INTERIOR LIGHT

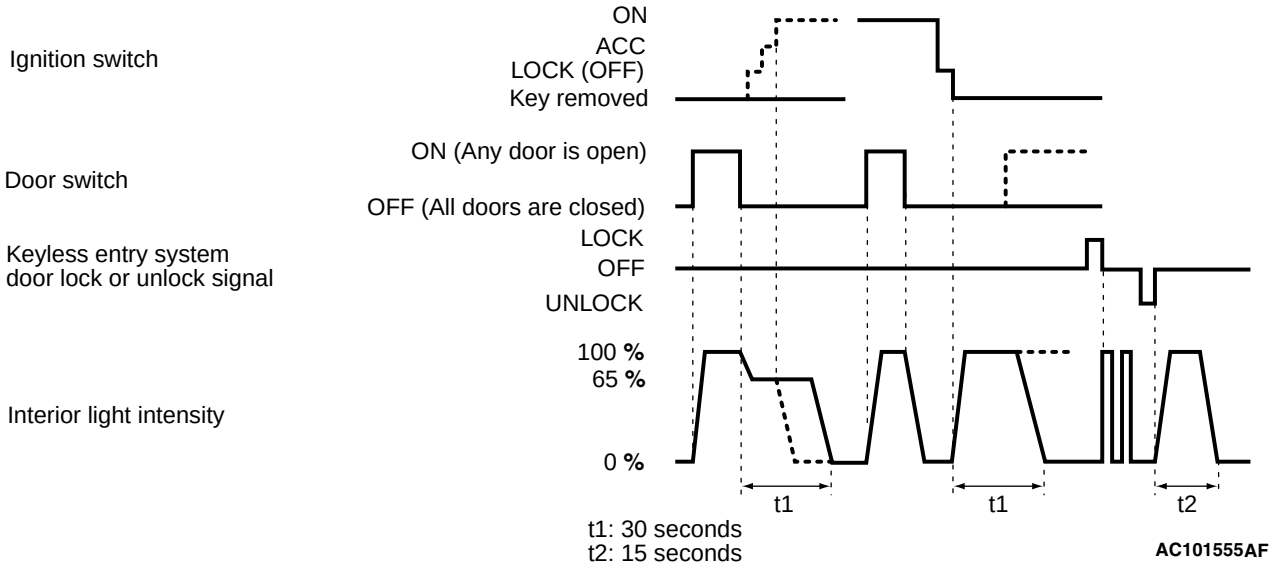
GENERAL DESCRIPTION CONCERNING THE INTERIOR LIGHT

M1549021800236

The following ECUs affect the functions and control of the interior lights.

FUNCTION	CONTROL ECU
Interior light control function	ETACS-ECU
Interior light automatic-shutoff function	ETACS-ECU
Ignition key hole illumination light function	ETACS-ECU
Door ajar indicator	ETACS-ECU
Seat belt indicator	ETACS-ECU

Interior light control function



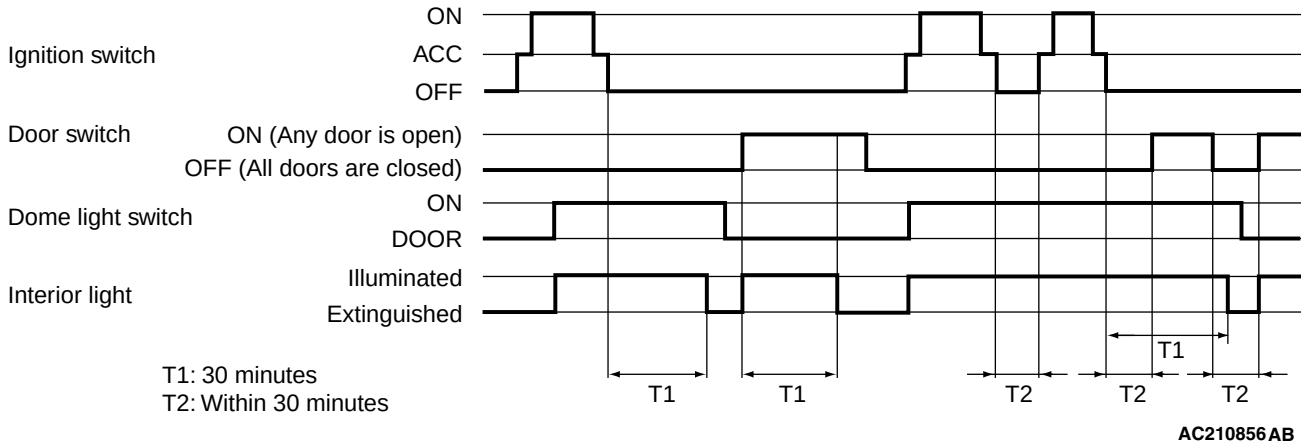
The ETACS-ECU controls the interior lights by turning them on and off in the following way:

- When a door is opened with the ignition switch off, the interior lights up to a luminance of 100 percent. When a door is closed, the interior lights dims at a luminance of 65 percent, and goes off 30 seconds later. However if the ignition switch is turned ON or if a door is locked while the interior lights is dimming, the dome light will go off at that point.
- When a door is opened with the ignition switch ON, the interior lights up at a luminance of 100 percent. When a door is closed, the interior lights go off.
- When the ignition key is removed with all doors closed, the interior lights up at a luminance of 100 percent, and goes off 30 seconds later. However if the ignition key is inserted again or if a door is locked while the interior lights is lighting, the interior lights will go off at that point.
- To check keyless entry operations more easily, the interior lights is flashed once when the doors are locked. When the doors are unlocked, the interior lights at a luminance of 100 percent, and go off 15 seconds later.

NOTE: The dimmer function can be customized on vehicles equipped with a multi center display (middle grade type). Refer to P.54B-555.

NOTE: The dotted lines indicate that lighting mode when the ignition switch is turned ON, door is locked, or any door is opened during the timer illumination time.

Interior light automatic-shutoff 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 the battery from discharging 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 with the interior light illuminated, the interior lights will go off automatically.
- When the ignition switch is turned off and one of the door switches remains open for 30 minutes continuously, the interior lights will go off automatically.

NOTE: The interior light automatic shutoff function can be customized on vehicles equipped with a multi center display (middle grade type). Refer to P.54B-555.

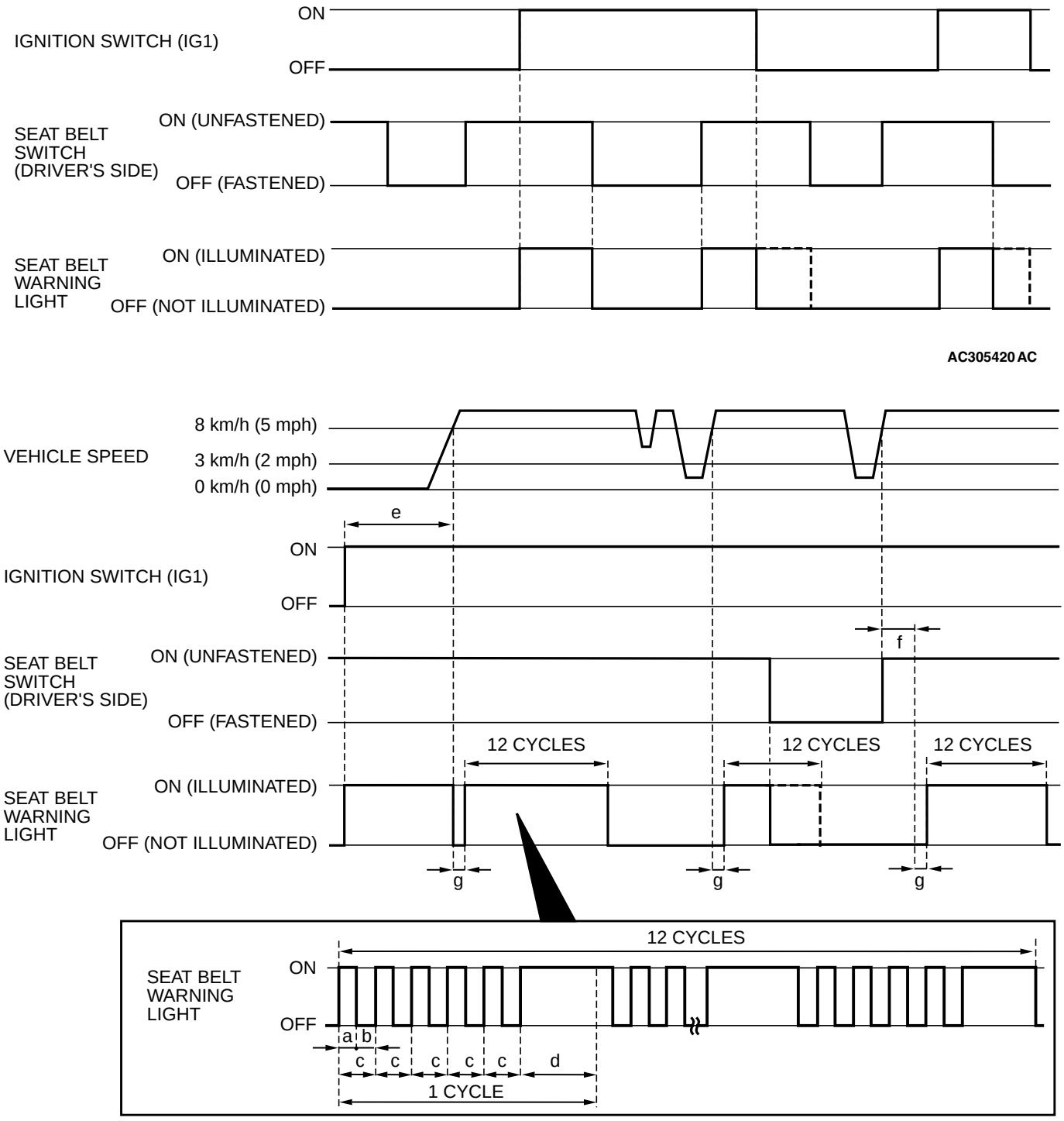
Ignition key hole illumination light function

The ignition key hole illumination light illuminates when the driver's door is opened with the ignition switch off, and for 30 seconds after the driver's door is closed. It also illuminates for 30 seconds after the ignition key is pulled out. In any case, it goes out when the ignition switch is turned on.

Door ajar indicator

The combination meter receives the signal sent from the ETACS-ECU about whether each door is open or closed and turns the door ajar indicator on and off. While the door ajar indicator is illuminated, the door ajar warning function is activated and the door ajar indicator flashes 4 times. If the door remains open even after the 4 warning flashes, the door ajar indicator will be illuminated again. And when the interior light automatic-shutoff function is activated, the door ajar indicator is extinguished.

Seat belt indicator



a: 0.48 SECOND
b: 0.52 SECOND
c: 1 SECOND
d: 3 SECONDS
e: 60 SECONDS OR MORE
f: 10 SECONDS
g: 0.5 SECOND

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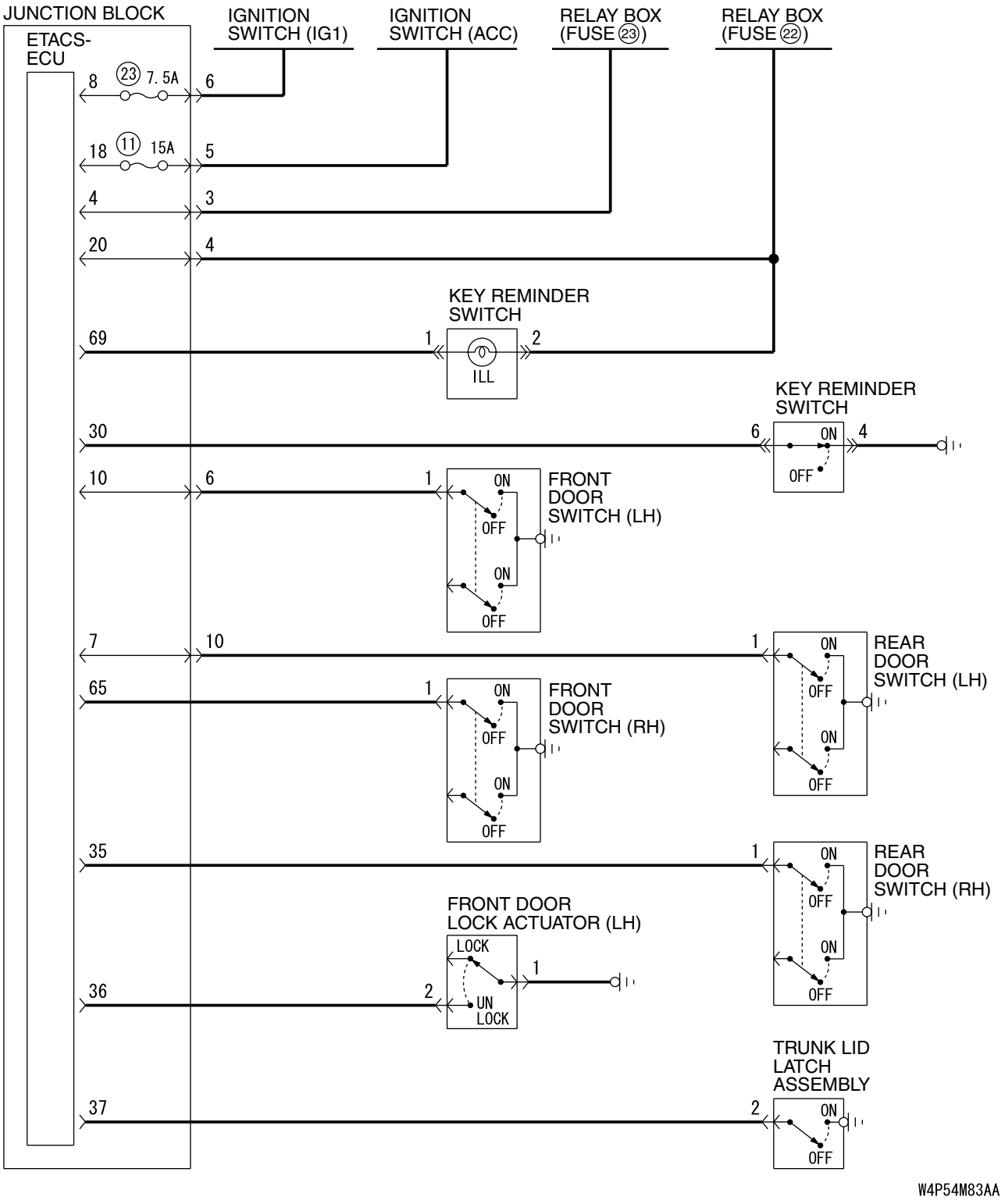
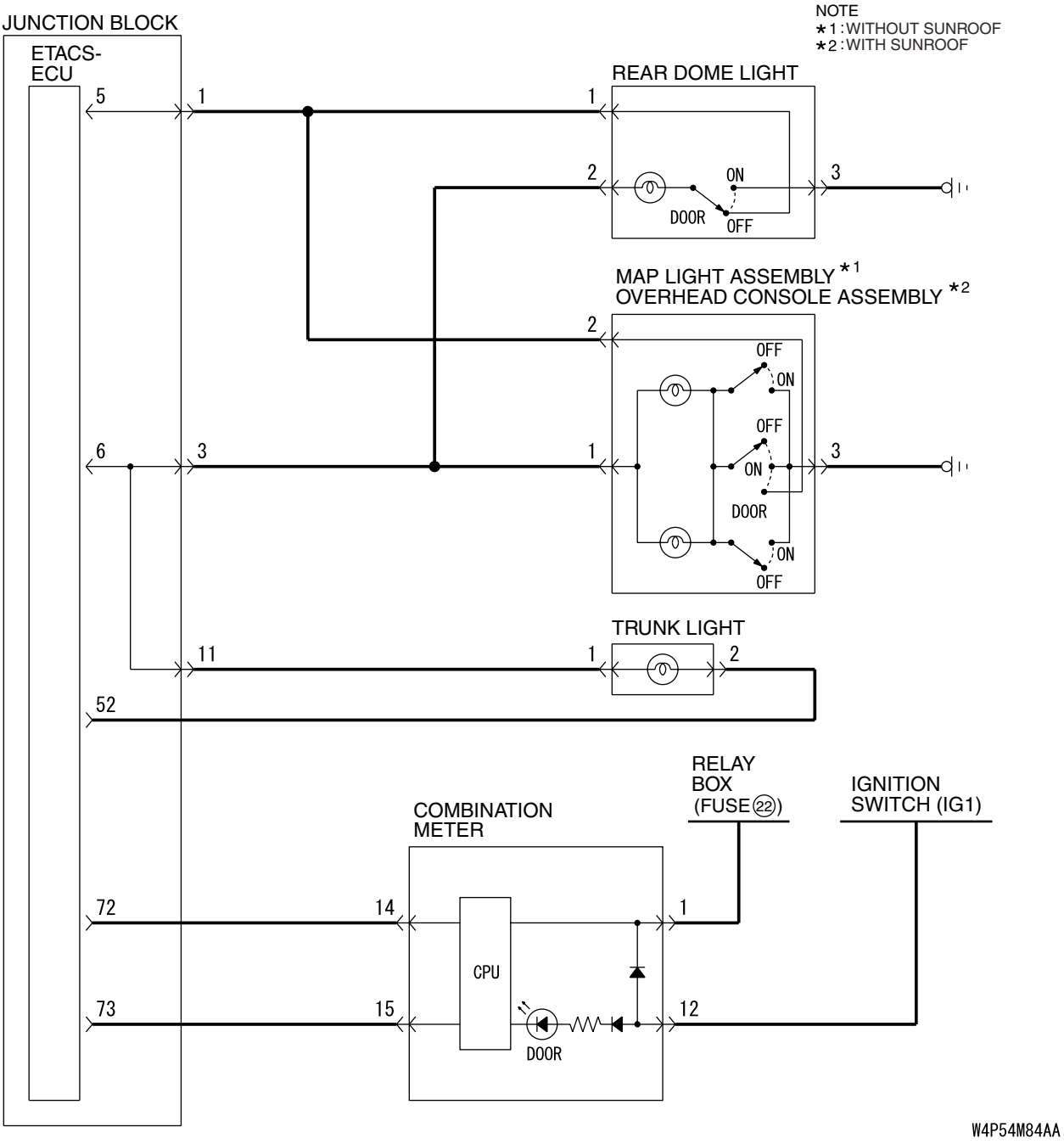
If any of the following conditions is met with the ignition switch at "ON" or "ST", the ETACS-ECU illuminates, flashes or extinguishes the seat belt indicator by using the driver's seat belt switch signal and the vehicle speed signal sent from the combination meter.

- Illuminates when the ignition switch is at "ON" and the seat belt switch is turned on (the driver's seat belt is unfastened).
- Flashes and illuminates the indicator 12 cycles (after 0.5 seconds) if any of the following conditions is met when sixty seconds or more have elapsed since the ignition switch is turned "ON". One cycle consists of five-second "flashing" and then three-second "illumination".
  a. The vehicle speed has reached 8 km/h (5 mph) while the seat belt switch is turned on (driver's seat belt is not fastened) with the ignition switch "ON.
  b. The seat belt switch has been turned on (driver's seat belt has not been fastened) for at least ten seconds while the ignition switch has been turned "ON" and the vehicle speed has been 8 km/h (5 mph) or more.

  NOTE: Once this timer operation has been activated, it will not be activated again until the vehicle speed reduces to 3 km/h (2 mph) or less even if any of the following conditions is met.
- The indicator stops illuminating if the ignition switch or the seat belt switch is turned off (the driver's seat belt is fastened) while the timer operation is active.

General circuit diagram for interior lights

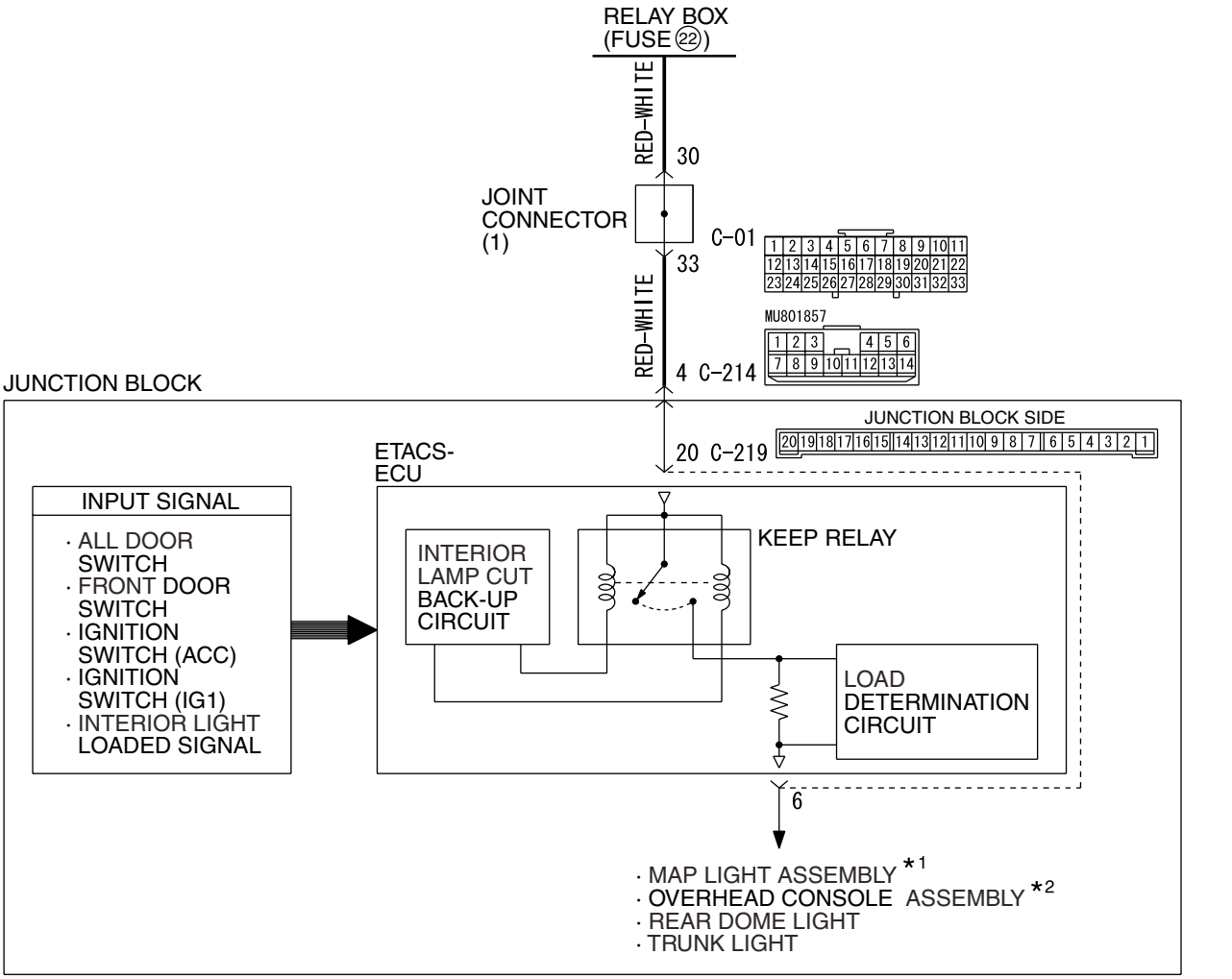



NOTE
*1:WITHOUT SUNROOF
*2:WITH SUNROOF
JUNCTION BLOCK
ETACS-ECU
5
1
REAR DOME LIGHT
1
2
ON
3
DOOR
OFF
MAP LIGHT ASSEMBLY *1
OVERHEAD CONSOLE ASSEMBLY *2
2
OFF
ON
OFF
6
3
1
ON
3
DOOR
ON
OFF
TRUNK LIGHT
11
1
2
52
RELAY BOX (FUSE 22)
IGNITION SWITCH (IG1)
COMBINATION METER
72
14
CPU
1
73
15
12
DOOR
W4P54M84AA

INSPECTION PROCEDURE K-1: Interior Light: The dome light do not illuminate and go out normally.

NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991813. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-15."

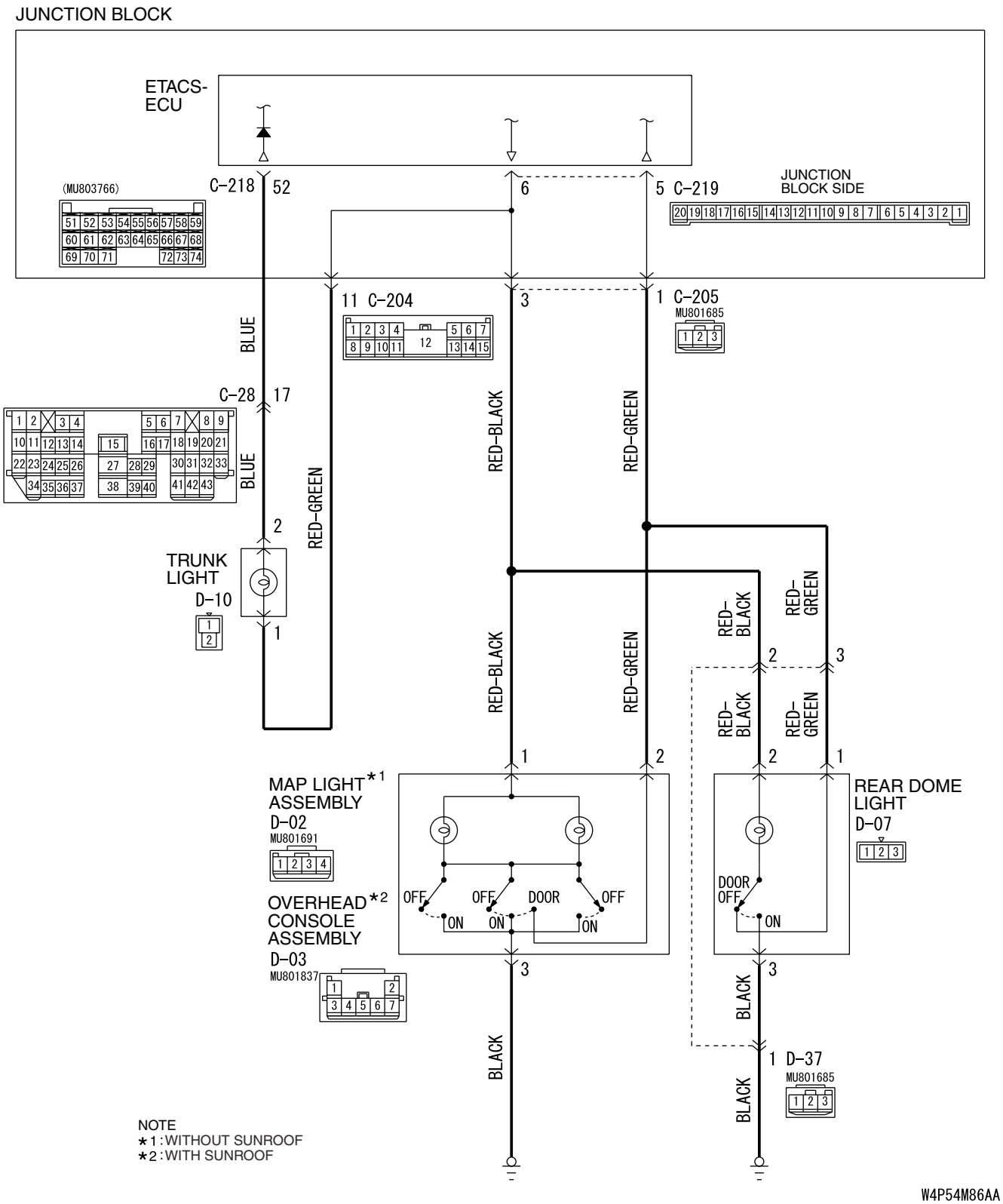
Interior Light Circuit



NOTE
*1: WITHOUT SUNROOF
*2: WITH SUNROOF

W4P54M85AA

Interior Light Circuit



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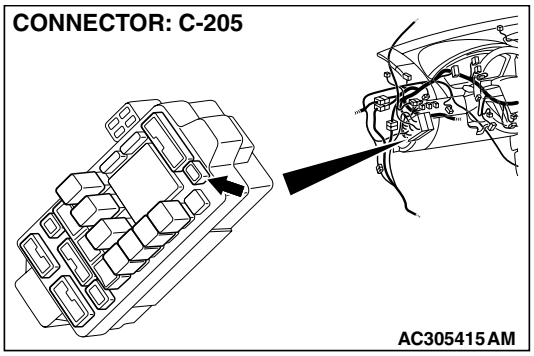
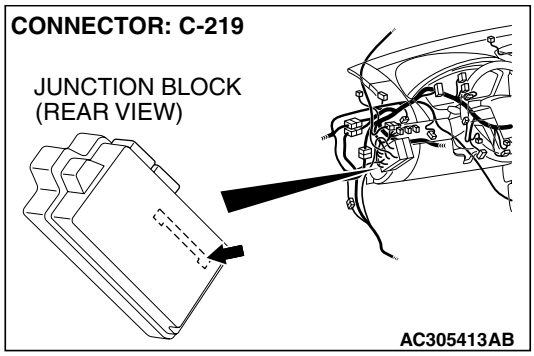
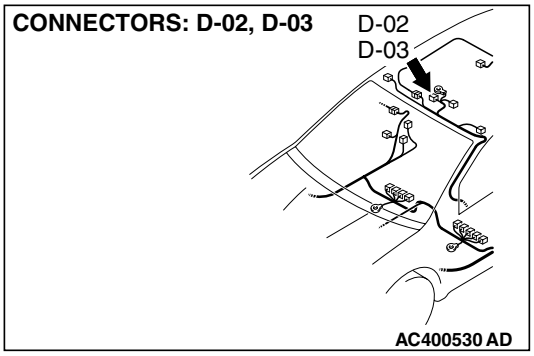






CIRCUIT OPERATION

The ETACS-ECU operates the dome light according to the following signals:

- Ignition switch (IG1): ON or OFF
- Key reminder switch: ON or OFF
- Door switches: ON or OFF
- Driver's door lock actuator switch: ON or OFF
- Interior light loaded signal: ON

TECHNICAL DESCRIPTION (COMMENT)

If the dome light does not illuminate 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.

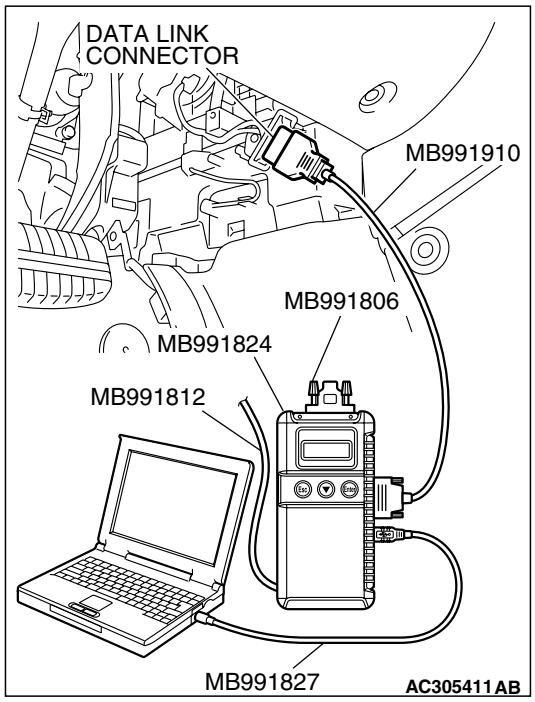
TROUBLESHOOTING HINTS

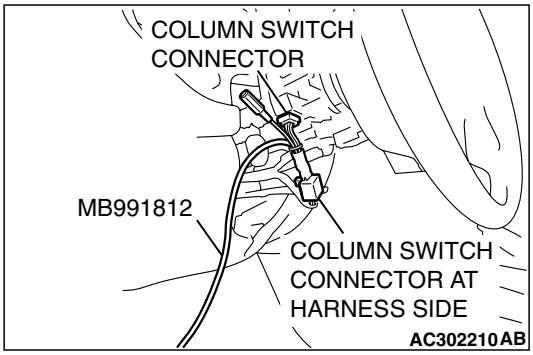
- Trouble in input signal system
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- The ETACS-ECU may be defective

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991910: MUT-III Main Harness A
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991822: Probe Harness





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

Check the ETACS-ECU.

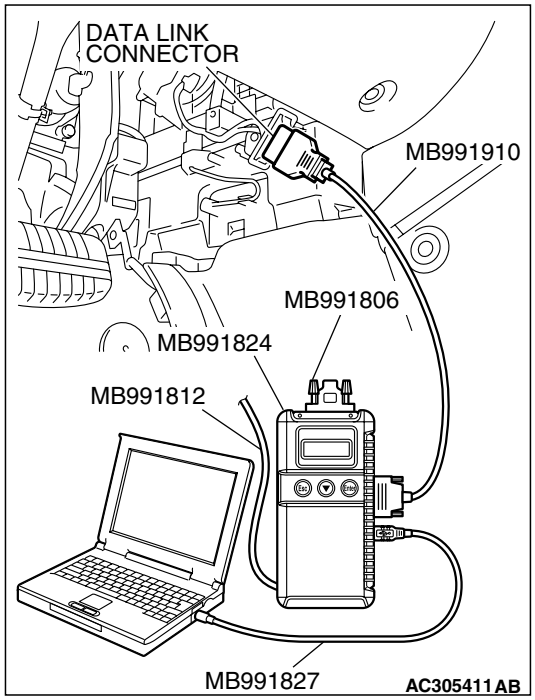
⚠ CAUTION

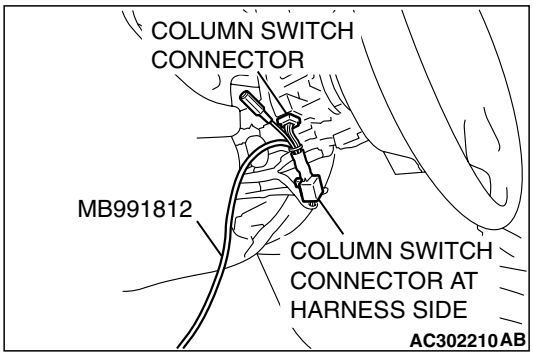
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect special tool MB991910 before connecting special tool MB991812. Be sure to connect special tool MB991806 after turning on special tool MB991824.

(1) Connect the special tool. Refer to "How to connect SWS monitor P.54B-13."
(2) Turn the ignition switch to the "LOCK" (OFF) position.
(3) Operate scan tool MB991958 according to the procedure below to display "ECU COMM Check."
  a. Select "Interactive Diagnosis."
  b. Select "System select."
  c. Select "SWS."
  d. Select "SWS MONITOR."
  e. Select "ECU COMM Check."
(4) Scan tool MB991958 should show "OK" on the "ECU COMM Check" menu for the "ETACS ECU" menu.

Q: Is "OK" displayed for the "ETACS ECU" menu?

YES : Go to Step 2.
NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54B-78."





STEP 2. 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 or front passenger's door: open

(1) Operate scan tool MB991958 according to the procedure below to display "ETACS ECU."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "SWS MONITOR."
   e. Select "Data List."
   f. Select "ETACS ECU."

(2) Check that normal conditions are displayed for the items described in the table below.

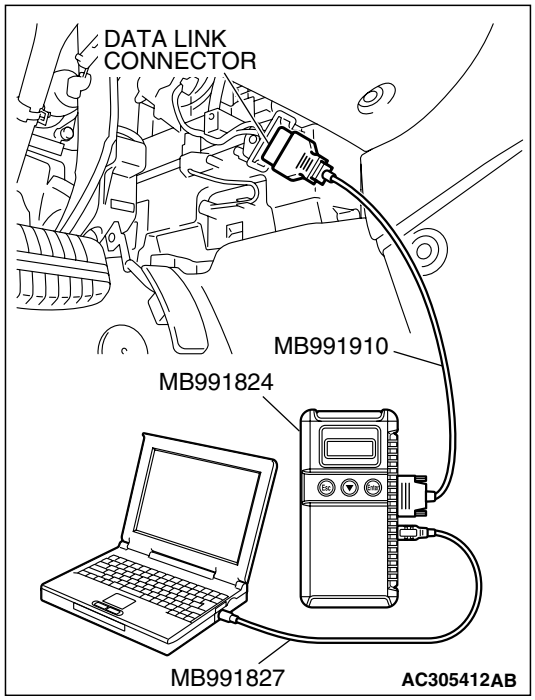
ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 30	IG SW (IG1)	ON
ITEM 32	FRONT DOOR SW	ON

Q: Does the scan tool MB991958 display the items "IG SW (IG1)" and "FRONT DOOR SW" as normal condition?

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 M-2 "ETACS-ECU does not receive any signal from the ignition switch (IG1) P.54B-470."

Normal condition is not displayed for "FRONT DOOR SW" : Refer to Inspection Procedure M-4 "ETACS-ECU does not receive any signal from the front door switches P.54B-477."



STEP 3. Check the input signal (by using the pulse check mode of the monitor).

Check the following switches and input signals:

- Key reminder switch
- Interior light loaded signal
- Door switches

(1) Operate scan tool MB991958 according to the procedure below to display "Pulse check."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "Pulse Checking."

(2) Check if scan tool MB991958 sounds or not.

ITEM NAME	CONDITION
key reminder switch	Remove and reinsert the ignition key
interior light loaded signal	Turn on one of the interior lights
door switches	Open or close one of the doors

Q: When the key reminder switch, any door switch or interior light is operated, does scan tool MB991958 sound?

Buzzer of scan tool MB991958 sounds normally. : Go to Step 4.

Scan tool MB991958 does not sound when the ignition key is removed and reinserted : Refer to Inspection Procedure N-1 "ETACS-ECU does not receive any signal from the key reminder switch P.54B-497."

When one of the interior lights is illuminated, scan tool MB991958 does not sound : Refer to Inspection Procedure N-9 "ETACS-ECU does not receive any interior light loaded signal P.54B-542."

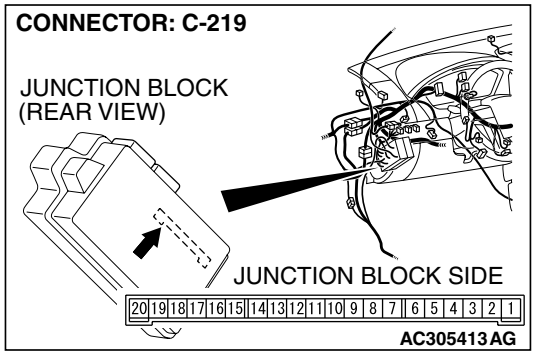
When one of the doors is opened and closed, scan tool MB991958 does not sound : Refer to Inspection Procedure N-3 "ETACS-ECU does not receive any signal from any of the door switches P.54B-505."

STEP 4. Check ETACS-ECU connector C-219 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-219 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 dome light illuminates normally.



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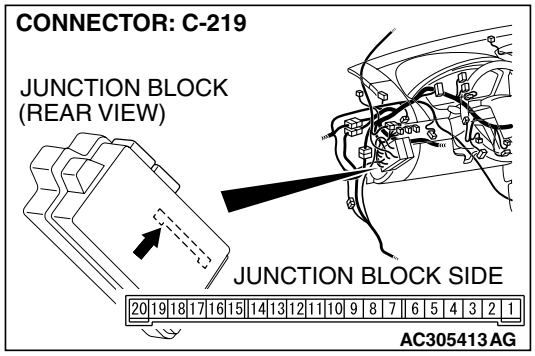
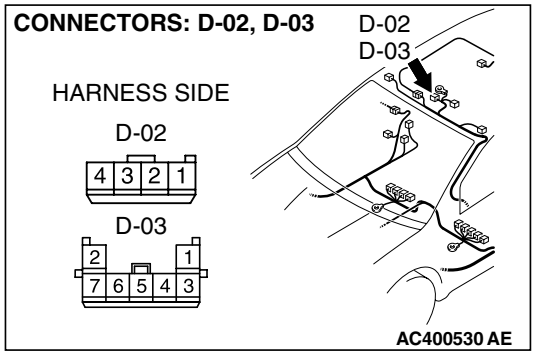
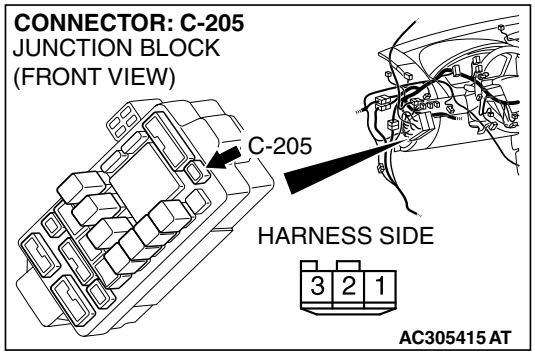
STEP 5. Check the wiring harness between map light assembly connector D-02 (terminal 1) <without sunroof> or overhead console assembly connector D-03 (terminal 1) <with sunroof> and ETACS-ECU connector C-219 (terminal 6).







NOTE: Also check junction block connector C-205 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-205 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

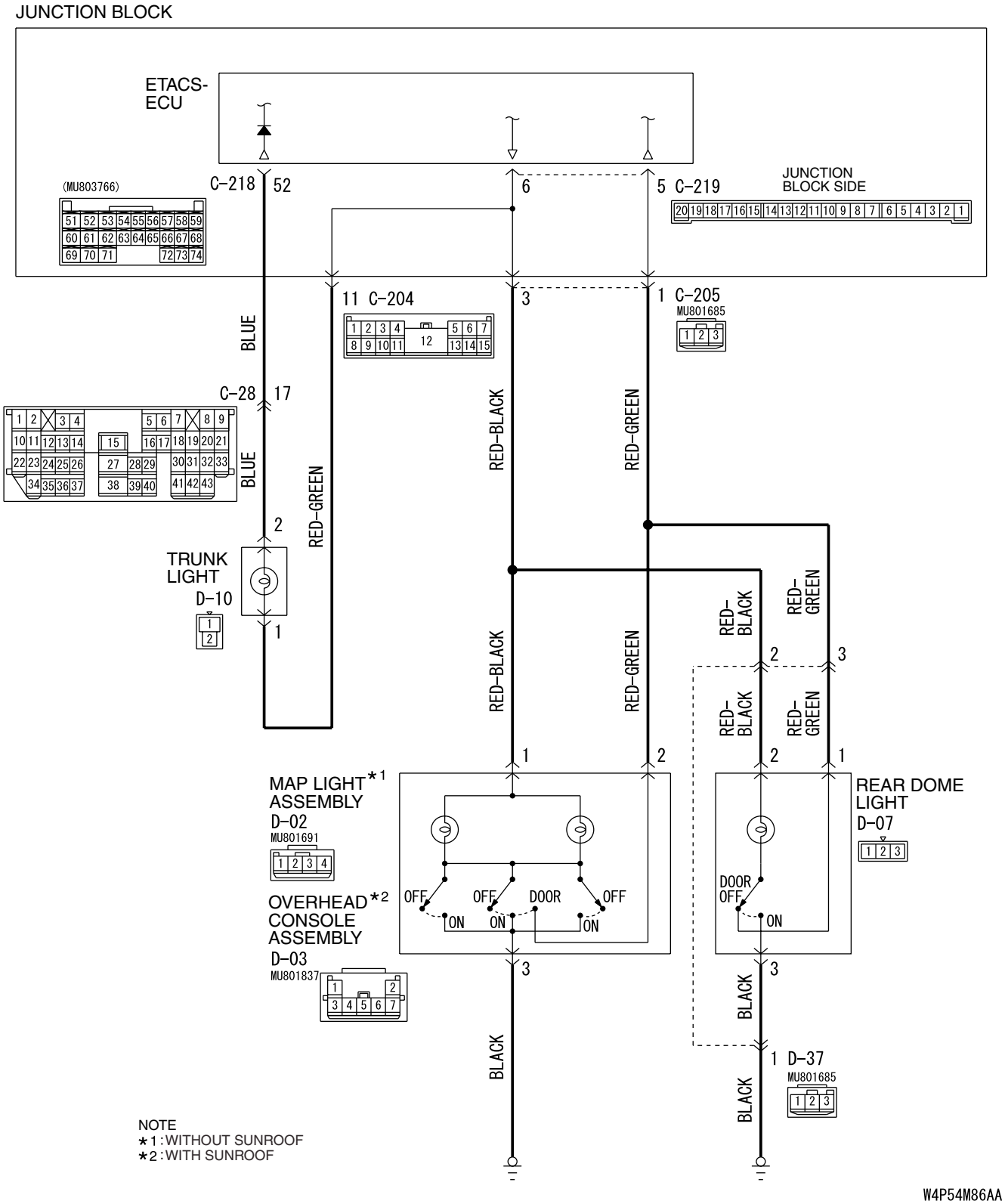
Q: Is the wiring harness between map light assembly connector D-02 (terminal 1) <without sunroof> or overhead console assembly connector D-03 (terminal 1) <with sunroof> and ETACS-ECU connector C-219 (terminal 6) in good condition?

YES : Replace the ETACS-ECU. Verify that the 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 dome light illuminates normally.

INSPECTION PROCEDURE K-2: Interior Light: The front dome light, rear dome light or trunk light do not illuminate or go out normally.

