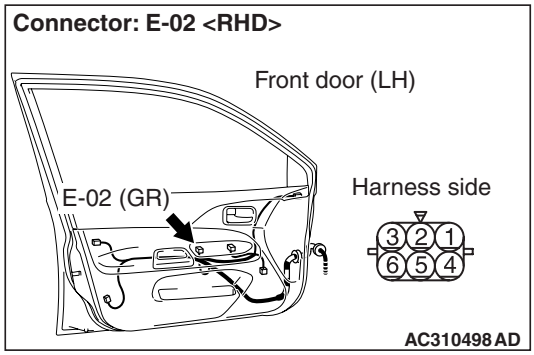
- Check the input and output lines to the revolution detection sensor for open or short circuit.

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

Step 15. Retest the system.
After the front power window sub switch is replaced, check that the front passenger's anti-trap function can be operated by the power window sub switch.
(1) Replace the front power window sub switch (RH).
(2) Check that the front passenger's power window anti-trap function works.

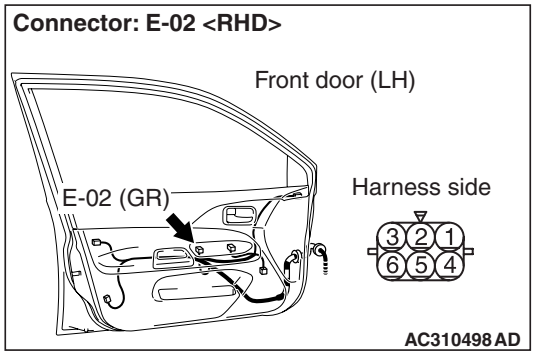
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front power window regulator motor assembly (RH).

Step 16. Connector check: E-02 front power window regulator motor (LH) connector

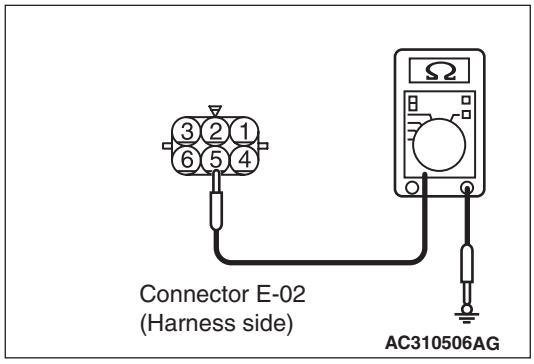


Q: Is the check result normal?
YES : Go to Step 17.
NO : Repair the defective connector.

Step 17. Resistance measurement at E-02 front power window regulator motor (LH) connector



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

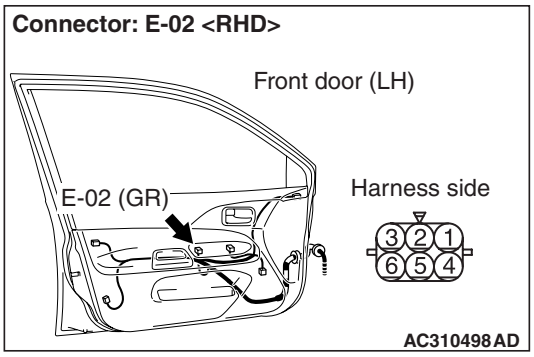


(2) Resistance between E-02 front power window regulator motor (LH) connector terminal No.5 and body earth.

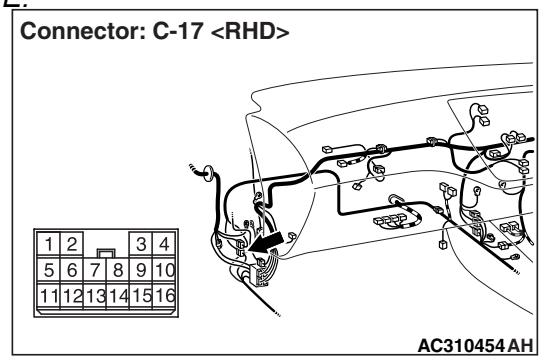
OK: 2Ω or less

Q: Is the check result normal?
YES : Go to Step 19.
NO : Go to Step 18.

Step 18. Check the wiring harness from E-02 front power window regulator motor (LH) connector terminal No.5 to body earth.



NOTE:

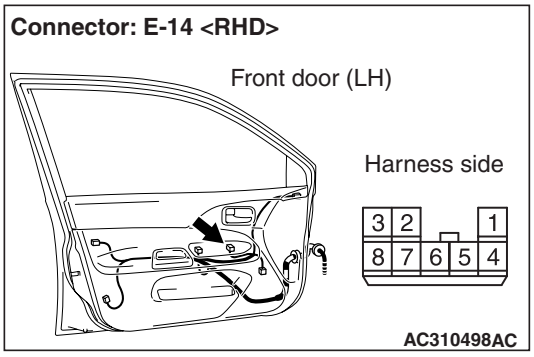


Prior to the wiring harness inspection, check intermediate connector C-17, and repair if necessary.

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

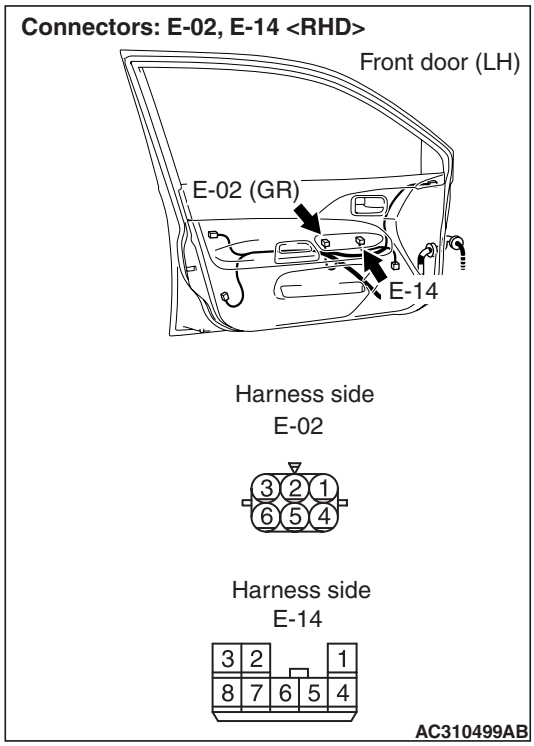
Q: Is the check result normal?
YES : Go to Step 19.
NO : Repair the wiring harness.

Step 19. Connector check: E-14 front power window sub switch connector



Q: Is the check result normal?
YES : Go to Step 20.
NO : Repair the defective connector.

Step 20. Check the wiring harness from E-14 front power window sub switch connector terminal Nos.2, 8 and 3 to E-02 front power window regulator motor (LH) connector terminal Nos.2, 3 and 6.



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

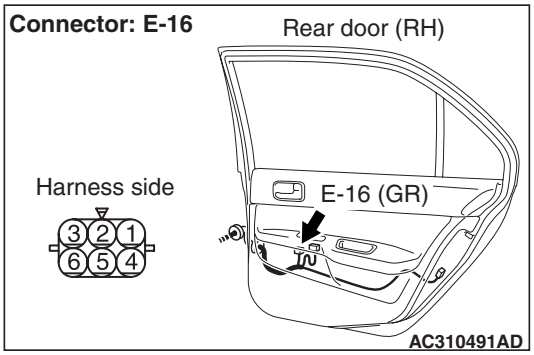
Q: Is the check result normal?
YES : Go to Step 21.
NO : Repair the wiring harness.

Step 21. Retest the system.

After the front power window sub switch is replaced, check that the front passenger's anti-trap function can be operated by the power window sub switch.
(1) Replace the front power window sub switch.
(2) Check that the front passenger's power window anti-trap function works.

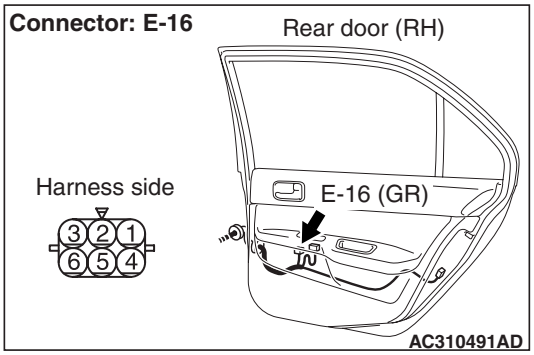
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front power window regulator motor assembly (LH).

Step 22. Connector check: E-16 rear power window regulator motor (RH) connector

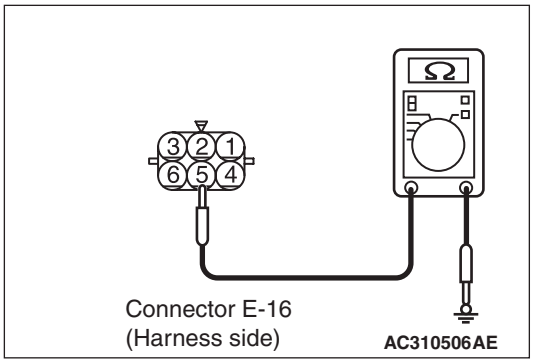


Q: Is the check result normal?
YES : Go to Step 23.
NO : Repair the defective connector.

Step 23. Resistance measurement at E-16 rear power window regulator motor (RH) connector



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

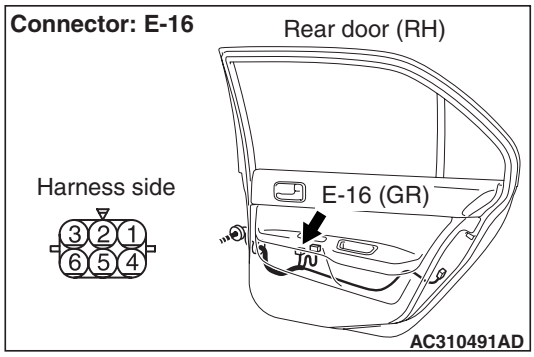


(2) Resistance between E-16 rear power window regulator motor (RH) connector terminal No.5 and body earth.

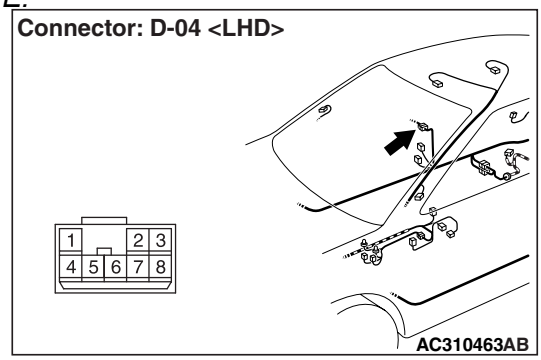
OK: 2Ω or less

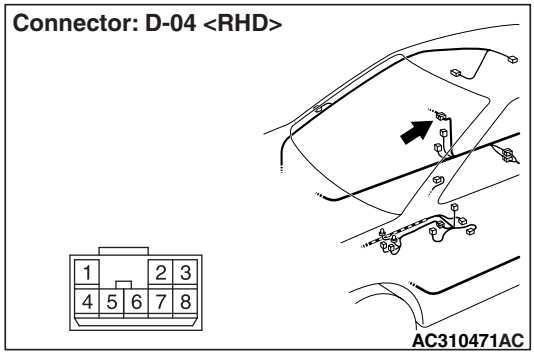
Q: Is the check result normal?
YES : Go to Step 25.
NO : Go to Step 24.

Step 24. Check the wiring harness from E-16 rear power window regulator motor (RH) connector terminal No.5 to body earth.



NOTE:



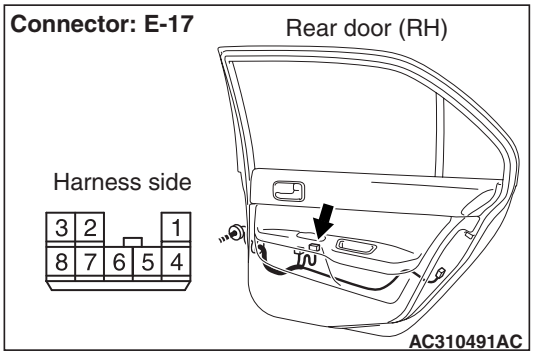


Prior to the wiring harness inspection, check intermediate connector D-04, and repair if necessary.

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

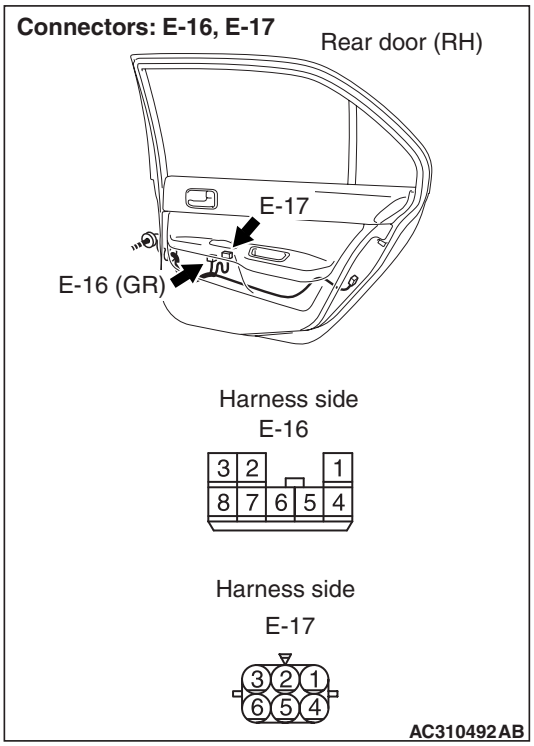
Q: Is the check result normal?
YES : Go to Step 25.
NO : Repair the wiring harness.

Step 25. Connector check: E-17 rear power window sub switch (RH) connector



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

Step 26. Check the wiring harness from E-17 rear power window sub switch (RH) connector terminal Nos.2, 8 and 3 to E-16 rear power window regulator motor (RH) connector terminal Nos.2, 3 and 6.



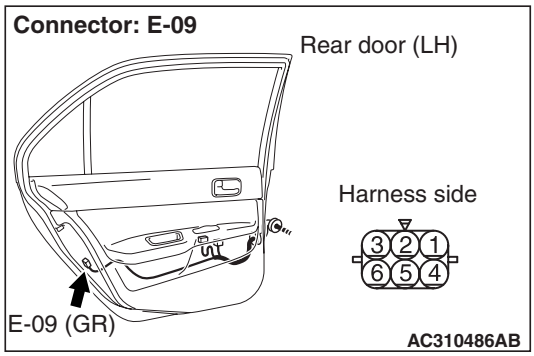
- Check the input and output lines to the revolution detection sensor for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 27.
NO : Repair the wiring harness.

Step 27. Retest the system.
After the rear power window sub switch (RH) is replaced, check that the rear right door anti-trap function can be operated by the power window sub switch.
(1) Replace the rear power window sub switch (RH).
(2) Check that the rear right power window anti-trap function works.

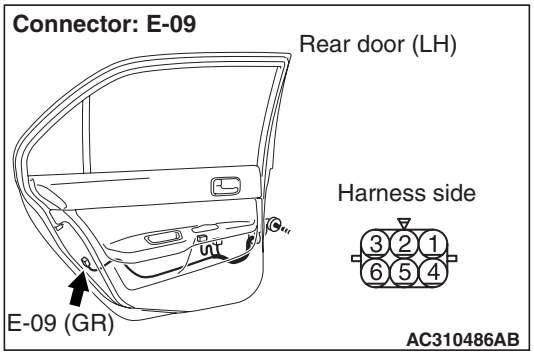
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the rear power window regulator motor assembly (RH).

Step 28. Connector check: E-09 rear power window regulator motor (LH) connector

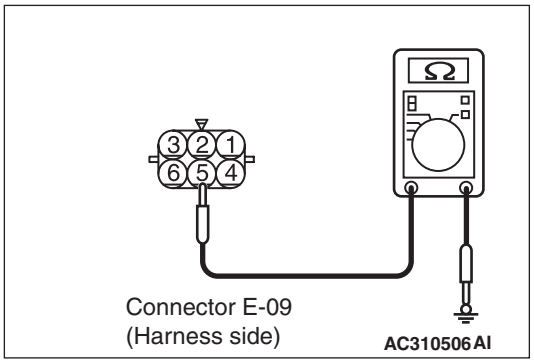


Q: Is the check result normal?
YES : Go to Step 29.
NO : Repair the defective connector.

Step 29. Resistance measurement at E-09 rear power window regulator motor (LH) connector



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

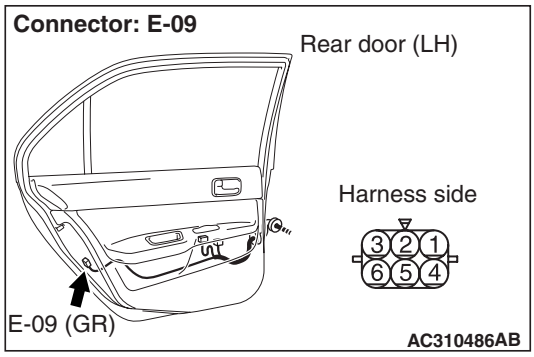


(2) Resistance between E-09 rear power window regulator motor (LH) connector terminal No.5 and body earth.

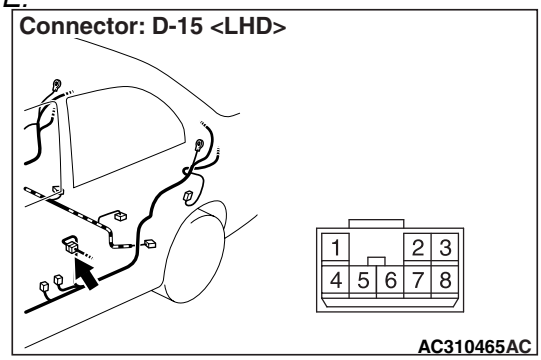
OK: 2Ω or less

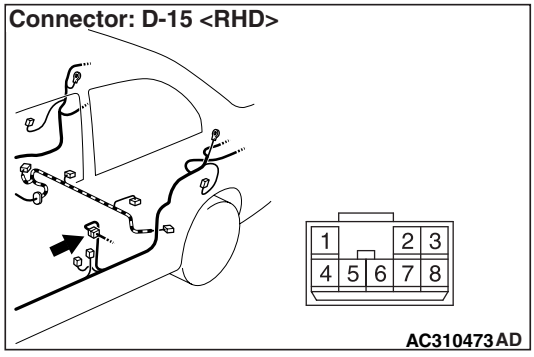
Q: Is the check result normal?
YES : Go to Step 31.
NO : Go to Step 30.

Step 30. Check the wiring harness from E-09 rear power window regulator motor (LH) connector terminal No.5 to body earth.



NOTE:



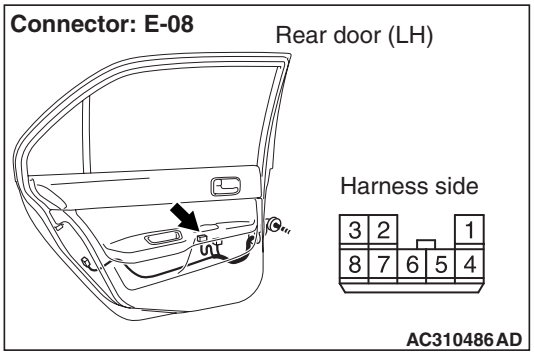


Prior to the wiring harness inspection, check intermediate connector D-15, and repair if necessary.

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

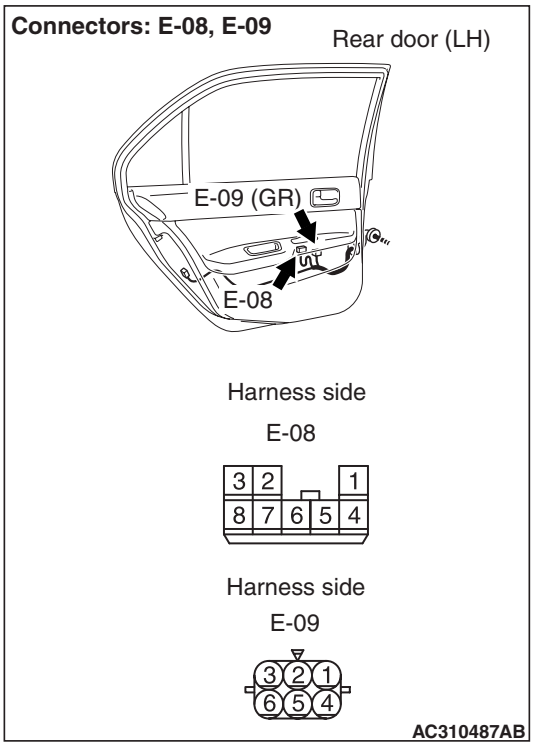
Q: Is the check result normal?
YES : Go to Step 31.
NO : Repair the wiring harness.

Step 31. Connector check: E-08 rear power window sub switch (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 E-08 rear power window sub switch (LH) connector terminal Nos.8, 2 and 3 to E-09 rear power window regulator motor (LH) connector terminal Nos.3, 2 and 6.



- 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 rear power window sub switch (LH) is replaced, check that the rear left door anti-trap function can be operated by the power window sub switch.
(1) Replace the rear power window sub switch (LH).
(2) Check that the rear left power window anti-trap function works.

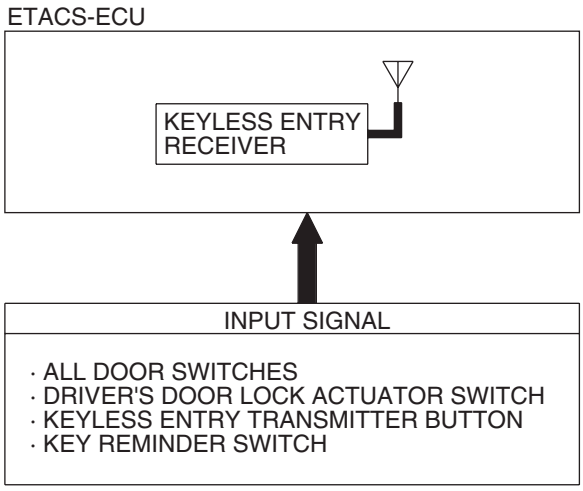
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the rear power window regulator motor assembly (LH).

KEYLESS ENTRY SYSTEM

INSPECTION PROCEDURE E-1: Keyless entry system does not work.

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

Keyless Entry System Function Circuit



W4J54E109A

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 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-42."

Step 2. 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
All of the door switches	A door is opened when all the doors are closed
Driver's door lock actuator switch	When the driver's key cylinder or inside lock knob is unlocked or locked
Keyless entry transmitter switch	When the switch is turned from off to on

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is 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 L-8 "The key reminder switch signal is not received P.54B-257."

All the door switch signals are not received. : Refer to inspection procedure L-10 "All the door switch signals are not received <LH drive vehicles>P.54B-265 ." Refer to inspection procedure L-10 "All the door switch signals are not received <RH drive vehicles>P.54B-268 ."

The driver's door lock actuator switch signal is not received. : Refer to inspection procedure L-11 "The front door lock actuator (LH) switch signal is not received <LH drive vehicles>P.54B-272 ." Refer to inspection procedure L-11 "The front door lock actuator (RH) switch signal is not received <RH drive vehicles>P.54B-275 ."

The keyless entry transmitter switch signal is not received. : Refer to inspection procedure L-13 "Each switch signal of the keyless entry transmitter is not received P.54B-282."

Step 3. 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 warning 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 warning 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 adjustment function.
Check that the keyless entry hazard warning lamp answerback function has been enabled by using the adjustment function.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Enable the keyless entry hazard warning lamp answerback function by using the adjustment function (Refer to P.54B-302).

Step 2. 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 3.
NO : Refer to inspection procedure I-2 "The hazard warning lamps do not illuminate P.54B-196".

Step 3. Check the operation of the room lamps.
Check that the room lamps illuminate normally.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Refer to inspection procedure K-1 "The front, rear room lamp and/or luggage compartment lamp do not illuminate or extinguish normally P.54B-225."

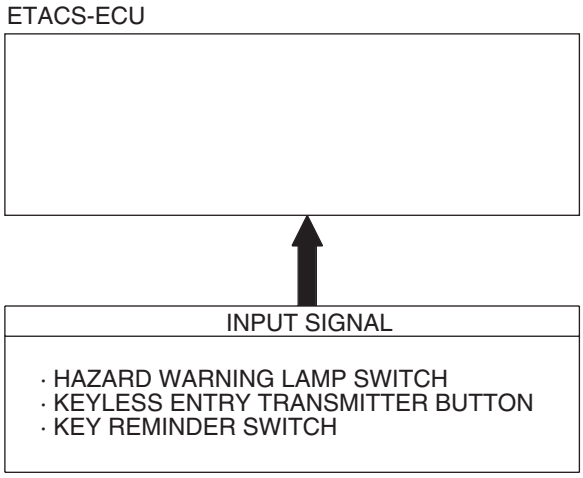
Step 4. Retest the system.
Check that the keyless entry hazard warning lamp answerback function or the room lamp answerback function work normally.

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

INSPECTION PROCEDURE E-3: Encrypted code cannot be registered.

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

Encrypted Transmitter Code Register Mode



W4J54E110A

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 M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is 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 L-8 "The key reminder switch signal is not received P.54B-257."
The hazard warning lamp switch signal is not received. : Refer to inspection procedure L-9 "The hazard warning lamp switch signal is not received P.54B-261."
The keyless entry transmitter switch signal is not received. : Refer to inspection procedure L-13 "Each switch signal of the keyless entry transmitter is not received P.54B-282."

Step 3. Retest the system.
Check that the encrypted code can be registered.

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

INSPECTION PROCEDURE E-4: The timer lock function does not work after the doors have been unlocked by the keyless entry system.

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

COMMENT ON TROUBLE SYMPTOM
If the keyless entry timer lock does not work normally, the input signal circuit(s) to the keyless entry transmitter or the ETACS-ECU may be defective.

POSSIBLE CAUSES
- Malfunction of the keyless entry transmitter
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the operation of the keyless entry system.
Check that the keyless entry system works normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to inspection procedure E-1 "Keyless entry system does not work P.54B-125."

Step 2. Retest the system.
Check that the timer lock works normally.

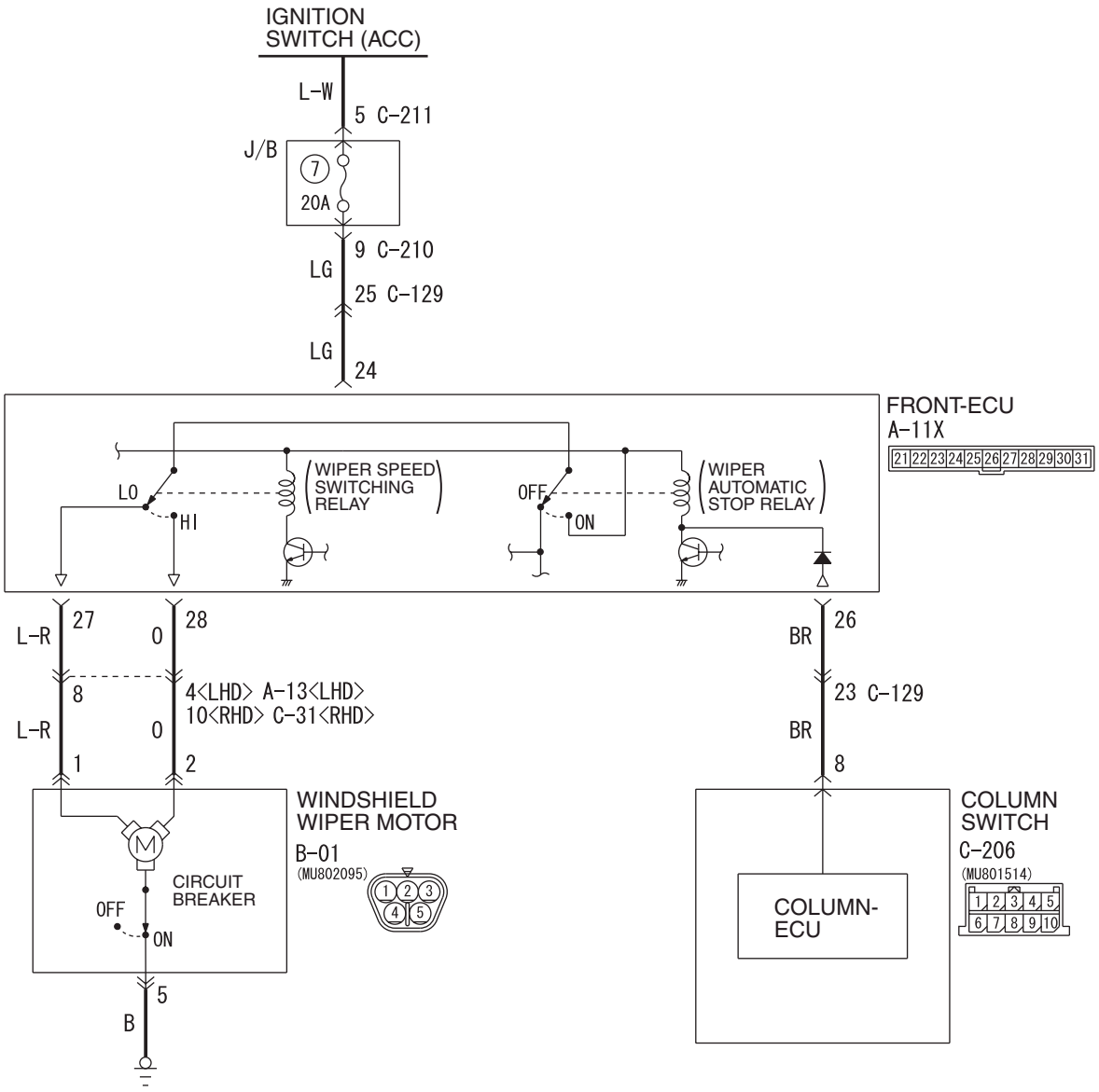
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

WINDSHIELD WIPER AND WASHER

INSPECTION PROCEDURE F-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 : Grey R : Red P : Pink V : Violet PU : Purple

W6J54E029A

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. M.U.T.-II/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-14.

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 M.U.T.-II/III sounds or the voltmeter needle fluctuates.

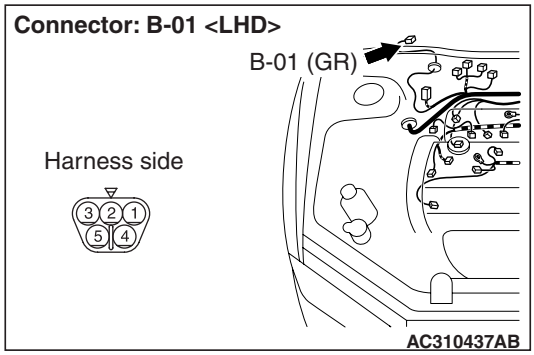
Q: Is the check result normal?

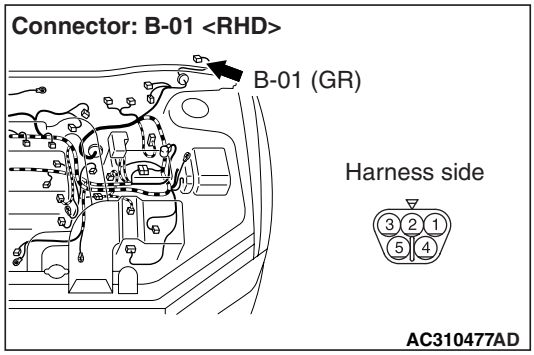
All the signals are received normally : Go to Step 3.

The ignition switch (ACC) signal is not received. : Refer to inspection procedure L-1 "The ignition switch (ACC) signal is not received P.54B-239."

Windshield mist wiper switch signal is not received. : Refer to inspection procedure L-5 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received P.54B-249."

Step 3. Connector check: B-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.

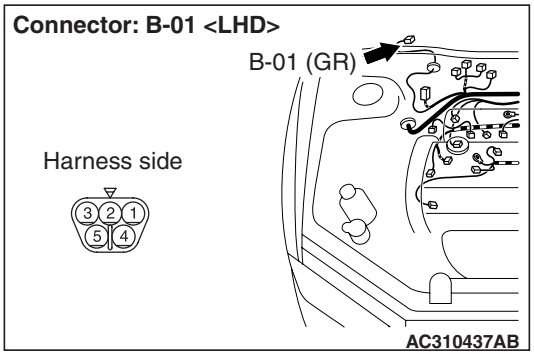
Refer to GROUP 51 – Windshield wiper P.51-21.

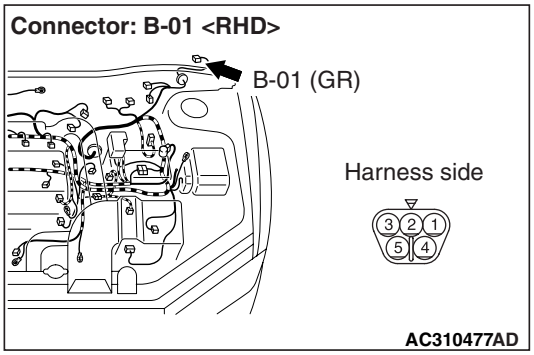
Q: Is the check result normal?

YES : Go to Step 5

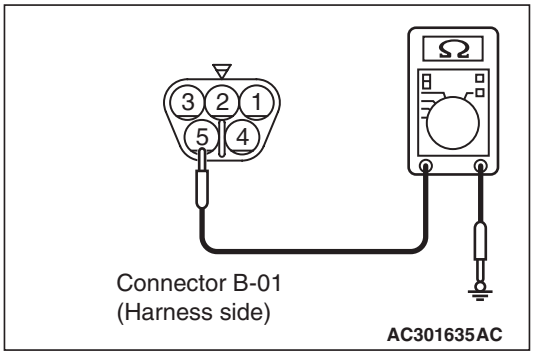
NO : Replace the windshield wiper motor assembly.

Step 5. Resistance measurement at the B-01 windshield wiper motor connector





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

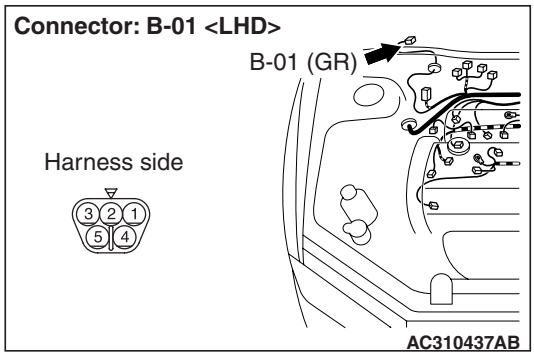


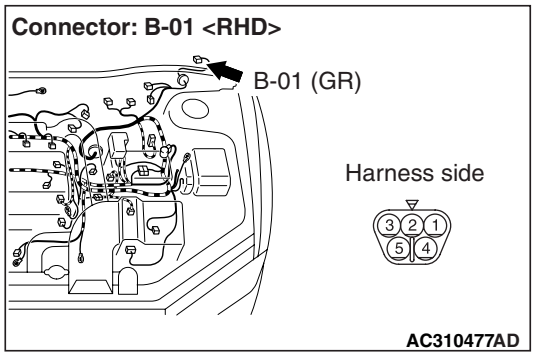
(2) Continuity between B-01 windshield wiper motor connector terminal No.5 and body earth

OK: 2Ω 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 B-01 windshield wiper motor connector terminal No.5 and body earth.

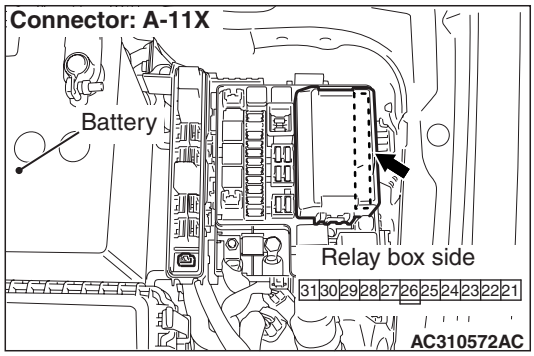




- Check the earth wires for open circuit.

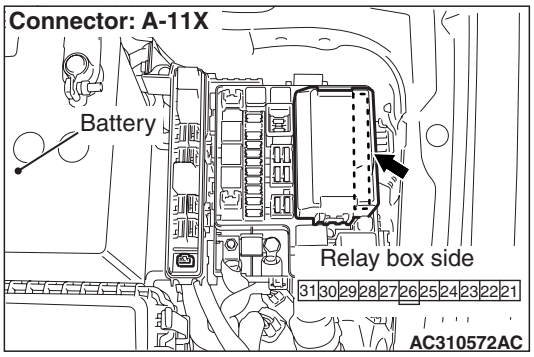
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 7. Connector check: A-11X front-ECU connector

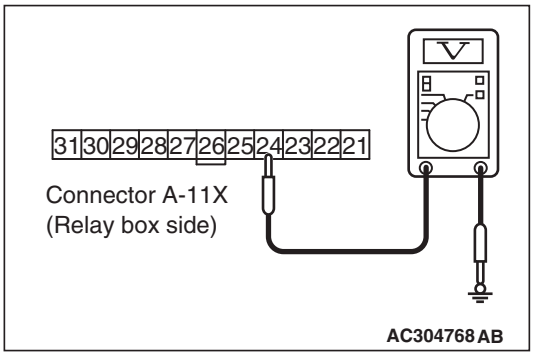


Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the connector.

Step 8. Voltage measurement at the A-11X front-ECU connector



(1) Remove the front-ECU, and measure at the relay box side.
(2) Ignition switch: ACC

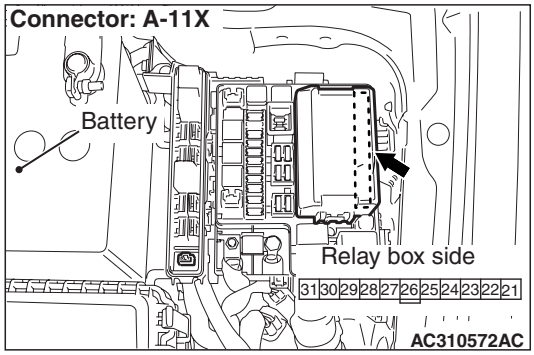


(3) Check the voltage between the A-11X front-ECU connector terminal No.24 and body earth.

OK: System voltage

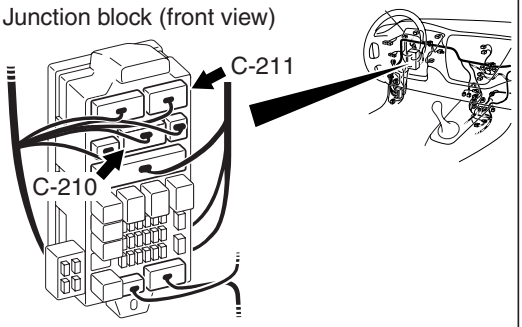
Q: Is the check result normal?
YES : Go to Step 10.
NO : Go to Step 9.

Step 9. Check the wiring harness between A-11X front-ECU connector terminal No.24 and the ignition switch (ACC).

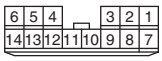


NOTE:

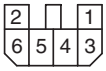
Connectors: C-210, C-211 <LHD>
Junction block (front view)



Harness side
C-210

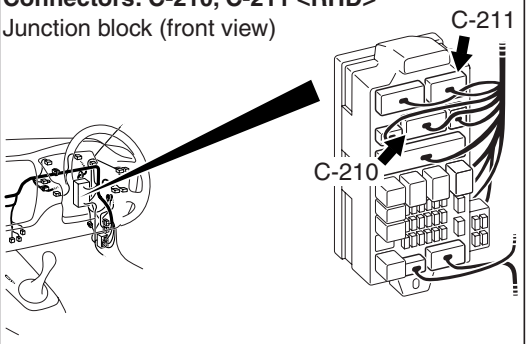


Harness side
C-211

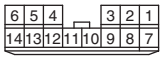


AC310449AF

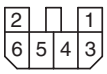
Connectors: C-210, C-211 <RHD>
Junction block (front view)



Harness side
C-210

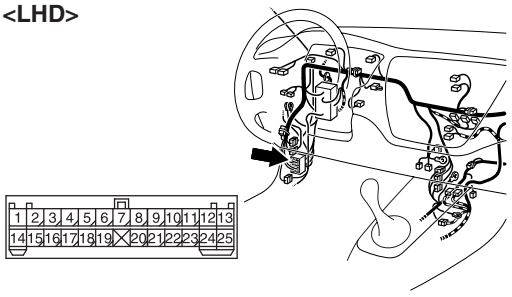


Harness side
C-211



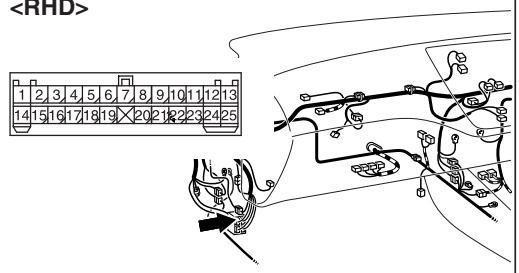
AC310459AF

Connector: C-129 <LHD>



AC310446AI

Connector: C-129 <RHD>



AC310454AJ

Prior to the wiring harness inspection, check the junction block connectors C-210, C-211 and intermediate connector C-129 and repair if necessary.

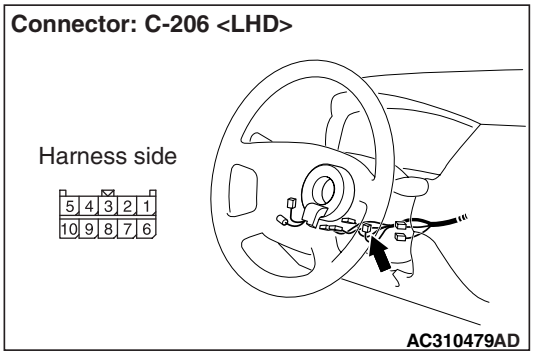
- Check the power supply line to the ignition switch (ACC) for open circuit.

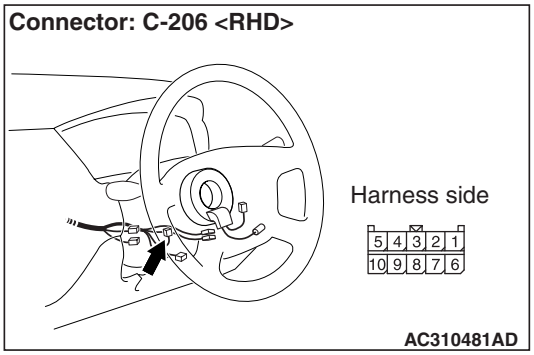
Q: Is the check result normal?

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.

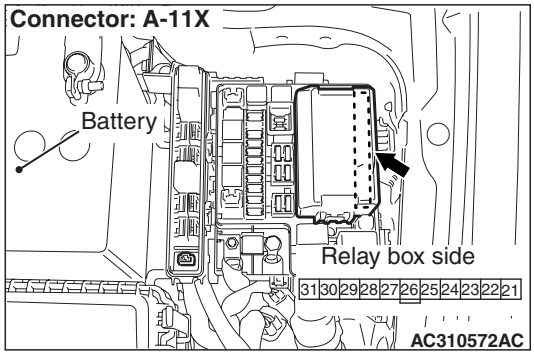
Step 10. Connector check: C-206 column switch connector

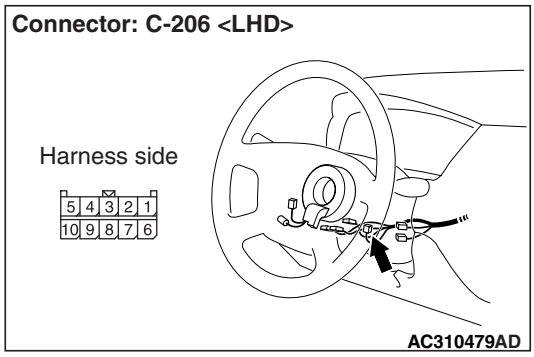


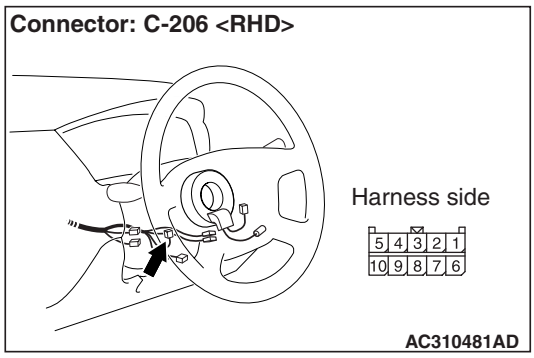


Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the connector.

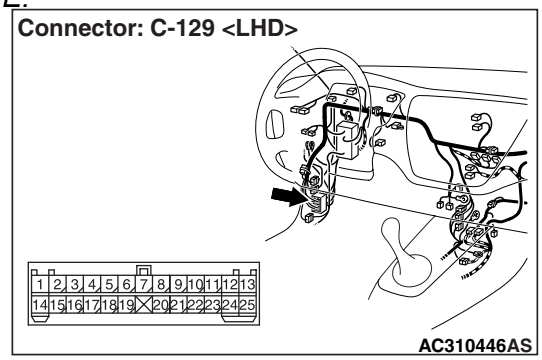
Step 11. Check the wiring harness between C-206 column switch connector terminal No.8 and A-11X front-ECU connector terminal No.26.

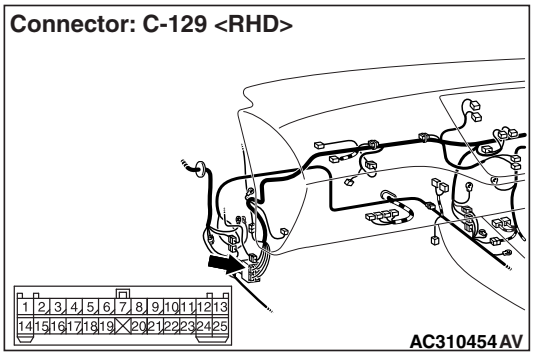






NOTE:





Prior to the wiring harness inspection, check the intermediate connector C-129 and repair if necessary.

- Check the wiper backup circuit.

Q: Is the check result normal?

YES : Go to Step 12.

NO : Repair the wiring harness.

Step 12. Retest the system.

The windshield wiper should now work normally at all.

Q: Is the check result normal?

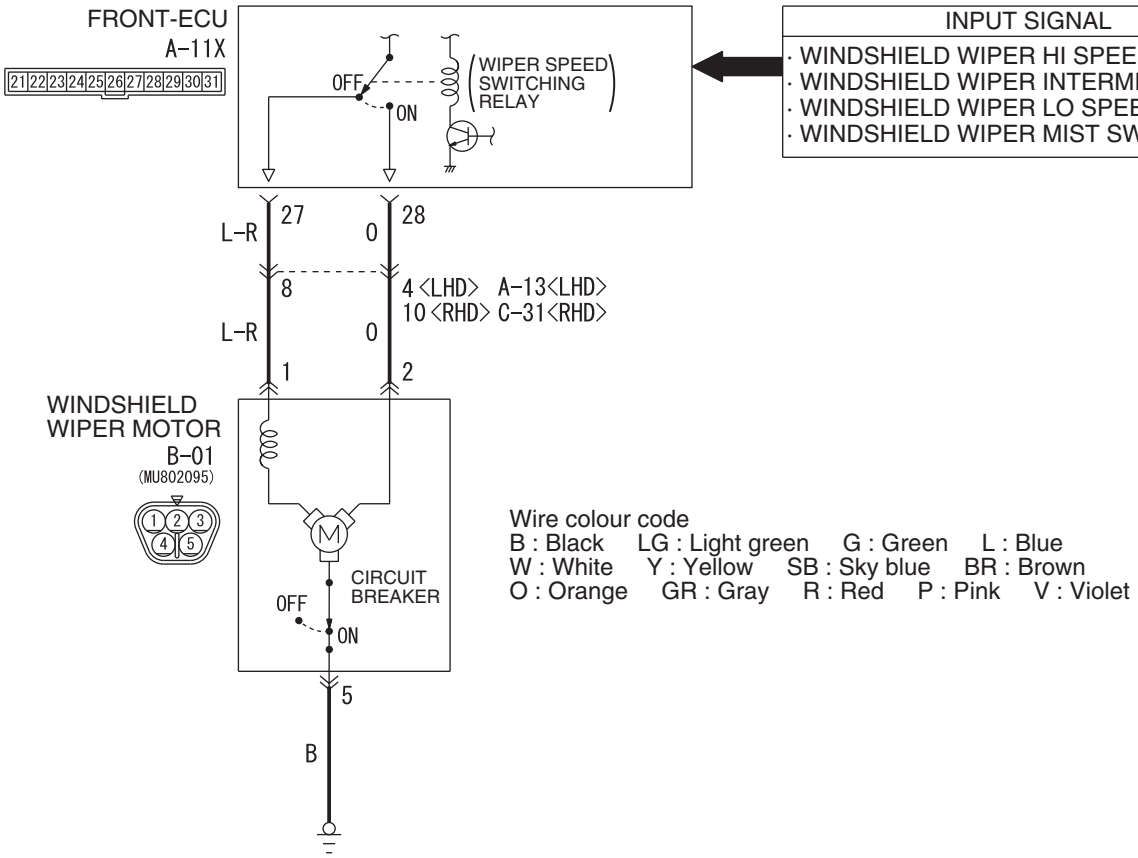
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the front-ECU.

INSPECTION PROCEDURE F-2: 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.

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

Windshield Wiper Motor Drive Circuit



W4J54E112A

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. M.U.T.-II/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-14.
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 M.U.T.-II/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 L-1 "The ignition switch (ACC) signal is not received P.54B-239."
Windshield mist wiper switch signal is not received. : Refer to inspection procedure L-5 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received P.54B-249."

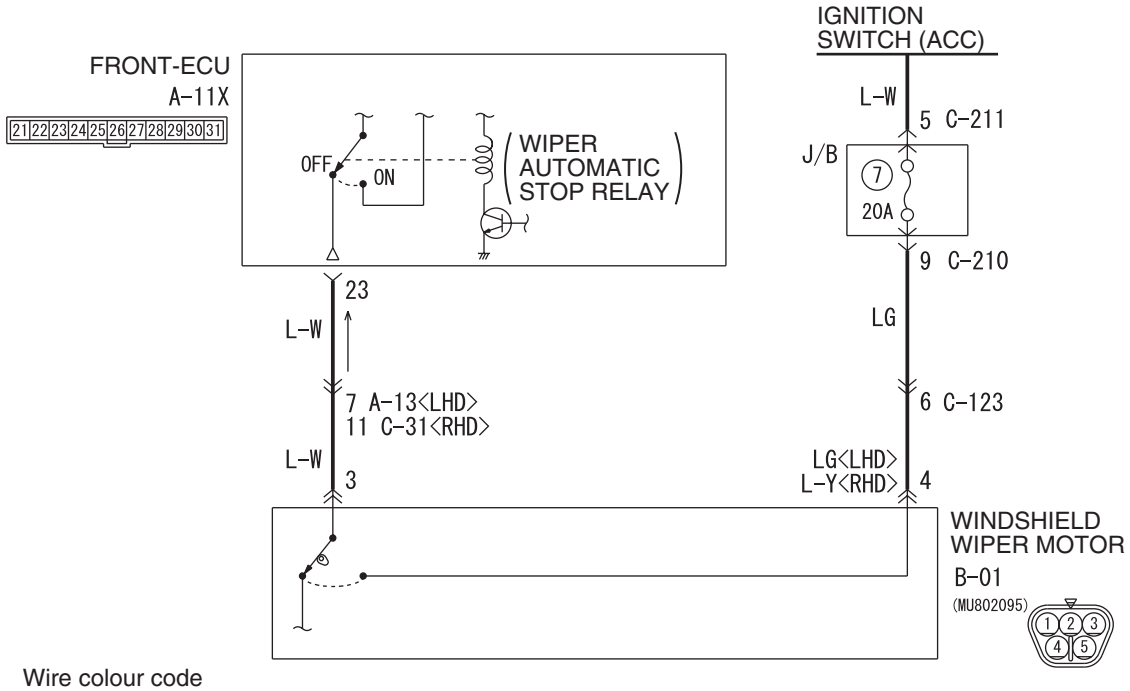
Step 3. Retest the system.
The windshield wiper should now work normally.

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

INSPECTION PROCEDURE F-3: The windshield wipers do not stop at the specified park position

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

Windshield Wiper Automatic Stop Relay Circuit



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

W4J54E113A

COMMENTS ON TROUBLE SYMPTOM

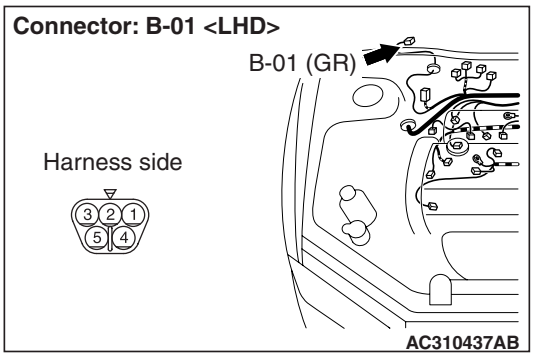
The windshield wiper motor or the front-ECU may be defective.

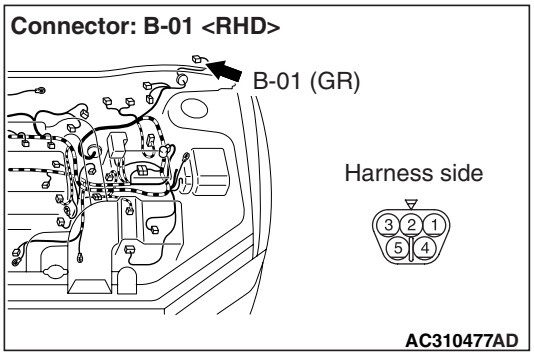
POSSIBLE CAUSES

- Malfunction of the windshield wiper motor
- Malfunction of the front-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Connector check: B-01 windshield wiper motor connector





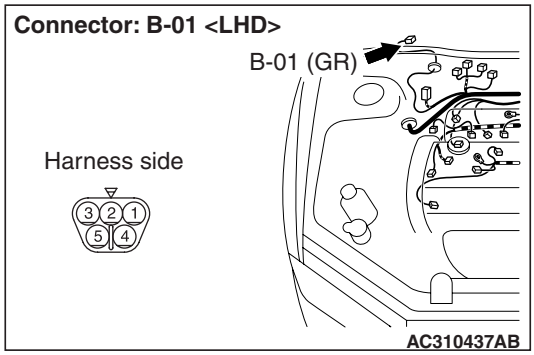
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the connector.

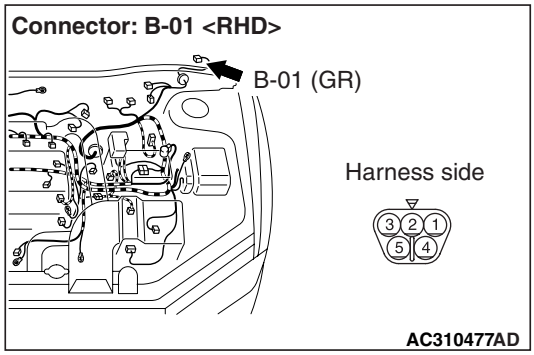
Step 2. Check the windshield wiper motor assembly.

Refer to GROUP 51 – Windshield wiper P.51-21.

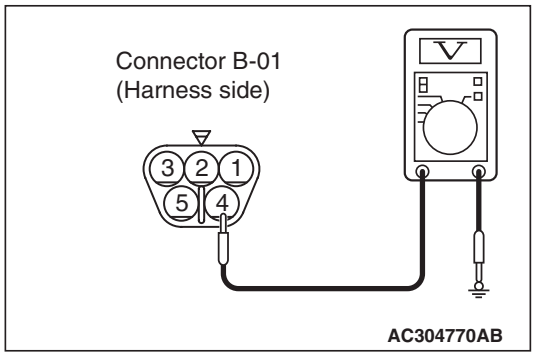
Q: Is the check result normal?
YES : Go to Step 3
NO : Replace the windshield wiper motor assembly.

Step 3. Voltage measurement at the B-01 windshield wiper motor connector





(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: ACC

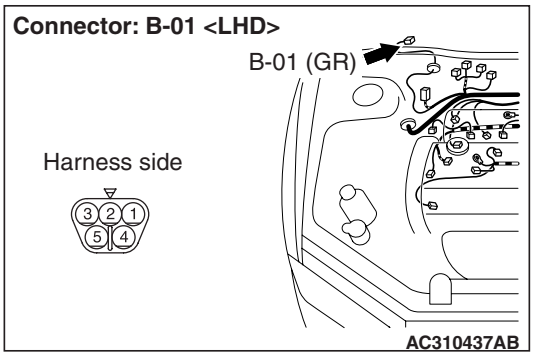


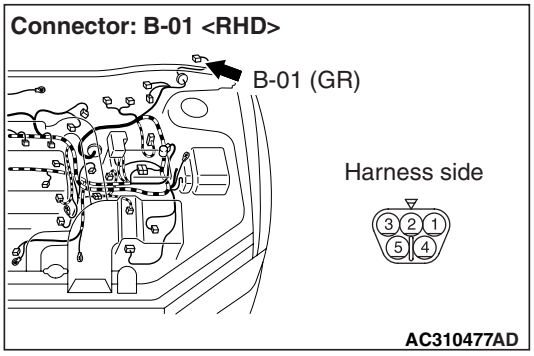
(3) Check the voltage between the B-01 windshield wiper motor connector terminal No.4 and body earth.

OK: System voltage

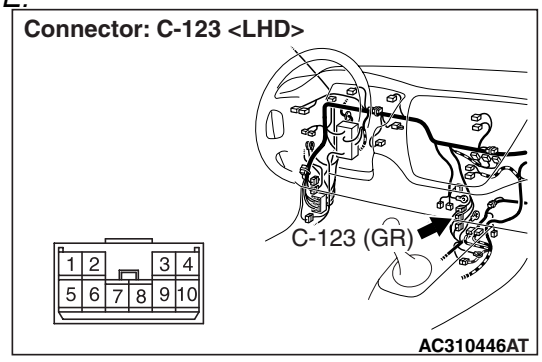
Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

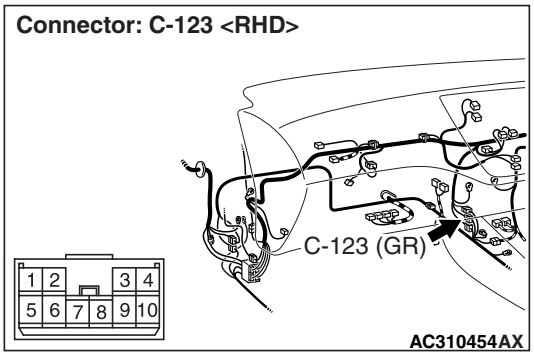
Step 4. Check the wiring harness between B-01 windshield wiper motor connector terminal No.4 and ignition switch (ACC).

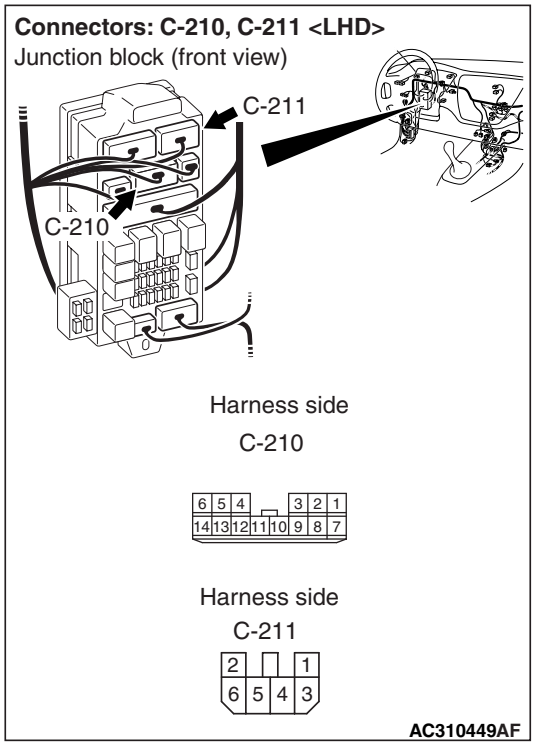


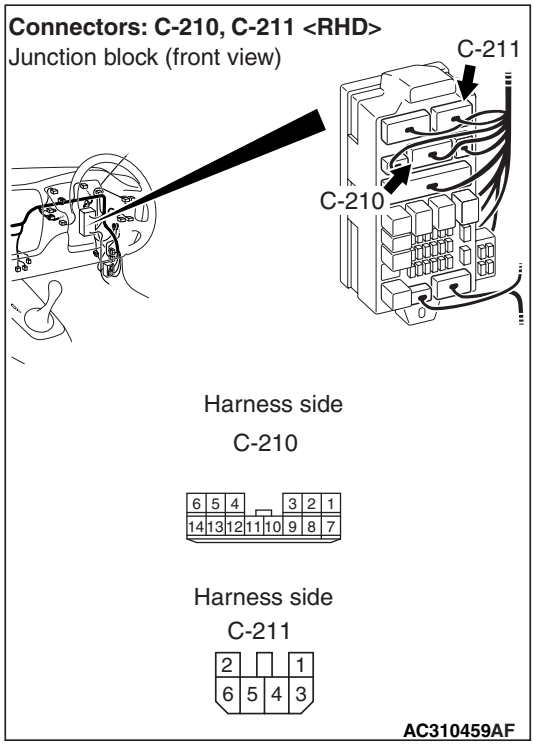


NOTE:









Prior to the wiring harness inspection, check the junction connectors C-210, C-211 and the intermediate connector C-123 and repair if necessary.

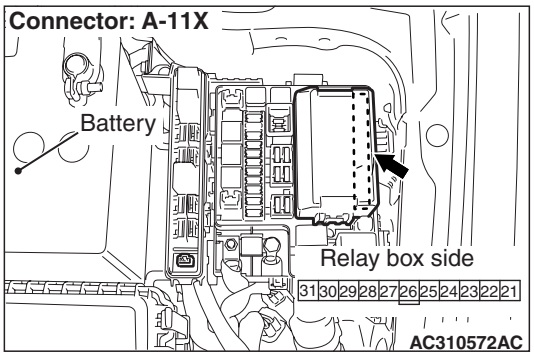
- Check the power supply line to ignition switch (ACC) for open circuit.

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).

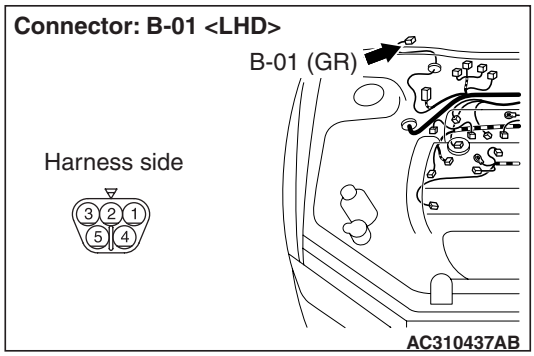
NO : Repair the wiring harness.

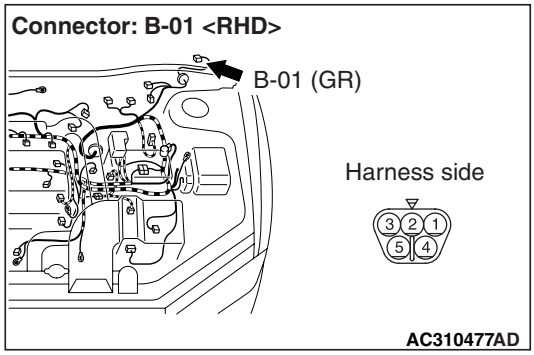
Step 5. Connector check: A-11X front-ECU connector

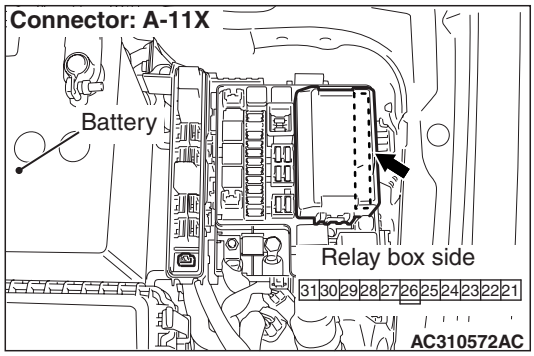


Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the connector.

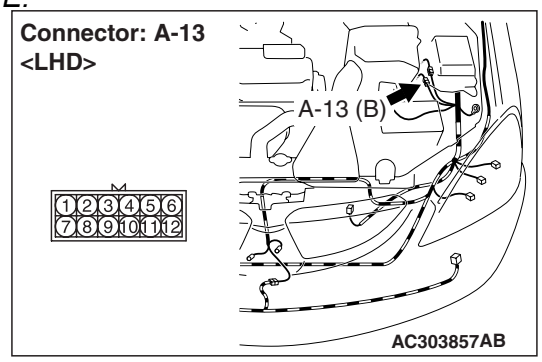
Step 6. Check the wiring harness between B-01 windshield wiper motor connector terminal No.3 and A-11X front-ECU connector terminal No.23.

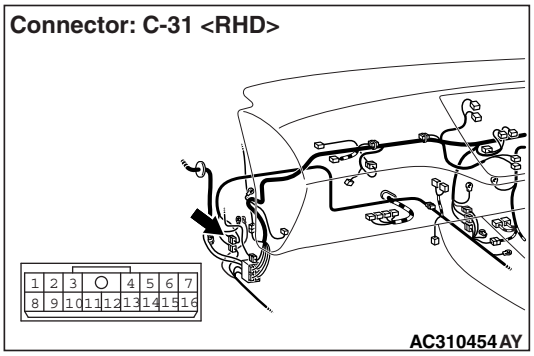






NOTE:





Prior to the wiring harness inspection, check the intermediate connector A-13 <LH drive vehicles>, C-31 <RH drive vehicles> and repair if necessary.

- 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?

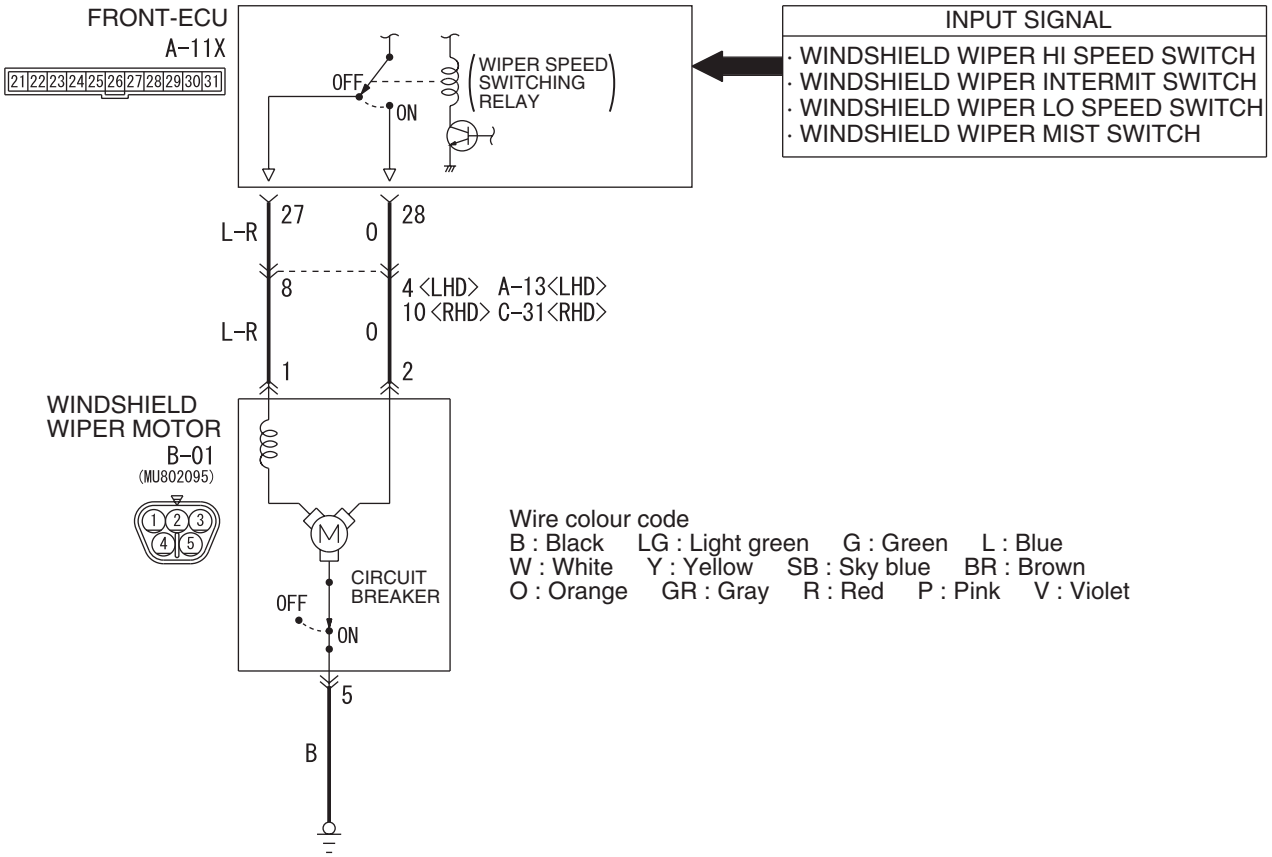
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the front-ECU.

INSPECTION PROCEDURE F-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 Wiper Motor Drive Circuit



W4J54E112A

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. 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 M.U.T.-II/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 L-1 "The ignition switch (ACC) signal is not received P.54B-239."

Windshield mist wiper switch signal is not received. : Refer to inspection procedure L-5 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received P.54B-249."

Windshield intermittent wiper switch signal is not received. : Refer to inspection procedure L-5 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received P.54B-249."

Windshield low-speed wiper switch signal is not received. : Refer to inspection procedure L-5 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received P.54B-249."

Windshield high-speed wiper switch signal is not received. : Refer to inspection procedure L-5 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received P.54B-249."

Step 2. Check the operation of the windshield wipers.

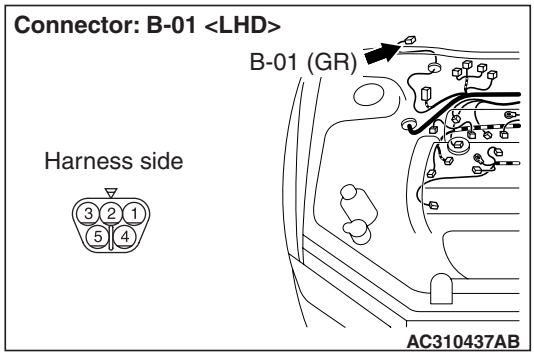
Check that the windshield wipers work at high speed and the mist mode.

