

## HEADLIGHT AND TAILLIGHT

### GENERAL DESCRIPTION CONCERNING THE HEADLIGHT AND TAILLIGHT

M1549021300156

The ECU related to the headlight and taillight types and various control functions are as follows.

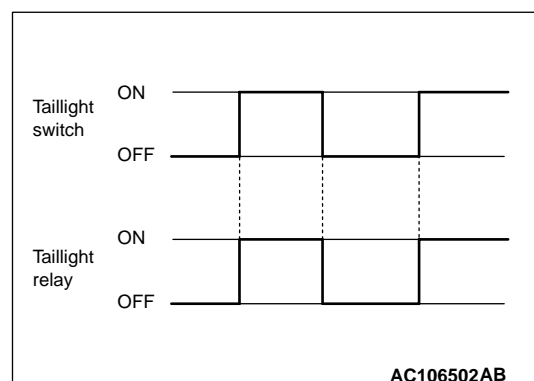
FUNCTION	CONTROL ECU
Taillight	Front-ECU, column switch
Headlights and high-beam indicator light	ETACS-ECU, front-ECU, column switch
Headlight automatic-shutdown function	ETACS-ECU, front-ECU, column switch
Dimmer automatic reset function	Front-ECU, column switch
Daytime running light function	Front-ECU

### TAILLIGHTS AND HEADLIGHTS ILLUMINATION

#### Taillight

The front ECU will light up the taillight when the tail light switch signal from the column switch is in the ON state and the built-in taillight relay is in the ON state.

*NOTE: This item only considers the taillight light up function and does not take into consideration the other functions. In actual driving, the taillights may be turned off due to the headlight automatic shut-down function. For the details of the headlight automatic shut-down function, refer to its Section.*

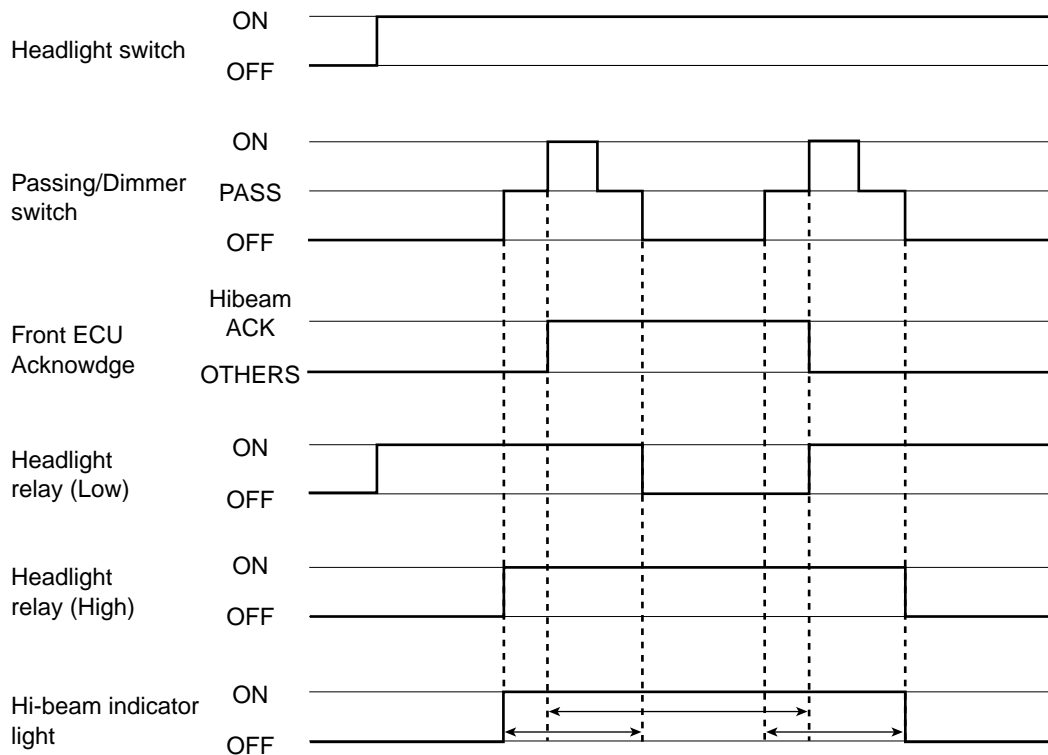


#### Headlights and high-beam indicator light

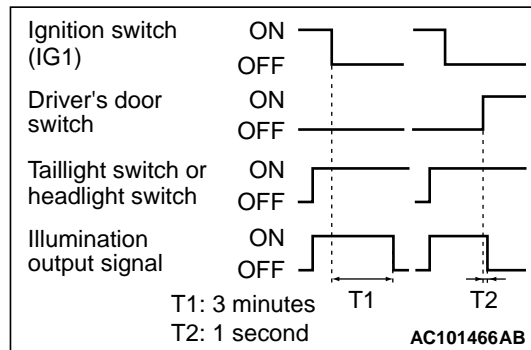
The front ECU lights up the headlight (LOW) when the signal from the column switch to the headlight switch is in the "ON" state and the built-in head light relay (LOW) is in the ON state. If the dimmer switch is turned on while the headlight relay (LOW) is on, the front-ECU turns on the headlight relay (HIGH), causing the high-beam headlights to illuminate.

What's more, ETACS-ECU lights up the high beam indicator light when the acknowledgment signal from the front ECU is in the "HI-BEAM ACK" state or the head light switch signal from the column switch is in the "PASS" state.

*NOTE: This item only considers the headlight light up function and doesn't take into consideration the other functions. In actual driving, the headlights may be turned off due to the headlight automatic shut-down function. For the details of the headlight automatic shut-down function, refer to its Section.*



AC106816 AD



AC101466 AB

### Headlight automatic-shutdown function

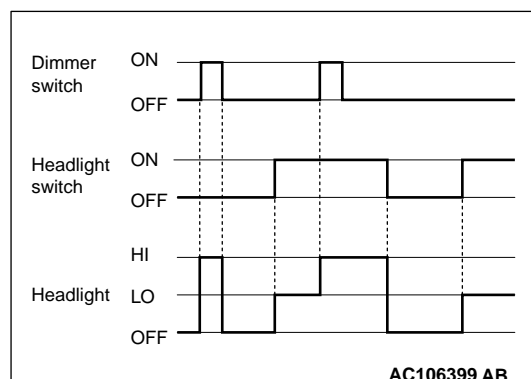
Even if the lighting switch (taillight switch or headlight switch) is ON, the head light (including the taillights) will automatically go off in the following conditions to prevent the battery from discharging as a result of forgetting to turn off lights.

When the ignition key is turned from ON to LOCK (OFF) or ACC position with the lighting switch turned ON, and this state continues for three minutes, the light will automatically be turned off. If the driver's seat door is opened during these three minutes, the light will go off one second later.

**NOTE:** This function can be disabled by the configuration function (Refer to [P.54B-574.](#))

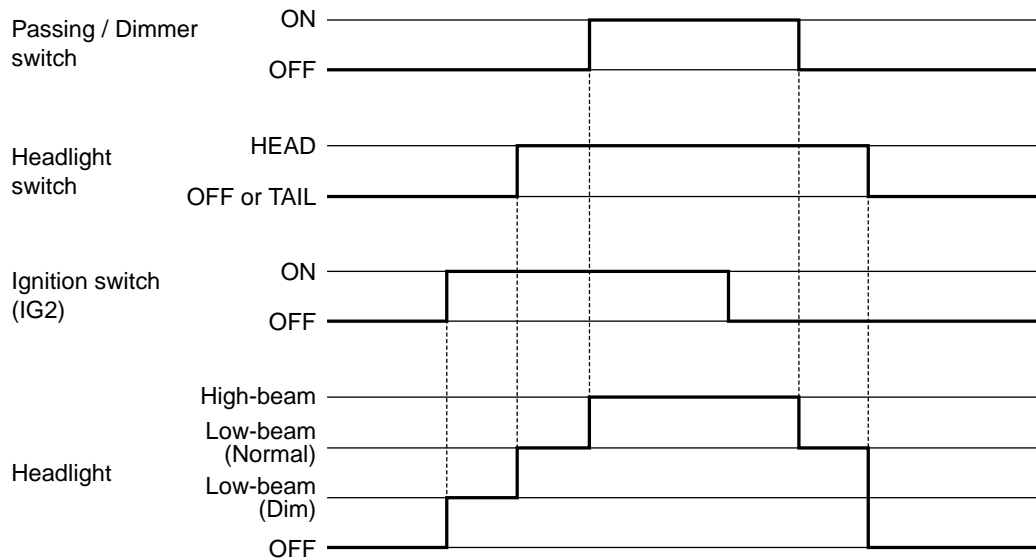
### Dimmer automatic reset function

The column switch (column ECU) resets the dimmer switch and prevents the high beam from lighting up when turning on the headlight again if the headlight switch is put in the OFF position while the high beam of the headlight is on (including the instance when the dimmer switch is erroneously put in the ON state upon passing operations) and resets the dimmer switch.



AC106399 AB

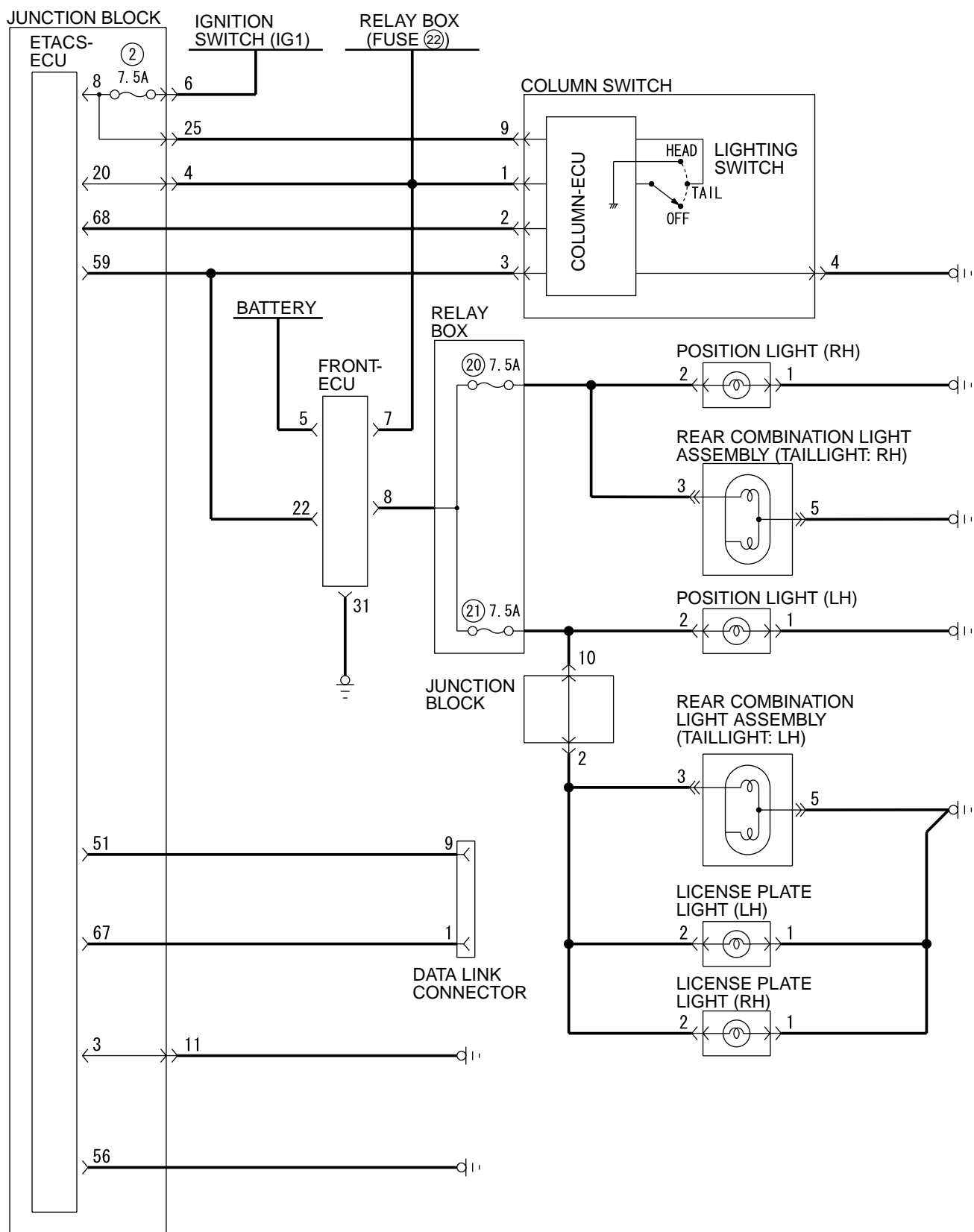
**Daytime running light function <Vehicles for CANADA>**



AC201190AC

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

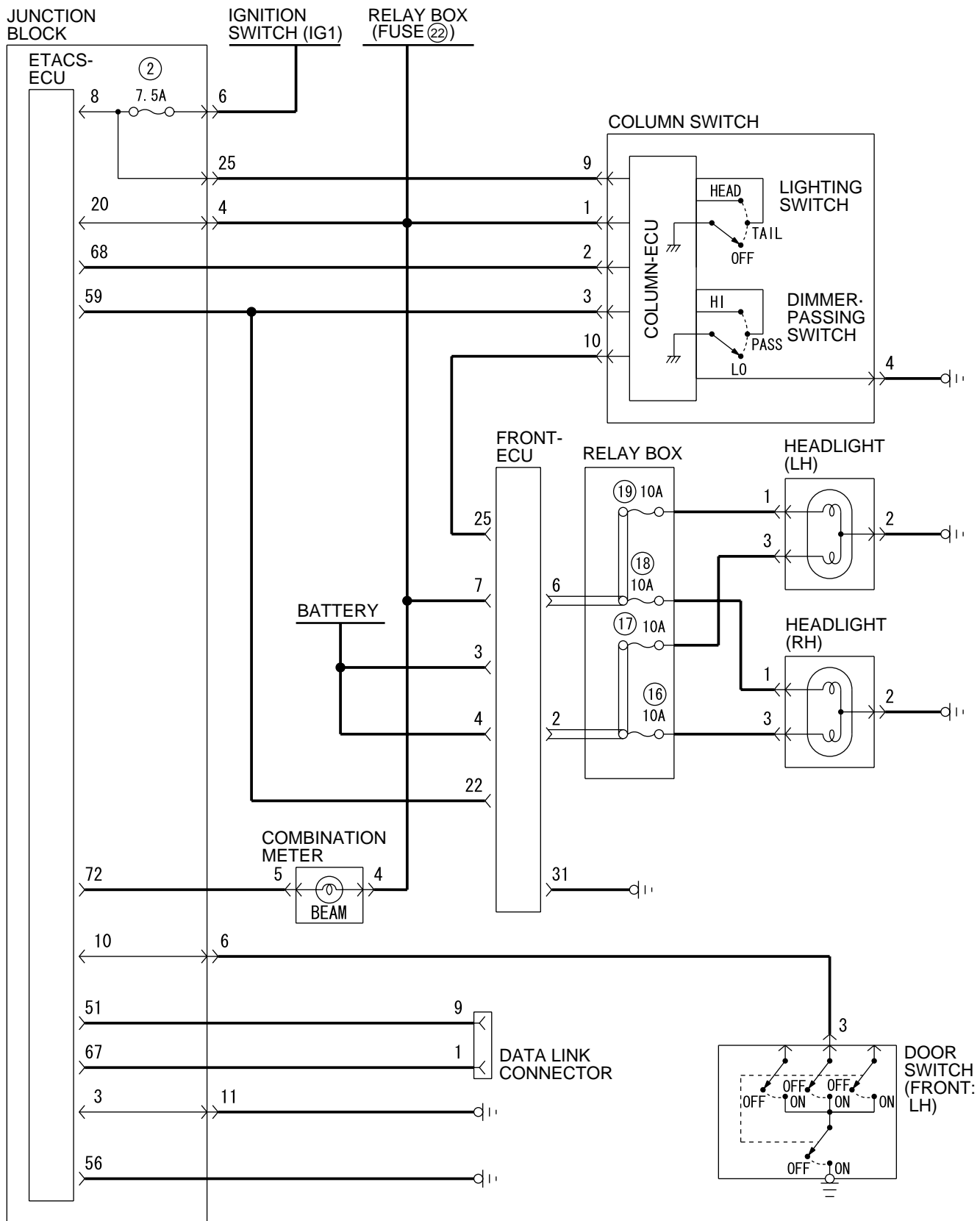
## General circuit diagram for the taillight



W4J54M94AA



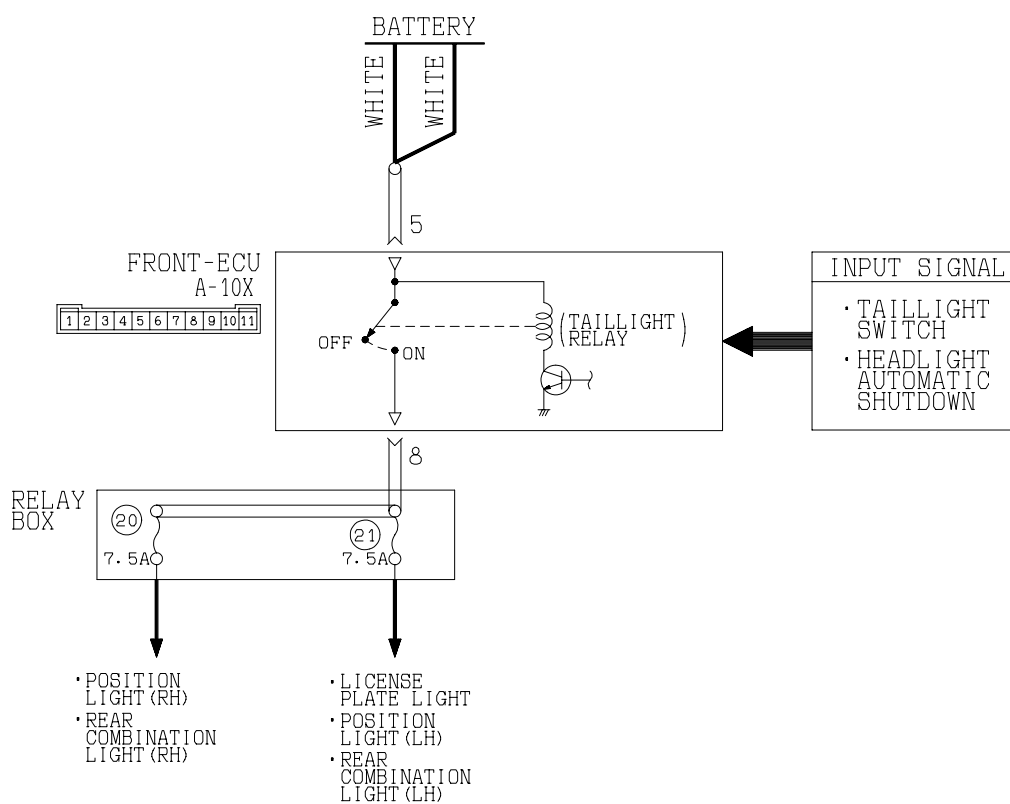
**General circuit diagram for the headlight**



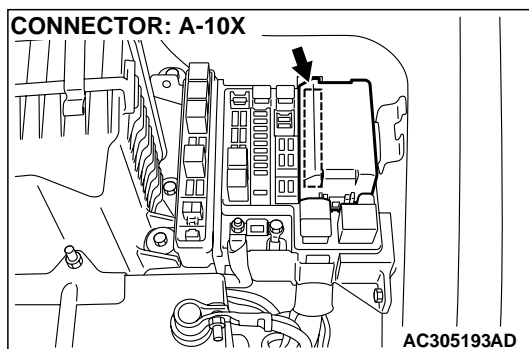
W4J54M10AA

**INSPECTION PROCEDURE J-1: Headlight and Taillight : Taillights does not illuminate normally.**

*NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991862. For details on how to use the SWS monitor, refer to "How to use SWS monitor [P.54B-10](#)."*

**Taillight Relay Circuit**

W3J01M11AA



### **CIRCUIT OPERATION**

When the lighting switch is set to "TAIL" position, the "TAIL" signal is sent through the column-ECU (incorporated in the column switch) to the front-ECU. IF the front-ECU receives the "TAIL" signal through the column-ECU, the front-ECU turns on the taillight relay (incorporated in the front-ECU), thus causing the taillights to illuminate.

### **TECHNICAL DESCRIPTION (COMMENT)**

If the taillights do not illuminate normally, the column switch or the front-ECU may be defective.

### **TROUBLESHOOTING HINTS**

- The column switch (taillight switch) may be defective
- The front-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

## **DIAGNOSIS**

### **Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991922: Probe Harness

**STEP 1. Use scan tool MB991958 to select "ECU COMM CHK" on the SWS monitor display.**

Check the following ECUs:

- Column-ECU
- Front-ECU

**⚠ CAUTION**

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect the DLC harness before connecting the column-ECU harness. Be sure to connect SWS monitor kit MB991862 after turning on scan tool MB991958.

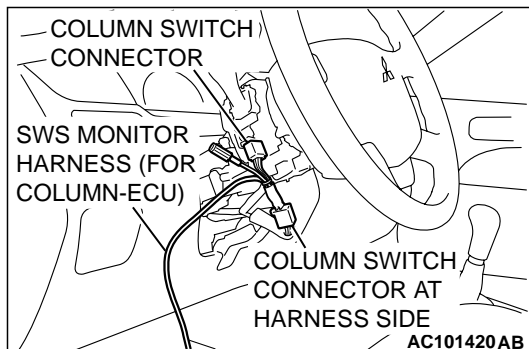
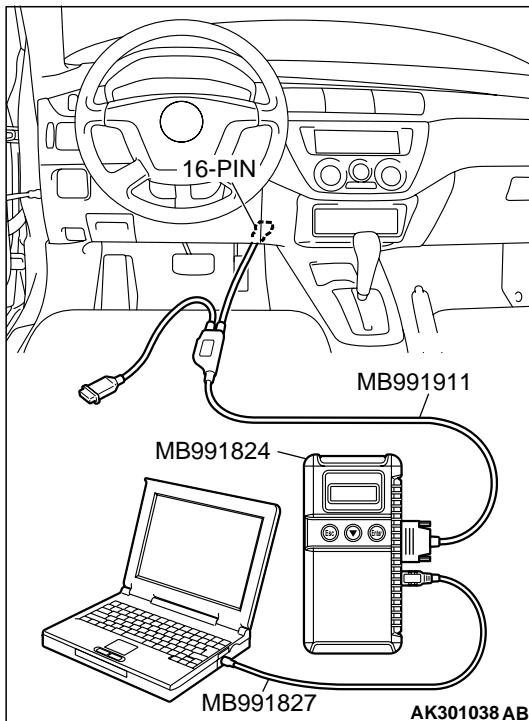
- (1) Connect scan tool MB991958 to the data link connector.
- (2) Connect SWS monitor kit MB991862 to the column switch connector.
- (3) Turn the ignition switch to the "LOCK" (OFF) position.
- (4) Operate scan tool MB991958 according to the procedure below to display "ECU COMM CHK."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "SWS MONITOR."
  4. Select "ECU COMM CHK."
- (5) Scan tool MB991958 should show "OK" on the "ECU COMM CHK" menus for both the "COLUMN ECU" and the "FRONT ECU" menus.

**Q: Is "OK" displayed on both the "COLUMN ECU" and "FRONT ECU" menus?**

"OK" are displayed for all the items : Go to Step 2.

"NG" is displayed on the "COLUMN ECU" menu : Refer to Inspection Procedure A-2 "Communication with column switch (column-ECU) is not possible P.54B-35."

"NG" is displayed on the "FRONT ECU" menu : Refer to Inspection procedure A-4 "Communication with front-ECU is not possible P.54B-53."



**STEP 2. Check the input signal by using "FUNCTION DIAG." menu of the SWS monitor.**

Check the input signals from the following switches:

- Ignition switch: ON
- Lighting switch: TAIL

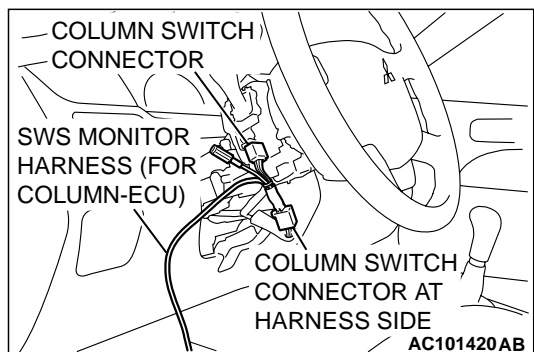
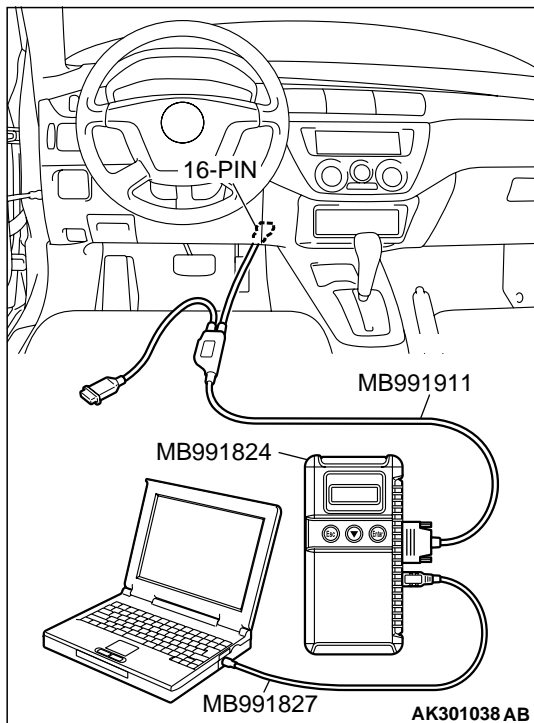
*NOTE: Turn the ignition switch to the "ON" position in order to disable the headlight automatic shutdown function.*

Operate scan tool MB991958 according to the procedure below to display "TAILLIGHT."

1. Select "SYSTEM SELECT."
2. Select "SWS."
3. Select "SWS MONITOR."
4. Select "FUNCTION DIAG."
5. Select "LIGHTING."
6. Select "TAILLIGHT."

Check that normal conditions are displayed on the items described in the table below.

ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 01	TAILLIGHT SW	ON
ITEM 35	H/L AUTO-CUT	OFF
ITEM 70	FRONT ECU ACK	NORMAL ACK



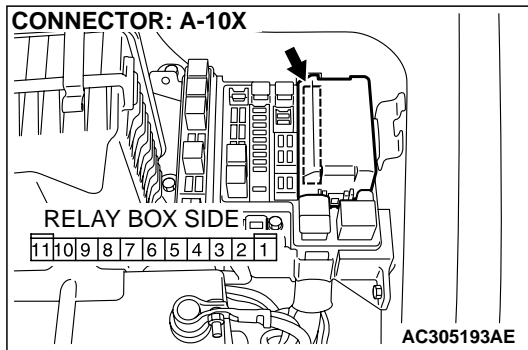
**Q: Are normal conditions displayed on the "TAILLIGHT SW", "H/L AUTO-CUT" and "FRONT ECU ACK"?**

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

**The scan tool does not show the respective normal condition for item "TAILLIGHT SW" : Refer to Inspection Procedure N-5 "ETACS-ECU does not receive a signal from the taillight switch [P.54B-486](#)."**

**The scan tool does not show the respective normal condition for item "H/L AUTO-CUT" : Refer to Inspection Procedure J-9 "The headlight automatic shutdown function does not work normally [P.54B-345](#)."**

**The scan tool does not show the respective normal condition for item "FRONT ECU ACK" : Replace the front-ECU. Verify that the taillights illuminate normally.**



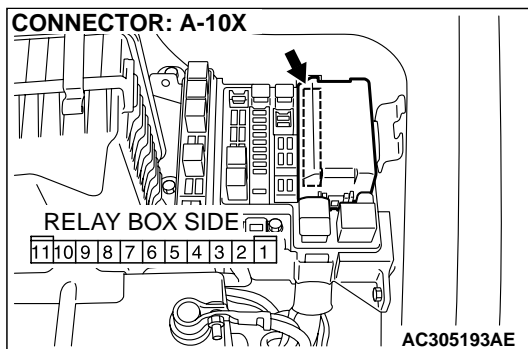
**STEP 3. Check the front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is the front-ECU connector A-10X in good condition?**

**YES :** Go to Step 4.

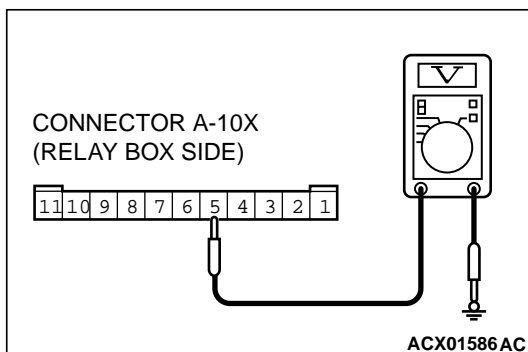
**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** Verify that the taillights illuminate normally.



**STEP 4. Check the battery power supply circuit to the front-ECU. Test at front-ECU connector A-10X.**

(1) Disconnect front-ECU connector A-10X and measure the voltage available at the relay box side of the connector.



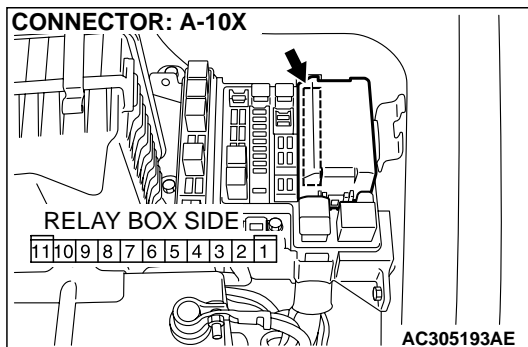
(2) Measure the voltage between terminal 5 and ground.

- The voltage should equal approximately 12 volts (battery positive voltage).

**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES :** Replace the front-ECU. Verify that the taillights illuminate normally.

**NO :** Go to Step 5.



**STEP 5. Check the wiring harness between front-ECU connector A-10X (terminal 5) and the battery.**

**Q: Is the wiring harness between front-ECU connector A-10X (terminal 5) and the battery in good condition?**

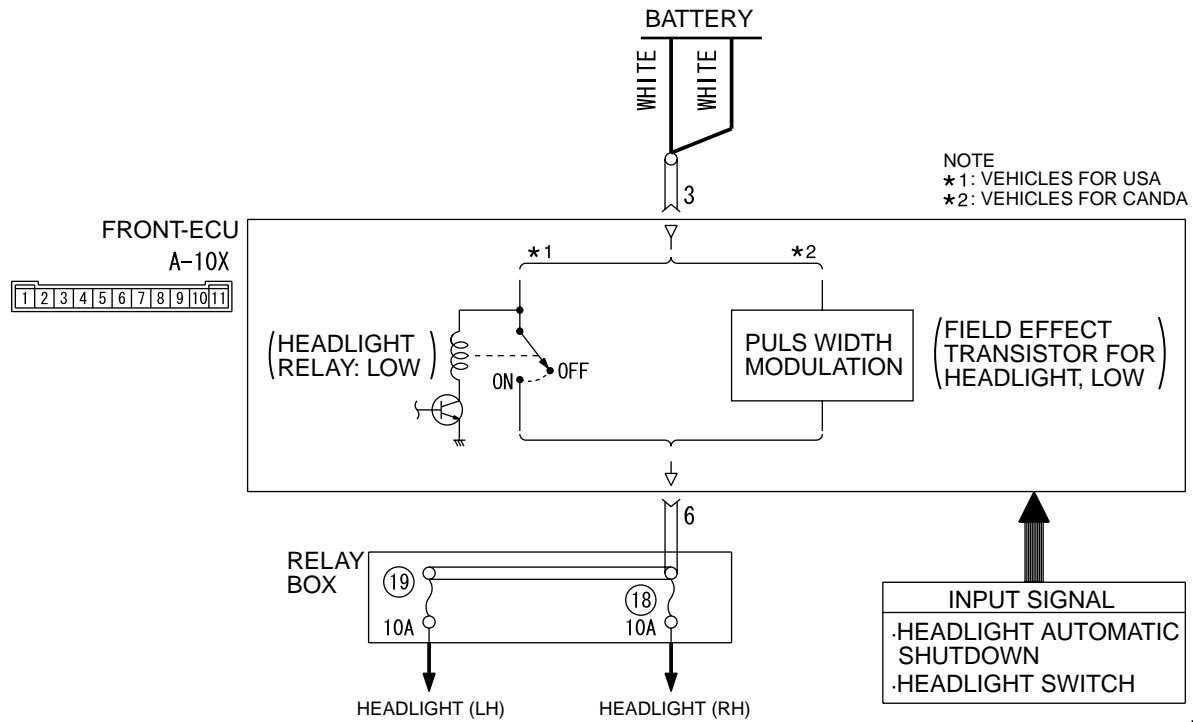
**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the taillights illuminate normally.

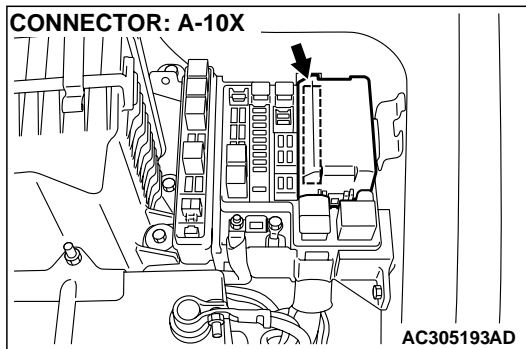
**INSPECTION PROCEDURE J-2: Headlight and Taillight: Headlights (low-beam) do not illuminate normally.**

*NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991862. For details on how to use the SWS monitor, refer to "How to use SWS monitor [P.54B-10](#)."*

**Headlight Relay (Low-beam) Circuit**



W4J54M01AA



**CIRCUIT OPERATION**

- When the lighting switch is set to "HEAD" position, the "HEAD" signal is sent through the column-ECU (incorporated in the column switch) to the front-ECU. IF the front-ECU receives the "HEAD" signal through the column-ECU, the front-ECU turns on the headlight relay (incorporated in the front-ECU), thus causing the headlights to illuminate. The headlights always illuminate at low-beam by the headlight dimmer switch automatic resetting function.
- If the SWS communication line is defective, the front-ECU operates the headlights by using the other communication lines (headlight backup circuit) instead of that line.

**TECHNICAL DESCRIPTION (COMMENT)**

If the headlights (low-beam) do not illuminate normally, the column switch or the front-ECU may be defective.

**TROUBLESHOOTING HINTS**

- The column switch (turn-signal light and lighting switch) may be defective
- The front-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991922: Probe Harness



**STEP 1. Use scan tool MB991958 to select "ECU COMM CHK" on the SWS monitor display.**

Check the following ECUs:

- Column-ECU
- Front-ECU

**⚠ CAUTION**

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect the DLC harness before connecting the column-ECU harness. Be sure to connect SWS monitor kit MB991862 after turning on scan tool MB991958.

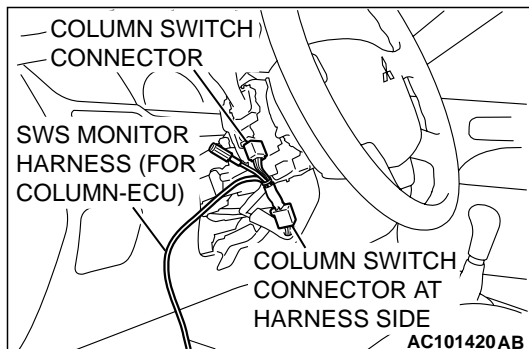
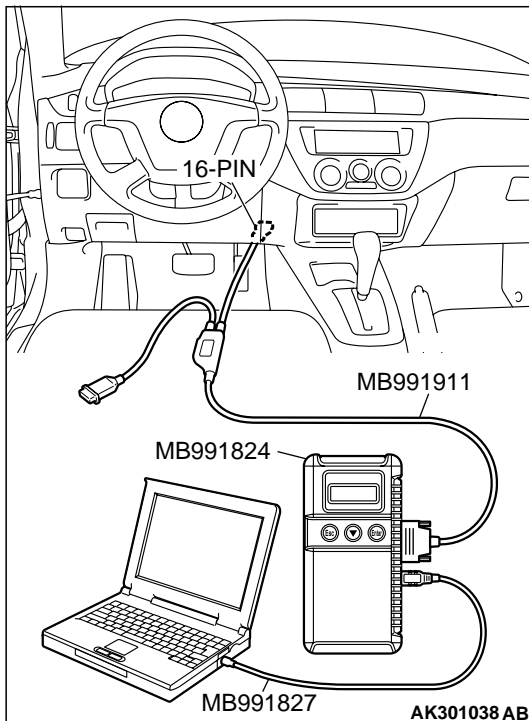
- (1) Connect scan tool MB991958 to the data link connector.
- (2) Connect SWS monitor kit MB991862 to the column switch connector.
- (3) Turn the ignition switch to the "LOCK" (OFF) position.
- (4) Operate scan tool MB991958 according to the procedure below to display "ECU COMM CHK."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "SWS MONITOR."
  4. Select "ECU COMM CHK."
- (5) Scan tool MB991958 should show "OK" on the "ECU COMM CHK" menus for both the "COLUMN ECU" and the "FRONT ECU" menus.

**Q: Is "OK" displayed on both the "COLUMN ECU" and "FRONT ECU" menus?**

"OK" are displayed for all the items : Go to Step 2.

"NG" is displayed on the "COLUMN ECU" menu : Refer to Inspection Procedure A-2 "Communication with column switch (column-ECU) is not possible P.54B-35."

"NG" is displayed on the "FRONT ECU" menu : Refer to Inspection procedure A-4 "Communication with front-ECU is not possible P.54B-53."



**STEP 2. Check the input signal by using "FUNCTION DIAG." menu of the SWS monitor.**

Check the input signals from the following switches:

- Ignition switch: ON
- Lighting switch: HEAD

Operate scan tool MB991958 according to the procedure below to display "HEADLIGHT LO."

1. Select "SYSTEM SELECT."
2. Select "SWS."
3. Select "SWS MONITOR."
4. Select "FUNCTION DIAG."
5. Select "LIGHTING."
6. Select "HEADLIGHT LO."

Check that normal conditions are displayed on the items described in the table below.

ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 00	HEADLIGHT SW	ON
ITEM 35	H/L AUTO-CUT	OFF
ITEM 70	FRONT ECU ACK	NORMAL ACK

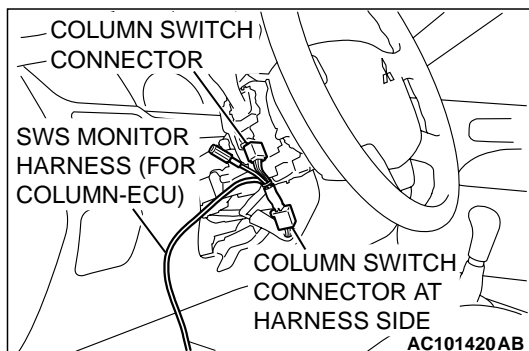
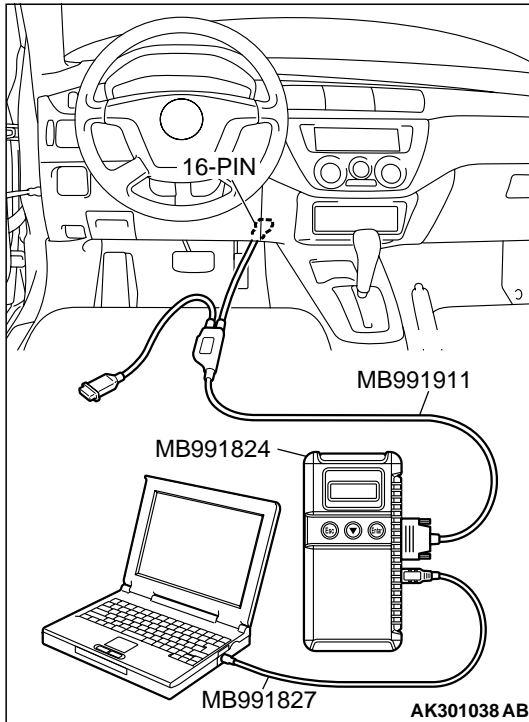
**Q: Are normal conditions displayed on the "HEADLIGHT SW", "H/L AUTO-CUT" and "FRONT ECU ACK"?**

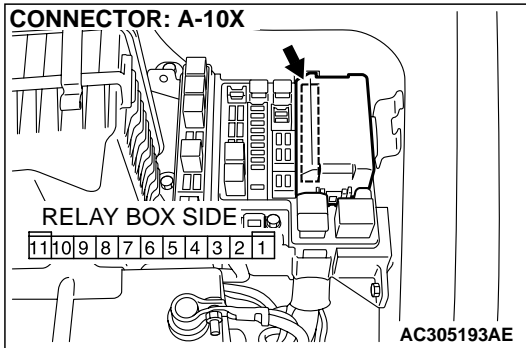
**Normal conditions are displayed for all the items :** Go to Step 3.

**The scan tool does not show the respective normal condition for item "HEADLIGHT SW" :** Normal condition is not displayed on the "HEADLIGHT SW": Refer to Inspection Procedure N-5 "ETACS-ECU does not receive a signal from the headlight switch [P.54B-486](#)."

**The scan tool does not show the respective normal condition for item "H/L AUTO-CUT" :** Normal condition is not displayed on the "H/L AUTO-CUT": Refer to Inspection Procedure J-9 "Headlight automatic shutdown function does not work normally [P.54B-345](#)."

**The scan tool does not show the respective normal condition for item "FRONT ECU ACK" :** Normal condition is not displayed on the "FRONT ECU ACK": Replace the front-ECU. Verify that the headlights (low-beam) illuminate normally.



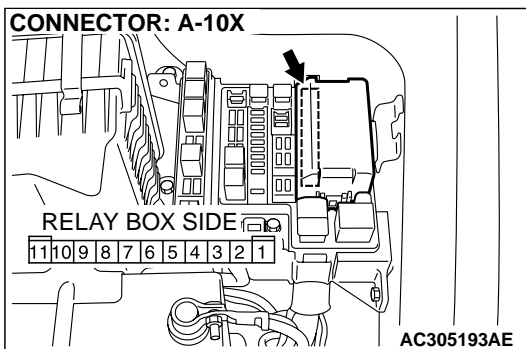


**STEP 3. Check the front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is the front-ECU connector A-10X in good condition?**

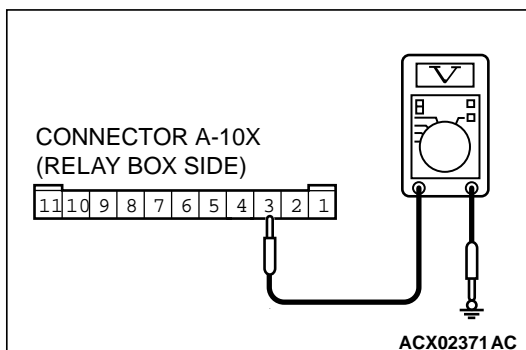
**YES :** Go to Step 4.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the headlights (low-beam) illuminate normally.



**STEP 4. Check the battery power supply circuit to the front-ECU. Test at front-ECU connector A-10X.**

(1) Disconnect front-ECU connector A-10X and measure the voltage available at the relay box side of the connector.



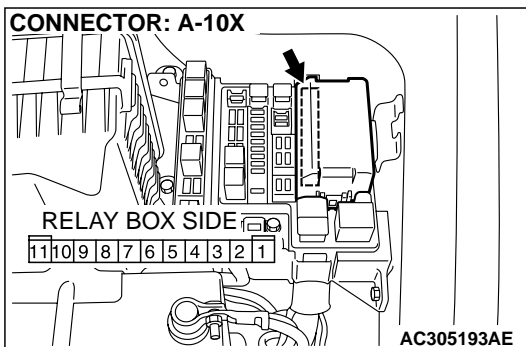
(2) Measure the voltage between terminal 3 and ground.

- The voltage should equal approximately 12 volts (battery positive voltage).

**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES :** Replace the front-ECU. Verify that the headlights (low-beam) illuminate normally.

**NO :** Go to Step 5.



**STEP 5. Check the wiring harness between front-ECU connector A-10X (terminal 3) and the battery.**

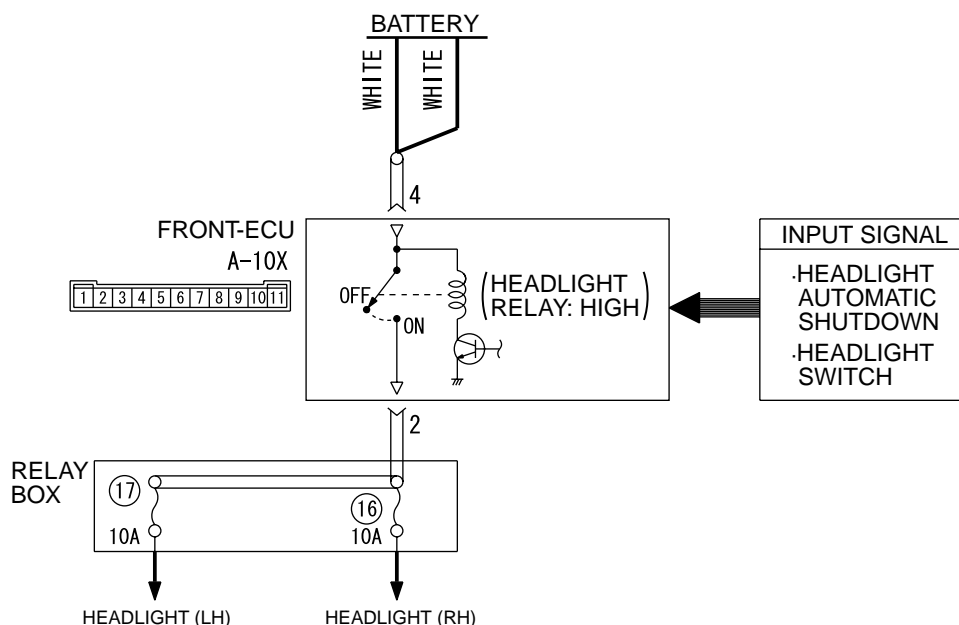
**Q: Is the wiring harness between front-ECU connector A-10X (terminal 3) and the battery in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the headlights (low-beam) illuminate normally.

**INSPECTION PROCEDURE J-3: Headlight and Taillight: Headlights (high-beam) do not illuminate normally.**

*NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991862. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-10."*

**Headlight Relay (High-beam) Circuit**

W4J54M02AA

**CIRCUIT OPERATION**

When the dimmer switch is turned on, the column switch sends a signal to the front-ECU. Then the front-ECU switches the headlights from low-beam to high beam or vice versa.

**TECHNICAL DESCRIPTION (COMMENT)**

If the headlights (high beam) do not illuminate normally, the column switch or the front-ECU may be defective.

**TROUBLESHOOTING HINTS**

- The column switch (turn-signal light and lighting switch) may be defective
- The front-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991922: Probe Harness

**STEP 1. Use scan tool MB991958 to select "ECU COMM CHK" on the SWS monitor display.**

Check the following ECUs:

- Column-ECU
- Front-ECU

**⚠ CAUTION**

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect the DLC harness before connecting the column-ECU harness. Be sure to connect SWS monitor kit MB991862 after turning on scan tool MB991958.

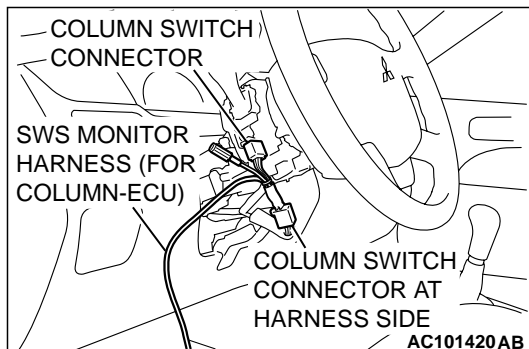
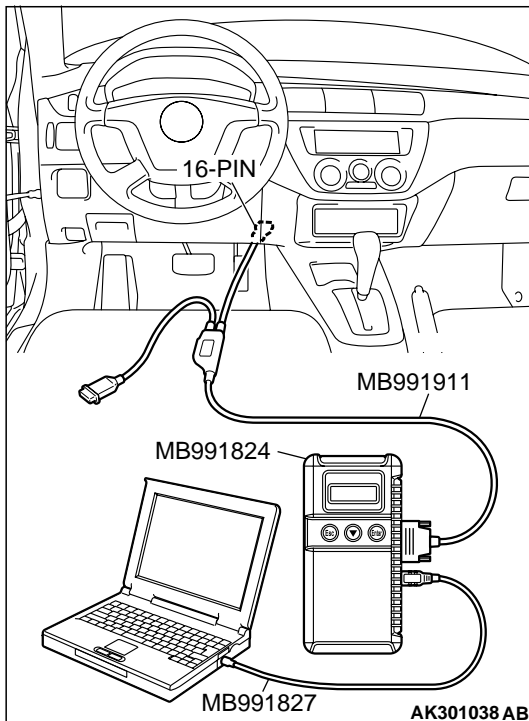
- (1) Connect scan tool MB991958 to the data link connector.
- (2) Connect SWS monitor kit MB991862 to the column switch connector.
- (3) Turn the ignition switch to the "LOCK" (OFF) position.
- (4) Operate scan tool MB991958 according to the procedure below to display "ECU COMM CHK."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "SWS MONITOR."
  4. Select "ECU COMM CHK."
- (5) Scan tool MB991958 should show "OK" on the "ECU COMM CHK" menus for both the "COLUMN ECU" and the "FRONT ECU" menus.

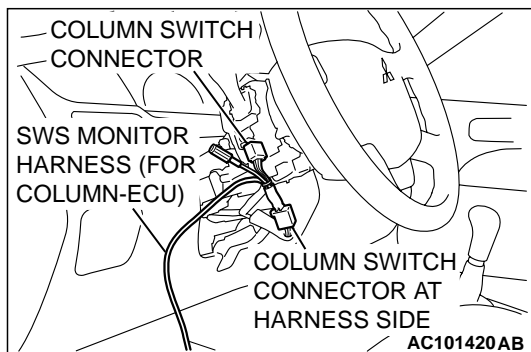
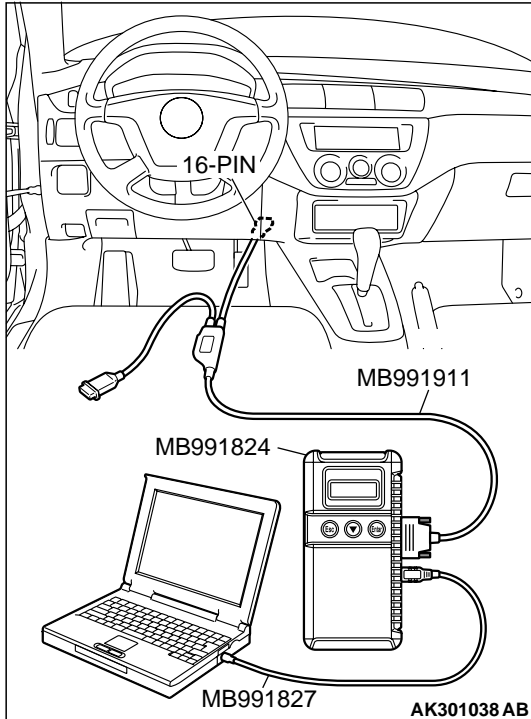
**Q: Is "OK" displayed on both the "COLUMN ECU" and "FRONT ECU" menus?**

**"OK" are displayed for all the items :** Go to Step 2.

**"NG" is displayed on the "COLUMN ECU" menu :** Refer to Inspection Procedure A-2 "Communication with column switch (column-ECU) is not possible [P.54B-35.](#)"

**"NG" is displayed on the "FRONT ECU" menu :** Refer to Inspection procedure A-4 "Communication with front-ECU is not possible [P.54B-53.](#)"



**STEP 2. Check the input signal by using "FUNCTION DIAG." menu of the SWS monitor.**

Check the input signals from the following switches:

- Ignition switch: ON
- Lighting switch: HEAD
- Dimmer switch: ON

Operate scan tool MB991958 according to the procedure below to display "HEADLIGHT HI."

1. Select "SYSTEM SELECT."
2. Select "SWS."
3. Select "SWS MONITOR."
4. Select "FUNCTION DIAG."
5. Select "LIGHTING."
6. Select "HEADLIGHT HI."

Check that normal conditions are displayed on the items described in the table below.

ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 00	HEADLIGHT SW	ON
ITEM 02	DIMMER SW	OFF (should turn "ON" momentarily when the dimmer switch is operated)
ITEM 35	H/L AUTO-CUT	OFF
ITEM 70	FRONT ECU ACK	HI-BEAM ACK

**Q: Are normal conditions displayed on the "HEADLIGHT SW", "DIMMER SW", "H/L AUTO-CUT" and "FRONT ECU ACK"?**

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

Replace the front-ECU. Verify that the headlights (high-beam) illuminate normally.

**The scan tool does not show the respective normal condition for item "HEADLIGHT SW" :** Refer to

Inspection Procedure N-5 "ETACS-ECU does not receive a signal from the headlight switch [P.54B-486](#)."

**The scan tool does not show the respective normal condition for item "DIMMER SW" :** Refer to Inspection

Procedure N-5 "ETACS-ECU does not receive a signal from the dimmer switch [P.54B-486](#)."

**The scan tool does not show the respective normal condition for item "H/L AUTO-CUT" :** Refer to Inspection

Procedure J-9 "Headlight automatic shutdown function does not work normally [P.54B-345](#)."

**The scan tool does not show the respective normal condition for item "FRONT ECU ACK" :** Replace the

front-ECU. Verify that the headlights (high-beam) illuminate normally.



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**INSPECTION PROCEDURE J-4: Headlight and Taillight: When the passing switch is turned "on", the headlights (low-beam or high-beam) do not illuminate.**

---

*NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991862. For details on how to use the SWS monitor, refer to "How to use SWS monitor [P.54B-10](#)."*

**TECHNICAL DESCRIPTION (COMMENT)**

If both of the headlights (low-beam and high-beam) do not illuminate, the input circuit from the passing switch or the front-ECU may be defective.

**TROUBLESHOOTING HINTS**

- The column switch may be defective
- The front-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS**

**Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991922: Probe Harness

---

**STEP 1. Verify the headlights.**

**Q: Do the headlights (low-beam and high-beam) illuminate normally?**

**YES :** Go to Step 2.

**Headlights (low-beam) do not illuminate normally :**

Refer to Inspection Procedure J-2 "Headlights (low-beam) do not illuminate normally [P.54B-289](#)."

**Headlights (high-beam) do not illuminate normally :**

Refer to Inspection Procedure J-3 "Headlights (high-beam) do not illuminate normally [P.54B-294](#)."

**STEP 2. Check the input signal by using "DATA LIST" menu of the SWS monitor.**

Turn the passing switch to the "ON" position before checking input signals from the passing switch.

**⚠ CAUTION**

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect the DLC harness before connecting the column-ECU harness. Be sure to connect SWS monitor kit MB991862 after turning on scan tool MB991958.

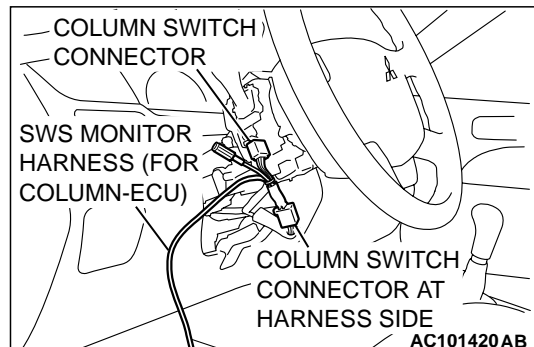
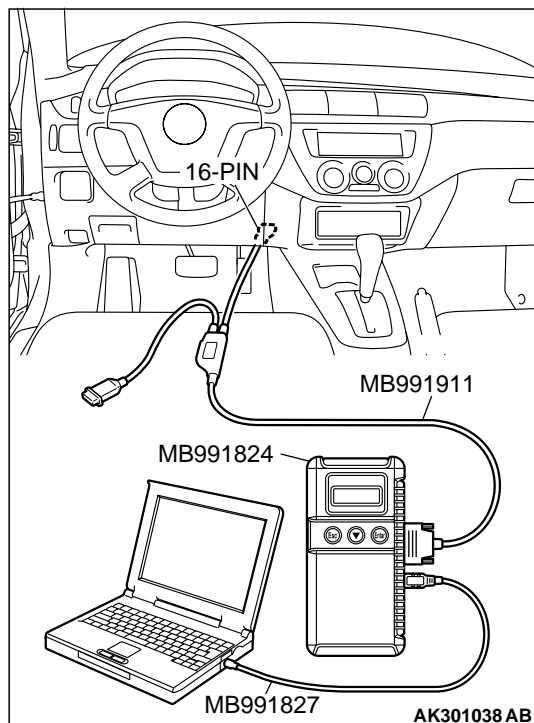
- (1) Connect scan tool MB991958 to the data link connector.
- (2) Connect SWS monitor kit MB991862 to the column switch connector.
- (3) Operate scan tool MB991958 according to the procedure below to display "COLUMN ECU."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "SWS MONITOR."
  4. Select "DATA LIST."
  5. Select "COLUMN ECU."
- (4) Check that normal conditions are displayed on the items described in the table below.

ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 03	PASSING SW	ON

**Q: Is normal condition displayed on the "PASSING SW"?**

**YES :** Replace the front-ECU. When the passing switch is turned "ON", the headlights (low-beam and high-beam) should illuminate normally.

**NO :** Refer to Inspection Procedure N-5 "ETACS-ECU does not receive a signal from the passing switch [P.54B-486](#)."





**INSPECTION PROCEDURE J-5: Headlight and Taillight:** Headlights do not illuminate when the lighting switch is at "AUTO," "TAIL," and "PASSING" position, but illuminate at low-beam when the switch is at "head" position. at this position, the headlights cannot be changed into high beam by operating the dimmer switch.

*NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991862. For details on how to use the SWS monitor, refer to "How to use SWS monitor [P.54B-10](#)."*

**TECHNICAL DESCRIPTION (COMMENT)**

If the headlights illuminate at low-beam regardless of the lighting switch positions, the headlight operation is in fail-safe mode.

**TROUBLESHOOTING HINTS**

- The column switch may be defective
- The front-ECU may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS**

**Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991922: Probe Harness

Use scan tool MB991958 to select "ECU COMM CHK" on the SWS monitor display.

Check the following ECUs:

- ETACS-ECU
- Column-ECU
- Front-ECU

**⚠ CAUTION**

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect the DLC harness before connecting the column-ECU harness. Be sure to connect SWS monitor kit MB991862 after turning on scan tool MB991958.

- (1) Connect scan tool MB991958 to the data link connector.
- (2) Connect SWS monitor kit MB991862 to the column switch connector.
- (3) Turn the ignition switch to the "LOCK" (OFF) position.
- (4) Operate scan tool MB991958 according to the procedure below to display "ECU COMM CHK."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "SWS MONITOR."
  4. Select "ECU COMM CHK."
- (5) Scan tool MB991958 should show "OK" on the "ECU COMM CHK" menus for the "ETACS ECU", "COLUMN ECU" and "FRONT ECU" menus.

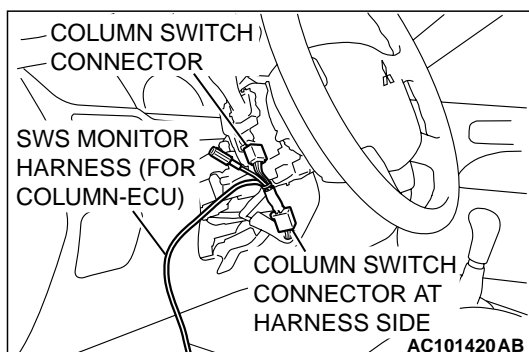
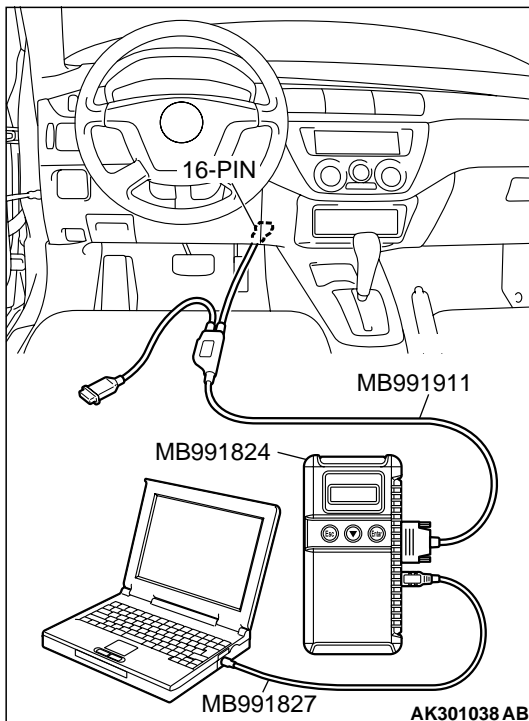
**Q: Is "OK" displayed on the "ETACS ECU", "COLUMN ECU" and "FRONT ECU" menus?**

**"OK" are displayed for all the items :** Replace the front-ECU. Verify that the headlights and the taillights illuminate normally.

**"NG" is displayed on the "ETACS ECU" menu :** Refer to Inspection Procedure A-3 "Communication with ETACS-ECU is not possible [P.54B-45](#)."

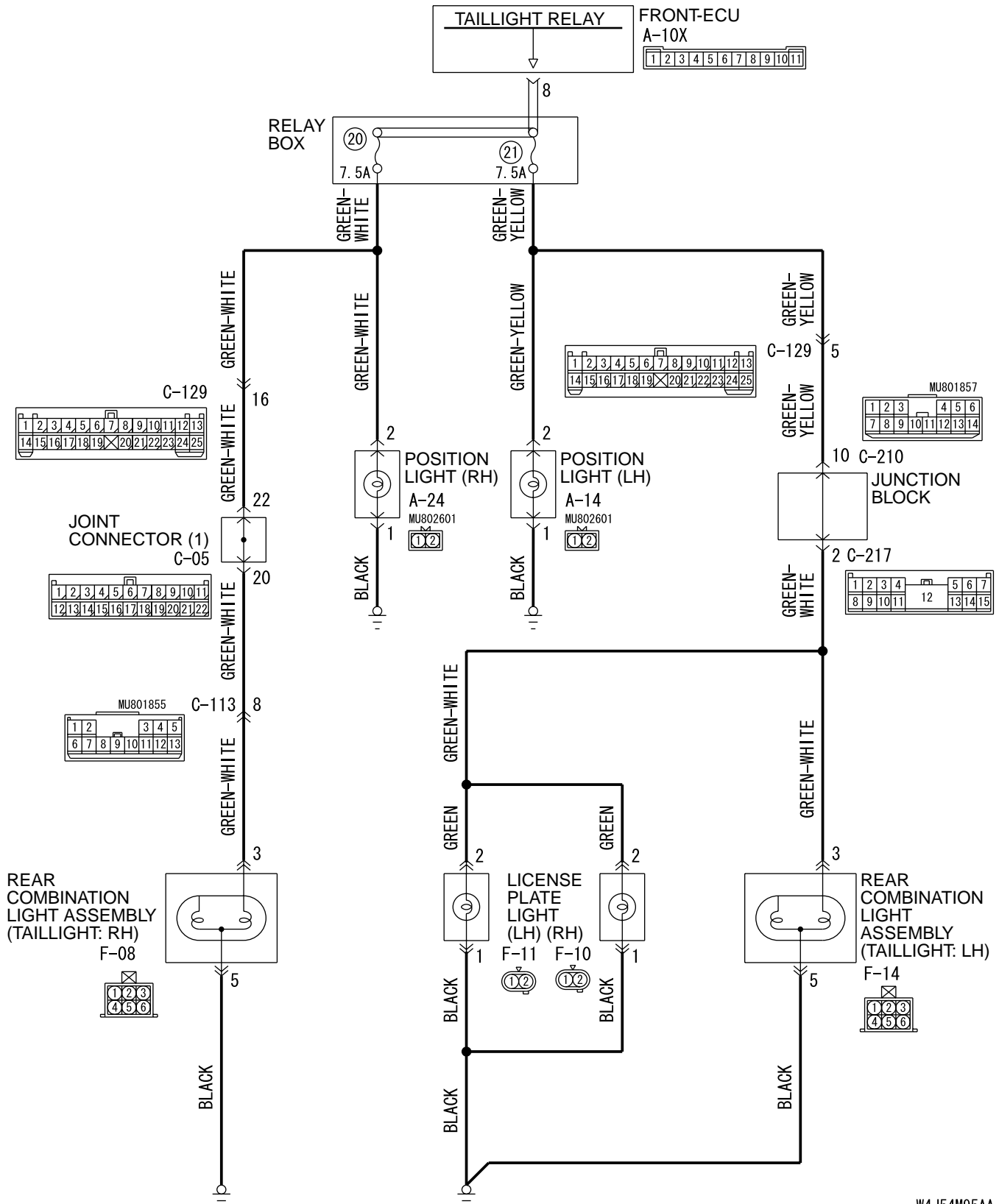
**"NG" is displayed on the "COLUMN ECU" menu :** Refer to Inspection Procedure A-2 "Communication with column switch (column-ECU) is not possible [P.54B-45](#)."

**"NG" is displayed on the "FRONT ECU" menu :** Refer to Inspection procedure A-4 "Communication with front-ECU is not possible [P.54B-53](#)."

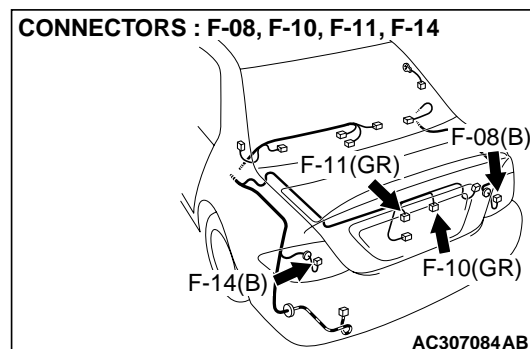
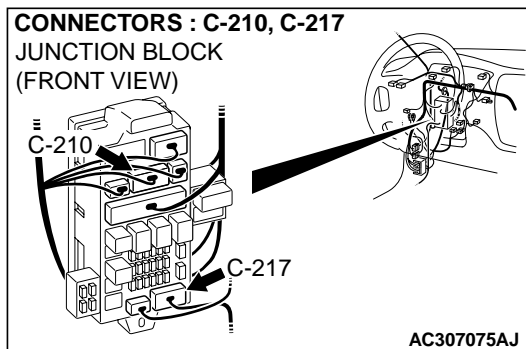
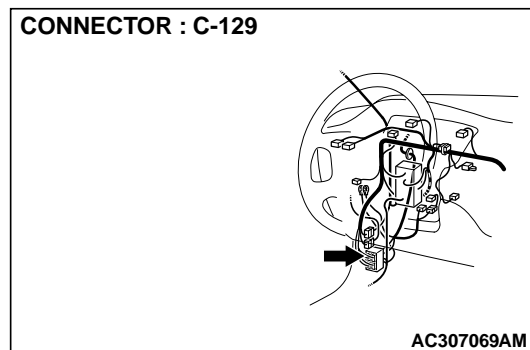
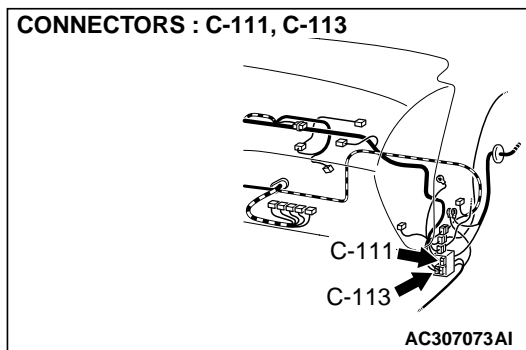
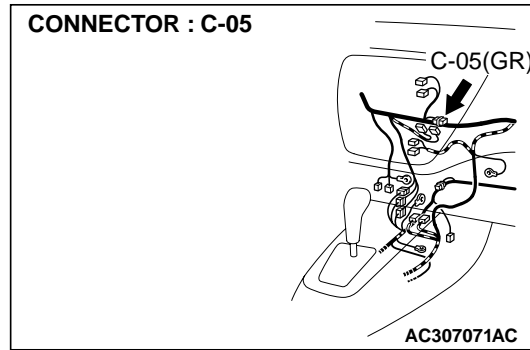
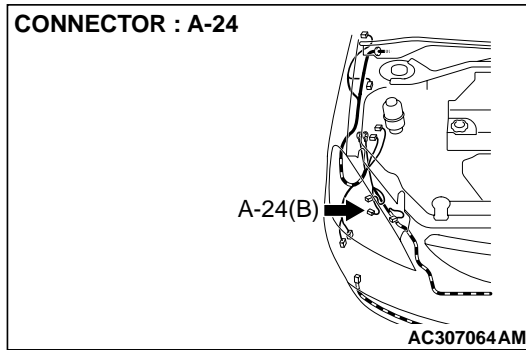
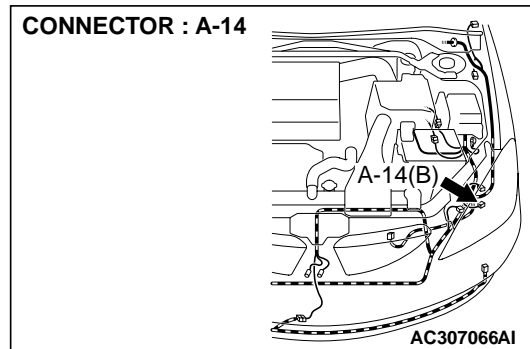
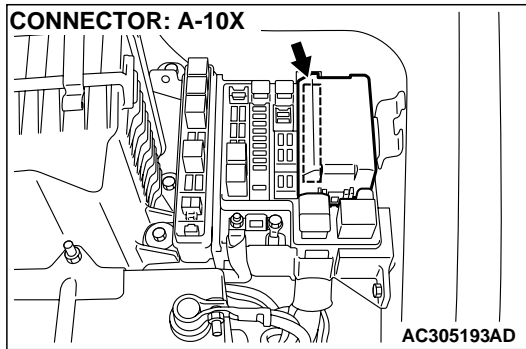


**INSPECTION PROCEDURE J-6: Headlight and Taillight: Any of taillights, the position lights or the license plate lights do not illuminate.**

**Taillights, Position Lights and License Plate Lights Circuit**



W4J54M95AA

**TECHNICAL DESCRIPTION (COMMENT)**

If the position lights, the taillights or the license plate lights do not illuminate, their bulb may be defective.

## TROUBLESHOOTING HINTS

- The position light bulb may be defective
- The stop/taillight bulb may be defective
- The license plate light bulb may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

## DIAGNOSIS

### Required Special Tool:

- MB991223: Harness Set

### STEP1. Verify the operation of each light.

#### Q: Which light does not illuminate?

**taillights (LH) and license plate light** : Go to Step 2.

**position light (RH) and taillights (RH)** : Go to Step 4.

**position light (LH)** : Go to Step 6.

**position light (RH)** : Go to Step 12.

**taillight (LH)** : Go to Step 18.

**taillight (RH)** : Go to Step 24.

**license plate lights** : Go to Step 30.

**license plate light (LH)** : Go to Step 35.

**license plate light (RH)** : Go to Step 41.

**position light (LH), taillight (LH) and license plate light** :  
Go to Step 47.

**All lights** : Refer to Inspection Procedure J-1 "Tail lights do not illuminate [P.54B-284](#)."

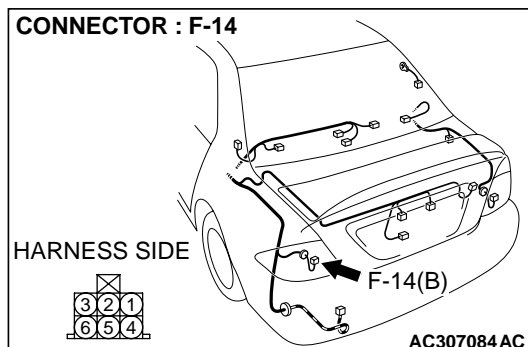
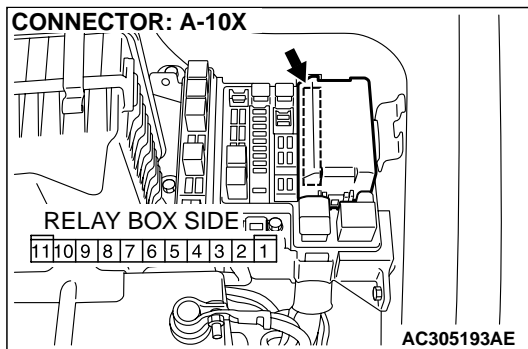
### STEP 2. Check rear combination light assembly (LH)

**connector F-14 and front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

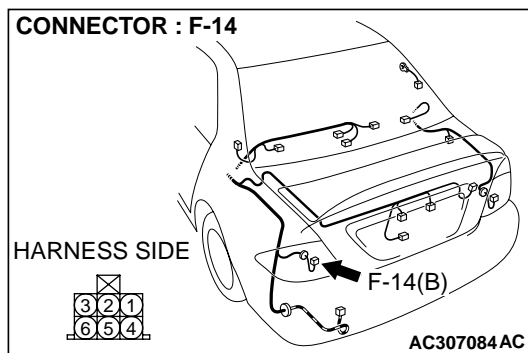
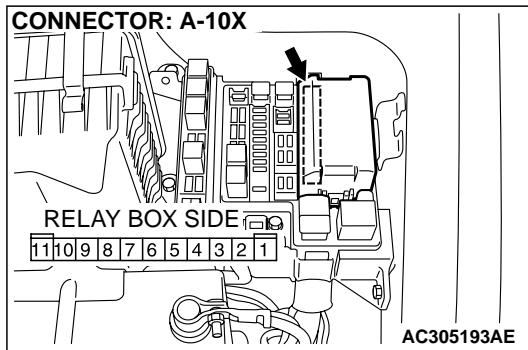
#### Q: Are rear combination light assembly (LH) connector F-14 and front-ECU connector A-10X in good condition?

**YES** : Go to Step 3.

**NO** : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). The taillight (LH) and the license plate lights should illuminate normally.

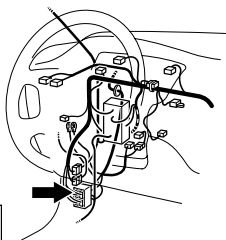


**STEP 3.** Check the wiring harness between rear combination light assembly (LH) connector F-14 (terminal 3) and front-ECU connector A-10X (terminal 8).



**CONNECTOR : C-129**

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	



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*NOTE: Also check junction block connectors C-210, C-217 and intermediate connector C-129 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connectors C-210, C-217 or intermediate connector C-129 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

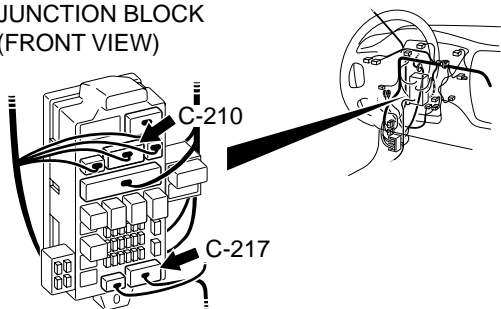
**Q: Is the wiring harness between rear combination light assembly (LH) connector F-14 (terminal 3) and front-ECU connector A-10X (terminal 8) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. The taillight (LH) and the license plate lights should illuminate normally.

**CONNECTORS : C-210, C-217**

JUNCTION BLOCK  
(FRONT VIEW)



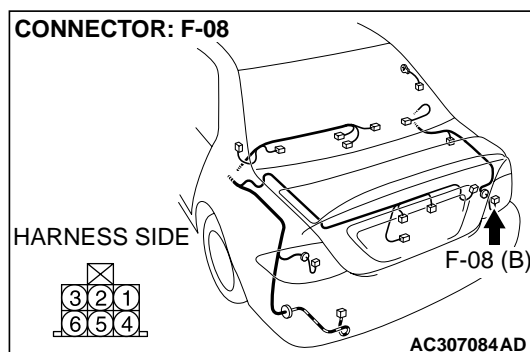
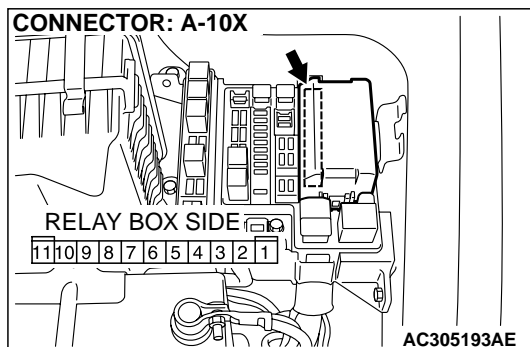
HARNESS SIDE  
C-210

6	5	4			3	2	1
14	13	12	11	10	9	8	7

HARNESS SIDE  
C-217

7	6	5		4	3	2	1
15	14	13	12	11	10	9	8

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**STEP 4. Check rear combination light assembly (RH) connector F-08 and front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

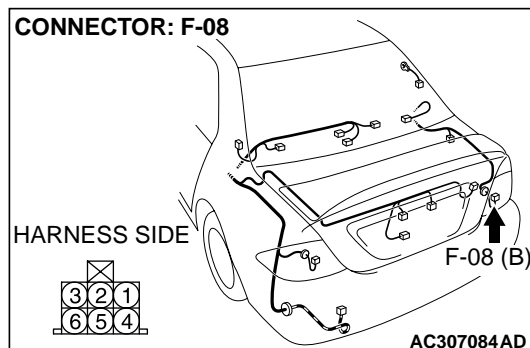
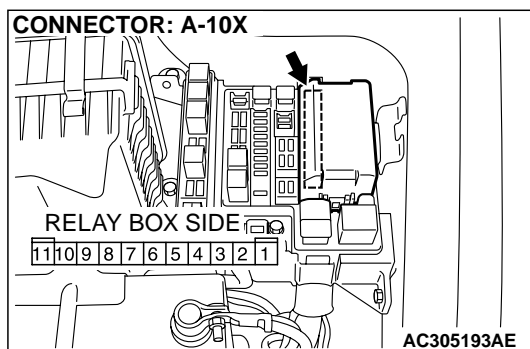
**Q: Are rear combination light assembly (RH) connector F-08 and front-ECU connector A-10X in good condition?**

**YES :** Go to Step 5.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

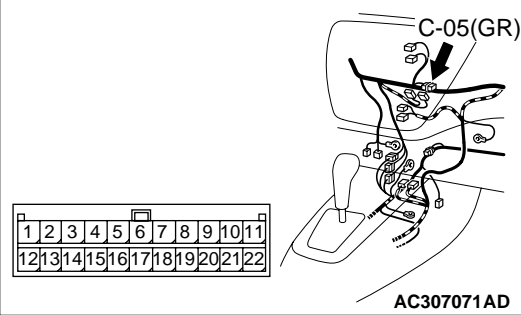
**P.00E-2.** The position light (RH) and the taillight (RH) should illuminate normally.

**STEP 5. Check the wiring harness between rear combination light assembly (RH) connector F-08 (terminal 3) and front-ECU connector A-10X (terminal 8).**





**CONNECTOR : C-05**



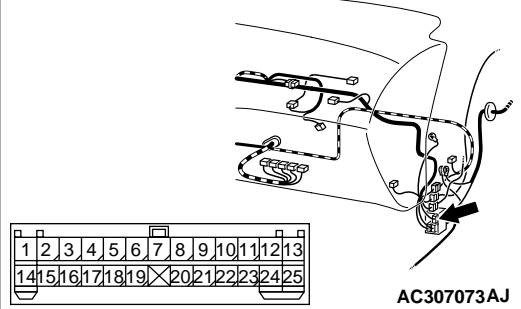
*NOTE: Also check joint connector C-05, intermediate connectors C-111 and C-129 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If joint connector C-05, intermediate connectors C-111 or C-129 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

**Q: Is the wiring harness between position light (RH) connector F-08 (terminal 3) and front-ECU connector A-10X (terminal 8) in good condition?**

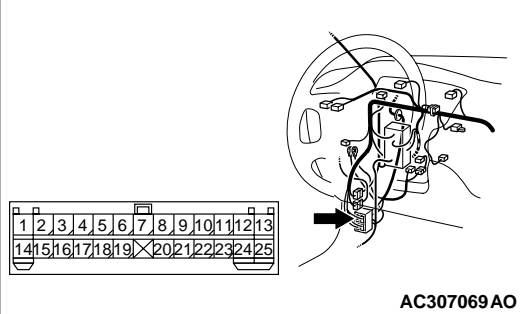
**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. The position light (RH) and the taillight (RH) should illuminate normally.

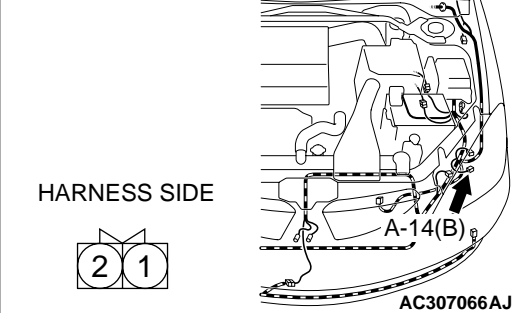
**CONNECTOR : C-111**



**CONNECTOR : C-129**



**CONNECTOR : A-14**



**STEP 6. Check position light (LH) connector A-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is position light (LH) connector A-14 in good condition?**

**YES :** Go to Step 7.

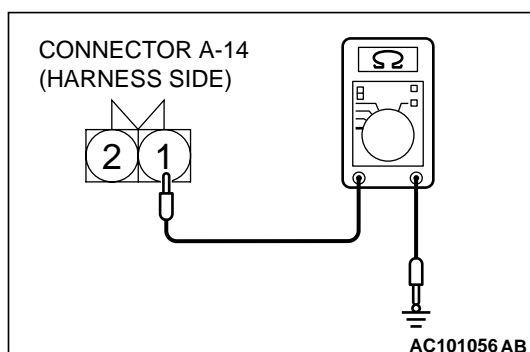
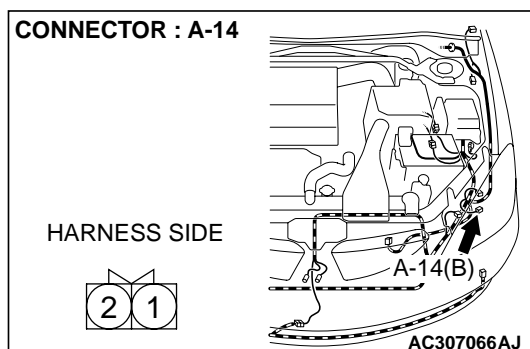
**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. Verify that the position light (LH) illuminates normally.

**STEP 7. Check the position light bulb (LH).**

- (1) Remove the position light bulb (LH).
- (2) Verify that the position light bulb (LH) is not damaged or burned out.

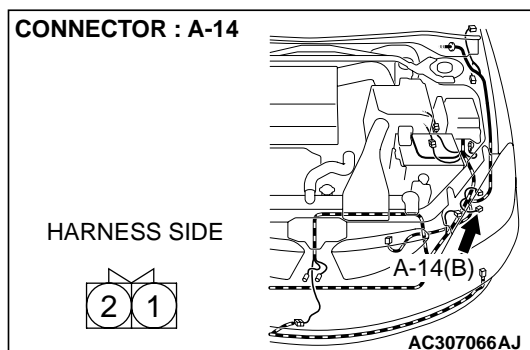
**Q: Is the position light bulb (LH) in good condition?****YES :** Go to Step 8.**NO :** Replace the position light bulb (LH). Verify that the position light (LH) illuminates normally.**STEP 8. Check the ground circuit to the position light (LH).****Test at position light (LH) connector A-14.**

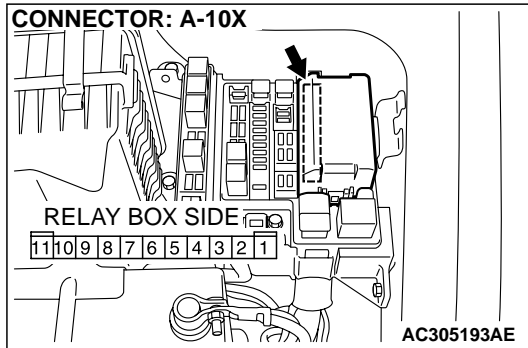
- (1) Disconnect position light (LH) connector A-14 and measure the resistance available at the wiring harness side of the connector.



- (2) Measure the resistance value between terminal 1 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?****YES :** Go to Step 10.**NO :** Go to Step 9.**STEP 9. Check the wiring harness between position light (LH) connector A-14 (terminal 1) and ground.****Q: Is the wiring harness between position light (LH) connector A-14 (terminal 1) and ground in good condition?****YES :** Replace the position light socket (LH). Verify that the position light (LH) illuminates normally.**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the position light (LH) illuminates normally.

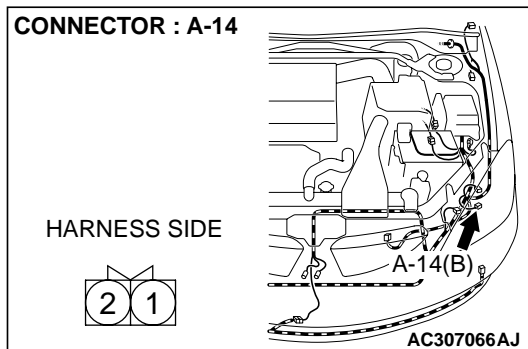


**STEP 10. Check front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is front-ECU connector A-10X in good condition?**

**YES :** Go to Step 11.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the position light (LH) illuminates normally.

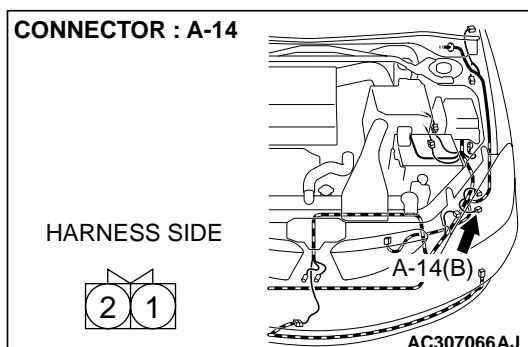
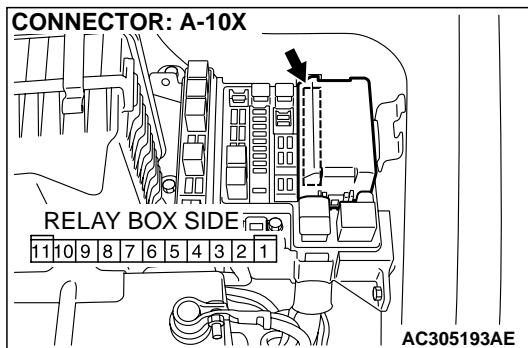


**STEP 11. Check the wiring harness between position light (LH) connector A-14 (terminal 2) and front-ECU connector A-10X (terminal 8).**

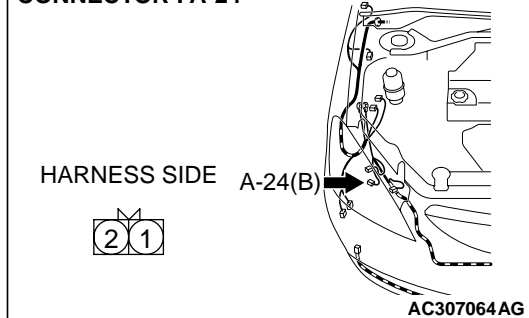
**Q: Is the wiring harness between position light (LH) connector A-14 (terminal 2) and front-ECU connector A-10X (terminal 8) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the position light (LH) illuminates normally.



CONNECTOR : A-24



**STEP 12. Check position light (RH) connector A-24 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is position light (RH) connector A-24 in good condition?**

**YES :** Go to Step 13.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the position light (RH) illuminates normally.

**STEP 13. Check the position light bulb (RH).**

- (1) Remove the position light bulb (RH).
- (2) Verify that the position light bulb (RH) is not damaged or burned out.

**Q: Is the position light bulb (RH) in good condition?**

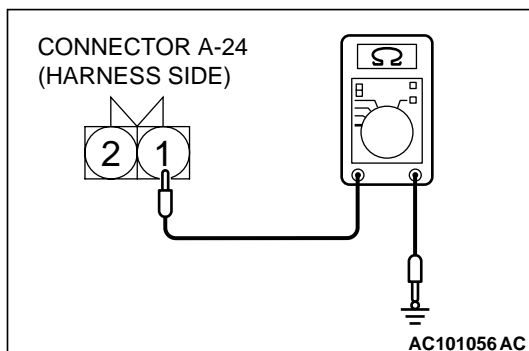
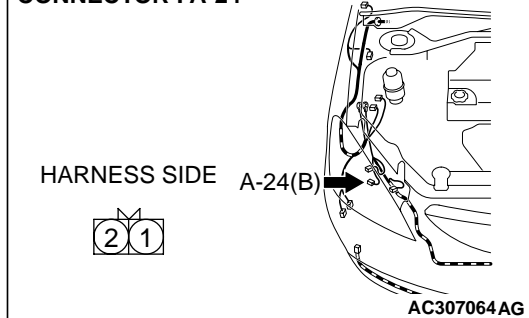
**YES :** Go to Step 14.

**NO :** Replace the position light bulb (RH). Verify that the position light (RH) illuminates normally.

**STEP 14. Check the ground circuit to the position light (LH). Test at position light (LH) connector A-24.**

- (1) Disconnect position light (LH) connector A-24 and measure the resistance available at the wiring harness side of the connector.