Interior Light Circuit



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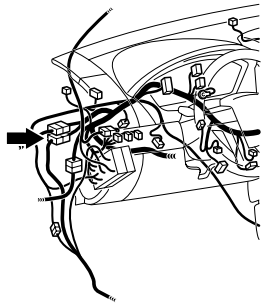
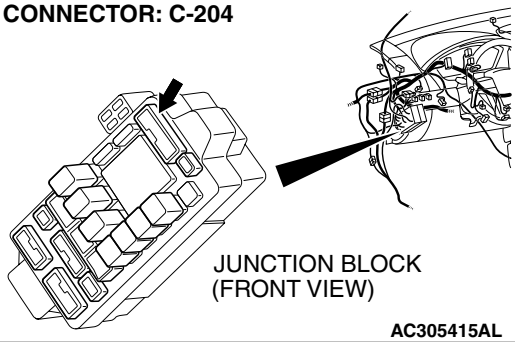
CONNECTOR: C-28



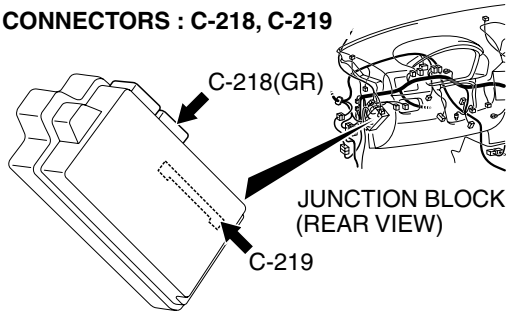
AC305231BA

CONNECTOR: C-204



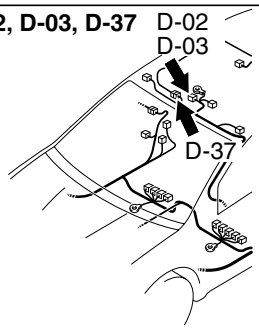
AC305415AL

CONNECTORS : C-218, C-219



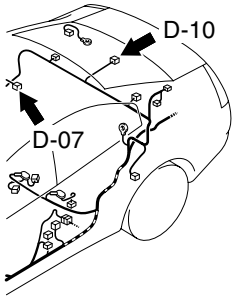
AC207121 AG

CONNECTORS: D-02, D-03, D-37



AC400530 AF

CONNECTORS: D-07, D-10



AC400532 AD

CIRCUIT OPERATION

The ETACS-ECU operates the dome light according to the following signals:

- Ignition switch (IG1): ON or OFF
- Key reminder switch: ON or OFF
- Door switches: ON or OFF
- Trunk lid latch assembly: ON or OFF
- Driver's door lock actuator switch: LOCK or UNLOCK

TECHNICAL DESCRIPTION (COMMENT)

Is 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.

TROUBLESHOOTING HINTS

- The front dome light bulb may be defective
- The rear dome light bulb may be defective
- The trunk light bulb 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

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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
  - MB991910: MUT-III Main Harness A

STEP 1. Check which of the front dome light, rear dome light or trunk light do not illuminate normally.

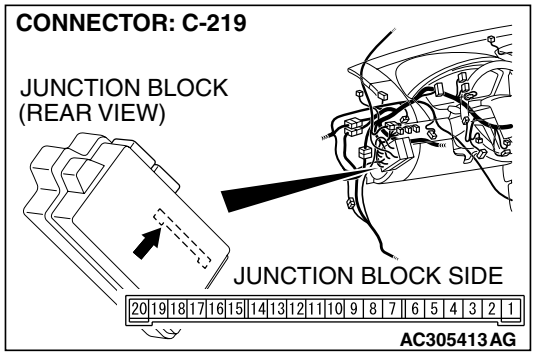
Q: Which of the front dome light, rear dome light or trunk light fail to illuminate normally?

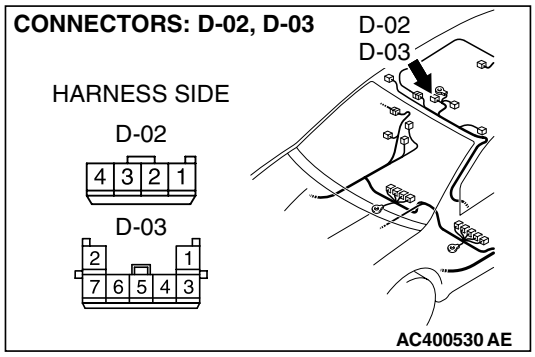
Front dome light and rear dome light : Go to Step 2.
Front dome light : Go to Step 4.
Rear dome light : Go to Step 9.
Trunk light : Go to Step 14.

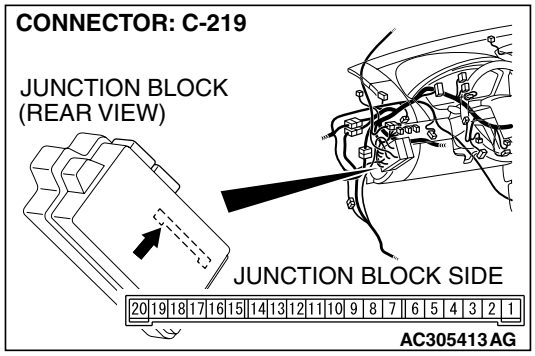
STEP 2. Check map light assembly connector D-02 <without sunroof>, overhead console assembly connector D-03 <with sunroof> and ETACS-ECU connector C-219 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is map light assembly connector D-02 <without sunroof>, overhead console assembly connector D-03 <with sunroof> and ETACS-ECU connector C-219 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. Check that the front dome light and rear dome light illuminates normally.





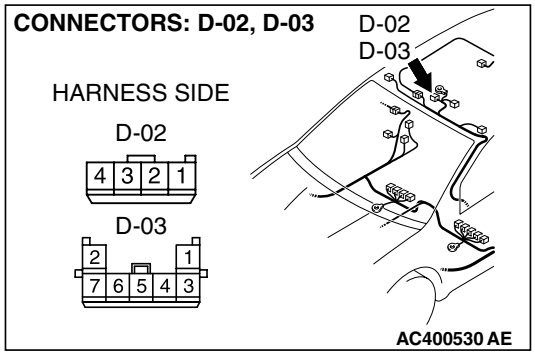


STEP 3. Check the wiring harness between map light assembly connector D-02 (terminals 1 and 2) <without sunroof> or overhead console assembly connector D-03 (terminals 1 and 2) <with sunroof> and ETACS-ECU connector C-219 (terminals 6 and 5).

Q: Is the wiring harness between map light assembly connector D-02 (terminals 1 and 2) <without sunroof> or overhead console assembly connector D-03 (terminals 1 and 2) <with sunroof> and ETACS-ECU connector C-219 (terminals 6 and 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. Check that the front dome light and rear dome light illuminates normally.

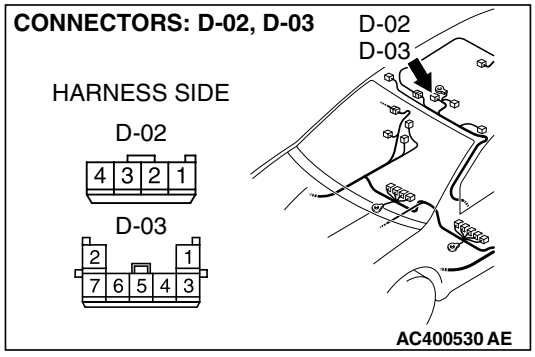


STEP 4. Check map light assembly connector D-02 <without sunroof> or overhead console assembly connector D-03 <with sunroof> for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is map light assembly connector D-02 <without sunroof> or overhead console assembly connector D-03 <with sunroof> 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. Check that the front dome light illuminates normally.



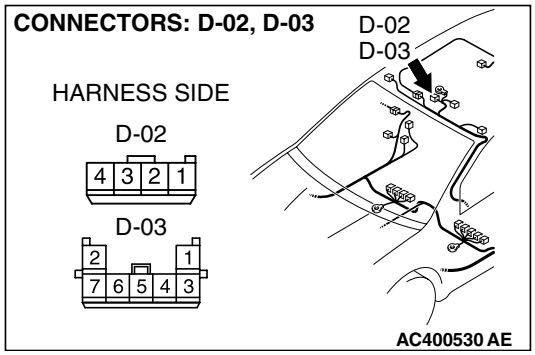
STEP 5. Check the front dome light bulb.

Q: Is the front dome light bulb in good condition?

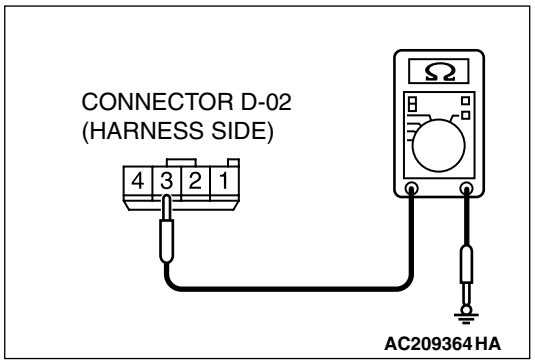
YES : Go to Step 6.

NO : Replace the front dome light bulb. Check that the front dome light illuminates normally.

STEP 6. Check the ground circuit to the front dome light. Measure the resistance at map light assembly connector D-02 <without sunroof> or overhead console assembly connector D-03 <with sunroof>.



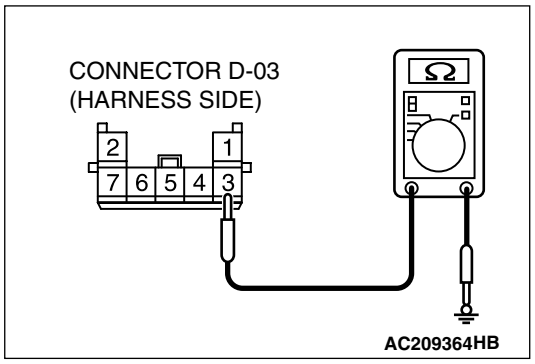
(1) Disconnect map light assembly connector D-02 <without sunroof> or overhead console assembly connector D-03 <with sunroof> and measure the resistance available at the wiring harness side of the connector.



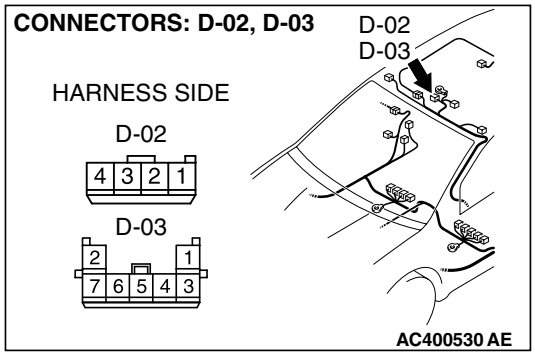
(2) Measure the resistance value between terminal 3 and ground.
- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 8.
NO : Go to Step 7.



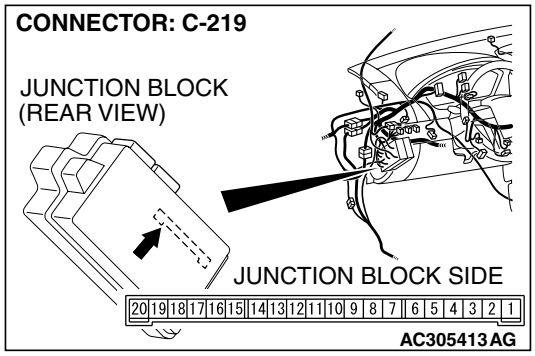
STEP 7. Check the wiring harness between map light assembly connector D-02 (terminal 3) <without sunroof> or overhead console assembly connector D-03 (terminal 3) <with sunroof> and ground.

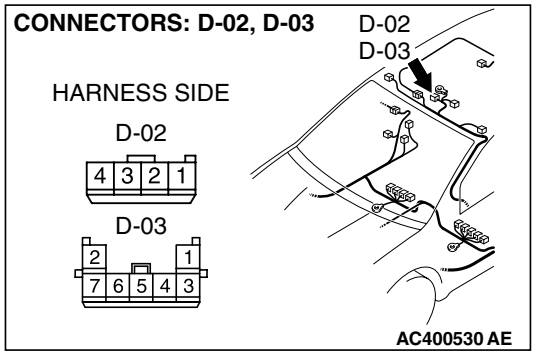


Q: Is the wiring harness between map light assembly connector D-02 (terminal 3) <without sunroof> or overhead console assembly connector D-03 (terminal 3) <with sunroof> and ground in good condition?

YES : Replace the overhead console assembly. Check 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. Check that the front dome light illuminates normally.

TSB Revision



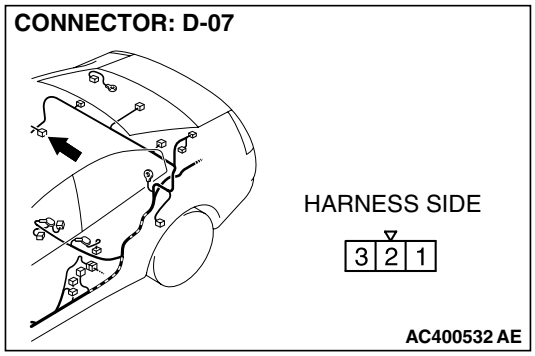


STEP 8. Check the wiring harness between map light assembly connector D-02 (terminals 1 and 2) <without sunroof> or overhead console assembly connector D-03 (terminals 1 and 2) <with sunroof> and ETACS-ECU connector C-219 (terminals 6 and 5).

Q: Is the wiring harness between map light assembly connector D-02 (terminals 1 and 2) <without sunroof> or overhead console assembly connector D-03 (terminals 1 and 2) <with sunroof> and ETACS-ECU connector C-219 (terminals 6 and 5) in good condition?

YES : Replace the map light assembly <without sunroof> or overhead console assembly <with sunroof>. Check 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. Check that the front dome light illuminates normally.



STEP 9. Check rear dome light connector 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 10.

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

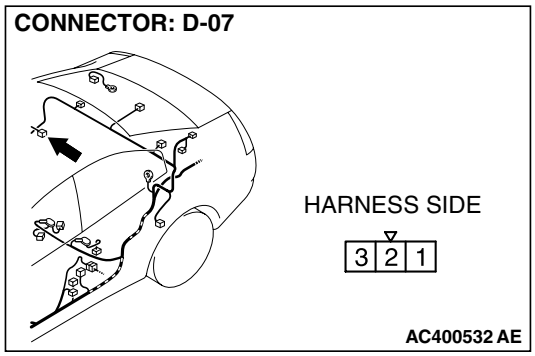
STEP 10. Check the rear dome light bulb.

Q: Is the rear dome light bulb in good condition?

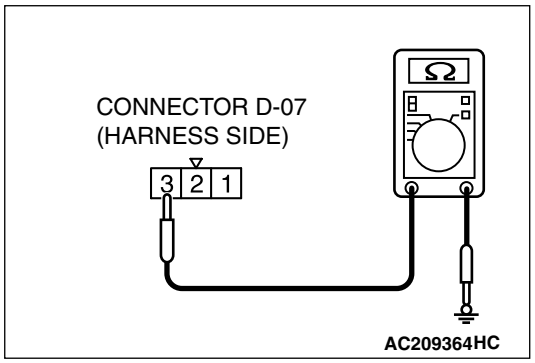
YES : Go to Step 11.

NO : Replace the rear dome light bulb. Check that the rear dome light illuminates normally.

STEP 11. Check the ground circuit to the rear dome light. Measure the resistance at rear dome light connector D-07.



(1) Disconnect rear dome light connector D-07 and measure the resistance available at the wiring harness side of the connector.

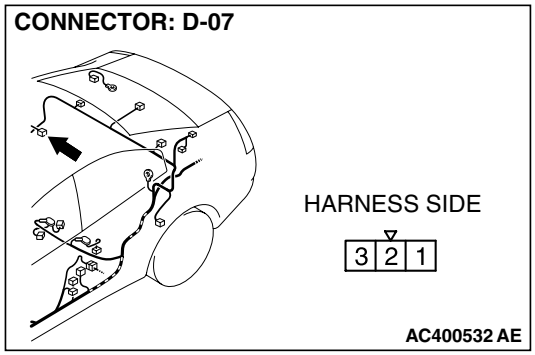


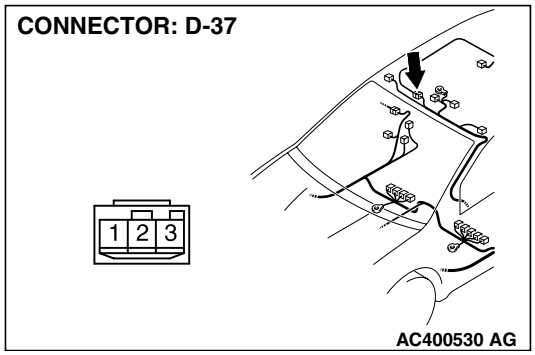
(2) Measure the resistance value between terminal 3 and ground.
- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 13.
NO : Go to Step 12.

STEP 12. Check the wiring harness between rear dome light connector D-07 and ground.



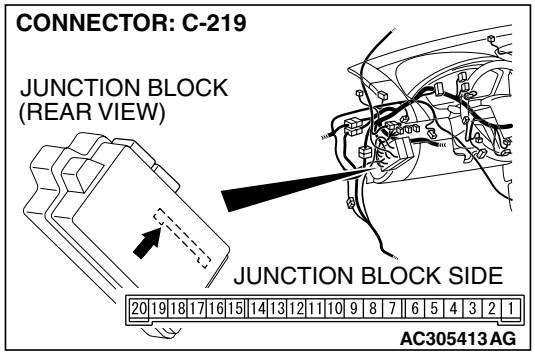


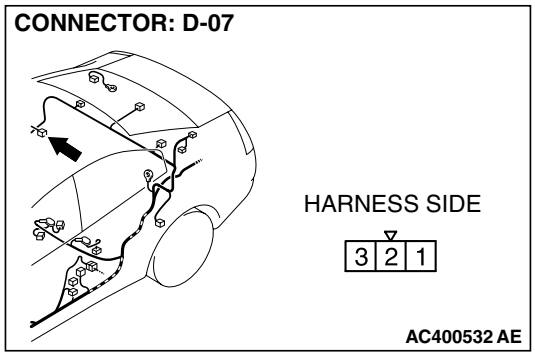
NOTE: Also check intermediate connector D-37 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-37 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

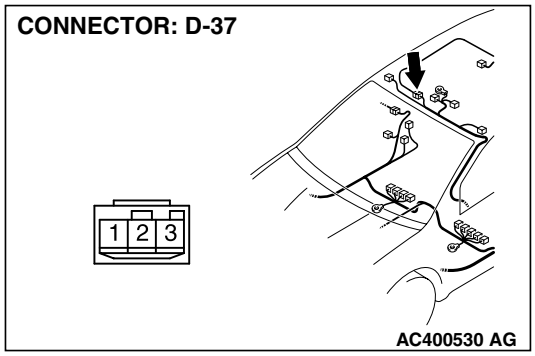
Q: Is the wiring harness between rear dome light connector D-07 and ground in good condition?

YES : Replace the rear dome light. Check that the rear 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. Check that the rear dome light illuminates normally.

STEP 13. Check the wiring harness between rear dome light connector D-07 (terminals 1 and 2) and ETACS-ECU connector C-219 (terminals 6 and 5).





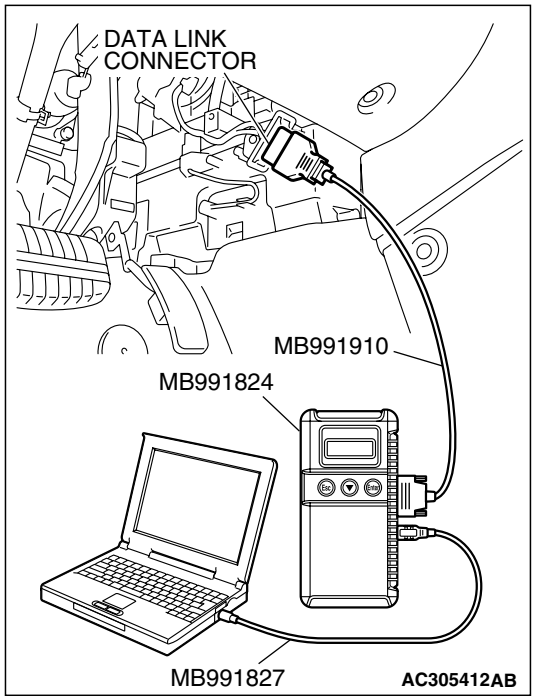


NOTE: Also check intermediate connector D-37 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-37 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between rear dome light connector D-07 (terminals 1 and 2) and ETACS-ECU connector C-219 (terminals 6 and 5) in good condition?

YES : Replace the rear dome light. Check that the rear 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. Check that the rear dome light illuminates normally.



STEP 14. Check the input signal (by using the pulse check mode of the monitor).

Check the input signals from the trunk lid latch assembly.

- Check whether scan tool MB991958 sounds or not when the trunk is opened.

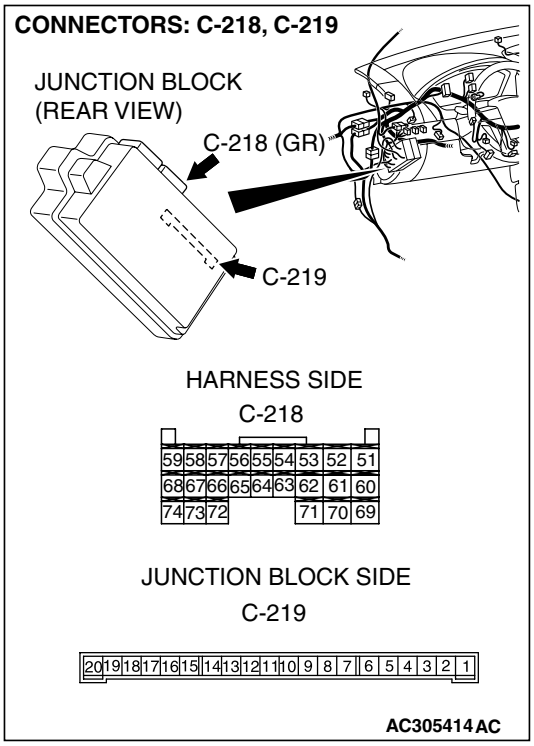
(1) Operate scan tool MB991958 according to the procedure below to display "Pulse checking."
   a. Select "Interactive Diagnosis."
   b. Select "System Select."
   c. Select "SWS."
   d. Select "Pulse Checking."

Q: Does scan tool MB991958 sound when the trunk is opened and closed?

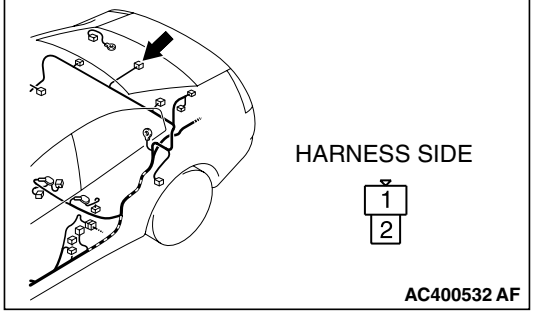
YES : Go to Step 15.

NO : Refer to Inspection Procedure N-7 "ETACS-ECU does not receive any signal from the trunk lid latch assembly P.54B-537."

CONNECTORS: C-218, C-219



CONNECTOR: D-10



STEP 15. Check trunk light connector D-10, ETACS-ECU connectors C-218 and C-219 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is trunk light connector D-10, ETACS-ECU connectors C-218 and C-219 in good condition?

YES : Go to Step 16.

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

STEP 16. Check the trunk light bulb.

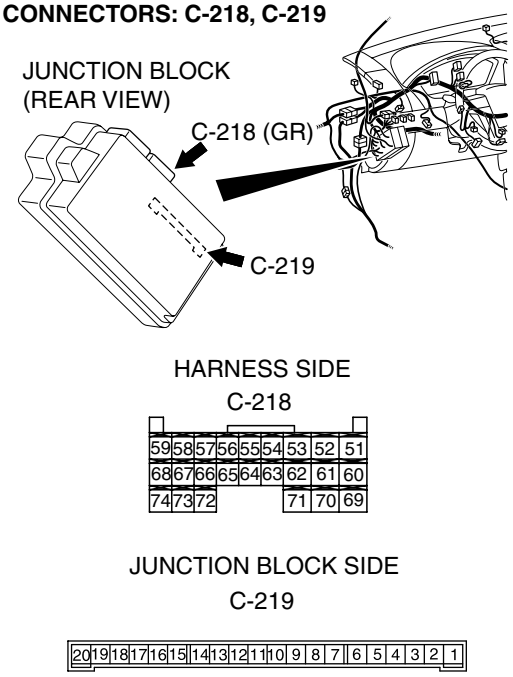
Q: Is the trunk light bulb in good condition?

YES : Go to Step 17.

NO : Replace the trunk light bulb. Check that the trunk light illuminates normally.

STEP 17. Check the wiring harness between trunk light connector D-10 (terminals 1 and 2) and ETACS-ECU connector C-219 (terminal 6) or C-218 (terminal 52).

CONNECTORS: C-218, C-219



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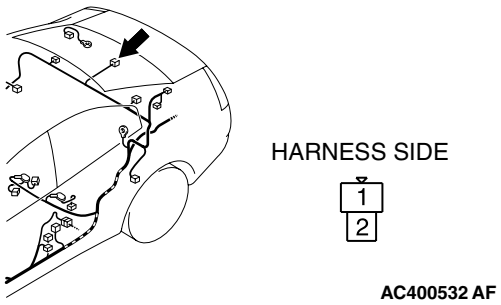
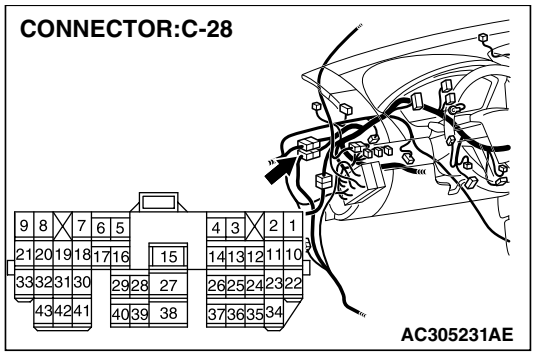
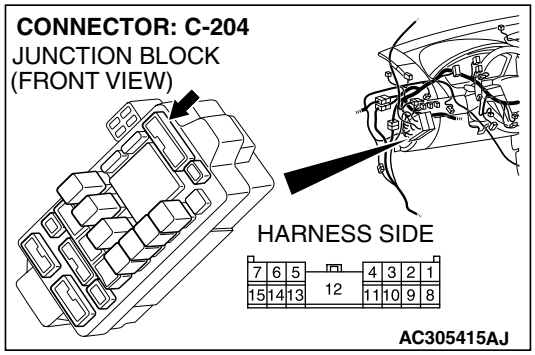
CONNECTOR: D-10



AC400532AF





NOTE: Also check intermediate connector C-28 and junction block connector C-204 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-28 or junction block connector C-204 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 trunk light connector D-10 (terminals 1 and 2) and ETACS-ECU connector C-219 (terminal 6) or C-218 (terminal 52) in good condition?

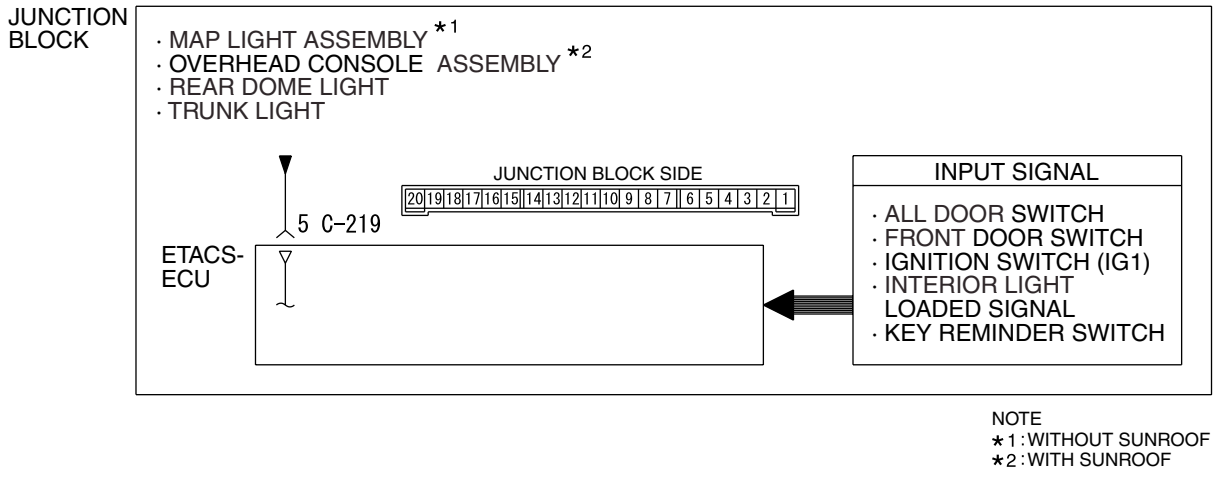
YES : Replace the trunk light. Check that the trunk light illuminates normally.

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. Check that the trunk light illuminates normally.

INSPECTION PROCEDURE K-3: Interior light: Dome light dimming function does not work normally.

NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991813. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-15."

Ignition Dimming Function



CIRCUIT OPERATION

The ETACS-ECU operates the dome light dimming function according to the input signals from the following switches:

- Ignition switch (IG1): OFF
- Key reminder switch: ON
- Door switches: OFF
- Driver's door lock actuator switch: LOCK or UNLOCK

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

- Trouble in input signal system
- 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 Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991910: MUT-III Main Harness A
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991822: Probe Harness

STEP 1. Check the dome light.

If a door is opened while the dome light switch is at "door-linked" position, the dome light should illuminate.

Q: Does the dome light illuminate normally?

YES : Go to Step 2.

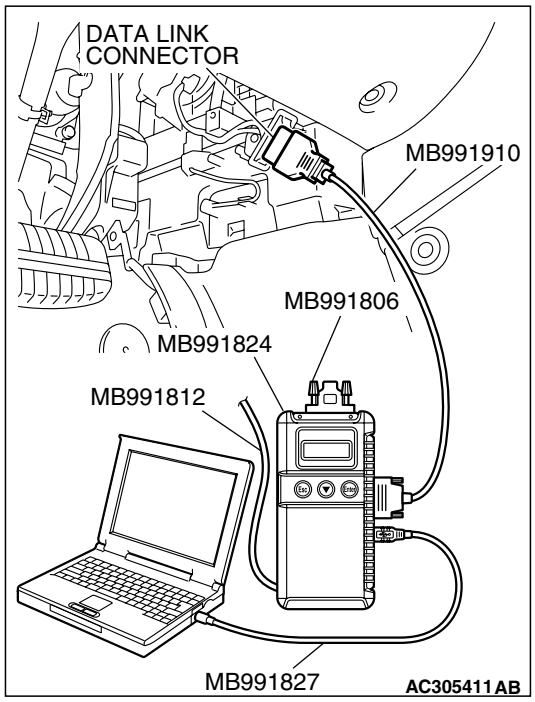
NO : Refer to Inspection Procedure K-1 "The dome light do not illuminate and go out normally P.54B-420."

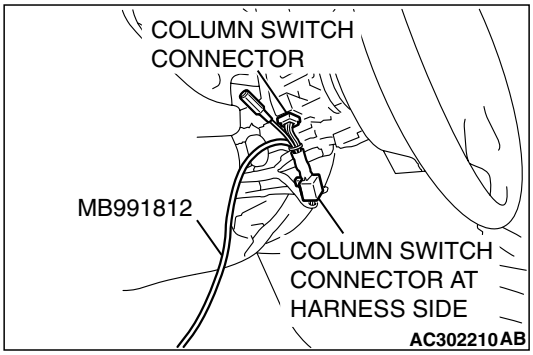
STEP 2. Check the adjustment function.

Q: Has the dome light delay-off time been set to other than "0 second" by the adjustment function?

YES : Go to Step 3.

NO : Set the dome light delay-off time to "0 second."





STEP 3. Use scan tool MB991958 to select "ECU COMM Check" on the SWS monitor display.

Check the ETACS-ECU.

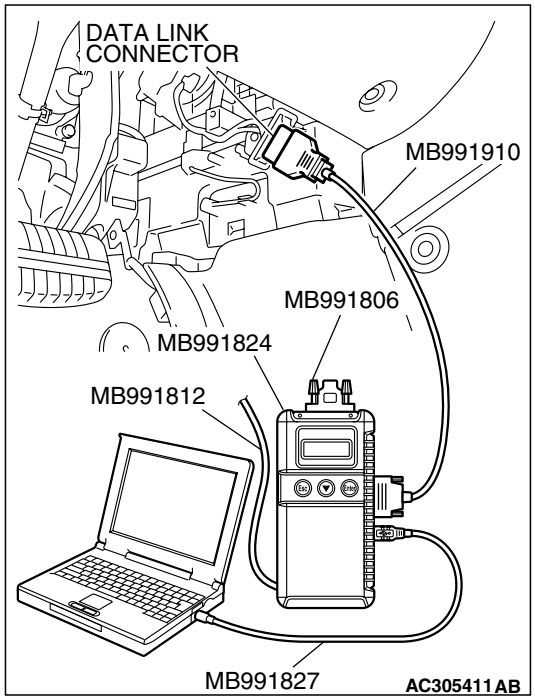
⚠ CAUTION

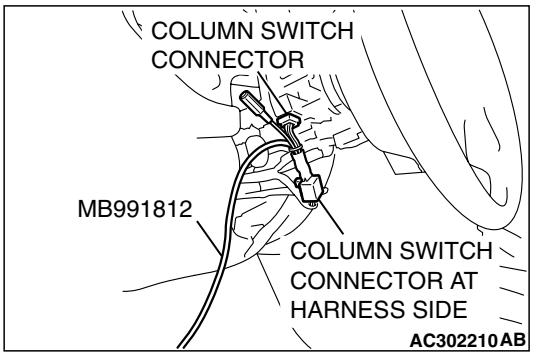
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect special tool MB991910 before connecting special tool MB991812. Be sure to connect special tool MB991806 after turning on special tool MB991824.

(1) Connect the special tool. Refer to "How to connect SWS monitor P.54B-13."
(2) Turn the ignition switch to the "LOCK" (OFF) position.
(3) Operate scan tool MB991958 according to the procedure below to display "ECU COMM Check."
  a. Select "Interactive Diagnosis."
  b. Select "System select."
  c. Select "SWS."
  d. Select "SWS MONITOR."
  e. Select "ECU COMM Check."
(4) Scan tool MB991958 should show "OK" on the "ECU COMM Check" menu for the "ETACS ECU" menu.

Q: Is "OK" displayed for the "ETACS ECU" menu?

YES : Go to Step 4.
NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54B-78."





STEP 4. 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 or front passenger's door: open

(1) Operate scan tool MB991958 according to the procedure below to display "ETACS ECU."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "SWS MONITOR."
   e. Select "Data List."
   f. Select "ETACS ECU."

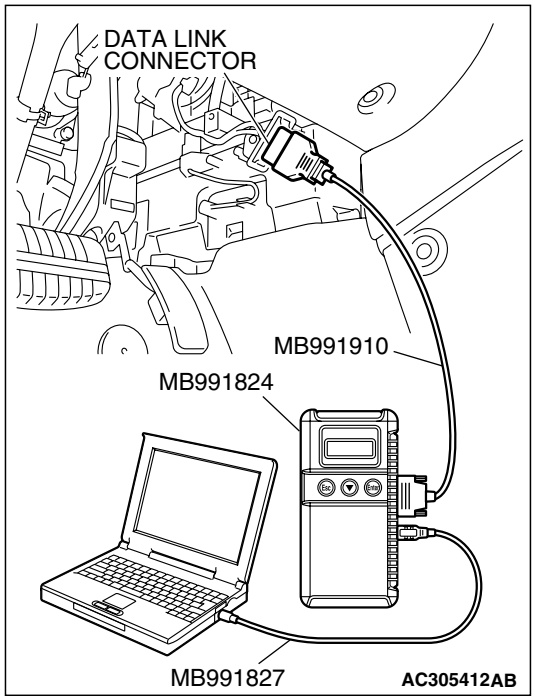
(2) Check that normal conditions are displayed for the item described in the table below.

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

Q: Does the scan tool MB991958 display "IG SW (IG1)" as normal condition?

YES : Go to Step 5.

NO : Refer to Inspection Procedure M-2 "ETACS-ECU does not receive any signal from the ignition switch (IG1) P.54B-470."



STEP 5. Check the input signal (by using the pulse check mode of the monitor).

Check the input signals from the following switches:

- Key reminder switch
- Door switches
- Trunk lid latch assembly

(1) Operate scan tool MB991958 according to the procedure below to display "Pulse check."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "Pulse Checking."

(2) Check if scan tool MB991958 sounds or not.

ITEM NAME	CONDITION
key reminder switch	Remove and reinsert the ignition key
door switches	Open or close one of the doors
trunk lid latch assembly	Open or close the trunk lid

Q: When the key reminder switch, any door switch, or the trunk lid is operated, does scan tool MB991958 sound?

Buzzer of scan tool MB991958 sounds normally. : Replace the ETACS-ECU. Verify that the dome light dimming function works normally.

Scan tool MB991958 does not sound when the ignition key is removed and reinserted : Refer to Inspection Procedure N-1 "ETACS-ECU does not receive a signal from the key reminder switch P.54B-497."

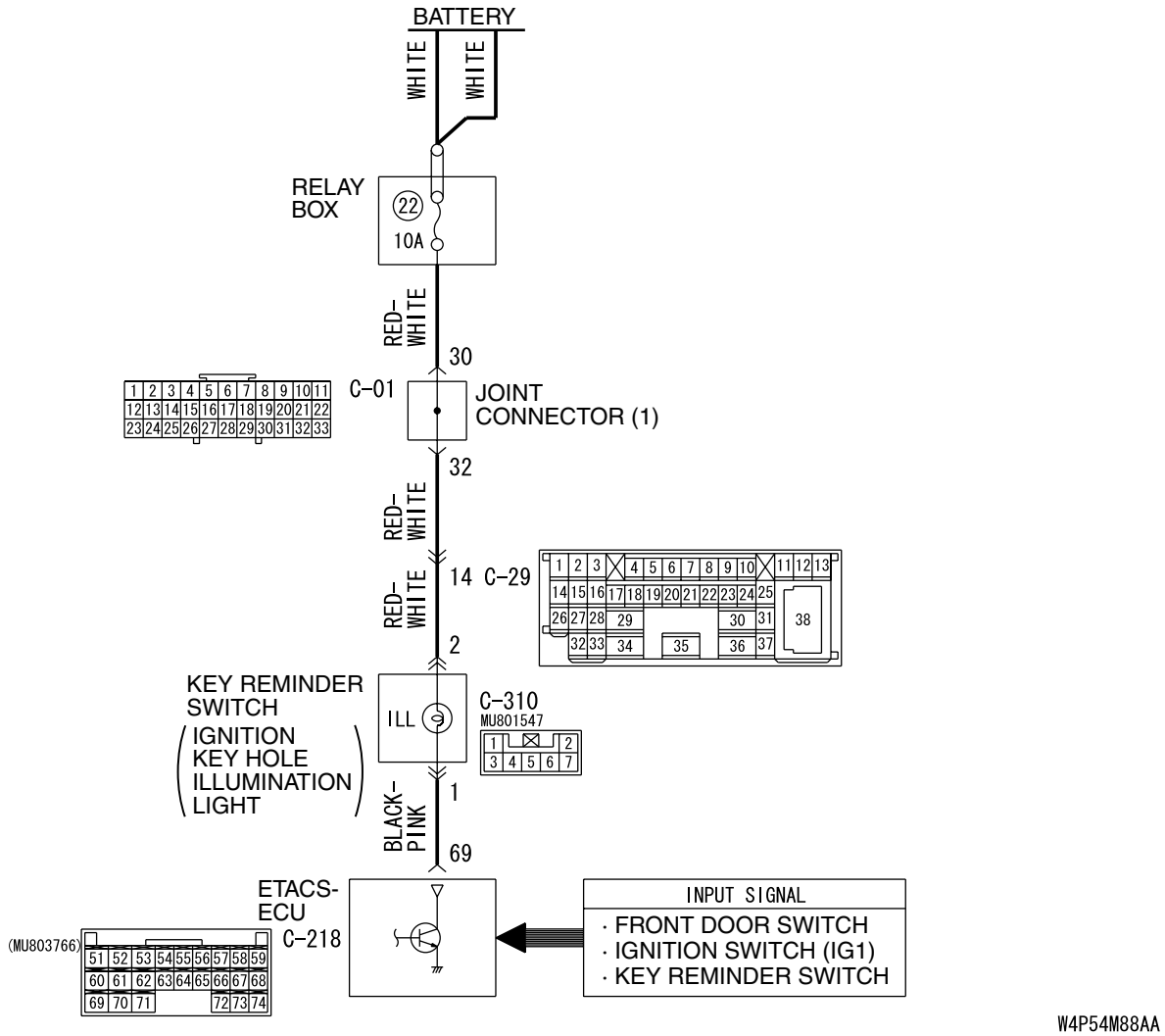
Scan tool MB991958 does not sound whenever a door switch is operated : Refer to Inspection Procedure N-3 "ETACS-ECU does not receive any signal from any of the door switches P.54B-505."

When the trunk lid is opened and closed, scan tool MB991958 does not sound. : Refer to Inspection Procedure N-7 "ETACS-ECU does not receive any signal from trunk lid latch assembly P.54B-537."

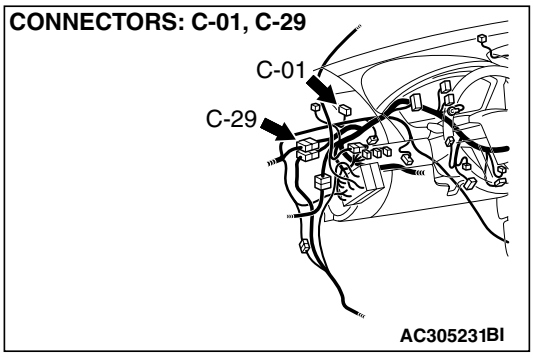
INSPECTION PROCEDURE K-4: Interior Light: The ignition key hole illumination light does not illuminate or go out normally.

NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991813. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-15."

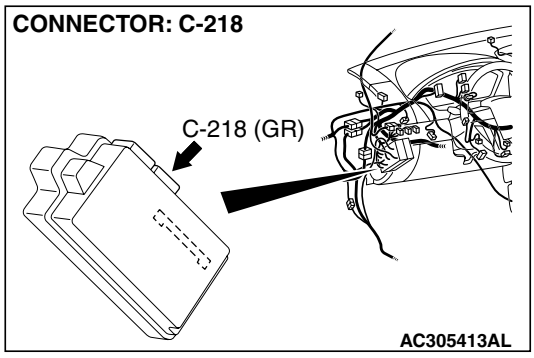
Ignition Key Hole Illumination Light Circuit



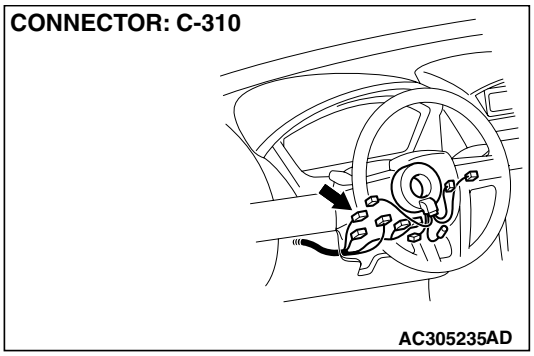
CONNECTORS: C-01, C-29



CONNECTOR: C-218



TSB Revision



CIRCUIT OPERATION

- When the driver's door is opened with the ignition switch at "ACC" position, the ETACS-ECU illuminates the ignition key hole illumination light.
- The ignition key hole illumination light goes out in 30 seconds after the driver's door is closed. The ignition key hole illumination light remains illuminated for 30 seconds after the ignition key is pulled out.
- The ETACS-ECU operates the ignition key hole illumination light according to the input signals from the following switches:
  - Ignition switch (IG1): OFF
  - Key reminder switch: OFF
  - Interior light loaded signal: ON
- Vehicle condition:
  - Ignition switch: "LOCK" (OFF) or "ACC" position
  - Ignition key: Removed from the ignition key cylinder
  - Driver's door: Opened or closed

TECHNICAL DESCRIPTION (COMMENT)

If the ignition key hole illumination light does not illuminate, the input circuits from the switches described in "CIRCUIT OPERATION", the key reminder switch (ignition key hole illumination light bulb) or the ETACS-ECU may be defective.

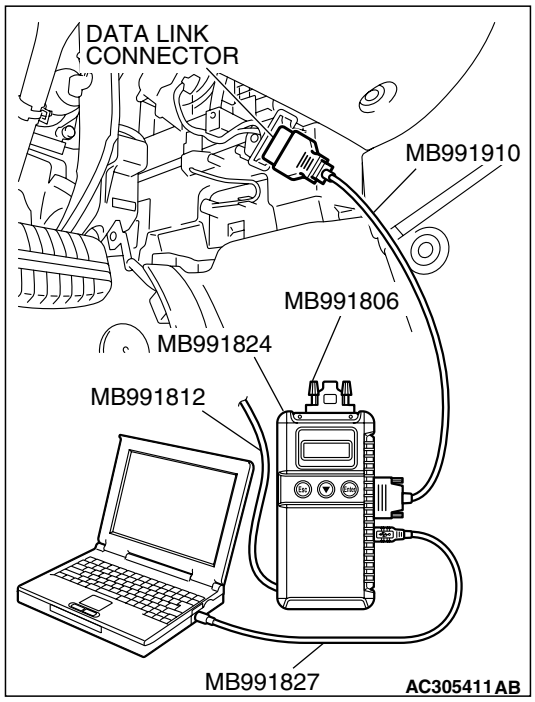
TROUBLESHOOTING HINTS

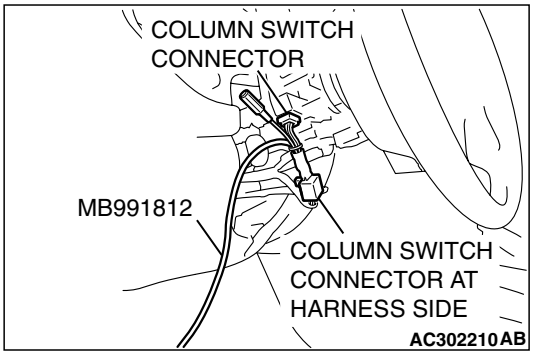
- Trouble in input signal system
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- The ETACS-ECU may be defective

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991910: MUT-III Main Harness A
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991822: Probe Harness





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

Check the ETACS-ECU.