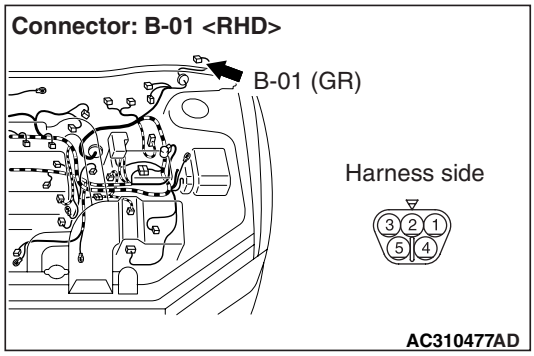
Q: Is the check result normal?

YES : Go to Step 3.

NO : Go to Step 8.

Step 3. Connector check: B-01 windshield wiper motor connector





Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the defective connector.

Step 4. Check the windshield wiper motor assembly.

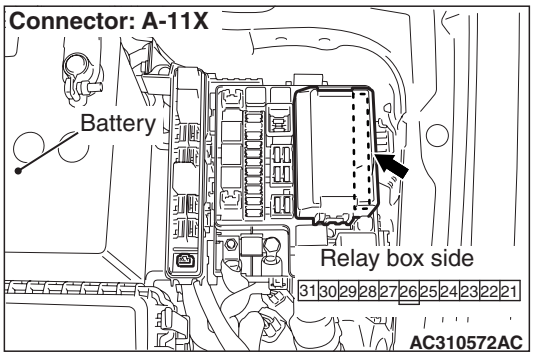
Refer to GROUP 51 – Windshield wiper P.51-21.

Q: Is the check result normal?

YES : Go to Step 5

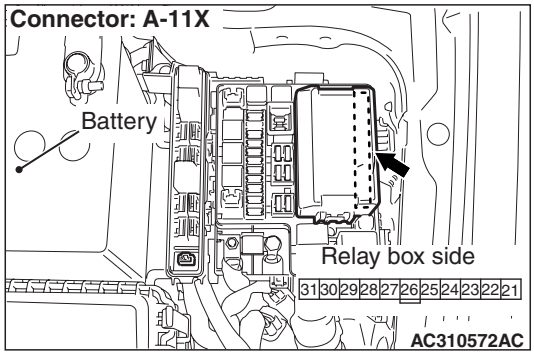
NO : Replace the windshield wiper motor assembly.

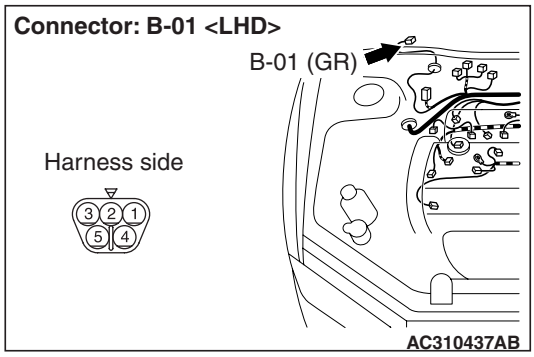
Step 5. Connector check: A-11X front-ECU connector

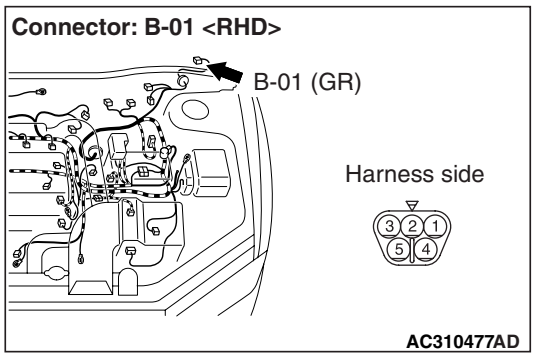


Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

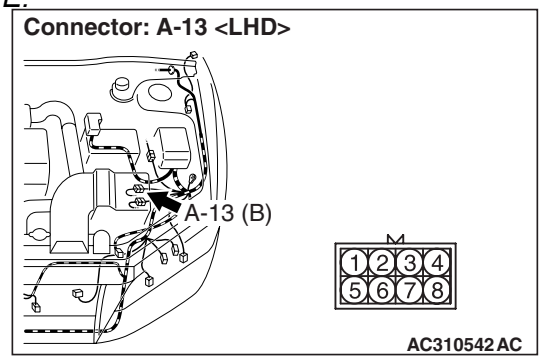
Step 6. Check the wiring harness between A-11X front-ECU connector terminal No.27 and B-01 windshield wiper motor connector terminal No.1.

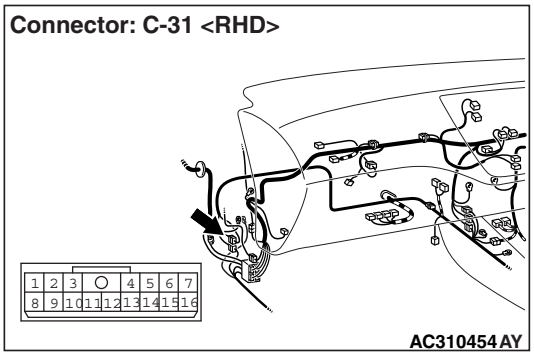






NOTE:





Prior to the wiring harness inspection, check the intermediate connector A-13 <LH drive vehicles>, C-31 <RH drive vehicles>, and repair if necessary.

- Check the power supply line to front-ECU for open circuit.

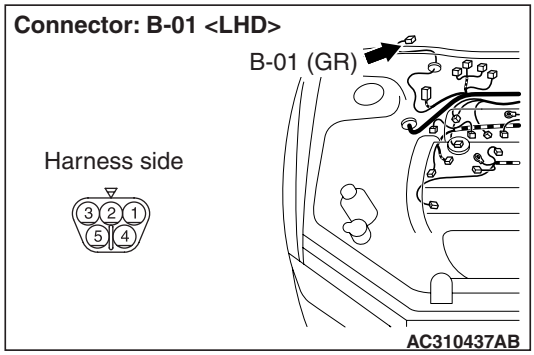
Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

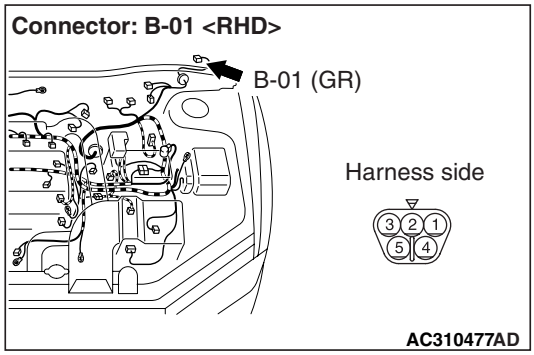
Step 7. Retest the system.

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: B-01 windshield wiper motor connector





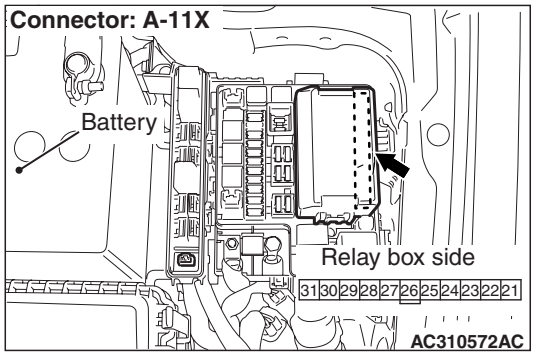
Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the defective connector.

Step 9. Check the windshield wiper motor assembly.

Refer to GROUP 51 – Windshield wiper P.51-21.

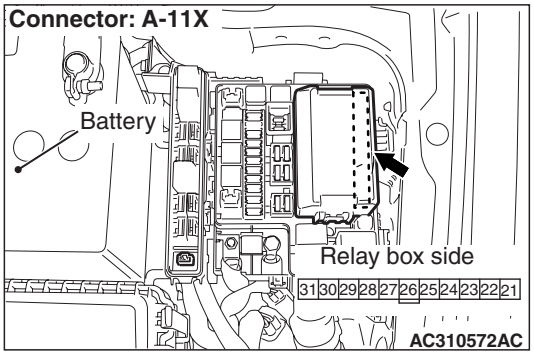
Q: Is the check result normal?
YES : Go to Step 10
NO : Replace the windshield wiper motor assembly.

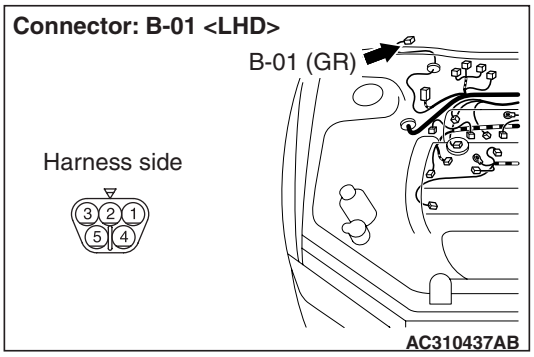
Step 10. Connector check: A-11X front-ECU connector

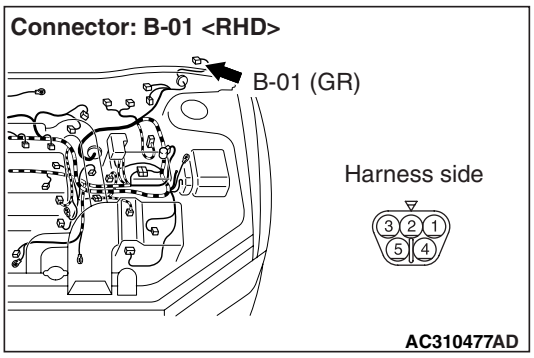


Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the defective connector.

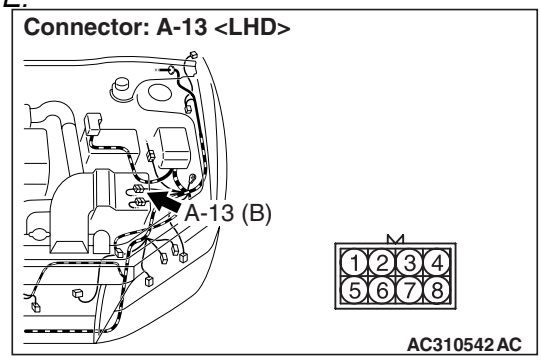
Step 11. Check the wiring harness between A-11X front-ECU connector terminal No.28 and B-01 windshield wiper motor connector terminal No.2.

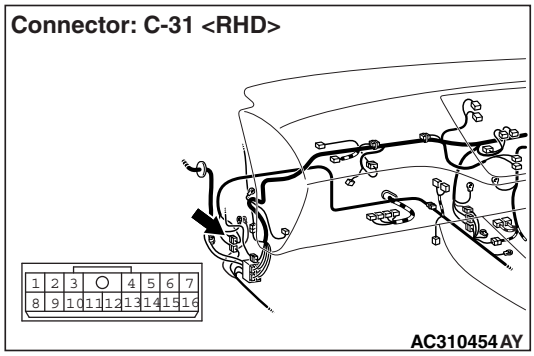






NOTE:





Prior to the wiring harness inspection, check the intermediate connector A-13 <LH drive vehicles>, C-31 <RH drive vehicles>, and repair if necessary.

- Check the power supply line to front-ECU for open circuit.

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

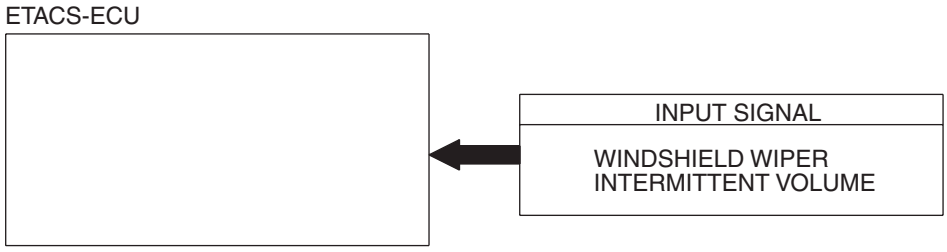
Step 12. Retest the system.
Check that the windshield wipers work normally by moving the switch to each position.

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 F-5: The intermittent wiper interval can not be adjusted by operating the windshield intermittent wiper volume control.

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

Windshield Wiper Intermittent Volume Input Signal



W4J54E114A

COMMENTS ON TROUBLE SYMPTOM

The column switch or the front-ECU may be defective.

POSSIBLE CAUSES

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

DIAGNOSIS PROCEDURE

Step 1. 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 M.U.T.-II/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 L-1 "The ignition switch (ACC) signal is not received P.54B-239."

The windshield wiper volume signal is not received. : Refer to inspection procedure L-6 "The windshield intermittent wiper volume signal is not received P.54B-250."

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?

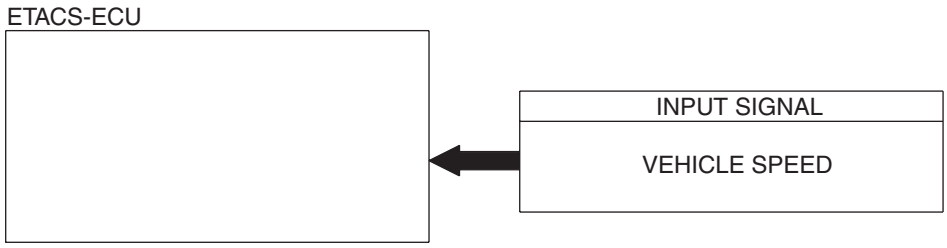
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the front-ECU

INSPECTION PROCEDURE F-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.

Vehicles Speed Input Signal



W4J54E115A

COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU calculates the intermittent wiper interval according to the vehicle speed signal which is sent by the vehicle speed sensor.
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 (vehicle speed sensor)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the adjustment function.
Check that the vehicles speed sensing function has been enabled by using the adjustment function.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Enable the vehicles speed sensing function by using the adjustment function (Refer to P.54B-302).

Step 2. Retest the system.
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 3.
NO : Refer to Inspection Procedure F-5 "The intermittent wiper interval can not be adjusted by operating the windshield intermittent wiper volume control P.54B-149."

Step 3. Pulse check
Check the input signals below which are related to the vehicle speed-dependent intermittent wiper.

System switch	Check condition
Ignition switch (ACC)	When turned from LOCK (OFF) position to the ACC position
Vehicle speed signal (engine-ECU)	When the vehicle speed has reached 10 km/h or more

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?

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

The ignition switch (IG1) signal is not received. : Refer to inspection procedure L-1 "The ignition switch (ACC) signal is not received P.54B-239."

The vehicle speed signal (engine-ECU) is not received. : Refer to inspection procedure L-12 "The vehicle speed sensor signal is not received P.54B-278."

Step 4. Retest the system.

Check that the intermittent wiper interval depends on the vehicle speed.

Q: Is the check result normal?

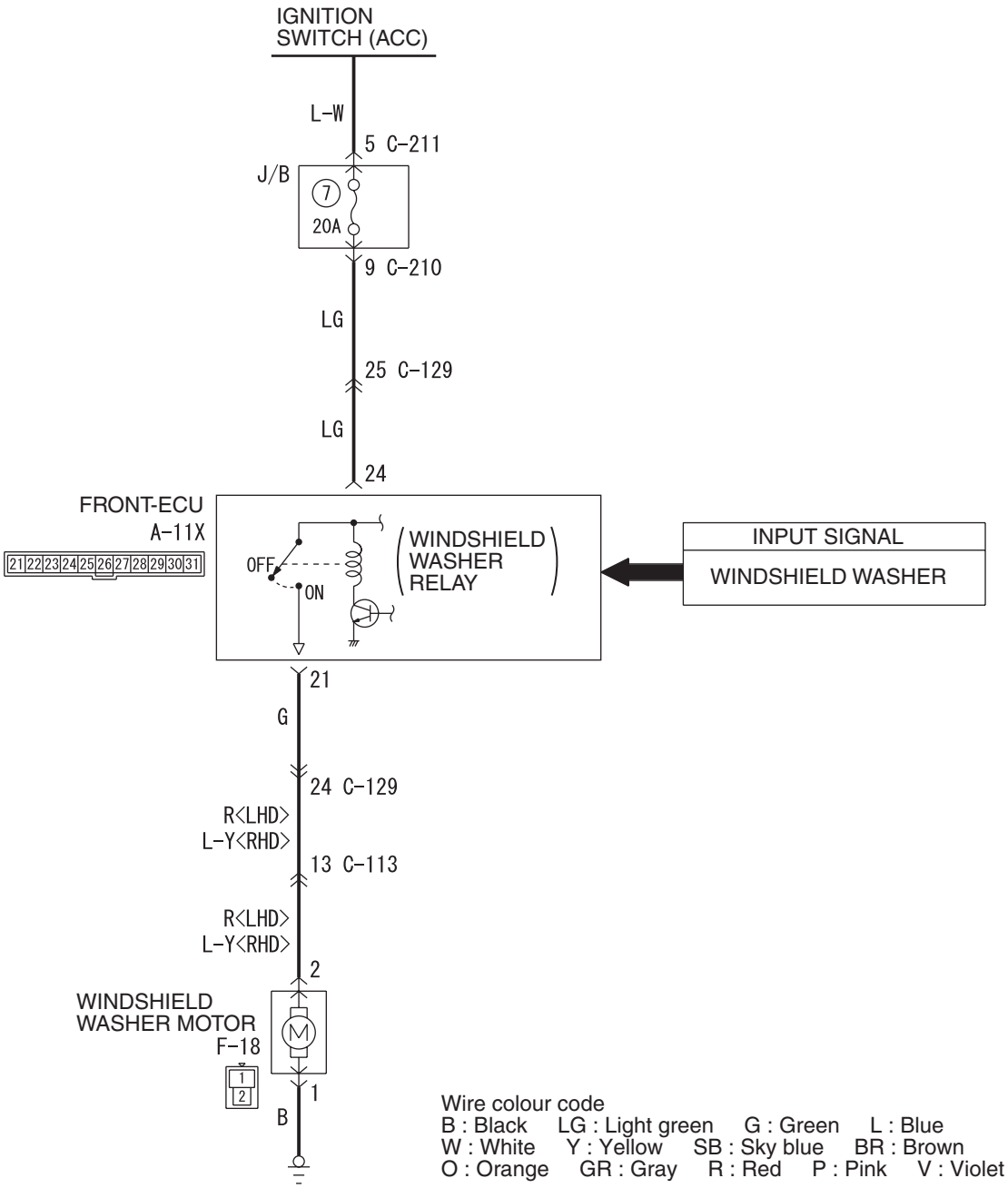
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE F-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



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

W4J54E116A

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 F-1 "The windshield wipers do not work at all P.54B-130."

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 M.U.T.-II/III sounds or the voltmeter needle fluctuates.

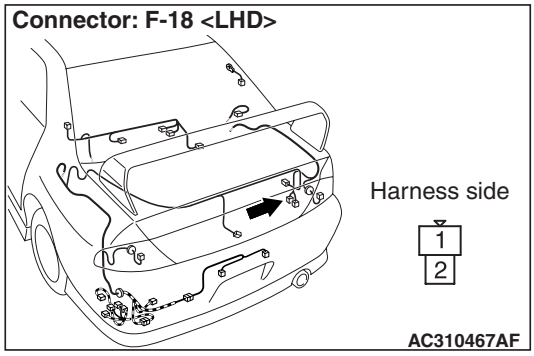
Q: Is the check result normal?

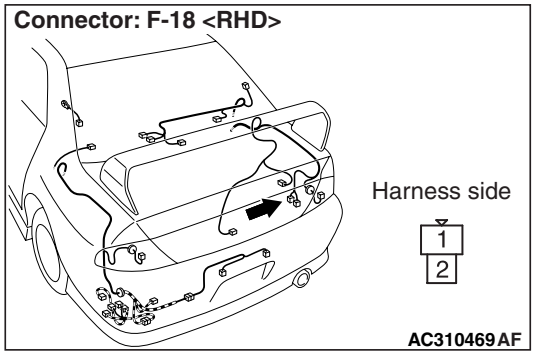
All the signals are received normally : Go to Step 3.

The ignition switch (ACC) signal is not received. : Refer to inspection procedure L-1 "The ignition switch (ACC) signal is not received P.54B-239."

Windshield washer switch signal is not received. : Refer to inspection procedure L-5 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received P.54B-249."

Step 3. Connector check: F-18 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.

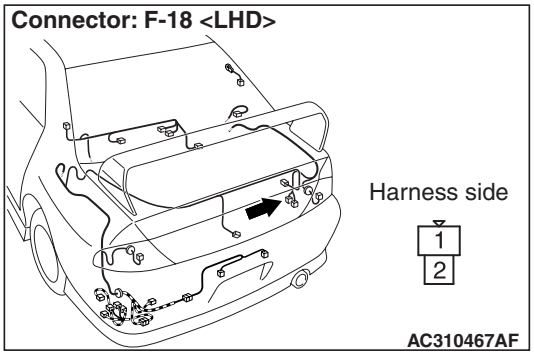
Refer to GROUP 51 – Windshield washer P.51-24.

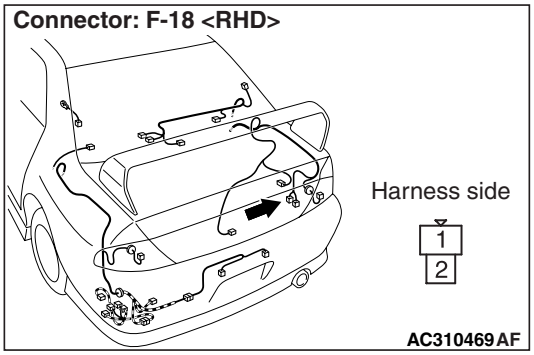
Q: Is the check result normal?

YES : Go to Step 5

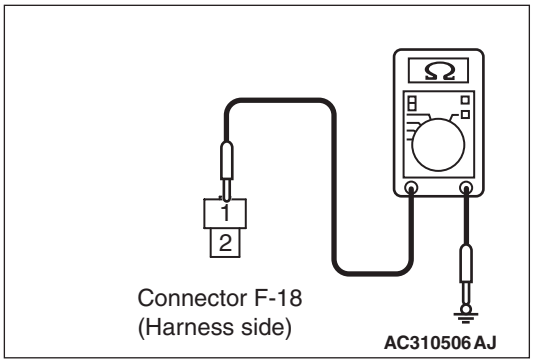
NO : Replace the windshield washer motor.

Step 5. Resistance measurement at the F-18 windshield washer motor connector





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

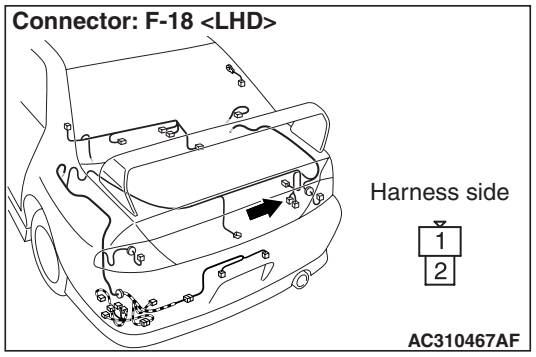


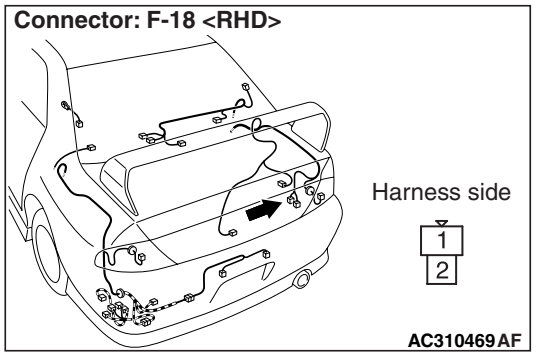
(2) Continuity between F-18 windshield washer motor connector terminal No.1 and body earth

OK: 2Ω 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 F-18 windshield washer motor connector terminal No.1 and body earth.

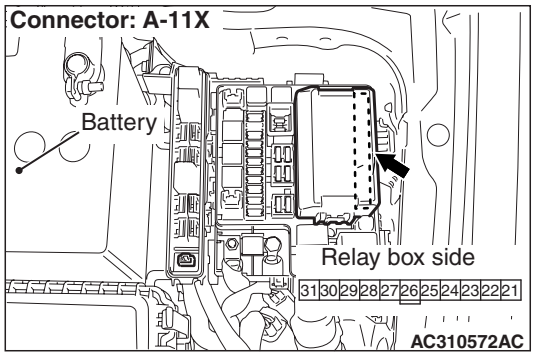




- Check the earth wires for open circuit.

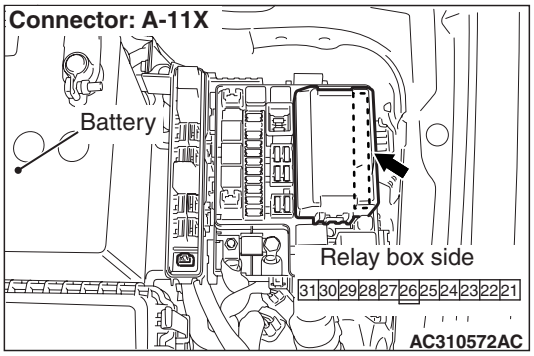
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

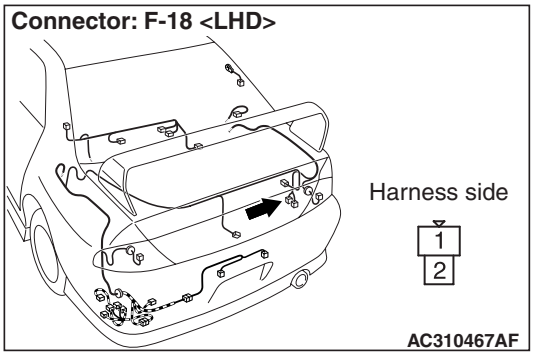
Step 7. Connector check: A-11X front-ECU connector

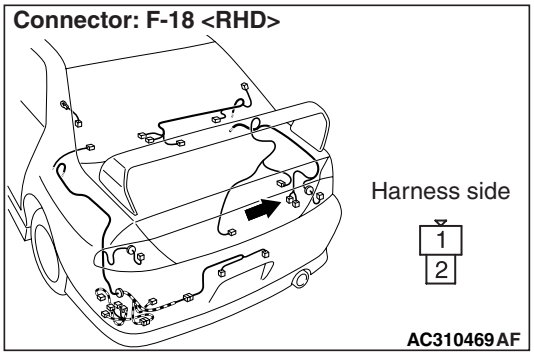


Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the connector.

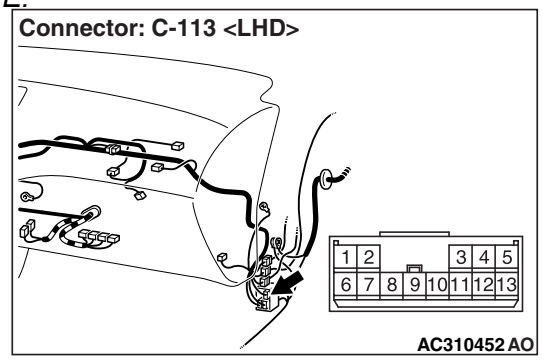
Step 8. Check the wiring harness between F-18 windshield washer motor connector terminal No.2 and A-11X front-ECU connector terminal No.21.

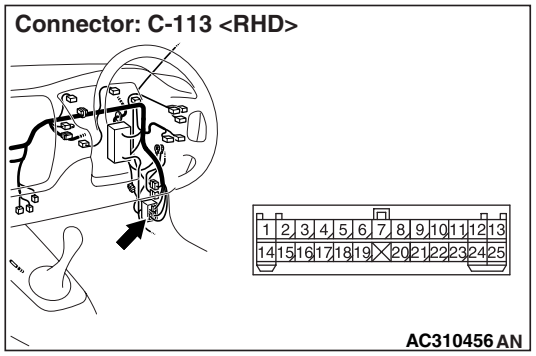


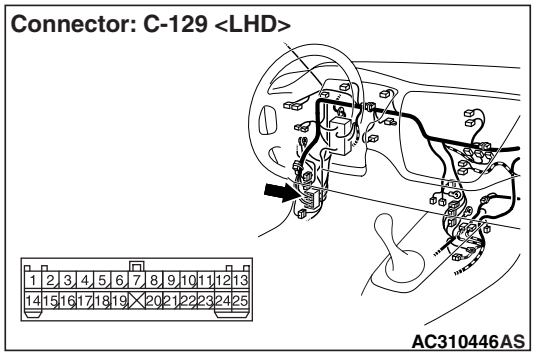


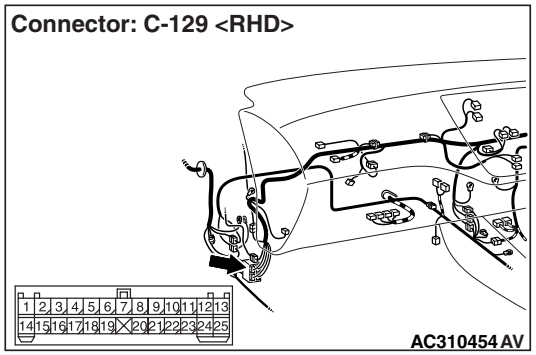


NOTE:









Prior to the wiring harness inspection, check the intermediate connector C-129, C-113 and repair if necessary.

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

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

Step 9. Retest the system.
The windshield washer should now work normally.

Q: Is the check result normal?

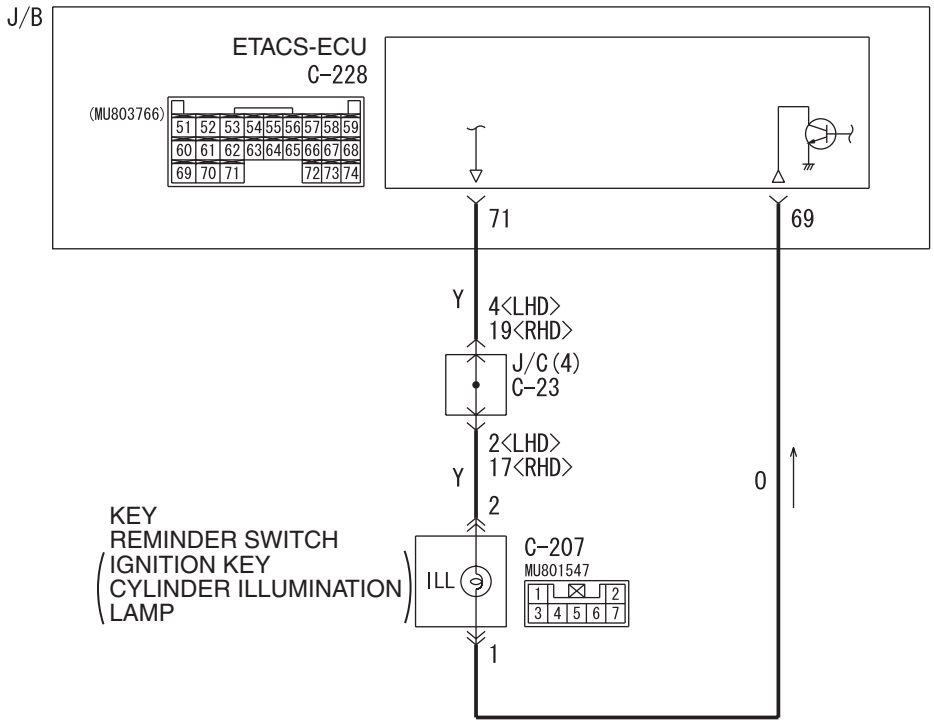
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the front-ECU.

IGNITION KEY CYLINDER ILLUMINATION LAMP

INSPECTION PROCEDURE G-1: The ignition key cylinder illumination lamp does not illuminate/extinguish normally.

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

Ignition Key Cylinder Illumination Lamp Circuit



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

W4J54E134A

COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.
- 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 room lamp.
Check that the room lamps illuminate and extinguish normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to inspection procedure K-1 "The front, rear room lamp and/or luggage compartment lamp do not illuminate or extinguish normally P.54B-225."

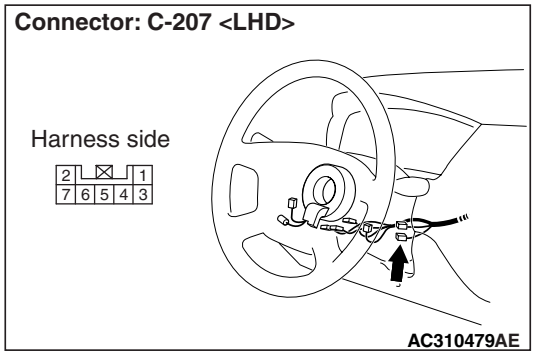
Step 2. Pulse check
Check the input signals below, which are related to the ignition key cylinder illumination lamp.

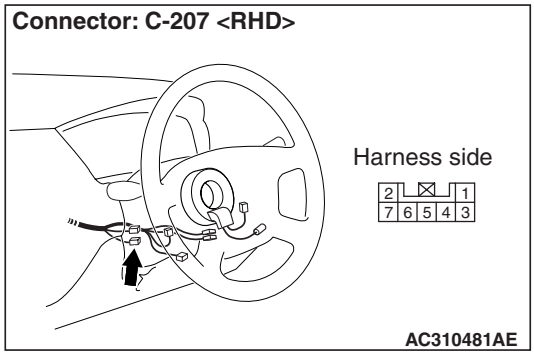
System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
Key reminder switch	When the inserted ignition key is pulled out
Driver's door switch	When the driver's door is opened

OK: The M.U.T.-II/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 L-2 "The ignition switch (IG1) signal is not received P.54B-242."
The key reminder switch signal is not received. : Refer to inspection procedure L-8 "The key reminder switch signal is not received P.54B-257."
The driver's door switch signal is not received. : Refer to inspection procedure L-3 "The door switch (front: LH) signal is not received <LH drive vehicles>P.54B-244 ." Or refer to inspection procedure L-3 "The door switch (front: RH) signal is not received <RH drive vehicles>P.54B-246 ."

Step 3. Connector check: C-207 key reminder switch connector



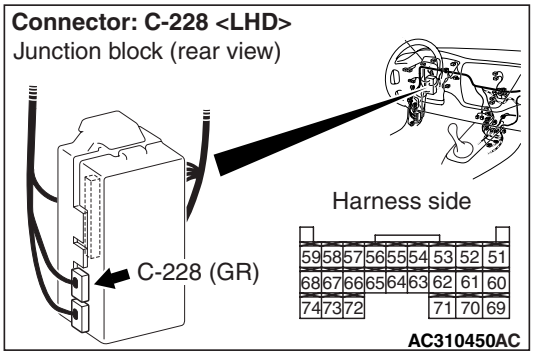


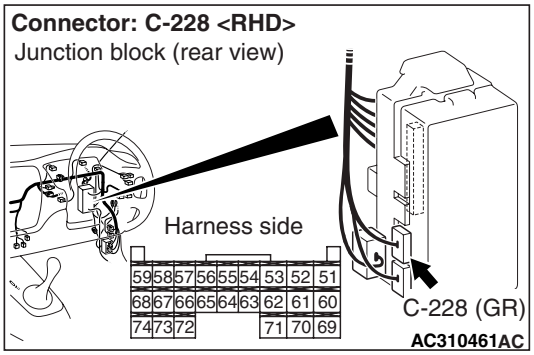
Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the defective connector.

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-228 ETACS-ECU connector



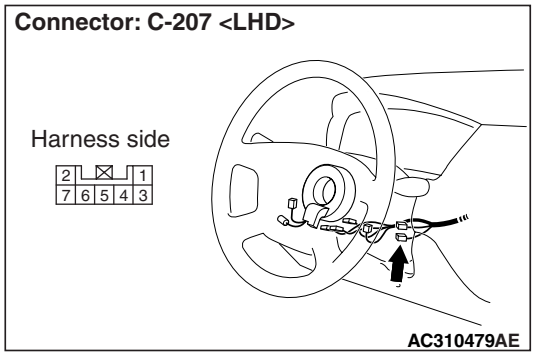


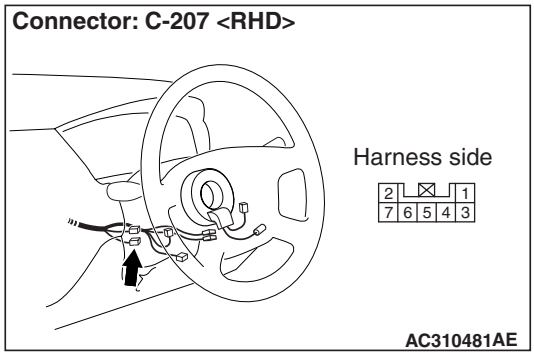
Q: Is the check result normal?

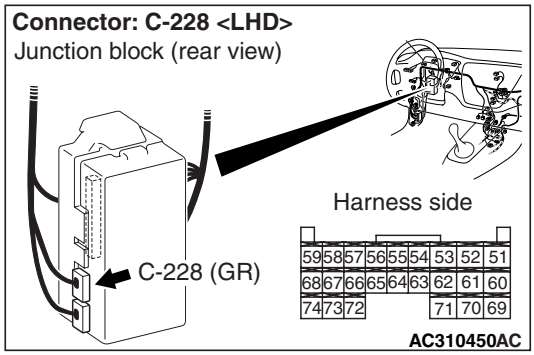
YES : Go to Step 6.

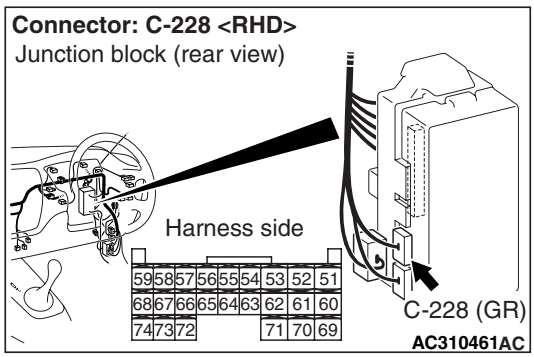
NO : Repair the defective connector.

Step 6. Check the wiring harness from C-228 ETACS-ECU connector terminal Nos.69 and 71 to C-207 ignition key cylinder illumination lamp connector terminal Nos.1 and 2.

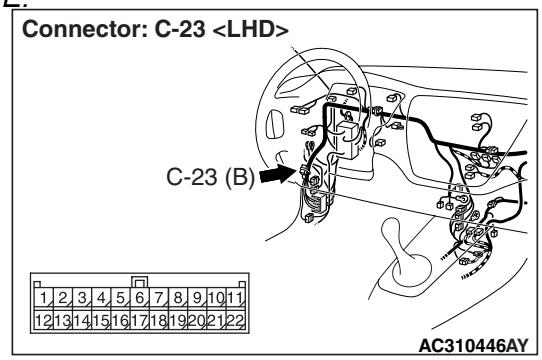


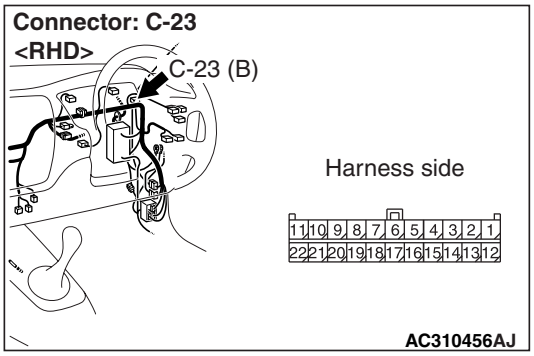






NOTE:





Prior to the wiring harness inspection, check joint connector C-23, and repair if necessary.

- 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).

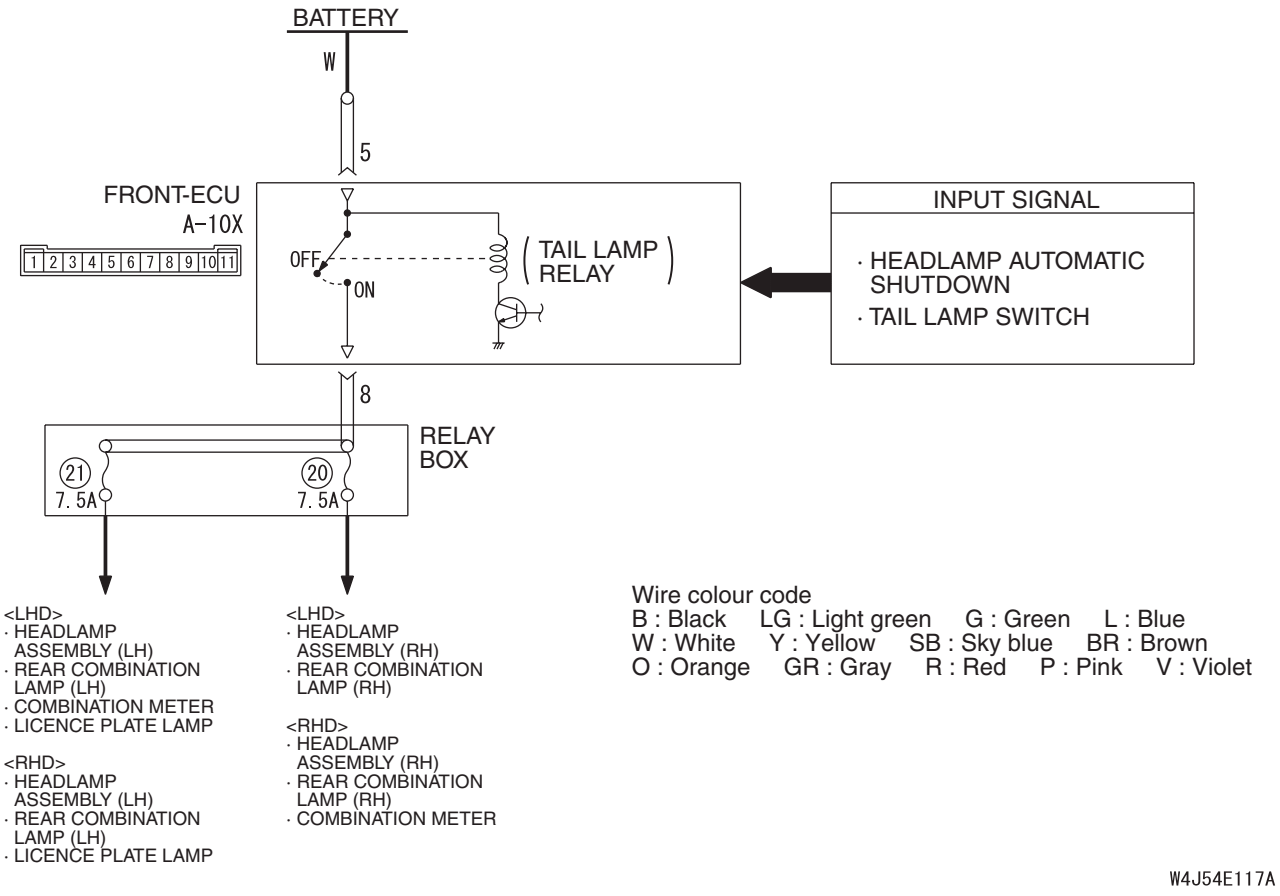
NO : Replace the ETACS-ECU.

HEADLAMP AND TAIL LAMP

INSPECTION PROCEDURE H-1: The tail lamps do not illuminate normally.

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

Taillamp Relay Circuit



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

W4J54E117A

COMMENTS ON TROUBLE SYMPTOM

If all the tail 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. M.U.T.-II/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-14.
NO : Go to Step 2.

Step 2. 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 M.U.T.-II/III sounds or the voltmeter needle fluctuates.

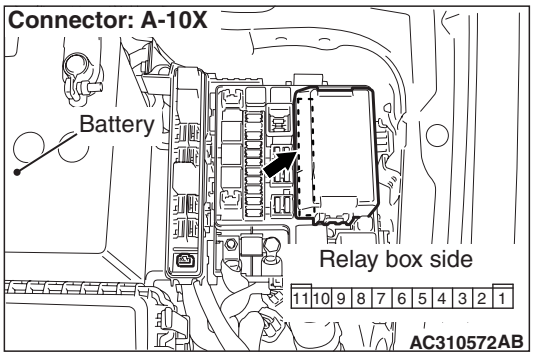
Q: Is the check result normal?

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

The ignition switch (IG1) signal is not received. : Refer to inspection procedure L-2 "The ignition switch (IG1) signal is not received P.54B-242."

The tail lamp switch signal is not received. : Refer to inspection procedure L-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-248."

Step 3. Connector check: A-10X front-ECU connector

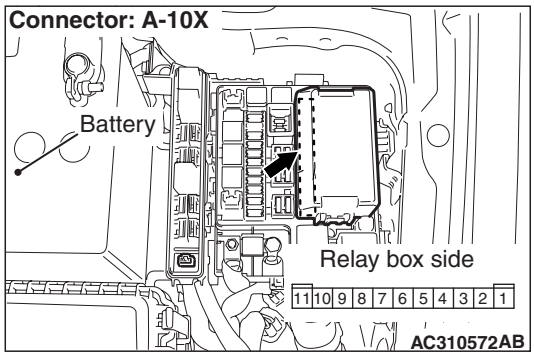


Q: Is the check result normal?

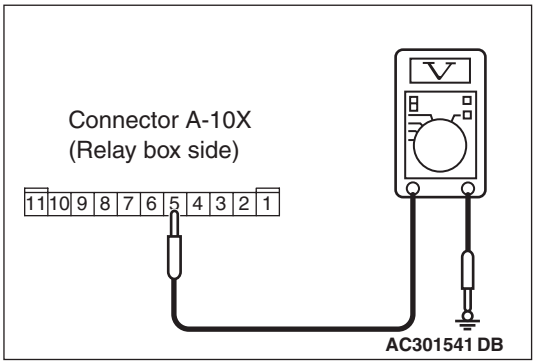
YES : Go to Step 4.

NO : Repair the defective connector.

Step 4. Voltage measurement at A-10X front-ECU connector



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



(2) Voltage between A-10X front-ECU connector terminal No.5 and body earth

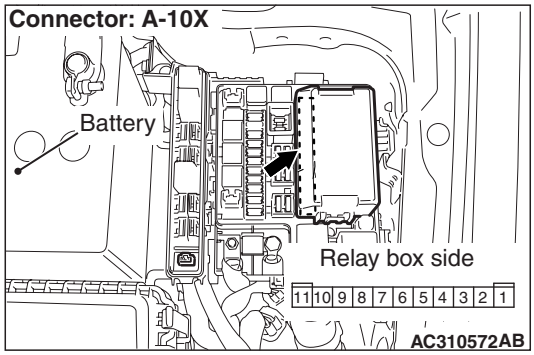
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 6.

NO : Go to Step 5.

Step 5. Check the wiring harness between A-10X front-ECU connector terminal No.5 and the battery.



- Check the power supply line for open circuit.

Q: Is the check result normal?

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

NO : Repair the wiring harness.

Step 6. Retest the system.
Check that the tail lamps illuminate normally.

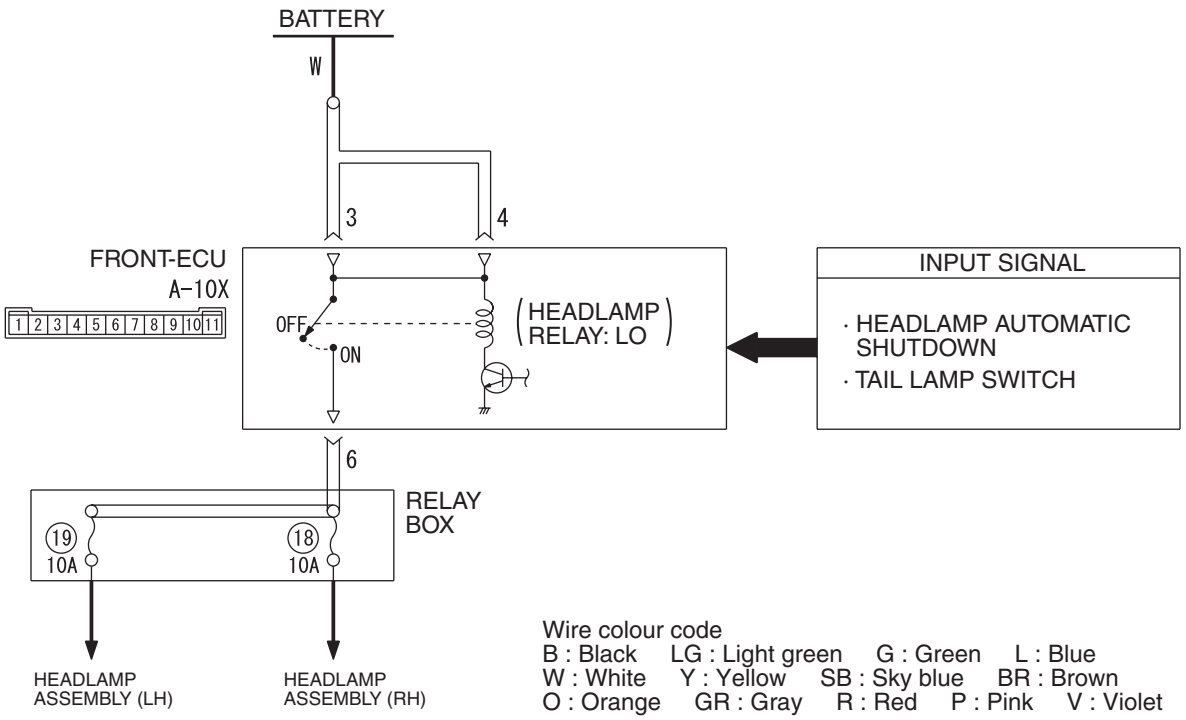
Q: Is the check result normal?

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 H-2: The low-beam headlamps do not illuminate normally.

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

Headlamp Relay (Low-Beam) Circuit



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

W4J54E118A

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. M.U.T.-II/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-14.
NO : Go to Step 2.

Step 2. 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 M.U.T.-II/III sounds or the voltmeter needle fluctuates.

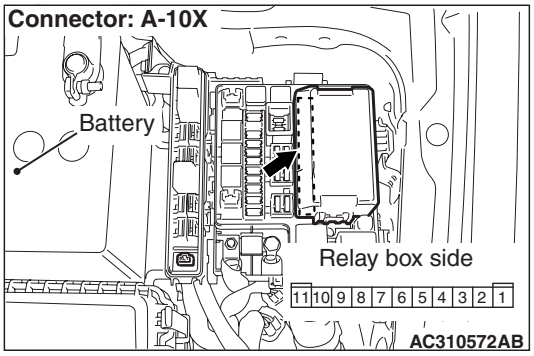
Q: Is the check result normal?

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

The ignition switch (IG1) signal is not received. : Refer to inspection procedure L-2 "The ignition switch (IG1) signal is not received P.54B-242."

The headlamp switch signal is not received. : Refer to inspection procedure L-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-248."

Step 3. Connector check: A-10X front-ECU connector

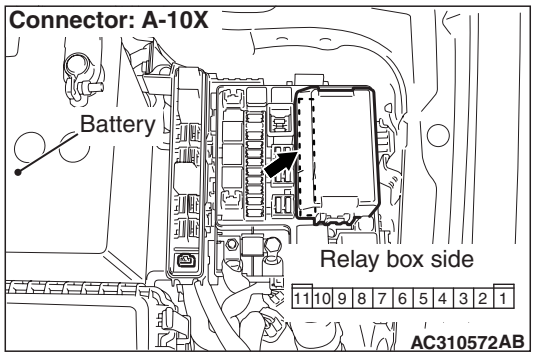


Q: Is the check result normal?

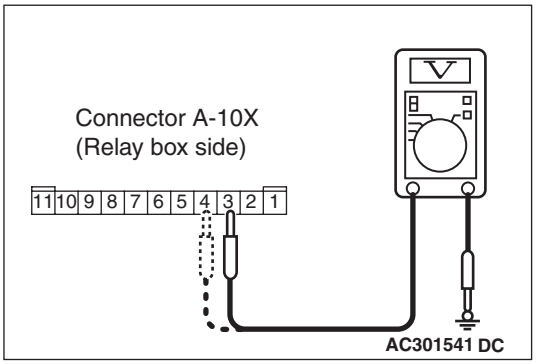
YES : Go to Step 4.

NO : Repair the defective connector.

Step 4. Voltage measurement at A-10X front-ECU connector



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



(2) Voltage between A-10X front-ECU connector terminal Nos.3, 4 and body earth

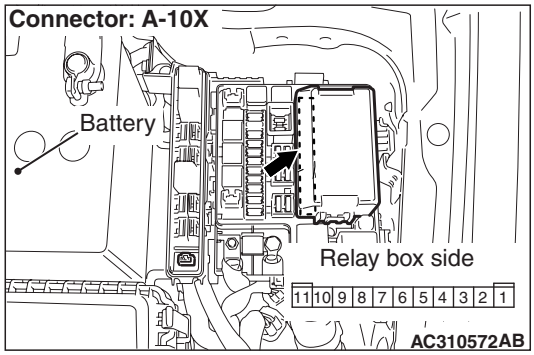
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 6.

NO : Go to Step 5.

Step 5. Check the wiring harness between A-10X front-ECU connector terminal Nos.3, 4 and the battery.



- Check the power supply line for open circuit.

Q: Is the check result normal?

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

NO : Repair the wiring harness.

Step 6. Retest the system.
Check that the low-beam headlamps illuminate normally.

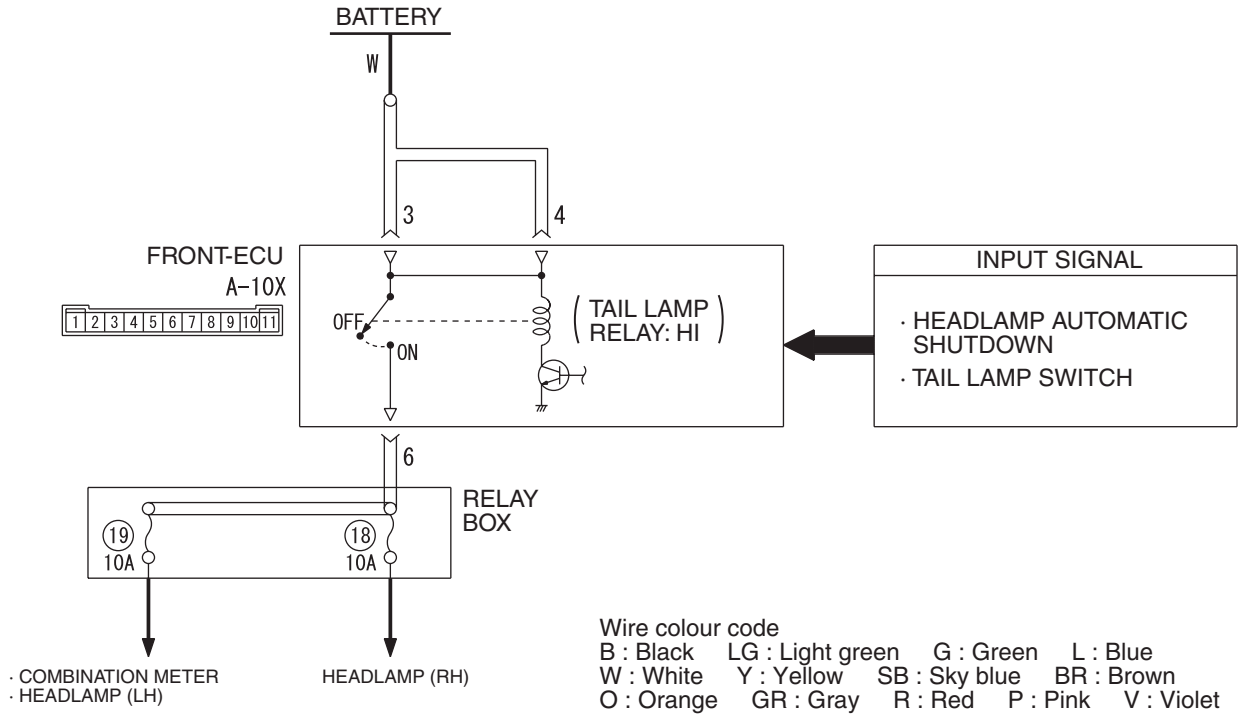
Q: Is the check result normal?

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

INSPECTION PROCEDURE H-3: The high-beam headlamps do not illuminate normally.

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

Headlamp Relay (High-Beam) Circuit



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

W4J54E119A

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 H-2 "The low-beam headlamps do not illuminate normally P.54B-162."

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 M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to inspection procedure L-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-248."

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 H-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-33.

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 M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to inspection procedure L-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-248."

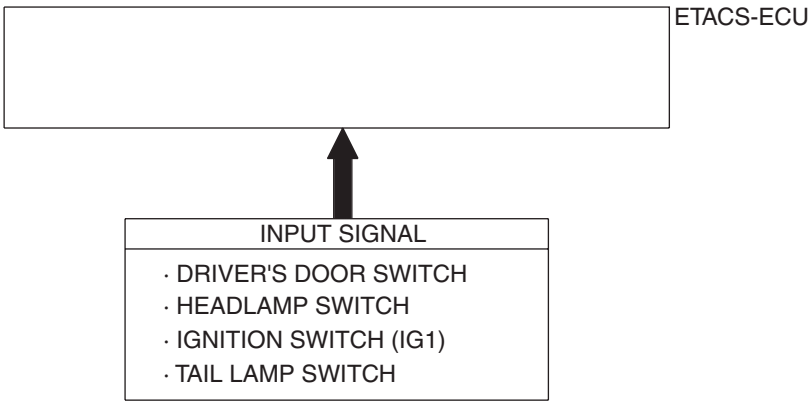
Step 3. Retest the system.
When the passing switch is turned on, check if the headlamps illuminate normally.

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 H-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



W4J54E120A

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 the adjustment function.
Check that the headlamp automatic shutdown function has been enabled by using the adjustment function.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Enable the headlamp automatic shutdown function by using the adjustment function. Refer to P.54B-302.

Step 2. 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 3.
NO : Repair the headlamps. Refer to trouble symptom chart P.54B-33.

Step 3. 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 M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?

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

The ignition switch (IG1) signal is not received. : Refer to inspection procedure L-2 "The ignition switch (IG1) signal is not received P.54B-242."

The driver's door switch signal is not received. : Refer to inspection procedure L-3 "The door switch (front: LH) signal is not received <LH drive vehicles>P.54B-244 ." Refer to inspection procedure L-3 "The door switch (front: RH) signal is not received <RH drive vehicles>P.54B-246 ."

The tail lamp switch signal is not received. : Refer to inspection procedure L-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-248."

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).

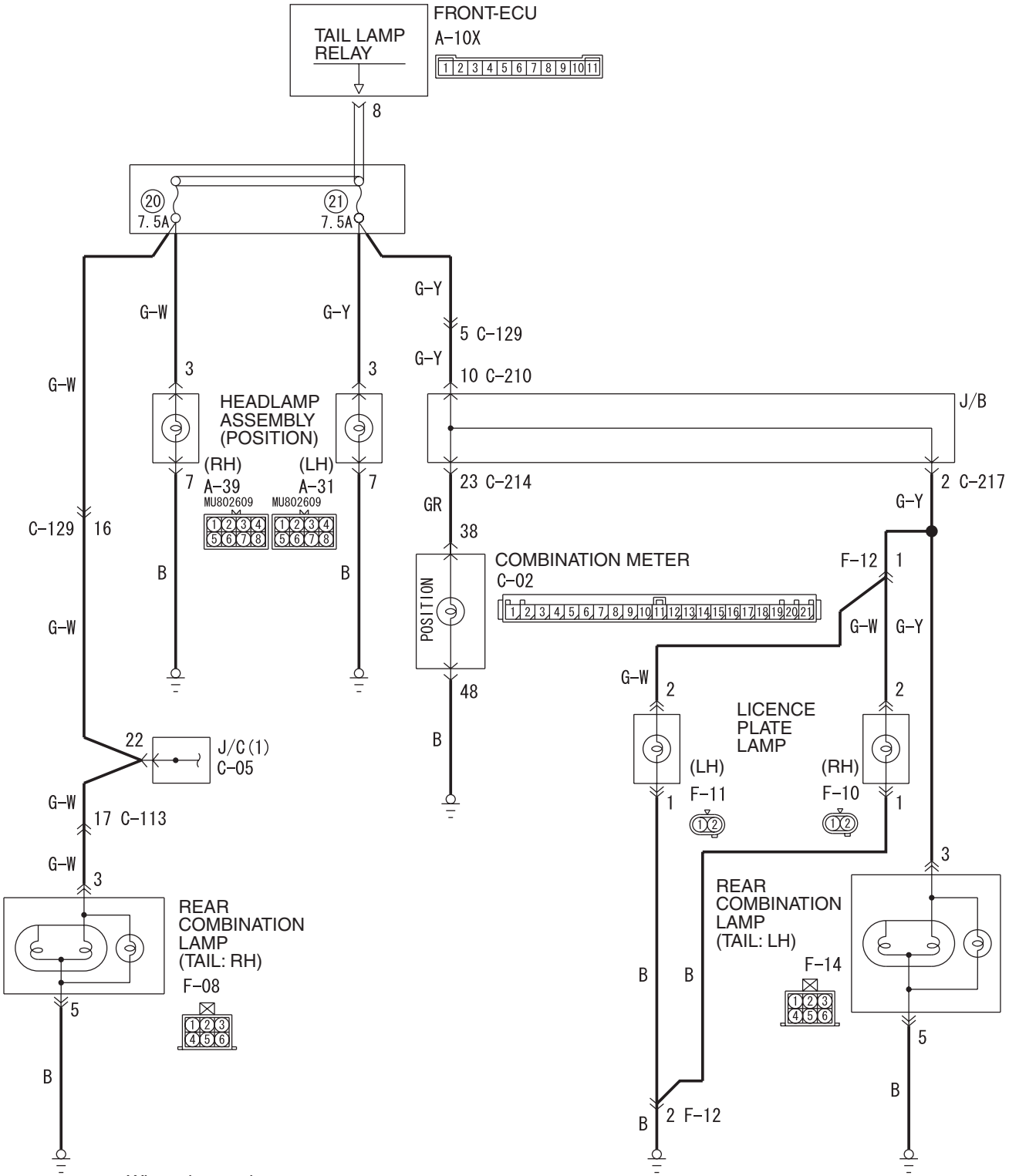
NO : Replace the front-ECU.

INSPECTION PROCEDURE H-6: Any of tail lamps, position lamps or licence plate lamps does not illuminate. <LH drive vehicles>

⚠ CAUTION

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

Taillamps, 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

W4J54E122A

COMMENTS ON TROUBLE SYMPTOM

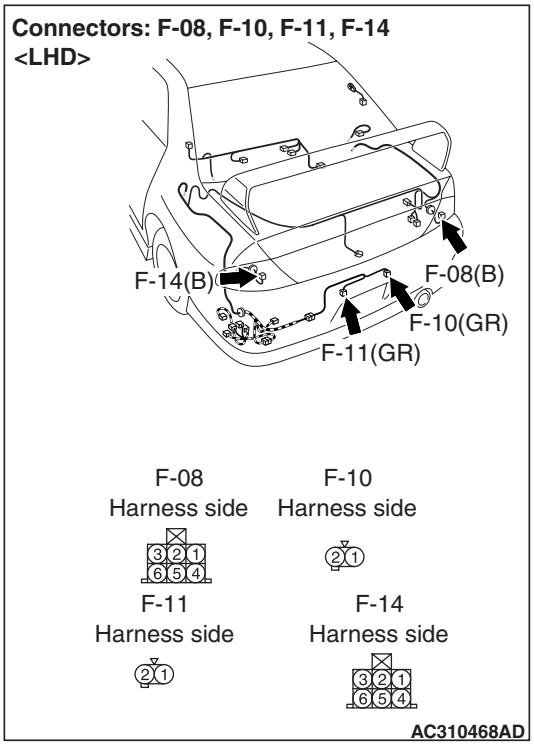
If the tail lamps, the position lamps or the licence plate lamps do not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

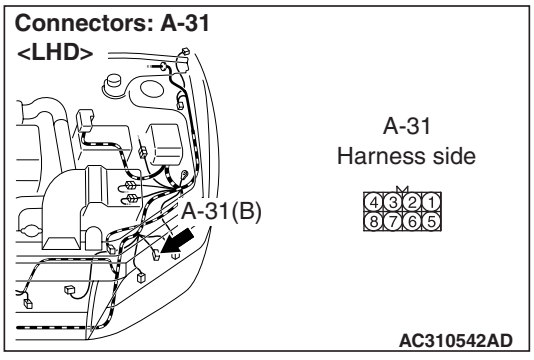
POSSIBLE CAUSES

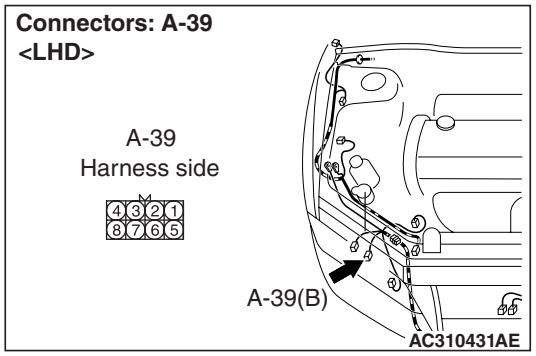
- Burned-out bulb
- Damaged harness wires and connectors

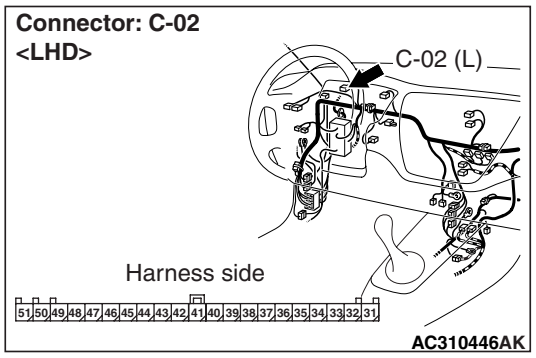
DIAGNOSTIC PROCEDURE

Step 1. Connector check: F-14 <tail lamp LH> or F-08 <tail lamp RH> rear combination lamp connector, A-31 <position lamp LH> or A-39 <position lamp RH> headlamp assembly connector, F-11 <licence plate lamp LH> or F-10 <licence plate lamp RH> licence plate lamp connector, C-02 <tail lamp indicator> combination meter connector









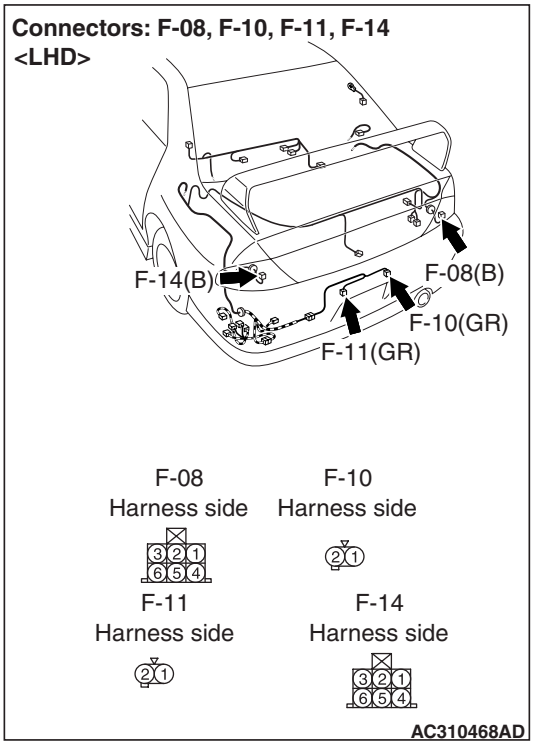
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

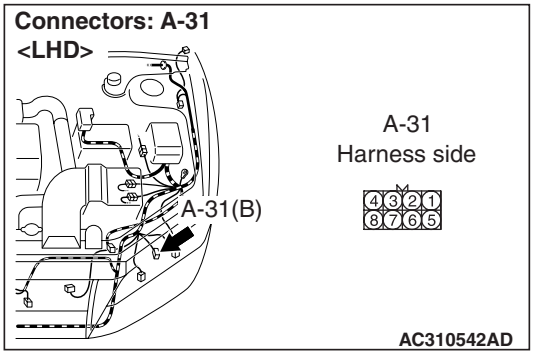
Step 2. Check the bulbs of the tail lamps, the position lamp, the licence plate lamp or tail lamp indicator.

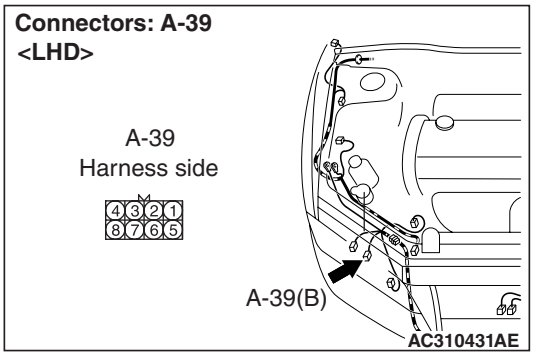
Check the bulb of the lamp which does not illuminate.

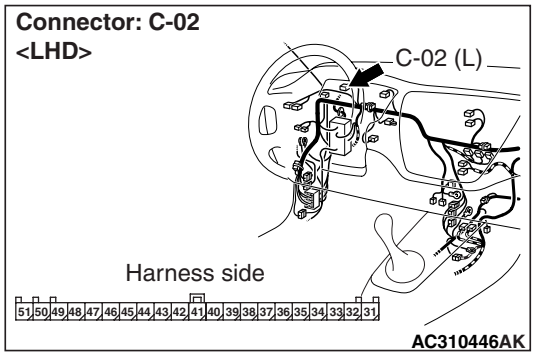
Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the bulb of the lamp which does not illuminate.