CONNECTOR : A-24



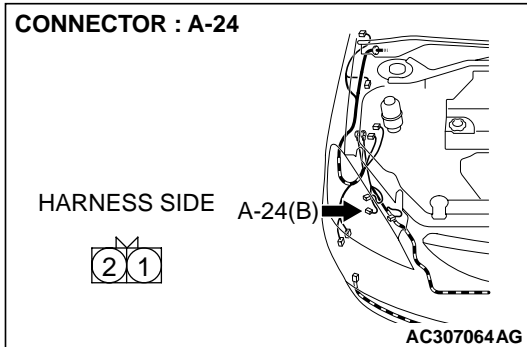
- (2) Measure the resistance value between terminal 1 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 16.

**NO :** Go to Step 15.

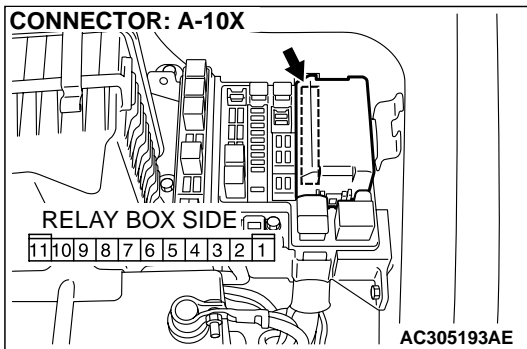


**STEP 15. Check the wiring harness between position light (RH) connector A-24 (terminal 1) and ground.**

**Q: Is the wiring harness between position light (RH) connector A-24 (terminal 1) and ground in good condition?**

**YES :** Replace the position light socket (RH). Verify that the position light (RH) illuminates normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the position light (RH) illuminates normally.

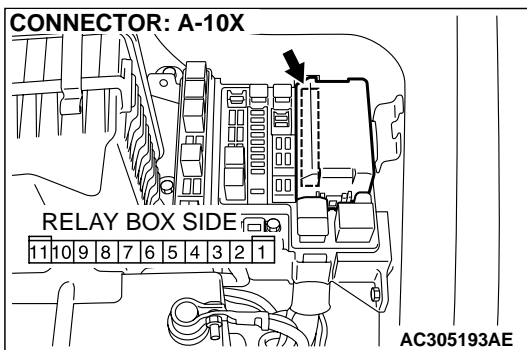


**STEP 16. Check front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is front-ECU connector A-10X in good condition?**

**YES :** Go to Step 17.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the position light (RH) illuminates normally.

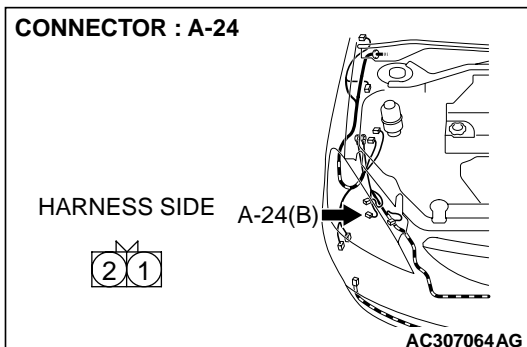


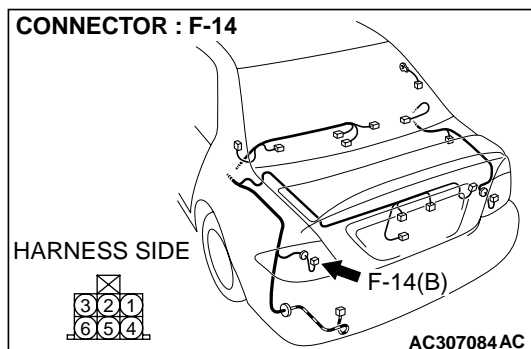
**STEP 17. Check the wiring harness between position light (RH) connector A-24 (terminal 2) and front-ECU connector A-10X (terminal 8).**

**Q: Is the wiring harness between position light (RH) connector A-24 (terminal 2) and front-ECU connector A-10X (terminal 8) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the position light (RH) illuminates normally.





**STEP 18. Check rear combination light (LH) connector F-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is rear combination light (LH) connector F-14 in good condition?**

**YES :** Go to Step 19.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** Verify that the taillights (LH) illuminate normally.

**STEP 19. Check the stop/taillight bulb (LH).**

(1) Remove the stop/taillight bulb (LH).

(2) Verify that the stop/taillight bulb (LH) is not damaged or burned out.

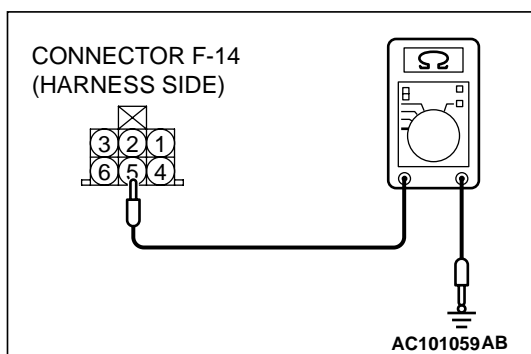
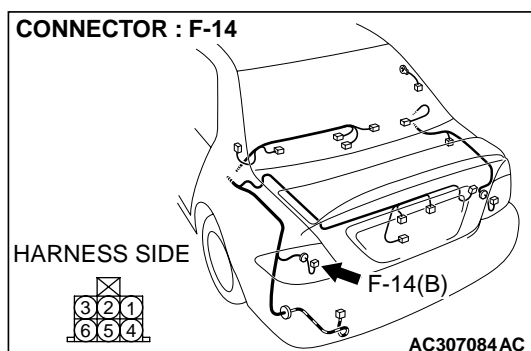
**Q: Is the stop/taillight bulb (LH) in good condition?**

**YES :** Go to Step 20.

**NO :** Replace the stop/taillight bulb (LH). Verify that the taillights (LH) illuminate normally.

**STEP 20. Check the ground circuit to the rear combination light (LH). Test at rear combination light (LH) connector F-14.**

(1) Disconnect rear combination light (LH) connector F-14 and measure the resistance available at the wiring harness side of the connector.



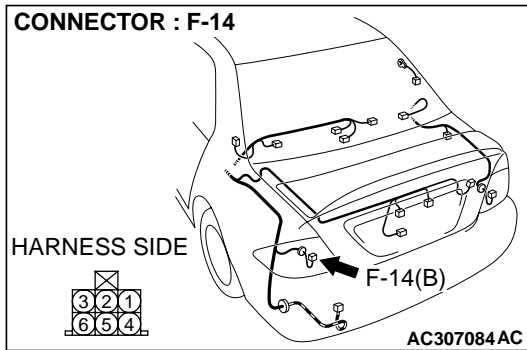
(2) Measure the resistance value between terminal 5 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 22.

**NO :** Go to Step 21.

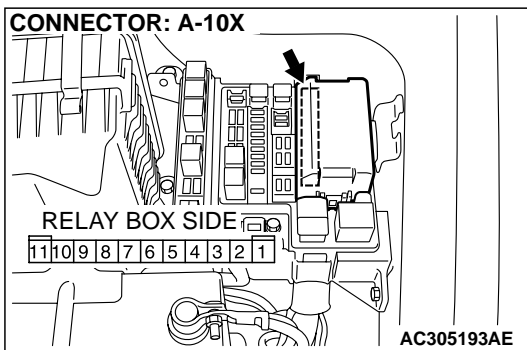


**STEP 21. Check the wiring harness between rear combination light (LH) connector F-14 (terminal 5) and ground.**

**Q: Is the wiring harness between rear combination light (LH) connector F-14 (terminal 5) and ground in good condition?**

**YES :** Replace the rear combination light socket (LH). Verify that the taillight (LH) illuminates normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the taillights (LH) illuminate normally.



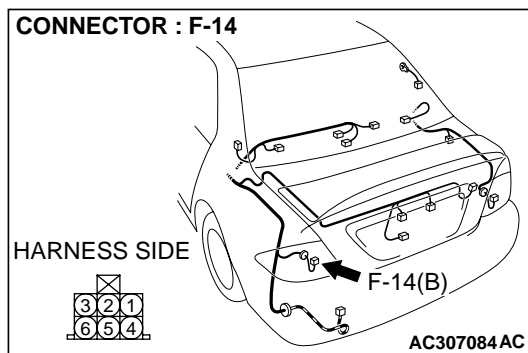
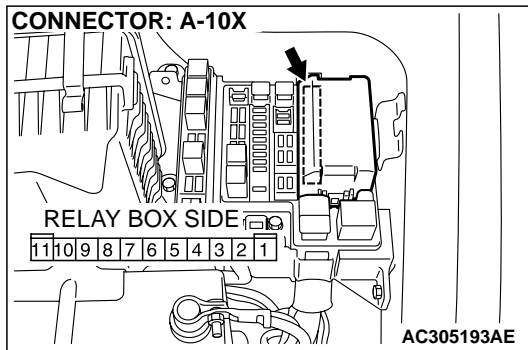
**STEP 22. Check front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is front-ECU connector A-10X in good condition?**

**YES :** Go to Step 23.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the taillights (LH) illuminate normally.

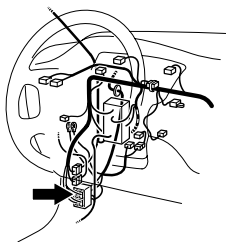
**STEP 23.** Check the wiring harness between rear combination light (LH) connector F-14 (terminal 3) and front-ECU connector A-10X (terminal 8).





**CONNECTOR : C-129**

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	



AC307069AO

*NOTE: Also check intermediate connector C-129, junction block connectors C-210 and C-217 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-129 or junction block connector C-210 or C-217 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

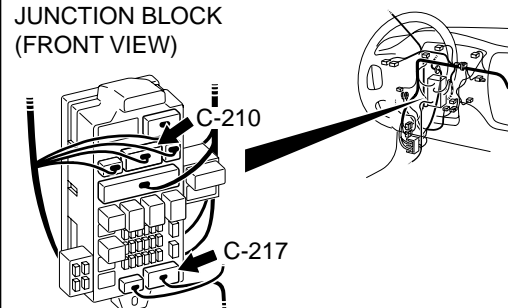
**Q: Is the wiring harness between rear combination light (LH) connector F-14 (terminal 3) and front-ECU connector A-10X (terminal 8) in good condition?**

**YES :** Replace the rear combination light socket (LH). Verify that the taillights (LH) illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the taillights (LH) illuminate normally.

**CONNECTORS : C-210, C-217**

JUNCTION BLOCK  
(FRONT VIEW)



HARNESS SIDE  
C-210

6	5	4		3	2	1
14	13	12	11	10	9	8

HARNESS SIDE  
C-217

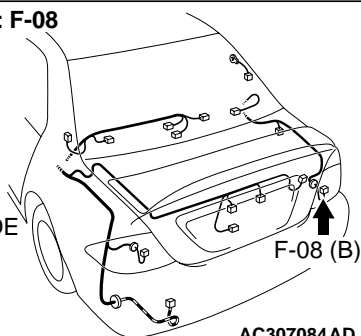
7	6	5		4	3	2	1
15	14	13	12	11	10	9	8

AC307076AD

**CONNECTOR: F-08**

HARNESS SIDE

3	2	1
6	5	4



AC307084AD

**STEP 24. Check rear combination light (RH) connector F-08 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is rear combination light (RH) connector F-08 in good condition?**

**YES :** Go to Step 25.

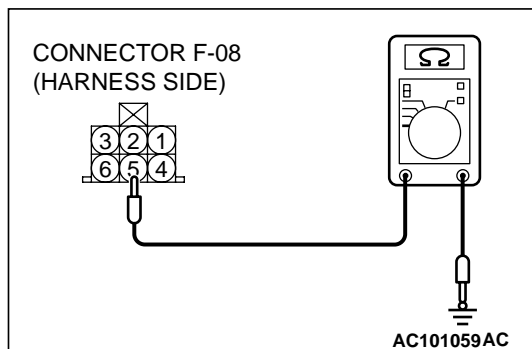
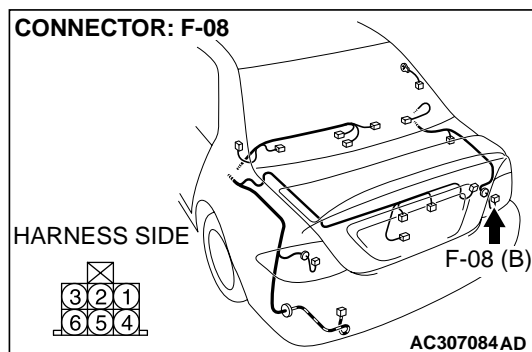
**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the taillight (RH) illuminates normally.

**STEP 25. Check the stop/taillight bulb (RH).**

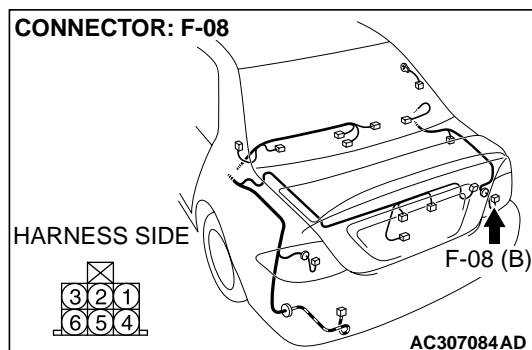
- (1) Remove the stop/taillight bulb (RH).
- (2) Verify that the stop/taillight bulb (RH) is not damaged or burned out.

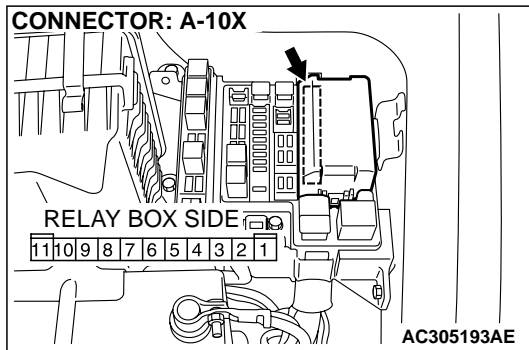
**Q: Is the stop/taillight bulb (RH) in good condition?****YES :** Go to Step 26.**NO :** Replace the stop/taillight bulb (RH). Verify that the taillight (RH) illuminates normally.**STEP 26. Check the ground circuit to the rear combination light (RH). Test at rear combination light (RH) connector F-08.**

- (1) Disconnect front combination light (RH) connector F-08 and measure the resistance available at the wiring harness side of the connector.



- (2) Measure the resistance value between terminal 5 and ground.
  - The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?****YES :** Go to Step 28.**NO :** Go to Step 27.**STEP 27. Check the wiring harness between rear combination light (RH) connector F-08 (terminal 5) and ground.****Q: Is the wiring harness between rear combination light (RH) connector F-08 (terminal 5) and ground in good condition?****YES :** Replace the rear combination light socket (RH). Verify that the taillight (RH) illuminates normally.**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the taillight (RH) illuminates normally.

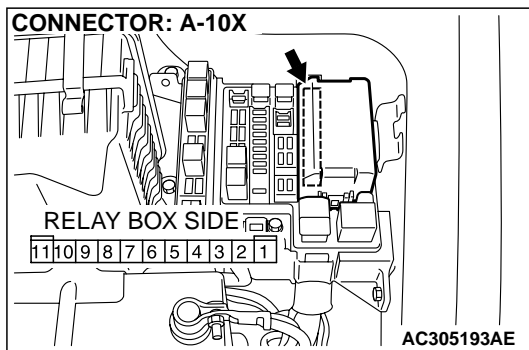


**STEP 28.** Check front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.

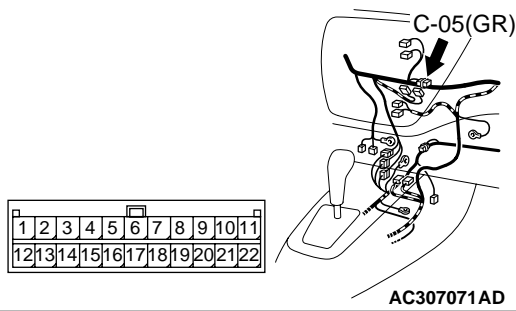
**Q:** Is front-ECU connector A-10X in good condition?

**YES :** Go to Step 29.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the taillight (RH) illuminates normally.



**STEP 29.** Check the wiring harness between rear combination (RH) connector F-08 (terminal 3) and front-ECU connector A-10X (terminal 8).

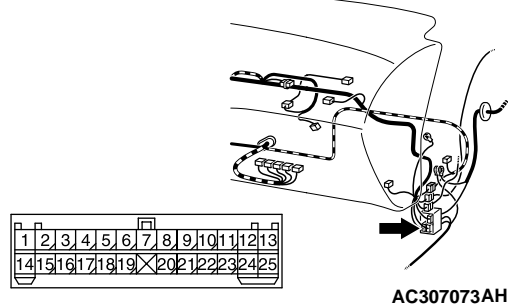
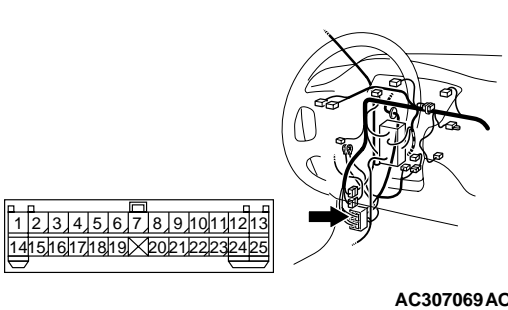
**CONNECTOR : C-05**

**NOTE:** Also check intermediate connectors C-113, C-129 and joint connector C-05 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-113, C-129 or joint connector C-05 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

**Q:** Is the wiring harness between rear combination light (RH) connector F-08 (terminal 3) and front-ECU connector A-10X (terminal 8) in good condition?

**YES :** Replace the rear light socket (RH). Verify that the taillight (RH) illuminates normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the taillight (RH) illuminates normally.

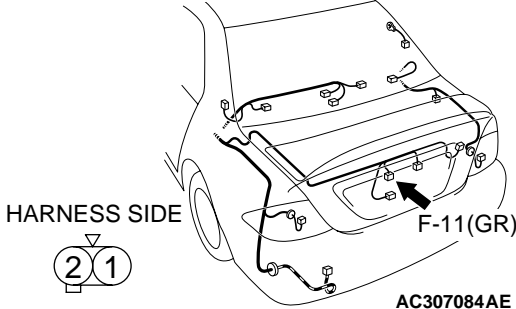
**CONNECTOR : C-113****CONNECTOR : C-129**

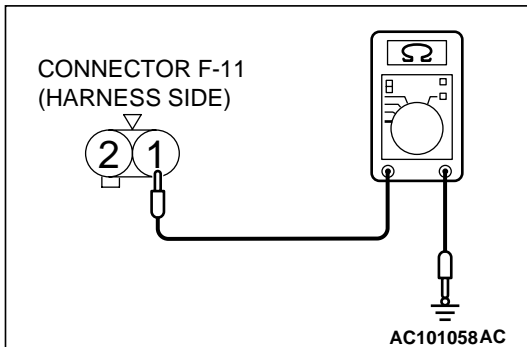
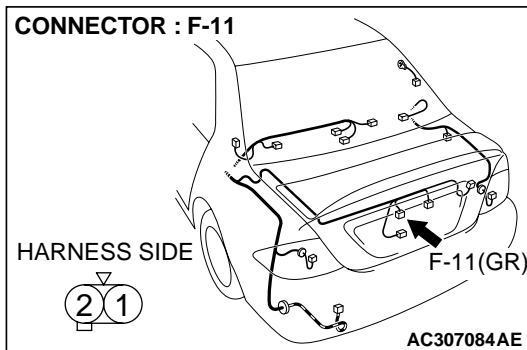
**STEP 31.** Check license plate light (LH) connector F-11 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

**Q:** Is license plate light (LH) connector F-11 in good condition?

**YES :** Go to Step 32.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the license plate lights illuminate normally.

**CONNECTOR : F-11**



**STEP 30. Check the ground circuit to the license plate light (LH). Test at license plate light (LH) connector F-11.**

(1) Disconnect license plate light (LH) connector F-11 and measure the resistance available at the wiring harness side of the connector.

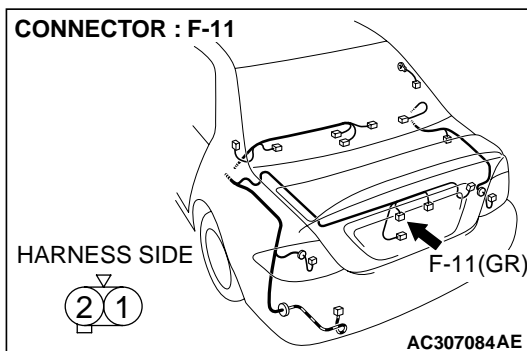
(2) Measure the resistance value between terminal 1 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 33.

**NO :** Go to Step 31.

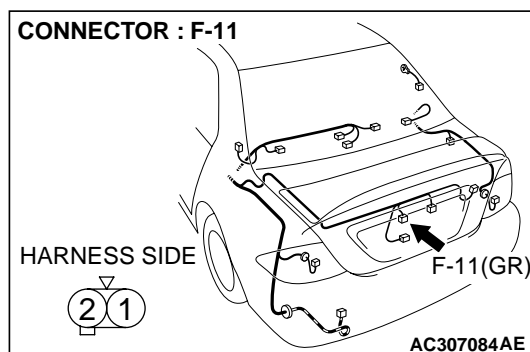
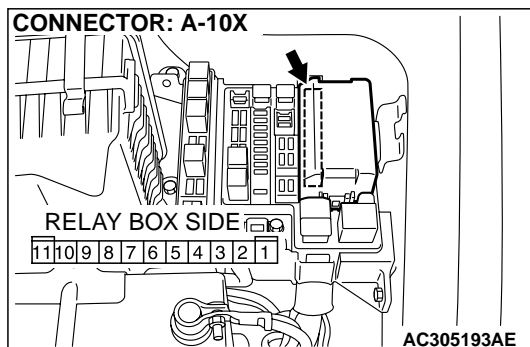


**STEP 32. Check the wiring harness between license plate light (LH) connector F-11 (terminal 1) and ground.**

**Q: Is the wiring harness between license plate light (LH) connector F-11 (terminal 1) and ground in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the license plate lights illuminate normally.



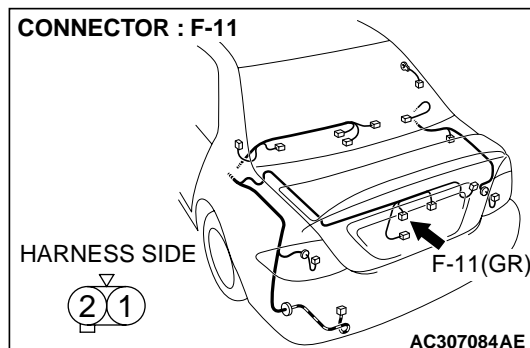
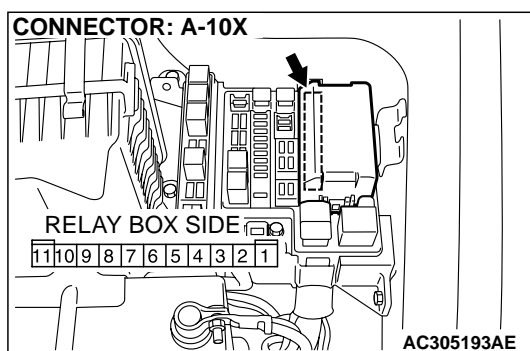
**STEP 33. Check license plate light (LH) connector F-11 and front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Are license plate light (LH) connector F-11 and front-ECU connector A-10X in good condition?**

**YES :** Go to Step 34.

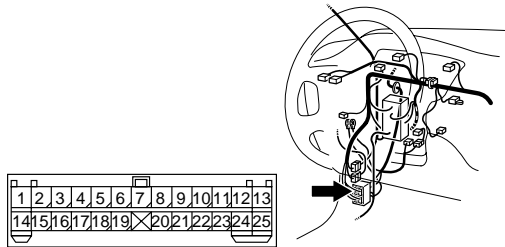
**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** Verify that the license plate lights illuminate normally.



**STEP 34. Check the wiring harness between license plate light (LH) connector F-11 (terminal 2) and front-ECU connector A-10X (terminal 8).**

**CONNECTOR : C-129**



AC307069AO

*NOTE: Also check intermediate connectors C-129, junction block connectors C-210 and C-217 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-129, junction block connector C-210 or C-217 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

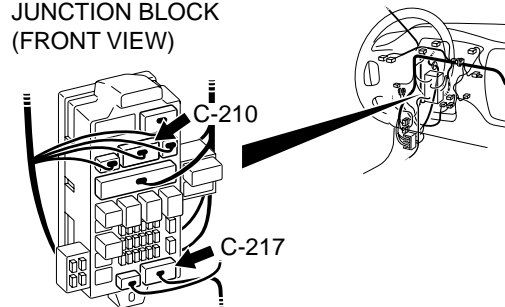
**Q: Is the wiring harness between license plate light (LH) connector F-11 (terminal 2) and front-ECU connector A-10X (terminal 8) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the license plate lights illuminate normally.

**CONNECTORS : C-210, C-217**

JUNCTION BLOCK  
(FRONT VIEW)



HARNESS SIDE  
C-210

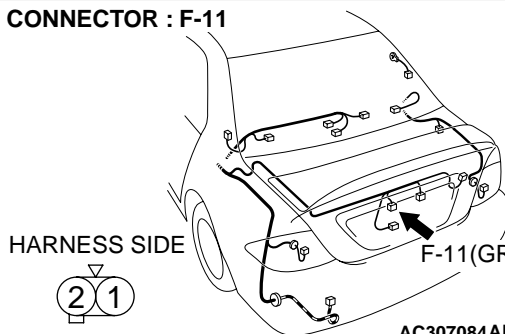
6	5	4		3	2	1
14	13	12	11	10	9	8

HARNESS SIDE  
C-217

7	6	5		4	3	2	1
15	14	13	12	11	10	9	8

AC307076AD

**CONNECTOR : F-11**



HARNESS SIDE



AC307084AE

**STEP 35. Check license plate light (LH) connector F-11 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is license plate light (LH) connector F-11 in good condition?**

**YES :** Go to Step 36.

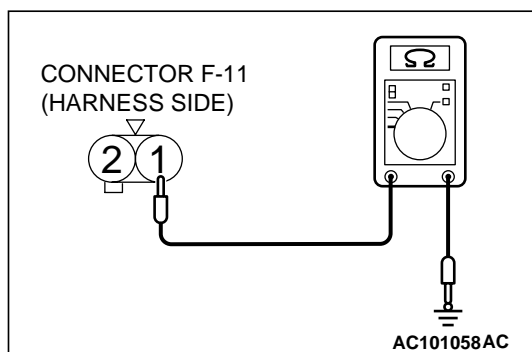
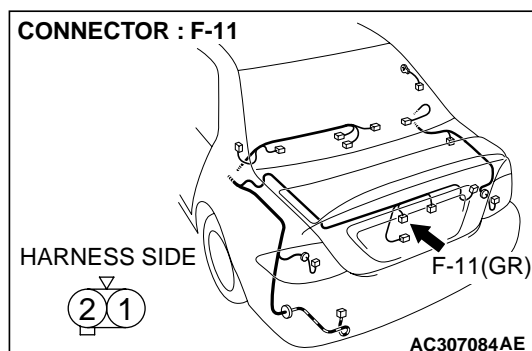
**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. Verify that the license plate lights (LH) illuminate normally.

**STEP 36. Check the license plate light bulb (LH).**

- (1) Remove the license plate light bulb (LH).
- (2) Verify that the license plate light bulb (LH) is not damaged or burned out.

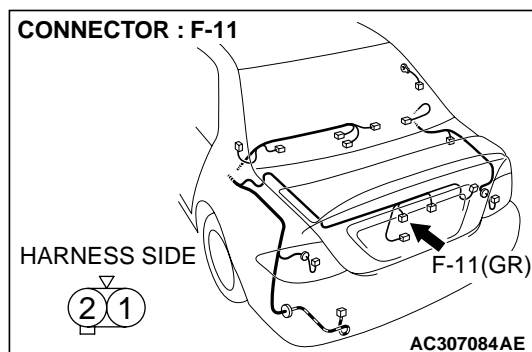
**Q: Is the license plate light bulb (LH) in good condition?****YES :** Go to Step 37.**NO :** Replace the license plate light bulb (LH). Verify that the license plate lights illuminate normally.**STEP 37. Check the ground circuit to the license plate light (LH). Test at license plate light (LH) connector F-11.**

- (1) Disconnect license plate light (LH) connector F-11 and measure the resistance available at the wiring harness side of the connector.

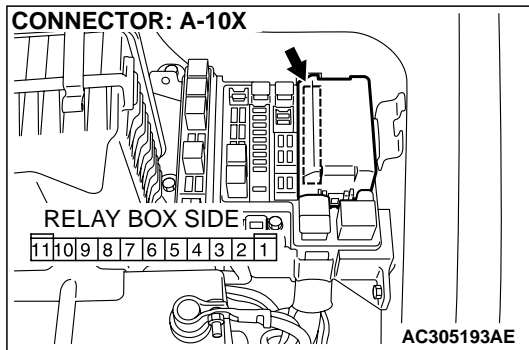


- (2) Measure the resistance value between terminal 1 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?****YES :** Go to Step 39.**NO :** Go to Step 38.**STEP 38. Check the wiring harness between license plate light (LH) connector F-11 (terminal 1) and ground.****Q: Is the wiring harness between license plate light (LH) connector F-11 (terminal 1) and ground in good condition?****YES :** Replace the license plate light socket. Verify that the license plate light (LH) illuminates normally.**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the taillight (LH) illuminates normally.



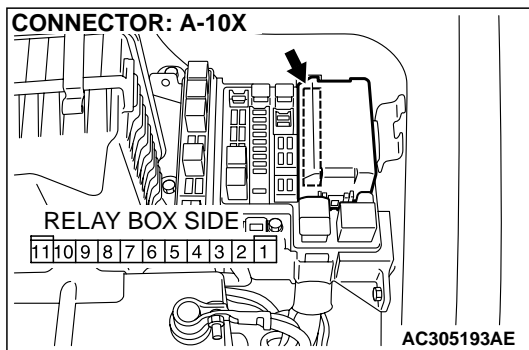


**STEP 39.** Check front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.

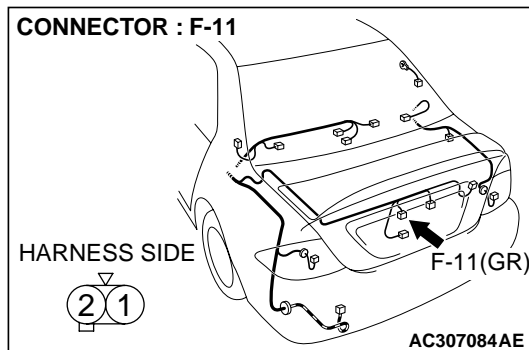
**Q:** Is front-ECU connector A-10X in good condition?

**YES :** Go to Step 40.

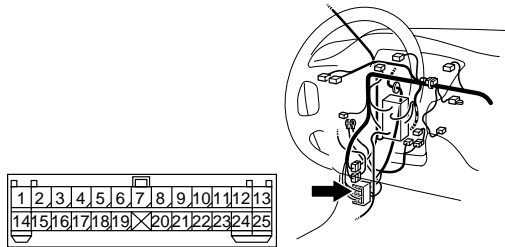
**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the license plate lights (LH) illuminate normally.



**STEP 40.** Check the wiring harness between license plate light (LH) connector F-11 (terminal 2) and front-ECU connector A-10X (terminal 8).



## CONNECTOR : C-129



AC307069AO

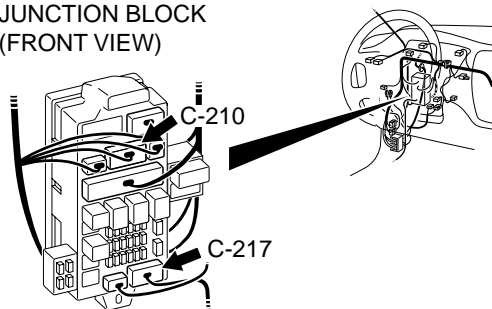
**NOTE:** Also check intermediate connectors C-129, junction block connectors C-210 and C-217 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-129, junction block connector C-210 or C-217 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

**Q:** Is the wiring harness between license plate light (LH) connector F-11 (terminal 2) and front-ECU connector A-10X (terminal 8) in good condition?

**YES :** Replace the license plate light socket. Verify that the license plate light (LH) illuminates normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the taillight (RH) illuminates normally.

## CONNECTORS : C-210, C-217

JUNCTION BLOCK  
(FRONT VIEW)HARNESS SIDE  
C-210

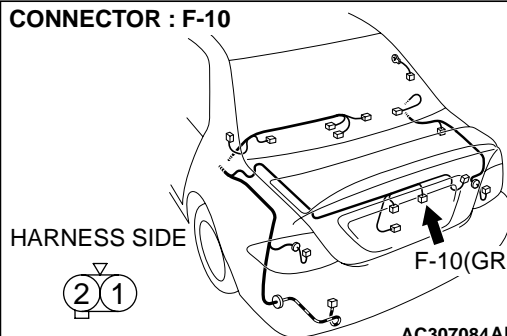
6	5	4		3	2	1
14	13	12	11	10	9	8

HARNESS SIDE  
C-217

7	6	5		4	3	2	1
15	14	13	12	11	10	9	8

AC307076AD

## CONNECTOR : F-10



AC307084AF

**STEP 41.** Check license plate light (RH) connector F-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

**Q:** Is license plate light (RH) connector F-10 in good condition?

**YES :** Go to Step 42.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the license plate lights (RH) illuminate normally.

**STEP 42. Check the license plate light bulb (RH).**

- (1) Remove the license plate light bulb (RH).
- (2) Verify that the license plate light bulb (RH) is not damaged or burned out.

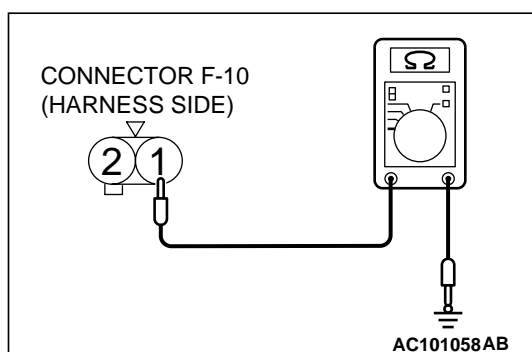
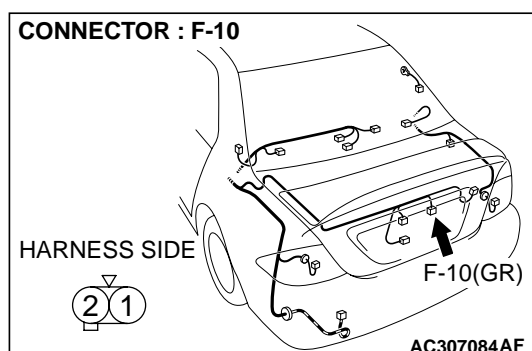
**Q: Is the license plate light bulb (RH) in good condition?**

**YES :** Go to Step 43.

**NO :** Replace the license plate light bulb (RH). Verify that the license plate lights illuminate normally.

**STEP 43. Check the ground circuit to the license plate light (RH). Test at license plate light (RH) connector F-10.**

- (1) Disconnect license plate light (RH) connector F-10 and measure the resistance available at the wiring harness side of the connector.



- (2) Measure the resistance value between terminal 1 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 45.

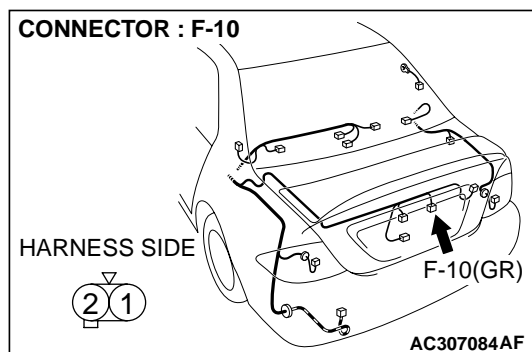
**NO :** Go to Step 44.

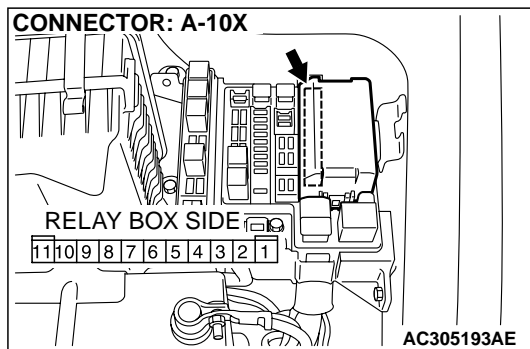
**STEP 44. Check the wiring harness between license plate light (RH) connector F-10 (terminal 1) and ground.**

**Q: Is the wiring harness between license plate light (RH) connector F-10 (terminal 1) and ground in good condition?**

**YES :** Replace the license plate light socket. Verify that the license plate light (RH) illuminates normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the taillight (RH) illuminates normally.



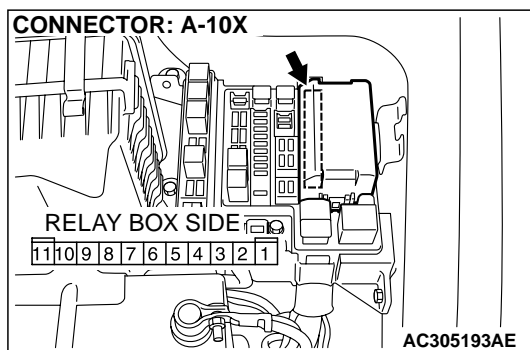


**STEP 45. Check front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

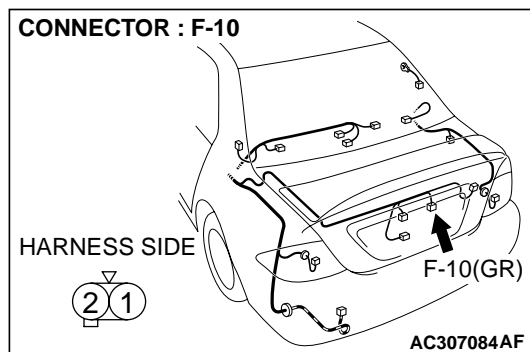
**Q: Is front-ECU connector A-10X in good condition?**

**YES :** Go to Step 46.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the license plate lights (RH) illuminate normally.

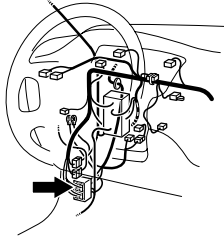


**STEP 46. Check the wiring harness between license plate light (RH) connector F-10 (terminal 2) and front-ECU connector A-10X (terminal 8).**



**CONNECTOR : C-129**

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	



AC307069 AO

*NOTE: Also check intermediate connectors C-129, junction block connectors C-210 and C-217 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-129, junction block connector C-210 or C-217 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

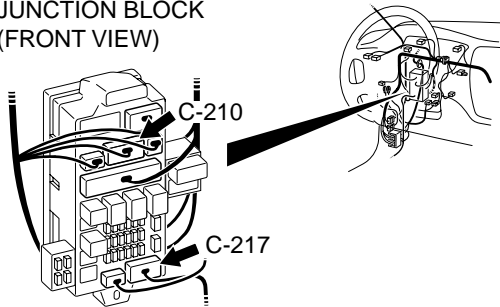
**Q: Is the wiring harness between license plate light (RH) connector F-10 (terminal 2) and front-ECU connector A-10X (terminal 8) in good condition?**

**YES :** Replace the license plate light socket. Verify that the license plate light (RH) illuminates normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the taillight (RH) illuminates normally.

**CONNECTORS : C-210, C-217**

JUNCTION BLOCK  
(FRONT VIEW)



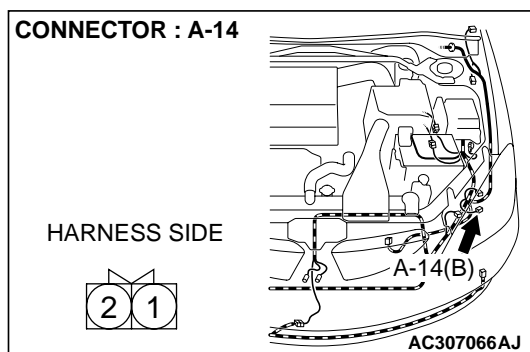
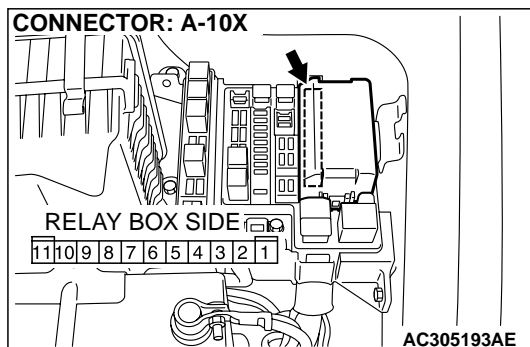
HARNESS SIDE  
C-210

6	5	4		3	2	1
14	13	12	11	10	9	8

HARNESS SIDE  
C-217

7	6	5		4	3	2	1
15	14	13	12	11	10	9	8

AC307076 AD



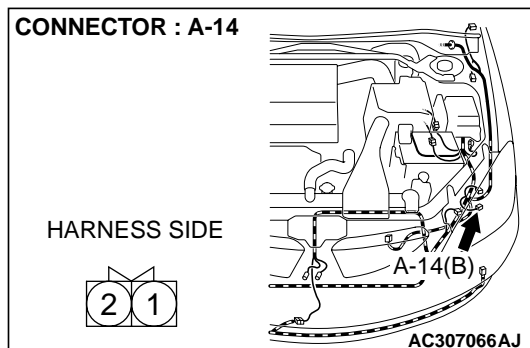
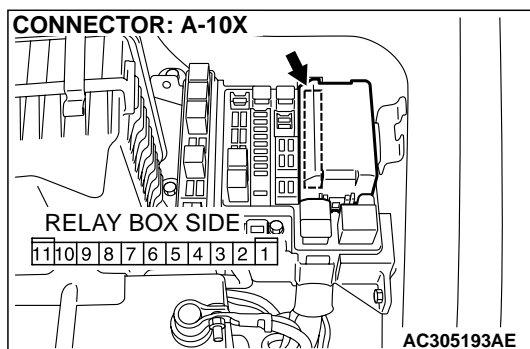
**STEP 47. Check position light (LH) connector A-14 and front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Are position light (LH) connector A-14 and front-ECU connector A-10X in good condition?**

**YES :** Go to Step 48.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** Verify that the position light (LH), taillight (LH), license plate light illuminates normally.



**STEP 48. Check the wiring harness between position light (LH) connector A-14 (terminal 2) and front-ECU connector A-10X (terminal 8).**

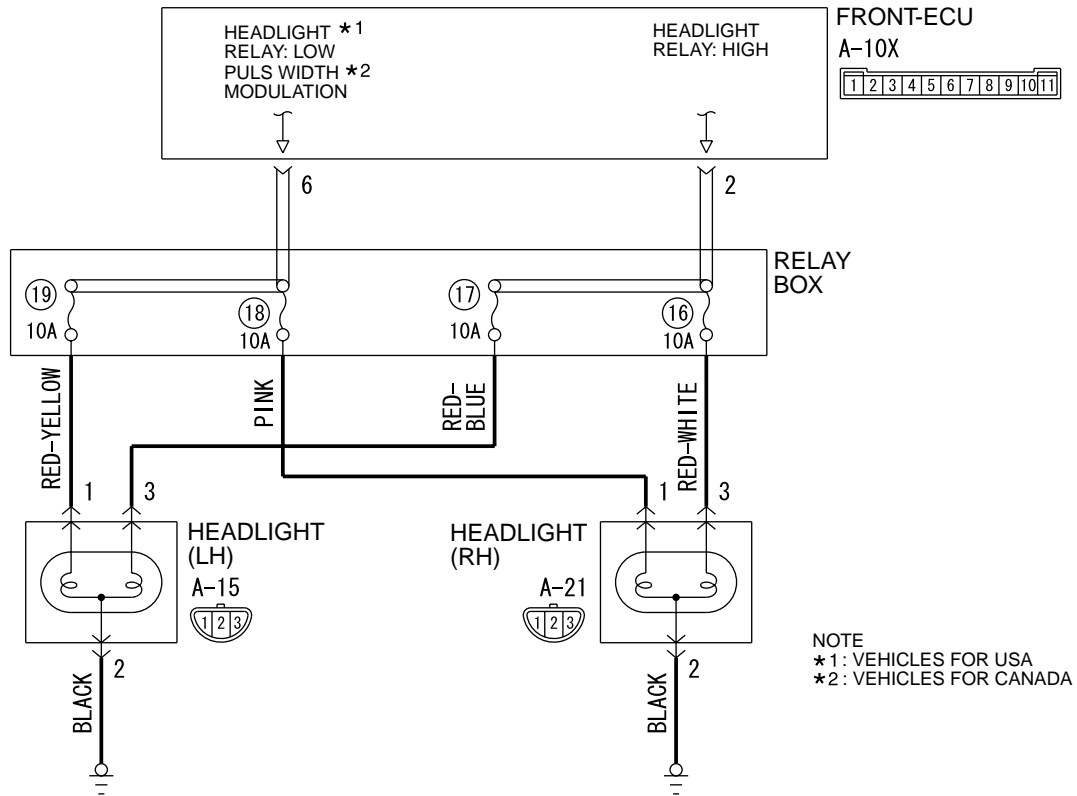
**Q: Is the wiring harness between position light (LH) connector A-14 (terminal 2) and front-ECU connector A-10X (terminal 8) in good condition?**

**YES :** No action is necessary and testing is complete.

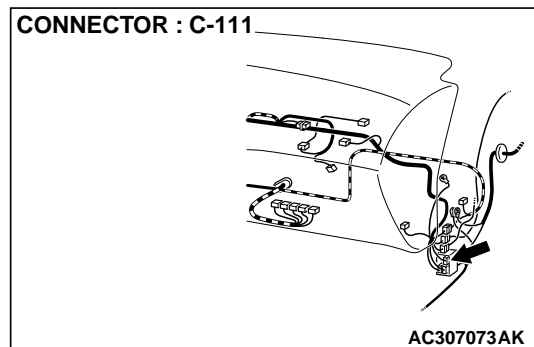
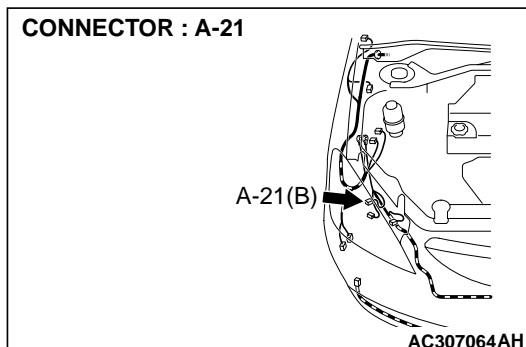
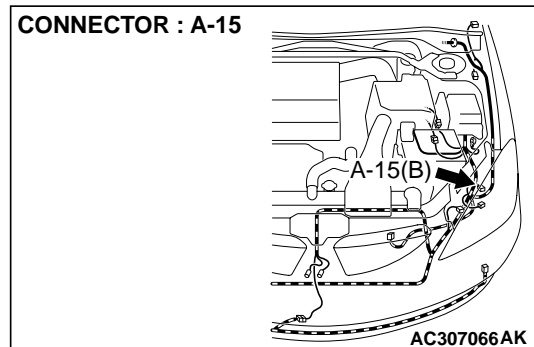
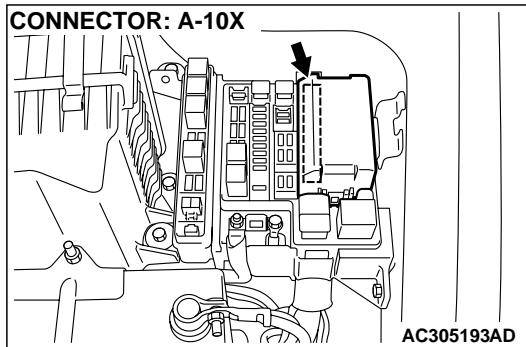
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the position light (LH), taillight (LH), license plate light illuminates normally.

**INSPECTION PROCEDURE J-7: Headlight and Taillight: One of the headlights does not illuminate.**

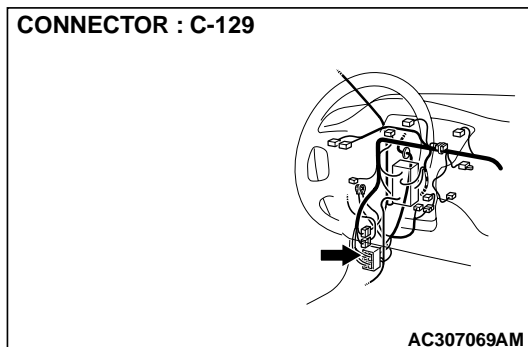
**Headlights Circuit**



W4J54M96AA



CONNECTOR : C-129

**TECHNICAL DESCRIPTION (COMMENT)**

If one of the headlights does not illuminate, a headlight bulb may be defective.

**TROUBLESHOOTING HINTS**

- The headlight bulb may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tool:**

- MB991223: Harness Set

**STEP1. Check the headlight operation.****Q: Which of the headlights does not illuminate?**

**LH (low and high beam) :** Go to Step 2.

**RH (low and high beam) :** Go to Step 5.

**LH (only low-beam) :** Go to Step 8.

**RH (only low-beam) :** Go to Step 12.

**LH (only high beam) :** Go to Step 16.

**RH (only high beam) :** Go to Step 20.

**Low beam only (both RH and LH) :** Refer to Inspection Procedure J-2 "Headlights (low-beam) do not illuminate [P.54B-289](#)."

**High beam (both RH and LH) and high-beam indicator light :** Refer to Inspection Procedure J-3 "Headlights (high-beam) do not illuminate [P.54B-294](#)."

**Only high-beam indicator light :** Refer to Inspection Procedure J-8 "The high-beam indicator light does not illuminate [P.54B-339](#)."

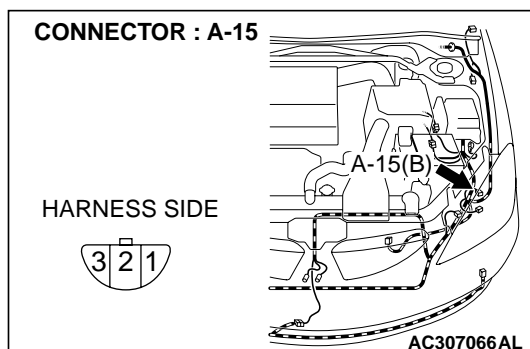
**STEP 2. Check headlight (LH) connector A-15 for loose, corroded or damaged terminals, or terminals pushed back in the connector.****Q: Is headlight (LH) connector A-15 in good condition?**

**YES :** Go to Step 3.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the headlights illuminate normally.

CONNECTOR : A-15

HARNESS SIDE





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**STEP 3. Check headlight (LH) bulb.**

- (1) Remove the headlight (LH) bulb.
- (2) Verify that the headlight (LH) bulb is not damaged or burned out.

**Q: Is headlight (LH) bulb normal?**

**YES :** Go to Step 4.

**NO :** Replace the headlight (LH) bulb. Verify that the headlights illuminate normally.

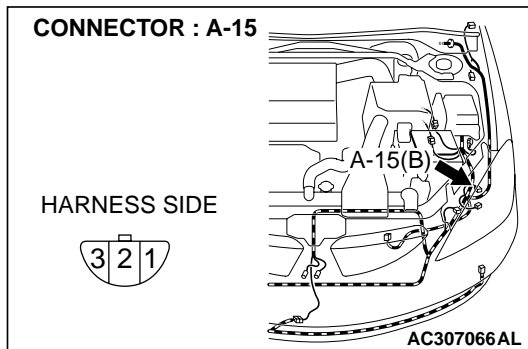
---

**STEP 4. Check the wiring harness between headlight (LH) connector A-15 (terminal 2) and ground.**

**Q: Is the wiring harness between headlight (LH) connector A-15 (terminal 2) and ground in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the headlights illuminate normally.



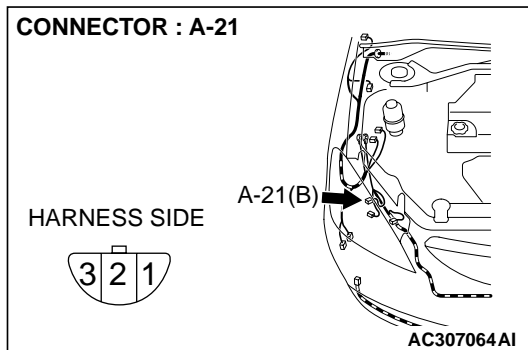
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**STEP 5. Check headlight (RH) connector A-21 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is headlight (RH) connector A-21 in good condition?**

**YES :** Go to Step 6.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the headlights illuminate normally.



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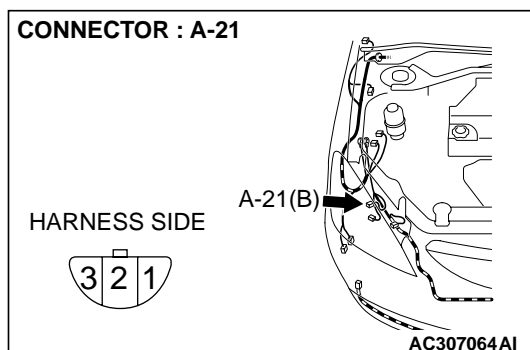
**STEP 6. Check headlight (RH) bulb.**

- (1) Remove the headlight (RH) bulb.
- (2) Verify that the headlight (RH) bulb is not damaged or burned out.

**Q: Is headlight (RH) bulb normal?**

**YES :** Go to Step 7.

**NO :** Replace the headlight (RH) bulb. Verify that the headlights illuminate normally.

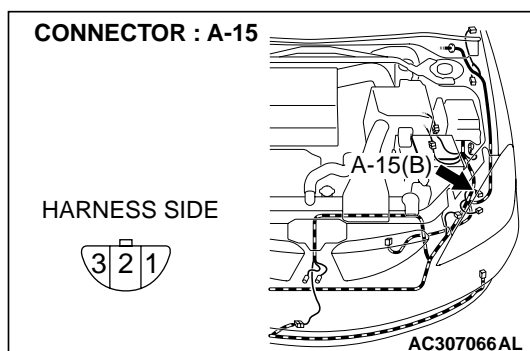


**STEP 7. Check the wiring harness between headlight (RH) connector A-21 (terminal 2) and ground.**

**Q: Is the wiring harness between headlight (RH) connector A-21 (terminal 2) and ground in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the headlights illuminate normally.



**STEP 8. Check headlight (LH) connector A-15 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is headlight (LH) connector A-15 in good condition?**

**YES :** Go to Step 9.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the headlights illuminate normally.

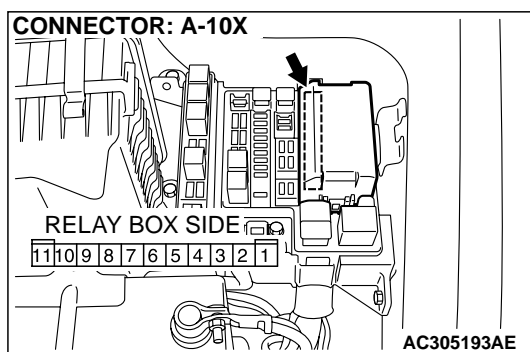
**STEP 9. Check headlight (LH) bulb.**

- (1) Remove the headlight (LH) bulb.
- (2) Verify that the headlight (LH) bulb is not damaged or burned out.

**Q: Is headlight (LH) bulb normal?**

**YES :** Go to Step 10.

**NO :** Replace the headlight (LH) bulb. Verify that the headlights illuminate normally.

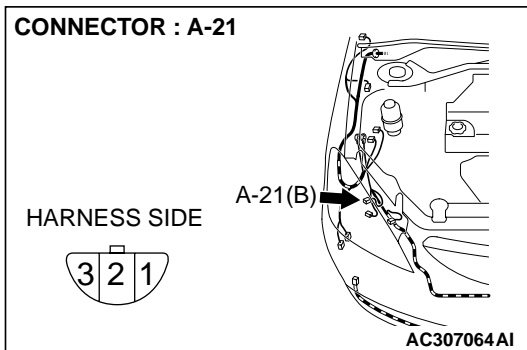
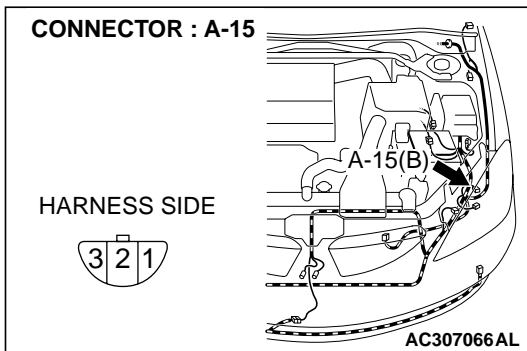
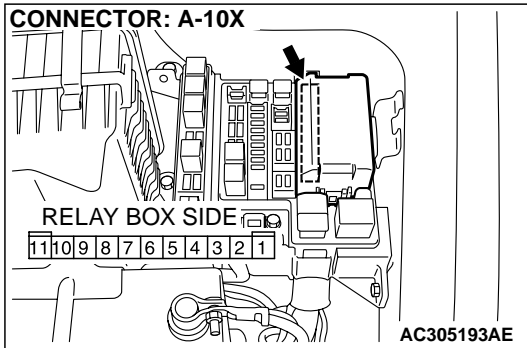


**STEP 10. Check front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is front-ECU connector A-10X in good condition?**

**YES :** Go to Step 11.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the headlights illuminate normally.



**STEP 11. Check the wiring harness between headlight (LH) connector A-15 (terminal 1) and front-ECU connector A-10X (terminal 6).**

**Q: Is the wiring harness between headlight (LH) connector A-15 (terminal 1) and front-ECU connector A-10X (terminal 6) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the headlights illuminate normally.

**STEP 12. Check headlight (RH) connector A-21 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is headlight (RH) connector A-21 in good condition?**

**YES :** Go to Step 13.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the headlights illuminate normally.

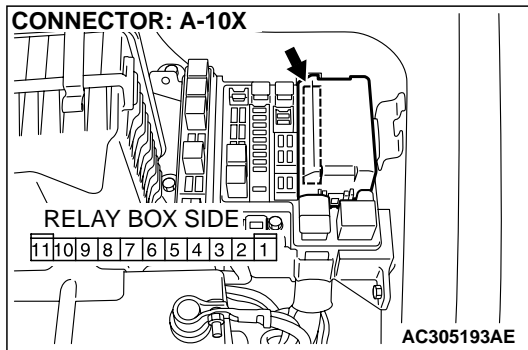
**STEP 13. Check headlight (RH) bulb.**

- (1) Remove the headlight (RH) bulb.
- (2) Verify that the headlight (RH) bulb is not damaged or burned out.

**Q: Is headlight (RH) bulb normal?**

**YES :** Go to Step 14.

**NO :** Replace the headlight (RH) bulb. Verify that the headlights illuminate normally.

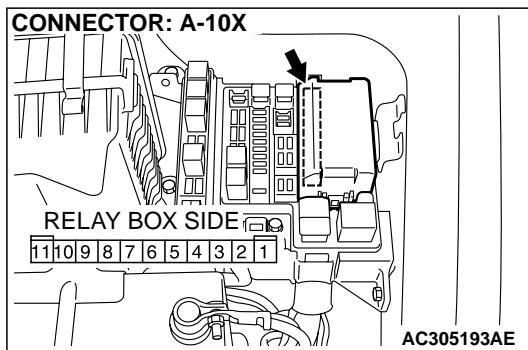


**STEP 14.** Check front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.

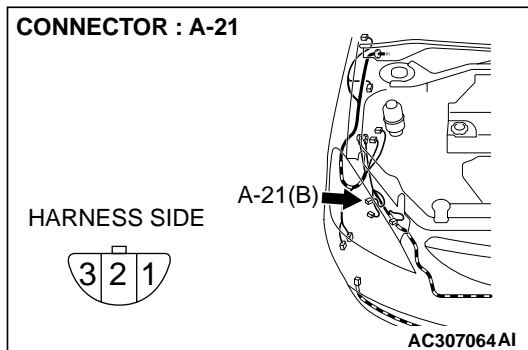
**Q:** Is front-ECU connector A-10X in good condition?

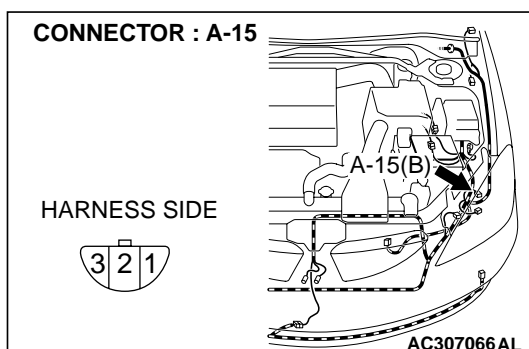
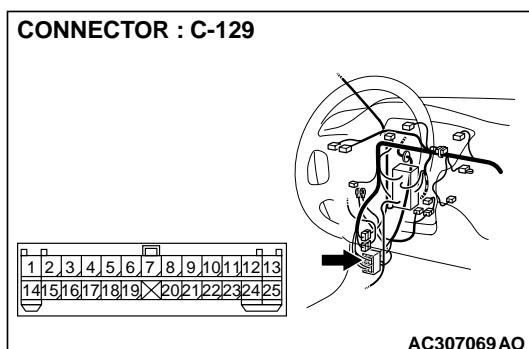
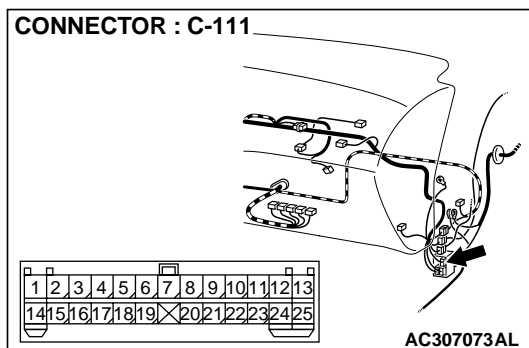
**YES :** Go to Step 15.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the headlights illuminate normally.



**STEP 15.** Check the wiring harness between headlight (RH) connector A-21 (terminal 1) and front-ECU connector A-10X (terminal 6).





*NOTE: Also check intermediate connectors C-111 and C-129 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-111 or C-129 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

**Q: Is the wiring harness between headlight (RH) connector A-21 (terminal 1) and front-ECU connector A-10X (terminal 6) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the headlights illuminate normally.

**STEP 16. Check headlight (LH) connector A-15 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is headlight (LH) connector A-15 in good condition?**

**YES :** Go to Step 17.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. Verify that the headlights illuminate normally.

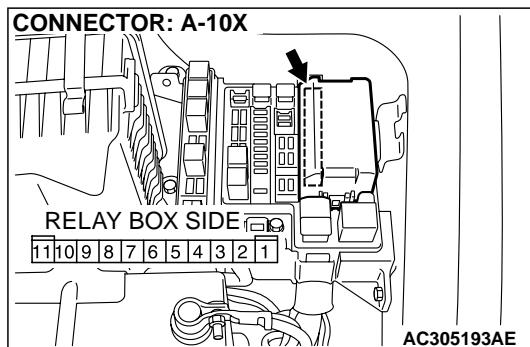
**STEP 17. Check headlight (LH) bulb.**

- (1) Remove the headlight (LH) bulb.
- (2) Verify that the headlight (LH) bulb is not damaged or burned out.

**Q: Is headlight (LH) bulb normal?**

**YES :** Go to Step 18.

**NO :** Replace the headlight (LH) bulb. Verify that the headlights illuminate normally.



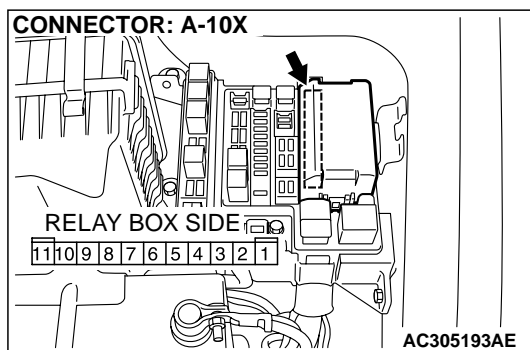
**STEP 18. Check front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is front-ECU connector A-10X in good condition?**

**YES :** Go to Step 19.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** Verify that the headlights illuminate normally.

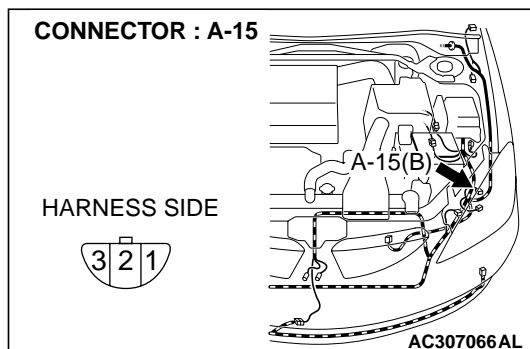


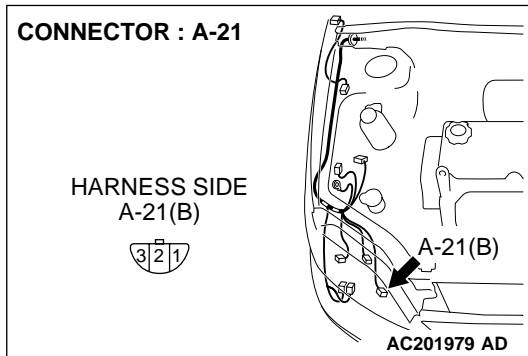
**STEP 19. Check the wiring harness between headlight (LH) connector A-15 (terminal 3) and front-ECU connector A-10X (terminal 2).**

**Q: Is the wiring harness between headlight (LH) connector A-15 (terminal 3) and front-ECU connector A-10X (terminal 2) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the headlights illuminate normally.





**STEP 20. Check headlight (RH) connector A-21 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is headlight (RH) connector A-21 in good condition?**

**YES :** Go to Step 21.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the headlights illuminate normally.

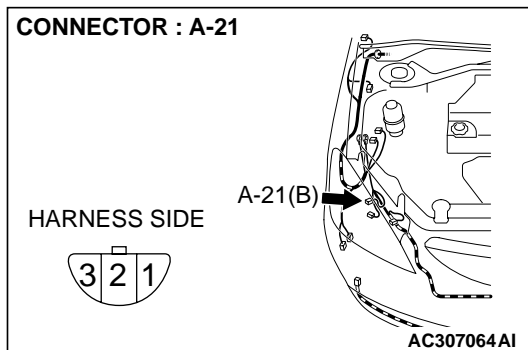
**STEP 21. Check headlight (RH) bulb.**

- (1) Remove the headlight (RH) bulb.
- (2) Verify that the headlight (RH) bulb is not damaged or burned out.

**Q: Is headlight (RH) bulb normal?**

**YES :** Go to Step 22.

**NO :** Replace the headlight (RH) bulb. Verify that the headlights illuminate normally.



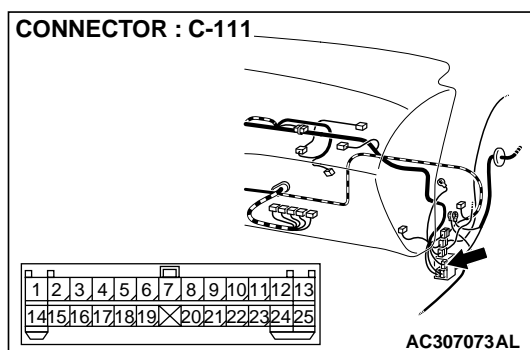
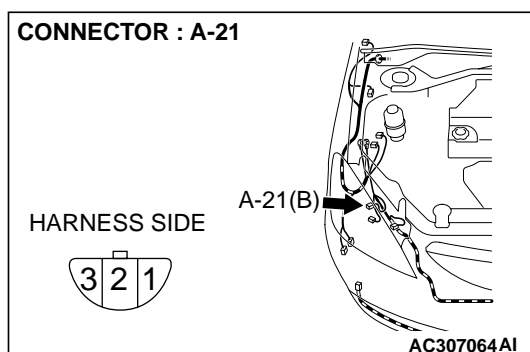
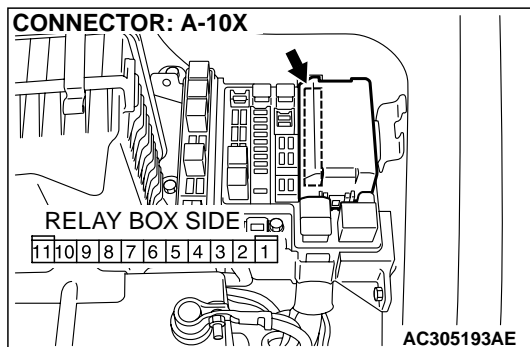
**STEP 22. Check front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is front-ECU connector A-10X in good condition?**

**YES :** Go to Step 23.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the headlights illuminate normally.

**STEP 23.** Check the wiring harness between headlight (RH) connector A-21 (terminal 3) and front-ECU connector A-10X (terminal 2).

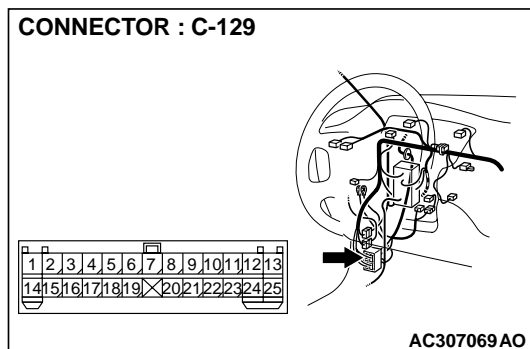


*NOTE: Also check intermediate connectors C-111 and C-129 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-111 or C-129 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

**Q: Is the wiring harness between headlight (RH) connector A-21 (terminal 3) and front-ECU connector A-10X (terminal 2) in good condition?**

**YES :** No action is necessary and testing is complete.

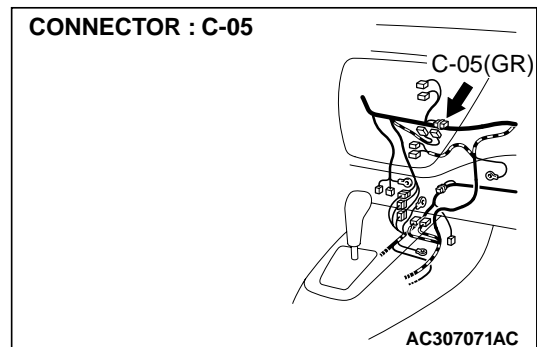
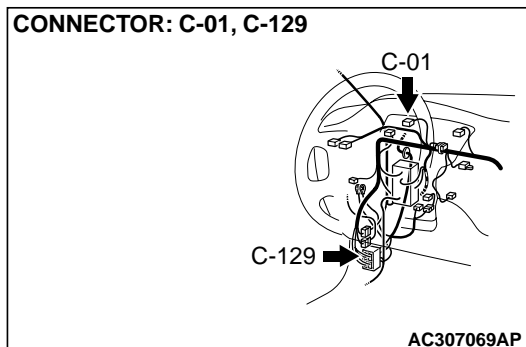
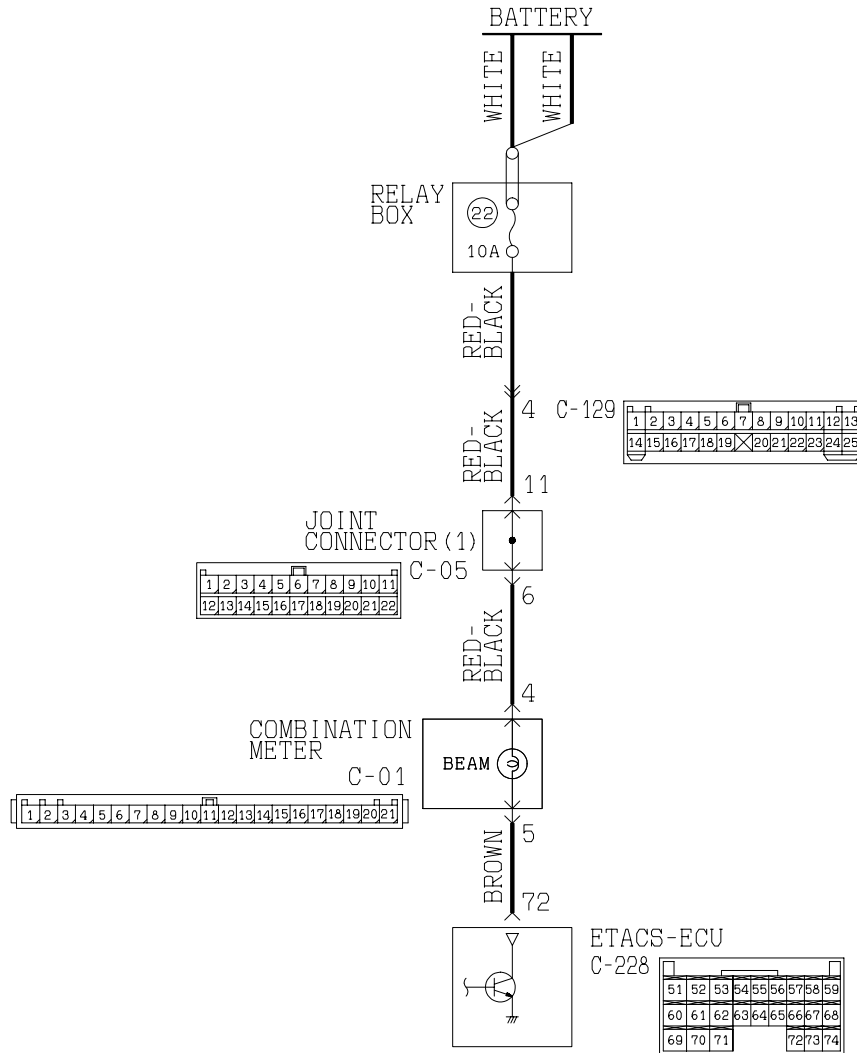
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the headlights illuminate normally.

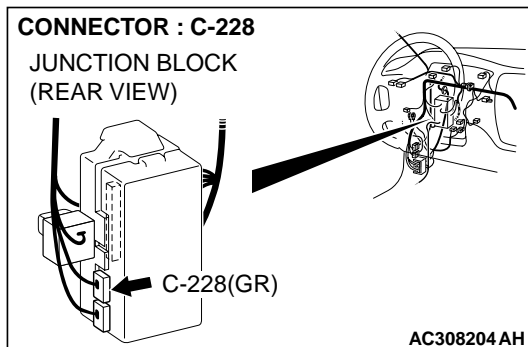




**INSPECTION PROCEDURE J-8: Headlight and Taillight: The high-beam indicator light does not illuminate.**

**High-beam Indicator Light Circuit**



**TECHNICAL DESCRIPTION (COMMENT)**

If the high-beam indicator light does not illuminate, the high-beam indicator light bulb or the ETACS-ECU may be defective.

**TROUBLESHOOTING HINTS**

- The high-beam indicator light bulb may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tools:**

- MB991223: Harness Set

**STEP1. Verify the headlight operation.****Q: Do the headlights illuminate?**

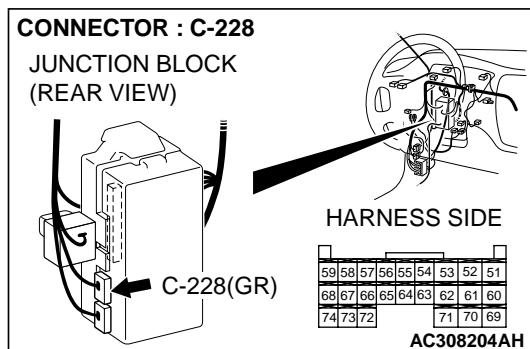
**YES** : Go to Step 2

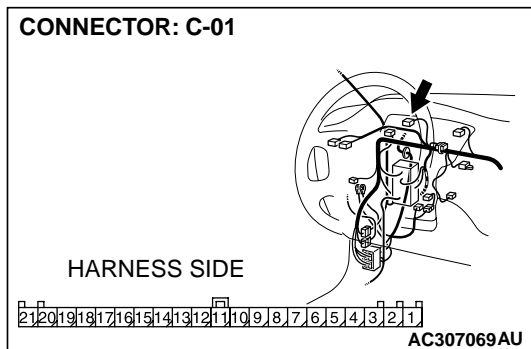
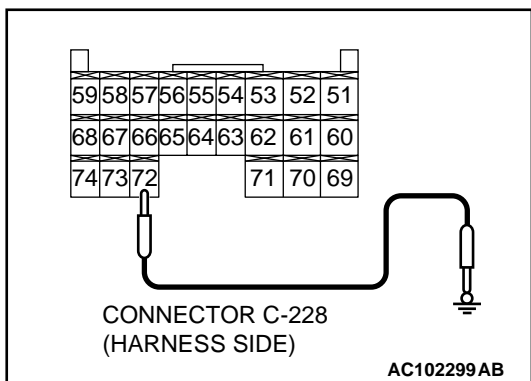
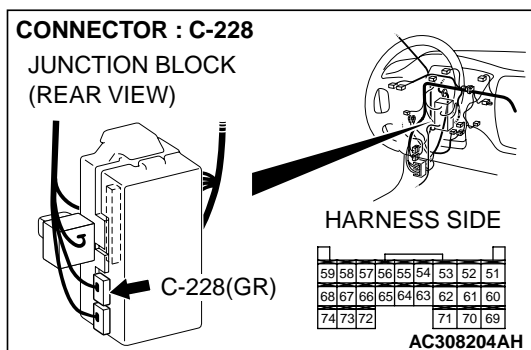
**NO** : Repair the headlights first (Refer to [P.54B-23](#)).

**STEP 2. Check ETACS-ECU connector C-228 for loose, corroded or damaged terminals, or terminals pushed back in the connector.****Q: Is ETACS-ECU connector C-228 in good condition?**

**YES** : Go to Step 3.

**NO** : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the high-beam indicator light illuminates normally.





**STEP 3. Check at ETACS-ECU connector C-228 in order to check the high-beam indicator light circuit.**

- (1) Disconnect ETACS-ECU connector C-228, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.

- (3) Connect terminal 72 to ground.

**Q: Does the high-beam indicator light illuminate?**

**YES :** Replace the ETACS-ECU. Verify that the high-beam indicator light illuminates normally.

**NO :** Go to Step 4

**STEP 4. Check combination meter connector C-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is combination meter connector C-01 in good condition?**

**YES :** Go to Step 5.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the high-beam indicator light illuminates normally.

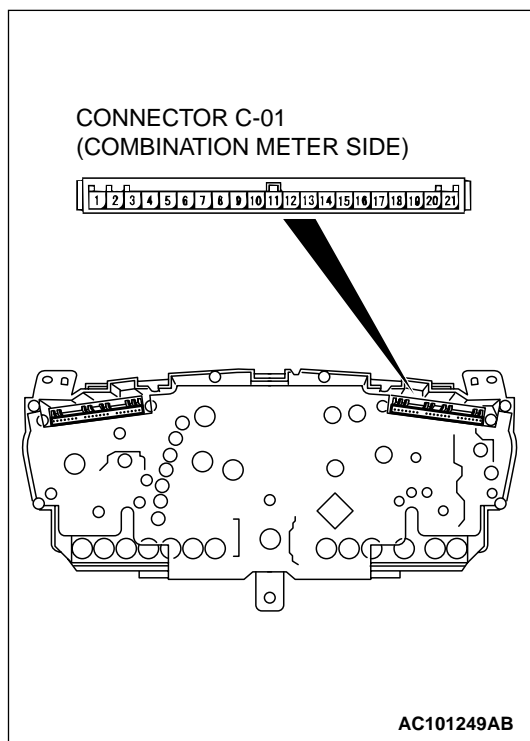
**STEP 5. Check high-beam indicator light bulb.**

- (1) Remove the high-beam indicator light bulb.
- (2) Verify that the high-beam indicator light bulb is not damaged or burned out.

**Q: Is the high-beam indicator light normal?**

**YES :** Go to Step 6

**NO :** Replace the bulb. Verify that the high-beam indicator light illuminates normally.

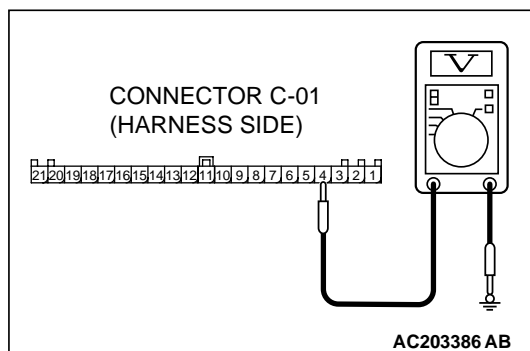
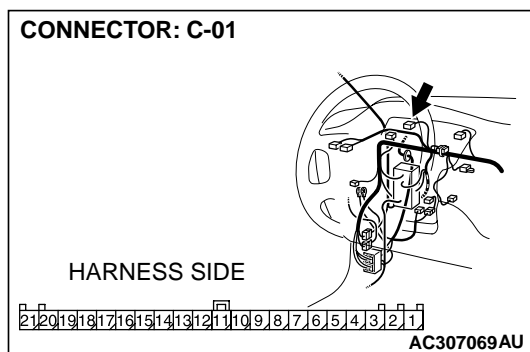
**STEP 6. Check the combination meter (printed-circuit board).**

- (1) Remove the combination meter.
- (2) Remove the high-beam indicator light bulb. Then measure the resistance value between the bulb terminals.
- (3) Install the bulb to the combination meter, and then measure the resistance value between connector C-01 terminals 4 and 5. The measured resistance value should be roughly the same as the value measured in Step (2).

**Q: Are these two resistance values extremely different?**

**YES** : Repair or replace the combination meter (printed circuit board). Verify that the headlight-beam indicator light illuminates normally.

**NO (roughly the same)** : Go to Step 7

**STEP 7. Check the battery power supply circuit to the combination meter. Test at combination meter connector C-01.**

- (1) Disconnect combination meter connector C-01 and measure the voltage available at the wiring component side of the connector.

- (2) Measure the voltage between terminal 4 and ground.
  - The measured value should be 12 volts (battery positive voltage).

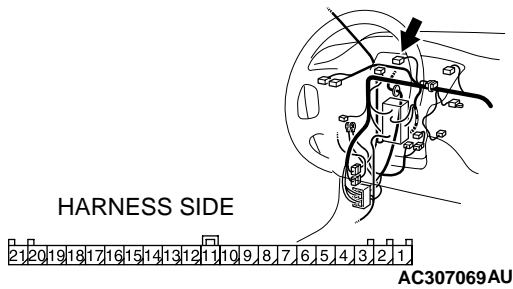
**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES** : Go to Step 9.

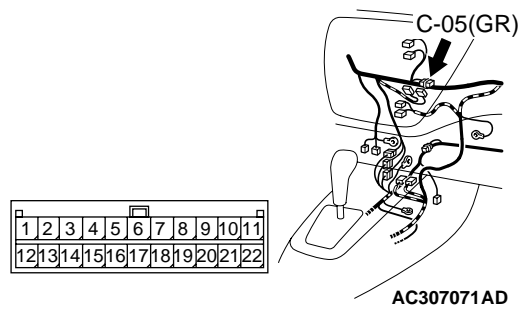
**NO** : Go to Step 8.

**STEP 8. Check the wiring harness between combination meter connector C-01 (terminal 4) and the battery.**

**CONNECTOR: C-01**



**CONNECTOR : C-05**



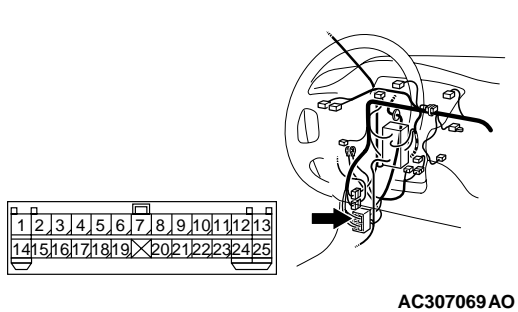
*NOTE: Also check joint connector C-05 and intermediate connector C-129 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If joint connector C-05 or intermediate connectors C-129 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

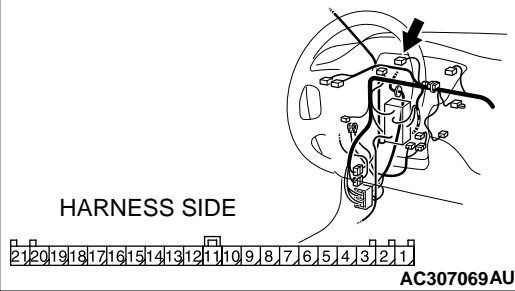
**Q: Is the wiring harness between combination meter connector C-01 (terminal 4) and the battery in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the high-beam indicator light illuminates normally.

**CONNECTOR : C-129**



**CONNECTOR: C-01**

**STEP 9. Check the wiring harness between combination meter connector C-01 (terminal 5) and ETACS-ECU connector C-228 (terminal 72).**

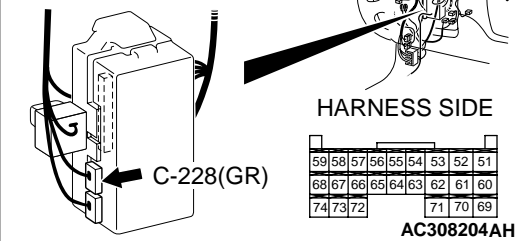
**Q: Is the wiring harness between combination meter connector C-01 (terminal 5) and ETACS-ECU connector C-228 (terminal 72) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the high-beam indicator light illuminates normally.

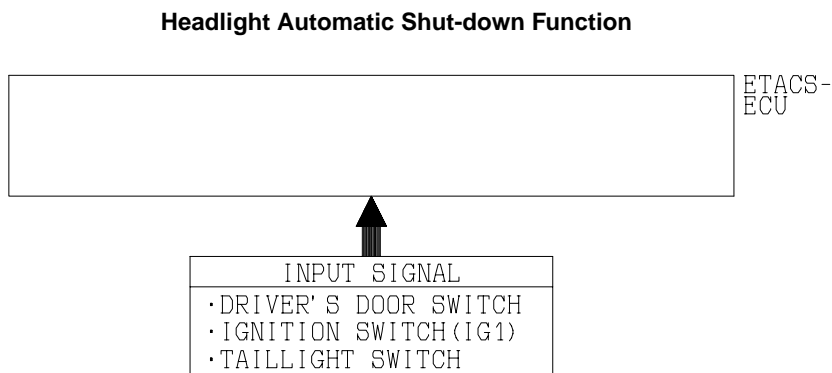
**CONNECTOR : C-228**

JUNCTION BLOCK  
(REAR VIEW)



**INSPECTION PROCEDURE J-9: Headlight and Taillight: Headlight automatic shutdown function does not work normally.**

*NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991862. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-10."*



W2J08M62AB

**CIRCUIT OPERATION**

The ETACS-ECU operates the headlight automatic shutdown function according to the following signals:

- Ignition switch (IG1)
- Driver's door switch
- Tail light switch
- Headlight switch

**TECHNICAL DESCRIPTION (COMMENT)**

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

**TROUBLESHOOTING HINTS**

- The driver's door switch may be defective
- The column switch (turn-signal light and lighting switch) may be defective
- The ETACS-ECU may be defective
- The front-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991922: Probe Harness

**STEP 1. Verify the configuration function.**

**Q: Has the headlight automatic shutdown function been enabled by means of the adjustment function?**

**YES :** Go to Step 2.

**NO :** Enable the headlight automatic shutdown function by means of the adjustment function. Refer to [P.54B-574](#).

**STEP 2. Check the input signal by using "FUNCTION DIAG." menu of the SWS monitor.**

Check the input signals from the following switches:

- Ignition switch: "ON" to "OFF"
- Lighting switch: "TAIL" or "HEAD"

**⚠ CAUTION**

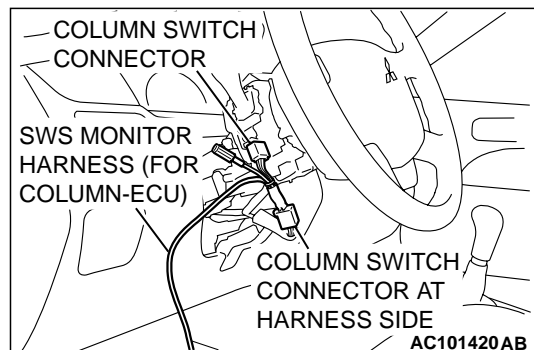
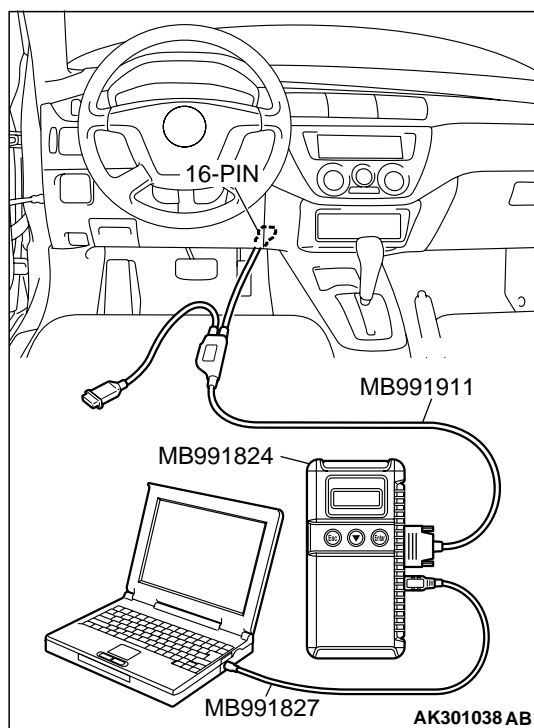
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Also connect SWS monitor kit MB991862 after turning on scan tool MB991958.

- (1) Connect scan tool MB991958 to the data link connector.
- (2) Connect SWS monitor kit MB991862 to the column switch connector.
- (3) Operate scan tool MB991958 according to the procedure below to display "H/L AUTO-CUT."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "SWS MONITOR."
  4. Select "FUNCTION DIAG."
  5. Select "LIGHTING."
  6. Select "H/L AUTO-CUT."
- (4) Check that normal conditions are displayed on the items described in the table below.

ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 01	TAILLIGHT SW	ON
ITEM 30	IG SW (IG1)	OFF

- (5) When the driver's door is opened, check that normal conditions are displayed on the items described in the table below.

ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 32	FRONT DOOR SW	ON
ITEM 35	H/L AUTO-CUT	ON





**Q: Are normal conditions displayed on the "TAILLIGHT SW", "IG SW (IG1)", "FRONT DOOR SW" and "H/L AUTO-CUT"?**

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

Replace the front-ECU. Verify that the headlight automatic shutdown function now works normally.

**The scan tool does not show the respective normal condition for item "TAILLIGHT SW" :** Refer to Inspection

Procedure N-5 "ETACS-ECU does not receive a signal from the taillight switch [P.54B-486](#)."

**The scan tool does not show the respective normal condition for item "IG SW (IG1)" :** Refer to Inspection

Procedure N-2 "ETACS-ECU does not receive a signal from the ignition switch (IG1) [P.54B-457](#)."

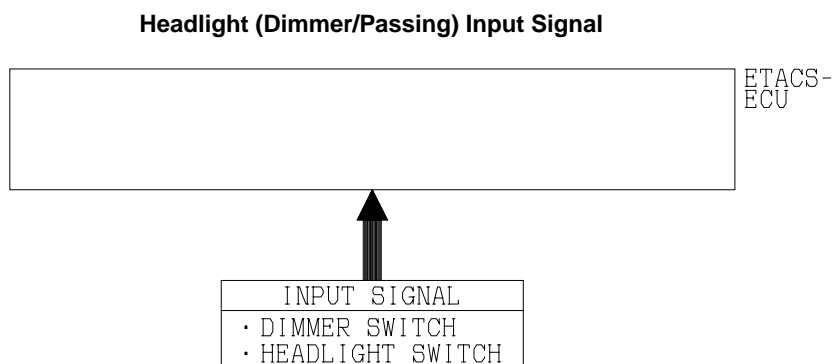
**The scan tool does not show the respective normal condition for item "FRONT DOOR SW" :** Refer to

Inspection Procedure N-4 "ETACS-ECU does not receive a signal from the driver's or the front passenger's door switch [P.54B-478](#)."

**The scan tool does not show the respective normal condition for item "H/L AUTO-CUT" :** Replace the

front-ECU. Verify that the headlight automatic shutdown function now works normally.

**INSPECTION PROCEDURE J-10: Headlight and Taillight: Headlight dimmer switch automatic resetting function does not work normally.**



W2J08M63AA

**CIRCUIT OPERATION**

The headlight dimmer switch automatic resetting function is controlled by the front-ECU.

**TECHNICAL DESCRIPTION (COMMENT)**

If the headlight dimmer switch automatic resetting function does not work normally, the front-ECU may be defective.

**TROUBLESHOOTING HINT**

The front-ECU may be defective

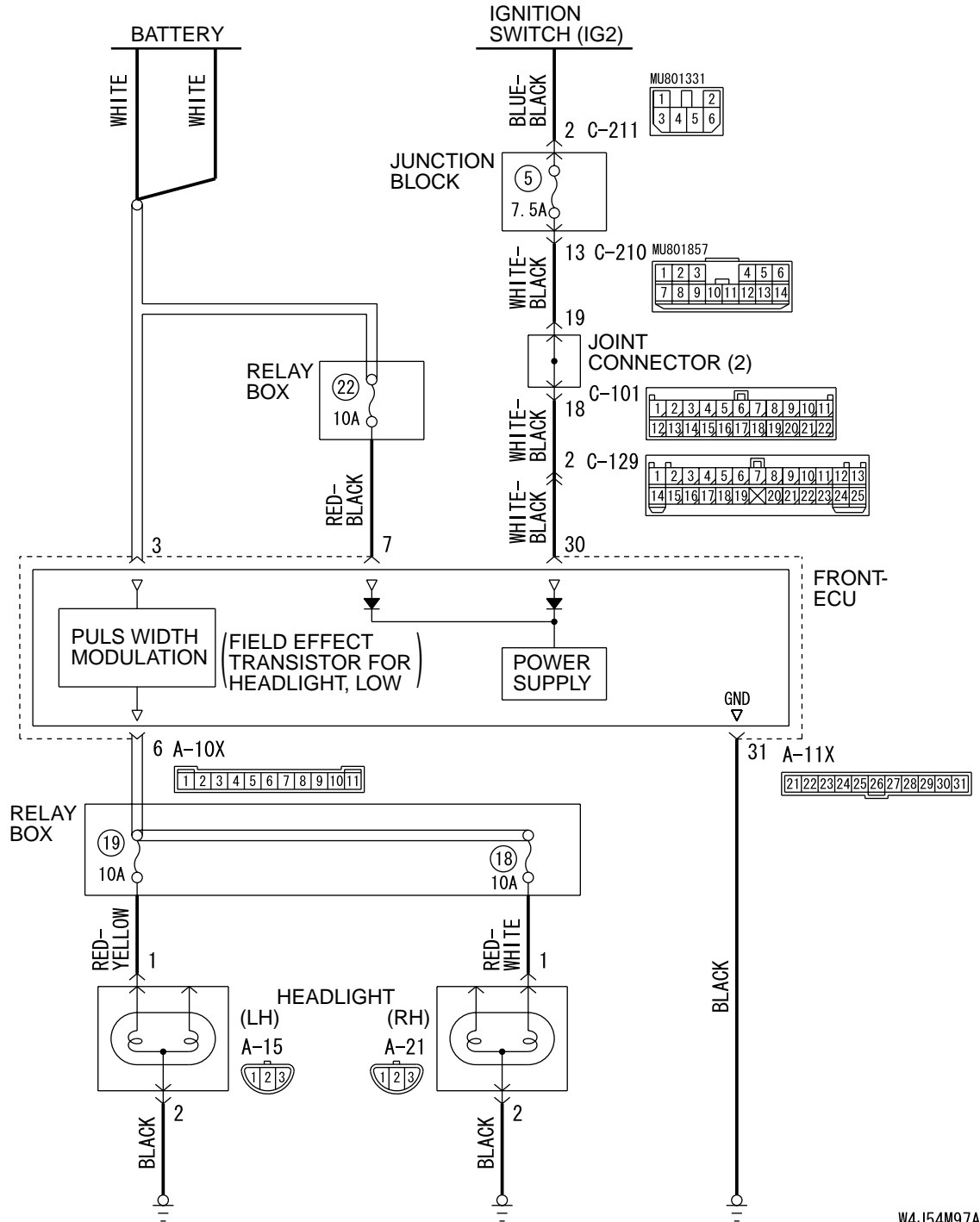
**DIAGNOSIS**

Replace the front-ECU.

Verify that the headlight dimmer switch automatic resetting function works normally.

**INSPECTION PROCEDURE J-11: Headlight and Taillight: Daytime running light function does not work normally. <vehicles with daytime running light function>**

**Daytime Running Light Circuit**



W4J54M97AA

**TECHNICAL DESCRIPTION (COMMENT)**

If the daytime running light function is not operating normally the front-ECU power circuit may be defective or the front-ECU may be defective.

**TROUBLESHOOTING HINTS**

- The front-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991922: Probe Harness

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**STEP 1. Verify the headlight (low-beam) operation.**

Check to see that the headlight (low-beam) lights up properly when operating the dimmer switch while the headlight switch is ON.

**Q: Do the headlights (low-beam) illuminate normally?**

**YES :** Go to Step 2.

**NO :** Refer to Inspection Procedure J-2 "Headlights (low-beam) do not illuminate normally [P.54B-289](#)."

**STEP 2. Use scan tool MB991958 to select "ECU COMM CHK" on the SWS monitor display.**

Check the following ECUs:

- Front-ECU

**⚠ CAUTION**

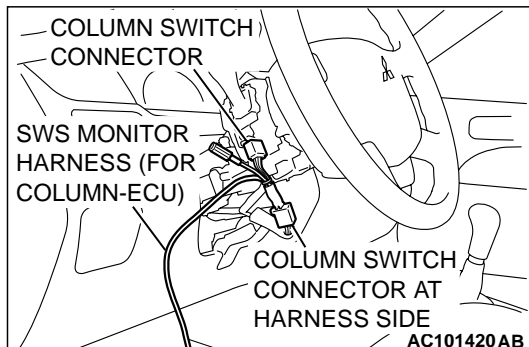
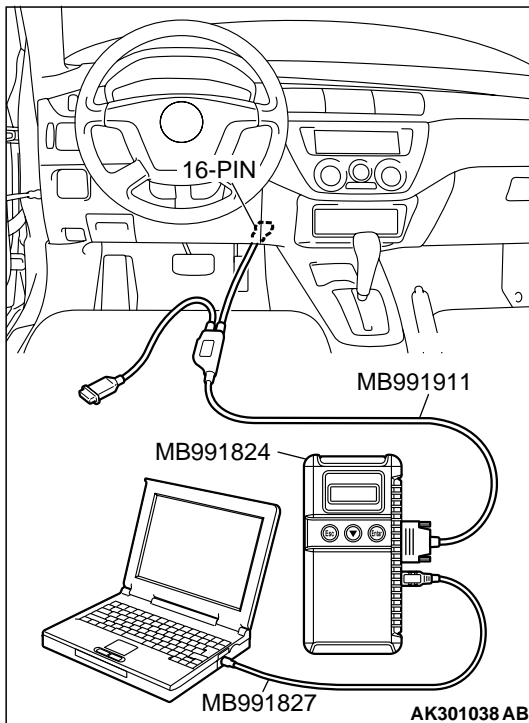
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect the DLC harness before connecting the column-ECU harness. Be sure to connect SWS monitor kit MB991862 after turning on scan tool MB991958.

- (1) Connect scan tool MB991958 to the data link connector.
- (2) Connect SWS monitor kit MB991862 to the column switch connector.
- (3) Turn the ignition switch to the "ON" position.
- (4) Operate scan tool MB991958 according to the procedure below to display "ECU COMM CHK."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "SWS MONITOR."
  4. Select "ECU COMM CHK."
- (5) Scan tool MB991958 should show "OK" on the "ECU COMM CHK" menu for the "FRONT ECU" menu.

**Q: Is "OK" displayed on the "FRONT ECU" menu?**

**YES :** Replace the front-ECU. The daytime running light function should now work normally.

**NO :** Refer to Inspection procedure A-4 "Communication with the front-ECU is not possible [P.54B-53](#)."



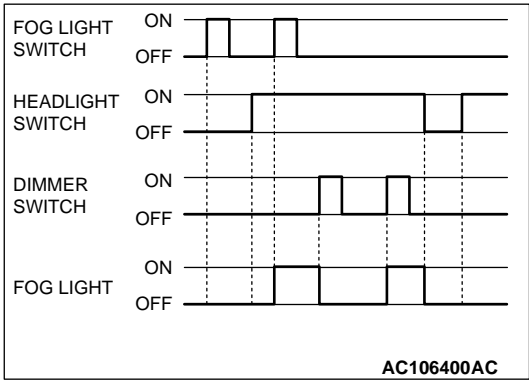
FOG LIGHT

GENERAL DESCRIPTION CONCERNING FOG LIGHT

M1549021400120

The following ECUs affect the functions and control of the fog lights and fog light indicator light.

FUNCTION	CONTROL ECU
Fog light and fog light indicator light	ETACS-ECU, front-ECU, column switch



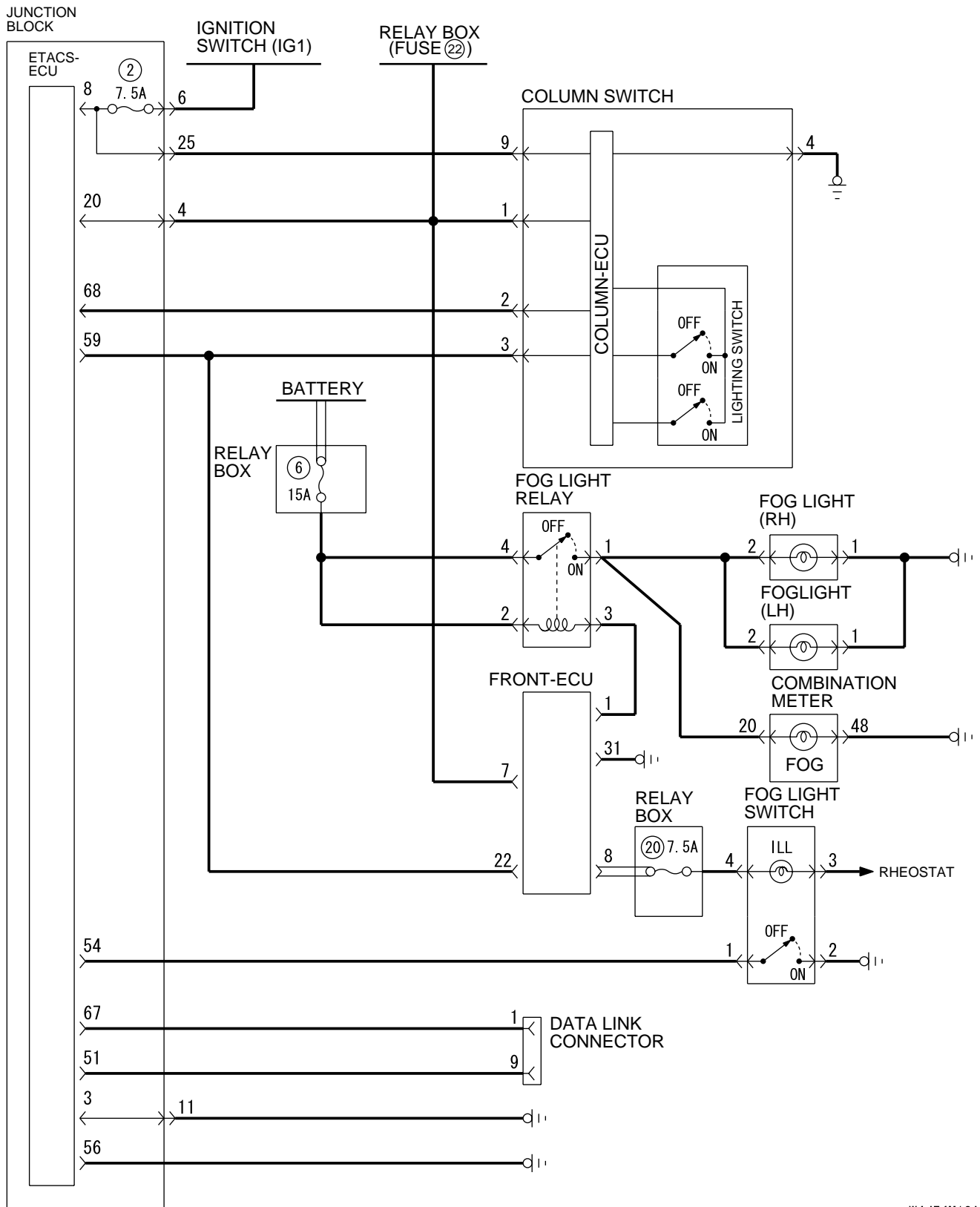
Fog light and fog light indicator light

If the ETAS-ECU sends a fog light "ON" request signal to the front-ECU after the low-beam headlights are on, the fog light relay is turned on, allowing the fog lights and the fog light indicator light to be illuminated. If the low-beam headlights are turned off, the fog lights will also be turned off automatically. Therefore, when the headlights are turned on at next opportunity, the fog lights will not illuminate.

If the high-beam headlights are turned on while the fog lights are on, the fog lights will be turned off. Then, if you switch the headlights from the high-beam to the low-beam, the fog lights will be turned on again.

*NOTE: This description covers the fog lights only. In actual driving, the fog lights may be turned off due to the headlight automatic shut-down function. For the details on the headlight automatic shut-down function, refer to [P.54B-279](#).*

**General circuit diagram for the fog lights**



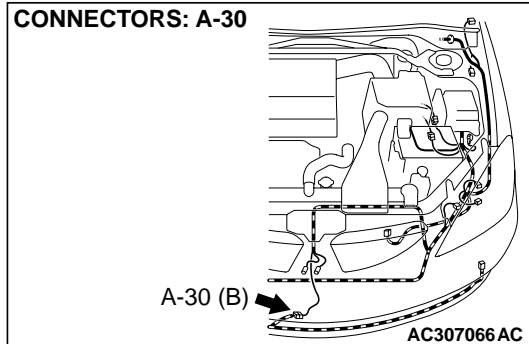
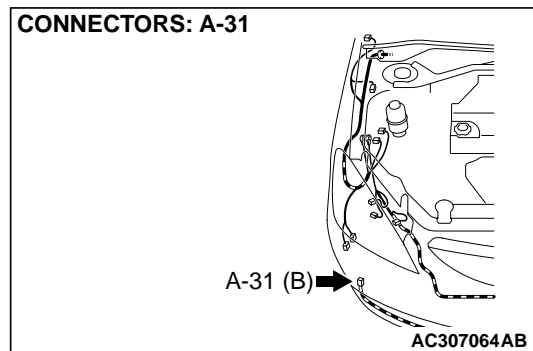
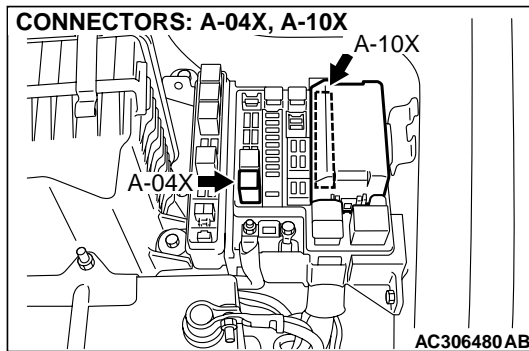
W4J54M13AA

**NOTE:** This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991862. For details on how to use the SWS monitor, refer to "How to use SWS monitor [P.54B-10](#)."

The diagram illustrates the electrical system for fog lights and the combination meter. It includes the following components and connections:

- BATTERY:** Connected to the relay box and the fog light relay.
- RELAY BOX (15A):** Controls the fog lights (A-29 and A-31) via blue and black wires.
- FOG LIGHT RELAY (A-04X):** Controls the fog light (A-10X) via red and white wires.
- FOG LIGHT (LH) (A-29) and (RH) (A-31):** Connected to the relay box via blue and black wires.
- COMBINATION METER (C-01):** Connected to the fog light relay via a blue wire.
- FRONT-ECU (A-10X):** Connected to the fog light relay via a red and white wire.
- COMBINATION METER (C-02):** Connected to the fog light relay via a blue wire.





### CIRCUIT OPERATION

- The ETACS-ECU sends a fog light illumination request signal ("LIGHT ON" signal) to the front-ECU when the fog light switch is turned on while the headlights are on.
- Then the front-ECU switches on its relay to illuminate the fog lights.

### TECHNICAL DESCRIPTION (COMMENT)

If the headlights illuminate normally, the fog light relay, the fog light switch, the front-ECU or the ETACS-ECU may be defective.

### TROUBLESHOOTING HINTS

- Trouble in input signal system
- The fog light relay may be defective.
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector.
- The front-ECU may be defective.
- The ETACS-ECU may be defective.

### DIAGNOSIS

#### Required Special Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991922: Probe Harness

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**STEP 1. Verify the headlight operation.****Q: Do the headlights illuminate normally?****The lights illuminate normally at both high and low beams.** : Go to Step 2.**Headlights do not illuminate at low beam** : Refer to Inspection Procedure J-2 "Headlights (low-beam) do not illuminate normally [P.54B-289](#)."**Headlights do not illuminate at high beam** : Refer to Inspection Procedure J-3 "Headlights (high-beam) do not illuminate normally [P.54B-294](#)."

**STEP 2. Check the input signal by using "Function Diag." menu of the SWS monitor.**

Set each switch to the following condition before checking input signal from the fog light switch:

- Ignition switch: ON
- Fog light switch: ON

*NOTE: Turn the ignition switch to the "ON" position in order to disable the headlight automatic shutdown function.*

**⚠ CAUTION**

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect special tool MB991497 or MB991911 before connecting special tool MB991812. Be sure to connect special tool MB991806 after turning on special tool MB991496 or MB991824.

- (1) Connect the special tool. Refer to "How to connect SWS monitor [P.54B-8](#)."
- (2) Operate scan tool MB991958 according to the procedure below to display "F.FOG."
  - a. Select "Interactive Diagnosis."
  - b. Select "System select."
  - c. Select "SWS."
  - d. Select "SWS MONITOR."
  - e. Select "Function Diag."
  - f. Select "LIGHTING."
  - g. Select "F.FOG."
- (3) Check that normal conditions are displayed on the items described in the table below.

ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 30	IG SW (IG1)	ON
ITEM 36	F.FOG LIGHT	ON

**Q: Are normal conditions displayed on the "IG SW(IG1)" and "F.FOG LIGHT"?**

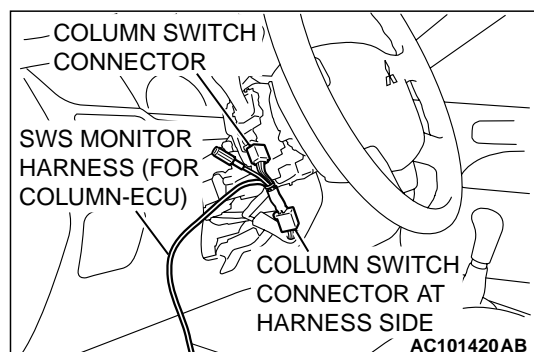
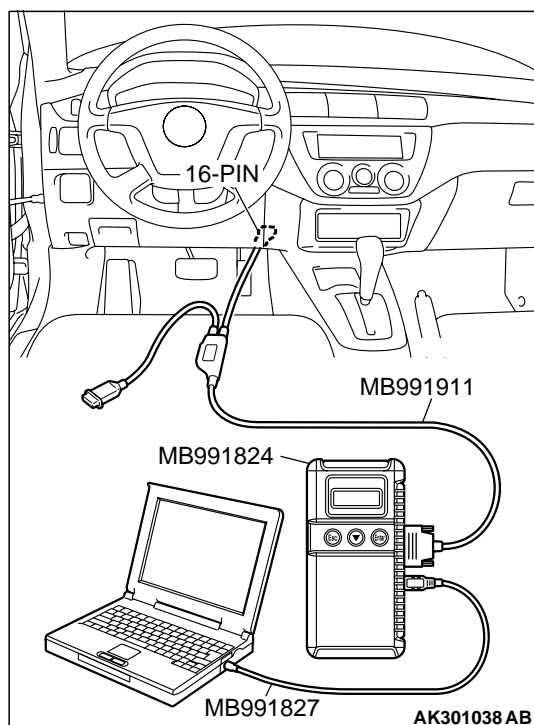
**Normal conditions are displayed for all the items :** Go to Step 3.

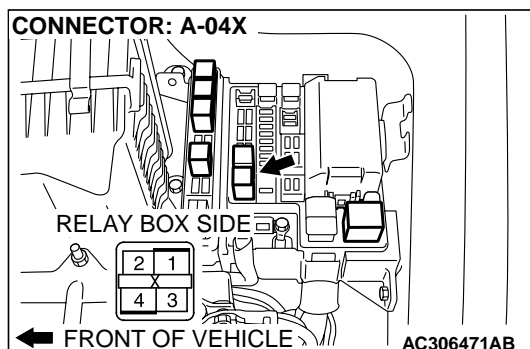
**Normal condition is not displayed for "IG SW (IG1)" :**

Refer to Inspection Procedure N-2 "ETACS-ECU does not receive any signal from the ignition switch (IG1) [P.54B-457](#)."

**Normal condition is not displayed for "F.FOG LIGHT" :**

Refer to Inspection Procedure N-9 "ETACS-ECU does not receive signals from the fog light switch [P.54B-502](#)."





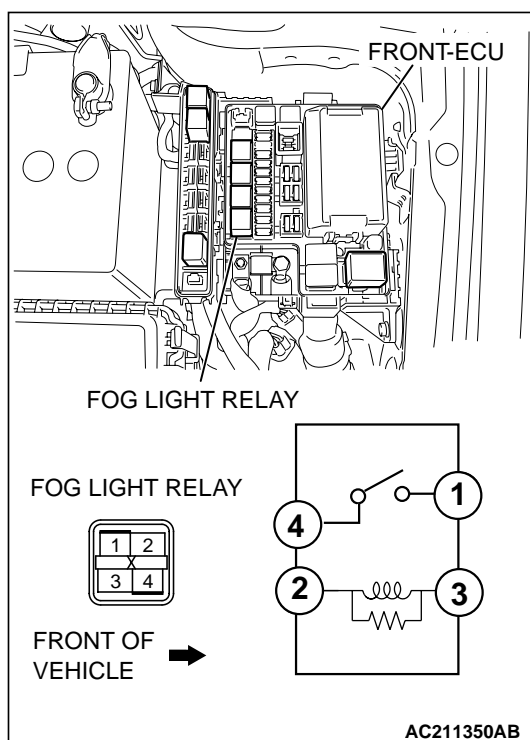
**STEP 3. Check fog light relay connector A-04X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is fog light relay connector A-04X in good condition?**

**YES :** Go to Step 4.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** Check that the fog lights illuminate normally.



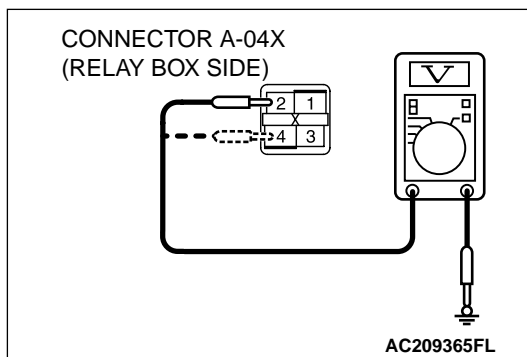
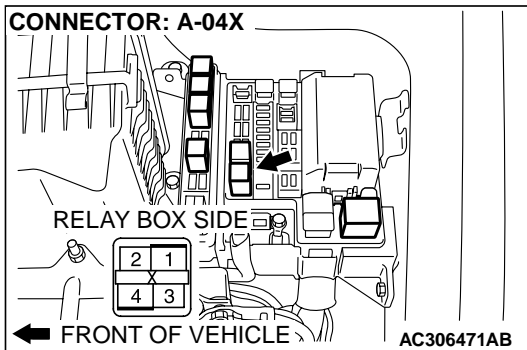
**STEP 4. Check the fog light relay.**

BATTERY VOLTAGE	TESTER CONNECTION	SPECIFIED CONDITION
Not applied	1 – 4	Open circuit
<ul style="list-style-type: none"> <li>Connect terminal 2 to the positive battery terminal</li> <li>Connect terminal 3 to the negative battery terminal</li> </ul>	1 – 4	Less than 2 ohms

**Q: Is the fog light relay in good condition?**

**YES :** Go to Step 5.

**NO :** Replace the fog light relay. Verify that the fog lights illuminate normally.



**STEP 5. Check the battery power supply circuit to the fog light relay. Measure the voltage at fog light relay connector A-04X.**

(1) Disconnect fog light relay connector A-04X and measure the voltage available at the relay box side of the connector.

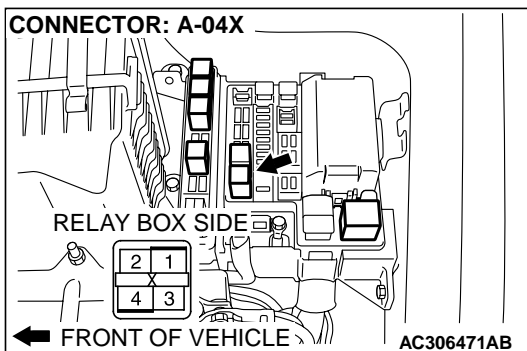
(2) Measure the voltage between terminal 2 and ground, and also between terminal 4 and ground.

- The voltage should equal approximately 12 volts (battery positive voltage).

**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES :** Go to Step 7.

**NO :** Go to Step 6.

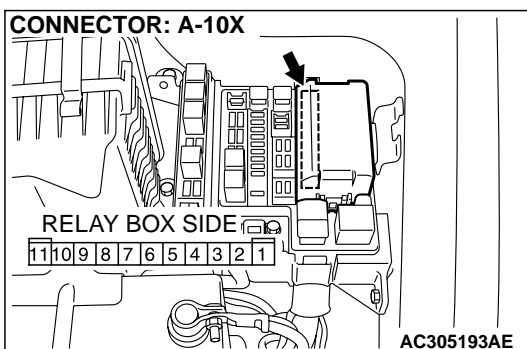


**STEP 6. Check the wiring harness between fog light relay connector A-04X (terminal 2 and 4) and the battery.**

**Q: Is the wiring harness between fog light relay connector A-04X (terminal 2 and 4) and the battery in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the fog lights illuminate normally.



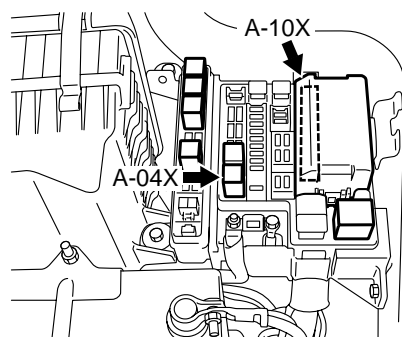
**STEP 7. Check front-ECU connector A-10X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is front-ECU connector A-10X in good condition?**

**YES :** Go to Step 8.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the fog lights illuminate normally.

## CONNECTORS: A-04X, A-10X



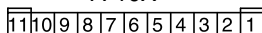
RELAY BOX SIDE

A-04X



RELAY BOX SIDE

A-10X



AC306472 AB

**STEP 8. Check the wiring harness between fog light relay connector A-04X (terminal 3) and front-ECU connector A-10X (terminal 1).**

**Q: Is the wiring harness between fog light relay connector A-04X (terminal 3) and front-ECU connector A-10X (terminal 1) in good condition?**

**YES :** Go to Step 9.

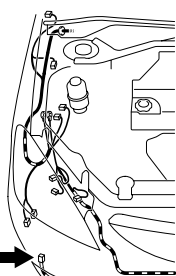
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the fog lights illuminate normally.

## CONNECTOR: A-31

HARNESS SIDE



A-31 (B) →



AC307064 AC

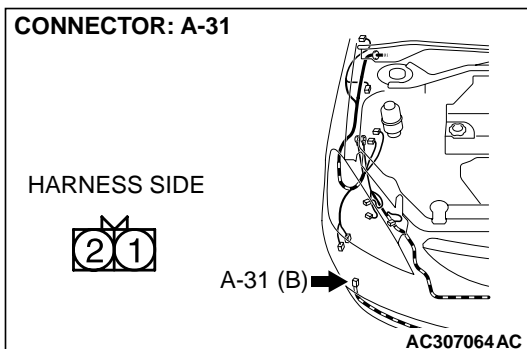
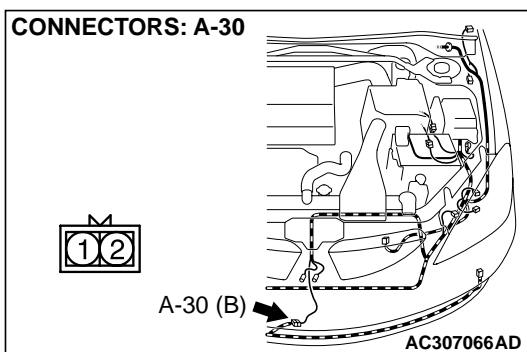
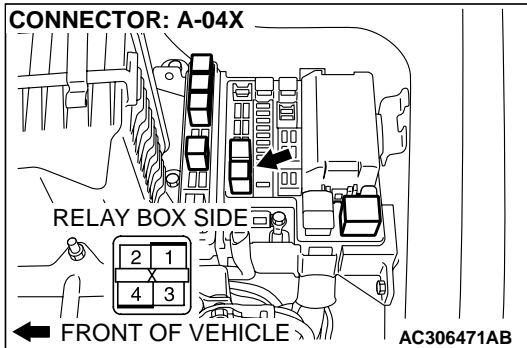
**STEP 9. Check fog light (RH) connector A-31 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is fog light (RH) connector A-31 in good condition?**

**YES :** Go to Step 10.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the fog lights illuminate normally.

**STEP 10. Check the wiring harnesses among fog light relay connector A-04X (terminal 1) and fog light (RH) connector A-31 (terminal 2).**



*NOTE: Also check intermediate connector A-30 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors A-30 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Are the wiring harnesses among fog light relay connector A-04X (terminal 1) and fog light (RH) connector A-31 (terminal 2) in good condition?**

**YES :** Go to Step 11.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the fog lights illuminate normally.

**STEP 11. Replace the ECU.**

- (1) Replace the front-ECU.
- (2) Verify that the fog lights illuminate normally.

**Q: Do the fog lights illuminate normally?**

**YES :** No action is necessary and testing is complete.

**NO :** Replace the ETACS-ECU. Verify that the fog lights illuminate normally.

**INSPECTION PROCEDURE K-2: Fog Light:** Fog lights do not go out when the headlights (low-beam) are turned off while the fog lights are on.

---

**TECHNICAL DESCRIPTION (COMMENT)**

If the trouble above occurs, the front-ECU may be defective.

**TROUBLESHOOTING HINT**

The front-ECU may be defective

**DIAGNOSIS**

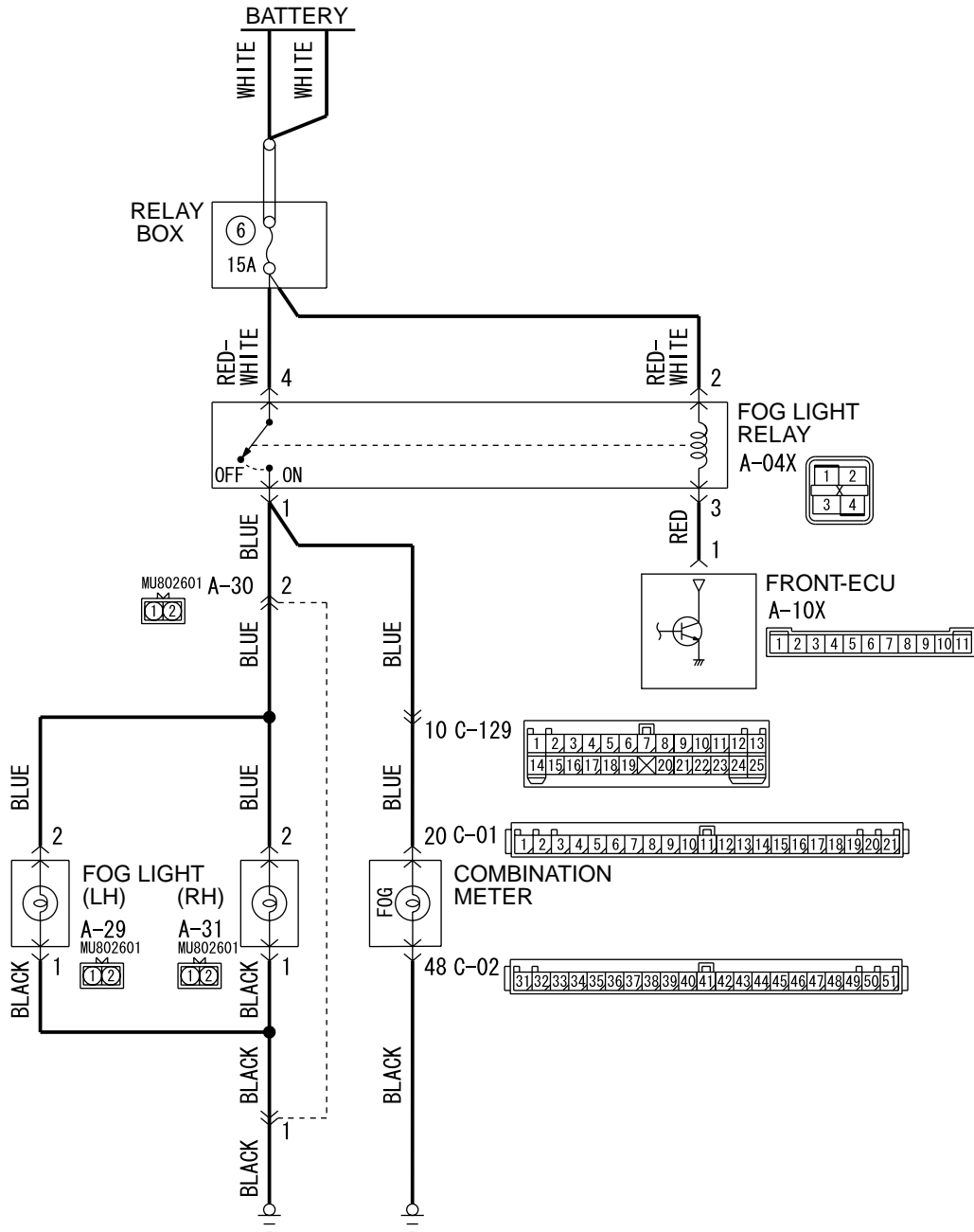
Replace the front-ECU.

The fog lights should go out when the headlights (low-beam) are turned off while the fog lights are on.

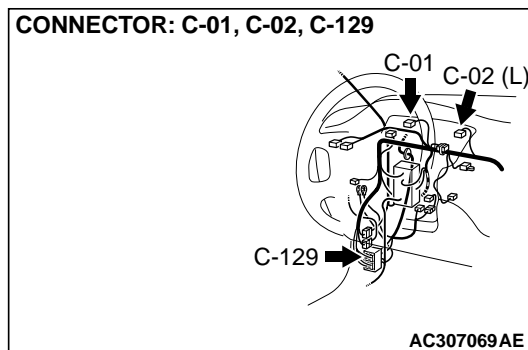
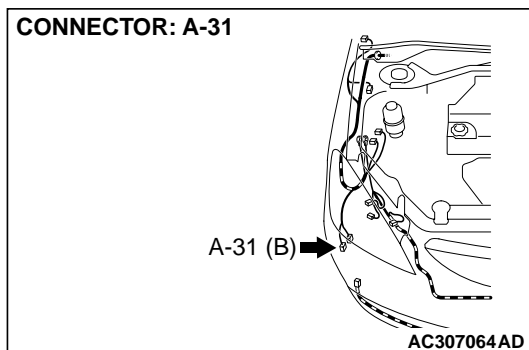
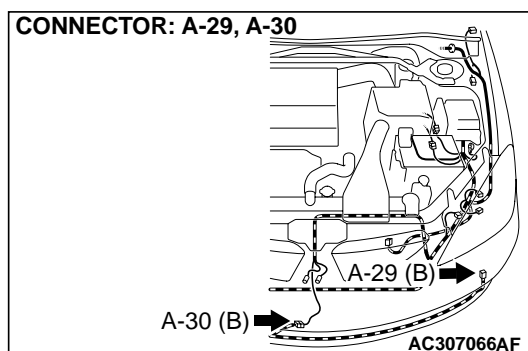
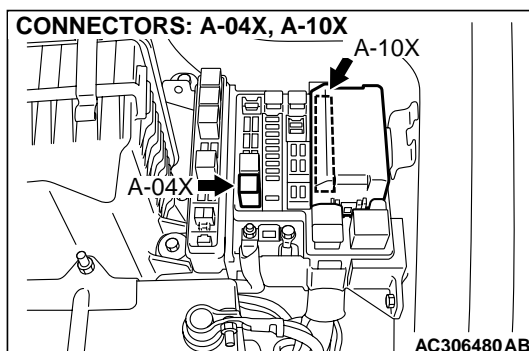


**INSPECTION PROCEDURE K-3: Fog Light: One of the fog lights does not illuminate.**

**Fog light circuit**



W4J54M98AA

**TECHNICAL DESCRIPTION (COMMENT)**

If one of the fog lights does not illuminate, the fog light relay or the fog light bulb may be defective. If the fog light indicator light does not illuminate, the combination meter may be defective.

**TROUBLESHOOTING HINTS**

- The fog light bulb may be defective.
- The combination meter may be defective.
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector.

**DIAGNOSIS****Required Special Tool:**

- MB991223: Harness Set

**STEP 1. Verify the fog lights and the fog light indicator light operation.**

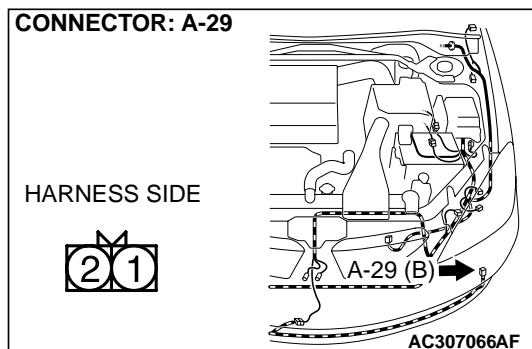
**Q: Which of the fog lights and the fog light indicator light does not illuminate normally?**

**Only the fog light (LH) does not illuminate :** Go to Step 2.

**Only the fog light (RH) does not illuminate :** Go to Step 8.

**Only the fog light indicator light does not illuminate :**  
Go to Step 14.

**Both the fog lights and the fog light indicator light do not illuminate :** Refer to Inspection procedure K-1 "Fog lights do not illuminate when the fog light switch is turned on [P.54B-354](#)".



**STEP 2. Check fog light (LH) connector A-29 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is fog light (LH) connector A-29 in good condition?**

**YES :** Go to Step 3.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. Verify that the fog lights illuminate normally.

**STEP 3. Check the fog light bulb (LH).**

- (1) Remove the fog light bulb (LH).
- (2) Verify that the fog light bulb (LH) is not damaged or burned out.

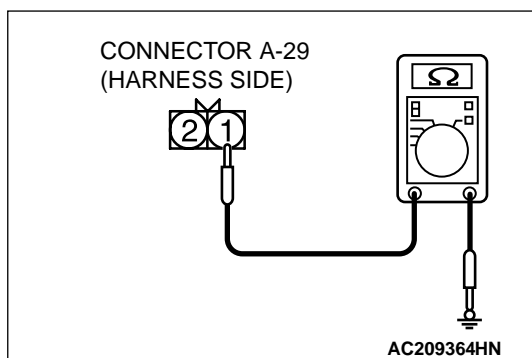
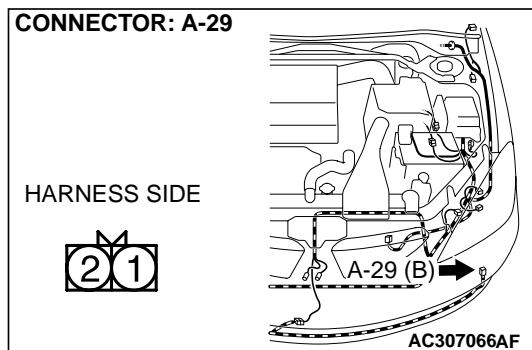
**Q: Is the fog light bulb (LH) in good condition?**

**YES :** Go to Step 4.

**NO :** Replace the fog light bulb (LH). Verify that the fog lights illuminate normally.

**STEP 4. Check the ground circuit to the fog light (LH). Measure the resistance at fog light (LH) connector A-29.**

- (1) Disconnect fog light (LH) connector A-29 and measure the resistance available at the wiring harness side of the connector.



- (2) Measure the resistance value between terminal 1 and ground.

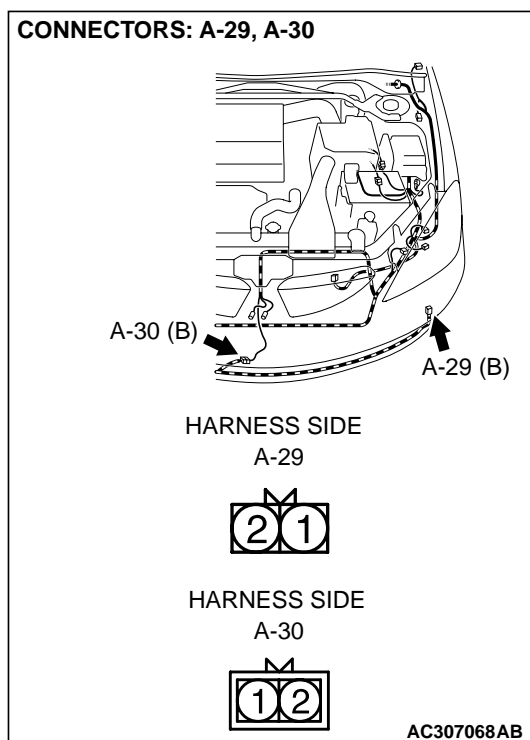
- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 6.

**NO :** Go to Step 5.

**STEP 5. Check the wiring harness between fog light (LH) connector A-29 (terminal 1) and ground.**



*NOTE: Also check intermediate connector A-30 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector A-30 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between fog light (LH) connector A-29 (terminal 1) and ground in good condition?**

**YES :** No action is necessary and testing is complete.

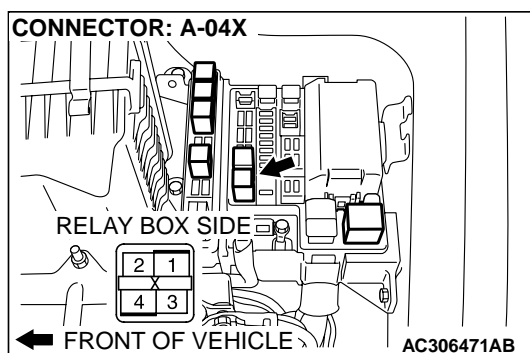
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the fog lights illuminate normally.

**STEP 6. Check fog light relay connector A-04X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

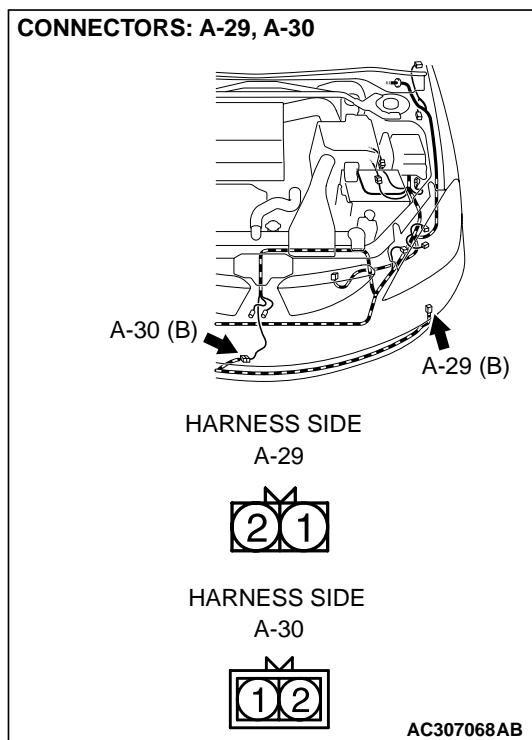
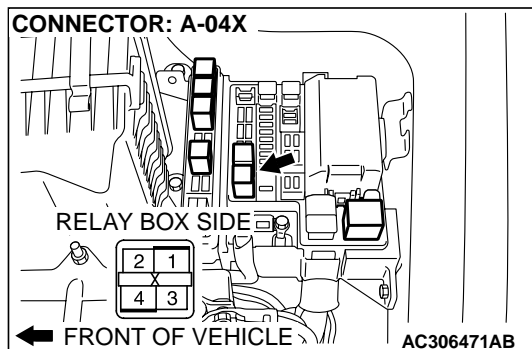
**Q: Is fog light relay connector A-04X in good condition?**

**YES :** Go to Step 7.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the fog lights illuminate normally.



**STEP 7. Check the wiring harness between fog light relay connector A-04X (terminal 1) and fog light (LH) connector A-29 (terminal 2).**

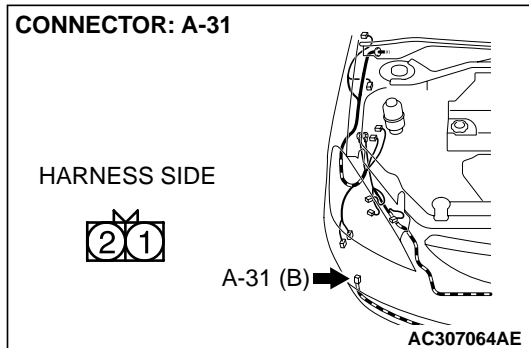


*NOTE: Also check intermediate connector A-30 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors A-30 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between fog light relay connector A-04X (terminal 1) and fog light (LH) connector A-29 (terminal 2) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the fog lights illuminate normally.



**STEP 8. Check fog light (RH) connector A-31 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is fog light (RH) connector A-31 in good condition?**

**YES :** Go to Step 9.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. Verify that the fog lights illuminate normally.

**STEP 9. Check the fog light bulb (RH).**

- (1) Remove the fog light bulb (RH).
- (2) Verify that the fog light bulb (RH) is not damaged or burned out.

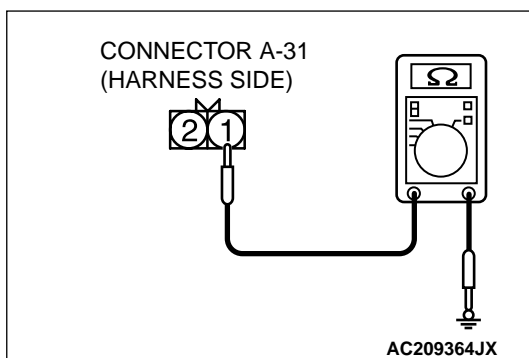
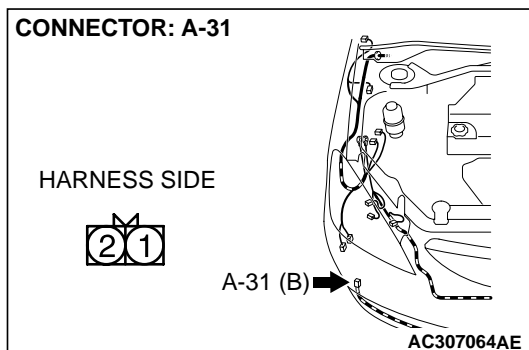
**Q: Is the fog light bulb (RH) in good condition?**

**YES :** Go to Step 10.

**NO :** Replace the fog light bulb (RH). Verify that the fog lights illuminate normally.

**STEP 10. Check the ground circuit to the fog light (RH). Measure the resistance at fog light (RH) connector A-31.**

- (1) Disconnect fog light (RH) connector A-31 and measure the resistance available at the wiring harness side of the connector.



- (2) Measure the resistance value between terminal 1 and ground.

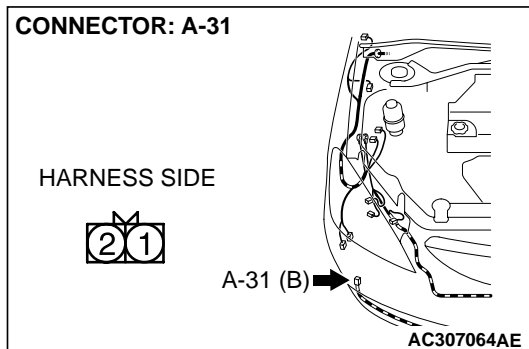
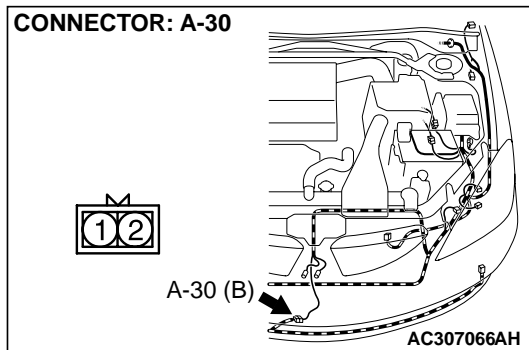
- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 12.

**NO :** Go to Step 11.

**STEP 11. Check the wiring harness between fog light (RH) connector A-31 (terminal 1) and ground.**



*NOTE: Also check intermediate connector A-30 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors A-30 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between fog light (RH) connector A-31 (terminal 1) and ground in good condition?**

**YES :** No action is necessary and testing is complete.

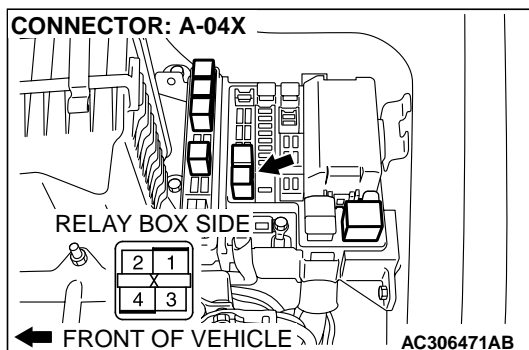
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the fog lights illuminate normally.

**STEP 12. Check fog light relay connector A-04X for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

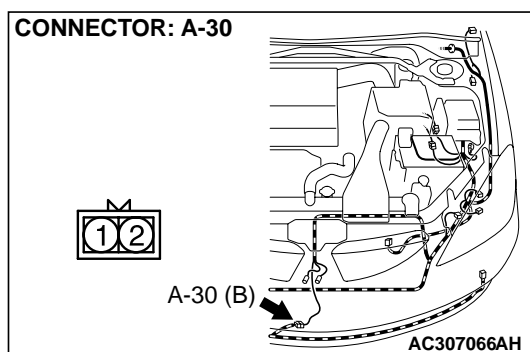
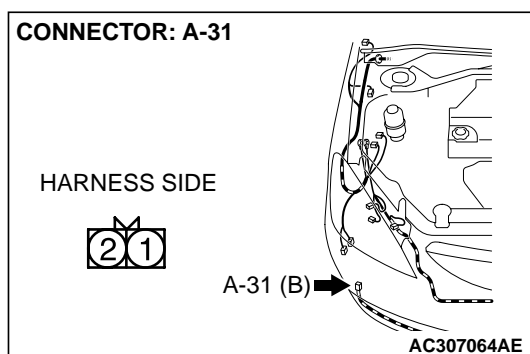
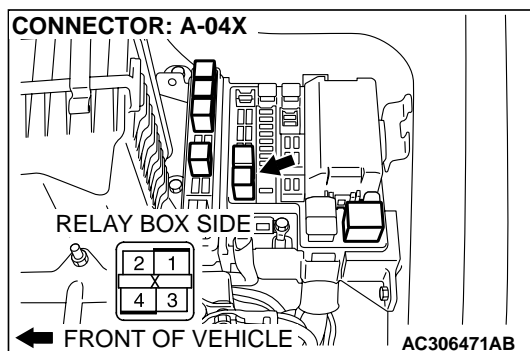
**Q: Is fog light relay connector A-04X in good condition?**

**YES :** Go to Step 13.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the fog lights illuminate normally.



**STEP 13.** Check the wiring harness between fog light relay connector A-04X (terminal 1) and fog light (RH) connector A-31 (terminal 2).



*NOTE: Also check intermediate connector A-30 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors A-30 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

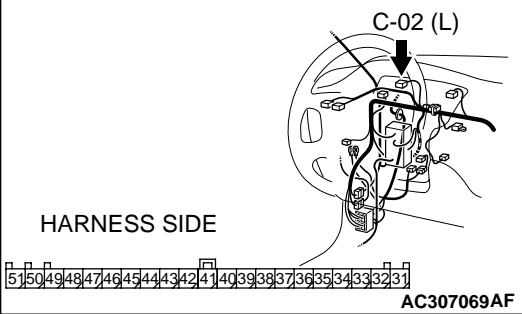
**Q: Is the wiring harness between fog light relay connector A-04X (terminal 1) and fog light (RH) connector A-31 (terminal 2) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the fog lights illuminate normally.



**CONNECTOR: C-02**



**STEP 14. Check combination meter connector C-02 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is combination meter connector C-02 in good condition?**

**YES :** Go to Step 15.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection  
**P.00E-2.** Verify that the fog light indicator light illuminates normally.

**STEP 15. Check the fog light indicator light bulb.**

- (1) Remove the fog light indicator light bulb.
- (2) Verify that the fog light indicator light bulb is not damaged or burned out.

**Q: Is the fog light indicator light bulb in good condition?**

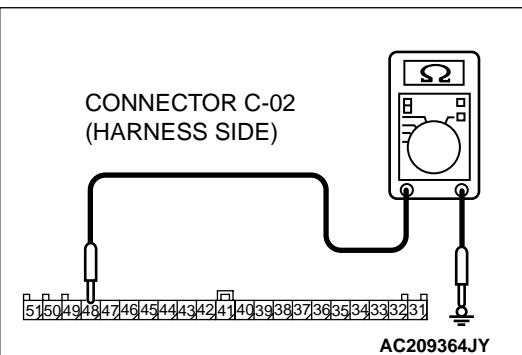
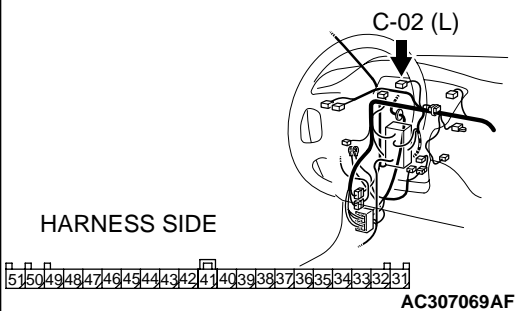
**YES :** Go to Step 16.

**NO :** Replace the fog light indicator light bulb. Verify that the fog light indicator light illuminates normally.

**STEP 16. Check the ground circuit to the fog light indicator light. Measure the resistance at combination meter connector C-02.**

- (1) Disconnect fog light indicator light connector C-02 and measure the resistance available at the wiring harness side of the connector.

**CONNECTOR: C-02**

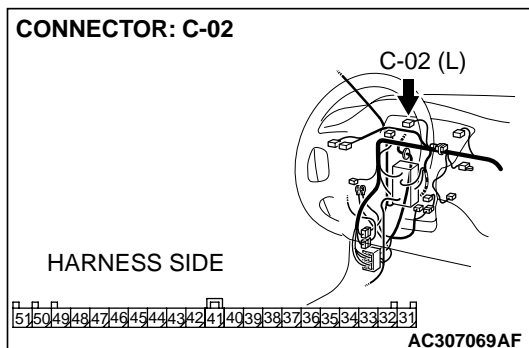


- (2) Measure the resistance value between terminal 48 and ground.
  - The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 18.

**NO :** Go to Step 17.

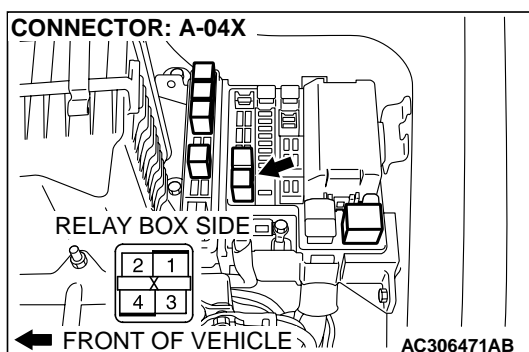


**STEP 17. Check the wiring harness between combination meter connector C-02 (terminal 48) and ground.**

**Q: Is the wiring harness between combination meter connector C-02 (terminal 48) and ground in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the fog light indicator light illuminates normally.

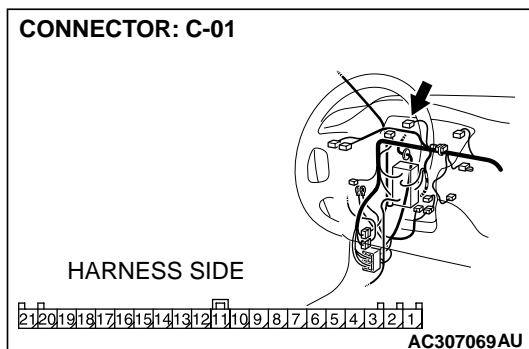


**STEP 18. Check fog light relay connector A-04X and combination meter connector C-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

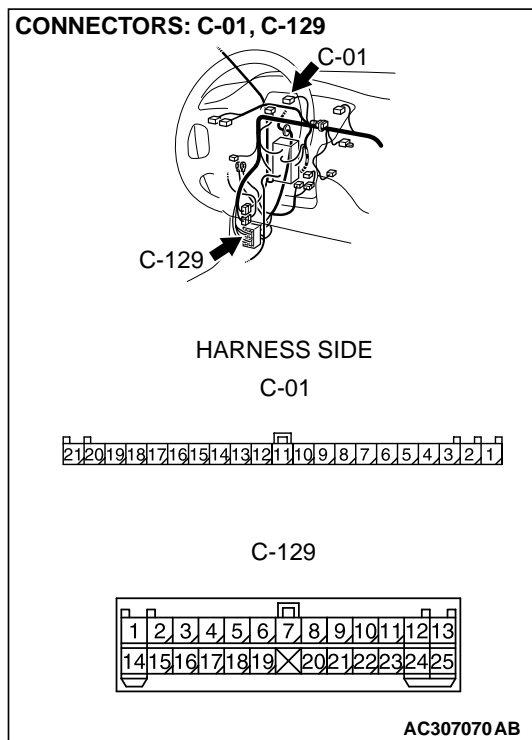
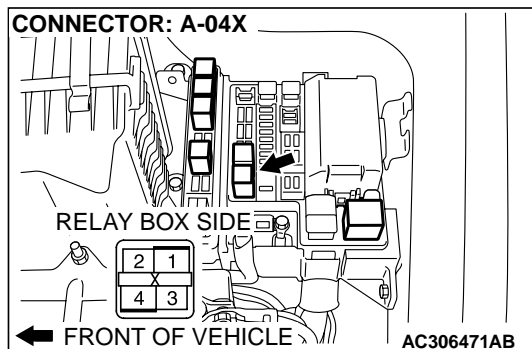
**Q: Are fog light relay connector A-04X and combination meter connector C-01 in good condition?**

**YES :** Go to Step 19.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the fog light indicator light illuminates normally.



**STEP 19.** Check the wiring harness between fog light relay connector A-04X (terminal 1) and combination meter connector C-01 (terminal 20).



**NOTE:** Also check intermediate connector C-129 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-129 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

**Q:** Is the wiring harness between fog light relay connector A-04X (terminal 1) and combination meter connector C-01 (terminal 20) in good condition?

**YES :** Replace the combination meter. Verify that the fog light indicator light illuminates normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the fog light indicator light illuminates normally.

**FLASHER TIMER****GENERAL DESCRIPTION CONCERNING THE FLASHER TIMER**

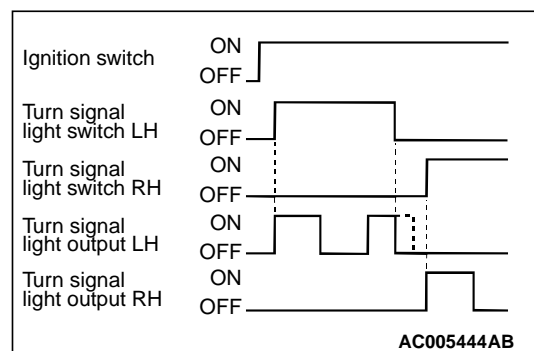
M1549023600131

The ECU related to the alarm function types and various control functions are as follows.

Function	CONTROL ECU
Turn signal light	ETACS-ECU, column switch
Hazard light	ETACS-ECU

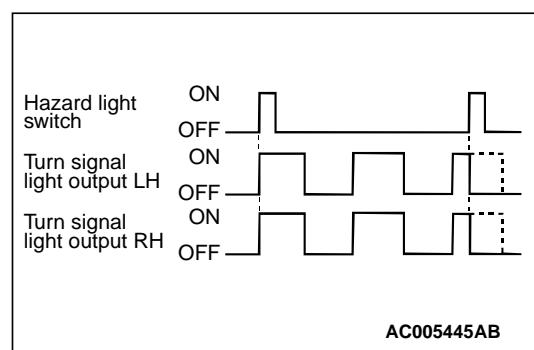
**Flasher timer function****Turn signal light**

The turn signal light output (flashing signal) is turned ON when the turn signal light ignition switch is ON and the turn signal light switch is ON (LH or RH.) If the front turn signal light or rear turn signal light bulb has burned out, the flashing speed increases to indicate that the bulb has burned out.

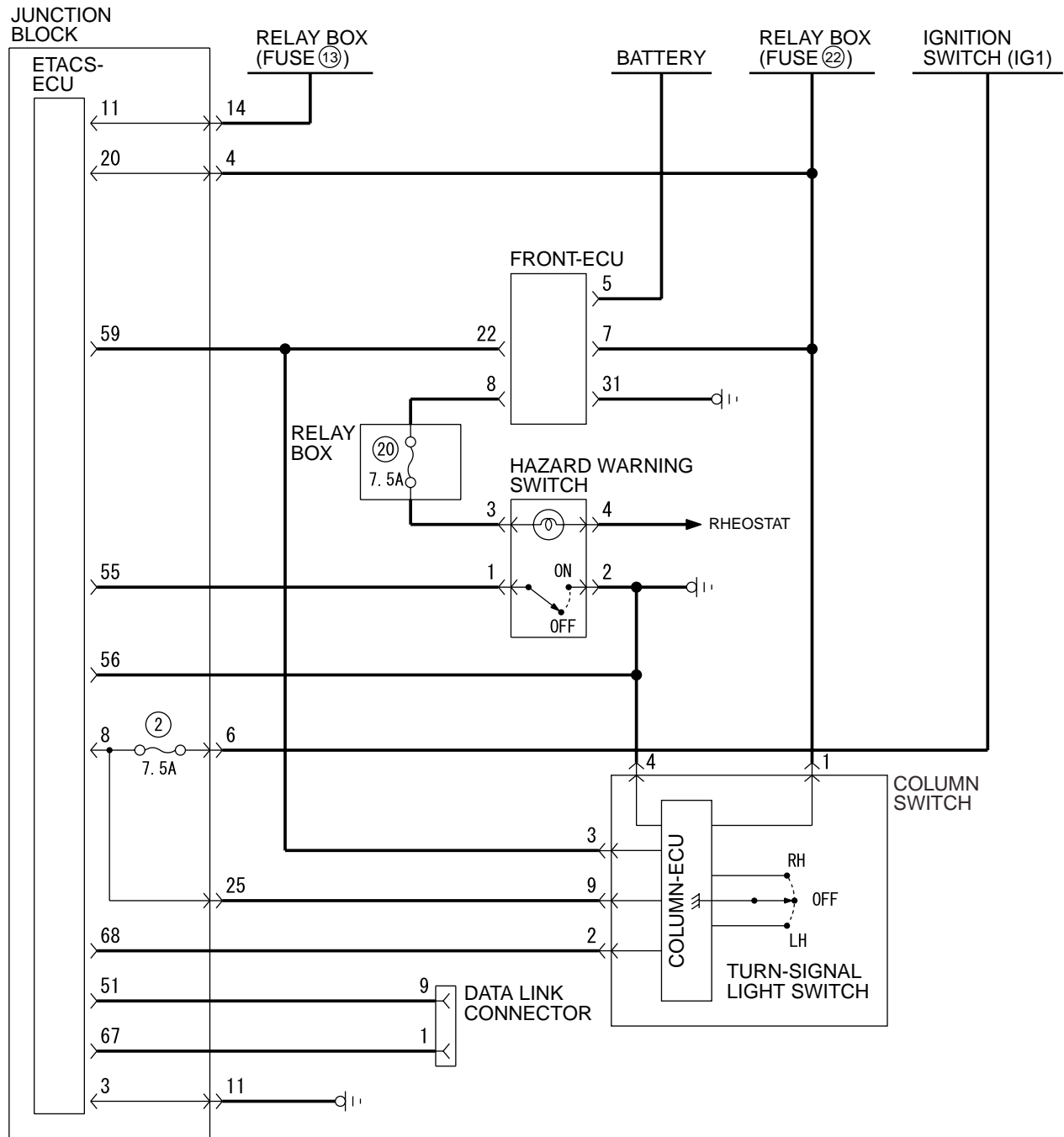
**Hazard light**

The hazard lights output (flashing) is turned ON when the hazard switch is turned OFF to ON. When the switch is turned ON again, the output is turned OFF.

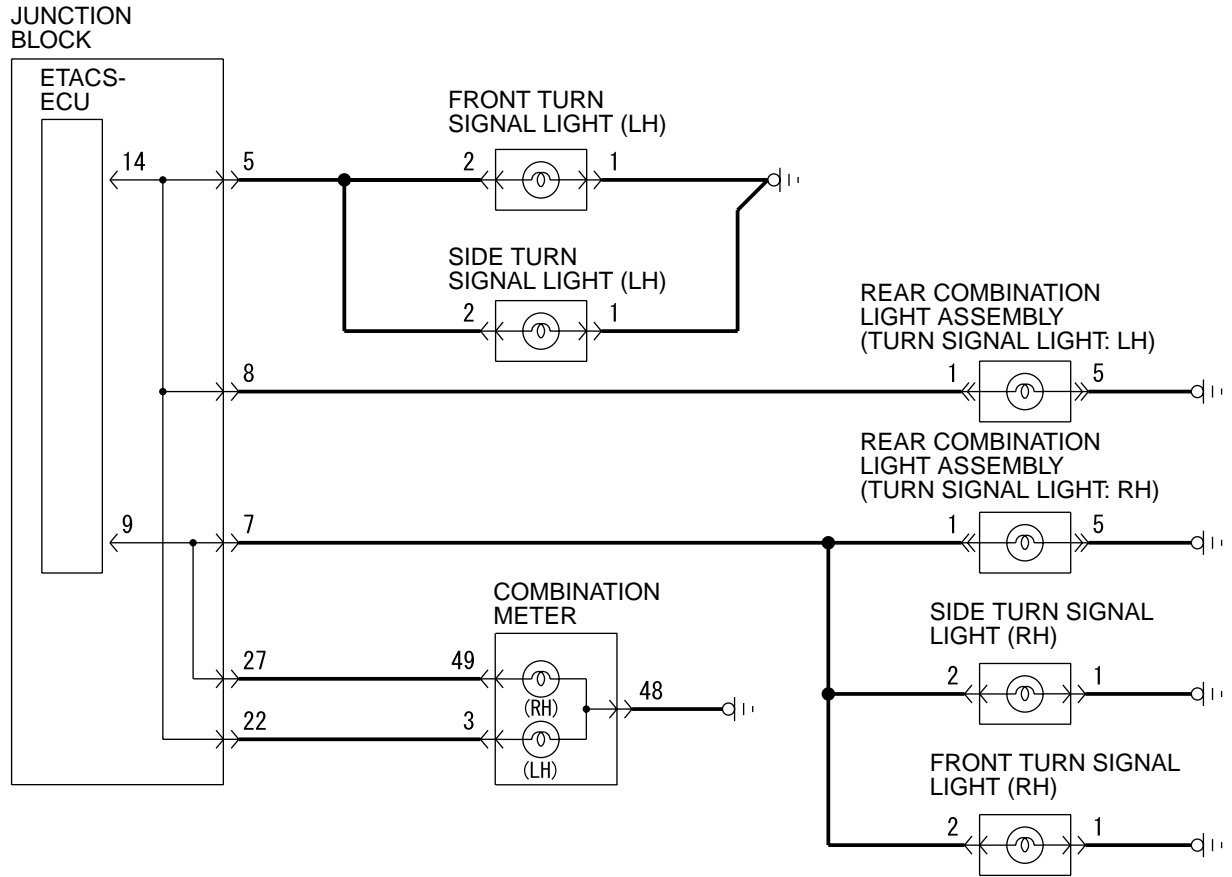
*NOTE: The hazard light switch is a push-return type toggle switch.*



**General circuit diagram for the turn signal light and hazard light**



W4J54M36AA

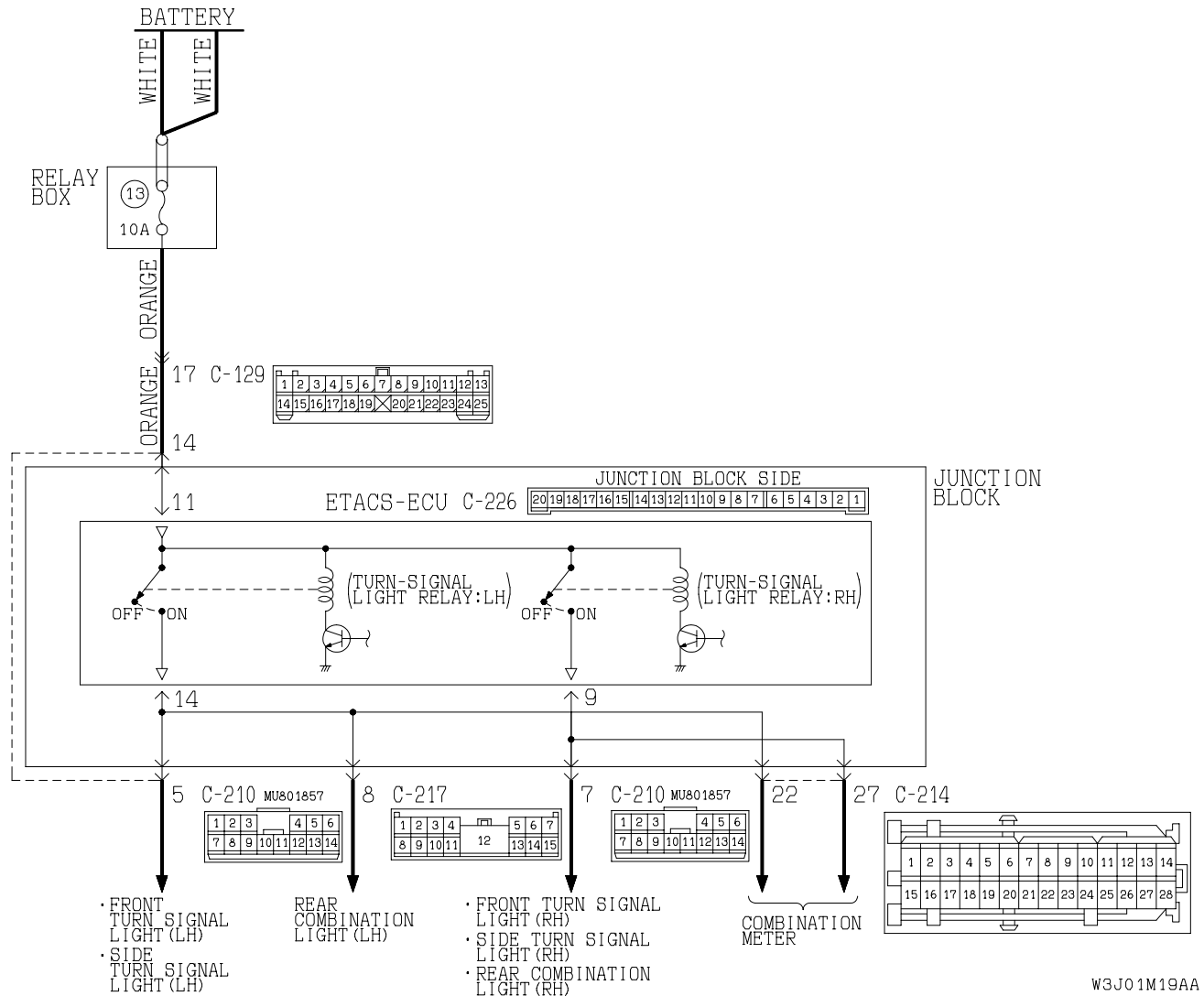


W4J54M93AA

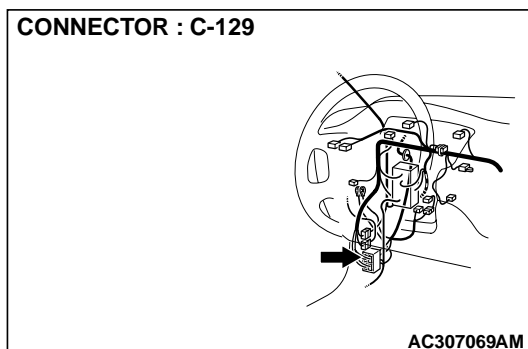
**INSPECTION PROCEDURE L-1: Flasher Timer: Turn-signal lights does not flash when the turn-signal light switch is turned on.**

*NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991862. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-10."*

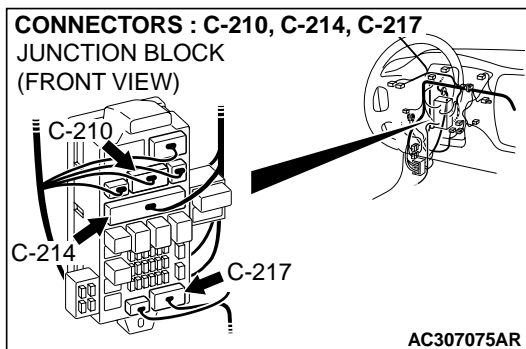
**Turn-signal Light Power Supply Circuit**



CONNECTOR : C-129

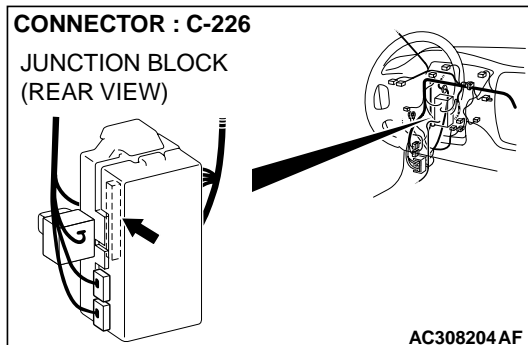


AC307069AM

CONNECTORS : C-210, C-214, C-217  
JUNCTION BLOCK  
(FRONT VIEW)

AC307075AR

CONNECTOR : C-226

JUNCTION BLOCK  
(REAR VIEW)

AC308204AF

**CIRCUIT OPERATION**

- The turn-signal light switch sends a signal through the column-ECU (incorporated in the column switch) to the ETACS-ECU. If the column-ECU sends a turn-signal light switch "ON" signal to the ETACS-ECU, the ETACS-ECU turns on the flasher timer (incorporated in the ETACS-ECU), thus causing the turn-signal lights to flash.
- The ETACS-ECU operates the turn-signal lights according to the following signals:
  - Ignition switch (IG1)
  - Turn-signal light switch

**TECHNICAL DESCRIPTION (COMMENT)**

Is the turn-signal lights do not flash normally, the input circuits from the switches described in "CIRCUIT OPERATION" or the ETACS-ECU may be defective. If the hazard warning lights do not flash, the power supply line to the ETACS-ECU (dedicated to the turn-signal lights) may be defective.

**TROUBLESHOOTING HINTS**

- The column switch (turn-signal light and lighting switch) may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991862: SWS monitor kit

**STEP 1. Verify the hazard warning light.****Q: Does the hazard warning light work normally?**

**YES** : Go to Step 7.

**NO** : Go to Step 2.



**STEP 2. Verify the turn-signal lights.**

**Q: Does either of the turn-signal lights illuminate?**

**YES (illuminates at only one side) :** Go to Step 3.

**NO (do not illuminate at all) :** Go to Step 4.

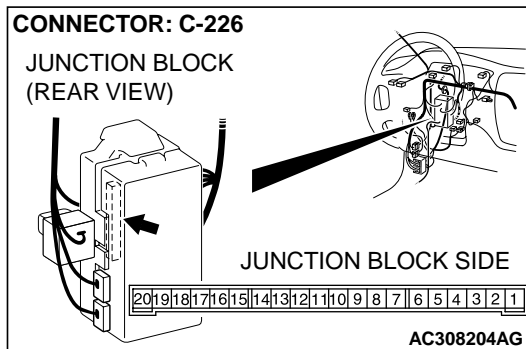
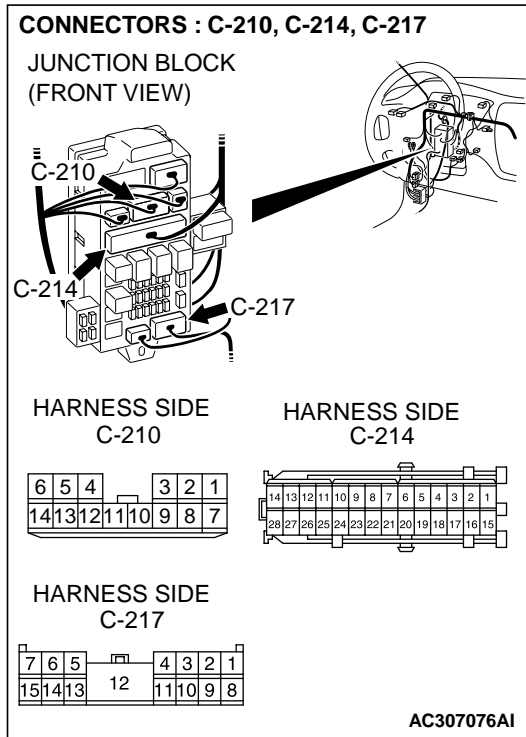
**STEP 3. Check ETACS-ECU connector C-226, junction block connectors C-210, C-214 and C-217 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

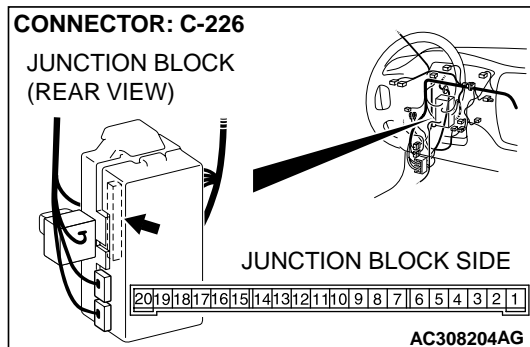
**Q: Are ETACS-ECU connector C-226, junction block connectors C-210, C-214 and C-217 in good condition?**

**YES :** Replace the ETACS-ECU. Verify that the turn-signal lights illuminate normally.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

[P.00E-2](#). Verify that the turn-signal lights illuminate normally.



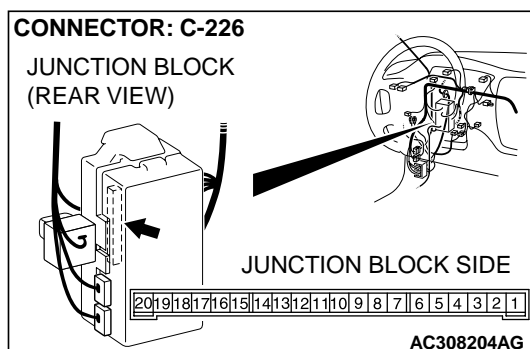


**STEP 4. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-226 in good condition?**

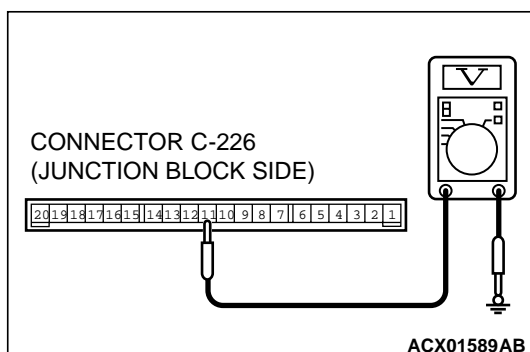
**YES :** Go to Step 5.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the turn-signal lights illuminate normally.



**STEP 5. Check the battery power supply circuit to the ETACS-ECU. Test at ETACS-ECU connector C-226.**

(1) Disconnect ETACS-ECU connector C-226 and measure the voltage available at the junction block side of the connector.



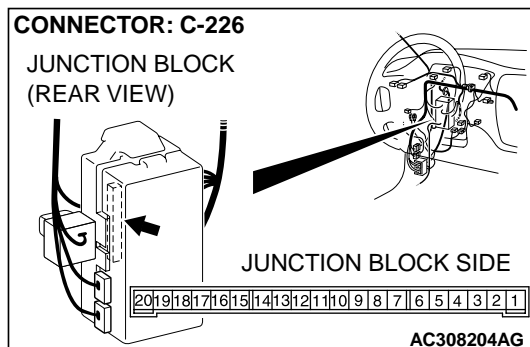
(2) Measure the voltage between terminal 11 and ground.

- The voltage should equal approximately 12 volts (battery positive voltage).

**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES :** Replace the ETACS-ECU. Verify that the turn-signal lights illuminate normally.

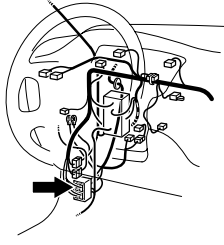
**NO :** Go to Step 6.



**STEP 6. Check the wiring harness between ETACS-ECU connector C-226 (terminal 11) and the battery.**

**CONNECTOR : C-129**

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	



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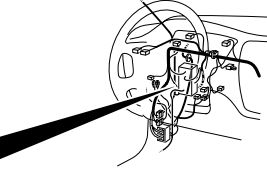
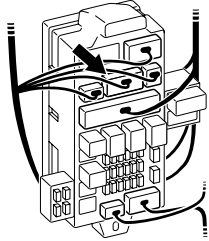
*NOTE: Also check intermediate connector C-129 and junction block connector C-210 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-129 or junction block connector C-210 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

**Q: Is the wiring harness between ETACS-ECU connector C-226 (terminal 11) and the battery in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.

**CONNECTOR : C-210**  
JUNCTION BLOCK  
(FRONT VIEW)



HARNESS SIDE

6	5	4			3	2	1
14	13	12	11	10	9	8	7

AC307075AS

**STEP 7. Check the input signal by using "FUNCTION DIAG." menu of the SWS monitor.**

Check the input signals from the following switches:

- Ignition switch: ON
- Turn-signal light switch: RH

**⚠ CAUTION**

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect the DLC harness before connecting the column-ECU harness. Be sure to connect SWS monitor kit MB991862 after turning on scan tool MB991958.

- (1) Connect scan tool MB991958 to the data link connector.
- (2) Connect SWS monitor kit MB991862 to the column switch connector.
- (3) Operate scan tool MB991958 according to the procedure below to display "TURN SIG.RH."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "SWS MONITOR."
  4. Select "FUNCTION DIAG."
  5. Select "TURN SIGNAL."
  6. Select "TURN SIG.RH."
- (4) Check that normal conditions are displayed on the items described in the table below.

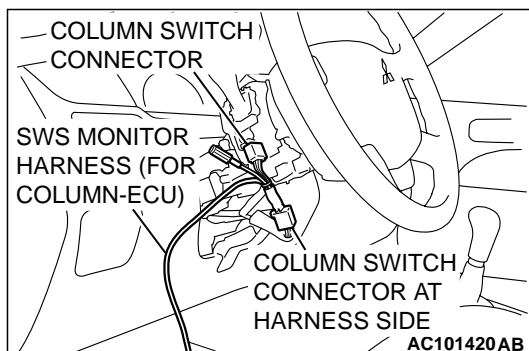
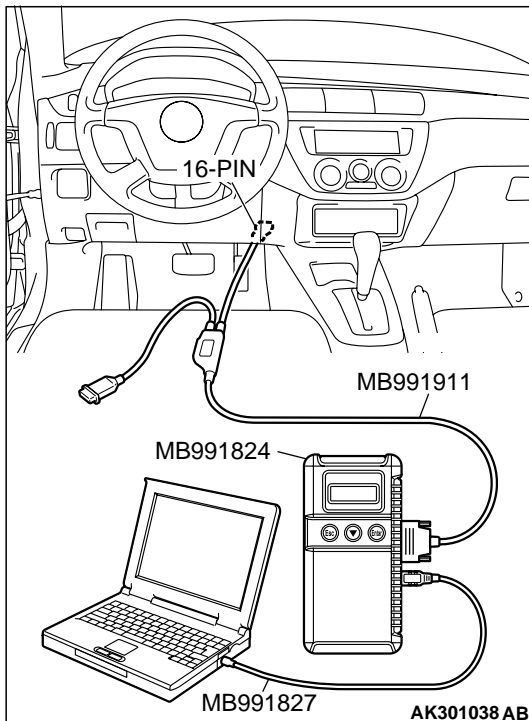
ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 10	T/S RH SW	ON
ITEM 30	IG SW (IG1)	ON

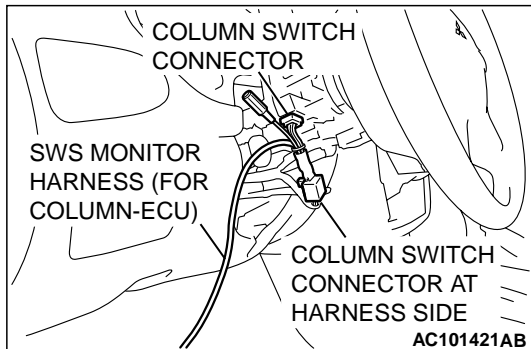
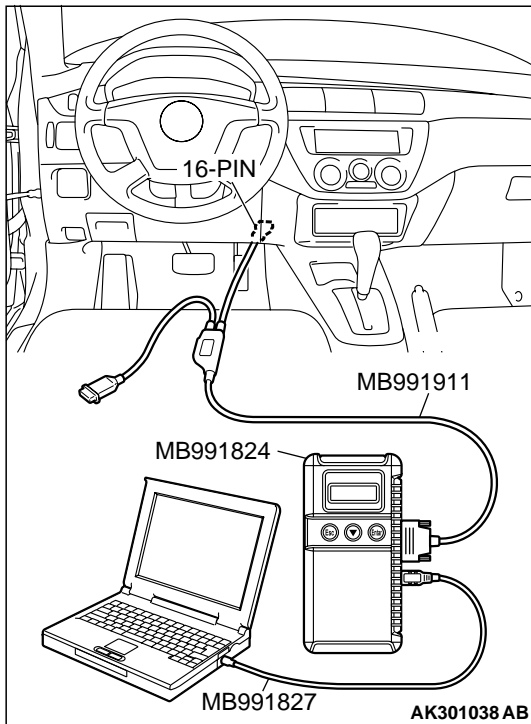
**Q: Are normal conditions displayed on the "T/S RH SW" and "IG SW (IG1)"?**

**Normal conditions are displayed for all the items : Go to Step 8.**

**The scan tool does not show the respective normal condition for item "T/S RH SW" :** Refer to Inspection Procedure N-5 "ETACS-ECU does not receive a signal from the turn-signal RH switch [P.54B-486](#)."