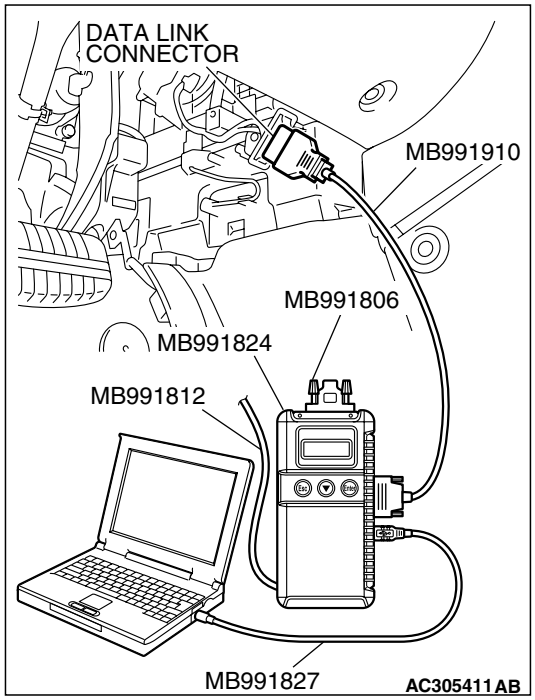
⚠ CAUTION

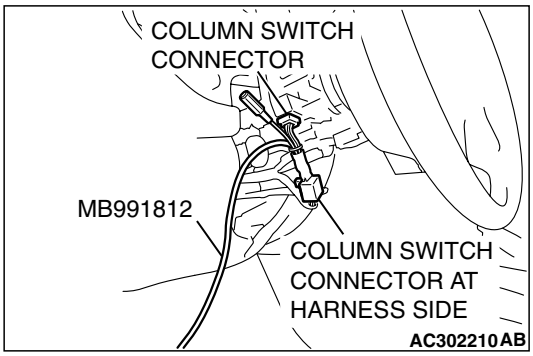
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect special tool MB991910 before connecting special tool MB991812. Be sure to connect special tool MB991806 after turning on special tool MB991824.

(1) Connect the special tool. Refer to "How to connect SWS monitor P.54B-13."
(2) Turn the ignition switch to the "LOCK" (OFF) position.
(3) Operate scan tool MB991958 according to the procedure below to display "ECU COMM Check."
  a. Select "Interactive Diagnosis."
  b. Select "System select."
  c. Select "SWS."
  d. Select "SWS MONITOR."
  e. Select "ECU COMM Check."
(4) Scan tool MB991958 should show "OK" on the "ECU COMM Check" menu for the "ETACS ECU" menu.

Q: Is "OK" displayed for the "ETACS ECU" menu?

YES : Go to Step 2.
NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54B-78."





STEP 2. 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 door: open
- Front passenger's door: closed

(1) Operate scan tool MB991958 according to the procedure below to display "ETACS ECU."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "SWS MONITOR."
   e. Select "Data List."
   f. Select "ETACS ECU."

(2) Check that normal conditions are displayed for the items described in the table below.

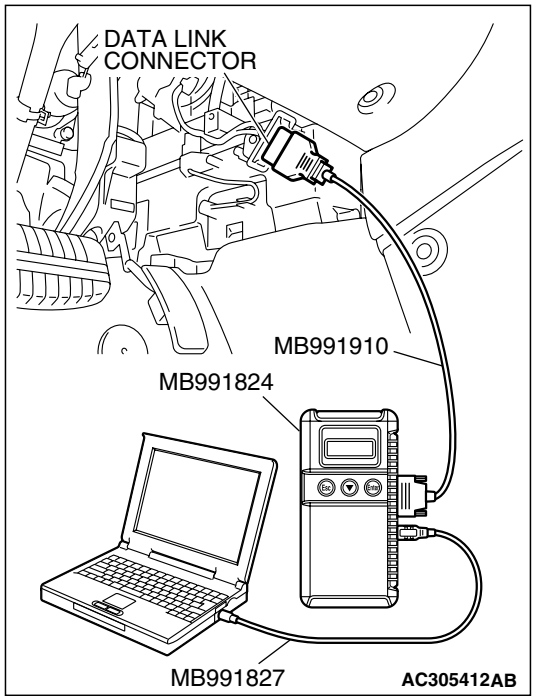
ITEM NO.	ITEM NAME	NORMAL CONDITION
ITEM 30	IG SW(IG1)	OFF
ITEM 32	FRONT DOOR SW	ON

Q: Does the scan tool MB991958 display the items "IG SW (IG1)" and "FRONT DOOR SW" as normal condition?

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 M-2 "ETACS-ECU does not receive any signal from the ignition switch (IG1) P.54B-470."

Normal condition is not displayed for "FRONT DOOR SW" : Refer to Inspection Procedure M-4 "ETACS-ECU does not receive any signal from the front door switches P.54B-477."



STEP 3. Check the input signal (by using the pulse check mode of the monitor).

Check the following switches and input signals:

- Key reminder switch
- Interior light loaded signal

(1) Operate scan tool MB991958 according to the procedure below to display "Pulse check."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "Pulse Checking."

(2) When the switches (see table below), which are applicable for the input signal check, are operated, check if scan tool MB991958 sounds or not.

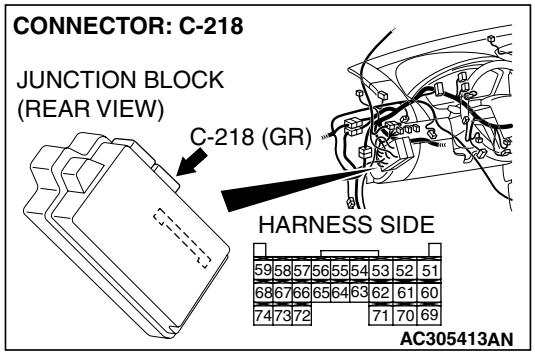
ITEM NAME	CONDITION
key reminder switch	Remove and reinsert the ignition key
interior light loaded signal	Turn on one of the interior lights

Q: When the key reminder switch and the interior light are operated, does scan tool MB991958 sound in each case?

Buzzer of scan tool MB991958 sounds normally. : Go to Step 4.

When the ignition key is removed and reinserted, scan tool MB991958 does not sound : Refer to Inspection Procedure N-1 "ETACS-ECU does not receive any signal from the key reminder switch P.54B-497."

When one of the interior lights is illuminated, scan tool MB991958 does not sound : Refer to Inspection Procedure N-9 "ETACS-ECU does not receive any interior light loaded signal P.54B-542."

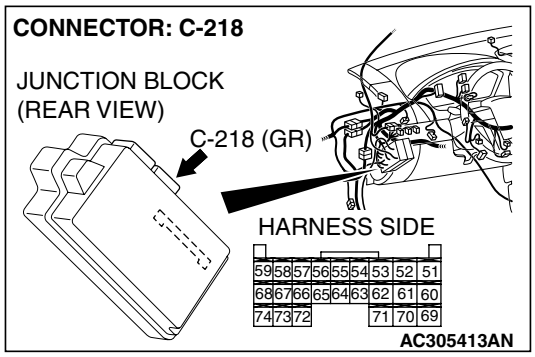


STEP 4. Check ETACS-ECU connector C-218 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-218 in good condition?

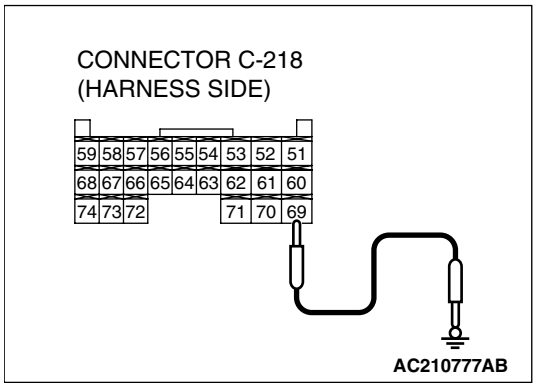
YES : Go to Step 5.

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



STEP 5. Check at ETACS-ECU connector C-218 in order to check the ignition key hole illumination light circuit.

(1) Disconnect ETACS-ECU connector C-218, and measure at the wiring harness side.



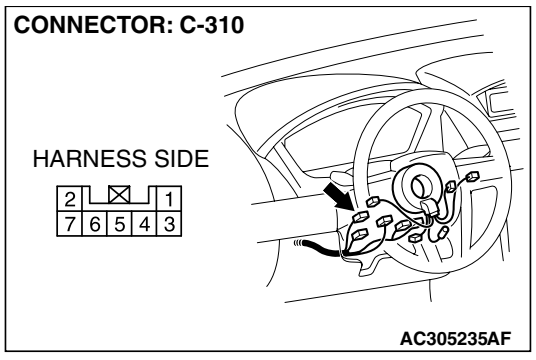
(2) The ignition key hole illumination light should illuminate when terminal 69 is grounded.

Q: Does the ignition key hole illumination light illuminate?

YES : Replace the ETACS-ECU. Verify that the ignition key hole illumination light illuminates normally.

NO : Go to Step 6.

STEP 6. Check key reminder switch connector C-310 for loose, corroded or damaged terminals, or terminals pushed back in the connector.



Q: Is key reminder switch connector C-310 in good condition?

YES : Go to Step 7.

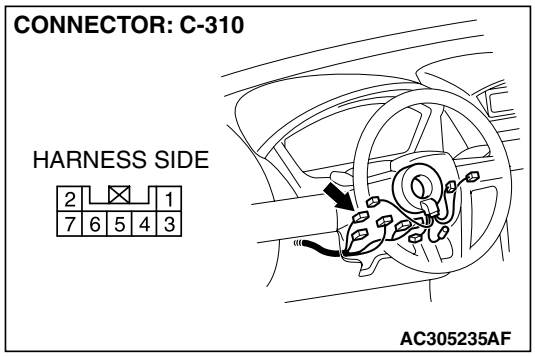
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. Verify that the ignition key hole illumination light illuminates normally.

STEP 7. Check the ignition key hole illumination light bulb.

Q: Is the ignition key hole illumination light bulb in good condition?

YES : Go to Step 8.

NO : Replace the bulb. Verify that the ignition key hole illumination light illuminates normally.



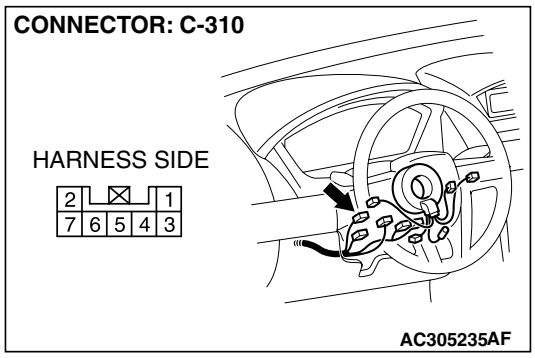
STEP 8. Check the key reminder switch (ignition key hole illumination).

(1) Disconnect key reminder switch connector C-310.
(2) Remove the ignition key hole illumination light bulb. Then measure the resistance value between the bulb terminals.
(3) Install a bulb to the key remainder switch, and measure the resistance between connector C-310 terminals 1 and 2. The measured resistance value should be roughly the same as the value measured in Step (2).

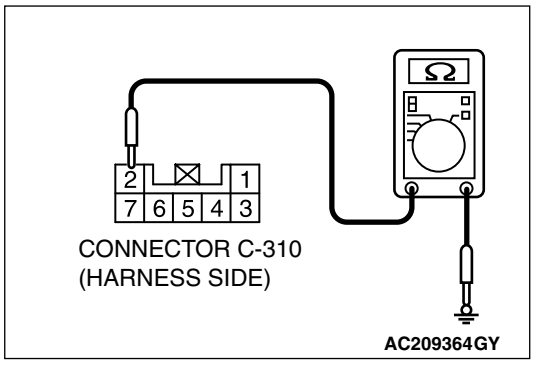
Q: Are these two resistance values extremely different?

YES : Replace the key reminder switch. Verify that the ignition key hole illumination light illuminates normally.
NO : <Nearly equal> Go to Step 9.

STEP 9. Check the battery power supply circuit to the key reminder switch circuit. Measure the voltage at key reminder switch connector C-310.



(1) Disconnect key reminder switch connector C-310, and measure the voltage available at the wiring harness side of the connector.

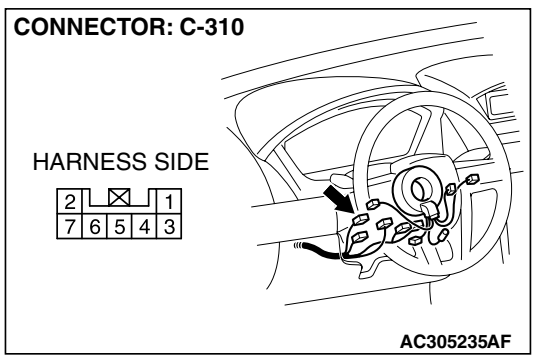


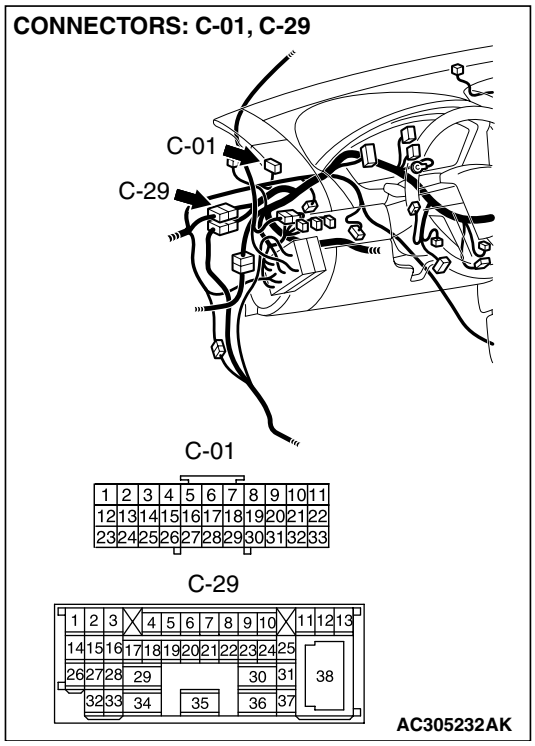
(2) Measure the voltage between terminal 2 and ground.
- The voltage should measure approximately 12 volts (battery positive voltage).

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

YES : Go to Step 11.
NO : Go to Step 10.

STEP 10. Check the wiring harness between key reminder switch connector C-310 (terminal 2) and battery.





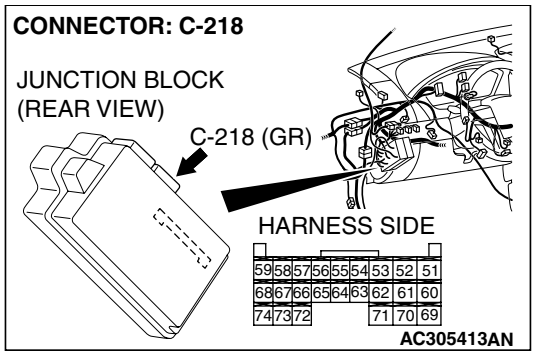
NOTE: Also check joint connector C-01 and intermediate connector C-29 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If joint connector C-01 or intermediate connector C-29 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between key reminder switch connector C-310 (terminal 2) and 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 ignition key hole illumination light illuminates normally.

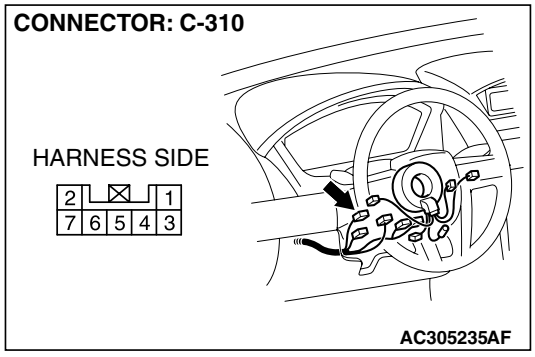
STEP 11. Check the wiring harness between key reminder switch connector C-310 (terminal 1) and ETACS-ECU connector C-218 (terminal 69).



Q: Is the wiring harness between key reminder switch connector C-310 (terminal 1) and ETACS-ECU connector C-218 (terminal 69) in good condition?

YES : No action is necessary and testing is complete.

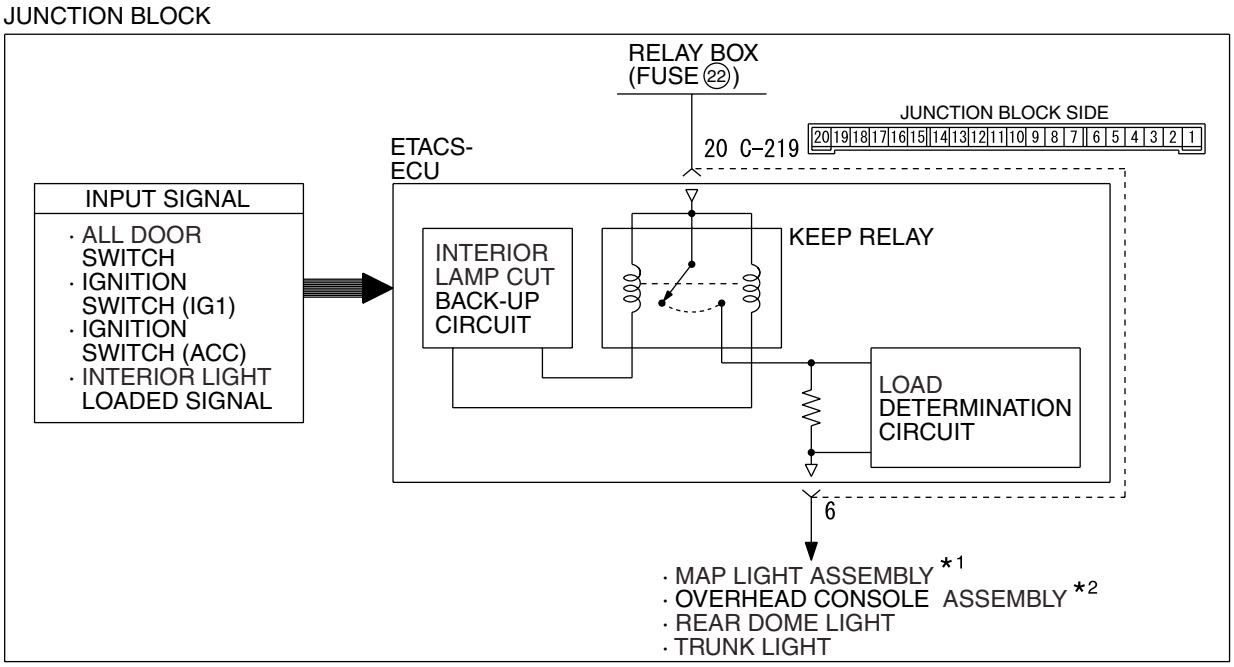
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the ignition key hole illumination light illuminates normally.



INSPECTION PROCEDURE K-5: Interior Light: The interior light automatic shutoff function does not work normally.

NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991813. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-15."

Interior Light Automatic Shutoff Function Circuit



NOTE
*1: WITHOUT SUNROOF
*2: WITH SUNROOF

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CIRCUIT OPERATION

The ETACS-ECU operates the interior light automatic shutdown function according to the following switch signals:

- Ignition switch (ACC)
- Ignition switch (IG1)
- Front door switch (LH)
- 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

- Trouble in input signal system
- 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 Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991910: MUT-III Main Harness A
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991822: Probe Harness

STEP 1. Check the interior lights.

If the interior light switch is moved to the "door interlock position", the interior lights should illuminate when either door is opened.

Q: Do the interior light illuminate normally?

All the interior lights illuminate normally. : Go to Step 2.

None of the interior lights illuminate normally. : Refer to Inspection Procedure K-1 "The dome light do not illuminate and go out normally P.54B-420."

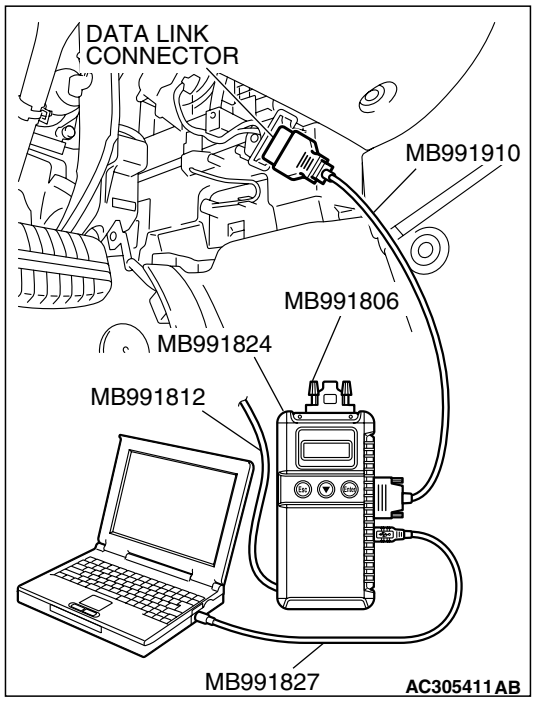
Some of the interior lights do not illuminate normally. : Refer to Inspection Procedure K-2 "The front dome light, rear dome light or trunk light do not illuminate or go out normally P.54B-427."

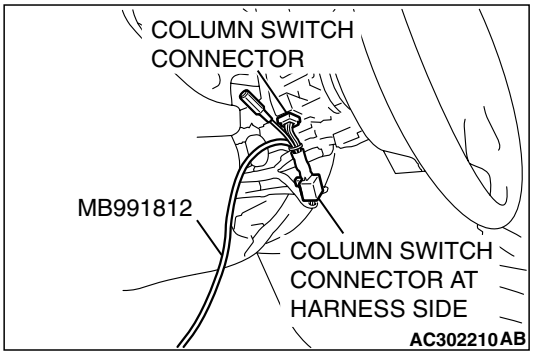
STEP 2. Check the adjustment function.

Q: Has a setting other than "No auto-shutoff" been selected for the interior light automatic shutdown function by the adjustment function?

YES : Go to Step 3.

NO : Set the interior light automatic shutdown function to another setting other than "No auto-shutoff".





STEP 3. Use scan tool MB991958 to select "ECU COMM Check" on the SWS monitor display.

Check the ETACS-ECU.

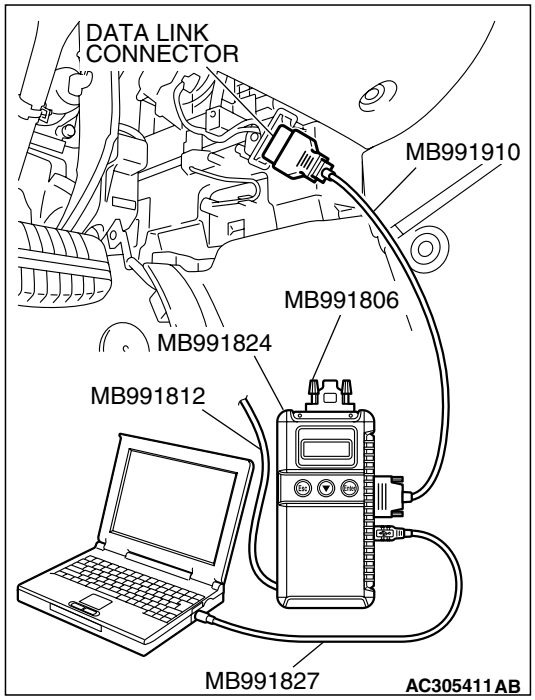
⚠ CAUTION

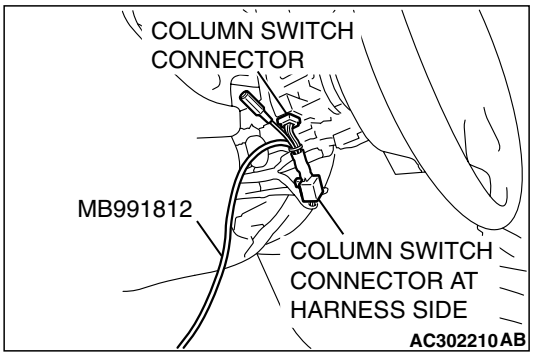
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect special tool MB991910 before connecting special tool MB991812. Be sure to connect special tool MB991806 after turning on special tool MB991824.

(1) Connect the special tool. Refer to "How to connect SWS monitor P.54B-13."
(2) Turn the ignition switch to the "LOCK" (OFF) position.
(3) Operate scan tool MB991958 according to the procedure below to display "ECU COMM Check."
  a. Select "Interactive Diagnosis."
  b. Select "System select."
  c. Select "SWS."
  d. Select "SWS MONITOR."
  e. Select "ECU COMM Check."
(4) Scan tool MB991958 should show "OK" on the "ECU COMM Check" menu for the "ETACS ECU" menu.

Q: Is "OK" displayed for the "ETACS ECU" menu?

YES : Go to Step4.
NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54B-78."





STEP 4. 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 or front passenger's door: open

(1) Operate scan tool MB991958 according to the procedure below to display "ETACS ECU."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "SWS MONITOR."
   e. Select "Data List."
   f. Select "ETACS ECU."

(2) Check that normal conditions are displayed for 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

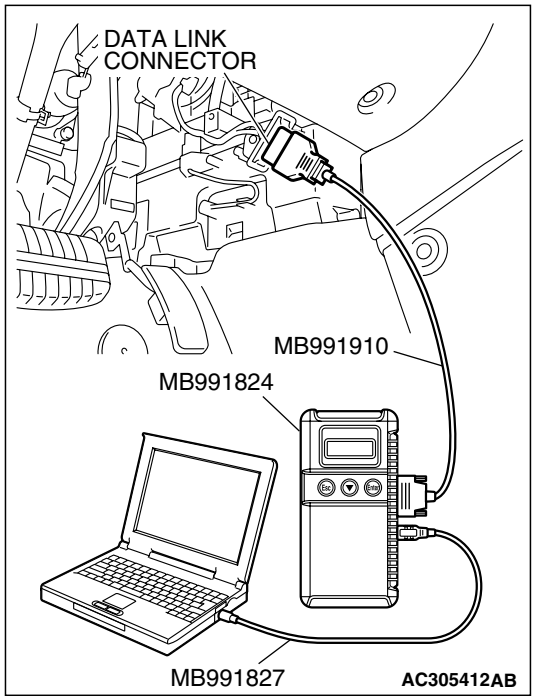
Q: Does the scan tool MB991958 display the items "IG SW (IG1)", "IG SW (ACC)" and "FRONT DOOR SW" as normal condition?

Normal conditions are displayed for all the items : Go to Step 5.

Normal condition is not displayed for "IG SW (IG1)" : Refer to Inspection Procedure M-2 "ETACS-ECU does not receive any signal from the ignition switch (IG1) P.54B-470."

Normal condition is not displayed for "IG SW (ACC)" : Refer to Inspection Procedure M-1 "ETACS-ECU does not receive any signal from the ignition switch (ACC) P.54B-467."

Normal condition is not displayed for "FRONT DOOR SW" : Refer to Inspection Procedure M-4 "ETACS-ECU does not receive any signal from the front door switches P.54B-477."



STEP 5. Check the input signal (by using the pulse check mode of the monitor).

Check the following switches and input signals:

- Door switches
- Interior light loaded signal

(1) Operate scan tool MB991958 according to the procedure below to display "Pulse check."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "Pulse Checking."

(2) Check if scan tool MB991958 sounds or not.

ITEM NAME	CONDITION
interior light loaded signal	Turn on one of the interior lights
door switch	Open or close one of the doors

Q: When any door switch, interior light, the liftgate latch or glass hatch latch is operated, does scan tool MB991958 sound?

Buzzer of scan tool MB991958 sounds normally. : Replace the ETACS-ECU. Verify that the dome light illuminates normally.

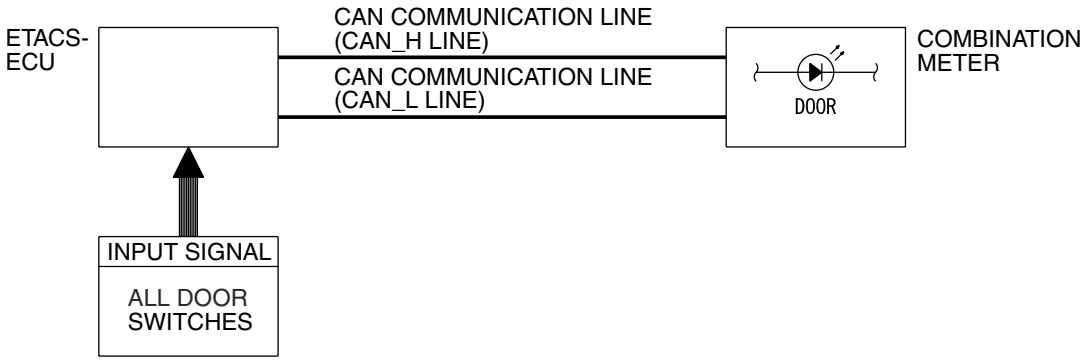
When one of the doors is opened and closed, scan tool MB991958 does not sound : Refer to Inspection Procedure N-3 "ETACS-ECU does not receive any signal from any of the door switches P.54B-505."

When one of the interior lights is illuminated, scan tool MB991958 does not sound : Refer to Inspection Procedure N-9 "ETACS-ECU does not receive any interior light loaded signal P.54B-542."

INSPECTION PROCEDURE K-6: 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 MB991813. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-15."

Door Ajar Indicator Light Circuit



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CIRCUIT OPERATION

The combination meter receives the door switches signals from the ETACS-ECU, and then controls the door ajar indicator, based on these signals.

TECHNICAL DESCRIPTION (COMMENT)

If the door ajar indicator does not illuminate, connector(s), wiring harness in the CAN bus lines, the door switches, the ETACS-ECU, or the combination meter may be defective.

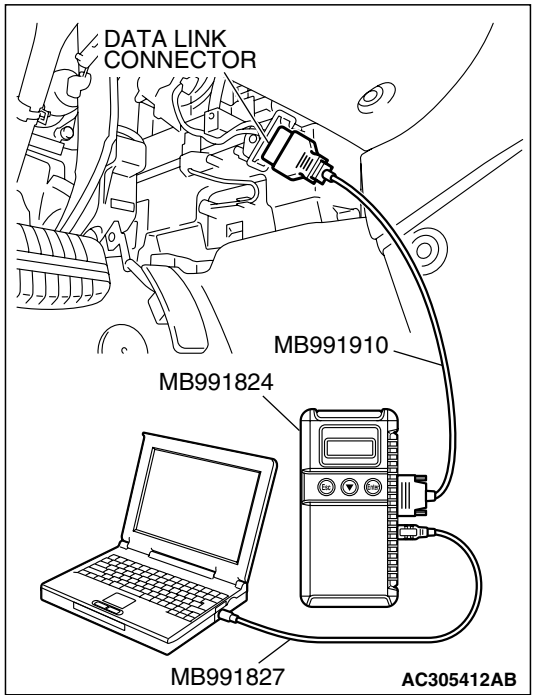
TROUBLESHOOTING HINTS

- Trouble in input signal system
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- The combination meter 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
  - MB991910: MUT-III Main Harness A
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991822: Probe Harness



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

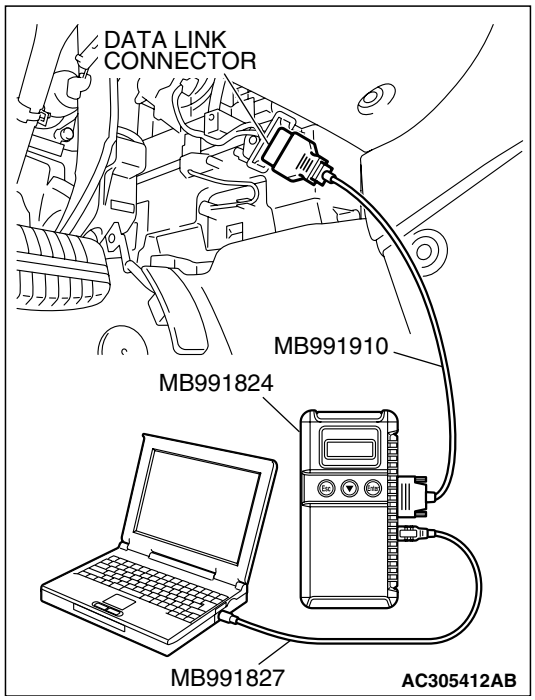
⚠ CAUTION

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.Refer to "How to connect SWS monitor P.54B-13."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-14).

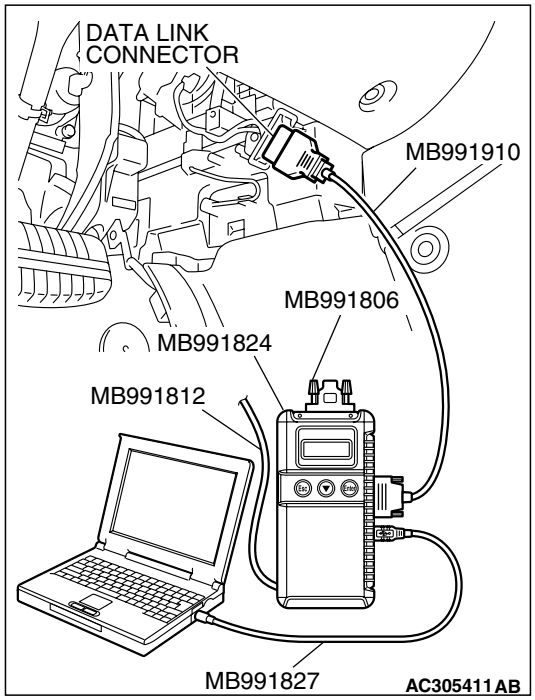


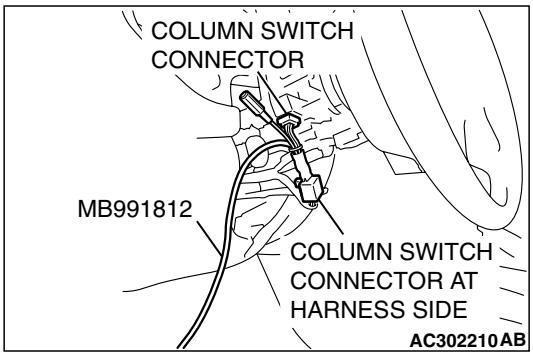
STEP 2. Using scan tool MB991958, read the combination meter diagnostic trouble code.

(1) Check whether the combination meter-related DTC is set.
(2) Turn the ignition switch to the "ON" position.
(3) Check whether the combination meter-related DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the combination meter. Refer to P.54A-52.
NO : Go to Step 3.





STEP 3. Use scan tool MB991958 to select "ECU COMM Check" on the SWS monitor display.

Check the ETACS-ECU.

⚠ CAUTION

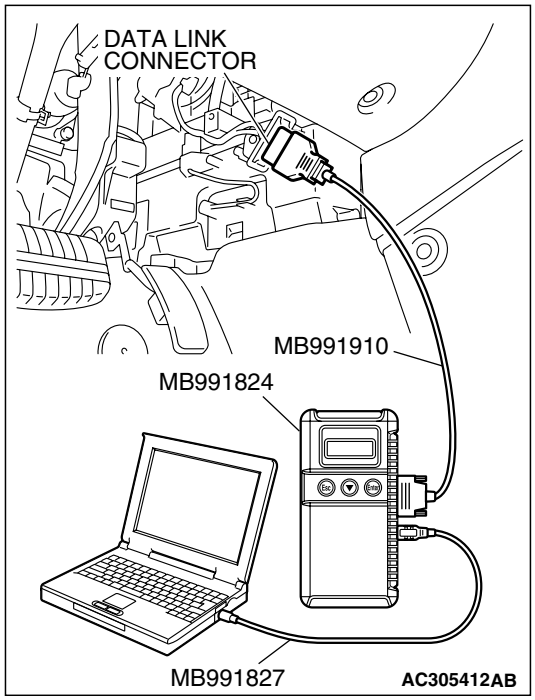
Connect special tool MB991910 before connecting special tool MB991812. Be sure to connect special tool MB991806 after turning on special tool MB991824.

(1) Connect the SWS monitor. Refer to "How to connect SWS monitor P.54B-13."
(2) Turn the ignition switch to the "LOCK" (OFF) position.
(3) Operate scan tool MB991958 according to the procedure below to display "ECU COMM Check."
  a. Select "Interactive Diagnosis."
  b. Select "System select."
  c. Select "SWS."
  d. Select "SWS MONITOR."
  e. Select "ECU COMM Check."
(4) Scan tool MB991958 should show "OK" on the "ECU COMM Check" menu for the "ETACS ECU" menu.

Q: Is "OK" displayed for the "ETACS ECU" menu?

YES : Go to Step 4.

NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54B-78."



STEP 4. Check the input signal (by using the pulse check mode of the monitor).

Check the following switches and input signals:

- Door switches

(1) Operate scan tool MB991958 according to the procedure below to display "Pulse check."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "Pulse Checking."

(2) Check if scan tool MB991958 sounds or not.

ITEM NAME	CONDITION
door switches	Open or close one of the doors

Q: When any door switch is operated, does scan tool MB991958 sound?

YES : Go to Step 5.

NO : Refer to Inspection Procedure N-3 "ETACS-ECU does not receive any signal from any of the door switches P.54B-505."

STEP 5. Replace the combination meter.

(1) Replace the combination meter.

(2) Check that the door ajar indicator light illuminates normally.

Q: Is the door ajar indicator light in good condition?

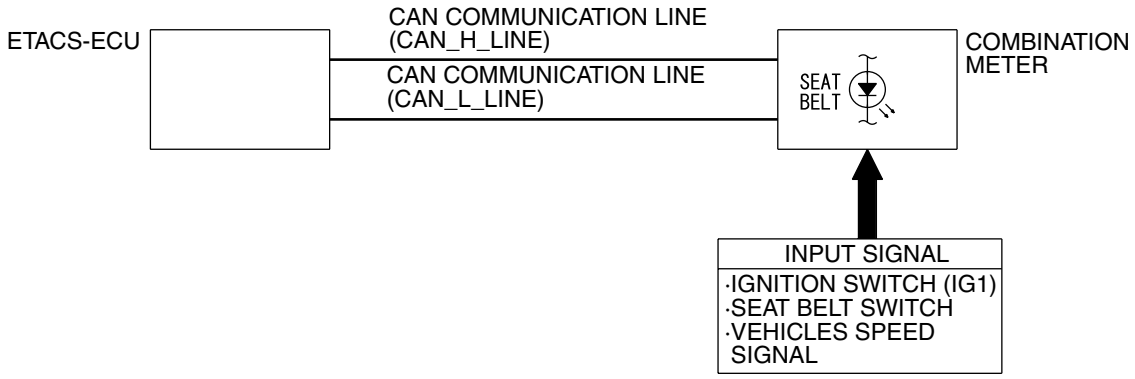
YES : No action is necessary and testing is complete.

NO : Replace the ETACS-ECU. Check that the door ajar indicator light illuminates normally.

INSPECTION PROCEDURE K-7: Interior Light: The seat belt warning light do not illuminate or go out normally

NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991813. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-15."

Seat Belt Warning Light Circuit



W4P54M111A

CIRCUIT OPERATION

The combination meter and the ETACS-ECU illuminates and flashes the seat belt warning light by using the signal from the seat belt switch, the ignition switch (IG1) and the vehicle speed signal.

TECHNICAL DESCRIPTION (COMMENT)

If the seat belt warning light does not illuminate or flash correctly, connector(s), wiring harness in the CAN bus lines, the door switches, the ETACS-ECU, or the combination meter may be defective.

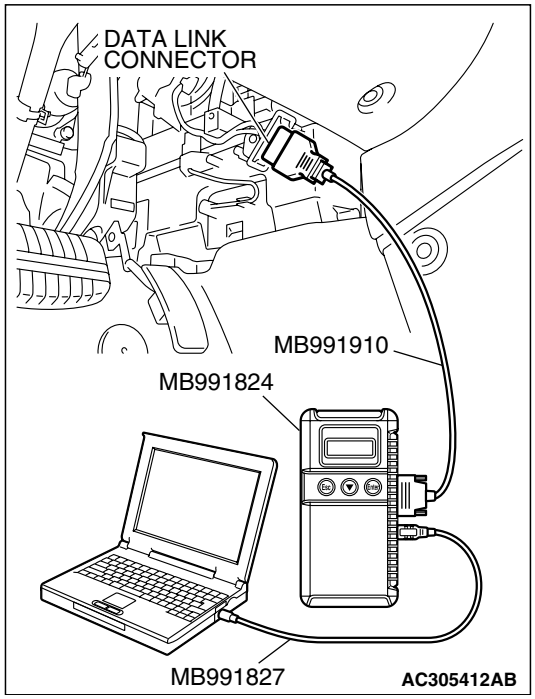
TROUBLESHOOTING HINTS

- Trouble in input signal system
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- The combination meter 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
  - MB991910: MUT-III Main Harness A
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991822: Probe Harness



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

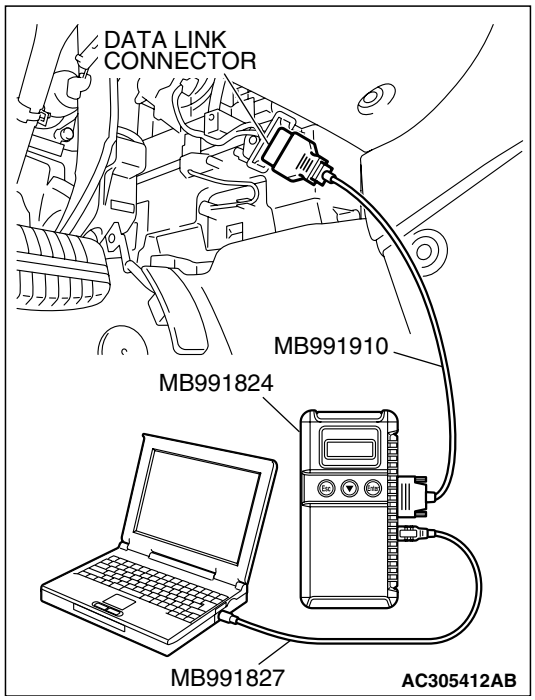
⚠ CAUTION

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.Refer to "How to connect SWS monitor P.54B-13."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-14).

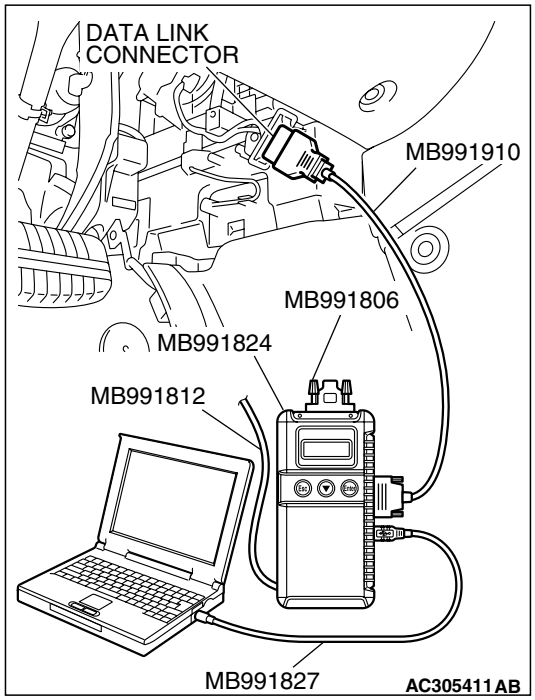


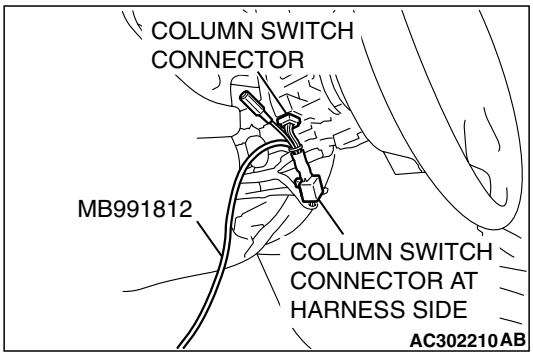
STEP 2. Using scan tool MB991958, read the combination meter diagnostic trouble code.

(1) Check whether the combination meter-related DTC is set.
(2) Turn the ignition switch to the "ON" position.
(3) Check whether the combination meter-related DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the combination meter. Refer to P.54A-52.
NO : Go to Step 3.





STEP 3. Use scan tool MB991958 to select "ECU COMM Check" on the SWS monitor display.

Check the ETACS-ECU.

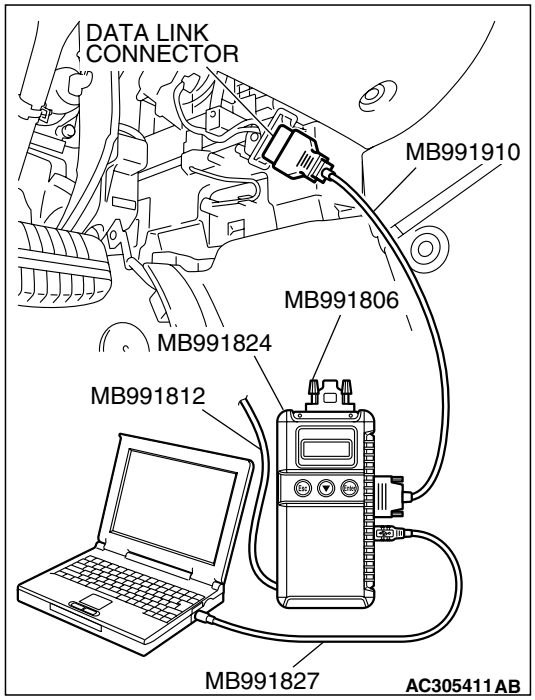
⚠ CAUTION

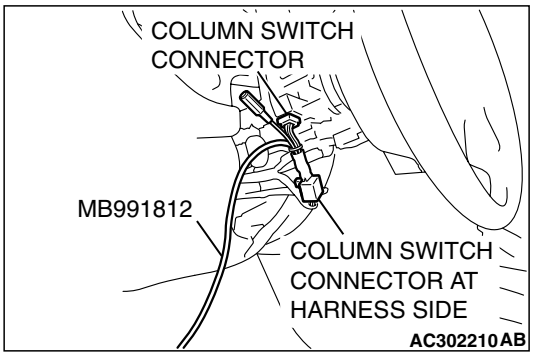
Connect special tool MB991910 before connecting special tool MB991812. Be sure to connect special tool MB991806 after turning on special tool MB991824.

(1) Connect the SWS monitor. Refer to "How to connect SWS monitor P.54B-13."
(2) Turn the ignition switch to the "LOCK" (OFF) position.
(3) Operate scan tool MB991958 according to the procedure below to display "ECU COMM Check."
  a. Select "Interactive Diagnosis."
  b. Select "System select."
  c. Select "SWS."
  d. Select "SWS MONITOR."
  e. Select "ECU COMM Check."
(4) Scan tool MB991958 should show "OK" on the "ECU COMM Check" menu for the "ETACS ECU" menu.

Q: Is "OK" displayed for the "ETACS ECU" menu?