Step 3. Resistance measurement at the F-14 <tail lamp LH> or F-08 <tail lamp RH> rear combination lamp connector, the A-31 <position lamp LH> or A-39 <position lamp RH> headlamp assembly connector, the F-11 <licence plate lamp LH> or F-10 <licence plate lamp RH> licence plate lamp connector or C-02 <tail lamp indicator> combination meter connector

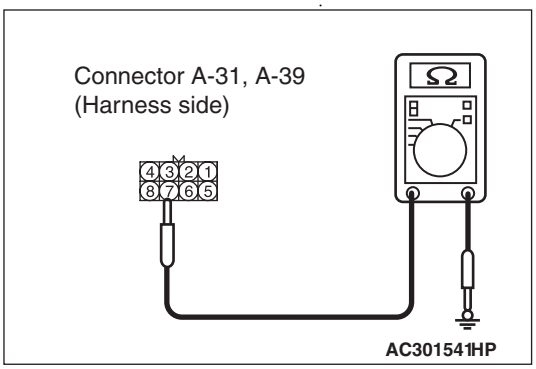




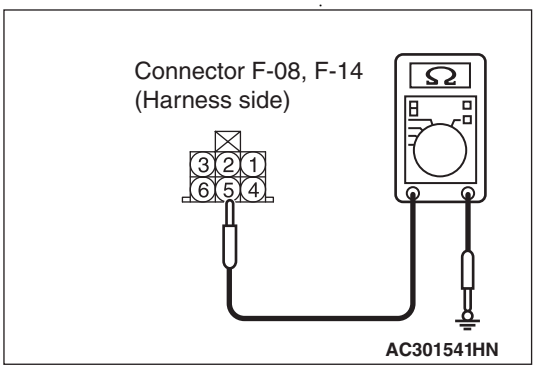




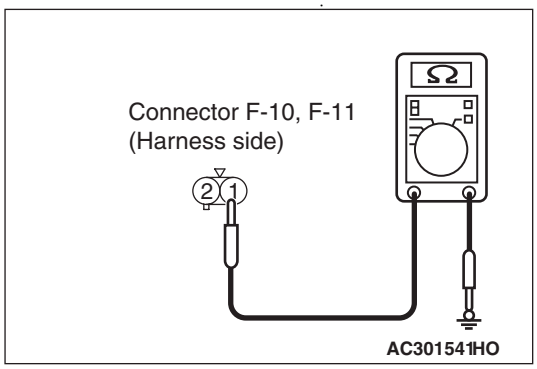
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Check the resistance between the lamp connector and body earth.



Resistance between A-31 <position lamp LH> headlamp assembly connector terminal No.7 and body earth
- Resistance between A-39 <position lamp RH> headlamp assembly connector terminal No.7 and body earth

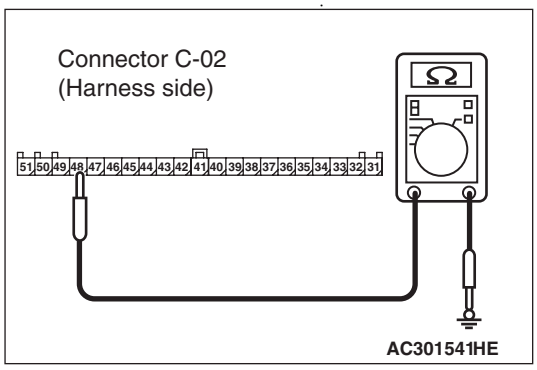


Resistance between F-14 <tail lamp LH> rear combination lamp connector terminal No.5 and body earth
- Resistance between F-08 <tail lamp RH> rear combination lamp connector terminal No.5 and body earth



Resistance between F-11 <licence plate lamp LH> licence plate lamp connector terminal No.1 and body earth

- Resistance between F-10 <licence plate lamp RH> licence plate lamp connector terminal No.1 and body earth



Resistance between C-02 <tail lamp indicator> combination meter connector terminal No.48 and body earth

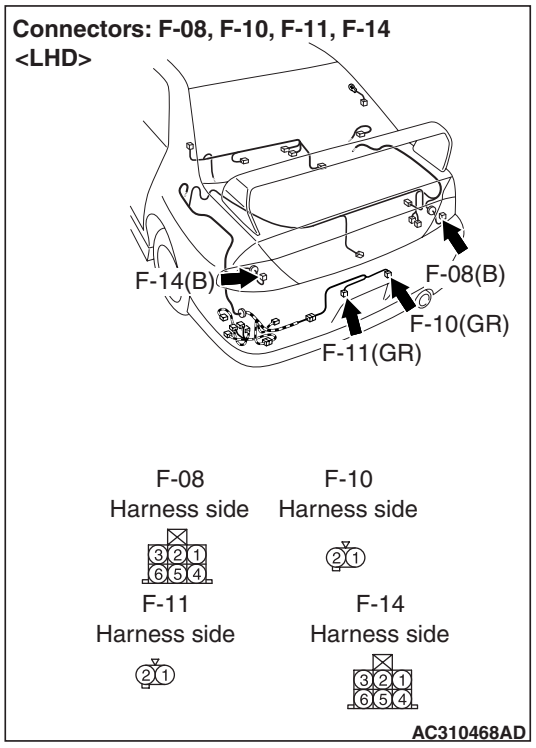
OK: 2 Ω or less

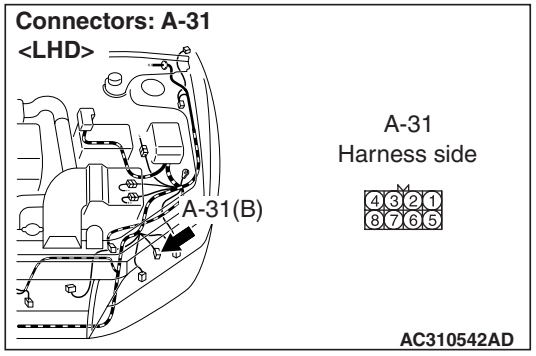
Q: Is the check result normal?

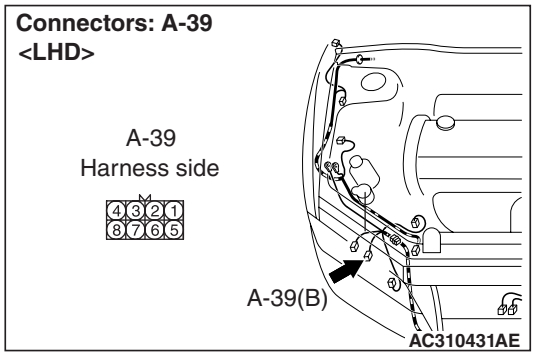
YES : Go to Step 5.

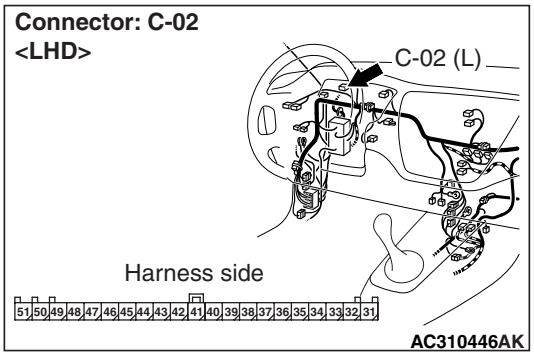
NO : Go to Step 4.

Step 4. Check the wiring harness from F-14 <tail lamp LH> or F-08 <tail lamp RH> rear combination lamp connector terminal No.5, A-31 <position lamp LH> or A-39 <position lamp RH> headlamp assembly connector terminal No.7, F-11 <licence plate lamp LH> or F-10 <licence plate lamp RH> licence plate lamp connector terminal No.1 or C-02 <tail lamp indicator> combination meter connector terminal No.48 to body earth.

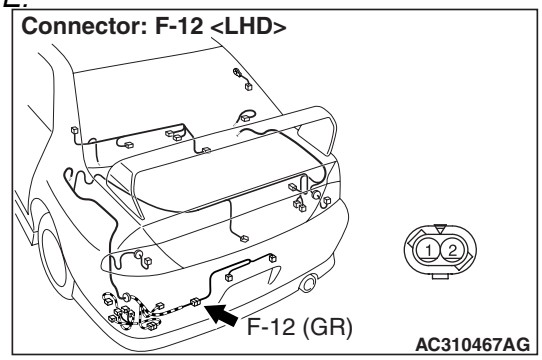








NOTE:



Prior to the wiring harness inspection, check intermediate connector F-12 <licence plate lamp> and repair if necessary.

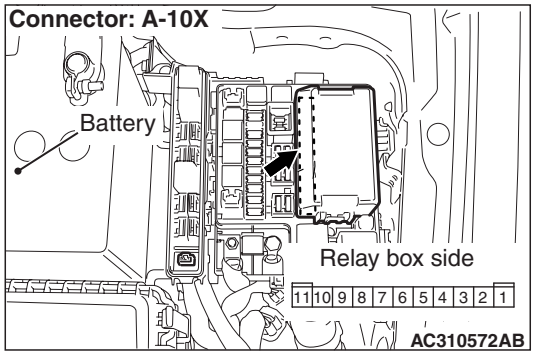
- Check the earth wires for open circuit.

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: A-10X front-ECU connector



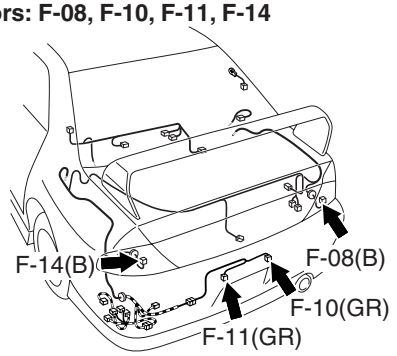
Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the defective connector.

Step 6. Check the wiring harness from F-14 <tail lamp LH> or F-08 <tail lamp RH> rear combination lamp connector terminal No.3, A-31 <position lamp LH> or A-39 <position lamp RH> headlamp assembly connector terminal No.3, F-11 <licence plate lamp LH> or F-10 <licence plate lamp RH> licence plate lamp connector terminal No.2, C-02 <tail lamp indicator> combination meter connector terminal No.38 to A-10X front-ECU connector terminal No.8.

Connectors: F-08, F-10, F-11, F-14
<LHD>



F-08
Harness side



F-10
Harness side



F-11
Harness side

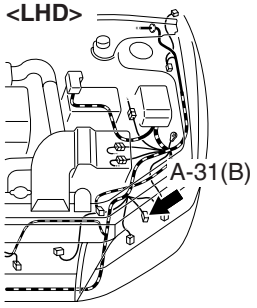


F-14
Harness side



AC310468AD

Connectors: A-31
<LHD>



A-31
Harness side

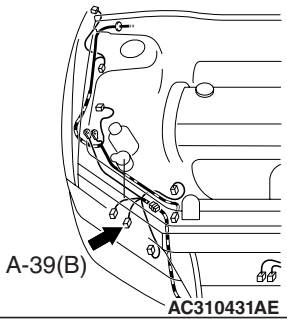


AC310542AD

Connectors: A-39
<LHD>

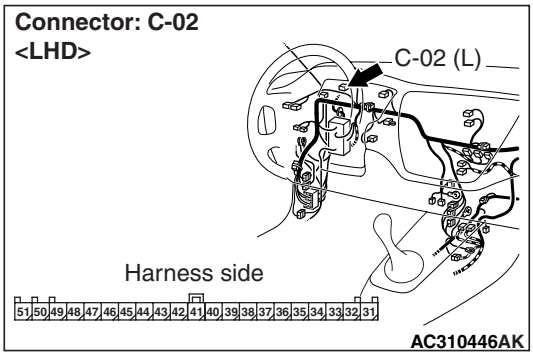
A-39
Harness side





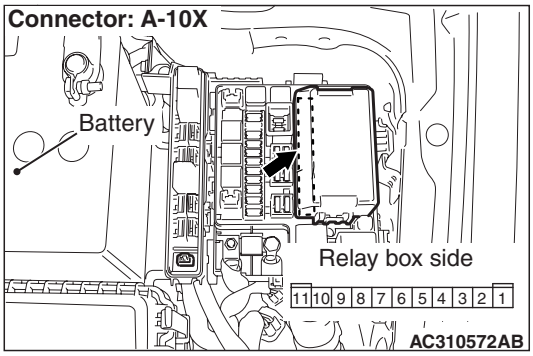
AC310431AE

Connector: C-02
<LHD>



AC310446AK

Connector: A-10X

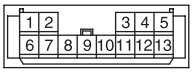


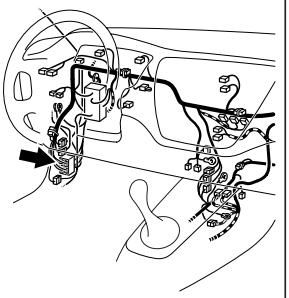
AC310572AB

NOTE:

Connectors: C-129
<LHD>

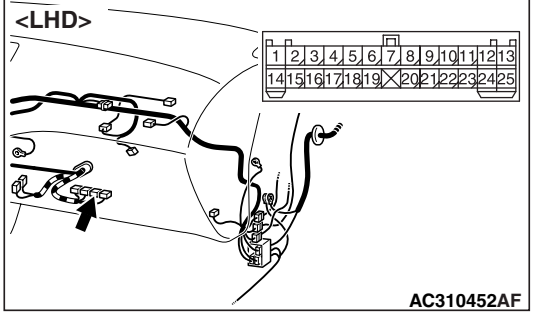
C-129



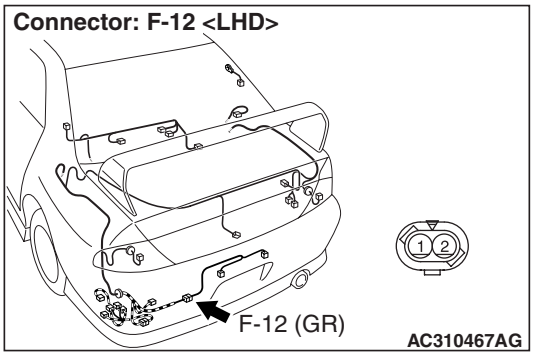


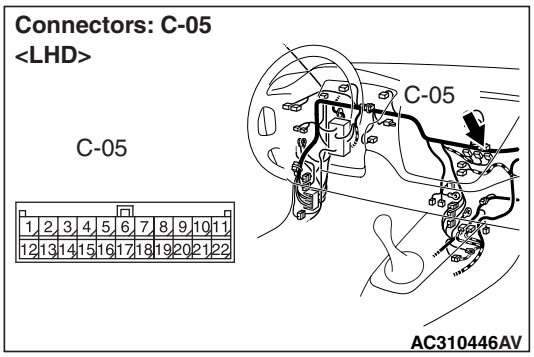
AC310446AP

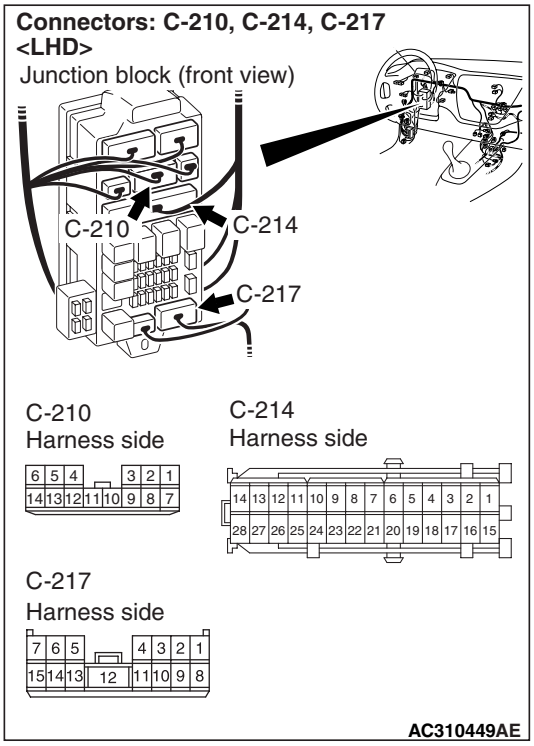
Connector: C-113
<LHD>



AC310452AF







Prior to the wiring harness inspection, check intermediate connector C-129 <tail lamp LH, licence plate lamp or tail lamp indicator>, C-113 <tail lamp RH> or F-12 <licence plate lamp>, joint connector C-05 <tail lamp RH>, junction block connector C-210 <tail lamp LH, licence plate lamp or tail lamp indicator>, C-214 <tail lamp indicator> or C-217 <tail lamp LH or licence plate lamp> and repair if necessary.

- 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 tail lamps, the position lamps and the licence plate lamps illuminate normally.

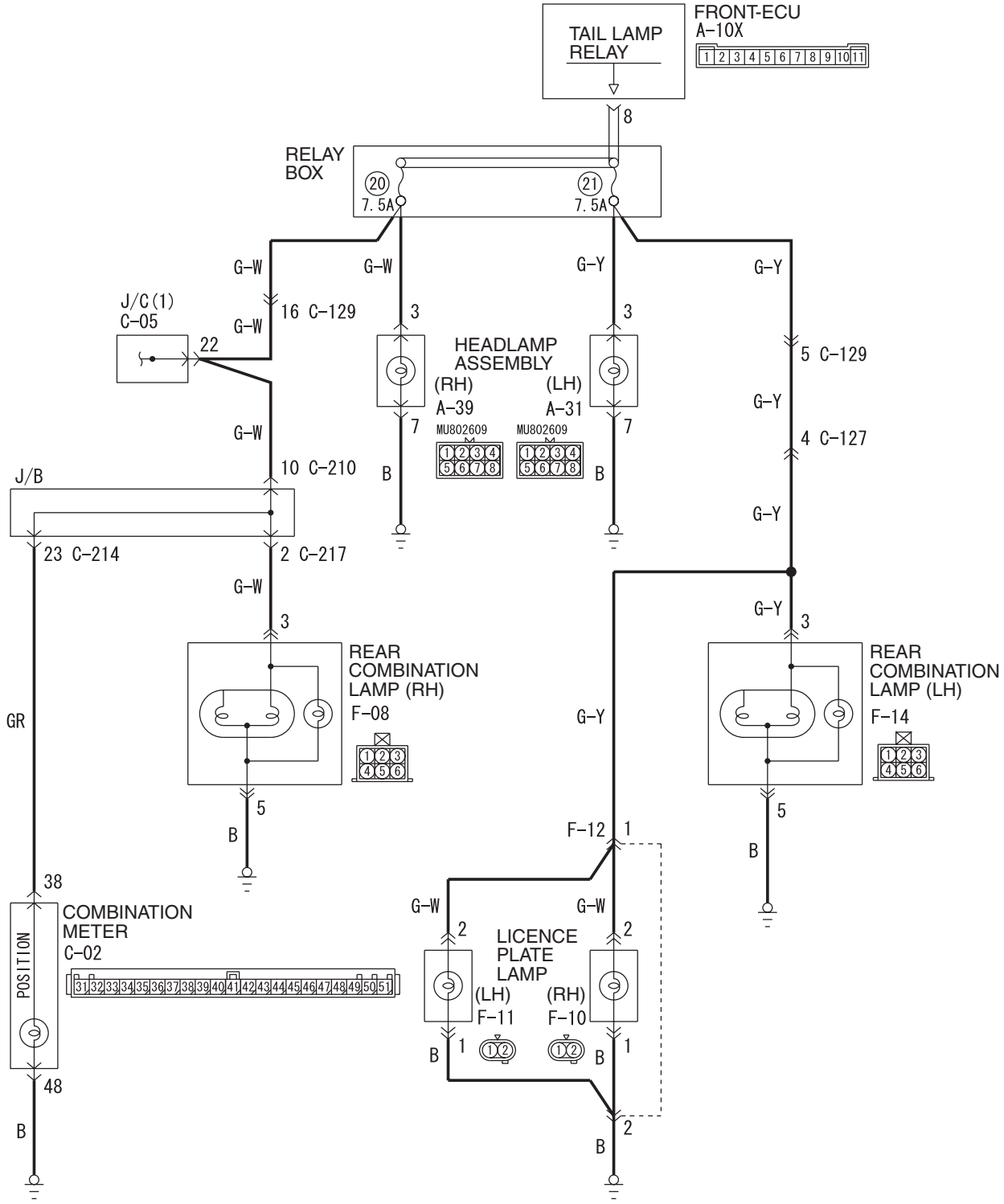
Q: Is the check result normal?
The all lamps illuminate normally : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
When the tail lamps do not illuminate : Replace the rear combination lamp socket assembly.
When the position lamps do not illuminate : Replace the position lamp socket.
When the licence plate lamps do not illuminate : Replace the licence plate lamp socket.
When the tail lamp indicator do not illuminate : Replace the combination meter assembly.

INSPECTION PROCEDURE H-6: Any of tail lamps, position lamps or licence plate lamps does not illuminate. <RH drive vehicles>

⚠ CAUTION

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

Taillamps, 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

W4J54E121A

COMMENTS ON TROUBLE SYMPTOM

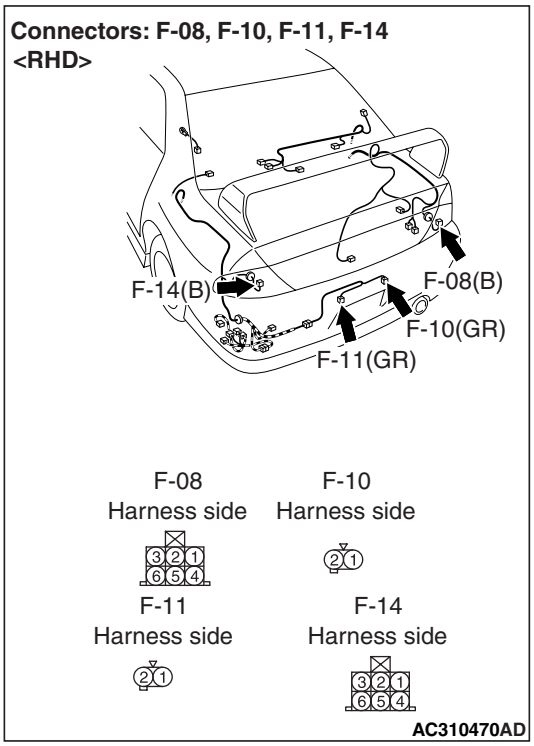
If the tail lamps, the position lamps or the licence plate lamps do not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

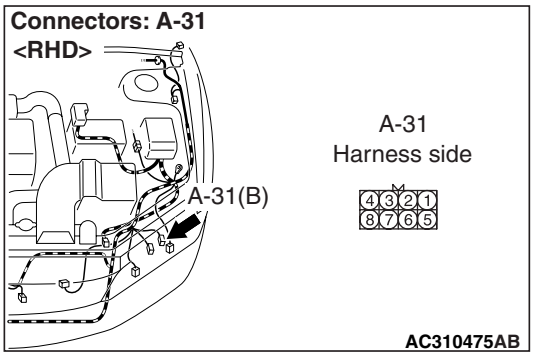
POSSIBLE CAUSES

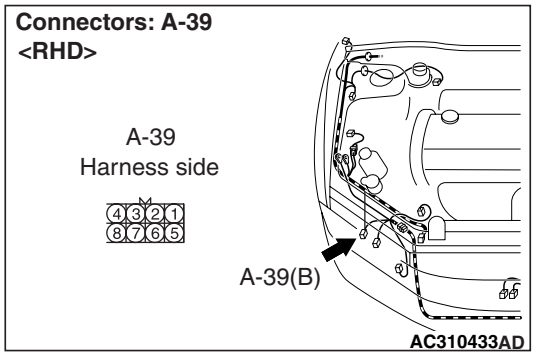
- Burned-out bulb
- Damaged harness wires and connectors

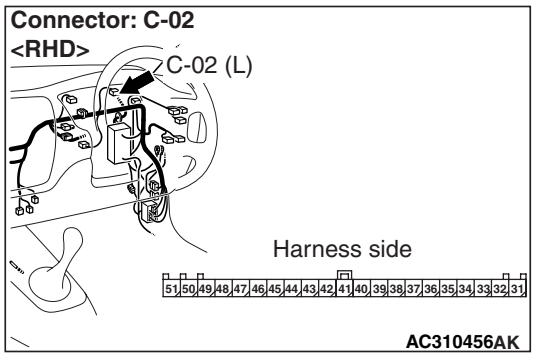
DIAGNOSTIC PROCEDURE

Step 1. Connector check: F-14 <tail lamp LH> or F-08 <tail lamp RH> rear combination lamp connector, A-31 <position lamp LH> or A-39 <position lamp RH> headlamp assembly connector, F-11 <licence plate lamp LH> or F-10 <licence plate lamp RH> licence plate lamp connector, C-02 <tail lamp indicator> combination meter connector









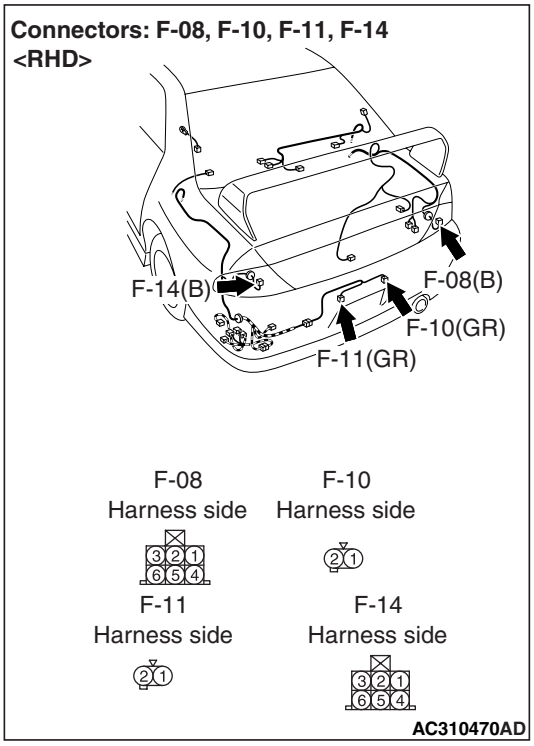
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

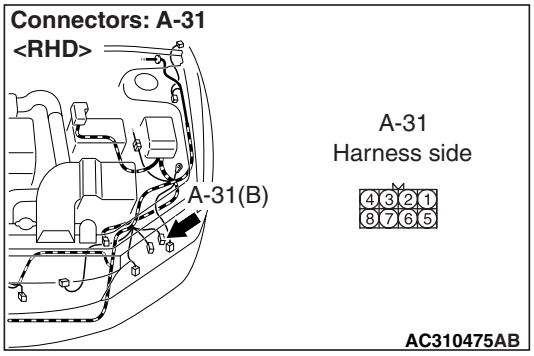
Step 2. Check the bulbs of the tail lamps, the position lamp, the licence plate lamp or tail lamp indicator.

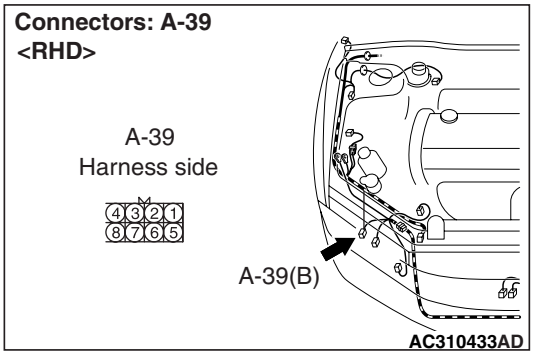
Check the bulb of the lamp which does not illuminate.

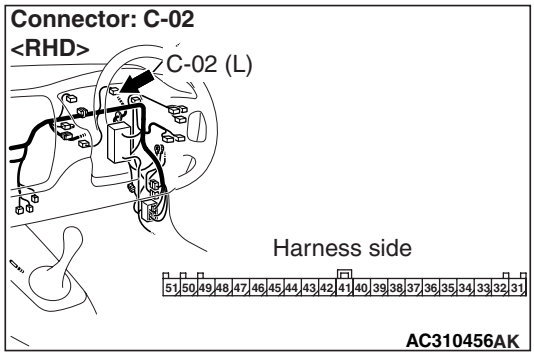
Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the bulb of the lamp which does not illuminate.

Step 3. Resistance measurement at the F-14 <tail lamp LH> or F-08 <tail lamp RH> rear combination lamp connector, the A-31 <position lamp LH> or A-39 <position lamp RH> headlamp assembly connector, the F-11 <licence plate lamp LH> or F-10 <licence plate lamp RH> licence plate lamp connector or C-02 <tail lamp indicator> combination meter connector

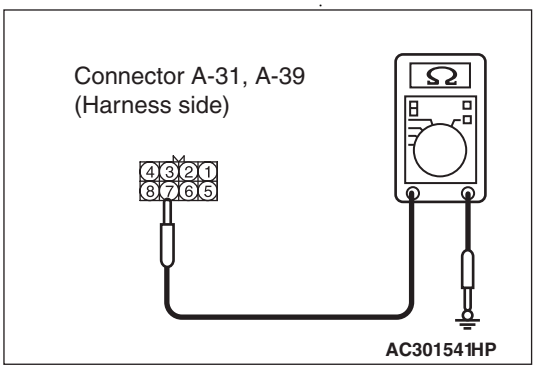






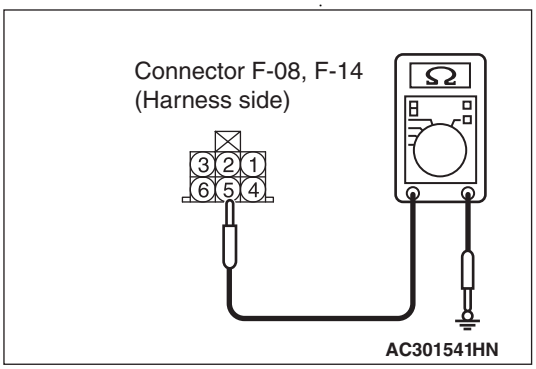


(1) Disconnect the connector, and measure at the wiring harness side.
(2) Check the resistance between the lamp connector and body earth.



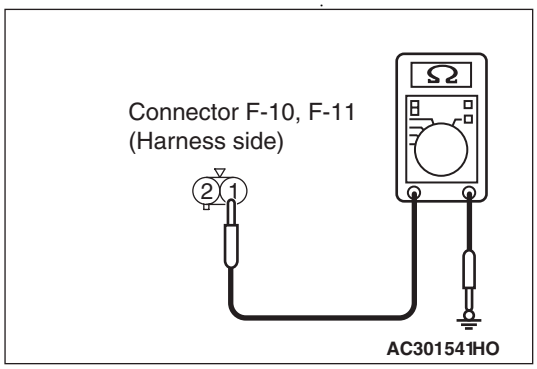
Resistance between A-31 <position lamp LH> headlamp assembly connector terminal No.7 and body earth

- Resistance between A-39 <position lamp RH> headlamp assembly connector terminal No.7 and body earth



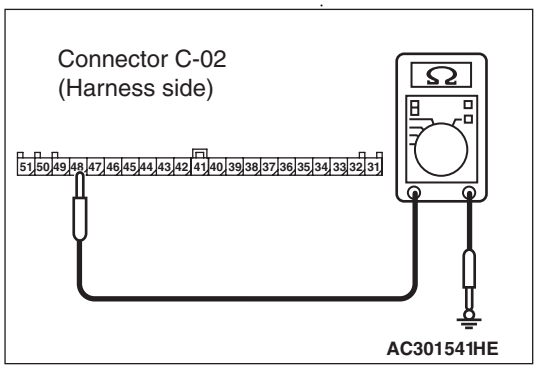
Resistance between F-14 <tail lamp LH> rear combination lamp connector terminal No.5 and body earth

- Resistance between F-08 <tail lamp RH> rear combination lamp connector terminal No.5 and body earth



Resistance between F-11 <licence plate lamp LH> licence plate lamp connector terminal No.1 and body earth

- Resistance between F-10 <licence plate lamp RH> licence plate lamp connector terminal No.1 and body earth



Resistance between C-02 <tail lamp indicator> combination meter connector terminal No.48 and body earth

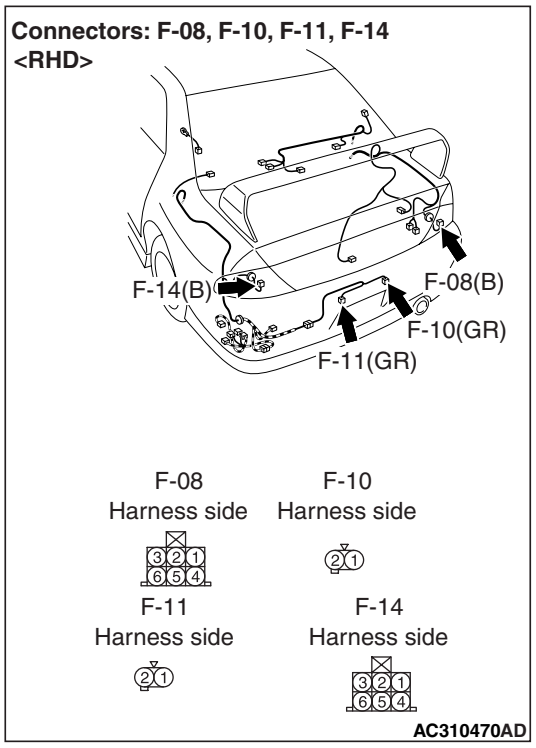
OK: 2 Ω or less

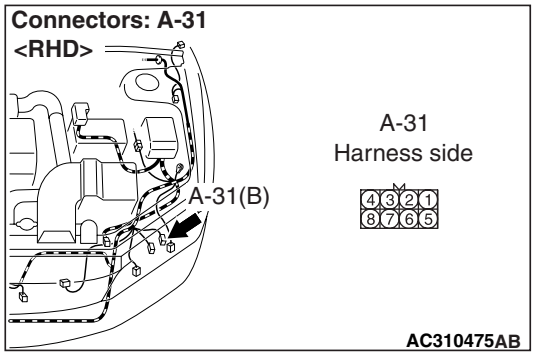
Q: Is the check result normal?

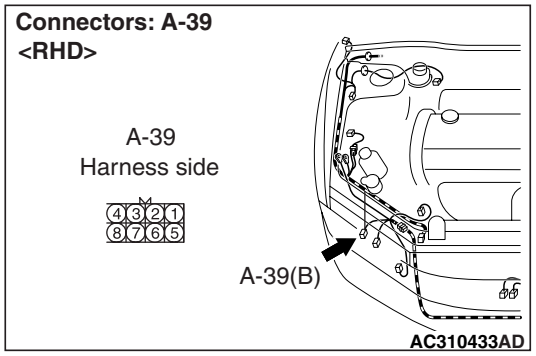
YES : Go to Step 5.

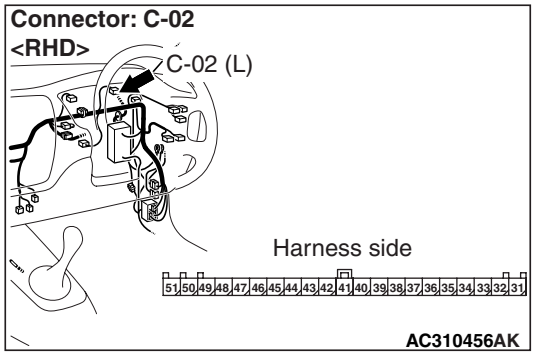
NO : Go to Step 4.

Step 4. Check the wiring harness from F-14 <tail lamp LH> or F-08 <tail lamp RH> rear combination lamp connector terminal No.5, A-31 <position lamp LH> or A-39 <position lamp RH> headlamp assembly connector terminal No.7, F-11 <licence plate lamp LH> or F-10 <licence plate lamp RH> licence plate lamp connector terminal No.1 or C-02 <tail lamp indicator> combination meter connector terminal No.48 to body earth.

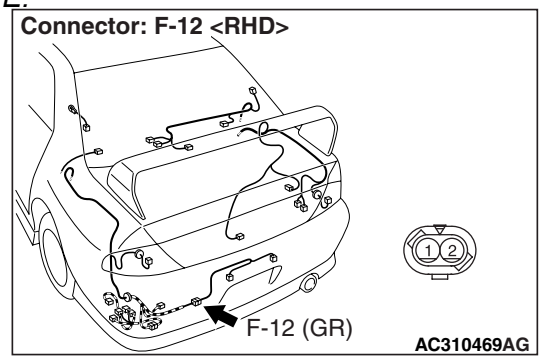








NOTE:



Prior to the wiring harness inspection, check intermediate connector F-12 <licence plate lamp> and repair if necessary.

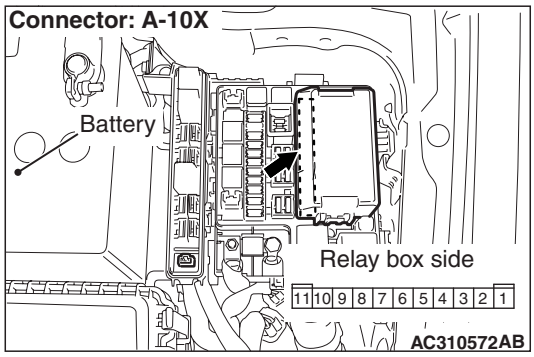
- Check the earth wires for open circuit.

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: A-10X front-ECU connector

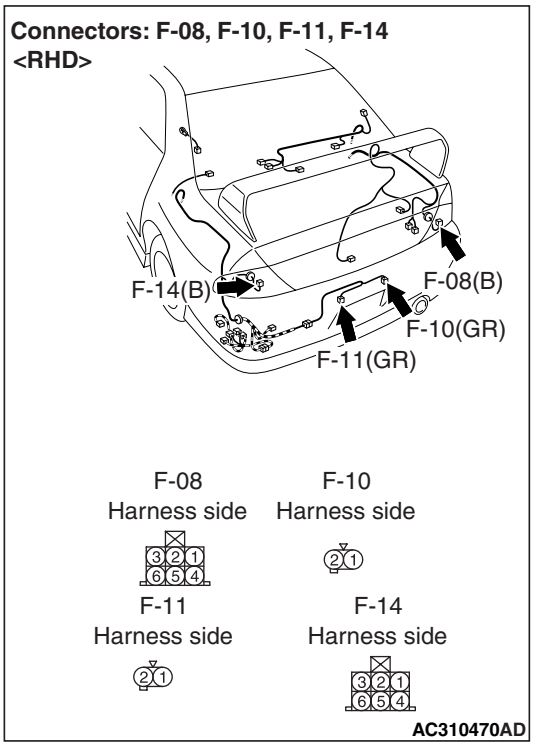


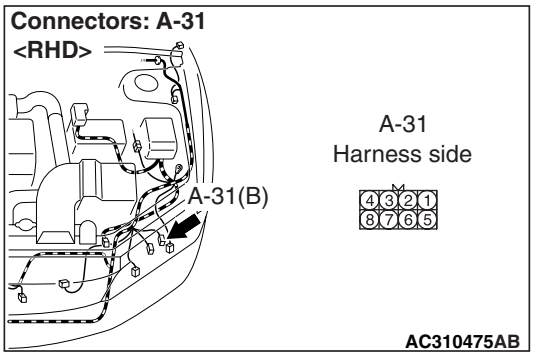
Q: Is the check result normal?

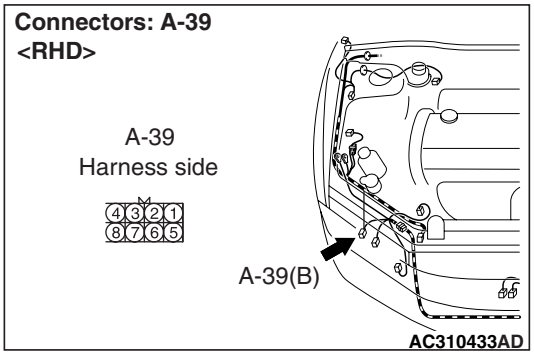
YES : Go to Step 6.

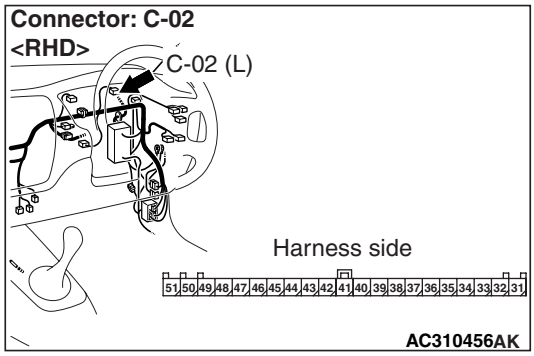
NO : Repair the defective connector.

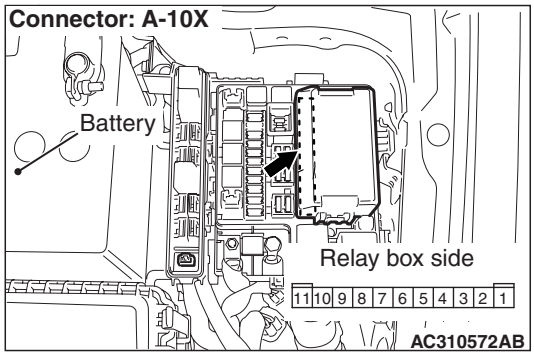
Step 6. Check the wiring harness from F-14 <tail lamp LH> or F-08 <tail lamp RH> rear combination lamp connector terminal No.3, A-31 <position lamp LH> or A-39 <position lamp RH> headlamp assembly connector terminal No.3, F-11 <licence plate lamp LH> or F-10 <licence plate lamp RH> licence plate lamp connector terminal No.2, C-02 <tail lamp indicator> combination meter connector terminal No.38 to A-10X front-ECU connector terminal No.8.

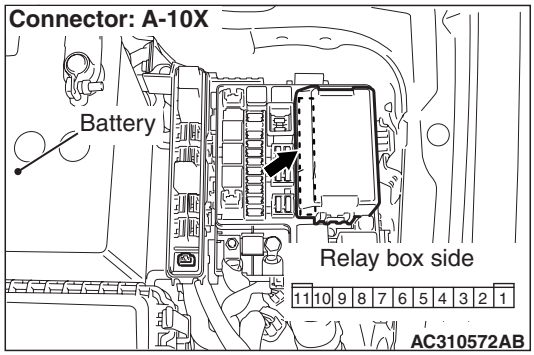




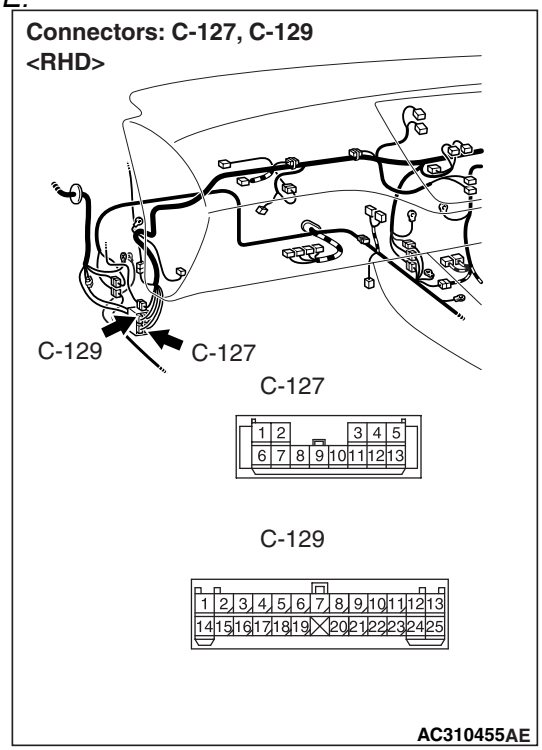


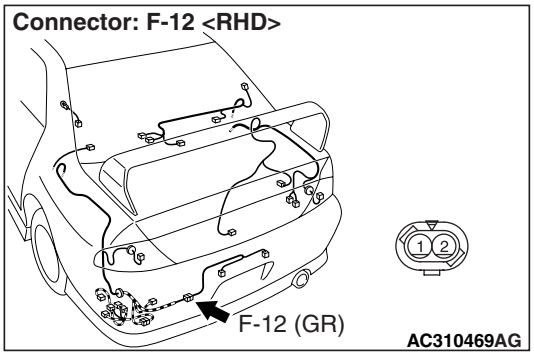


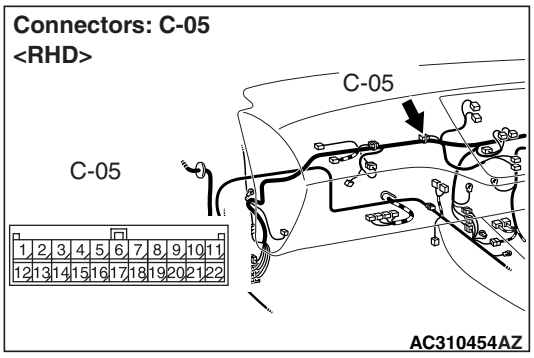


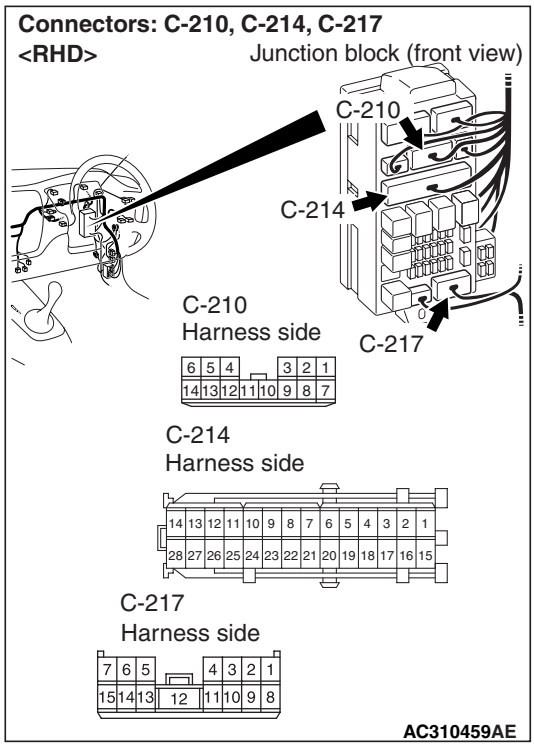


NOTE:









Prior to the wiring harness inspection, check intermediate connector C-129 <tail lamp, licence plate lamp or tail lamp indicator>, C-127 <tail lamp LH or licence plate lamp> or F-12 <licence plate lamp>, joint connector C-05 <tail lamp RH, or tail lamp indicator>, junction block connector C-210 <tail lamp RH, or tail lamp indicator>, C-214 <tail lamp indicator> or C-217 <tail lamp RH> and repair if necessary.

- 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.

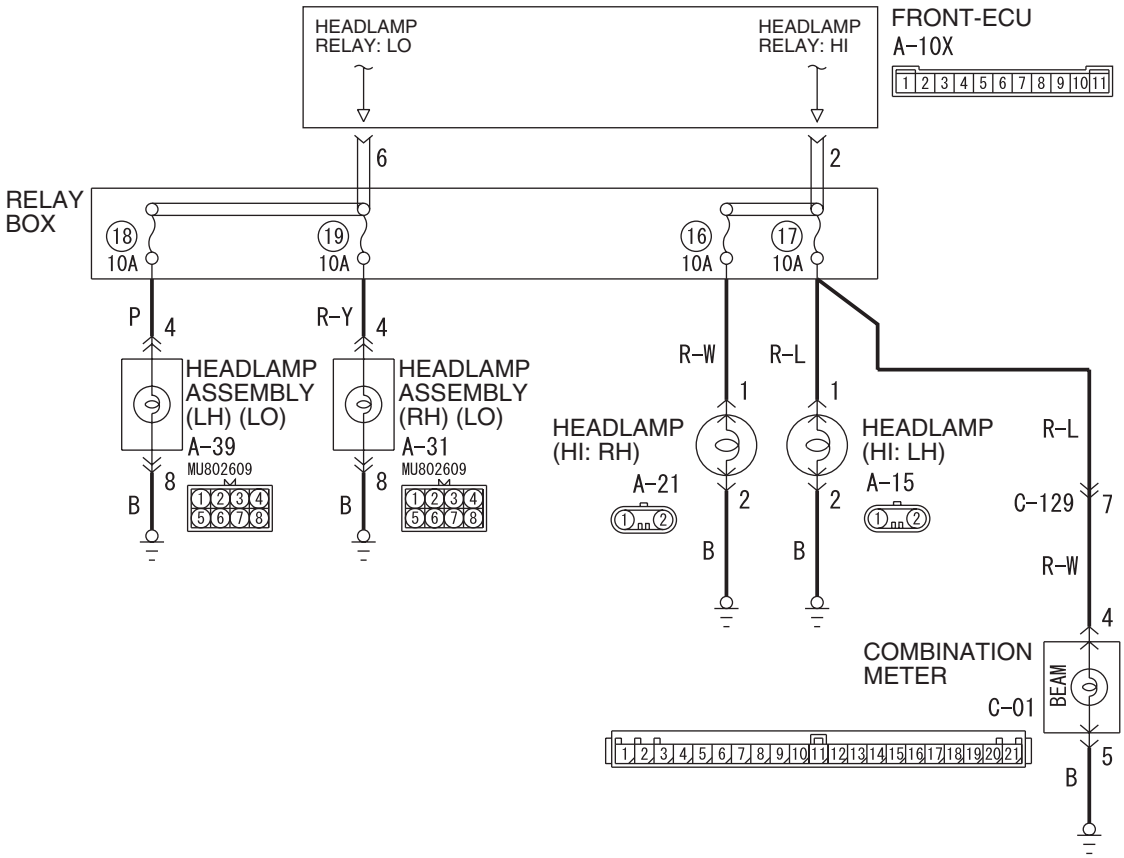
Check that the tail lamps, the position lamps and the licence plate lamps illuminate normally.

Q: Is the check result normal?
The all lamps illuminate normally : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
When the tail lamps do not illuminate : Replace the rear combination 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.
When the tail lamp indicator do not illuminate : Replace the combination meter assembly.

INSPECTION PROCEDURE H-7: The headlamp(s) do not illuminate. <including high-beam indicator>

⚠ 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

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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.

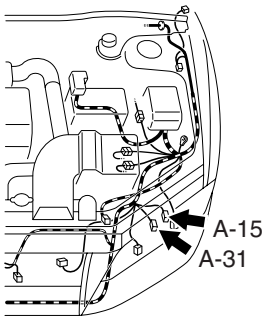
POSSIBLE CAUSES

- Malfunction of the headlamp bulbs
- Malfunction of the high-beam indicator bulb
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Connector check: A-31 <headlamp (LO) RH>, A-39 <headlamp (LO) LH>, A-21 <headlamp (HI) RH>, A-15 <headlamp (HI) LH> headlamp assembly connector or C-01 <high-beam indicator> combination meter connector

Connectors: A-15, A-31
<LHD>



A-15
Harness side

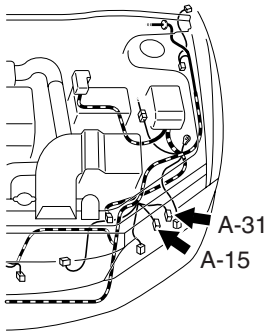


A-31
Harness side



AC310543AC

Connectors: A-15, A-31
<RHD>



A-15
Harness side

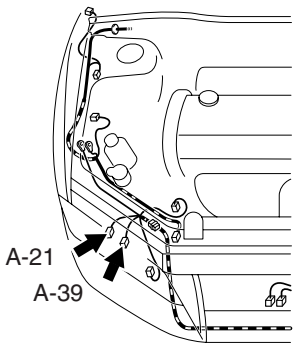


A-31
Harness side



AC310476AC

Connectors: A-21, A-39
<LHD>



A-21
Harness side

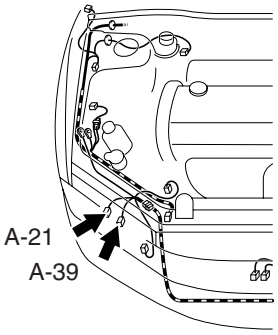


A-39
Harness side



AC310432AC

Connectors: A-21, A-39
<RHD>



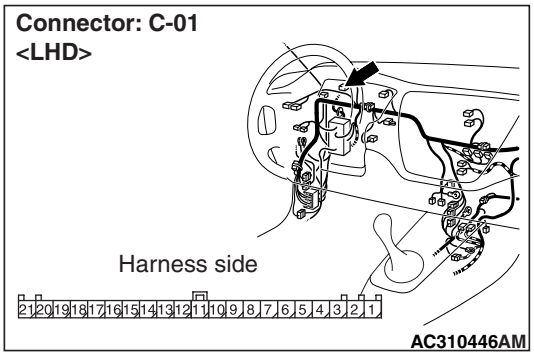
A-21
Harness side

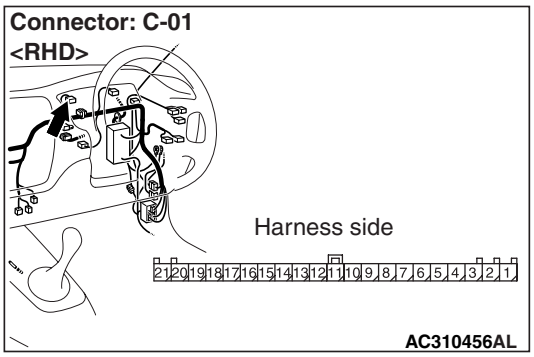


A-39
Harness side



AC310434AC





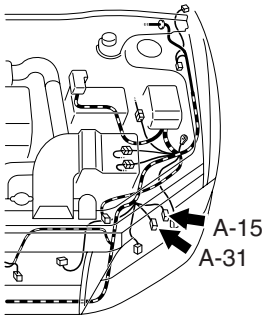
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the bulb(s) of the headlamps or the high-beam indicator lamp.
Check the bulb(s) of the defective lamp.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the bulb(s) of the defective lamp.

Step 3. Resistance measurement at A-31 <headlamp (LO) RH>, A-39 <headlamp (LO) LH>, A-21 <headlamp (HI) RH>, A-15 <headlamp (HI) LH> headlamp assembly connector or C-01 <high-beam indicator> combination meter connector

Connectors: A-15, A-31
<LHD>



A-15
Harness side

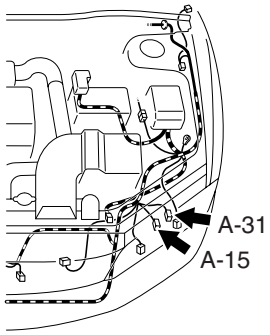


A-31
Harness side



AC310543AC

Connectors: A-15, A-31
<RHD>



A-15
Harness side

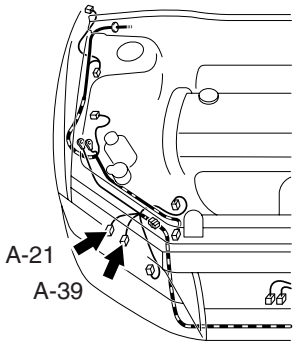


A-31
Harness side



AC310476AC

Connectors: A-21, A-39
<LHD>



A-21
Harness side

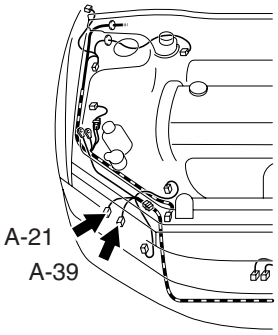


A-39
Harness side



AC310432AC

Connectors: A-21, A-39
<RHD>



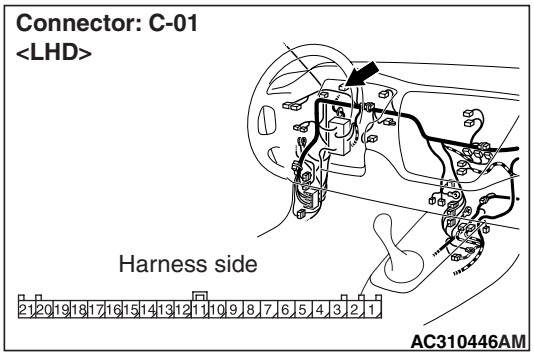
A-21
Harness side

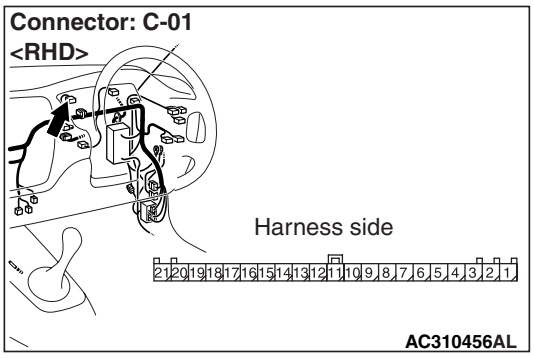


A-39
Harness side

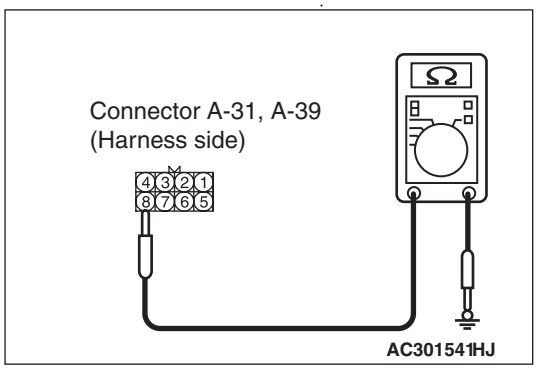


AC310434AC

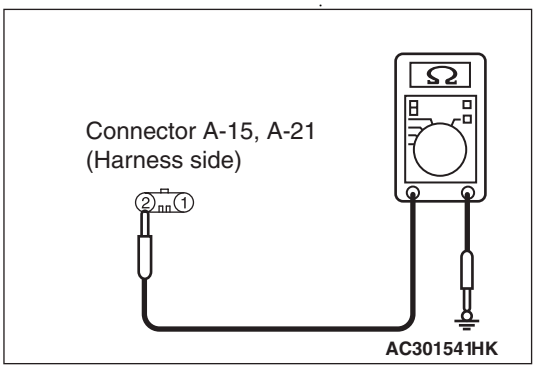




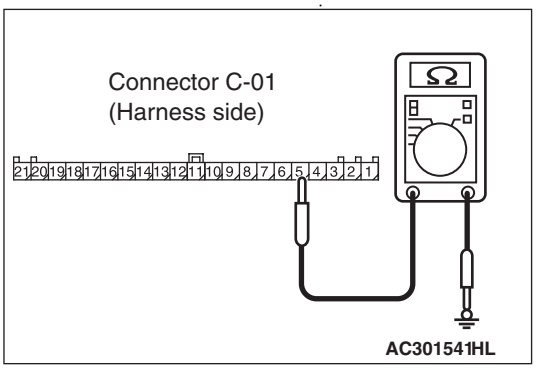
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Check the resistance between the lamp connector and body earth.



Resistance between A-31 <headlamp (LO) RH> headlamp assembly connector terminal No.8 and body earth
- Resistance between A-39 <headlamp (LO) LH> headlamp assembly connector terminal No.8 and body earth



Resistance between A-21 <headlamp (HI) RH> headlamp assembly connector terminal No.2 and body earth
- Resistance between A-15 <headlamp (HI) LH> headlamp assembly connector terminal No.2 and body earth



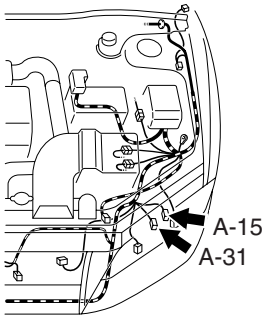
Resistance between C-01 <high-beam indicator> combination meter connector terminal No.5 and body earth

OK: 2 Ω or less

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

Step 4. Check the wiring harness from A-31 <headlamp (LO) RH> or A-39 <headlamp (LO) LH> headlamp connector terminal No.8, or A-21 <headlamp (HI) RH> or A-15 <headlamp (HI) LH> headlamp connector terminal No.2, or C-01 <high-beam indicator> combination meter connector terminal No.5 to body earth.

Connectors: A-15, A-31
<LHD>



A-15
Harness side

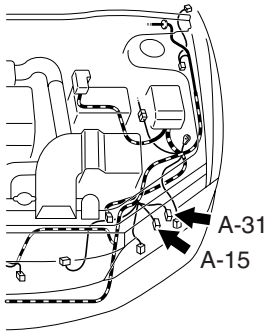


A-31
Harness side



AC310543AC

Connectors: A-15, A-31
<RHD>



A-15
Harness side

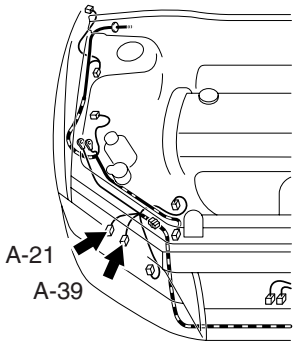


A-31
Harness side



AC310476AC

Connectors: A-21, A-39
<LHD>



A-21
Harness side

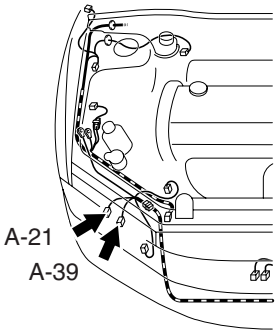


A-39
Harness side



AC310432AC

Connectors: A-21, A-39
<RHD>



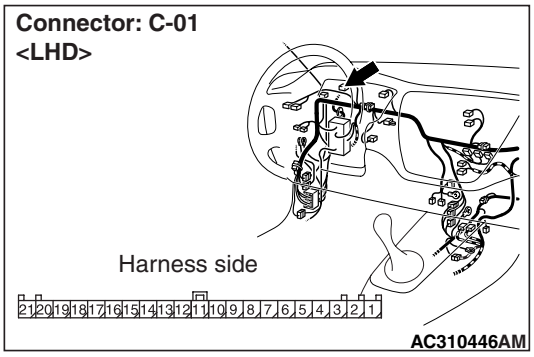
A-21
Harness side

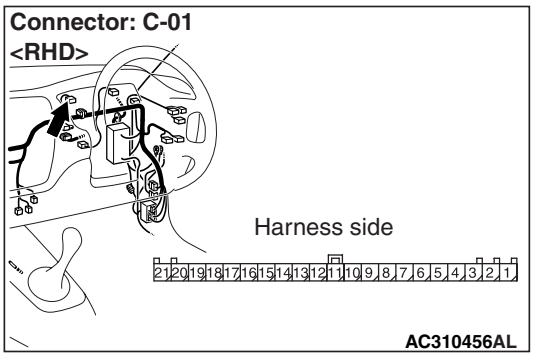


A-39
Harness side



AC310434AC

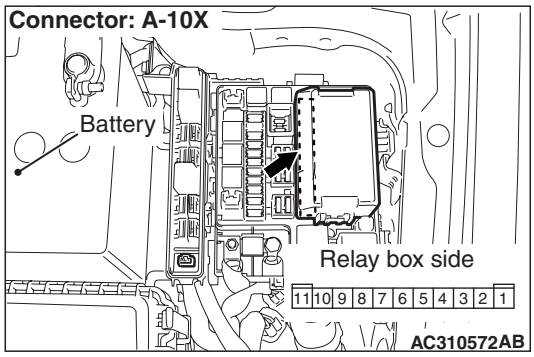




- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

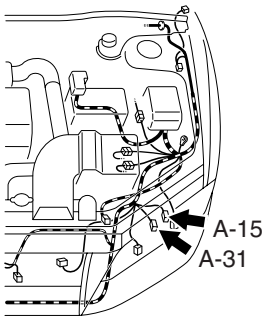
Step 5. Connector check: A-10X front-ECU connector



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

Step 6. Check the wiring harness from A-31 <headlamp (LO) RH> or A-39 <headlamp (LO) LH> headlamp connector terminal No.4, or A-21 <headlamp (HI) RH> or A-15 <headlamp (HI) LH> headlamp connector terminal No.1, or C-01 <high-beam indicator> combination meter connector terminal No.5 to A-10X front-ECU connector terminal No.6 <low-beam> or No.2 <high-beam>.

Connectors: A-15, A-31
<LHD>



A-15
Harness side

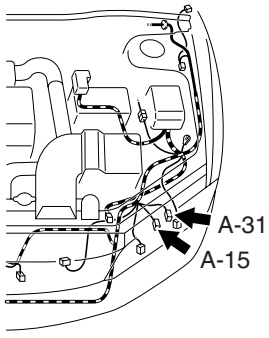


A-31
Harness side



AC310543AC

Connectors: A-15, A-31
<RHD>



A-15
Harness side

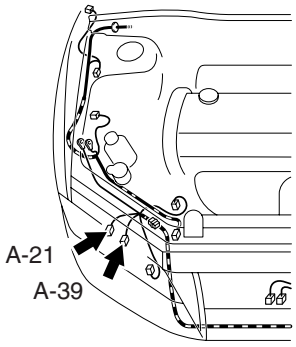


A-31
Harness side



AC310476AC

Connectors: A-21, A-39
<LHD>



A-21
Harness side

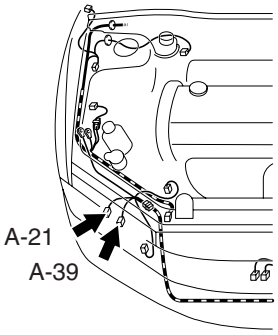


A-39
Harness side



AC310432AC

Connectors: A-21, A-39
<RHD>



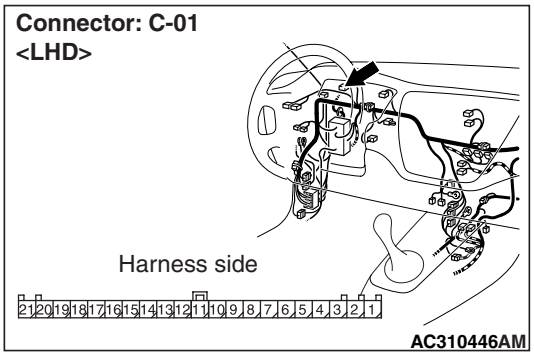
A-21
Harness side

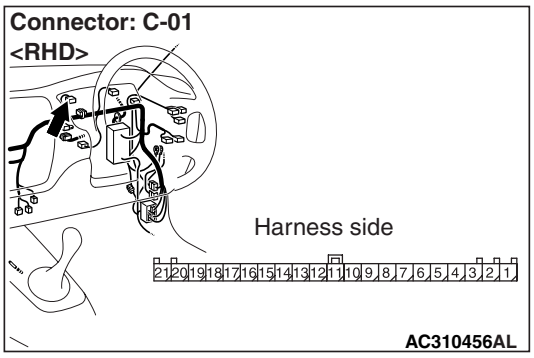


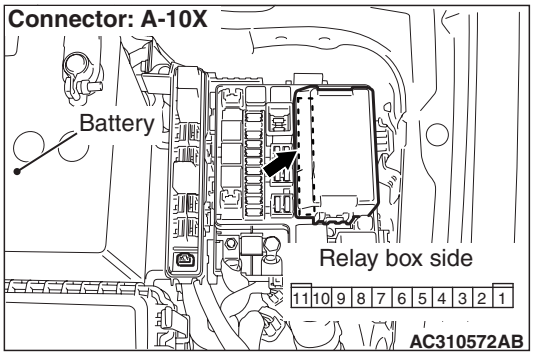
A-39
Harness side



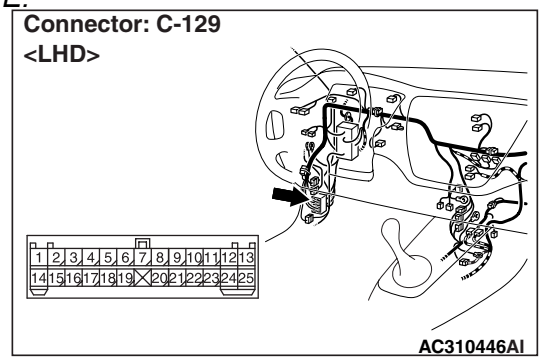
AC310434AC

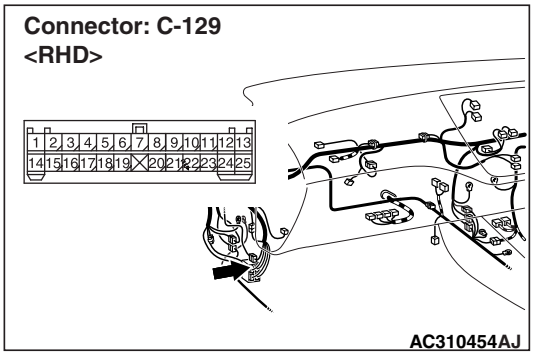






NOTE:





Prior to the wiring harness inspection, check intermediate connector C-129 <high-beam indicator>, and repair if necessary.

- 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 headlamps and the high-beam indicator lamp illuminate/extinguish normally.

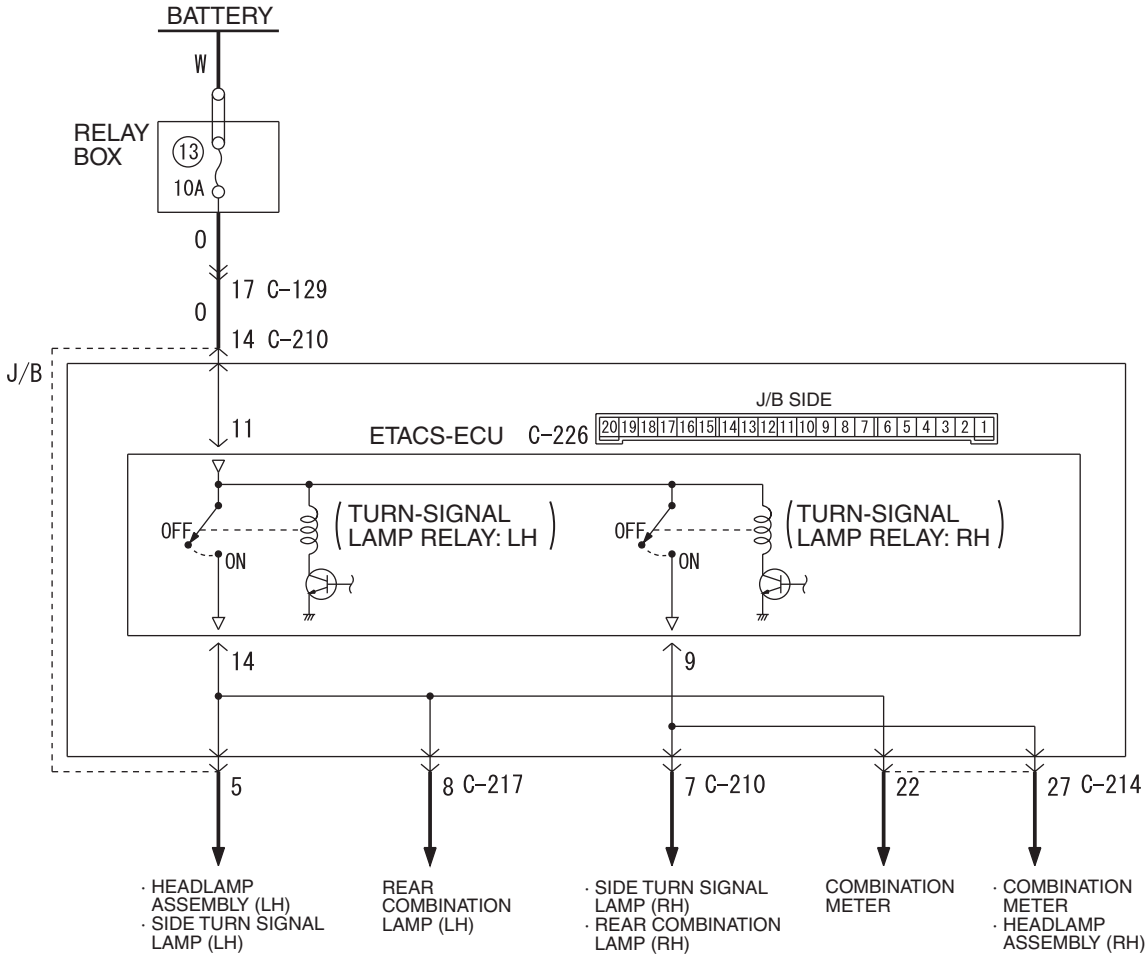
Q: Is the check result normal?
The lamps illuminate normally at both high and low beams. : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
When the headlamps do not illuminate : Replace the headlamp socket.
When the high-beam indicator lamp does not illuminate : Replace the combination meter.