**The scan tool does not show the respective normal condition for item "IG SW (IG1)" :** Refer to Inspection Procedure N-2 "ETACS-ECU does not receive a signal from the ignition switch (IG1) [P.54B-457](#)."





**STEP 8. Check the input signal by using "FUNCTION DIAG." menu of the SWS monitor.**

Check the input signal from the turn-signal light switch (LH). Operate scan tool MB991958 according to the procedure below to display "TURN SIG.LH."

1. Select "SYSTEM SELECT."
2. Select "SWS."
3. Select "SWS MONITOR."
4. Select "FUNCTION DIAG."
5. Select "TURN SIGNAL."
6. Select "TURN SIG.LH."

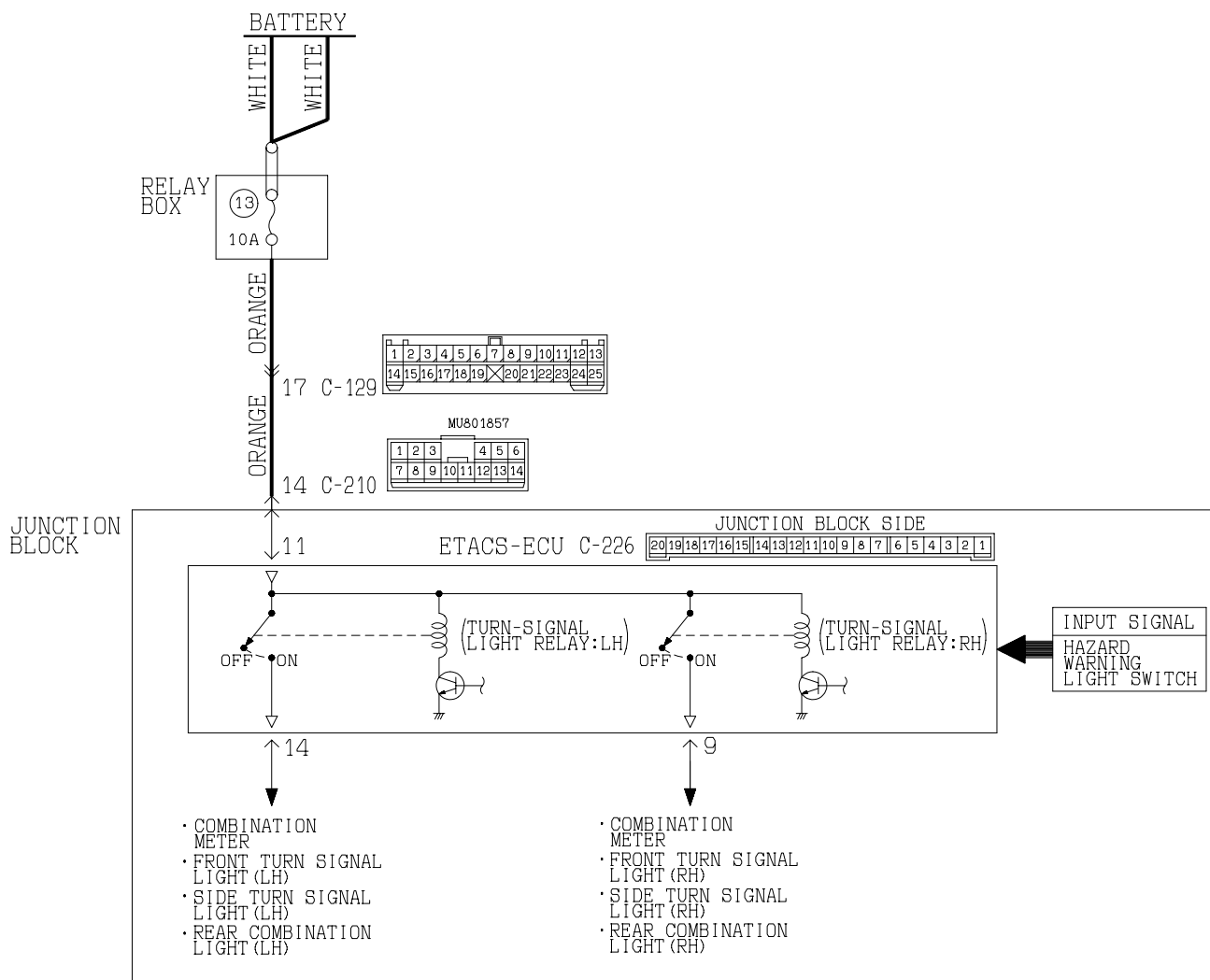
Check that normal condition is displayed on the item described in the table below.

ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 11	T/S LH SW	ON

**Q: Do the scan tool display the items "T/S LH SW" is normal condition?**

**YES :** Replace the ETACS-ECU. Verify that the turn-signal lights illuminate normally.

**NO :** Refer to Inspection Procedure N-5 "ETACS-ECU does not receive any signal from the taillight switch, the headlight switch, the passing light switch, the dimmer switch, the turn-signal light switch or switch [P.54B-486.](#)"

**INSPECTION PROCEDURE L-2: Flasher Timer: Hazard warning lights do not flash when the hazard warning light switch is turned on.****Hazard Warning Light Circuit**

W3J01M20AA

**CIRCUIT OPERATION**

If the ETACS-ECU receives "ON" signal from the hazard warning light switch, the ETACS-ECU turns on the flasher timer (incorporated in the ETACS-ECU), thus causing the turn-signal lights to flash.

**TECHNICAL DESCRIPTION (COMMENT)**

If the hazard warning lights do not flash, the power supply line to the ETACS-ECU (dedicated to the turn-signal lights) or the ETACS-ECU may be defective.

**TROUBLESHOOTING HINTS**

- The hazard warning light switch may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

## DIAGNOSIS

### Required Special Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

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### STEP 1. Verify the turn-signal lights.

#### Q: Do the turn-signal lights illuminate normally?

**YES :** Go to Step 2.

**NO :** Refer to Inspection Procedure L-1 "Turn-signal lights does not flash when the turn-signal light switch is turned on [P.54B-377](#)."

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### STEP 2. Check the input signal (by using the pulse check mode of the monitor).

Check input signal from the hazard warning light switch.

#### CAUTION

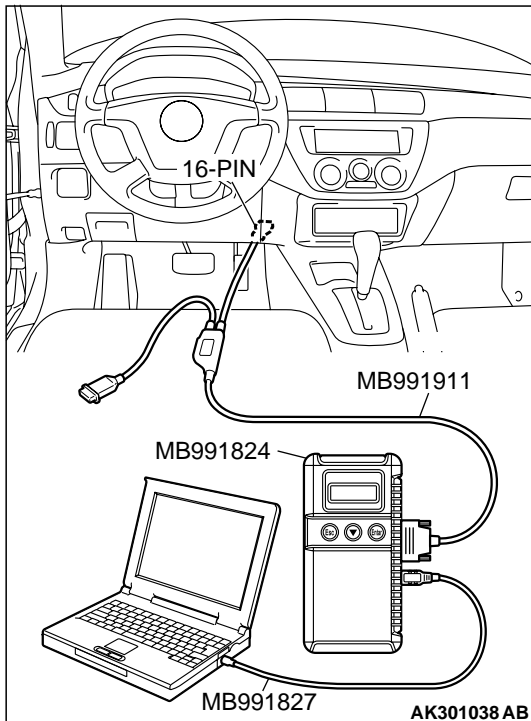
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958 to the data link connector.
- (2) Operate scan tool MB991958 according to the procedure below to display "PULSE CHECK."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "PULSE CHECK."
- (3) Check that scan tool MB991958 sounds when the hazard warning light switch is turned from "OFF" to "ON."

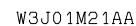
#### Q: Does scan tool MB991958 sound when the hazard warning light switch is turned from "OFF" to "ON"?

**YES :** Replace the ETACS-ECU. Verify that the hazard warning lights illuminate normally.

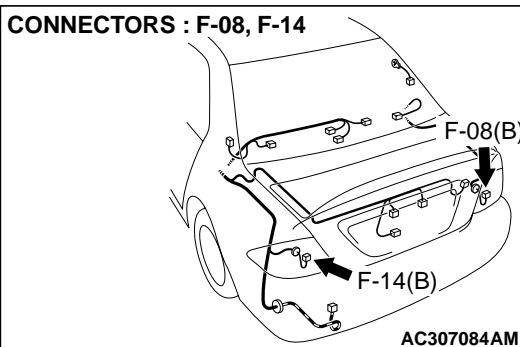
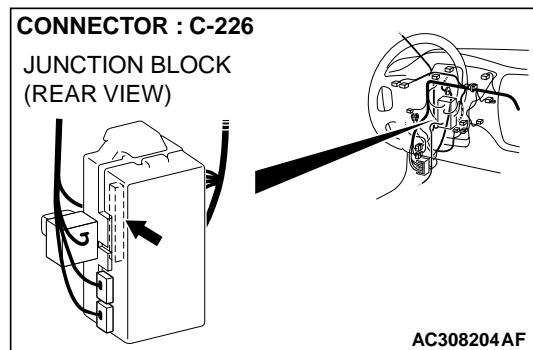
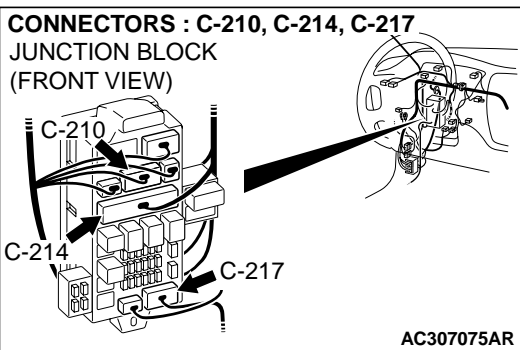
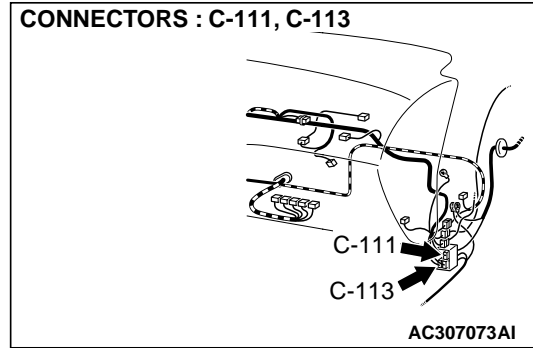
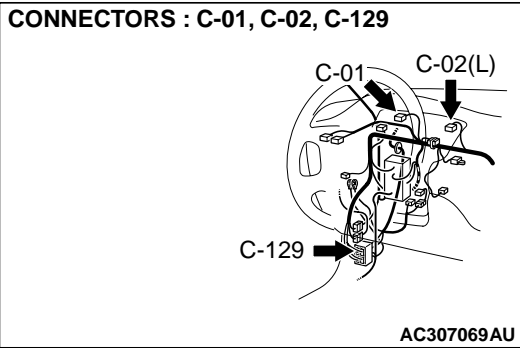
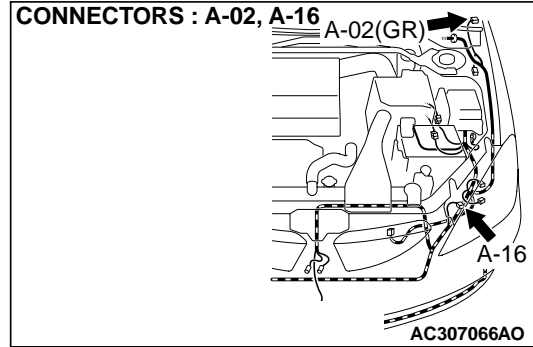
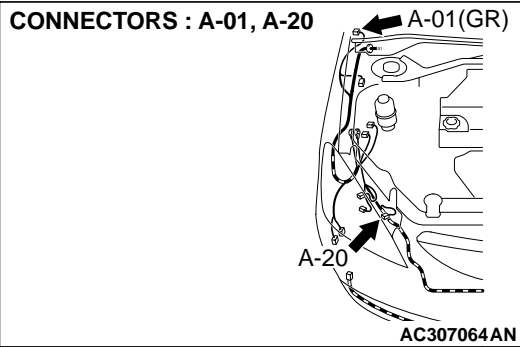
**NO :** Refer to Inspection Procedure O-2 "ETACS-ECU does not receive a signal from the hazard warning light switch [P.54B-512](#)."



## Turn-signal Light Circuit







#### TECHNICAL DESCRIPTION (COMMENT)

If the right or left turn-signal light does not illuminate, their bulb may be defective.

#### TROUBLESHOOTING HINTS

- The turn-signal light bulb may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tool:**

- MB991223: Harness Set

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**STEP 1. Check the hazard warning light.****Q: Which turn-signal light does not illuminate?**

**Front turn-signal light (LH) and side turn-signal light (LH) :** Go to Step 2.

**Front turn-signal light (RH) and side turn-signal light (RH) :** Go to Step 4.

**front turn-signal light (LH) :** Go to Step 6.

**front turn-signal light (RH) :** Go to Step 12.

**side turn-signal light (LH) :** Go to Step 18.

**side turn-signal light (RH) :** Go to Step 24.

**rear combination light (LH) :** Go to Step 30.

**rear combination light (RH) :** Go to Step 36.

**combination meter (LH) :** Go to Step 42.

**combination meter (RH) :** Go to Step 44.

**Combination meter (both right and left) :** Go to Step 46

**front turn-signal light (RH), side turn-signal light (RH) and rear combination light (RH) :** Go to Step 48.

**LH side only :** Refer to Inspection Procedure L-1

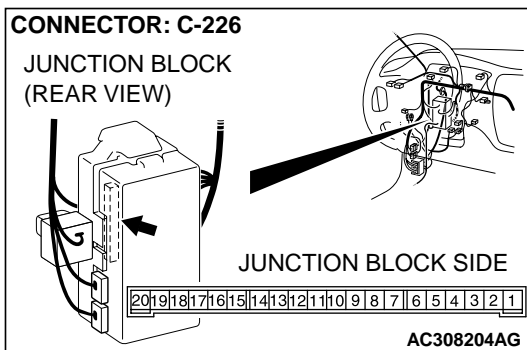
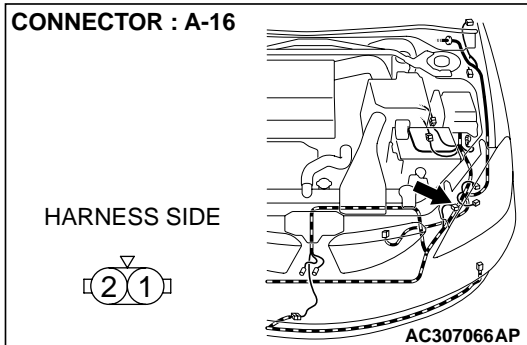
"Turn-signal lights does not flash when the turn-signal light switch is turned on [P.54B-377](#)."

**RH side only :** Refer to Inspection Procedure L-1

"Turn-signal lights does not flash when the turn-signal light switch is turned on [P.54B-377](#)."

**Both LH and RH sides :** Refer to Inspection Procedure L-2

"Hazard warning light does not illuminate [P.54B-384](#)."



**STEP 2. Check front turn-signal light (LH) connector A-16 and ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

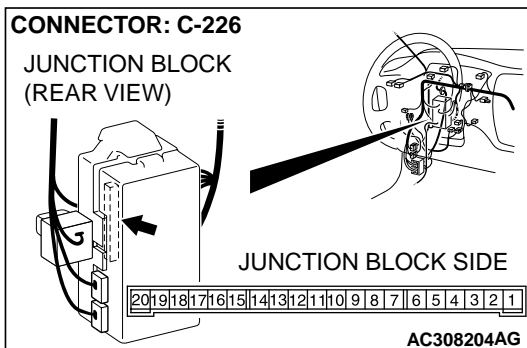
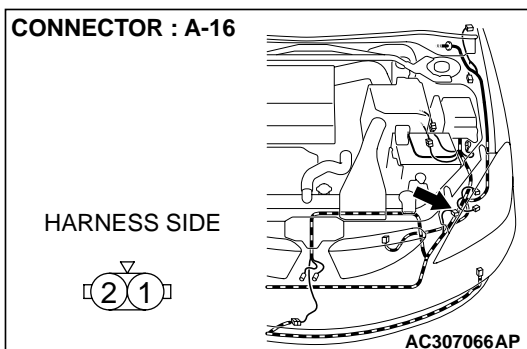
**Q: Are front turn-signal light (LH) connector A-16 and ETACS-ECU connector C-226 in good condition?**

**YES :** Go to Step 3.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

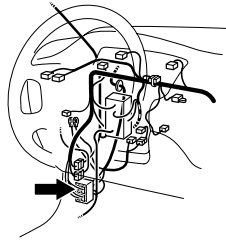
**P.00E-2.** Verify that the turn-signal lights illuminate normally.

**STEP 3. Check the wiring harness between front turn-signal light (LH) connector A-16 (terminal 2) and ETACS-ECU connector C-226 (terminal 14).**



**CONNECTOR : C-129**

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	



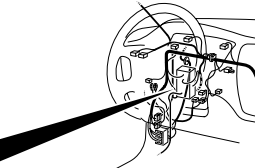
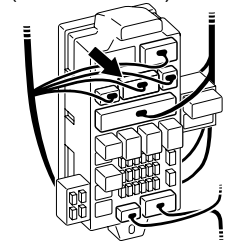
AC307069AO

**NOTE:** Also check intermediate connector C-129 and junction block connector C-210 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-129 or junction block connector C-210 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

**Q:** Is the wiring harness between front turn-signal light (LH) connector A-16 (terminal 2) and ETACS-ECU connector C-226 (terminal 14) in good condition?

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.

**CONNECTOR : C-210**  
JUNCTION BLOCK  
(FRONT VIEW)

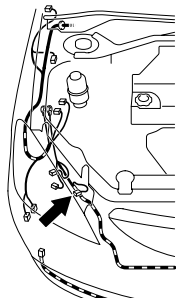
HARNESS SIDE

6	5	4		3	2	1
14	13	12	11	10	9	8
7						

AC307075AS

**CONNECTOR : A-20**

HARNESS SIDE



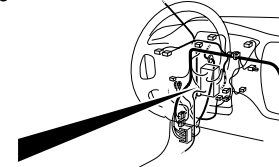
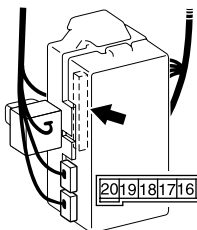
AC307064AO

**STEP 4.** Check front turn-signal light (RH) connector A-20 and ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

**Q:** Are front turn-signal light (RH) connector A-20 and ETACS-ECU connector C-226 in good condition?

**YES :** Go to Step 5.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the turn-signal lights illuminate normally.

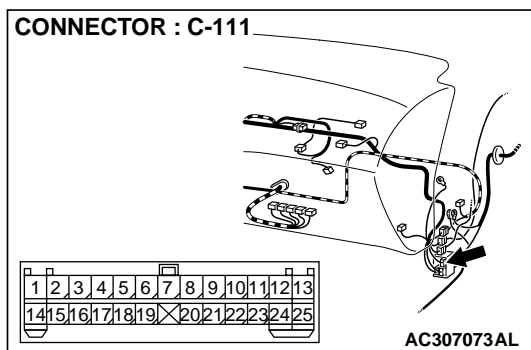
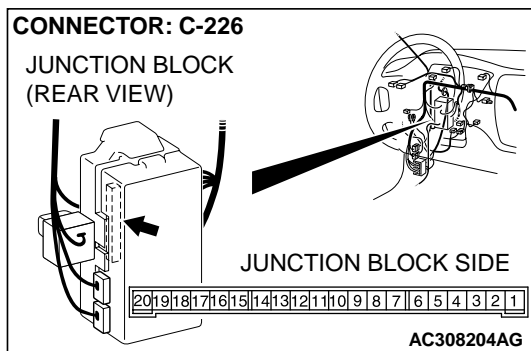
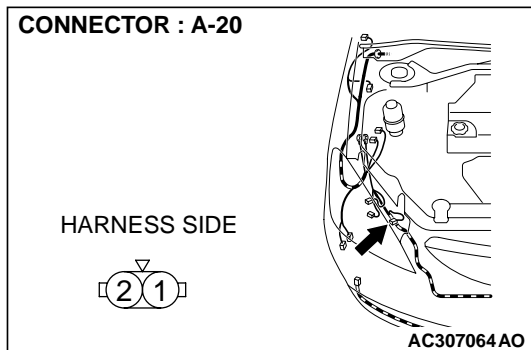
**CONNECTOR: C-226**JUNCTION BLOCK  
(REAR VIEW)

JUNCTION BLOCK SIDE

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
----	----	----	----	----	----	----	----	----	----	----	---	---	---	---	---	---	---	---	---

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**STEP 5. Check the wiring harness between front turn-signal light (RH) connector A-20 (terminal 2) and ETACS-ECU connector C-226 (terminal 9).**

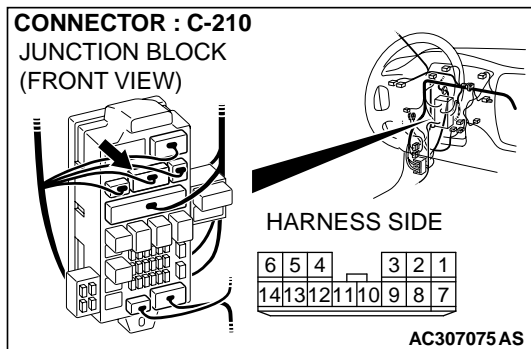


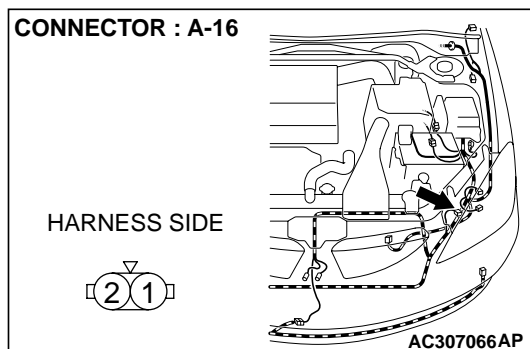
*NOTE: Also check junction block connector C-210 and intermediate connector C-111 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-210 or intermediate connector C-111 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

**Q: Is the wiring harness between front turn-signal light (RH) connector A-20 (terminal 2) and ETACS-ECU connector C-226 (terminal 9) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.





**STEP 6. Check front turn-signal light (LH) connector A-16 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is the front turn-signal (LH) connector A-16 in good condition?**

**YES :** Go to Step 7.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** Verify that the turn-signal lights illuminate normally.

**STEP 7. Check the front turn-signal light bulb (LH).**

- (1) Remove the front turn-signal (LH) light bulb.
- (2) Verify that the front turn-signal light bulb (LH) is not damaged or burned out.

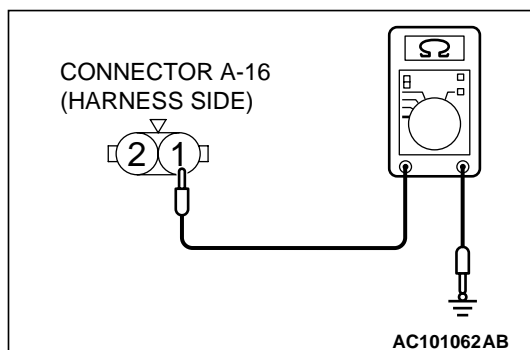
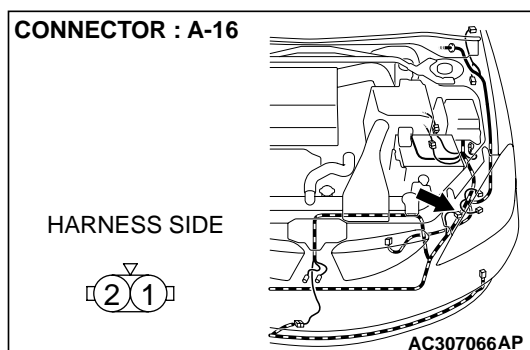
**Q: Is the front turn-signal (LH) light bulb in good condition?**

**YES :** Go to Step 8.

**NO :** Replace the front turn-signal (LH) light bulb. Verify that the turn-signal lights illuminate normally.

**STEP 8. Check the ground circuit to the front turn signal light (LH). Test at front turn-signal light (LH) connector A-16.**

- (1) Disconnect front turn-signal light (LH) connector A-16 and measure the resistance available at the wiring harness side of the connector.



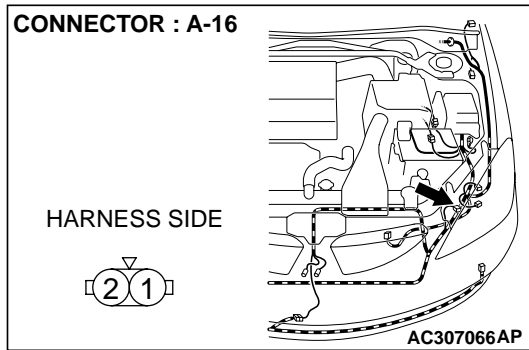
- (2) Measure the resistance value between terminal 1 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 10.

**NO :** Go to Step 9.

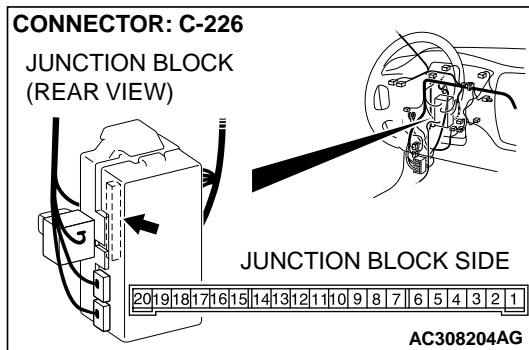


**STEP 9. Check the wiring harness between front turn-signal light (LH) connector A-16 (terminal 1) and ground.**

**Q: Is the wiring harness between front turn-signal light (LH) connector A-16 (terminal 1) and ground in good condition?**

**YES :** Replace the socket. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



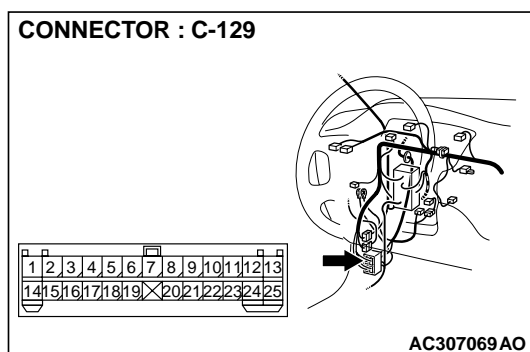
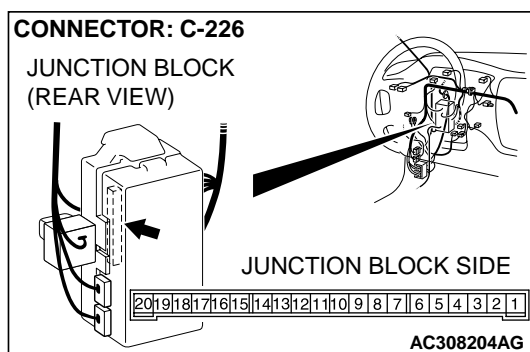
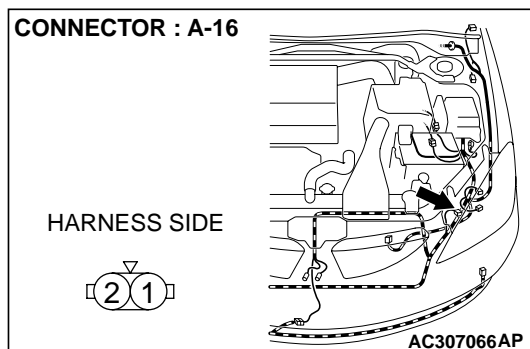
**STEP 10. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-226 in good condition?**

**YES :** Go to Step 11.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the turn-signal lights illuminate normally.

**STEP 11.** Check the wiring harness between front turn-signal light (LH) connector A-16 (terminal 2) and ETACS-ECU connector C-226 (terminal 14).

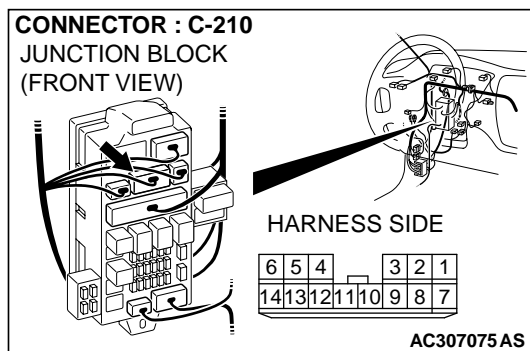


*NOTE: Also check junction block connector C-210 and intermediate connector C-129 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-210 or intermediate connector C-129 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

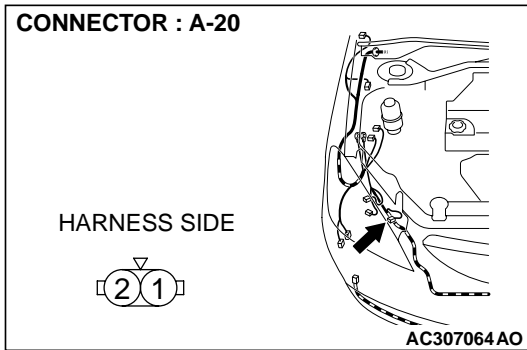
**Q: Is the wiring harness between front turn-signal light (LH) connector A-16 (terminal 2) and ETACS-ECU connector C-226 (terminal 14) in good condition?**

**YES :** Replace the socket. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.







**STEP 12. Check front turn-signal light (RH) connector A-20 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is the front turn-signal (RH) connector A-20 in good condition?**

**YES :** Go to Step 13.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the turn-signal lights illuminate normally.

**STEP 13. Check the front turn-signal light bulb (RH).**

- (1) Remove the front turn-signal (RH) light bulb.
- (2) Verify that the front turn-signal light bulb (RH) is not damaged or burned out.

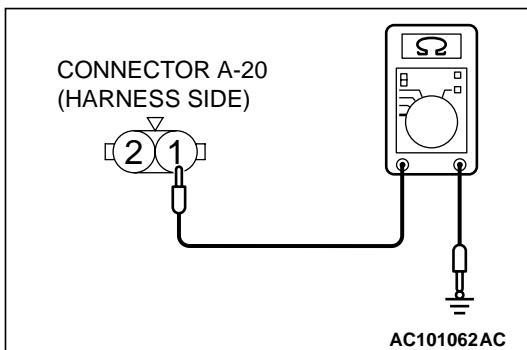
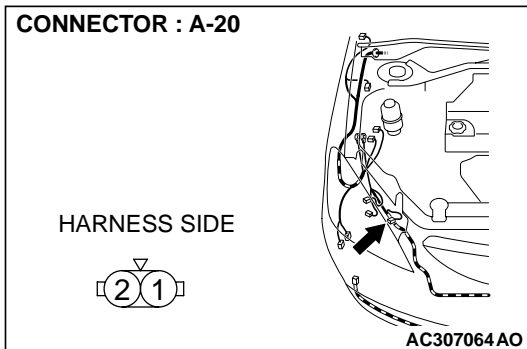
**Q: Is the front turn-signal (RH) light bulb in good condition?**

**YES :** Go to Step 14.

**NO :** Replace the front turn-signal (RH) light bulb. Verify that the turn-signal lights illuminate normally.

**STEP 14. Check the ground circuit to the front turn-signal light (RH). Test at front turn-signal light (RH) connector A-20.**

- (1) Disconnect front turn-signal light (RH) connector A-20 and measure the resistance available at the wiring harness side of the connector.



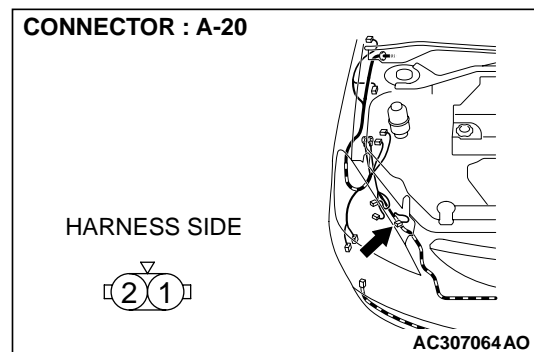
- (2) Measure the resistance value between terminal 1 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 16.

**NO :** Go to Step 15.

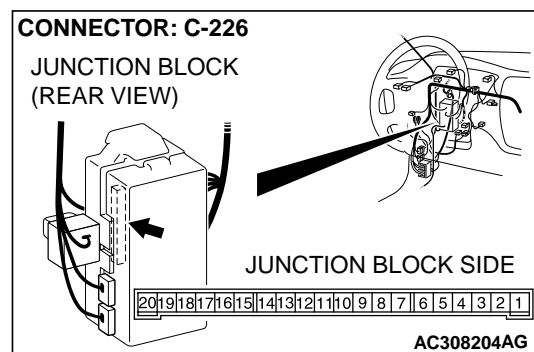


**STEP 15. Check the wiring harness between front turn-signal light (RH) connector A-20 (terminal 1) and ground.**

**Q: Is the wiring harness between front turn-signal light (RH) connector A-20 (terminal 1) and ground in good condition?**

**YES :** Replace the socket. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



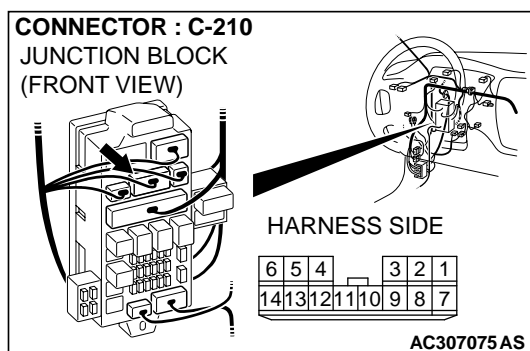
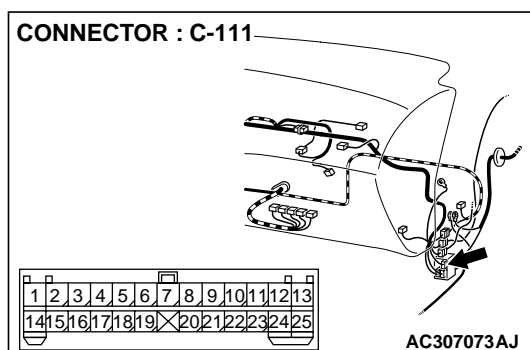
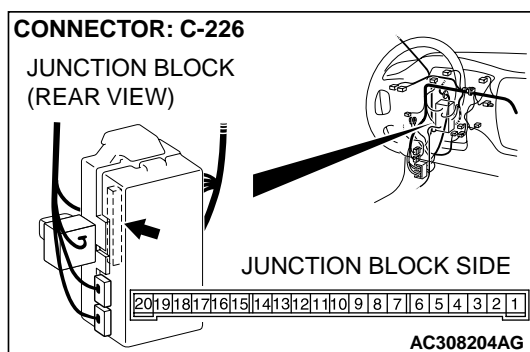
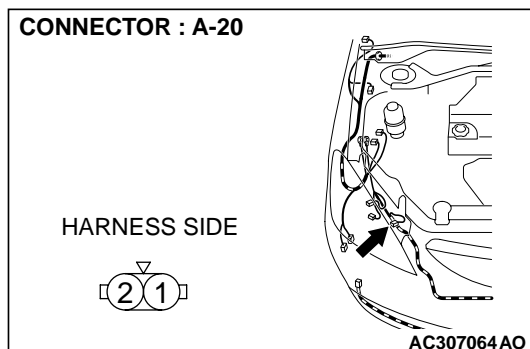
**STEP 16. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-226 in good condition?**

**YES :** Go to Step 17.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the turn-signal lights illuminate normally.

**STEP 17. Check the wiring harness between front turn-signal light (RH) connector A-20 (terminal 2) and ETACS-ECU connector C-226 (terminal 9).**

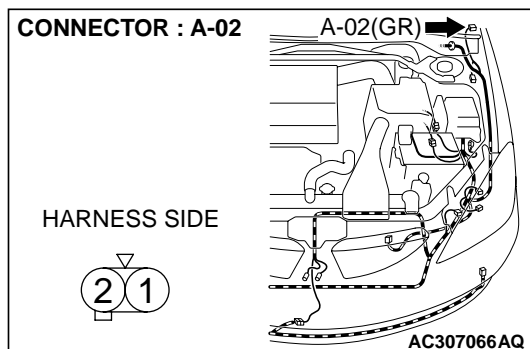


*NOTE: Also check junction block connector C-210 and intermediate connector C-111 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-210 or intermediate connector C-111 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

**Q: Is the wiring harness between front turn-signal light (RH) connector A-20 (terminal 2) and ETACS-ECU connector C-226 (terminal 9) in good condition?**

**YES :** Replace the socket. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



**STEP 18. Check side turn-signal light (LH) connector A-02 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is the side turn-signal light (LH) connector A-02 in good condition?**

**YES :** Go to Step 19.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** Verify that the turn-signal lights illuminate normally.

**STEP 19. Check the side turn-signal light bulb (LH).**

- (1) Remove the side turn-signal light (LH) bulb.
- (2) Verify that the side turn-signal light bulb (LH) is not damaged or burned out.

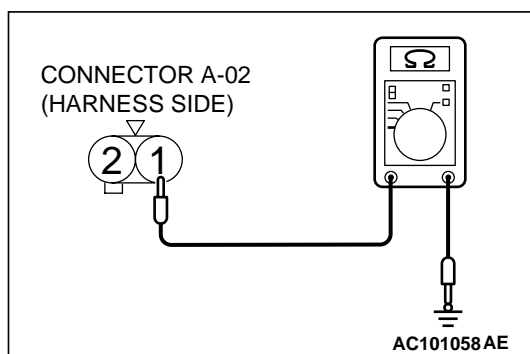
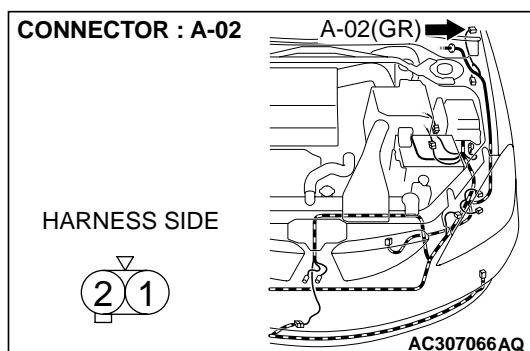
**Q: Is the side turn-signal light (LH) bulb in good condition?**

**YES :** Go to Step 20.

**NO :** Replace the side turn-signal light (LH) bulb. Verify that the turn-signal lights illuminate normally.

**STEP 20. Check the ground circuit to the side turn-signal light (LH). Test at side turn-signal light (LH) connector A-02.**

- (1) Disconnect side turn-signal light (LH) connector A-02 and measure the resistance available at the wiring harness side of the connector.



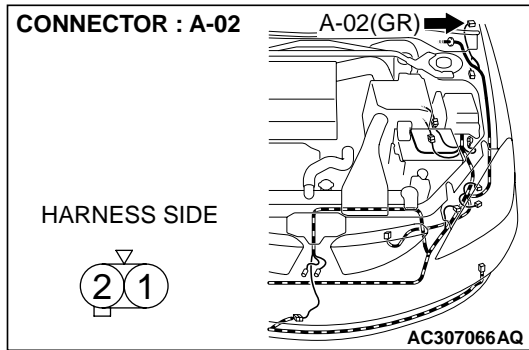
- (2) Measure the resistance value between terminal 1 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 22.

**NO :** Go to Step 21.

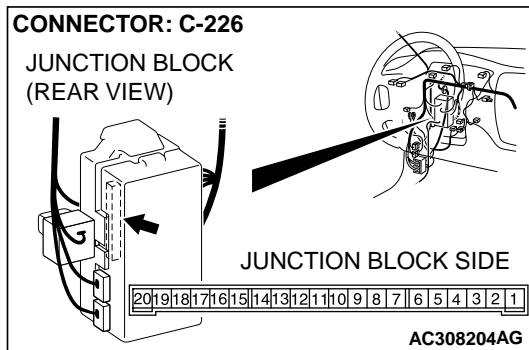


**STEP 21. Check the wiring harness between side turn-signal light (LH) connector A-02 (terminal 1) and ground.**

**Q: Is the wiring harness between side turn-signal light (LH) connector A-02 (terminal 1) and ground in good condition?**

**YES :** Replace the socket. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



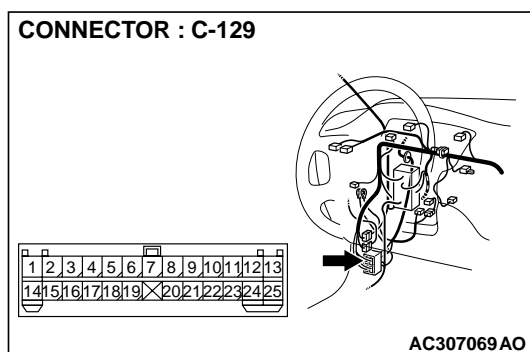
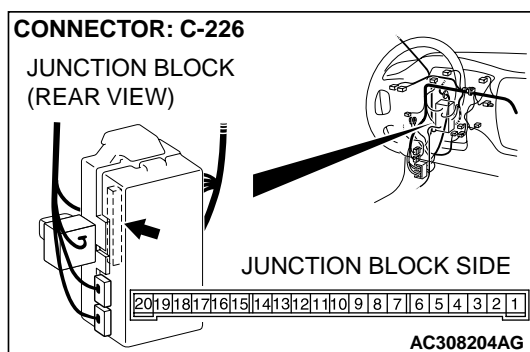
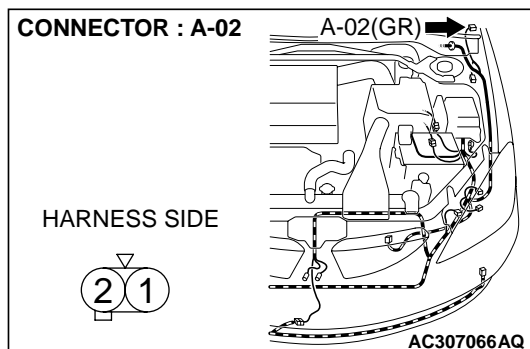
**STEP 22. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-226 in good condition?**

**YES :** Go to Step 23.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the turn-signal lights illuminate normally.

**STEP 23.** Check the wiring harness between side turn-signal light (LH) connector A-02 (terminal 2) and ETACS-ECU connector C-226 (terminal 14).

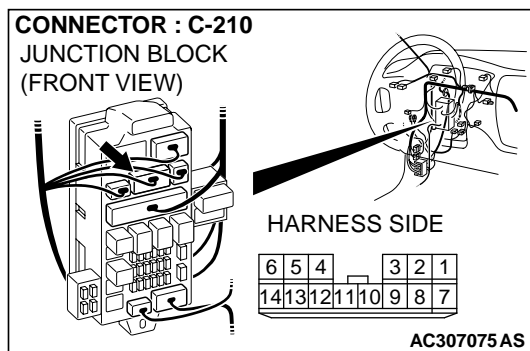


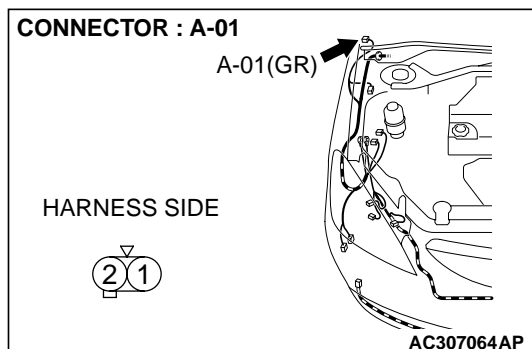
*NOTE: Also check junction block connector C-210 and intermediate connector C-129 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-210 or intermediate connector C-129 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

**Q: Is the wiring harness between side turn-signal light (LH) connector A-02 (terminal 2) and ETACS-ECU connector C-226 (terminal 14) in good condition?**

**YES :** Replace the socket. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.





**STEP 24. Check side turn-signal light (RH) connector A-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is the side turn-signal light (RH) connector A-01 in good condition?**

**YES :** Go to Step 25.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** Verify that the turn-signal lights illuminate normally.

**STEP 25. Check the side turn-signal light bulb (RH).**

(1) Remove the side turn-signal light (RH) bulb.

(2) Verify that the side turn-signal light bulb (RH) is not damaged or burned out.

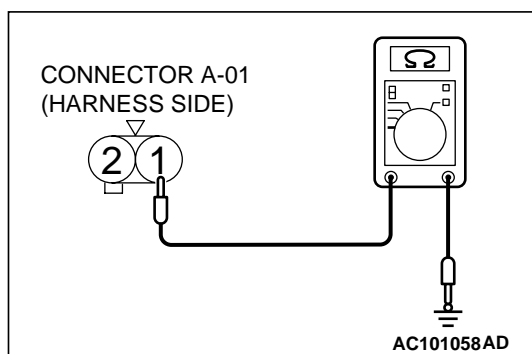
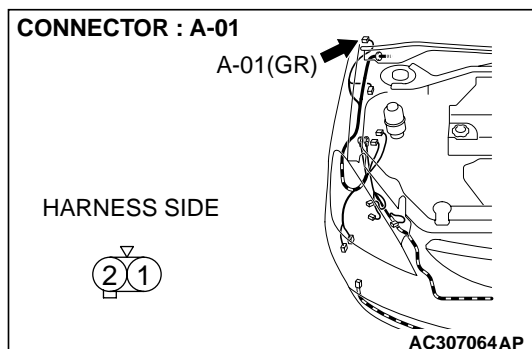
**Q: Is the side turn-signal light (RH) bulb in good condition?**

**YES :** Go to Step 26.

**NO :** Replace the side turn-signal light (RH) bulb. Verify that the turn-signal lights illuminate normally.

**STEP 26. Check the ground circuit to the side turn-signal light (RH). Test at side turn-signal light (RH) connector A-01.**

(1) Disconnect side turn-signal light (RH) connector A-01 and measure the resistance available at the wiring harness side of the connector.



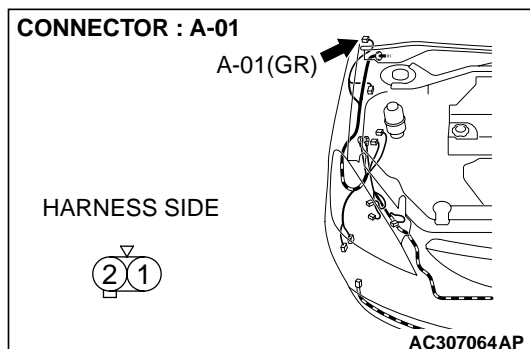
(2) Measure the resistance value between terminal 1 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 28.

**NO :** Go to Step 27.

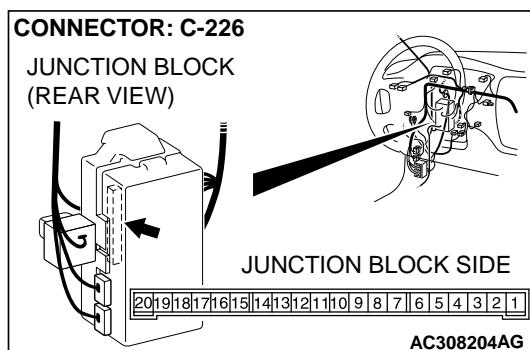


**STEP 27. Check the wiring harness between side turn-signal light (RH) connector A-01 (terminal 1) and ground.**

**Q: Is the wiring harness between side turn-signal light (RH) connector A-01 (terminal 1) and ground in good condition?**

**YES :** Replace the socket. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



**STEP 28. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

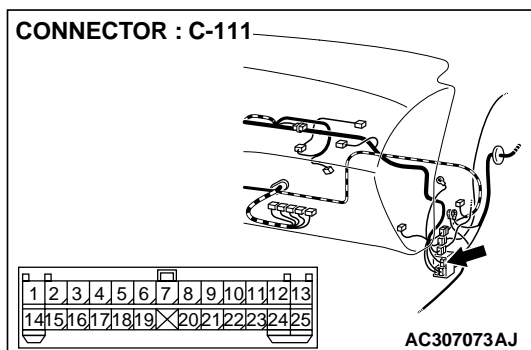
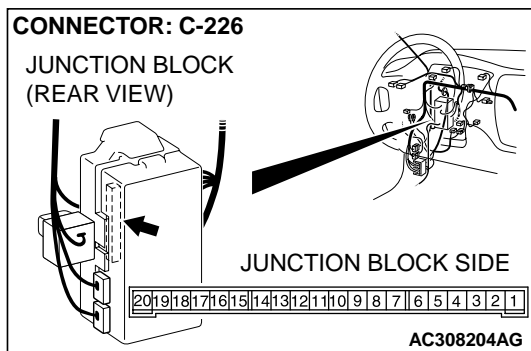
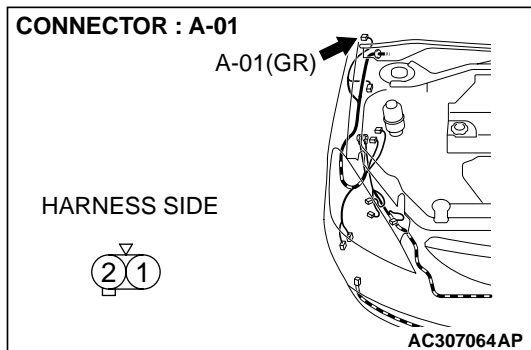
**Q: Is ETACS-ECU connector C-226 in good condition?**

**YES :** Go to Step 29.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the turn-signal lights illuminate normally.



**STEP 29.** Check the wiring harness between side turn-signal light (RH) connector A-01 (terminal 2) and ETACS-ECU connector C-226 (terminal 9).

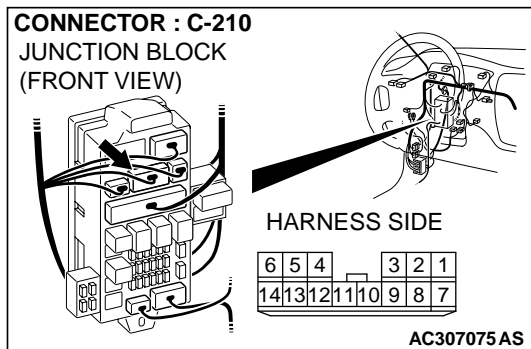


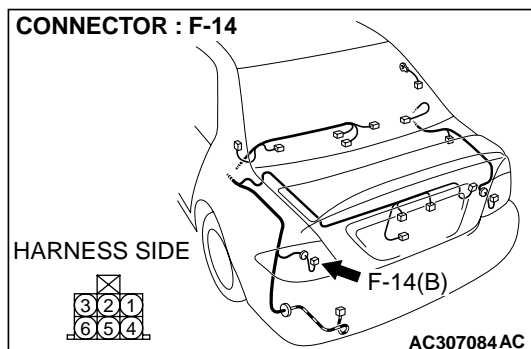
*NOTE: Also check junction block connector C-210 and intermediate connector C-111 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-210 or intermediate connector C-111 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

**Q: Is the wiring harness between side turn-signal light (RH) connector A-01 (terminal 2) and ETACS-ECU connector C-226 (terminal 9) in good condition?**

**YES :** Replace the socket. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.





**STEP 30. Check rear combination light (LH) connector F-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is rear combination light (LH) connector F-14 in good condition?**

**YES :** Go to Step 31.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** Verify that the turn-signal lights illuminate normally.

**STEP 31. Check the rear turn-signal light bulb (LH).**

- (1) Remove the rear turn-signal (LH) light bulb.
- (2) Verify that the rear turn-signal light bulb (LH) is not damaged or burned out.

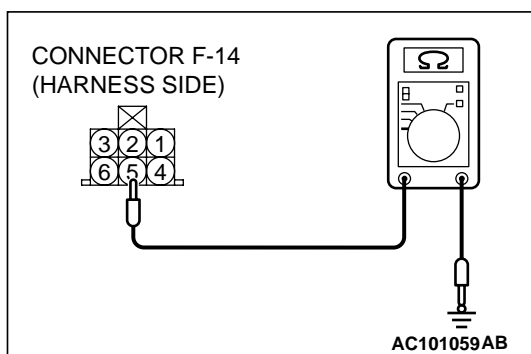
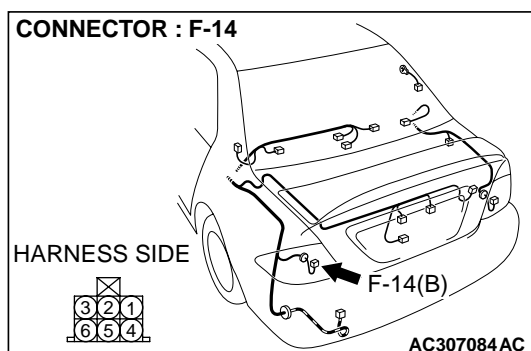
**Q: Is the rear turn-signal (LH) light bulb in good condition?**

**YES :** Go to Step 32.

**NO :** Replace the rear turn-signal (LH) light bulb. Verify that the turn-signal lights illuminate normally.

**STEP 32. Check the ground circuit to the rear turn-signal light (LH). Test at rear combination light (LH) connector F-14.**

- (1) Disconnect rear combination light (LH) connector F-14 and measure the resistance available at the wiring harness side of the connector.



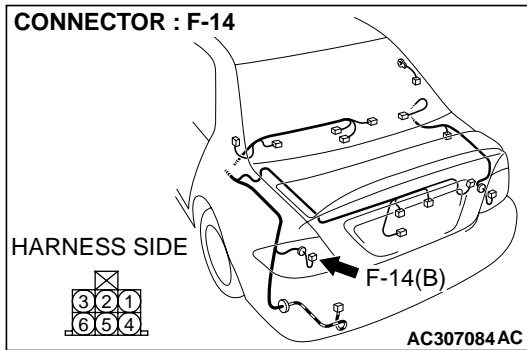
- (2) Measure the resistance value between terminal 5 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 34.

**NO :** Go to Step 33.

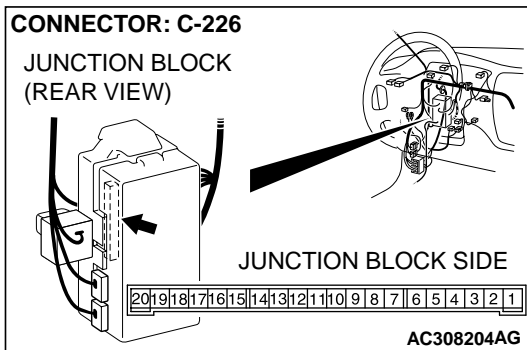


**STEP 33. Check the wiring harness between rear combination light (LH) connector F-14 (terminal 5) and ground.**

**Q: Is the wiring harness between rear combination light (LH) connector F-14 (terminal 5) and ground in good condition?**

**YES :** Replace the socket assembly. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



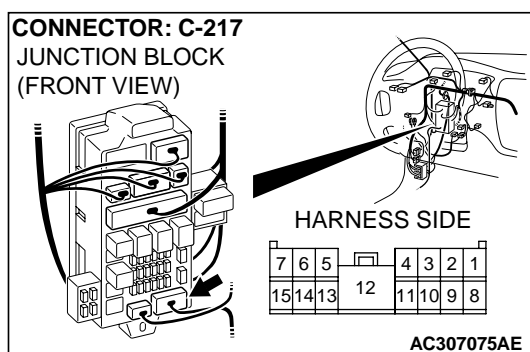
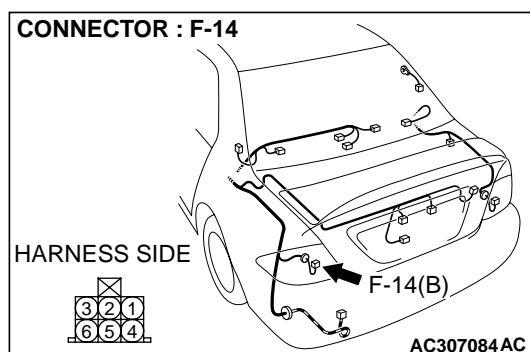
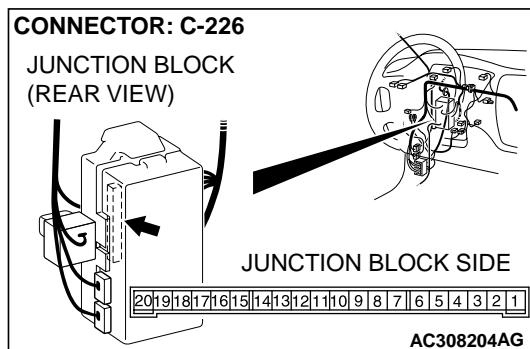
**STEP 34. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Are rear combination light (LH) connector F-14 and ETACS-ECU connector C-226 in good condition?**

**YES :** Go to Step 35.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the turn-signal lights illuminate normally.

**STEP 35. Check the wiring harness between rear combination light (LH) connector F-14 (terminal 1) and ETACS-ECU connector C-226 (terminal 14).**

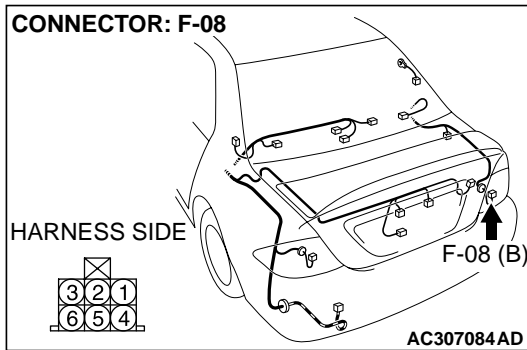


*NOTE: Also check junction block connector C-217 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-217 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between rear combination light (LH) connector F-14 (terminal 1) and ETACS-ECU connector C-226 (terminal 14) in good condition?**

**YES :** Replace the socket assembly. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



**STEP 36. Check rear combination light (RH) connector F-08 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is rear combination light (RH) connector F-08 in good condition?**

**YES :** Go to Step 37.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the turn-signal lights illuminate normally.

**STEP 37. Check the rear turn-signal light bulb (RH).**

- (1) Remove the rear turn-signal light bulb (RH).
- (2) Verify that the rear turn-signal light bulb (RH) is not damaged or burned out.

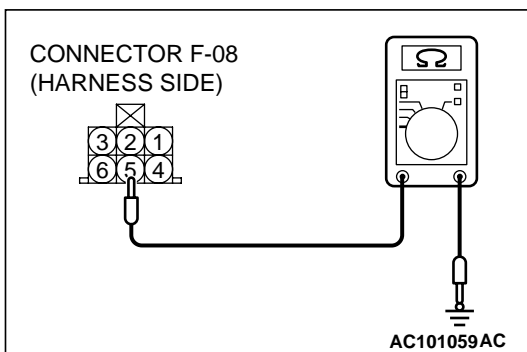
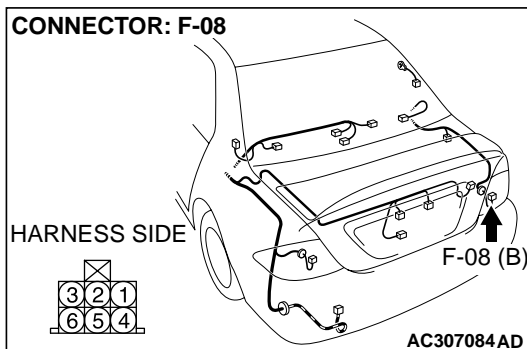
**Q: Is the rear turn-signal light bulb (RH) in good condition?**

**YES :** Go to Step 38.

**NO :** Replace the rear turn-signal (RH) light bulb. Verify that the turn-signal lights illuminate normally.

**STEP 38. Check the ground circuit to the rear turn-signal light (RH). Test at rear combination light (RH) connector F-08.**

- (1) Disconnect rear combination light (LH) connector F-08 and measure the resistance available at the wiring harness side of the connector.



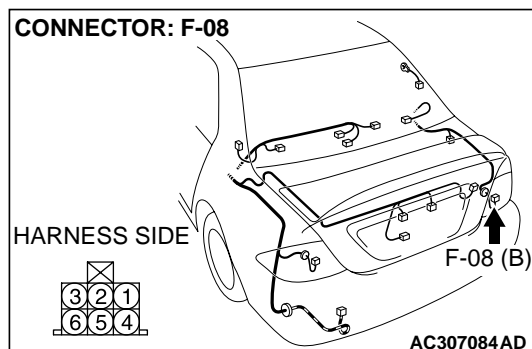
- (2) Measure the resistance value between terminal 5 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 40.

**NO :** Go to Step 39.

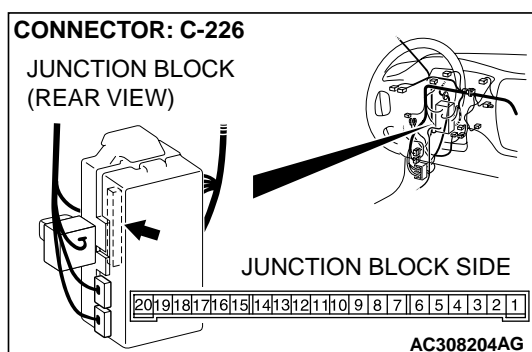


**STEP 39. Check the wiring harness between rear combination light (RH) connector F-08 (terminal 5) and ground.**

**Q: Is the wiring harness between rear combination light (RH) connector F-08 (terminal 5) and ground in good condition?**

**YES :** Replace the socket assembly. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



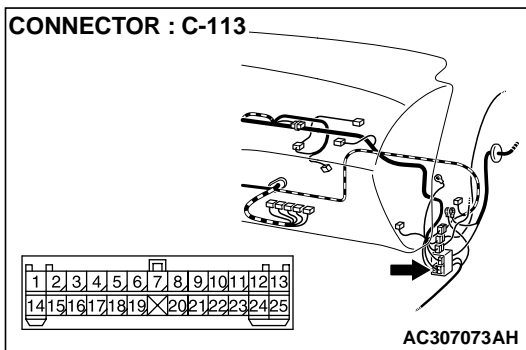
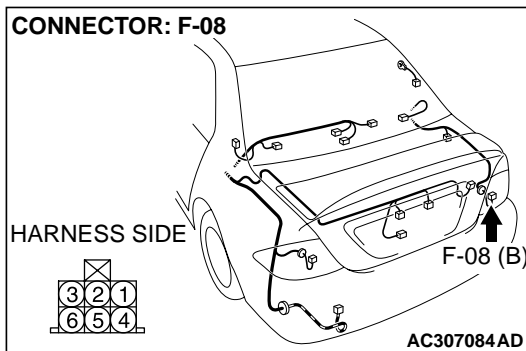
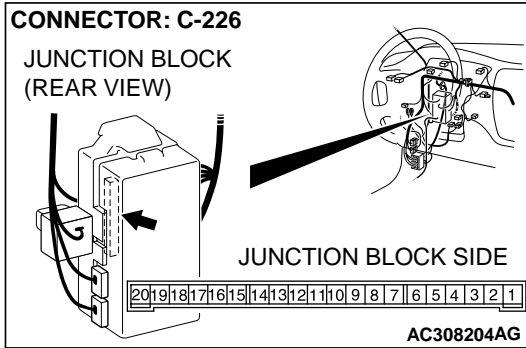
**STEP 40. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-226 in good condition?**

**YES :** Go to Step 41.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the turn-signal lights illuminate normally.

**STEP 41.** Check the wiring harness between rear combination light (RH) connector F-08 (terminal 1) and ETACS-ECU connector C-226 (terminal 9).

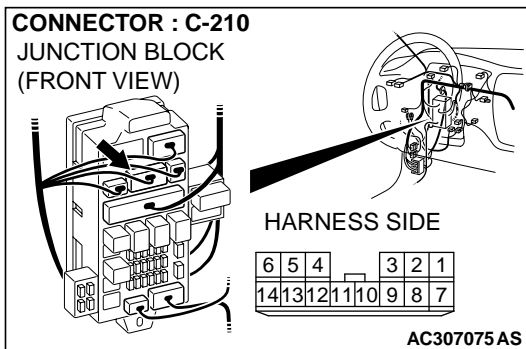


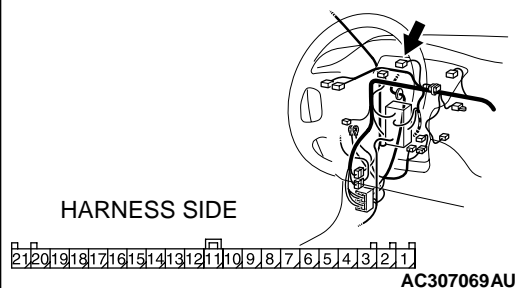
*NOTE: Also check junction block connector C-210 and intermediate connector C-113 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-210 or intermediate connector C-113 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

**Q: Is the wiring harness between rear combination light (RH) connector F-08 (terminal 1) and ETACS-ECU connector C-226 (terminal 9) in good condition?**

**YES :** Replace the socket assembly. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



**CONNECTOR: C-01**

**STEP 42. Check combination meter connector C-01 and ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Are combination meter connector C-01 and ETACS-ECU connector C-226 in good condition?**

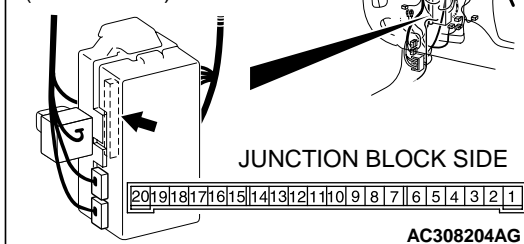
**YES :** Go to Step 43.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

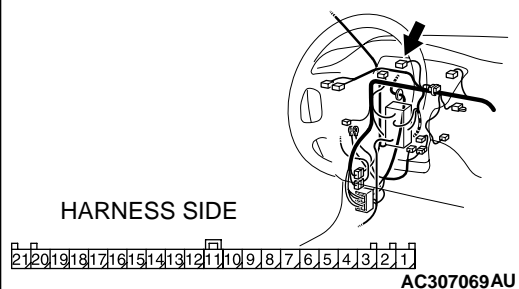
**P.00E-2.** Verify that the turn-signal lights illuminate normally.

**CONNECTOR: C-226**

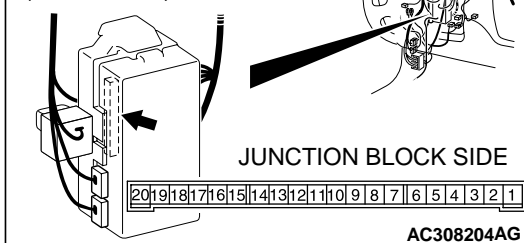
JUNCTION BLOCK  
(REAR VIEW)



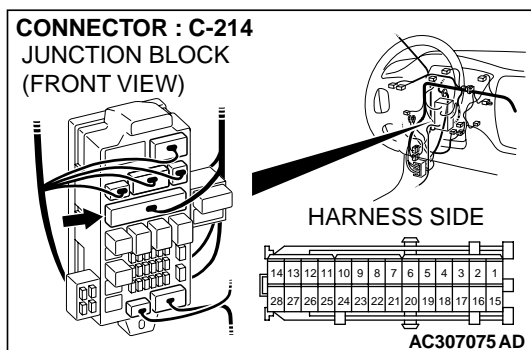
**STEP 43. Check the wiring harness between combination meter connector C-01 (terminal 3) and ETACS-ECU connector C-226 (terminal 14).**

**CONNECTOR: C-01****CONNECTOR: C-226**

JUNCTION BLOCK  
(REAR VIEW)







*NOTE: Also check junction block connector C-214 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-214 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between combination meter connector C-01 (terminal 3) and ETACS-ECU connector C-226 (terminal 14) in good condition?**

**YES :** Replace the combination meter. Verify that the turn-signal lights illuminate normally.

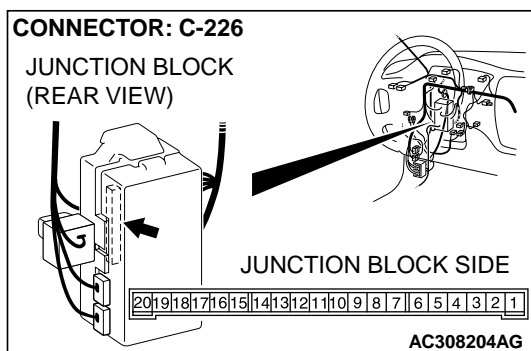
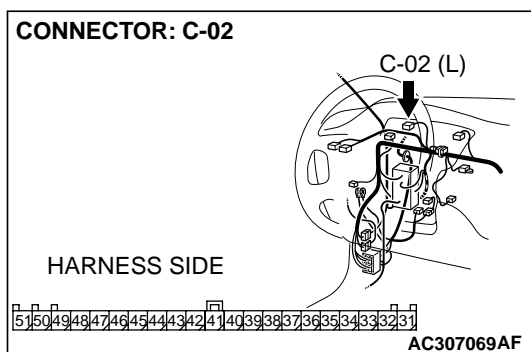
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.

**STEP 44. Check combination meter connector C-02 and ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

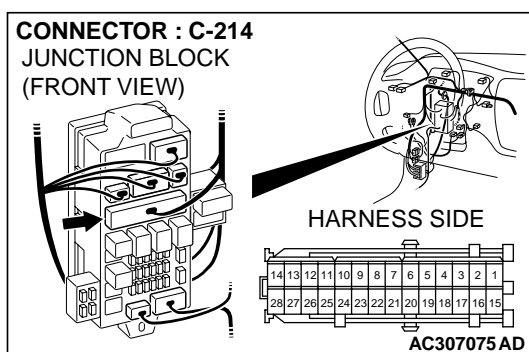
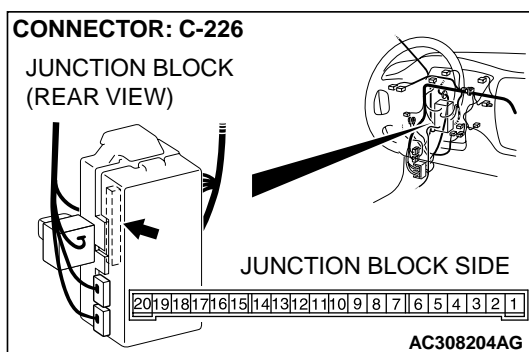
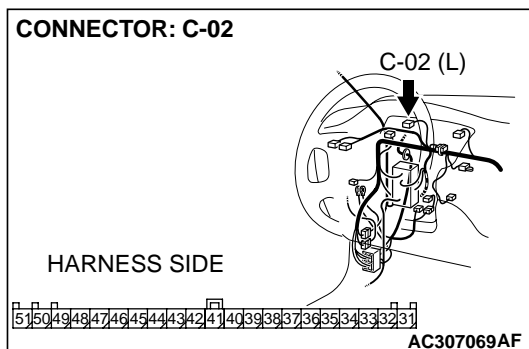
**Q: Are combination meter connector C-02 and ETACS-ECU connector C-226 in good condition?**

**YES :** Go to Step 45.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the turn-signal lights illuminate normally.



**STEP 45.** Check the wiring harness between combination meter connector C-02 (terminal 49) and ETACS-ECU connector C-226 (terminal 9).



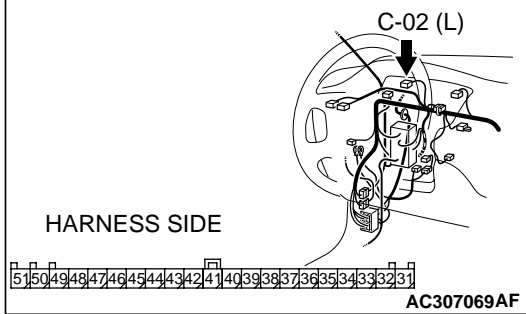
*NOTE: Also check junction block connector C-214 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-214 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between combination meter connector C-02 (terminal 49) and ETACS-ECU connector C-226 (terminal 9) in good condition?**

**YES :** Replace the combination meter. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.

CONNECTOR: C-02



**STEP 46. Check combination meter connector C-02 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

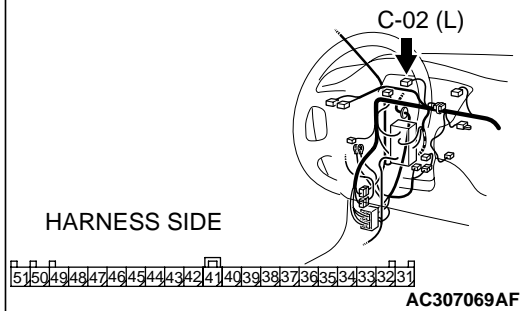
**Q: Is combination meter connector C-02 in good condition?**

**YES :** Go to Step 47.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

[P.00E-2](#). Verify that the turn-signal lights illuminate normally.

CONNECTOR: C-02

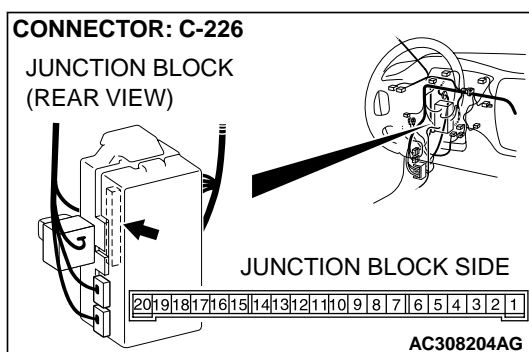
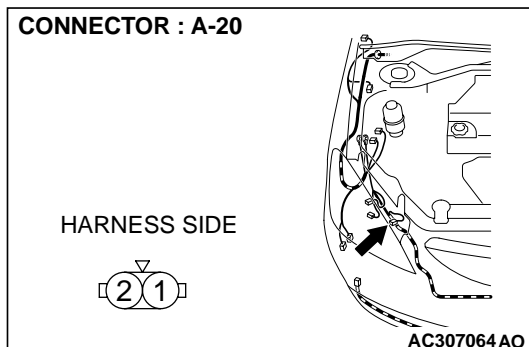


**STEP 47. Check the wiring harness between combination meter connector C-02 (terminal 48) and ground.**

**Q: Is the wiring harness between combination meter connector C-02 (terminal 48) and ground in good condition?**

**YES :** Replace the combination meter. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



**STEP 48.** Check front turn-signal light (RH) connector A-20 and ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

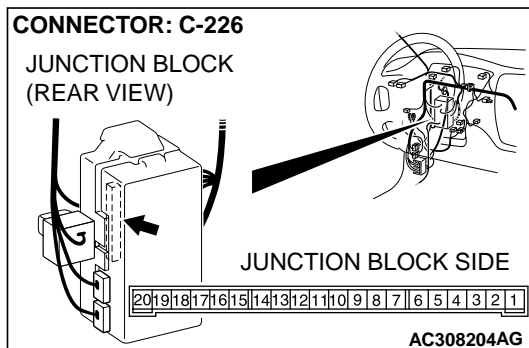
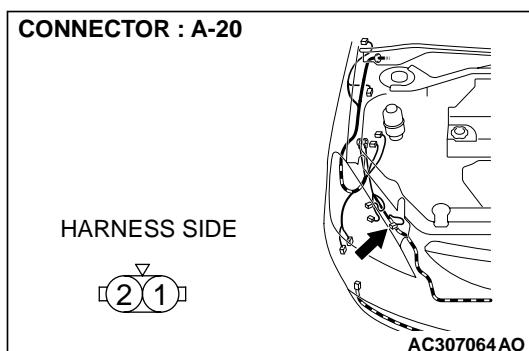
**Q:** Are front turn-signal light (RH) connector A-20 and ETACS-ECU connector C-226 in good condition?

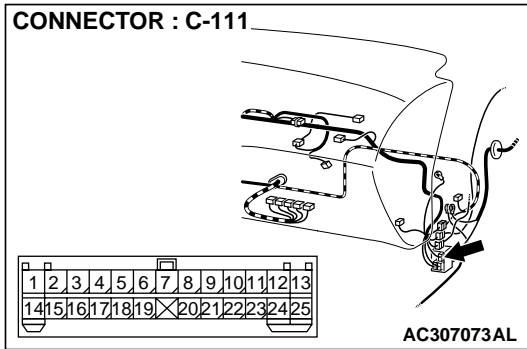
**YES :** Go to Step 49.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** Verify that the turn-signal lights illuminate normally.

**STEP 49.** Check the wiring harness between front turn-signal light (RH) connector A-20 (terminal 2) and ETACS-ECU connector C-226 (terminal 9).



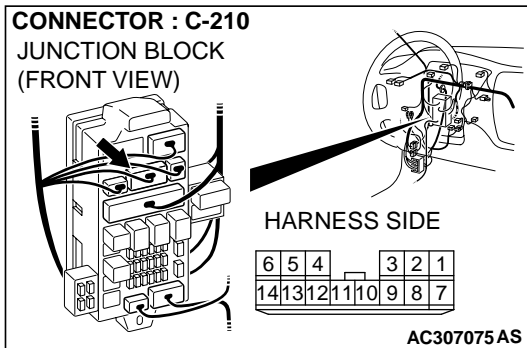


*NOTE: Also check junction block connector C-210 and intermediate connector C-111 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-210 or intermediate connector C-111 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

**Q: Is the wiring harness between front turn-signal light (RH) connector A-20 (terminal 2) and ETACS-ECU connector C-226 (terminal 9) in good condition?**

**YES :** Replace the socket. Verify that the turn-signal lights illuminate normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



## INTERIOR LIGHT

## GENERAL DESCRIPTION CONCERNING THE INTERIOR LIGHT

M1549021800139

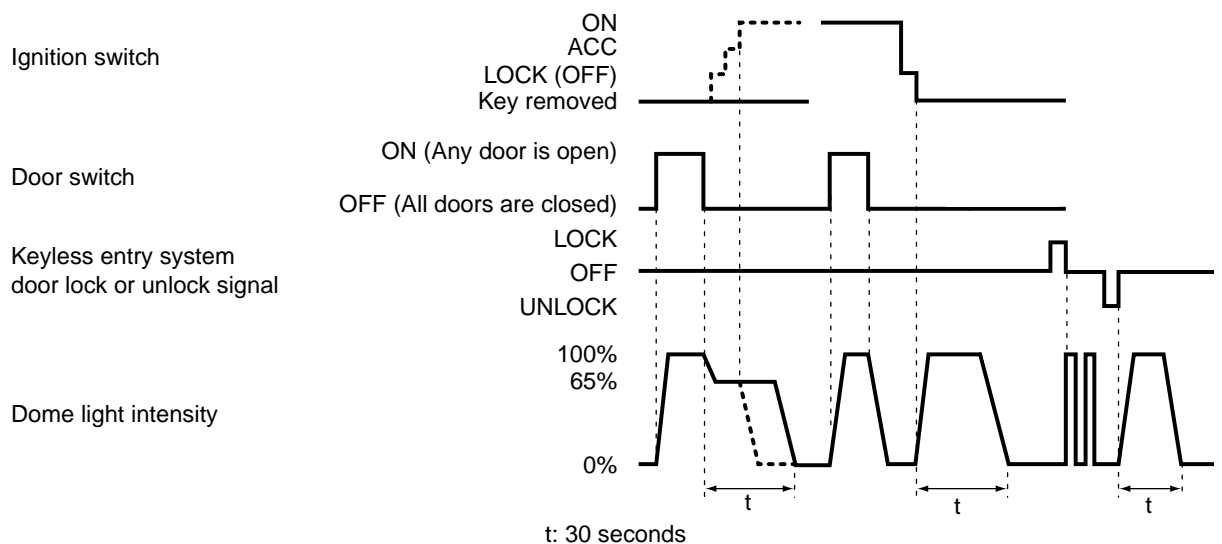
The ECU related to the interior light function types and various control functions are as follows.

FUNCTIONS	CONTROL ECU
Dome light control function	ETACS-ECU
Interior light automatic-shutdown function	ETACS-ECU

## Dome light control function

When the dome light switch is at the door position, the ETACS-ECU controls the lighting of the dome light as follows:

- When a door is opened to get on or get off the vehicle with the ignition switch off, the dome light lights up at a luminance of 100 percent. When a door is closed, the dome light dims at a luminance of 65 percent, and goes off 30 seconds later. However if the ignition switch is turned ON or if all doors are locked while they are closed, the dome light will go off at that point.
- When a door is opened with the ignition switch ON, the dome light lights up at a luminance of 100 percent. When a door is closed, the dome light goes off.
- When the ignition key is removed with all doors closed, the dome light lights up at a luminance of 100 percent, and goes off 30 seconds later. However if the ignition key is inserted again or if all doors are locked while the dome light is lighting, the dome light will go off at that point.
- The dome light is flashed twice when door is locked with keyless entry. When door is unlocked with keyless entry, the dome light lights at a luminance of 100 percent, and goes off 15 seconds later.



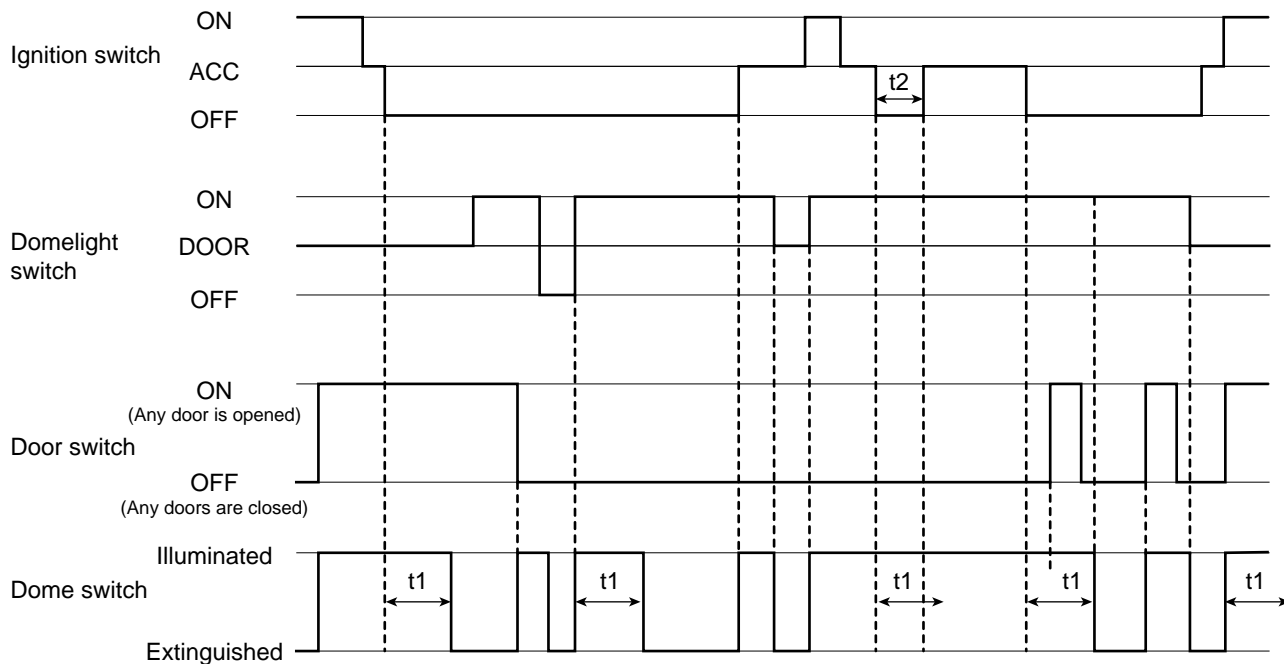
AC101555AC

**NOTE:** The dotted lines indicate that lighting mode when the ignition switch is turned ON, all doors are locked during the timer illumination time.

### Interior light automatic-shutdown function

Illuminated interior lights such as the front dome light, etc. (all lights using the dome light fuse as the power supply) will automatically go off in the following conditions to prevent excess battery discharge as a result of forgetting to turn off the lights or incomplete closing of the door.

- When the ignition switch is turned off and more than 30 minutes pass by with the interior light illuminated, the interior lights will go off automatically.
- When the ignition switch is turned off and any door switch remains open for 30 minutes continuously, the interior lights will go off automatically.



AC106815AB

The diagram illustrates the electrical connections for the ETACS-ECU. Key components and their connections include:

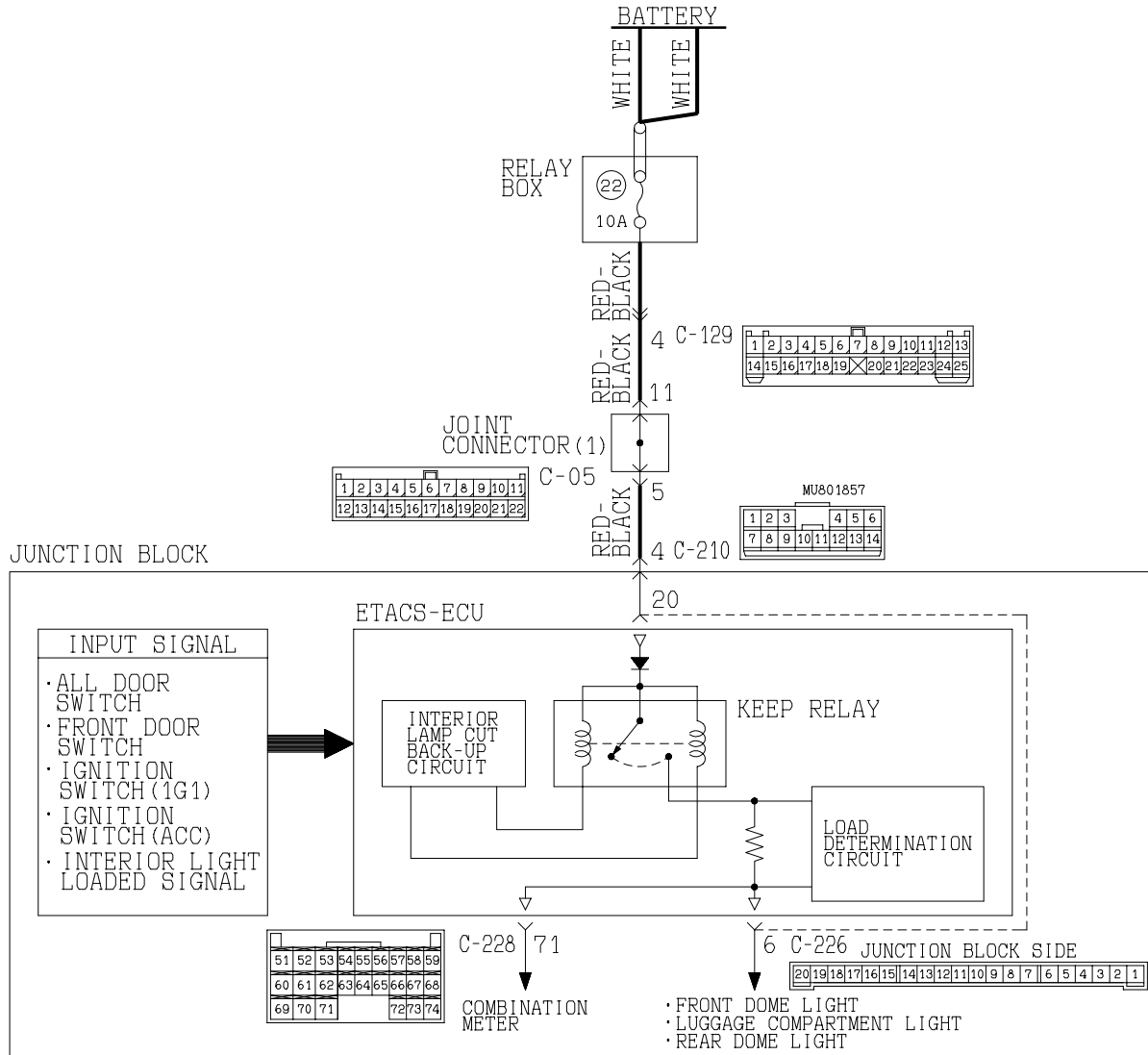
- ETACS-ECU:** The central control unit with terminals 8, 18, 4, 20, 5, 30, 56, 7, 65, 10, 71, 53, 51, and 67.
- IGNITION SWITCH (IG1):** Connected to terminal 8 (7.5A) and terminal 18 (15A).
- IGNITION SWITCH (ACC):** Connected to terminal 4.
- RELAY BOX (FUSE 23):** Connected to terminal 20.
- RELAY BOX (FUSE 22):** Connected to terminal 5.
- REAR DOME LIGHT <VEHICLES WITHOUT SUNROOF>:** Connected to terminal 6 and terminal 1.
- FRONT DOME LIGHT:** Connected to terminal 1 and terminal 2.
- LUGGAGE AREA LIGHT:** Connected to terminal 11 and terminal 1.
- LUGGAGE COMPARTMENT LIGHT SWITCH:** Connected to terminal 1 and terminal 2.
- KEY REMINDER SWITCH:** Connected to terminal 6 and terminal 4.
- DOOR SWITCH (REAR: RH):** Connected to terminal 2 and terminal 1.
- DOOR SWITCH (FRONT: RH):** Connected to terminal 2 and terminal 3.
- DOOR SWITCH (REAR: LH):** Connected to terminal 10 and terminal 2.
- DOOR SWITCH (FRONT: LH):** Connected to terminal 10 and terminal 3.
- COMBINATION METER:** Connected to terminal 71 and terminal 34.
- DATA LINK CONNECTOR:** Connected to terminal 53 (9) and terminal 67 (1).



**INSPECTION PROCEDURE M-1: Interior Light: The front dome light, rear dome light <vehicles without sunroof> and luggage compartment light do not illuminate or go out normally.**

*NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991862. For details on how to use the SWS monitor, refer to "How to use SWS monitor [P.54B-10](#)."*

**Interior Light Automatic Shut-down Function Circuit**



W3J01M22AB

**CIRCUIT OPERATION**

The ETACS-ECU illuminates the front dome light, the rear dome light and the luggage compartment light according to the following signals:

- Ignition switch (IG1)

- Key reminder switch
- Door switch (front: LH)
- All door switches
- Door lock actuator switch (front: LH)

**TECHNICAL DESCRIPTION (COMMENT)**

If the front dome light, the rear dome light and luggage compartment light do not illuminate normally, the dome light bulb(s) may be burned out or the input circuit system from the switches, the power supply lines to the switches or the ETACS-ECU may be defective (refer to "CIRCUIT OPERATION"). Alternatively, the delay-off function may be set to "0 second" by using the configuration function.