YES : Go to Step 4.
NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54B-78."





STEP 4. Check the input signal by using "DATA LIST" menu of the SWS monitor.

Check the input signals from the following switches:

- Ignition switch: ON

(1) Operate scan tool MB991958 according to the procedure below to display "ETACS ECU."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "SWS MONITOR."
   e. Select "Data List."
   f. Select "ETACS ECU."

(2) Check that normal conditions are displayed for the items described in the table below.

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

Q: Is the scan tool MB991958 display the items "IG SW (IG1)" normal condition?

YES : Go to Step 5.

NO : Refer to Inspection Procedure M-2 "ETACS-ECU does not receive any signal from the ignition switch (IG1) P.54B-470."

STEP 5. Replace the combination meter.

(1) Replace the combination meter.
(2) Check that the seat belt warning light illuminates normally.

Q: Is the seat belt warning light in good condition?

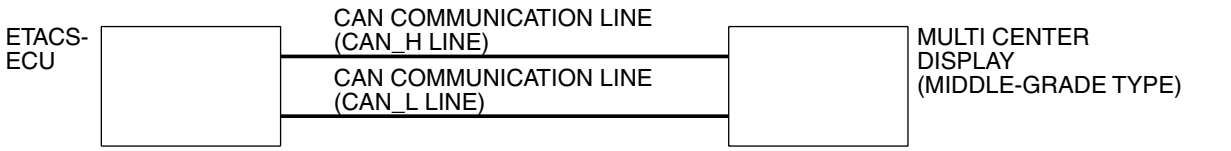
YES : No action is necessary and testing is complete.

NO : Replace the ETACS-ECU. Verify that the seat belt warning light illuminates normally.

INSPECTION PROCEDURE L-1: Can not customize the functions by operating the multi center display (middle-grade type).

NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991813. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-15."

Configuration Function



W4P54M59AA

CIRCUIT OPERATION

The ETACS-ECU enables/disables the functions and changes their operation time, based on the information sent from the multi center display (middle-grade type)

TECHNICAL DESCRIPTION (COMMENT)

If it is impossible to customize the functions by operating the multi center display (middle-grade type), connector(s) or wiring harness in the CAN bus lines, the ETACS-ECU or the multi center display unit (middle-grade type) may be defective.

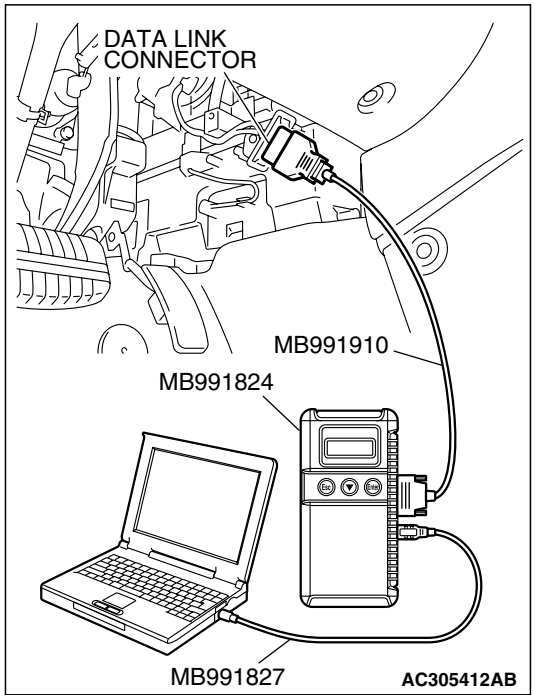
TROUBLESHOOTING HINTS

- Trouble in input signal system
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- Malfunction of the multi center display (middle-grade type)
- 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
  - MB991910: MUT-III Main Harness A
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991822: Probe Harness



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

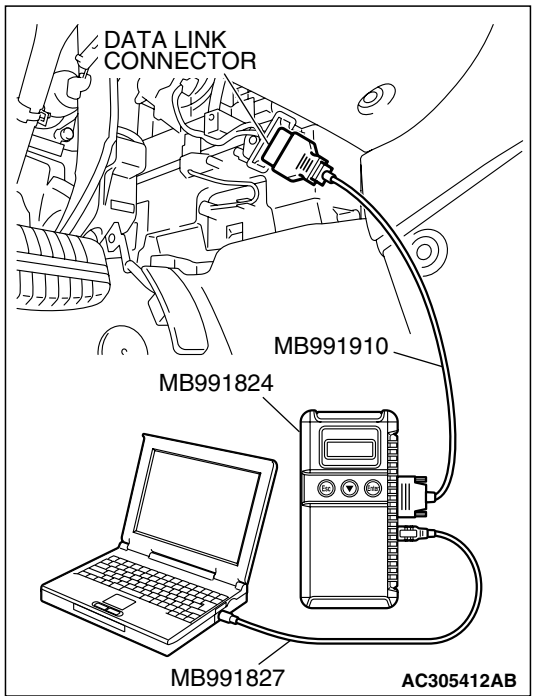
⚠ CAUTION

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.Refer to "How to connect SWS monitor P.54B-13."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-14).

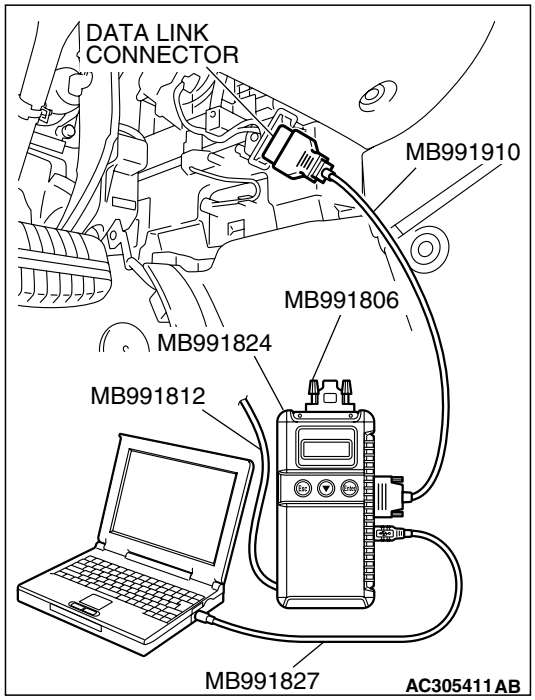


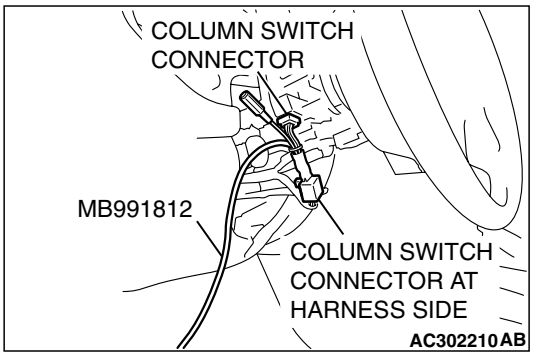
STEP 2. Using scan tool MB991958, read the multi center display (middle-grade type) diagnostic trouble code.

(1) Turn the ignition switch to the "ON" position.
(2) Check if the multi center display (middle-grade type) sets a DTC.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the multi center display (middle-grade type) unit. Refer to P.54A-224.
NO : Go to Step 3.





STEP 3. Use scan tool MB991958 to select "ECU COMM Check" on the SWS monitor display.

Check the ETACS-ECU.

⚠ CAUTION

Connect special tool MB991910 before connecting special tool MB991812. Be sure to connect special tool MB991806 after turning on special tool MB991824.

(1) Connect the SWS monitor. Refer to "How to connect SWS monitor P.54B-13."
(2) Turn the ignition switch to the "ON" position.
(3) Operate scan tool MB991958 according to the procedure below to display "ECU COMM Check."
  a. Select "Interactive Diagnosis."
  b. Select "System select."
  c. Select "SWS."
  d. Select "SWS MONITOR."
  e. Select "ECU COMM Check."
(4) Scan tool MB991958 should show "OK" on the "ECU COMM Check" menu for the "ETACS ECU" menu.

Q: Is "OK" displayed for the "ETACS ECU" menu?

YES : Go to Step 4.
NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54B-78."

STEP 4. Replace the multi center display (middle-grade type).

(1) Replace the multi center display (middle-grade type).
(2) Check if it is possible to customize the functions by operating the new multi center display (middle-grade type).

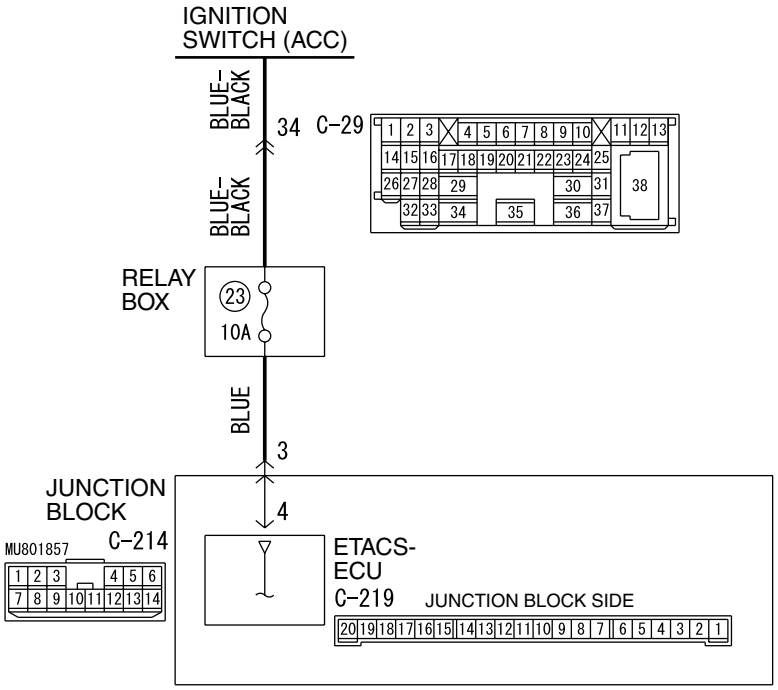
Q: Is it possible to customize the functions by operating the multi center display (middle-grade type)?

YES : No action is necessary and testing is complete.
NO : Replace the ETACS-ECU. Verify that it is possible to customize the functions by operating the multi center display (middle-grade type).

INPUT SIGNAL PROCEDURES

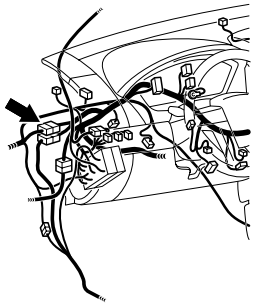
INSPECTION PROCEDURE M-1: ETACS-ECU does not receive any signal from the ignition switch (ACC).

Ignition Switch (ACC) Input Circuit



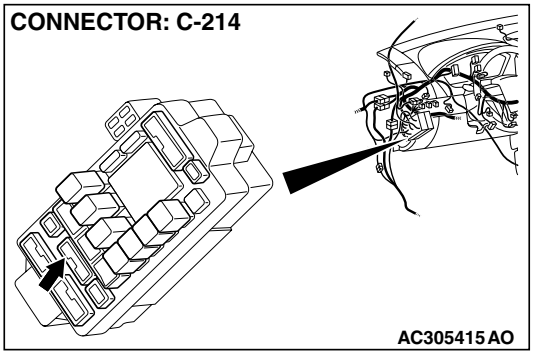
W4P54M01AA

CONNECTOR: C-29



AC305231AH

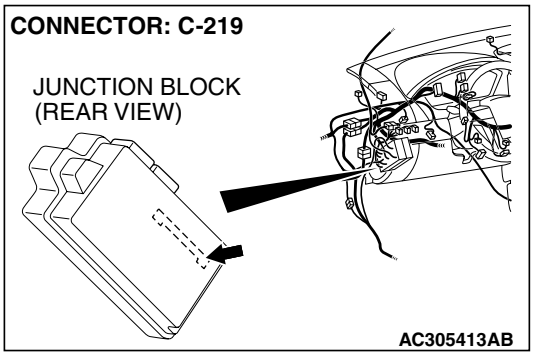
CONNECTOR: C-214



AC305415AO

CONNECTOR: C-219

JUNCTION BLOCK (REAR VIEW)



AC305413AB

TSB Revision

CIRCUIT OPERATION

The ETACS-ECU operates the following equipment and function(s) according to signal from the ignition switch (ACC):

- Windshield wiper and washer
- Interior light automatic shutoff function

The ETACS-ECU receives information on the ignition switch condition (ACC) from the middle-grade multi center display unit via CAN communication. If the ignition switch (ACC) input signal is incorrect, refer to the appropriate Diagnostic Trouble Code Chart P.54B-27.

TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the equipment and function(s), which are described in "CIRCUIT OPERATION", do not work normally.

TROUBLESHOOTING HINTS

- 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:

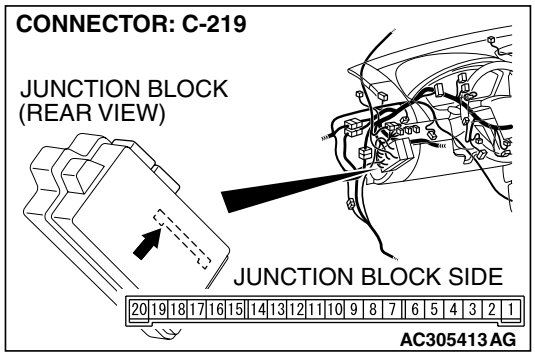
- MB991223: Harness Set

STEP 1. Check ETACS-ECU connector C-219 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

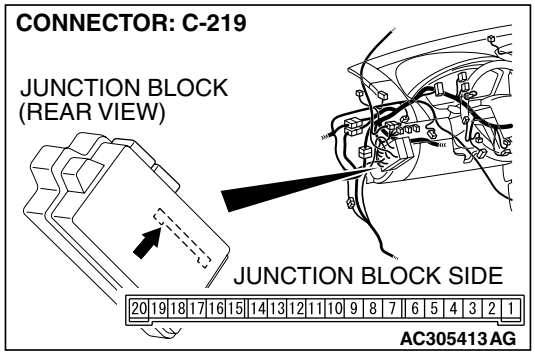
Q: Is ETACS-ECU connector C-219 in good condition?

YES : Go to Step 2.

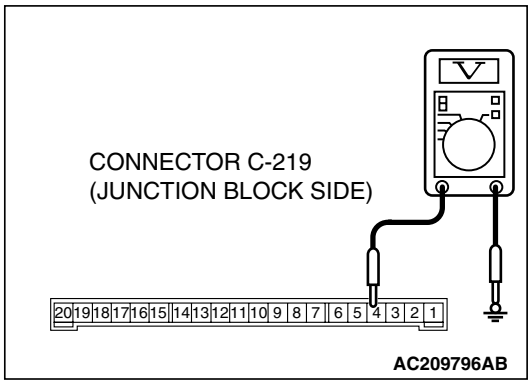
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the equipment described in "CIRCUIT OPERATION" works normally, the input signal from the ignition switch (ACC) should be normal.



STEP 2. Check the ignition switch (ACC) line of the power supply circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connector C-219.



(1) Disconnect ETACS-ECU connector C-219 and measure the voltage available at the junction block side of the connector.
(2) Turn the ignition switch to the "ACC" position.



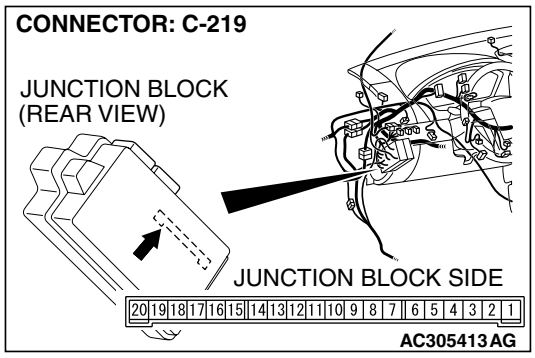
(3) Measure the voltage between terminal 4 and ground.
- The voltage should measure approximately 12 volts (battery positive voltage).

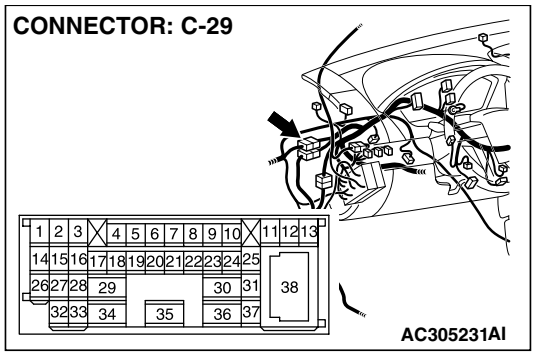
Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

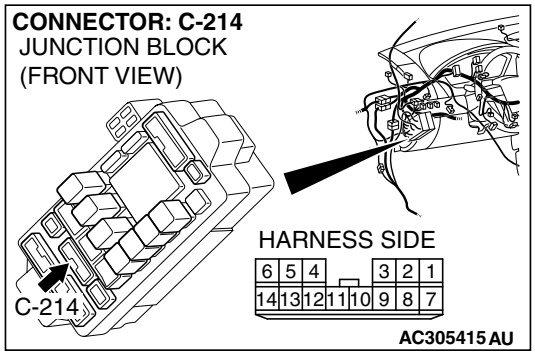
YES : Replace the ETACS-ECU. If the equipment described in "CIRCUIT OPERATION" works normally, the input signal from the ignition switch (ACC) should be normal.

NO : Go to Step 3.

STEP 3. Check the wiring harness between ETACS-ECU connector C-219 (terminal 4) and the ignition switch (ACC).







NOTE: Also check intermediate connector C-29 and junction block connector C-214 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-29 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.

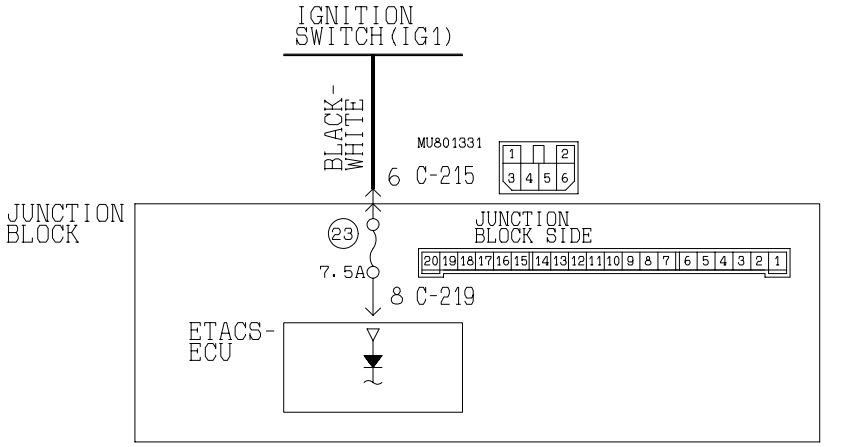
Q: Is the wiring harness between ETACS-ECU connector C-219 (terminal 4) and ignition switch (ACC) in good condition?

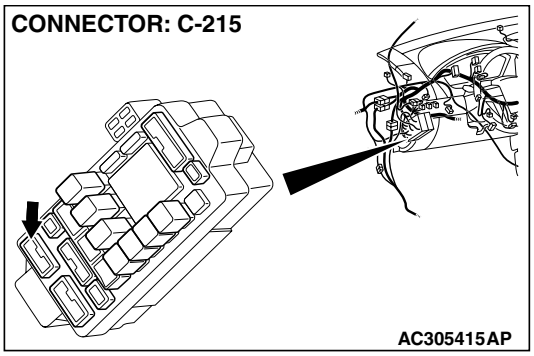
YES : No action is necessary and testing is complete.

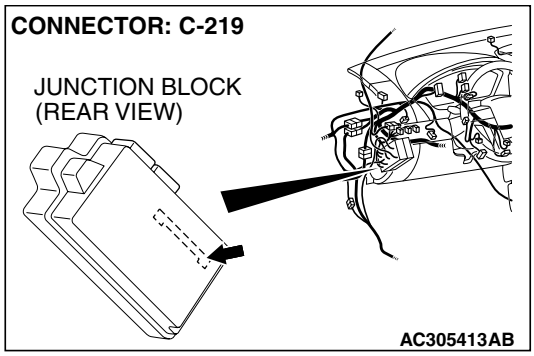
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the equipment described in "CIRCUIT OPERATION" works normally, the input signal from the ignition switch (ACC) should be normal.

INSPECTION PROCEDURE M-2: ETACS-ECU does not receive any signal from the ignition switch (IG1).

Ignition Switch (IG1) Input Circuit







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
- Door ajar warning buzzer
- Turn-signal light buzzer
- Multi center display operation tone <vehicles with multi center display (middle grade type)>
- Power window timer function
- Sunroof timer function
- Headlight automatic shutdown function
- Turn-signal light
- Dome light dimming function
- Ignition key hole illumination light
- If the power supply circuit from the battery to the ETACS-ECU is open, this circuit is used as backup circuit.

If the signal is not normal, the equipment or functions described in "CIRCUIT OPERATION" do not work normally.

The ETACS-ECU receives information on the ignition switch condition (IG1) from the combination meter via CAN communication. If the ignition switch (IG1) input signal is incorrect, refer to the Diagnostic Trouble Code Chart P.54B-27.

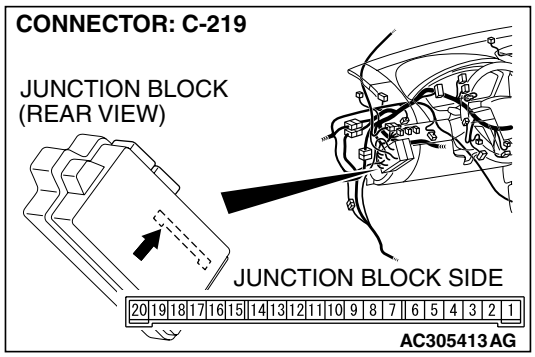
TROUBLESHOOTING HINTS

- 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 ETACS-ECU connector C-219 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-219 in good condition?

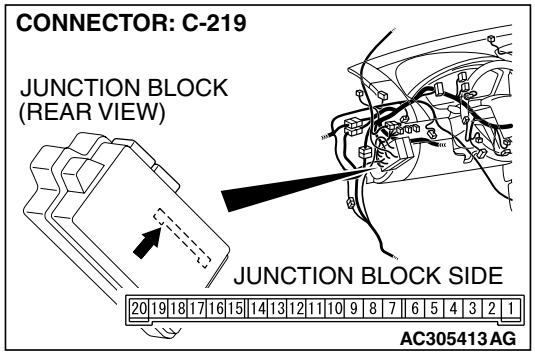
YES : Go to Step 2.

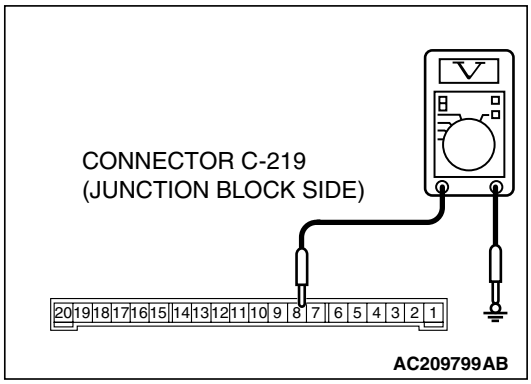
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the ignition switch (IG1) should be normal.

STEP 2. Check the ignition switch (IG1) line of the power supply circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connector C-219.

(1) Disconnect ETACS-ECU connector C-219 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.

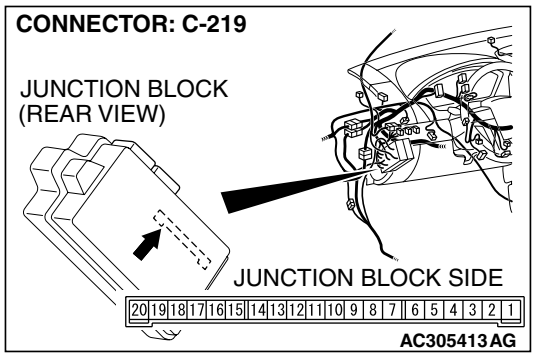
- The voltage should measure approximately 12 volts (battery positive voltage).

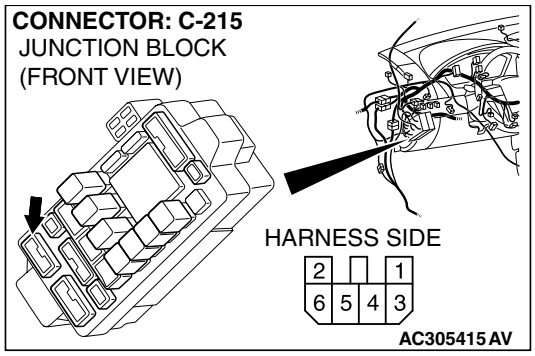
Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Replace the ETACS-ECU. If the functions 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-219 (terminal 8) and the ignition switch (IG1).





NOTE: Also check junction block connector C-215 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-215 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

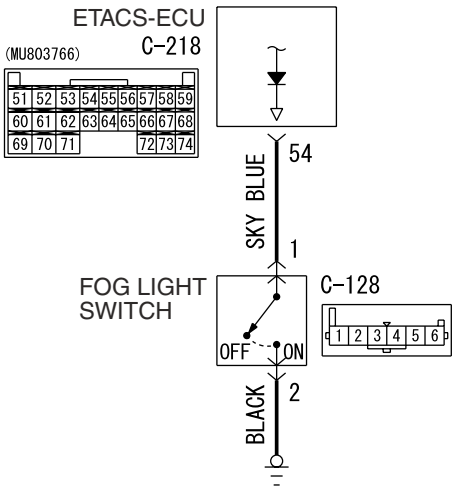
Q: Is the wiring harness between ETACS-ECU connector C-219 (terminal 8) and ignition switch (IG1) in good condition?

YES : No action is necessary and testing is complete.

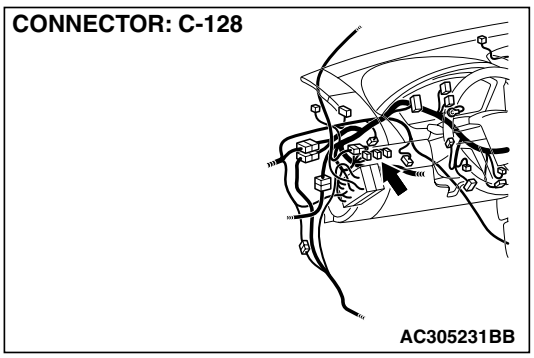
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the ignition switch (IG1) should be normal.

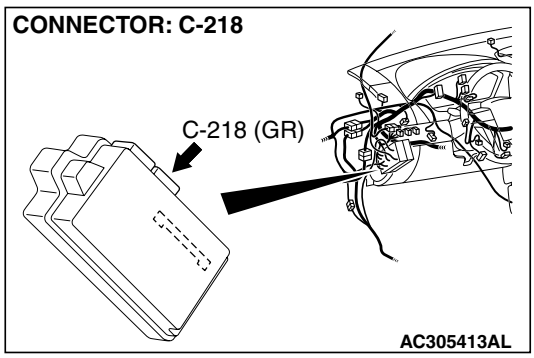
INSPECTION PROCEDURE M-3: ETACS-ECU does not receive any signal from the fog light switch.

Fog Light Switch Input Circuit



W4P54M02AA





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

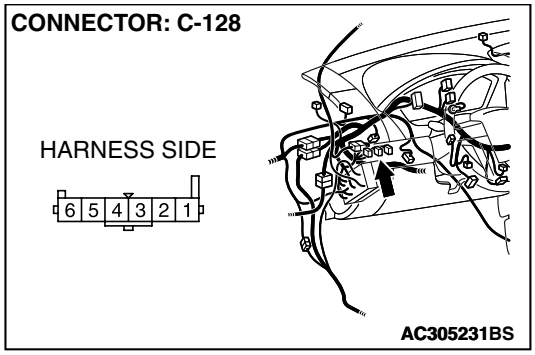
- The fog light switch may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- The ETACS-ECU may be defective

DIAGNOSIS

Required Special Tool:

- MB991223: Harness Set

STEP 1. Check fog light switch connector C-128 for loose, corroded or damaged terminals, or terminals pushed back in the connector.



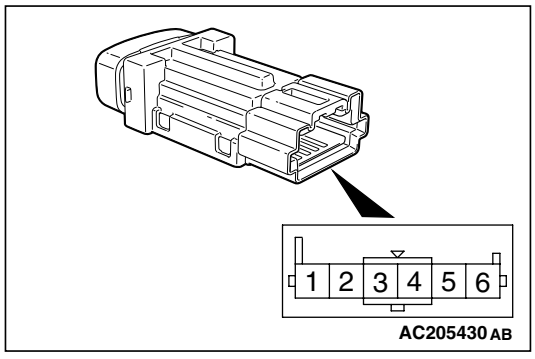
Q: Is fog light switch connector C-128 in good condition?

YES : Go to Step 2.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. Repair the fog light switch. If the fog light switch operates normally, a correct signal is sent from the fog light switch.

STEP 2. Check the fog light switch.

Remove the fog light switch. Refer to GROUP 54A, Fog light P.54A-126. Then check continuity between the switch terminals.

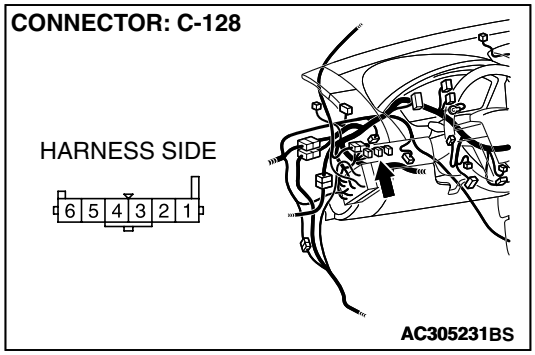


SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Released	1 – 2	Open circuit
Pressed	1 – 2	Less than 2 ohms

Q: Is the fog light switch in good condition?

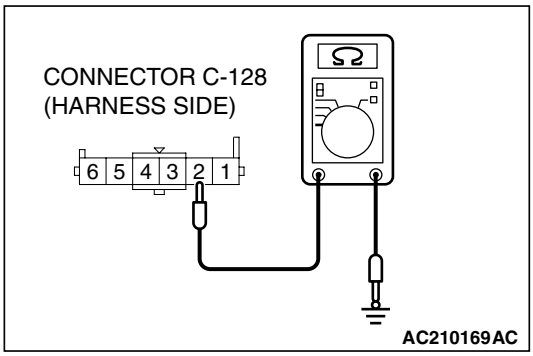
YES : Go to Step 3.

NO : Repair the fog light switch. If the fog light switch operates normally, a correct signal is sent from the fog light switch.



STEP 3. Check the ground circuit to the fog light switch. Measure the resistance at fog light switch connector C-128.

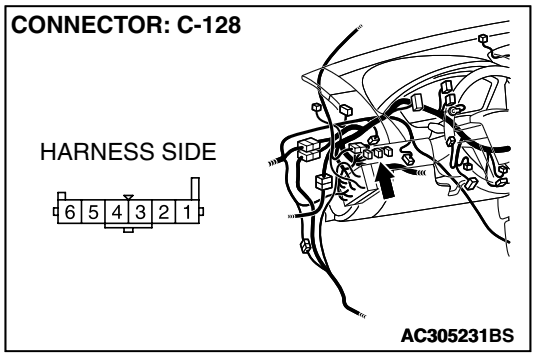
(1) Disconnect fog light switch connector C-128 and measure the resistance available at the wiring harness side of the connector.



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

Q: Is the measured resistance 2 ohms or less?

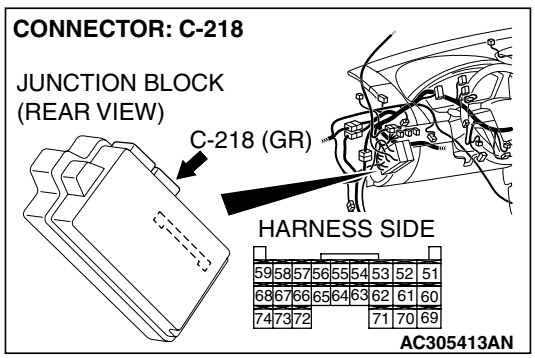
YES : Go to Step 5.
NO : Go to Step 4.



STEP 4. Check the wiring harness between fog light switch connector C-128 (terminal 2) and ground.

Q: Is the wiring harness between fog light switch connector C-128 (terminal 2) and ground in good condition?

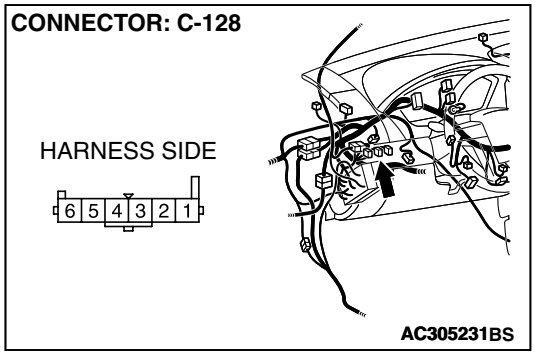
YES : No action is necessary and testing is complete.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the fog light switch operates normally, a correct signal is sent from the fog light switch.

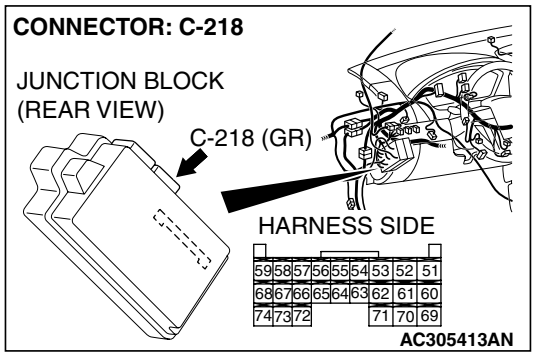


STEP 5. Check ETACS-ECU connector C-218 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-218 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, a correct signal is sent from the fog light switch.





STEP 6. Check the wiring harness between fog light switch connector C-128 (terminal 1) and ETACS-ECU connector C-218 (terminal 54).

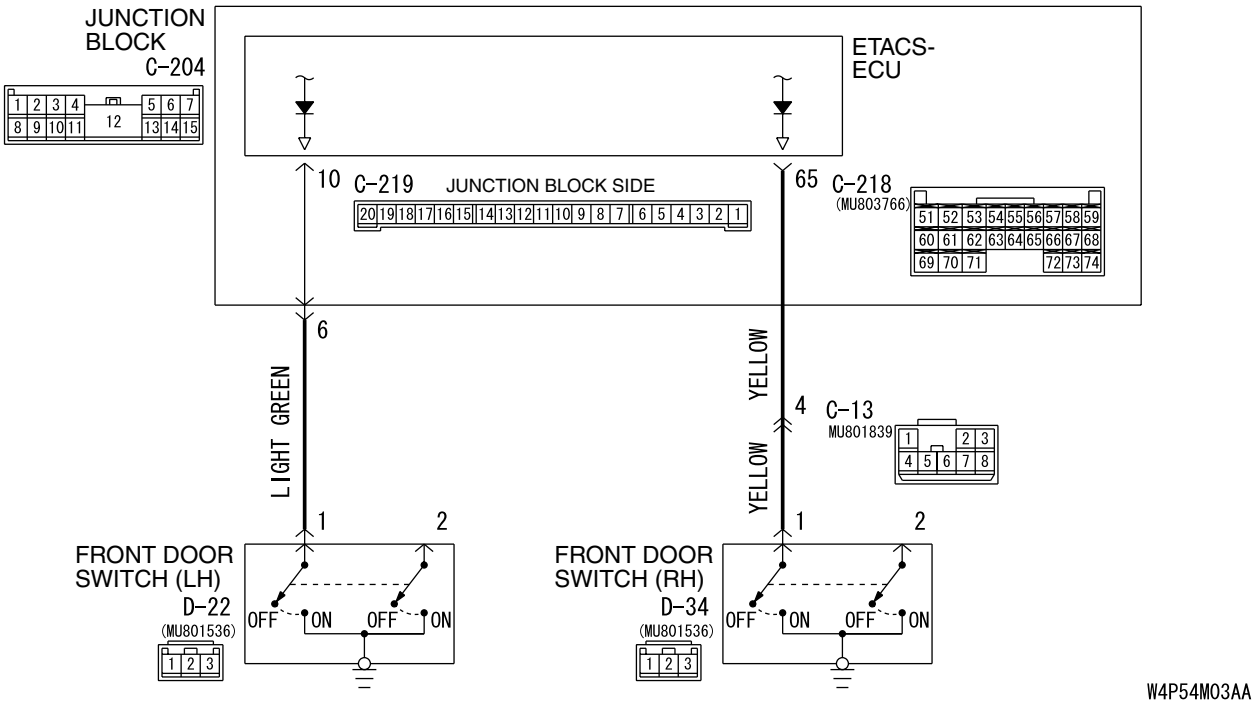
Q: Is the wiring harness between fog light switch connector C-128 (terminal 1) and ETACS-ECU connector C-218 (terminal 54) in good condition?

YES : Replace the ETACS-ECU. If the fog light switch operates normally, a correct signal is sent from the fog light switch.

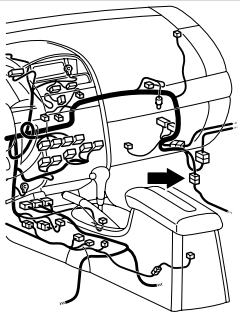
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the fog light switch operates normally, a correct signal is sent from the fog light switch.

INSPECTION PROCEDURE M-4: ETACS-ECU does not receive any signal from the front door switches.

Front Door Switches Input Circuit

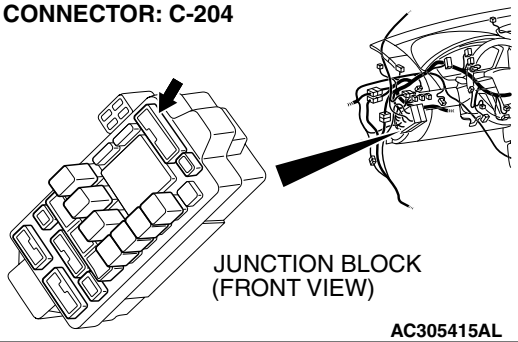


CONNECTOR: C-13



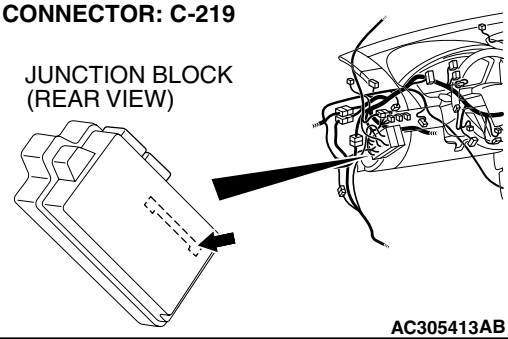
AC305233AR

CONNECTOR: C-204



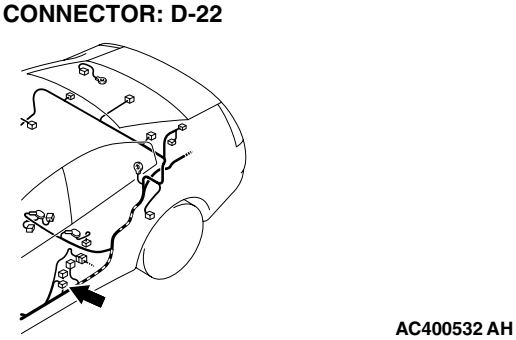
AC305415AL

CONNECTOR: C-219



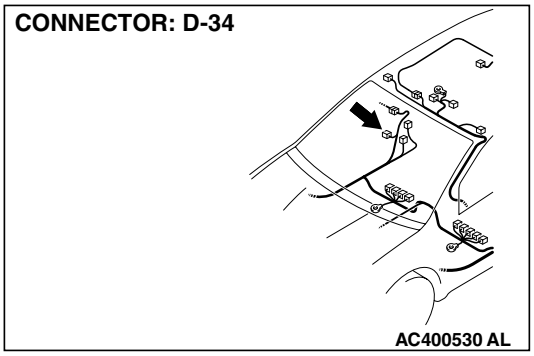
AC305413AB

CONNECTOR: D-22



AC400532AH

TSB Revision



CIRCUIT OPERATION

The ETACS-ECU operates the following functions or systems according to signal from the front door switches:

- Ignition key reminder tone alarm function <front door switch (LH)>
- Light reminder tone alarm function <front door switch (LH)>
- Door ajar warning buzzer
- Forgotten key reminder
- Power window timer function
- Sunroof timer function <front door switch (LH)>
- Keyless entry system
- Timed locking mechanism
- Headlight automatic shutdown function <front door switch (LH)>
- Dome light
- Interior light automatic-shutdown function
- Ignition key hole illumination light <front door switch (LH)>
- Door-ajar indicator light

TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the functions or systems described in "CIRCUIT OPERATION" do not work normally. If the signal is not normal, the front door switches or the ETACS-ECU may be defective.

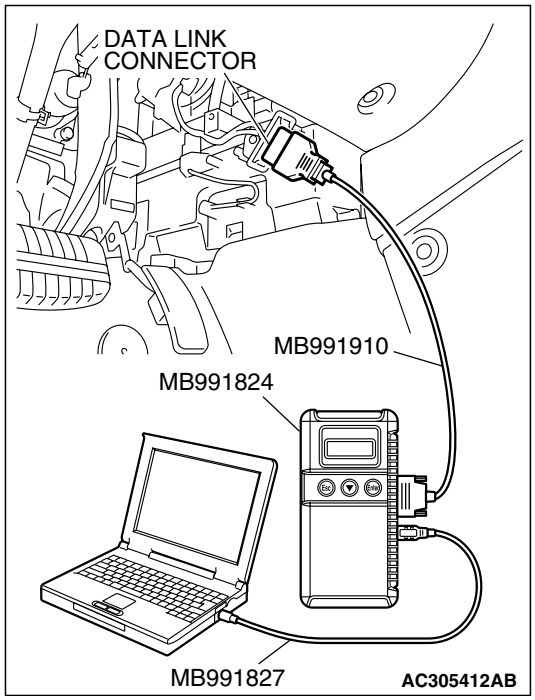
TROUBLESHOOTING HINTS

- The front door switches 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 Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991910: MUT-III Main Harness A



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 the scan tool MB991958.Refer to "How to connect SWS monitor P.54B-13."

(2) Operate scan tool MB991958 according to the procedure below to display "Pulse check."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "Pulse Checking."

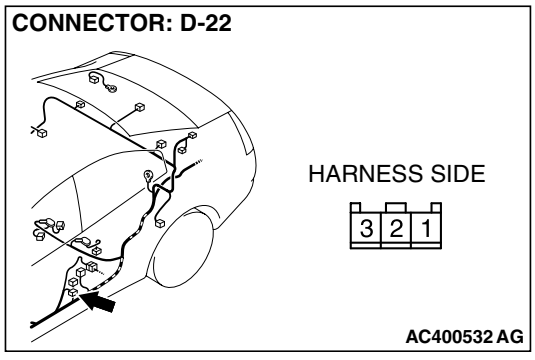
(3) Check that scan tool MB991958 sounds.

Q: Does scan tool MB991958 sound when each front door is opened and closed?

When the front door (LH) is opened and closed, scan tool MB991958 does not sound. : Go to Step 2.

When the front door (RH) is opened and closed, scan tool MB991958 does not sound. : Go to Step 7.

When either front door is opened and closed, scan tool MB991958 sounds. : Replace the ETACS-ECU. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door switches should be normal.

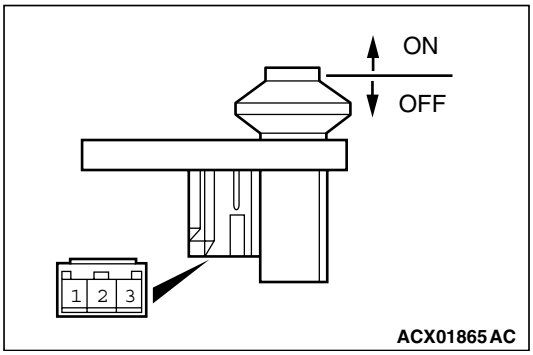


STEP 2. Check front door switch (LH) connector D-22 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door switch (LH) connector D-22 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 described in "CIRCUIT OPERATION" work normally, the input signal from the front door switch (LH) should be normal.



STEP 3. Check the front door switch (LH).

Remove the front door switch (LH). Refer to GROUP 42, Door, Door Assembly P.42-37. Then check continuity between the switch terminals and the body ground.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Released (ON)	1 – body ground	Less than 2 ohms
Pressed (OFF)	1 – body ground	Open circuit

Q: Is the front door switch (LH) in good condition?

YES : Go to Step 4.

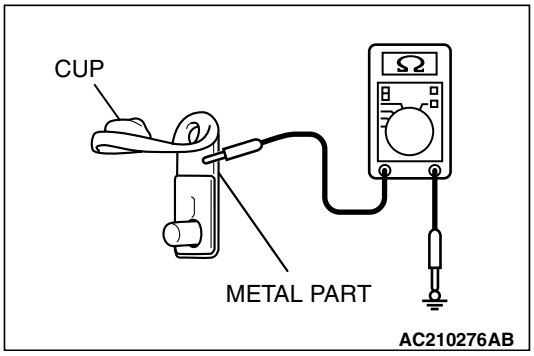
NO : Replace the front door switch (LH). If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door switch (LH) should be normal.

STEP 4. Measure resistance at the lower metal part of the front door switch (LH) in order to check the ground circuit to the front door switch (LH).

NOTE: Check that the front door switch (LH) is grounded to the vehicle body via its mounting screw.

Remove the cap, and measure the resistance value between the lower metal part and ground.

- The resistance should be 2 ohms or less.



Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 5.

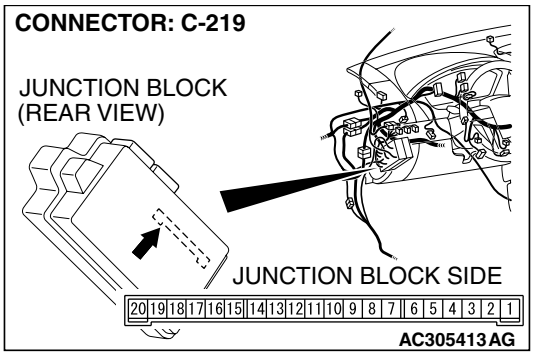
NO : Check the installation of the switch, and repair if necessary. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door switch (LH) should be normal.