FLASHER TIMER

INSPECTION PROCEDURE I-1: The turn-signal lamps do not illuminate.

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

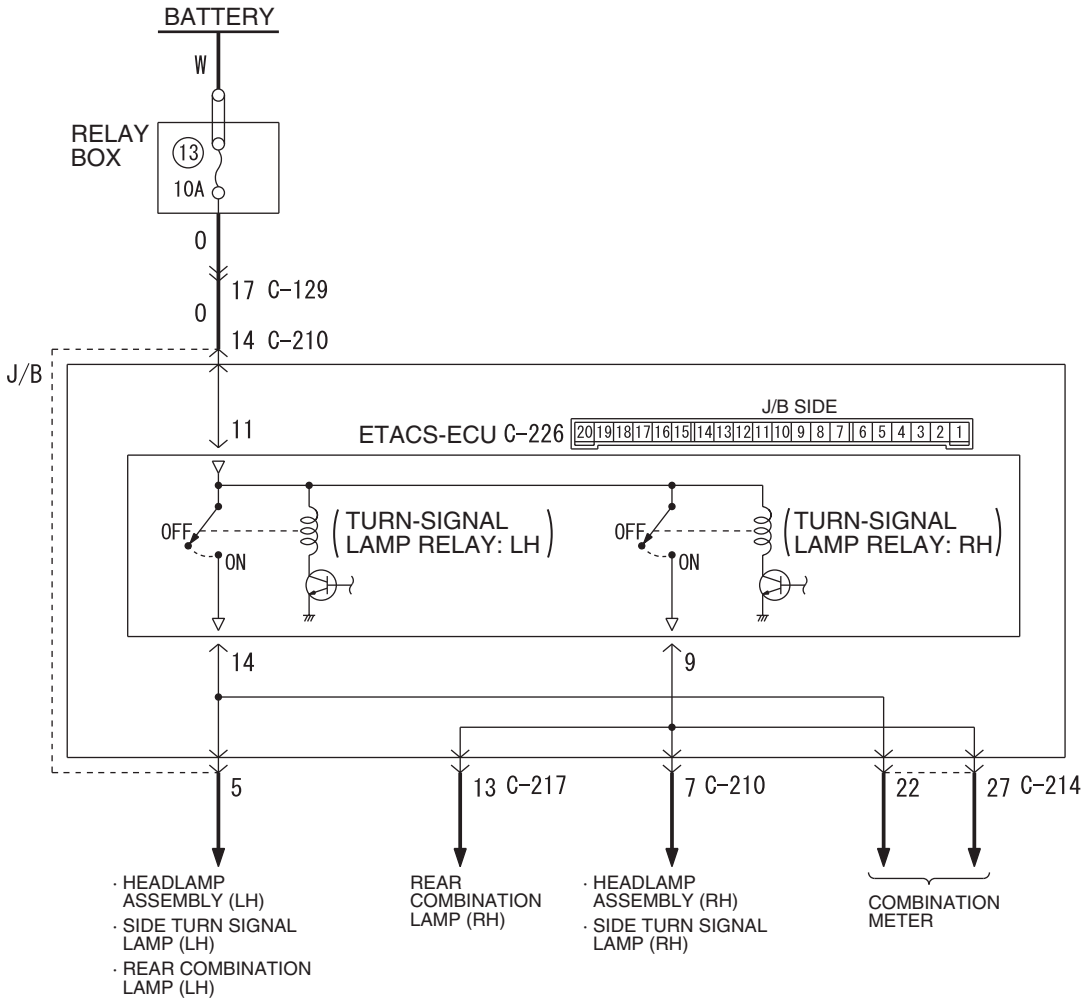
Turn-Signal Lamp Power Supply Circuit <LHD>



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

W4J54E124A

Turn-Signal Lamp Power Supply 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

W4J54E125A

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.

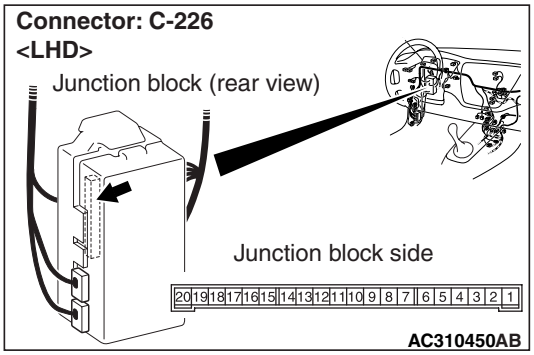
Check that the hazard warning lamps illuminate normally.

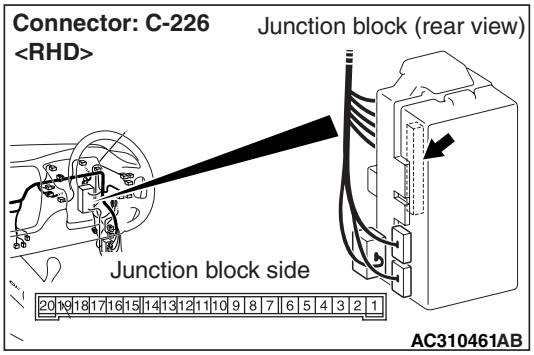
Q: Is the check result normal?

YES : Go to Step 6.

NO : Go to Step 2.

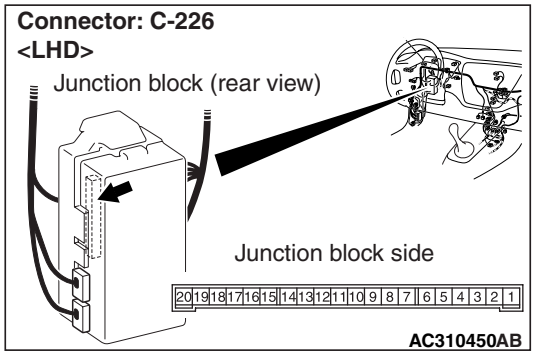
Step 2. Connector check: C-226 ETACS-ECU connector

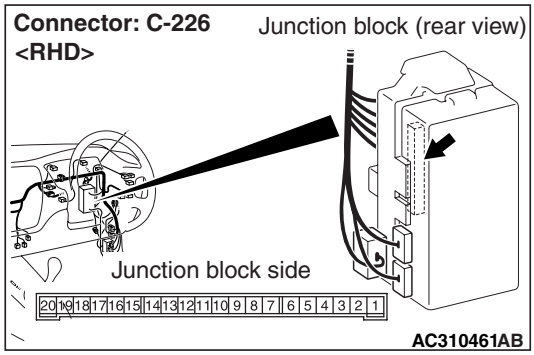




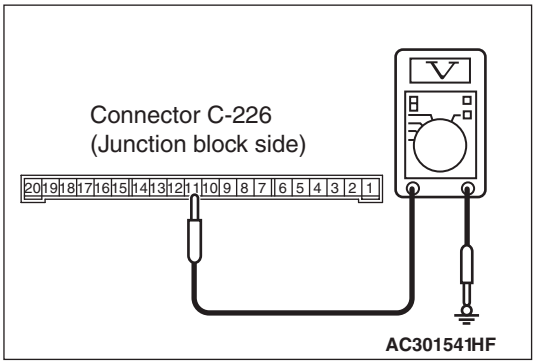
Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Voltage measurement at the C-226 ETACS-ECU connector





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

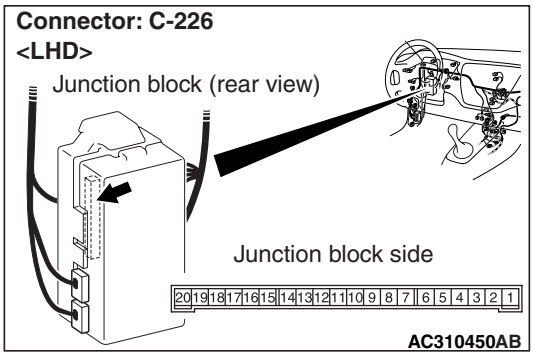


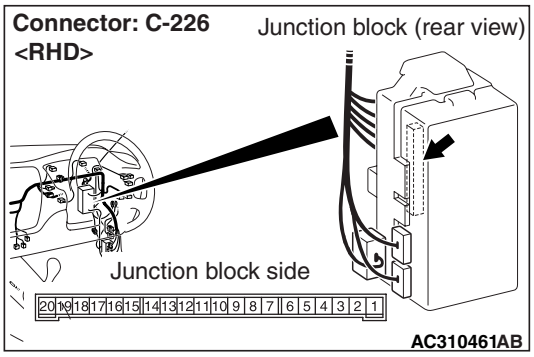
(2) Voltage between C-226 ETACS-ECU connector terminal No.11 and body earth

OK: System voltage

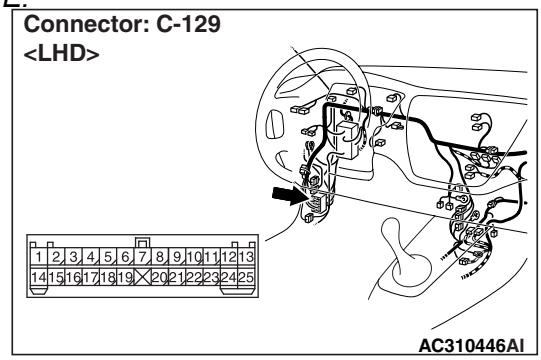
Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

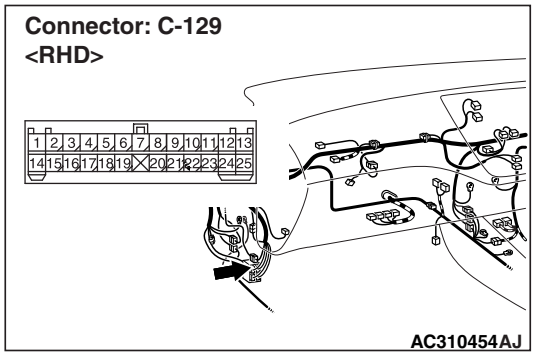
Step 4. Check the wiring harness between C-226 ETACS-ECU connector terminal No.11 and the battery.

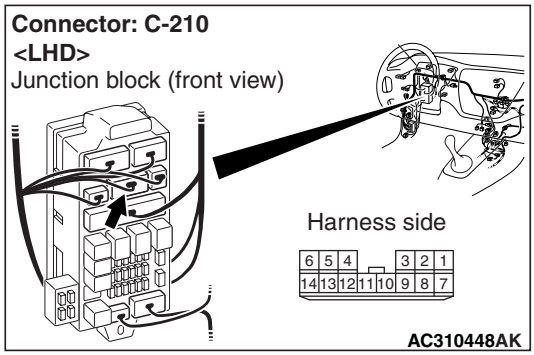


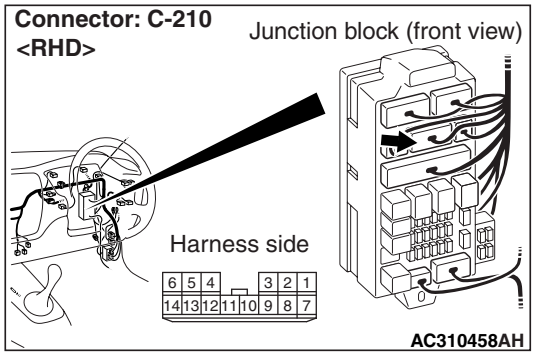


NOTE:









Prior to the wiring harness inspection, check intermediate connector C-129 and junction block connector C-210, 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.

System switch	Check condition
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 M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is 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 L-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-248."

The turn-signal lamp switch (LH) signal is not received. : Refer to inspection procedure L-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-248."

Step 7. Retest the system.

Check that the turn-signal lamps illuminate.

Q: Is the check result normal?

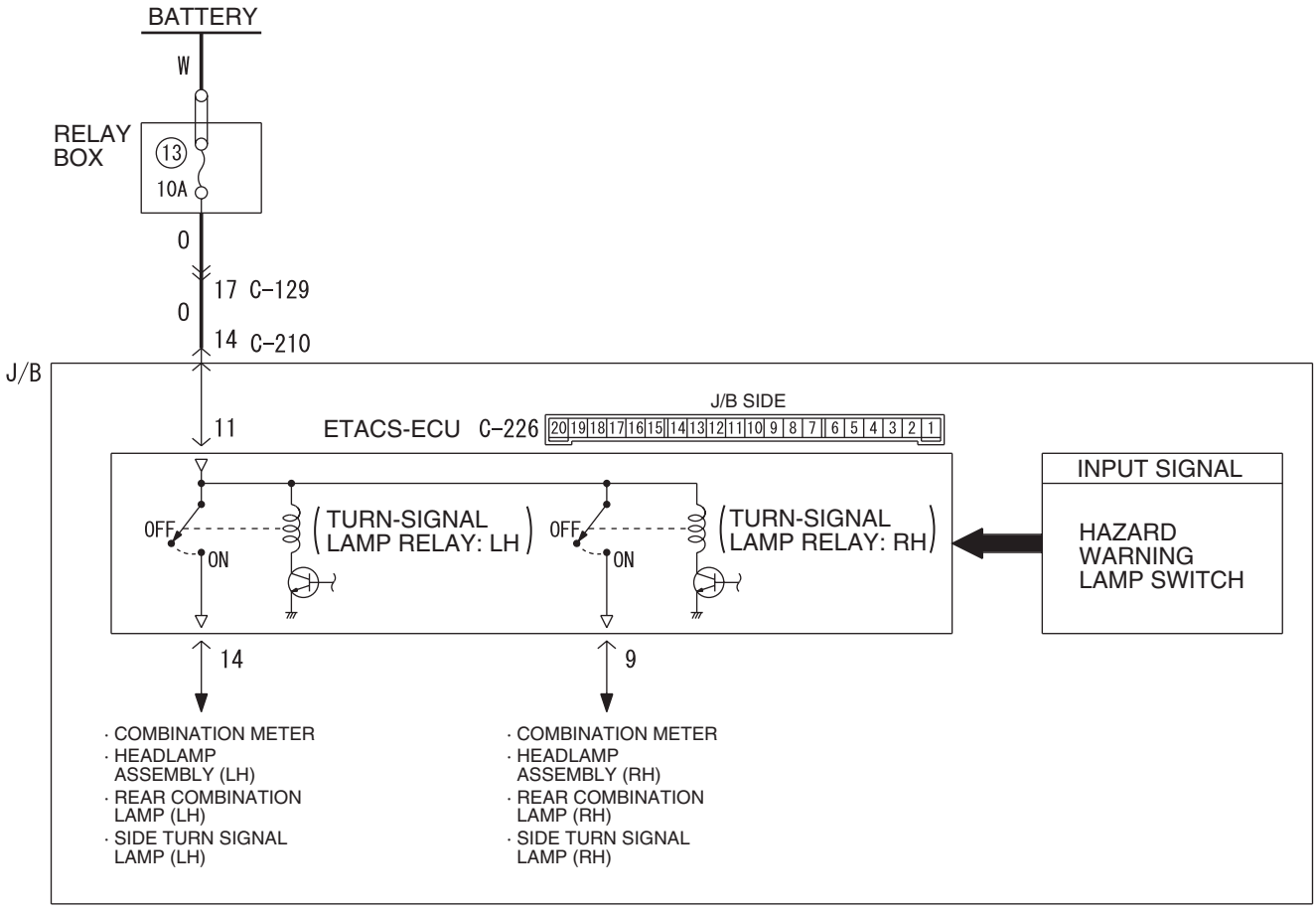
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE I-2: The hazard warning lamps do not illuminate.

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

Hazard Warning Lamp Circuit



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

W4J54E126A

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 I-1 "The turn-signal lamps do not illuminate P.54B-191."

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
- Dome 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 battery power supply circuit to the ETACS-ECU P.54B-42."

Step 3. Pulse check

Check the input signal from the hazard warning lamp switch.

System switch	Check condition
Hazard warning lamp switch	When the hazard warning lamp switch is turned from off to on

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?

The signal is received normally. : Go to Step 4.

The hazard warning lamp switch signal is not received. : Refer to inspection procedure L-9 "The hazard warning lamp switch signal is not received P.54B-261."

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).

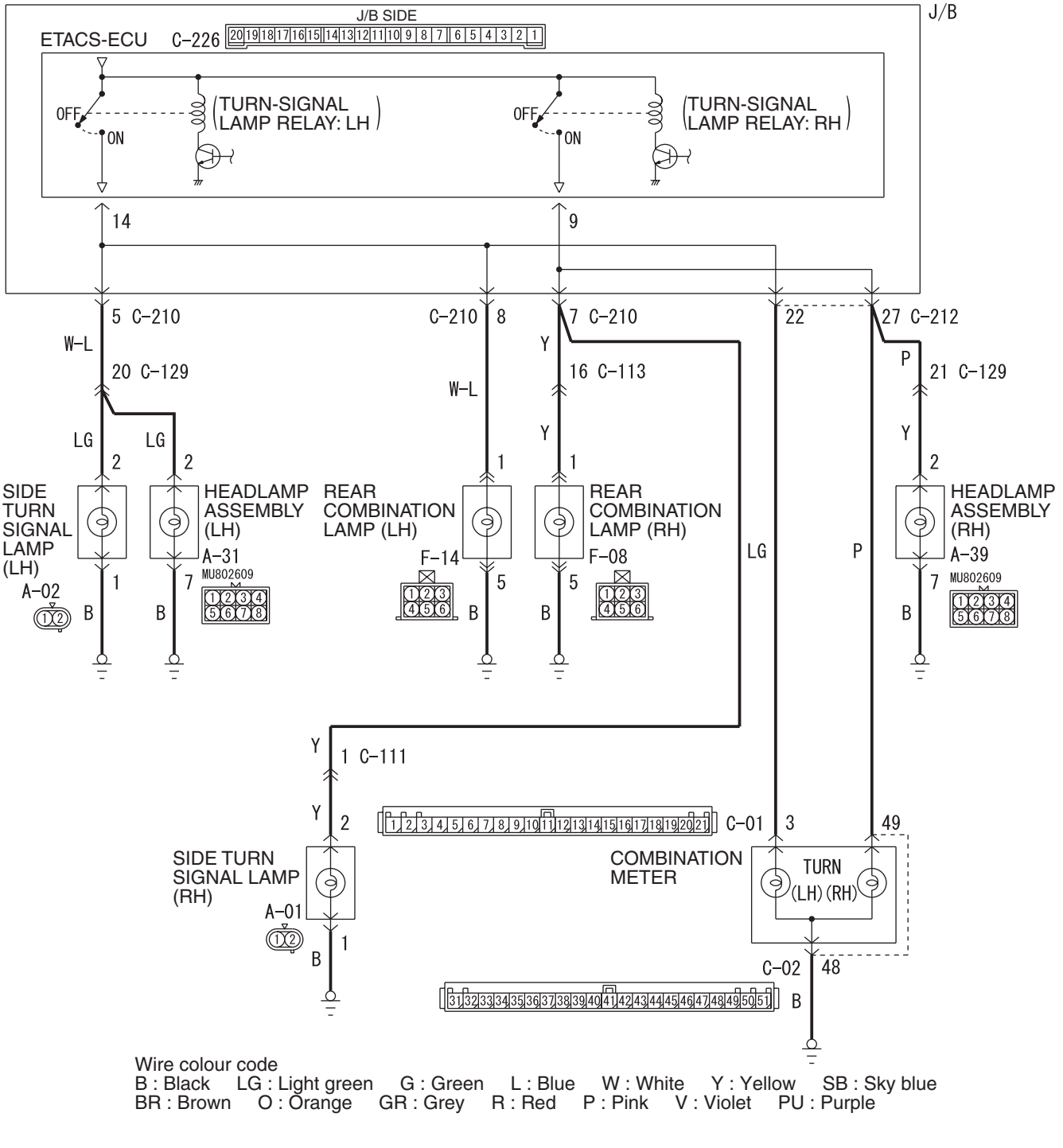
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE I-3: Any of the turn-signal lamps does not illuminate. <LH drive vehicles>

⚠ CAUTION

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

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 : Grey R : Red P : Pink V : Violet PU : Purple

W6J54E026A

COMMENTS ON TROUBLE SYMPTOM

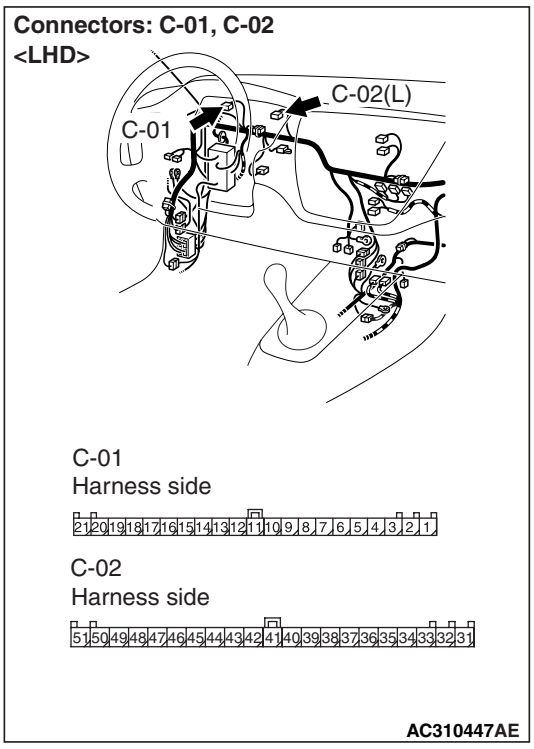
If any of the turn-signal lamp does not illuminate normally, wiring harness connector(s) or the bulb may be defective.

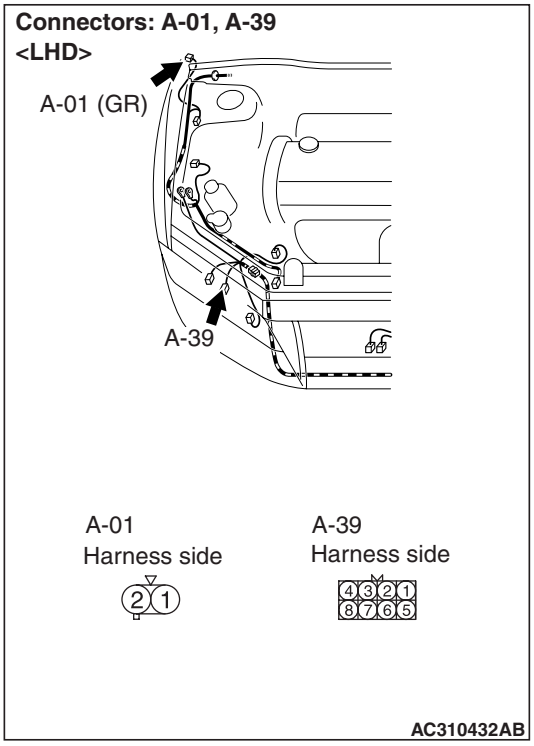
POSSIBLE CAUSES

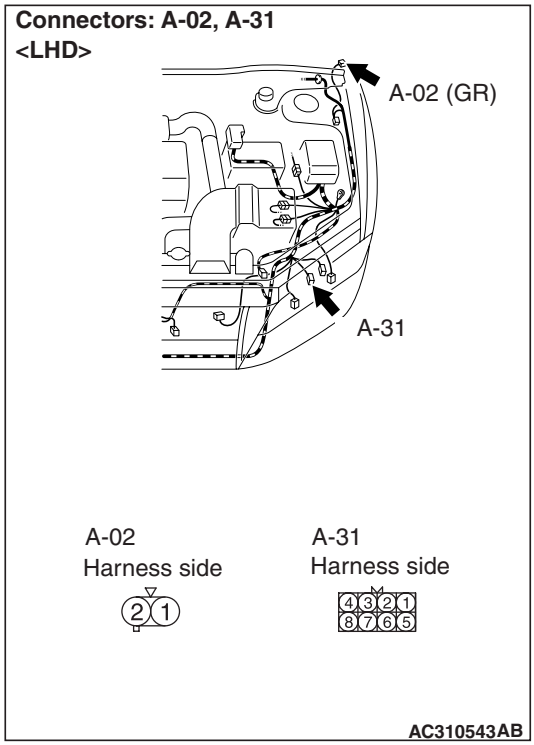
- Defective turn-signal lamp bulb
- Damaged harness wires and connectors

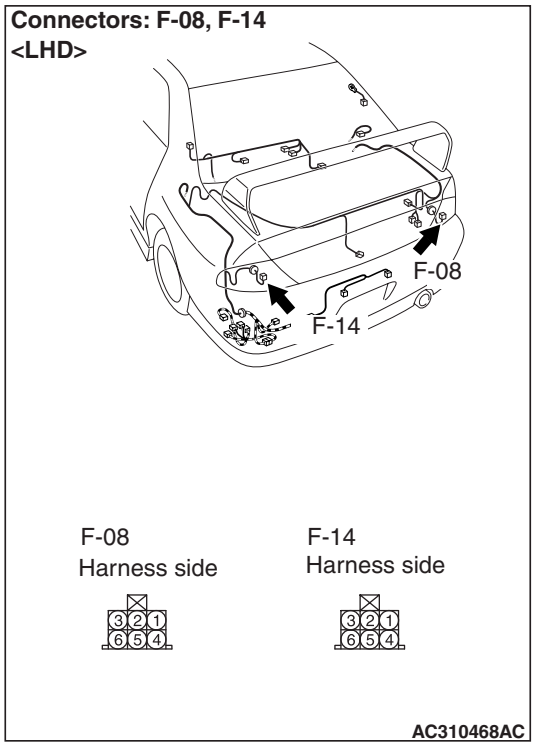
DIAGNOSTIC PROCEDURE

Step 1. Connector check: A-39 <front RH> or A-31 <front LH> headlamp assembly connector, A-01 <side RH> or A-02 <side LH> side turn-signal lamp connector, F-08 <rear RH> or F-14 <rear LH> rear combination lamp connector, C-02 <turn-signal indicator lamp> and C-01 <turn-signal indicator lamp (LH)> combination meter connector







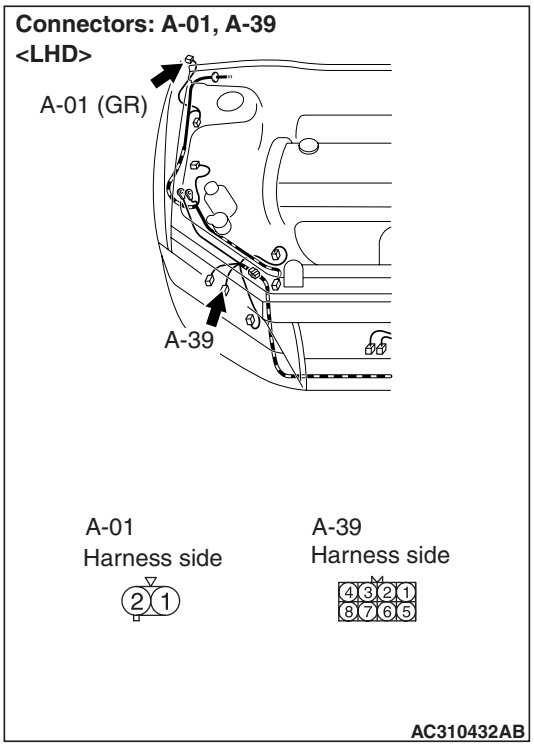


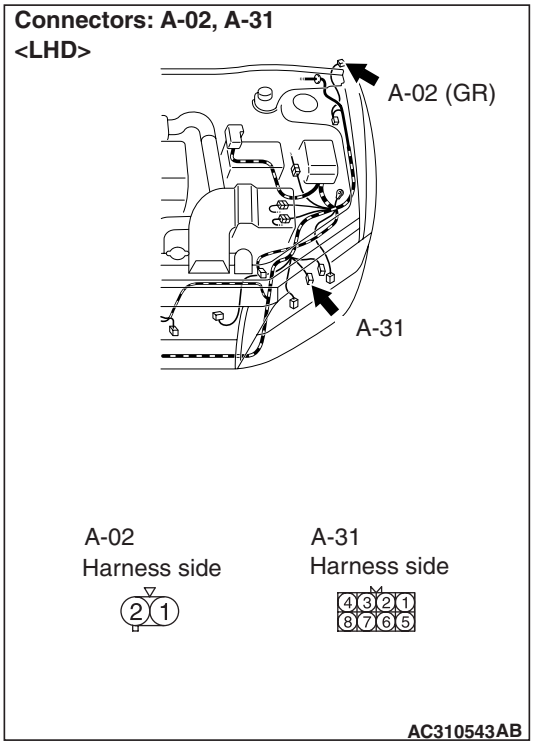
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

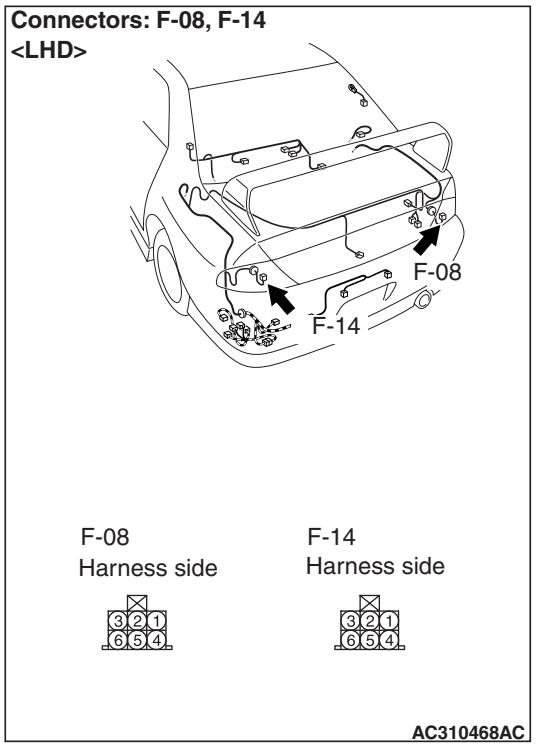
Step 2. Check the bulb(s) of the turn-signal lamps or the turn-signal indicator lamps.
Check the bulb(s) of the defective lamp.

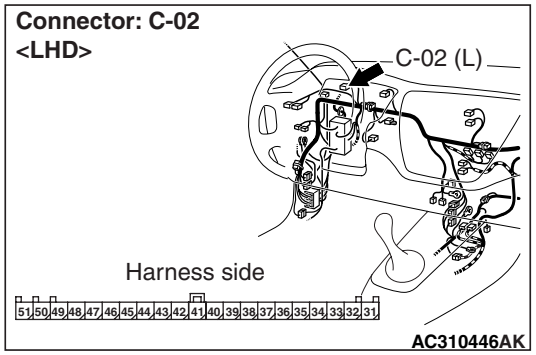
Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the bulb(s) of the defective lamp.

Step 3. Resistance measurement at the A-39 <front RH> or A-31 <front LH> headlamp assembly connector, the A-01 <side RH> or A-02 <side LH> side turn-signal lamp connector, the F-08 <rear RH> or F-14 <rear LH> rear combination lamp connector, the C-02 <turn-signal indicator lamp> combination meter connector



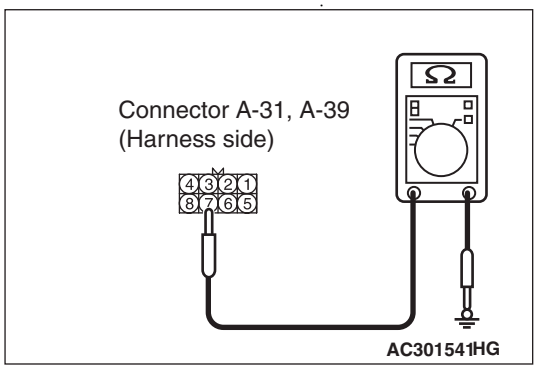






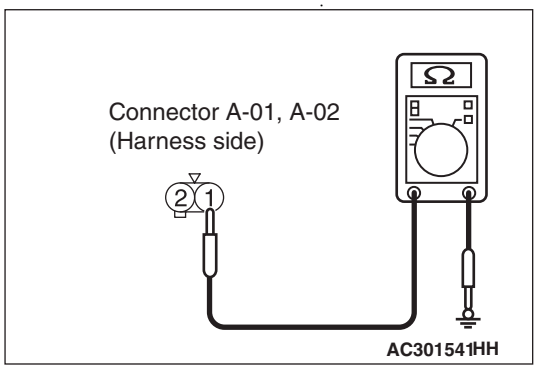
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Measure the resistance between the defective lamp connector terminal and body earth.



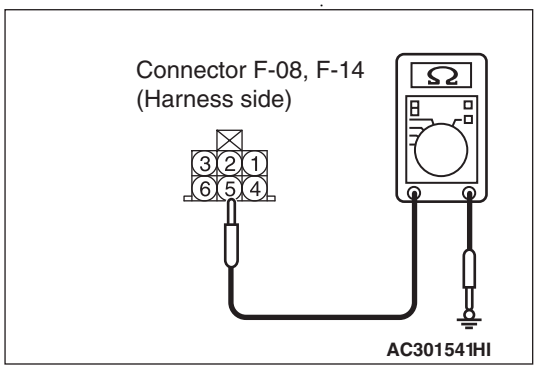
Resistance between A-39 <front RH> headlamp assembly connector terminal No.7 and body earth

- Resistance between A-31 <front LH> headlamp assembly connector terminal No.7 and body earth



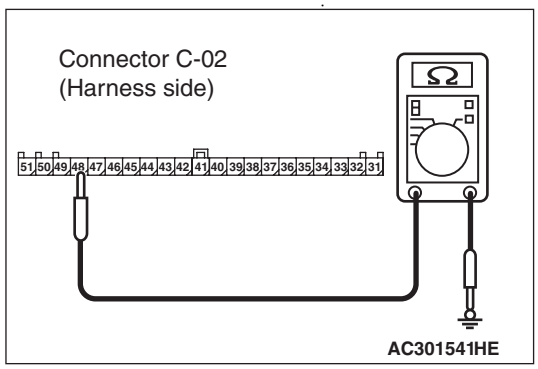
Resistance between A-01 <side RH> side turn-signal lamp connector terminal No.1 and body earth

- Resistance between A-02 <side LH> side turn-signal lamp connector terminal No.1 and body earth



Resistance between F-08 <rear RH> rear combination lamp connector terminal No.5 and body earth

- Resistance between F-14 <rear LH> rear combination lamp connector terminal No.5 and body earth

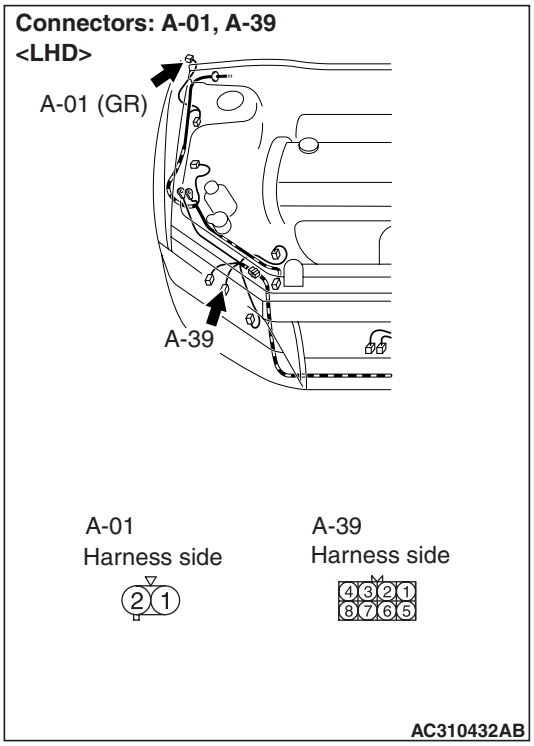


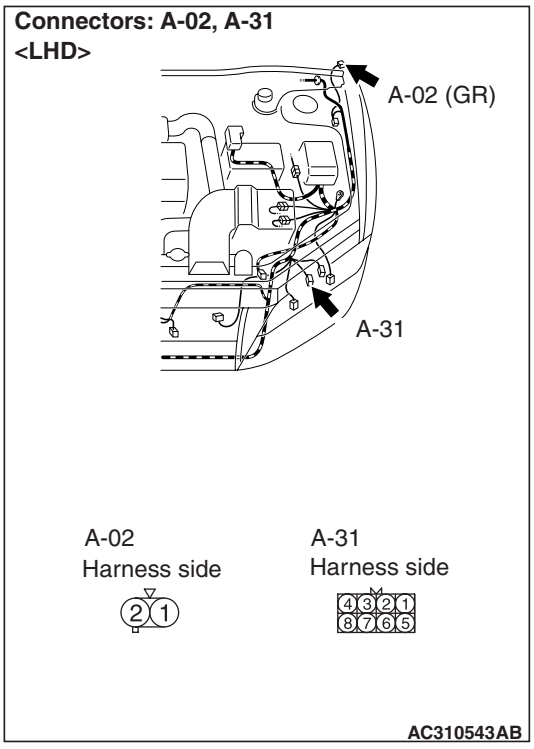
Resistance between C-02 <turn-signal indicator lamp> combination meter terminal No.48 and body earth

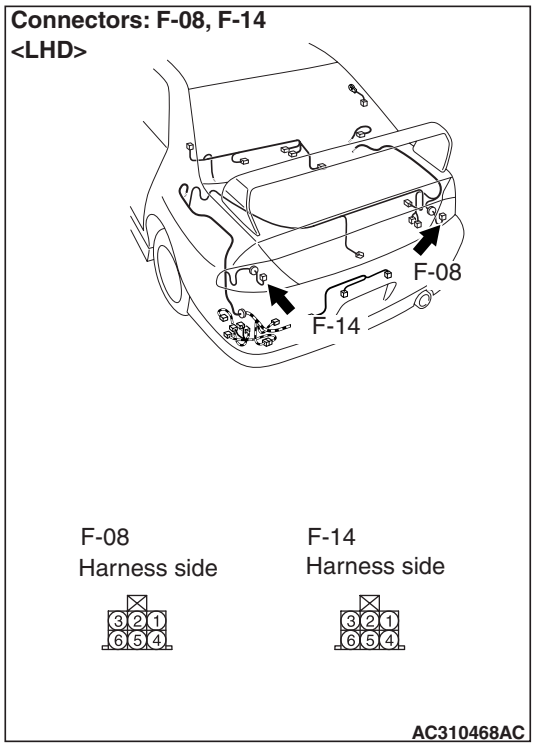
OK: 2 Ω or less

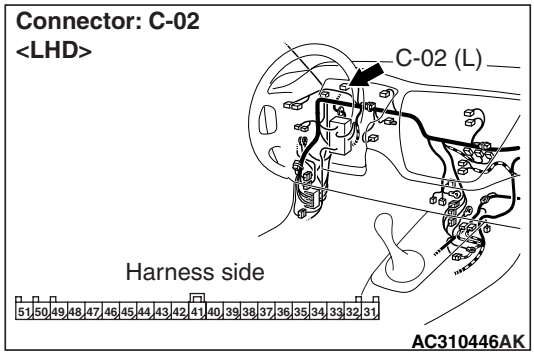
Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness from A-39 <front RH> or A-31 <front LH> headlamp assembly connector terminal No.7, A-01 <side RH> or A-02 <side LH> side turn-signal lamp connector terminal No.1, F-08 <rear RH> or F-14 <rear LH> rear combination lamp connector terminal No.5, or C-02 <turn-signal indicator lamp> combination meter connector terminal No.48 to body earth.





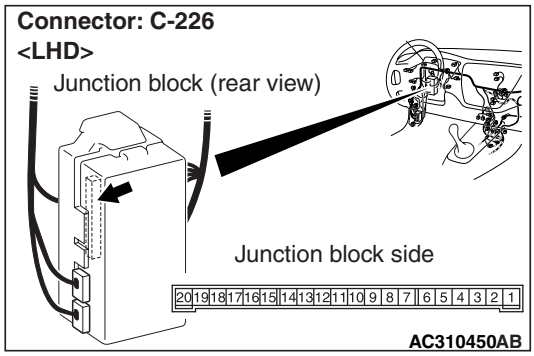




- Check the earth wires for open circuit.

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.

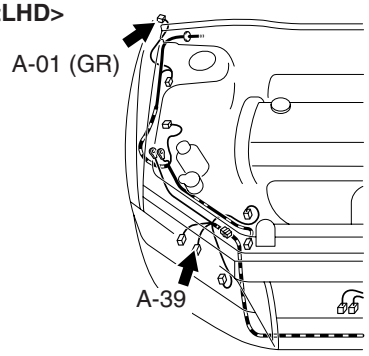
Step 5. Connector check: C-226 ETACS-ECU connector



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

Step 6. Check the wiring harness from the A-39 <front RH> or A-31 <front LH> headlamp assembly connector terminal No.2, the A-01 <side RH> or A-02 <side LH> side turn-signal lamp connector terminal No.2, the F-08 <rear RH> or F-14 <rear LH> rear combination lamp connector terminal No.1, the C-02 <turn-signal indicator lamp> combination meter connector terminal No.49 or C-01 <turn-signal indicator lamp (LH)> combination lamp connector terminal No.3 to C-226 ETACS-ECU connector terminal No.9 <RH> or 14 <LH>.

Connectors: A-01, A-39
<LHD>



A-01
Harness side

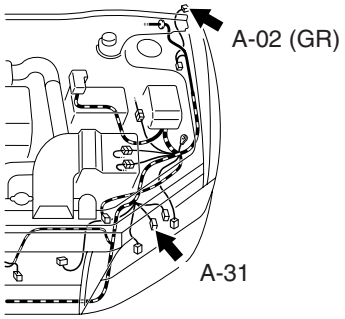


A-39
Harness side



AC310432AB

Connectors: A-02, A-31
<LHD>



A-02
Harness side

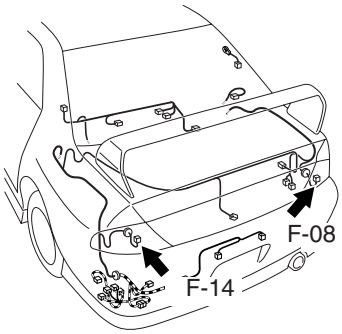


A-31
Harness side



AC310543AB

Connectors: F-08, F-14
<LHD>



F-08
Harness side

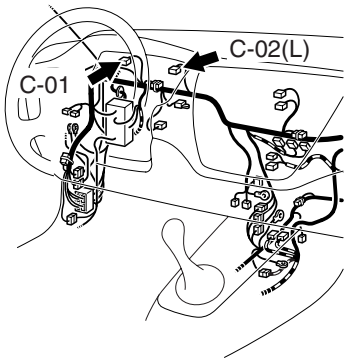


F-14
Harness side

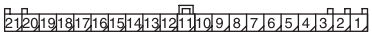


AC310468AC

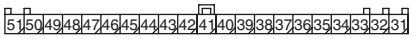
Connectors: C-01, C-02
<LHD>



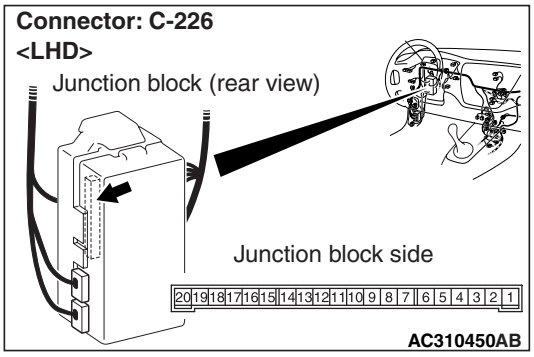
C-01
Harness side



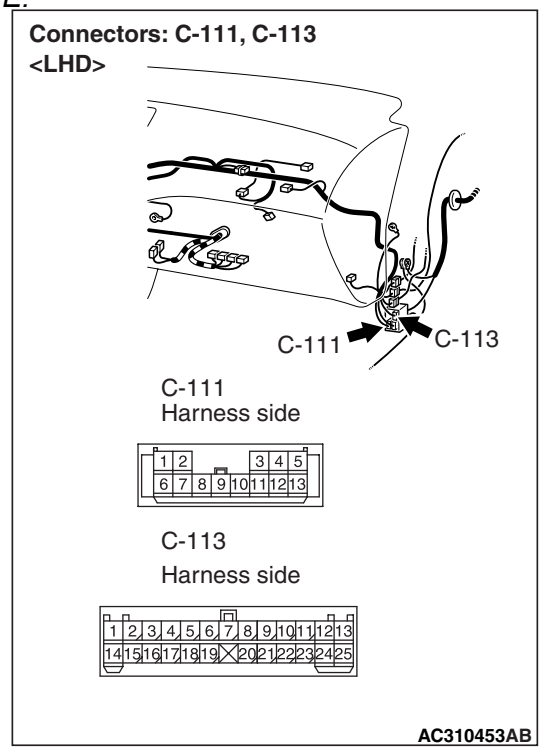
C-02
Harness side

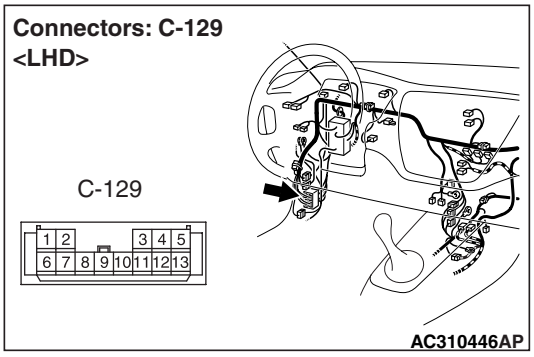


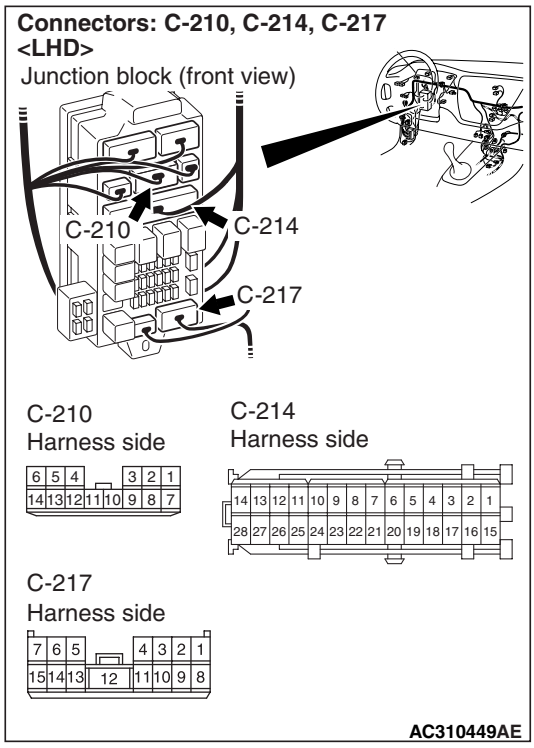
AC310447AE



NOTE:







Prior to the wiring harness inspection, check intermediate connector C-129 <front or side LH>, C-113 <rear RH> or C-111 <side RH> and junction block connector C-210 <front LH, side or rear RH>, C-217 <rear LH> or C-214 <front RH or turn-signal indicator lamp>, and repair if necessary.

- 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 turn-signal lamps and the indicator lamps illuminate normally.

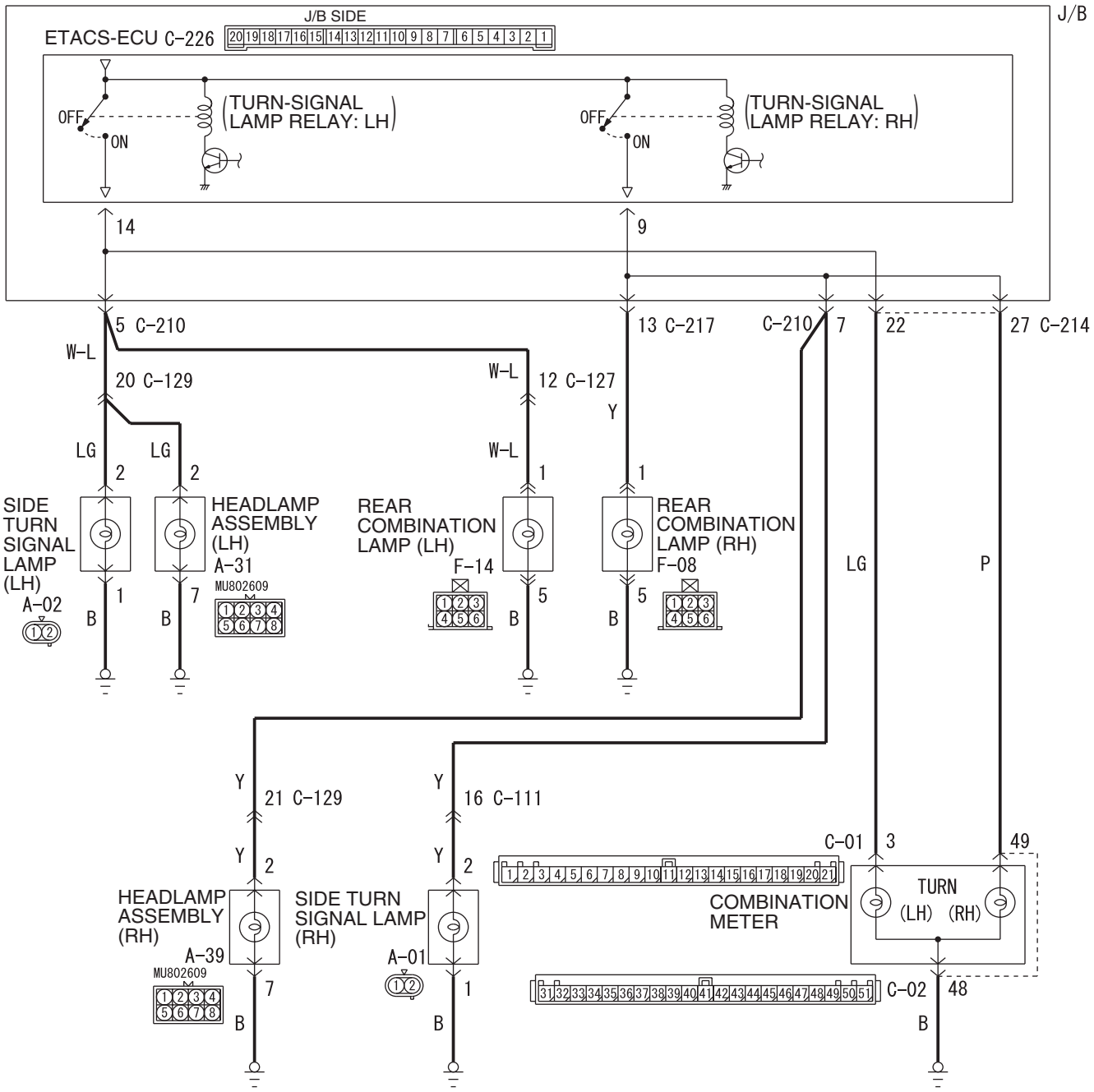
Q: Is the check result normal?
The lamps illuminate normally at both high and low beams. : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
The front turn-signal lamps do not illuminate. : Replace the socket.
The side turn-signal lamps do not illuminate. : Replace the socket.
The rear turn-signal lamps do not illuminate. : Replace the socket assembly.
The turn-signal indicator lamps do not illuminate. : Replace the combination meter.

INSPECTION PROCEDURE I-3: Any of the turn-signal lamps does not illuminate. <RH drive vehicles>

⚠ CAUTION

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

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

W4J54E128A

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.

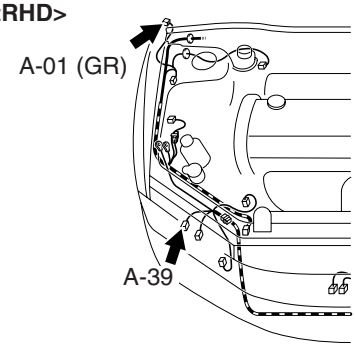
POSSIBLE CAUSES

- Defective turn-signal lamp bulb
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Connector check: A-39 <front RH> or A-31 <front LH> headlamp assembly connector, A-01 <side RH> or A-02 <side LH> side turn-signal lamp connector, F-08 <rear RH> or F-14 <rear LH> rear combination lamp connector, C-02 <turn-signal indicator lamp> and C-01 <turn-signal indicator lamp (LH)> combination meter connector

Connectors: A-01, A-39
<RHD>



A-01
Harness side

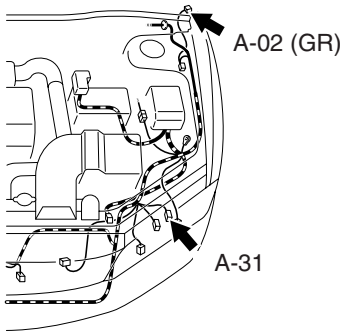


A-39
Harness side



AC310434AB

Connectors: A-02, A-31
<RHD>



A-02
Harness side

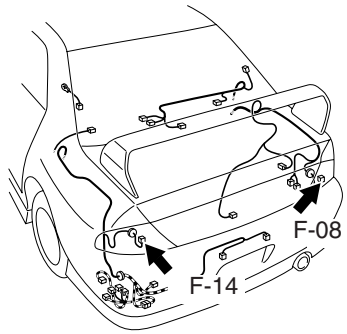


A-31
Harness side



AC310476AB

Connectors: F-08, F-14
<RHD>



F-08
Harness side

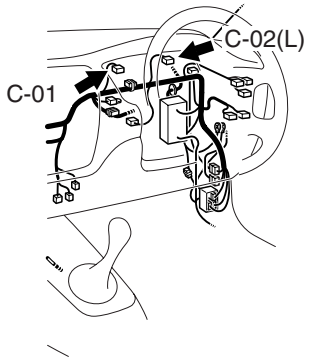


F-14
Harness side



AC310470AC

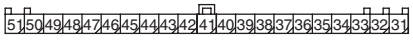
Connectors: C-01, C-02
<RHD>



C-01
Harness side



C-02
Harness side



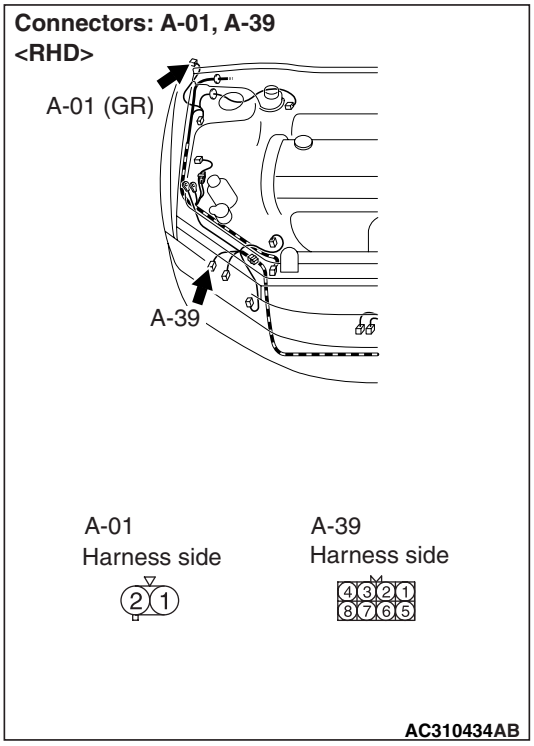
AC310457AB

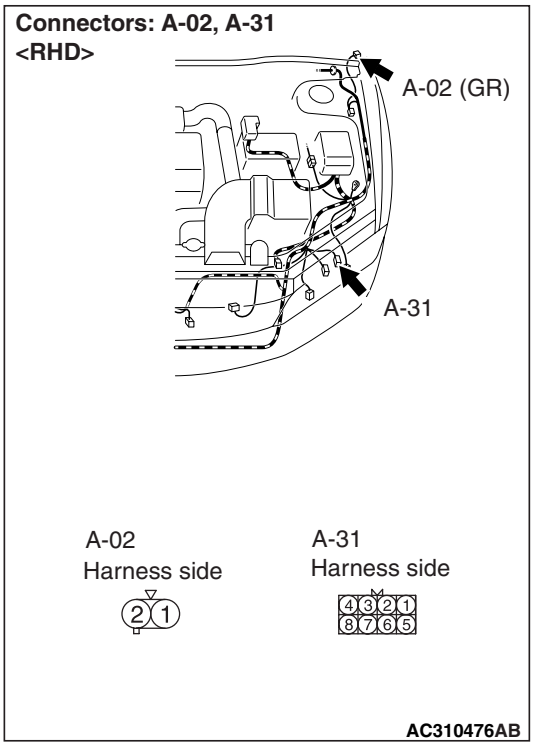
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

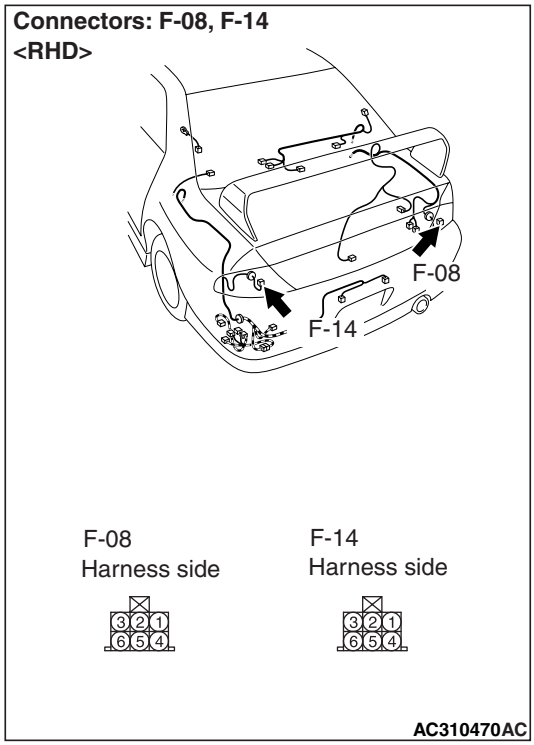
Step 2. Check the bulb(s) of the turn-signal lamps or the turn-signal indicator lamps.
Check the bulb(s) of the defective lamp.

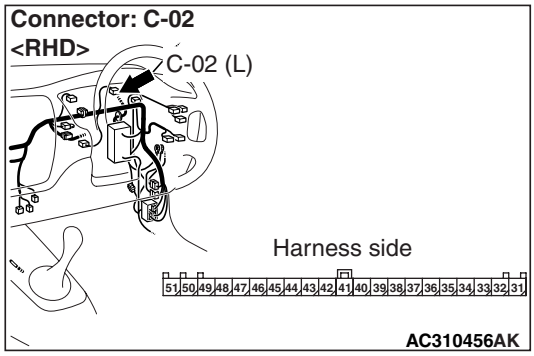
Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the bulb(s) of the defective lamp.

Step 3. Resistance measurement at the A-39 <front RH> or A-31 <front LH> headlamp assembly connector, the A-01 <side RH> or A-02 <side LH> side turn-signal lamp connector, the F-08 <rear RH> or F-14 <rear LH> rear combination lamp connector, the C-02 <turn-signal indicator lamp> combination meter connector



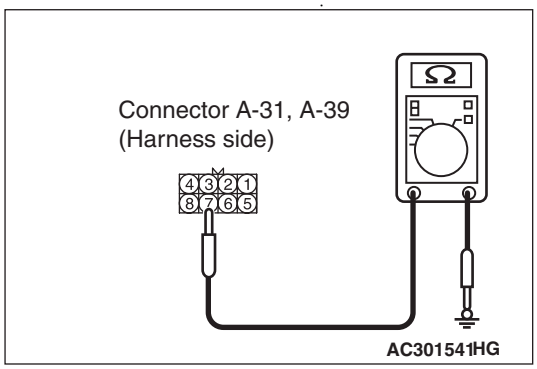






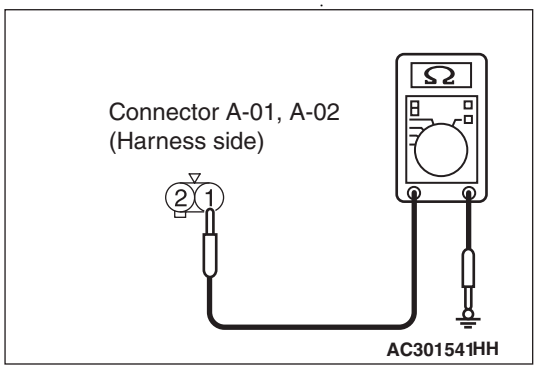
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Measure the resistance between the defective lamp connector terminal and body earth.



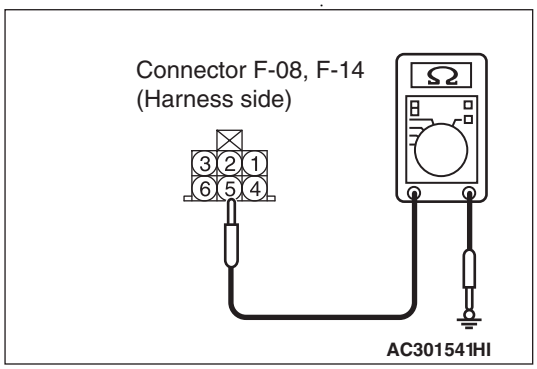
Resistance between A-39 <front RH> headlamp assembly connector terminal No.7 and body earth

- Resistance between A-31 <front LH> headlamp assembly connector terminal No.7 and body earth



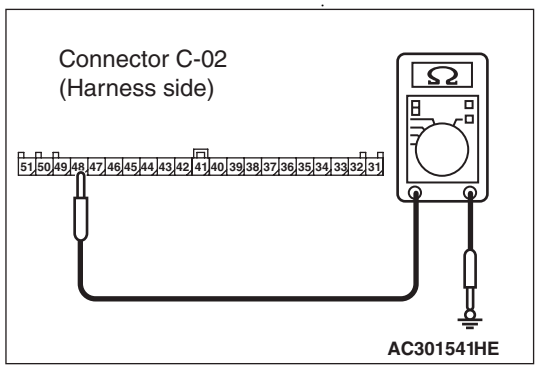
Resistance between A-01 <side RH> side turn-signal lamp connector terminal No.1 and body earth

- Resistance between A-02 <side LH> side turn-signal lamp connector terminal No.1 and body earth



Resistance between F-08 <rear RH> rear combination lamp connector terminal No.5 and body earth

- Resistance between F-14 <rear LH> rear combination lamp connector terminal No.5 and body earth

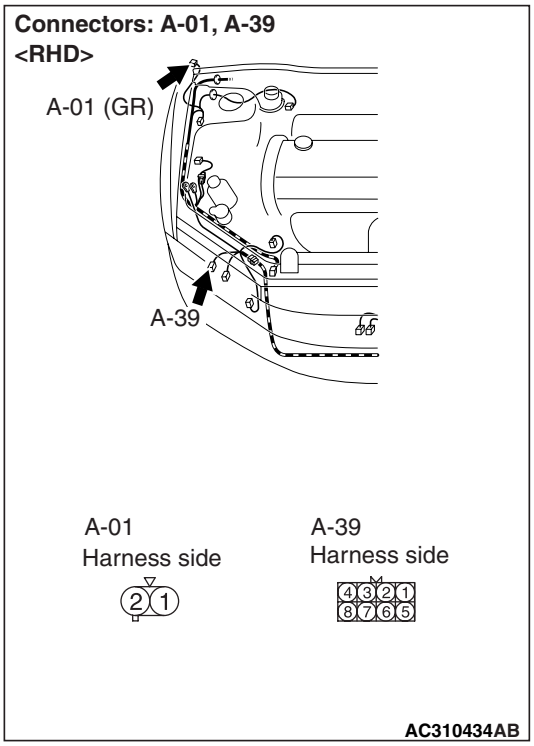


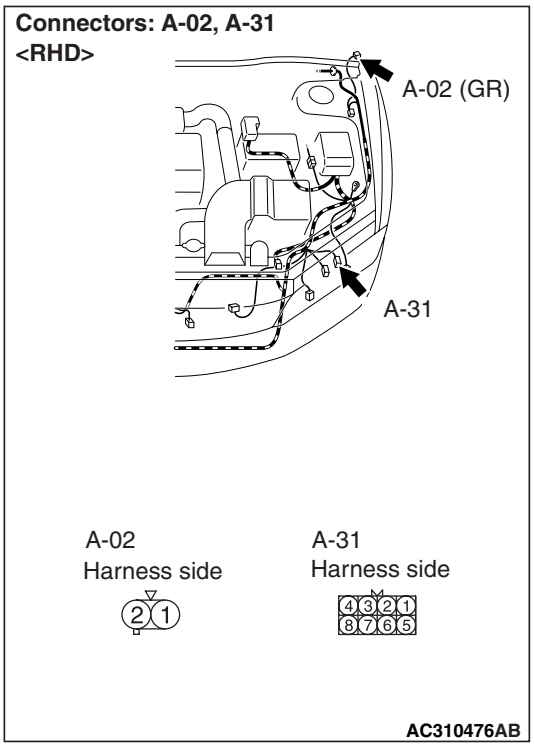
Resistance between C-02 <turn-signal indicator lamp> combination meter terminal No.48 and body earth

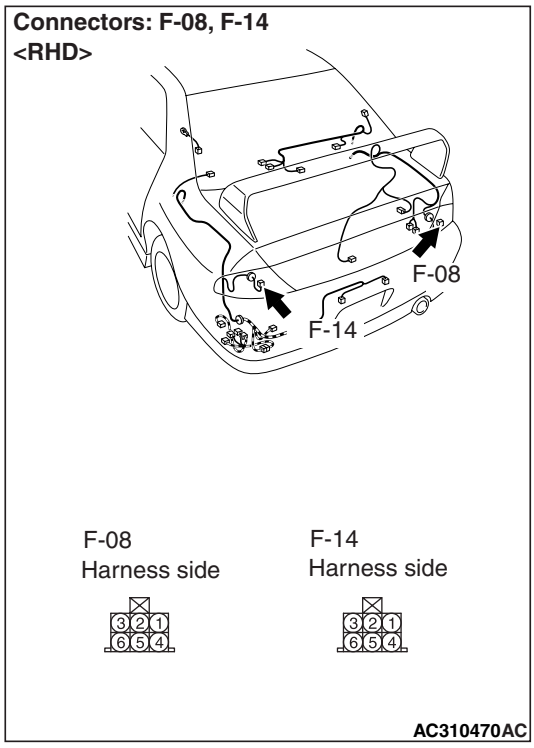
OK: 2 Ω or less

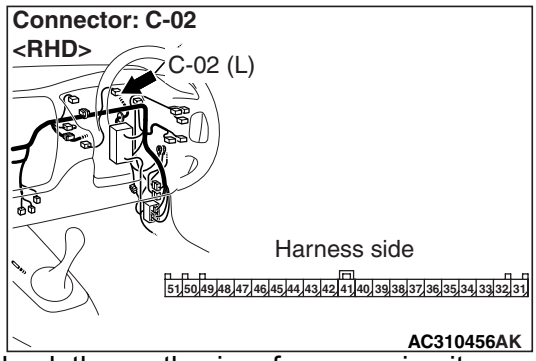
Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness from A-39 <front RH> or A-31 <front LH> headlamp assembly connector terminal No.7, A-01 <side RH> or A-02 <side LH> side turn-signal lamp connector terminal No.1, F-08 <rear RH> or F-14 <rear LH> rear combination lamp connector terminal No.5, or C-02 <turn-signal indicator lamp> combination meter connector terminal No.48 to body earth.





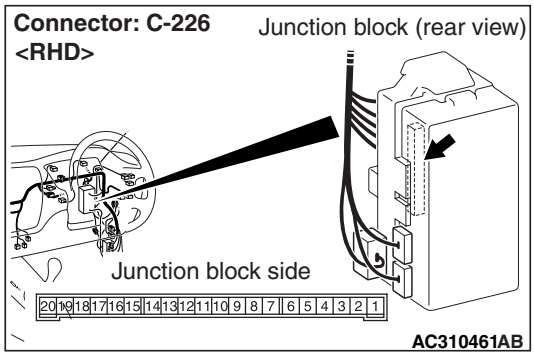




- Check the earth wires for open circuit.

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.

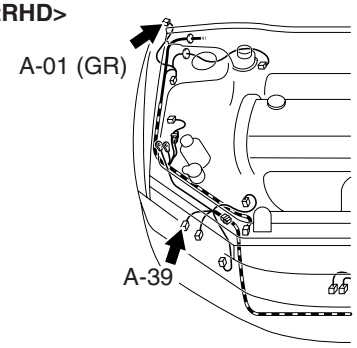
Step 5. Connector check: C-226 ETACS-ECU connector



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

Step 6. Check the wiring harness from the A-39 <front RH> or A-31 <front LH> headlamp assembly connector terminal No.2, the A-01 <side RH> or A-02 <side LH> side turn-signal lamp connector terminal No.2, the F-08 <rear RH> or F-14 <rear LH> rear combination lamp connector terminal No.1, the C-02 <turn-signal indicator lamp RH> combination meter connector terminal No.49 or C-01 <turn-signal indicator lamp LH> combination lamp connector terminal No.3 to C-226 ETACS-ECU connector terminal No.9 <RH> or 14 <LH>.