**TROUBLESHOOTING HINTS**

- The key reminder switch may be defective
- The door switch may be defective
- The driver's door lock actuator switch may be defective
- The dome light may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991862: SWS monitor kit

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**STEP 1. Verify the adjustment function.**

**Q: Is the dome light delay-off time set to "7.5 seconds", "10 seconds", "15 seconds" or "30 seconds by using the adjustment function?"**

**YES :** Go to Step 2.

**NO :** Set the dome light delay-off time to "7.5 seconds", "10 seconds", "15 seconds" or "30 seconds by using the adjustment function." Verify that the dome light illuminates normally.

**STEP 2. Use scan tool MB991958 to select "ECU COMM CHK" on the SWS monitor display.**

Check the ETACS-ECU

**⚠ CAUTION**

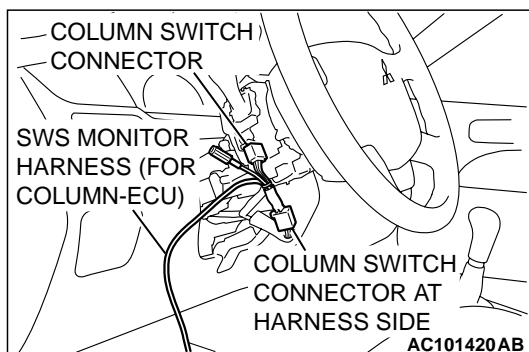
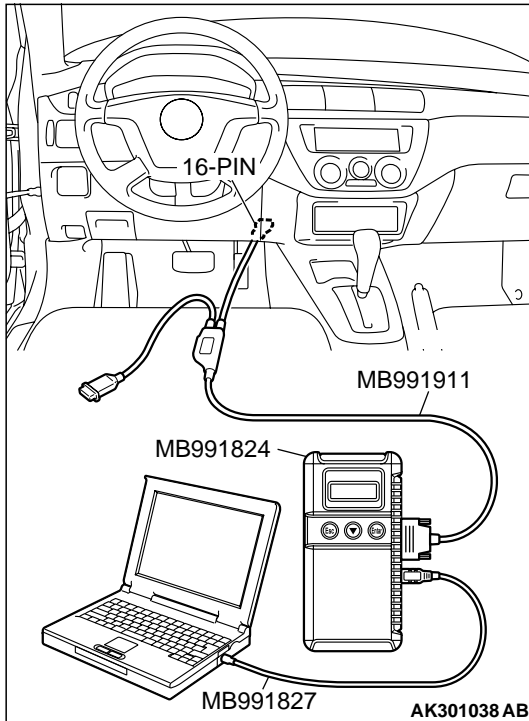
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect the DLC harness before connecting the column-ECU harness. Be sure to connect SWS monitor kit MB991862 after turning on scan tool MB991958.

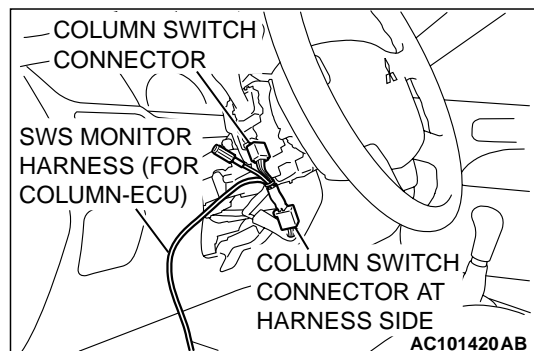
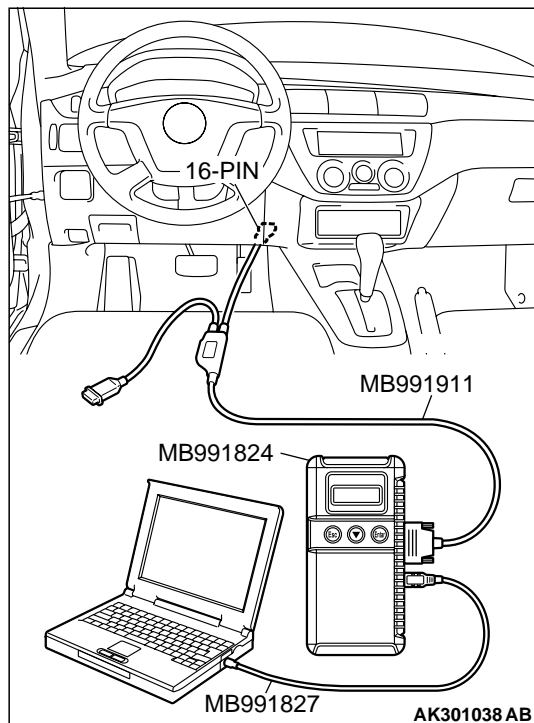
- (1) Connect scan tool MB991958 to the data link connector.
- (2) Connect SWS monitor kit MB991862 to the column switch connector.
- (3) Turn the ignition switch to the "LOCK" (OFF) position.
- (4) Operate scan tool MB991958 according to the procedure below to display "ECU COMM CHK."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "SWS MONITOR."
  4. Select "ECU COMM CHK."
- (5) Scan tool MB991958 should show "OK" on the "ECU COMM CHK" menu for the "ETACS ECU" menu.

**Q: Is "OK" displayed on the "ETACS ECU" menu?**

**YES :** Go to Step 3.

**NO :** Refer to Inspection Procedure A-3 "Communication with ETACS-ECU is not possible [P.54B-45](#)."





### STEP 3. Check the input signal by using "DATA LIST" menu of the SWS monitor.

Check the input signals from the following switches:

- Ignition switch: ON or START
- Driver's door: open

Operate scan tool MB991958 according to the procedure below to display "ETACS ECU."

1. Select "SYSTEM SELECT."
2. Select "SWS."
3. Select "SWS MONITOR."
4. Select "DATA LIST."
5. Select "ETACS ECU."

Check that normal conditions are displayed on the items described in the table below.

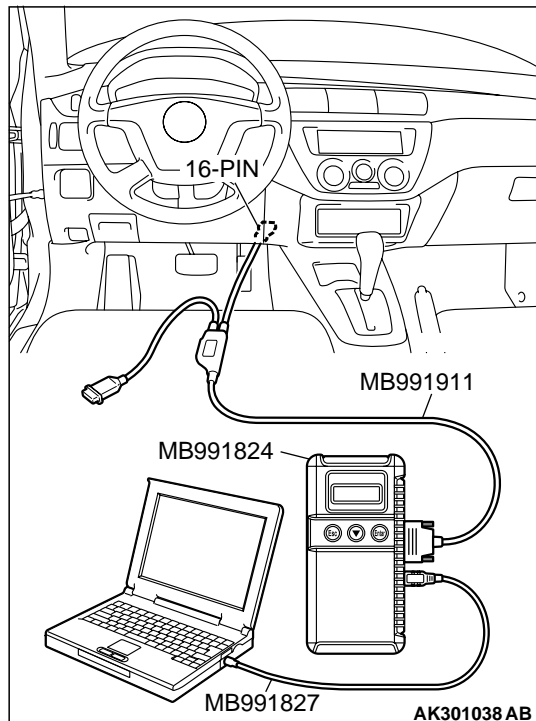
ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 30	IG SW (IG1)	ON
ITEM 32	FRONT DOOR SW	ON

**Q: Are normal conditions displayed on the "IG SW (IG1)" and "FRONT DOOR SW"?**

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

**The scan tool does not show the respective normal condition for item "IG SW (IG1)" :** Refer to Inspection Procedure N-2 "ETACS-ECU does not receive a signal from the ignition switch (IG1) [P.54B-457](#)."

**The scan tool does not show the respective normal condition for item "FRONT DOOR SW" :** Refer to Inspection Procedure N-4 "ETACS-ECU does not receive a signal from the driver's or the front passenger's door switch [P.54B-478](#)."



**STEP 4. Check the input signal (by using the pulse check mode of the monitor).**

Check the following switches and input signals:

- Key reminder switch
- All door switches
- Interior light loaded signal

Operate scan tool MB991958 according to the procedure below to display "PULSE CHECK."

1. Select "SYSTEM SELECT."
2. Select "SWS."
3. Select "PULSE CHECK."

Check if scan tool MB991958 sounds or not.

ITEM NAME	CONDITION
Key reminder switch	Remove and reinsert the ignition key
Each door switch	Open or close one of the doors
Interior light loaded signal	Illuminate one of the interior lights

**Q: When the key reminder switch, each door switch and the interior light are operated, does scan tool MB991958 sound in each case?**

**Buzzer of scan tool MB991958 sounds normally :**

Replace the ETACS-ECU. Verify that the dome light illuminates normally.

**Scan tool MB991958 does not sound when the ignition key is removed and reinserted :** Refer to Inspection

Procedure O-1 "ETACS-ECU does not receive a signal from the key reminder switch [P.54B-507](#)."

**When one of the doors is opened and closed, scan tool MB991958 does not sound :** Refer to Inspection

Procedure O-4 "ETACS-ECU does not receive a signal from all the door switches [P.54B-522](#)."

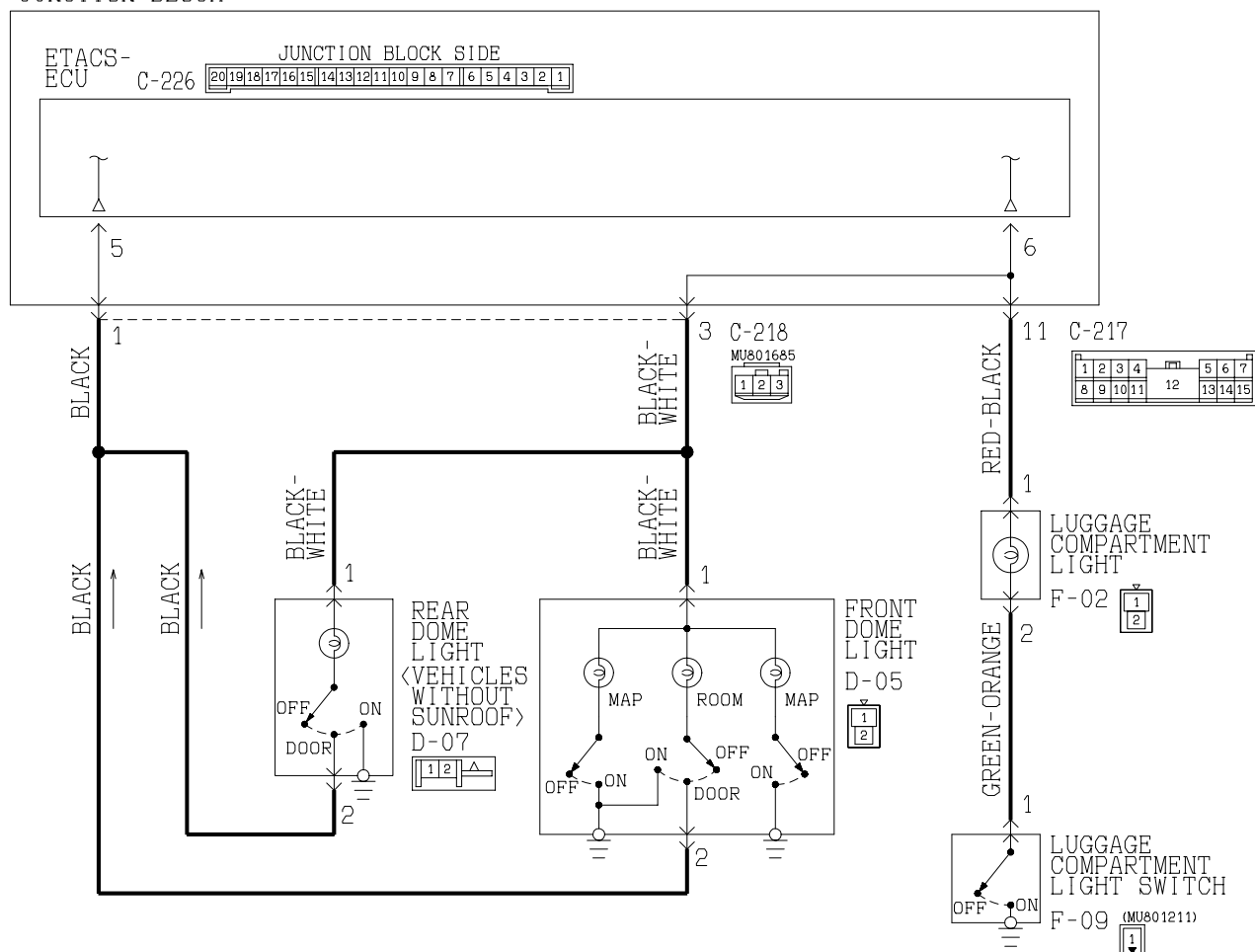
**When one of the interior lights is illuminated, scan tool MB991958 does not sound :** Refer to Inspection

Procedure O-10 "ETACS-ECU does not receive any interior light loaded signal [P.54B-560](#)."

**INSPECTION PROCEDURE M-2: Interior Light: The front dome light, rear dome light <vehicles without sunroof> or luggage compartment light does not illuminate or go out normally.**

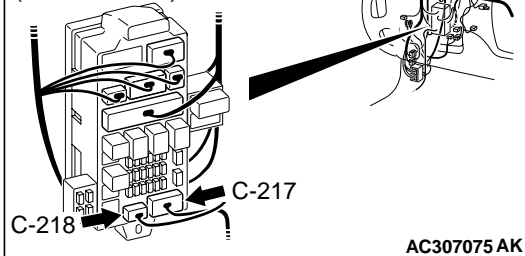
### Interior Lights and Luggage Compartment Light Circuit

JUNCTION BLOCK

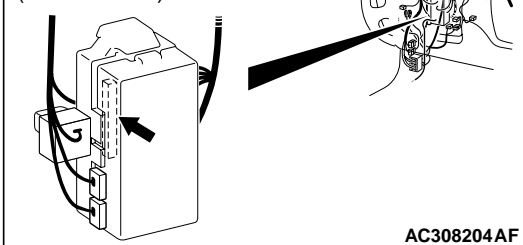


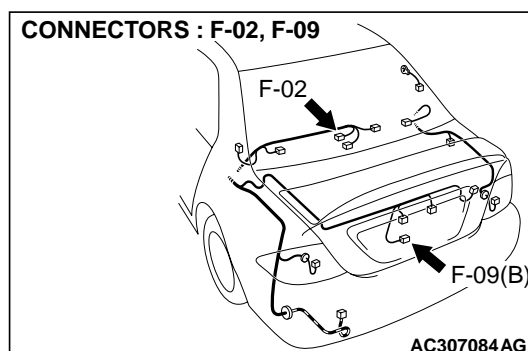
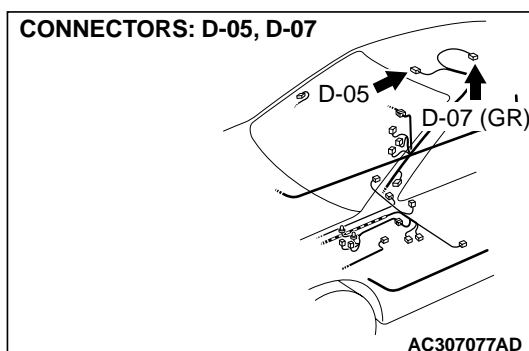
W3J01M23AA

**CONNECTORS : C-217, C-218**  
JUNCTION BLOCK  
(FRONT VIEW)



**CONNECTOR : C-226**  
JUNCTION BLOCK  
(REAR VIEW)





### **CIRCUIT OPERATION**

The ETACS-ECU operates the dome light according to the following signals:

- Ignition switch (IG1)
- Key reminder switch
- Door switch (front: LH)
- All door switches
- Door lock actuator switch (front: LH)

### **TECHNICAL DESCRIPTION (COMMENT)**

If the dome light does not flash normally, a burned-out dome light bulb, the input circuits from the switches described in "CIRCUIT OPERATION", the power supply line to the switches or the ETACS-ECU may be defective. Alternatively, the delay-off function may be set to "0 second" by using the configuration function.

### **TROUBLESHOOTING HINTS**

- The key reminder switch may be defective
- The door switch may be defective
- The driver's door lock actuator switch may be defective
- The dome light may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

## **DIAGNOSIS**

### **Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

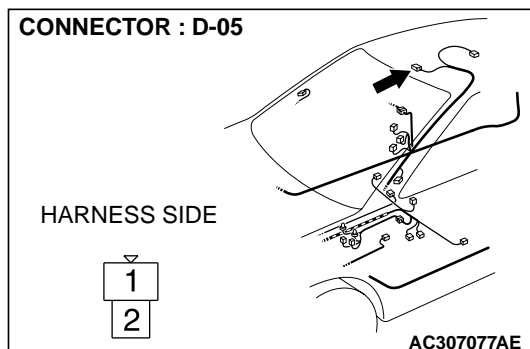
**STEP 1. Verify which of the front dome light, the rear dome light <vehicles without sunroof> or the luggage compartment light does not illuminate normally.**

**Q: Which of the front dome light, the rear dome light <vehicles without sunroof> or the luggage compartment light fail to illuminate normally?**

**Front dome light does not illuminate normally :** Go to Step 2.

**rear dome Light <vehicles without sunroof> :** Go to Step 8.

**luggage compartment light :** Go to Step 14.



**STEP 2. Check front dome light connectors D-05 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is front dome light connector D-05 in good condition?**

**YES :** Go to Step 3.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the front dome light illuminates normally.

**STEP 3. Verify the front dome light bulb.**

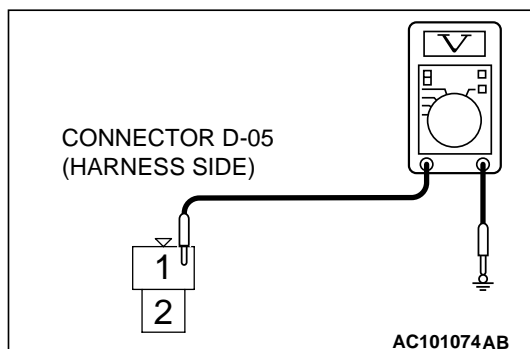
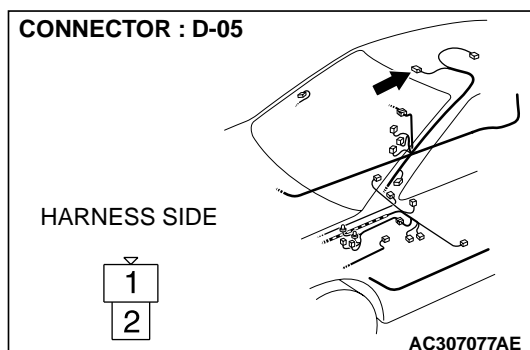
**Q: Is the front dome light bulb in good condition?**

**YES :** Go to Step 4.

**NO :** Replace the bulb. Verify that the front dome light illuminates normally.

**STEP 4. Check the battery power supply circuit to the front dome light. Test at front dome light connector D-05.**

(1) Disconnect front dome light connector D-05 and measure the voltage available at the harness side of the connector.



(2) Measure the voltage between terminal 1 and ground.

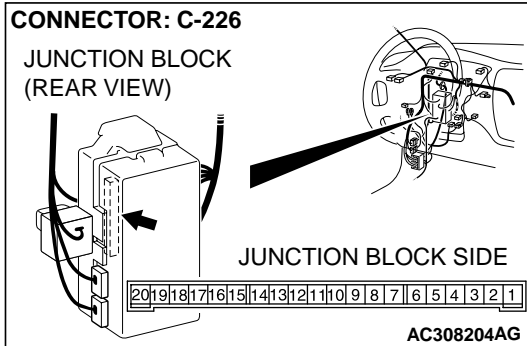
- The voltage should equal approximately 12 volts (battery positive voltage).

**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES :** Go to Step 7.

**NO :** Go to Step 5.



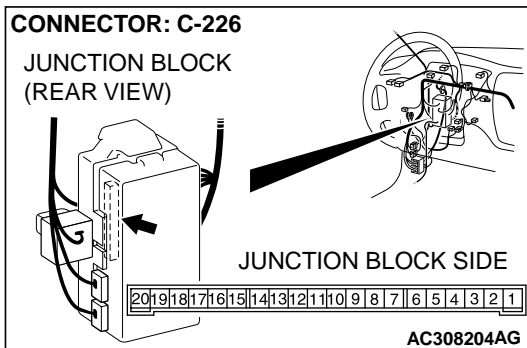


**STEP 5. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

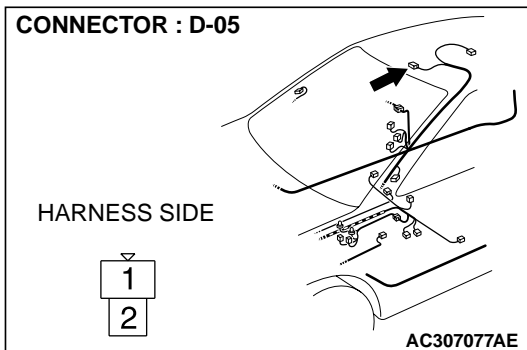
**Q: Is ETACS-ECU connector C-226 in good condition?**

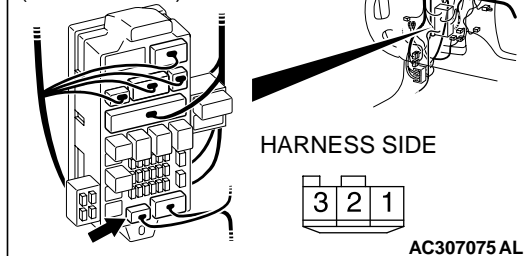
**YES :** Go to Step 6.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the front dome light illuminates normally.



**STEP 6. Check the wiring harness between front dome light connector D-05 (terminal 1) and ETACS-ECU connector C-226 (terminal 6).**



**CONNECTOR : C-218**  
JUNCTION BLOCK  
(FRONT VIEW)

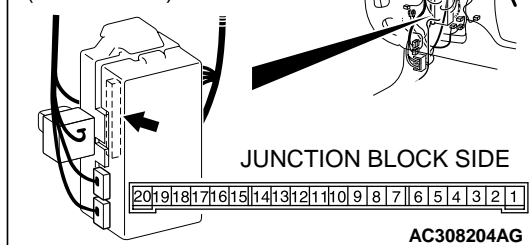
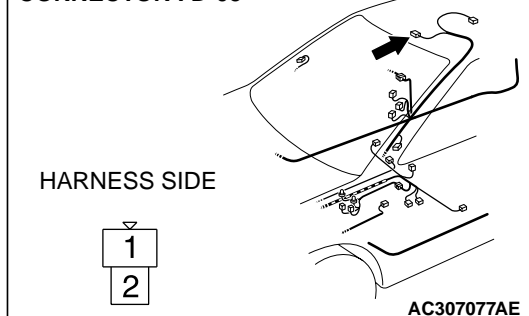
**NOTE:** Also check junction block connector C-218 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-218 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

**Q:** Is the wiring harness between front dome light connector D-05 (terminal 1) and ETACS-ECU connector C-226 (terminal 6) in good condition?

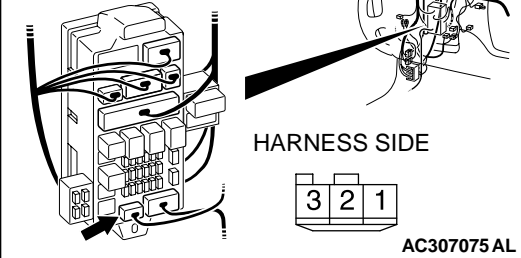
**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the front dome light illuminates normally.

**STEP 7. Check the wiring harness between front dome light connector D-05 (terminal 2) and ETACS-ECU connector C-226 (terminal 5).**

**CONNECTOR: C-226**  
JUNCTION BLOCK  
(REAR VIEW)**CONNECTOR : D-05**

**CONNECTOR : C-218**  
JUNCTION BLOCK  
(FRONT VIEW)



*NOTE: Also check junction block connector C-218 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-218 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between front dome light connector D-05 (terminal 2) and ETACS-ECU connector C-226 (terminal 5) in good condition?**

**YES :** Replace the ETACS-ECU. Verify that the front dome light illuminates normally.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the front dome light illuminates normally.

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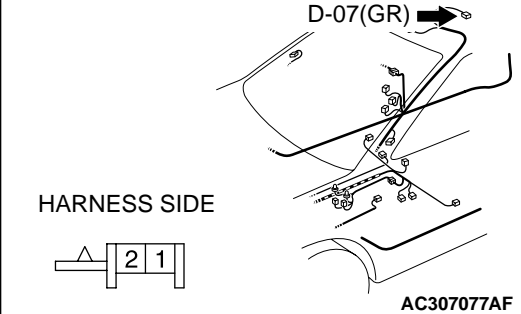
**STEP 8. Check rear dome light connectors D-07 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is rear dome light connector D-07 in good condition?**

**YES :** Go to Step 9.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the rear dome lights illuminate normally.

**CONNECTOR : D-07**



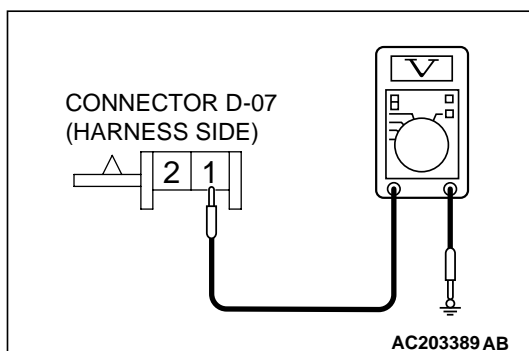
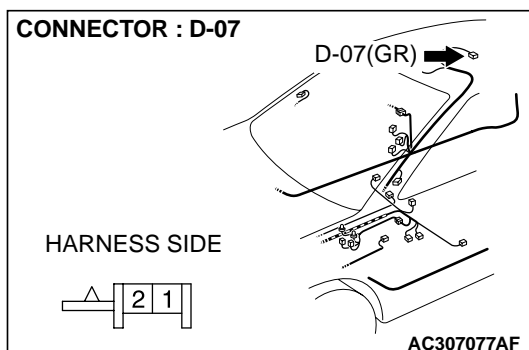
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**STEP 9. Verify the rear dome light bulb.**

**Q: Is the rear dome light bulb in good condition?**

**YES :** Go to Step 10.

**NO :** Replace the bulb. Verify that the rear dome lights illuminate normally.



**STEP 10. Check the battery power supply circuit to the rear dome light. Test at rear dome light connector D-07.**

(1) Disconnect rear dome light connector D-07 and measure the voltage available at the harness side of the connector.

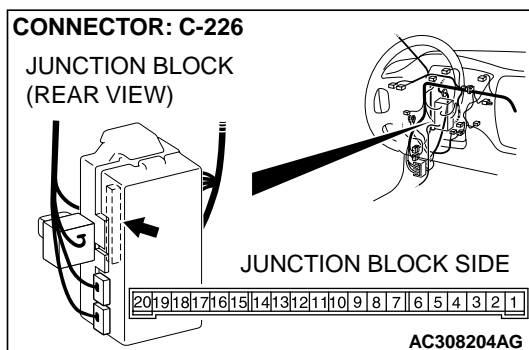
(2) Measure the voltage between terminal 1 and ground.

- The voltage should equal approximately 12 volts (battery positive voltage).

**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES :** Go to Step 13.

**NO :** Go to Step 11.



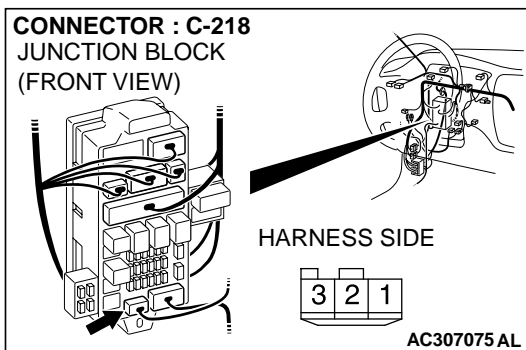
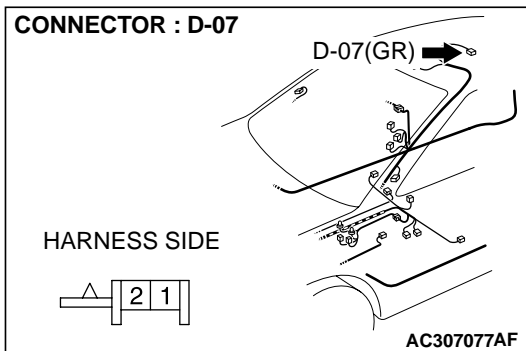
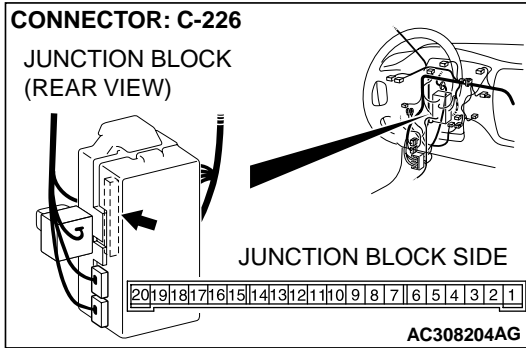
**STEP 11. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-226 in good condition?**

**YES :** Go to Step 12.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the rear dome lights illuminate normally.

**STEP 12. Check the wiring harness between rear dome light connector D-07 (terminal 1) and ETACS-ECU connector C-226 (terminal 6).**



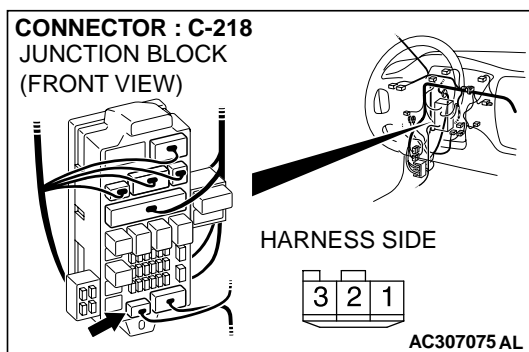
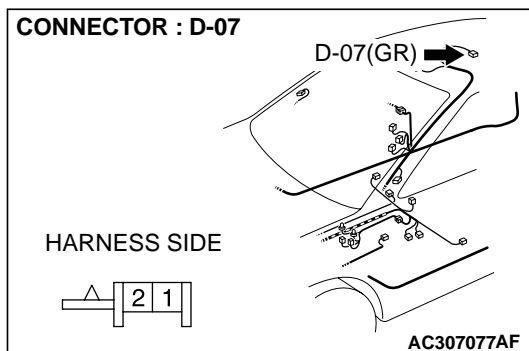
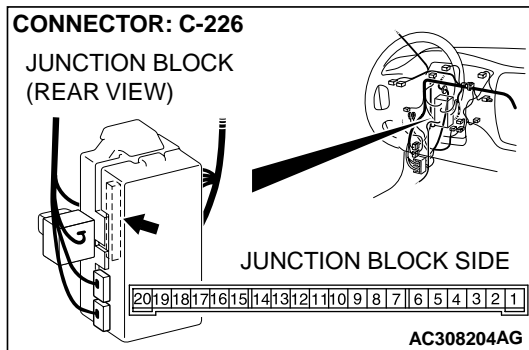
*NOTE: Also check junction block connector C-218 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-218 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between rear dome light connector D-07 (terminal 1) and ETACS-ECU connector C-226 (terminal 6) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the rear dome lights illuminate normally.

**STEP 13. Check the wiring harness between rear dome light connector D-07 (terminal 2) and ETACS-ECU connector C-226 (terminal 5).**

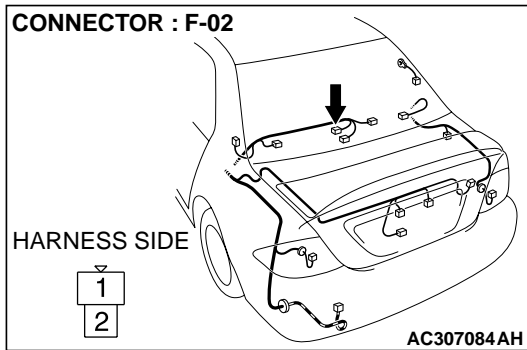


*NOTE: Also check junction block connector C-218 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-218 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between rear dome light connector D-07 (terminal 2) and ETACS-ECU connector C-226 (terminal 5) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the rear dome lights illuminate normally.



**STEP 14. Check luggage compartment light connector F-02 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is luggage compartment light connector F-02 in good condition?**

**YES :** Go to Step 15.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** Verify that the luggage compartment lights illuminate normally.

**STEP 15. Verify the luggage compartment light bulb.**

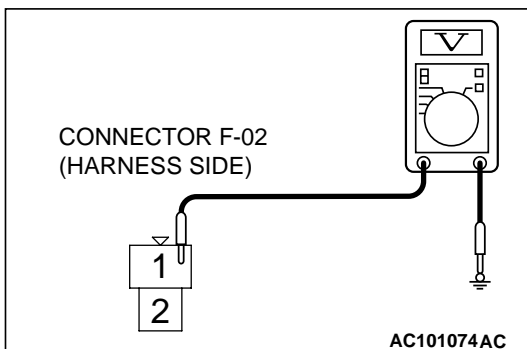
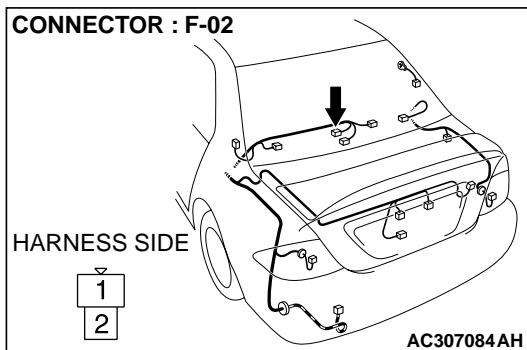
**Q: Is the luggage compartment bulb in good condition?**

**YES :** Go to Step 16

**NO :** Replace the bulb. Verify that the luggage compartment lights illuminate normally.

**STEP 16. Check the battery power supply circuit to the luggage compartment light. Test at luggage compartment light F-02.**

(1) Disconnect luggage compartment light F-02 and measure the voltage available at the harness side of the connector.



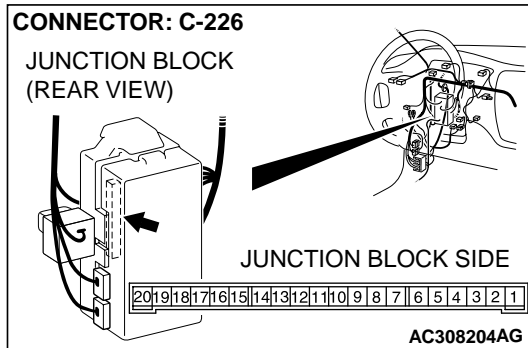
(2) Measure the voltage between terminal 1 and ground.

- The voltage should equal approximately 12 volts (battery positive voltage).

**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES :** Go to Step 19.

**NO :** Go to Step 17.

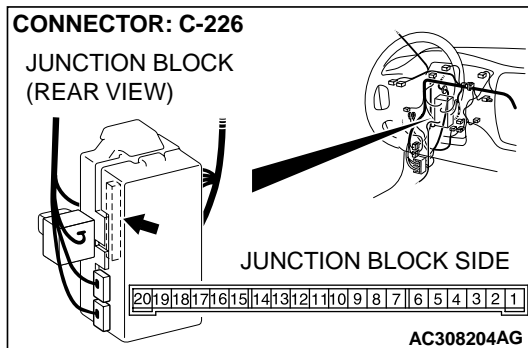


**STEP 17. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

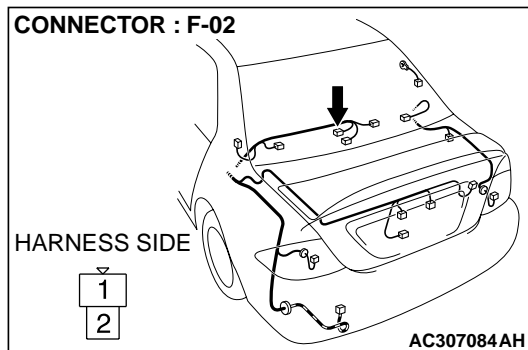
**Q: Is ETACS-ECU connector C-226 in good condition?**

**YES :** Go to Step 18.

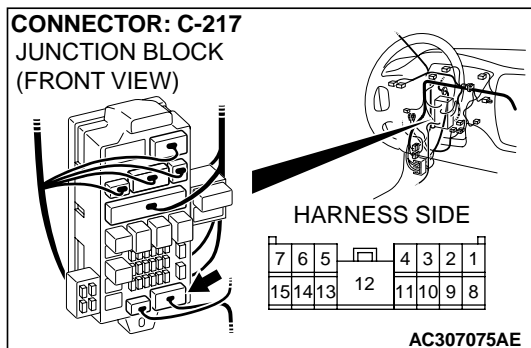
**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the luggage compartment lights illuminate normally.



**STEP 18. Check the wiring harness between luggage compartment light connector F-02 (terminal 1) and ETACS-ECU connector C-226 (terminal 6).**





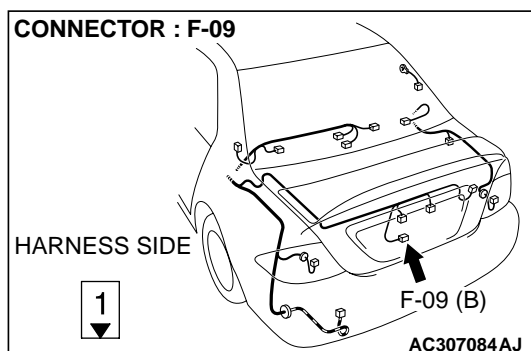


*NOTE: Also check junction block connector C-217 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-217 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between luggage compartment light connector F-02 (terminal 1) and ETACS-ECU connector C-226 (terminal 6) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the luggage compartment lights illuminate normally.

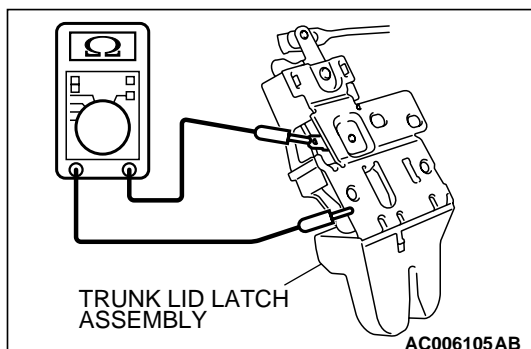


**STEP 19. Check luggage compartment light switch connector F-09 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is luggage compartment light switch connector F-09 in good condition?**

**YES :** Go to Step 20.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the luggage compartment lights illuminate normally.



**STEP 20. Check the luggage compartment light switch.**

Disconnect luggage compartment light switch connector F-09. Then check the continuity between the switch and ground.

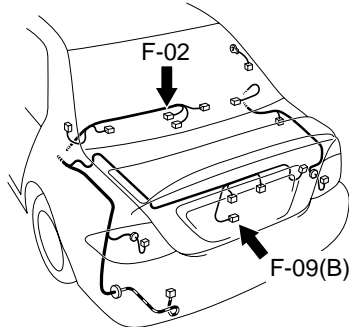
SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
ON (Latch open)	1 – Ground	Less than 2 ohms
OFF (Latch shut)	1 – Ground	Open circuit

**Q: Is the luggage compartment light switch in good condition?**

**YES :** Go to Step 21.

**NO :** Replace the luggage compartment light switch. Verify that the luggage compartment lights illuminate normally.

CONNECTORS : F-02, F-09

HARNESS SIDE  
F-02HARNESS SIDE  
F-09

AC307085AB

**STEP 21.** Check the wiring harness between luggage compartment light connector F-02 (terminal 2) and luggage compartment light switch connector F-09 (terminal 1).

**Q:** Is the wiring harness between luggage compartment light connector F-02 (terminal 2) and luggage compartment light switch connector F-09 (terminal 1) in good condition?

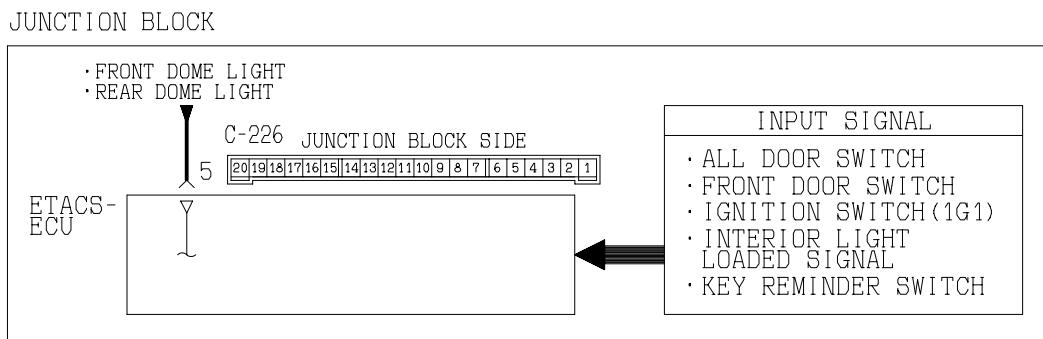
**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the luggage compartment lights illuminate normally.

**INSPECTION PROCEDURE M-3: Interior Light: Front dome light and rear dome light <vehicles without sunroof> dimming function does not work normally.**

*NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991862. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-10."*

**Interior Light Automatic Shutt-down Function Circuit**



W3J01M24AA

**CIRCUIT OPERATION**

The ETACS-ECU operates the dome light dimming function according to the following switches:

- Ignition switch (IG1)
- Key reminder switch
- Front door switches
- Door lock actuator switch (front: LH)

**TECHNICAL DESCRIPTION (COMMENT)**

If the dome lights do not dim normally, the input circuits from the switches described in "CIRCUIT OPERATION" or the ETACS-ECU may be defective.

**TROUBLESHOOTING HINTS**

- The key reminder switch may be defective
- The door switches may be defective
- The driver's door lock actuator switch may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS**

**Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991862: SWS monitor kit

**STEP 1. Verify the front dome light and the rear dome light.**

If the front dome light switch and the rear dome light switch <vehicles without sunroof> are moved to the "door interlock position", the front dome light and the rear dome light <vehicles without sunroof> should illuminate when either door is opened.

**Q: Do the front dome light and the rear dome light  
<vehicles without sunroof> illuminate normally?**

**Both the front dome light and the rear dome light  
<vehicles without sunroof> illuminate normally. : Go to  
Step 2.**

**Neither the front dome light nor the rear dome light  
<vehicles without sunroof> illuminates normally. : Refer  
to Inspection Procedure M-1 "Front dome light, rear  
dome light and luggage compartment light do not  
illuminate or go out normally [P.54B-419](#)."**

**Either the front dome light or the rear dome light  
<vehicles without sunroof> illuminates normally. : Refer  
to Inspection Procedure M-2 "Front dome light, rear  
dome light or luggage compartment light do not  
illuminates or goes out normally [P.54B-424](#)."**

**STEP 2.** Use scan tool MB991958 to select "ECU COMM CHK" on the SWS monitor display.

Check the ETACS-ECU.

**⚠ CAUTION**

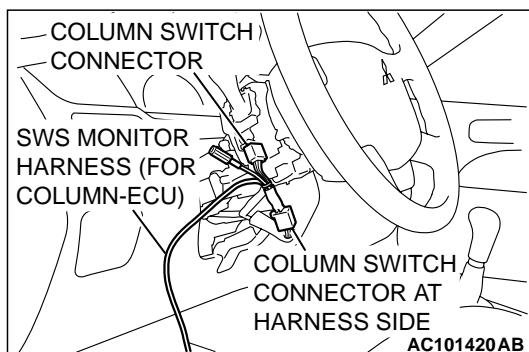
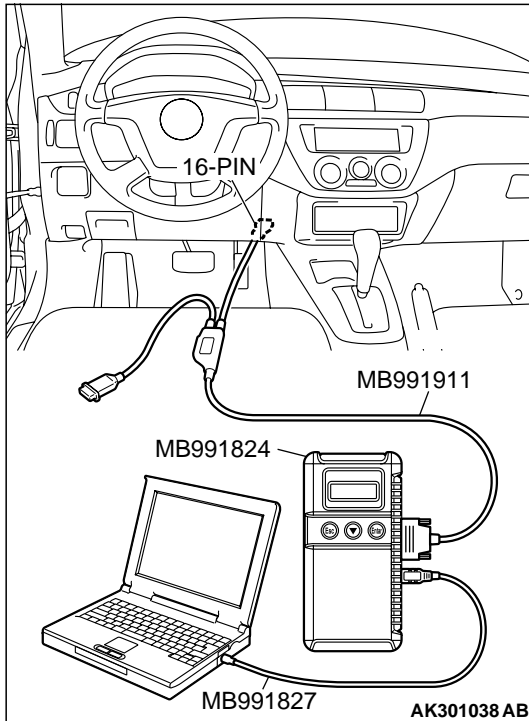
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect the DLC harness before connecting the column-ECU harness. Be sure to connect SWS monitor kit MB991862 after turning on scan tool MB991958.

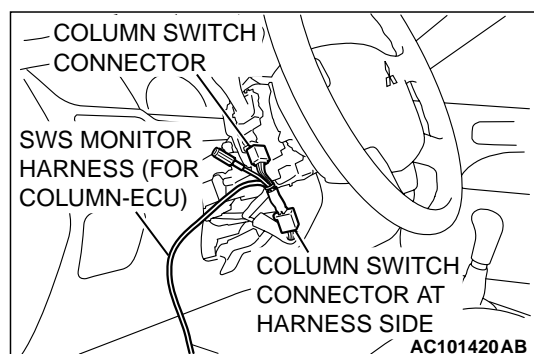
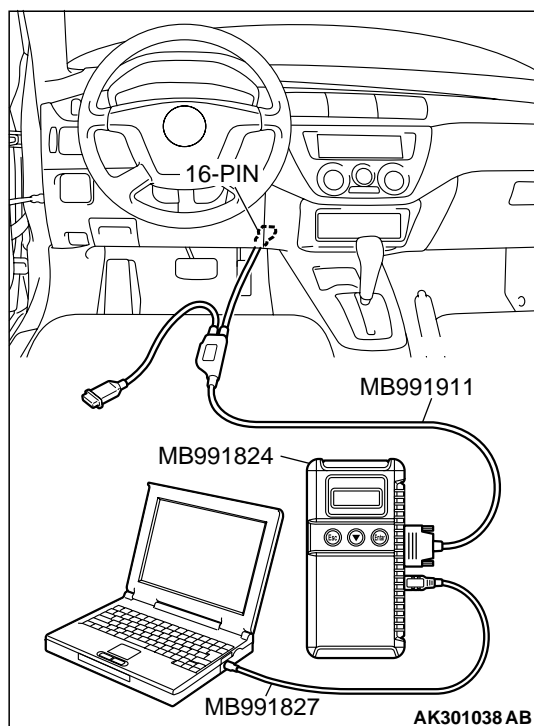
- (1) Connect scan tool MB991958 to the data link connector.
- (2) Connect SWS monitor kit MB991862 to the column switch connector.
- (3) Turn the ignition switch to the "LOCK" (OFF) position.
- (4) Operate scan tool MB991958 according to the procedure below to display "ECU COMM CHK."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "SWS MONITOR."
  4. Select "ECU COMM CHK."
- (5) Scan tool MB991958 should show "OK" on the "ECU COMM CHK" menu for the "ETACS ECU" menu.

**Q: Is "OK" displayed on the "ETACS ECU" menu?**

**YES :** Go to Step 3.

**NO :** Refer to Inspection Procedure A-3 "Communication with ETACS-ECU is not possible [P.54B-45](#)."





### STEP 3. Check the input signal by using "DATA LIST" menu of the SWS monitor.

Check the input signals from the following switches:

- Ignition switch: ON or START
- Driver's door: open

Operate scan tool MB991958 according to the procedure below to display "ETACS ECU."

1. Select "SYSTEM SELECT."
2. Select "SWS."
3. Select "SWS MONITOR."
4. Select "DATA LIST."
5. Select "ETACS ECU."

Check that normal conditions are displayed on the items described in the table below.

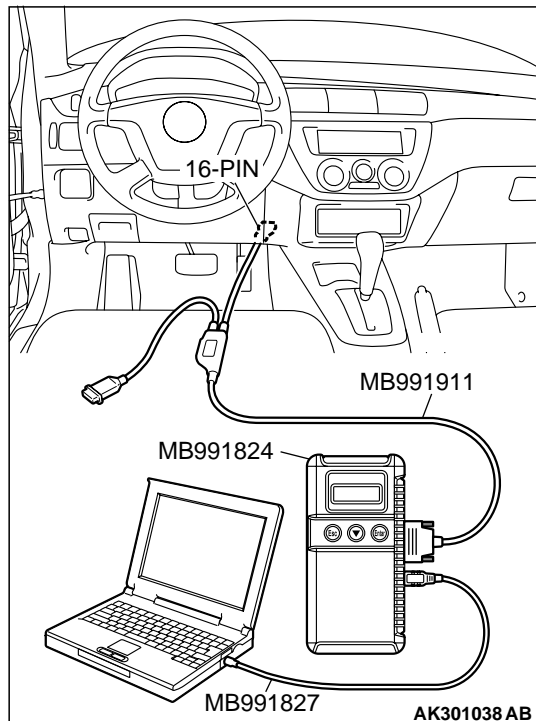
ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 30	IG SW (IG1)	ON
ITEM 32	FRONT DOOR SW	ON

**Q: Are normal conditions displayed on the "IG SW (IG1)" and "FRONT DOOR SW"?**

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

**The scan tool does not show the respective normal condition for item "IG SW (IG1)" :** Refer to Inspection Procedure N-2 "ETACS-ECU does not receive a signal from the ignition switch (IG1) [P.54B-457](#)."

**The scan tool does not show the respective normal condition for item "FRONT DOOR SW" :** Refer to Inspection Procedure N-4 "ETACS-ECU does not receive a signal from the driver's or the front passenger's door switch [P.54B-478](#)."



**STEP 4. Check the input signal (by using the pulse check mode of the monitor).**

Check the following switches and input signals:

- Key reminder switch
- All door switches
- Interior light loaded signal

Operate scan tool MB991958 according to the procedure below to display "PULSE CHECK."

1. Select "SYSTEM SELECT."
2. Select "SWS."
3. Select "PULSE CHECK."

Check if scan tool MB991958 sounds or not.

ITEM NAME	CONDITION
Key reminder switch	Remove and reinsert the ignition key
Each door switch	Open or close one of the doors
Interior light loaded signal	Illuminate one of the interior lights

**Q: When the key reminder switch, each door switch and the interior light are operated, does scan tool MB991958 sound in each case?**

**Buzzer of scan tool MB991958 sounds normally :**

Replace the ETACS-ECU. Verify that the dome light illuminates normally.

**Scan tool MB991958 does not sound when the ignition key is removed and reinserted :** Refer to Inspection

Procedure O-1 "ETACS-ECU does not receive a signal from the key reminder switch [P.54B-507](#)."

**When one of the doors is opened and closed, scan tool MB991958 does not sound :** Refer to Inspection

Procedure O-4 "ETACS-ECU does not receive a signal from all the door switches [P.54B-522](#)."

**When one of the interior lights is illuminated, scan tool MB991958 does not sound :** Refer to Inspection

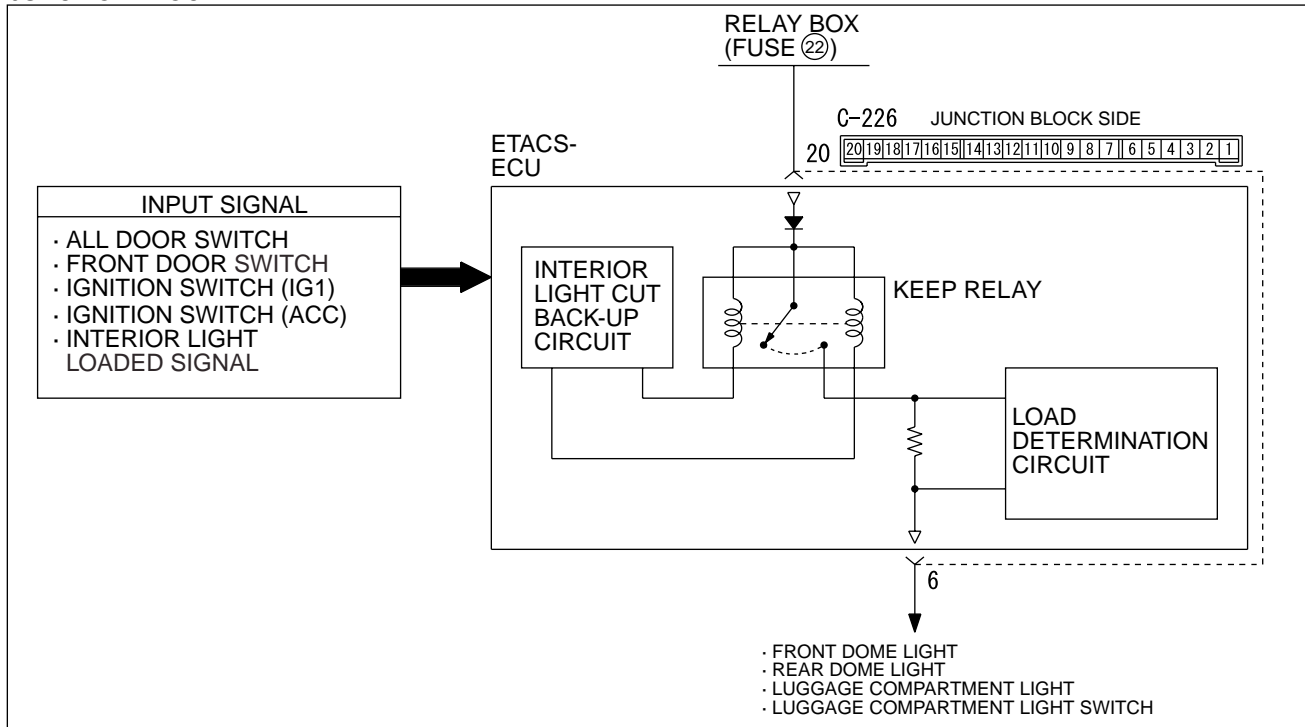
Procedure O-10 "ETACS-ECU does not receive a interior light loaded signal [P.54B-560](#)."

**INSPECTION PROCEDURE L-4: Interior Light: The interior light automatic shut-down function does not work normally.**

*NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991862. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-10."*

**Interior Light Automatic Shut-down Function Circuit**

JUNCTION BLOCK



W4J54M106A

**CIRCUIT OPERATION**

The ETACS-ECU operates the interior light automatic shutdown function according to the following switch signals:

- Ignition switch (ACC)
- Ignition switch (IG1)
- Door switch (front: LH)
- All door switches
- Interior light loaded signal

**TECHNICAL DESCRIPTION (COMMENT)**

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

**TROUBLESHOOTING HINTS**

- The door switch may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector



## DIAGNOSIS

### Required Special Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991862: SWS Monitor Kit

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### STEP 1. Verify the front dome light and the rear dome light <vehicles with sunroof>.

If the front dome light switch and the rear dome light switch <vehicles without sunroof> are moved to the "door interlock position", the front dome light and the rear dome light <vehicles without sunroof> should illuminate when either door is opened.

#### Q: Do the front dome light and the rear dome light <vehicles with sunroof> illuminate normally?

**The front dome light and the rear dome light <vehicles with sunroof> do illuminate normally :** Go to Step 2.

**Neither the front dome light nor the rear dome light <vehicles without sunroof> illuminates normally :** Refer to Inspection Procedure M-1 "The front dome light, rear dome light <vehicles without sunroof> and luggage compartment light do not illuminate or go out normally [P.54B-419](#)."

**Either the front dome light or the rear dome light <vehicles without sunroof> illuminates normally :** Refer to Inspection Procedure M-2 "The front dome light, rear dome light <vehicles without sunroof> or luggage compartment light does not illuminate or go out normally [P.54B-424](#)."

**STEP 2.** Use scan tool MB991958 to select "ECU COMM CHK" on the SWS monitor display.

Check the ETACS-ECU.

**⚠ CAUTION**

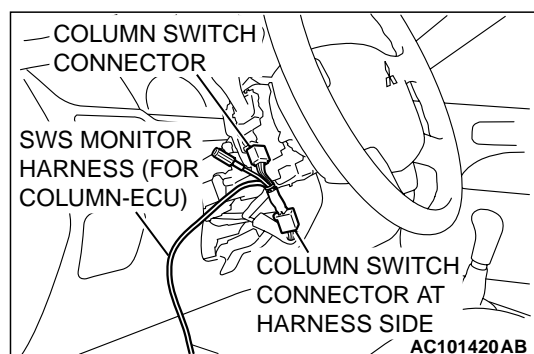
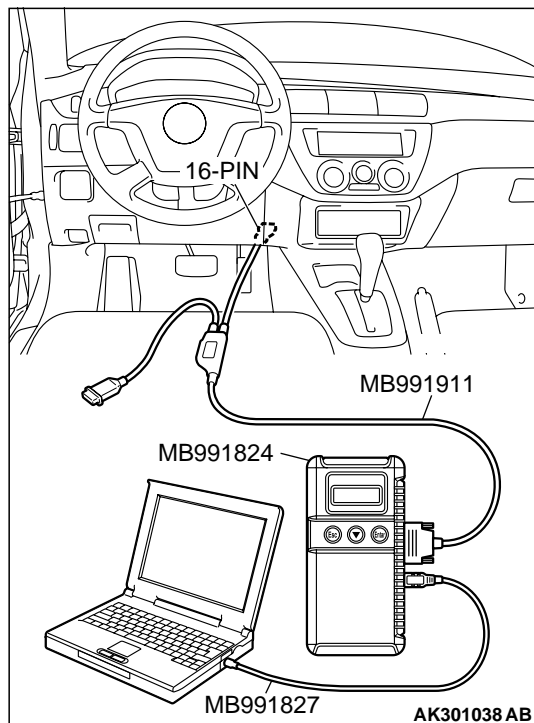
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect the DLC harness before connecting the column-ECU harness. Be sure to connect SWS monitor kit MB991862 after turning on scan tool MB991958.

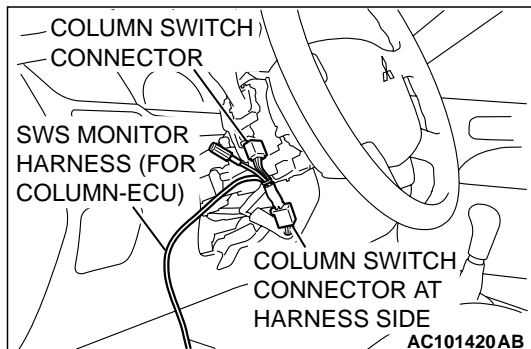
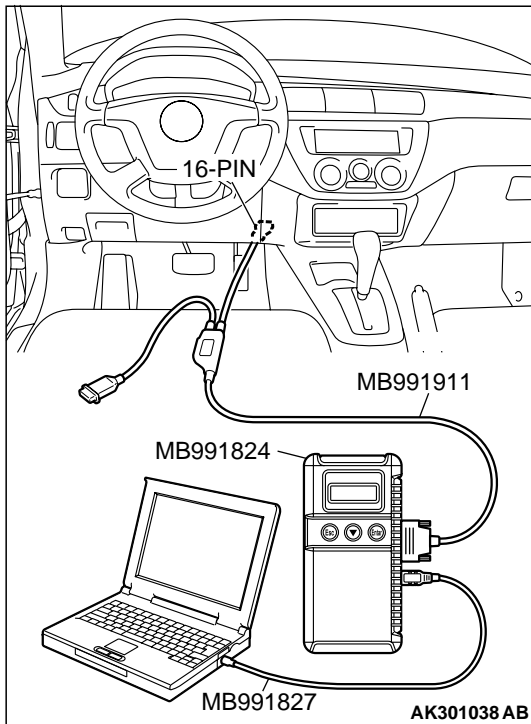
- (1) Connect scan tool MB991958 to the data link connector.
- (2) Connect SWS monitor kit MB991862 to the column switch connector.
- (3) Turn the ignition switch to the "LOCK" (OFF) position.
- (4) Operate scan tool MB991958 according to the procedure below to display "ECU COMM CHK."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "SWS MONITOR."
  4. Select "ECU COMM CHK."
- (5) Scan tool MB991958 should show "OK" on the "ECU COMM CHK" menu for the "ETACS ECU" menu.

**Q: Is "OK" displayed on the "ETACS ECU" menu?**

**YES :** Go to Step 3.

**NO :** Refer to Inspection Procedure A-3 "Communication with ETACS-ECU is not possible [P.54B-45](#)."





**STEP 3. Check the input signal by using "DATA LIST" menu of the SWS monitor.**

Check the input signals from the following switches:

- Ignition switch: OFF
- Driver's and front passenger's door: open

Operate scan tool MB991958 according to the procedure below to display "ETACS ECU."

1. Select "SYSTEM SELECT."
2. Select "SWS."
3. Select "SWS MONITOR."
4. Select "DATA LIST."
5. Select "ETACS ECU."

Check that normal conditions are displayed on the items described in the table below.

ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 30	IG SW (IG1)	OFF
ITEM 31	IG SW (ACC)	OFF
ITEM 32	FRONT DOOR SW	ON

**Q: Does the scan tool display the items "IG SW (IG1)", "IG SW (ACC)" and "FRONT DOOR SW" as normal condition?**

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

**Normal condition is not displayed for "IG SW (IG1)" :**

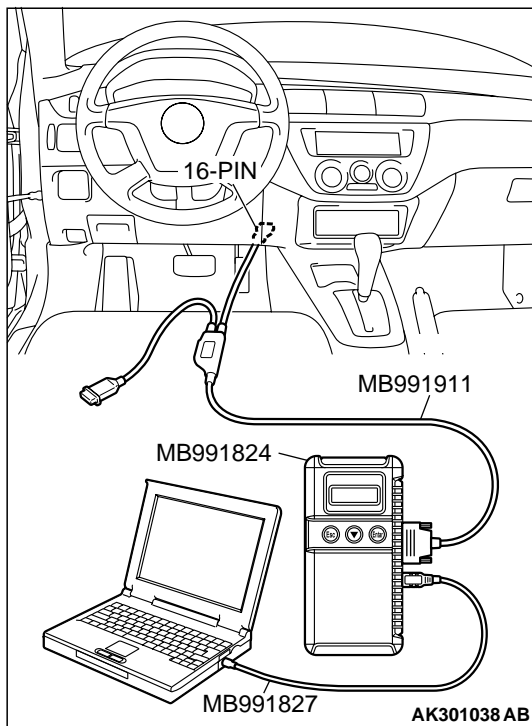
Refer to Inspection Procedure N-2 "ETACS-ECU does not receive a signal from the ignition switch (IG1) [P.54B-457](#)."

**Normal condition is not displayed for "IG SW (ACC)" :**

Refer to Inspection Procedure N-1 "ETACS-ECU does not receive a signal from the ignition switch (ACC) [P.54B-454](#)."

**Normal condition is not displayed for "FRONT DOOR SW" :**

Refer to Inspection Procedure N-4 "ETACS-ECU does not receive a signal from the driver's or the front passenger's door switch [P.54B-478](#)."

**STEP 4. Check the input signal (by using the pulse check mode of the monitor).**

Check the following switches and input signals:

- Interior light loaded signal

Operate scan tool MB991958 according to the procedure below to display "PULSE CHECK."

1. Select "SYSTEM SELECT."
2. Select "SWS."
3. Select "PULSE CHECK."

Check if scan tool MB991958 sounds or not.

ITEM NAME	CONDITION
Interior light loaded signal	Illuminate one of the interior lights

**Q: Does scan tool MB991958 sound when the interior light loaded signal is operated?**

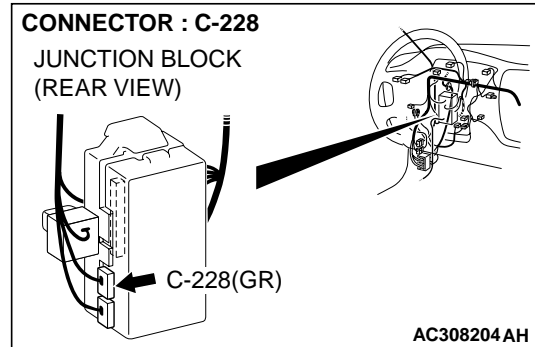
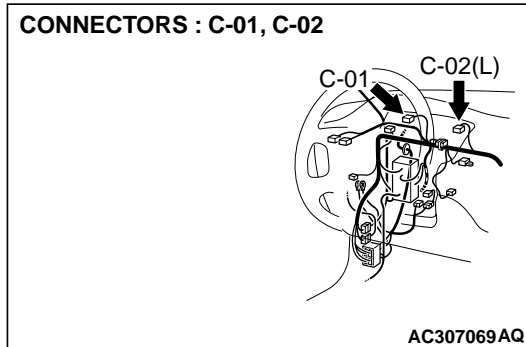
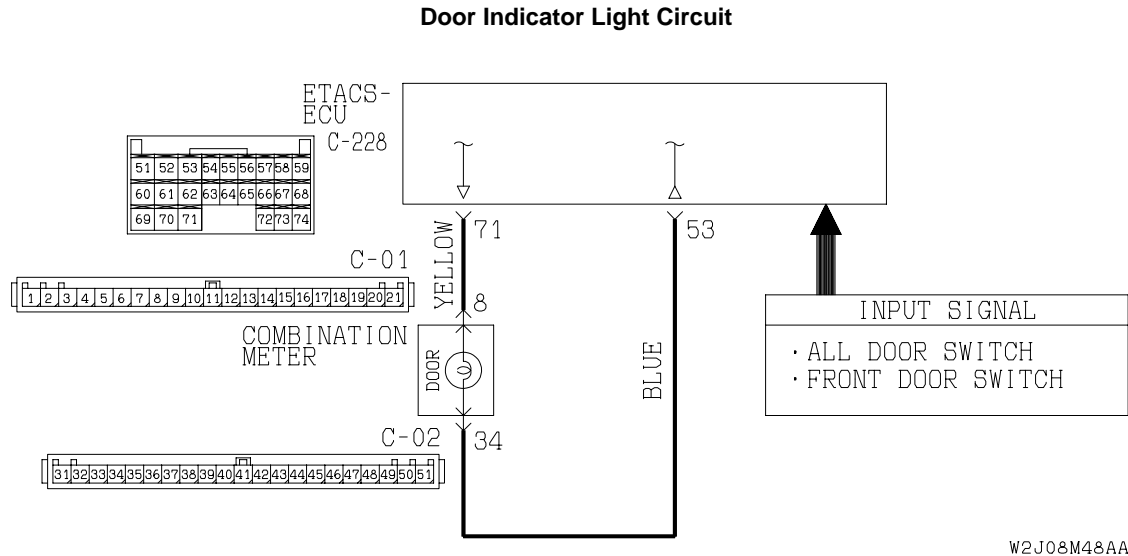
**YES :** Replace the ETACS-ECU. Verify that the dome light illuminates normally.

**NO :** Refer to Inspection Procedure O-10 "ETACS-ECU does not receive a interior light loaded signal

[P.54B-560.](#)"

**INSPECTION PROCEDURE M-5: Interior Light: The door ajar indicator lights do not illuminate or go out normally**

*NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991862. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-10."*



**CIRCUIT OPERATION**

The ETACS-ECU operates the door ajar indicator light according to the following switch signals:

- Front door switch
- All door switches

**TECHNICAL DESCRIPTION (COMMENT)**

If the door ajar indicator light does not illuminate normally, the input circuit system from the switches or the ETACS-ECU may be defective (refer to "CIRCUIT OPERATION").

**TROUBLESHOOTING HINTS**

- The door switch may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991862: SWS monitor kit

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**STEP 1. Verify the dome light and the rear dome light <vehicles without sunroof>.**

If the dome light switch and the rear dome light switch <vehicles without sunroof> are moved to the "door interlock position", the dome light and the rear dome light <vehicles without sunroof> should illuminate when either door is opened.

**Q: Do the dome light and the rear dome light illuminate normally?**

**Both the dome light and the rear dome light illuminate normally.** : Go to Step 2.

**Neither the dome light nor the rear dome light illuminates normally.** : Refer to Inspection Procedure M-1 "The front dome light, rear dome light <vehicles without sunroof> and luggage compartment light do not illuminate or go out normally [P.54B-419](#)."

**Either the dome light or the rear dome light illuminates normally.** : Refer to Inspection Procedure M-2 "The front dome light, rear dome light <vehicles without sunroof> or luggage compartment light does not illuminate or go out normally [P.54B-424](#)."

**STEP 2. Check the input signal by using "DATA LIST" menu of the SWS monitor.**

**⚠ CAUTION**

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect the DLC harness before connecting the column-ECU harness. Be sure to connect SWS monitor kit MB991862 after turning on scan tool MB991958.

Open the driver's door before checking the input signals from the front door switch (LH).

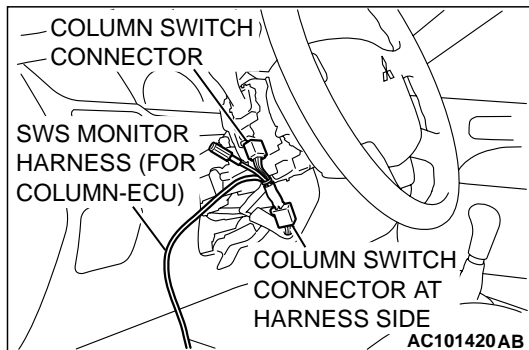
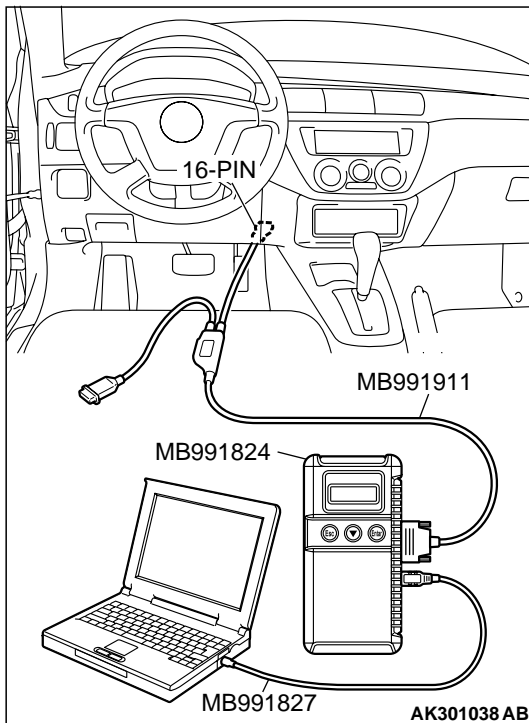
- (1) Connect scan tool MB991958 to the data link connector.
- (2) Connect SWS monitor kit MB991862 to the column switch connector.
- (3) Operate scan tool MB991958 according to the procedure below to display "ETACS ECU"
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "SWS MONITOR."
  4. Select "DATA LIST."
  5. Select "ETACS ECU."
- (4) Check that normal conditions are displayed on the items described in the table below.

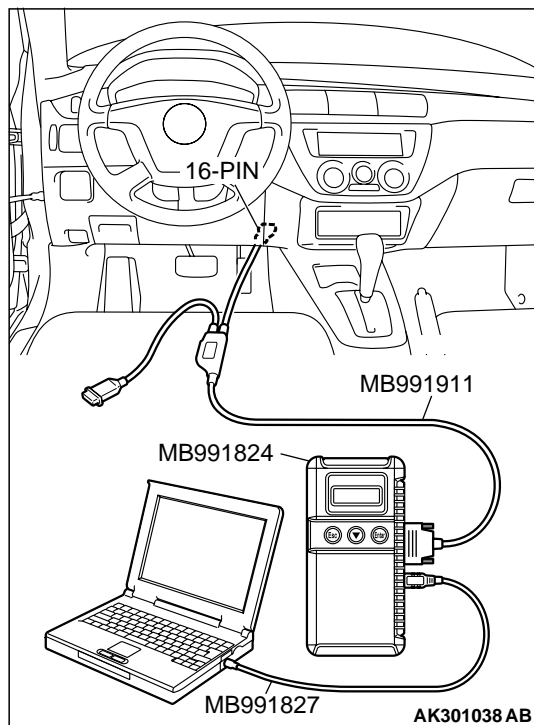
ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 32	FRONT DOOR SW	ON

**Q: Is normal condition displayed on the "FRONT DOOR SW"?**

**YES :** Go to Step 3.

**NO :** Refer to Inspection Procedure N-4 "ETACS-ECU does not receive a signal from the driver's or the front passenger's door switch [P.54B-478](#)."



**STEP 3. Check the input signal by using the pulse check mode of the monitor.**

Check the input signals from all the door switches:  
Operate scan tool MB991958 according to the procedure below to display "PULSE CHECK."

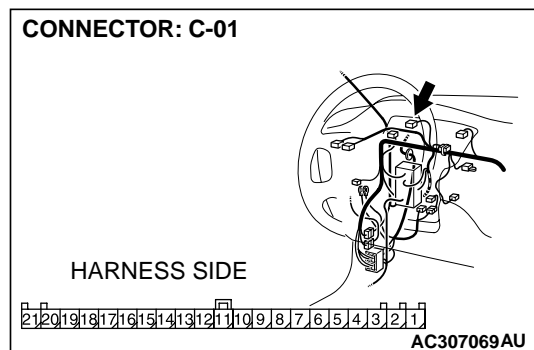
1. Select "SYSTEM SELECT."
2. Select "SWS."
3. Select "PULSE CHECK."

If a door (except front doors) is opened and closed, check if scan tool MB991958 sounds or not.

**Q: If a door (except front doors) is opened and closed, does scan tool MB991958 sound?**

**YES :** Go to Step 4.

**NO :** Refer to Inspection Procedure N-4 "ETACS-ECU does not receive a signal from all the door switches [P.54B-478](#)."

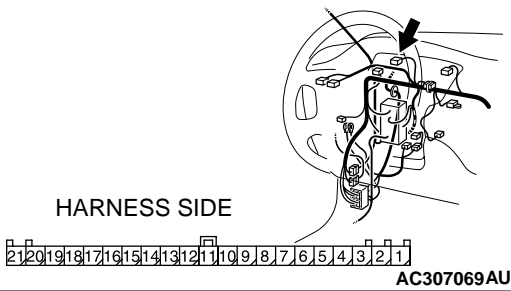
**STEP 4. Check combination meter connector C-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.****Q: Is combination meter connector C-01 in good condition?**

**YES :** Go to Step 5.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the door ajar indicator light illuminates normally.

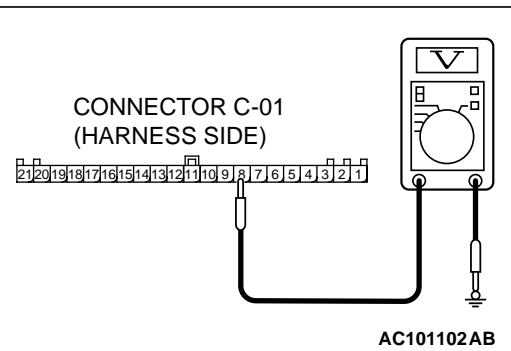


**CONNECTOR: C-01**



**STEP 5. Check the battery power supply circuit to the combination meter. Test at combination meter connector C-01.**

- (1) Disconnect combination meter connector C-01 and measure the voltage available at the harness side of the connector.



- (2) Measure the voltage between terminal 8 and ground.

- The voltage should equal approximately 12 volts (battery positive voltage).

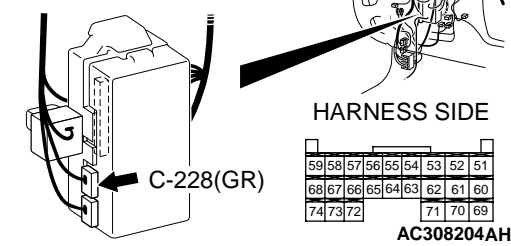
**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES :** Go to Step 8.

**NO :** Go to Step 6.

**CONNECTOR : C-228**

JUNCTION BLOCK  
(REAR VIEW)

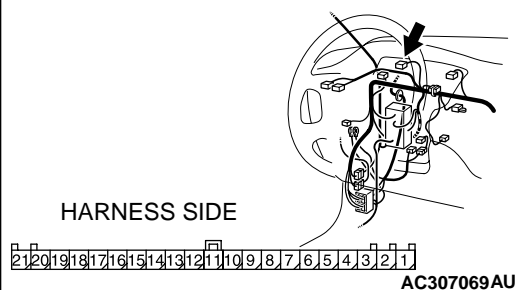


**STEP 6. Check ETACS-ECU connector C-228 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-228 in good condition?**

**YES :** Go to Step 7.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the door ajar indicator light illuminates normally.

**CONNECTOR: C-01**

**STEP 7. Check the wiring harness between combination meter connector C-01 (terminal 8) and ETACS-ECU connector C-228 (terminal 71).**

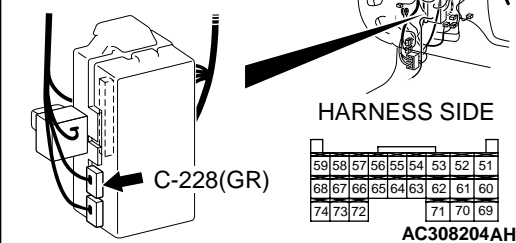
**Q: Is the wiring harness between combination meter connector C-01 (terminal 8) and ETACS-ECU connector C-228 (terminal 71) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the door ajar indicator light illuminates normally.

**CONNECTOR : C-228**

JUNCTION BLOCK  
(REAR VIEW)

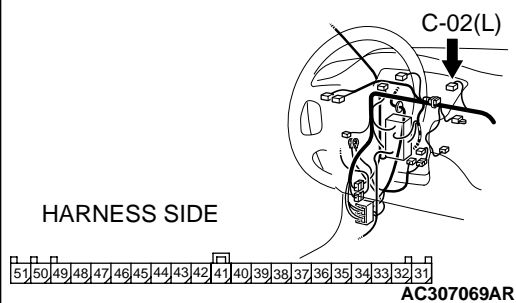


**STEP 8. Check combination meter connector C-02 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is combination meter connector C-02 in good condition?**

**YES :** Go to Step 9.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Verify that the door ajar indicator light illuminates normally.

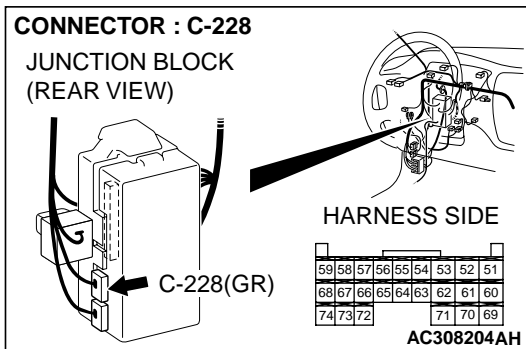
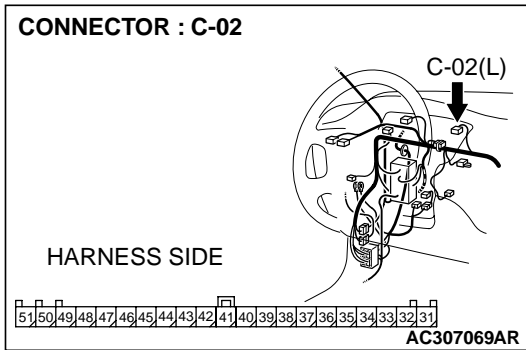
**CONNECTOR : C-02**

**STEP 9. Check the wiring harness between combination meter connector C-02 (terminal 34) and ETACS-ECU connector C-228 (terminal 53).**

**Q: Is the wiring harness between combination meter connector C-02 (terminal 34) and ETACS-ECU connector C-228 (terminal 53) in good condition?**

**YES :** Replace the ETACS-ECU. Verify that the door ajar indicator light illuminates normally.

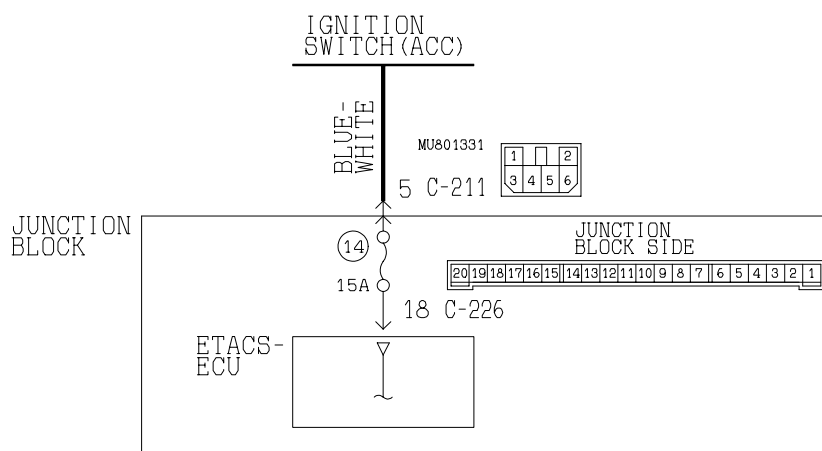
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the door ajar indicator light illuminates normally.



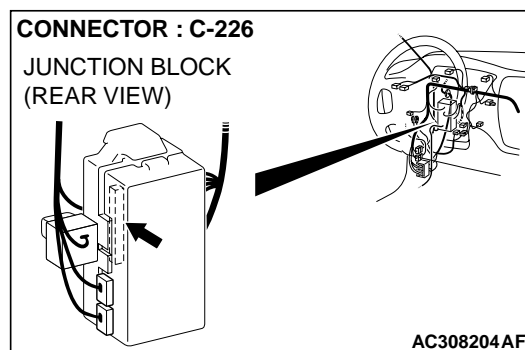
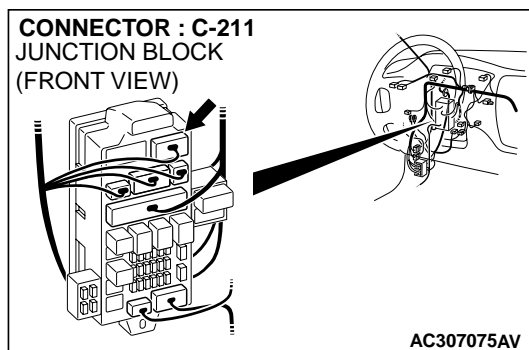
# INPUT SIGNAL PROCEDURES

**INSPECTION PROCEDURE N-1: The ETACS-ECU does not receive any signal from the ignition switch (ACC).**

**Ignition Switch (ACC) Input Circuit**



W2J08M10AB



## CIRCUIT OPERATION

The ETACS-ECU operates the following equipment according to signal from the ignition switch (ACC):

- Windshield wiper and washer
- Rear wiper and washer

## TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the equipment, which is described in "CIRCUIT OPERATION", does not work normally.

## TROUBLESHOOTING HINTS

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

## DIAGNOSIS

### Required Special Tools:

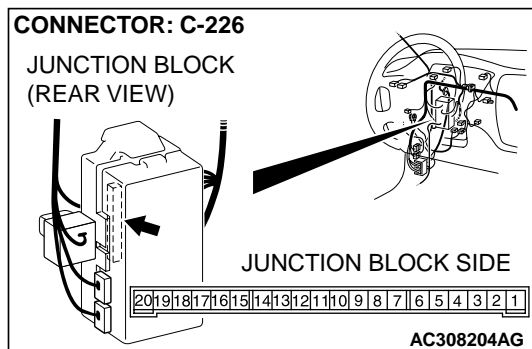
- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

**STEP 1. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-226 in good condition?**

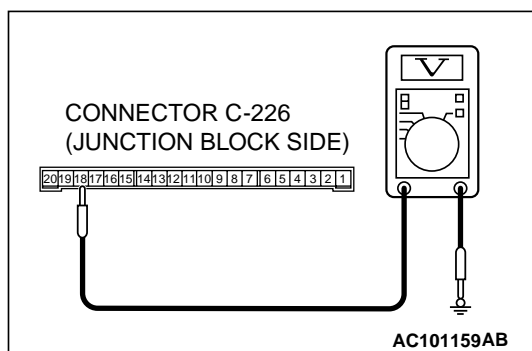
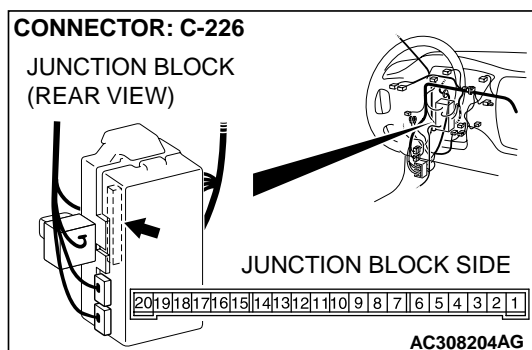
**YES :** Go to Step 2.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the equipment, which are described in "CIRCUIT OPERATION", work normally, the input signal from the ignition switch (ACC) should be normal.



**STEP 2. Check the ignition switch (ACC) circuit to the ETACS-ECU. Test at ETACS-ECU connector C-226.**

- (1) Disconnect ETACS-ECU connector C-226 and measure the voltage available at the junction block side of the connector.
- (2) Turn the ignition switch to the "ACC" position.



- (3) Measure the voltage between terminal 18 and ground.

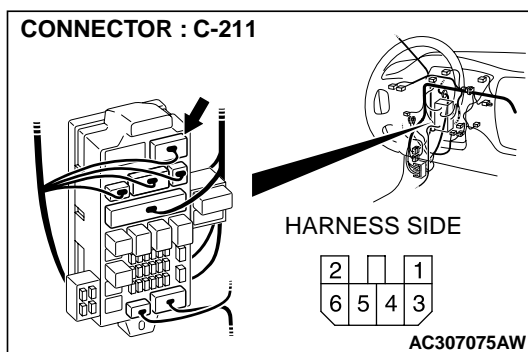
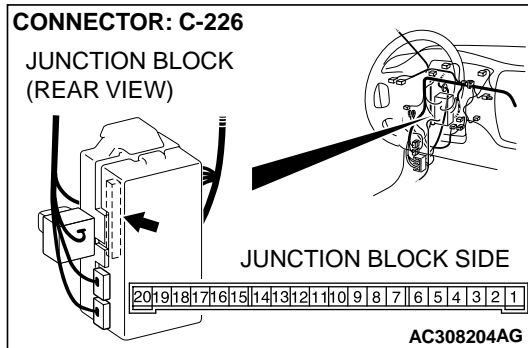
- The voltage should equal approximately 12 volts (battery positive voltage).

**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES :** Replace the ETACS-ECU. If the equipment, which are described in "CIRCUIT OPERATION", work normally, the input signal from the ignition switch (ACC) should be normal.

**NO :** Go to Step 3.

**STEP 3. Check the wiring harness between ETACS-ECU connector C-226 (terminal 18) and the ignition switch (ACC).**



*NOTE: Also check junction block connector C-211 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-211 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

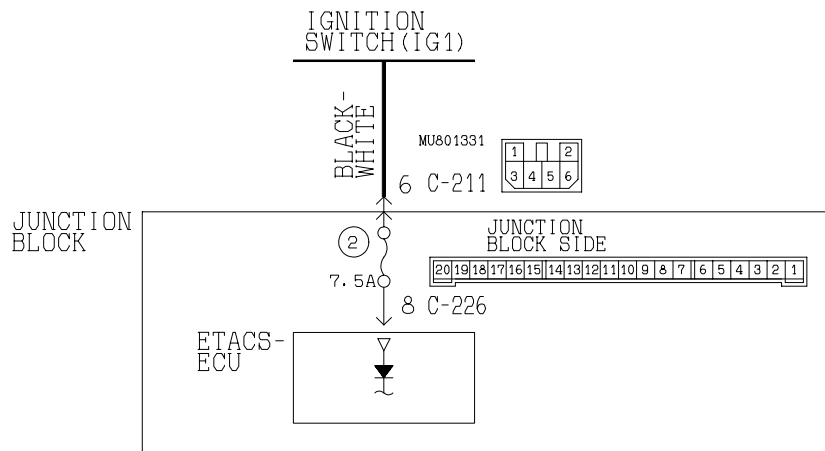
**Q: Is the wiring harness between ETACS-ECU connector C-226 (terminal 18) and ignition switch (ACC) in good condition?**

**YES :** No action is necessary and testing is complete.

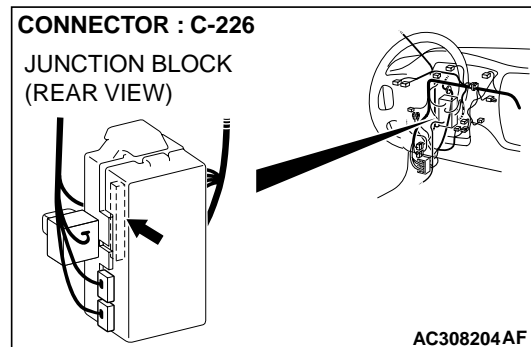
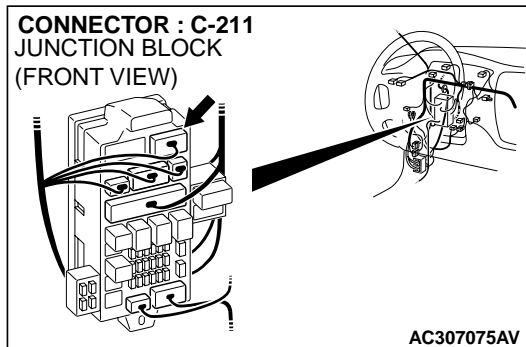
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the equipment, which are described in "CIRCUIT OPERATION", work normally, the input signal from the ignition switch (ACC) should be normal.

**INSPECTION PROCEDURE N-2:** The ETACS-ECU does not receive any signal from the ignition switch (IG1).

**Ignition Switch (IG1) Input Circuit**



W2J08M11AB



**CIRCUIT OPERATION**

- The ETACS-ECU operates the following equipment or functions according to signal from the ignition switch (IG1):
  - Ignition key reminder tone alarm function
  - Light reminder tone alarm function
  - Seat belt tone alarm function
  - Power window timer function
  - Seat belt warning light
  - Headlight automatic shutdown function
  - Turn-signal light
  - Dome light dimming function

- If the power supply circuit from the battery to the ETACS-ECU is open, this circuit is used as backup circuit.