STEP 5. Check ETACS-ECU connector C-219 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

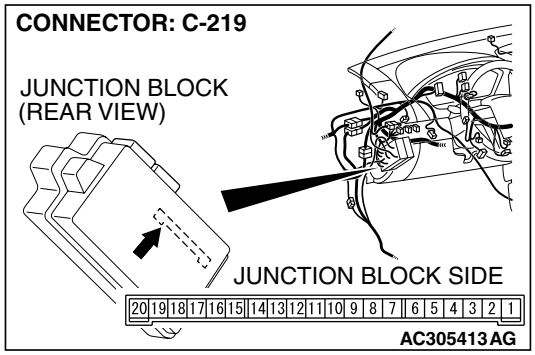
Q: Is ETACS-ECU connector C-219 in good condition?

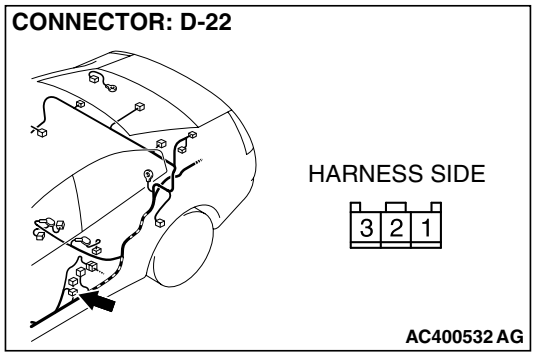
YES : Go to Step 6.

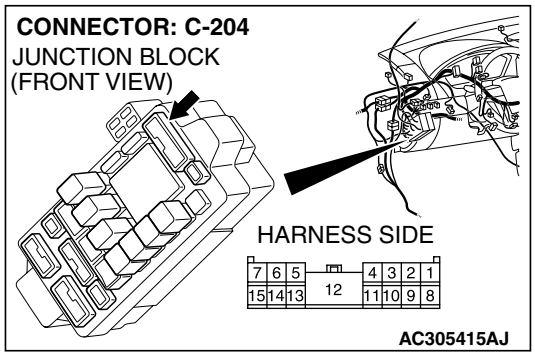
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door switch (LH) should be normal.



STEP 6. Check the wiring harness between front door switch (LH) connector D-22 (terminal 1) and ETACS-ECU connector C-219 (terminal 10).





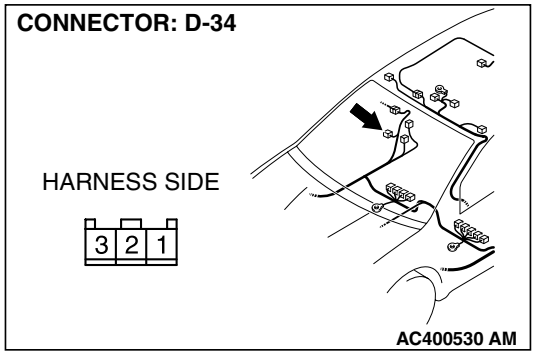


NOTE: Also check junction block connector C-204 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-204 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between front door switch (LH) connector D-22 (terminal 1) and ETACS-ECU connector C-219 (terminal 10) in good condition?

YES : Replace the ETACS-ECU. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front 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 described in "CIRCUIT OPERATION" work normally, the input signal from the front door switch (LH) should be normal.

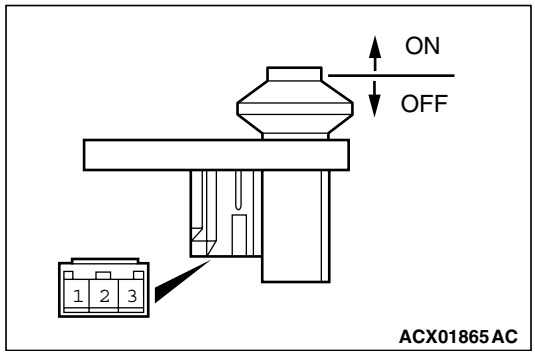


STEP 7. Check front door switch (RH) connector D-34 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door switch (RH) connector D-34 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 described in "CIRCUIT OPERATION" work normally, the input signal from the front door switch (RH) should be normal.



STEP 8. Check the front door switch (RH).

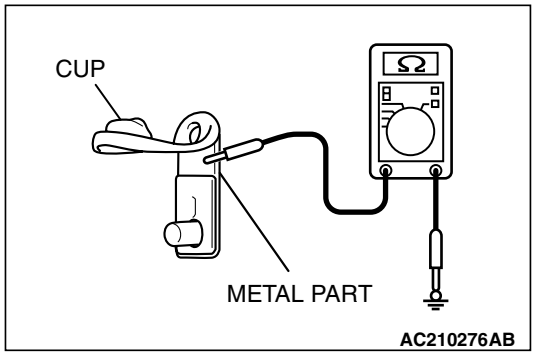
Remove the front door switch (RH). Refer to GROUP 42, Door, Door Assembly P.42-37. Then check continuity between the switch terminals and the body ground.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Released (ON)	1 – body ground	Less than 2 ohms
Pressed (OFF)	1 – body ground	Open circuit

Q: Is the front door switch (RH) in good condition?

YES : Go to Step 9.

NO : Replace the front door switch (RH). If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door switch (RH) should be normal.



STEP 9. Measure resistance at the lower metal part of the front door switch (RH) in order to check the ground circuit to the front door switch (RH).

NOTE: Check that the front door switch (RH) is grounded to the vehicle body via its mounting screw.

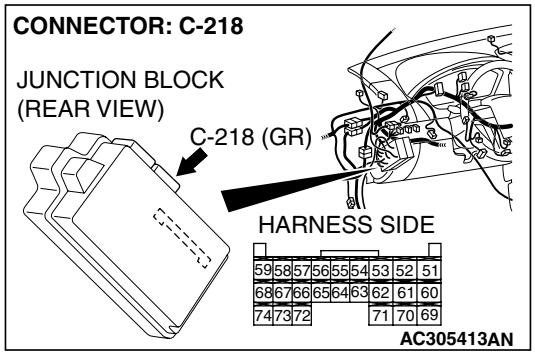
Remove the cap, and measure the resistance value between the lower metal part and ground.

- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 10.

NO : Check the installation of the switch, and repair if necessary. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door switch (RH) should be normal.

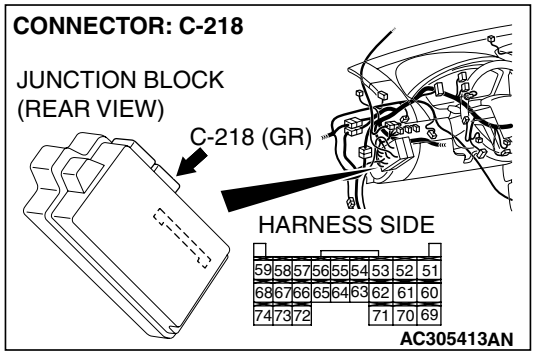


STEP 10. Check ETACS-ECU connector C-218 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

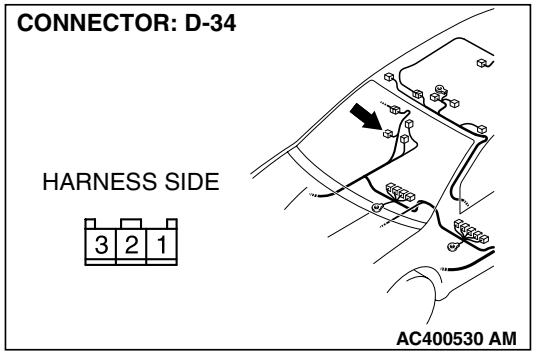
Q: Is ETACS-ECU connector C-218 in good condition?

YES : Go to Step 11.

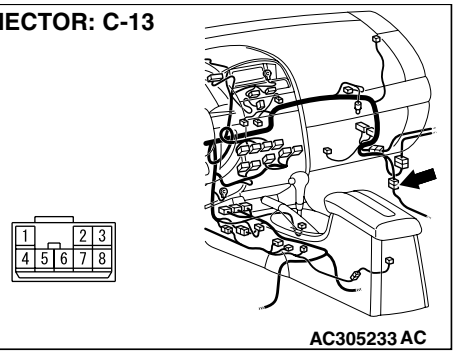
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door switch (RH) should be normal.



STEP 11. Check the wiring harness between front door switch (RH) connector D-34 (terminal 1) and ETACS-ECU connector C-218 (terminal 65).



CONNECTOR: C-13



AC305233 AC

NOTE: Also check intermediate connector C-13 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-13 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between front door switch (RH) connector D-34 (terminal 1) and ETACS-ECU connector C-218 (terminal 65) in good condition?

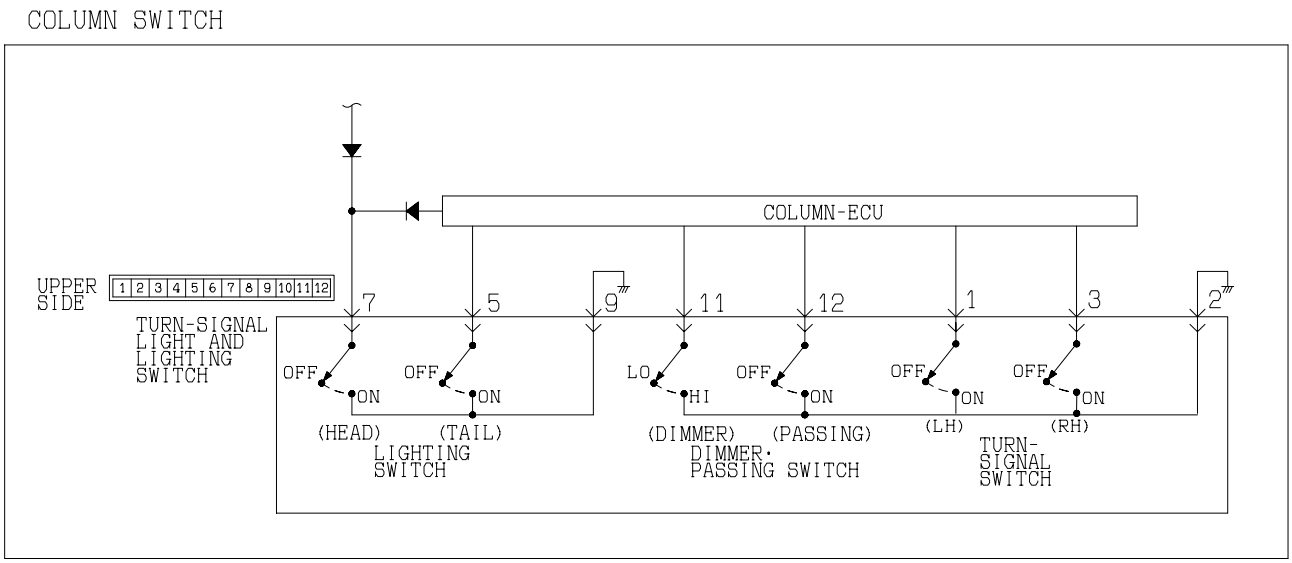
YES : Replace the ETACS-ECU. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door switch (RH) should be normal.

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 described in "CIRCUIT OPERATION" work normally, the input signal from the front door switch (RH) should be normal.

INSPECTION PROCEDURE M-5: Column Switch: ETACS-ECU does not receive any signal from the taillight switch, the headlight switch, the passing light switch, the dimmer switch or the turn-signal light switch.

NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991813. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-15."

Turn-signal Light and Lighting Switch Input Circuit



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TSB Revision

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
- Turn-signal light buzzer
- Headlight
- Turn-signal light
- High-beam indicator
- Turn-signal indicators

TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the equipment or functions 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.

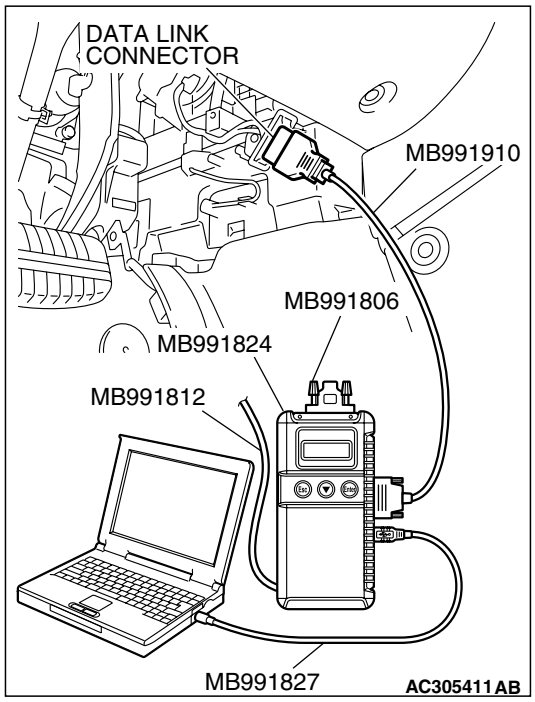
TROUBLESHOOTING HINTS

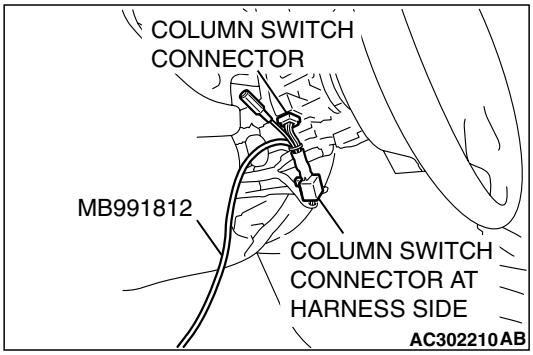
- The column switch (turn-signal light and lighting switch) may be defective
- The ETACS-ECU may be defective

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
  - MB991910: MUT-III Main Harness A
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991822: Probe Harness





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

Check the column-ECU.

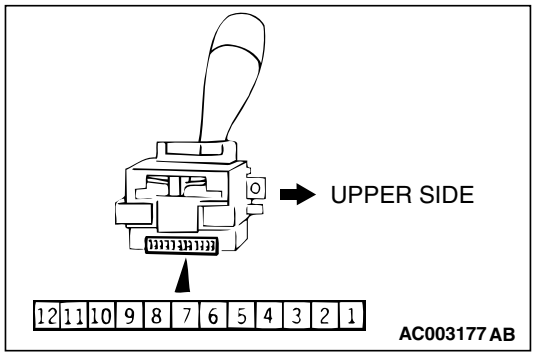
⚠ CAUTION

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 special tool MB991910 before connecting special tool MB991812. Be sure to connect special tool MB991806 after turning on special tool MB991824.

(1) Connect the special tool. Refer to "How to connect SWS monitor P.54B-13."
(2) Turn the ignition switch to the "ON" position.
(3) Operate the scan tool according to the procedure below to display "ECU COMM Check."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "SWS MONITOR."
   e. Select "ECU COMM Check."
(4) Scan tool (MUT-III) should show "OK" on the "ECU COMM Check" menu for the "COLUMN ECU" menu.

Q: Is "OK" displayed for the "COLUMN ECU" menu?

YES : Go to Step 2.
NO : Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54B-71."



STEP 2. Check the turn-signal light and lighting switch.
Remove the turn-signal light and the lighting switch. Then check continuity between the switch terminals.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
OFF	1 – 2, 2 – 3, 2 – 11, 2 – 12, 5 – 9, 7 – 9	Open circuit
Taillight switch	5 – 9	Less than 2 ohms
Headlight switch	5 – 9, 7 – 9	Less than 2 ohms
Passing switch	2 – 12	Less than 2 ohms
Dimmer switch	2 – 11, 2 – 12	Less than 2 ohms
Turn-signal light switch (LH)	1 – 2	Less than 2 ohms
Turn-signal light switch (RH)	2 – 3	Less than 2 ohms

Q: Are the turn-signal light and lighting switch in good condition?

YES : Go to Step 3.

NO : Replace the turn-signal light and the lighting switch. The input signal from the column switch (turn-signal light and lighting switch) should be able to be checked and the functions described in the "CIRCUIT OPERATION" should work normally.

STEP 3. Replace the column switch.

(1) Replace the column switch.
(2) The input signal from the column switch (turn-signal light and lighting switch) should be able to be checked and the functions described in the "CIRCUIT OPERATION" should work normally.

Q: Is the input signal from the column switch (turn-signal light and lighting switch) input normally?

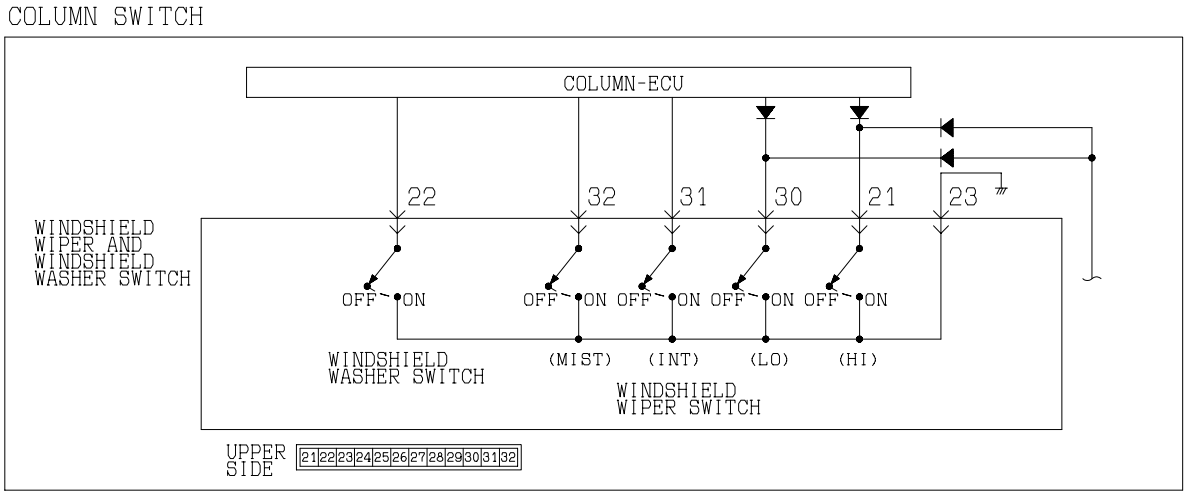
YES : No action is necessary and testing is complete.

NO : Replace the ETACS-ECU. The input signal from the column switch (turn-signal light and lighting switch) should be able to be checked and the functions described in the "CIRCUIT OPERATION" should work normally.

INSPECTION PROCEDURE M-6: Column switch: ETACS-ECU does not receive any signal from the windshield mist wiper switch, the windshield intermittent wiper switch, the windshield low-speed wiper switch, the windshield high-speed wiper switch or the windshield washer switch.

NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991813. For details on how to use the SWS monitor, refer to "How to use SWS monitor P.54B-15."

Windshield Wiper and Windshield Washer Switch Input Circuit



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CIRCUIT OPERATION

The ETACS-ECU operates the windshield wiper and washer according to signal from the windshield wiper and washer switch.

TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the windshield wiper and washer do not work normally.

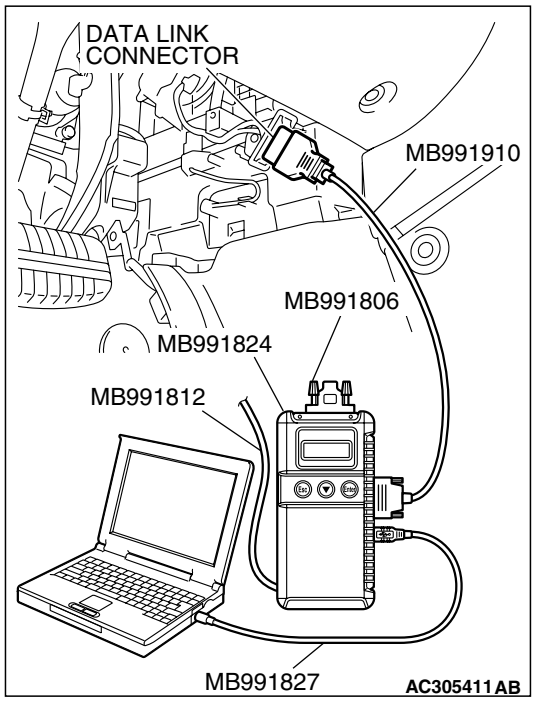
TROUBLESHOOTING HINTS

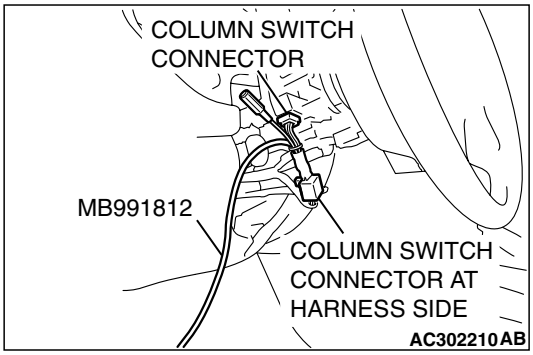
- The column switch may be defective (windshield wiper and washer switch)
- The ETACS-ECU may be defective

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
  - MB991910: MUT-III Main Harness A
- MB991813: SWS Monitor Kit
  - MB991806: SWS Monitor Cartridge
  - MB991812: SWS Monitor Harness (For Column-ECU)
  - MB991822: Probe Harness





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

Check the column-ECU.

⚠ CAUTION

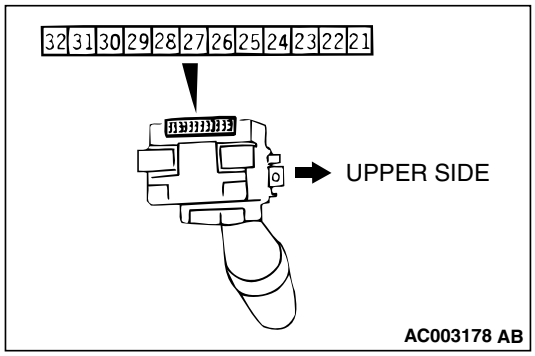
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect special tool MB991910 before connecting special tool MB991812. Be sure to connect special tool MB991806 after turning on special tool MB991824.

(1) Connect the special tool. Refer to "How to connect SWS monitor P.54B-13."
(2) Turn the ignition switch to the "ON" position.
(3) Operate the scan tool according to the procedure below to display "ECU COMM Check."
  a. Select "Interactive Diagnosis."
  b. Select "System select."
  c. Select "SWS."
  d. Select "SWS MONITOR."
  e. Select "ECU COMM Check."
(4) Scan tool (MUT-III) should show "OK" on the "ECU COMM Check" menu for the "COLUMN ECU" menu.

Q: Is "OK" displayed for the "COLUMN ECU" menu?

YES : Go to Step 2.

NO : Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54B-71."



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	21 – 23, 22 – 23, 23 – 30, 23 – 31, 23 – 32, 25 – 26, 25 – 29	Open circuit
Windshield mist wiper switch	23 – 32	Less than 2 ohms
Windshield intermittent wiper switch	23 – 31	Less than 2 ohms
Windshield low-speed wiper switch	23 – 30	Less than 2 ohms
Windshield high-speed wiper switch	21 – 23	Less than 2 ohms
Windshield washer switch	22 – 23	Less than 2 ohms

Q: Are the windshield wiper and washer switch in good condition?

YES : Go to Step 3.

NO : Replace the windshield wiper and washer switch. If the equipment described in "CIRCUIT OPERATION" work normally, the input signal from the column switch (windshield wiper and washer switch) should be normal.

STEP 3. Replace the column switch.

(1) Replace the column switch.
(2) If the equipment described in "CIRCUIT OPERATION" work normally, the input signal from the column switch (windshield wiper and washer switch) should be normal.

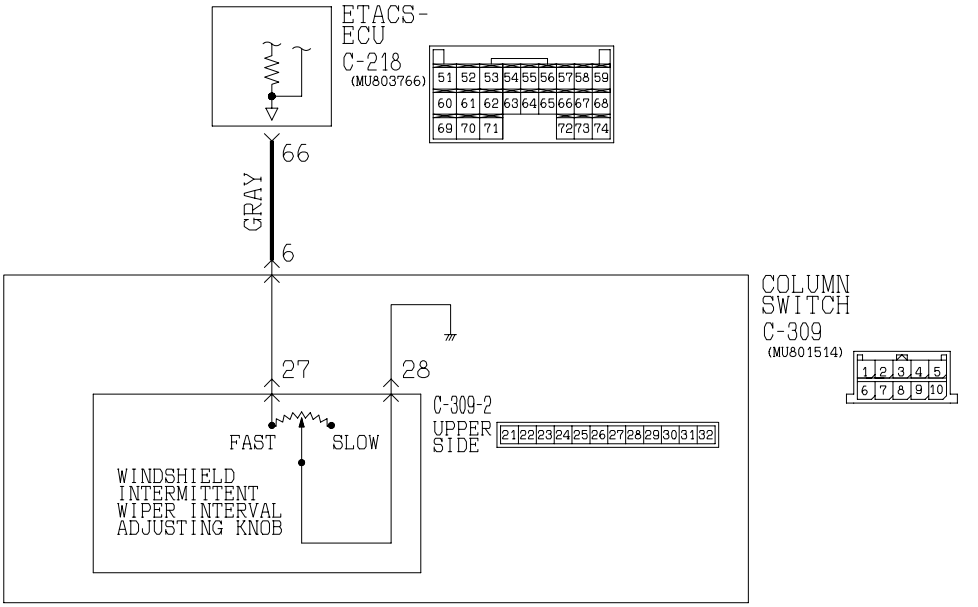
Q: Does the column switch (windshield wiper and washer switch) send a normal signal to the ECU?

YES : No action is necessary and testing is complete.

NO : Replace the ETACS-ECU. If the equipment described in "CIRCUIT OPERATION" work normally, the input signal from the column switch (windshield wiper and washer switch) should be normal.

INSPECTION PROCEDURE M-7: Column Switch: ETACS-ECU does not receive any signal from the variable intermittent wiper control switch.

Windshield Intermittent Wiper Interval Adjusting Knob Input Circuit



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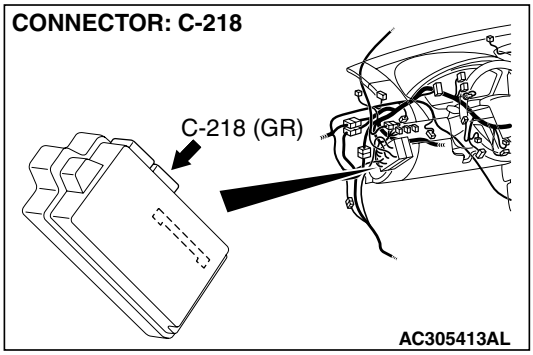
CONNECTOR: C-218



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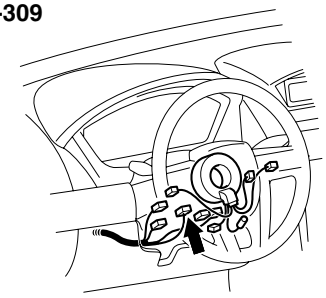
CONNECTOR: C-309



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CIRCUIT OPERATION

The ETACS-ECU calculates the windshield intermittent wiper interval according to the position of the variable intermittent wiper control switch, which is incorporated in column switch (windshield wiper and washer switch).

TECHNICAL DESCRIPTION (COMMENT)

If the windshield intermittent wiper interval cannot be adjusted, the column switch or the ETACS-ECU may be defective.

TROUBLESHOOTING HINTS

- The column switch may be defective (windshield wiper and washer switch)
- 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

TSB Revision

DIAGNOSIS

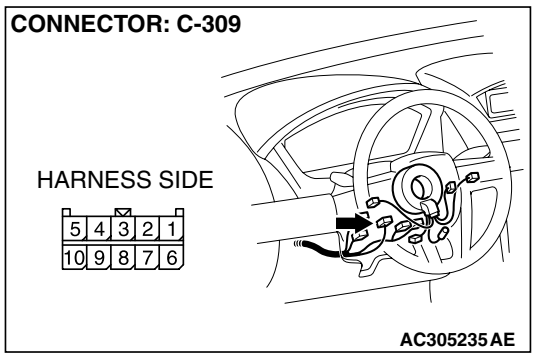
Required Special Tool:
- MB991223: Harness Set

STEP 1. Check column switch connector C-309 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is column switch connector C-309 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 wiper interval can be adjusted normally, the variable intermittent wiper control switch should send a signal to the ECU.



STEP 2. Check the variable intermittent wiper control switch.

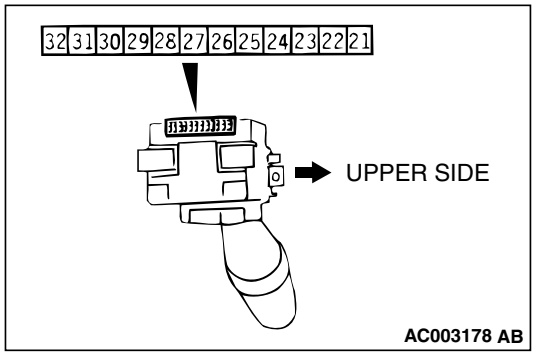
(1) Remove the windshield wiper and washer switch, and check at the switch side.

(2) Measure the resistance value between terminals 27 and 28. The measured resistance should change smoothly from approximately 0 ohm ("FAST" position) to 1 kΩ ("SLOW" position).

Q: Is the variable intermittent wiper control switch in good condition?

YES : Go to Step 3.

NO : Replace the column switch (windshield wiper and washer switch). If the wiper interval can be adjusted normally, that the variable intermittent wiper control switch should send a signal to the ECU.

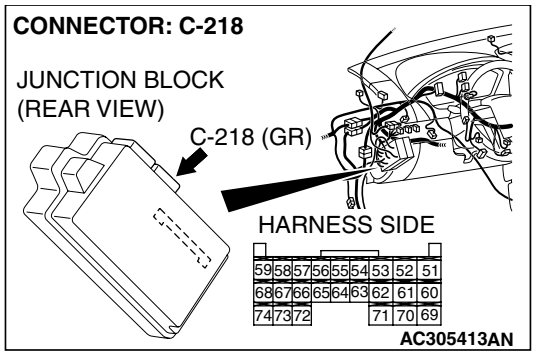


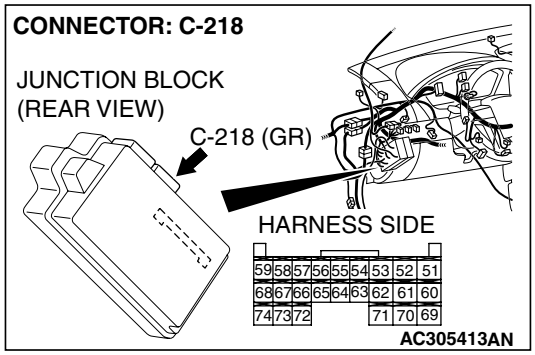
STEP 3. Check ETACS-ECU connector C-218 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

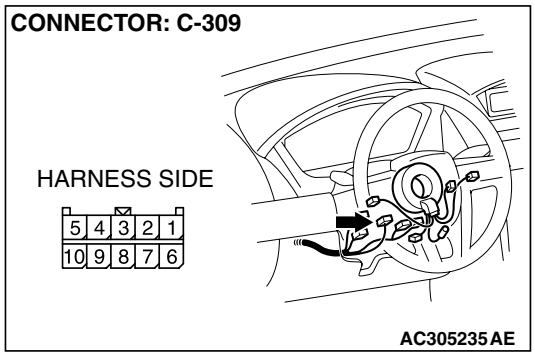
Q: Is ETACS-ECU connector C-218 in good condition?

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, that the variable intermittent wiper control switch should send a signal to the ECU.







STEP 4. Check the wiring harness between column switch connector C-309 (terminal 6) and ETACS-ECU connector C-218 (terminal 66).

Q: Is the wiring harness between column switch connector C-309 (terminal 6) and ETACS-ECU connector C-218 (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, the variable intermittent wiper control switch should send a signal to the ECU.

STEP 5. Replace the column switch.

(1) Replace the column switch.

(2) If the wiper interval can be adjusted normally, the variable intermittent wiper control switch should send a signal to the ECU.

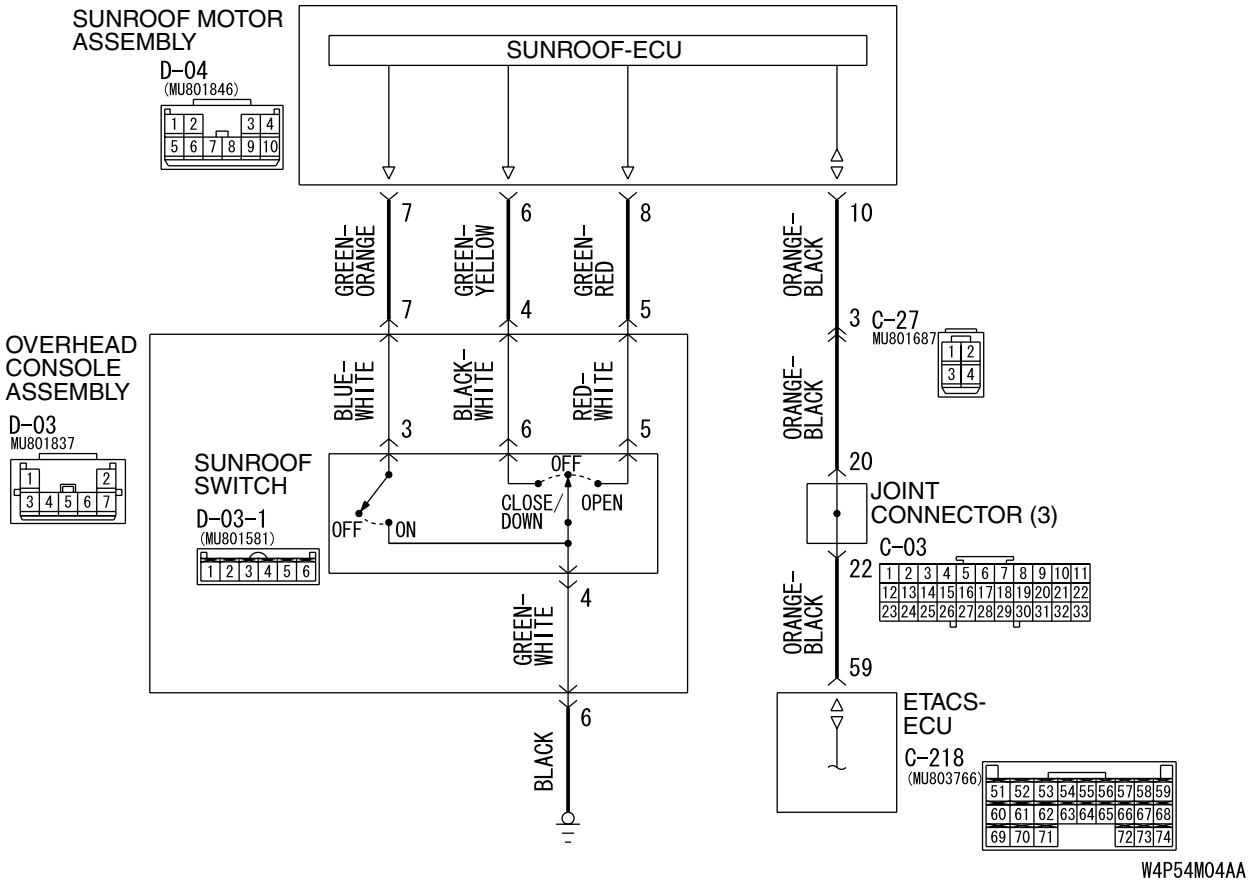
Q: Can input signal be confirmed when the variable intermittent wiper control switch is operated?

YES : No action is necessary and testing is complete.

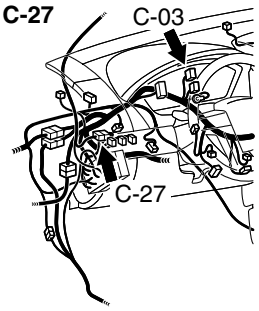
NO : Replace the ETACS-ECU. If the wiper interval can be adjusted normally, the variable intermittent wiper control switch should send a signal to the ECU.

INSPECTION PROCEDURE M-8: Sunroof Switch: ETACS-ECU does not receive any signal from the up, open or close/down switch.

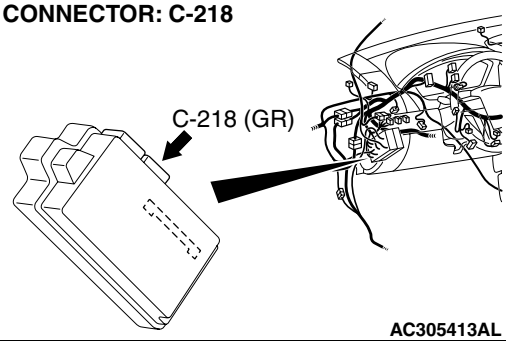
Sunroof Switch Input Circuit



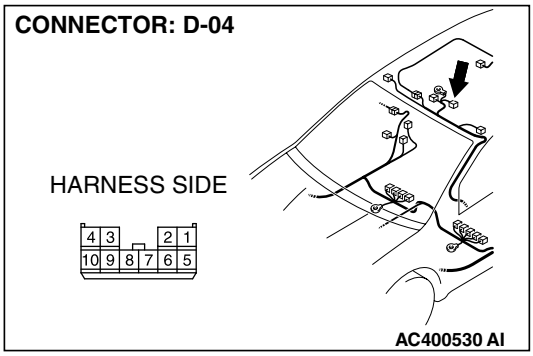
CONNECTORS: C-03, C-27



CONNECTOR: C-218



CONNECTOR: D-04



TSB Revision

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

DIAGNOSIS

Required Special Tool:

- MB991223: Test Harness Set

STEP 1. Check the sunroof operation.

Q: Does the sunroof work normally?

YES : Go to Step 2.

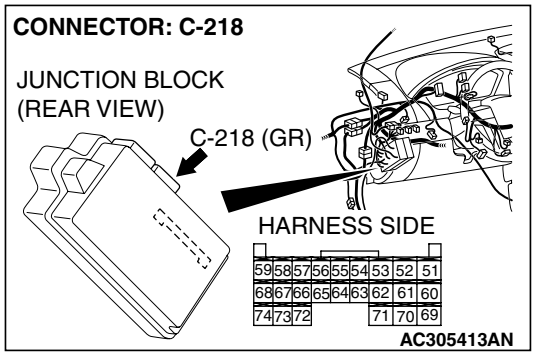
NO : Refer to Inspection Procedure F-1 "Sunroof does not operate P.54B-239."

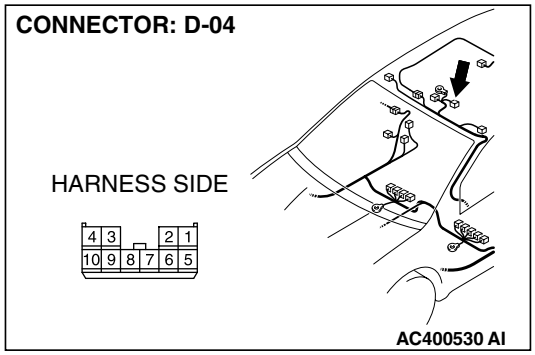
STEP 2. Check sunroof motor assembly connector D-04 and ETACS-ECU connector C-218 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are sunroof motor assembly connector D-04 and ETACS-ECU connector C-218 in good condition?

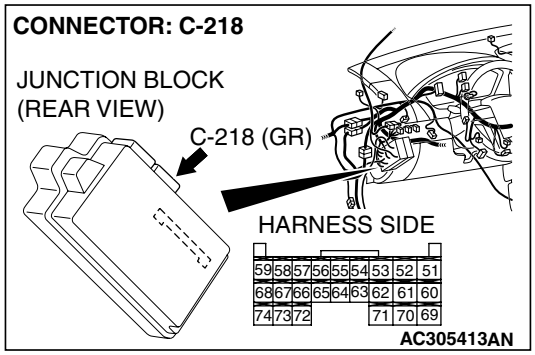
YES : Go to Step 3.

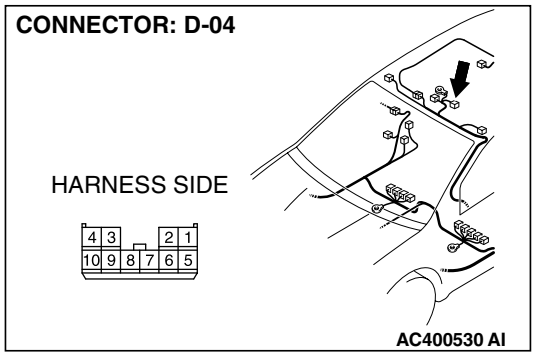
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the sunroof operates normally, a correct signal is sent from the sunroof switch.

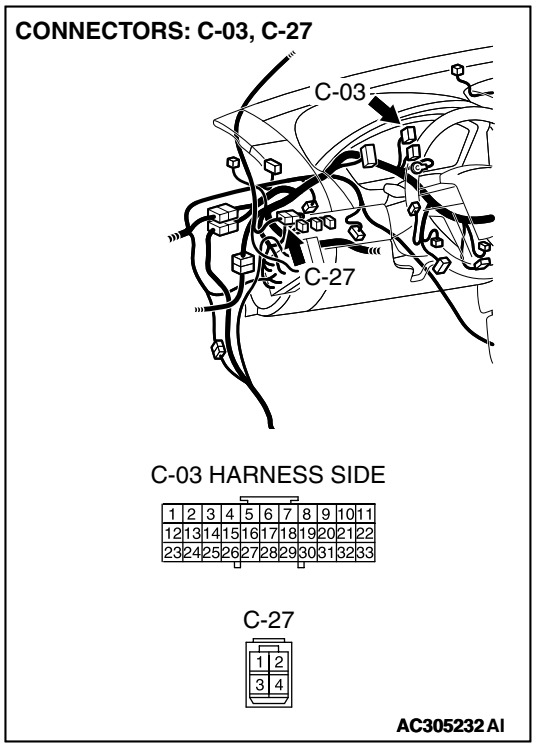




STEP 3. Check the wiring harness between sunroof motor assembly connector D-04 (terminal 10) and ETACS-ECU connector C-218 (terminal 59).







NOTE: Also check intermediate connector C-27 and joint connector C-03. If intermediate connector C-27 or joint connector C-03 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between sunroof motor assembly connector D-04 (terminal 10) and ETACS-ECU connector C-218 (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, a correct signal is sent from the sunroof switch.

STEP 4. Replace the sunroof motor assembly.

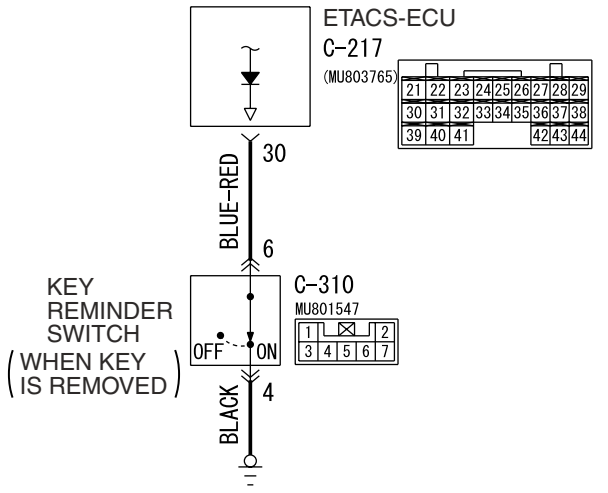
(1) Replace the sunroof motor assembly.
(2) If the sunroof operates normally, a correct signal is sent from the sunroof switch.

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, a correct signal is sent from the sunroof switch.

INSPECTION PROCEDURE N-1: ETACS-ECU does not receive any signal from the key reminder switch.

Key Reminder Switch Input Circuit



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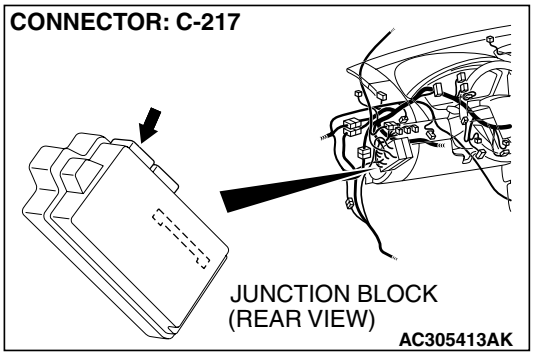
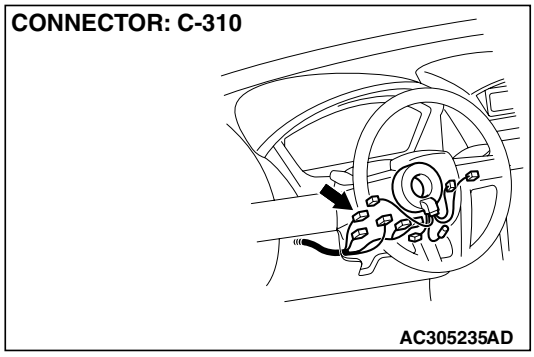




CIRCUIT OPERATION

The ETACS-ECU operates the following functions or systems according to signal from the key reminder switch:

- Ignition key reminder tone alarm function
- Forgotten key reminder
- Keyless entry system
- Timed locking mechanism
- Dome light dimming function
- Ignition key hole illumination light

TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the functions or systems described in "CIRCUIT OPERATION" do not work normally.

TROUBLESHOOTING HINTS

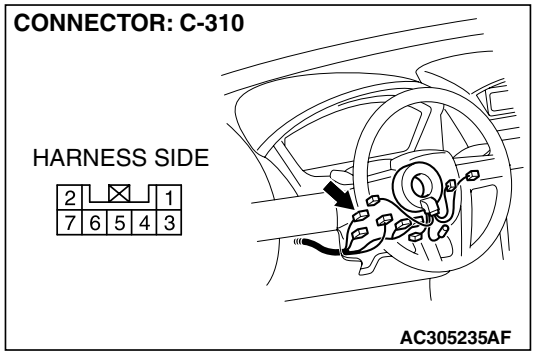
- The key reminder switch may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- The ETACS-ECU may be defective

DIAGNOSIS

Required Special Tool:

- MB991223: Harness Set

STEP 1. Check key reminder switch connector C-310 for loose, corroded or damaged terminals, or terminals pushed back in the connector.