Connectors: A-01, A-39
<RHD>



A-01
Harness side

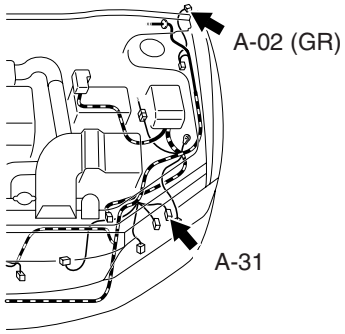


A-39
Harness side



AC310434AB

Connectors: A-02, A-31
<RHD>



A-02
Harness side

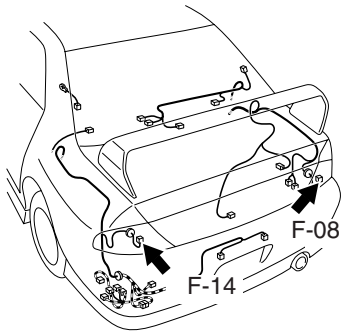


A-31
Harness side



AC310476AB

Connectors: F-08, F-14
<RHD>



F-08
Harness side

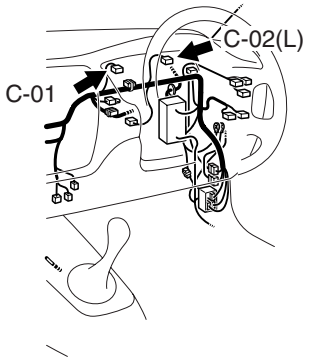


F-14
Harness side



AC310470AC

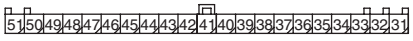
Connectors: C-01, C-02
<RHD>



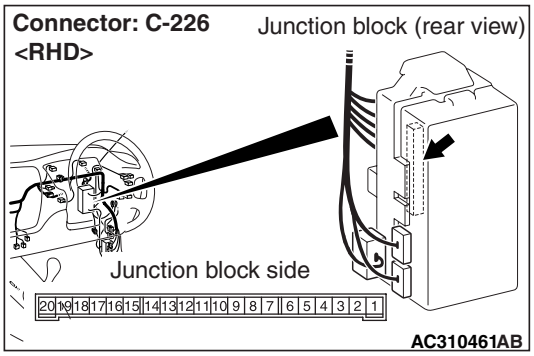
C-01
Harness side



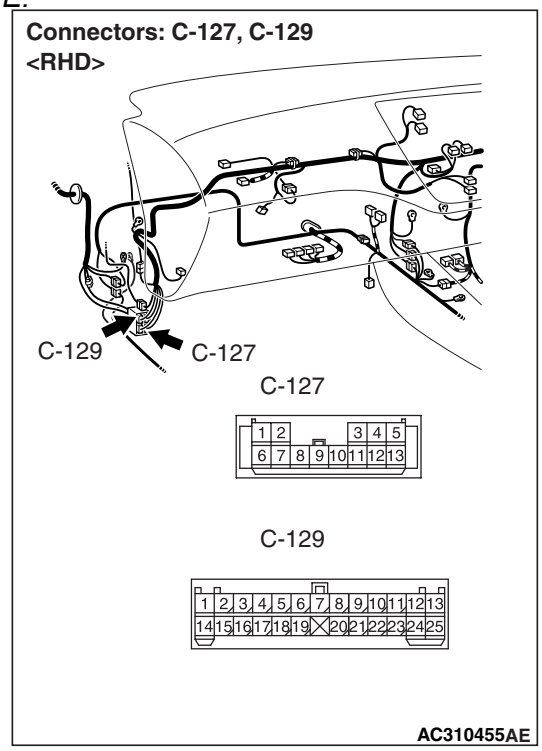
C-02
Harness side

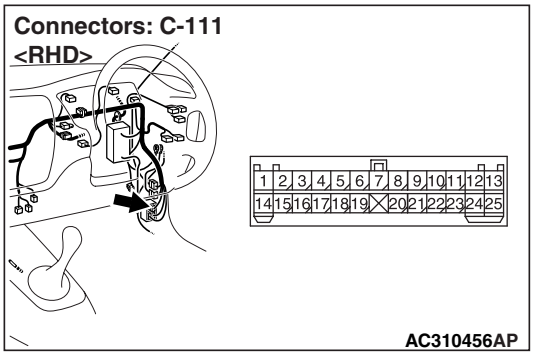


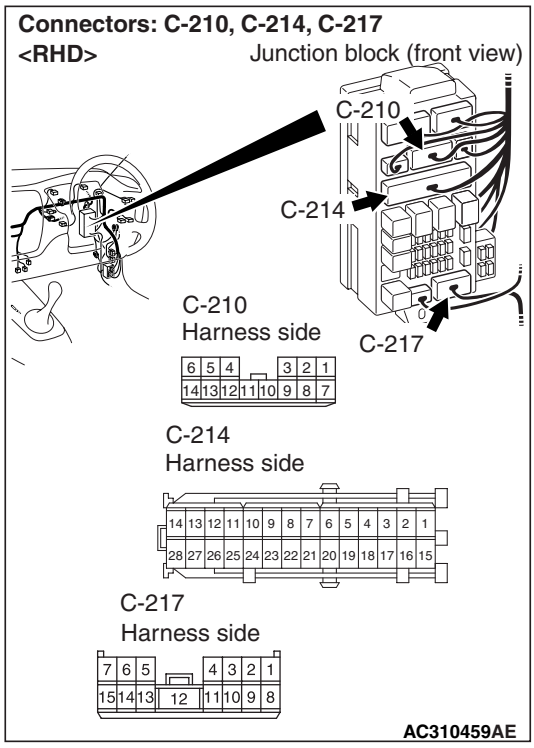
AC310457AB



NOTE:







Prior to the wiring harness inspection, check intermediate connector C-129 <front or side LH>, C-127 <rear LH> or C-111 <side RH> and junction block connector C-210 <front, side or rear LH>, C-217 <rear RH> or C-214 <turn-signal indicator lamp>, and repair if necessary.

- 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 turn-signal lamps and the indicator lamps illuminate normally.

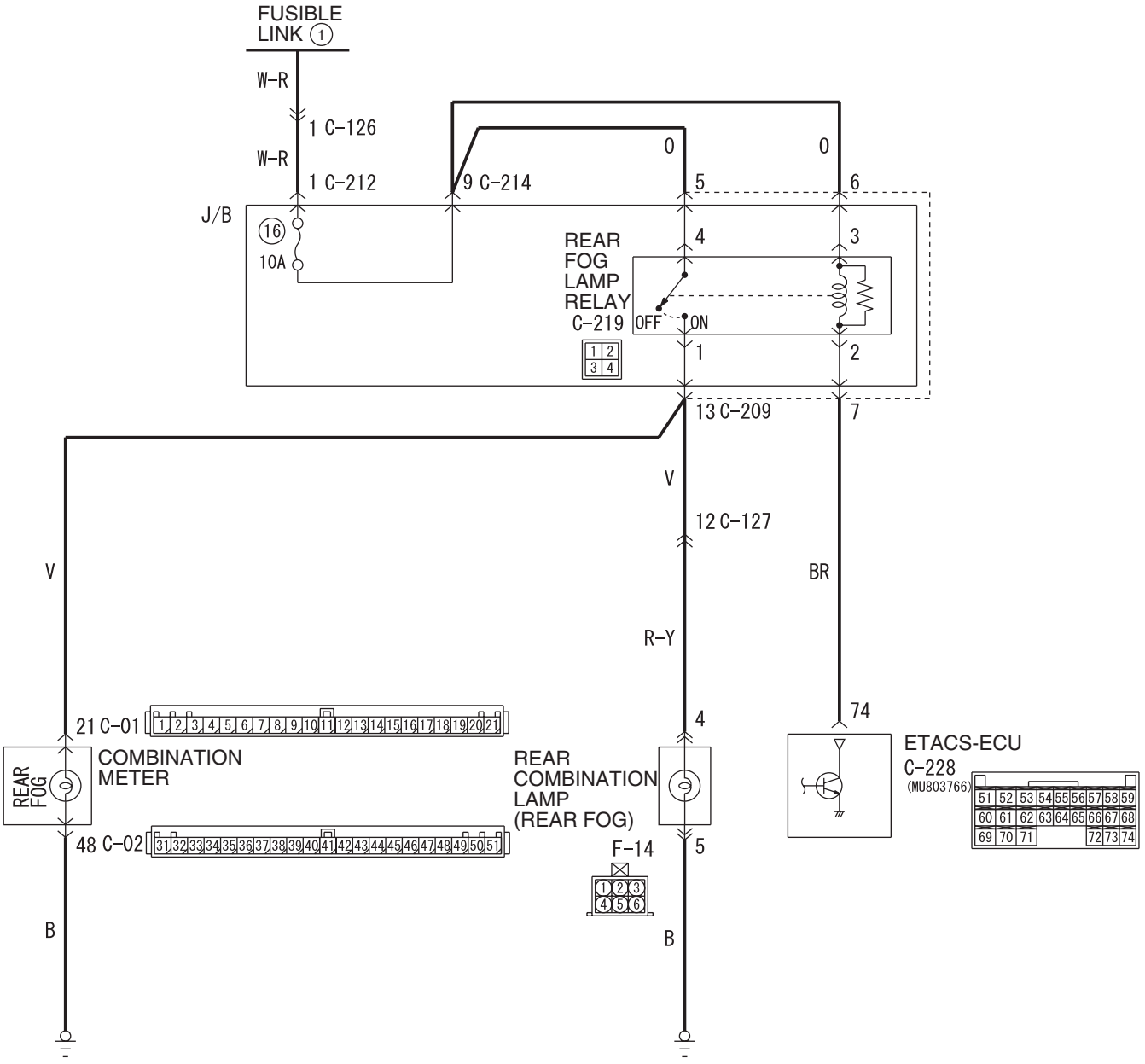
Q: Is the check result normal?
The lamps illuminate normally at both high and low beams. : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
The front turn-signal lamps do not illuminate. : Replace the socket.
The side turn-signal lamps do not illuminate. : Replace the socket.
The rear turn-signal lamps do not illuminate. : Replace the socket assembly.
The turn-signal indicator lamps do not illuminate. : Replace the combination meter.

FOG LAMP

INSPECTION PROCEDURE J-1: The rear fog lamps do not illuminate normally.

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

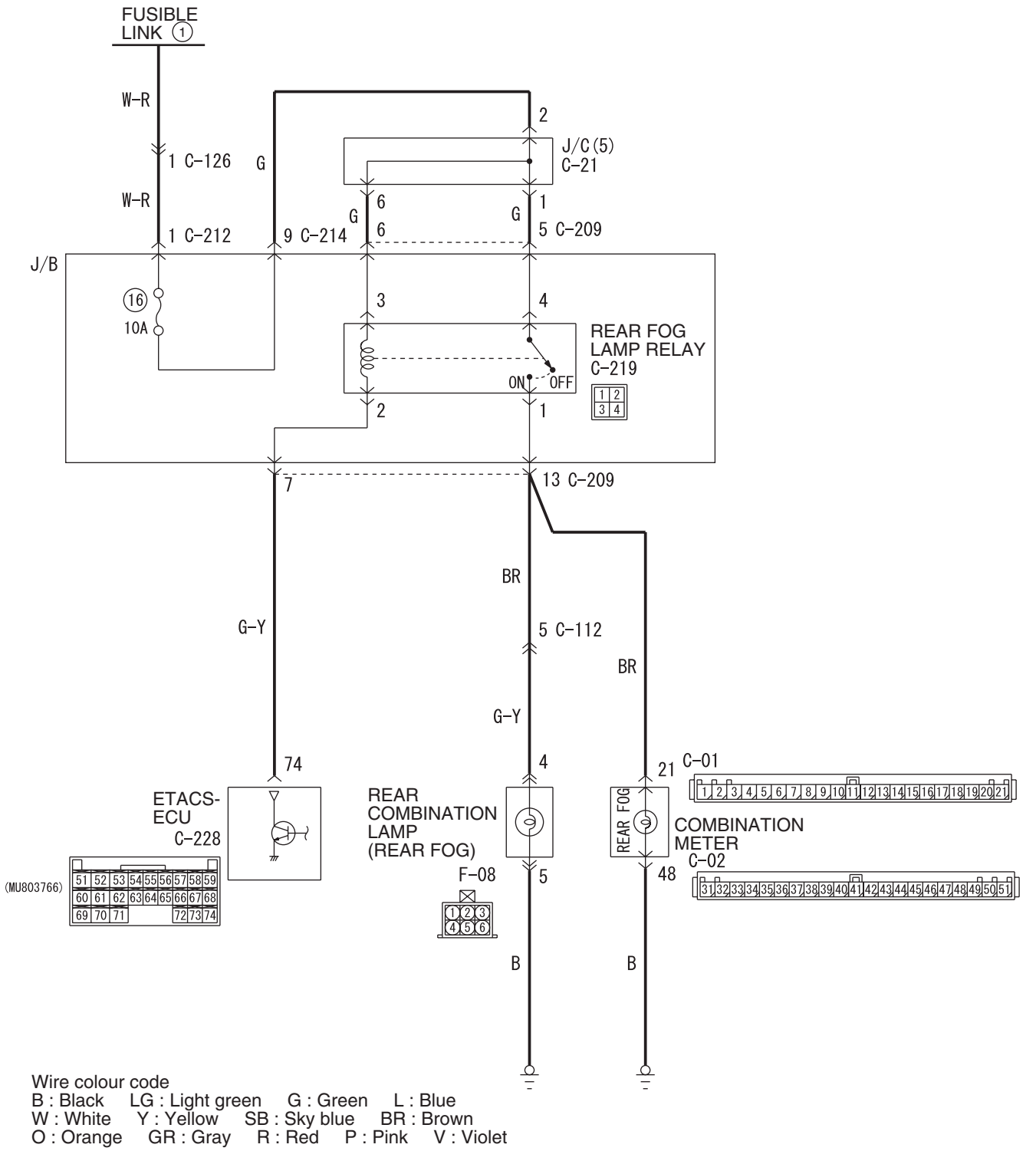
Rear Fog Lamp Circuit <LHD>



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

W4J54E129A

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

W4J54E130A

OPERATION

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

- Tail lamp switch
- Headlamp switch
- Rear fog lamp switch

If the rear fog lamps do not illuminate normally, these input signal circuit(s) or the ETACS-ECU may be defective.

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 lamps and headlamps operate.

Check that the tail lamps and headlamps illuminate normally.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Check the tail lamps and the headlamps (Refer to trouble symptom chart P.54B-33).

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 M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?

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

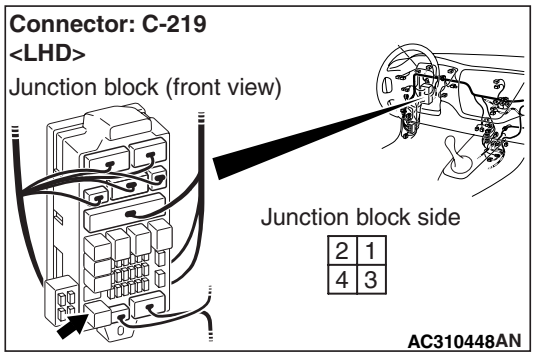
The ignition switch (IG1) signal is not received. : Refer to inspection procedure L-2 "The ignition switch (IG1) signal is not received P.54B-242."

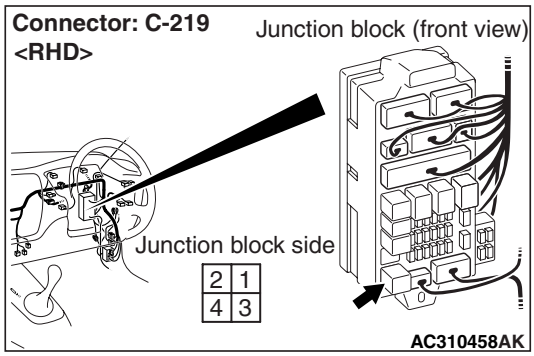
The tail lamp switch signal is not received. : Refer to inspection procedure L-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-248."

The headlamp switch signal is not received. : Refer to inspection procedure L-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54B-248."

The rear fog lamp switch signal is not received. : Refer to inspection procedure L-14 "The rear fog lamp switch signal is not received P.54B-283."

Step 3. Connector check: C-219 rear fog lamp relay connector





Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the defective connector.

Step 4. Check the rear fog lamp relay.

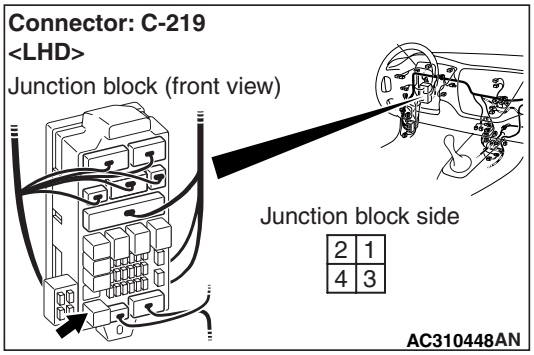
Refer to GROUP 54A – Rear fog lamp P.54A-64.

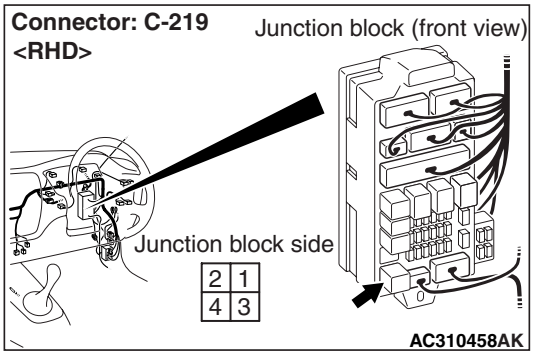
Q: Is the check result normal?

YES : Go to Step 5.

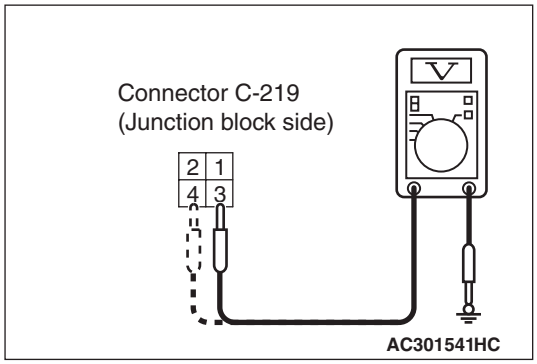
NO : Replace the rear fog lamp relay.

Step 5. Voltage measurement at the C-219 rear fog lamp relay connector





(1) Remove the rear fog lamp relay, and measure at the junction block side.

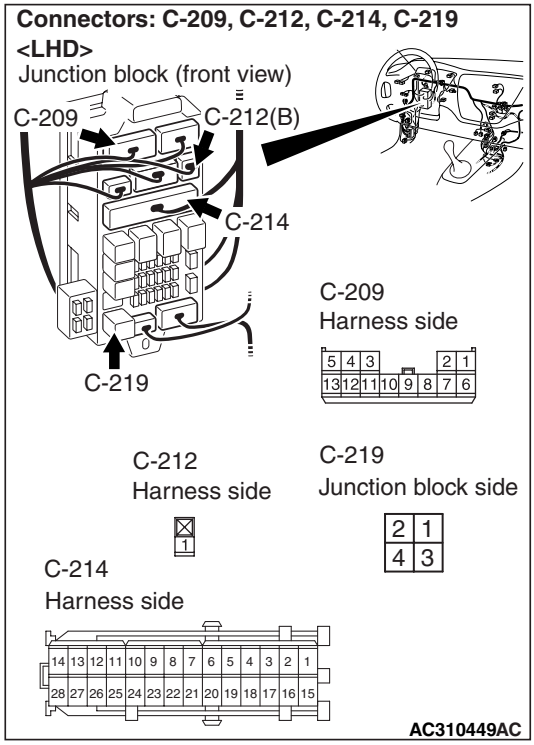


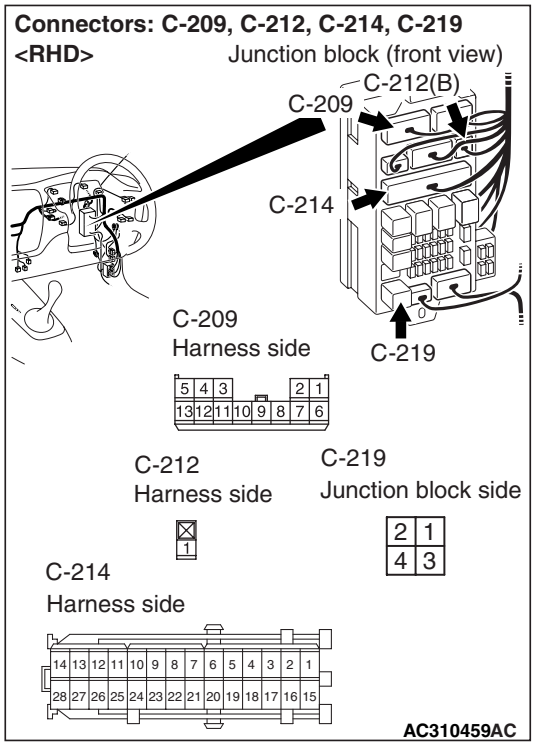
(2) Check the voltage between the rear fog lamp relay connector and body earth.
- Voltage between C-219 rear fog lamp relay connector terminal No.3 and body earth
- Voltage between C-219 rear fog lamp relay connector terminal No.4 and body earth

OK: System voltage

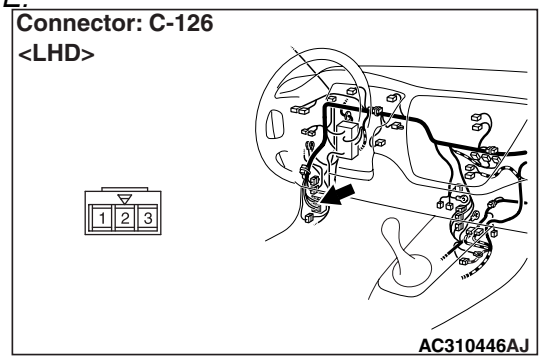
Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 6.

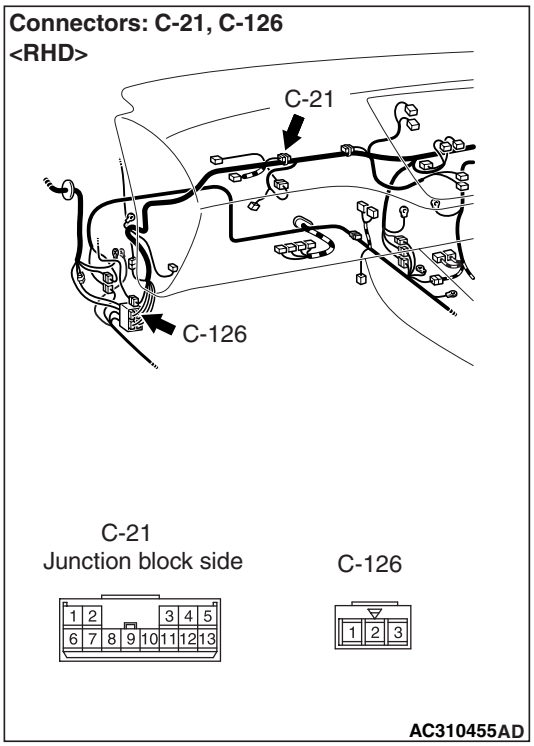
Step 6. Check the wiring harness between C-219 rear fog lamp relay connector (terminal Nos.3 and 4) and the battery.





NOTE:





Prior to the wiring harness inspection, check intermediate connector C-126, joint connector C-21 <RH drive vehicles> and junction block connectors C-209, C-212 and C-214, and repair if necessary.

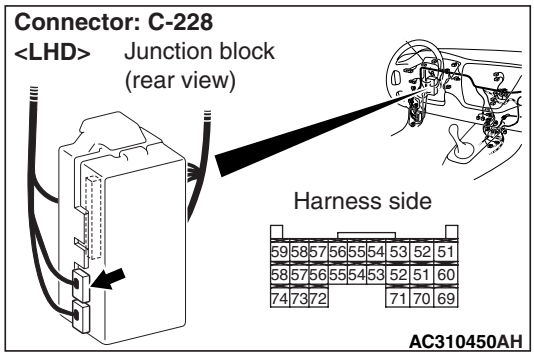
- Check the power supply line for open circuit.

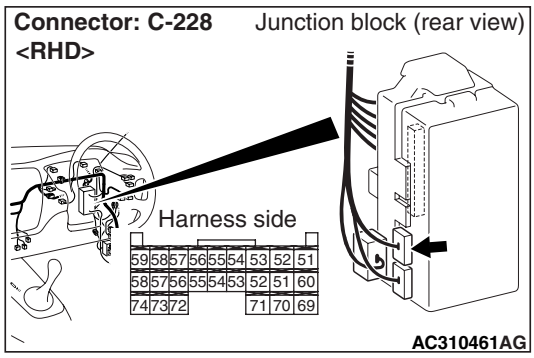
Q: Is the check result normal?

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. Connector check: C-228 ETACS-ECU connector



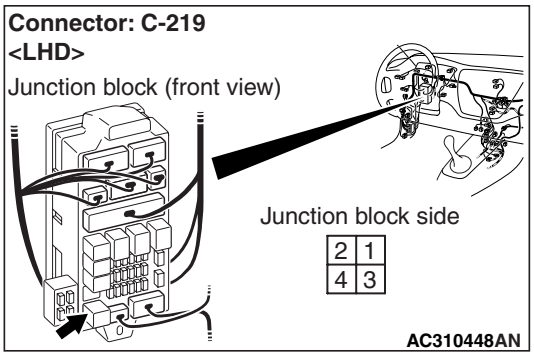


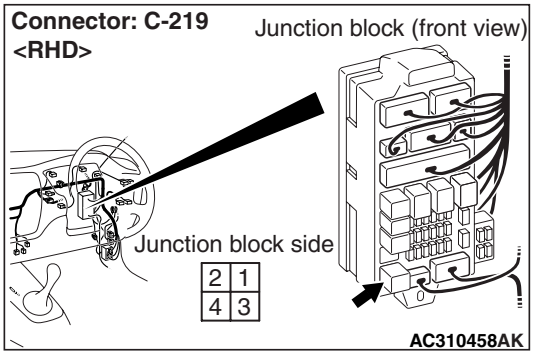
Q: Is the check result normal?

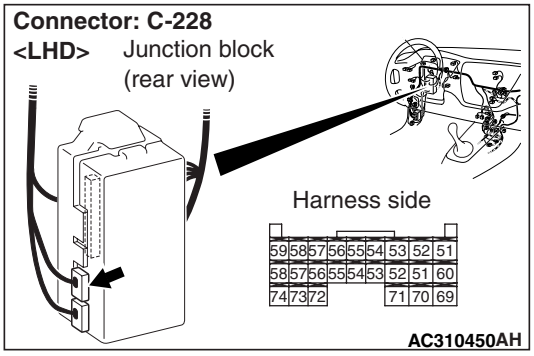
YES : Go to Step 8.

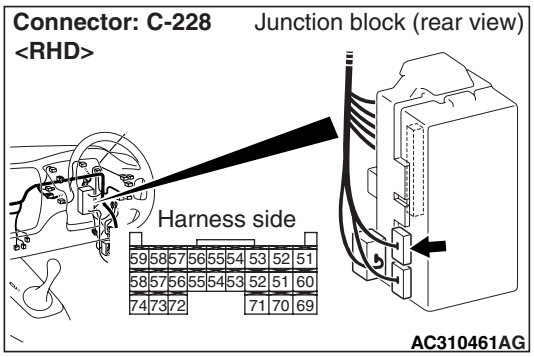
NO : Repair the defective connector.

Step 8. Check the wiring harness between C-219 rear fog lamp relay connector terminal No.2 and C-228 ETACS-ECU connector terminal No.74.

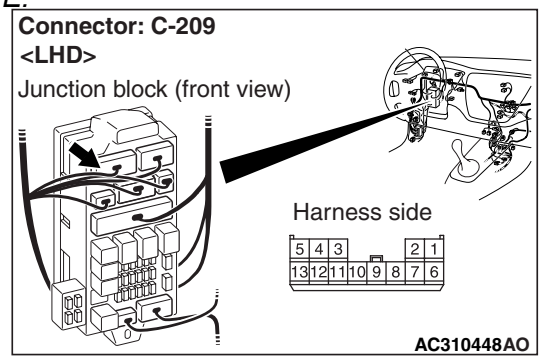


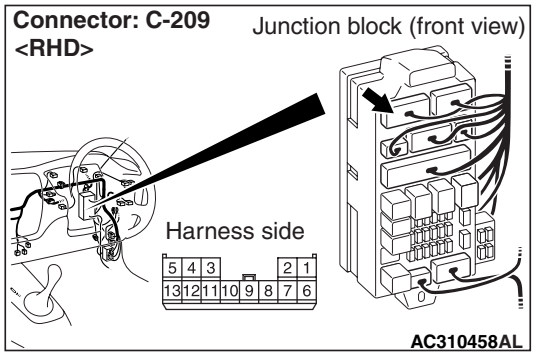






NOTE:





Prior to the wiring harness inspection, check junction block connector C-209, and repair if necessary.

- 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.

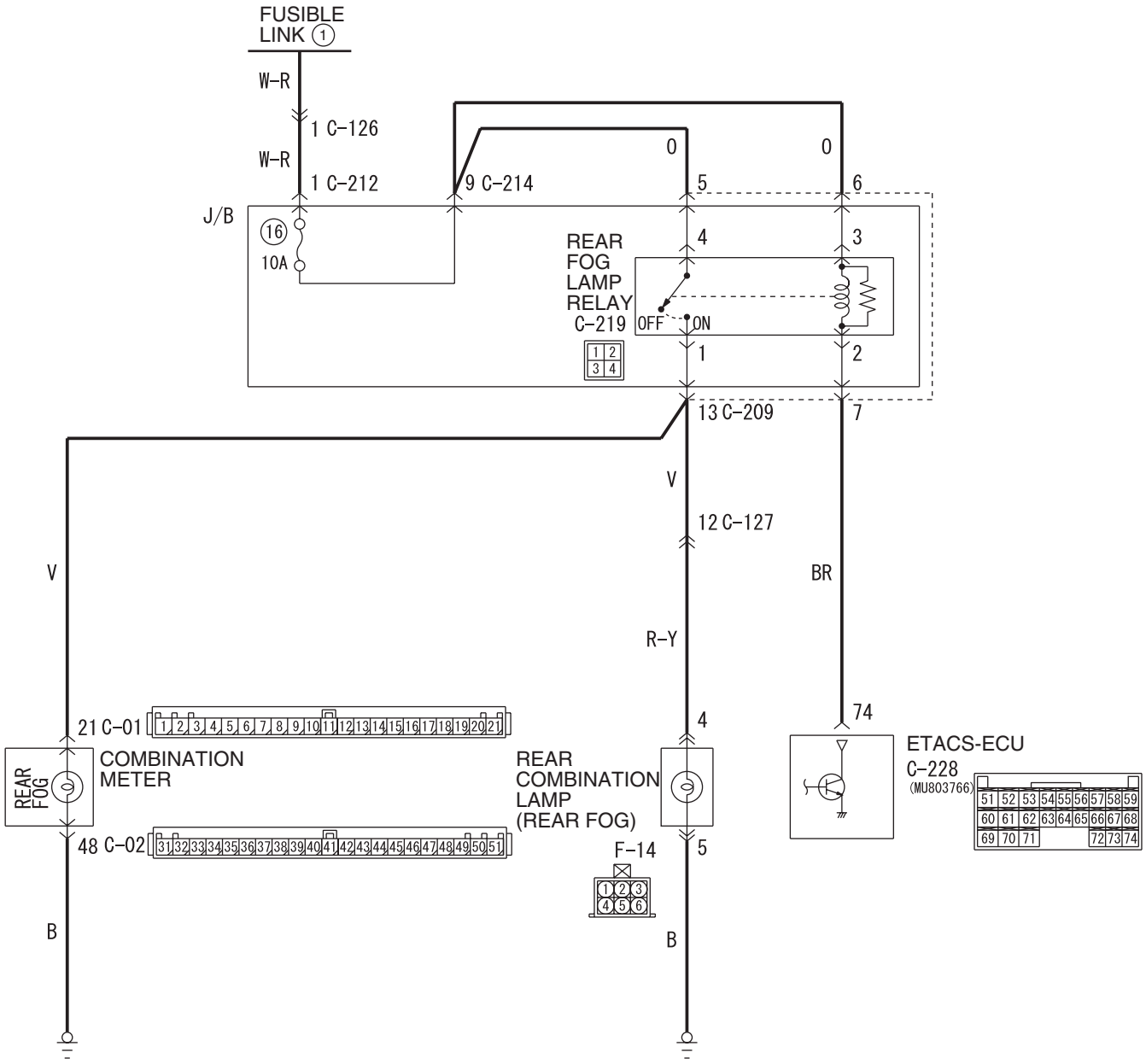
Check that the rear fog lamps illuminate normally.

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 J-2: The rear fog lamp or the rear fog lamp indicator does not illuminate normally.

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

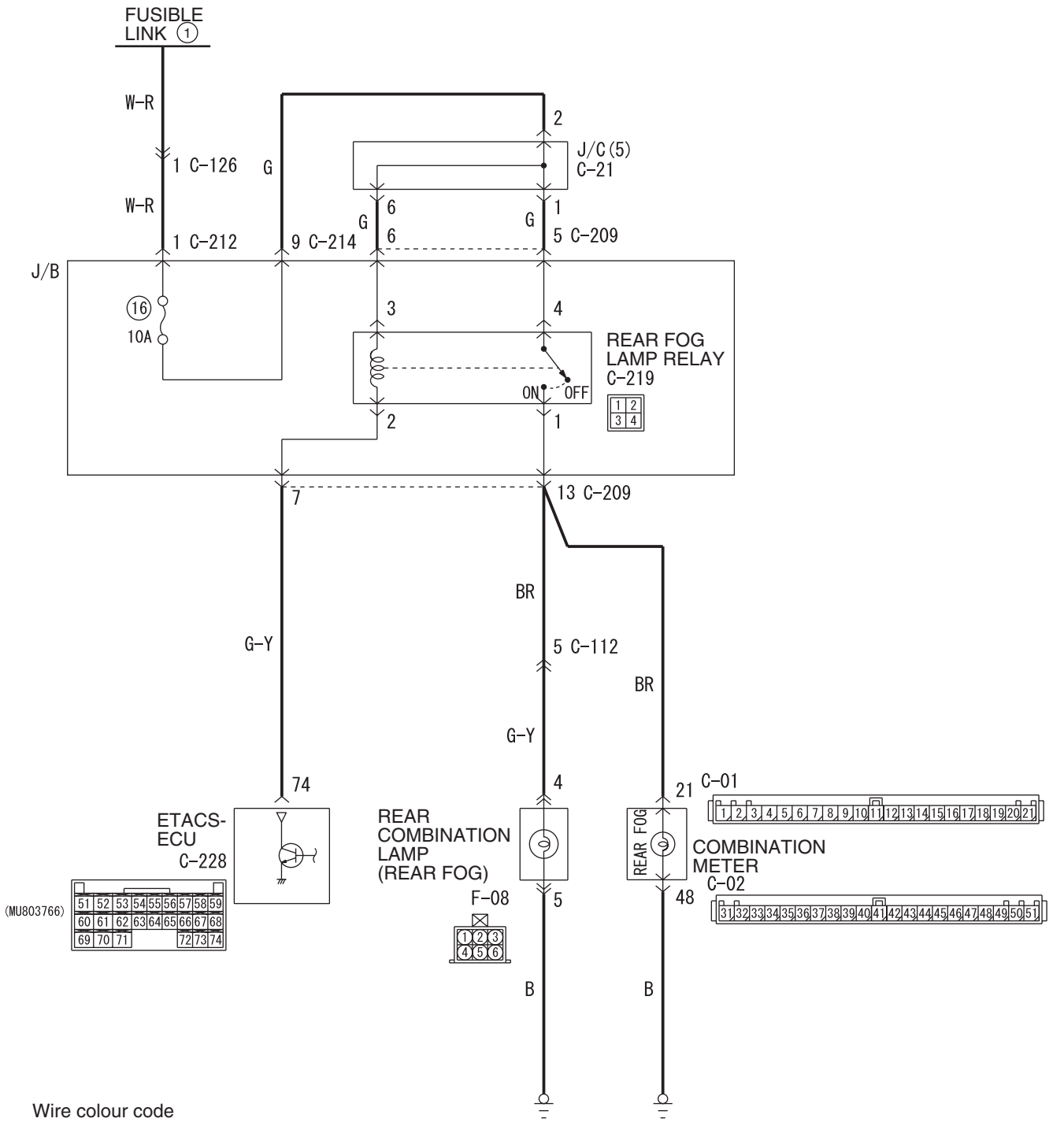
Rear Fog Lamp Circuit <LHD>



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

W4J54E129A

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

W4J54E130A

COMMENTS ON TROUBLE SYMPTOM

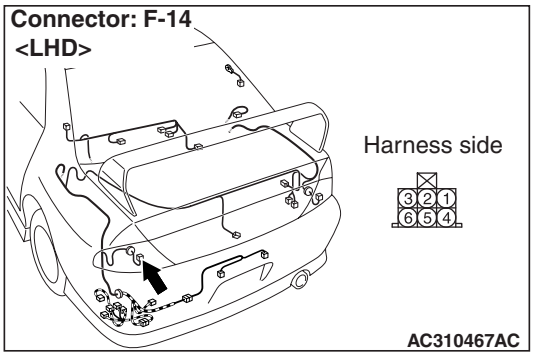
If any of the rear fog lamps do not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

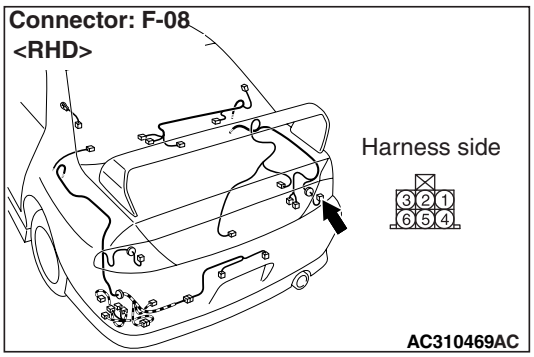
POSSIBLE CAUSES

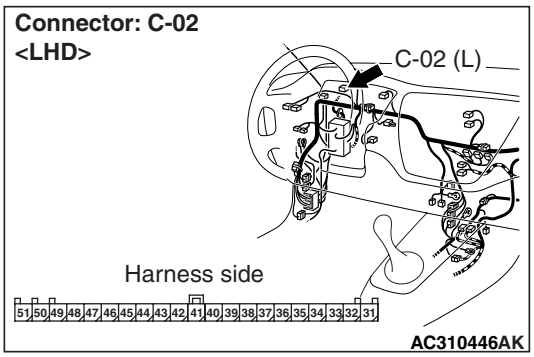
- Burned-out rear fog lamp bulb
- Damaged harness wires and connectors

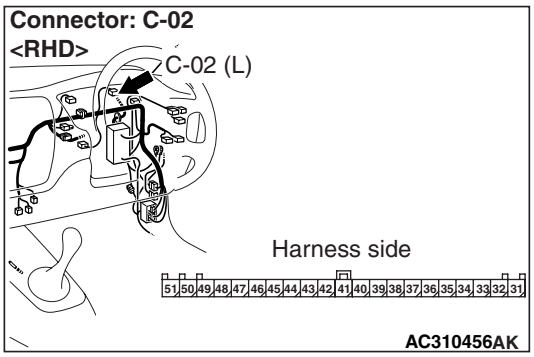
DIAGNOSTIC PROCEDURE

Step 1. Connector check: F-14 <LH drive vehicles>, F-08 <RH drive vehicles> rear fog lamp connector or C-02 <rear fog lamp indicator lamp> combination meter connector







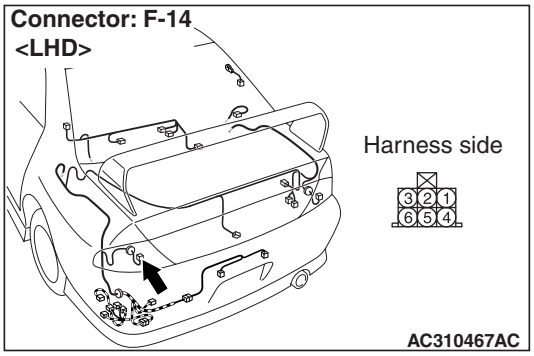


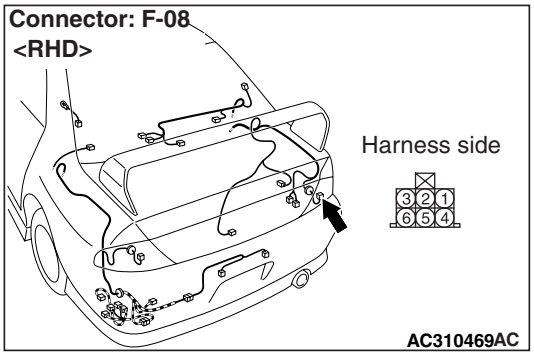
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

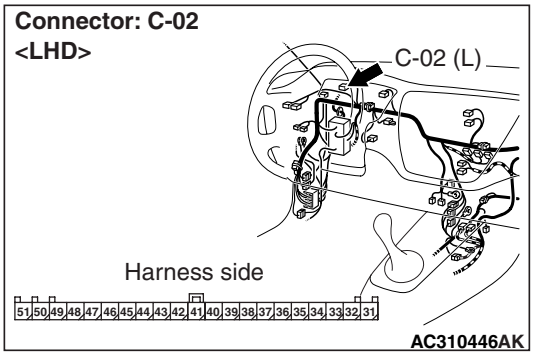
Step 2. Check the bulbs of the rear fog lamps or the rear fog lamp indicator lamp.
Check the bulb(s) of the defective lamp.

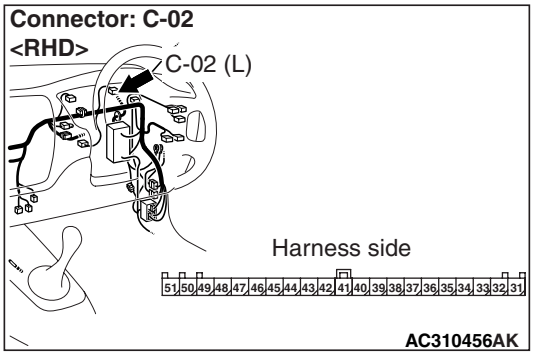
Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the bulb(s) of the defective lamp.

Step 3. Resistance measurement at the F-14 <LH drive vehicles>, F-08 <RH drive vehicles> rear fog lamp connector or C-02 <fog lamp indicator lamp> combination meter connector



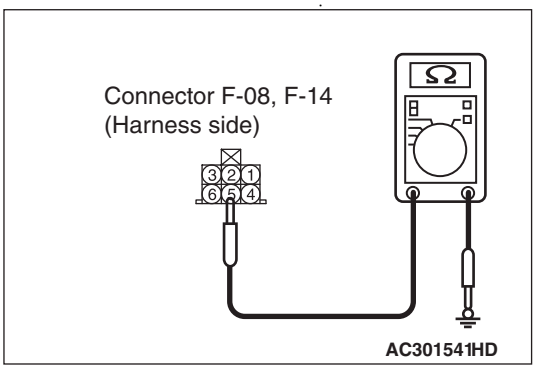




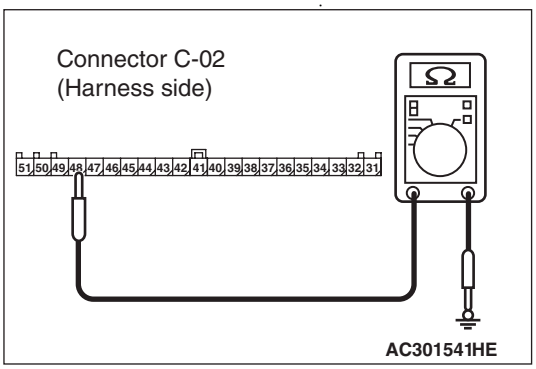


(1) Disconnect the connector, and measure at the wiring harness side.

(2) Check the resistance between the lamp connector and body earth.



Resistance between F-14 <LH drive vehicles>, F-08 <RH drive vehicles> rear fog lamp relay connector terminal No.5 and body earth

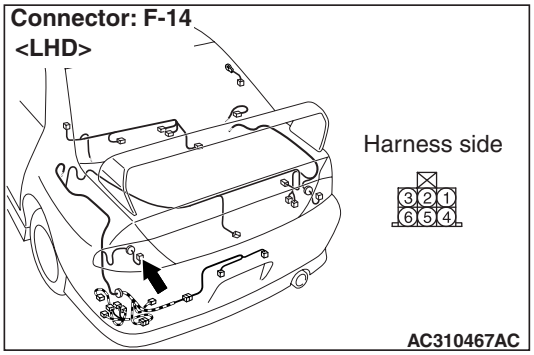


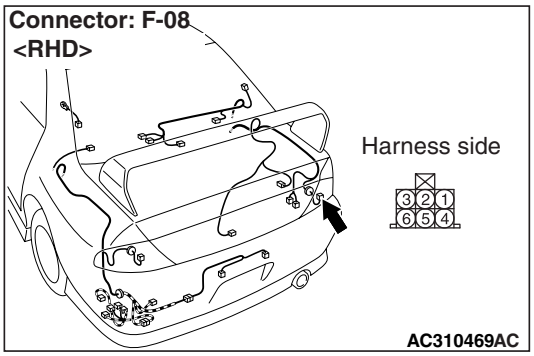
Resistance between C-02 <rear fog lamp indicator lamp> combination meter connector terminal No.48 and body earth

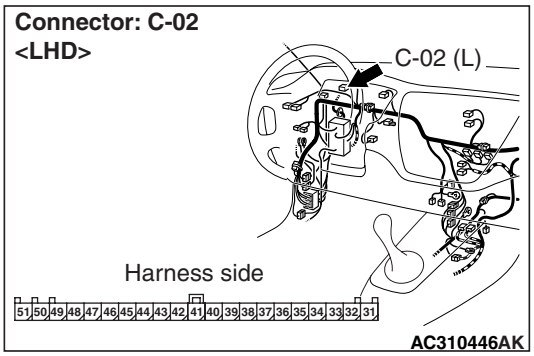
OK: 2 Ω or less

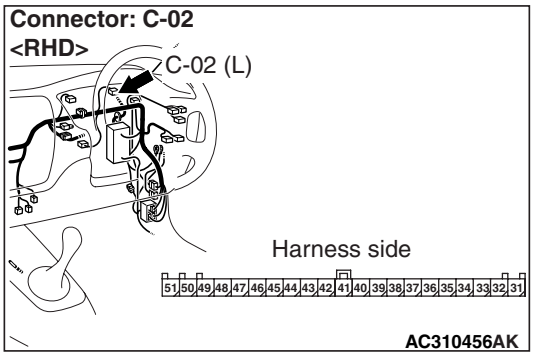
Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness from F-14 <LH drive vehicles>, F-08 <RH drive vehicles> rear fog lamp connector terminal No.5, C-02 <rear fog lamp indicator lamp> combination meter connector terminal No.48 to body earth.





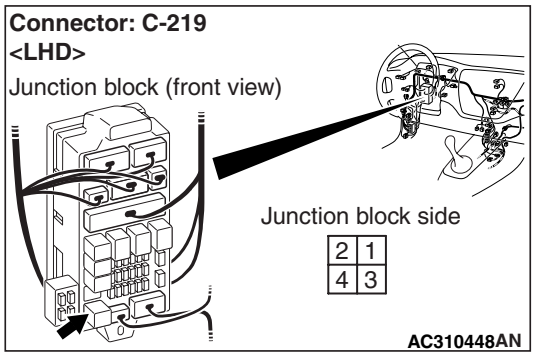


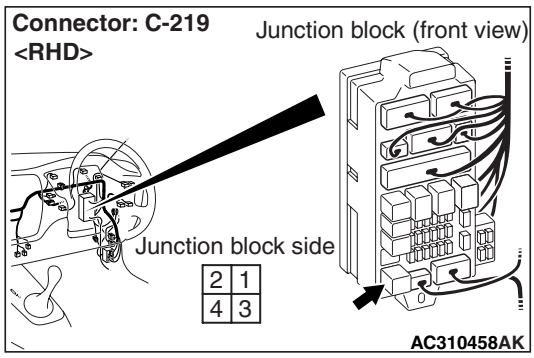


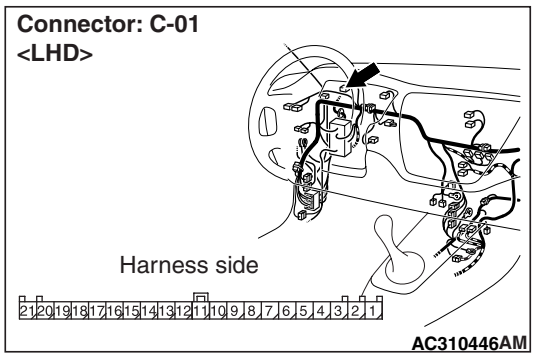
- Check the earth wires for open circuit.

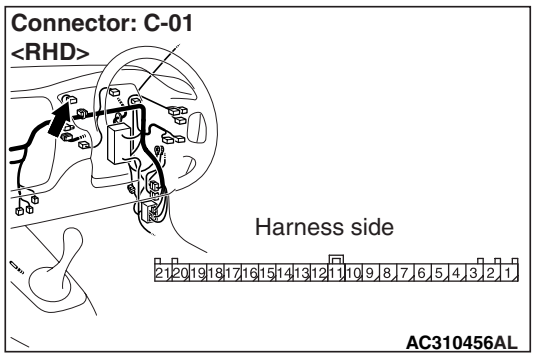
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Connector check: C-219 rear fog lamp relay connector, C-01 <rear fog lamp indicator lamp> combination meter connector



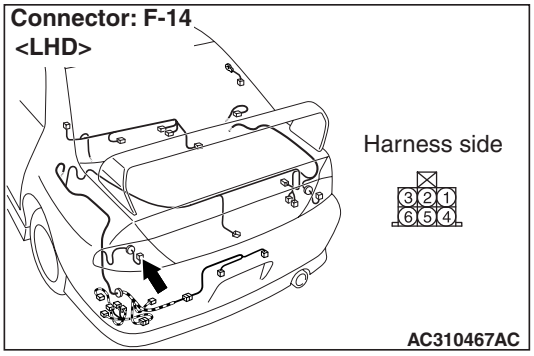


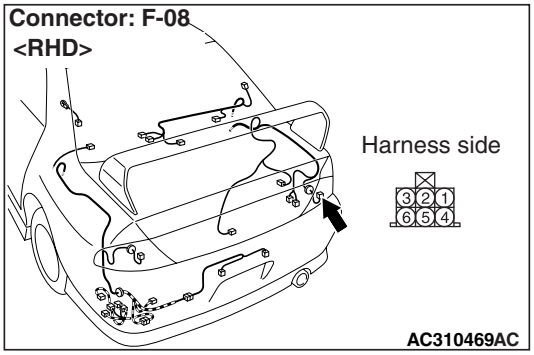


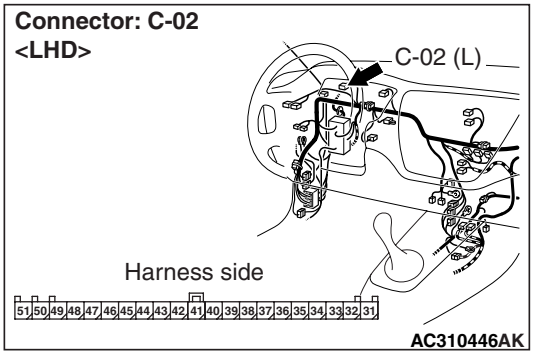


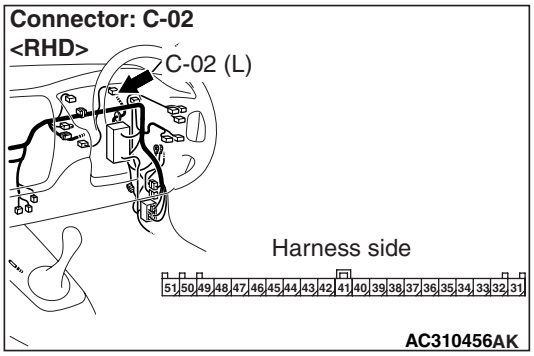
Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

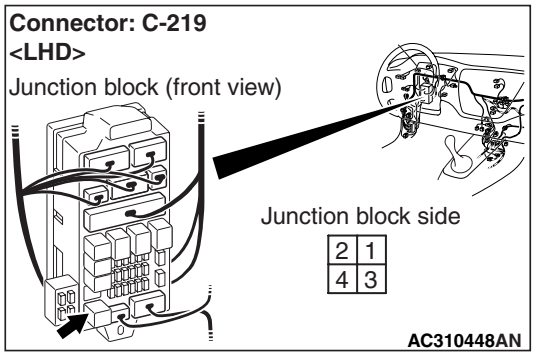
Step 6. Check the wiring harness from F-14 <LH drive vehicles>, F-08 <RH drive vehicles> rear fog lamp connector terminal No.4, C-01 <rear fog lamp indicator lamp> combination meter connector terminal No.21 to C-219 rear fog lamp relay connector terminal No.1.

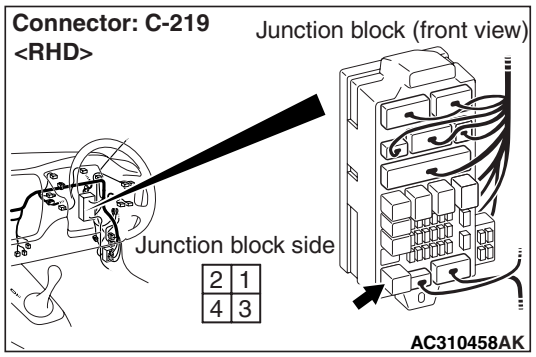




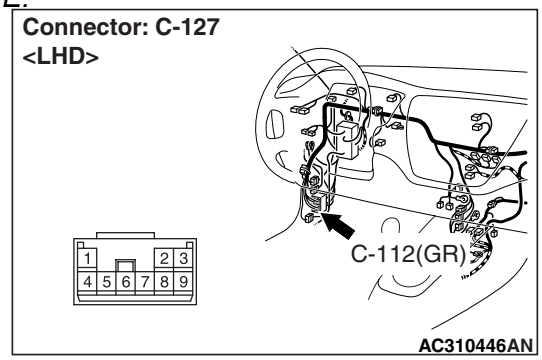


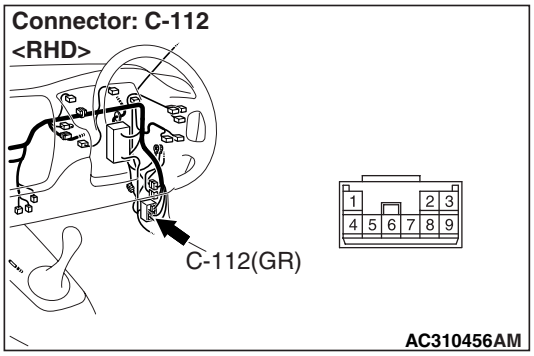


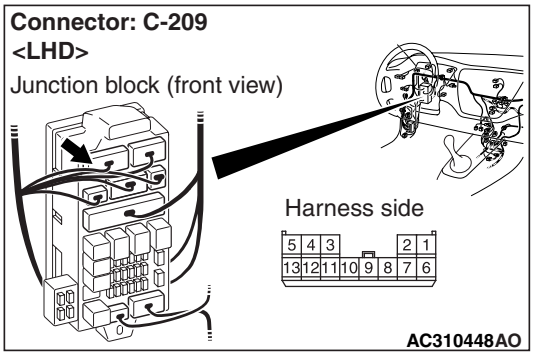


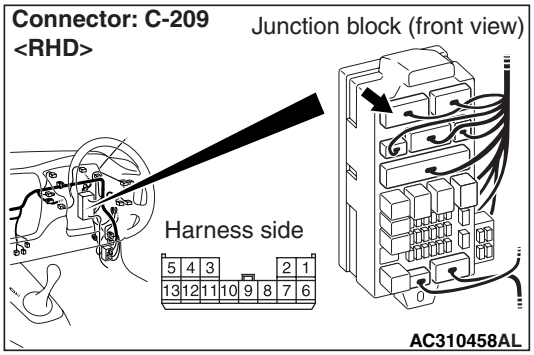


NOTE:









Prior to the wiring harness inspection, check intermediate connector C-127 <LH drive vehicles - rear fog lamp>, C-112 <RH drive vehicles - rear fog lamp> and junction block connector C-209, and repair if necessary.

- 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 rear fog lamp and the rear fog lamp indicator lamp 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).

The rear fog lamps do not illuminate. : Replace the rear fog lamp(s).

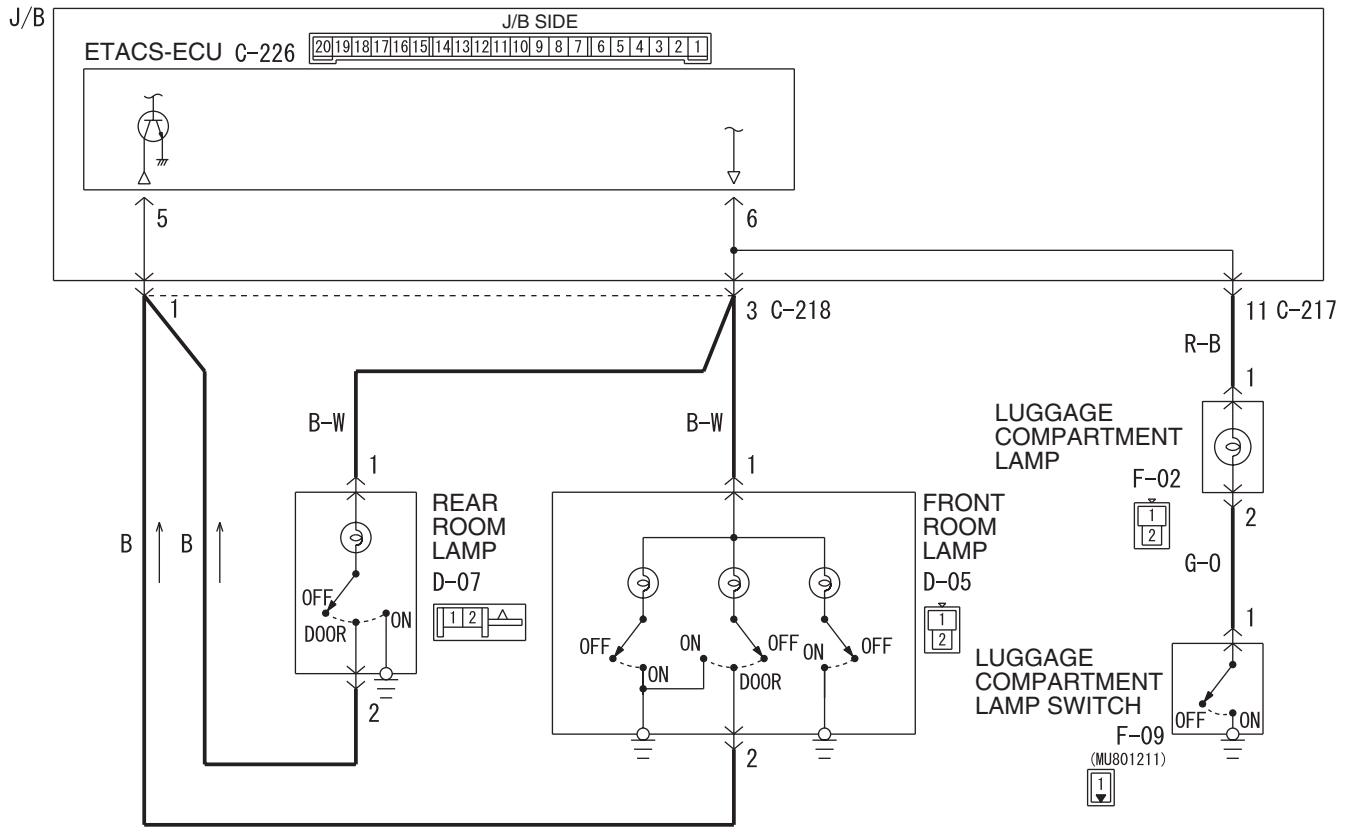
The rear fog lamp indicator lamp does not illuminate. : Replace the combination meter.

INTERIOR LAMP

INSPECTION PROCEDURE K-1: The front, rear room lamp and/or luggage compartment lamp do not illuminate or extinguish normally.

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

Room Lamp Circuit



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

W4J54E131A

COMMENTS ON TROUBLE SYMPTOM

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

- Ignition switch (IG1)
- Key reminder switch
- All of the door switches
- Driver's door lock actuator
- Interior lamp loaded signal

If this function does not work normally, these input signal circuit(s), the interior lamp automatic shut-down function or the ETACS-ECU may be defective. The delay-off setting of this function can be changed by the adjustment function (default setting; 15 seconds).

POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the door switches
- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Check the adjustment function.
Check that the room lamp delay-off time has been set to other than "0 second" by the adjustment function.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Use the adjustment function to set the room lamp delay-off time to other than "0 second." Refer to P.54B-302.

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 battery power supply circuit to the ETACS-ECU P.54B-42."

Step 3. Pulse check
Check the input signals below, which are related to the front and rear room lamps.

System switch	Check condition
Ignition switch (IG1)	When turned from ACC to ON
All of the door switches	A door is opened when all the doors are closed
Driver's door lock actuator switch	When the driver's door is unlocked or locked
Interior lamp loaded signal	When a load is applied through multi-purpose fuse No.18

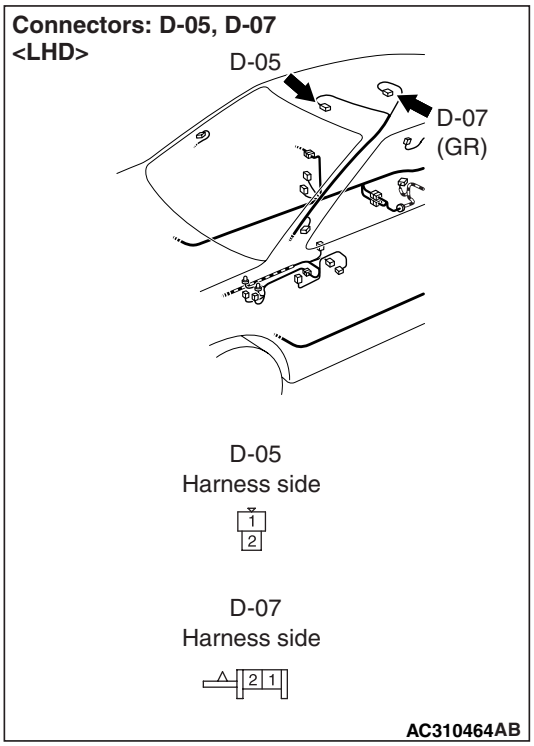
OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

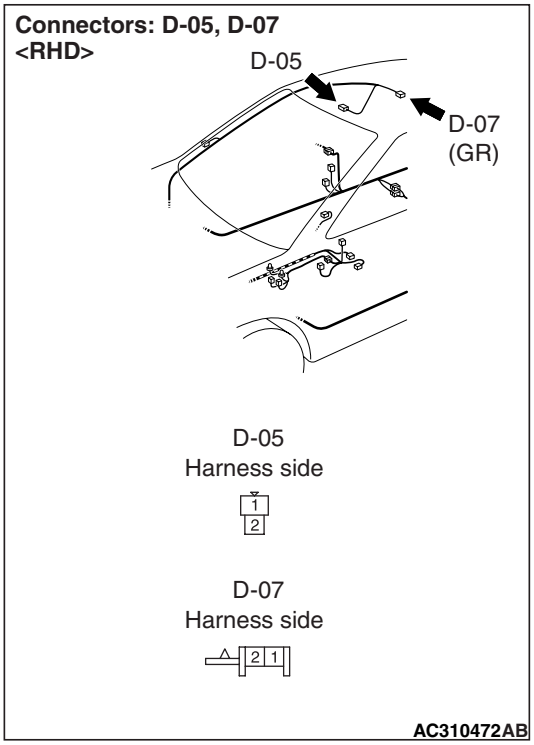
Q: Is the check result normal?
All the signals are received normally. : Go to Step 4.
The ignition switch (IG1) signal is not received. : Refer to inspection procedure L-2 "The ignition switch (IG1) signal is not received P.54B-242."
All the door switch signals are not received. : Refer to inspection procedure L-10 "All the door switch signals are not received <LH drive vehicles>P.54B-265 ." Refer to inspection procedure L-10 "All the door switch signals are not received <RH drive vehicles>P.54B-268 ."
The driver's door lock actuator switch signal is not received. : Refer to inspection procedure L-11 "The front door lock actuator (LH) switch signal is not received <LH drive vehicles>P.54B-272 ." Refer to inspection procedure L-11 "The front door lock actuator (RH) switch signal is not received <RH drive vehicles>P.54B-275 ."
Interior lamp loaded signal is not detected. : Refer to inspection procedure L-15 "Interior lamp loaded signal is not detected P.54B-287."

Step 4. Determine a trouble spot.

Q: Which lamp does not illuminate?
No lamp illuminates. : Replace the ETACS-ECU.
The front room lamp or the rear room lamp does not illuminate. : Go to Step 5.
The luggage compartment lamp does not illuminate. : Go to Step 10.

Step 5. Connector check: D-05 front room lamp connector, D-07 rear room lamp connector





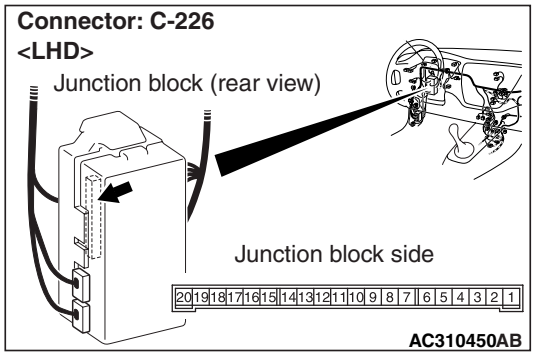
Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

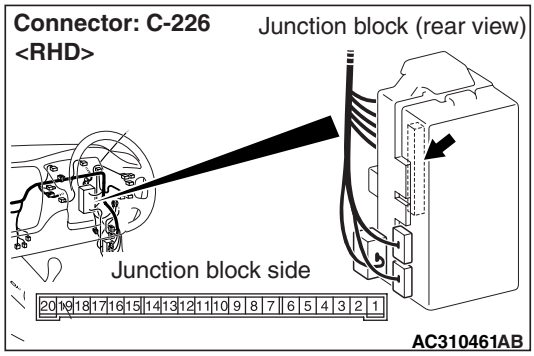
Step 6. Check the bulbs of the front or rear room lamps.

Check that the front or rear room lamp bulbs are not burned out.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Replace the front or rear room lamp bulb.

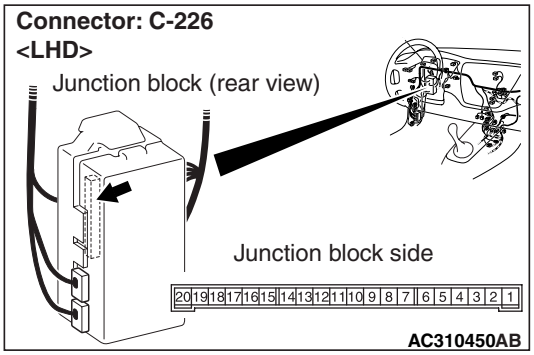
Step 7. Connector check: C-226 ETACS-ECU connector

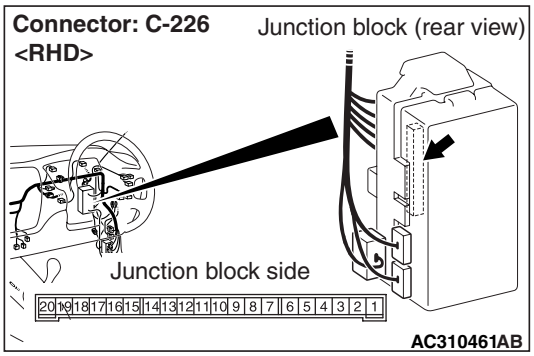


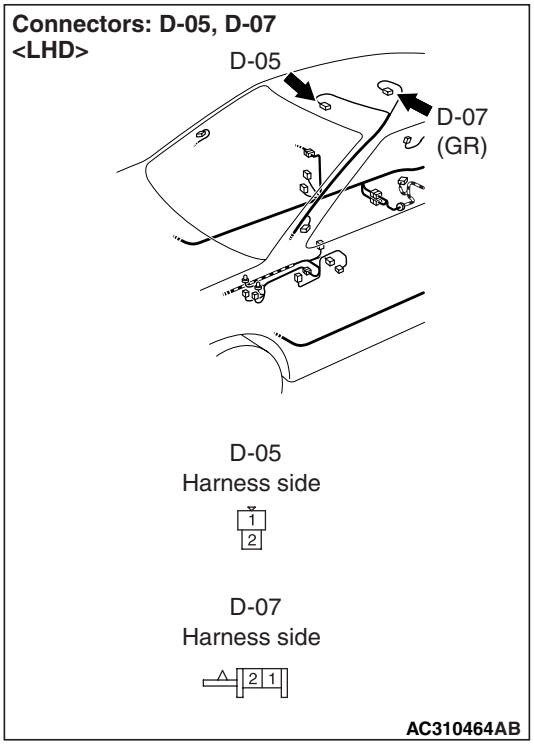


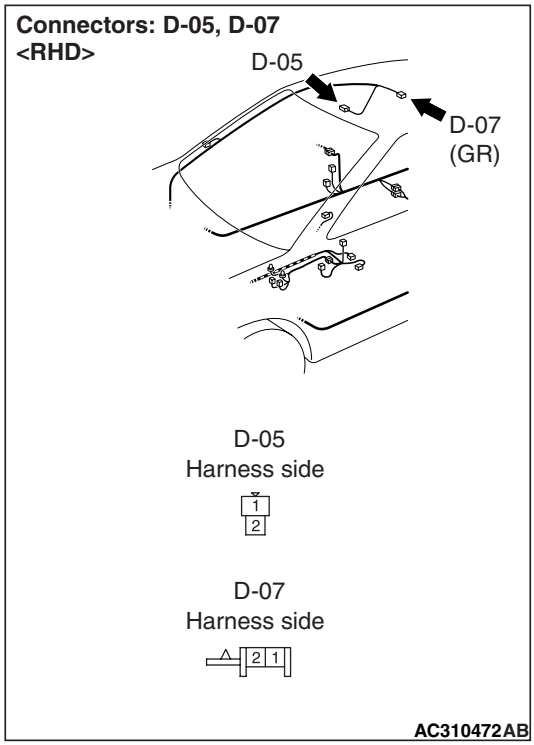
Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the defective connector.

Step 8. Check the wiring harness from C-226 ETACS-ECU connector terminal Nos.5 and 6 to D-05 front room lamp connector terminal Nos.2 and 1 or D-07 rear room lamp connector terminal Nos.2 and 1.

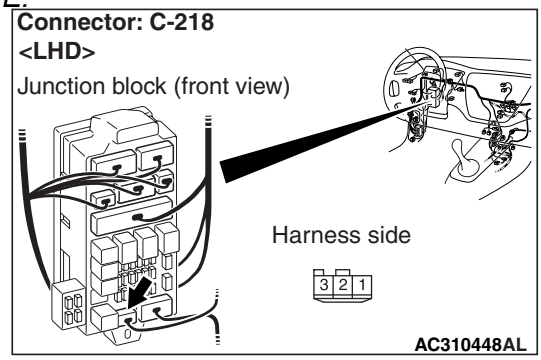


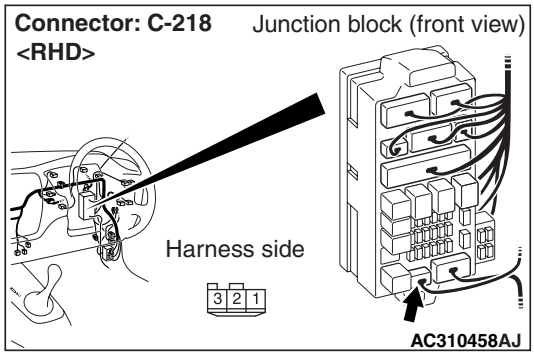






NOTE:





Prior to the wiring harness inspection, check junction block connector C-218, and repair if necessary.