**TECHNICAL DESCRIPTION (COMMENT)**

If the signal is not normal, the equipment or functions, which are described in "CIRCUIT OPERATION", do not work normally.

**TROUBLESHOOTING HINTS**

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

**DIAGNOSIS****Required Special Tools:**

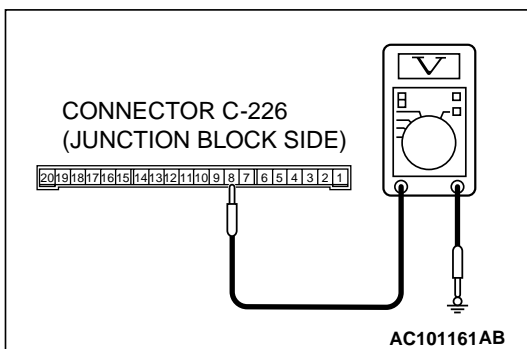
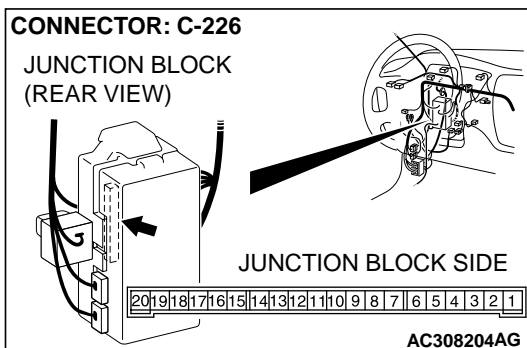
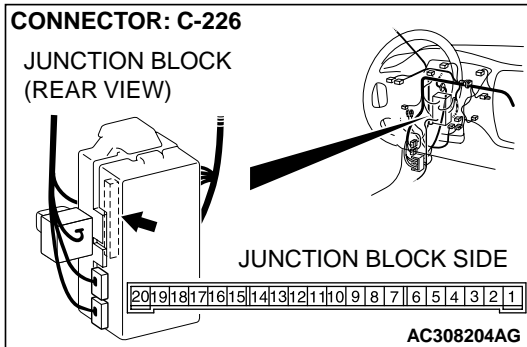
- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

**STEP 1. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-226 in good condition?**

**YES :** Go to Step 2.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the ignition switch (IG1) should be normal.



**STEP 2. Check the ignition switch (IG1) circuit to the ETACS-ECU. Test at ETACS-ECU connector C-226.**

- (1) Disconnect ETACS-ECU connector C-226 and measure the voltage available at the junction block side of the connector.
- (2) Turn the ignition switch to the "ON" position.

- (3) Measure the voltage between terminal 8 and ground.

- The voltage should equal approximately 12 volts (battery positive voltage).

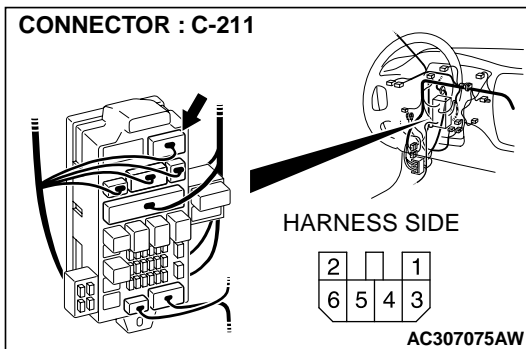
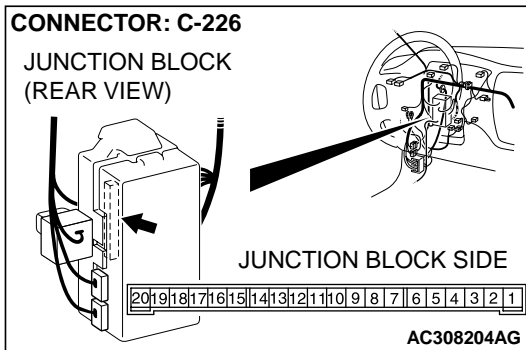
**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES :** Replace the ETACS-ECU. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the ignition switch (IG1) should be normal.

**NO :** Go to Step 3.



**STEP 3. Check the wiring harness between ETACS-ECU connector C-226 (terminal 8) and the ignition switch (IG1).**



*NOTE: Also check junction block connector C-211 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-211 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

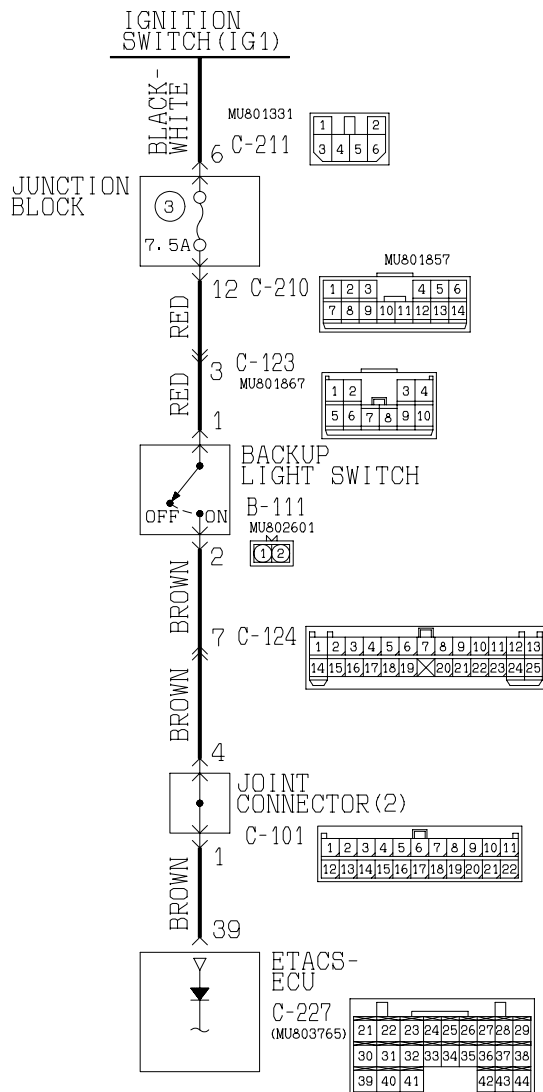
**Q: Is the wiring harness between ETACS-ECU connector C-226 (terminal 8) and ignition switch (IG1) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** Replace the ETACS-ECU. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the ignition switch (IG1) should be normal.

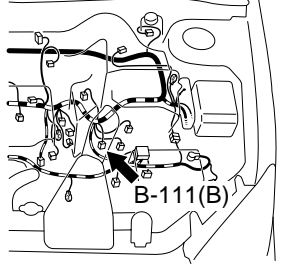
**INSPECTION PROCEDURE N-3: ETACS-ECU does not receive any signal from the backup light switch <M/T>.**

### Backup Light Switch Input Circuit



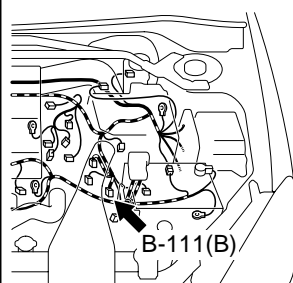
W3J05M01AA

**CONNECTOR : B-111**  
**<2000>**



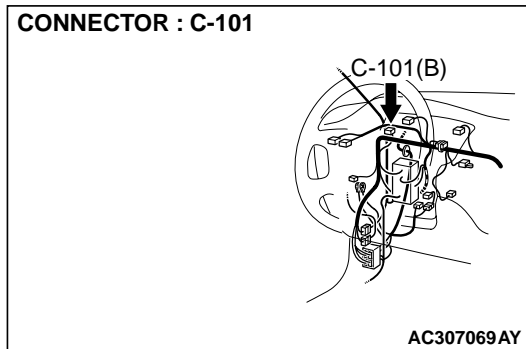
AC308637AH

**CONNECTOR : B-111 <2400>**

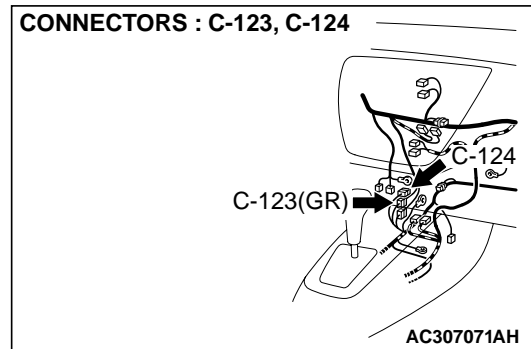


AC309153AB

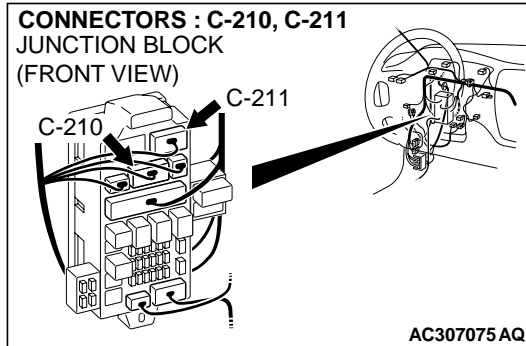
CONNECTOR : C-101



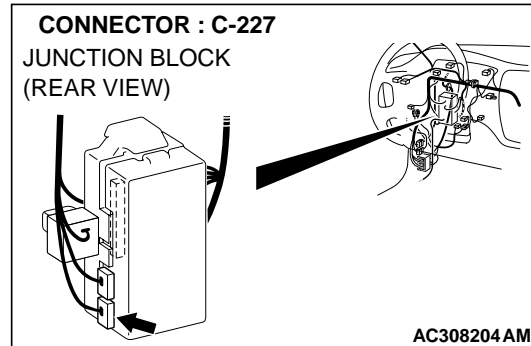
CONNECTORS : C-123, C-124



CONNECTORS : C-210, C-211  
JUNCTION BLOCK  
(FRONT VIEW)



CONNECTOR : C-227  
JUNCTION BLOCK  
(REAR VIEW)



### CIRCUIT OPERATION

The ETACS-ECU operates the rear wiper according to signal from the backup light switch.

### TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the rear wiper does not operate consecutively twice when the shift lever is moved to the "R" position with the rear wiper on. If the signal is not normal, the backup light switch or the ETACS-ECU may be defective.

### TROUBLESHOOTING HINTS

- The backup light switch may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tools:**

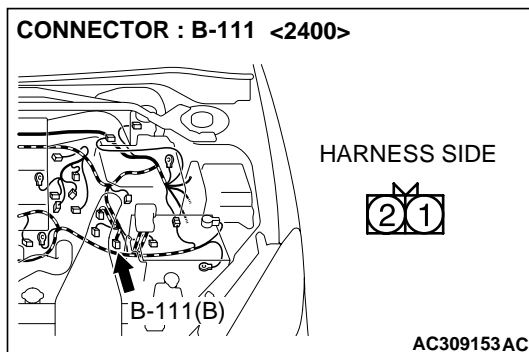
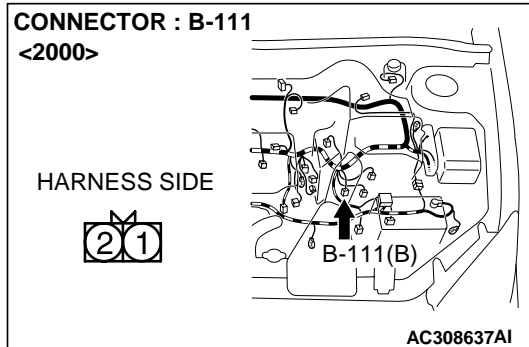
- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

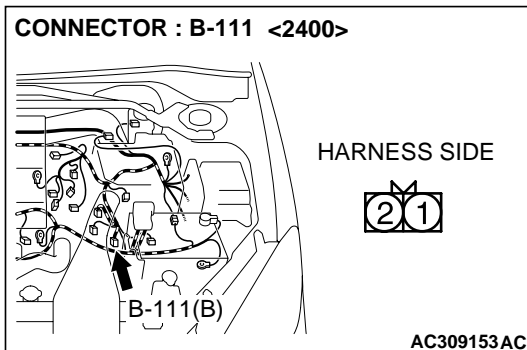
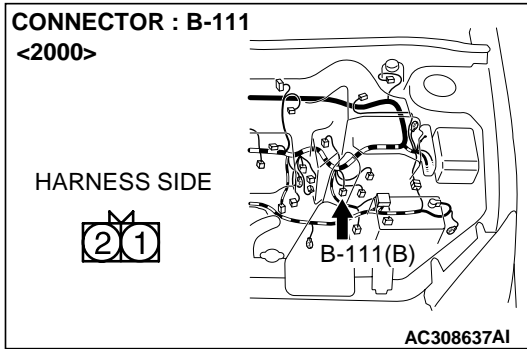
**STEP 1. Check backup light switch connector B-111 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is the backup light switch connector B-111 in good condition?**

**YES :** Go to Step 2.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the rear wiper operates normally, it indicates that a correct "R" position signal is sent from the backup light switch.





**STEP 2. Check the backup light switch.**

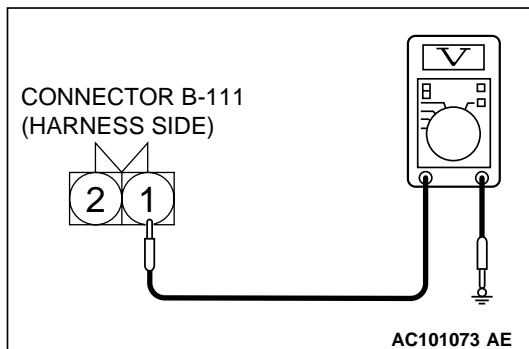
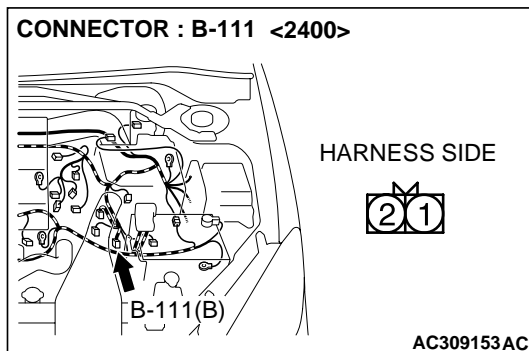
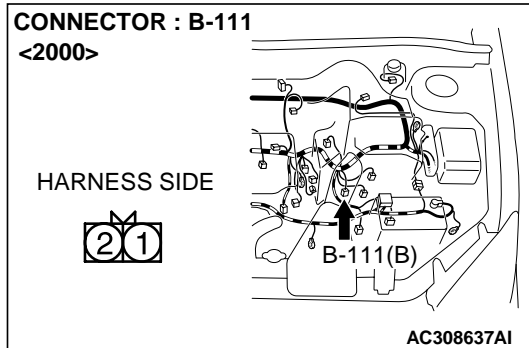
Disconnect backup light switch connector B-111. Then check continuity between the switch terminals.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Other than "R"	1 – 2	Open circuit
R	1 – 2	Less than 2 ohms

**Q: Is the backup light switch in good condition?**

**YES :** Go to Step 3.

**NO :** Replace the backup light switch. If the rear wiper operates normally, it indicates that a correct "R" position signal is sent from the backup light switch.



**STEP 3. Check the ignition switch (IG1) circuit to the backup light switch. Test at backup light switch connector B-111.**

- (1) Disconnect backup light switch connector B-111 and measure the voltage available at the wiring harness side of the connector.
- (2) Turn the ignition switch to the "ON" position.

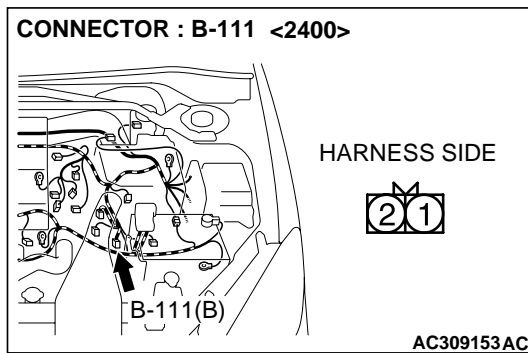
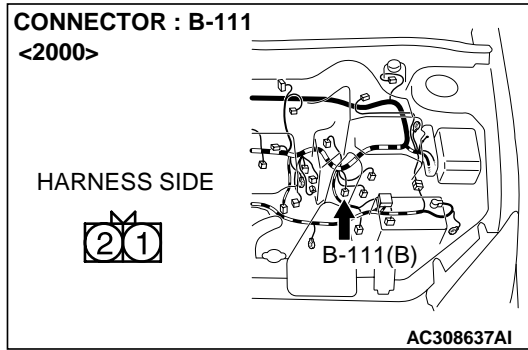
- (3) Measure the voltage between terminal 1 and ground.
  - The voltage should equal approximately 12 volts (battery positive voltage).

**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES :** Go to Step 5.

**NO :** Go to Step 4.

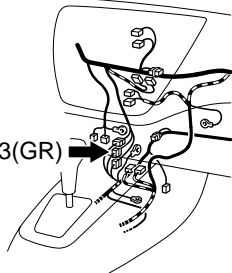
**STEP 4. Check the wiring harness between backup light switch connector B-111 (terminal 1) and the ignition switch (IG1).**



**CONNECTOR : C-123**

1	2	3	4
5	6	7	8
9	10		

C-123(GR)



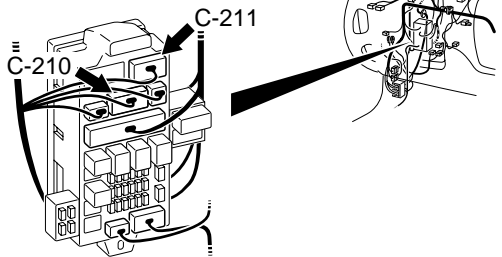
AC307071AG

**NOTE:** Also check junction block connectors C-210, C-211 and intermediate connector C-123 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connectors C-210, C-211 or intermediate connectors C-123 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

**Q:** Is the wiring harness between backup light switch connector B-111 (terminal 1) and the ignition switch (IG1) in good condition?

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the rear wiper operates normally, it indicates that a correct "R" position signal is sent from the backup light switch.

**CONNECTORS : C-210, C-211**JUNCTION BLOCK  
(FRONT VIEW)

HARNESS SIDE

C-210

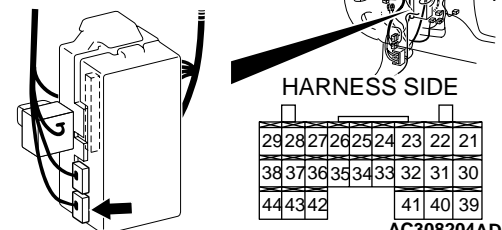
6	5	4		3	2	1
14	13	12	11	10	9	8
7						

HARNESS SIDE

C-211

2		1
6	5	4
3		

AC307076AH

**CONNECTORS : C-227**JUNCTION BLOCK  
(REAR VIEW)

HARNESS SIDE

29	28	27	26	25	24	23	22	21
38	37	36	35	34	33	32	31	30
44	43	42				41	40	39

AC308204AD

**STEP 5.** Check ETACS-ECU connector C-227 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

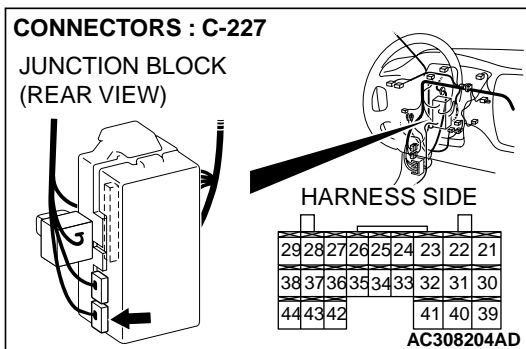
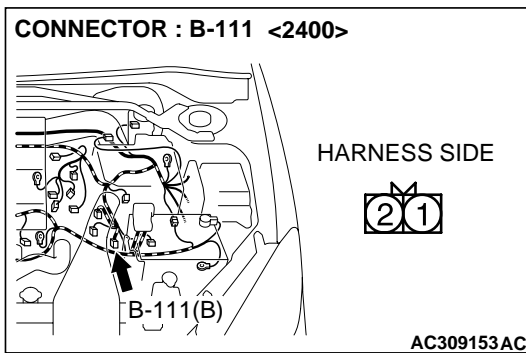
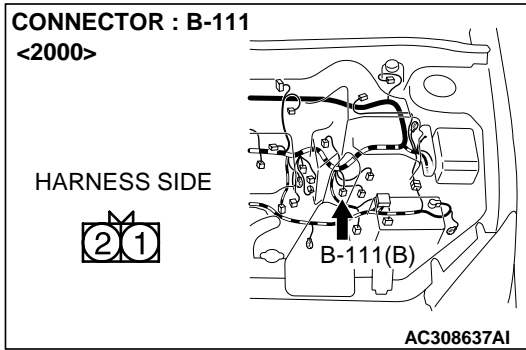
**Q:** Are ETACS-ECU connector C-227 in good condition?

**YES :** Go to Step 6.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the rear wiper operates normally, it indicates that a correct "R" position signal is sent from the backup light switch.



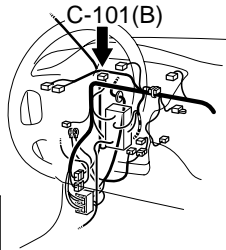
**STEP 6. Check the wiring harness between backup light switch connector B-111 (terminal 2) and ETACS-ECU connector C-227 (terminal 39).**



**CONNECTOR : C-101**

HARNESS SIDE

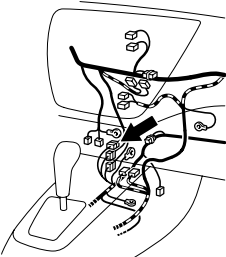
1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22



AC307069AZ

**CONNECTOR : C-124**

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	



AC307071AI

**NOTE:** Also check joint connector C-101 and intermediate connector C-124 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If joint connector C-101 or intermediate connectors C-124 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

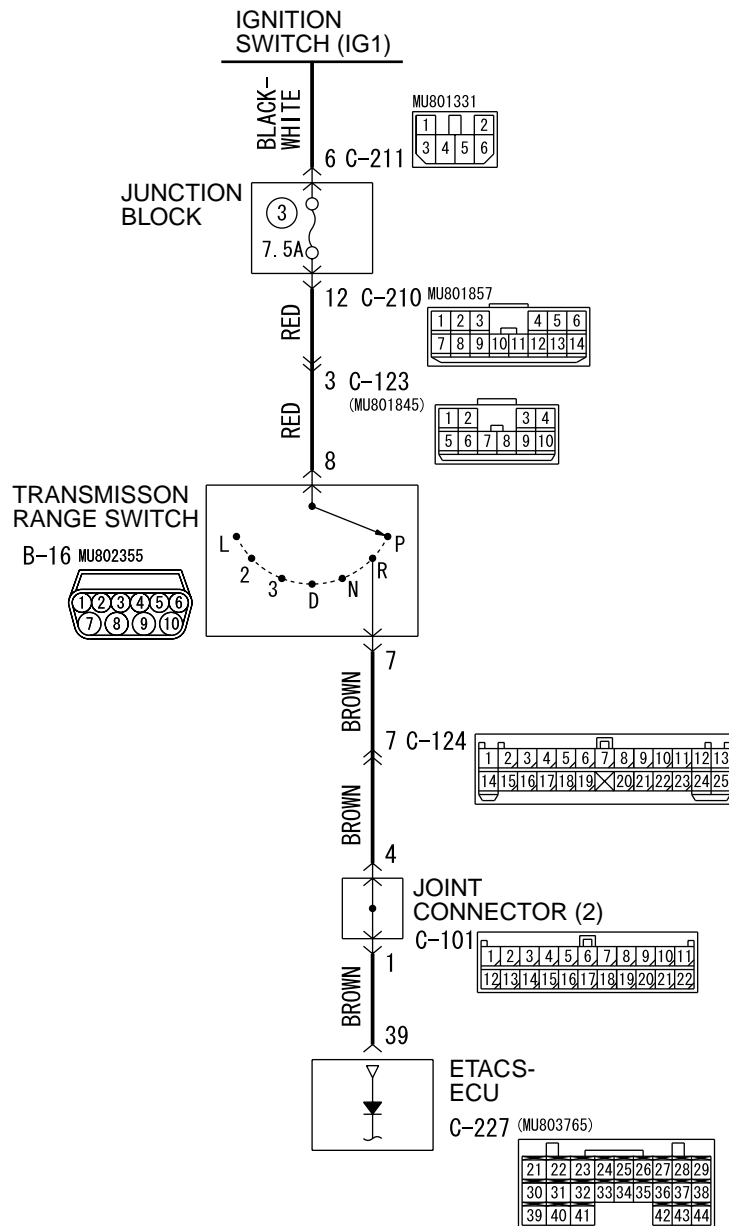
**Q: Is the wiring harness between backup light switch connector B-111 (terminal 2) and ETACS-ECU connector C-227 (terminal 39) in good condition?**

**YES :** Replace the ETACS-ECU. If the rear wiper operates normally, it indicates that a correct "R" position signal is sent from the backup light switch.

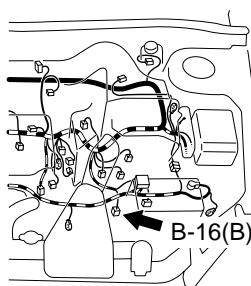
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the rear wiper operates normally, it indicates that a correct "R" position signal is sent from the backup light switch.

**INSPECTION PROCEDURE N-3: ETACS-ECU does not receive "R" position signal from the transmission range switch <A/T>.**

**Transmission range Switch Input Circuit**

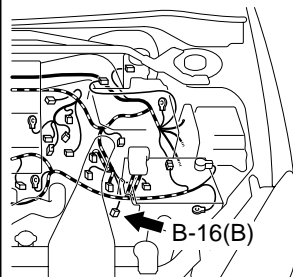


W4J54M129A

CONNECTOR : B-16  
<2000>

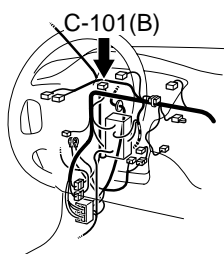
AC308637AJ

CONNECTOR : B-16 &lt;2400&gt;



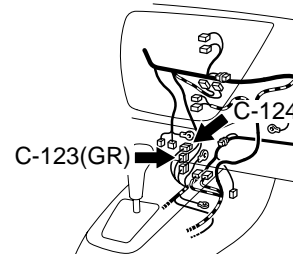
AC309153AD

CONNECTOR : C-101

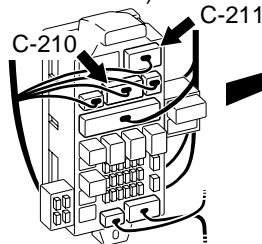


AC307069AY

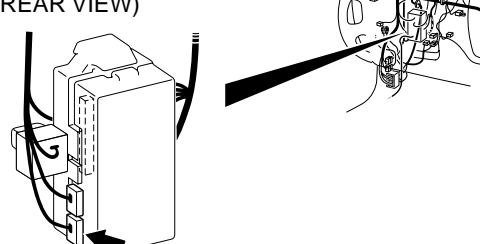
CONNECTORS : C-123, C-124



AC307071AH

CONNECTORS : C-210, C-211  
JUNCTION BLOCK  
(FRONT VIEW)

AC307075AQ

CONNECTOR : C-227  
JUNCTION BLOCK  
(REAR VIEW)

AC308204AM

**CIRCUIT OPERATION**

The ETACS-ECU operates the rear wiper according to signal from the transmission range switch.

**TECHNICAL DESCRIPTION (COMMENT)**

If the signal is not normal, the rear wiper does not operate consecutively twice when the selector lever is moved to the "R" position with the rear wiper on. If the signal is not normal, the transmission range switch or the ETACS-ECU may be defective.

*NOTE: The transmission range switch is shared with the automatic transaxle control system. If this problem is not solved, carry out the troubleshooting regarding the automatic transaxle control system. Refer to GROUP 23A, A/T Diagnosis [P.23A-11](#) <2000> [P.23B-12](#) <2400> .*

**TROUBLESHOOTING HINTS**

- The transmission range switch may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

## DIAGNOSIS

### Required Special Tools:

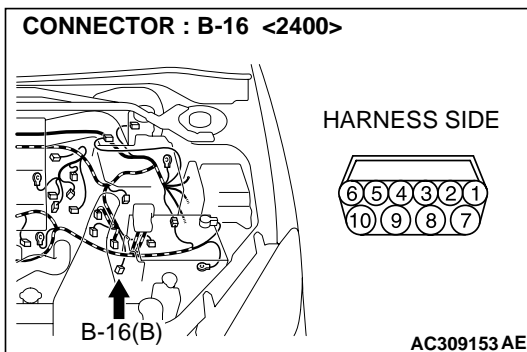
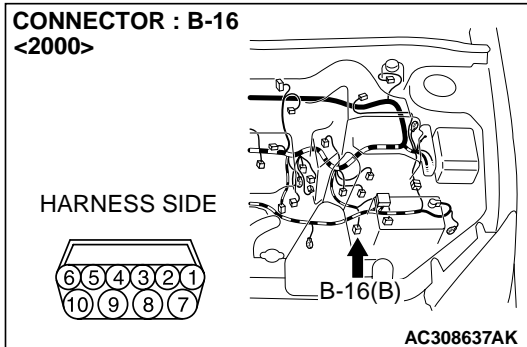
- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

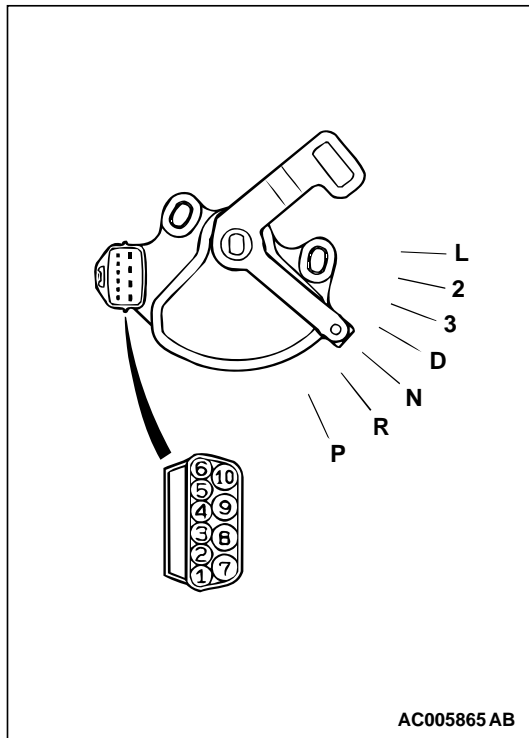
**STEP 1. Check transmission range switch connector B-16 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is transmission range switch connector B-16 in good condition?**

**YES :** Go to Step 2.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the rear wiper operates normally, it indicates that a correct "R" position signal is sent from the transmission range switch.



**STEP 2. Check the transmission range switch.**

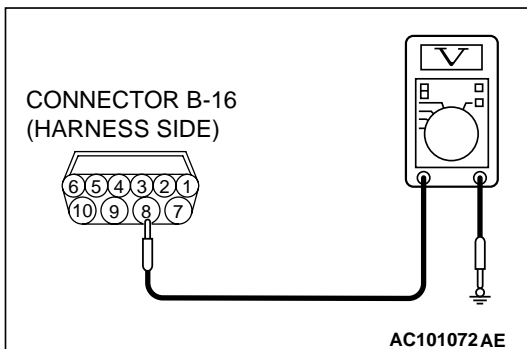
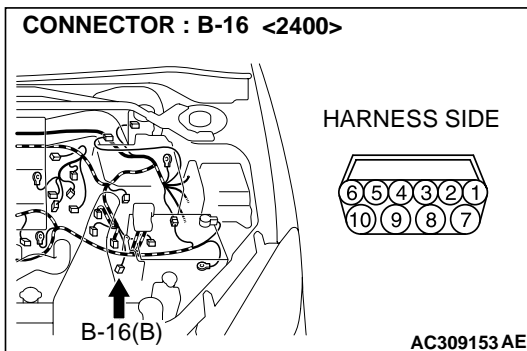
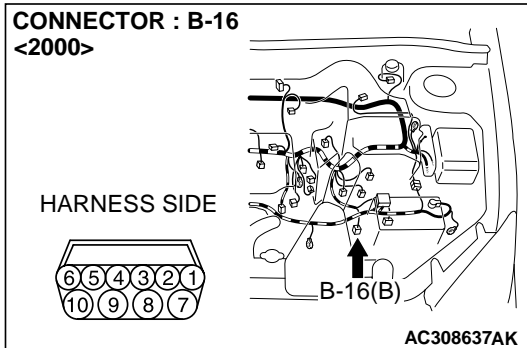
Disconnect transmission range switch connector B-16. Then check continuity between the switch terminals.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
P, N, D, 3, 2, L	7 – 8	Open circuit
R	7 – 8	Less than 2 ohms

**Q: Is the transmission range switch in good condition?**

**YES :** Go to Step 3.

**NO :** Replace the transmission range switch. If the rear wiper operates normally, it indicates that a correct "R" position signal is sent from the transmission range switch.



**STEP 3. Check the ignition switch (IG1) line of the power supply circuit to the park/neutral switch. Test at park/neutral switch connector B-16.**

- (1) Disconnect transmission range switch connector B-16 and measure the voltage available at the wiring harness side of the connector.
- (2) Turn the ignition switch to the "ON" position.

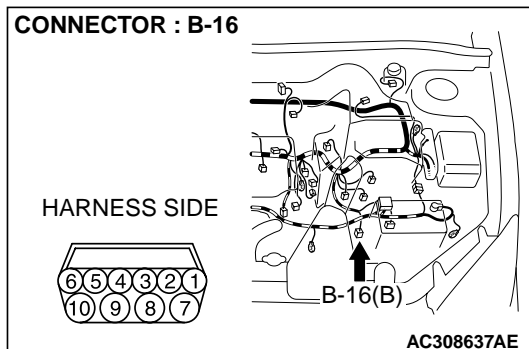
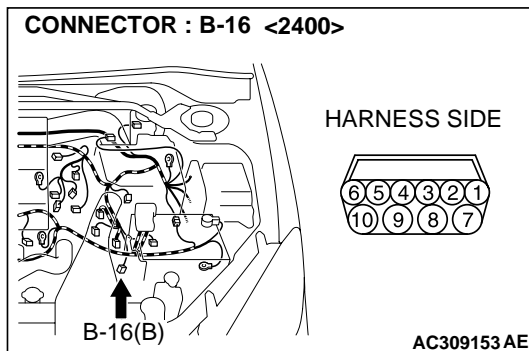
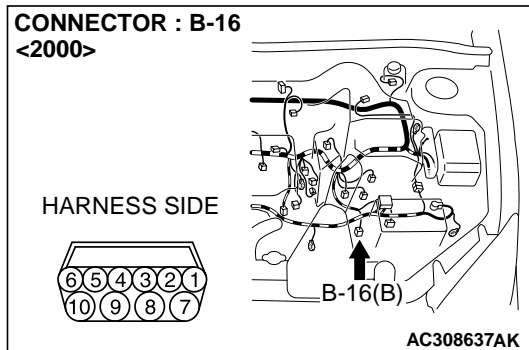
- (3) Measure the voltage between terminal 8 and ground.
  - The voltage should equal approximately 12 volts (battery positive voltage).

**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES :** Go to Step 5.

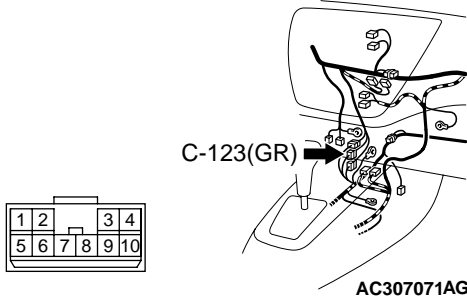
**NO :** Go to Step 4.

**STEP 4.** Check the wiring harness between transmission range switch connector B-16 (terminal 8) and the ignition switch (IG1).





**CONNECTOR : C-123**



*NOTE: Also check junction block connectors C-210, C-211 and intermediate connector C-123 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connectors C-210, C-211 or intermediate connectors C-123 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

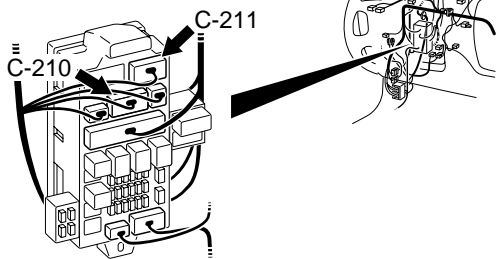
**Q: Is the wiring harness between transmission range switch connector B-16 (terminal 8) and the ignition switch (IG1) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the rear wiper operates normally, it indicates that a correct "R" position signal is sent from the transmission range switch.

**CONNECTORS : C-210, C-211**

JUNCTION BLOCK  
(FRONT VIEW)



HARNESS SIDE

C-210

6	5	4		3	2	1
14	13	12	11	10	9	8
7						

HARNESS SIDE

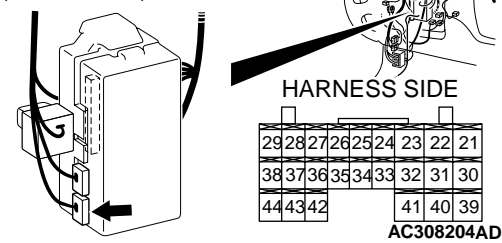
C-211

2		1
6	5	4
3		

AC307076AH

**CONNECTORS : C-227**

JUNCTION BLOCK  
(REAR VIEW)



HARNESS SIDE

29	28	27	26	25	24	23	22	21
38	37	36	35	34	33	32	31	30
44	43	42				41	40	39

AC308204AD

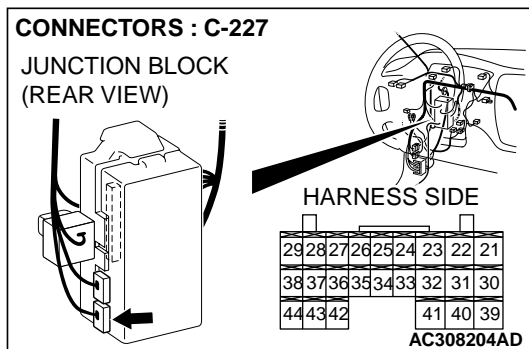
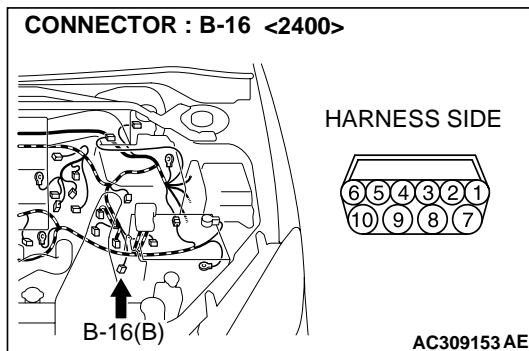
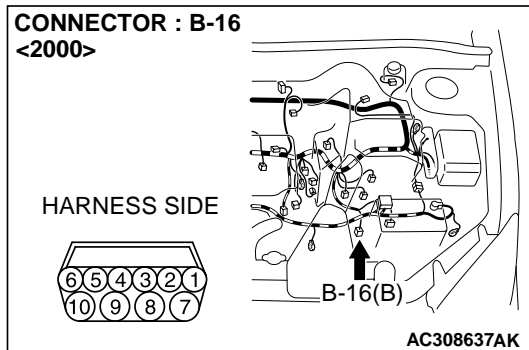
**STEP 5. Check ETACS-ECU connector C-227 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Are ETACS-ECU connector C-227 in good condition?**

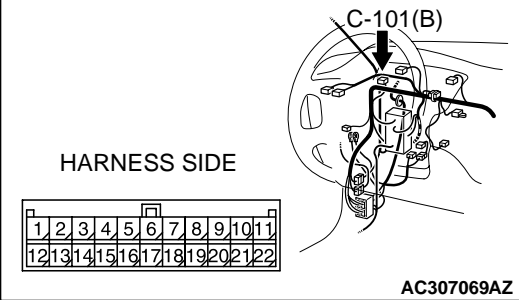
**YES :** Go to Step 6.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the rear wiper operates normally, it indicates that a correct "R" position signal is sent from the transmission range switch.

**STEP 6.** Check the wiring harness between transmission range switch connector B-16 (terminal 7) and ETACS-ECU connector C-227 (terminal 39).



**CONNECTOR : C-101**



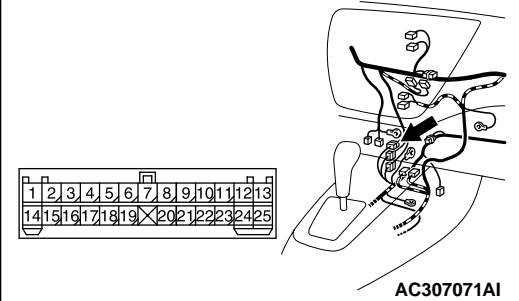
*NOTE: Also check joint connector C-101 and intermediate connector C-124 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If joint connector C-101 or intermediate connectors C-124 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between transmission range switch connector B-16 (terminal 7) and ETACS-ECU connector C-227 (terminal 39) in good condition?**

**YES :** Replace the ETACS-ECU. If the rear wiper operates normally, it indicates that a correct "R" position signal is sent from the transmission range switch.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the rear wiper operates normally, it indicates that a correct "R" position signal is sent from the transmission range switch.

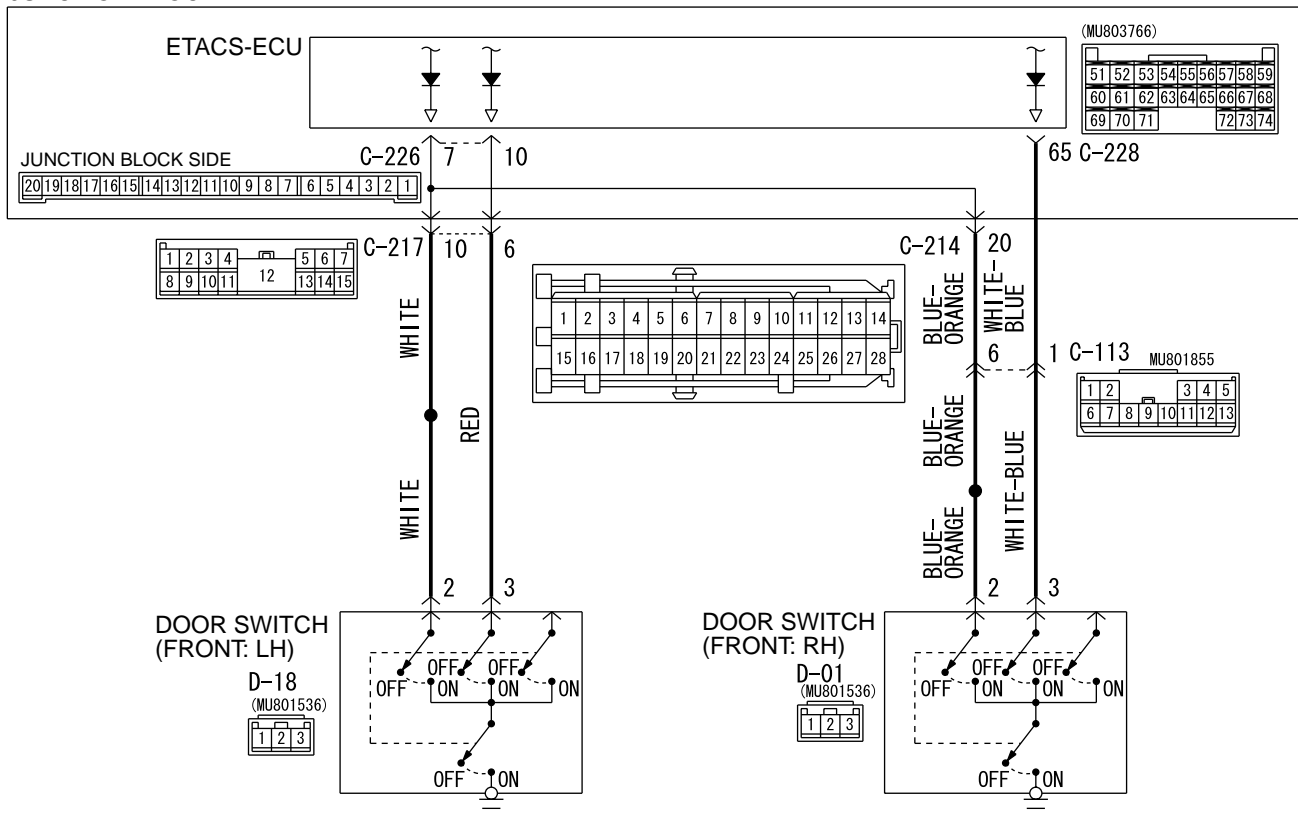
**CONNECTOR : C-124**



**INSPECTION PROCEDURE N-4:** The ETACS-ECU does not receive any signal from the driver's or the front passenger's door switch.

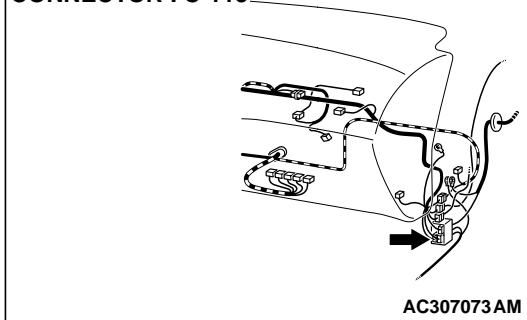
### Front Door Switches Input Circuit

#### JUNCTION BLOCK

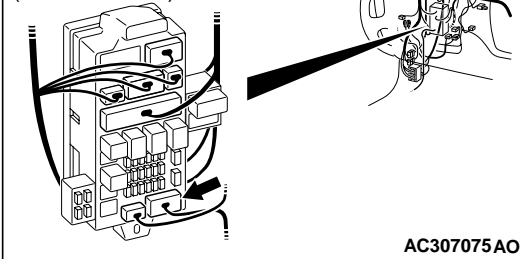


W4J54M130A

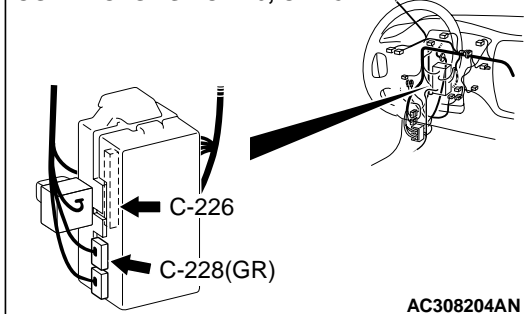
#### CONNECTOR : C-113



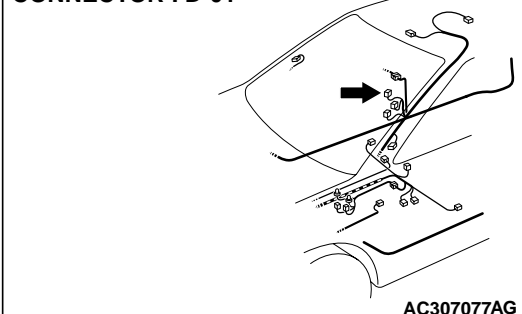
#### CONNECTOR : C-217 JUNCTION BLOCK (FRONT VIEW)



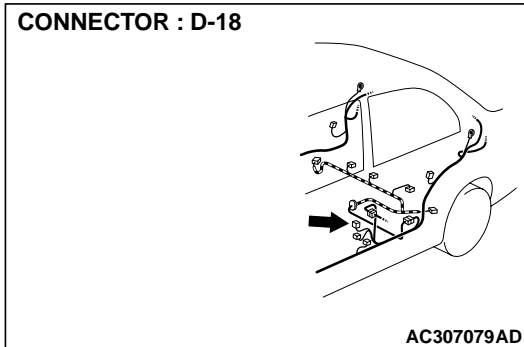
#### CONNECTORS : C-226, C-228



#### CONNECTOR : D-01



CONNECTOR : D-18



### CIRCUIT OPERATION

The ETACS-ECU operates the following functions or systems according to signal from the driver's or front passenger's door switches:

- Ignition key reminder tone alarm function
- Light reminder tone alarm function
- Power window timer function
- Headlight automatic shutdown function
- Dome light

### TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the functions or systems, which are described in "CIRCUIT OPERATION", do not work normally. If the signal is not normal, the driver's or front passenger's door switch or the ETACS-ECU may be defective.

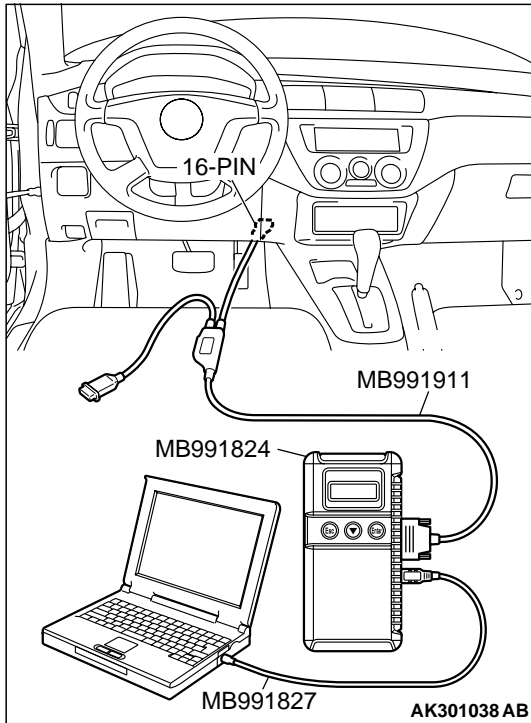
### TROUBLESHOOTING HINTS

- The driver's or front passenger's door switches may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

### DIAGNOSIS

#### Required Special Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B



### STEP 1. Check the input signal (by using the pulse check mode of the monitor).

Check the input signals from the front door switches.

#### ⚠ CAUTION

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

- (1) Connect scan tool MB991958 to the data link connector.
- (2) Operate scan tool MB991958 according to the procedure below to display "PULSE CHECK."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "PULSE CHECK."
- (3) When each front door is opened and closed, check if scan tool MB991958 sounds or not.

#### Q: Does scan tool MB991958 sound when each front door is opened and closed?

When the driver's door is opened and closed, scan tool MB991958 does not sound. : Go to Step 2.

When the front passenger's door is opened and closed, scan tool MB991958 does not sound. : Go to Step 7.

when each front door is opened and closed, scan tool MB991958 sounds. : Replace the ETACS-ECU. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's or the front passenger's door switch should be normal.

### STEP 2. Measure at the lower metal part of the driver's door switch in order to check the ground circuit to the driver's door switch.

*NOTE: Check that the driver's door switch is grounded to the vehicle body by means of its mounting screw.*

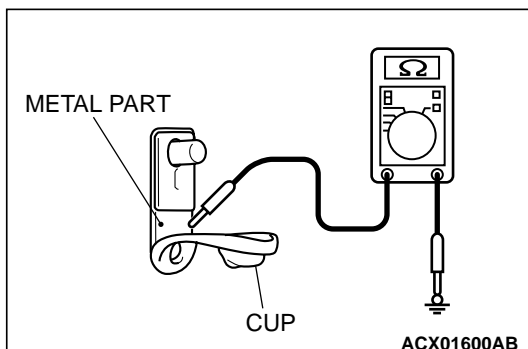
Remove the cap, and measure the resistance value between the lower metal part and the ground.

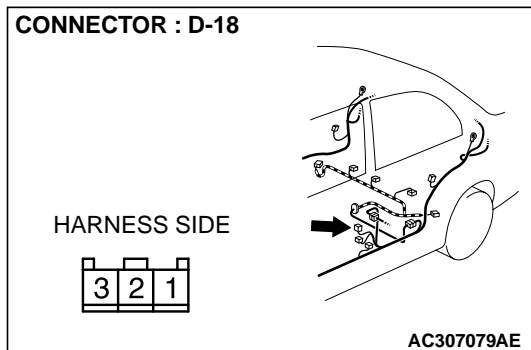
- The resistance should equal 2 ohms or less.

#### Q: Is the measured resistance 2 ohms or less?

**YES** : Go to Step 3.

**NO** : Check the fit of the switch, and repair if necessary. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door switch should be normal.



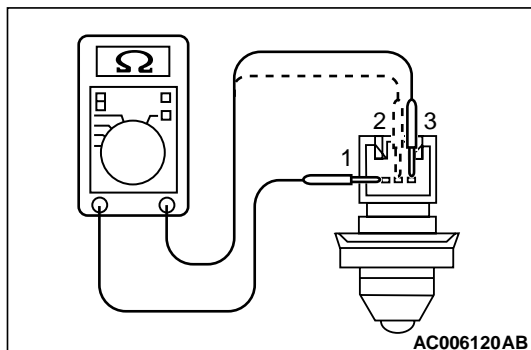


**STEP 3. Check driver's door switch connector D-18 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Are driver's door switch connector D-18 in good condition?**

**YES :** Go to Step 4.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door switch should be normal.



**STEP 4. Check the driver's door switch.**

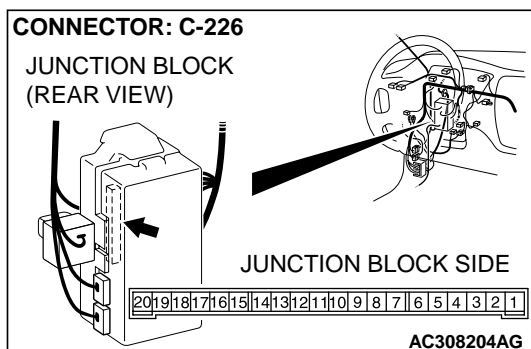
Remove the driver's door switch. Then check the continuity between the switch terminals.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Released	1 - 3, 1 - 2, 2 - 3	Less than 2 ohms
Pressed	1 - 3, 1 - 2, 2 - 3	Open circuit

**Q: Is the driver's door switch in good condition?**

**YES :** Go to Step 5.

**NO :** Replace the front door switch (LH). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door switch should be normal.



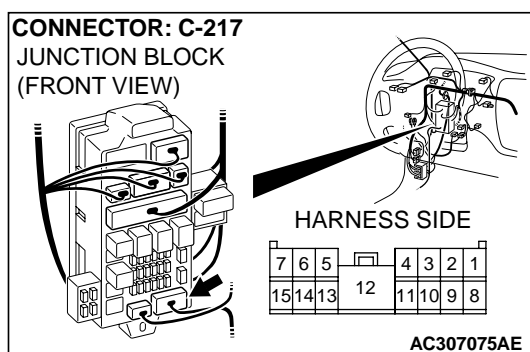
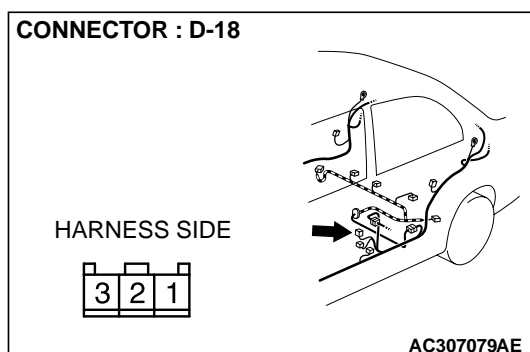
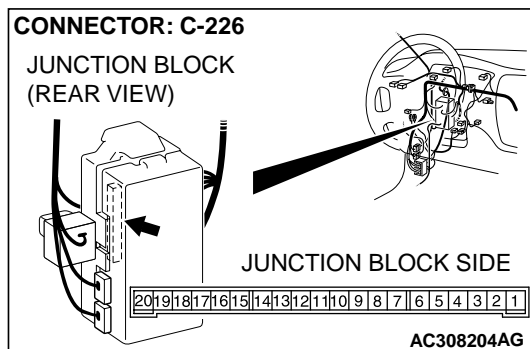
**STEP 5. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Are ETACS-ECU connector C-226 in good condition?**

**YES :** Go to Step 6.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door switch should be normal.

**STEP 6. Check the wiring harness between driver's door switch connector D-18 (terminal 3) and ETACS-ECU connector C-226 (terminal 10).**



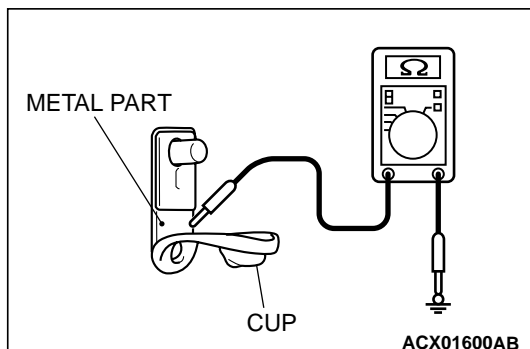
**NOTE:** Also check junction block connector C-217 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-217 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

**Q: Is the wiring harness between driver's door switch connector D-18 (terminal 3) and ETACS-ECU connector C-226 (terminal 10) in good condition?**

**YES :** Replace the ETACS-ECU. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door switch should be normal.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door switch should be normal.





**STEP 7. Measure at the lower metal part of the passenger's door switch in order to check the ground circuit to the front passenger's door switch.**

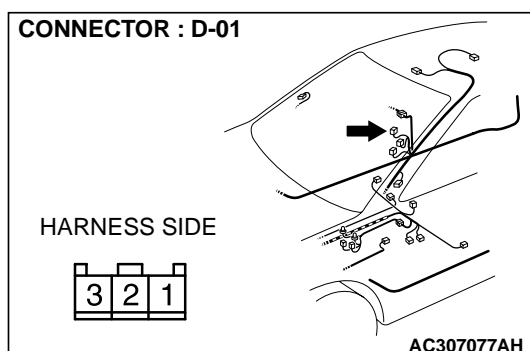
*NOTE: Check that the front passenger's door switch is grounded to the vehicle body by means of its mounting screw. Remove the cap, and measure the resistance value between the lower metal part and the ground.*

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 8.

**NO :** Check the fit of the switch, and repair if necessary. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the front passenger's door switch should be normal.

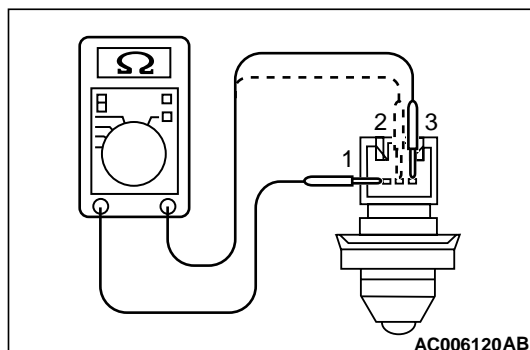


**STEP 8. Check front passenger's door switch connector D-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Are front passenger's door switch connector D-01 in good condition?**

**YES :** Go to Step 9.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the front passenger's door switch should be normal.



**STEP 9. Check the front passenger's door switch.**

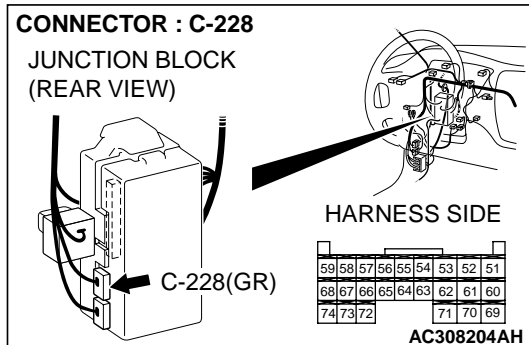
Remove the front passenger's door switch. Then check the continuity between the switch terminals.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Released	1 - 3, 1 - 2, 2 - 3	Less than 2 ohms
Pressed	1 - 3, 1 - 2, 2 - 3	Open circuit

**Q: Is the front passenger's door switch in good condition?**

**YES :** Go to Step 10.

**NO :** Replace the front passenger's door switch. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the front passenger's door switch should be normal.

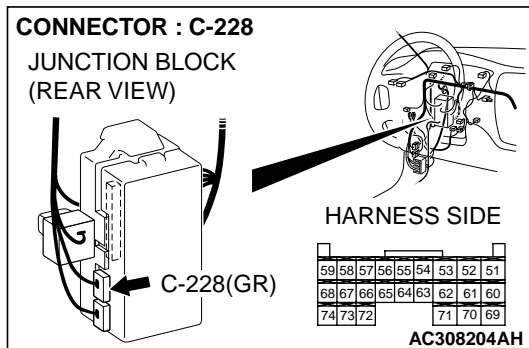


**STEP 10. Check ETACS-ECU connector C-228 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

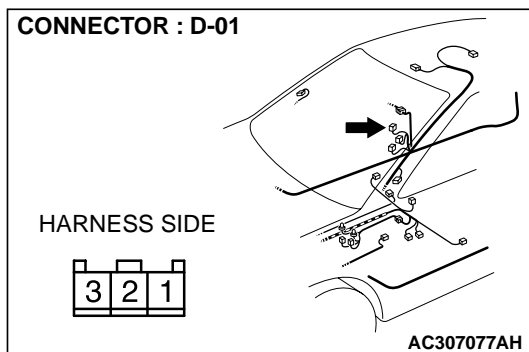
**Q: Are ETACS-ECU connector C-228 in good condition?**

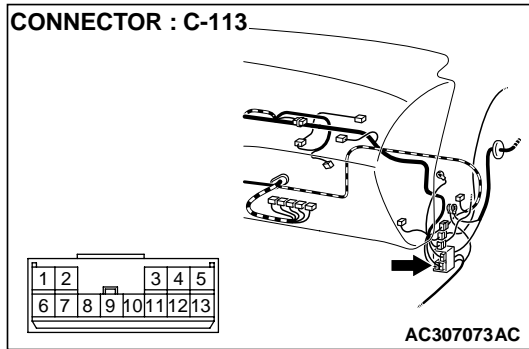
**YES :** Go to Step 11.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the front passenger's door switch should be normal.



**STEP 11. Check the wiring harness between front passenger's door switch connector D-01 (terminal 3) and ETACS-ECU connector C-228 (terminal 65).**





*NOTE: Also check intermediate connector C-113 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors C-113 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between front passenger's door switch connector D-01 (terminal 3) and ETACS-ECU connector C-228 (terminal 65) in good condition?**

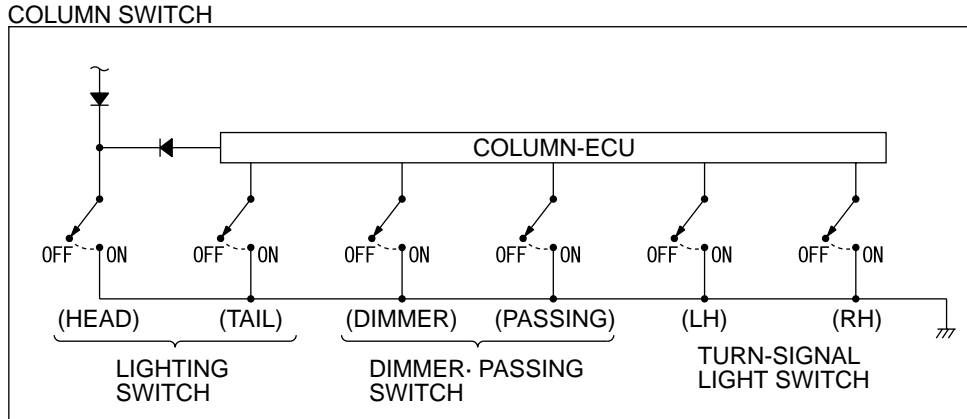
**YES :** Replace the ETACS-ECU. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the front passenger's door switch should be normal.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the front passenger's door switch should be normal.

**INSPECTION PROCEDURE N-5: Column Switch: ETACS-ECU does not receive any signal from the taillight switch, the headlight switch, the passing light switch, the dimmer switch, the turn-signal light switch or switch.**

*NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991862. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-10."*

#### Turn-signal Light and Lighting Switch Input Circuit



W4J54M52AA

#### CIRCUIT OPERATION

The ETACS-ECU operates the following equipment or functions according to signal from the column switch (turn-signal light and lighting switch):

- Light reminder tone alarm function
- Headlight
- Turn-signal light

#### TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the equipment or functions, which are described in "CIRCUIT OPERATION", do not work normally. If the signal is not normal, the column switch (turn-signal light and lighting switch) or the ETACS-ECU may be defective.

#### TROUBLESHOOTING HINTS

- The column switch (turn-signal light and lighting switch) may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

## **DIAGNOSIS**

### **Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991922: Probe Harness

**STEP 1.** Use scan tool MB991958 to select "ECU COMM CHK" on the SWS monitor display.

Check the column-ECU.

**⚠ CAUTION**

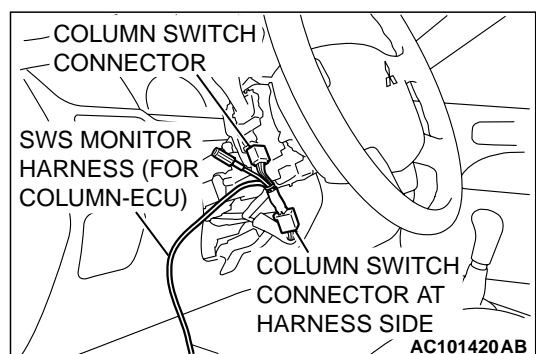
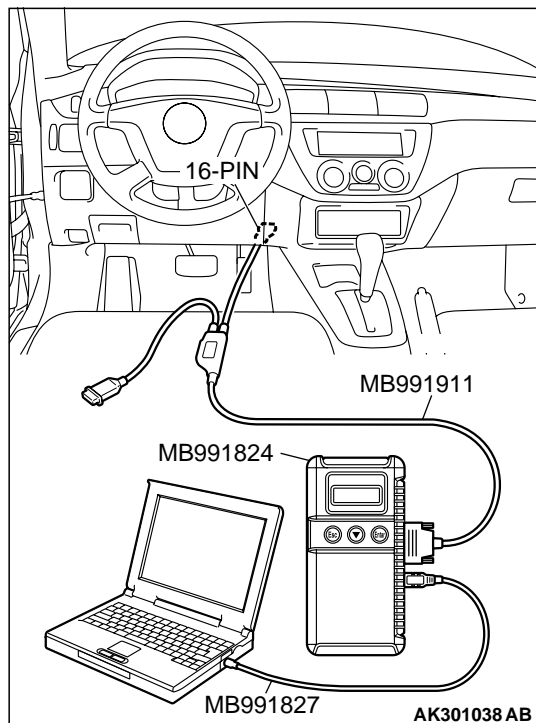
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect the DLC harness before connecting the column-ECU harness. Be sure to connect SWS monitor kit MB991862 after turning on scan tool MB991958.

- (1) Connect scan tool MB991958 to the data link connector.
- (2) Connect SWS monitor kit MB991862 to the column switch connector.
- (3) Turn the ignition switch to the "LOCK" (OFF) position.
- (4) Operate scan tool MB991958 according to the procedure below to display "ECU COMM CHK."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "SWS MONITOR."
  4. Select "ECU COMM CHK."
- (5) Scan tool MB991958 should show "OK" on the "ECU COMM CHK" menu for the "COLUMN ECU" menu.

**Q: Is "OK" displayed on the "COLUMN ECU" menu?**

**YES :** Go to Step 2.

**NO :** Refer to Inspection Procedure A-2 "Communication with column switch (column-ECU) is not possible P.54B-35."



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**STEP 2. Replace the ECU.**

- (1) Replace the column switch (turn-signal light and lighting switch).
- (2) If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the column switch (turn-signal light and lighting switch) should be normal.

**Q: Does the column switch (turn-signal light and lighting switch) send normal signal to the ECU?**

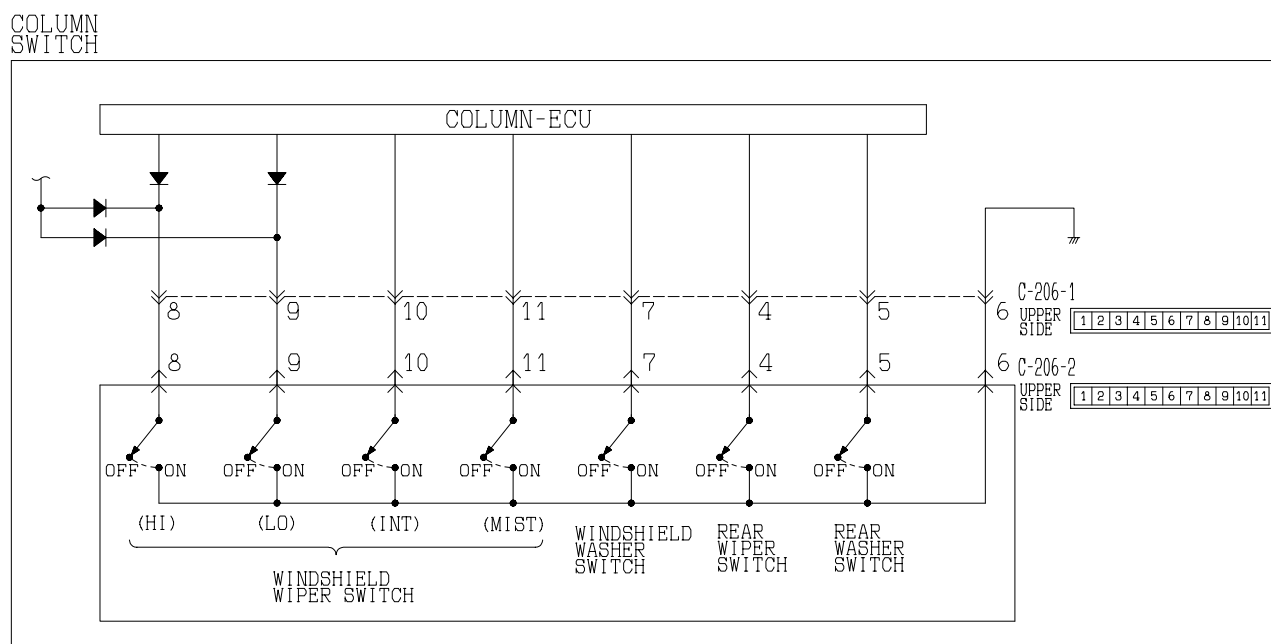
**YES :** No action is necessary and testing is complete.

**NO :** Replace the ETACS-ECU. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the column switch (turn-signal light and lighting switch) should be normal.

**INSPECTION PROCEDURE N-6: Column switch: ETACS-ECU does not receive any signal from windshield mist wiper switch, windshield intermittent wiper switch, windshield low-speed wiper switch, windshield high-speed wiper switch, windshield washer switch, rear wiper switch or rear washer switch.**

*NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991862. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-10."*

**Windshield Wiper and Washer Switch Input Circuit**



W2J08M16AA

### CIRCUIT OPERATION

The ETACS-ECU operates the following equipment or functions according to signal from the column switch (windshield wiper and washer switch):

- Windshield wiper and washer
- Rear wiper and washer

### TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the equipment, which is described in "CIRCUIT OPERATION", does not work normally.

### TROUBLESHOOTING HINTS

- The column switch (windshield wiper and washer switch) may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector



## **DIAGNOSIS**

### **Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991922: Probe Harness

**STEP 1.** Use scan tool MB991958 to select "ECU COMM CHK" on the SWS monitor display.

Check the column-ECU.

**⚠ CAUTION**

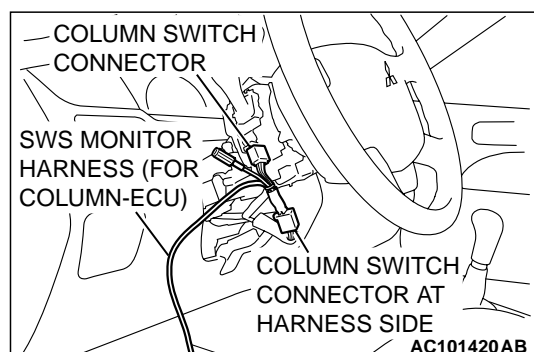
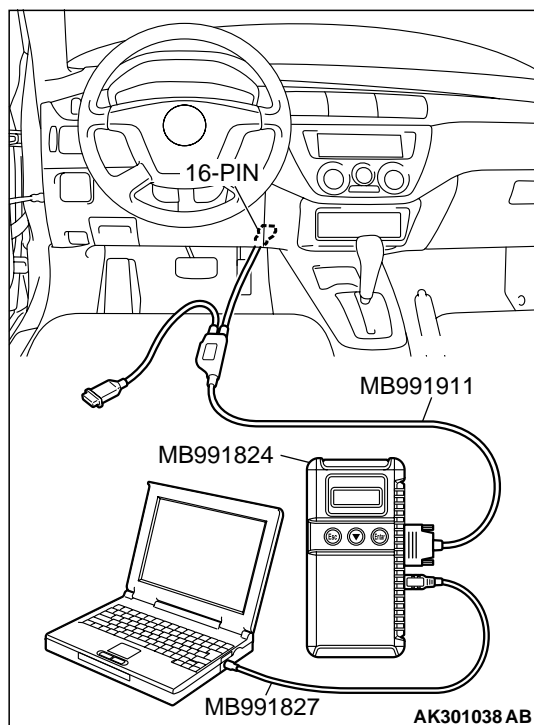
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect the DLC harness before connecting the column-ECU harness. Be sure to connect SWS monitor kit MB991862 after turning on scan tool MB991958.

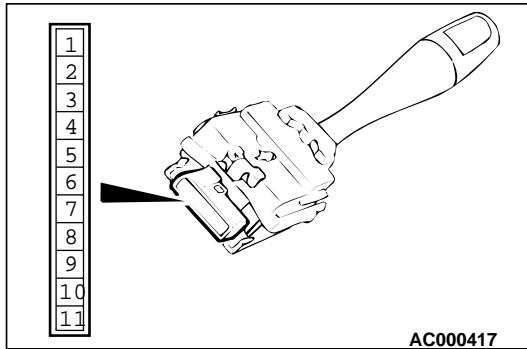
- (1) Connect scan tool MB991958 to the data link connector.
- (2) Connect SWS monitor kit MB991862 to the column switch connector.
- (3) Turn the ignition switch to the "ON" position.
- (4) Operate scan tool MB991958 according to the procedure below to display "ECU COMM CHK."
  1. Select "SYSTEM SELECT."
  2. Select "SWS."
  3. Select "SWS MONITOR."
  4. Select "ECU COMM CHK."
- (5) Scan tool MB991958 should show "OK" on the "ECU COMM CHK" menus for both the "COLUMN ECU" menu.

**Q: Is "OK" displayed on the "COLUMN ECU" menu?**

**YES :** Go to Step 2.

**NO :** Refer to Inspection Procedure A-2 "Communication with column switch (column-ECU) is not possible P.54B-35."





**STEP 2. Check the windshield wiper and washer switch.**

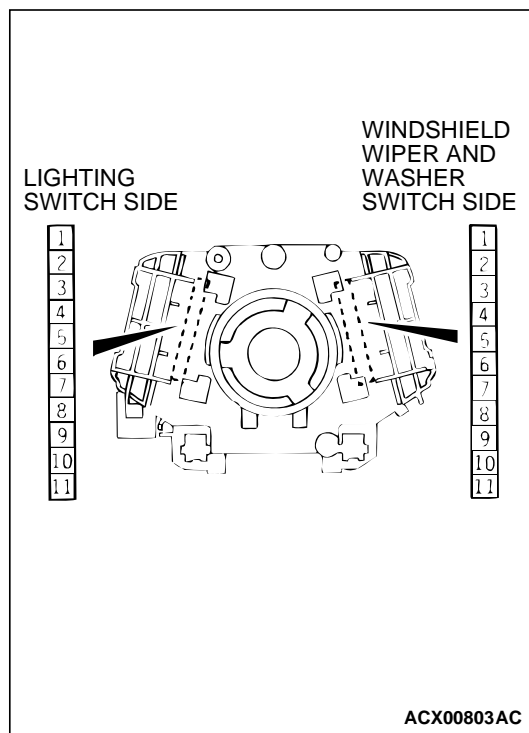
Remove the windshield wiper and washer switch. Then check continuity between the switch terminals.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
OFF	4 – 6, 5 – 6, 6 – 7, 6 – 8, 6 – 9, 6 – 10, 6 – 11	Open circuit
Windshield mist wiper switch	6 – 11	Less than 2 ohms
Windshield intermittent wiper switch	6 – 10	Less than 2 ohms
Windshield low-speed wiper switch	6 – 9	Less than 2 ohms
Windshield high-speed wiper switch	6 – 8	Less than 2 ohms
Windshield washer switch	6 – 7	Less than 2 ohms
Rear wiper switch	4 – 6	Less than 2 ohms
Rear washer switch	5 – 6	Less than 2 ohms

**Q: Are the windshield wiper and washer switch in good condition?**

**YES :** Go to Step 3.

**NO :** Replace the column switch. If the equipment, which are described in "CIRCUIT OPERATION", work normally, the input signal from the column switch (windshield wiper and washer switch) should be normal.

**STEP 3. Check the switch body.**

Remove the turn-signal light and lighting switch and windshield wiper and washer switch. Then check continuity between the switch body terminals.

SWITCH BODY	TESTER CONNECTION	SPECIFIED CONDITION
Lighting switch side – Windshield wiper and washer switch side	4 – 4 5 – 5 6 – 6 7 – 7 8 – 8 9 – 9 10 – 10 11 – 11	Less than 2 ohms

**Q: Is the switch body in good condition?**

**YES :** Go to Step 4.

**NO :** Replace the column switch. If the equipment, which are described in "CIRCUIT OPERATION", work normally, the input signal from the column switch (windshield wiper and washer switch) should be normal.

**STEP 4. Replace the ECU.**

- (1) Replace the column switch (turn-signal light and lighting switch).
- (2) If the equipment, which are described in "CIRCUIT OPERATION", work normally, the input signal from the column switch (windshield wiper and washer switch) should be normal.

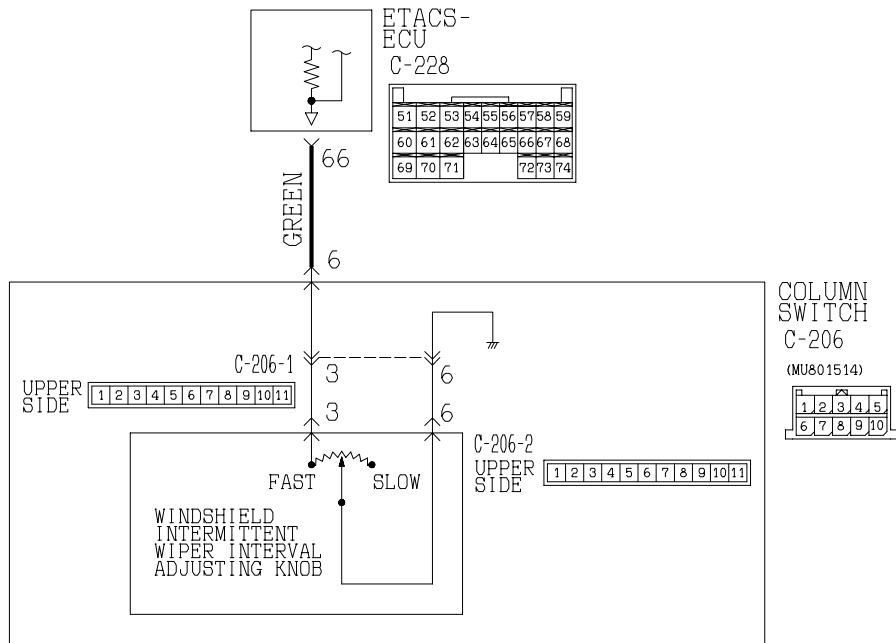
**Q: Does the column switch (windshield wiper and washer switch) send a normal signal to the ECU?**

**YES :** No action is necessary and testing is complete.

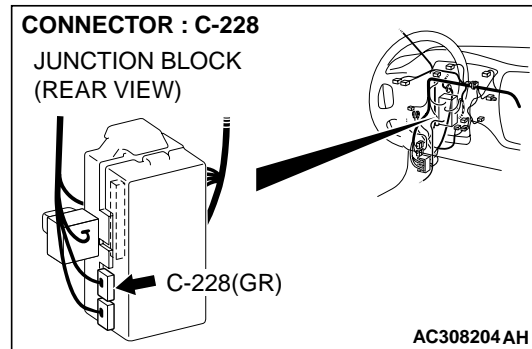
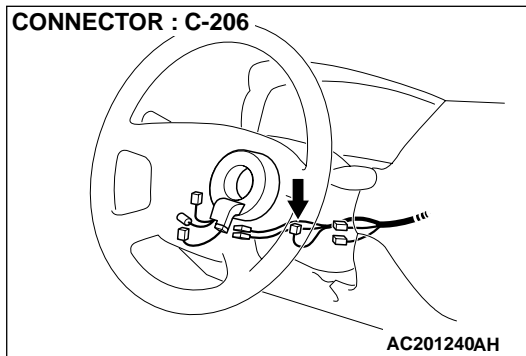
**NO :** Replace the ETACS-ECU. If the equipment, which are described in "CIRCUIT OPERATION", work normally, the input signal from the column switch (windshield wiper and washer switch) should be normal.

**INSPECTION PROCEDURE N-7: Column Switch: ETACS-ECU does not receive any signal from the windshield intermittent wiper interval adjusting knob.**

**Windshield Intermittent Wiper Interval Adjusting Knob Input Circuit**



W2J08M17AA



### CIRCUIT OPERATION

The ETACS-ECU calculates the windshield intermittent wiper interval according to the position of the windshield intermittent wiper interval adjusting knob, which is incorporated in column switch (windshield wiper and washer switch).

**TECHNICAL DESCRIPTION (COMMENT)**

If the windshield intermittent wiper interval can not be adjusted, the column switch or the ETACS-ECU may be defective.

**TROUBLESHOOTING HINTS**

- The column switch (windshield wiper and washer switch) may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

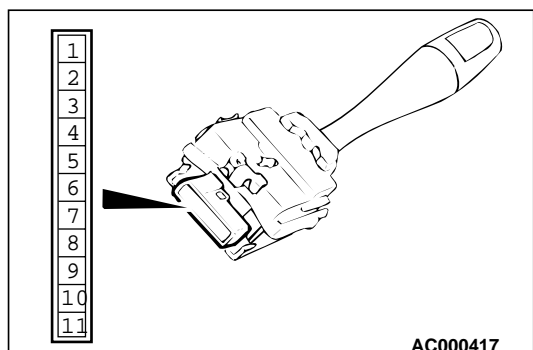
**STEP 1. Check the windshield intermittent wiper interval adjusting knob.**

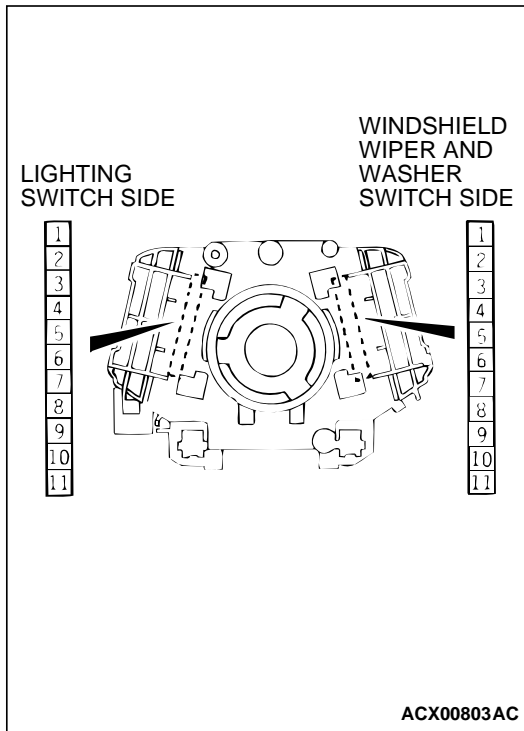
- (1) Remove the windshield wiper and washer switch, and check at the switch side.
- (2) Measure the resistance value between terminals 3 and 6. The measured resistance should change smoothly from approximately 0 ohm ("FAST" position) to 1 kiloohm ("SLOW" position).

**Q: Is the windshield intermittent wiper interval adjusting knob in good condition?**

**YES :** Go to Step 2.

**NO :** Replace the column switch (windshield wiper and washer switch). If the wiper interval can be adjusted normally, it indicates that the windshield intermittent wiper interval adjusting knob should send a signal to the ECU.





**STEP 2. Check the column switch body.**

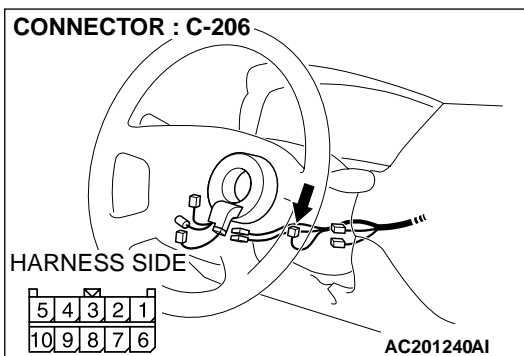
Remove the turn-signal light and lighting switch and windshield wiper and washer switch. Then check continuity between the switch body terminals.

SWITCH BODY	TESTER CONNECTION	SPECIFIED CONDITION
Lighting switch side – Windshield wiper and washer switch side	3 – 3 6 – 6	Less than 2 ohms

**Q: Is the column switch body in good condition?**

**YES :** Go to Step 3.

**NO :** Replace the column switch body. If the wiper interval can be adjusted normally, it indicates that the windshield intermittent wiper interval adjusting knob should send a signal to the ECU.

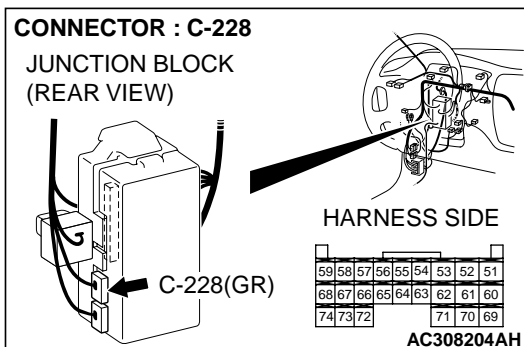


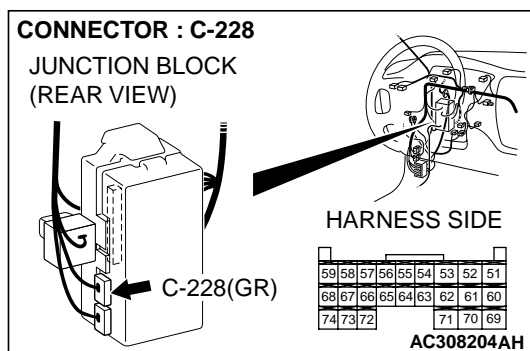
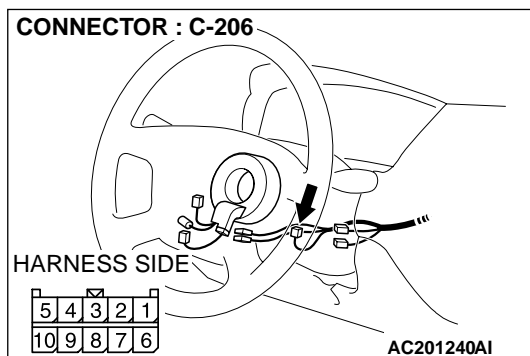
**STEP 3. Check column switch connector C-206 and ETACS-ECU connector C-228 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Are column switch connector C-206 and ETACS-ECU connector C-228 in good condition?**

**YES :** Go to Step 4.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the wiper interval can be adjusted normally, it indicates that the windshield intermittent wiper interval adjusting knob should send a signal to the ECU.





**STEP 4. Check the wiring harness between column switch connector C-206 (terminal 6) and ETACS-ECU connector C-228 (terminal 66).**

**Q: Is the wiring harness between column switch connector C-206 (terminal 6) and ETACS-ECU connector C-228 (terminal 66) in good condition?**

**YES :** Go to Step 5.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the wiper interval can be adjusted normally, it indicates that the windshield intermittent wiper interval adjusting knob should send a signal to the ECU.

**STEP 5. Replace the ECU.**

(1) Replace the ETACS-ECU.

(2) If the wiper interval can be adjusted normally, it indicates that the windshield intermittent wiper interval adjusting knob should send a signal to the ECU.

**Q: Can input signal be confirmed when the windshield intermittent wiper interval adjusting knob is operated?**

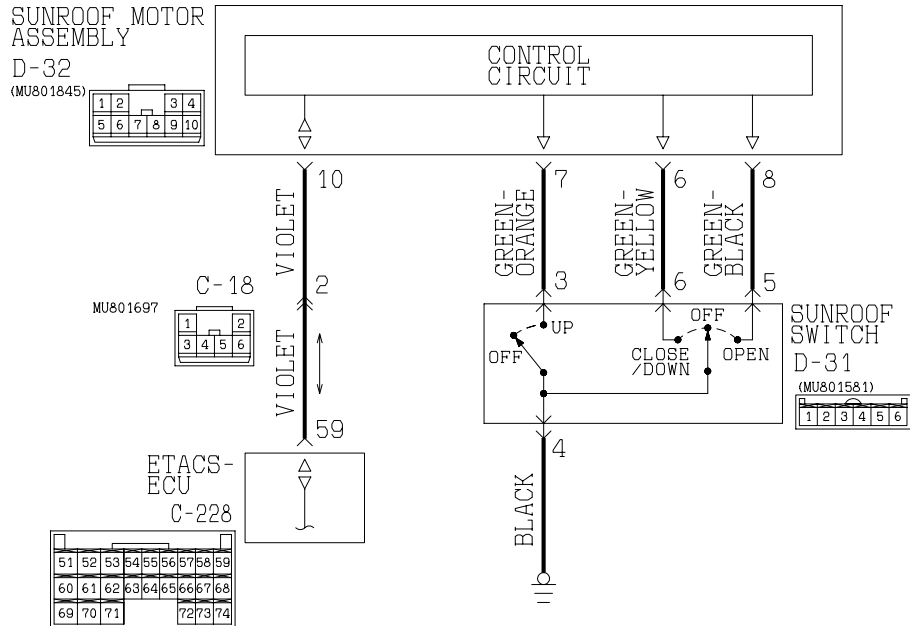
**YES :** No action is necessary and testing is complete.