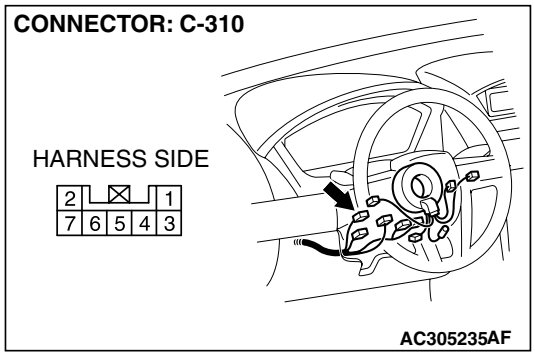
Q: Is key reminder switch connector C-310 in good condition?

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 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-310. Then check continuity between terminals.



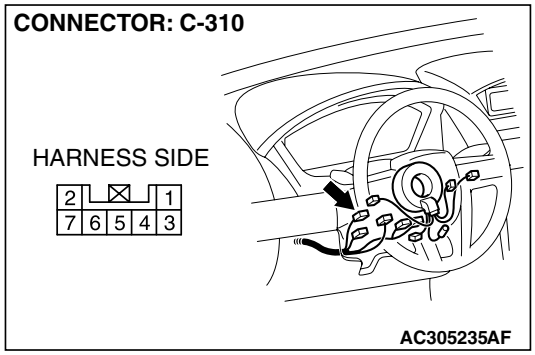
IGNITION KEY	TESTER CONNECTION	SPECIFIED CONDITION
Removed	4 – 6	Open circuit
Inserted	4 – 6	Less than 2 ohms

Q: Is the key reminder switch in good condition?

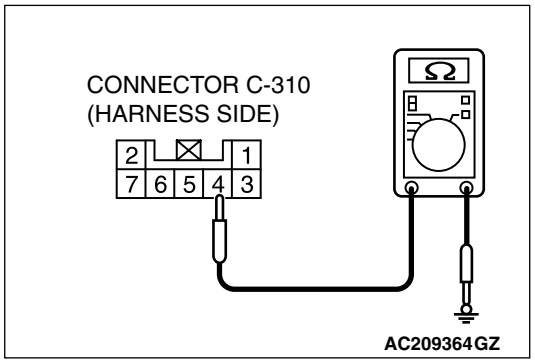
YES : Go to Step 3.

NO : Replace the key reminder switch. If the functions 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. Measure the resistance at key reminder switch connector C-310.



(1) Disconnect key reminder switch connector C-310 and measure the resistance available at the wiring harness side of the connector.

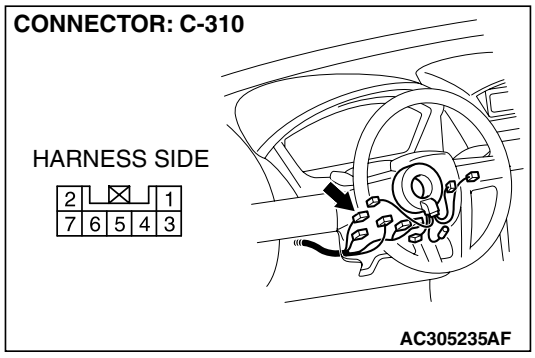


(2) Measure the resistance value between terminal 4 and ground.
- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

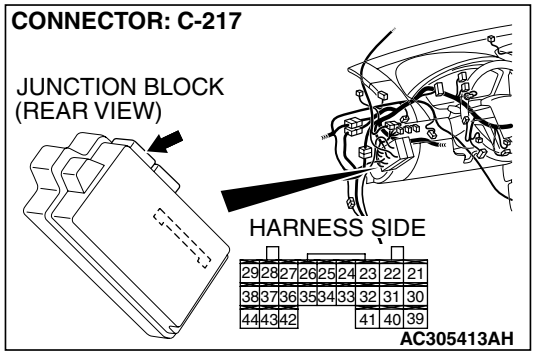
YES : Go to Step 5.
NO : Go to Step 4.

STEP 4. Check the wiring harness between key reminder switch connector C-310 (terminal 4) and ground.



Q: Is the wiring harness between key reminder switch connector C-310 (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 described in "CIRCUIT OPERATION" work normally, the input signal from the key reminder switch should be normal.

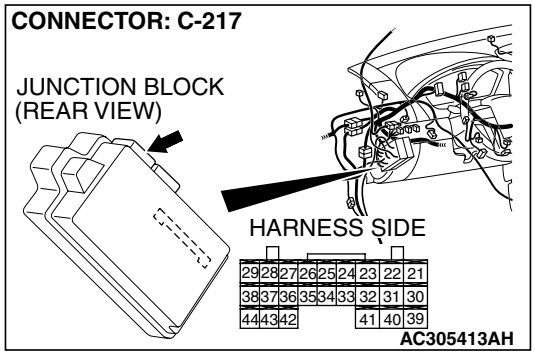


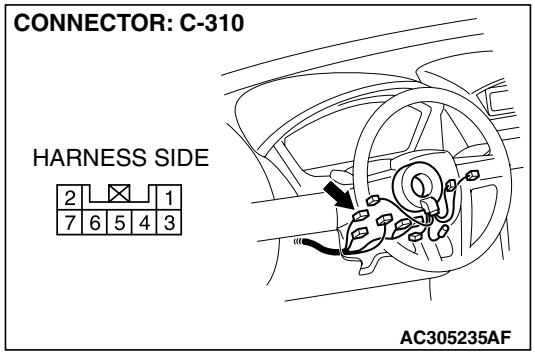
STEP 5. Check ETACS-ECU connector C-217 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-217 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 described in "CIRCUIT OPERATION" work normally, the input signal from the key reminder switch should be normal.



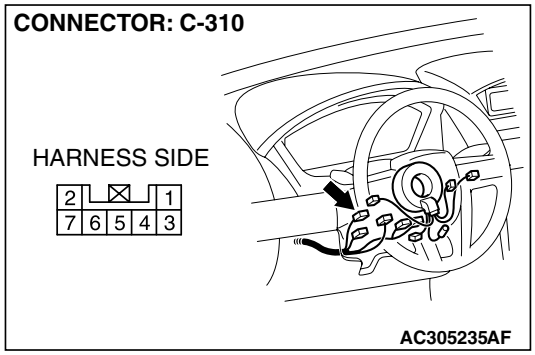


STEP 6. Check the wiring harness between key reminder switch connector C-310 (terminal 6) and ETACS-ECU connector C-217 (terminal 30).

Q: Is the wiring harness between key reminder switch connector C-310 (terminal 6) and ETACS-ECU connector C-217 (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 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-310 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-310 and measure the resistance available at the equipment side of the connector.

(2) Check for continuity between key reminder switch connector C-310 terminal 4 and each of the other terminals as well as terminal 6 and each of the other terminals.

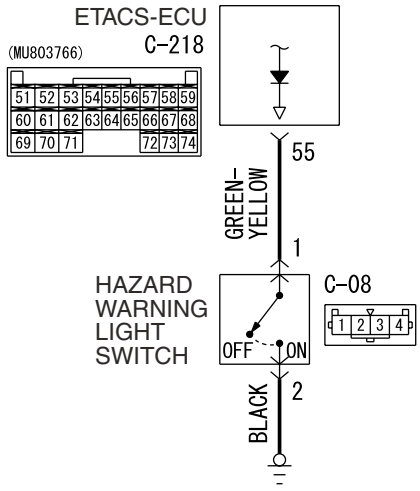
Q: Does continuity exist between the terminals?

NO : Replace the ETACS-ECU. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the key reminder switch should be normal.

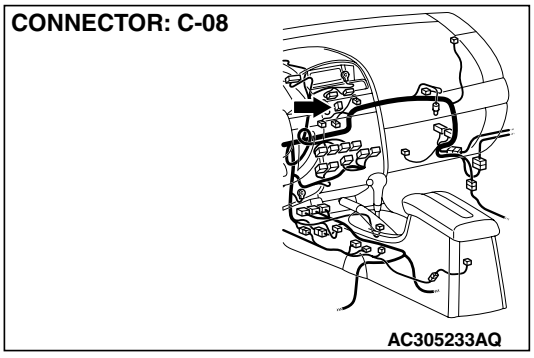
YES : Replace the key reminder switch. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the key reminder switch should be normal.

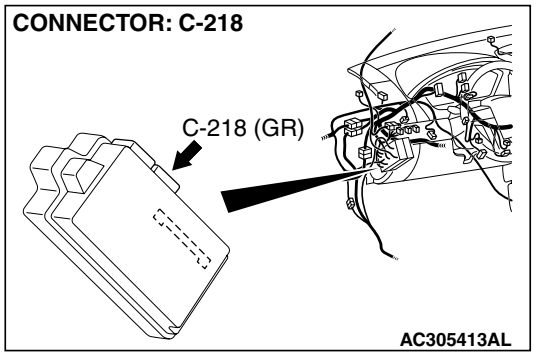
INSPECTION PROCEDURE N-2: ETACS-ECU does not receive any signal from the hazard warning light switch.

Hazard Warning Light Switch Input Circuit



W4P54M06AA





TSB Revision

CIRCUIT OPERATION

The ETACS-ECU operates the following functions or systems according to signal from the hazard warning light switch:

- Turn-signal light buzzer
- Hazard warning light
- Keyless entry system (registering the encrypted code)

TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the equipment or systems described in "CIRCUIT OPERATION" do not work normally.

TROUBLESHOOTING HINTS

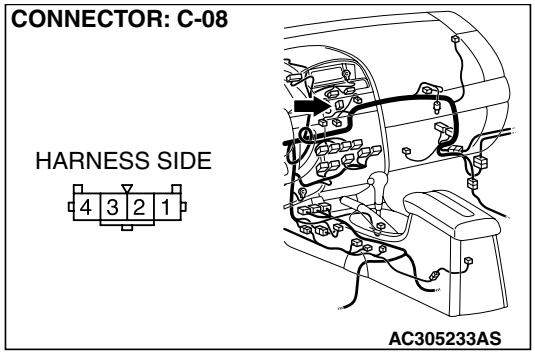
- The hazard warning light switch may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- The ETACS-ECU may be defective

DIAGNOSIS

Required Special Tool:

- MB991223: Harness Set

STEP 1. Check hazard warning light switch connector C-08 for loose, corroded or damaged terminals, or terminals pushed back in the connector.



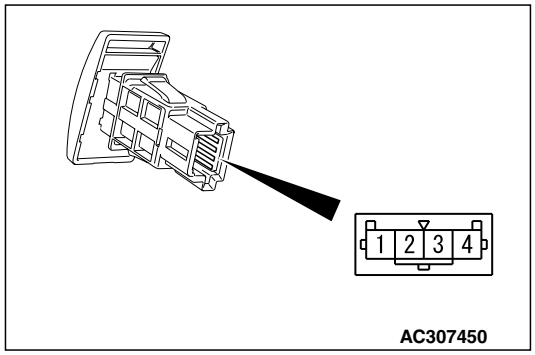
Q: Is hazard warning light switch connector C-08 in good condition?

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 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. Refer to GROUP 54A, Hazard Warning Light Switch P.54A-126. Then check continuity between the switch terminals.



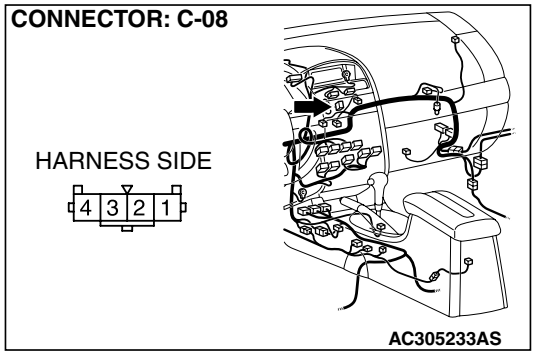
SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Released	1 – 2	Open circuit
Pressed	1 – 2	Less than 2 ohms

Q: Is the hazard warning light switch in good condition?

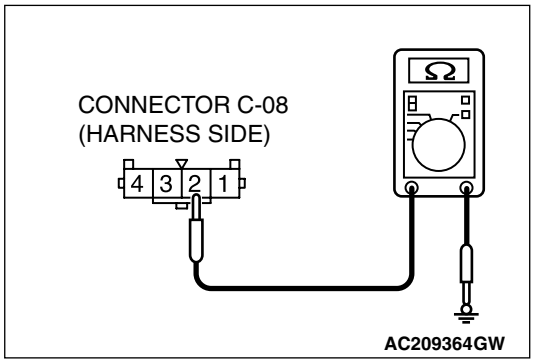
YES : Go to Step 3.

NO : Replace the hazard warning light switch. If the equipment 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. Measure the resistance at hazard warning light switch connector C-08.



(1) Disconnect hazard warning light switch connector C-08 and measure the resistance available at the wiring harness side of the connector.

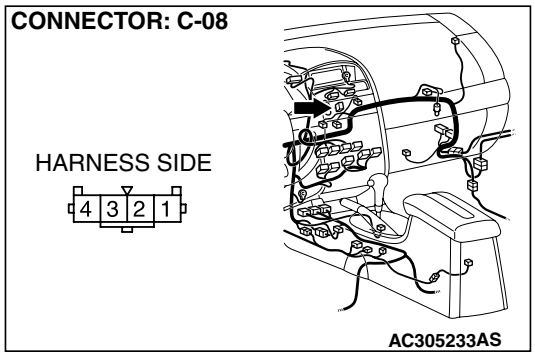


(2) Measure the resistance value between terminal 2 and ground.
- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

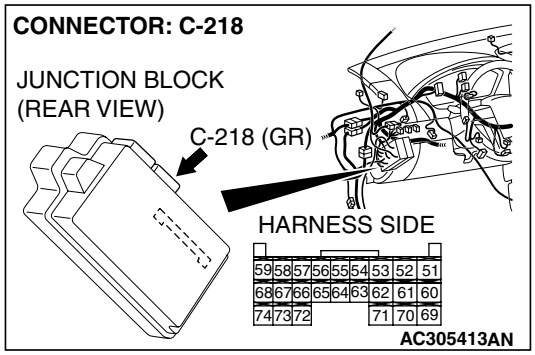
YES : Go to Step 5.
NO : Go to Step 4.

STEP 4. Check the wiring harness between hazard warning light switch connector C-08 (terminal 2) and ground.



Q: Is the wiring harness between hazard warning light switch connector C-08 (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 described in "CIRCUIT OPERATION" work normally, the input signal from the hazard warning light switch should be normal.

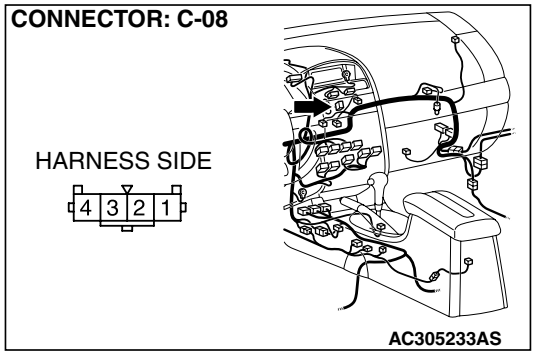


STEP 5. Check ETACS-ECU connector C-218 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-218 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 described in "CIRCUIT OPERATION" work normally, the input signal from the hazard warning light switch should be normal.

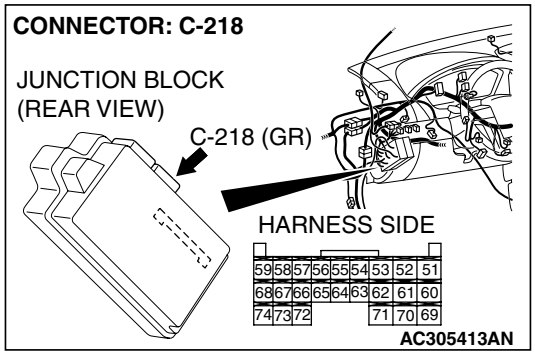


STEP 6. Check the wiring harness between hazard warning light switch connector C-08 (terminal 1) and ETACS-ECU connector C-218 (terminal 55).

Q: Is the wiring harness between hazard warning light switch connector C-08 (terminal 1) and ETACS-ECU connector C-218 (terminal 55) in good condition?

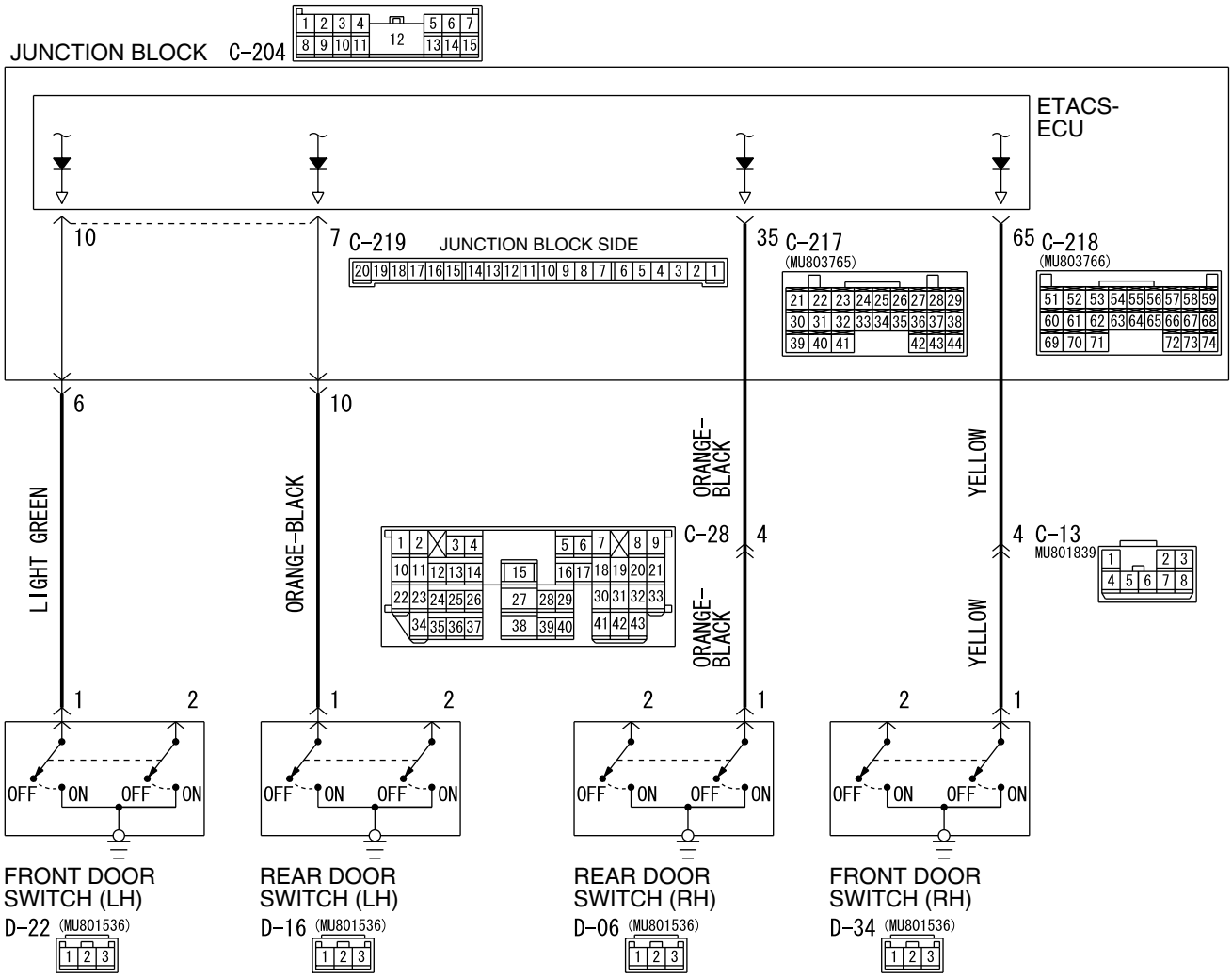
YES : Replace the ETACS-ECU. If the equipment described in "CIRCUIT OPERATION" work normally, the input signal from the hazard warning light switch should be normal.

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 described in "CIRCUIT OPERATION" work normally, the input signal from the hazard warning light switch should be normal.



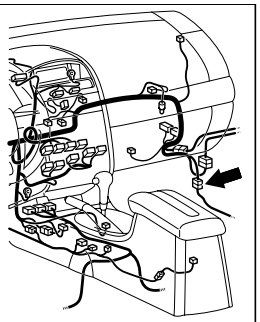
INSPECTION PROCEDURE N-3: ETACS-ECU does not receive any signal from any of the door switches.

Door Switches Input Circuit



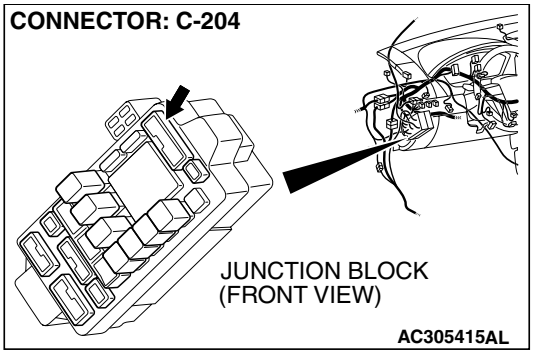
W5P54M001A

CONNECTOR: C-28

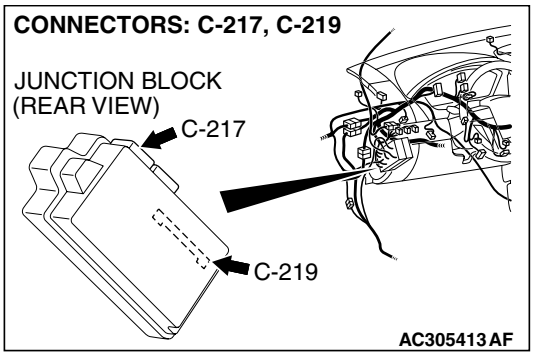


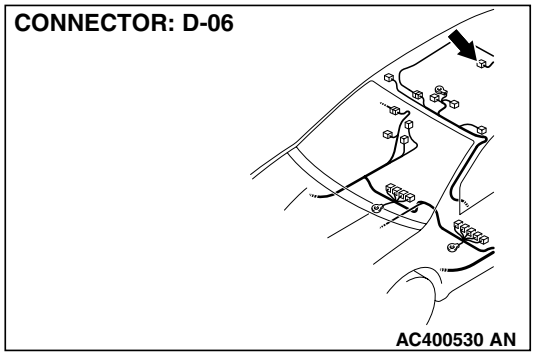
AC305233 DC

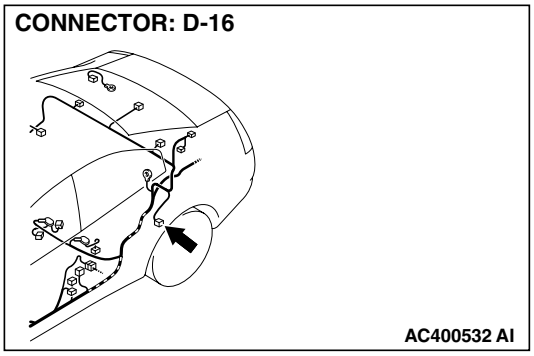
CONNECTOR: C-204



AC305415AL







CIRCUIT OPERATION

The ETACS-ECU operates the following functions or systems according to signal from the front or rear door switches:

- Ignition key reminder tone alarm function <front door switch (LH)>
- Light reminder tone alarm function <front door switch (LH)>
- Door ajar warning buzzer <all door switches>
- Ignition key reminder tone alarm <front door switches>
- Power window timer function <front door switches>
- Sunroof timer function <front door switch (LH)>
- Headlight automatic shutdown function <front door switch (LH)>
- Keyless entry system <all door switches>
- Timer lock <all door switches>
- Dome light <all door switches>
- Interior light automatic-shutdown function <all door switches>
- Ignition key hole illumination light <front door switch (LH)>
- Door-ajar indicator light <all door switches>

TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the functions or systems described in "CIRCUIT OPERATION" do not work normally. If the signal is not normal, the front or rear door switches or the ETACS-ECU may be defective.

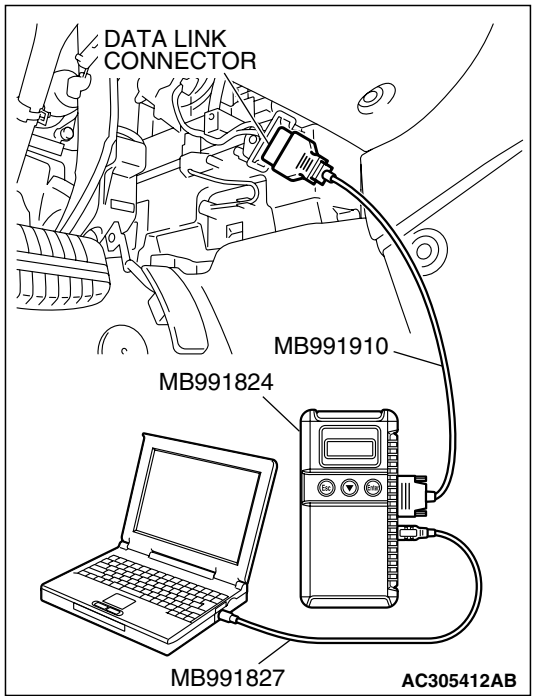
TROUBLESHOOTING HINTS

- The front or rear door switches 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 Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991910: MUT-III Main Harness A



STEP 1. Check the input signal (by using the pulse check mode of the monitor).

Check the input signals from the all 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 the scan tool MB991958. Refer to "How to connect SWS monitor P.54B-13."

(2) Operate scan tool MB991958 according to the procedure below to display "Pulse check."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "Pulse Checking."

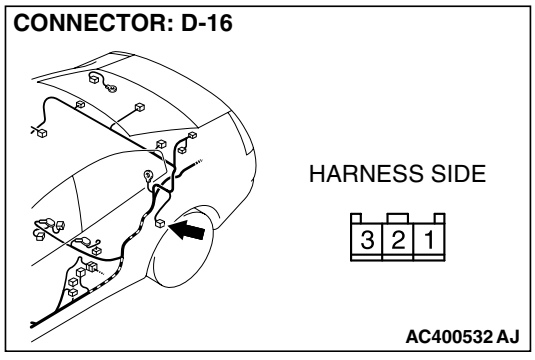
(3) Check that scan tool MB991958 sounds.

Q: When the front and rear doors are opened/closed, does the scan tool MB991958 sound?

When the front doors are opened and closed, scan tool MB991958 does not sound. : Refer to Inspection Procedure M-4 "ETACS-ECU does not receive any signal from the front door switches P.54B-477."

When the rear door (LH) is opened and closed, scan tool MB991958 does not sound. : Go to Step 2.

When the rear door (RH) is opened and closed, scan tool MB991958 does not sound. : Go to Step 7.

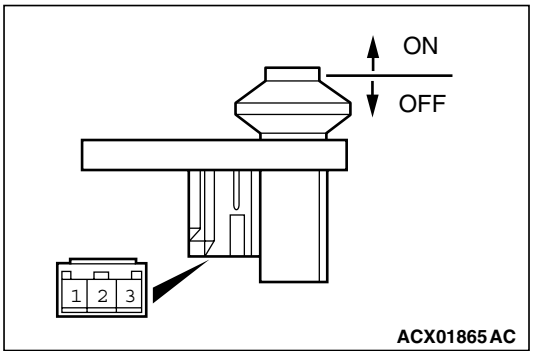


STEP 2. Check rear door switch (LH) connector D-16 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear door switch (LH) connector D-16 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 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). Refer to GROUP 42, Door, Door Assembly P.42-37. Then check continuity between the switch terminals and the body ground.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Released (ON)	1 – body ground	Less than 2 ohms
Pressed (OFF)	1 – body ground	Open circuit

Q: Is the rear door switch (LH) in good condition?

YES : Go to Step 4.

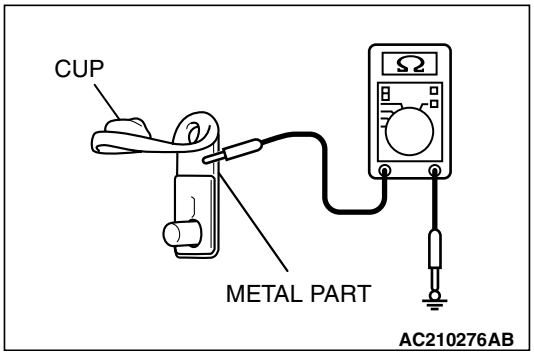
NO : Replace the rear door switch (LH). If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the rear door switch (LH) should be normal.

STEP 4. Measure resistance 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 via its mounting screw.

Remove the cap, and measure the resistance value between the lower metal part and ground.

- The resistance should be 2 ohms or less.



Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 5.

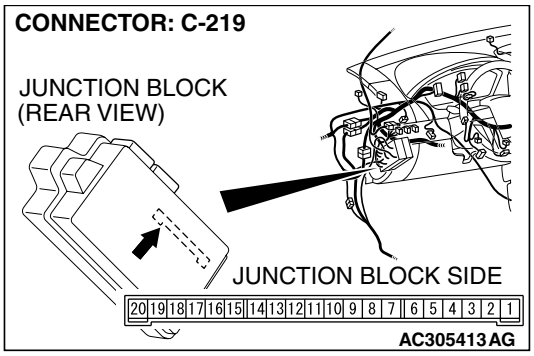
NO : Check the installation of the switch, and repair if necessary. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the rear door switch (LH) should be normal.

STEP 5. Check ETACS-ECU connector C-219 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

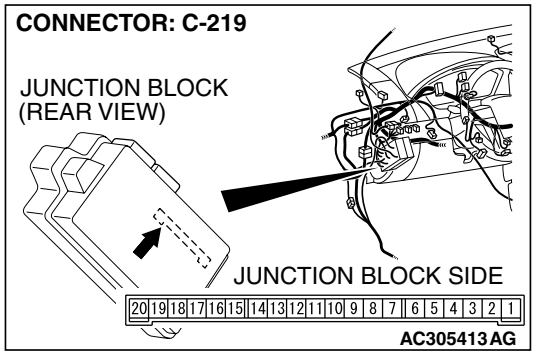
Q: Is ETACS-ECU connector C-219 in good condition?

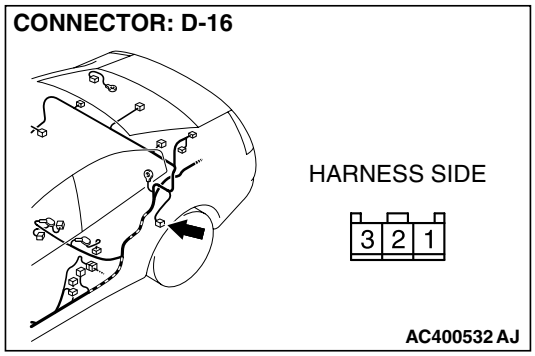
YES : Go to Step 6.

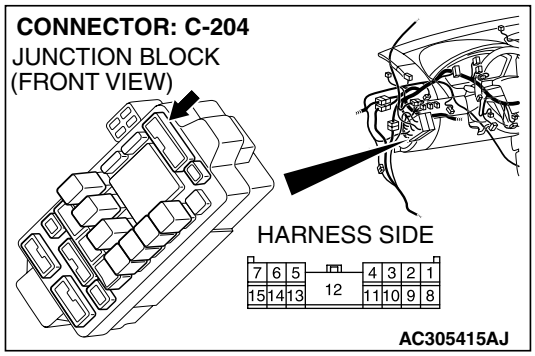
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the rear door switch (LH) should be normal.



STEP 6. Check the wiring harness between rear door switch (LH) connector D-16 (terminal 1) and ETACS-ECU connector C-219 (terminal 7).





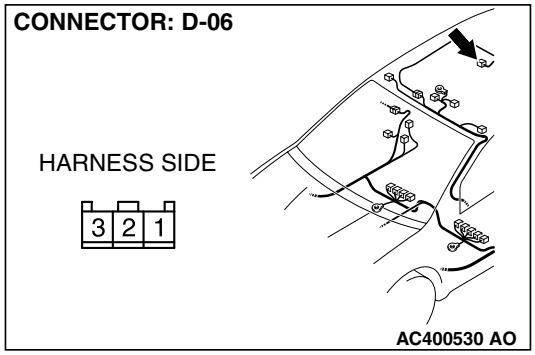


NOTE: Also check junction block connector C-204 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-204 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between rear door switch (LH) connector D-16 (terminal 1) and ETACS-ECU connector C-219 (terminal 7) in good condition?

YES : Replace the ETACS-ECU. If the functions 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 described in "CIRCUIT OPERATION" work normally, the input signal from the rear door switch (LH) should be normal.

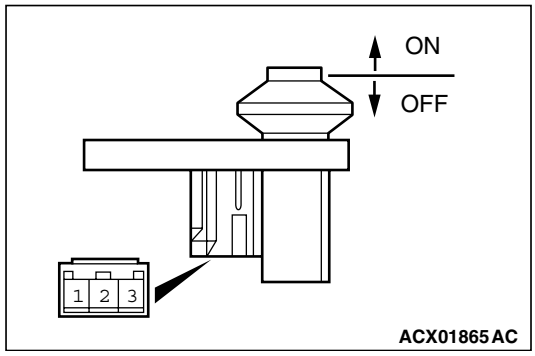


STEP 7. Check rear door switch (RH) connector D-06 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear door switch (RH) connector D-06 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 described in "CIRCUIT OPERATION" work normally, the input signal from the rear door switch (RH) should be normal.



STEP 8. Check the rear door switch (RH).

Remove the rear door switch (RH). Refer to GROUP 42, Door, Door Assembly P.42-37. Then check continuity between the switch terminals and the body ground.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Released (ON)	1 – body ground	Less than 2 ohms
Pressed (OFF)	1 – body ground	Open circuit

Q: Is the rear door switch (RH) in good condition?

YES : Go to Step 9.

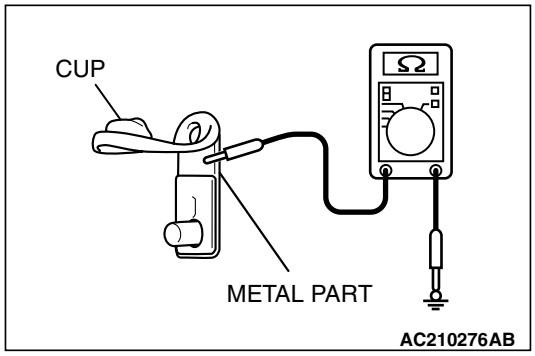
NO : Replace the rear door switch (RH). If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the rear door switch (RH) should be normal.

STEP 9. Measure resistance 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 via its mounting screw.

Remove the cap, and measure the resistance value between the lower metal part and ground.

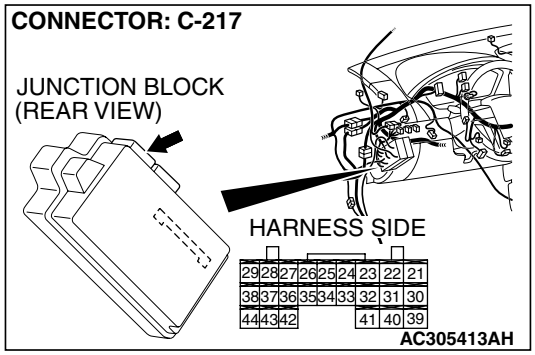
- The resistance should be 2 ohms or less.



Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 10.

NO : Check the installation of the switch, and repair if necessary. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the rear door switch (RH) should be normal.

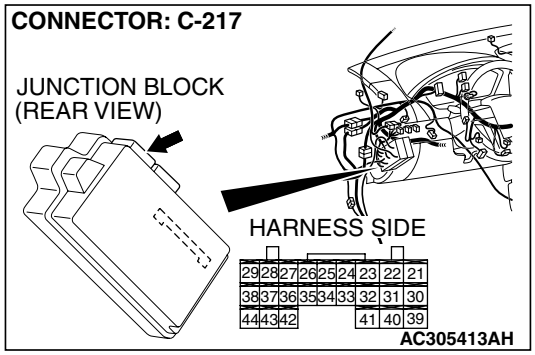


STEP 10. Check ETACS-ECU connector C-217 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

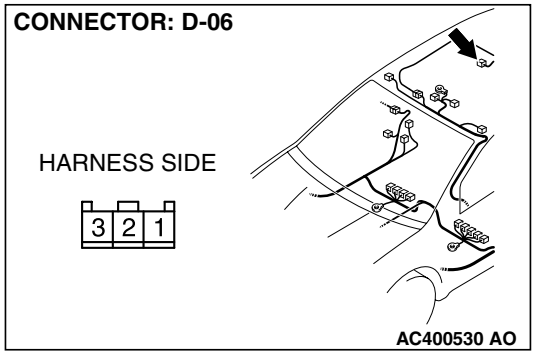
Q: Is ETACS-ECU connector C-217 in good condition?

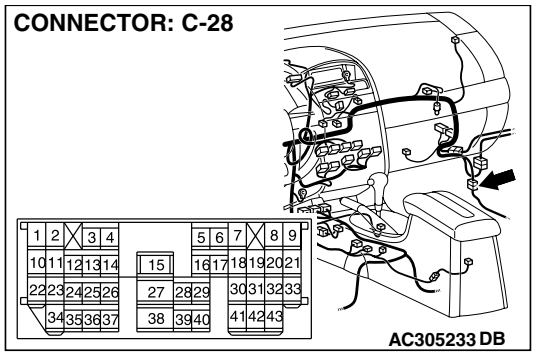
YES : Go to Step 11.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the functions 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-06 (terminal 1) and ETACS-ECU connector C-217 (terminal 35).





NOTE: Also check intermediate connector C-28 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-28 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

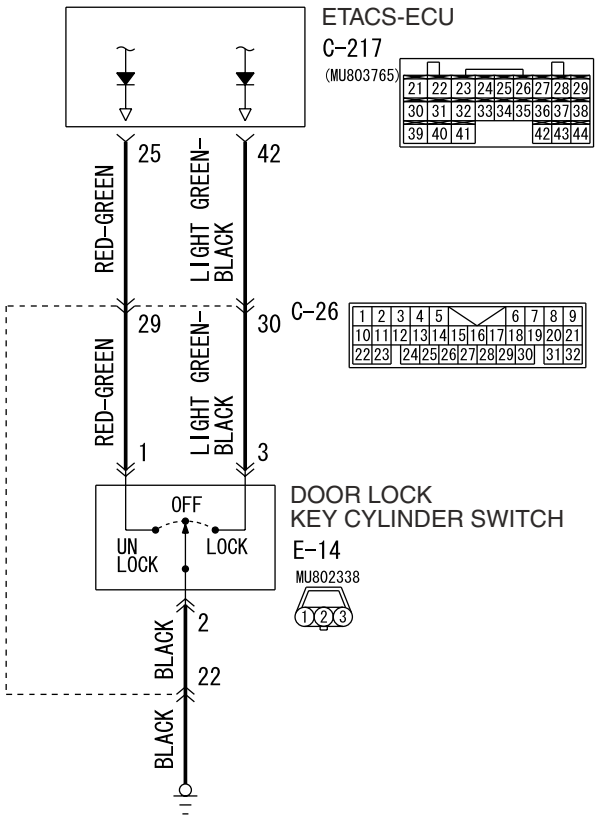
Q: Is the wiring harness between rear door switch (RH) connector D-06 (terminal 1) and ETACS-ECU connector C-217 (terminal 35) in good condition?

YES : Replace the ETACS-ECU. If the functions 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 described in "CIRCUIT OPERATION" work normally, the input signal from the rear door switch (RH) should be normal.

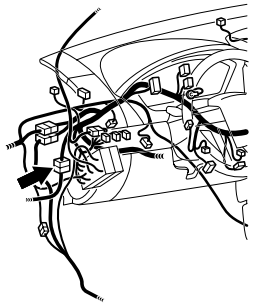
INSPECTION PROCEDURE N-4: ETACS-ECU does not receive any signal from the door lock key cylinder switch.

Door Lock Key Cylinder Switch Input Circuit



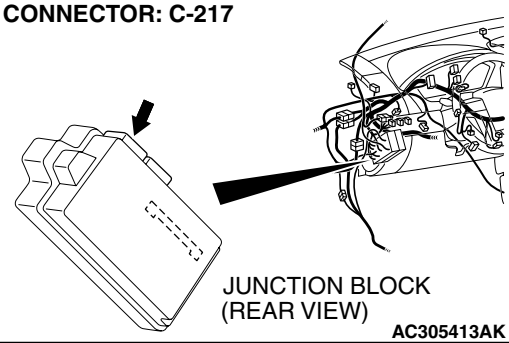
TSB Revision

CONNECTOR: C-26



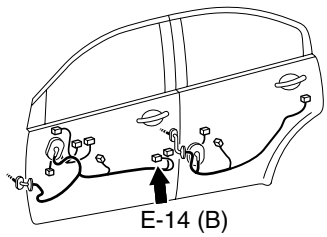
AC305231AL

CONNECTOR: C-217



AC305413AK

CONNECTOR: E-14



AC305262AL

CIRCUIT OPERATION

The ETACS-ECU operates the central door locking system according to signal from the 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 door lock key cylinder 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

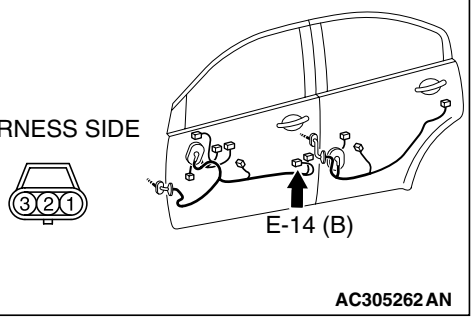
STEP 1. Check door lock key cylinder switch connector E-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is door lock key cylinder switch connector E-14 in good condition?

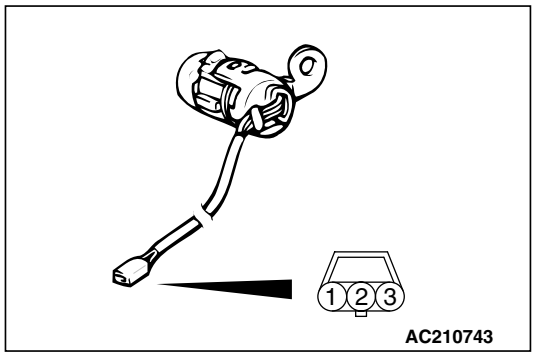
YES : Go to Step 2.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the systems described in "CIRCUIT OPERATION" work normally, the input signal from the door lock key cylinder switch should be normal.

CONNECTOR: E-14



AC305262AN

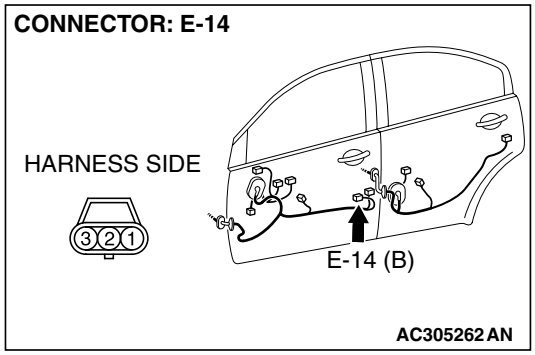


STEP 2. Check the door lock key cylinder switch.
Disconnect door lock key cylinder switch connector E-14. Then check continuity between the switch terminals.

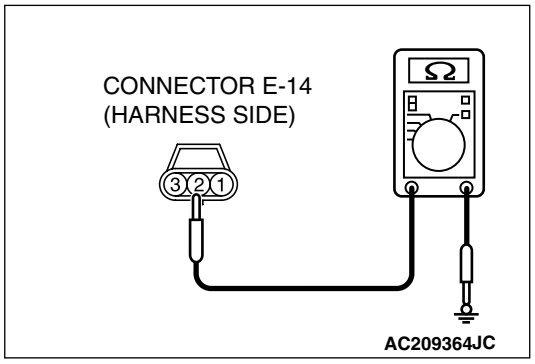
SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	2 – 3	Less than 2 ohms
Neutral (OFF)	1 – 2, 2 – 3	Open circuit
UNLOCK	1 – 2	Less than 2 ohms

Q: Is the door lock key cylinder switch in good condition?
YES : Go to Step 3.
NO : Replace the door lock key cylinder switch. If the systems described in "CIRCUIT OPERATION" work normally, the input signal from the door lock key cylinder switch should be normal.

STEP 3. Check the ground circuit to the door lock key cylinder switch. Measure the resistance at door lock key cylinder switch connector E-14.



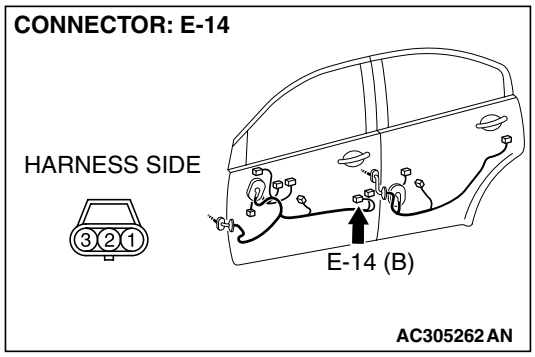
(1) Disconnect door lock key cylinder switch connector E-14 and measure the resistance available at the wiring harness side of the connector.

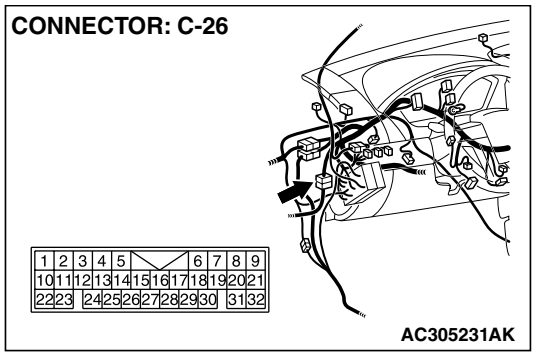


(2) Measure the resistance value between terminal 2 and ground.
- The resistance should be 2 ohms or less.

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 door lock key cylinder switch connector E-14 (terminal 2) and ground.





NOTE: Also check intermediate connector C-26 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-26 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between door lock key cylinder switch connector E-14 (terminals 2) and ground in good condition?

YES : No action is necessary and testing is complete.