- Check the input or 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 or rear room lamp illuminates and extinguishes normally.

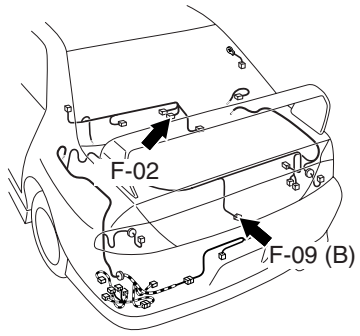
Q: Is the check result normal?

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

NO : Replace the ETACS-ECU.

Step 10. Connector check: F-02 luggage compartment lamp connector, F-09 luggage compartment lamp switch connector

Connectors: F-02, F-09
<LHD>

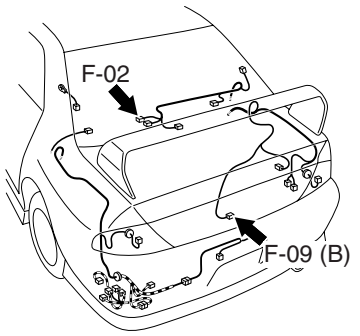


F-02
Harness side
1
2

F-09
Harness side
1

AC310468AB

Connectors: F-02, F-09
<RHD>



F-02
Harness side
1
2

F-09
Harness side
1

AC310470AB

Q: Is the check result normal?

YES : Go to Step 11.

NO : Repair the defective connector.

Step 11. Check the bulbs of the luggage compartment lamp.

Check that the luggage compartment lamp bulb are not burned out.

Q: Is the check result normal?

YES : Go to Step 12.

NO : Replace the luggage compartment lamp bulb.

Step 12. Check the luggage compartment lamp switch.

Check the luggage compartment lamp switch.Refer to GROUP 42 – Trunk lid P.42-39.

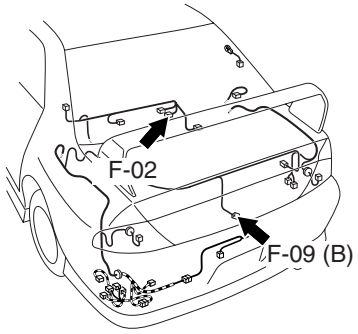
Q: Is the check result normal?

YES : Go to Step 13.

NO : Replace the luggage compartment lamp switch.

Step 13. Check the wiring harness from F-02 luggage compartment lamp connector terminal No.2 to F-09 luggage compartment lamp switch connector terminal No.1.

Connectors: F-02, F-09
<LHD>



F-02
Harness side

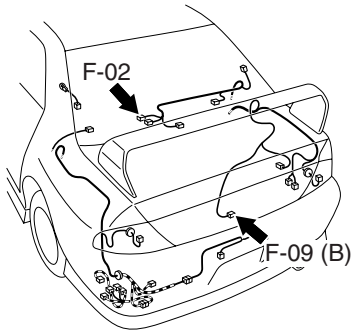


F-09
Harness side



AC310468AB

Connectors: F-02, F-09
<RHD>



F-02
Harness side



F-09
Harness side



AC310470AB

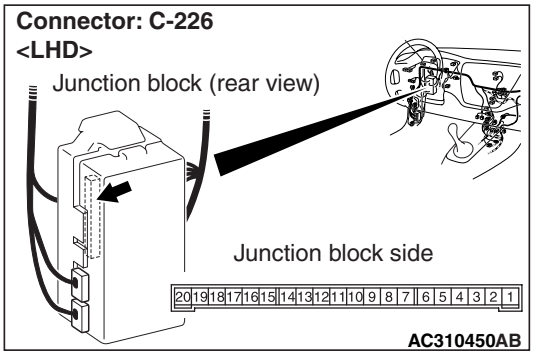
- Check the earth wires for open circuit.

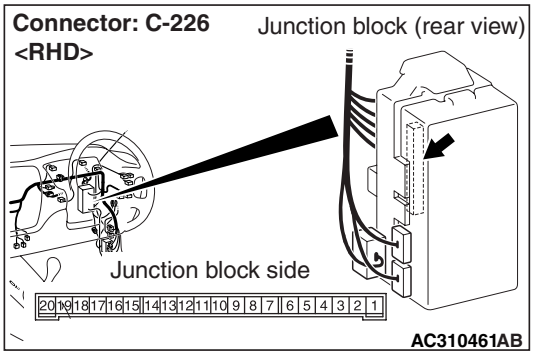
Q: Is the check result normal?

YES : Go to Step 14.

NO : Repair the wiring harness.

Step 14. Connector check: C-226 ETACS-ECU connector



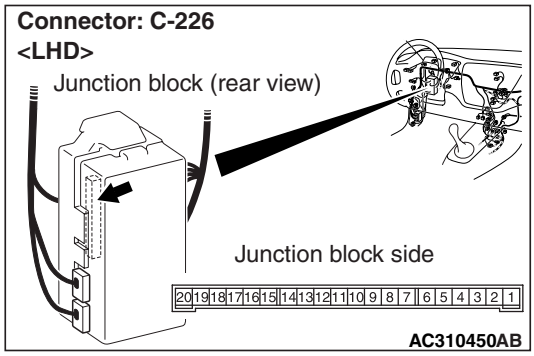


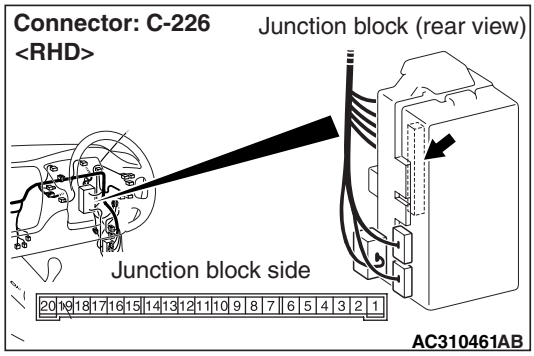
Q: Is the check result normal?

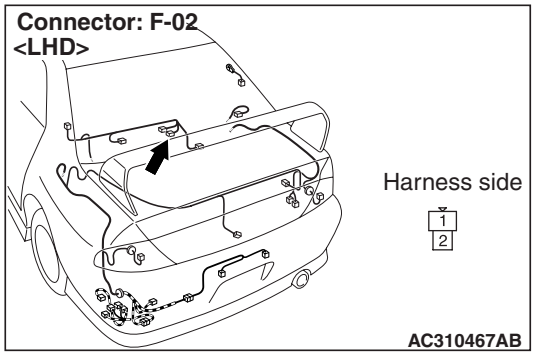
YES : Go to Step 15.

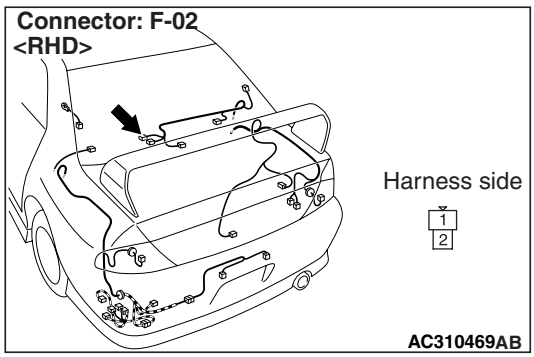
NO : Repair the defective connector.

Step 15. Check the wiring harness from C-226 ETACS-ECU connector terminal No.6 to F-02 luggage compartment lamp connector terminal No.1.

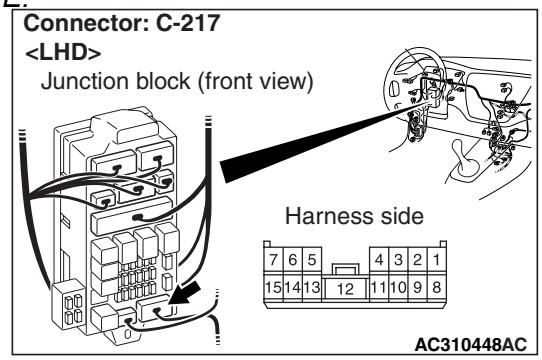


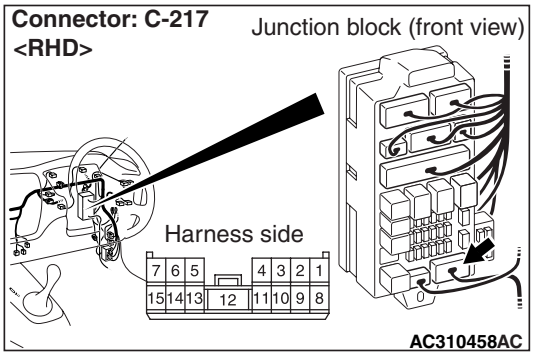






NOTE:





Prior to the wiring harness inspection, check junction block connector C-217, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?

YES : Go to Step 16.

NO : Repair the wiring harness.

Step 16. Retest the system.

Check that the luggage compartment lamp illuminates and extinguishes normally.

Q: Is the check result normal?

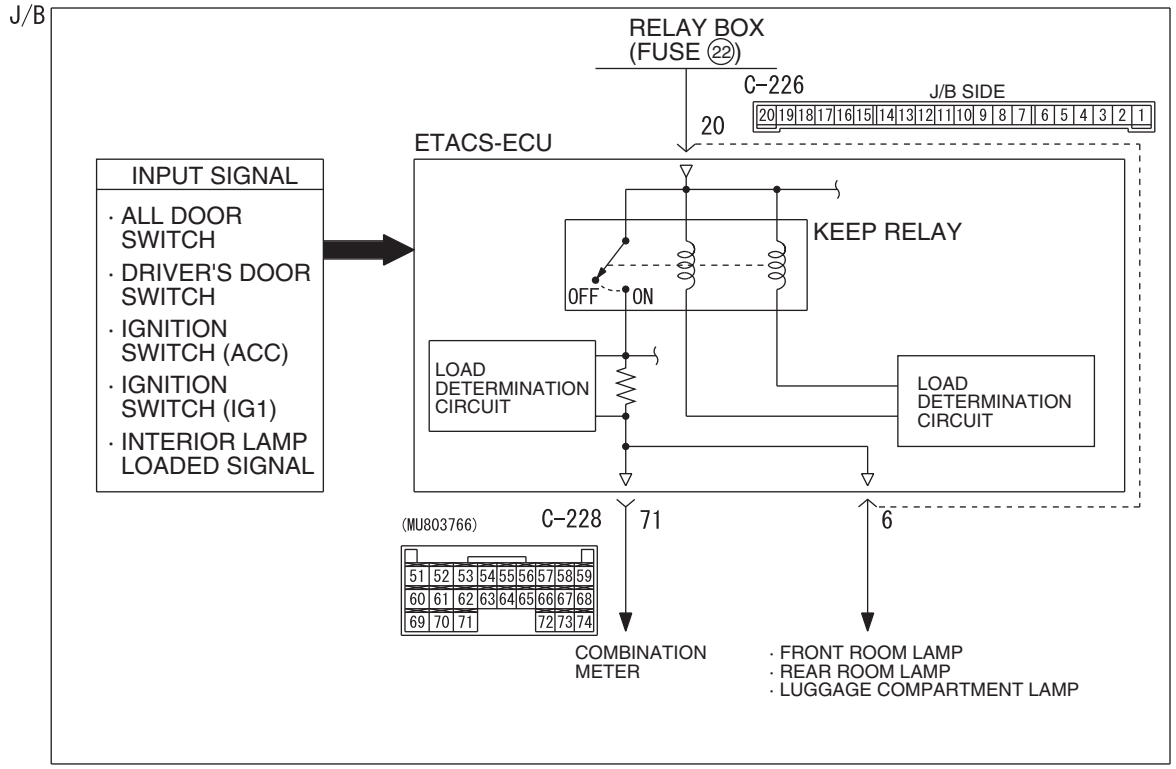
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE K-2: Interior lamp automatic shutdown function does not work normally.

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

Interior Lamp Automatic Shutdown Function Circuit



W4J54E132A

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 adjustment function.

Check that the interior lamp automatic shutdown function has been enabled by using the adjustment function.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Enable the interior lamp automatic shutdown function by using the adjustment function. Refer to P.54B-302.

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 battery power supply circuit to the ETACS-ECU P.54B-42."

Step 3. Pulse check
Check the input signals below, which are related to the front and rear dome lamps.

System switch	Check condition
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.
All of the door switches	A door is opened when all the doors are closed
Interior lamp loaded signal	When a load is applied through multi-purpose fuse No.18

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
All the signals are received normally. : Go to Step 4.
The ignition switch (ACC) signal is not received. : Refer to inspection procedure L-1 "The ignition switch (ACC) signal is not received P.54B-239."
The ignition switch (IG1) signal is not received. : Refer to inspection procedure L-2 "The ignition switch (IG1) signal is not received P.54B-242."
The driver's door switch signal is not received. : Refer to inspection procedure L-3 "The door switch (front: LH) signal is not received <LH drive vehicles>P.54B-244 ." Refer to inspection procedure L-3 "The door switch (front: RH) signal is not received <RH drive vehicles>P.54B-246 ."
All the door switch signals are not received. : Refer to inspection procedure L-10 "All the door switch signals are not received <LH drive vehicles>P.54B-265 ." Refer to inspection procedure L-10 "All the door switch signals are not received <RH drive vehicles>P.54B-268 ."
Interior lamp loaded signal is not detected : Refer to inspection procedure L-15 "Interior lamp loaded signal is not detected P.54B-287."

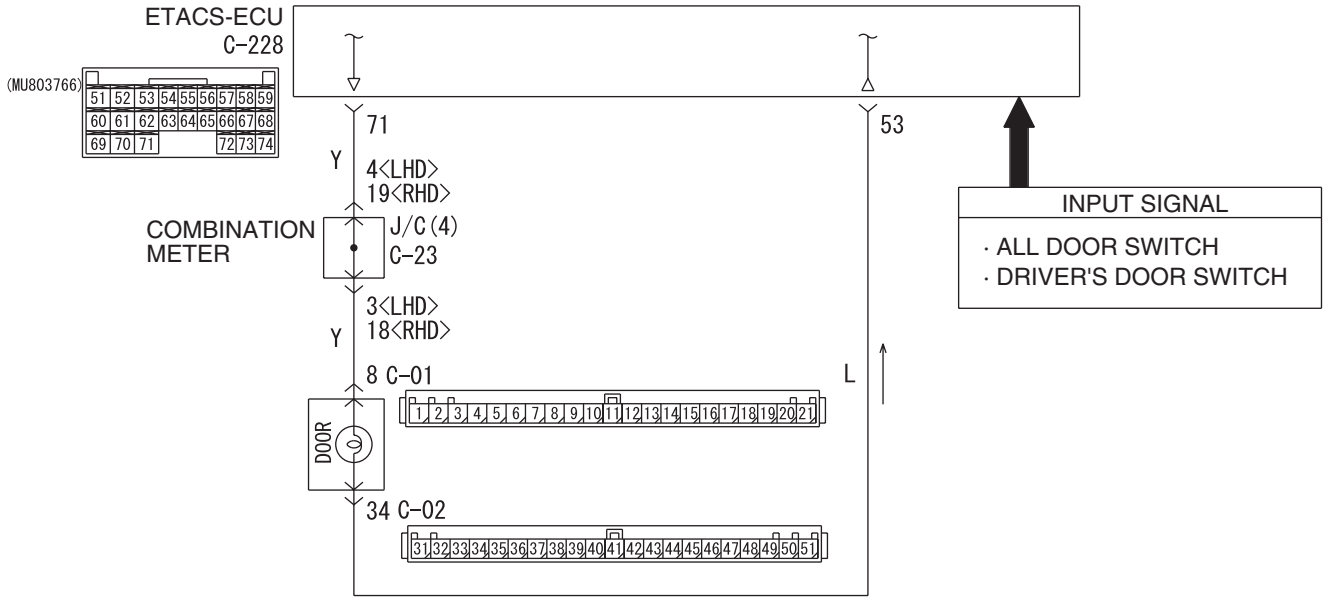
Step 4. Retest the system.
Check that the interior lamp automatic shutdown function works normally.

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 K-3: The door-ajar warning lamp does not illuminate/extinguish normally.

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

Door Ajar Indicator 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

W4J54E133A

COMMENTS ON TROUBLE SYMPTOM

If the door-ajar warning lamp does not work normally, the input signal circuits from all the door switches or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- All the door switches are defective.
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Check the operation of the room lamp.

Q: Does the room lamp illuminate/extinguish?
YES : Go to Step 2.
NO : Refer to inspection procedure K-1 "The front, rear room lamp and/or luggage compartment lamp do not illuminate or extinguish normally P.54B-225."

Step 2. Pulse check

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

System switch	Check condition
Driver's door switch	Driver's door is opened while all the other doors are closed.
All of the door switches	A door is opened when all the doors are closed

OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?

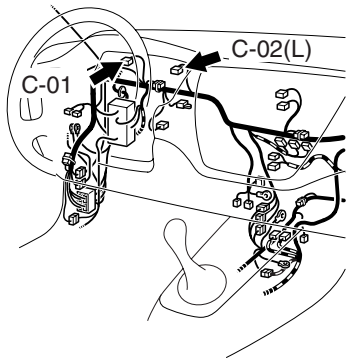
All the signals are received normally. : Go to Step 3.

The driver's door switch signal is not received. : Refer to inspection procedure L-3 "The door switch (front: LH) signal is not received <LH drive vehicles>P.54B-244 ." Refer to inspection procedure L-3 "The door switch (front: RH) signal is not received <RH drive vehicles>P.54B-246 ."

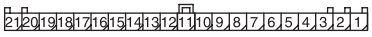
All the door switch signals are not received. : Refer to inspection procedure L-10 "All the door switch signals are not received <LH drive vehicles>P.54B-265 ." Refer to inspection procedure L-10 "All the door switch signals are not received <RH drive vehicles>P.54B-268 ."

Step 3. Connector check: C-01 and C-02 combination meter connector

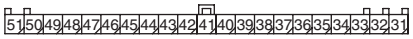
Connectors: C-01, C-02
<LHD>



C-01
Harness side

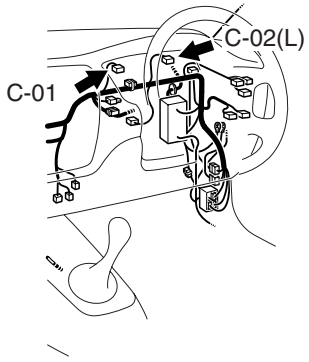


C-02
Harness side

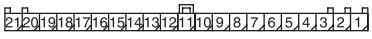


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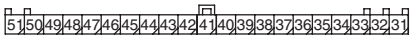
Connectors: C-01, C-02
<RHD>



C-01
Harness side



C-02
Harness side



AC310457AB

Q: Is the check result normal?

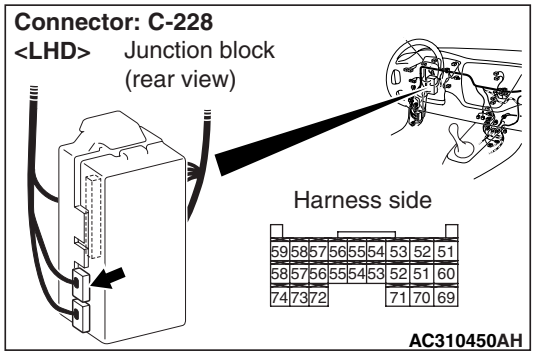
YES : Go to Step 4.

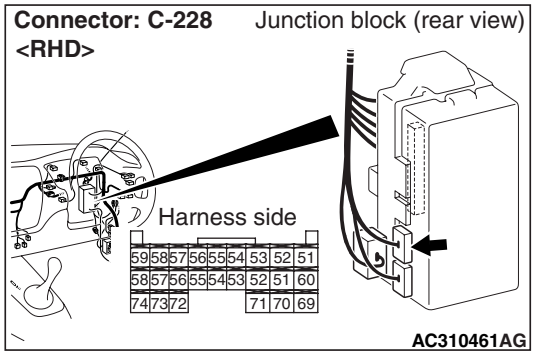
NO : Repair the defective connector.

Step 4. Check the door-ajar warning lamp bulb.
Check the door-ajar warning lamp bulb.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the door-ajar warning lamp bulb.

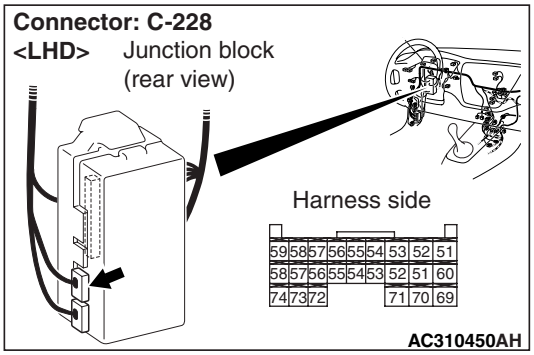
Step 5. Connector check: C-228 ETACS-ECU connector

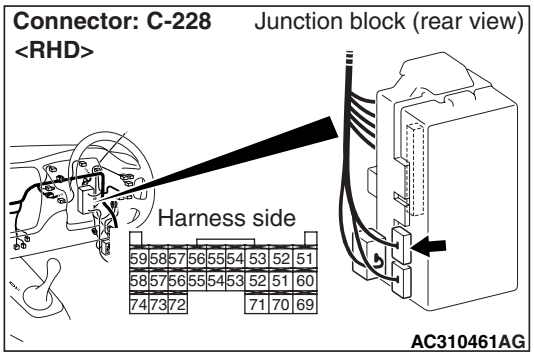


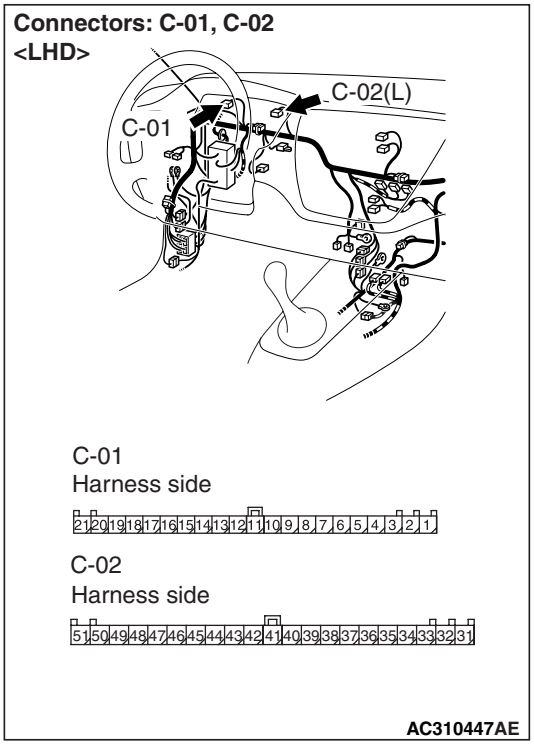


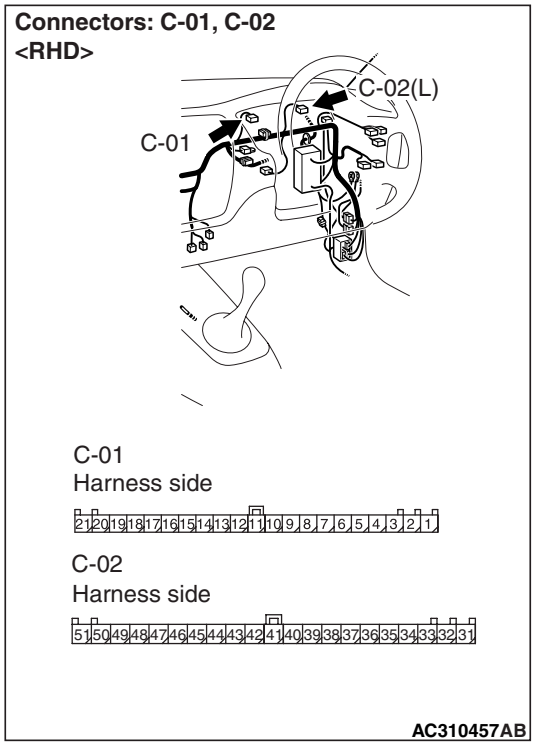
Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from C-228 ETACS-ECU connector terminal Nos.53 and 71 to C-02 combination meter connector terminal No.34 and C-01 combination meter connector terminal No.8.









- Check the input or 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.

Replace the ETACS-ECU, and then check that the door-ajar warning lamp illuminates/extinguishes normally.

(1) Replace the ETACS-ECU.
(2) Check that the door-ajar warning lamp illuminates/extinguishes normally.

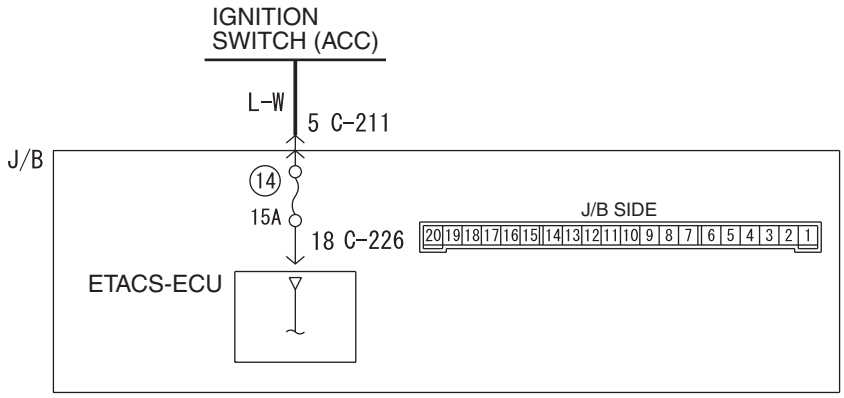
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the combination meter.

INPUT SIGNAL PROCEDURES

INSPECTION PROCEDURE L-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



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

W4J54E155A

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.

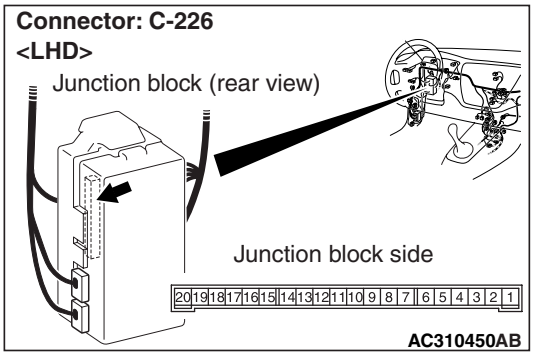
- Windshield wiper and washer
- Interior lamp automatic shutdown function

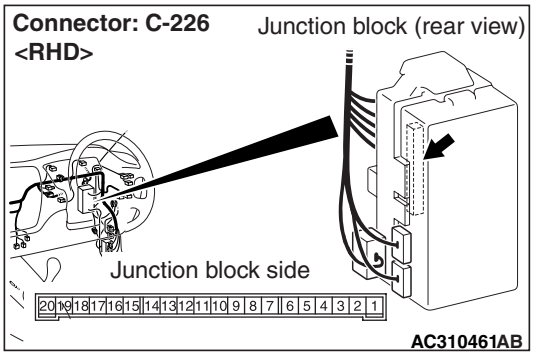
POSSIBLE CAUSES

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

DIAGNOSTIC PROCEDURE

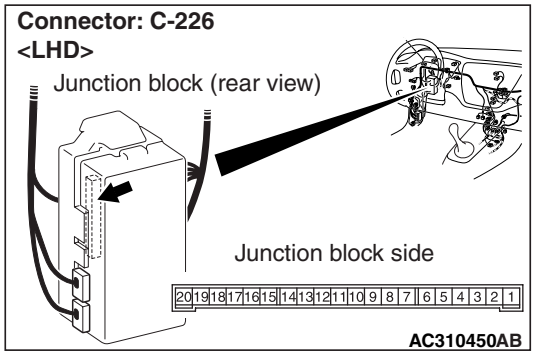
Step 1. Connector check: C-226 ETACS-ECU connector

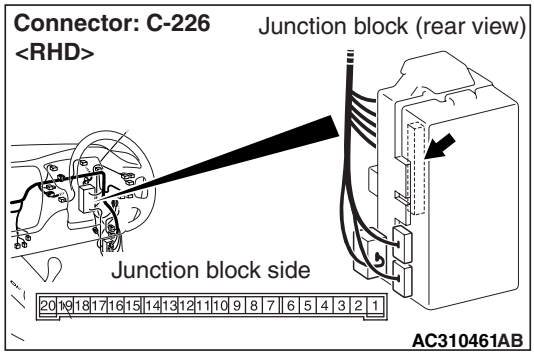




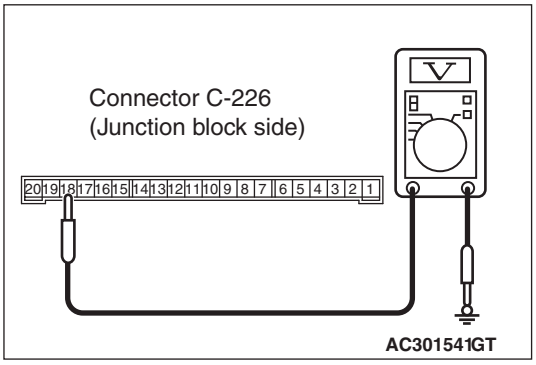
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Voltage measurement at the C-226 ETACS-ECU connector





(1) Remove the ETACS-ECU, and measure at the junction block side.
(2) Ignition switch: ACC position

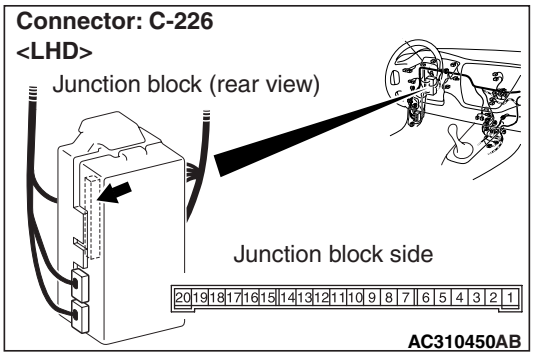


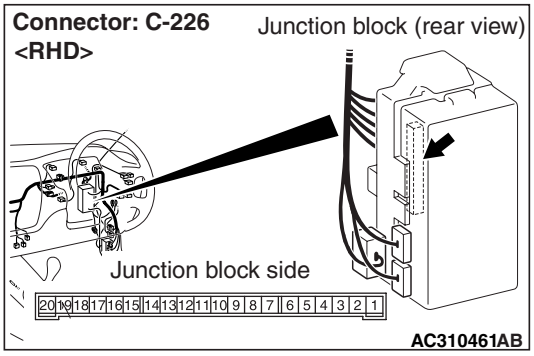
(3) Voltage between C-226 ETACS-ECU connector terminal No.18 and body earth

OK: System voltage

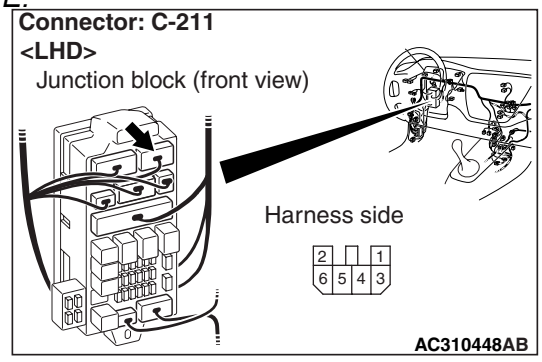
Q: Is the check result normal?
YES : Go to Step 4.
NO : Go to Step 3.

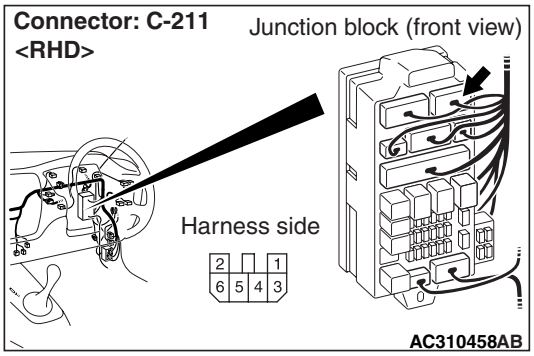
Step 3. Check the wiring harness between C-226 ETACS-ECU connector terminal No.18 and the ignition switch (ACC).





NOTE:





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

- Check the power supply line for open circuit.

Q: Is the check result normal?

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

NO : Repair the wiring harness.

Step 4. Retest the system.

Check that the ignition switch (ACC) signal is received normally.

Q: Is the check result normal?

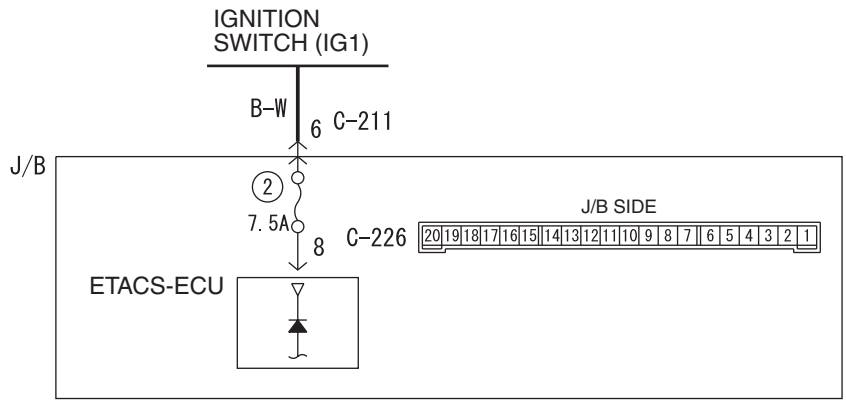
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE L-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

W4J54E156A

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.

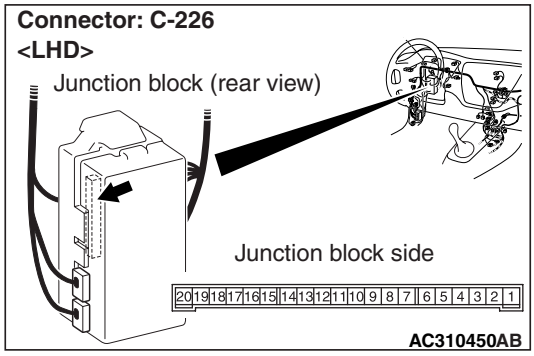
- Lamp reminder function
- Ignition key cylinder illumination lamp
- Headlamp automatic shutdown function
- Turn signal lamp
- Room lamps

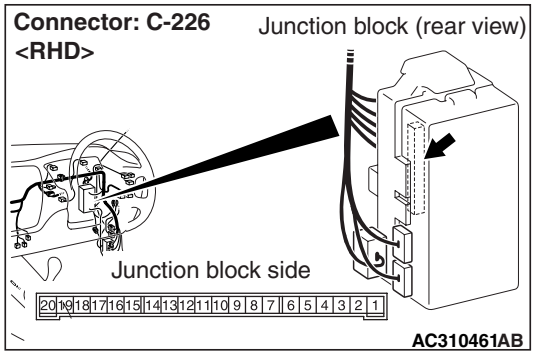
POSSIBLE CAUSES

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

DIAGNOSTIC PROCEDURE

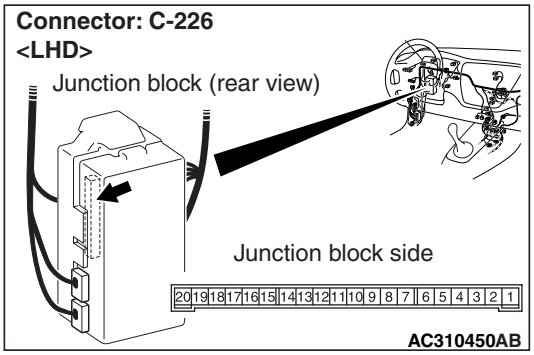
Step 1. Connector check: C-226 ETACS-ECU connector

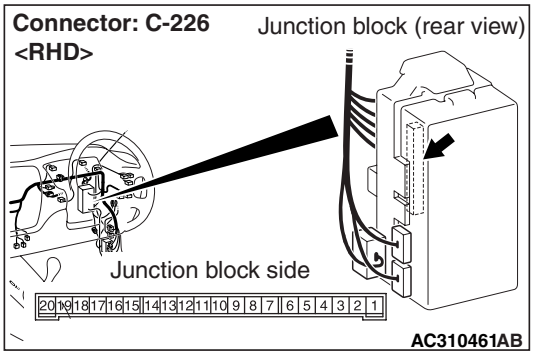




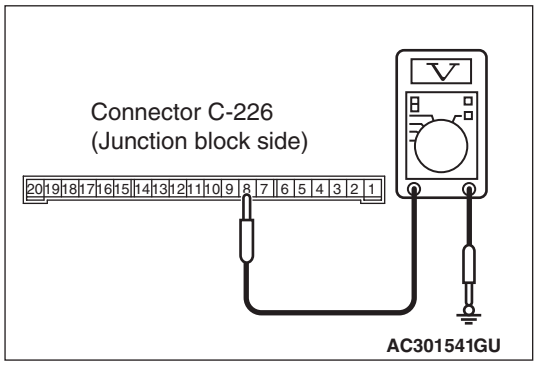
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Voltage measurement at the C-226 ETACS-ECU connector





(1) Remove the ETACS-ECU, and measure at the junction block side.
(2) Ignition switch: ON position

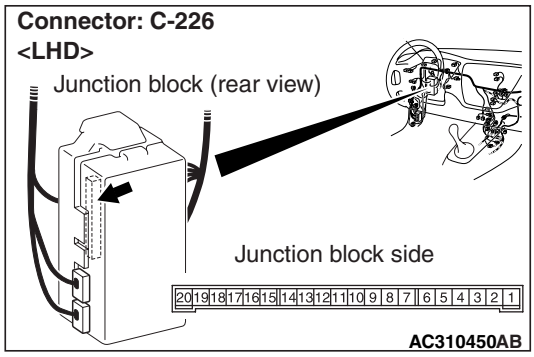


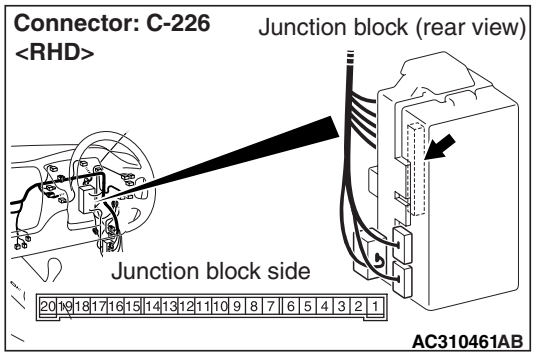
(3) Voltage between C-226 ETACS-ECU connector terminal No.8 and body earth

OK: System voltage

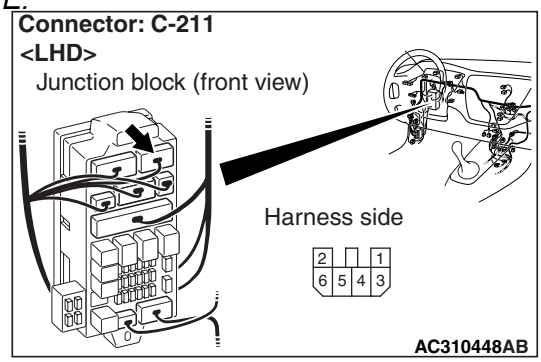
Q: Is the check result normal?
YES : Go to Step 4.
NO : Go to Step 3.

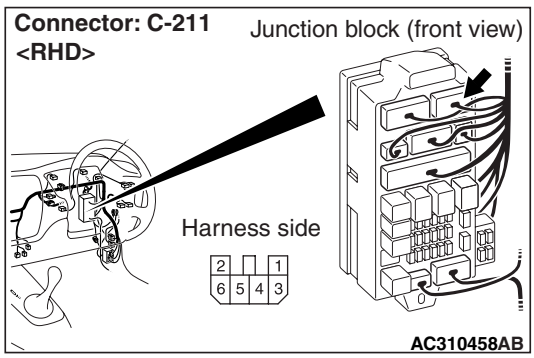
Step 3. Check the wiring harness between C-226 ETACS-ECU connector terminal No.8 and the ignition switch (IG1).





NOTE:





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

- Check the power supply line for open circuit.

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

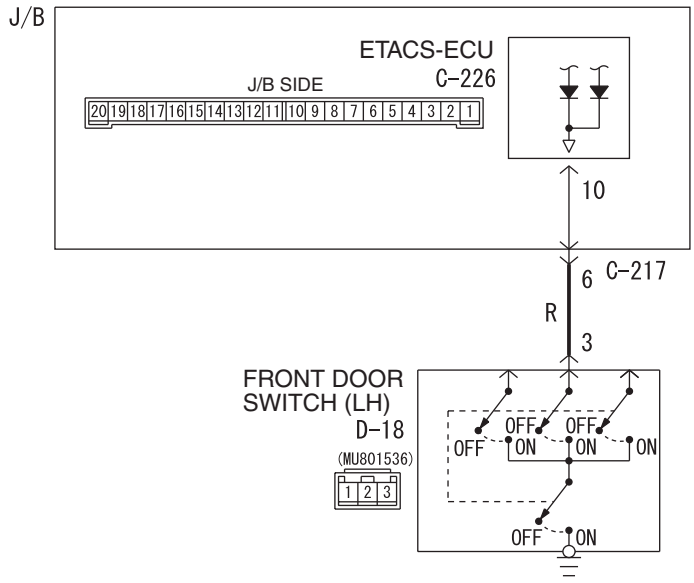
Step 4. Retest the system.
Check that the ignition switch (IG1) signal is received normally.

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 L-3: The door switch (front: LH) signal is not received. <LH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Door Switch Input Circuit <LHD>



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

W4J54E157A

COMMENTS ON TROUBLE SYMPTOM

Input signal from the door switch (front: LH) 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

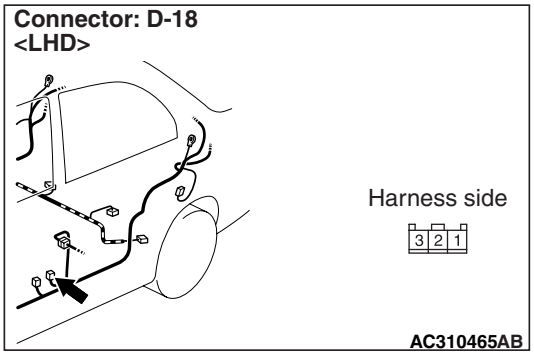
- Malfunction of the door switch (front: LH)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Check the installation condition.
Check that the door switch (front: 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-18 door switch (front: LH) connector

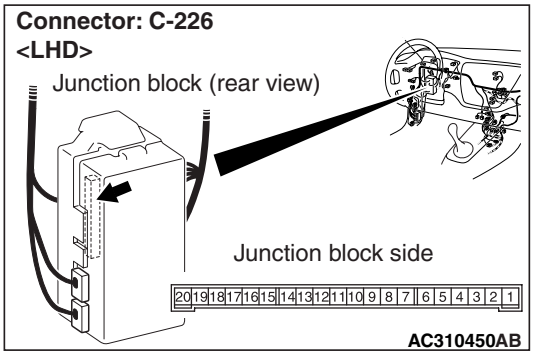


Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Check the door switch (front: LH).
Refer to GROUP 42 – Door P.42-27.

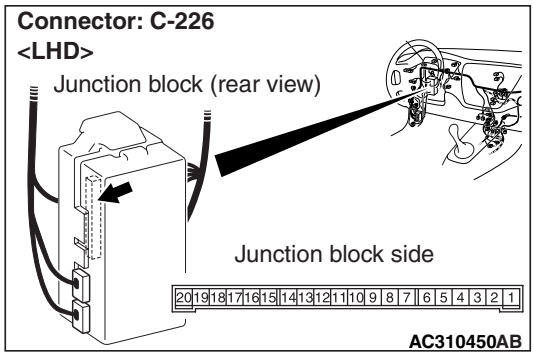
Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the door switch (front: LH).

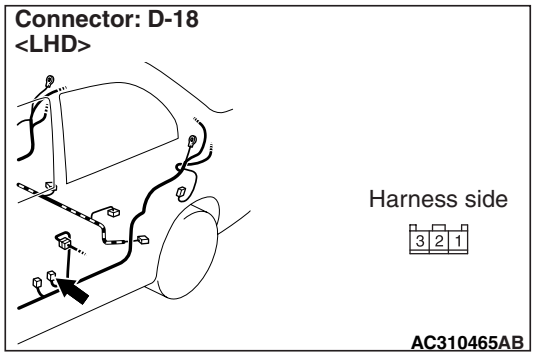
Step 4. Connector check: C-226 ETACS-ECU connector



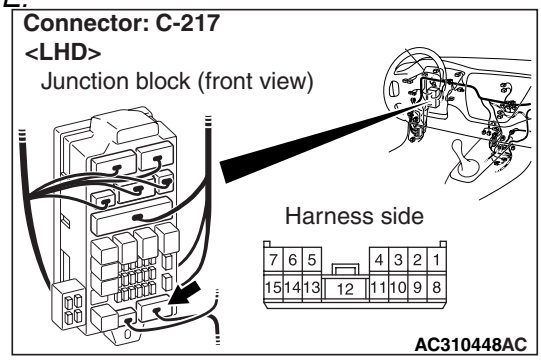
Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the defective connector.

Step 5. Check the wiring harness between D-18 door switch (front: LH) connector terminal No.3 and C-226 ETACS-ECU connector terminal No.10.





NOTE:



Prior to the wiring harness inspection, check joint connector C-217, 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.

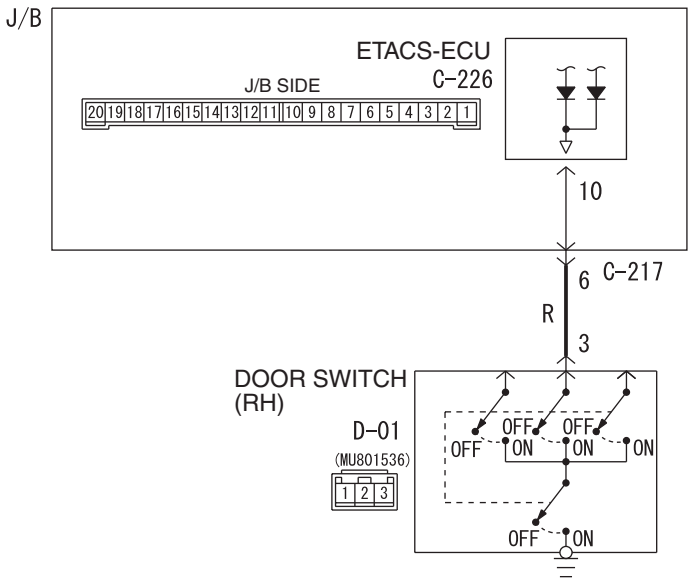
Step 6. Retest the system.
Check that the door switch (front: LH) signal is received normally.

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 L-3: The door switch (front: RH) signal is not received. <RH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

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

W4J54E158A

COMMENTS ON TROUBLE SYMPTOM

Input signal from the door switch (front: 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

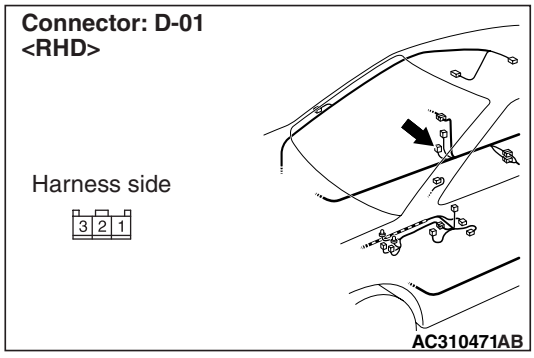
- Malfunction of the door switch (front: RH)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Check the installation condition.
Check that the door switch (front: 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-01 door switch (front: RH) connector

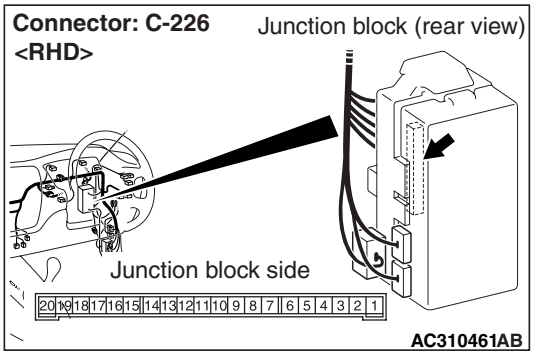


Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Check the door switch (front: RH).
Refer to GROUP 42 – Door P.42-27.

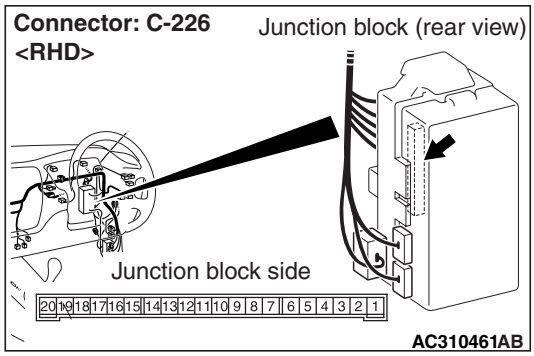
Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the door switch (front: RH).

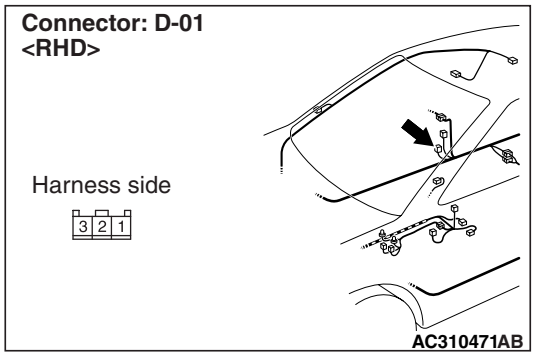
Step 4. Connector check: C-226 ETACS-ECU connector



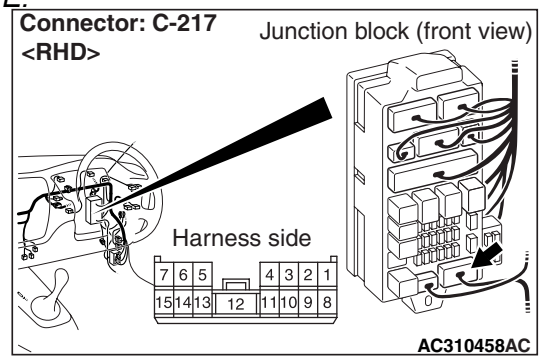
Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the defective connector.

Step 5. Check the wiring harness between D-01 door switch (front: RH) connector terminal No.3 and C-226 ETACS-ECU connector terminal No.10.





NOTE:



Prior to the wiring harness inspection, check joint connector C-217, 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.

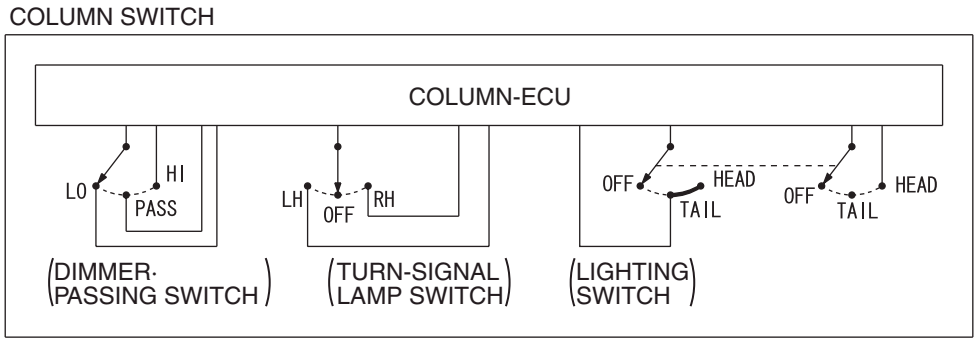
Step 6. Retest the system.
Check that the door switch (front: RH) signal is received normally.

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 L-4: The column switch (lighting and turn-signal lamp switch) signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Lighting Switch Input Circuit



W4J54E159A

COMMENTS ON TROUBLE SYMPTOM

Input signal from the column switch (lighting and turn-signal lamp 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

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-74.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the column switch.

Step 3. M.U.T.-II/III diagnosis code.
Check that the ETACS-ECU sets a diagnosis code.

Q: Is the diagnosis code set?
YES : Refer to diagnosis code chart P.54B-14.
NO : Go to Step 4.

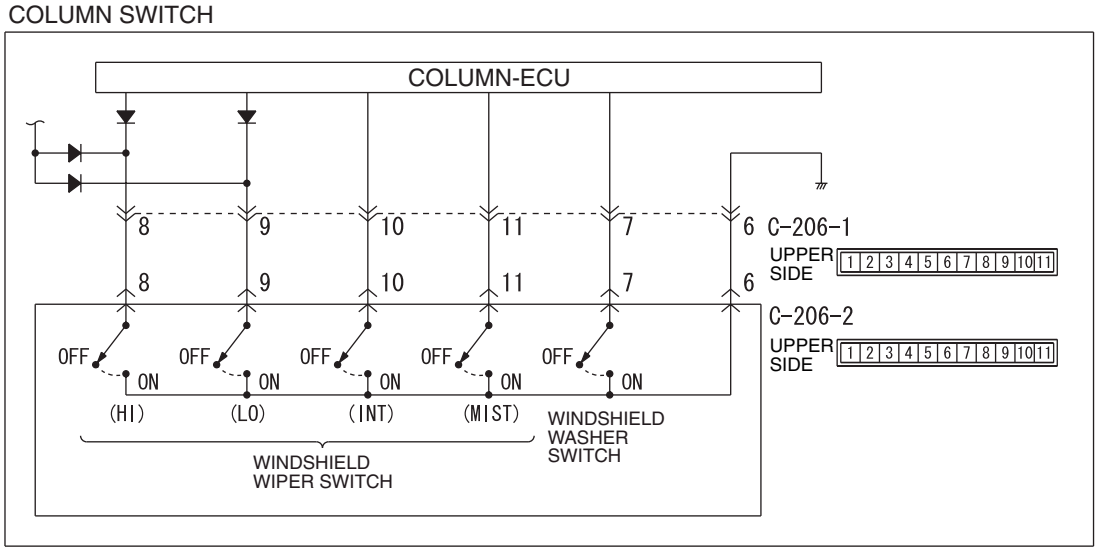
Step 4. Retest the system.
Replace the column switch, and check if the column switch (lighting, turn-signal lamp) sends signal.
(1) Replace the column switch.
(2) Check if the column switch (lighting and turn-signal switch) sends signal.

Q: Is the check result normal?
YES : The procedure is complete.
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE L-5: The column switch (windshield wiper/washer) 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



W4J54E160A

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

POSSIBLE CAUSES

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

DIAGNOSTIC PROCEDURE

Step 1. M.U.T.-II/III diagnosis code.
Check that the ETACS-ECU sets a diagnosis code.

Q: Is the diagnosis code set?
YES : Refer to diagnosis code chart P.54B-14.
NO : Go to Step 2.

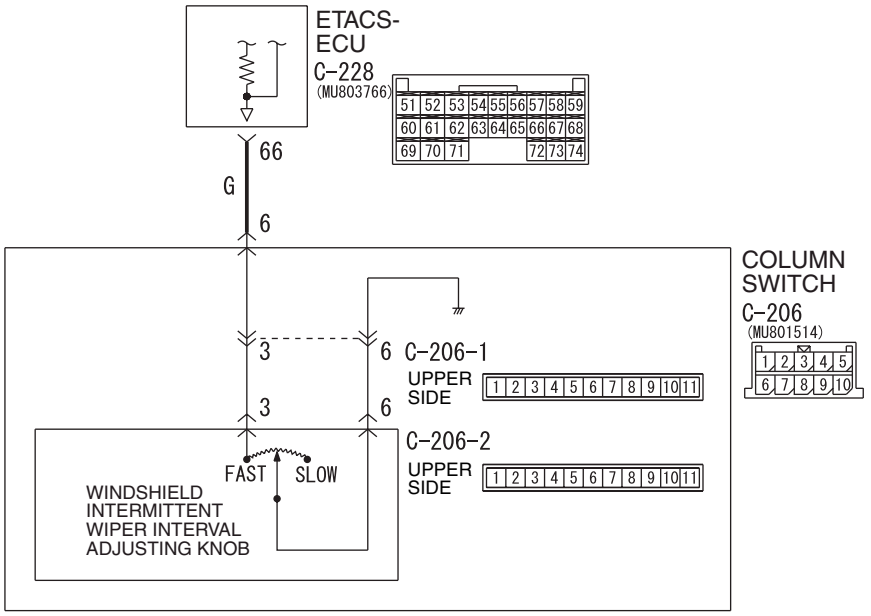
Step 2. Retest the system.
Replace the column switch, and check if the column switch (windshield wiper washer) sends signal.
(1) Replace the column switch.
(2) Check if the column switch (windshield wiper/washer) sends signal.

Q: Is the check result normal?
YES : The procedure is complete.
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE L-6: 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

W4J54E161A

COMMENTS ON TROUBLE SYMPTOM

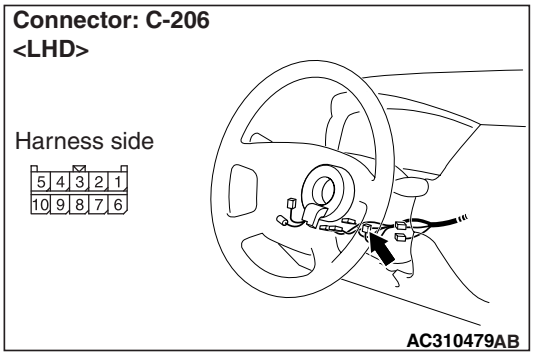
The intermittent wiper interval is calculated in accordance with the input signal from the windshield intermittent wiper volume. If this signal is abnormal, the wiper interval can not be adjusted.

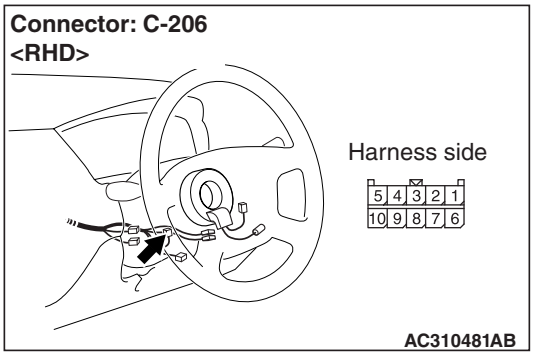
POSSIBLE CAUSES

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

DIAGNOSTIC PROCEDURE

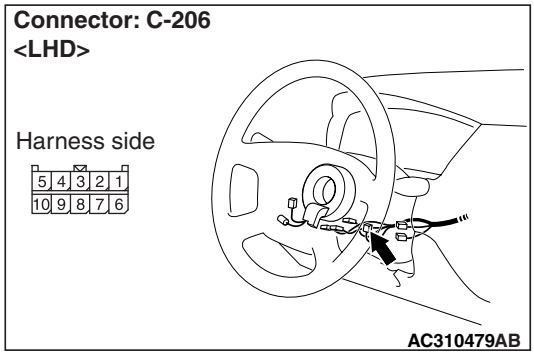
Step 1. Connector check: C-206 column switch connector

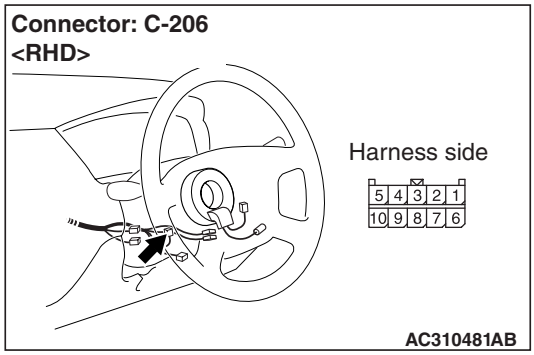




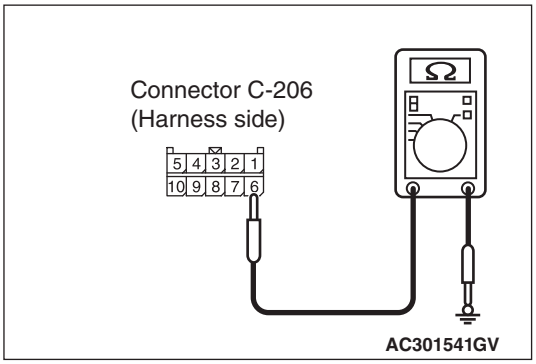
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Resistance measurement at the C-206 column switch connector





(1) Disconnect the connector, and measure at the column switch side.

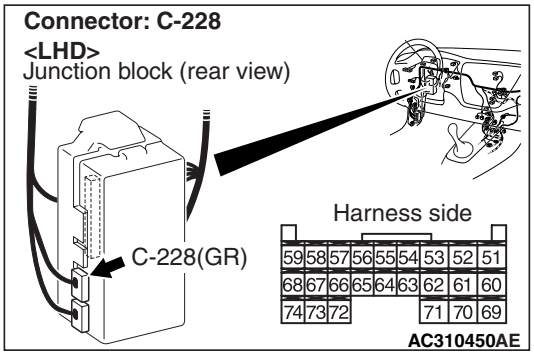


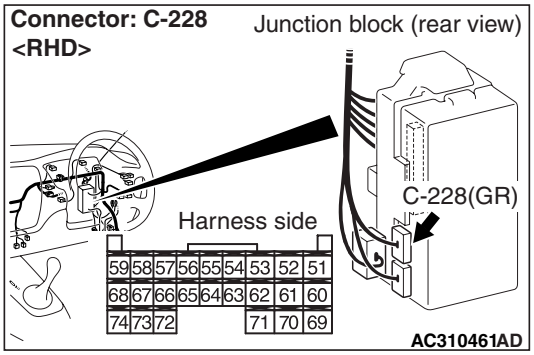
(2) Resistance between C-206 column switch connector terminal No.6 and body earth

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.

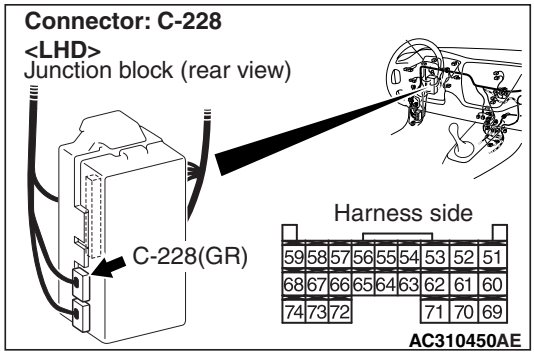
Step 3. Connector check: C-228 ETACS-ECU connector

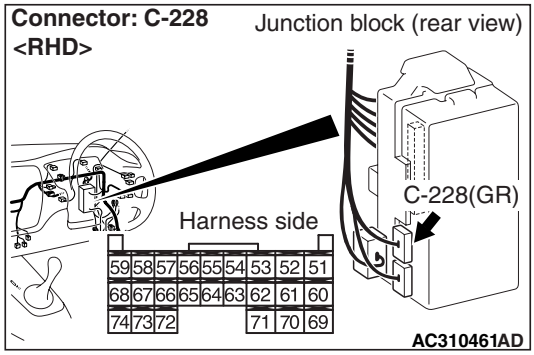


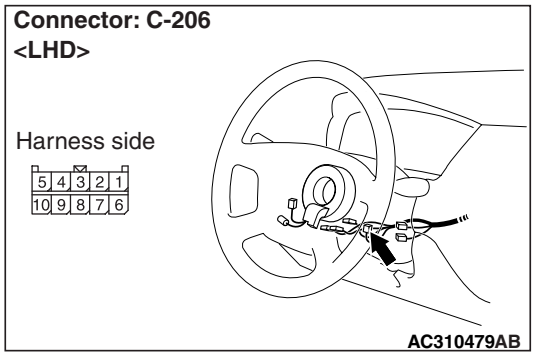


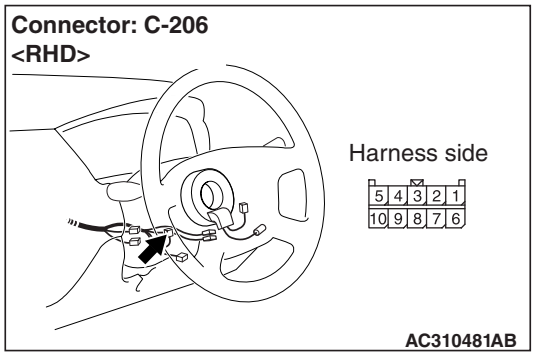
Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the defective connector.

Step 4. Check the wiring harness between C-206 column switch connector terminal No.6 and C-228 ETACS-ECU connector terminal No.66.









- Check the input line for open circuit.

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

Step 5. Retest the system.

Check that the windshield intermittent wiper volume is sending a correct signal.

Q: Is the check result normal?

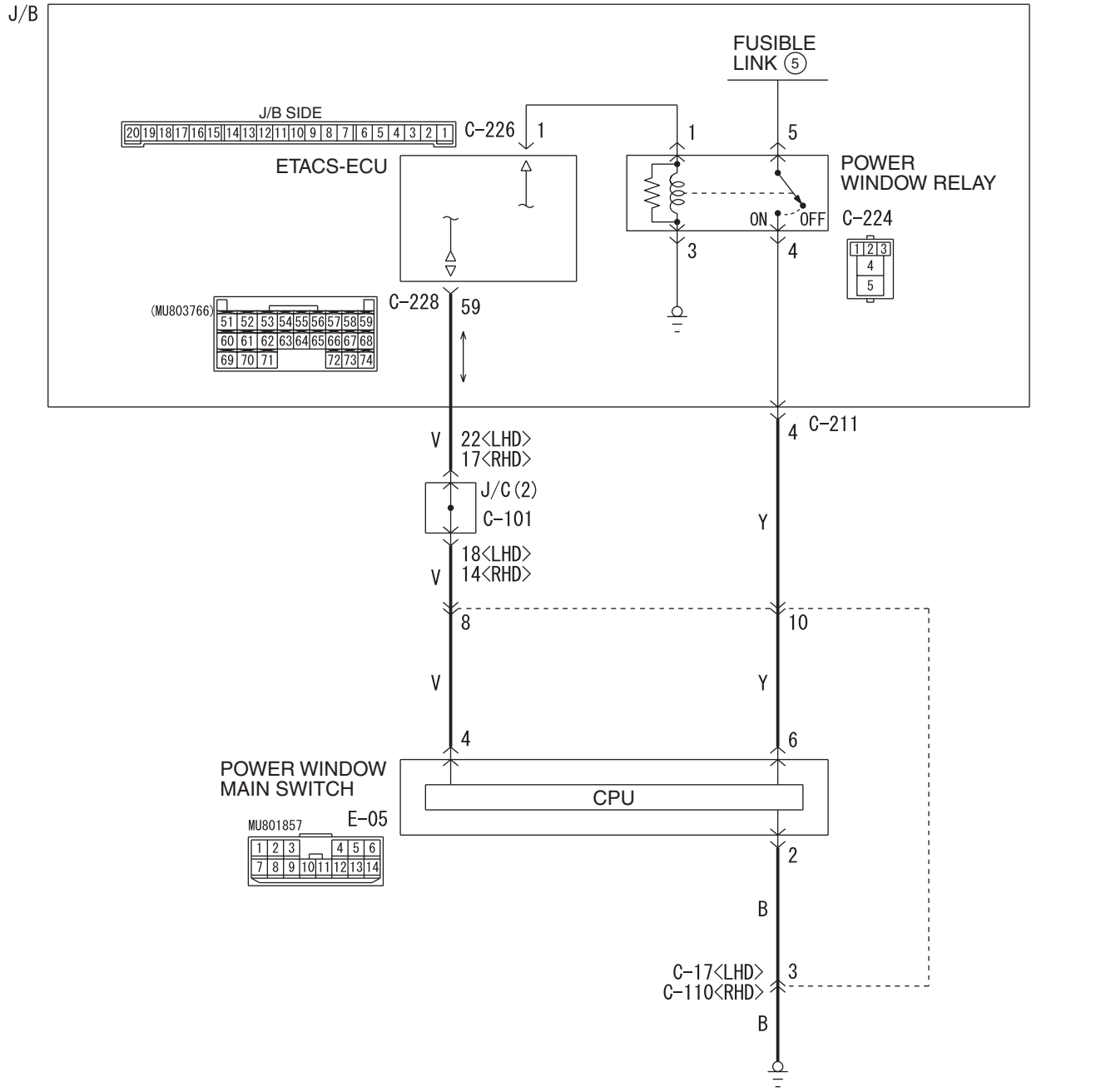
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE L-7: 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 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

W4J54E162A

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.

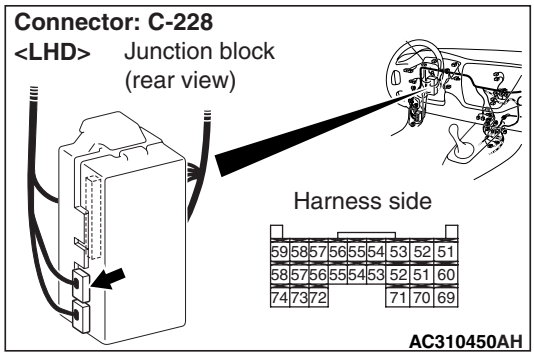
Check if each window can be operated by means of the power window main switch.

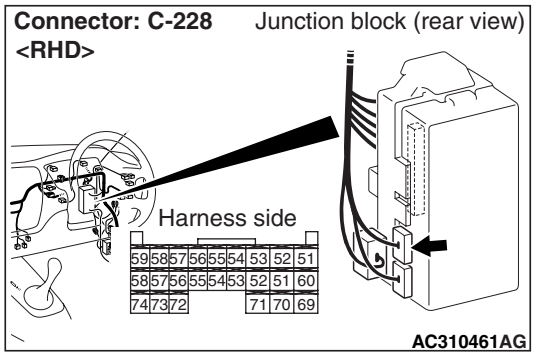
Q: Can each power window be operated by means of the power window main switch?

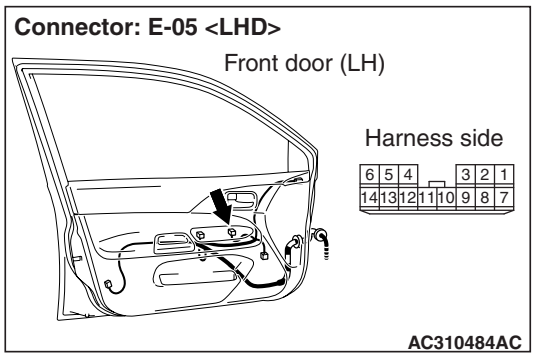
YES : Go to Step 2.