**NO :** Replace the column switch (windshield wiper and washer switch). If the wiper interval can be adjusted normally, it indicates that the windshield intermittent wiper interval adjusting knob should send a signal to the ECU.

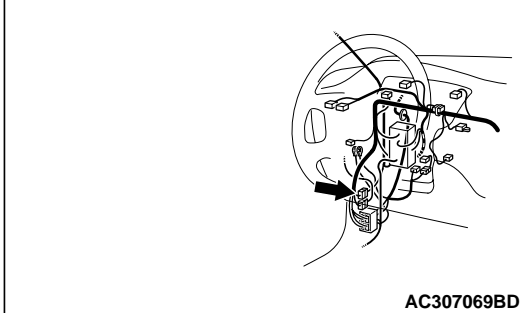


**INSPECTION PROCEDURE N-8: Sunroof Switch: The ETACS-ECU does not receive any signal from the up, open or close/down switch.**

**Sunroof Switch Input Circuit**

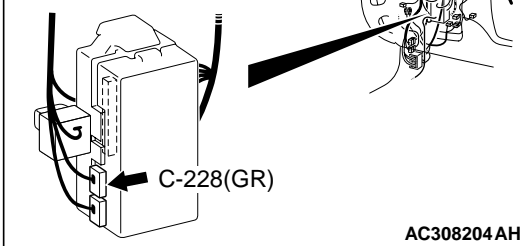


**CONNECTORS : C-18**

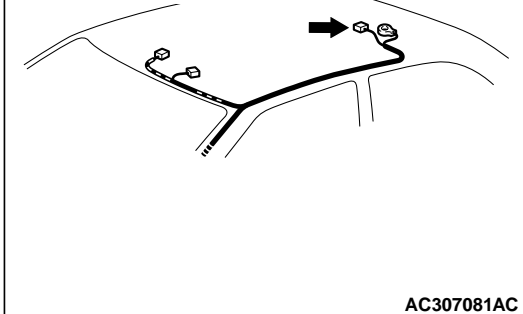


**CONNECTOR : C-228**

**JUNCTION BLOCK (REAR VIEW)**



**CONNECTOR : D-32**



**CIRCUIT OPERATION**

The ETACS-ECU receives a signal through the sunroof motor assembly via the SWS communication line from the sunroof switch, and sends a signal to the data link connector.

**TECHNICAL DESCRIPTION (COMMENT)**

If the SWS communication line between the sunroof motor assembly and the ETACS-ECU is defective, the ETACS-ECU cannot identify the input signal from the sunroof switch even if the sunroof is normal.

**TROUBLESHOOTING HINTS**

- The sunroof switch may be defective
- The sunroof motor assembly may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

**STEP 1. Verify the sunroof operation.****Q: Does the sunroof work normally?**

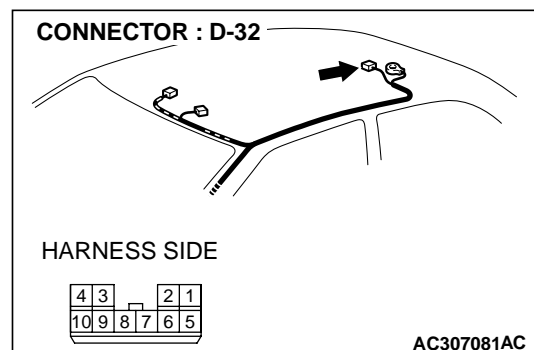
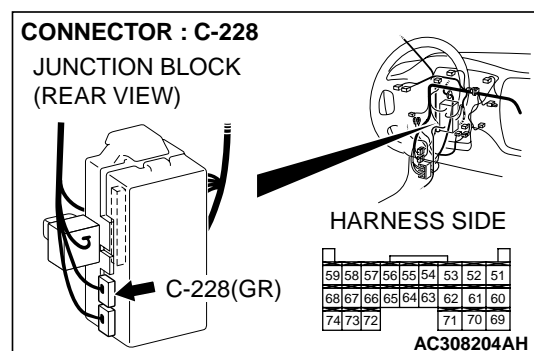
**YES** : Go to Step 2.

**NO** : Refer to Inspection Procedure F-1 "Sunroof does not operate [P.54B-189](#)."

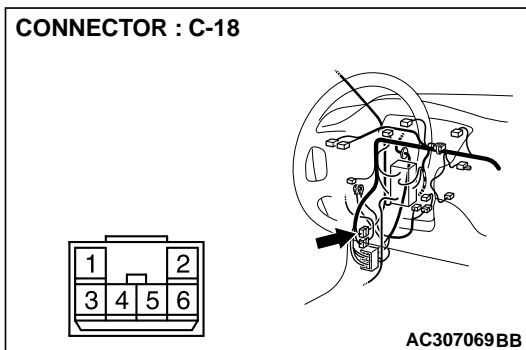
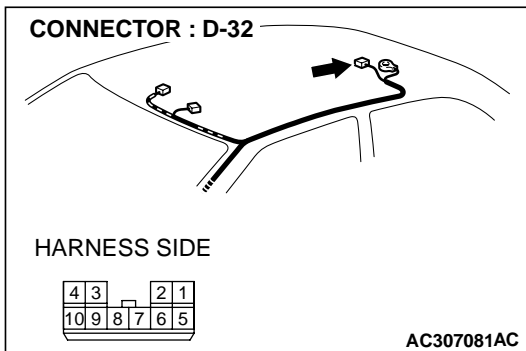
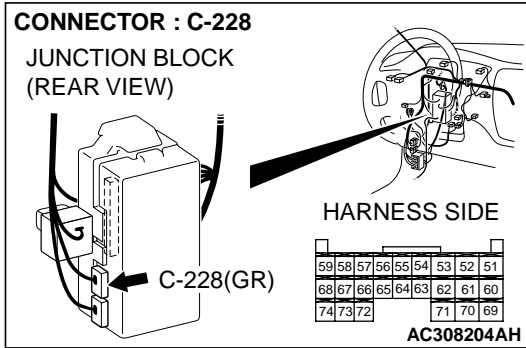
**STEP 2. Check sunroof motor assembly connector D-32 and ETACS-ECU connector C-228 for loose, corroded or damaged terminals, or terminals pushed back in the connector.****Q: Are sunroof motor assembly connector D-32 and ETACS-ECU connector C-228 in good condition?**

**YES** : Go to Step 3.

**NO** : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the sunroof operates normally, it indicates that a correct signal is sent from the sunroof switch.



**STEP 3. Check the wiring harness between sunroof motor assembly connector D-32 (terminal 10) and ETACS-ECU connector C-228 (terminal 59).**



*NOTE: Also check intermediate connector C-18 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-18 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between sunroof motor assembly connector D-32 (terminal 10) and ETACS-ECU connector C-228 (terminal 59) in good condition?**

**YES :** Go to Step 4.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the sunroof operates normally, it indicates that a correct signal is sent from the sunroof switch.

**STEP 4. Replace the ECU.**

- (1) Replace the sunroof motor assembly.
- (2) If the sunroof operates normally, it indicates that a correct signal is sent from the sunroof switch.

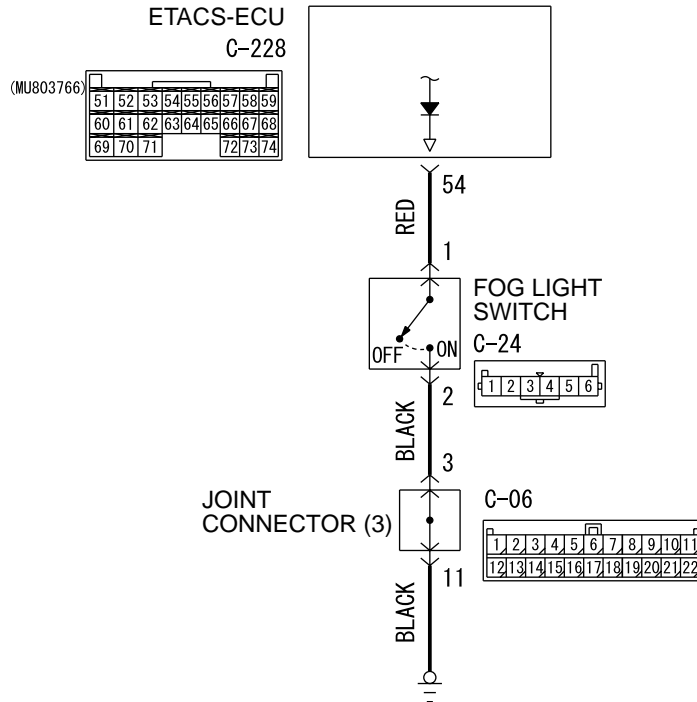
**Q: Does the ETACS-ECU receive correct signals from the sunroof switch?**

**YES :** No action is necessary and testing is complete.

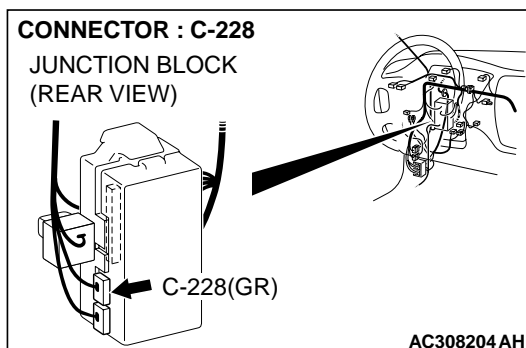
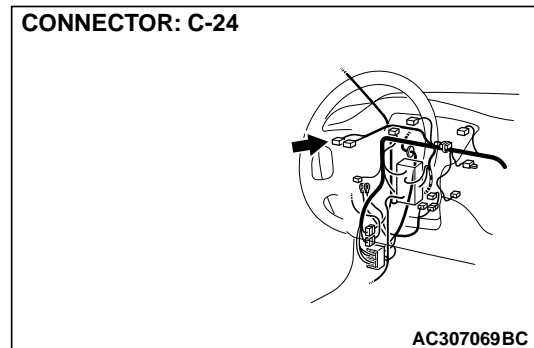
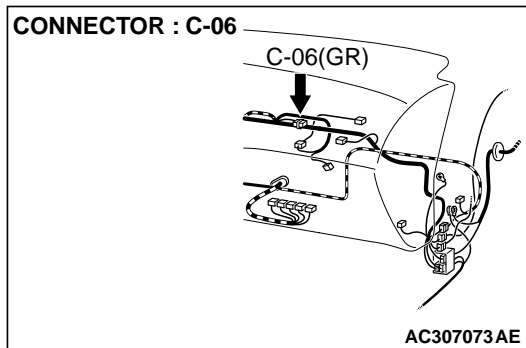
**NO :** Replace the ETACS-ECU. If the sunroof operates normally, it indicates that a correct signal is sent from the sunroof switch.

### **INSPECTION PROCEDURE N-9: ETACS-ECU does not receive signals from the fog light switch.**

### Fog light switch input circuit



W4J54M131A



### CIRCUIT OPERATION

The ETACS-ECU operates the fog lights according to signal from the fog light switch.

### TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the fog lights do not work normally. If the signal is not normal, the fog light switch or the ETACS-ECU may be defective.

### TROUBLESHOOTING HINTS

- The fog light switch may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- The ETACS-ECU may be defective

## DIAGNOSIS

### Required Special Tool:

- MB991223: Harness Set

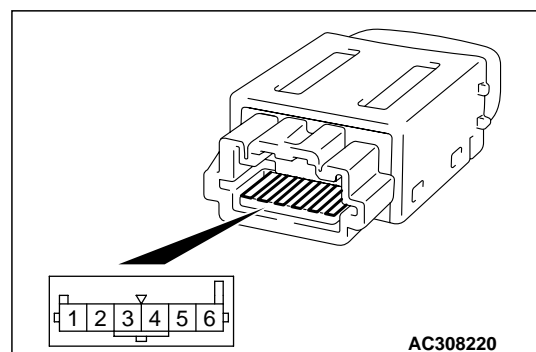
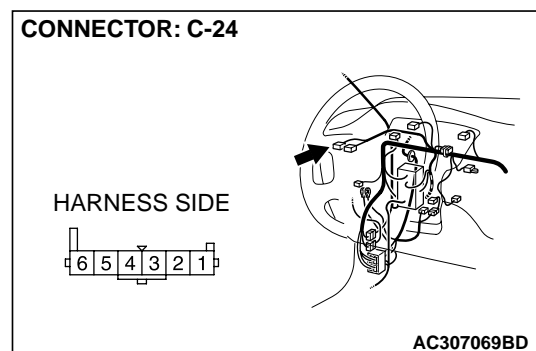
**STEP 1. Check fog light switch connector C-24 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is fog light switch connector C-24 in good condition?**

**YES :** Go to Step 2.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** If the fog light switch operates normally, it indicates that a correct signal is sent from the fog light switch.



### STEP 2. Check the fog light switch.

Remove the fog light switch. Then check for continuity between the switch terminals.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Released	1 – 2	Open circuit
Pressed	1 – 2	Less than 2 ohms

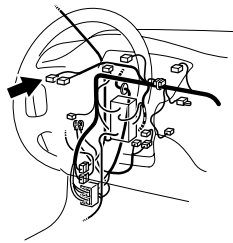
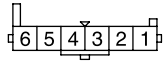
**Q: Is the fog light switch in good condition?**

**YES :** Go to Step 3.

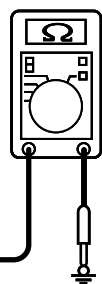
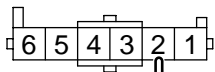
**NO :** Repair the fog light switch. If the fog light switch operates normally, it indicates that a correct signal is sent from the fog light switch.

**CONNECTOR: C-24**

HARNESS SIDE



AC307069BD

CONNECTOR C-24  
(HARNESS SIDE)

AC209364JV

**STEP 3. Check the ground circuit to the fog light switch.  
Measure the resistance at fog light switch connector C-24.**

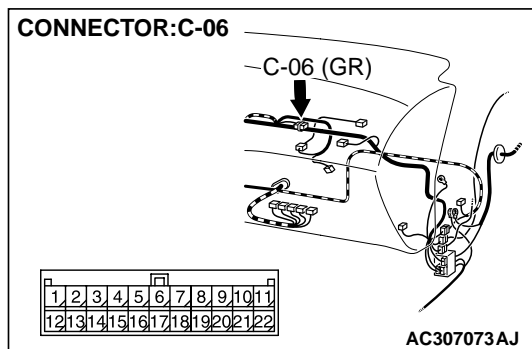
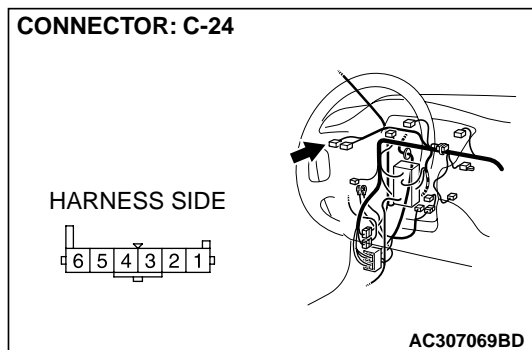
(1) Disconnect fog light switch connector C-24 and measure the resistance available at the wiring harness side of the connector.

(2) Measure the resistance value between terminal 2 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?****YES :** Go to Step 5.**NO :** Go to Step 4.

**STEP 4. Check the wiring harness between fog light switch connector C-24 (terminal 2) and ground.**



*NOTE: Also check joint connector C-06 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If joint connector C-06 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between fog light switch connector C-24 (terminal 2) and the ground in good condition?**

**YES :** No action is necessary and testing is complete.

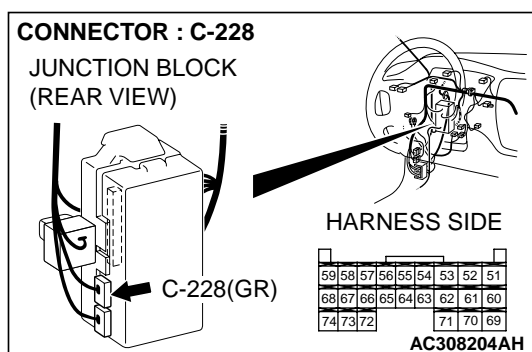
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the fog light switch operates normally, it indicates that a correct signal is sent from the fog light switch.

**STEP 5. Check ETACS-ECU connector C-228 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-228 in good condition?**

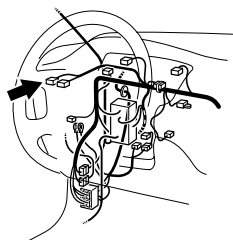
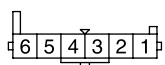
**YES :** Go to Step 6.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the fog light switch operates normally, it indicates that a correct signal is sent from the fog light switch.

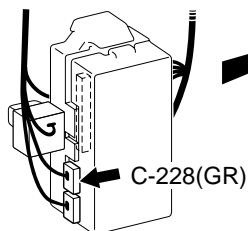


**CONNECTOR: C-24**

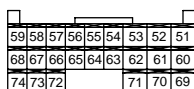
HARNESS SIDE



AC307069BD

**CONNECTOR : C-228**JUNCTION BLOCK  
(REAR VIEW)

HARNESS SIDE



AC308204AH

**STEP 6.** Check the wiring harness between fog light switch connector C-24 (terminal 1) and ETACS-ECU connector C-228 (terminal 54).

**Q:** Is the wiring harness between fog light switch connector C-24 (terminal 1) and ETACS-ECU connector C-228 (terminal 54) in good condition?

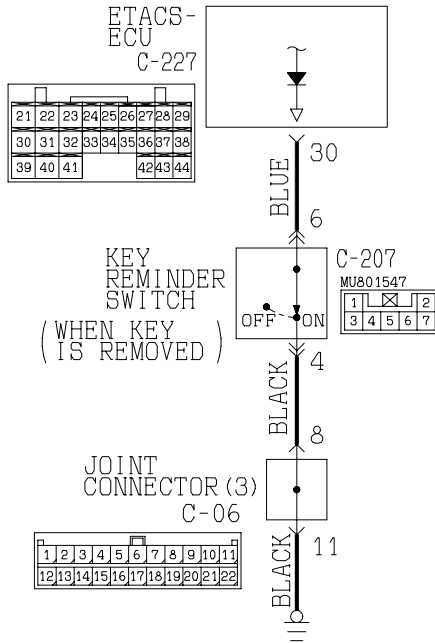
**YES :** Replace the ETACS-ECU. If the fog light switch operates normally, it indicates that a correct signal is sent from the fog light switch.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the fog light switch operates normally, it indicates that a correct signal is sent from the fog light switch.

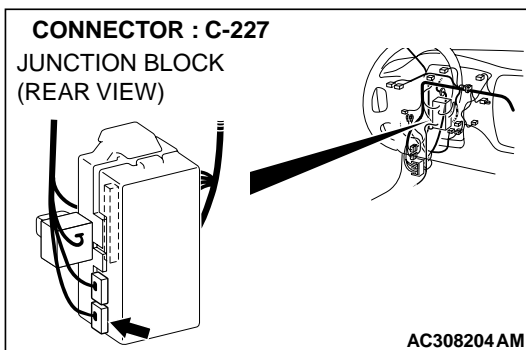
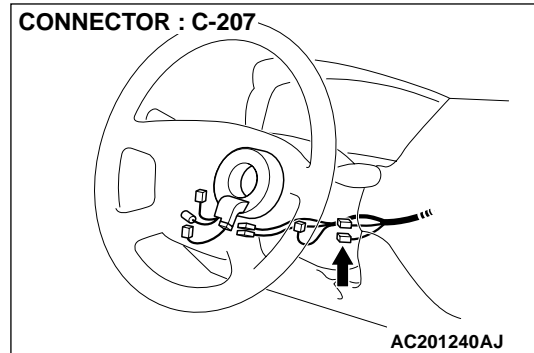
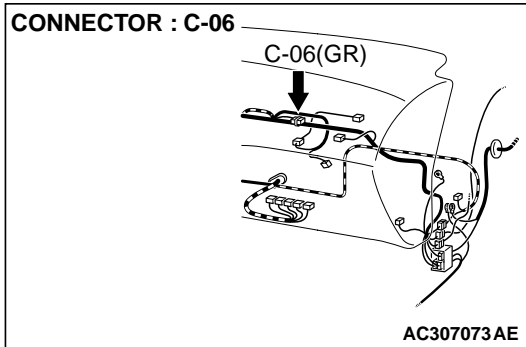


**INSPECTION PROCEDURE O-1: ETACS-ECU does not receive any signal from the key reminder switch.**

**Key Reminder Switch Input Circuit**



W2J08M18AA



**CIRCUIT OPERATION**

The ETACS-ECU operates the following functions or systems according to signal from the key reminder switch:

- Ignition key reminder tone alarm function
- Keyless entry system
- Dome light dimming function

**TECHNICAL DESCRIPTION (COMMENT)**

If the signal is not normal, the functions or systems, which are described in "CIRCUIT OPERATION", do not work normally.

**TROUBLESHOOTING HINTS**

- The key reminder switch may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tools:**

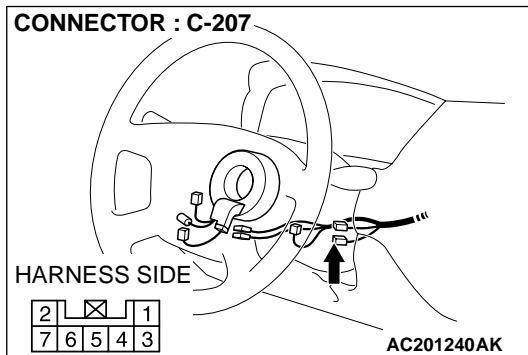
- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

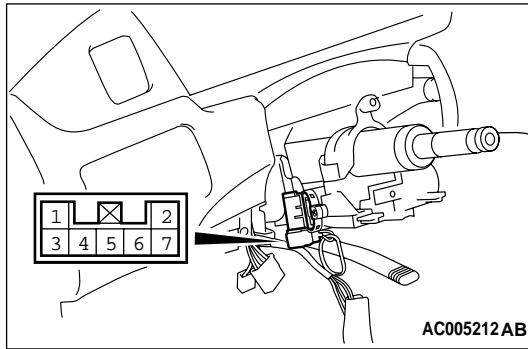
**STEP 1. Check key reminder switch connector C-207 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is key reminder switch connector C-207 in good condition?**

**YES :** Go to Step 2.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the key reminder switch should be normal.





**STEP 2. Check the key reminder switch.**

Disconnect key reminder switch connector C-207. Then check continuity between terminals.

IGNITION KEY	TESTER CONNECTION	SPECIFIED CONDITION
Removed	4 – 6	Less than 2 ohms
Inserted	4 – 6	Open circuit

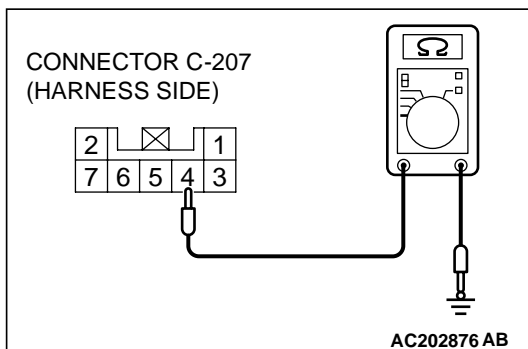
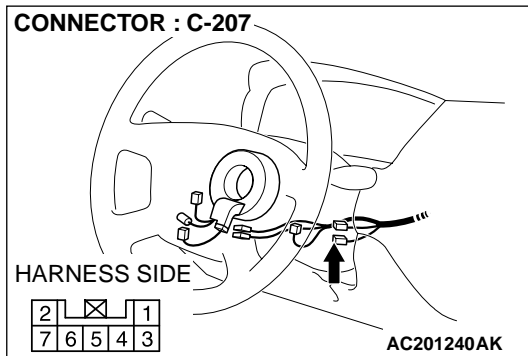
**Q: Is the key reminder switch in good condition?**

**YES :** Go to Step 3.

**NO :** Replace the key reminder switch. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the key reminder switch should be normal.

**STEP 3. Check the ground circuit to the key reminder switch. Test at key reminder switch connector C-207.**

(1) Disconnect key reminder switch connector C-207 and measure the resistance available at the wiring harness side of the connector.



(2) Measure the resistance value between terminal 4 and ground.

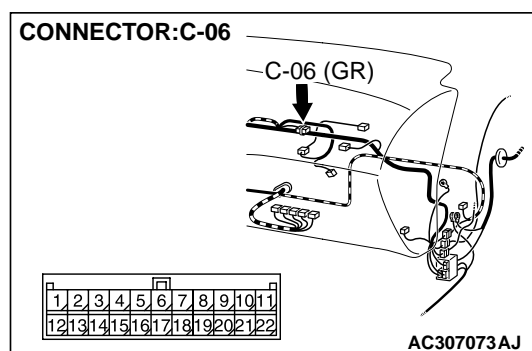
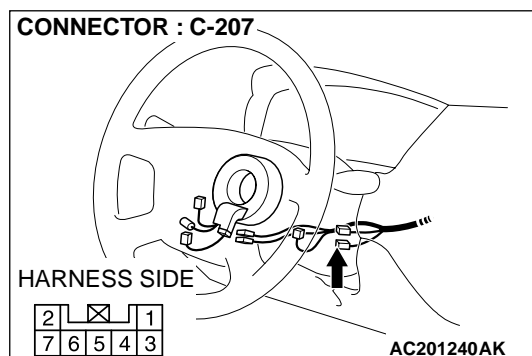
- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 5.

**NO :** Go to Step 4.

**STEP 4. Check the wiring harness between key reminder switch connector C-207 (terminal 4) and ground.**



*NOTE: Also check joint connector C-06 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If joint connector C-06 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between key reminder switch connector C-207 (terminal 4) and ground in good condition?**

**YES :** No action is necessary and testing is complete.

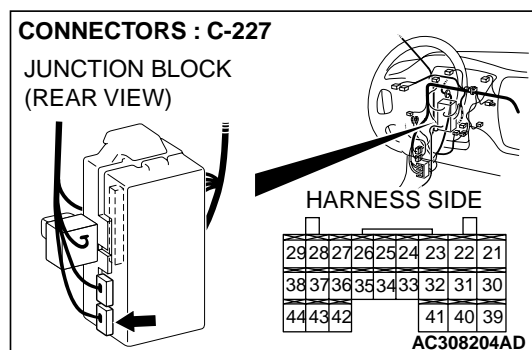
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the key reminder switch should be normal.

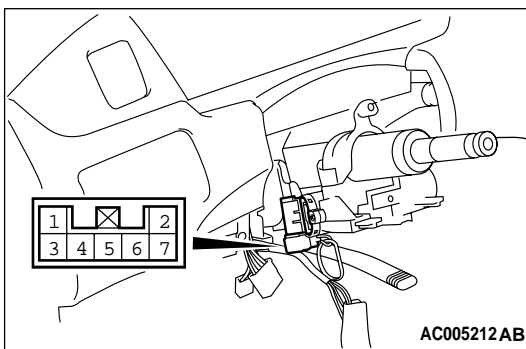
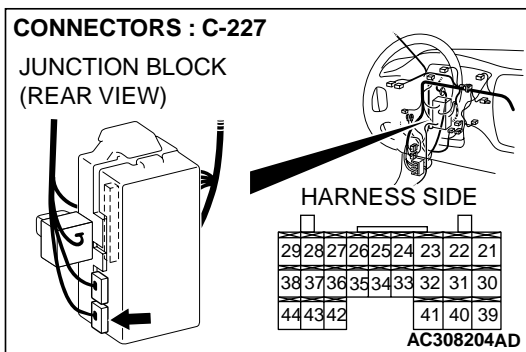
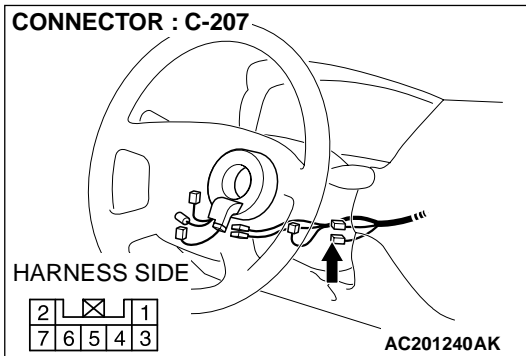
**STEP 5. Check ETACS-ECU connector C-227 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-227 in good condition?**

**YES :** Go to Step 6.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the key reminder switch should be normal.





**STEP 6. Check the wiring harness between key reminder switch connector C-207 (terminal 6) and ETACS-ECU connector C-227 (terminal 30).**

**Q: Is the wiring harness between key reminder switch connector C-207 (terminal 6) and ETACS-ECU connector C-227 (terminal 30) in good condition?**

**YES :** Go to Step 7.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the key reminder switch should be normal.

**STEP 7. Check for continuity between key reminder switch connector C-207 terminal 4 and each of the other terminals as well as terminal 6 and each of the other terminals.**

- (1) Disconnect key reminder switch connector C-207 and measure the resistance available at the equipment side of the connector.
- (2) Check for continuity between key reminder switch connector C-207 terminal 4 and each of the other terminals as well as terminal 6 and each of the other terminals.

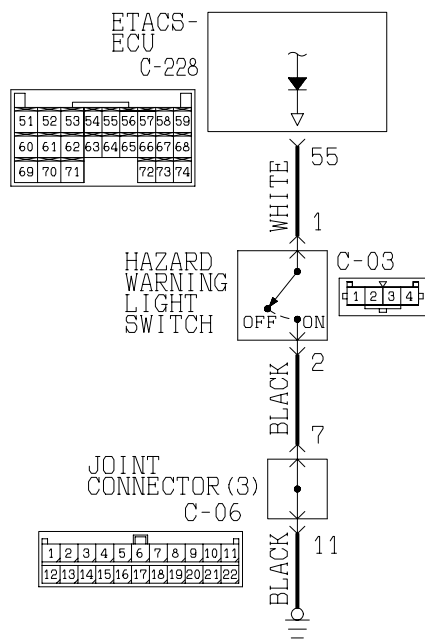
**Q: Does the continuity exist between the terminals?**

**YES :** Replace the ETACS-ECU. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the key reminder switch should be normal.

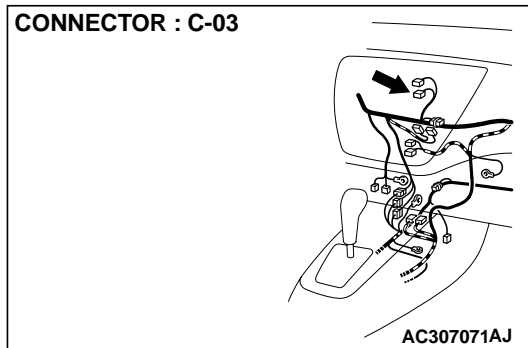
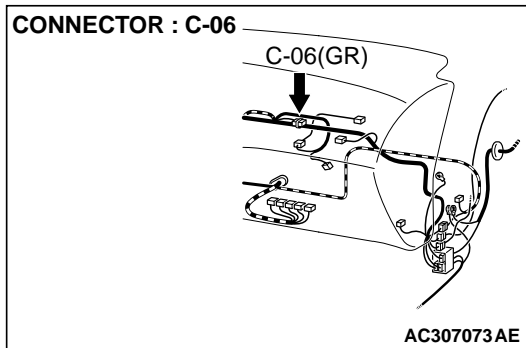
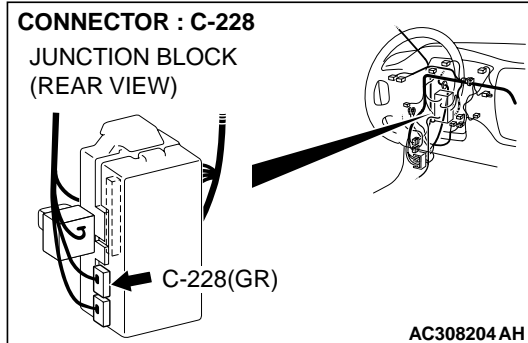
**NO :** Replace the key reminder switch. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the key reminder switch should be normal.

**INSPECTION PROCEDURE O-2: The ETACS-ECU does not receive any signal from the hazard warning light switch.**

### Hazard Warning Light Switch Input Circuit



W3J01M28AA

**CONNECTOR : C-03****CONNECTOR : C-06****CONNECTOR : C-228**JUNCTION BLOCK  
(REAR VIEW)

### CIRCUIT OPERATION

The ETACS-ECU operates the following functions or systems according to signal from the hazard warning light switch:

- Hazard warning light
- Keyless entry system (registering the encrypted code)

### TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the equipment or systems, which are described in "CIRCUIT OPERATION", do not work normally.

### TROUBLESHOOTING HINTS

- The hazard warning light switch may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

## DIAGNOSIS

### Required Special Tools:

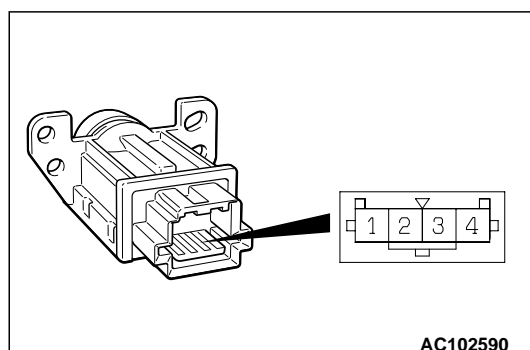
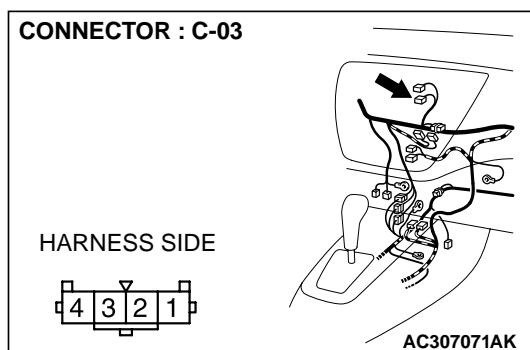
- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

**STEP 1. Check hazard warning light switch connector C-03 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is hazard warning light switch connector C-03 in good condition?**

**YES :** Go to Step 2.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the equipment, which are described in "CIRCUIT OPERATION", work normally, the input signal from the hazard warning light switch should be normal.



**STEP 2. Check the hazard warning light switch.**

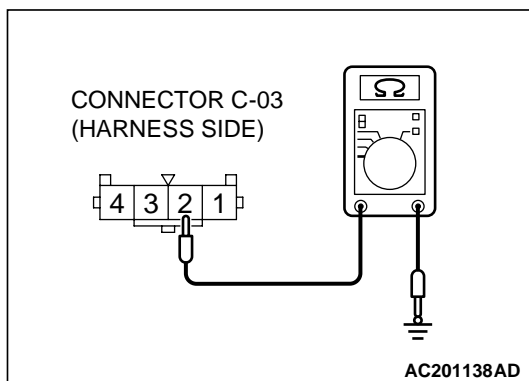
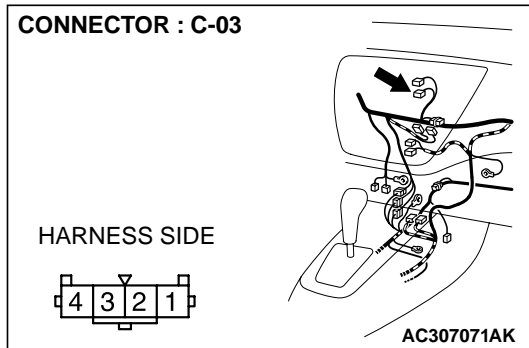
Remove the hazard warning light switch. Then check continuity between the switch terminals.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Released	1 – 2	Open circuit
Pressed	1 – 2	Less than 2 ohms

**Q: Is the hazard warning light switch in good condition?**

**YES :** Go to Step 3.

**NO :** Replace the hazard warning light switch. If the equipment, which are described in "CIRCUIT OPERATION", work normally, the input signal from the hazard warning light switch should be normal.



**STEP 3. Check the ground circuit to the hazard warning light switch. Test at hazard warning light switch connector C-03.**

- (1) Disconnect hazard warning light switch connector C-03 and measure the resistance available at the wiring harness side of the connector.

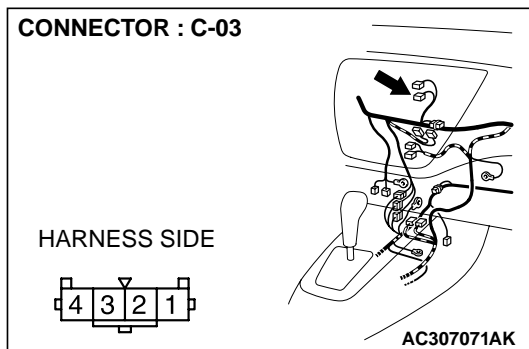
- (2) Measure the resistance value between terminal 2 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

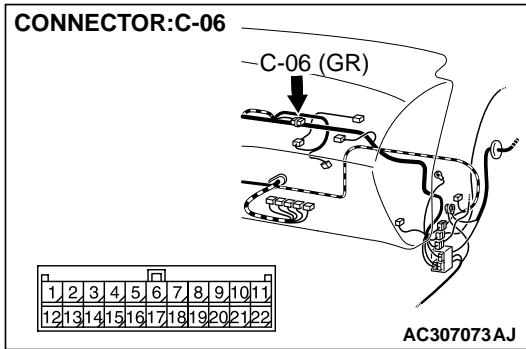
**YES :** Go to Step 5.

**NO :** Go to Step 4.



**STEP 4. Check the wiring harness between hazard warning light switch connector C-03 (terminal 2) and ground.**



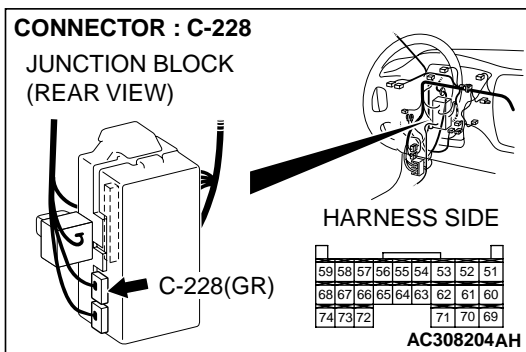


*NOTE: Also check joint connector C-06 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If joint connector C-06 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between hazard warning light switch connector C-03 (terminal 2) and ground in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the equipment, which are described in "CIRCUIT OPERATION", work normally, the input signal from the hazard warning light switch should be normal.

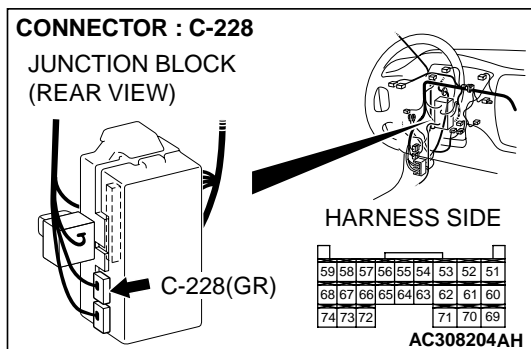
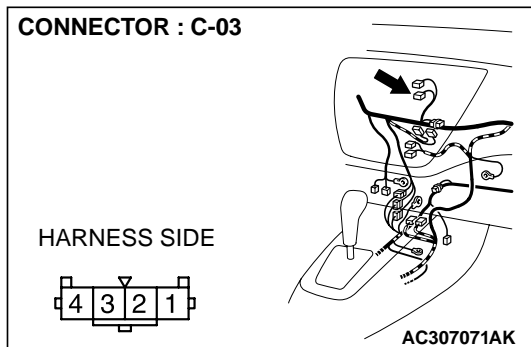


**STEP 5. Check ETACS-ECU connector C-228 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-228 in good condition?**

**YES :** Go to Step 6.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the equipment, which are described in "CIRCUIT OPERATION", work normally, the input signal from the hazard warning light switch should be normal.



**STEP 6.** Check the wiring harness between hazard warning light switch connector C-03 (terminal 1) and ETACS-ECU connector C-228 (terminal 55).

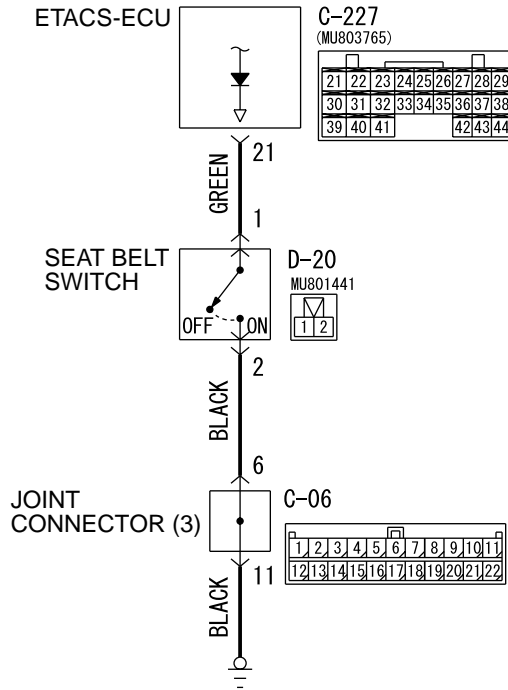
**Q:** Is the wiring harness between hazard warning light switch connector C-03 (terminal 1) and ETACS-ECU connector C-228 (terminal 55) in good condition?

**YES :** Replace the ETACS-ECU. If the equipment, which are described in "CIRCUIT OPERATION", work normally, the input signal from the hazard warning light switch should be normal.

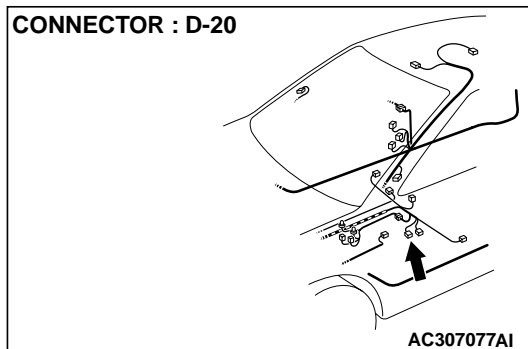
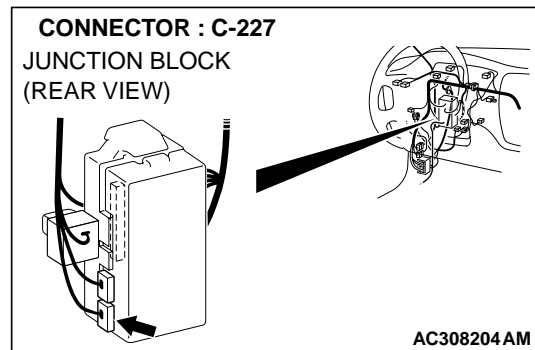
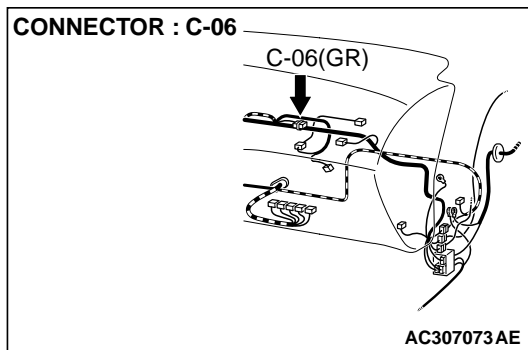
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the equipment, which are described in "CIRCUIT OPERATION", work normally, the input signal from the hazard warning light switch should be normal.

**INSPECTION PROCEDURE O-3: The ETACS-ECU does not receive any signal from the driver's seat belt switch.**

**Seat Belt Switch Input Circuit**



W4J54M132A



**CIRCUIT OPERATION**

The ETACS-ECU operates the following functions and equipment according to signal from the driver's seat belt switch:

- Seat belt tone alarm function
- Seat belt warning light

**TECHNICAL DESCRIPTION (COMMENT)**

If the signal is not normal, the equipment and functions, which are described in "CIRCUIT OPERATION", do not work normally.

**TROUBLESHOOTING HINTS**

- The driver's inner seat belt (driver's seat belt switch) may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tools:**

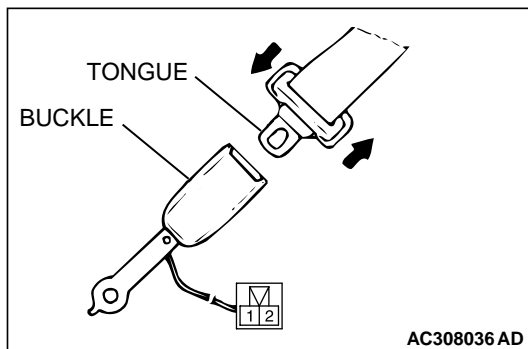
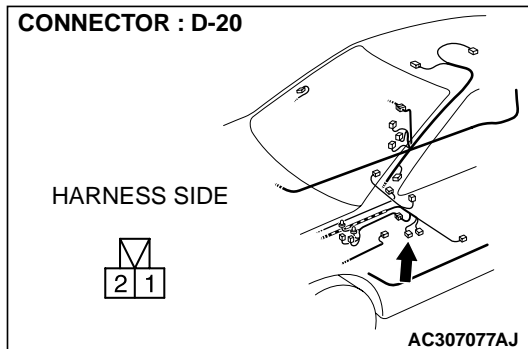
- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

**STEP 1. Check driver's seat belt switch connector D-20 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is the driver's seat belt switch connector D-20 in good condition?**

**YES :** Go to Step 2.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's seat belt switch should be normal.

**STEP 2. Check the driver's seat belt switch.**

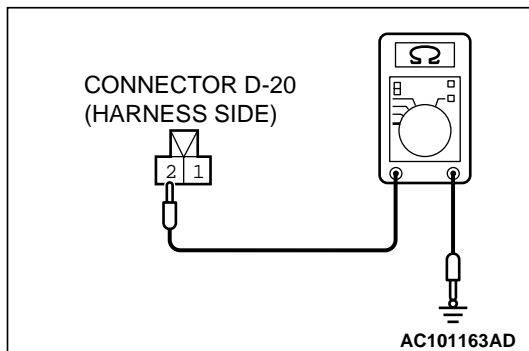
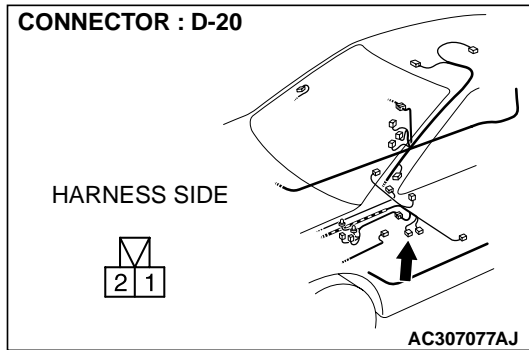
Disconnect driver's seat belt switch connector D-20. Then check continuity between the switch terminals.

ITEM	TESTER CONNECTION	SPECIFIED CONDITION
Fastened seat belt	1 – 2	Open circuit
Unfastened seat belt	1 – 2	Less than 2 ohms

**Q: Is the driver's seat belt switch in good condition?**

**YES :** Go to Step 3.

**NO :** Replace the driver's seat belt. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's seat belt switch should be normal.



**STEP 3. Check the battery ground circuit to the driver's seat belt switch. Test at driver's seat belt switch connector D-20.**

(1) Disconnect driver's seat belt switch connector D-20 and measure the resistance available at the wiring harness side of the connector.

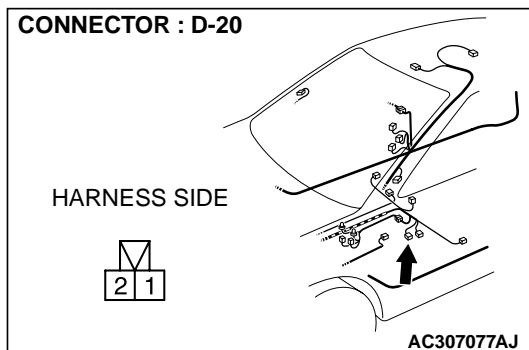
(2) Measure the resistance value between terminal 2 and ground.

- The resistance should equal 2 ohms or less.

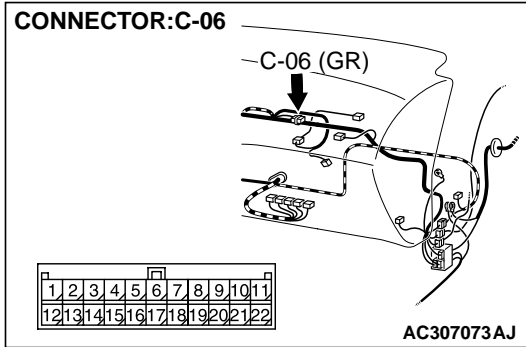
**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 5.

**NO :** Go to Step 4.



**STEP 4. Check the wiring harness between driver's seat belt switch connector D-20 (terminal 2) and ground.**



**NOTE:** Also check joint connector C-06 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If joint connector C-06 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

**Q: Is the wiring harness between driver's seat belt switch connector D-20 (terminal 2) and ground in good condition?**

**YES :** No action is necessary and testing is complete.

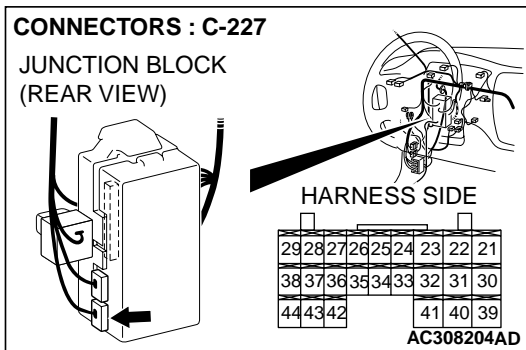
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's seat belt switch should be normal.

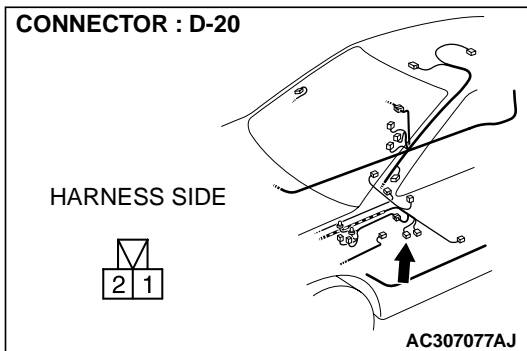
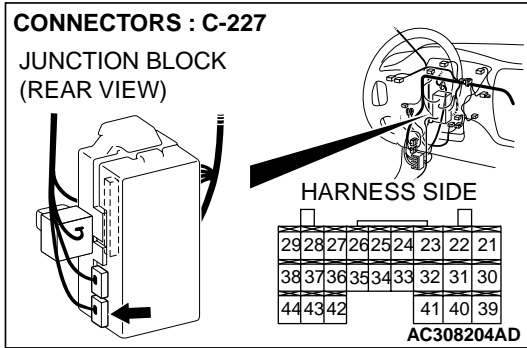
**STEP 5. Check ETACS-ECU connector C-227 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-227 in good condition?**

**YES :** Go to Step 6.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's seat belt switch should be normal.





**STEP 6. Check the wiring harness between driver's seat belt switch connector D-20 (terminal 1) and ETACS-ECU connector C-227 (terminal 21).**

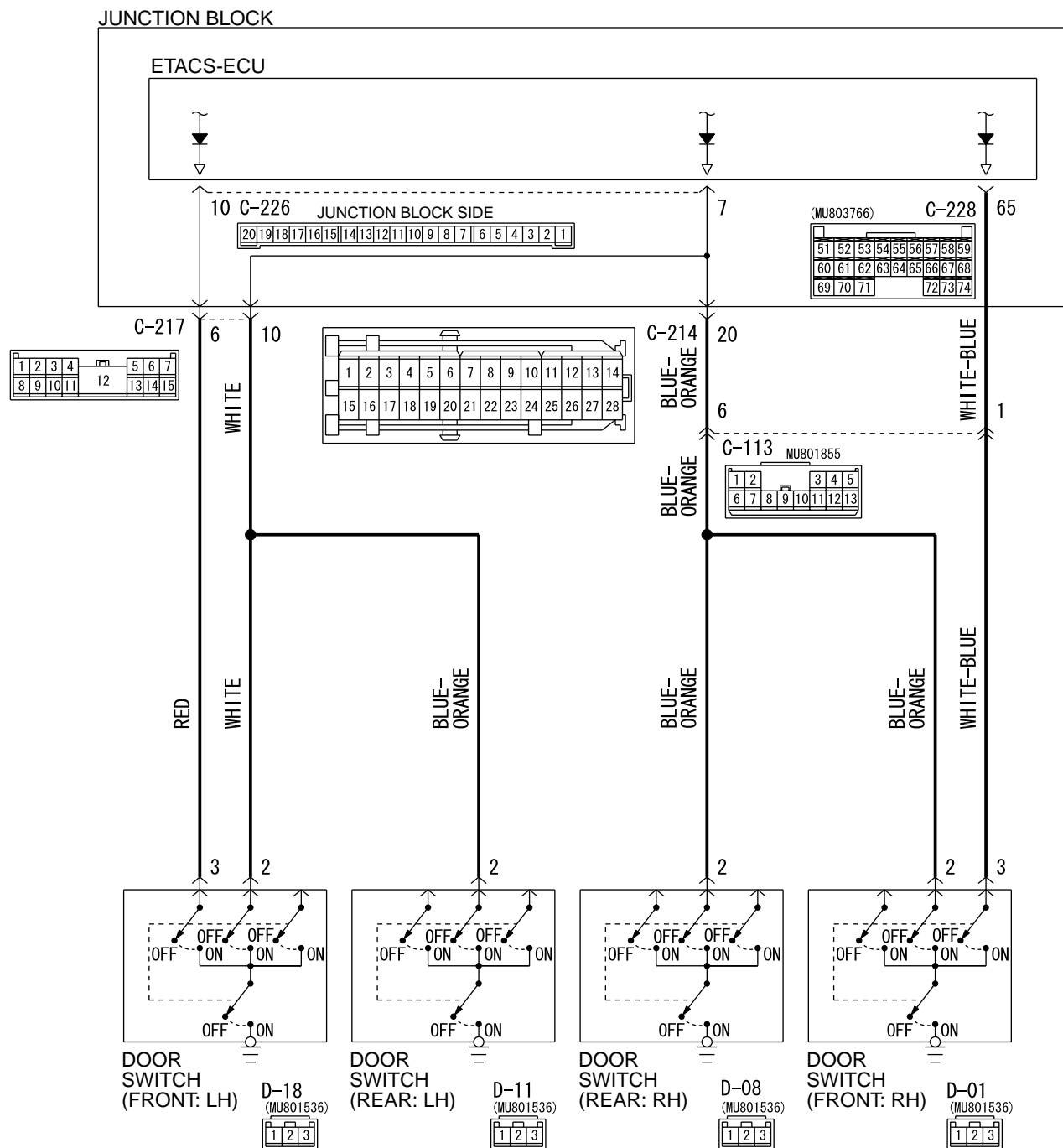
**Q: Is the wiring harness between driver's seat belt switch connector D-20 (terminal 1) and ETACS-ECU connector C-227 (terminal 21) in good condition?**

**YES :** Replace the ETACS-ECU. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's seat belt switch should be normal.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's seat belt switch should be normal.

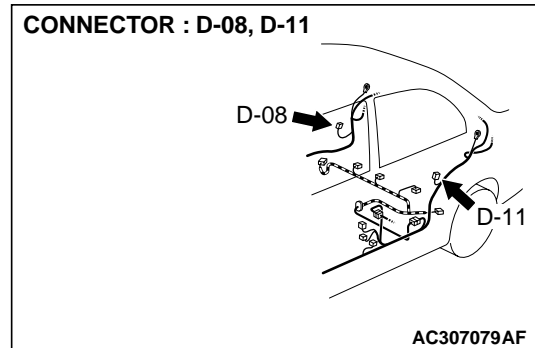
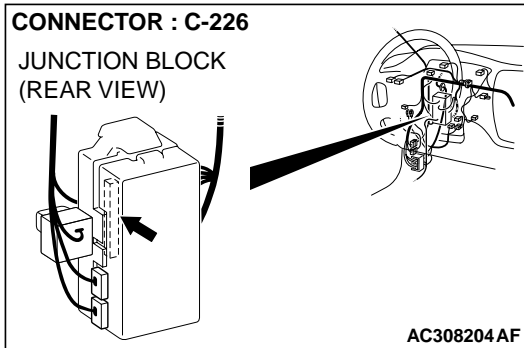
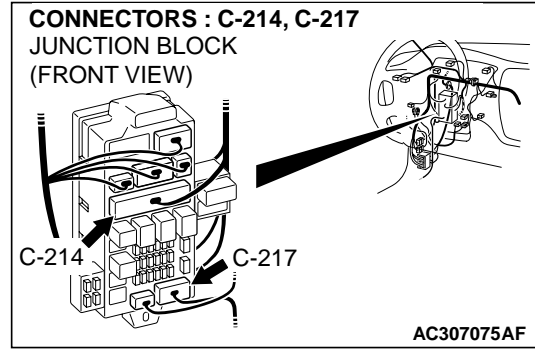
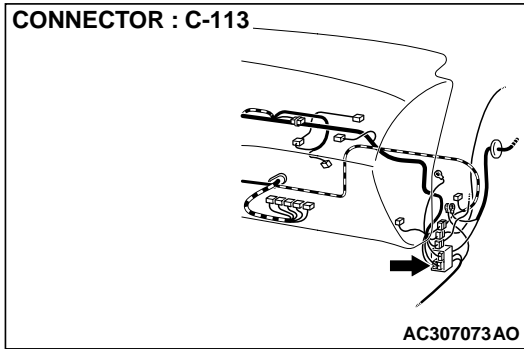
**INSPECTION PROCEDURE O-4:** The ETACS-ECU does not receive any signal from all the door switches.

### All Door Switches Input Circuit



W4J54M133A





### CIRCUIT OPERATION

The ETACS-ECU operates the following functions or systems according to signal from the driver's or front passenger's, rear or back door switches:

- Light reminder tone alarm function <Driver's door switch>
- Power window timer function <Driver's, front passenger's door switch>
- Headlight automatic shutdown function <Driver's door switch>
- Keyless entry system <All door switches>
- Dome light <All door switches>

### TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the functions or systems, which are described in "CIRCUIT OPERATION", do not work normally. If the signal is not normal, the driver's, front passenger's, rear or back door switch or the ETACS-ECU may be defective.

### TROUBLESHOOTING HINTS

- The driver's, front passenger's, rear or back door switch may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

### DIAGNOSIS

#### Required Special Tools:

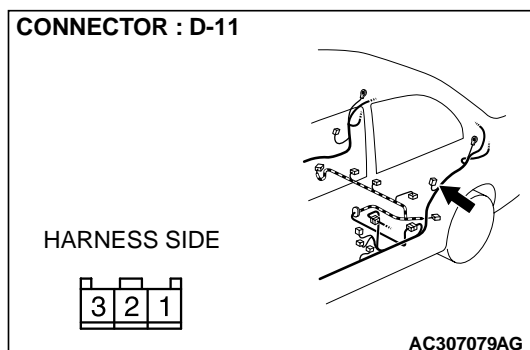
- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

**STEP 1. Check which door switch is defective.****Q: Which door switch signal is not entered?**

**Driver's or front passenger's door :** Refer to Inspection Procedure N-4 "ETACS-ECU does not receive any signal from the driver's or the front passenger's door switch P.54B-478."

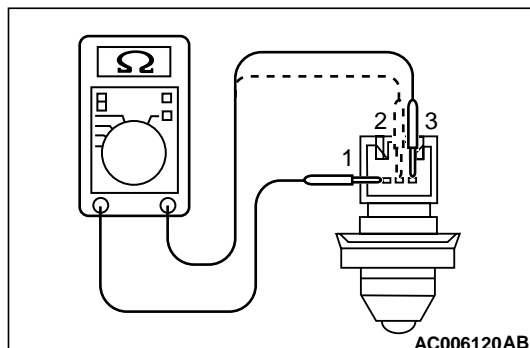
**Rear door (LH) :** Go to Step 2.

**Rear door (RH) :** Go to Step 7.

**STEP 2. Check rear door switch (LH) connector D-11 for loose, corroded or damaged terminals, or terminals pushed back in the connector.****Q: Is rear door switch (LH) connector D-11 in good condition?**

**YES :** Go to Step 3.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the rear door switch (LH) should be normal.

**STEP 3. Check the rear door switch (LH).**

Remove the rear door switch (LH). Then check continuity between the switch terminals.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Released	1 - 2, 1 - 3, 2 - 3	Less than 2 ohms
Pressed	1 - 2, 1 - 3, 2 - 3	Open circuit

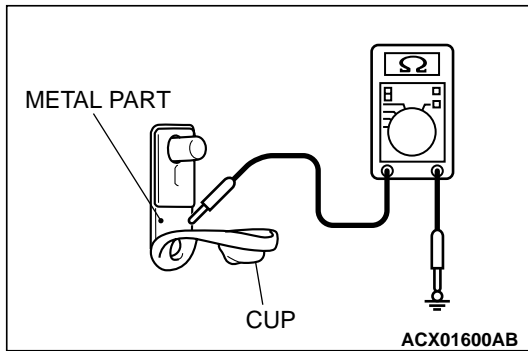
**Q: Is the rear door switch (LH) in good condition?**

**YES :** Go to Step 4.

**NO :** Replace the rear door switch (LH). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the rear door switch (LH) should be normal.

**STEP 4. Measure at the lower metal part of the rear door switch (LH) in order to check the ground circuit to the rear door switch (LH).**

**NOTE:** Check that the rear door switch (LH) is grounded to the vehicle body by means of its mounting screw.



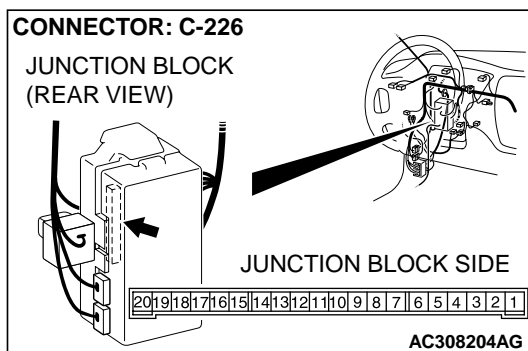
Remove the cap, and measure the resistance value between the lower metal part and the ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 5.

**NO :** Check the fit of the switch, and repair if necessary. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the rear door switch (LH) should be normal.

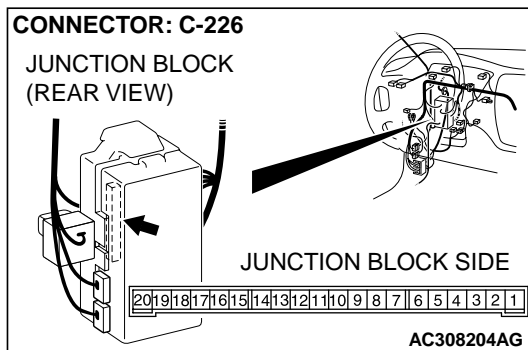


**STEP 5. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

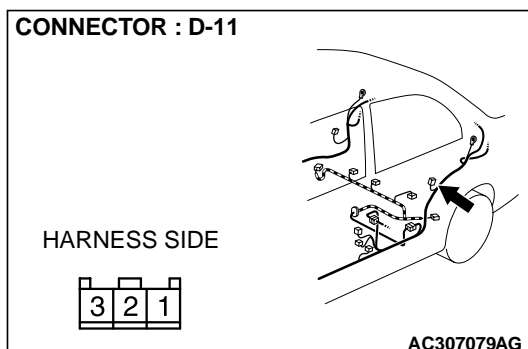
**Q: Is ETACS-ECU connector C-226 in good condition?**

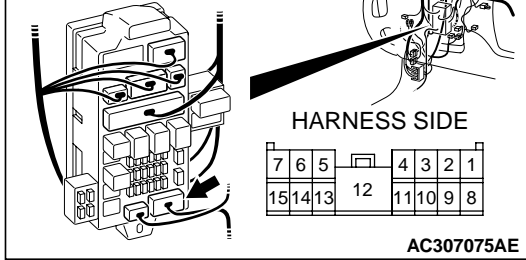
**YES :** Go to Step 6.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the rear door switch (LH) should be normal.



**STEP 6. Check the wiring harness between rear door switch (LH) connector D-11 (terminal 2) and ETACS-ECU connector C-226 (terminal 7).**



**CONNECTOR: C-217**  
JUNCTION BLOCK  
(FRONT VIEW)

AC307075AE

**NOTE:** Also check junction block connector C-217 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-217 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

**Q: Is the wiring harness between rear door switch (LH) connector D-11 (terminal 2) and ETACS-ECU connector C-226 (terminal 7) in good condition?**

**YES :** Replace the ETACS-ECU. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the rear door switch (LH) should be normal.

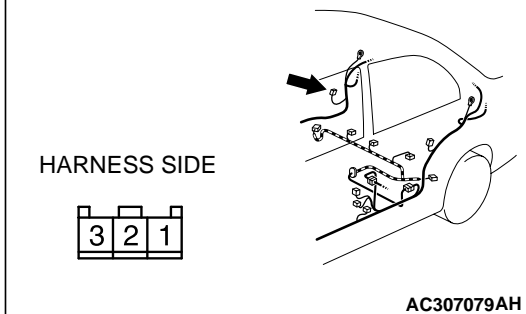
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the rear door switch (LH) should be normal.

**STEP 7. Check rear door switch (RH) connector D-08 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is rear door switch (RH) connector D-08 in good condition?**

**YES :** Go to Step 8

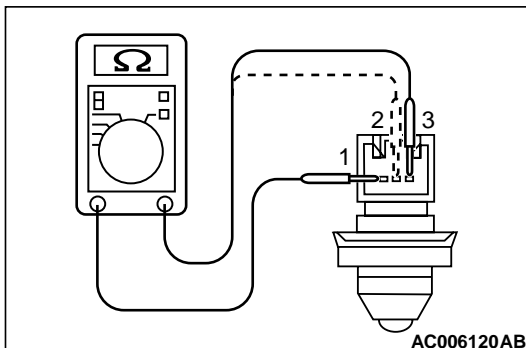
**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the rear door switch (RH) should be normal.

**CONNECTOR : D-08**

AC307079AH

**STEP 8. Check the rear door switch (RH).**

Remove the rear door switch (RH). Then check continuity between the switch terminals.



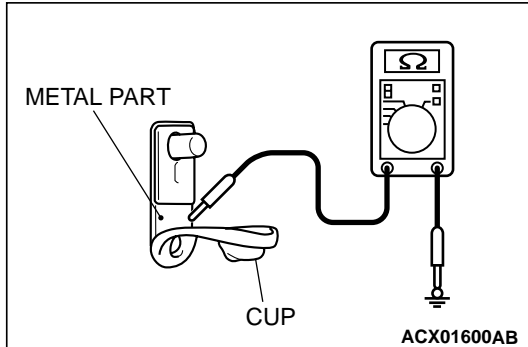
AC006120AB

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Released	1 - 2, 1 - 3, 2 - 3	Less than 2 ohms
Pressed	1 - 2, 1 - 3, 2 - 3	Open circuit

**Q: Is the rear door switch (RH) in good condition?**

**YES :** Go to Step 9.

**NO :** Replace the rear door switch (RH). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the rear door switch (RH) should be normal.



**STEP 9. Measure at the lower metal part of the rear door switch (RH) in order to check the ground circuit to the rear door switch (RH).**

*NOTE: Check that the rear door switch (RH) is grounded to the vehicle body by means of its mounting screw.*

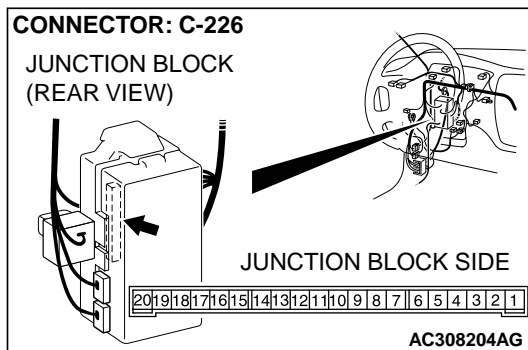
Remove the cap, and measure the resistance value between the lower metal part and the ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 10.

**NO :** Check the fit of the switch, and repair if necessary. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the rear door switch (RH) should be normal.



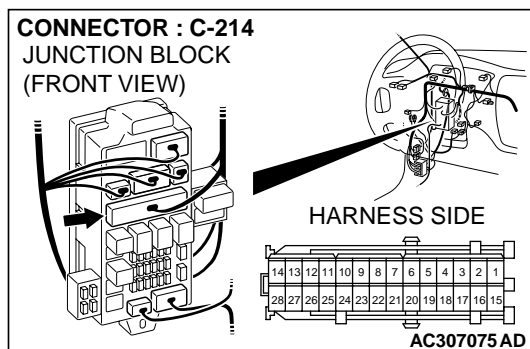
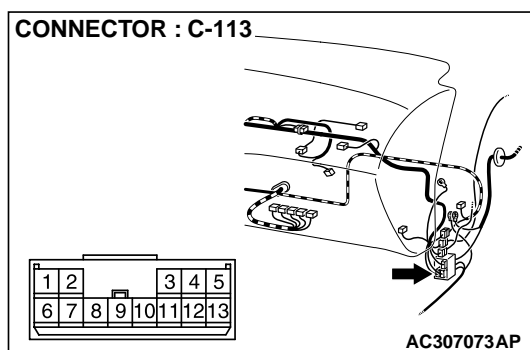
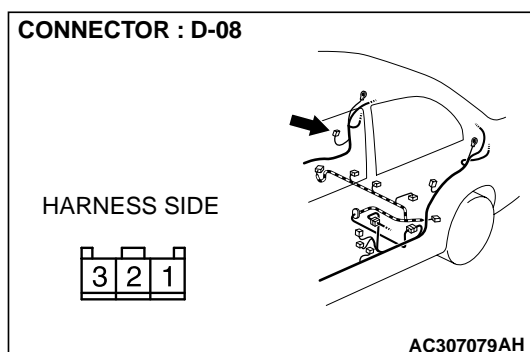
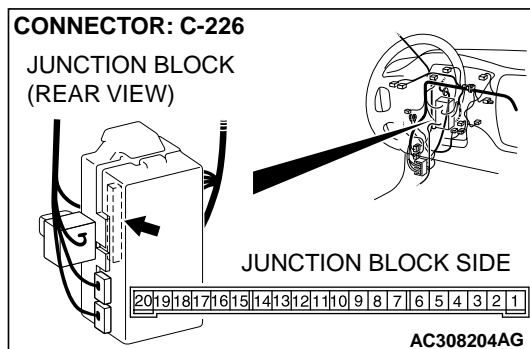
**STEP 10. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-226 in good condition?**

**YES :** Go to Step 11

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the rear door switch (RH) should be normal.

**STEP 11.** Check the wiring harness between rear door switch (RH) connector D-08 (terminal 2) and ETACS-ECU connector C-226 (terminal 7).



*NOTE: Also check intermediate connector C-113 and junction block connector C-214 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-113 or junction block connector C-214 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

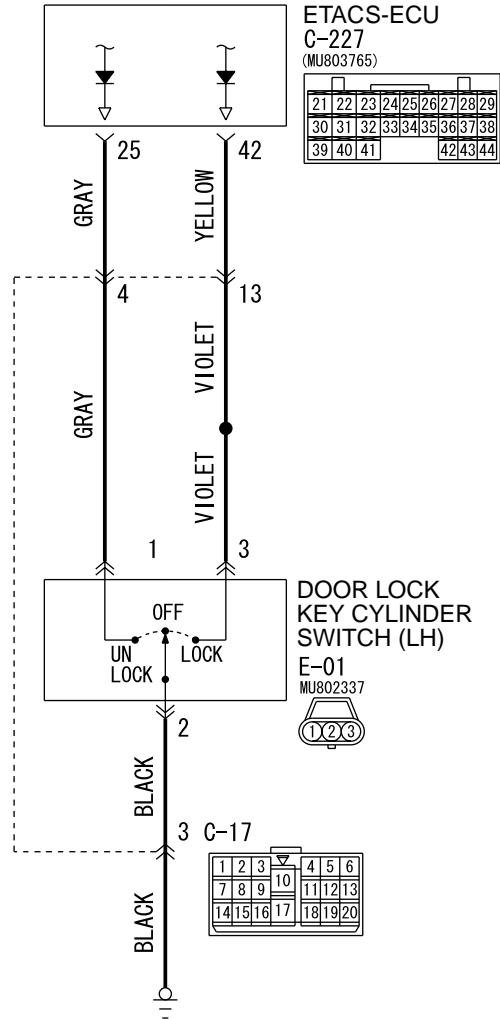
**Q: Is the wiring harness between rear door switch (RH) connector D-08 (terminal 2) and ETACS-ECU connector C-226 (terminal 7) in good condition?**

**YES :** Replace the ETACS-ECU. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the rear door switch (RH) should be normal.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the rear door switch (RH) should be normal.

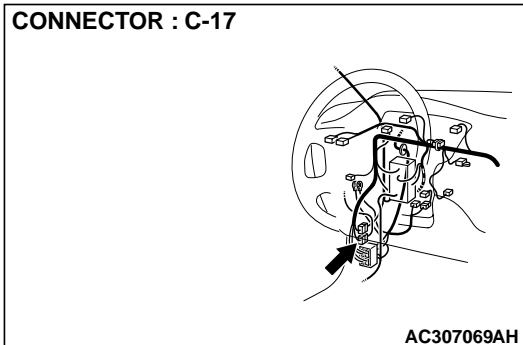
**INSPECTION PROCEDURE O-5: The ETACS-ECU does not receive any signal from the driver's door lock key cylinder switch.**

**All Door Switches Input Circuit**



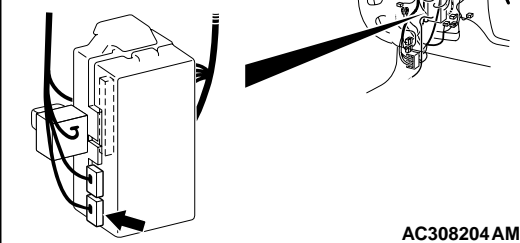
W4J54M134A

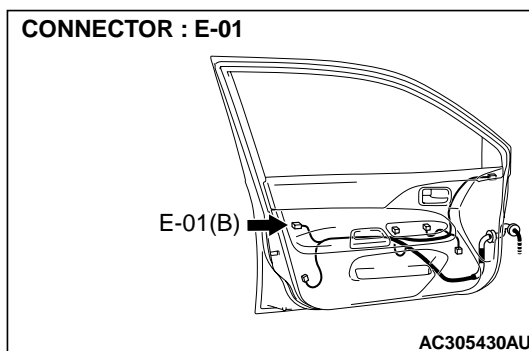
**CONNECTOR : C-17**



**CONNECTOR : C-227**

**JUNCTION BLOCK  
(REAR VIEW)**



**CIRCUIT OPERATION**

The ETACS-ECU operates the central door locking system according to signal from the driver's door lock key cylinder switch.

**TECHNICAL DESCRIPTION (COMMENT)**

If the signal is not normal, the systems, which are described in "CIRCUIT OPERATION", do not work normally.

**TROUBLESHOOTING HINTS**

- The driver's door lock key cylinder switch may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

**DIAGNOSIS****Required Special Tools:**

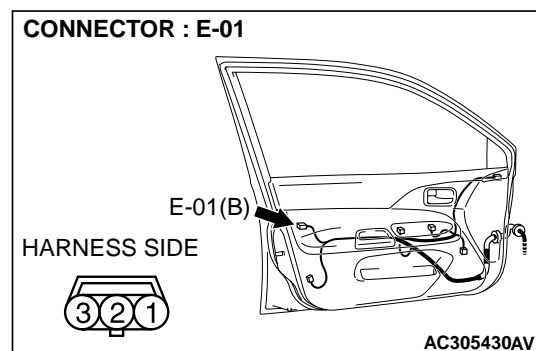
- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

**STEP 1. Check driver's door lock key cylinder switch connector E-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is driver's door lock key cylinder switch connector E-01 in good condition?**

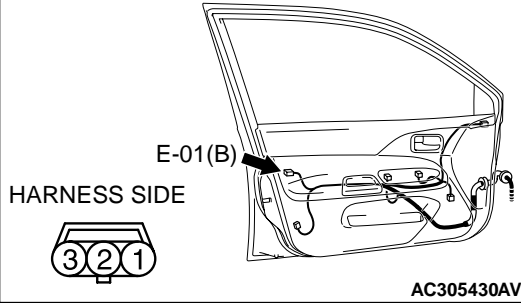
**YES :** Go to Step 2.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the systems, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door lock key cylinder switch should be normal.





**CONNECTOR : E-01**



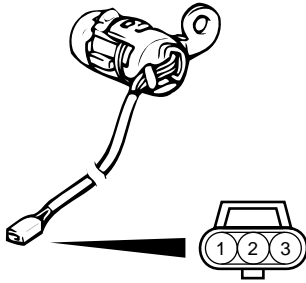
**STEP 2. Check the driver's door lock key cylinder switch.**  
Disconnect door lock key cylinder switch (LH) connector E-01.  
Then check continuity between the switch terminals.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	2 – 3	Less than 2 ohms
UNLOCK	1 – 2	Less than 2 ohms

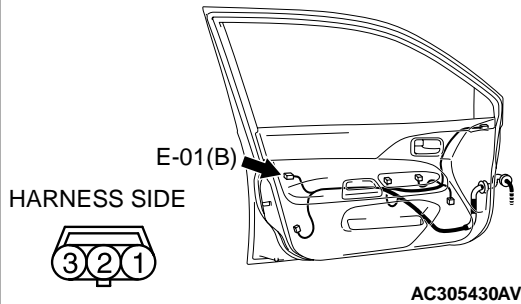
**Q: Is the driver's door lock key cylinder switch in good condition?**

**YES :** Go to Step 3.

**NO :** Replace the driver's door lock key cylinder switch. If the systems, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door lock key cylinder switch should be normal.



**CONNECTOR : E-01**



**STEP 3. Check the ground circuit to the driver's door lock key cylinder switch. Test at driver's door lock key cylinder switch connector E-01.**

(1) Disconnect driver's door lock key cylinder switch connector E-01 and measure the resistance available at the wiring harness side of the connector.

(2) Measure the resistance value between terminal 2 and ground.

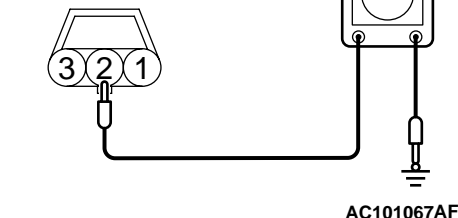
- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

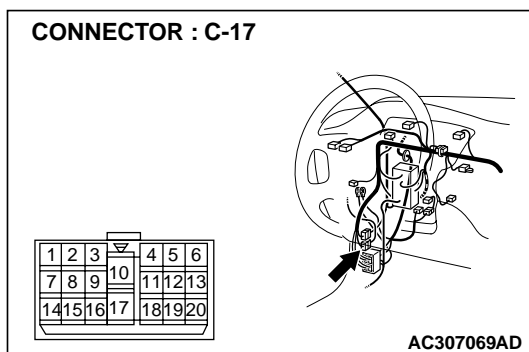
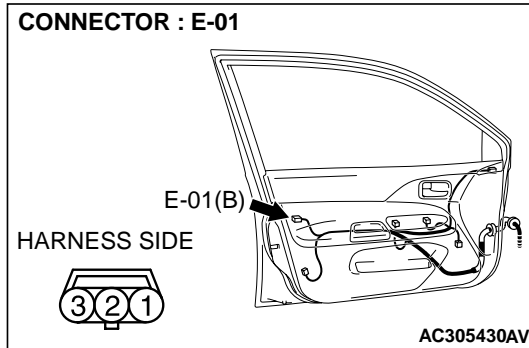
**YES :** Go to Step 5.

**NO :** Go to Step 4.

**CONNECTOR E-01  
(HARNESS SIDE)**



**STEP 4. Check the wiring harness between driver's door lock key cylinder switch connector E-01 (terminal 2) and ground.**



*NOTE: Also check intermediate connector C-17 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors C-17 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between driver's door lock key cylinder switch connector E-01 (terminal 2) and ground in good condition?**

**YES :** No action is necessary and testing is complete.

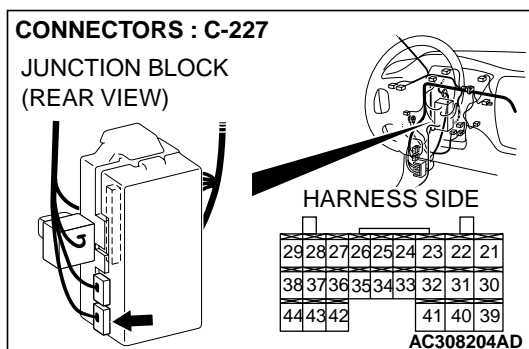
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the systems, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door lock key cylinder switch should be normal.

**STEP 5. Check ETACS-ECU connector C-227 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

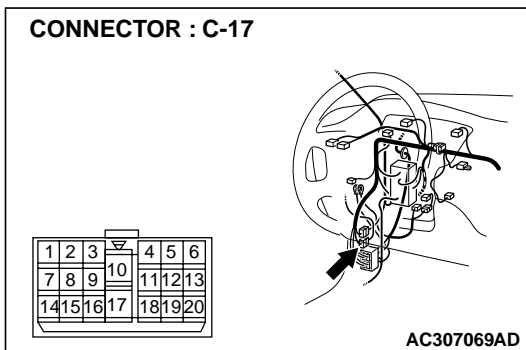
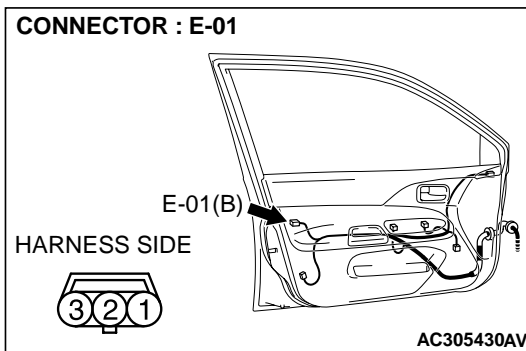
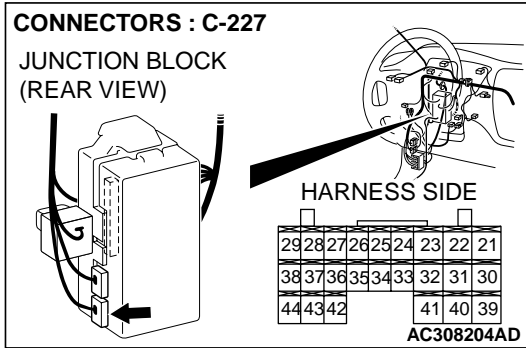
**Q: Is ETACS-ECU connector C-227 in good condition?**

**YES :** Go to Step 6.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the systems, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door lock key cylinder switch should be normal.



**STEP 6. Check the wiring harness between driver's door lock key cylinder switch connector E-01 (terminal 1 and 3) and ETACS-ECU connector C-227 (terminal 25 and 42).**



*NOTE: Also check intermediate connector C-17 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors C-17 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

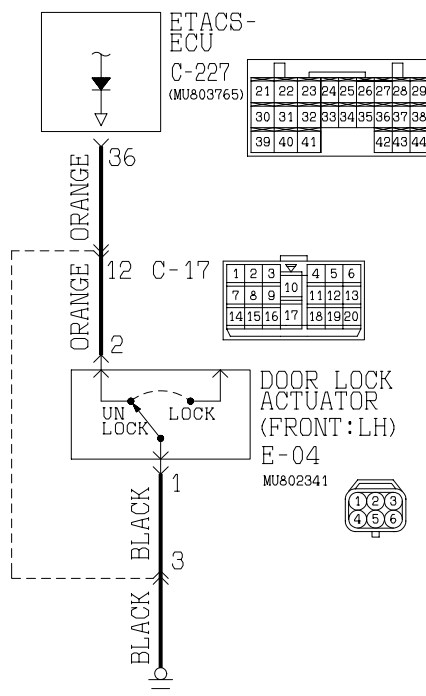
**Q: Is the wiring harness between driver's door lock key cylinder switch connector E-01 (terminal 1 and 3) and ETACS-ECU connector C-227 (terminal 25 and 42) in good condition?**

**YES :** Replace the ETACS-ECU. If the systems, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door lock key cylinder switch should be normal.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the systems, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door lock key cylinder switch should be normal.

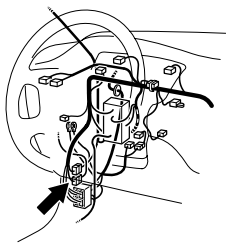
**INSPECTION PROCEDURE N-6 : The ETACS-ECU does not receive any signal from the driver's door lock actuator switch.**

### Door Lock Actuator Input Circuit



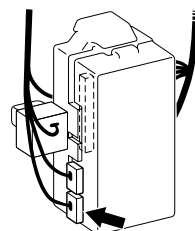
W3J01M29AA

CONNECTOR : C-17



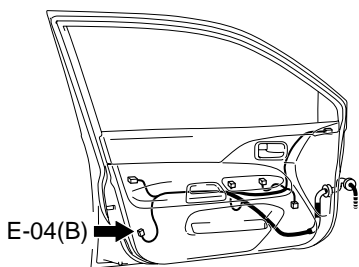
AC307069AI

CONNECTOR : C-227

JUNCTION BLOCK  
(REAR VIEW)

AC308204 AM

CONNECTOR : E-04



AC305430AF

### CIRCUIT OPERATION

The ETACS-ECU operates the following functions or systems according to signal from the driver's or front passenger's, rear or back door lock actuator switch:

- Central door locking system
- Keyless entry system
- Dome light dimming function

### TROUBLESHOOTING HINTS

- The driver's door latch assembly may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

### TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the functions or systems, which are described in "CIRCUIT OPERATION", do not work normally.

## DIAGNOSIS

### Required Special Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

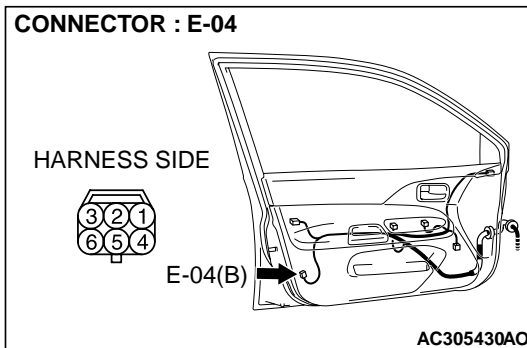
**STEP 1. Check driver's door lock actuator switch connector E-04 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

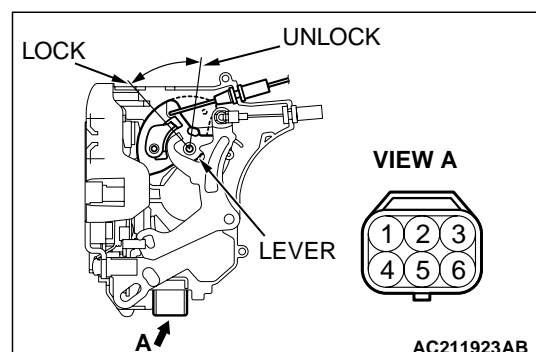
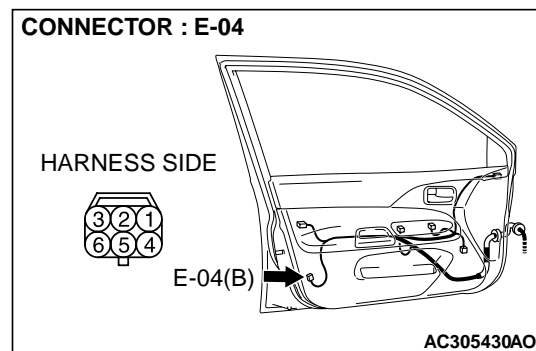
**Q: Is driver's door lock actuator switch connector E-04 in good condition?**

**YES :** Go to Step 2.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

[P.00E-2](#). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door lock actuator switch should be normal.



**STEP 2. Check the driver's door lock actuator switch.**

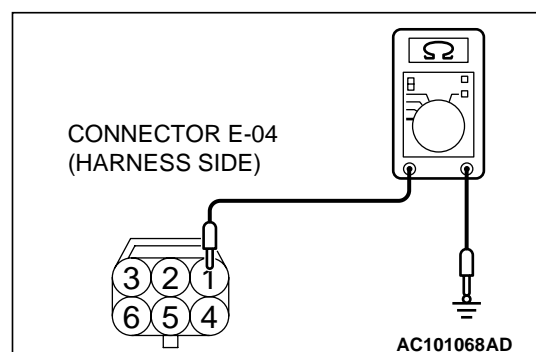
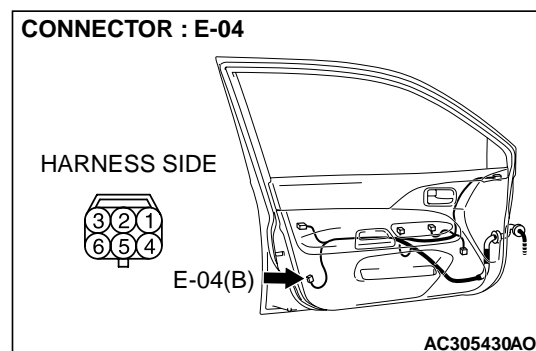
Disconnect driver's door lock actuator switch connector E-04. Then check continuity between the switch terminals.

LEVER POSITION	TESTER CONNECTION	SPECIFIED CONDITION
UNLOCK	1 – 3	Less than 2 ohms

**Q: Is the driver's door lock actuator switch in good condition?**

**YES :** Go to Step 3.

**NO :** Replace the driver's door lock actuator switch. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door lock actuator switch should be normal.

**STEP 3. Check the ground circuit to the driver's door lock actuator switch. Test at driver's door lock actuator switch connector E-04.**

(1) Disconnect driver's door lock actuator switch connector E-04 and measure the resistance available at the wiring harness side of the connector.

(2) Measure the resistance value between terminal 1 and ground.