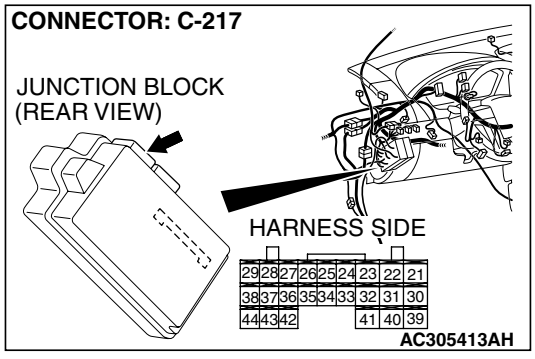
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the systems described in "CIRCUIT OPERATION" work normally, the input signal from the door lock key cylinder switch should be normal.

STEP 5. Check ETACS-ECU connector C-217 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

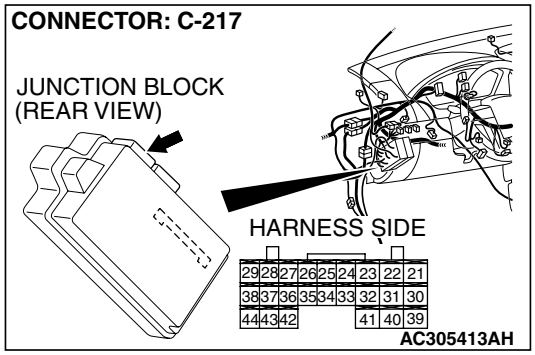
Q: Is ETACS-ECU connector C-217 in good condition?

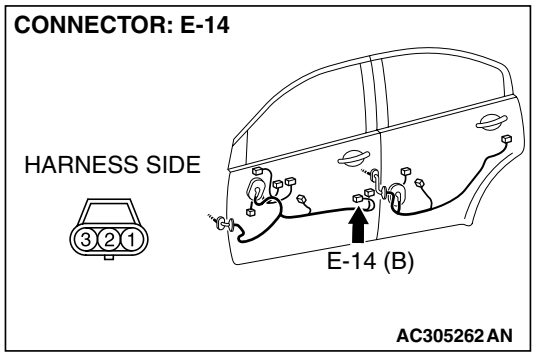
YES : Go to Step 6.

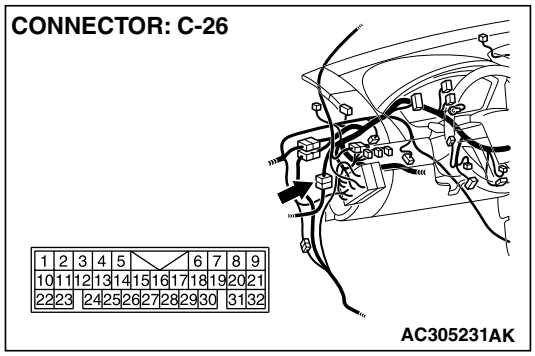
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the systems described in "CIRCUIT OPERATION" work normally, the input signal from the door lock key cylinder switch should be normal.



STEP 6. Check the wiring harness between door lock key cylinder switch connector E-14 (terminals 1 and 3) and ETACS-ECU connector C-217 (terminals 25 and 42).







NOTE: Also check intermediate connector C-26 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-26 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

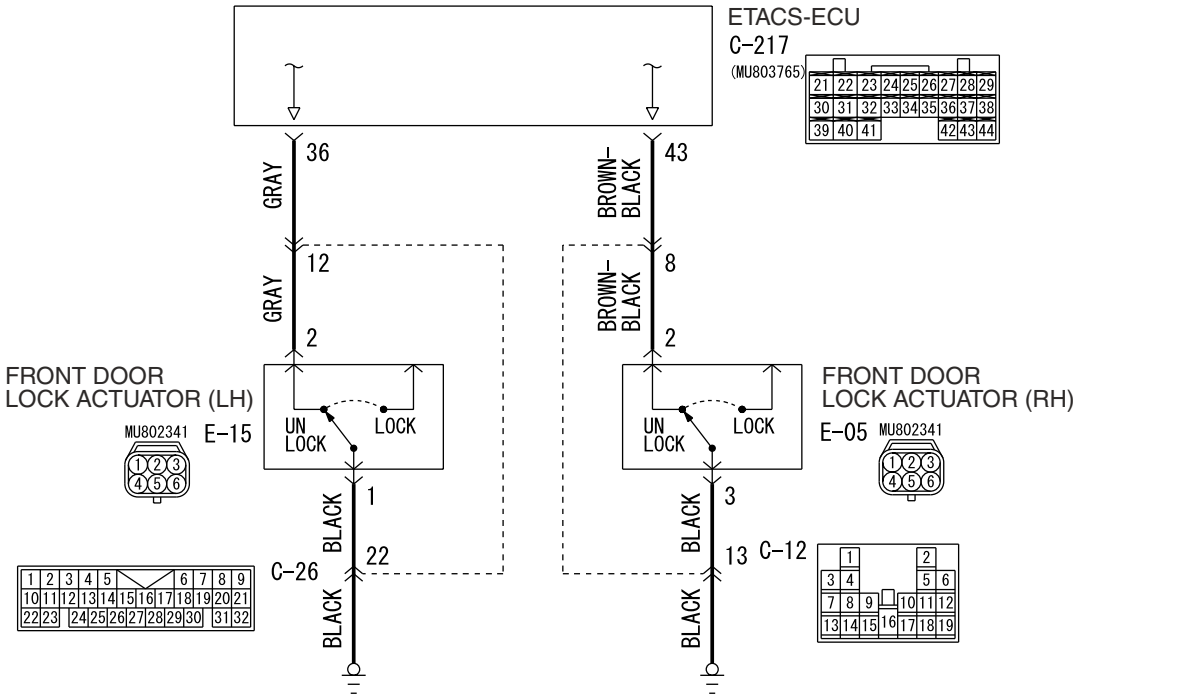
Q: Is the wiring harness between door lock key cylinder switch connector E-14 (terminals 1 and 3) and ETACS-ECU connector C-217 (terminals 25 and 42) in good condition?

YES : Replace the ETACS-ECU. If the systems described in "CIRCUIT OPERATION" work normally, the input signal from the 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 described in "CIRCUIT OPERATION" work normally, the input signal from the door lock key cylinder switch should be normal.

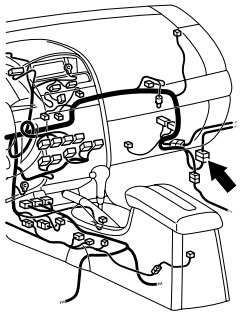
INSPECTION PROCEDURE N-5: ETACS-ECU does not receive any signal from the front door lock actuator.

Door Lock Actuator Input Circuit



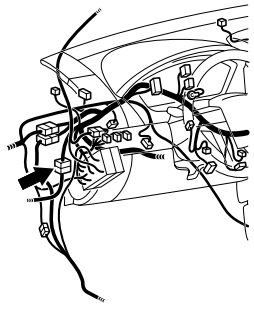
W4P54M09AA

CONNECTOR: C-12



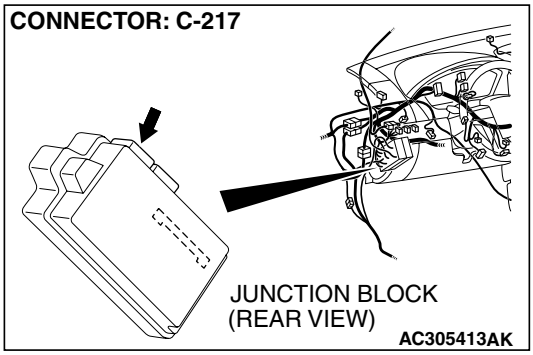
AC305233AE

CONNECTOR: C-26



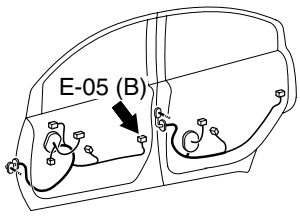
AC305231AL

CONNECTOR: C-217



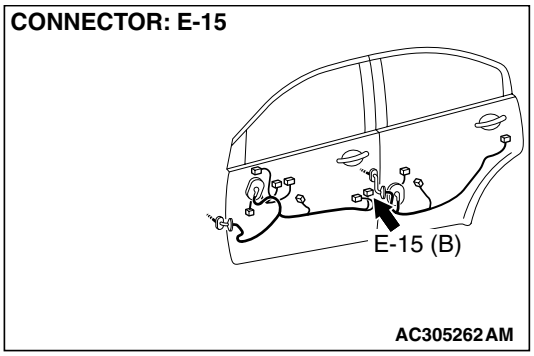
AC305413AK

CONNECTOR: E-05



AC305333AG

TSB Revision



CIRCUIT OPERATION

The ETACS-ECU operates the following functions or systems according to signal from the front door lock actuator:

- Central door locking system
- Ignition key reminder tone alarm
- Keyless entry system
- Dome light <front door lock actuator (LH)>

TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the functions or systems described in "CIRCUIT OPERATION" do not work normally.

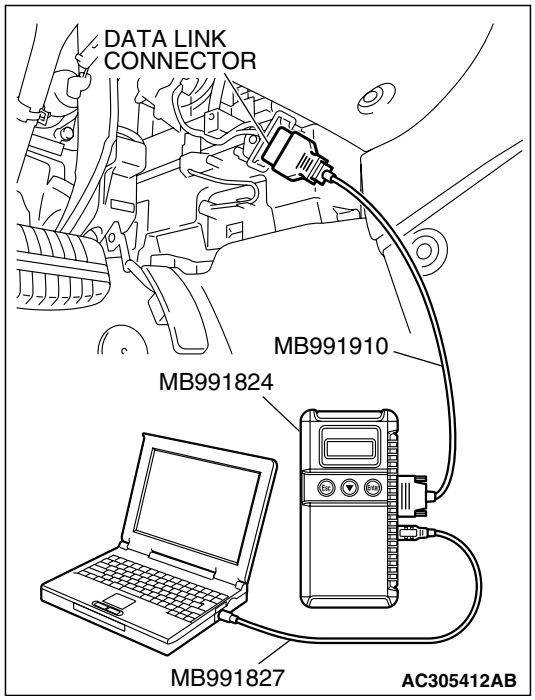
TROUBLESHOOTING HINTS

- The front door lock actuator 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 Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991910: MUT-III Main Harness A



STEP 1. Check the input signal (by using the pulse check mode of the monitor).

Check the input signals from the front door lock actuators.

⚠ 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.

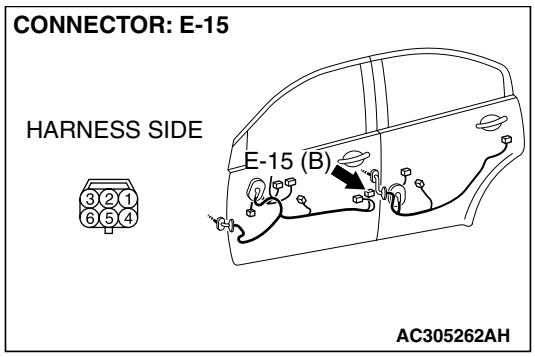
(1) Connect the scan tool MB991958. Refer to "How to connect SWS monitor P.54B-13."

(2) Operate scan tool MB991958 according to the procedure below to display "Pulse check."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "Pulse Checking."

(3) Check that scan tool MB991958 sounds.

Q: When the front door lock actuators are operated, does the scan tool MB991958 sound?

When the front door lock actuator (LH) is operated, the scan tool MB991958 does not sound. : Go to Step 2.
When the front door lock actuator (RH) is operated, the scan tool MB991958 does not sound. : Go to Step 8.

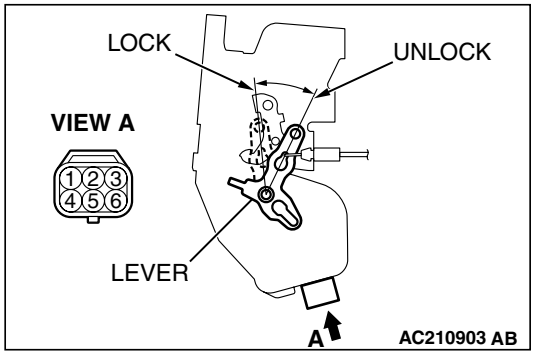


STEP 2. Check front door lock actuator (LH) connector E-15 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door lock actuator (LH) connector E-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. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door lock actuator (LH) should be normal.

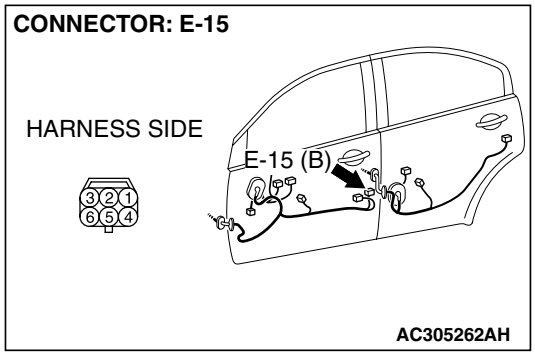


STEP 3. Check the front door lock actuator (LH).
Disconnect front door lock actuator (LH) connector E-15. Then check continuity between the terminals.

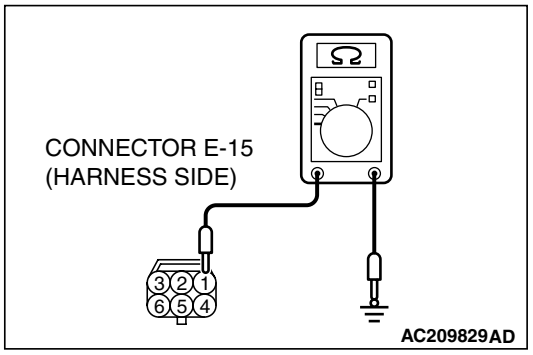
LEVER POSITION	TESTER CONNECTION	SPECIFIED CONDITION
UNLOCK	1 – 2	Less than 2 ohms
LOCK	1 – 2	Open circuit

Q: Is the front door lock actuator (LH) in good condition?
YES : Go to Step 4.
NO : Replace the front door lock actuator (LH). If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door lock actuator (LH) should be normal.

STEP 4. Check the ground circuit to the front door lock actuator (LH). Measure the resistance at front door lock actuator (LH) connector E-15.



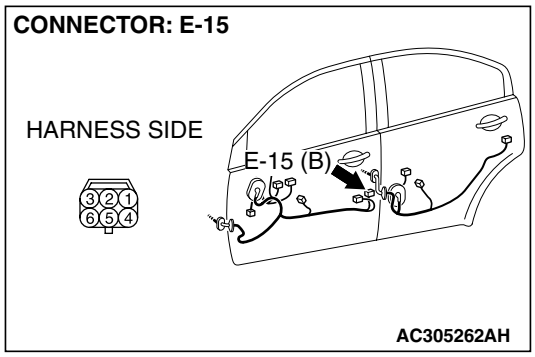
(1) Disconnect front door lock actuator (LH) connector E-15 and measure the resistance available at the wiring harness side of the connector.

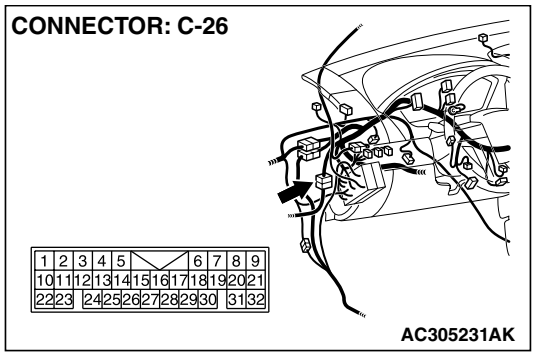


(2) Measure the resistance value between terminal 1 and ground.
- The resistance should be 2 ohms or less.

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 front door lock actuator (LH) connector E-15 (terminal 1) and ground.





NOTE: Also check intermediate connector C-26 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-26 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between front door lock actuator (LH) connector E-15 (terminal 1) and ground in good condition?

YES : No action is necessary and testing is complete.

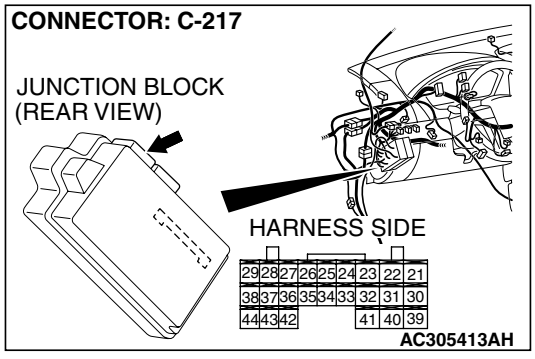
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door lock actuator (LH) should be normal.

STEP 6. Check ETACS-ECU connector C-217 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

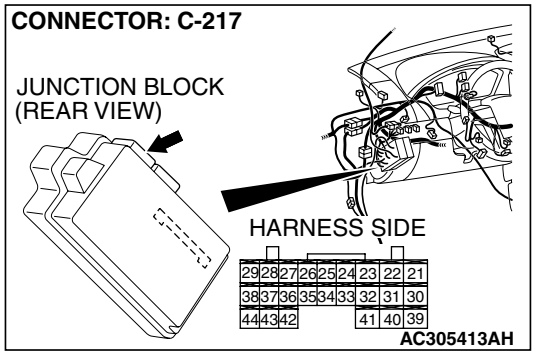
Q: Is ETACS-ECU connector C-217 in good condition?

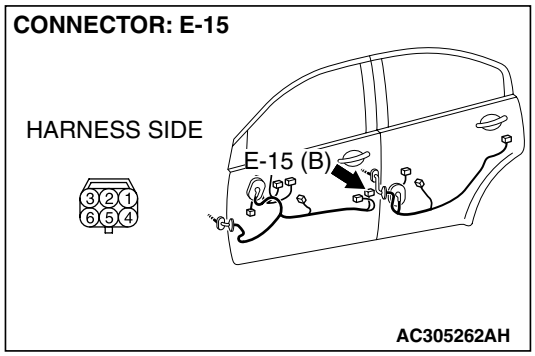
YES : Go to Step 7.

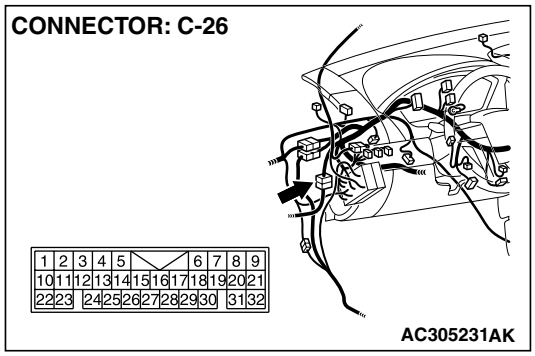
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door lock actuator (LH) should be normal.



STEP 7. Check the wiring harness between front door lock actuator (LH) connector E-15 (terminal 2) and ETACS-ECU connector C-217 (terminal 36).





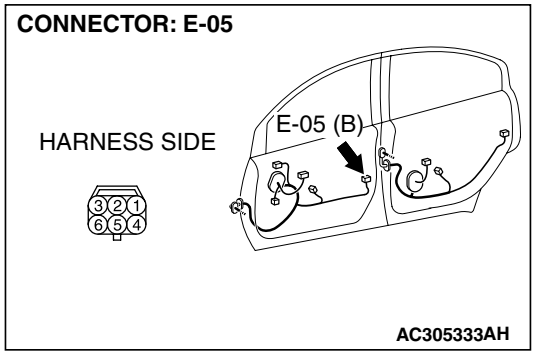


NOTE: Also check intermediate connector C-26 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-26 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between front door lock actuator (LH) connector E-15 (terminal 2) and ETACS-ECU connector C-217 (terminal 36) in good condition?

YES : Replace the ETACS-ECU. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door lock actuator (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 described in "CIRCUIT OPERATION" work normally, the input signal from the front door lock actuator (LH) should be normal.

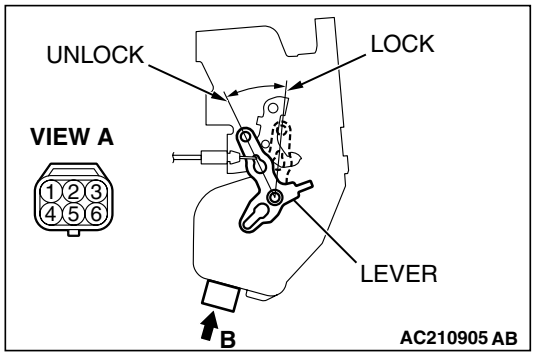


STEP 8. Check front door lock actuator (RH) connector E-05 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door lock actuator (RH) connector E-05 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 described in "CIRCUIT OPERATION" work normally, the input signal from the front door lock actuator (RH) should be normal.



STEP 9. Check the front door lock actuator (RH).

Disconnect front door lock actuator (RH) connector E-05. Then check continuity between the terminals.

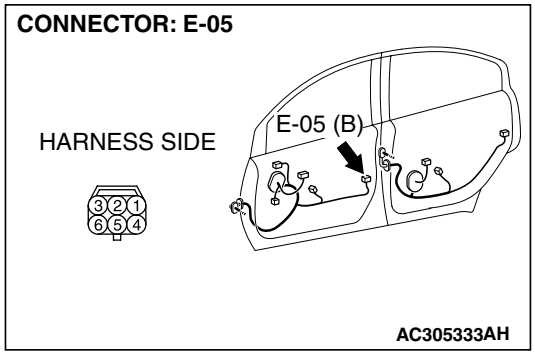
LEVER POSITION	TESTER CONNECTION	SPECIFIED CONDITION
UNLOCK	2 – 3	Less than 2 ohms
LOCK	2 – 3	Open circuit

Q: Is the front door lock actuator (RH) in good condition?

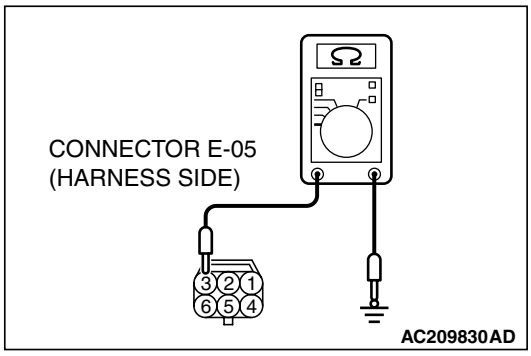
YES : Go to Step 10.

NO : Replace the front door lock actuator (RH). If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door lock actuator (RH) should be normal.

STEP 10. Check the ground circuit to the front door lock actuator (RH). Measure the resistance at front door lock actuator (RH) connector E-05.



(1) Disconnect front door lock actuator (RH) connector E-05 and measure the resistance available at the wiring harness side of the connector.

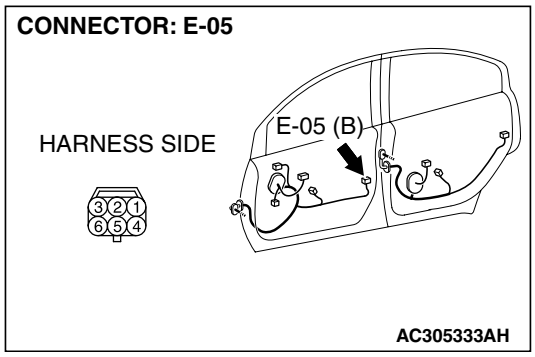


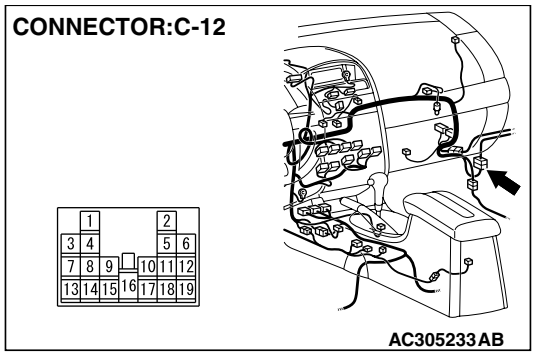
(2) Measure the resistance value between terminal 3 and ground.
- The resistance should be 2 ohms or less.

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 front door lock actuator (RH) connector E-05 (terminal 3) and ground.





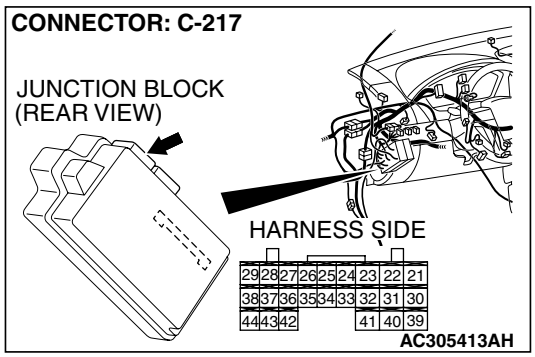
NOTE: Also check intermediate connector C-12 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-12 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between front door lock actuator (RH) connector E-05 (terminal 3) 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 described in "CIRCUIT OPERATION" work normally, the input signal from the front door lock actuator (RH) should be normal.

STEP 12. Check ETACS-ECU connector C-217 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

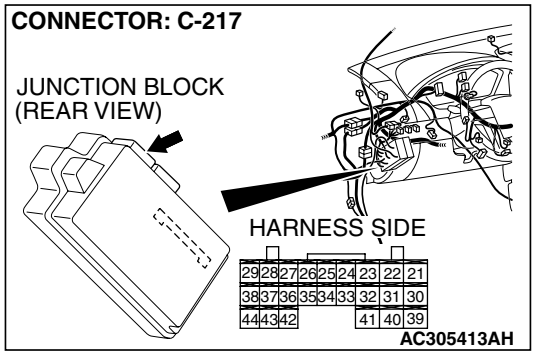


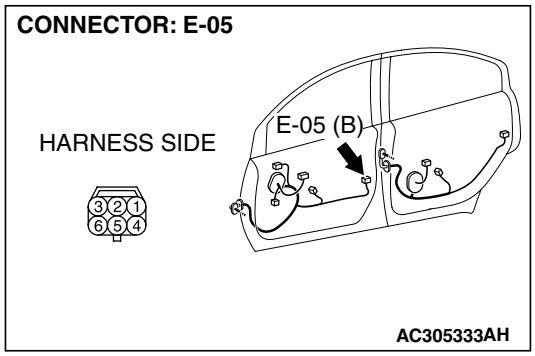
Q: Is ETACS-ECU connector C-217 in good condition?

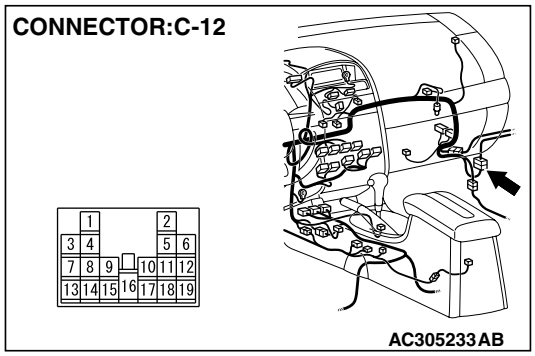
YES : Go to Step 13.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door lock actuator (RH) should be normal.

STEP 13. Check the wiring harness between front door lock actuator (RH) connector E-05 (terminal 2) and ETACS-ECU connector C-217 (terminal 43).







NOTE: Also check intermediate connector C-12 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-12 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

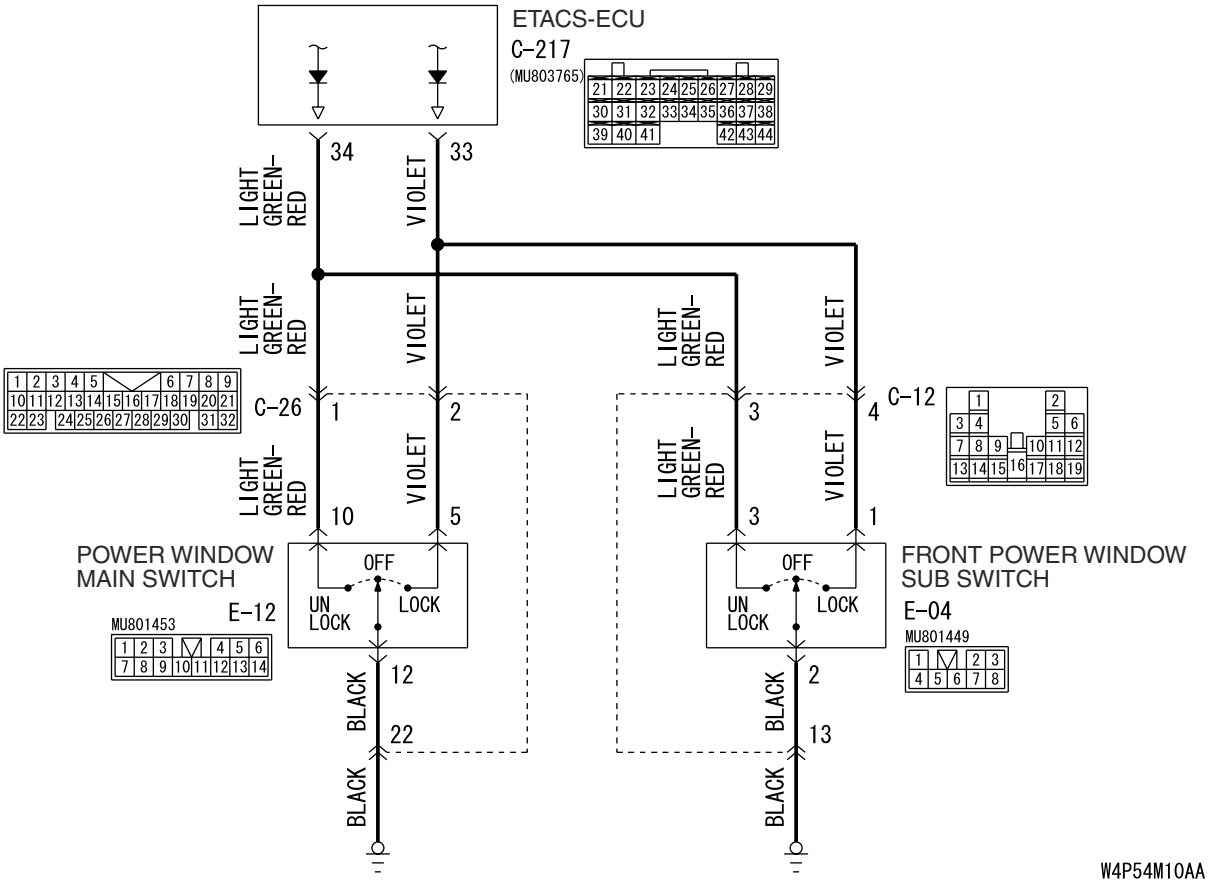
Q: Is the wiring harness between front door lock actuator (RH) connector E-05 (terminal 2) and ETACS-ECU connector C-217 (terminal 43) in good condition?

YES : Replace the ETACS-ECU. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door lock actuator (RH) should be normal.

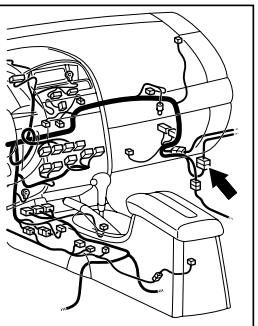
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the front door lock actuator (RH) should be normal.

INSPECTION PROCEDURE N-6: ETACS-ECU does not receive any signal from the door lock switch (incorporated in the power window main switch and front power window sub switch).

Door Lock Switch Input Circuit

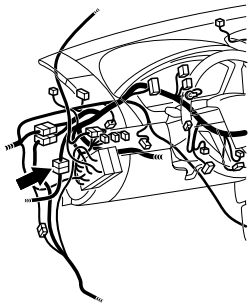


CONNECTOR: C-12



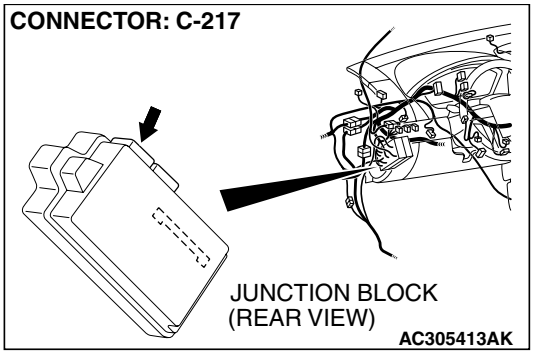
AC305233AE

CONNECTOR: C-26



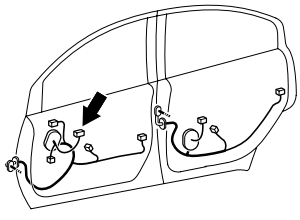
AC305231AL

CONNECTOR: C-217



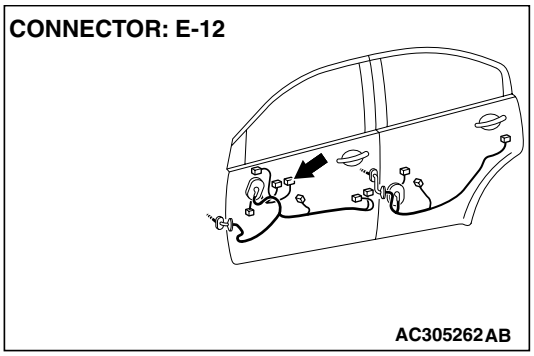
AC305413AK

CONNECTOR: E-04



AC305333AJ

TSB Revision



CIRCUIT OPERATION

The ETACS-ECU operates the central door locking system according to signal from the door lock switch (incorporated in the power window main switch and front power window sub switch).

TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the doors will not lock or unlock. If the signal is not normal, the power window main switch, front power window sub switch or the ETACS-ECU may be defective.

TROUBLESHOOTING HINTS

- The power window main switch or front power window sub 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
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: MUT-III USB Cable
  - MB991910: MUT-III Main Harness A

STEP 1. Check the input signal (by using the pulse check mode of the monitor).

Check the input signals from the door lock switch (incorporated in the power window main switch and front power window sub switch).

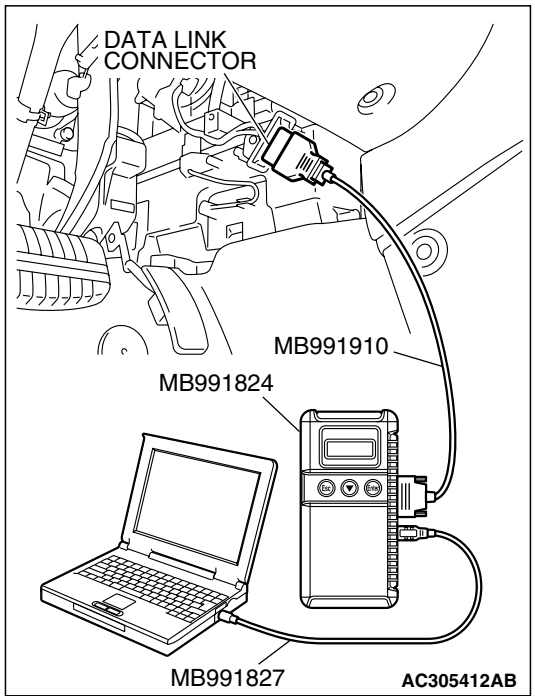
⚠ CAUTION

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 the scan tool MB991958. Refer to "How to connect SWS monitor P.54B-13."

(2) Operate scan tool MB991958 according to the procedure below to display "Pulse check."
   a. Select "Interactive Diagnosis."
   b. Select "System select."
   c. Select "SWS."
   d. Select "Pulse Checking."

(3) Check that scan tool MB991958 sounds.



Q: When the door lock switch (incorporated in the power window main switch and front power window sub switch) is operated, does the scan tool MB991958 sound?

When the door lock switch (incorporated in the power window main switch) is operated, the scan tool MB991958 does not sound. : Go to Step 2.

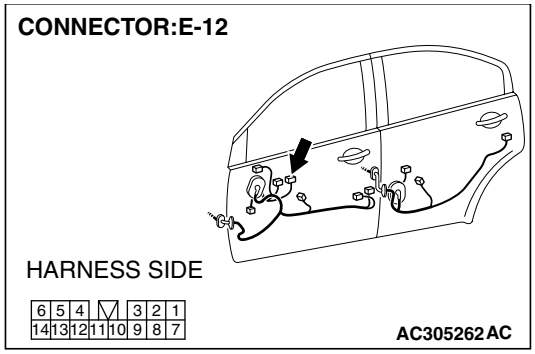
When the door lock switch (incorporated in the front power window sub switch) is operated, the scan tool MB991958 does not sound. : Go to Step 8.

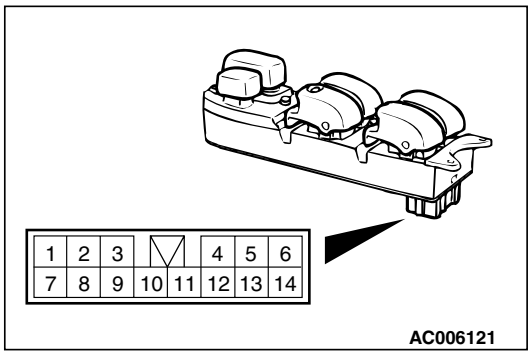
STEP 2. Check power window main switch connector E-12 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is power window main switch connector E-12 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 (power window main switch) should be normal.





STEP 3. Check the door lock switch (power window main switch).

Remove the power window main switch. Refer to GROUP 42, Door, Door Glass and Regulator P.42-39. Then check continuity between the switch terminals.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	5 – 12	Less than 2 ohms
OFF	5 – 12, 10 – 12	Open circuit
UNLOCK	10 – 12	Less than 2 ohms

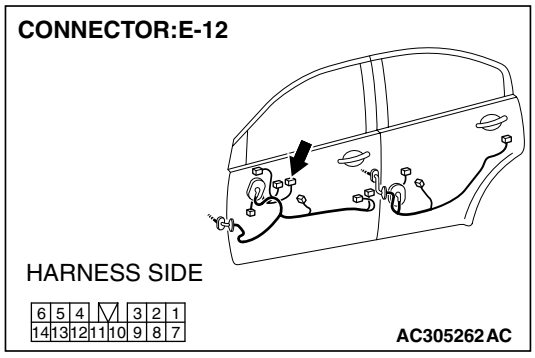
Q: Is the door lock switch (power window main switch) in good condition?

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 (power window main switch) should be normal.

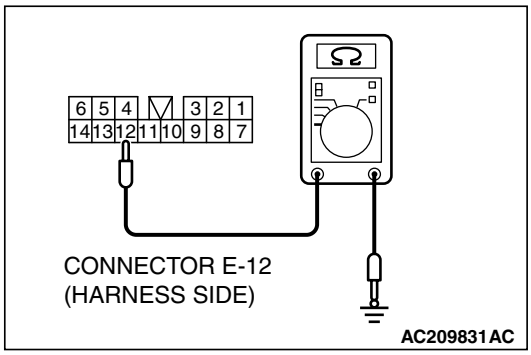
STEP 4. Check the ground circuit to the power window main switch. Measure the resistance at power window main switch connector E-12.

(1) Disconnect power window main switch connector E-12 and measure the resistance available at the wiring harness side of the connector.



(2) Measure the resistance value between terminal 12 and ground.

- The resistance should be 2 ohms or less.

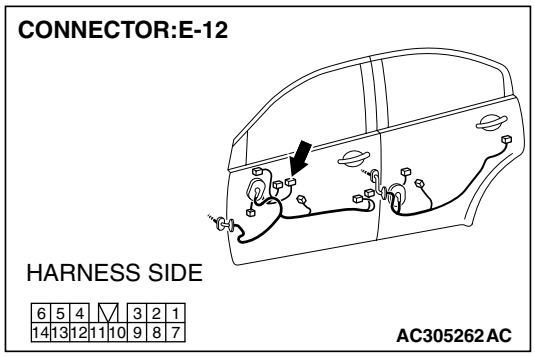


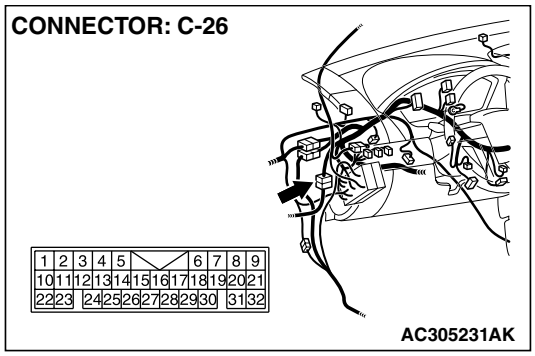
Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 6.

NO : Go to Step 5.

STEP 5. Check the wiring harness between power window main switch E-12 (terminal 12) and ground.





NOTE: Also check intermediate connector C-26 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-26 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between power window main switch connector E-12 (terminal 12) and ground in good condition?

YES : No action is necessary and testing is complete.

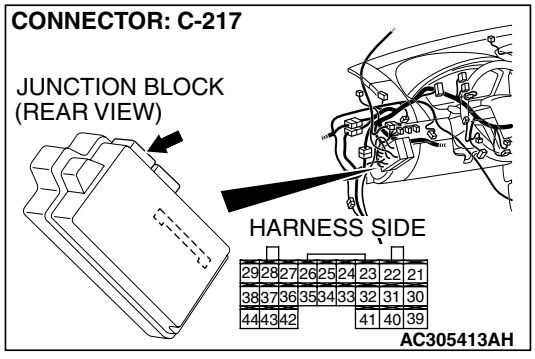
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the central door locking system works normally, input signal from the door lock switch (power window main switch) should be normal.

STEP 6. Check ETACS-ECU connector C-217 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

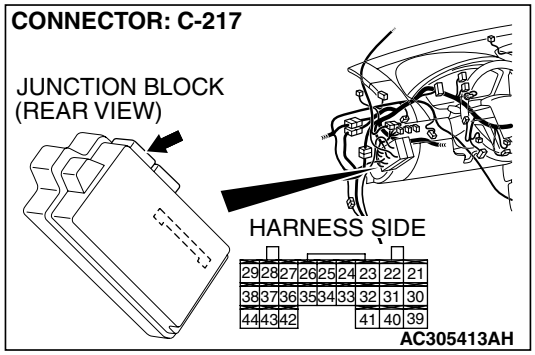
Q: Is ETACS-ECU connector C-217 in good condition?

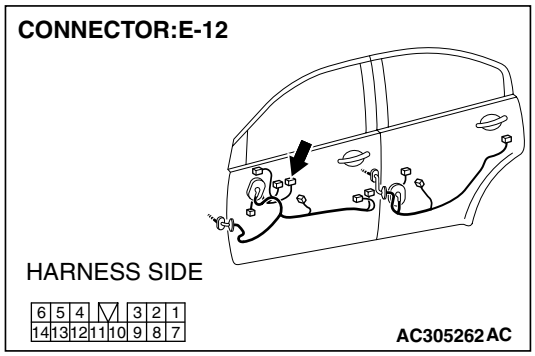
YES : Go to Step 7.

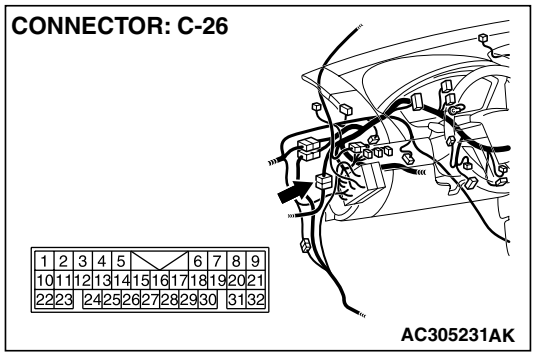
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the central door locking system works normally, input signal from the door lock switch (power window main switch) should be normal.



STEP 7. Check the wiring harness between power window main switch connector E-12 (terminals 5 and 10) and ETACS-ECU connector C-217 (terminals 33 and 34).





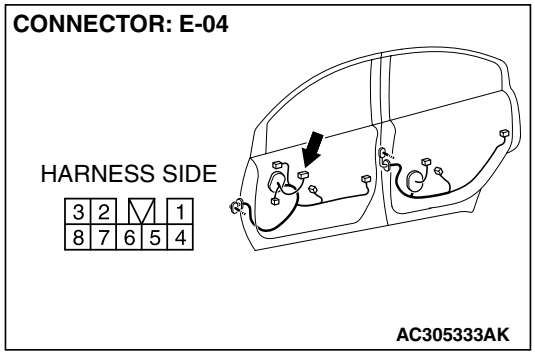


NOTE: Also check intermediate connector C-26 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-26 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between power window main switch connector E-12 (terminals 5 and 10) and ETACS-ECU connector C-217 (terminals 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 (power window main 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 (power window main switch) should be normal.

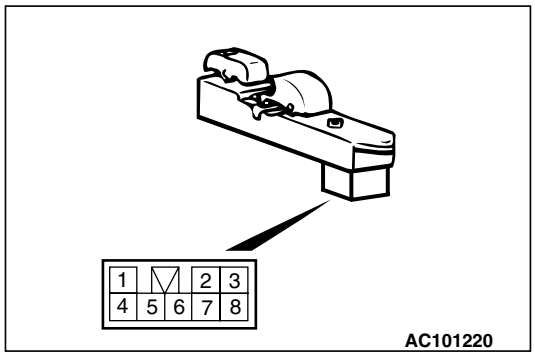


STEP 8. Check power window sub switch connector E-04 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is power window sub switch connector E-04 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 (front power window sub switch) should be normal.



STEP 9. Check the door lock switch (front power window sub switch).

Remove the front power window sub switch. Refer to GROUP 42, Door, Door Glass and Regulator P.42-39. Then check continuity between the switch terminals.

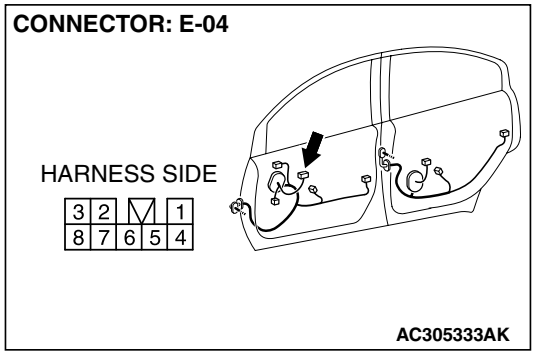
SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
LOCK	1 – 2	Less than 2 ohms
OFF	1 – 2, 2 – 3	Open circuit
UNLOCK	2 – 3	Less than 2 ohms

Q: Is the door lock switch (front power window sub switch) in good condition?