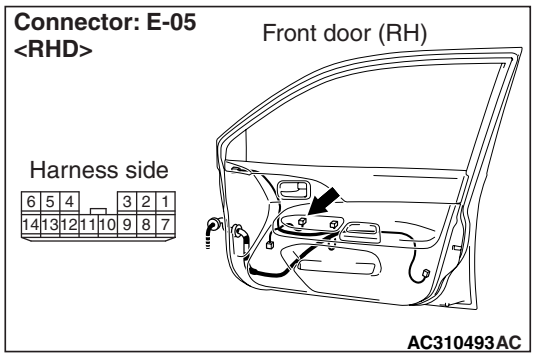
NO : Refer to Inspection Procedure D-1 "Power windows do not work at all P.54B-72."

Step 2. Connector check: C-228 ETACS-ECU connector and E-05 power window main switch connector







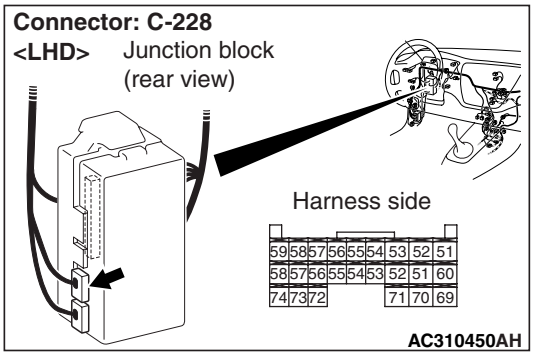


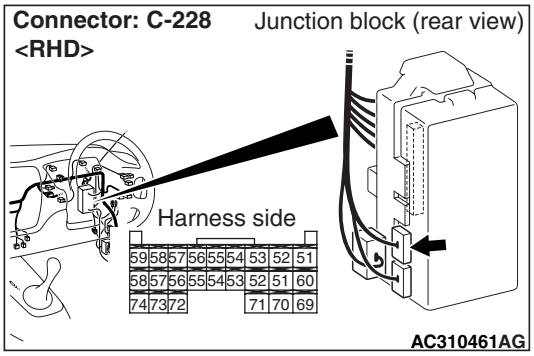
Q: Is the check result normal?

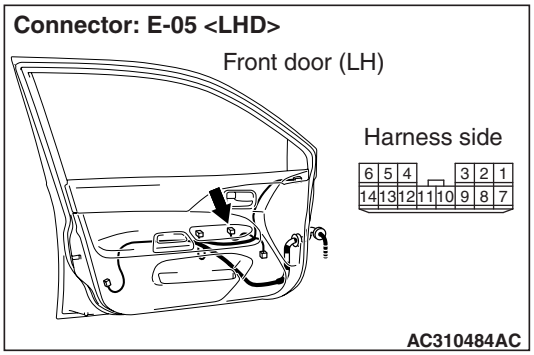
YES : Go to Step 3.

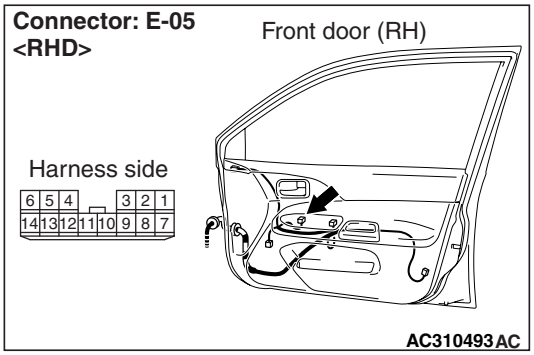
NO : Repair the defective connector.

Step 3. Check the wiring harness between C-228 ETACS-ECU connector terminal No.59 and E-05 power window main switch connector terminal No.4.

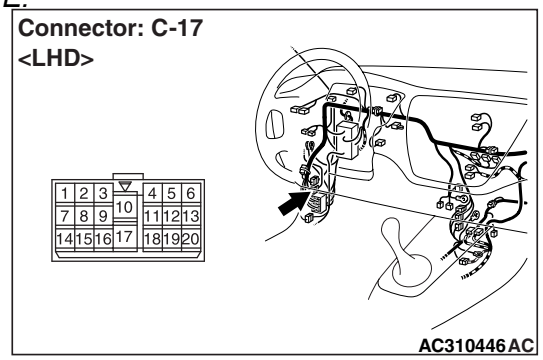


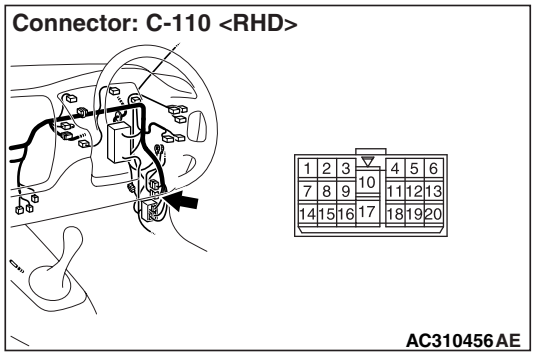


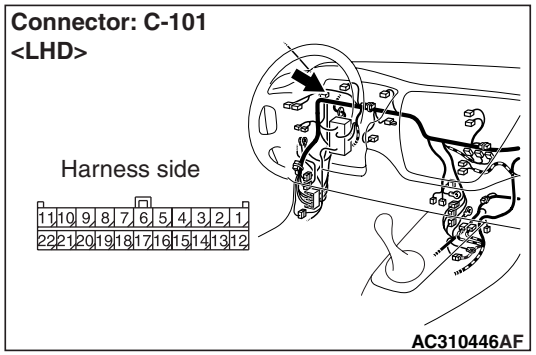


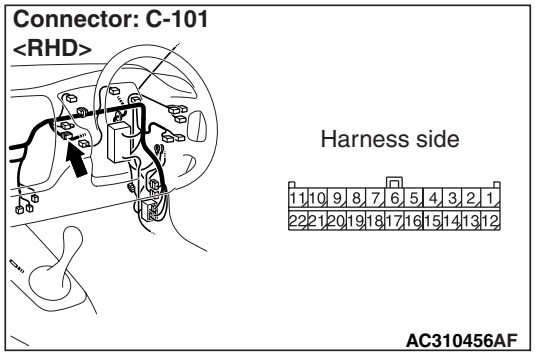


NOTE:









Prior to the wiring harness inspection, check intermediate connector C-17 <LH drive vehicles> or C-110 <RH drive vehicles> and joint connector C-101, 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.

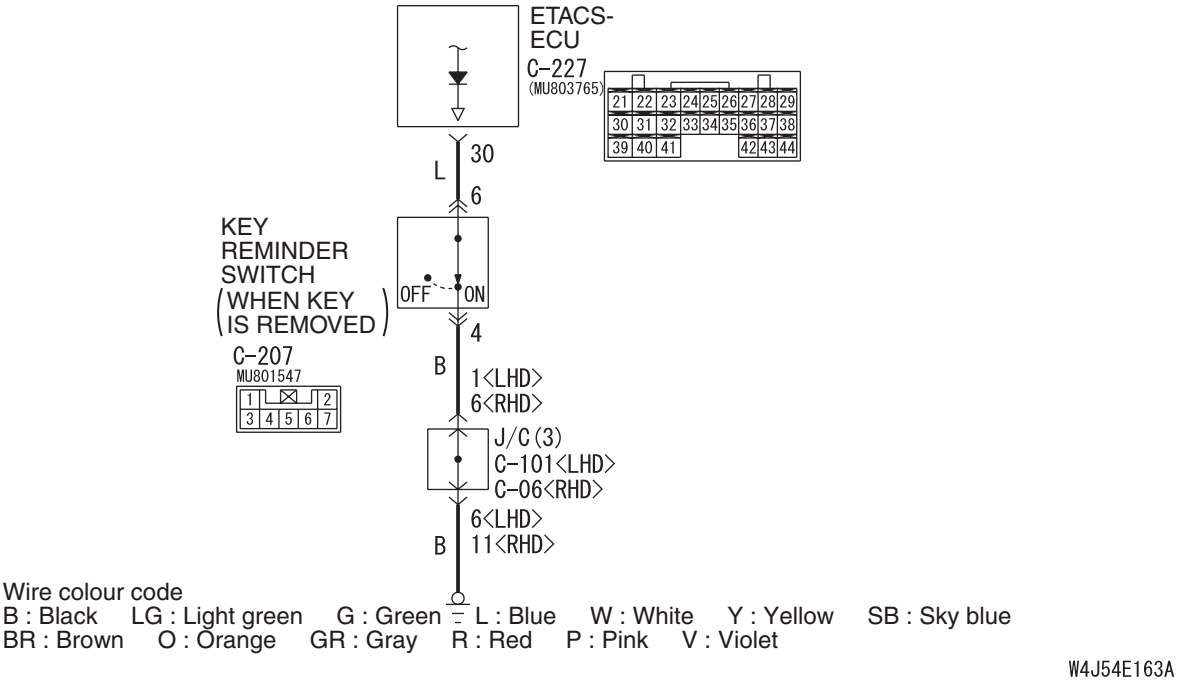
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE L-8: 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



W4J54E163A

COMMENTS ON TROUBLE SYMPTOM

Input signal from the key reminder switch is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

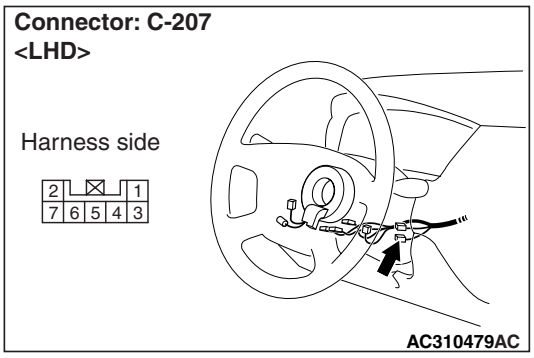
- Keyless entry system
- Room lamps

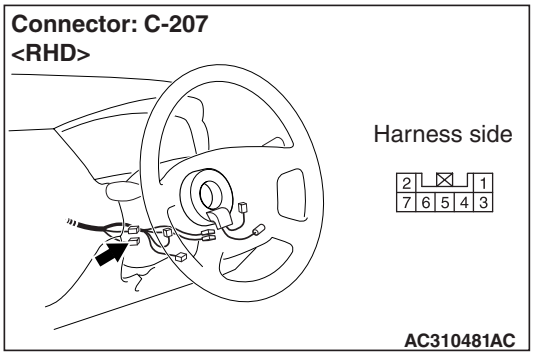
POSSIBLE CAUSES

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

DIAGNOSTIC PROCEDURE

Step 1. Connector check: C-207 key reminder switch connector





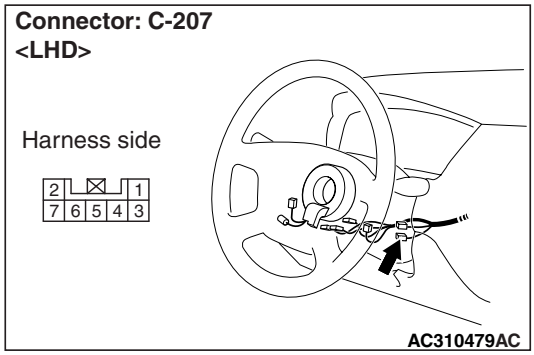
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

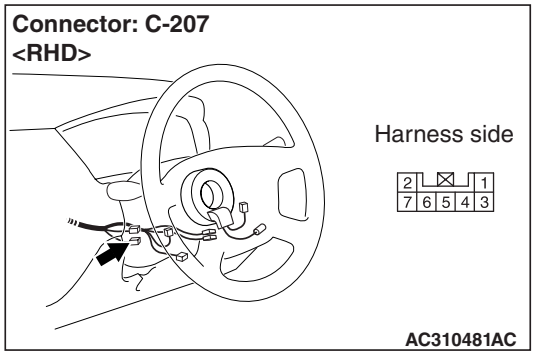
Step 2. Check the key reminder switch.

Refer to GROUP 54A – Ignition switch P.54A-30.

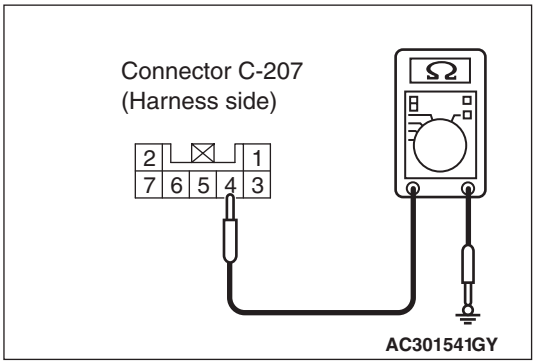
Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the key reminder switch.

Step 3. Resistance measurement at the C-207 key reminder switch connector





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

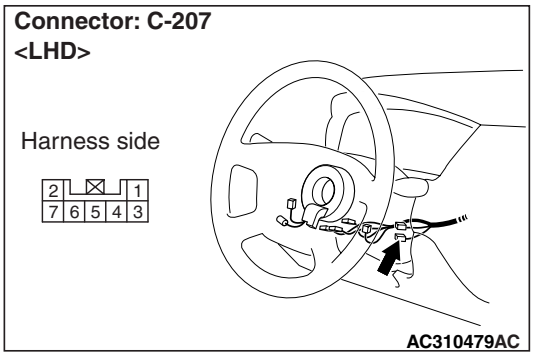


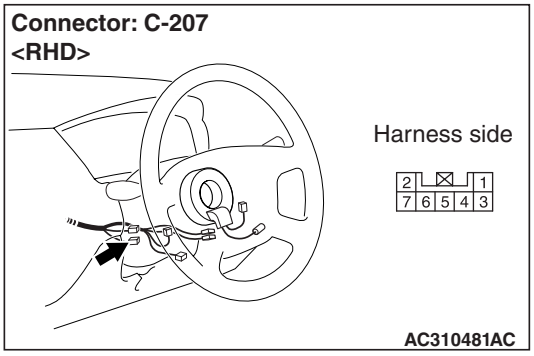
(2) Resistance between C-207 key reminder switch connector terminal No.4 and body earth

OK: 2 Ω or less

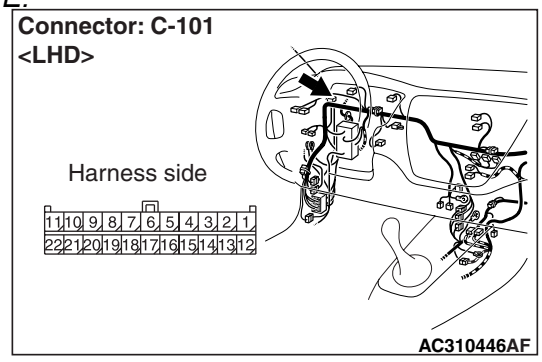
Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

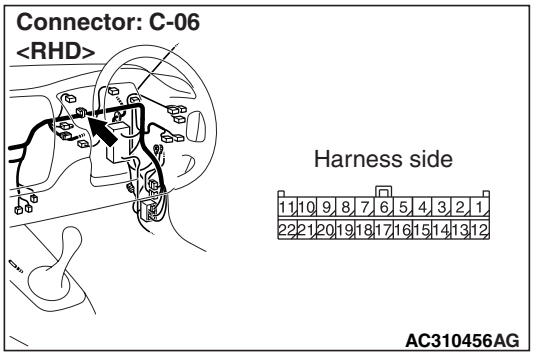
Step 4. Check the wiring harness between C-207 key reminder switch connector terminal No.4 and the body earth.





NOTE:



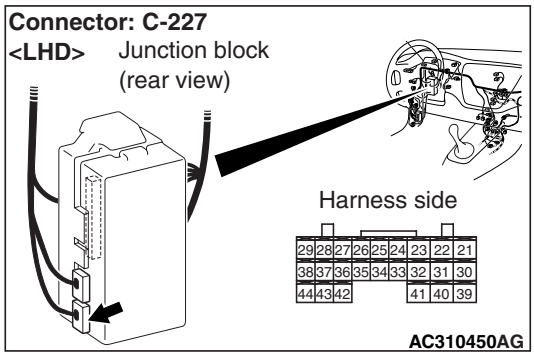


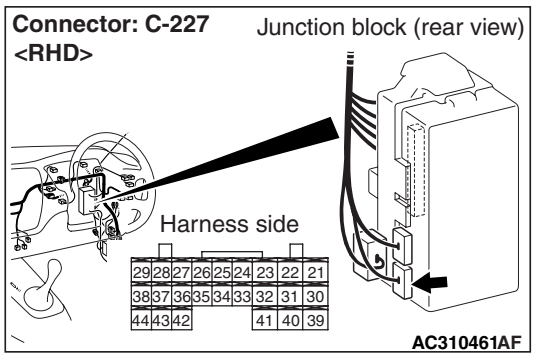
Prior to the wiring harness inspection, check joint connector C-101 <LH drive vehicles> or C-06 <RH drive vehicles>, and repair if necessary.

- 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.

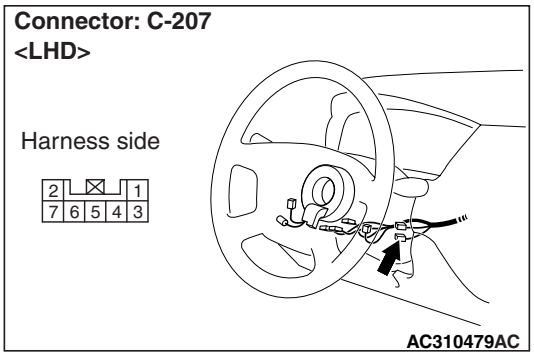
Step 5. Connector check: C-227 ETACS-ECU connector

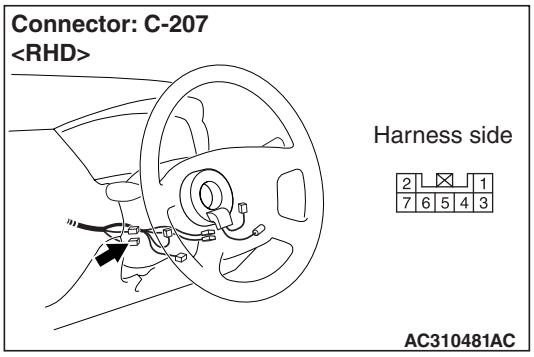


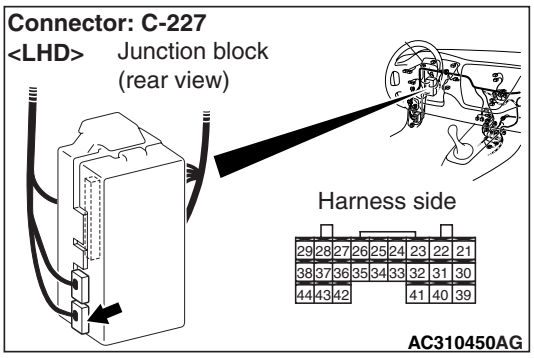


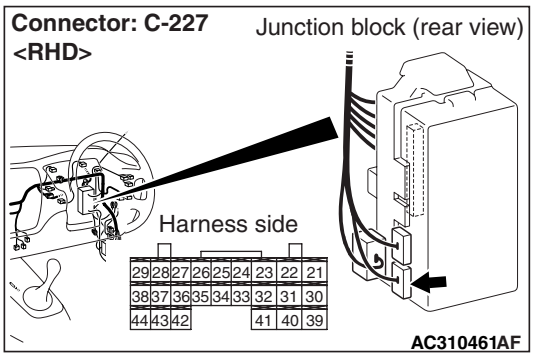
Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness between C-207 key reminder switch connector terminal No.6 and C-227 ETACS-ECU connector terminal No.30.









- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

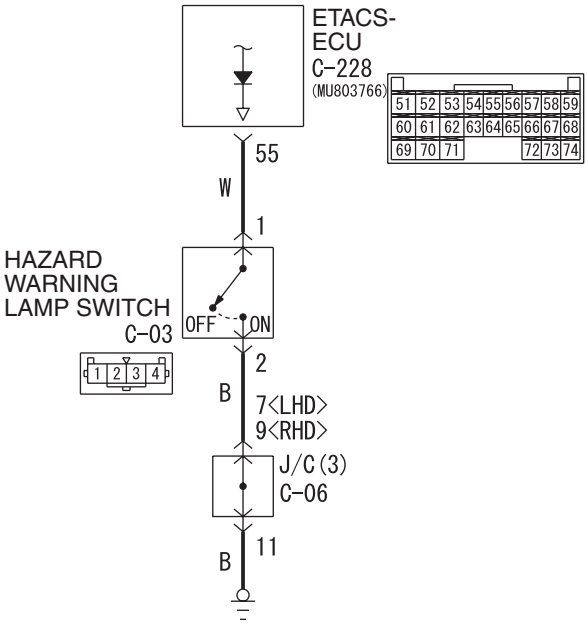
Step 7. Retest the system.
Check that the key reminder switch signal is received normally.

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.

INSPECTION PROCEDURE L-9: 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



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 hazard warning lamp switch is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

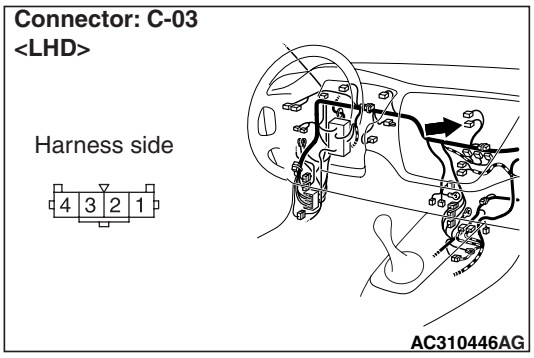
- Keyless entry system (encrypted code registration)
- Hazard warning lamp

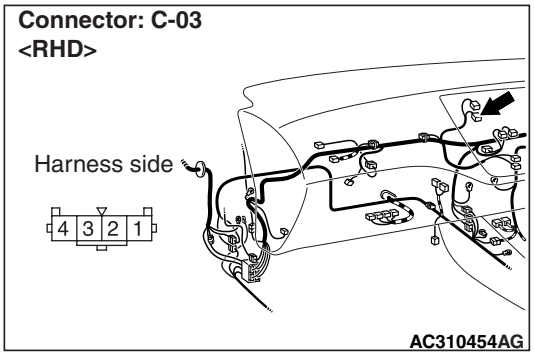
POSSIBLE CAUSES

- Malfunction of the hazard warning lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Connector check: C-03 hazard warning lamp switch connector





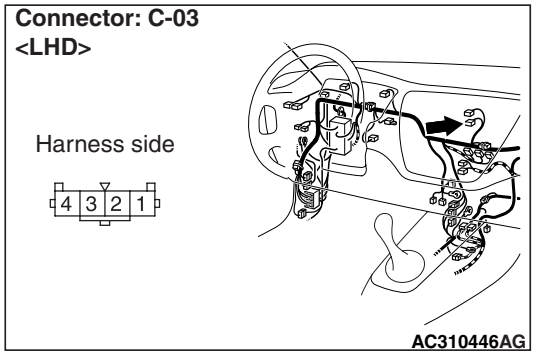
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

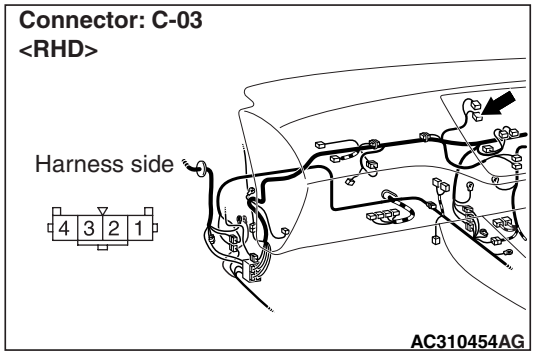
Step 2. Check the hazard warning lamp switch.

Refer to GROUP 54A – Hazard warning lamp switch P.54A-72.

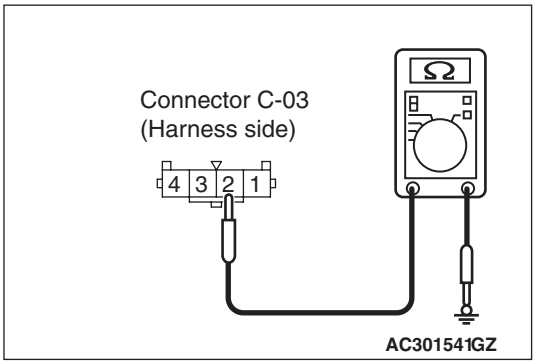
Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the hazard warning lamp switch.

Step 3. Resistance measurement at the C-03 hazard warning lamp switch connector





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

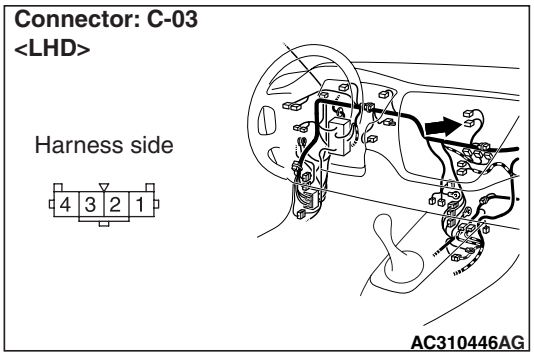


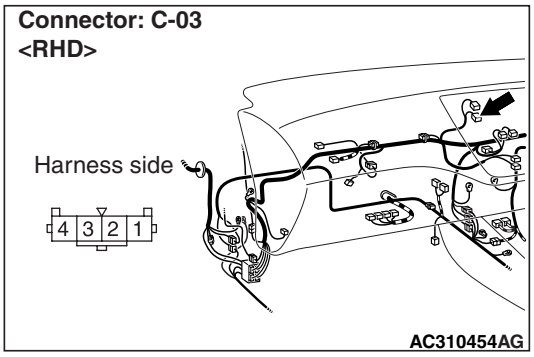
(2) Resistance between C-03 hazard warning lamp switch connector terminal No.2 and body earth

OK: 2 Ω or less

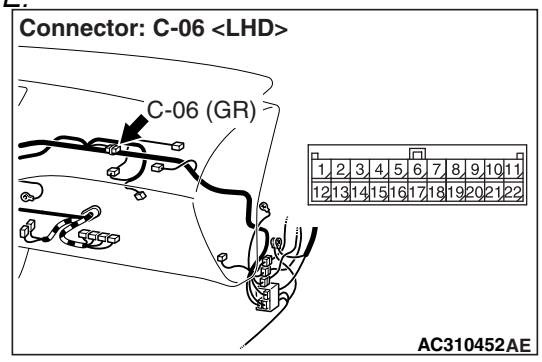
Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

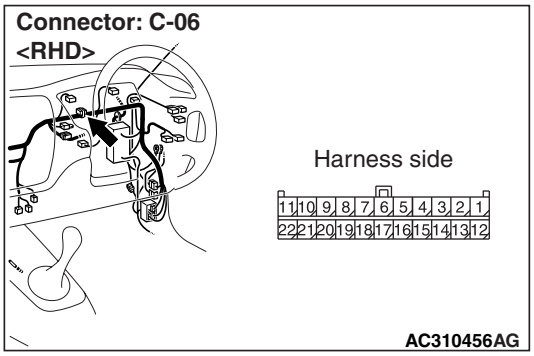
Step 4. Check the wiring harness between C-03 hazard warning lamp switch connector terminal No.2 and the body earth.





NOTE:





Prior to the wiring harness inspection, check joint connector C-06, and repair if necessary.

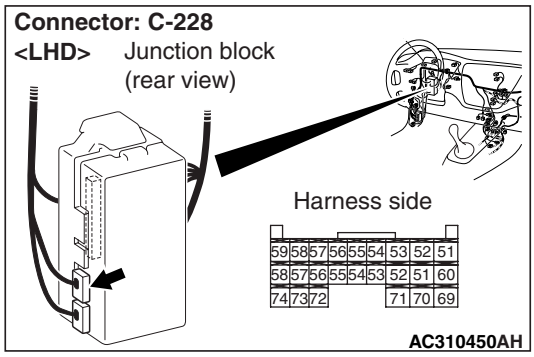
- Check the earth wires for open circuit.

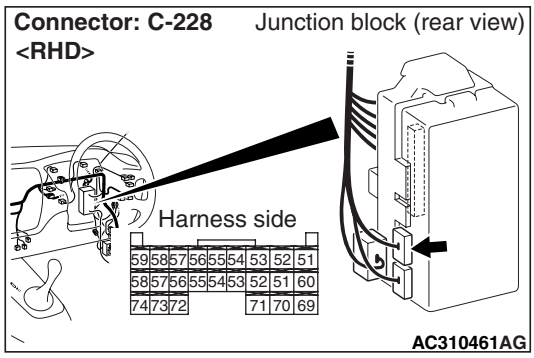
Q: Is the check result normal?

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-228 ETACS-ECU connector



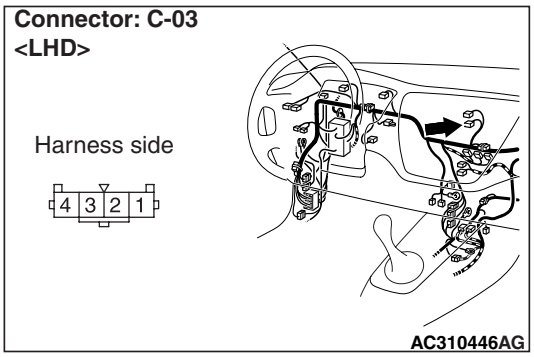


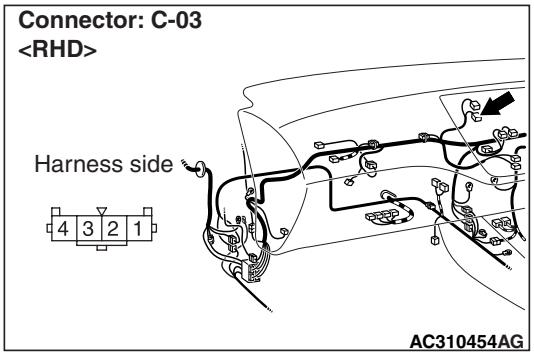
Q: Is the check result normal?

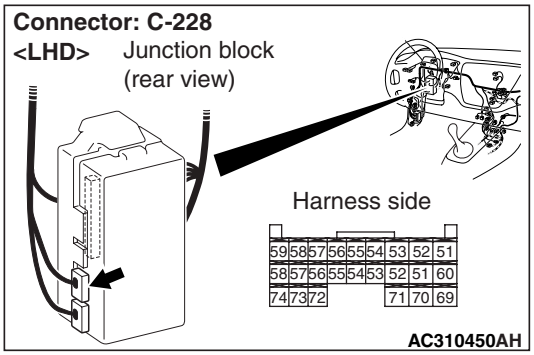
YES : Go to Step 6.

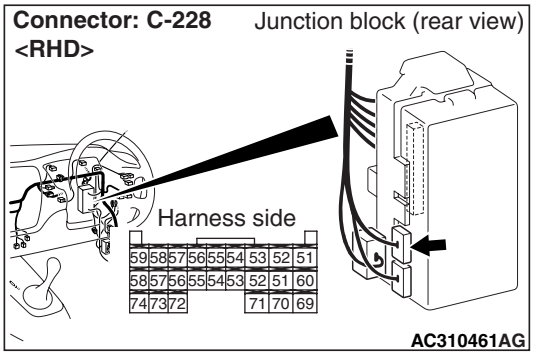
NO : Repair the defective connector.

Step 6. Check the wiring harness between C-228 ETACS-ECU connector terminal No.55 and C-03 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.

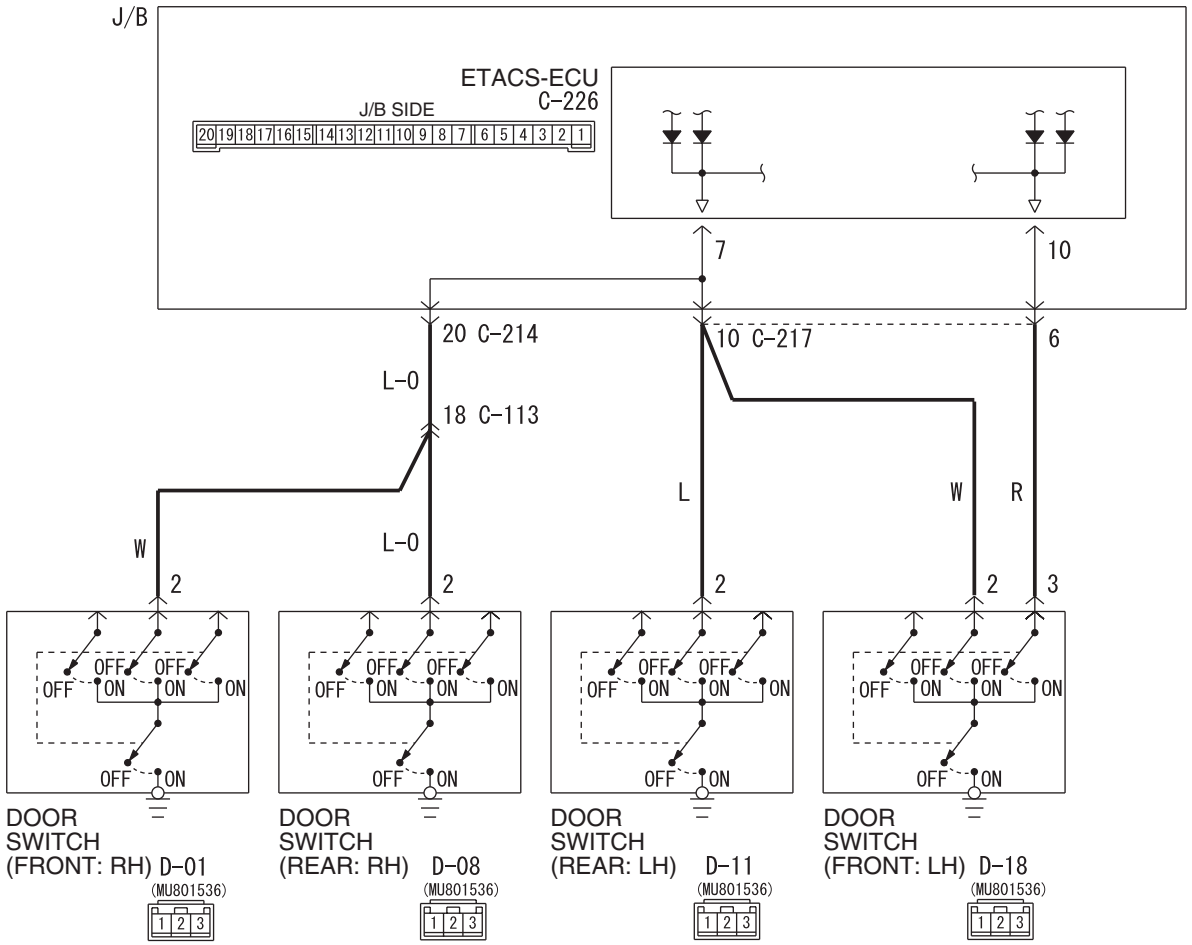
Step 7. Retest the system.
Check that the hazard warning lamp switch signal is received normally.

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 L-10: All the door switch signals are not received. <LH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

All 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

W4J54E145A

COMMENTS ON TROUBLE SYMPTOM

Input signals from all the door switches are used to operate the functions below. If the signal(s) are abnormal, these functions will not work normally.

- Keyless entry system
- Room lamps

POSSIBLE CAUSES

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

DIAGNOSTIC PROCEDURE

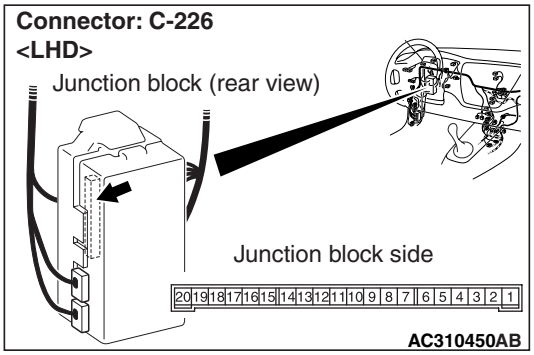
Step 1. Pulse check
Check the input signal from the door switch (front: LH).

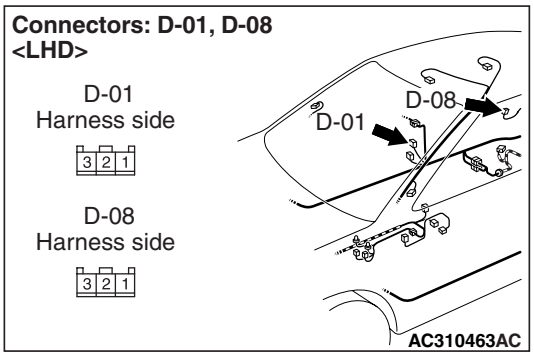
System switch	Check condition
door switch (front: LH)	When the driver's door is opened

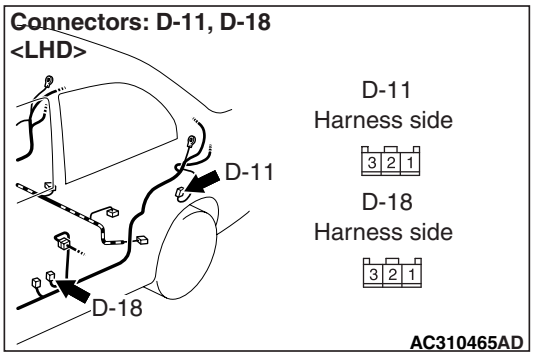
OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to inspection procedure L-3 "The door switch (front: LH) signal is not received P.54B-244."

Step 2. Connector check: D-18 <front: LH>, D-01 <front: RH>, D-08 <rear: RH> or D-11 <rear: LH> door switch connectors, and C-226 ETACS-ECU connector







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

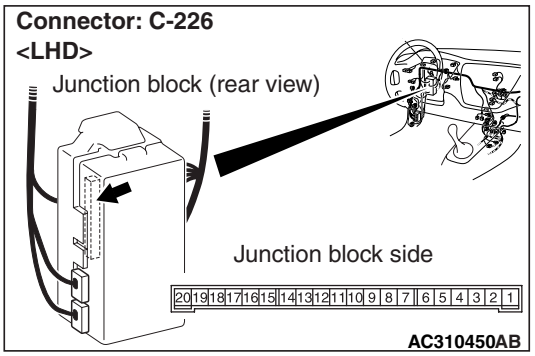
Step 3. Check the installation condition.
Check that the door switch is installed on the body correctly.

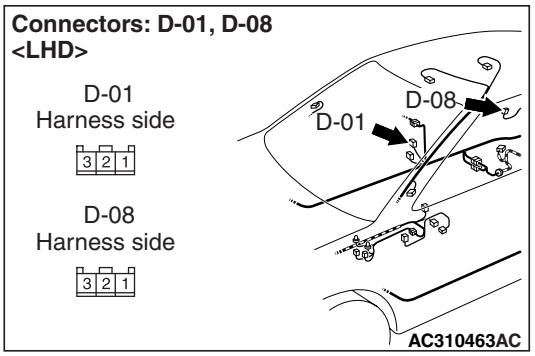
Q: Is the check result normal?
YES : Go to Step 4.
NO : Correct the installation condition.

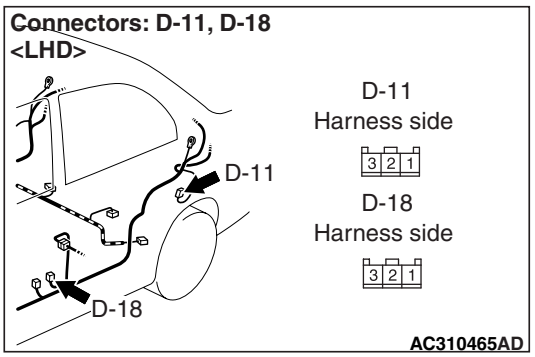
Step 4. Check the door switch.
Refer to GROUP 42 – Door P.42-27.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the door switch.

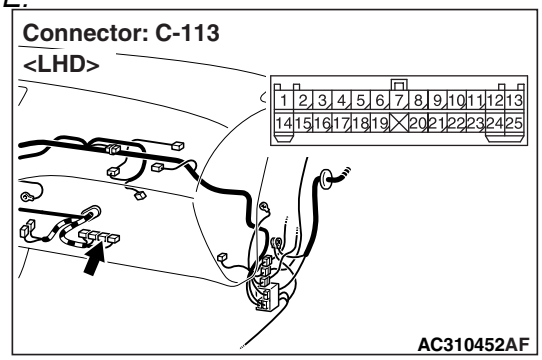
Step 5. Check the wiring harness from terminal No.2 of the D-18 <front: LH>, D-01 <front: RH>, D-08 <rear: RH> or D-11 <rear: LH> door switch connector to terminal No.7 of the C-226 ETACS-ECU connector.

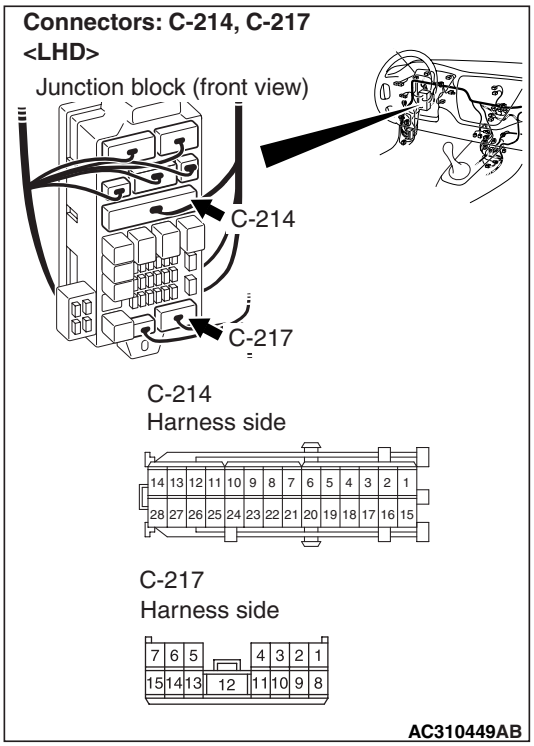






NOTE:





Prior to the wiring harness inspection, check intermediate connector C-113 <RH> and junction block connector C-214 <RH> or C-217 <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 driver's door switch signals are received normally.

Q: Is the check result normal?

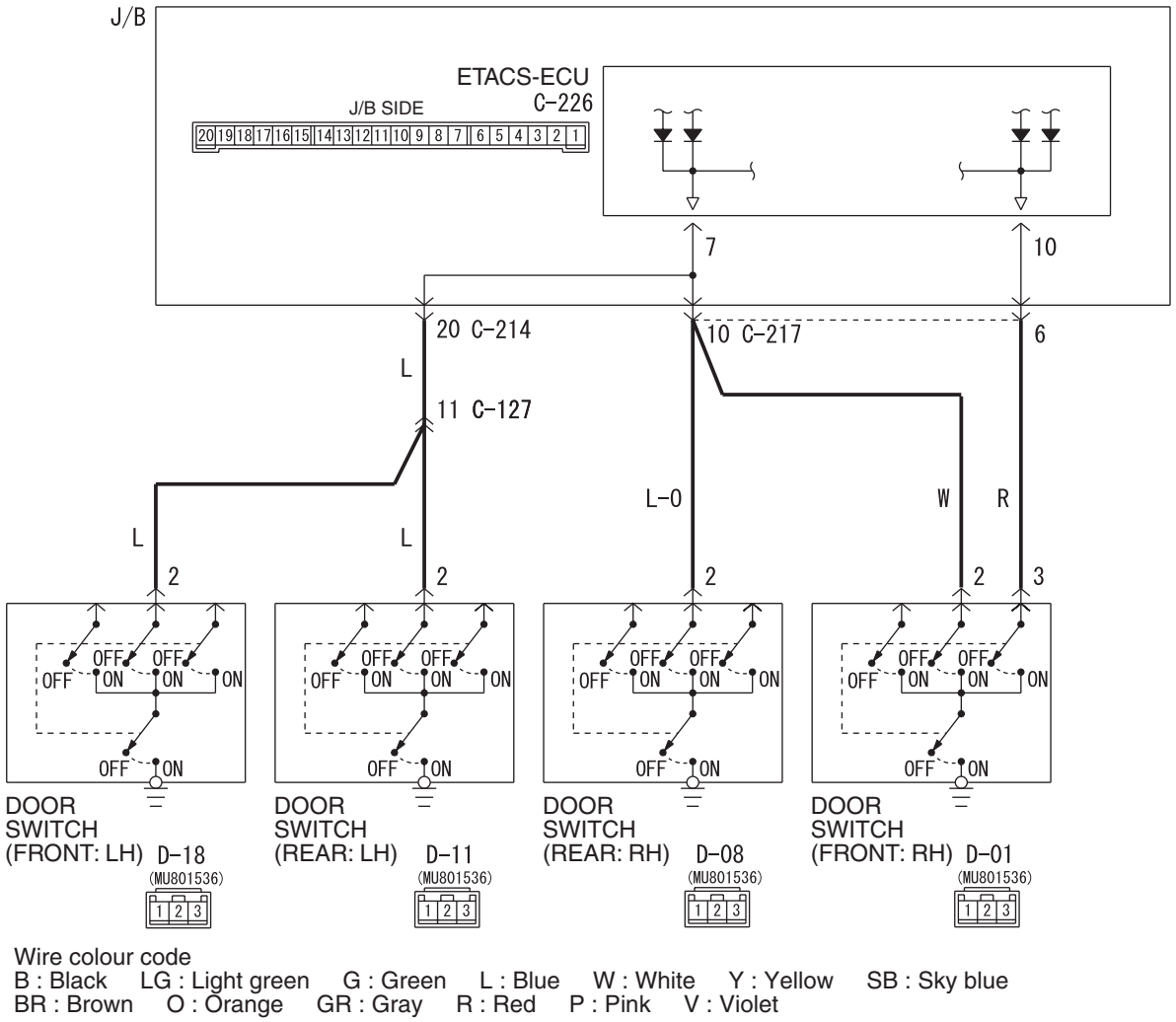
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE L-10: All the door switch signals are not received. <RH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

All Door Switches Input Circuit <RHD>



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

W4J54E146A

COMMENTS ON TROUBLE SYMPTOM

Input signals from all the door switches are used to operate the functions below. If the signal(s) are abnormal, these functions will not work normally.

- Keyless entry system
- Room lamps

POSSIBLE CAUSES

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

DIAGNOSTIC PROCEDURE

Step 1. Pulse check

Check the input signal from the door switch (front: RH).

System switch	Check condition
door switch (front: RH)	When the driver's door is opened

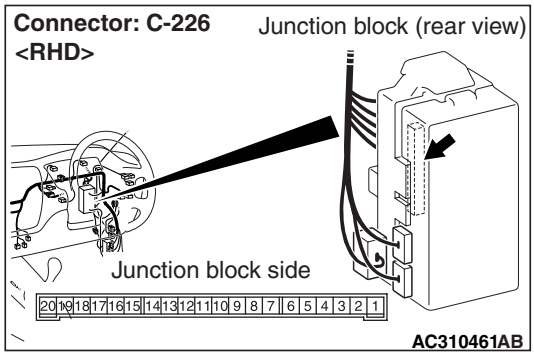
OK: The M.U.T.-II/III sounds or the voltmeter needle fluctuates.

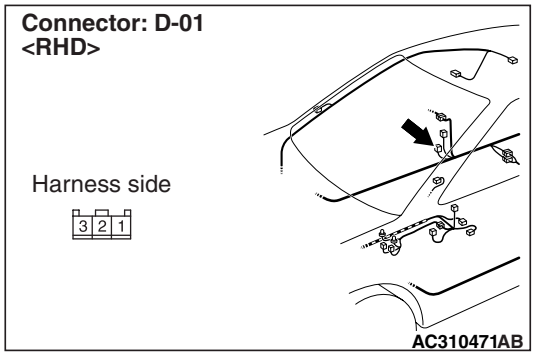
Q: Is the check result normal?

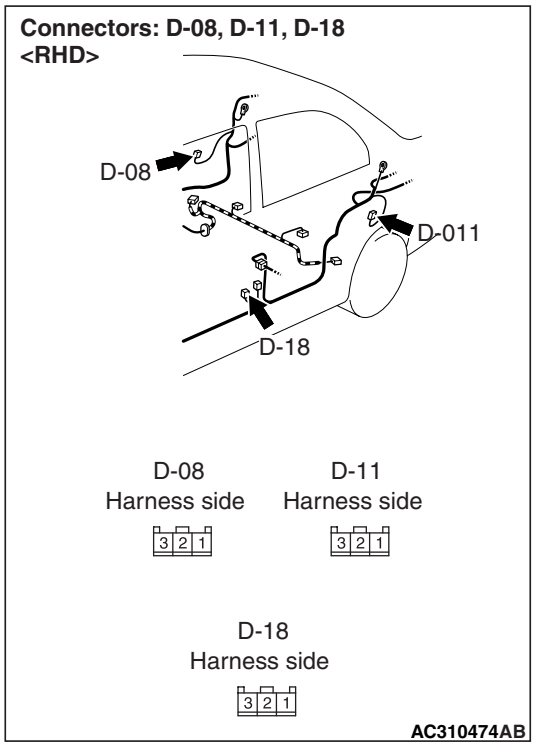
YES : Go to Step 2.

NO : Refer to inspection procedure L-3 "The door switch (front: RH) signal is not received P.54B-244."

Step 2. Connector check: D-18 <front: LH>, D-01 <front: RH>, D-08 <rear: RH> or D-11 <rear: LH> door switch connectors, and C-226 ETACS-ECU connector







Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the defective connector.

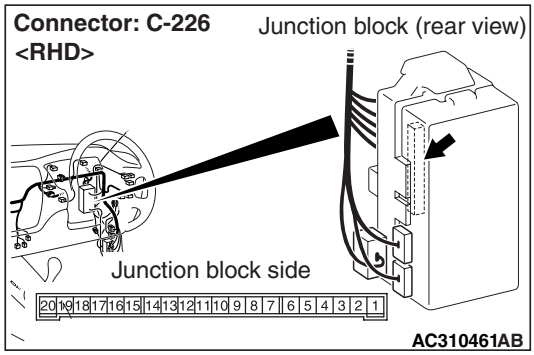
Step 3. Check the installation condition.
Check that the door switch is installed on the body correctly.

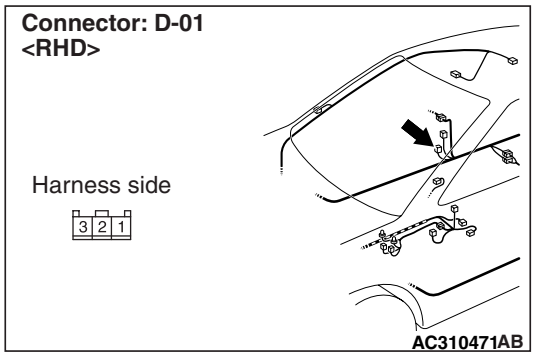
Q: Is the check result normal?
YES : Go to Step 4.
NO : Correct the installation condition.

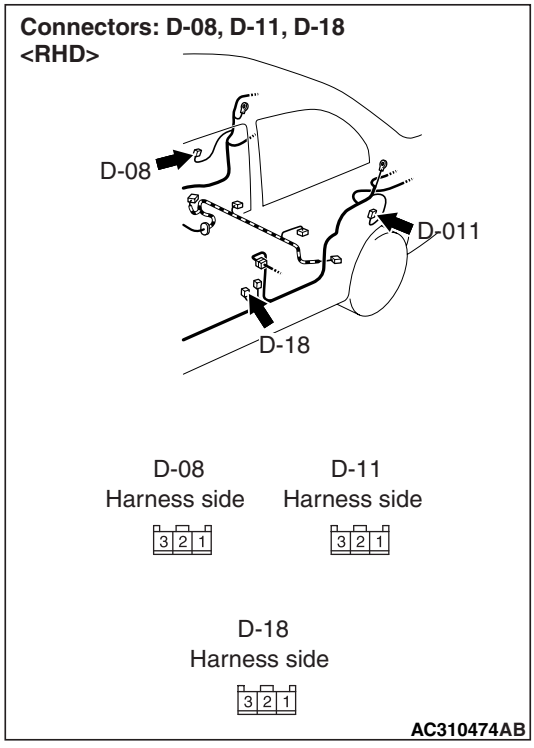
Step 4. Check the door switch.
Refer to GROUP 42 – Door P.42-27.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Replace the door switch.

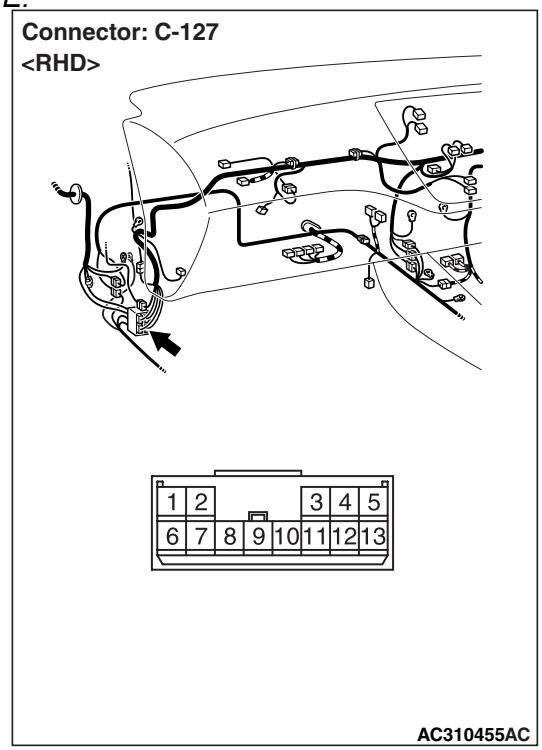
Step 5. Check the wiring harness from terminal No.2 of the D-18 <front: LH>, D-01 <front: RH>, D-08 <rear: RH> or D-11 <rear: LH> door switch connector to terminal No.7 of the C-226 ETACS-ECU connector.

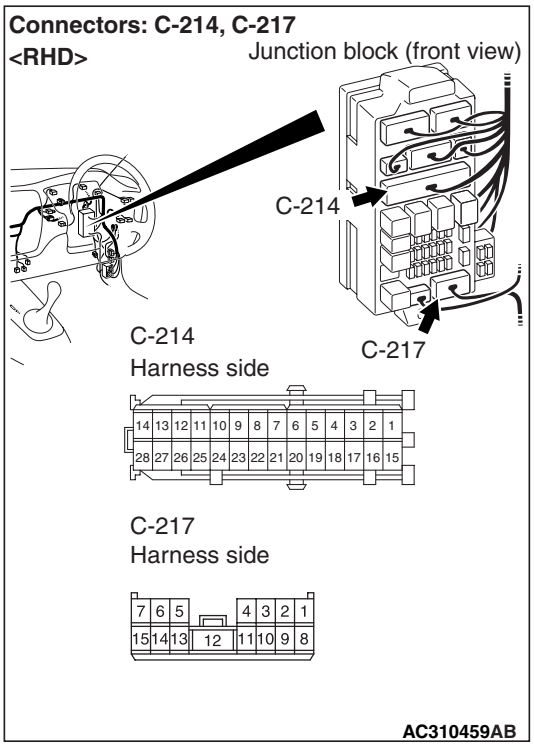






NOTE:





Prior to the wiring harness inspection, check intermediate connector C-127 <LH> and junction block connector C-217 <RH> or C-214 <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 driver's door switch signals are received normally.

Q: Is the check result normal?

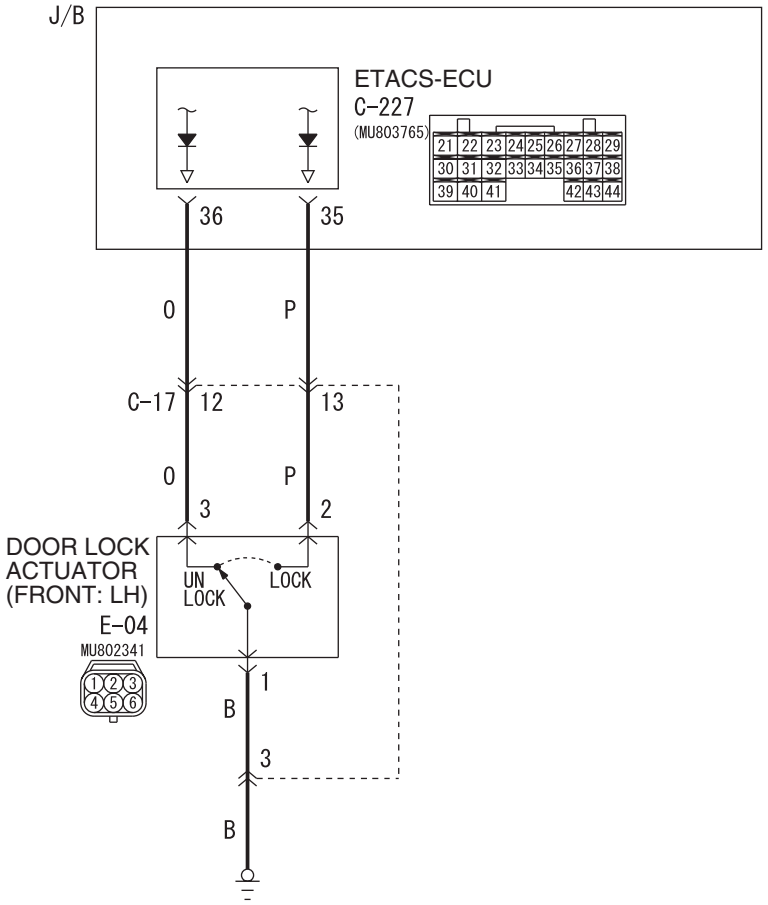
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE L-11: The front door lock actuator (LH) switch signal is not received. <LH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Front 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

W4J54E147A

COMMENTS ON TROUBLE SYMPTOM

Input signal from the front door lock actuator (LH) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

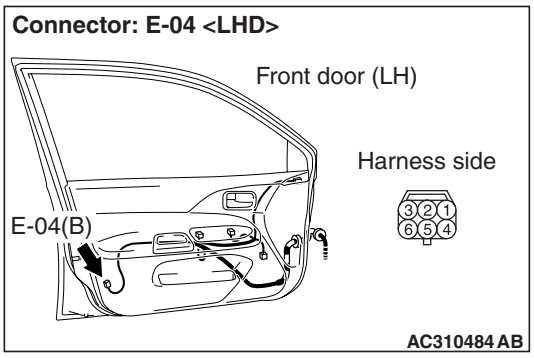
- Central door locking
- Keyless entry system
- Room lamps

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: E-04 front door lock actuator (LH) connector



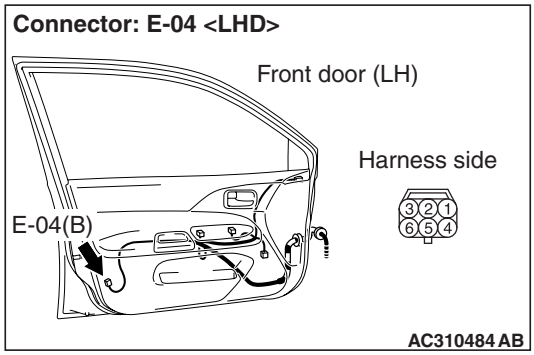
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the front door lock actuator (LH).

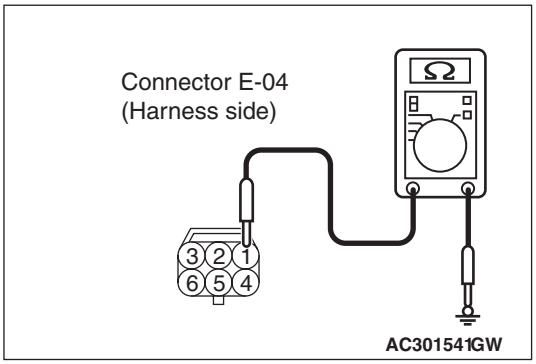
Refer to GROUP 42 – Door P.42-31.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the front door lock actuator (LH).

Step 3. Resistance measurement at the E-04 front door lock actuator (LH) connector



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

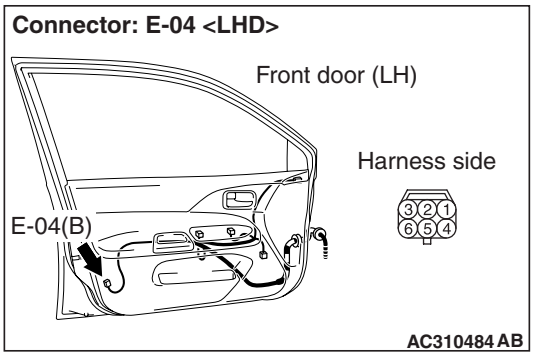


(2) Resistance between E-04 front door lock actuator (LH) connector terminal No.1 and body earth

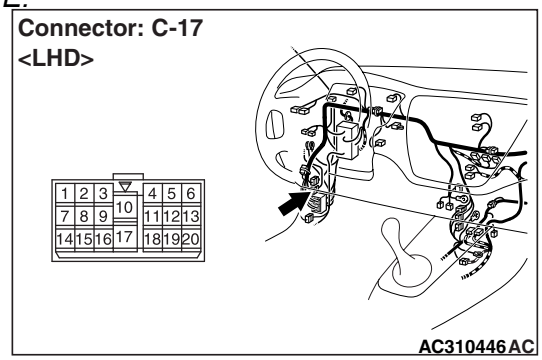
OK: 2 Ω or less

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

Step 4. Check the wiring harness between E-04 front door lock actuator (LH) connector terminal No.1 and body earth



NOTE:



Prior to the wiring harness inspection, check intermediate connector C-17, and repair if necessary.

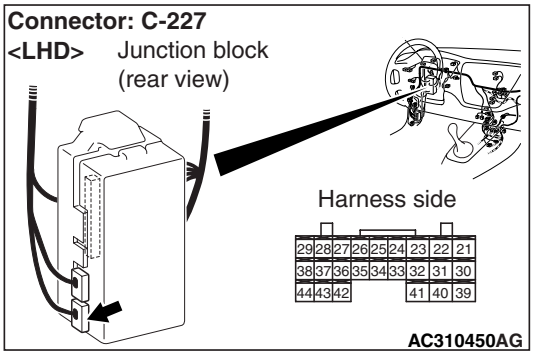
- Check the earth wires for open circuit.

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-227 ETACS-ECU connector

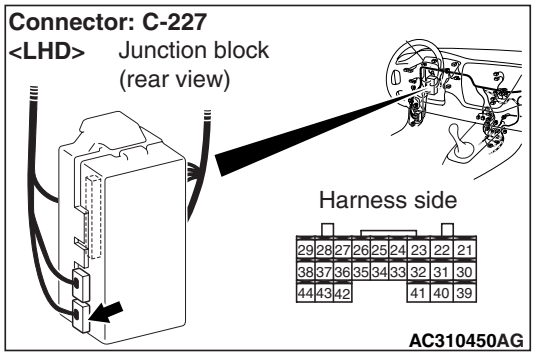


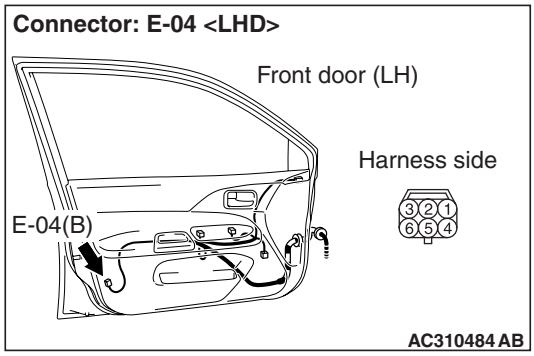
Q: Is the check result normal?

YES : Go to Step 6.

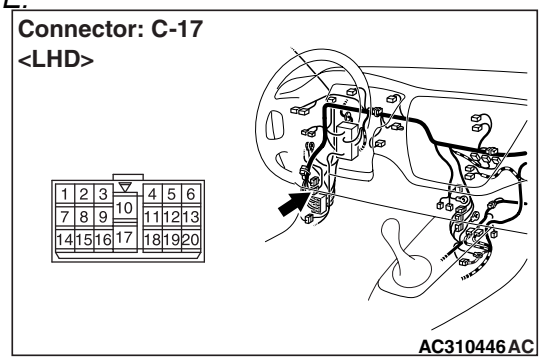
NO : Repair the defective connector.

Step 6. Check the wiring harness from E-04 front door lock actuator (LH) connector terminal Nos.2 and 3 to C-227 ETACS-ECU connector terminal Nos.35 and 36.





NOTE:



Prior to the wiring harness inspection, check intermediate connector C-17, 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 (LH) switch signal is received normally.

Q: Is the check result normal?

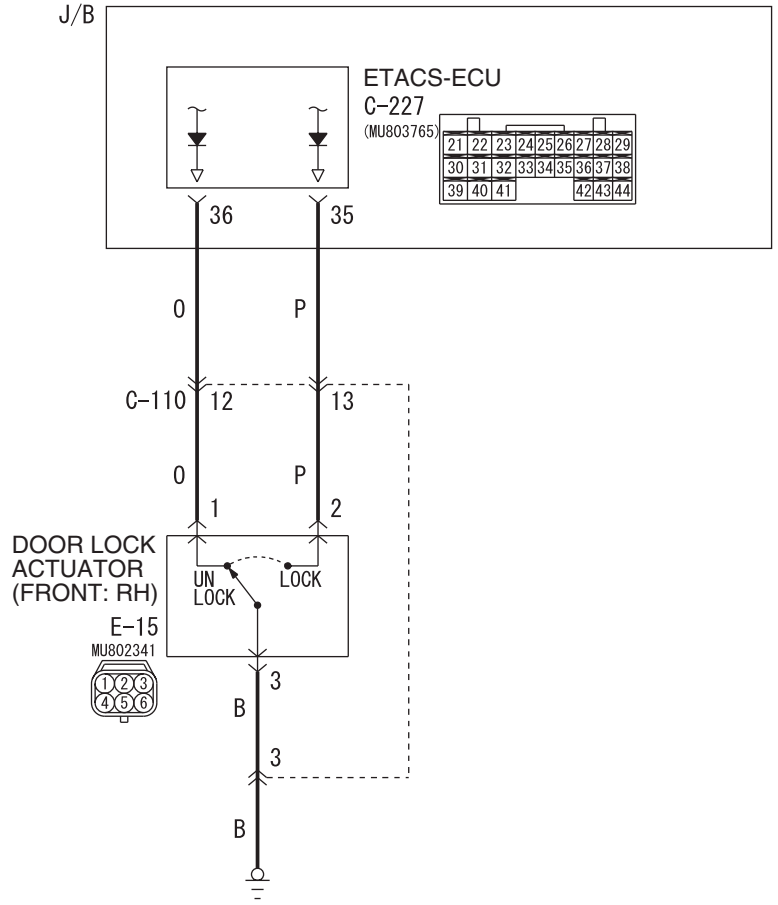
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE L-11: The front door lock actuator (RH) switch signal is not received. <RH drive vehicles>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Front 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

W4J54E148A

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.

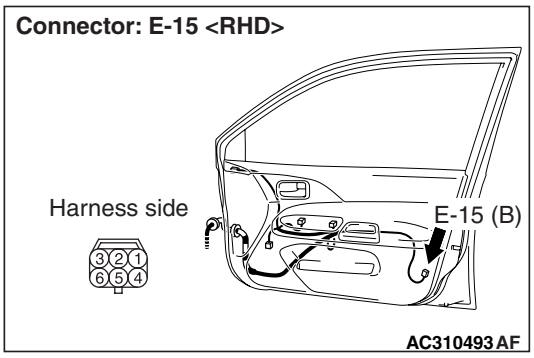
- Central door locking
- Keyless entry system
- Room lamps

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: E-15 front door lock actuator (RH) connector



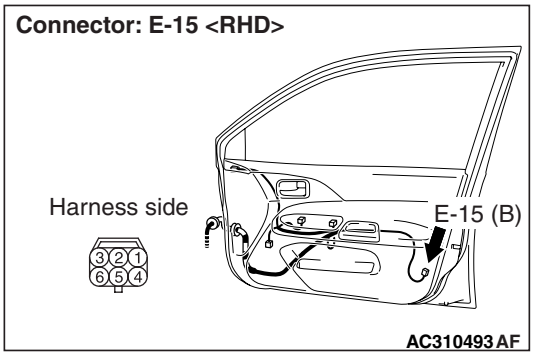
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the front door lock actuator (RH).

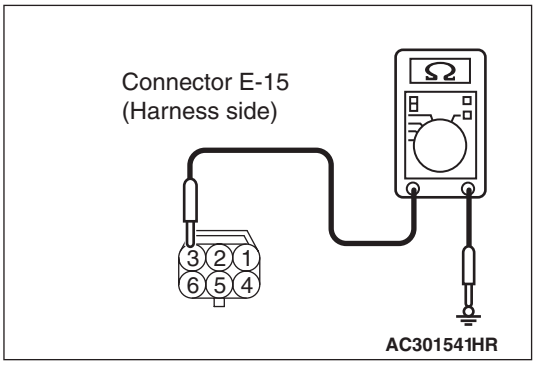
Refer to GROUP 42 – Door P.42-31.

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 E-15 front door lock actuator (RH) connector



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

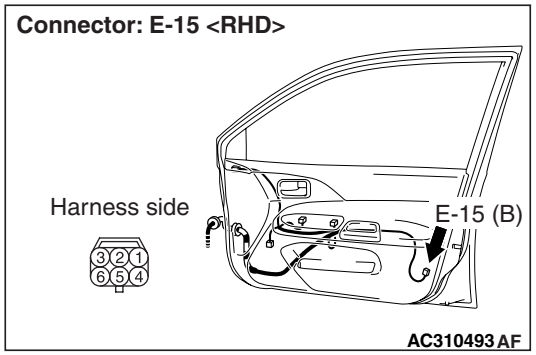


(2) Resistance between E-15 front door lock actuator (RH) connector terminal No.3 and body earth

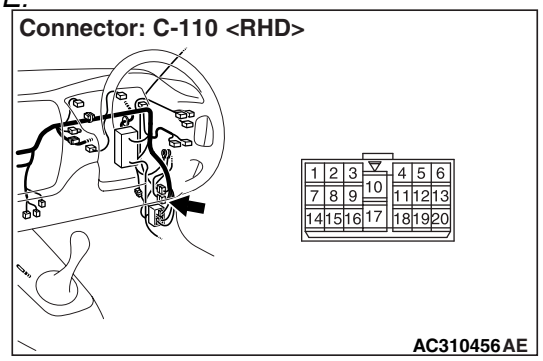
OK: 2 Ω or less

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

Step 4. Check the wiring harness between E-15 front door lock actuator (RH) connector terminal No.3 and body earth



NOTE:

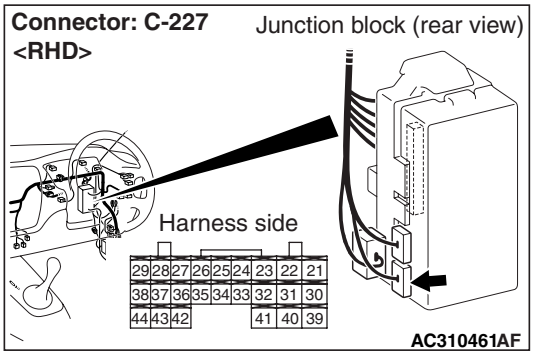


Prior to the wiring harness inspection, check intermediate connector C-110, and repair if necessary.