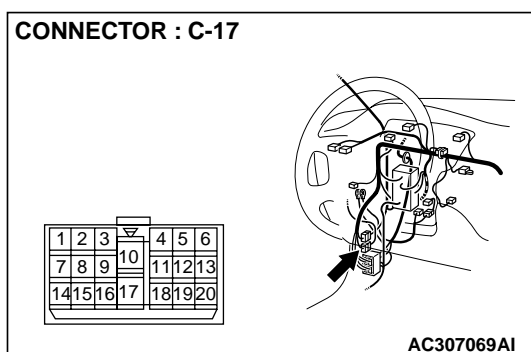
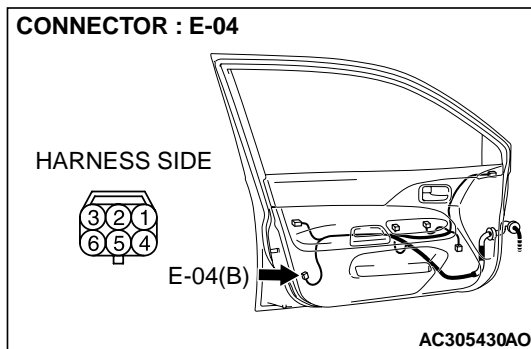
- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 5.

**NO :** Go to Step 4.

**STEP 4. Check the wiring harness between driver's door lock actuator switch connector E-04 (terminal 1) and ground.**



*NOTE: Also check intermediate connector C-17 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors C-17 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between driver's door lock actuator switch connector E-04 (terminal 1) and ground in good condition?**

**YES :** No action is necessary and testing is complete.

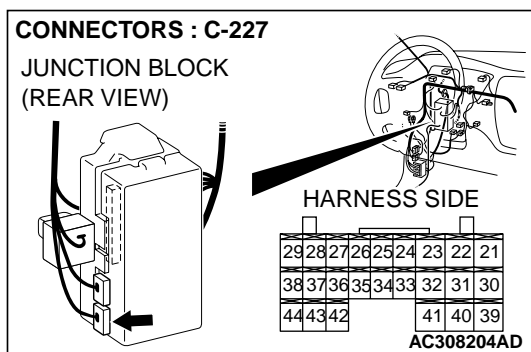
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door lock actuator switch should be normal.

**STEP 5. Check ETACS-ECU connector C-227 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

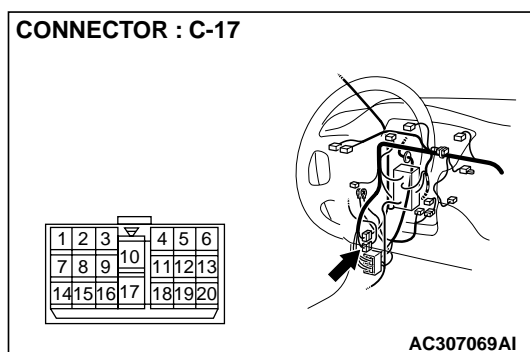
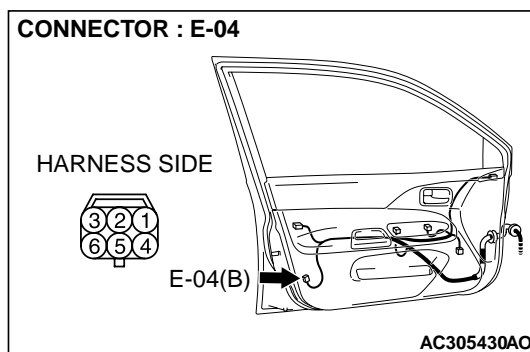
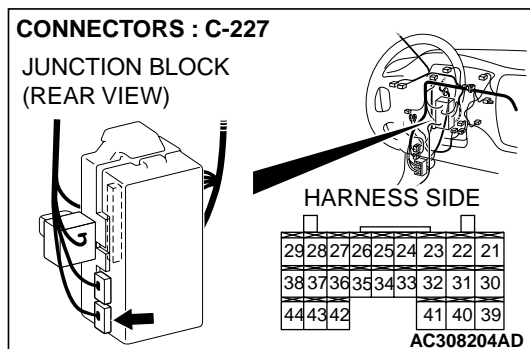
**Q: Is ETACS-ECU connector C-227 in good condition?**

**YES :** Go to Step 6.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door lock actuator switch should be normal.



**STEP 6. Check the wiring harness between driver's door lock actuator switch connector E-04 (terminal 3) and ETACS-ECU connector C-227 (terminal 36).**



*NOTE: Also check intermediate connector C-17 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors C-17 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between driver's door lock actuator switch connector E-04 (terminal 3) and ETACS-ECU connector C-227 (terminal 36) in good condition?**

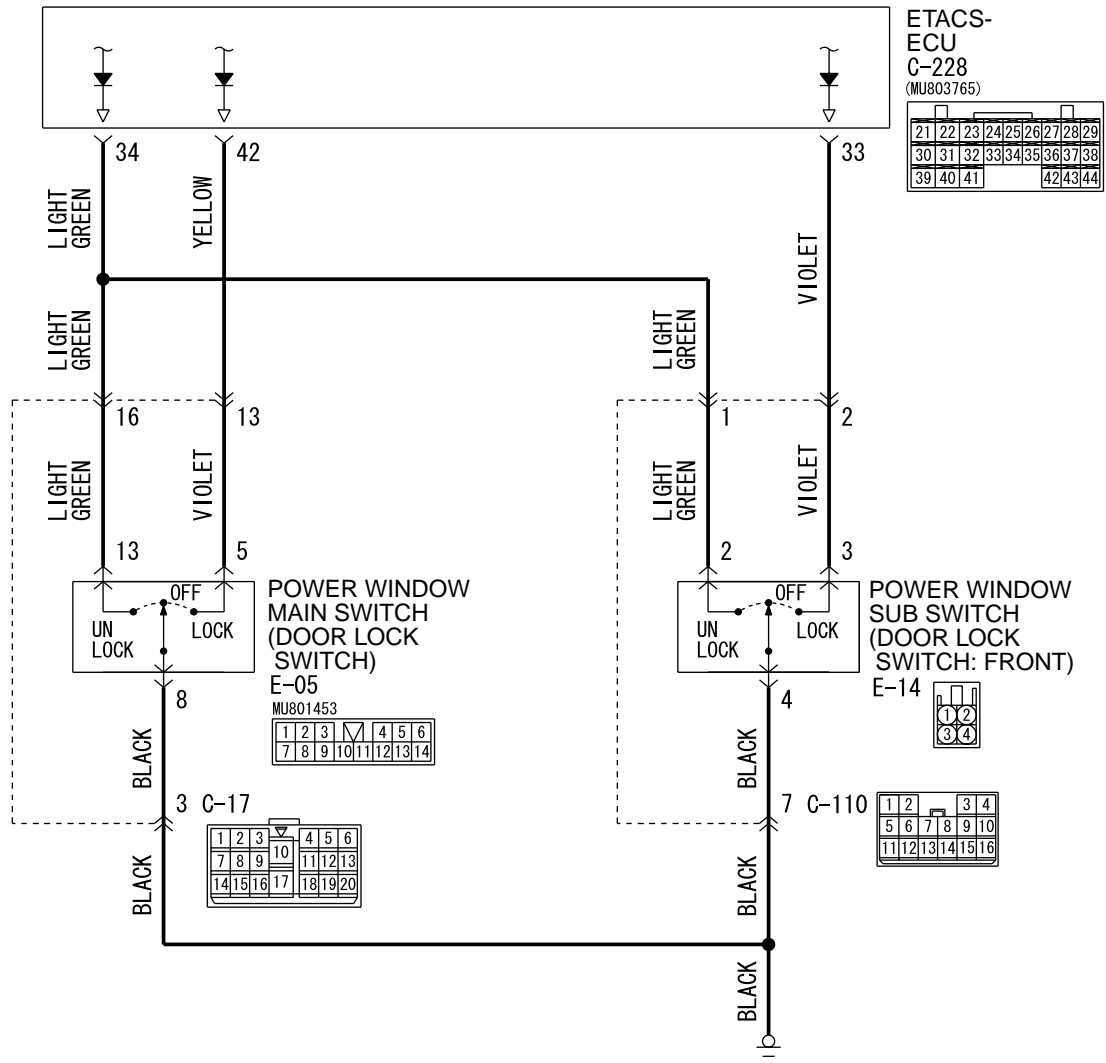
**YES :** Replace the ETACS-ECU. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door lock actuator switch should be normal.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions, which are described in "CIRCUIT OPERATION", work normally, the input signal from the driver's door lock actuator switch should be normal.



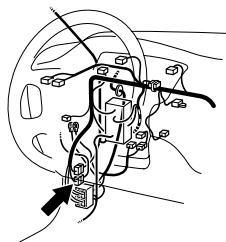
**INSPECTION PROCEDURE O-7: The ETACS-ECU does not receive any signal from the door lock switch (incorporated in power window main switch and power window sub switch) .**

**Door Lock Switch Input Circuit**



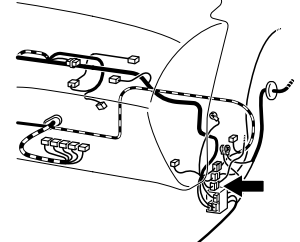
W4J54M135A

**CONNECTOR : C-17**

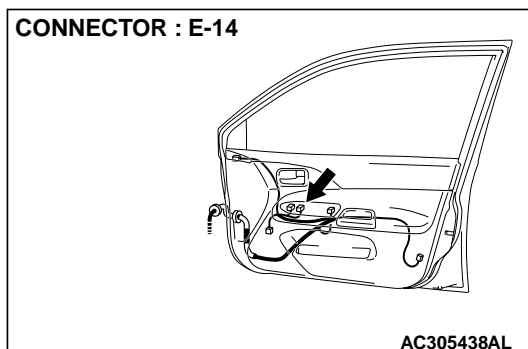
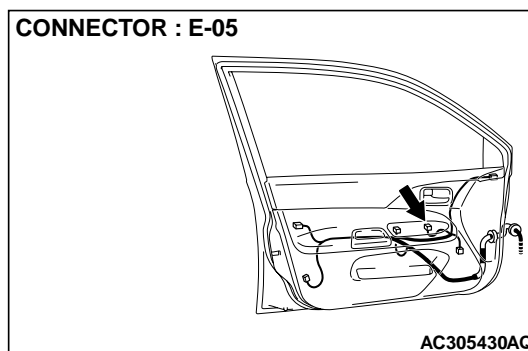
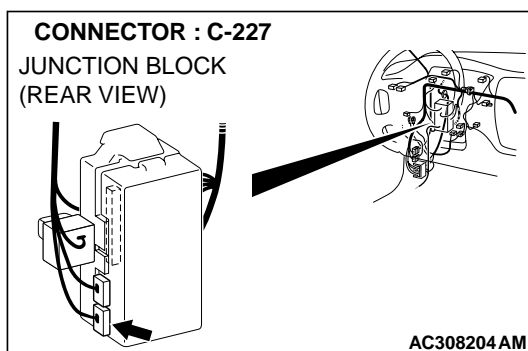


AC307069AH

**CONNECTOR : C-110**



AC307073AQ

**CIRCUIT OPERATION**

The ETACS-ECU operates the central door locking system according to signal from the door lock switch.

**TECHNICAL DESCRIPTION (COMMENT)**

If the signal is not normal, the doors is not locked or unlocked. If the signal is not normal, the power window main switch, power window sub switch or the ETACS-ECU may be defective.

**TROUBLESHOOTING HINTS**

- The power window main switch or power window sub switch (door lock switch) may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

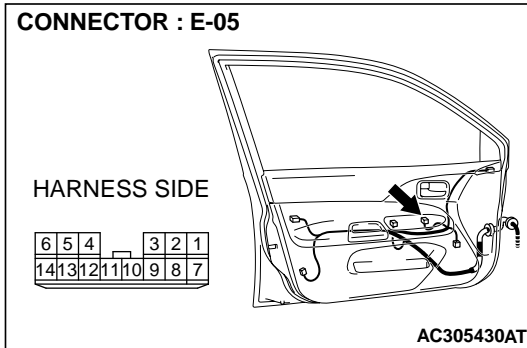
**DIAGNOSIS****Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

**STEP 1. Check which door switch is defective.****Q: Which door switch signal is not entered?**

**Power window main switch (Driver's door) :** Go to Step 2.

**Power window sub switch (Front passenger's door) :**  
Go to Step 8.

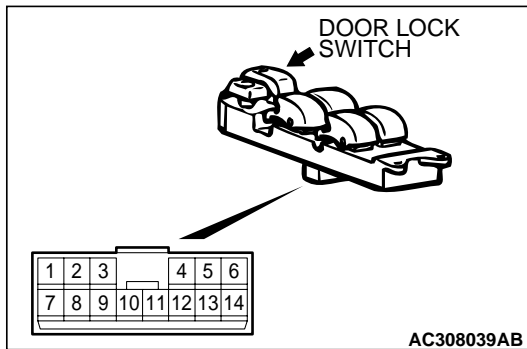


**STEP 2. Check power window main switch connector E-05 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is power window main switch connector E-05 in good condition?**

**YES :** Go to Step 3.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the central door locking system works normally, input signal from the door lock switch should be normal.



**STEP 3. Check the door lock switch (power window main switch).**

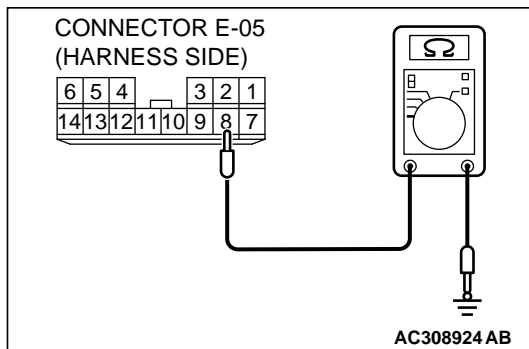
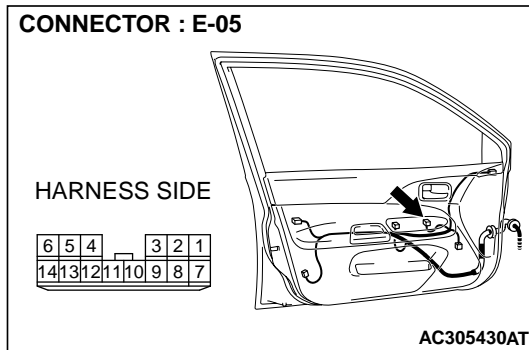
Remove the power window main switch. Then check continuity between the switch terminals.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	5 – 8	Less than 2 ohms
OFF	5 – 8, 8 – 13, 5 – 13	Open circuit
UNLOCK	8 – 13	Less than 2 ohms

**Q: Is the door lock switch (power window main switch) in good condition?**

**YES :** Go to Step 4.

**NO :** Replace the power window main switch. If the central door locking system works normally, input signal from the door lock switch should be normal.



**STEP 4. Check the ground circuit to the power window main switch. Test at power window main switch connector E-05.**

(1) Disconnect power window main switch connector E-05 and measure the resistance available at the wiring harness side of the connector.

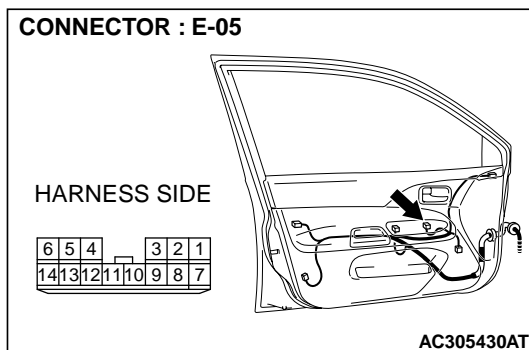
(2) Measure the resistance value between terminal 8 and ground.

- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 6.

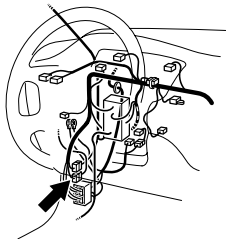
**NO :** Go to Step 5.



**STEP 5. Check the wiring harness between power window main switch E-05 (terminal 8) and ground.**

**CONNECTOR : C-17**

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20				



AC307069AI

*NOTE: Also check intermediate connector C-17 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors C-17 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between power window main switch connector E-05 (terminal 8) and ground in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the central door locking system works normally, input signal from the door lock switch should be normal.

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**STEP 6. Check ETACS-ECU connector C-227 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

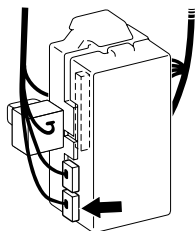
**Q: Is ETACS-ECU connector C-227 in good condition?**

**YES :** Go to Step 7.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the central door locking system works normally, input signal from the door lock switch should be normal.

**CONNECTORS : C-227**

JUNCTION BLOCK  
(REAR VIEW)

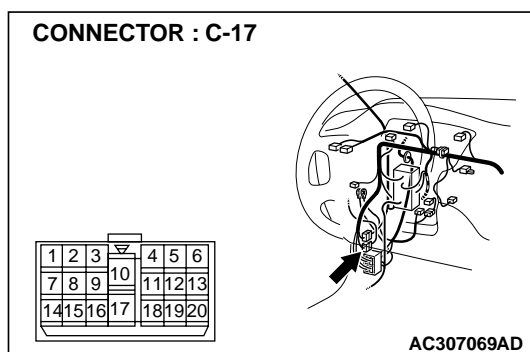
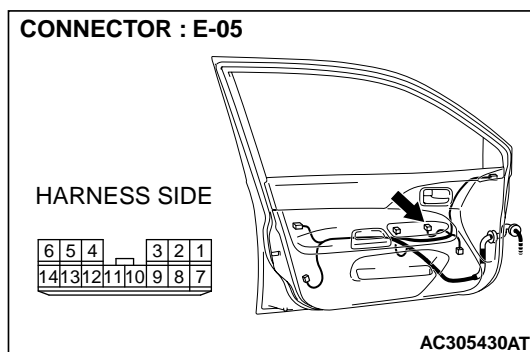
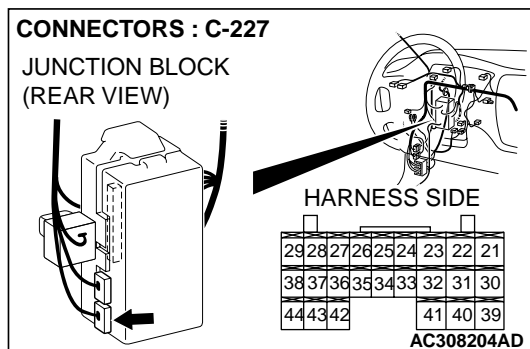


HARNESS SIDE

29	28	27	26	25	24	23	22	21
38	37	36	35	34	33	32	31	30
44	43	42				41	40	39

AC308204AD

**STEP 7. Check the wiring harness between power window main switch connector E-05 (terminal 5 and 13) and ETACS-ECU connector C-227 (terminal 42 and 34).**

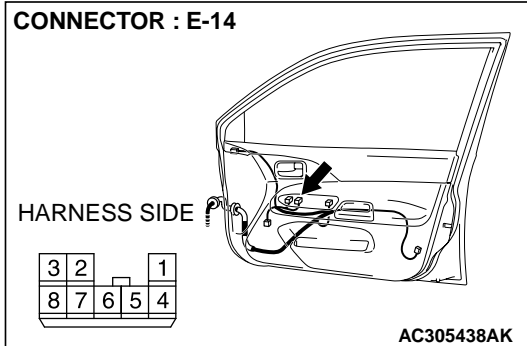


*NOTE: Also check intermediate connector C-17 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors C-17 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between power window main switch connector E-05 (terminal 5 and 13) and ETACS-ECU connector C-227 (terminal 42 and 34) in good condition?**

**YES :** Replace the ETACS-ECU. If the central door locking system works normally, input signal from the door lock switch should be normal.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the central door locking system works normally, input signal from the door lock switch should be normal.

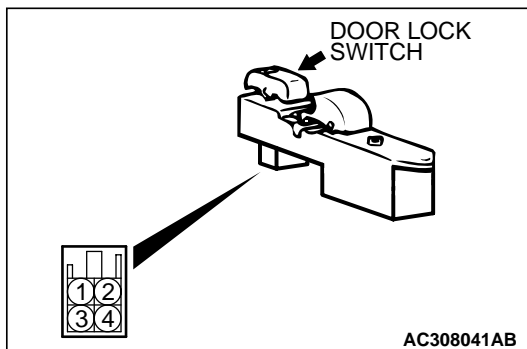


**STEP 8. Check power window sub switch connector E-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is power window sub switch connector E-14 in good condition?**

**YES :** Go to Step 9.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the central door locking system works normally, input signal from the door lock switch should be normal.



**STEP 9. Check the door lock switch (power window sub switch).**

Remove the power window sub switch. Then check continuity between the switch terminals.

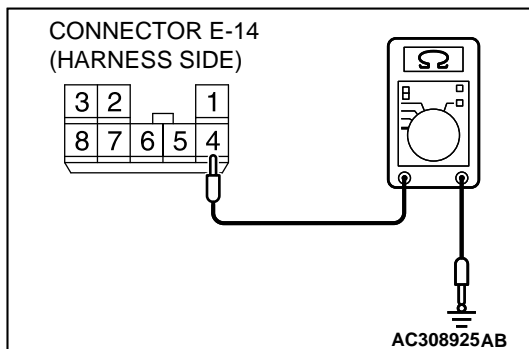
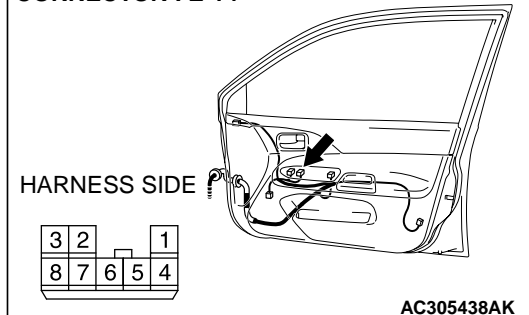
SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	3 – 4	Less than 2 ohms
OFF	2 – 3, 2 – 4, 3 – 4	Open circuit
UNLOCK	2 – 4	Less than 2 ohms

**Q: Is the door lock switch (power window sub switch) in good condition?**

**YES :** Go to Step 10.

**NO :** Replace the power window sub switch. If the central door locking system works normally, input signal from the door lock switch should be normal.

CONNECTOR : E-14



**STEP 10. Check the ground circuit to the power window sub switch. Test at power window sub switch connector E-14.**

(1) Disconnect power window sub switch connector E-14 and measure the resistance available at the wiring harness side of the connector.

(2) Measure the resistance value between terminal 4 and ground.

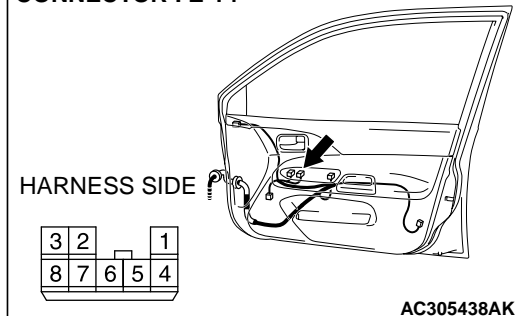
- The resistance should equal 2 ohms or less.

**Q: Is the measured resistance 2 ohms or less?**

**YES :** Go to Step 12.

**NO :** Go to Step 11.

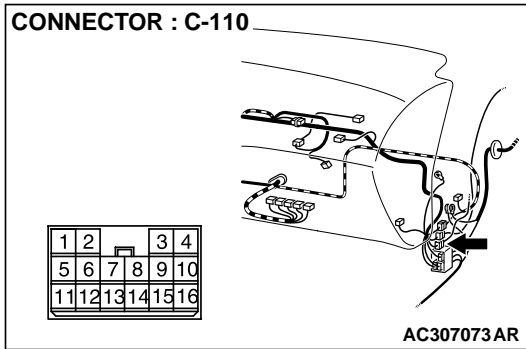
CONNECTOR : E-14



**STEP 11. Check the wiring harness between power window sub switch E-14 (terminal 4) and ground.**



**CONNECTOR : C-110**



*NOTE: Also check intermediate connector C-110 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors C-110 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**Q: Is the wiring harness between power window sub switch connector E-14 (terminal 4) and ground in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the central door locking system works normally, input signal from the door lock switch should be normal.

---

**STEP 12. Check ETACS-ECU connector C-227 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

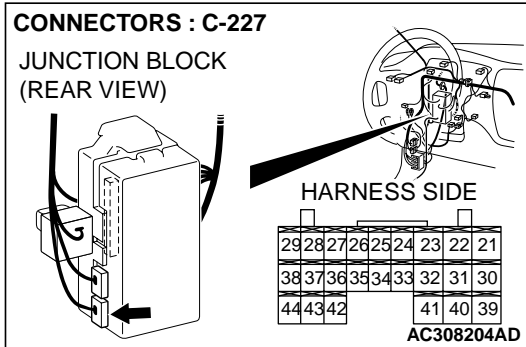
**Q: Is ETACS-ECU connector C-227 in good condition?**

**YES :** Go to Step 13.

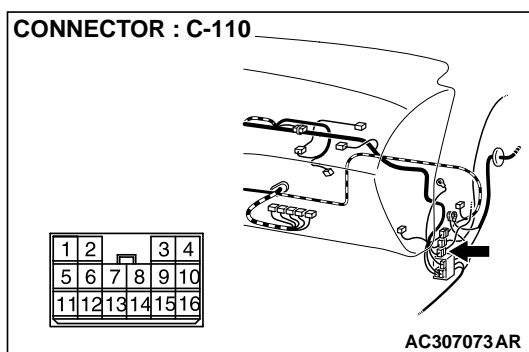
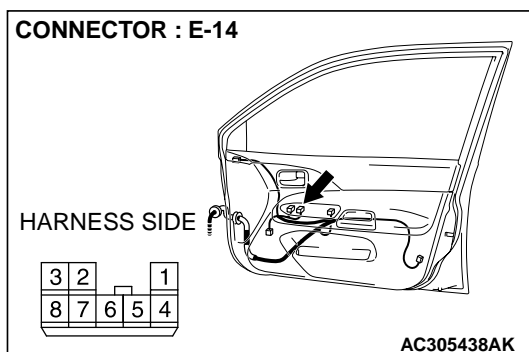
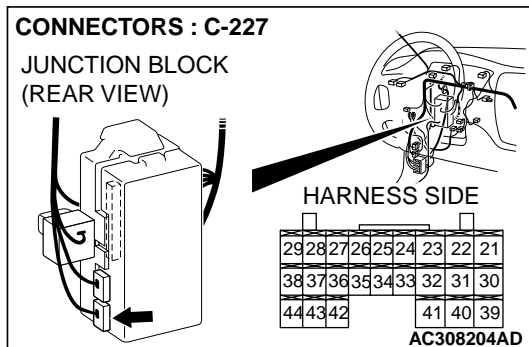
**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the central door locking system works normally, input signal from the door lock switch should be normal.

**CONNECTORS : C-227**

JUNCTION BLOCK  
(REAR VIEW)



**STEP 13.** Check the wiring harness between power window sub switch connector E-14 (terminal 2 and 3) and ETACS-ECU connector C-227 (terminal 34 and 33).



**NOTE:** Also check intermediate connector C-110 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors C-110 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

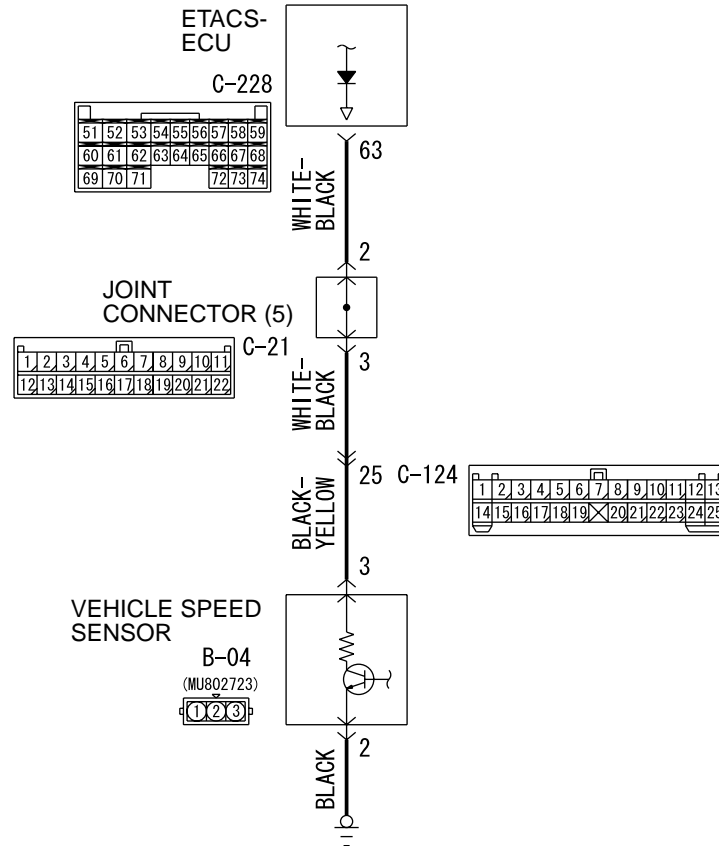
**Q:** Is the wiring harness between power window sub switch connector E-14 (terminal 1 and 3) and ETACS-ECU connector C-227 (terminal 33 and 34) in good condition?

**YES :** Replace the ETACS-ECU. If the central door locking system works normally, input signal from the door lock switch should be normal.

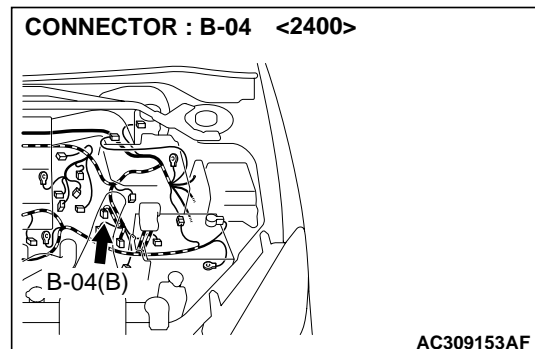
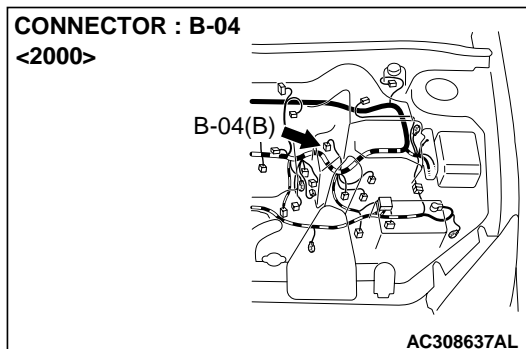
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the central door locking system works normally, input signal from the door lock switch should be normal.

**INSPECTION PROCEDURE O-8: ETACS-ECU does not receive any signal from the vehicle speed sensor. <M/T>**

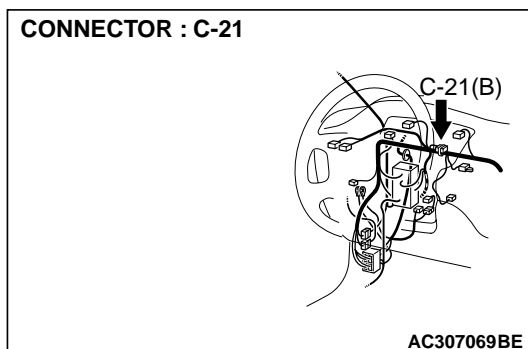
**Vehicle Speed Sensor Input Circuit**



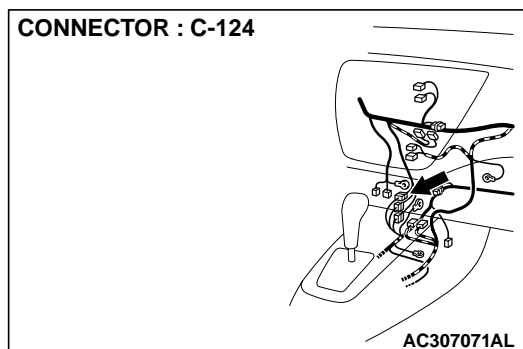
W4J54M136A



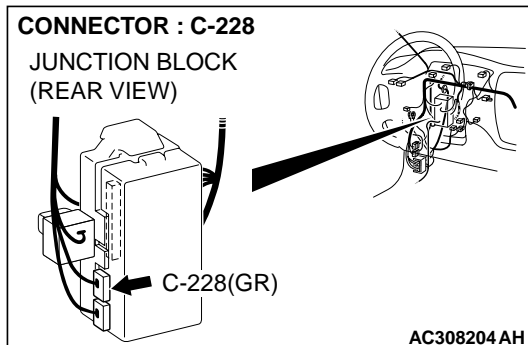
CONNECTOR : C-21



CONNECTOR : C-124



CONNECTOR : C-228

JUNCTION BLOCK  
(REAR VIEW)**CIRCUIT OPERATION**

The ETACS-ECU controls the windshield intermittent wiper interval according to the vehicle speed sensor signal.

**TECHNICAL DESCRIPTION (COMMENT)**

If the signal is not normal, the wiper interval, which is described in "CIRCUIT OPERATION", will not be changed correctly. If the signal is not normal, the vehicle speed sensor or the ETACS-ECU may be defective.

**TROUBLESHOOTING HINTS**

- The vehicle speed sensor may be defective
- The ETACS-ECU may be defective
- Damaged harness wires or connectors

**DIAGNOSIS****Required Special Tools:**

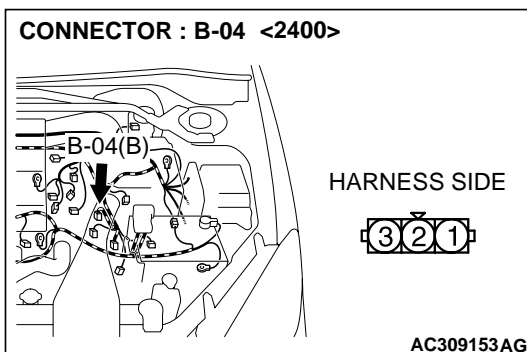
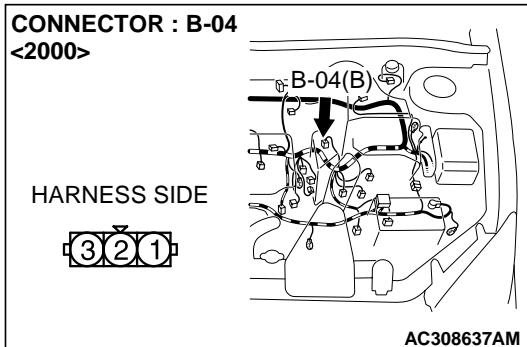
- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

**STEP 1. Check that the combination meter (speedometer) works normally.**

**Q: Does the combination meter (speedometer) work normally?**

**YES :** Go to Step 2.

**NO :** Refer to GROUP 54A, Combination Meters Assembly and Vehicle Speed Sensor - Symptom Procedures "Speed meter does not work <M/T> [P.54A-17](#) ."



**STEP 2.** Check ETACS-ECU connector C-228 and vehicle speed sensor connector B-04 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

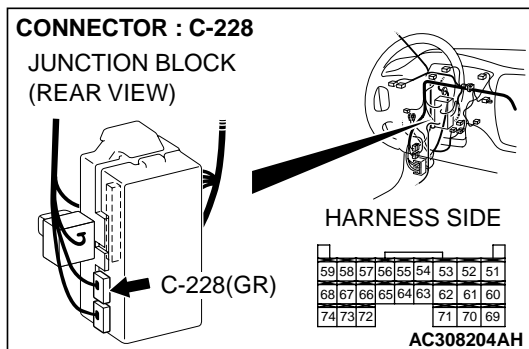
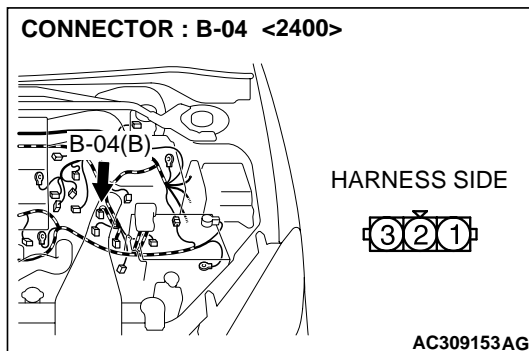
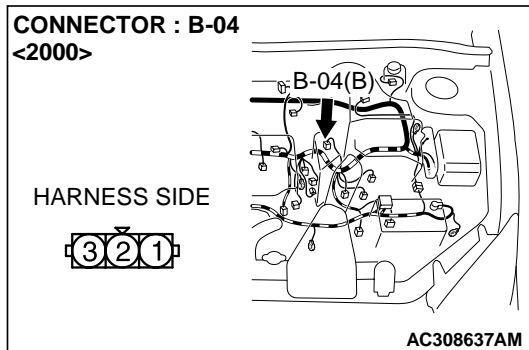
**Q:** Are ETACS-ECU connector C-228 and vehicles speed sensor connector B-04 in good condition?

**YES :** Go to Step 3.

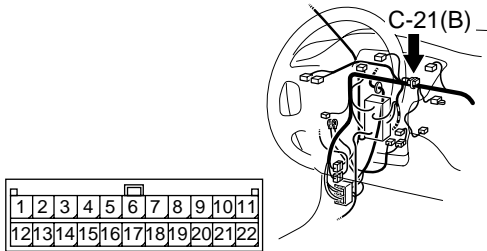
**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** If the wiper interval can be adjusted normally, it indicates that the windshield intermittent wiper interval adjusting knob should send a signal to the ECU.

**STEP 3. Check the wiring harness between ETACS-ECU connector C-228 (terminal 63) and vehicle speed sensor connector B-04 (terminal 3).**

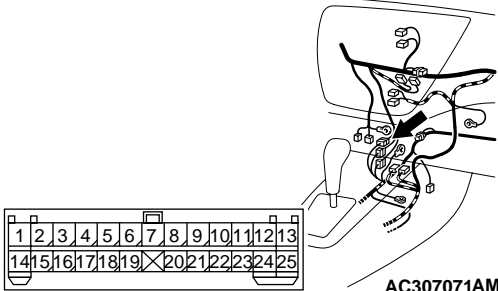


**CONNECTOR : C-21**



AC307069AX

**CONNECTOR : C-124**



AC307071AM

*NOTE: Also check intermediate connector C-124 and joint connector C-21 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-124 or joint connector C-21 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

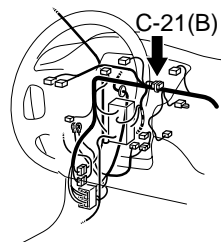
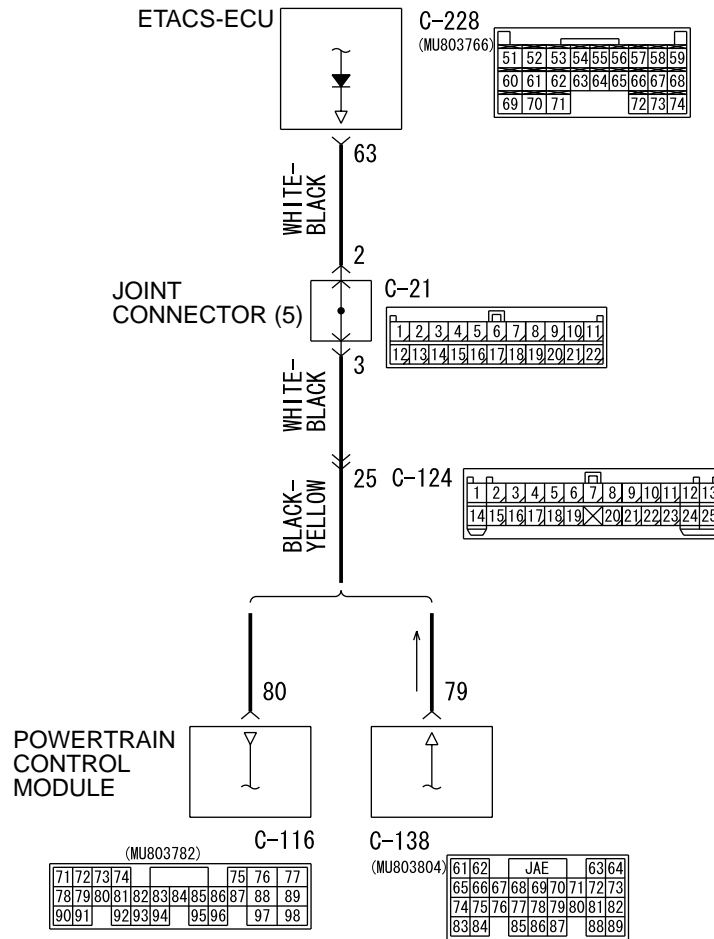
**Q: Is the wiring harness between ETACS-ECU connector C-228 (terminal 63) and vehicle speed sensor connector B-04 (terminal 3) in good condition?**

**YES :** Replace the ETACS-ECU. If the wiper interval can be adjusted normally, it indicates that the windshield intermittent wiper interval adjusting knob should send a signal to the ECU.

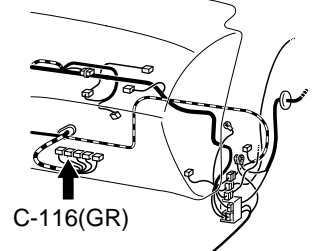
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the wiper interval can be adjusted normally, it indicates that the windshield intermittent wiper interval adjusting knob should send a signal to the ECU.

## INSPECTION PROCEDURE O-8: ETACS-ECU does not receive vehicle speed signal <A/T>.

## Vehicles Speed Signal Input Circuit



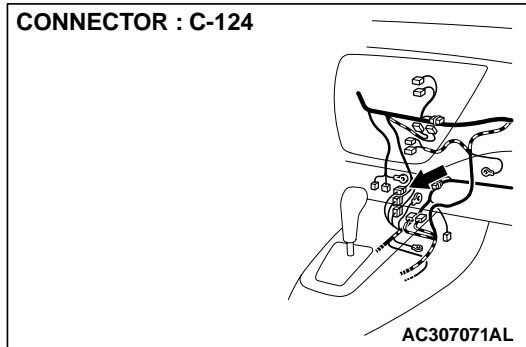
AC307069BE



AC307073AS

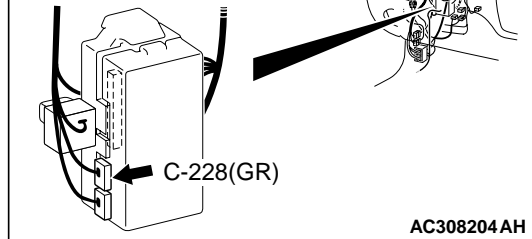


CONNECTOR : C-124



CONNECTOR : C-228

JUNCTION BLOCK  
(REAR VIEW)



### CIRCUIT OPERATION

The ETACS-ECU controls the windshield intermittent wiper interval according to the vehicle speed signal, which the powertrain control module sends.

### TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the wiper interval, which is described in "CIRCUIT OPERATION", will not be changed correctly. If the signal is not normal, the powertrain control module or the ETACS-ECU may be defective.

### TROUBLESHOOTING HINTS

- The powertrain control module may be defective
- The ETACS-ECU may be defective
- Damaged harness wires or connectors

## DIAGNOSIS

### Required Special Tools:

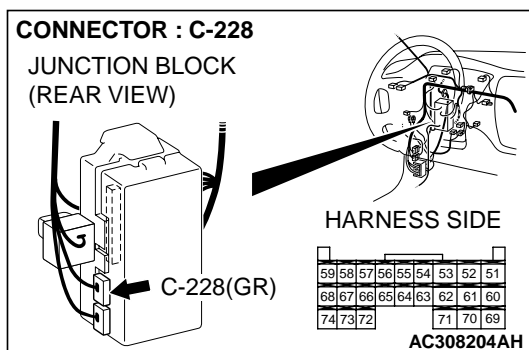
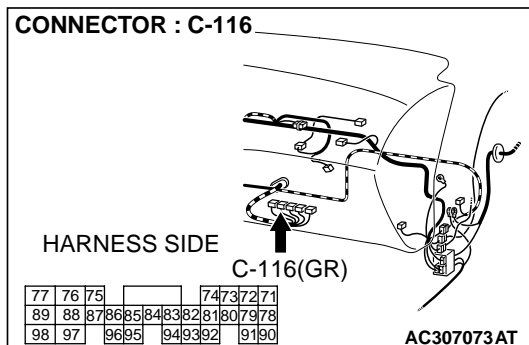
- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

**STEP 1. Check that the combination meter (speedometer) works normally.**

**Q: Does the combination meter (speedometer) work normally?**

**YES :** Go to Step 2.

**NO :** Refer to GROUP 54A, Combination Meters Assembly and Vehicle Speed Sensor - Symptom Procedures "Speed meter does not work <A/T>P.54A-12."



**STEP 2. Check ETACS-ECU connector C-228 and powertrain control module connector C-116 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

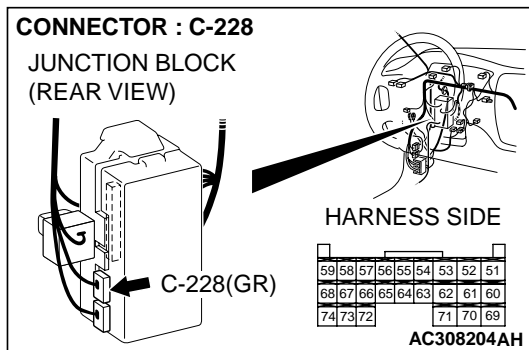
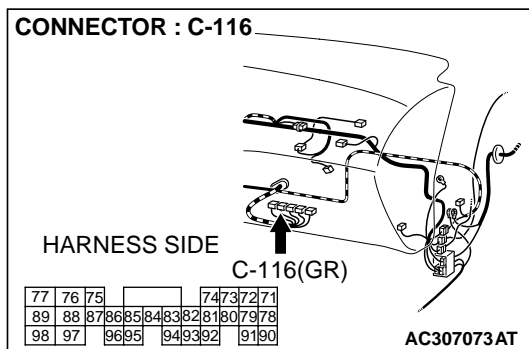
**Q: Are ETACS-ECU connector C-228 and powertrain control module connector C-116 in good condition?**

**YES :** Go to Step 3.

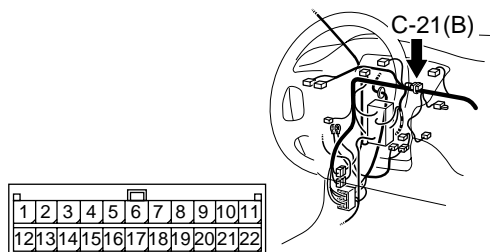
**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

**P.00E-2.** If the wiper interval can be adjusted normally, it indicates that the windshield intermittent wiper interval adjusting knob should send a signal to the ECU.

**STEP 3. Check the wiring harness between ETACS-ECU connector C-228 (terminal 63) and powertrain control module connector C-116 (terminal 80 <2.0L engine> or terminal 79 <2.4L engine>).**

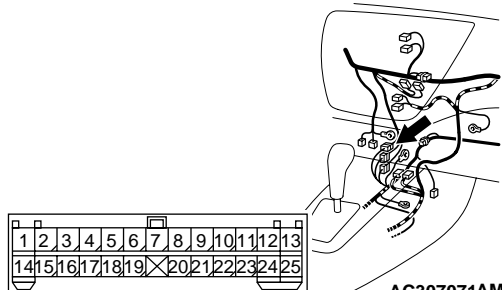


**CONNECTOR : C-21**



AC307069AX

**CONNECTOR : C-124**



AC307071AM

*NOTE: Also check intermediate connector C-124 and joint connector C-21 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-124 or joint connector C-21 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

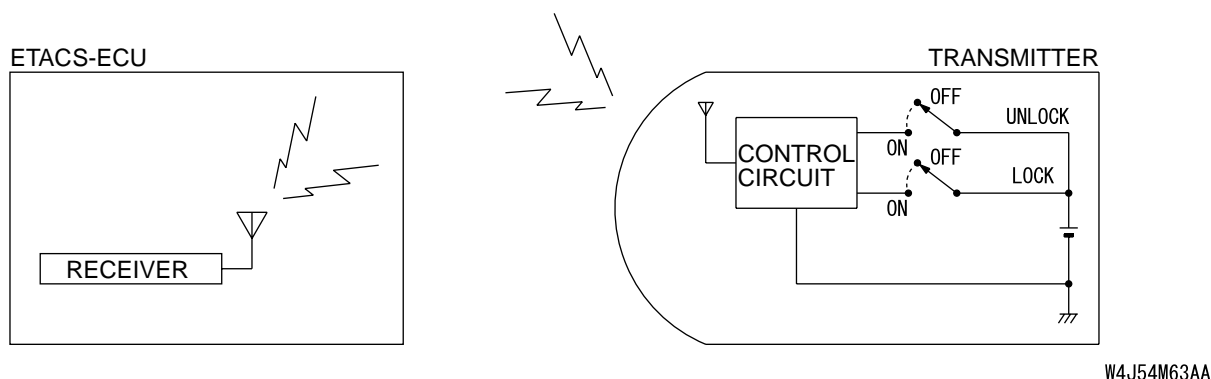
**Q: Is the wiring harness between ETACS-ECU connector C-228 (terminal 63) and powertrain control module connector C-116 (terminal 80 <2.0L engine> or terminal 79 <2.4L engine>) in good condition?**

**YES :** Replace the ETACS-ECU. If the wiper interval can be adjusted normally, it indicates that the windshield intermittent wiper interval adjusting knob should send a signal to the ECU.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the wiper interval can be adjusted normally, it indicates that the windshield intermittent wiper interval adjusting knob should send a signal to the ECU.

**INSPECTION PROCEDURE N-9: Transmitter: The ETACS-ECU does not receive any signal from the lock or unlock switch.**

Transmitter Input Circuit



### CIRCUIT OPERATION

The ETACS-ECU receives signal through its receiver from the transmitter, and operates the keyless entry system according to the signal.

### TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the systems, which are described in "CIRCUIT OPERATION", do not work normally.

### TROUBLESHOOTING HINTS

- The transmitter may be defective
- The ETACS-ECU may be defective

## DIAGNOSIS

### Required Special Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

### STEP 1. Register the transmitter.

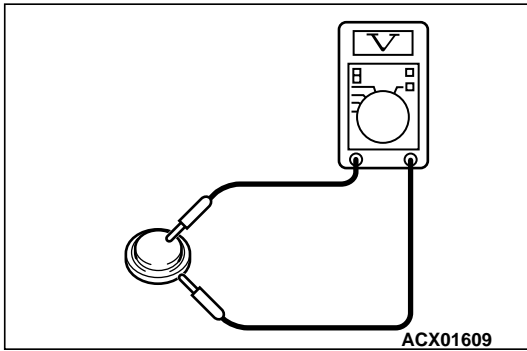
Replace the transmitter. Refer to GROUP 42, Keyless Entry System, On-vehicle Service, How to register secret code

[P.42-65](#).

### Q: Can the transmitter be registered correctly?

**YES :** If the systems, which are described in "CIRCUIT OPERATION", work normally, the input signal from the transmitter should be normal.

**NO :** Go to Step 2.



---

**STEP 2. Check the transmitter battery.**

Measure the voltage of the transmitter battery.

- The value should be approximately 2.5 - 3.2 volts.

**Q: Is the measured voltage approximately 2.5 - 3.2 volts (battery positive voltage)?**

**YES :** Go to Step 3.

**NO :** Replace the battery. If the transmitter can be registered normally, and the systems, which are described in "CIRCUIT OPERATION", operate normally, it indicates that the transmitter is sending normal signal to the ECU.

---

**STEP 3. Check the transmitter.**

Substantial other transmitter in order to register encrypted code. Refer to GROUP 42, Keyless Entry System, On-vehicle Service, How to register secret code [P.42-65](#).

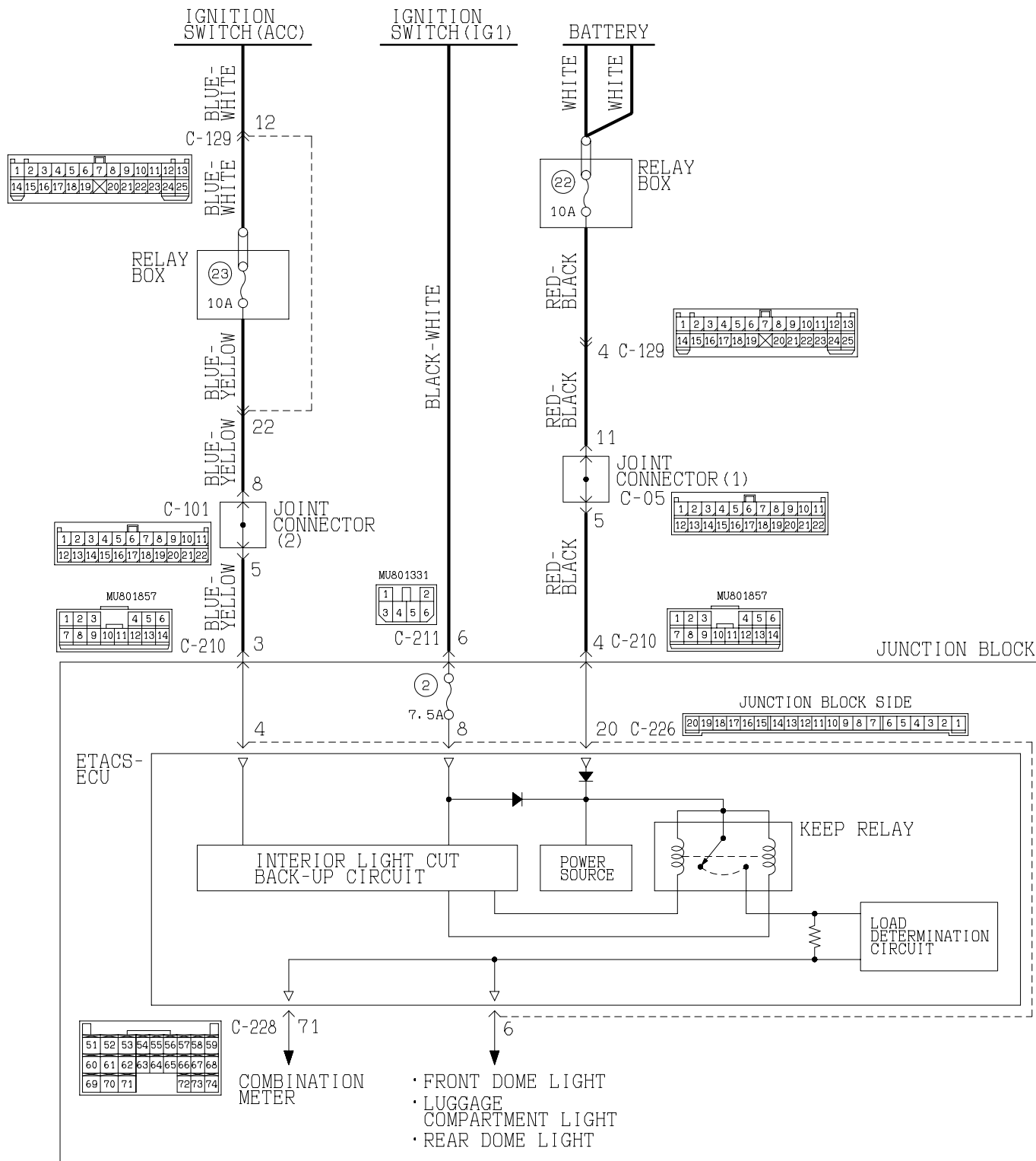
**Q: Can the transmitter be registered correctly?**

**YES :** If the systems, which are described in "CIRCUIT OPERATION", work normally, the input signal from the transmitter should be normal.

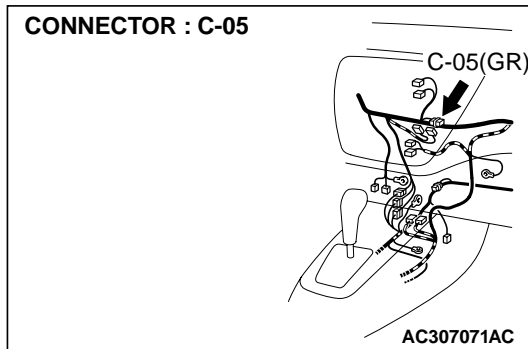
**NO :** Replace the ETACS-ECU. If the systems, which are described in "CIRCUIT OPERATION", work normally, the input signal from the transmitter should be normal.

## INSPECTION PROCEDURE O-10: ETACS-ECU does not receive any interior light loaded signal.

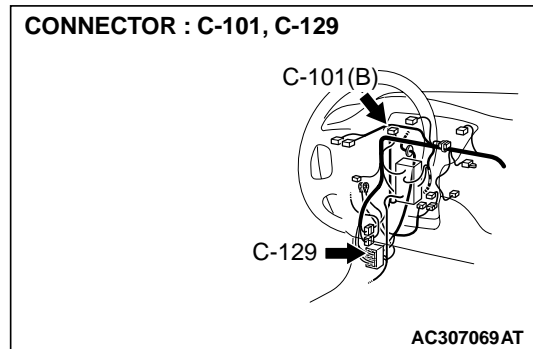
Interior Light Automatic Shut-down Function Circuit



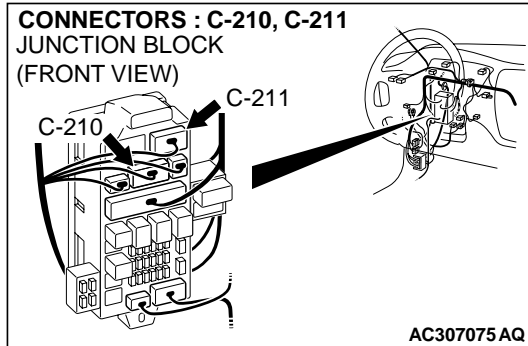
**CONNECTOR : C-05**



**CONNECTOR : C-101, C-129**

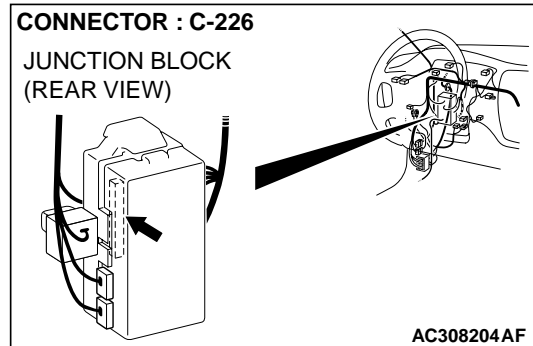


**CONNECTORS : C-210, C-211  
JUNCTION BLOCK  
(FRONT VIEW)**



**CONNECTOR : C-226**

**JUNCTION BLOCK  
(REAR VIEW)**



### **CIRCUIT OPERATION**

The ETACS-ECU operates the following equipment or functions by the interior light loaded signal:

- Interior light automatic shutoff function
- Front dome light, rear dome light and luggage compartment light
- Door-ajar indicator light

### **TECHNICAL DESCRIPTION (COMMENT)**

If the signal is not normal, the equipment or functions, which are described in "CIRCUIT OPERATION", do not work normally.

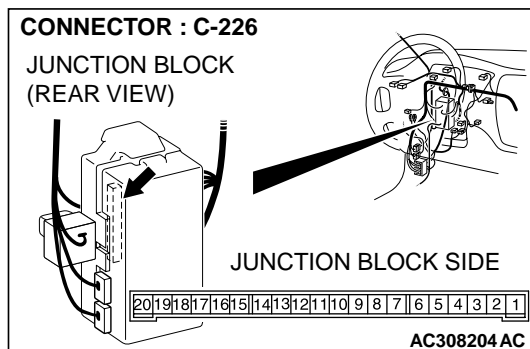
### **TROUBLESHOOTING HINTS**

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

## **DIAGNOSIS**

### **Required Special Tools:**

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B

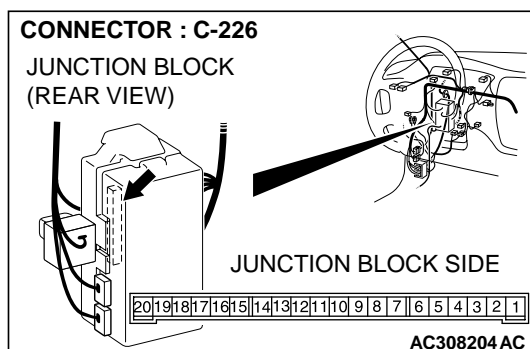


**STEP 1. Check ETACS-ECU connector C-226 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Is ETACS-ECU connector C-226 in good condition?**

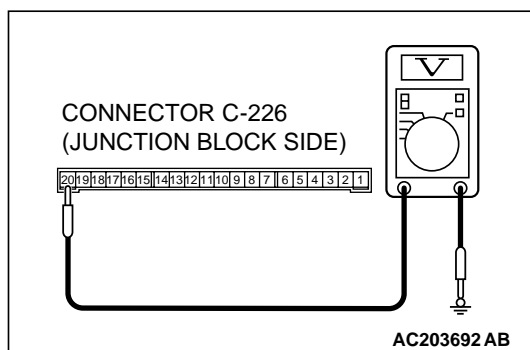
**YES :** Go to Step 2.

**NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). If the functions or equipment, which are described in "CIRCUIT OPERATION", work normally, the interior light loaded signal should be normal.



**STEP 2. Check the battery power supply circuit to the ETACS-ECU. Test at ETACS-ECU connector C-226.**

(1) Disconnect ETACS-ECU connector C-226 and measure the voltage available at the junction block side of the connector.



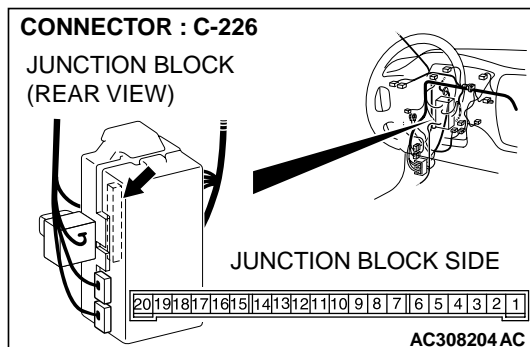
(2) Measure the voltage between terminal 20 and ground.

- The voltage should equal approximately 12 volts (battery positive voltage).

**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES :** Go to Step 4.

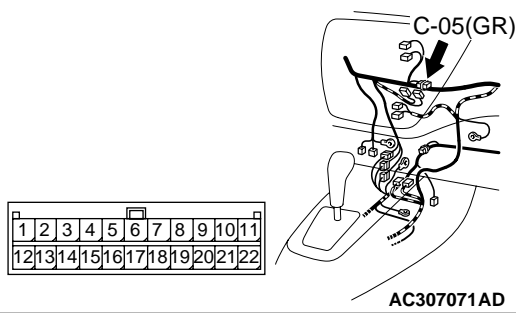
**NO :** Go to Step 3.



**STEP 3. Check the wiring harness between ETACS-ECU connector C-226 (terminal 20) and the battery.**

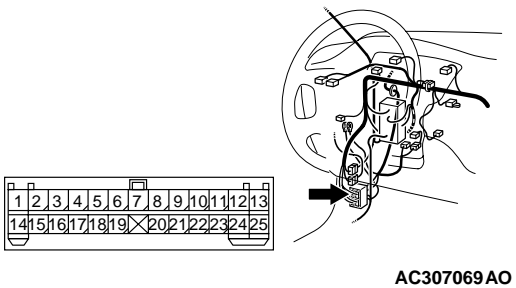


**CONNECTOR : C-05**



*NOTE: Also check junction block connector C-210, joint connector C-05 and intermediate connector C-129 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-210, joint connector C-05 or intermediate C-129 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

**CONNECTOR : C-129**



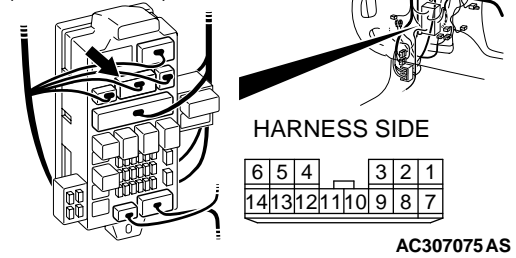
**Q: Is the wiring harness between ETACS-ECU connector C-226 (terminal 20) and the battery in good condition?**

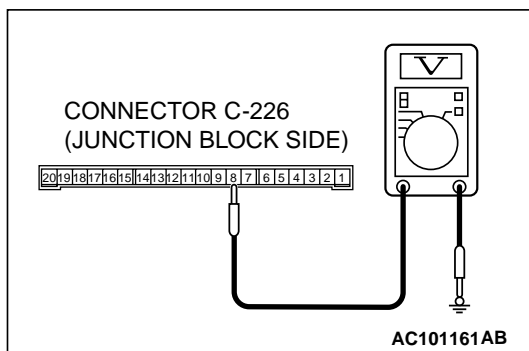
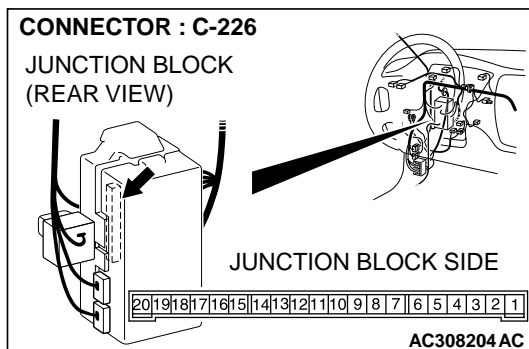
**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions or equipment, which are described in "CIRCUIT OPERATION", work normally, the interior light loaded signal should be normal.

**CONNECTOR : C-210**

JUNCTION BLOCK  
(FRONT VIEW)





**STEP 4. Check the ignition switch (IG1) line of the power supply circuit to the ETACS-ECU. Test at ETACS-ECU connector C-226.**

- (1) Disconnect ETACS-ECU connector C-226 and measure the voltage available at the junction block side of the connector.
- (2) Turn the ignition switch to the "ON" position.

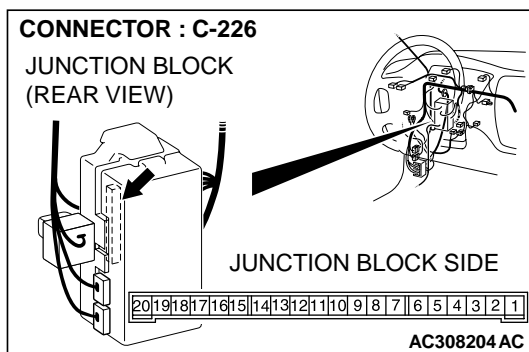
- (3) Measure the voltage between terminal 8 and ground.

- The voltage should equal approximately 12 volts (battery positive voltage).

**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

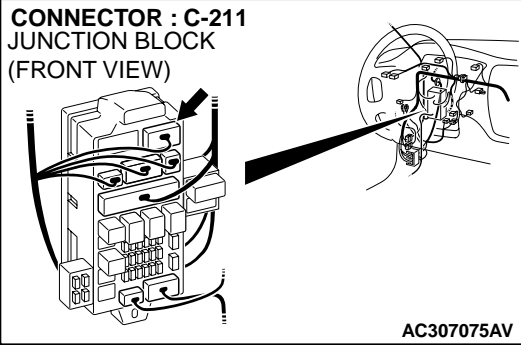
**YES :** Go to Step 6.

**NO :** Go to Step 5.



**STEP 5. Check the wiring harness between ETACS-ECU connector C-226 (terminal 8) and the ignition switch (IG1).**

**CONNECTOR : C-211**  
**JUNCTION BLOCK**  
**(FRONT VIEW)**



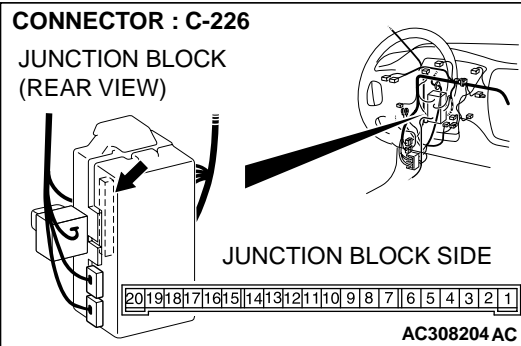
*NOTE: Also check junction block connector C-211 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-211 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.*

**Q: Is the wiring harness between ETACS-ECU connector C-226 (terminal 8) and the ignition switch (IG1) in good condition?**

**YES :** No action is necessary and testing is complete.

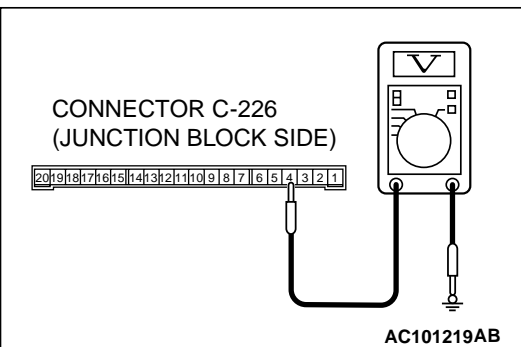
**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions or equipment, which are described in "CIRCUIT OPERATION", work normally, the interior light loaded signal should be normal.

**CONNECTOR : C-226**  
**JUNCTION BLOCK**  
**(REAR VIEW)**



**STEP 6. Check the ignition switch (ACC) line of the power supply circuit to the ETACS-ECU. Test at ETACS-ECU connector C-226.**

- (1) Disconnect ETACS-ECU connector C-226 and measure the voltage available at the junction block side of the connector.
- (2) Turn the ignition switch to the "ACC" position.



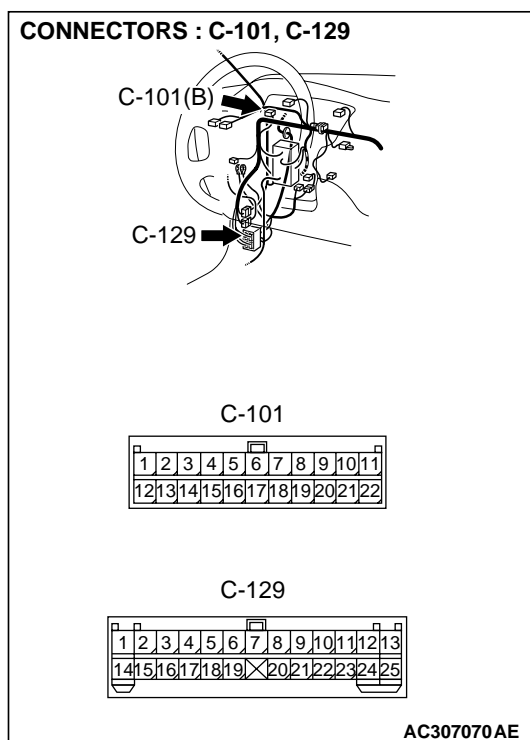
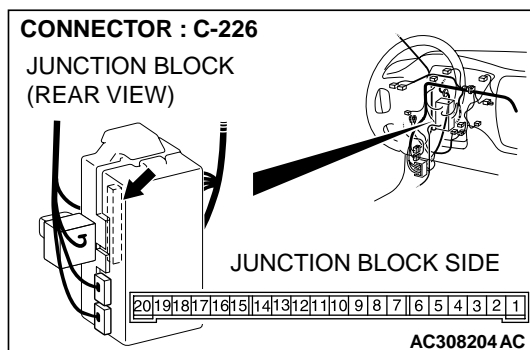
- (3) Measure the voltage between terminal 4 and ground.
  - The voltage should equal approximately 12 volts (battery positive voltage).

**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?**

**YES :** Replace the ETACS-ECU. If the functions or equipment, which are described in "CIRCUIT OPERATION", work normally, the interior light loaded signal should be normal.

**NO :** Go to Step 7.

**STEP 7. Check the wiring harness between ETACS-ECU connector C-226 (terminal 4) and the ignition switch (ACC).**

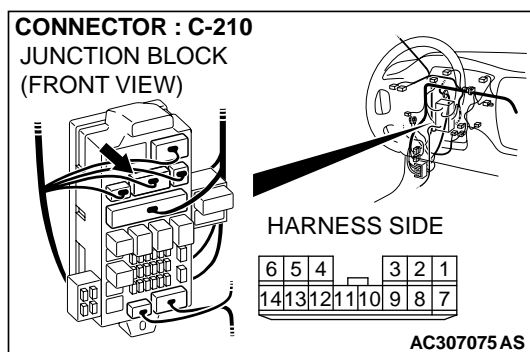


**NOTE:** Also check junction block connector C-210, joint connector C-101 and intermediate connector C-129 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-210, joint connector C-101 or intermediate C-129 is damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

**Q: Is the wiring harness between ETACS-ECU connector C-226 (terminal 4) and ignition switch (ACC) in good condition?**

**YES :** No action is necessary and testing is complete.

**NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions or equipment, which are described in "CIRCUIT OPERATION", work normally, the interior light loaded signal should be normal.



## CHECK AT ECU TERMINAL

M1549001200748

## 1. ETACS-ECU

\*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----

21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38
39	40	41				42	43	44

51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68
69	70	71				72	73	74

AC101265

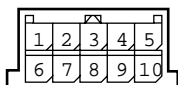
NOTE: \*: The terminal 1 to 20 connectors can not be measured as the ETACS-ECU is installed directly on the junction block. Therefore, this information is only for reference.

TERMINAL NO.	INSPECTION ITEM	INSPECTION CONDITION	NORMAL VALUE
1	Output to power window relay	When the power windows can work	Battery positive voltage
2	Battery positive voltage (for central door lock)	Always	Battery positive voltage
3	Ground (for ECU)	Always	0 V
4	Power supply to ignition switch (ACC)	Ignition switch: "ACC"	Battery positive voltage
5	Output to dome light	When dome light is on	2 V or less
6	Power supply to interior light (dome light)	Always (when interior light shutoff function is not operating)	Battery positive voltage
7	Input from door switches	Either of door switches: ON (Door open)	0 V
8	Power supply to ignition switch (IG1)	Ignition switch: "ON"	Battery positive voltage
9	Output to turn-signal light (RH)	When turn-signal light (RH) is on	Battery positive voltage
10	Input from driver's door switch	Driver's door switch: ON (Driver's door open)	0 V
11	Battery power supply (for turn-signal light)	Always	Battery positive voltage
12	Output to door lock	When door lock actuator is operating (doors locked)	Battery positive voltage
13	Output to door unlock (excluding driver's door)	When door lock actuator is operating (doors unlocked)	Battery positive voltage
14	Output to turn-signal light (LH)	When turn-signal light (LH) is on	Battery positive voltage
16	Output to rear wiper	When rear wiper is operating	Battery positive voltage
17	Input of rear wiper automatic stop signal	When rear wiper is operating	Battery positive voltage
18	Power supply to ignition switch (ACC)	Ignition switch: "ACC"	Battery positive voltage
19	—	—	—
20	Battery power supply (for ECU)	Always	Battery positive voltage

TERMINAL NO.	INSPECTION ITEM	INSPECTION CONDITION	NORMAL VALUE
21	Input of driver's seat belt switch signal	Driver's seat belt switch: ON (seat belts unfastened)	0 V
22	Output to door unlock (for driver's door)	When driver's door lock actuator is operating (doors unlocked)	Battery positive voltage
23	Output to rear washer	When rear washer is operating	Battery positive voltage
25	Input of driver's door lock key cylinder switch (UNLOCK) signal	Driver's door lock key cylinder switch: UNLOCK	0 V
30	Input of key reminder switch signal	Key reminder switch: ON (ignition key removed)	0 V
33	Input of front passenger's door lock key cylinder switch (LOCK) signal	front passenger's door lock key cylinder switch: LOCK	0 V
	Input of door lock switch signal (LOCK)	Door lock switch (incorporated in power window switch): LOCK	0 V
34	Input of front passenger's door lock key cylinder switch (UNLOCK) signal	Front passenger's door lock key cylinder switch: UNLOCK	0 V
	Input of door lock switch signal (UNLOCK)	Door lock switch (incorporated in power window switch): UNLOCK	0 V
36	Input of driver's door lock actuator switch (UNLOCK) signal	Driver's door lock actuator switch: UNLOCK	0 V
39	Input of "R" position signal from transmission range switch	Ignition switch: "ON," Selector lever: "R"	Battery positive voltage
42	Input of driver's door lock key cylinder switch (LOCK) signal	Driver's door lock key cylinder switch: LOCK	0 V
	Input of door lock switch signal (LOCK)	Door lock switch (incorporated in power window switch): LOCK	0 V
44	Output to horn	When the keyless entry horn answerback function operates the horn	2 V or less
51	Output to data link connector	When DTC sets	0 – 12 V (pulse signal)
		When input check signal is output	0 – 12 V (when input pulse signal is fluctuating)
53	Output to the door-ajar indicator light	Any door is open	2 V or less
55	Input of hazard warning light switch signal	Hazard warning light switch: ON (When the switch is depressed)	0 V
56	Ground (for sensor)	Always	0 V
59	SWS communication line	Always	0 – 12 V (pulse signal)
63	Input of vehicle speed signal	When the vehicle is being driven	0 – 12 V (pulse signal)
65	Input of front passengers's door switch signal	Front passenger's door switch: ON (Front passenger's door open)	0 V

TERMINAL NO.	INSPECTION ITEM	INSPECTION CONDITION	NORMAL VALUE
66	Input of signal from windshield intermittent wiper interval adjusting knob	Ignition switch: "ACC," Windshield intermittent wiper interval adjusting knob: "FAST" → "SLOW"	0 → 2.5 V
67	Input of diagnosis indication selection	When scan tool is connected	0 V
68	Output of data request signal	Always	0 – 12 V (pulse signal)
69	–	–	–
71	Power supply to interior light	Always (when interior light shutoff function is not operating)	Battery positive voltage
72	Output to the high-beam indicator light	Headlight: High-beam	2 V or less
73	Output to seat belt warning light	When seat belt warning light is on	2 V or less

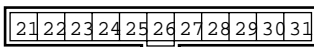
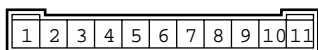
## 2. COLUMN SWITCH



ACX01512

TERMINAL NO.	INSPECTION ITEM	INSPECTION CONDITION	NORMAL VALUE
1	Battery power supply	Always	Battery positive voltage
2	Input of data request signal	Always	0 – 12 V (pulse signal)
3	SWS communication line	Always	0 – 12 V (pulse signal)
4	Ground	Always	0 V
6	Output of signal from windshield intermittent wiper interval adjusting knob	Igniting switch: "ACC," Windshield intermittent wipe interval adjusting knob: "FAST" → "SLOW"	0 → 2.5 V
8	Output of backup signal from windshield wiper switch	Windshield low-speed wiper switch or windshield high-speed wiper switch: ON	0 V
9	Power supply to ignition switch (IG1)	Ignition switch: "ON"	Battery positive voltage
10	Output of backup signal from headlight switch	Ignition switch: "ON," Headlight switch: ON	0 V

## 3. FRONT-ECU



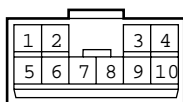
ACX01513

*NOTE: Terminal voltages can not be measured as the front-ECU is installed directly on the relay box. Therefore, this information is only for reference.*

TERMINAL NO.	INSPECTION ITEM	INSPECTION CONDITION	NORMAL VALUE
2	Output to headlight (high-beam)	When headlights (high-beam) are on	Battery positive voltage
3, 4	Battery power supply (for headlight)	Always	Battery positive voltage
5	Battery power supply (for taillight)	Always	Battery positive voltage
6	Output to headlight (low-beam)	When headlights (low-beam) are on	Battery positive voltage
7	Battery power supply (for ECU)	Always	Battery positive voltage
8	Output to taillights	When taillights are on	Battery positive voltage
21	Output to windshield washer	When windshield washer is on	Battery positive 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	Battery positive voltage
24	Power supply to ignition switch (ACC)	Ignition switch: "ACC"	Battery positive voltage
25	Input of backup signal from headlight switch	Headlight 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)	Battery positive voltage
28	Output to windshield wiper (high-speed)	When windshield wiper is on (at high speed)	Battery positive voltage
30	Power supply to ignition switch (IG2)	Ignition switch: "ON"	Battery positive voltage
31	Ground	Always	0 V



## 4. SUNROOF MOTOR ASSEMBLY

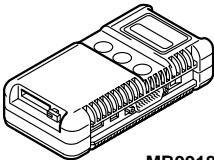
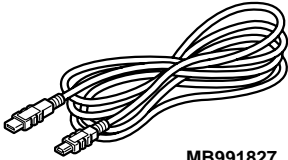

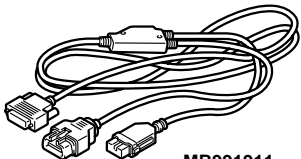
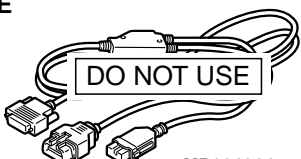
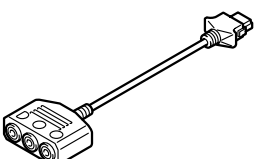
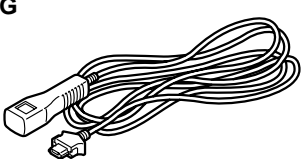


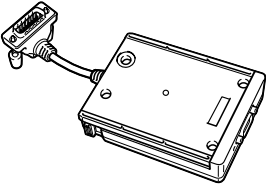
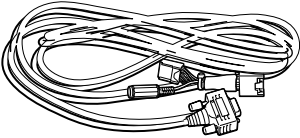
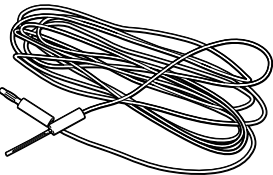
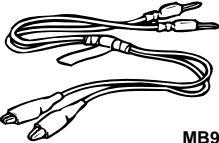

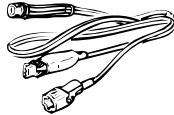
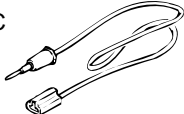

ACX01514

TERMINAL NO.	INSPECTION ITEM	INSPECTION CONDITION	NORMAL VALUE
1	Battery power supply (for motor)	Always	Battery positive voltage
2	Power supply to ignition switch (IG2)	Ignition switch: ON	Battery positive voltage
5	Ground	Always	0 V
6	Input signal ("CLOSE/DOWN") from the sunroof switch	Sunroof switch: "CLOSE/DOWN"	0 V
7	Input signal ("UP") from the sunroof switch	Sunroof switch: "UP"	0 V
8	Input signal ("OPEN") from the sunroof switch	Sunroof switch: "OPEN"	0 V
10	SWS communication line	Always	0 – 12 V (pulse signal)

## SPECIAL TOOLS

M1549000300689

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
<p>A</p>  <p>MB991824</p> <p>B</p>  <p>MB991827</p> <p>C</p>  <p>MB991910</p> <p>D</p>  <p>MB991911</p> <p>E</p>  <p>MB991914</p> <p>F</p>  <p>MB991825</p> <p>G</p>  <p>MB991826 MB991958</p>	<p>MB991958</p> <p>A: MB991824</p> <p>B: MB991827</p> <p>C: MB991910</p> <p>D: MB991911</p> <p>E: MB991914</p> <p>F: MB991825</p> <p>G: MB991826</p> <p>MUT-III sub assembly</p> <p>A: Vehicle communication interface</p> <p>B: MUT-III USB cable</p> <p>C: MUT-III main harness A (Vehicles with CAN communication system)</p> <p>D: MUT-III main harness B (Vehicles without CAN communication system)</p> <p>E: MUT-III Main Harness C (for Daimler Chrysler models only)</p> <p>F: MUT-III measurement adapter</p> <p>G: MUT-III trigger harness</p>	<p>MB991824-KIT</p> <p><i>NOTE: G: MB991826</i></p> <p><i>MUT-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.</i></p>	<p>SWS communication line check (ECU check and service data)</p> <p><b>⚠ CAUTION</b></p> <p><b>MUT-III Main Harness B (MB991911) should be used. MUT-III main harness A and C should not be used for this vehicle.</b></p>

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
<p>A</p>  <p>B</p>  <p>C</p>  <p align="right">B991862</p>	<p>MB991862 A: MB991806 B: MB991812 C: MB991822</p>	<p>SWS monitor kit A: SWS monitor cartridge B: SWS monitor harness (for column-ECU) C: Probe harness</p>	<p>SWS communication line check (ECU check and service data)</p>
 <p align="right">MB991529</p>	<p>MB991529 Diagnostic trouble code check harness</p>	<p>Tool not necessary if the scan tool (MUT-II) is available</p>	<p>Checking input signal when using a voltmeter</p>
<p>A</p>  <p>B</p>  <p>C</p>  <p>D</p>  <p align="right">MB991223AD</p>	<p>MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222 Harness set A: test harness B: LED harness C: LED harness adaptor D: Probe</p>	<p>General service tools</p>	<p>Making voltage and resistance measurement during troubleshooting A: Connector pin contact pressure inspection B: Power circuit inspection C: Power circuit inspection D: Commercial tester connection</p>

## ON-VEHICLE SERVICE

### ADJUSTMENT PROCEDURES OF SWS

#### FUNCTION <Vehicles with keyless entry system>

M1549002500571

##### Required Special Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991911: MUT-III Main Harness B
- MB991529: Diagnostic Trouble Code Check Harness

The following functions can be enabled or disabled by operating input switches in a special manner. This set mode is stored after the battery is disconnected.

- Keyless entry hazard answerback function
- Headlight automatic shutdown function
- Initialization of above mentioned functions

*NOTE: The keyless entry hazard answerback can be also adjusted by operating the RKE transmitter. (however, this adjustment can be done more easily by operating the transmitter.) Refer to GROUP 42, Keyless Entry System – On-vehicle Service – Enabling/disabling the Answerback Function*

[P.42-61.](#)

#### Entry conditions for adjustment mode

1. Set switches to the following conditions:
  - Hazard warning light switch: OFF
  - Diagnosis control: ON (Connect scan tool MB991958 to the data link connector, or connect the data link connector terminal 1 to ground.)
  - Key reminder switch: OFF (insert the ignition key)
  - Ignition switch: "LOCK" (OFF)
  - Driver's door switch: OFF (driver's door closed)
2. If the windshield washer switch remains on for 10 seconds or more, the tone alarm incorporated in the ETACS-ECU sounds once, and then enter the adjustment mode.

#### Release conditions for the adjustment mode

The adjustment mode will be released under one of the following conditions:

- Diagnosis control: ON (Disconnect scan tool MB991958 from the data link connector, or disconnect the data link connector terminal 1 from ground.)
- Key reminder switch: ON (ignition key removed)
- Ignition switch: Turn to the positions other than "LOCK" (OFF).
- Driver's door switch: ON (driver's door opened)
- After three minutes while the adjustment is not made (If any adjustment has been made within the three-minute period, cancel or complete the operation, and then release the adjustment mode within three minutes).
- When any other warning tone alarms sound

## Configuration of Functions

ITEMS	ADJUSTMENT PROCEDURES
Keyless entry hazard answerback	<p>If the transmitter "LOCK" switch is turned on twice within two seconds, the lock answerback function is enabled or disabled.</p> <ul style="list-style-type: none"> <li>• If the function is enabled, the tone alarm sounds once. (initial status)</li> <li>• If the function is disabled, the tone alarm sounds twice.</li> </ul> <p>If the transmitter "UNLOCK" switch is turned on twice within two seconds, the unlock answerback function is enabled or disabled.</p> <ul style="list-style-type: none"> <li>• If the function is enabled, the tone alarm sounds once. (initial status)</li> <li>• If the function is disabled, the tone alarm sounds twice.</li> </ul>
Vehicle speed-dependent wiper function	<p>The vehicle speed-dependent wiper function is enabled or disabled by turning on the windshield wiper mist switch for two seconds or more.</p> <ul style="list-style-type: none"> <li>• Enabled: the tone alarm sounds once. (initial status)</li> <li>• Disabled: the tone alarm sounds twice.</li> </ul>
Headlight automatic shutdown function	<p>If the passing switch is turned ON for more than two seconds with the headlight switch turned to ON and the turn signal light switch (RH) turned ON, the headlight automatic shutdown function is switched in the following order: (Next to "c", the function returns to "a" and repeats the sequence from "a".)</p> <ol style="list-style-type: none"> <li>With the ignition switch in "LOCK" (OFF) position, the automatic shutdown function is enabled when the lighting switch is turned ON and the tone alarm sounds once.</li> <li>If the function is disabled, the tone alarm sounds twice.</li> <li>When the function is enabled (While the ignition switch is at "LOCK" (OFF) position, the automatic shutdown function is enabled when the lighting switch is turned ON.), the tone alarm sounds three times. (initial status)</li> </ol>
The delay-off time of the dome light	<p>When the turn-signal light switch is moved in the order of LH → RH → LH → RH → LH, the dome light delay-off time will be changed as follows. (Next to "e", the function returns to "a" and repeats the sequence from "a".)</p> <ol style="list-style-type: none"> <li>30 seconds: the tone alarm sounds once.</li> <li>10 seconds: the tone alarm sounds twice.</li> <li>0 second (no delay-off time): the tone alarm sounds three times.</li> <li>15 seconds: the tone alarm sounds four times. (initial status)</li> <li>7.5 seconds: the tone alarm sounds five times.</li> </ol>
Interior light automatic shutoff function	<p>The interior light automatic shutdown function is disabled or enabled by turning the hazard warning light switch for two seconds or more.</p> <ul style="list-style-type: none"> <li>• Enabled: the tone alarm sounds once. (initial status)</li> <li>• Disabled: the tone alarm sounds twice.</li> </ul>
Initialization of above mentioned functions	<p>If the windshield washer switch is turned ON for more than 20 seconds, the tone alarm sounds twice and all functions are initialized. (The configuration mode entry tone alarm sounds after 10 seconds, but the switch must kept ON for 20 seconds to achieve initialization.)</p> <p>If the windshield washer switch is kept ON for more than 20 seconds without prior entry of the configuration mode, the configuration mode is entered after 10 seconds and initialization does not take place.</p>

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## NOTES