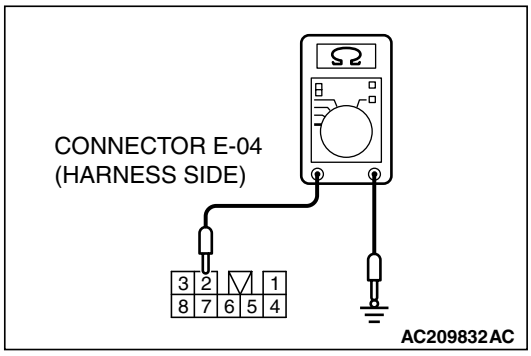
YES : Go to Step 10.

NO : Replace the front power window sub switch. If the central door locking system works normally, input signal from the door lock switch (front power window sub switch) should be normal.

STEP 10. Check the ground circuit to the front power window sub switch. Measure the resistance at front power window sub switch connector E-04.



(1) Disconnect front power window sub switch connector E-04 and measure the resistance available at the wiring harness side of the connector.

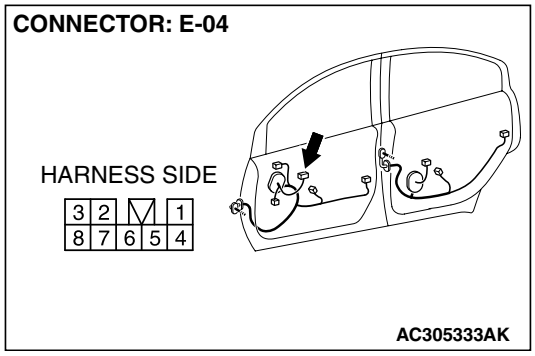


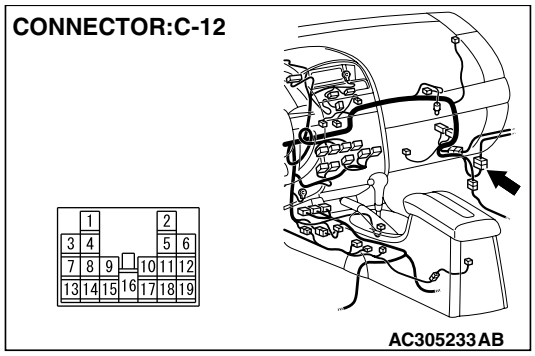
(2) Measure the resistance value between terminal 2 and ground.
- The resistance should be 2 ohms or less.

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 front power window sub switch E-04 (terminal 2) and ground.





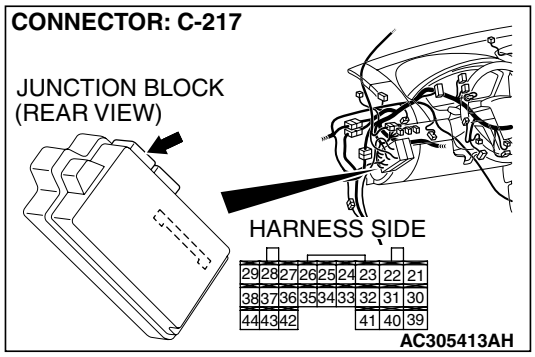
NOTE: Also check intermediate connector C-12 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-12 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between front power window sub switch connector E-04 (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 central door locking system works normally, input signal from the door lock switch should be normal.

STEP 12. Check ETACS-ECU connector C-217 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

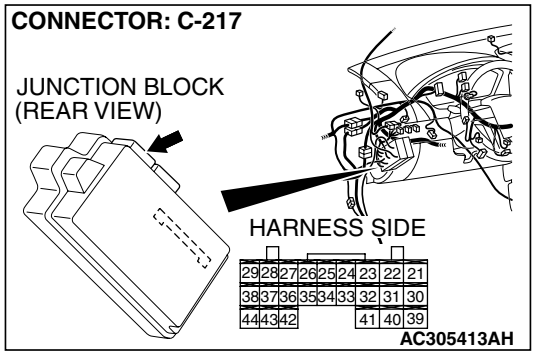


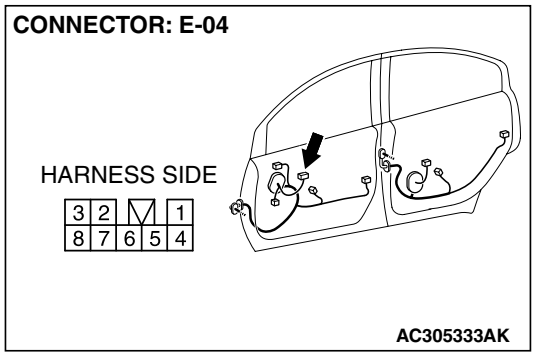
Q: Is ETACS-ECU connector C-217 in good condition?

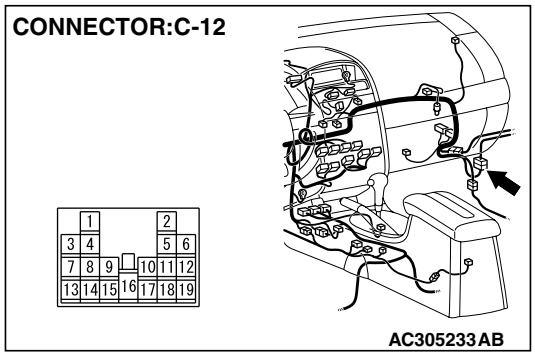
YES : Go to Step 13.

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 (front power window sub switch) should be normal.

STEP 13. Check the wiring harness between front power window sub switch connector E-04 (terminals 1 and 3) and ETACS-ECU connector C-217 (terminals 33 and 34).







NOTE: Also check intermediate connector C-12 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-12 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

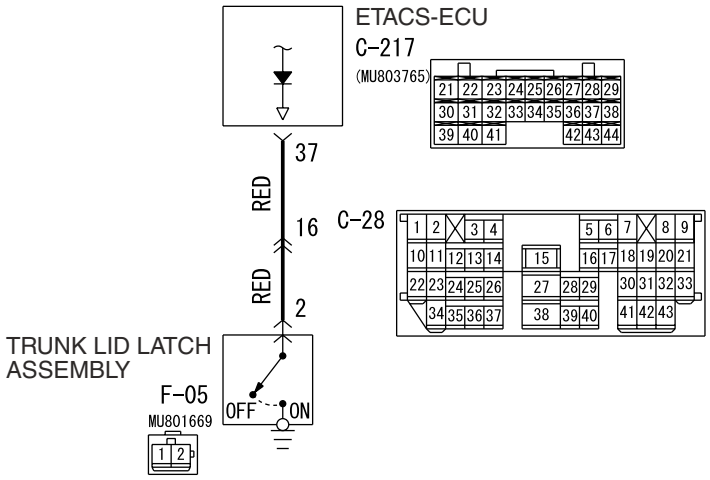
Q: Is the wiring harness between front power window sub switch connector E-04 (terminal 1 and 3) and ETACS-ECU connector C-217 (terminals 33 and 34) in good condition?

YES : Replace the ETACS-ECU. If the central door locking system works normally, input signal from the door lock switch (front power window sub 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 (front power window sub switch) should be normal.

INSPECTION PROCEDURE N-7: ETACS-ECU does not receive any signal from the trunk lid latch assembly.

Trunk Lid Latch Assembly Input Circuit



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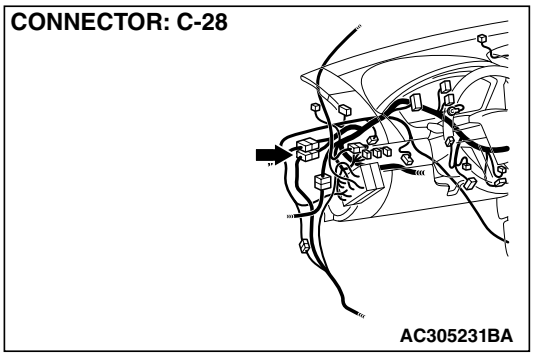
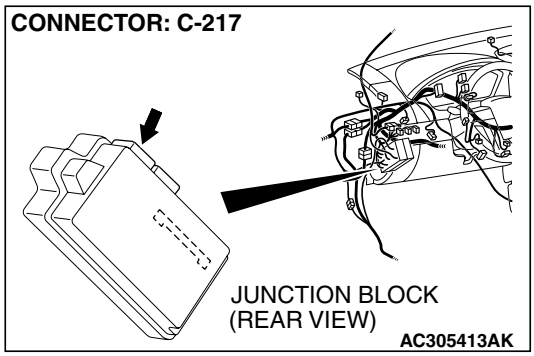
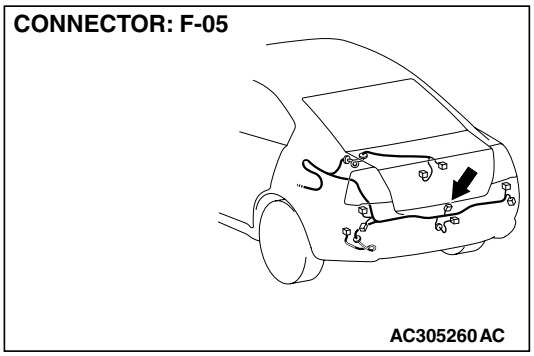






CIRCUIT OPERATION

The ETACS-ECU operates the trunk light according to signal from the trunk lid latch assembly.

TECHNICAL DESCRIPTION (COMMENT)

The trunk lid latch assembly input signal is used to operate the trunk light. If the signal fails, this function will not work normally.

TROUBLESHOOTING HINTS

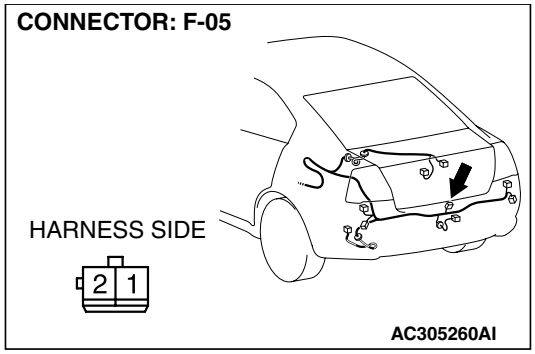
- The trunk lid latch assembly may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

TSB Revision

DIAGNOSIS

Required Special Tool:
- MB991223: Harness Set

STEP 1. Check trunk lid latch assembly connector F-05 for loose, corroded or damaged terminals, or terminals pushed back in the connector.



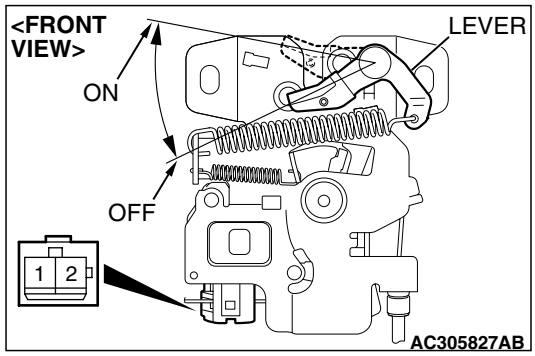
Q: Is trunk lid latch assembly connector F-05 in good condition?

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 described in "CIRCUIT OPERATION" work normally, the input signal from the trunk lid latch assembly should be normal.

STEP 2. Check the trunk lid latch assembly.

Remove the trunk lid latch assembly. Refer to GROUP 42, Trunk lid, Trunk lid latch inspection P.42-64.



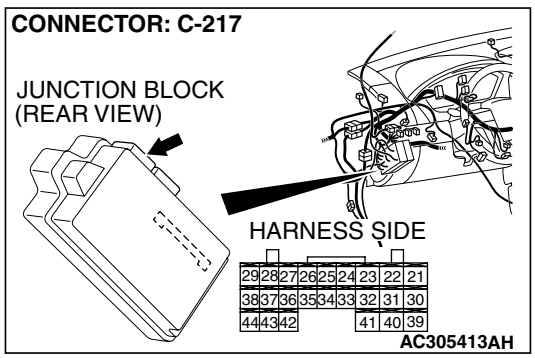
LEVER POSITION	TESTER CONNECTION	SPECIFIED CONDITION
ON (Latch open)	2 – Ground	Less than 2 ohms
OFF (Latch shut)	2 – Ground	Open circuit

Q: Is the trunk lid latch assembly in good condition?

YES : Go to Step 3.

NO : Replace the trunk lid latch assembly. The input signal from the trunk lid latch assembly should be able to be checked and the functions, which are described in the "Technical Description (comment)," should work normally.

STEP 3. Check ETACS-ECU connector C-217 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

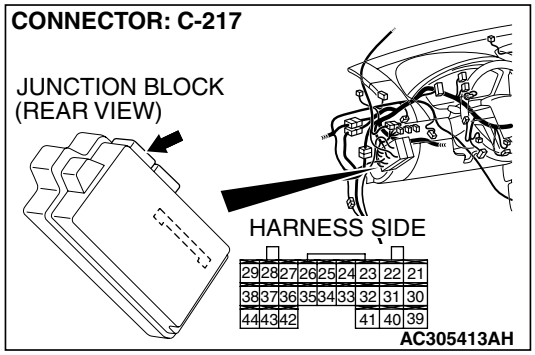


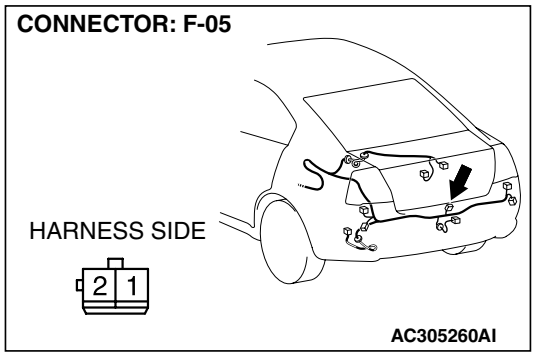
Q: Is ETACS-ECU connector C-217 in good condition?

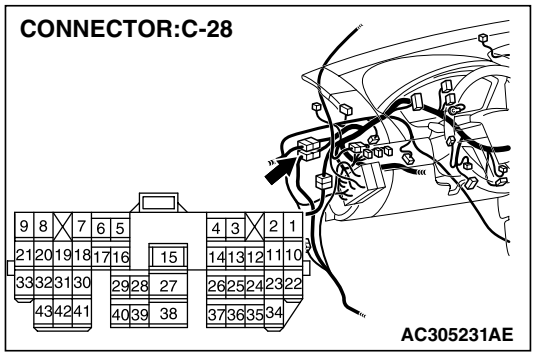
YES : Go to Step 4.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the trunk lid latch assembly should be normal.

STEP 4. Check the wiring harness between trunk lid latch assembly connector F-05 (terminal 2) and ETACS-ECU connector C-217 (terminal 37).







NOTE: Also check intermediate connector C-28 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-28 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

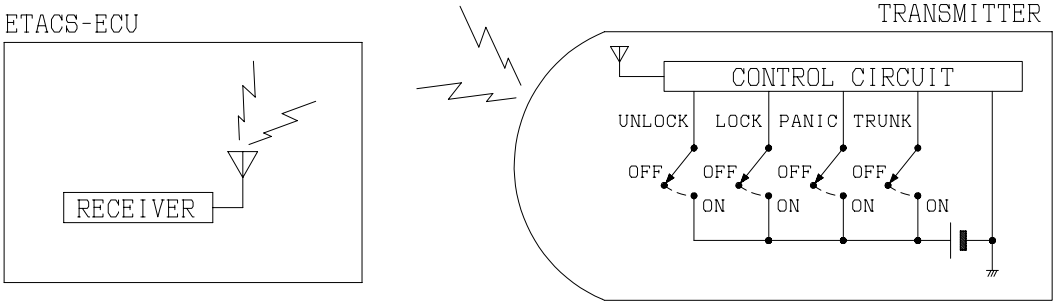
Q: Is the wiring harness between trunk lid latch assembly connector F-05 (terminal 2) and ETACS-ECU connector C-217 (terminal 37) in good condition?

YES : Replace the ETACS-ECU. If the functions described in "CIRCUIT OPERATION" work normally, the input signal from the trunk lid latch assembly 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 described in "CIRCUIT OPERATION" work normally, the input signal from the trunk lid latch assembly should be normal.

INSPECTION PROCEDURE N-8: Transmitter: ETACS-ECU does not receive any signal from the lock, unlock, trunk or panic switch.

Receiver and Transmitter Communication Circuit



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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 keyless entry transmitter does not work normally.

TROUBLESHOOTING HINTS

- The transmitter may be defective
- The ETACS-ECU may be defective

DIAGNOSIS

Required Special Tool:

- MB991223: Hamess Set

STEP 1. Register the transmitter.

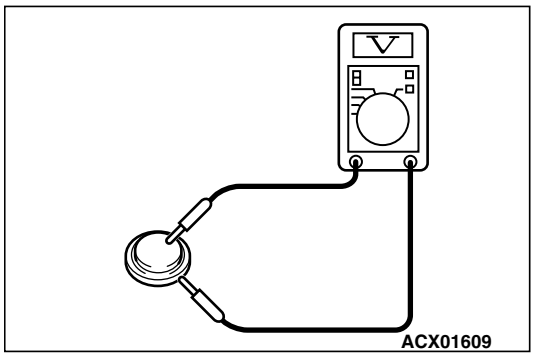
Register the transmitter. Refer to GROUP 42, Keyless Entry System, On-vehicle Service, How to register secret code P.42-71.

Q: Can the transmitter be registered correctly?

YES : If the transmitter works 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 operates normally, it indicates that the transmitter is sending normal signal to the ECU.

STEP 3. Check the transmitter.

Replace the transmitter and register the code. Refer to GROUP 42, Keyless Entry System, On-vehicle Service, How to register secret code P.42-71.

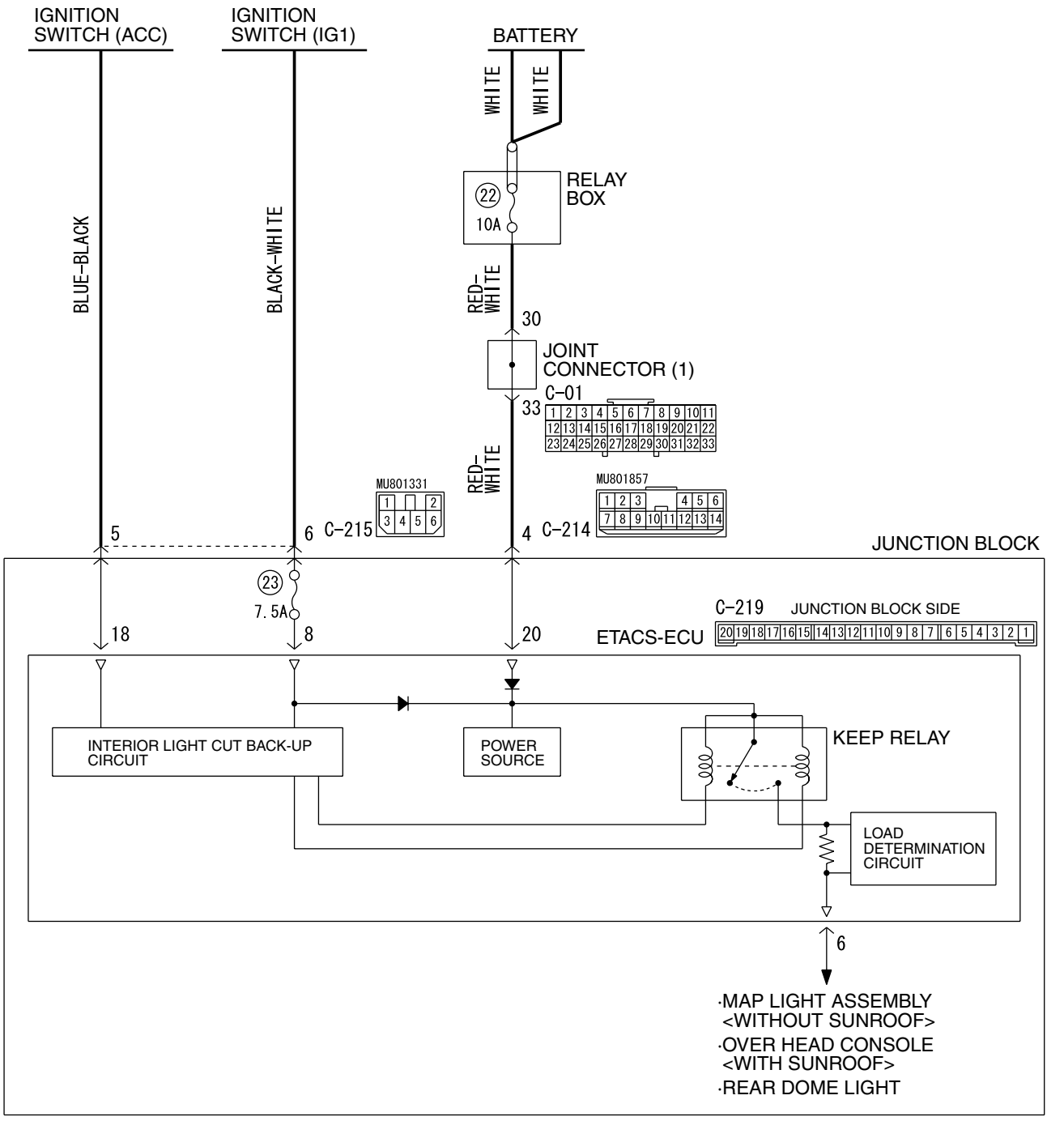
Q: Can the transmitter be registered correctly?

YES : If the transmitter works normally, the input signal from the transmitter should be normal.

NO : Replace the ETACS-ECU. If the transmitter works normally, the input signal from the transmitter should be normal.

INSPECTION PROCEDURE N-9: ETACS-ECU does not receive any interior light loaded signal.

Interior Light Automatic Shut-Down Function Circuit



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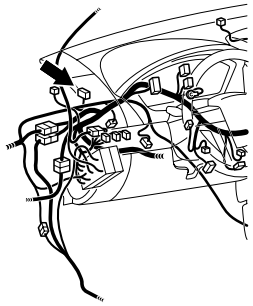
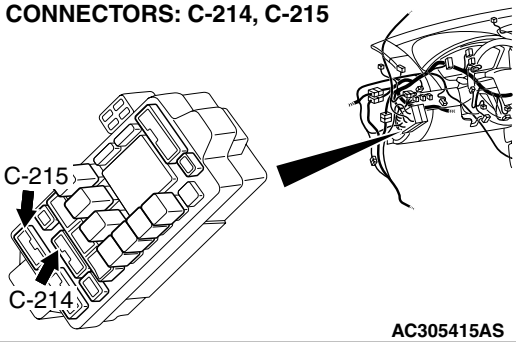
CONNECTOR: C-01



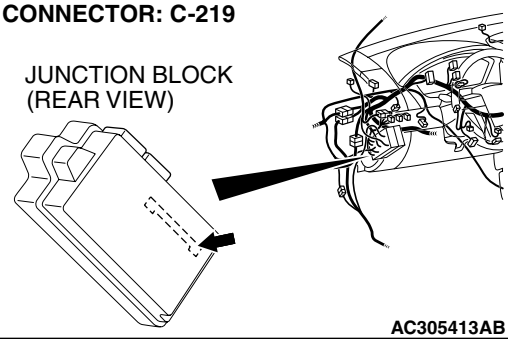
AC305231AY

CONNECTORS: C-214, C-215



AC305415AS

CONNECTOR: C-219



AC305413AB

CIRCUIT OPERATION

The ETACS-ECU operates the following equipment or functions by the interior light loaded signal:

- Interior light automatic shut-down function
- Dome light
- Ignition key hole illumination light

TECHNICAL DESCRIPTION (COMMENT)

If the signal is not normal, the equipment or functions described in "CIRCUIT OPERATION" do not work normally.

TROUBLESHOOTING HINTS

- 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

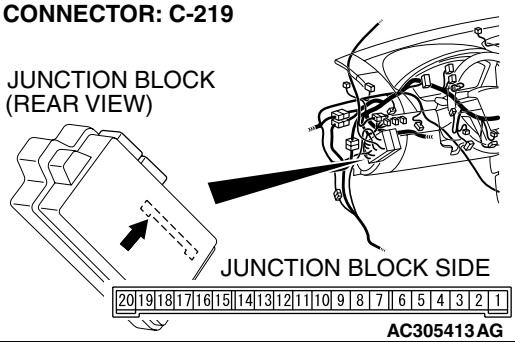
STEP 1. Check ETACS-ECU connector C-219 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-219 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 described in "CIRCUIT OPERATION" work normally, the interior light loaded signal should be normal.

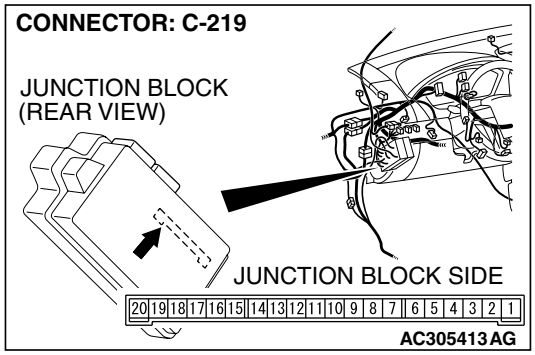
CONNECTOR: C-219

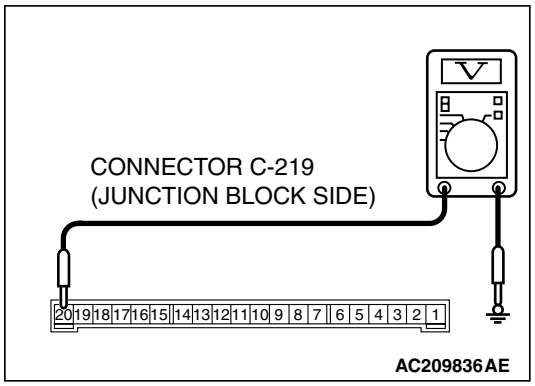


AC305413AG

STEP 2. Check the battery line of power supply circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connector C-219.

(1) Disconnect ETACS-ECU connector C-219 and measure the voltage available at the junction block side of the connector.



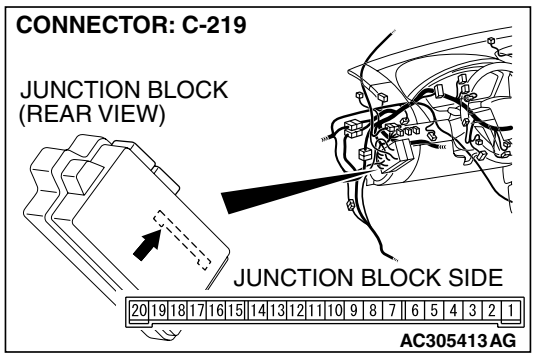


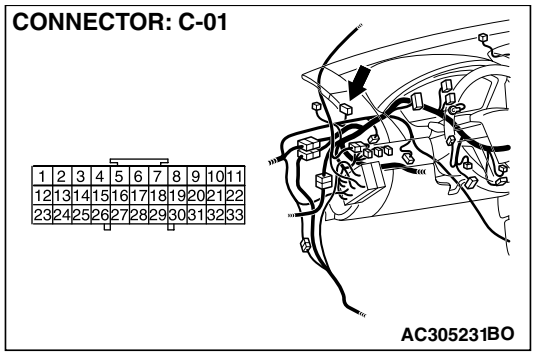
(2) Measure the voltage between terminal 20 and ground.
- The voltage should measure approximately 12 volts (battery positive voltage).

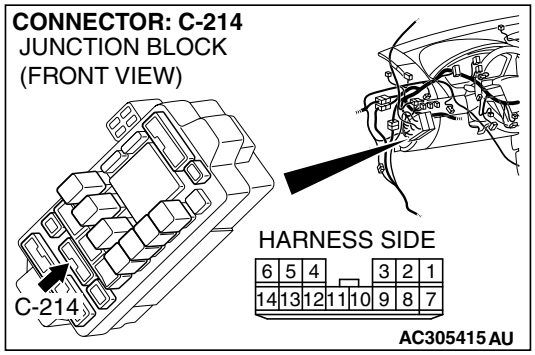
Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

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

STEP 3. Check the wiring harness between ETACS-ECU connector C-219 (terminal 20) and battery.







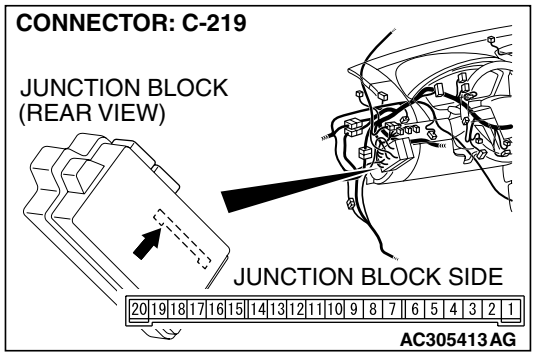
NOTE: Also check junction block connector C-214 and joint connector C-01 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-214 or joint connector C-01 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between ETACS-ECU connector C-219 (terminal 20) and battery in good condition?

YES : No action is necessary and testing is complete.

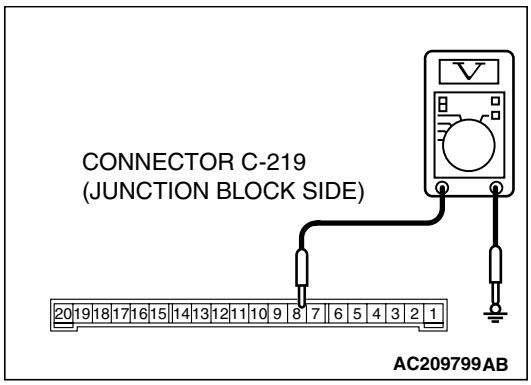
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions or equipment described in "CIRCUIT OPERATION" work normally, the interior light loaded signal should be normal.

STEP 4. Check the ignition switch (IG1) line of the power supply circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connector C-219.



(1) Disconnect ETACS-ECU connector C-219 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.

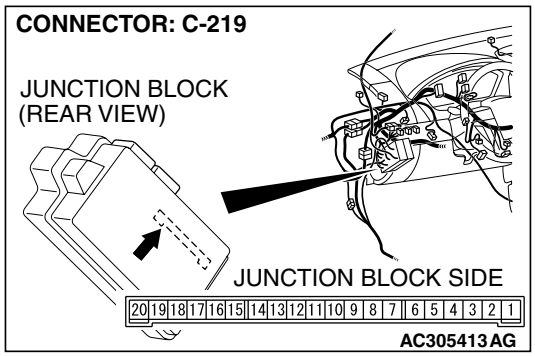
- The voltage should measure approximately 12 volts (battery positive voltage).

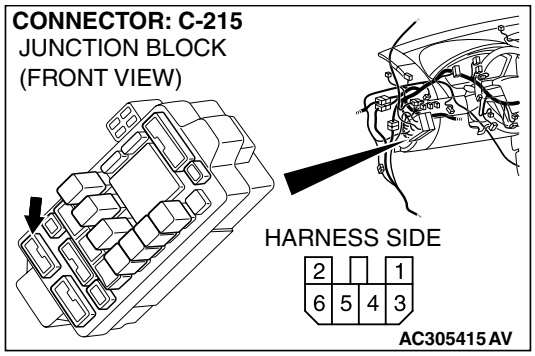
Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 6.

NO : Go to Step 5.

STEP 5. Check the wiring harness between ETACS-ECU connector C-219 (terminal 8) and the ignition switch (IG1).





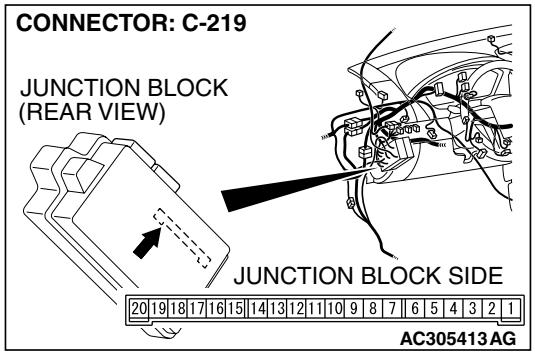
NOTE: Also check junction block connector C-215 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-215 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between ETACS-ECU connector C-219 (terminal 8) and the ignition switch (IG1) in good condition?

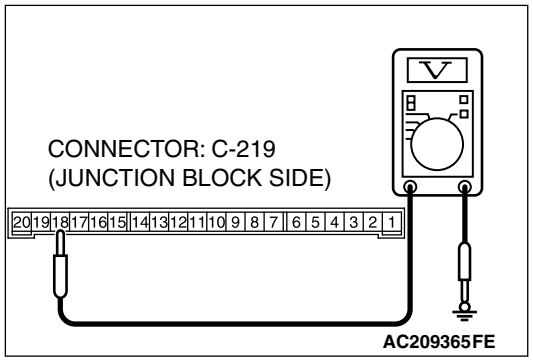
YES : No action is necessary and testing is complete.

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 described in "CIRCUIT OPERATION" work normally, the interior light loaded signal should be normal.

STEP 6. Check the ignition switch (ACC) line of the power supply circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connector C-219.



(1) Disconnect ETACS-ECU connector C-219 and measure the voltage available at the junction block side of the connector.
(2) Turn the ignition switch to the "ACC" position.



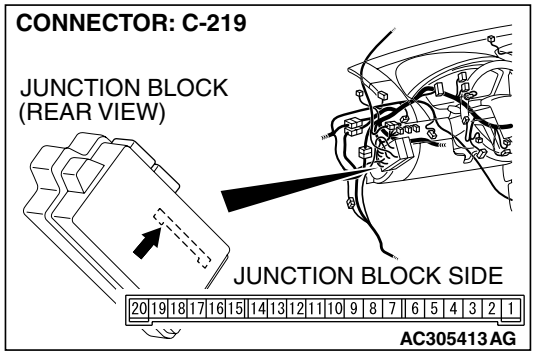
(3) Measure the voltage between terminal 18 and ground.
- The voltage should measure approximately 12 volts (battery positive voltage).

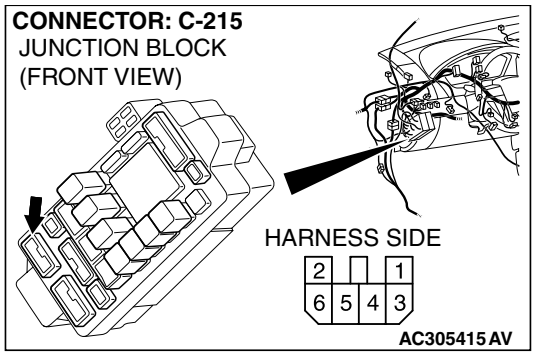
Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Replace the ETACS-ECU. If the functions or equipment 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-219 (terminal 18) and the ignition switch (ACC).





NOTE: Also check junction block connector C-215 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-215 is damaged, repair or replace the damaged component(s) as described in

Q: Is the wiring harness between ETACS-ECU connector C-219 (terminal 18) and ignition switch (ACC) in good condition?

YES : No action is necessary and testing is complete.

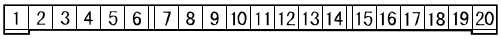
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the functions or equipment described in "CIRCUIT OPERATION" work normally, the interior light loaded signal should be normal.

CHECK AT ECU TERMINAL

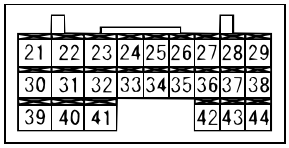
M1549001201031

ETACS-ECU

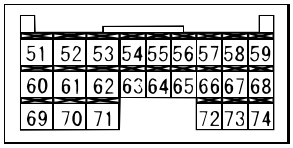
C-219



C-217



C-218



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*NOTE: *:The terminal No.1 to 20 connectors cannot be measured as the ETACS-ECU is installed directly on the junction block. Therefore, this information is only for reference.*

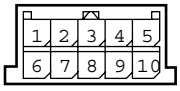
TERMINAL NO.	INSPECTION ITEM	INSPECTION CONDITION	NORMAL VALUE
1	Output to power window relay	When the power windows can work	Battery positive voltage
2	Battery positive voltage (for central door lock)	Always	Battery positive voltage
3	Ground (for ECU)	Always	0 V
4	Power supply to ignition switch (ACC)	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	Always (when interior light shutoff function is not operating)	Battery positive voltage
7	Input from rear door switch (LH)	Rear door switch (LH): ON (rear door (LH) 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
15 – 17	–	–	–
18	Power supply to ignition switch (ACC)	Ignition switch: "ACC"	Battery positive voltage
19	–	–	–
20	Battery power supply (for ECU)	Always	Battery positive voltage
21	–	–	–

TSB Revision

TERMINAL NO.	INSPECTION ITEM	INSPECTION CONDITION	NORMAL VALUE
22	Output to door unlock (for driver's door)	When driver's door lock actuator is operating (doors unlocked)	Battery positive voltage
23, 24	–	–	–
25	Input of door lock key cylinder switch (UNLOCK) signal	Door lock key cylinder switch: UNLOCK	0 V
26 – 28	–	–	–
29	Input of rear door lock actuator (UNLOCK) signal	Rear door lock actuator: UNLOCK	0 V
30	Input of key reminder switch signal	Key reminder switch: ON (when ignition key is removed)	0 V
31, 32	–	–	–
33	Input of door lock switch (LOCK) signal	Door lock switch (incorporated in power window switch): LOCK	0 V
34	Input of door lock switch (UNLOCK) signal	Door lock switch (incorporated in power window switch): UNLOCK	0 V
35	Input from rear door switch (RH)	Rear door switch (RH): ON (rear door (RH) open)	0 V
36	Input of driver's door lock actuator (UNLOCK) signal	Driver's door lock actuator: UNLOCK	0 V
37	Input from trunk lid latch assembly	Trunk lid latch: ON (trunk open)	0 V
38	Ground (for sensor)	Always	0 V
39 – 41	–	–	–
42	Input of door lock key cylinder switch (LOCK) signal	Door lock key cylinder switch: LOCK	0 V
43	Input of front passenger's door lock actuator (UNLOCK) signal	Front passenger’s door lock actuator: UNLOCK	0 V
44	Output to horn relay	When a horn sounds by the keyless entry horn answerback function	2 V or less
45 – 50	–	–	–
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)
52, 53	–	–	–
54	Input of fog light switch signal	Fog light switch: ON	0 V
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
57, 58	–	–	–
59	SWS communication line	Always	0 – 12 V (pulse signal)

TERMINAL NO.	INSPECTION ITEM	INSPECTION CONDITION	NORMAL VALUE
60 – 64	–	–	–
65	Input from front passenger's door switch	Front passenger's door switch: ON (front passenger's door open)	0 V
66	Input of signal from variable intermittent wiper control switch	Ignition switch: "ACC," Variable intermittent wiper control switch: "FAST" to "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	Output to ignition key hole illumination light	When ignition key hole illumination light is on	0 V
70	–	–	–
71	Power supply to interior light	Always (when interior light shutoff function is not operating)	Battery positive voltage
72 – 74	–	–	–

COLUMN SWITCH



C-309

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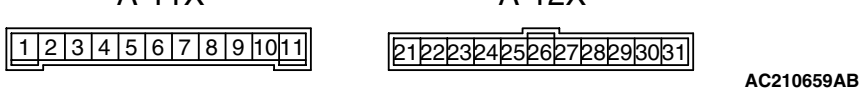
TERMINAL NO.	INSPECTION ITEM	INSPECTION CONDITION	NORMAL VALUE
1	Battery power supply	Always	Battery positive voltage
2	Input of data request signal	Always	0 – 12 V (pulse signal)
3	SWS communication line	Always	0 – 12 V (pulse signal)
4	Ground	Always	0 V
5	–	–	–
6	Output of signal from variable intermittent wiper control switch: "FAST" to "SLOW"	Igniting switch: "ACC," Variable intermittent wiper control switch: "FAST" to "SLOW"	0 → 2.5 V
7	–	–	–
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

FRONT-ECU

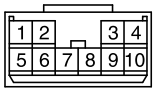


NOTE: Terminal voltages cannot be measured as the front-ECU is installed directly on the relay box. Therefore, this information is only for reference.

TERMINAL NO.	INSPECTION ITEM	INSPECTION CONDITION	NORMAL VALUE
1	Output to fog light relay	When the fog lights are on	Battery positive voltage
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
9 – 11	–	–	–
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

SUNROOF-ECU

D-04



AC306356 AB

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
3, 4	–	–	–
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
9	–	–	–
10	SWS communication line	Always	0 – 12 V (pulse signal)

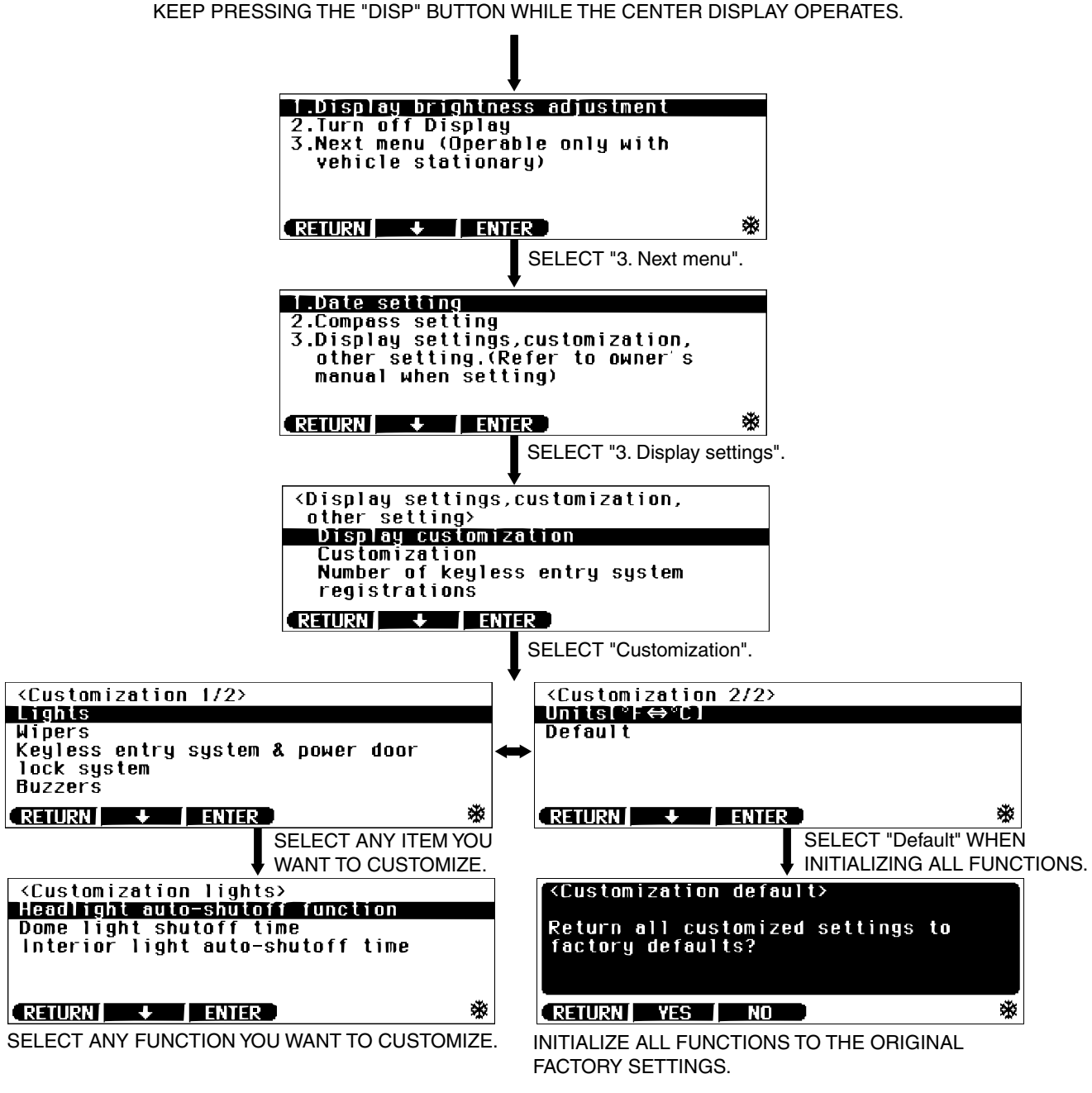
ON-VEHICLE SERVICE

CONFIGURATION FUNCTION

M1549002500861

ADJUSTMENT BY OPERATING THE MULTI CENTER DISPLAY <VEHICLES WITH MIDDLE-GRADE MULTI CENTER DISPLAY ONLY>

The following function and system customizations are possible by using the multi center display.



AC207102 AB

TSB Revision

ITEM (multi-center display)		ADJUSTMENT DETAILS
Lights	Headlight auto-cutout function	The headlight automatic shutoff function can be set in the following ways. a. Auto-cutout only when the ignition is turned OFF while lights are on (default) b. Auto-cutout when ignition is turned OFF at any time c. No auto-cutout
	Dome light cutout time	The interior dimmer delay period can be set in the following ways. a. 0 second b. 15 seconds c. 30 seconds (default) d. 60 seconds e. 120 seconds f. 180 seconds
	Interior light auto-cutout time	The period before the interior illumination is turned off automatically can be set in the following ways. a. 3 minutes b. 30 minutes (default) c. 60 minutes d. No auto-cutout
Wipers	Windshield wiper speed-sensitive operation	The speed-sensitive wiper function can be activated or deactivated. (ON by default)
	Rear wiper intermittent interval*	–

ITEM (multi-center display)		ADJUSTMENT DETAILS
Keyless entry and power door lock system	Keyless entry system confirmation by horn	The horn answerback honking conditions can be set in the following ways. a. Horn sounds b. Horn sounds if doors are already locked (default) c. Horn does not sound
	Keyless entry system confirmation by turn-signal lights	The hazard answerback flashing conditions can be set in the following ways. a. Locking and unlocking (default) b. Locking only c. Unlocking only d. No indication
	Time until automatic relocking after unlock operation using keyless entry system	The timed lock period after unlocking with the keyless entry transmitter can be set to the following times. a. 30 seconds (default) b. 60 seconds c. 120 seconds d. 180 seconds
	Unlock operation using keyless entry system or door key	The unlocking operations after unlocking with or without a key can be set in the following ways. a. Unlock driver's door on first unlock operation, and unlock all doors on second unlock operation (default) b. Unlock all doors on first unlock operation
Buzzers	Turn-signal buzzer	The turn-signal buzzer function can be activated or deactivated. (OFF by default)
	Door-ajar warning buzzer	The door ajar warning buzzer function can be activated or deactivated (ON by default).
Default		Initialization of above mentioned functions

NOTE: The item of the rear wiper is shown on the display, but the rear wiper can not be customized because it is not equipped on GALANT.

NOTES