- Check the earth wires for open circuit.

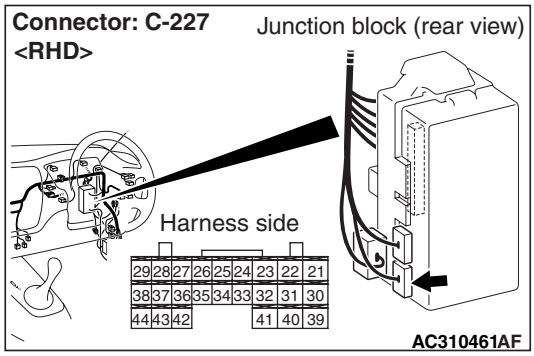
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

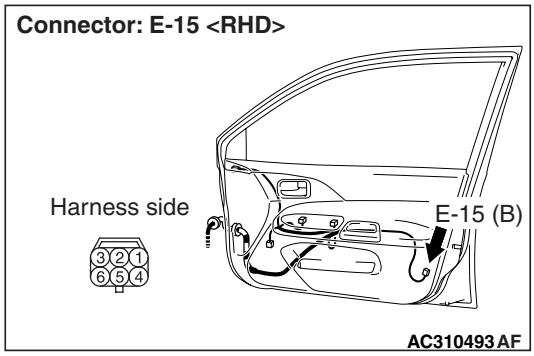
Step 5. Connector check: C-227 ETACS-ECU connector



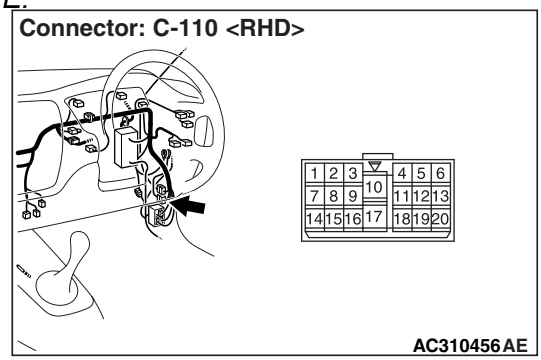
Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from E-15 front door lock actuator (RH) connector terminal Nos.1 and 2 to C-227 ETACS-ECU connector terminal Nos.36 and 35.





NOTE:



Prior to the wiring harness inspection, check intermediate connector C-110, 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.

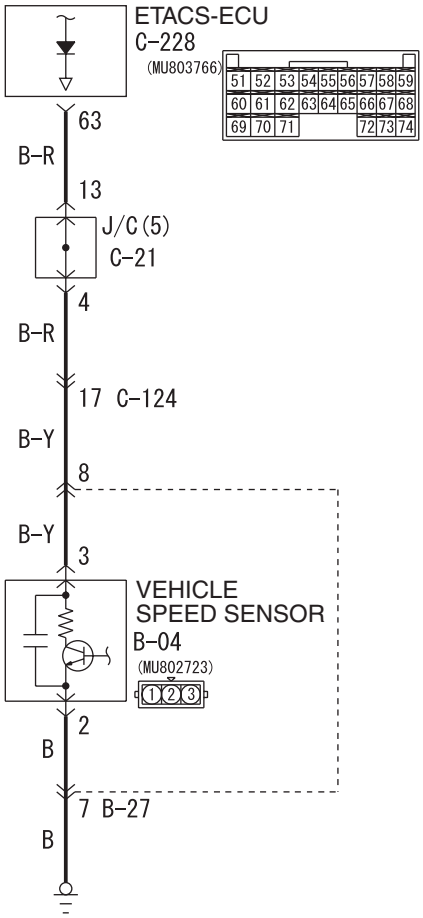
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE L-12: The vehicle speed sensor signal is not received.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input signal circuit is normal.

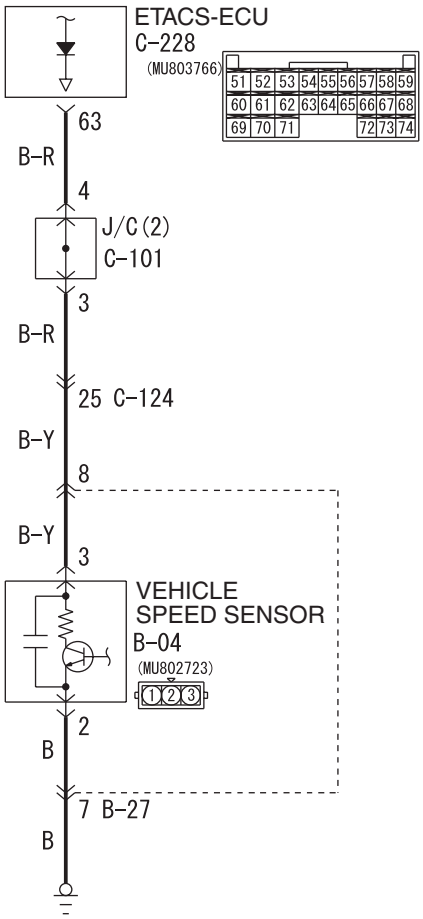
Vehicle Speed Sensor Input Circuit <LHD>



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

W6J54E031A

Vehicle Speed Signal 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 : Grey R : Red P : Pink V : Violet PU : Purple

W6J54E030A

COMMENTS ON TROUBLE SYMPTOM

Vehicle speed sensor signal is used to operate the windshield wiper (vehicle speed-dependent wiper function). If this signal is abnormal, the windshield wipers do not work normally.

POSSIBLE CAUSES

- Malfunction of the vehicles speed sensor
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Check the speedometer.

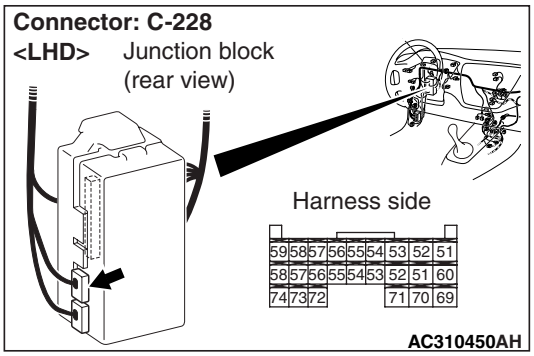
Check that the speedometer works normally.

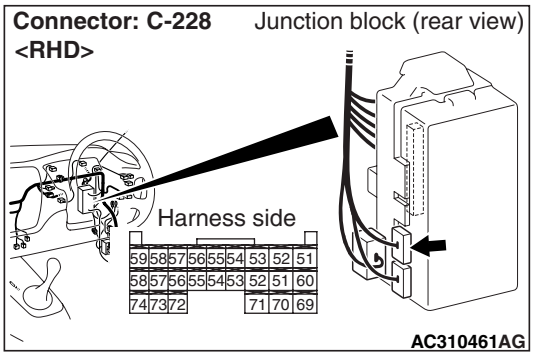
Q: Is the check result normal?

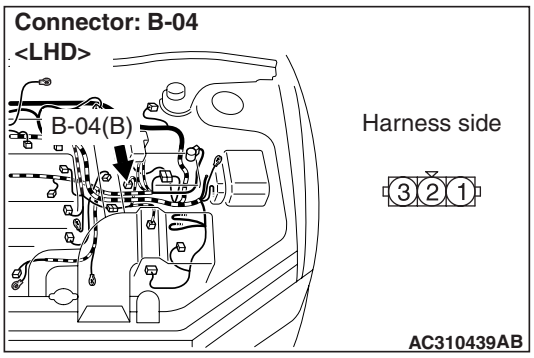
YES : Go to Step 2.

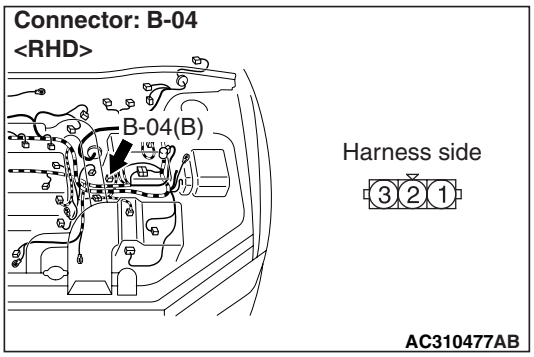
NO : Diagnose the combination meter (Refer to GROUP 54A – Combination meter P.54A-34).

Step 2. Connector check: B-04 vehicles speed sensor connector and C-228 ETACS-ECU connector

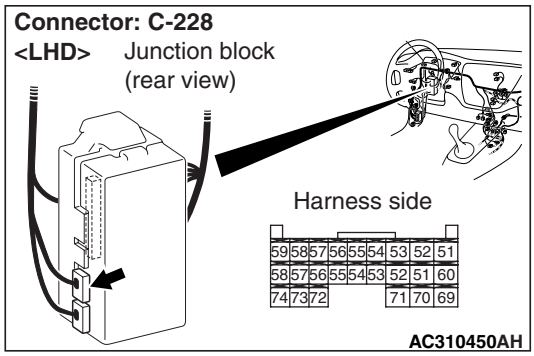


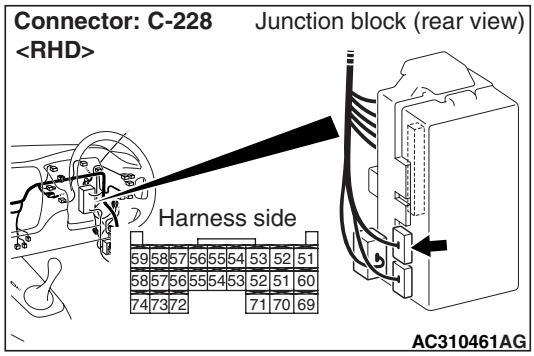


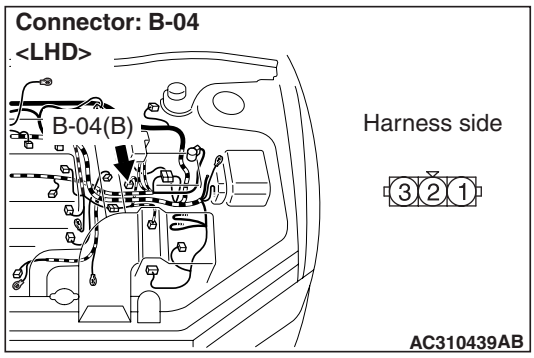


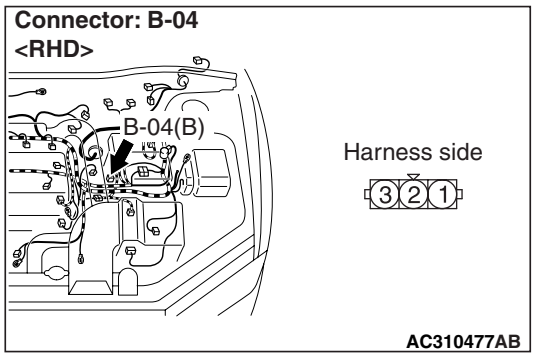


Step 3. Check the wiring harness between B-04 vehicles speed sensor connector terminal No.3 and C-228 ETACS-ECU connector terminal No.63.









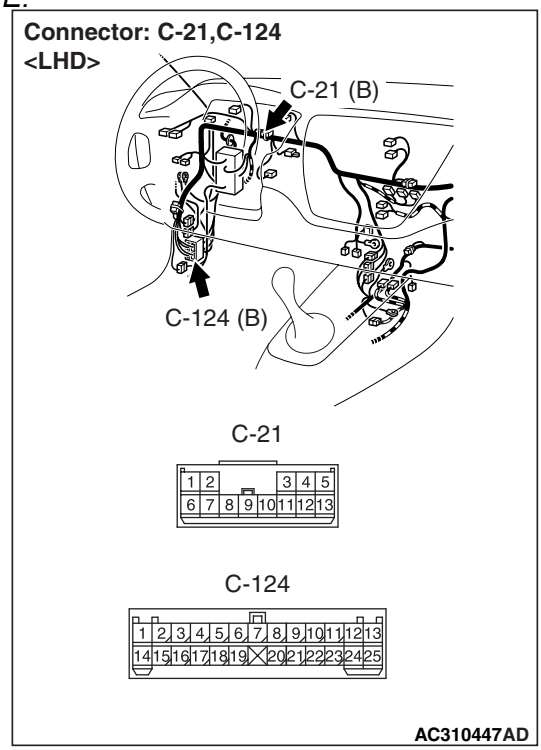
Q: Are the check result normal?

YES : Go to Step 3.

NO : Repair the defective connector.

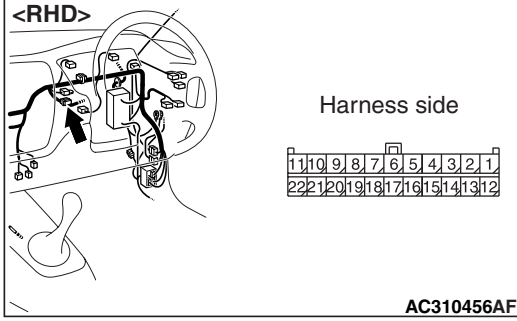
NOTE:

Connector: C-21,C-124 <LHD>



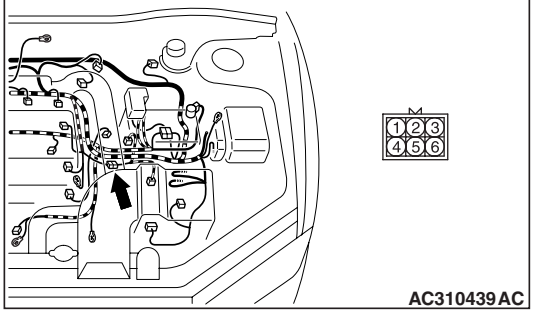
AC310447AD

Connector: C-101 <RHD>



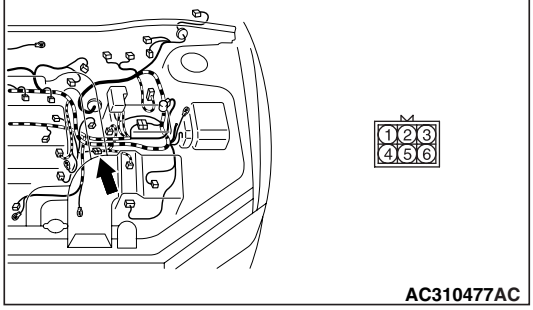
AC310456AF

Connector: B-27 <LHD>



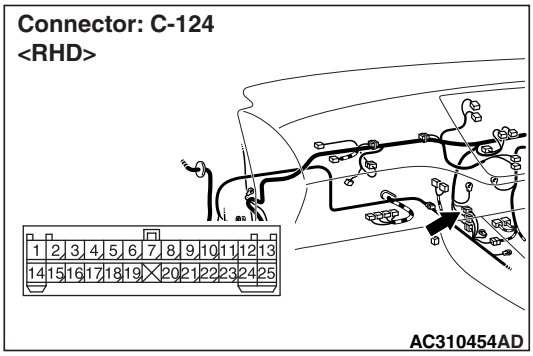
AC310439AC

Connector: B-27 <RHD>



AC310477AC

Connector: C-124 <RHD>



AC310454AD

Prior to the wiring harness inspection, check joint connector C-21 <LH driver vehicles>, combination meter connector C-101 <RH drive vehicles> and intermediate connector B-27 and C-124, and repair if necessary.

- Check the input line for open circuit.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the wiring harness.

Step 4. Retest the system.

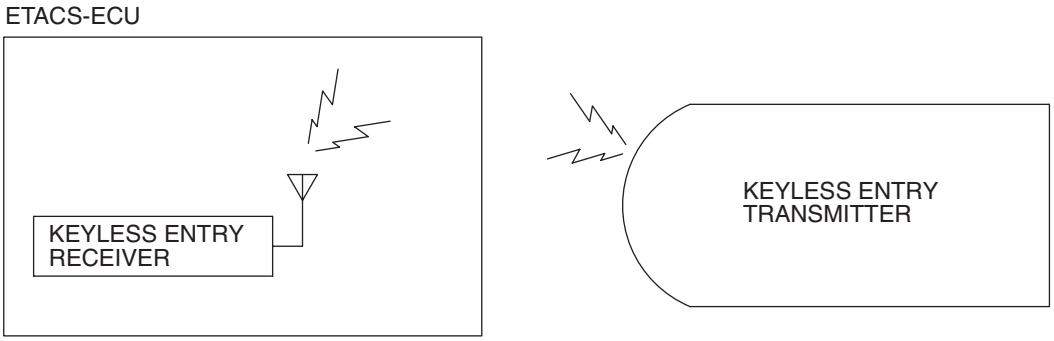
Check that the vehicle speed sensor signal is received normally.

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 L-13: 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



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.42-43.

System switch	Check condition
Keyless entry transmitter "LOCK/UNLOCK" switch	When the switch is turned from off to on

OK: The M.U.T.-II/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.42-47.

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.

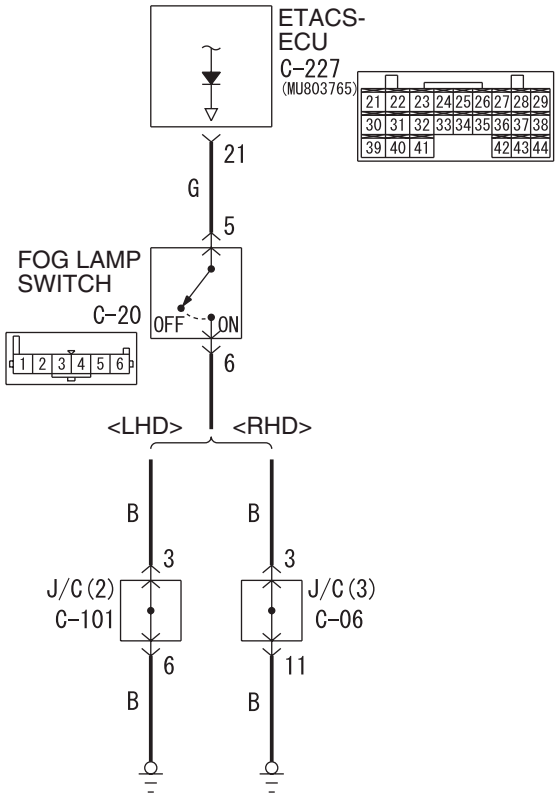
Check that each signal is received from the keyless entry transmitter.

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 L-14: 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

W4J54E151A

COMMENTS ON TROUBLE SYMPTOM

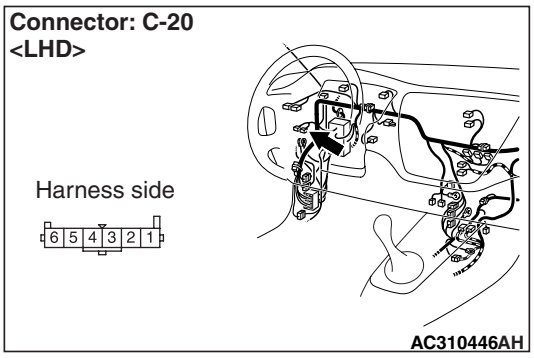
Input signal from the rear fog lamp switch is used to operate the rear fog lamps. If the signal is abnormal, the rear fog lamps will not illuminate and extinguish normally.

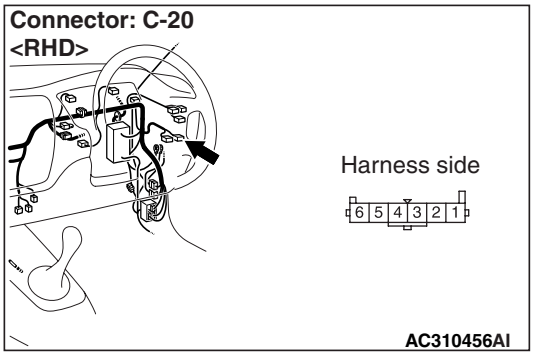
POSSIBLE CAUSES

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

DIAGNOSTIC PROCEDURE

Step 1. Connector check: C-20 fog lamp switch connector





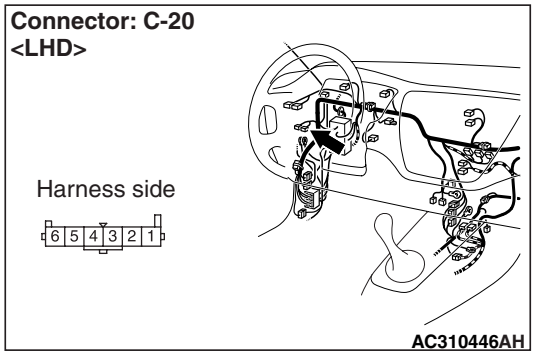
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

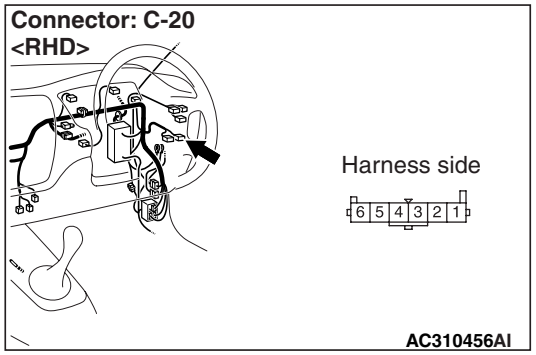
Step 2. Check the rear fog lamp switch.

Refer to GROUP 54A – Rear fog lamp P.54A-64.

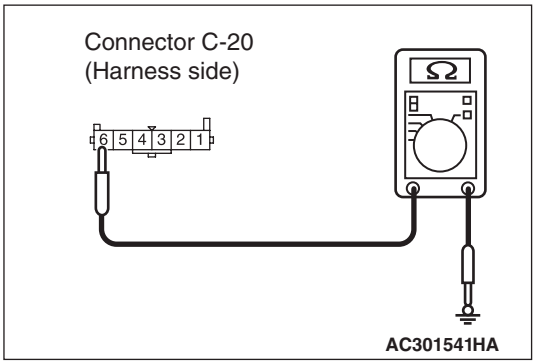
Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the fog lamp switch.

Step 3. Resistance measurement at the C-20 fog lamp switch connector





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

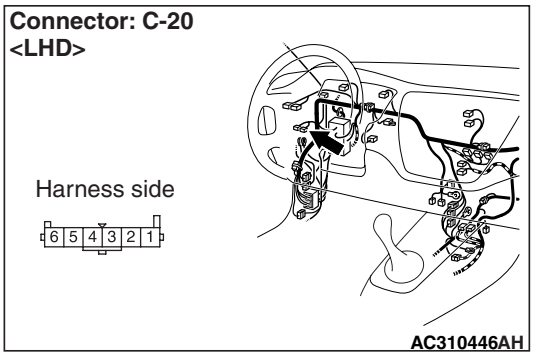


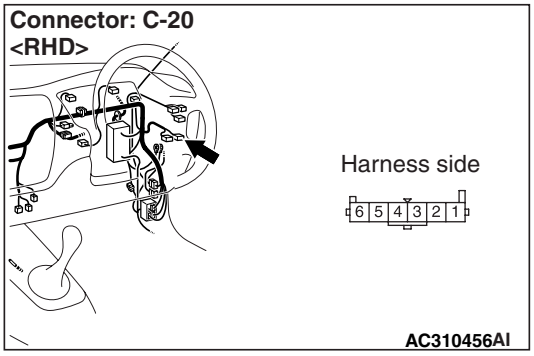
(2) Continuity between C-20 fog lamp switch connector terminal No.6 and body earth

OK: 2Ω or less

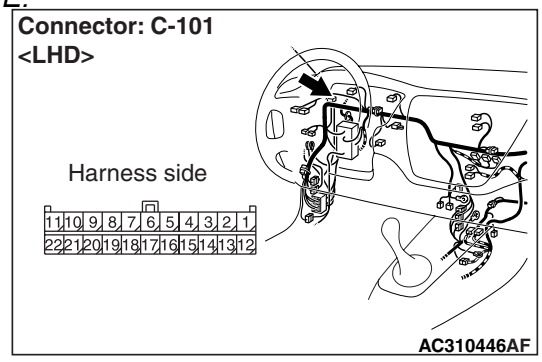
Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

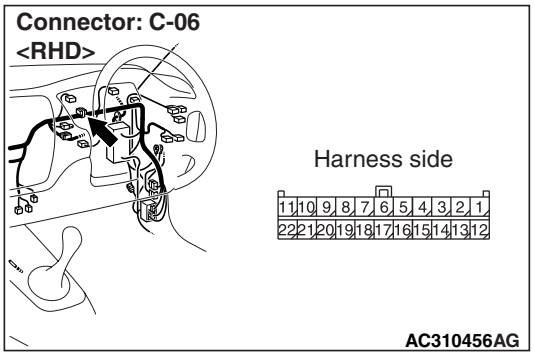
Step 4. Check the wiring harness between C-20 fog lamp switch connector terminal No.6 and body earth.





NOTE:





Prior to the wiring harness inspection, check joint connector C-101 <LH driver vehicles> or C-06 <RH drive vehicles>, and repair if necessary.

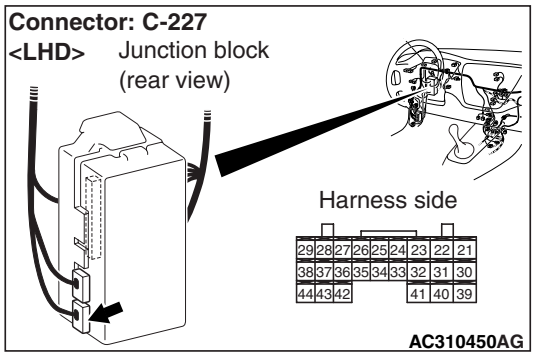
- Check the earth wires for open circuit.

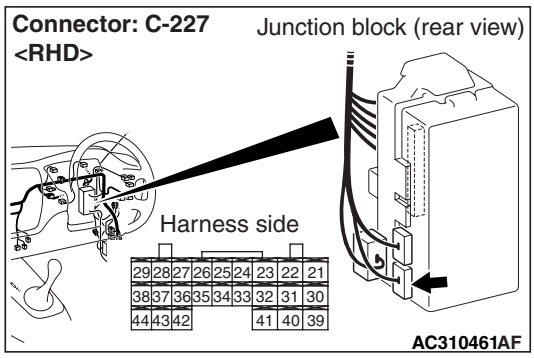
Q: Is the check result normal?

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-227 ETACS-ECU connector



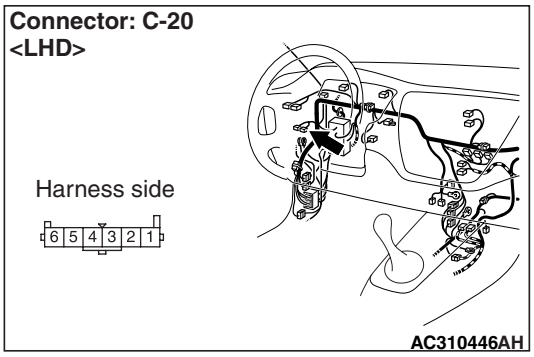


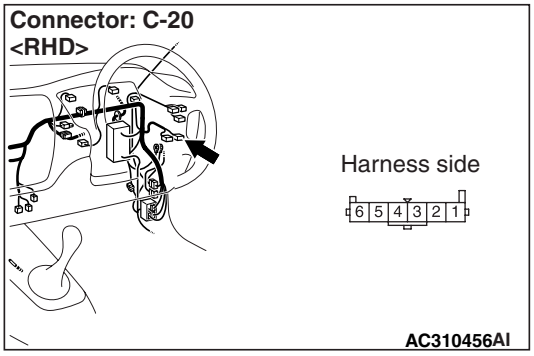
Q: Is the check result normal?

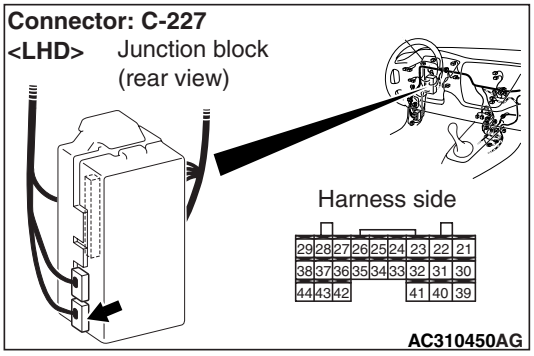
YES : Go to Step 6.

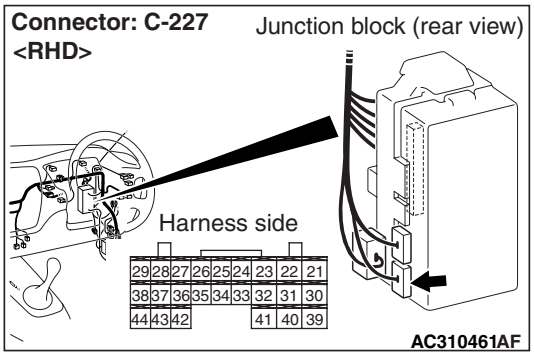
NO : Repair the defective connector.

Step 6. Check the wiring harness between C-227 ETACS-ECU connector terminal No.21 and C-20 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.

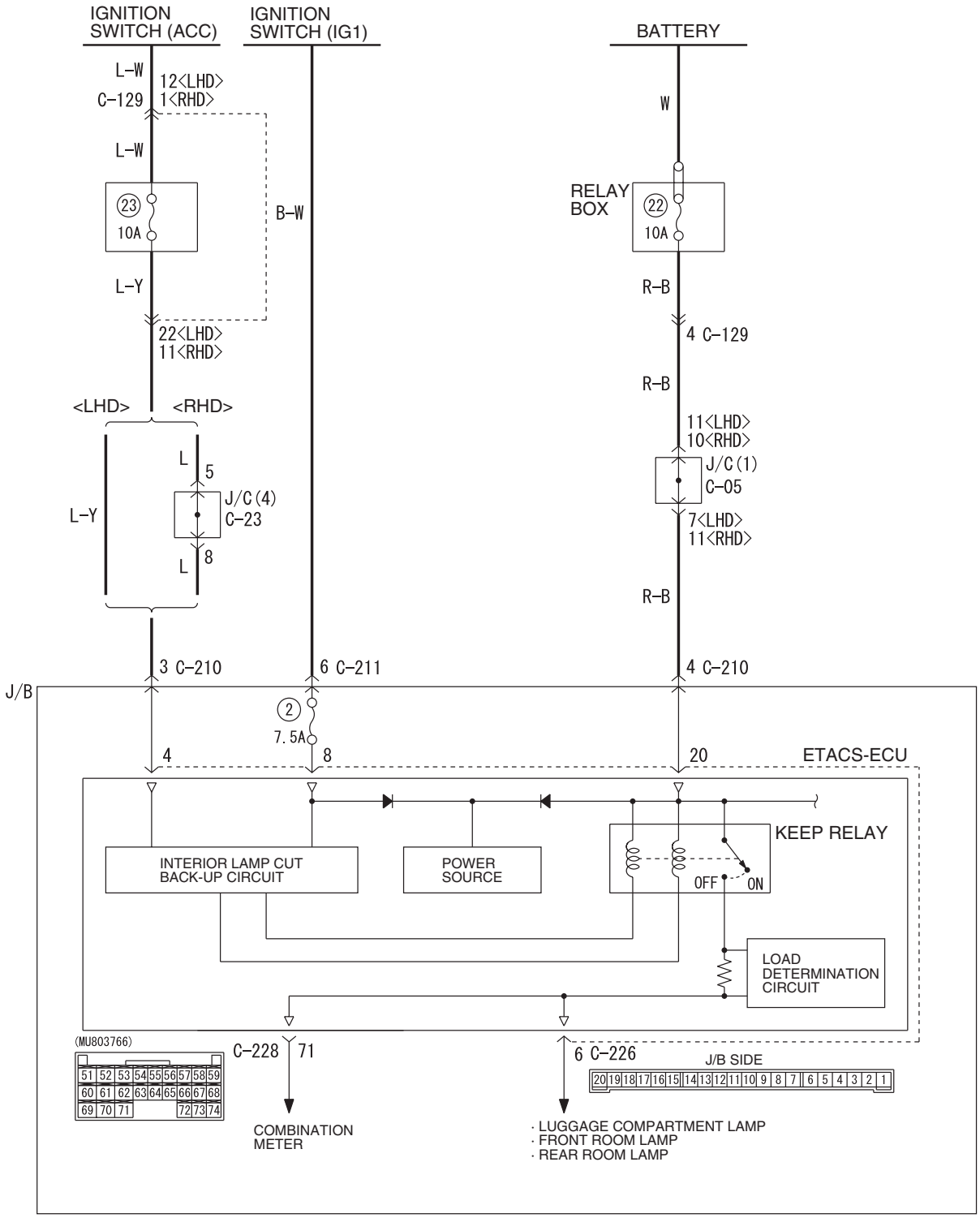
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE L-15: Interior lamp loaded signal is not detected.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Interior Lamp Automatic Shutdown 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

W4J54E152A

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.

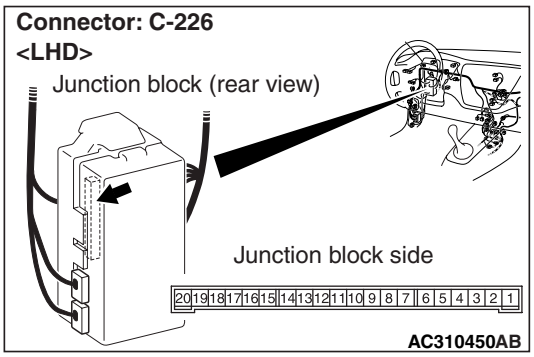
When the ignition switch is turned to the LOCK (OFF) position, check if the hazard warning lamps illuminate.

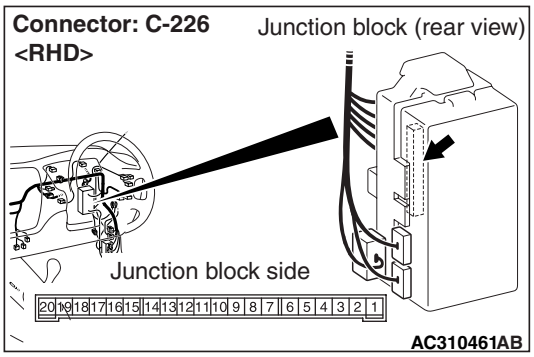
Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to inspection procedure A-2 "Check the battery power supply circuit to the ETACS-ECU P.54B-42."

Step 2. Connector check: C-226 ETACS-ECU connector



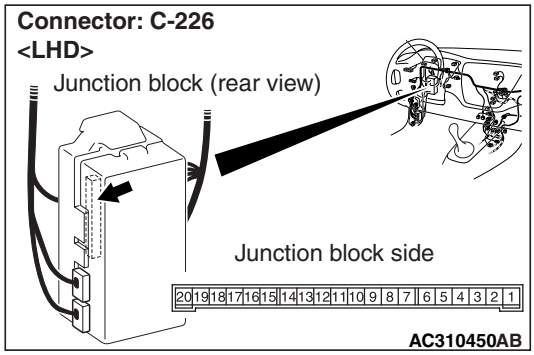


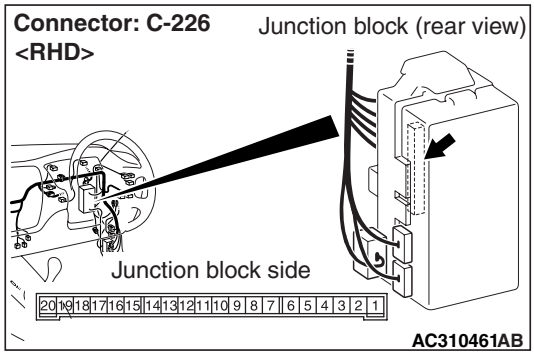
Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the defective connector.

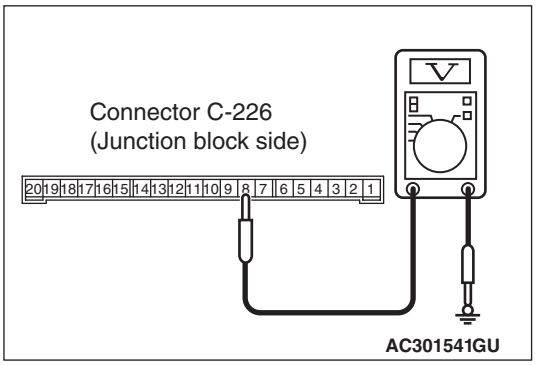
Step 3. Voltage measurement at the C-226 ETACS-ECU connector





(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-226 ETACS-ECU connector terminal No.8 and body earth

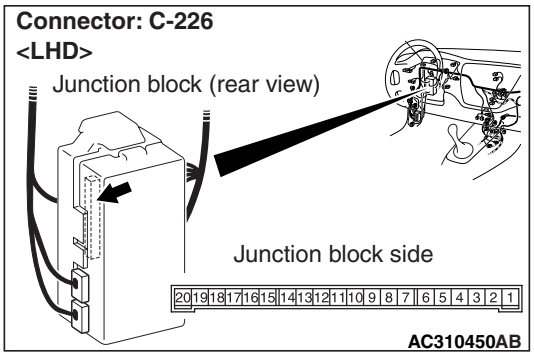
OK: System voltage

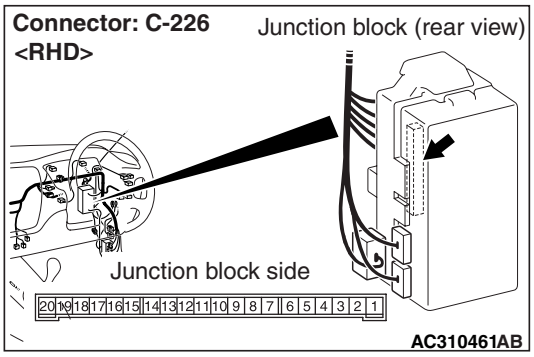
Q: Is the check result normal?

YES : Go to Step 5.

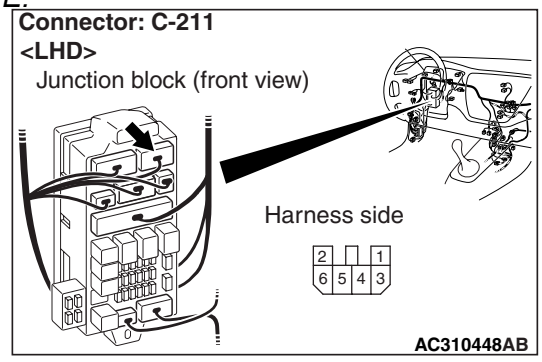
NO : Go to Step 4.

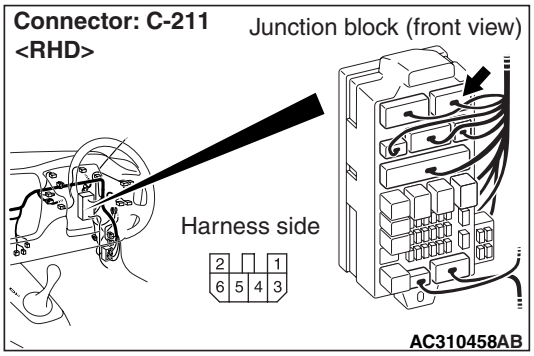
Step 4. Check the wiring harness between C-226 ETACS-ECU connector terminal No.8 and the ignition switch (IG1).





NOTE:



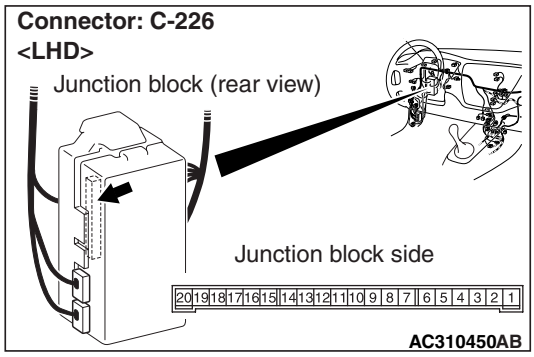


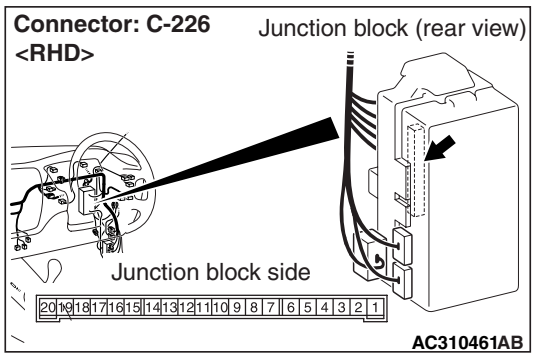
Prior to the wiring harness inspection, check junction block connector C-211, and repair if necessary.

- Check the power supply line to the ignition switch (IG1) for open circuit.

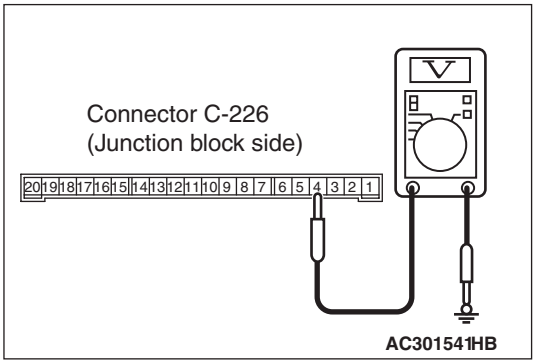
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

Step 5. Voltage measurement at the C-226 ETACS-ECU connector





(1) Remove the ETACS-ECU, and measure at the junction block side.
(2) Turn the ignition switch to the ACC position.

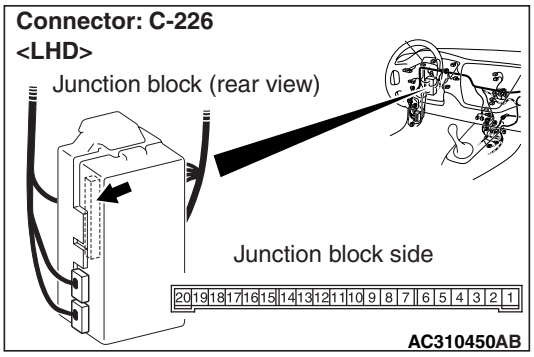


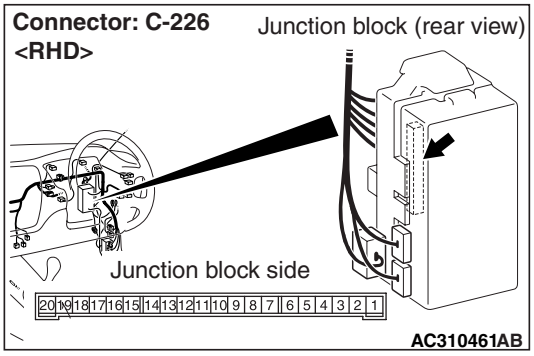
(3) Voltage between C-226 ETACS-ECU connector terminal No.4 and body earth

OK: System voltage

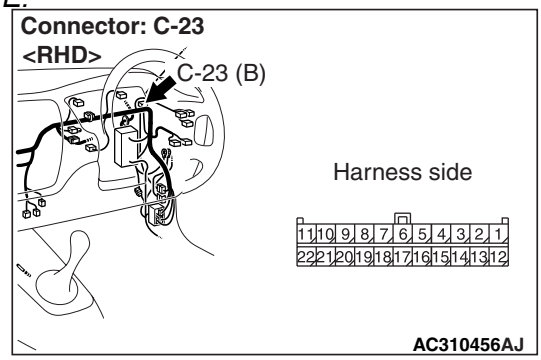
Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 6.

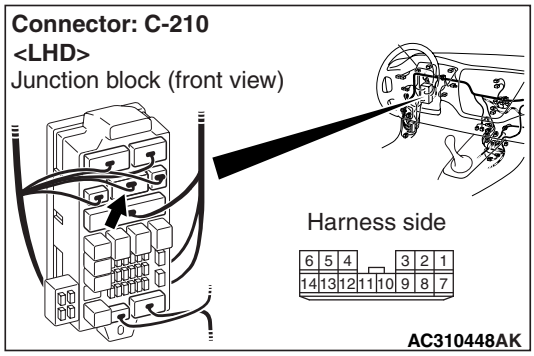
Step 6. Check the wiring harness between C-226 ETACS-ECU connector terminal No.4 and the ignition switch (ACC).

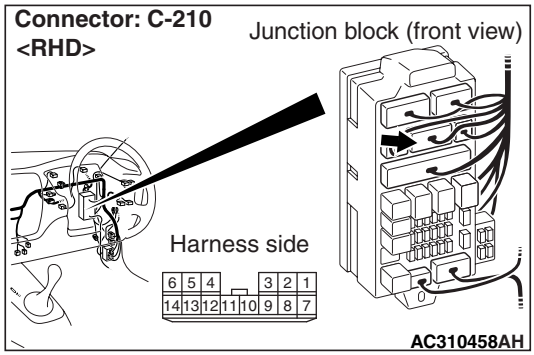


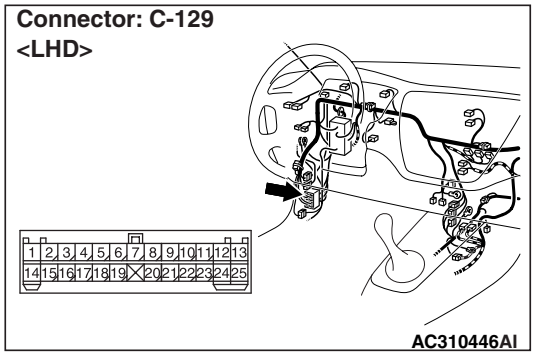


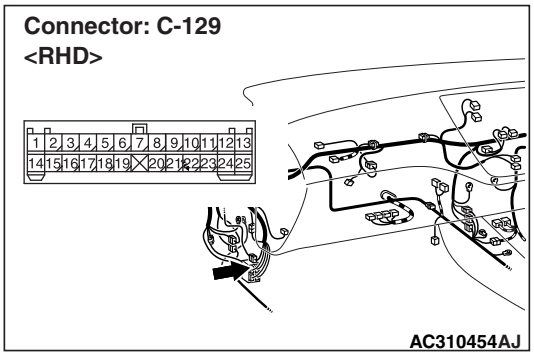
NOTE:











Prior to the wiring harness inspection, check joint connector C-23 <RH drive vehicles>, junction block connector C-210 or intermediate connector C-129, 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?

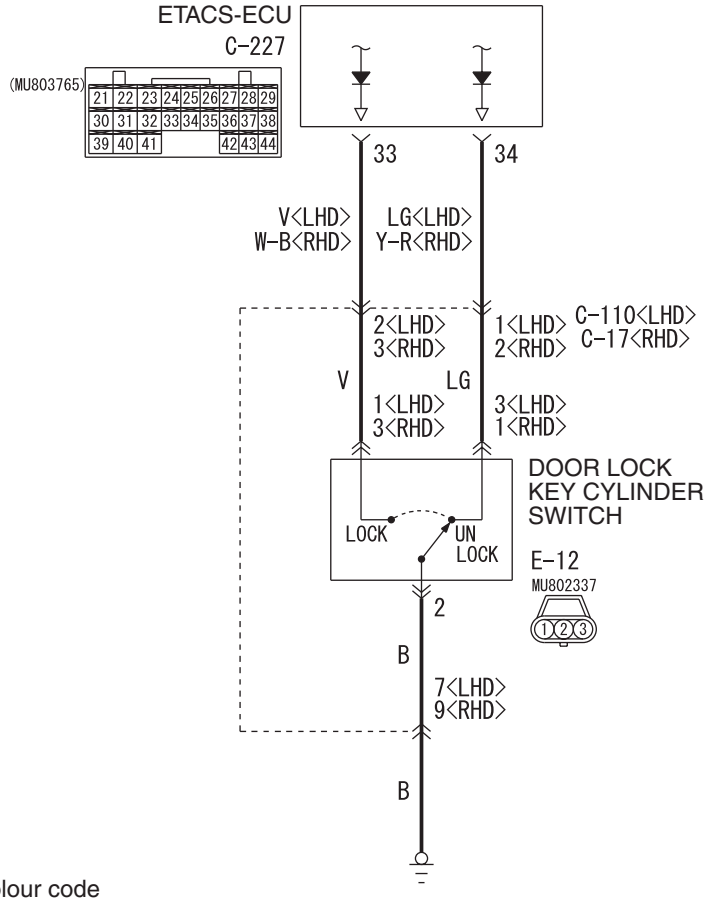
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE L-16: The door lock key cylinder switch signal is not detected.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Door Lock Key Cylinder 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 : Grey R : Red P : Pink V : Violet PU : Purple

W6J54E032A

COMMENTS ON TROUBLE SYMPTOM

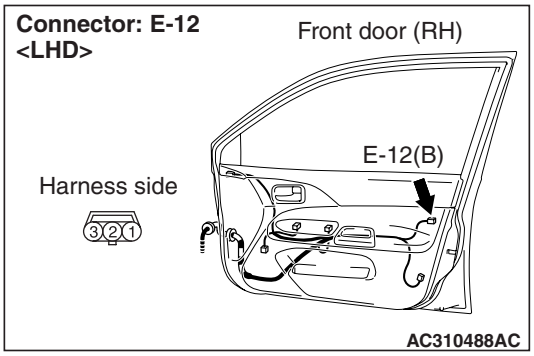
Input signal from the door lock key cylinder switch is used to operate the central door locking function. If the signal is abnormal, the central door locking function will not work normally.

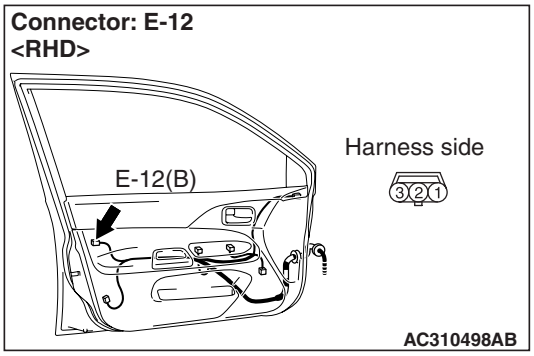
POSSIBLE CAUSES

- Malfunction of the door lock key cylinder switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Connector check: E-12 door lock key cylinder switch connector





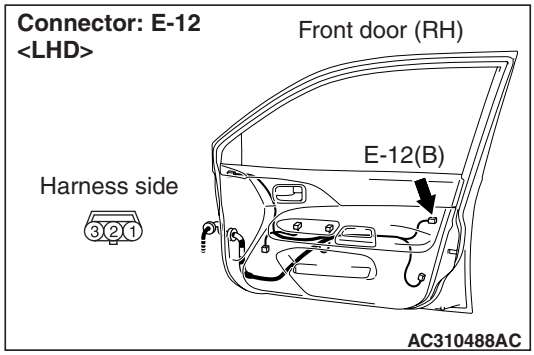
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

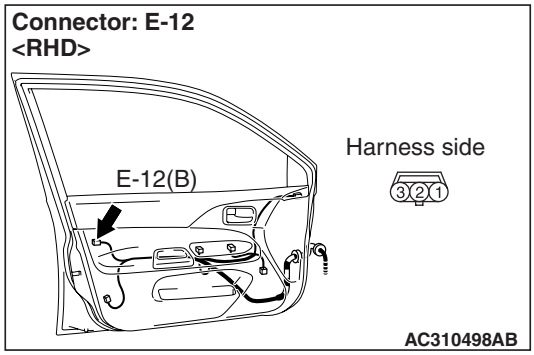
Step 2. Check the door lock key cylinder switch.

Refer to GROUP 42 – Door P.42-31.

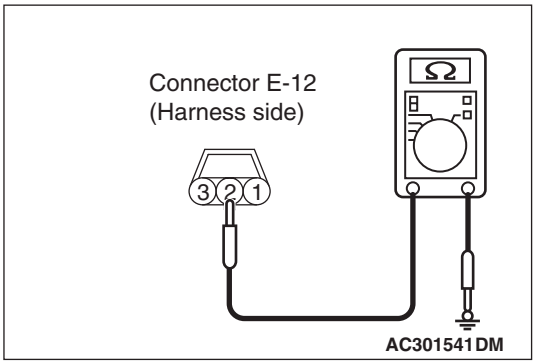
Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the door lock key cylinder switch.

Step 3. Resistance measurement at the E-12 door lock key cylinder switch connector





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

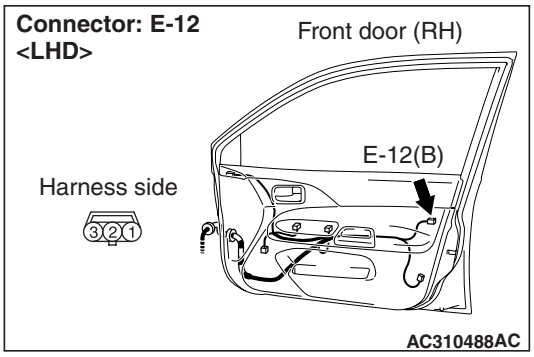


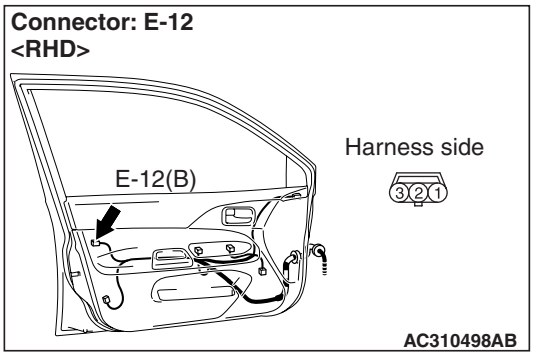
(2) Resistance between E-12 door lock key cylinder switch connector terminal No.2 and body earth

OK: 2 Ω or less

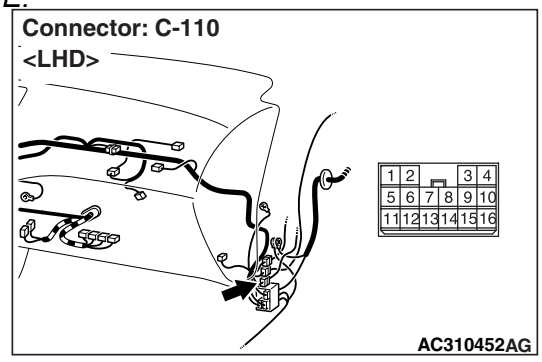
Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

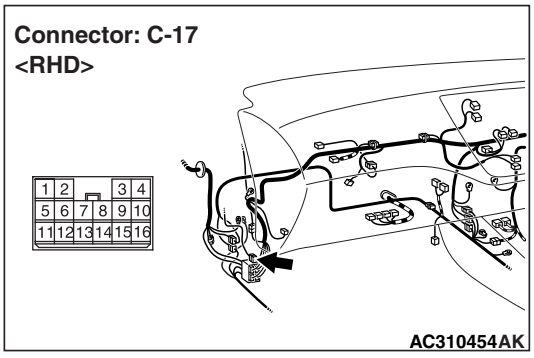
Step 4. Check the wiring harness between E-12 door lock key cylinder switch connector terminal No.2 and body earth.





NOTE:





Prior to the wiring harness inspection, check intermediate connector C-110 <LH drive vehicles> or C-17 <RH drive vehicles>, and repair if necessary.

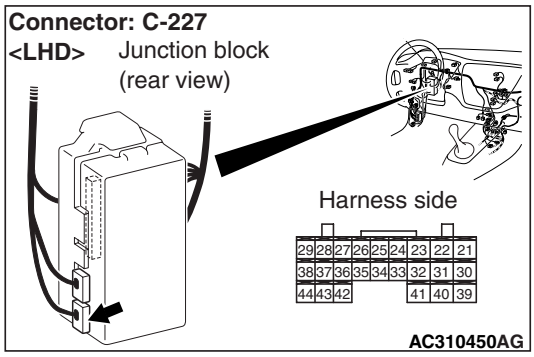
- Check the earth wires for open circuit.

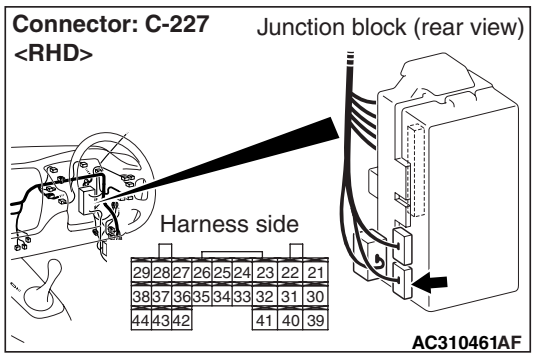
Q: Is the check result normal?

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-227 ETACS-ECU connector



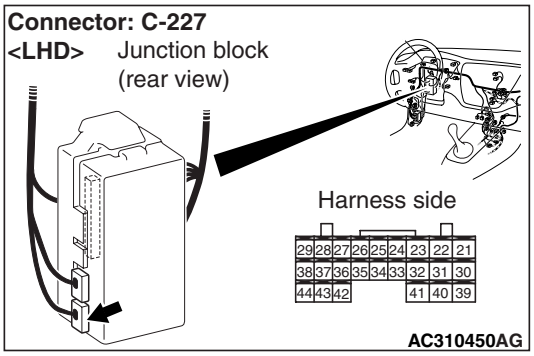


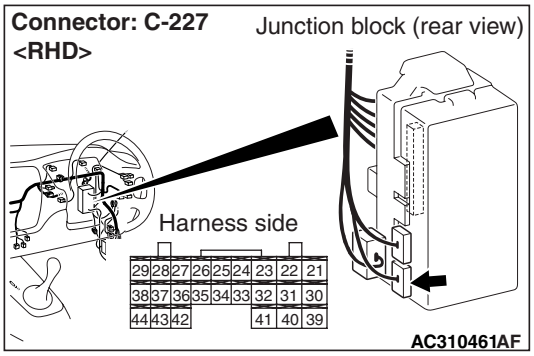
Q: Is the check result normal?

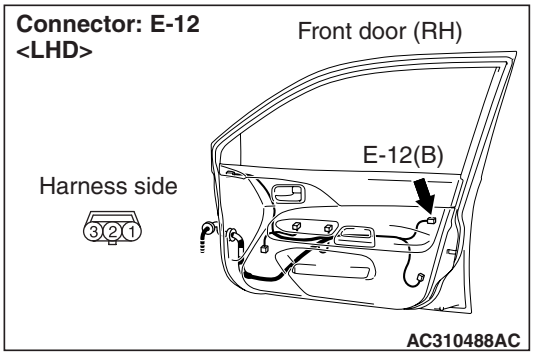
YES : Go to Step 6.

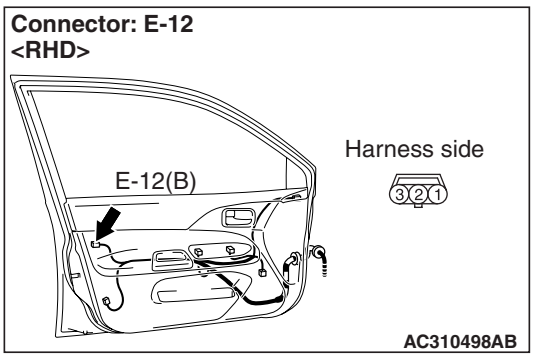
NO : Repair the defective connector.

Step 6. Check the wiring harness from E-12 door lock key cylinder switch connector terminal Nos.1 and 3 <LHD> or 3 and 1 <RHD> to C-227 ETACS-ECU connector terminal Nos.33 and 34.

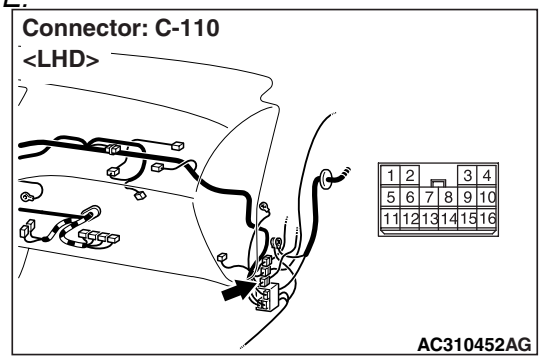


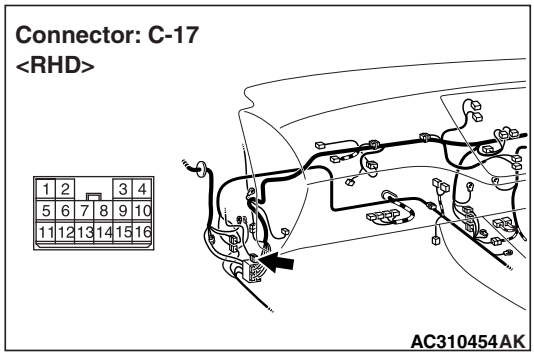






NOTE:





Prior to the wiring harness inspection, check intermediate connector C-110 <LH drive vehicles> or C-17 <RH drive vehicles>, 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 door lock key cylinder switch signal is received normally.

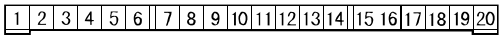
Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

CHECK AT ECU TERMINAL

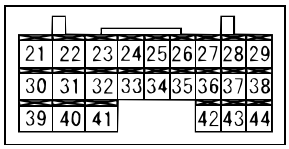
M1549001200823

ETACS-ECU

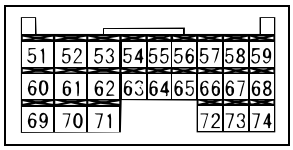
C-226



C-227



C-228



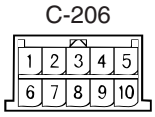
AC005554AI

NOTE: Terminal numbers 1 to 20 can not be measured as the ETACS-ECU is mounted on the junction block directly. The values are for reference only.

Terminal No.	Check item	Check condition	Normal condition
1	Output to the power window relay	When the power windows are operative	System voltage
2	Power supply to the central door locking system (battery positive voltage)	Always	System voltage
3	Earth (for ECU)	Always	0 V
4	Ignition switch (ACC)	Ignition switch: ACC	System voltage
5	Output to room lamp	When the room lamp is on	2 V or less
6	Power supply to interior lamp (battery positive voltage)	Always (when the interior lamp off function is off)	System voltage
7	Input from all the door switches	One of the door switches: ON (door open)	0 V
8	Power supply from ignition switch (IG1)	Ignition switch: ON	System voltage
9	Output to right turn-signal lamps	When right turn-signal lamps are on	System voltage
10	Input from driver's door switch	Driver's door switch: ON (door open)	0 V
11	Power supply to turn-signal lamps (battery positive voltage)	Always	System voltage
12	Output to central door locking (for locking the doors)	When the door lock actuators lock the doors	System voltage
13	Output to central door locking (for unlocking the doors other than the driver's door)	When the door lock actuators unlock the doors	System voltage
14	Output to left turn-signal lamps	When the left turn-signal lamps are on	System voltage
15 to 17	–	–	–
18	Power supply from ignition switch (ACC)	Ignition switch: ACC	System voltage
19	–	–	–
20	Battery power supply (for ECU)	Always	System voltage
21	Input from rear fog lamp switch	Rear fog lamp switch: ON	0 V

Terminal No.	Check item	Check condition	Normal condition
22	Output to central door locking (for unlocking the driver's door)	When the door lock actuators unlock the doors	System voltage
23 to 28	–	–	–
29	Input of collision signal	–	–
30	Input to key reminder switch	Key reminder switch: ON (ignition key removed)	0 V
31 to 34	–	–	–
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 to 44	–	–	–
51	Setting diagnosis code or sending input check signal	When diagnosis code is set (the M.U.T.-II/III is connected or the diagnosis connector terminal 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	–	–	–
53	Output to door-ajar indicator lamp	When door-ajar indicator lamp is on	0 V
54	–	–	–
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)
60 to 62	–	–	–
63	Input of vehicle speed signal	When the vehicle is being driven	0 to 12 V (pulse signal)
64, 65	–	–	–
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 M.U.T.-II/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	–	–	–
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



AC005555AG

Terminal No.	Check item	Check condition	Normal condition
1	Battery power supply	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 Move the wiper volume from "Fast" to "Slow."	0 to 2.5 V
7	–	–	–
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



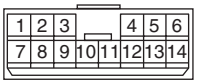
AC305097AB

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	–	–	–
2	Output to headlamp (high-beam)	When headlamps (high-beam) are on	System voltage
3, 4	Battery power supply (for headlamp)	Always	System voltage
5	Battery power supply (for tail lamp)	Always	System voltage
6	Output to headlamp (low-beam)	When headlamps (low-beam) are on	System voltage
7	Battery power supply (for ECU)	Always	System voltage
8	Output to tail lamps	When tail lamps are on	System voltage
9 to 11	–	–	–
21	Output to windshield washer	When windshield washer is on	System voltage
22	SWS communication line	Always	0 – 12 V (pulse signal)
23	Input of automatic stop signal to windshield wiper	When windshield wiper is on	System voltage
24	Power supply to ignition switch (ACC)	Ignition switch: "ACC"	System voltage
25	Input of backup signal from headlamp switch	Headlamp switch: ON	0 V
26	Input of backup signal to windshield wiper	Windshield low-speed wiper switch or windshield high-speed wiper switch: ON	0 V
27	Output to windshield wiper (low-speed)	When windshield wiper is on (at low speed)	System voltage
28	Output to windshield wiper (high-speed)	When windshield wiper is on (at high speed)	System voltage
29	–	–	–
30	Power supply to ignition switch (IG2)	Ignition switch: "ON"	System voltage
31	Earth	Always	0 V

POWER WINDOW MAIN SWITCH

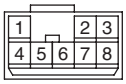
E-05



AC103264AG

Terminal No.	Check item	Check condition	Normal condition
1	Output to power window regulator 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 regulator motor	–	–
8	Input from power window regulator motor (pulse sensor earth)	–	0 V
9	Input from power window regulator motor (pulse sensor signal)	When the power windows are operating	0 to 5 V (pulse signal)
10	Input from power window regulator 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 regulator motor (power supply to pulse sensor)	When the power windows are operating	5 V
13, 14	–	–	–

POWER WINDOW SUB SWITCH



E-14 (front), E-08 (rear: LH), E-17 (rear: RH)

AC103265AI

Terminal No.	Check item	Check condition	Normal condition
1	Earth	Always	0 V
2	Input from power window regulator motor	–	–
3	Input from power window regulator motor	–	–
4	Power supply	Power window relay: ON	System voltage
5	Output to power window regulator motor	–	–
6	SWS communication line	Power window relay: ON	0 to 12 V (pulse signal)
7	Output to power window regulator motor	–	–
8	Input from power window regulator motor	–	–

ON-VEHICLE SERVICE

CONFIGURATION FUNCTION <VEHICLES WITH KEYLESS ENTRY SYSTEM>

M1549002500634

According to the configuration mode entry conditions of the input switch, the following functions can be adjusted. The data on configuration will be memorized even if the battery is removed.

- Keyless entry system hazard answerback function
- Vehicle speed-dependent wiper function
- Headlamp automatic-shutdown function
- Interior lamp automatic-shutdown function
- Delayed lamp-off time of the room lamp
- Initialisation of all functions (Returns to initial settings)

1. Conditions for entering the configuration mode
   i. Set each switch to the following state.
      - Hazard lamp switch: OFF
      - Diagnosis control: ON (Connect the M.U.T.-II or earth No.1 pin of the 16-pin diagnosis connector).
      - Key reminder switch: OFF (Insert the ignition key)
      - Ignition switch: "LOCK" (OFF) position
      - Driver's door switch: OFF (driver's door closed)

   ii. When the windshield washer switch is ON for more than ten seconds, the buzzer in the ETACS-ECU sounds for three seconds, and the configuration mode will be set.
2. Conditions for exiting the configuration mode
   - Diagnosis control: OFF (Disconnect the M.U.T.-II or the earth of No.1 pin of the 16-pin diagnosis connector disconnected).
   - Key reminder switch: ON (Remove the ignition key)
   - Ignition switch: Turning to any position other than "LOCK" (OFF) position
   - Driver's door switch: ON (driver's door opened)
   - When three minutes pass without configurations performed
   - When the other warning buzzer output is generated
3. Configurations of various functions

Function	Configuration procedure
Keyless entry system hazard answerback function	When the lock button of the transmitter is pressed twice continuously within two seconds, the hazard answerback function during the lock state will be switched between available or unavailable. • Function available: Buzzer sounds once. (Initial state) • Function not available: Buzzer sounds twice. When the unlock button of the transmitter is pressed twice continuously within two seconds, the hazard answerback function during the unlock state will be switched between available or unavailable. • Function available: Buzzer sounds once. (Initial state) • Function not available: Buzzer sounds twice.
Vehicle speed-dependent wiper function	When the windshield wiper mist switch is turned ON for more than two seconds, the vehicle speed-dependent wiper function is switched between available or unavailable. • Function available: Buzzer sounds once. (Initial state) • Function not available: Buzzer sounds twice.
Headlamp automatic-shutdown function	When the passing switch is turned ON for more than two seconds with the head lamp switch ON and the turn signal lamp switch turned to RH, the headlamp automatic-shutdown function is switched between available or unavailable. • Function available: Buzzer sounds once. (Initial state) • Function not available: Buzzer sounds twice.
Interior lamp automatic-shutdown function	When the hazard switch is turned ON for more than two seconds, the interior lamp automatic-shutdown function is switched between available or unavailable. • Function available: Buzzer sounds once. (Initial state) • Function not available: Buzzer sounds twice.
Delayed lamp-off time of the interior lamp	When the turn signal lamp switch is set in the order of RH to LH to RH to LH within three seconds from the LH position, the delayed lamp-off time switches (Returns to a after e, and repeats from a in order). a. 15 seconds: Buzzer sounds four times. (Initial state) b. 7.5 seconds: Buzzer sounds five times. c. 30 seconds: Buzzer sounds once. d. 10 seconds: Buzzer sounds twice. e. 0 seconds (No delay time): Buzzer sounds three times.
Initialisation of all functions	When the windshield washer switch is ON for more than 20 seconds continuously, the buzzer sounds twice, and all functions will be initialised (Settings are returned to their initial states). The configuration mode entry buzzer sounds after 10 seconds, however to initialise all functions, the ON state should be continued for 20 seconds. When the windshield washer switch is ON for more than 20 seconds continuously without the configuration mode set, the configuration mode will be set after 10 seconds without the initialisation of all functions.

NOTES